

PROSPECTUS



## 6,150,000 Ordinary Shares

This is our initial public offering. We are offering 6,150,000 of our ordinary shares.

Prior to this offering, there has been no public market for our ordinary shares. We have been approved to list our ordinary shares on the Nasdaq Global Market under the symbol "ITRM."

We are an "emerging growth company" as that term is used in the Jumpstart Our Business Startups Act of 2012, or the JOBS Act. See "Prospectus Summary—Emerging Growth Company Status."

**You should consider the risks we have described in “[Risk Factors](#)” beginning on page 10.**

**Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.**

	Per Share	Total
Initial public offering price	\$13.00	\$79,950,000
Underwriting discounts and commissions <sup>(1)</sup>	\$ 0.91	\$ 5,596,500
Proceeds, before expenses, to us	\$12.09	\$74,353,500

(1) We refer you to "Underwriting" beginning on page 173 of this prospectus for additional information regarding underwriting compensation.

Certain of our directors and existing shareholders, or their affiliates, have agreed to purchase an aggregate of 3,304,839 of our ordinary shares in this offering. These shares will be offered and sold on the same terms as the other shares that are being offered and sold in this offering to the public.

We have granted the underwriters an over-allotment option to purchase up to an additional 922,500 ordinary shares on the same terms and conditions.

The underwriters expect to deliver the ordinary shares on or about May 30, 2018.

**Leerink Partners**

**RBC Capital Markets**

**Guggenheim Securities**

**Needham & Company**

**The date of this prospectus is May 24, 2018.**

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We are responsible for the information contained in this prospectus and in any free writing prospectus we prepare and authorize. Neither we nor any of the underwriters have authorized anyone to provide you with different information, and we take no responsibility for any other information others may give you. Neither we nor the underwriters are making an offer to sell these securities in any jurisdiction where such offer and sale is not permitted. You should not assume that the information contained in this prospectus is accurate as of any date other than the date on the cover of this prospectus. Our business, financial condition, results of operations, and future growth prospects may have changed since that date.

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Persons who come into possession of this prospectus and any applicable free writing prospectus in jurisdictions outside the United States are required to inform themselves about and to observe any restrictions as to this offering and the distribution of this prospectus and any such free writing prospectus applicable to that jurisdiction.

## PROSPECTUS SUMMARY

*This summary highlights information contained in other parts of this prospectus. Because it is only a summary, it does not contain all of the information that you should consider before investing in our ordinary shares and it is qualified in its entirety by, and should be read in conjunction with, the more detailed information appearing elsewhere in this prospectus. You should read the entire prospectus carefully, especially “Risk Factors,” “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and our consolidated financial statements and the related notes, before deciding to buy our ordinary shares. Unless the context requires otherwise, references in this prospectus to “Iterum,” the “company,” “we,” “us,” and “our” refer to Iterum Therapeutics plc and its wholly owned subsidiaries.*

### Overview

We are a pharmaceutical company dedicated to developing and commercializing sulopenem to be potentially the first and only oral and intravenous (IV) branded penem available globally. Penems, including thiopenems and carbapenems, belong to a class of antibiotics more broadly defined as  $\beta$ -lactam antibiotics, the original example of which was penicillin, but which now also includes cephalosporins. Sulopenem, which we licensed from Pfizer Inc. (Pfizer) in November 2015, is a potent, thiopenem antibiotic delivered intravenously which is active against bacteria that belong to the group of organisms known as gram-negatives and cause urinary tract and intra-abdominal infections. Pfizer also developed an oral prodrug, sulopenem etzadroxil, which we further enhanced with the addition of probenecid and combined into a single bilayer tablet, which we refer to as oral sulopenem. Both oral sulopenem and sulopenem have the potential to be important new treatment alternatives to address growing concerns related to antibacterial resistance without the known toxicities of some of the most widely used antibiotics, specifically fluoroquinolones. We believe there are two distinct opportunities for our sulopenem program: patients at elevated risk for treatment failure in the community setting suffering from uncomplicated urinary tract infections (uUTI), and hospitalized patients suffering from complicated, antibiotic-resistant infections.

We plan to initiate a Phase 3 clinical program in the second half of 2018 for the treatment of adults in three indications: uUTI, complicated urinary tract infections (cUTI) and complicated intra-abdominal infections (cIAI). We designed one Phase 3 clinical trial in each indication based on our end of Phase 2 meeting with the U.S. Food and Drug Administration (FDA) and feedback from the European Medicines Agency (EMA). We intend to conduct the Phase 3 clinical trials under Special Protocol Assessment (SPA) agreements from the FDA. We expect to complete enrollment and produce top-line data for all three clinical trials in the second half of 2019, and to submit our new drug applications (NDAs) to the FDA by the end of 2019.

	Formulation	2H-17	1H-18	2H-18	1H-19	2H-19
Uncomplicated Urinary Tract Infection						
Sulopenem etzadroxil-probenecid	Oral Bilayer Tablet		SPA received	Pivotal Phase 3		Top-line results
Complicated Urinary Tract Infection						
Sulopenem	Intravenous		SPA received	Pivotal Phase 3		Top-line results
Sulopenem etzadroxil-probenecid	Oral Bilayer Tablet					
Complicated Intra-abdominal Infection						
Sulopenem	Intravenous		SPA received	Pivotal Phase 3		Top-line results
Sulopenem etzadroxil-probenecid	Oral Bilayer Tablet					

## **The Medical Need**

There are approximately 13.5 million emergency room and office visits for symptoms of urinary tract infections (UTIs) and approximately 21 million uUTIs in the United States annually. There are also approximately 3.6 million patients with cUTI and approximately 350,000 patients with cIAI that receive antibiotic therapy every year in the United States. The treatment of urinary tract and intra-abdominal infections has become more challenging because of the development of resistance by pathogens responsible for these diseases.

Based on market research, physicians estimated that approximately 35% of uUTI patients are at elevated risk for treatment failure. Proper antibiotic treatment of resistant infections in this group is particularly important due to the risks associated with treatment failure. Elevated risk patients were defined in the research as patients with recurrent UTIs, elderly patients, those who have a suspected or confirmed drug-resistant infection, patients with comorbidities (e.g., Diabetes mellitus) or that are immunocompromised, patients that have had a recent hospitalization, patients with a history of prior antibiotic failure and patients in a long-term care setting. Treatment failures pose significant clinical and economic challenges to the healthcare system. In addition, the Infectious Diseases Society of America and European Society for Microbiology and Infectious Diseases recommend against empiric use, or prescribing without results from a bacterial culture, of fluoroquinolones for uUTIs in their 2010 Update to the International Clinical Practice Guidelines for the Treatment of Acute Uncomplicated Cystitis and Pyelonephritis in Women. Similarly, the FDA in its November 2015 Advisory Committee meeting stated that the risk of serious side effects caused by fluoroquinolones generally outweighs the benefits for patients with uUTIs and other uncomplicated infections. Serious side effects associated with fluoroquinolones include tendon rupture, tendinitis, and worsening symptoms of myasthenia gravis and peripheral neuropathy. Subsequently, the FDA mandated labeling modifications for fluoroquinolone antibiotics directing healthcare professionals to reserve fluoroquinolones for patients with no other treatment alternatives. The combination of growing prevalence of bacterial resistance and FDA-mandated safety label changes for fluoroquinolones have left physicians in search of new oral treatment alternatives to safely and effectively treat their uUTI patients.

## **Our Solution: Sulopenem Program**

Our sulopenem program has the potential to offer a solution to the problem of antibiotic resistance and the toxicity limitations of existing agents. Sulopenem has *in vitro* activity against gram-negative organisms with resistance to one or more established antibiotics and can be delivered in an oral formulation. In November 2015, we acquired an exclusive, worldwide license under certain patents and know-how to develop and commercialize sulopenem and its oral prodrug, sulopenem etzadroxil, from Pfizer. Pfizer conducted Phase 1 and Phase 2 clinical trials of sulopenem delivered intravenously in Japan in over 1,450 patients with a variety of hospital and community acquired infections. Adverse event data from these trials provided preliminary insights into the safety profile for sulopenem, which will continue to be assessed with additional clinical trials. Pfizer subsequently developed sulopenem into a prodrug formulation, sulopenem etzadroxil, to enable oral delivery. We have further enhanced this prodrug formulation with the addition of probenecid to extend sulopenem's half-life and enhance its antibacterial potential.

None of the most commonly used oral antibiotics for treatment of uUTIs were initially approved by the FDA within the last two decades. We believe oral sulopenem will be an important empiric treatment option for elevated risk uUTI patients because of its potency against resistant pathogens, as well as its spectrum of antibacterial activity. In addition, oral sulopenem will allow patients who develop an infection with a resistant pathogen, but are stable enough to be treated in the community, to avoid the need for an IV catheter and even hospitalization.

In the hospital setting, the lack of effective oral stepdown options results in the potential for lengthy hospital stays or insertion of a peripherally inserted central catheter (PICC) to facilitate administration of IV antibiotics,

even for some patients with relatively straightforward infections. Our sulopenem program may enable faster discharges, providing cost-saving advantages for the hospital and mitigating the risk of catheter-related infection for patients. Based on potency, safety and formulation advantages, we believe our sulopenem program is uniquely positioned to address unmet medical needs for patients suffering from uncomplicated and complicated infections in both the community and hospital settings.

Sulopenem etzadroxil has an issued composition of matter patent in the United States (which we have exclusively licensed from Pfizer) that is scheduled to expire in 2029, subject to potential extension to 2034 under the Drug Price Competition and Patent Term Restoration Act of 1984 (the Hatch-Waxman Act). In addition, the FDA has designated sulopenem and oral sulopenem as Qualified Infectious Disease Products (QIDP) for the indications of uUTI, cUTI and cIAI pursuant to the Generating Antibiotic Incentives Now Act (the GAIN Act), which provides the potential for a more rapid NDA review cycle and which could add five years to any regulatory exclusivity period that we may be granted. None of our licensed patents cover the IV formulation of sulopenem.

#### **Our Commercialization Plan**

If the FDA approves oral sulopenem and sulopenem, we plan to build a targeted commercial infrastructure to launch both product candidates in the United States. Data from a study we commissioned in 2017 to quantify quinolone resistance by zip code, in addition to data from our clinical trials and available prescriber data, will inform our initial targeted sales force as to where the medical need for a new, effective therapy for UTIs is highest in the community and hospital settings. Outside of the United States, we are evaluating our options to maximize the value of our sulopenem program.

We plan to employ a dual sourcing strategy for critical elements of our sulopenem supply chain. We expect to register two suppliers and validate at least one supplier for the manufacture of the active pharmaceutical ingredient (API) at the time of our planned regulatory filings in the United States by the end of 2019. We plan to utilize a third-party facility to manufacture sulopenem tablets and another third party to manufacture the IV vials. Potential additional sources to manufacture sulopenem tablets and IV vials have also been identified.

#### **Our Management Team and Investors**

We were founded in June 2015 by former executives of Durata Therapeutics, Inc. (Durata), a biopharmaceutical company, which developed dalbavancin, another antibiotic from the Pfizer portfolio, and successfully obtained FDA approval, launched the product in the United States and submitted a marketing authorization application (MAA) to the EMA (approval was received in 2015). Durata was acquired by Allergan plc (Allergan, formerly Actavis, Inc.) in late 2014. To date, we have raised approximately \$120 million to develop our sulopenem program from a leading investor group including Advent Life Sciences LLP, Arix Bioscience plc, Bay City Capital LLC, Canaan Partners, Domain Associates, L.L.C., Frazier Healthcare Partners, New Leaf Venture Partners, Pivotal bioVenture Partners and Sofinnova Ventures, Inc., as well as our founders. Pfizer is also one of our shareholders.

#### **Our Strategy**

Our strategy is to develop and commercialize our sulopenem program for multiple indications, and in the long term to build a market-leading anti-infective business. The key elements of this strategy include the following:

- complete sulopenem clinical development in three initial indications;
- obtain regulatory approval for oral sulopenem and sulopenem in the United States and subsequently in the European Union;

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- maximize commercial potential of our sulopenem program;
- pursue the development of oral sulopenem and sulopenem in additional indications; and
- build a portfolio of differentiated anti-infective products.

### **Risks Associated with Our Business**

Our business is subject to a number of risks of which you should be aware before making a decision to invest in our ordinary shares. These risks are discussed more fully in the section titled “Risk Factors” and include, among others:

- We have incurred net losses in each year since our inception and anticipate that we will continue to incur significant losses unless we successfully commercialize our sulopenem program.
- We will require additional capital to fund our operations, and if we fail to obtain necessary financing, we may not be able to complete the development and commercialization of our sulopenem program.
- If clinical trials of oral sulopenem, sulopenem or any other product candidate that we may advance to clinical trials fail to demonstrate safety and efficacy or do not otherwise produce favorable results, we may incur additional costs or experience delays in completing, or ultimately may be unable to complete, the development and commercialization of oral sulopenem, sulopenem or any other product candidate.
- We face substantial competition from other pharmaceutical and biotechnology companies and our business may suffer if we fail to compete effectively.
- If we fail to comply with our obligations in our agreement with Pfizer, we could lose valuable intellectual property rights that are necessary to our development and commercialization of oral sulopenem and sulopenem.
- Our principal shareholders and management own a significant percentage of our ordinary shares and will be able to exert significant control over matters subject to shareholder approval.
- We have a limited operating history and no history of commercializing pharmaceutical products, which may make it difficult to evaluate the prospects for our future viability.
- Our product candidates may never achieve the market acceptance by physicians, patients, hospitals, third-party payors and others in the medical community that is necessary for commercial success, and the market opportunity may be smaller than we estimate.
- Delays or issues with the manufacture of preclinical, clinical or commercial supplies of oral sulopenem and sulopenem could negatively impact our development and commercialization plans.

### **Emerging Growth Company Status**

We are an “emerging growth company” as defined in the Jumpstart Our Business Startups Act (the JOBS Act), enacted in April 2012; therefore, we intend to take advantage of certain exemptions from various public company reporting requirements, including not being required to have our internal control over financial reporting audited by an independent registered public accounting firm pursuant to Section 404(b) of the Sarbanes-Oxley Act of 2002, reduced disclosure obligations regarding executive compensation in our periodic reports and proxy statements and exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and any golden parachute payments not previously approved. We may take advantage of these exemptions for up to five years or until we are no longer an “emerging growth company,” whichever occurs earlier.

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The JOBS Act permits an emerging growth company to take advantage of an extended transition period to comply with new or revised accounting standards applicable to public companies. We have irrevocably elected not to avail ourselves of this extended transition period and, as a result, we will adopt new or revised accounting standards on the relevant dates on which adoption of such standards is required for non-emerging growth companies.

### **Corporate Information**

We were incorporated in Ireland in June 2015 and were re-registered as a public limited company in March 2018 under the name Iterum Therapeutics plc. Our principal executive offices are located at Block 2 Floor 3, Harcourt Centre, Harcourt Street, Dublin 2, Ireland, and our telephone number is +353 1 903 8920. Our U.S. headquarters are located at 200 South Wacker Dr., Suite 650, Chicago, IL 60606, and our telephone number is (312) 778-6070. Our corporate website address is [www.iterumtx.com](http://www.iterumtx.com). Information contained on or accessible through our website is not a part of this prospectus, and the inclusion of our website address in this prospectus is an inactive textual reference only.

Iterum, our logo and our other registered or common law trademarks, trade names or service marks appearing in this prospectus are owned by us. We do not intend our use or display of other companies' trade names or trademarks to imply a relationship with, or endorsement or sponsorship of us by, any other companies.

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<b>The Offering</b>	
Ordinary shares offered by us	6,150,000 shares
Ordinary shares to be outstanding after this offering	13,959,423 shares
Over-allotment option to purchase additional shares	We have granted the underwriters a 30-day over-allotment option to purchase up to an additional 922,500 ordinary shares.
Use of proceeds	We estimate that the net proceeds to us from this offering will be approximately \$71.8 million, or approximately \$82.9 million if the underwriters exercise their over-allotment option in full, based on the initial public offering price of \$13.00 per share, after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us. We intend to use the net proceeds from this offering, together with our cash, cash equivalents, short-term investments and available borrowing under our credit facility, to fund our Phase 3 clinical trials of oral sulopenem and sulopenem, for payments to Pfizer pursuant to the exclusive license agreement we have entered into with Pfizer, and for working capital and other general corporate purposes, including regulatory, manufacturing, clinical supply and related costs. See “Use of Proceeds” for additional information.
Nasdaq Global Market symbol	“ITRM”
Risk Factors	You should carefully read the section titled “Risk Factors” and other information included in this prospectus for a discussion of factors that you should consider before deciding to invest in our ordinary shares.
The number of ordinary shares to be outstanding after this offering is based on 7,809,423 ordinary shares outstanding as of March 31, 2018 and excludes:	
<ul style="list-style-type: none"><li>• 248,128 ordinary shares issuable upon the exercise of outstanding stock options as of March 31, 2018, with a weighted-average exercise price of \$3.31 per share;</li><li>• 194,901 ordinary shares reserved for future issuance under our 2015 Equity Incentive Plan as of March 31, 2018; all shares reserved for future issuance and not subject to an outstanding stock option ceased to be available for issuance at the time our 2018 Equity Incentive Plan became effective in connection with this offering;</li><li>• 1,018,459 ordinary shares reserved for future issuance under our 2018 Equity Incentive Plan, as well as any increases in the number of ordinary shares reserved for future issuance under this plan, which became effective upon the execution of the underwriting agreement for this offering. Of the 1,018,459 ordinary shares reserved for future issuance under our 2018 Equity Incentive Plan, upon the execution of the underwriting agreement for this offering, options to purchase 417,867 ordinary shares were granted to our employees and 59,406 additional options and/or restricted stock units were granted to our non-employee directors; and</li></ul>	



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- 19,890 ordinary shares issuable upon exercise of outstanding warrants issued subsequent to March 31, 2018 at a price of \$18.85 per share.

In addition, unless we specifically state otherwise, all information in this prospectus assumes:

- the filing and effectiveness of our amended and restated constitution in connection with the closing of this offering;
- the conversion of all outstanding preferred shares into an aggregate of 7,396,313 ordinary shares immediately prior to the closing of this offering and the cancellation of the series preferred share classes;
- a one for 15.71 reverse stock split, and a renominalization of the par value of our ordinary shares, effective as of May 15, 2018;
- no exercise of outstanding stock options;
- no exercise by the underwriters of their over-allotment option to purchase up to an additional 922,500 ordinary shares from us; and
- the conversion of outstanding warrants exercisable for 19,890 Series B-2 preferred shares into warrants exercisable for 19,890 ordinary shares immediately prior to the closing of this offering.

Certain of our directors and existing shareholders, or their affiliates, have agreed to purchase an aggregate of 3,304,839 of our ordinary shares in this offering. These shares will be offered and sold on the same terms as the other shares that are being offered and sold in this offering to the public.

### Summary Financial Data

The following tables summarize our consolidated financial and other data. The consolidated statements of operations data for the years ended December 31, 2016 and 2017 and the consolidated balance sheet data as of December 31, 2017 are derived from our audited consolidated financial statements included elsewhere in this prospectus. The consolidated statements of operations data for the three months ended March 31, 2017 and 2018 and the consolidated balance sheet data as of March 31, 2018 are derived from our unaudited interim consolidated financial statements included elsewhere in this prospectus. Our unaudited interim consolidated financial statements were prepared on a basis consistent with our audited consolidated financial statements and include, in our opinion, all adjustments, consisting only of normal recurring adjustments, that we consider necessary for a fair presentation of the financial information set forth in those statements included elsewhere in this prospectus. Our historical results are not necessarily indicative of the results that may be expected in any future period, and the results for the three months ended March 31, 2018 are not necessarily indicative of the results to be expected for the full year or any other period.

You should read this data together with our consolidated financial statements and related notes included elsewhere in this prospectus and the sections titled “Selected Consolidated Financial Data” and “Management’s Discussion and Analysis of Financial Condition and Results of Operations.”

	Year Ended December 31,		Three Months Ended March 31,	
	2016	2017	2017	2018
	(unaudited)			
	(in thousands, except share and per share data)			
<b>Consolidated Statements of Operations Data:</b>				
Revenue	\$ —	\$ 508	\$ —	\$ 191
Operating expenses:				
Research and development	(10,101)	(25,499)	(4,534)	(10,879)
General and administrative	(3,258)	(4,464)	(1,008)	(1,515)
Total operating expenses	(13,359)	(29,963)	(5,542)	(12,394)
Operating loss	(13,359)	(29,455)	(5,542)	(12,203)
Interest income, net	—	277	—	85
Other income/(expense), net	8	216	(68)	61
Total other income	8	493	(68)	146
Loss before income taxes	(13,351)	(28,962)	(5,610)	(12,057)
Income tax expense	(113)	(444)	(227)	(89)
Net loss and comprehensive loss	\$(13,464)	\$ (29,406)	\$ (5,837)	\$ (12,146)
Net loss attributable to ordinary shareholders	\$(13,464)	\$ (29,406)	\$ (5,837)	\$ (12,146)
Net loss per share attributable to ordinary shareholders, basic and diluted <sup>(1)</sup>	\$(568.87)	\$ (170.84)	\$(103.68)	\$ (61.36)
Weighted average ordinary shares outstanding, basic and diluted	23,668	172,130	56,301	197,949
Pro forma net loss per share attributable to ordinary shareholders, basic and diluted (unaudited)		\$ (5.02)		\$ (1.60)
Pro forma weighted average ordinary shares outstanding, basic and diluted (unaudited)		5,858,793		7,594,262

(1) Net loss per share, basic and diluted, is the same due to our net loss.

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	As of March 31, 2018		
	Actual	Pro Forma(1)	Pro Forma As Adjusted(2)
	(in thousands)		
<b>Consolidated Balance Sheet Data:</b>			
Cash, cash equivalents, restricted cash and short-term investments	\$59,754	\$ 74,754	\$ 146,508
Working capital(3)	57,062	72,062	143,816
Total assets	68,131	83,131	154,885
Credit facility	—	15,000	15,000
Total liabilities	8,401	23,401	23,401
Convertible preferred shares	74	—	—
Total shareholders' equity	59,656	59,730	131,484

(1) The pro forma column reflects (a) the conversion of all outstanding preferred shares into 7,396,313 of our ordinary shares immediately prior to the closing of this offering, (b) the drawdown of \$15.0 million under our credit facility with Silicon Valley Bank in April 2018, and (c) the filing and effectiveness of our amended and restated constitution upon the closing of this offering.

(2) The pro forma as adjusted column reflects the sale of 6,150,000 ordinary shares in this offering at the initial public offering price of \$13.00 per share, after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us.

(3) Working capital is equal to current assets minus current liabilities.

## RISK FACTORS

*Investing in our ordinary shares involves a high degree of risk. You should carefully consider the risks described below, together with the other information contained in this prospectus, including our consolidated financial statements and the related notes appearing at the end of this prospectus, before making your decision to invest in our ordinary shares. We cannot assure you that any of the events discussed in the risk factors below will not occur. These risks could have a material and adverse impact on our business, results of operations, financial condition and cash flows, and if so our future prospects would likely be materially and adversely affected. If any of such events were to happen, the trading price of our ordinary shares could decline, and you could lose all or part of your investment.*

### **Risks Related to Our Financial Position and Capital Requirements**

***We have incurred net losses in each year since our inception and anticipate that we will continue to incur significant losses unless we successfully commercialize our sulopenem program.***

We are a clinical-stage pharmaceutical company with a limited operating history. We have not generated any product revenue and have incurred net losses in each year since our inception in 2015. As of March 31, 2018, we had an accumulated deficit of \$66.9 million. Our product candidates, oral sulopenem and sulopenem (together, the sulopenem program), are in clinical development, have not been approved for sale and we may never have our product candidates approved for commercialization. We have financed our operations through private placements of our preferred shares. In April 2018, we entered into a secured credit facility with Silicon Valley Bank (SVB) and made an initial drawdown of \$15.0 million. We have devoted substantially all of our financial resources and efforts to research and development, including preclinical and clinical development, for our sulopenem program.

We expect to continue to incur significant expenses and increasing operating losses as we conduct planned clinical trials of oral sulopenem and sulopenem, seek marketing approval for such product candidates if clinical trials are successful, and pursue the development of our sulopenem program in additional indications through preclinical and clinical development. Our expenses will also increase substantially if and as we:

- conduct additional clinical trials for oral sulopenem and sulopenem, which include our planned Phase 1 clinical trials, which we expect will occur in 2018 and 2019, and our three planned pivotal Phase 3 clinical trials which we plan to initiate in the second half of 2018;
- initiate other studies as part of our sulopenem program, some of which may be required for regulatory approval of our product candidates;
- establish a sales, marketing and distribution infrastructure to commercialize oral sulopenem and sulopenem in the United States if we obtain marketing approval from the U.S. Food and Drug Administration (FDA);
- establish manufacturing and supply chain capacity sufficient to provide commercial quantities of oral sulopenem and sulopenem, if we obtain marketing approval;
- pursue the development of our sulopenem program in additional indications;
- maintain, expand, defend and protect our intellectual property portfolio;
- hire additional clinical, scientific and commercial personnel;
- add operational, financial and management information systems and personnel, including personnel to support our product development and planned future commercialization efforts, as well as to support our transition to a public reporting company; and
- acquire or in-license other product candidates or technologies.

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***We are substantially dependent on the success of our two product candidates, oral sulopenem and sulopenem, and if we are unable to achieve and sustain profitability, the market value of our ordinary shares will likely decline.***

Our ability to become and remain profitable depends on our ability to generate revenue. To date, we have invested substantially all of our efforts and financial resources in the development of oral sulopenem and sulopenem, which are currently our two product candidates in development. Our prospects, including our ability to finance our operations and generate revenue from product sales, will currently depend entirely on the development and commercialization of our sulopenem program.

We do not expect to generate significant revenue unless and until we obtain marketing approval for, and commercialize, oral sulopenem and sulopenem. Our ability to generate future revenue from product sales will require us to be successful in a range of challenging clinical and commercial activities, including:

- commencing, enrolling and successfully completing Phase 3 clinical trials of our sulopenem program in our three initial indications;
- applying for and obtaining marketing approval for oral sulopenem and sulopenem;
- protecting and maintaining our rights to our intellectual property portfolio related to our sulopenem program;
- establishing and maintaining supply and manufacturing relationships with third parties that can support clinical development and can provide adequate commercial quantities of oral sulopenem and sulopenem, if approved;
- establishing sales, marketing and distribution capabilities to effectively market and sell oral sulopenem and sulopenem; and
- obtaining market acceptance of oral sulopenem and sulopenem as viable treatment options.

Because of the numerous risks and uncertainties associated with developing pharmaceutical products, we are unable to predict the extent of any future losses or when, or if, we will become profitable. We may never succeed in any or all of these activities and, even if we do, we may never generate revenue that is significant or large enough to achieve profitability. Our expenses could increase if we are required by the FDA, the European Medicines Agency (EMA), or any comparable foreign regulatory authority, to perform different studies or studies in addition to those currently expected, or if there are any delays in completing our clinical trials, including delays or expense associated with increasing the sample size of any study, or the development of our sulopenem program or any future product candidates. Even if oral sulopenem or sulopenem are approved for commercial sale, we anticipate incurring significant costs associated with the commercial launch of oral sulopenem and sulopenem.

Our failure to become and remain profitable would decrease the value of our company and could impair our ability to raise capital, maintain our research and development efforts, expand our business or continue our operations. A decline in the value of our company could cause you to lose all or part of your investment.

***We will require additional capital to fund our operations, and if we fail to obtain necessary financing, we may not be able to complete the development and commercialization of our sulopenem program.***

Developing pharmaceutical products is a time-consuming, expensive and uncertain process that takes years to complete. We expect that our expenses will increase substantially as we commence and advance our planned clinical trials of oral sulopenem and sulopenem, seek marketing approval for such product candidates if clinical trials are successful, and pursue the development of our sulopenem program in additional indications through preclinical and clinical development. If we obtain marketing approval for oral sulopenem, sulopenem or any future product candidate, we expect to incur significant commercialization expenses related to product sales,

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marketing, distribution and manufacturing. Some of these expenses may be incurred in advance of marketing approval, and could be substantial. Accordingly, we will be required to obtain further funding through public or private equity offerings, debt financings, collaborations and licensing arrangements or other sources. Adequate additional financing may not be available to us on acceptable terms, or at all. Our failure to raise capital as and when needed would have a negative effect on our financial condition and our ability to develop and commercialize our sulopenem program and otherwise pursue our business strategy.

We believe that the net proceeds from this offering, together with our existing cash, cash equivalents, short-term investments, and available borrowings under our credit facility, will enable us to fund our operating expenses and capital expenditure requirements through the fourth quarter of 2019. Our cash forecasts are based on assumptions that may prove to be wrong, and we could use our available capital resources sooner than we currently expect. Changing circumstances could cause us to consume capital significantly faster than we currently anticipate, and we may need to spend more than currently expected because of circumstances beyond our control. Our future funding requirements, both short-term and long-term, will depend on many factors, including:

- the timing and costs of our planned clinical trials of oral sulopenem and sulopenem;
- the initiation, progress, timing, costs and results of preclinical studies and clinical trials of other potential product candidates and of our current product candidates in additional indications;
- the amount of funding that we receive under government awards that we have applied for or may apply for in the future;
- the number and characteristics of product candidates that we pursue;
- the outcome, timing and costs of seeking regulatory approvals;
- the costs of commercialization activities for oral sulopenem and sulopenem and other product candidates if we receive marketing approval, including the costs and timing of establishing product sales, marketing, distribution and manufacturing capabilities;
- the receipt of marketing approval and revenue received from any potential commercial sales of oral sulopenem and sulopenem;
- the terms and timing of any future collaborations, licensing or other arrangements that we may establish;
- the amount and timing of any payments we may be required to make, or that we may receive, in connection with the licensing, filing, prosecution, defense and enforcement of any patents or other intellectual property rights, including milestone and royalty payments and patent prosecution fees that we are obligated to pay pursuant to an exclusive license agreement with Pfizer (the Pfizer License) or other future license agreements;
- the costs of preparing, filing and prosecuting patent applications, maintaining and protecting our intellectual property rights and defending against any intellectual property related claims;
- the costs of operating as a public company; and
- the extent to which we in-license or acquire other products and technologies.

Upon completion of this offering, our non-dilutive source of funding is expected to be a sub-award from the Trustees of Boston University under the Combating Antibiotic Resistant Bacteria Biopharmaceutical Accelerator (CARB-X) program (the CARB-X Award). The CARB-X Award supports preclinical and clinical trials in support of our potential regulatory filings for oral sulopenem and sulopenem, along with chemistry, manufacturing and controls optimization and development of our commercial bilayer tablet. The CARB-X Award is structured as a cost reimbursement arrangement. In June 2017, CARB-X awarded funds of up to \$1.5 million to advance the development of our sulopenem program and during the year ended December 31, 2017 and the three months ended March 31, 2018, we recognized \$0.5 million and \$0.2 million of revenue, respectively, under this award. The CARB-X Award is subject to termination by the Trustees of Boston University with 30 days, written notice, and to the availability of federal government and non-government funding.

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### ***Our indebtedness imposes certain operating and other restrictions on us and could adversely affect our ability to raise additional capital.***

On April 27, 2018, our subsidiaries, Iterum Therapeutics International Limited, Iterum Therapeutics US Holding Limited and Iterum Therapeutics US Limited (Borrowers), entered into a loan and security agreement with Silicon Valley Bank (SVB) pursuant to which SVB agreed to lend the Borrowers up to \$30 million in two term loans. \$15 million of the secured credit facility was available on closing and the other \$15 million is available at our option upon the satisfaction of certain draw requirements. In connection with the initial drawdown, we issued warrants to SVB and Life Sciences Fund II LLC (LSF) to purchase an aggregate of 19,890 Series B-2 preferred shares. If we draw down the second term loan, each of SVB and LSF will be entitled, pursuant to additional share warrants issued to each of them at closing, to purchase such number of additional ordinary shares in an aggregate amount equal to 2.5% of the funded amount, divided by the applicable exercise price. Obligations under the secured credit facility are secured by substantially all of our existing and future assets and the existing and future assets of our subsidiaries, including intellectual property. Our secured credit facility imposes operating and other restrictions on us. Such restrictions affect, and in many respects limit or prohibit, our ability to, among other things, dispose of certain assets, pay dividends and incur additional indebtedness. Failure to make payments or comply with these and other terms and covenants under our secured credit facility could result in an event of default, which could lead to an acceleration of amounts due and foreclosure upon and/or sale or other liquidation of all of our and our subsidiaries' assets, including intellectual property. Any of the foregoing would have a material adverse effect on our operations and financial condition. In addition, this indebtedness and the security interests granted to secure it could make it more difficult for us to raise additional capital to fund our operations.

### ***We have a limited operating history and no history of commercializing pharmaceutical products, which may make it difficult to evaluate the prospects for our future viability.***

We began operations in November 2015. Since our inception, we have devoted substantially all of our financial resources and efforts to organizing and staffing our company, business planning, raising capital, planning for potential commercialization, and research and development, including preclinical and clinical development, for our sulopenem program. While the members of the development team have successfully developed and registered other antibiotics, as Iterum we have limited experience and have not yet demonstrated an ability to successfully complete a large-scale, pivotal clinical trial, obtain marketing approval, manufacture a commercial scale product (or arrange for a third party to do so on our behalf), or conduct sales and marketing activities necessary for successful product commercialization. Consequently, predictions about our future success or viability may not be as accurate as they could be if we had a longer operating history or a history of successfully developing and commercializing pharmaceutical products.

Assuming we obtain marketing approval for oral sulopenem and sulopenem, we will need to transition from a company with a research and development focus to a company capable of supporting commercial activities. We may encounter unforeseen expenses, difficulties, complications and delays, and may not be successful in such a transition.

### ***Raising additional capital may cause dilution to our shareholders, including purchasers of ordinary shares in this offering, restrict our operations or require us to relinquish rights to our technologies or product candidates.***

Unless and until we can generate a substantial amount of revenue from our sulopenem program or future product candidates, we expect to finance our future cash needs through equity offerings, debt financings, collaboration agreements, other third-party funding, strategic alliances, licensing arrangements, marketing and distribution arrangements or government funding. In addition, we may seek additional capital due to favorable market conditions or strategic considerations, even if we believe that we have sufficient funds for our current or future operating plans.

Our issuance of additional securities, whether equity or debt, or the possibility of such issuance, may cause the market price of our ordinary shares to decline, and our shareholders may not agree with our financing plans

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or the terms of such financings. To the extent that we raise additional capital through the sale of ordinary shares, convertible securities or other equity securities, your ownership interest may be materially diluted, and the terms of these securities could include liquidation or other preferences and anti-dilution protections that could adversely affect your rights as an ordinary shareholder. In addition, if we make an additional draw under our secured credit facility, we will be required to issue additional warrants. Further debt financing, if available, would result in increased fixed payment obligations and may involve agreements that include restrictive covenants that limit our ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends, which could adversely affect our ability to conduct our business. In addition, securing additional financing would require a substantial amount of time and attention from our management and may divert a disproportionate amount of their attention away from day-to-day activities, which may adversely affect our management's ability to oversee the development of our product candidates.

If we raise additional funds through collaborations, strategic alliances or marketing, distribution or licensing arrangements with third parties, we may have to relinquish valuable rights to our technologies, future revenue streams or product candidates or grant licenses on terms that may not be favorable to us.

***We may expend our limited resources to pursue a particular product candidate or indication and fail to capitalize on product candidates or indications that may be more profitable or for which there is a greater likelihood of success.***

Because we have limited financial resources, we intend to focus on developing our sulopenem program for the specific indications of uUTI, cUTI and cIAI, all of which are focused on the most pressing near-term medical needs, in terms of both their potential for marketing approval and commercialization. As a result, we may forego or delay pursuit of opportunities with other potential product candidates or developing our sulopenem program in other indications that may prove to have greater commercial potential.

Our resource allocation decisions may cause us to fail to capitalize on viable commercial products or profitable market opportunities. Our spending on current and future research and development programs and product candidates for specific indications may not yield any commercially viable product candidates. If we do not accurately evaluate the commercial potential or target market for a particular product candidate, we may relinquish valuable rights to that product candidate through collaboration, licensing or other royalty arrangements in cases in which it would have been more advantageous for us to retain sole development and commercialization rights to the product candidate.

### **Risks Related to Clinical Development and Commercialization**

***We are heavily dependent on the success of our sulopenem program, and our ability to develop, obtain marketing approval for and successfully commercialize oral sulopenem and sulopenem.***

We currently have no products approved for sale and have invested substantially all of our efforts and financial resources in the development of our sulopenem program as the first and only oral and intravenous (IV) branded penem available globally. Our near-term prospects are substantially dependent on our ability to develop, obtain marketing approval for and successfully commercialize oral sulopenem and sulopenem. The success of our sulopenem program will depend on several factors, including the following:

- successful enrollment in, and completion of, clinical trials, including our three planned pivotal Phase 3 clinical trials of oral sulopenem and sulopenem, which we plan to initiate in the second half of 2018;
- clinical trial results with safety, tolerability and efficacy profiles that are satisfactory to the FDA or any comparable foreign regulatory authority;
- timely completion of any additional clinical trials and non-clinical studies conducted to support the filing for regulatory approvals of our sulopenem program, if required by the FDA or any comparable foreign regulatory authority;
- receipt of marketing approvals from applicable regulatory authorities;



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- establishment and maintenance of arrangements with third-party manufacturers to obtain commercial supply at a scale sufficient to meet anticipated demand and at a cost appropriate for our commercialization;
- acquisition and maintenance of patent, trade secret and other intellectual property protection and regulatory exclusivity, both in the United States and internationally, including our ability to maintain our license agreement with Pfizer Inc. (Pfizer);
- protection of our rights in our intellectual property portfolio;
- launch of commercial sales of oral sulopenem and sulopenem, if approved, whether alone or in collaboration with others;
- the effectiveness of our own or any future collaborators' marketing, sales and distribution strategy and operations;
- acceptance of oral sulopenem and sulopenem, if approved, by patients, physicians and the medical community at large;
- our ability to obtain and sustain an adequate level of reimbursement by third-party payors;
- the prevalence, frequency and severity of adverse side effects of oral sulopenem and sulopenem;
- the availability, perceived advantages, relative cost and relative efficacy of alternative and competing therapies; and
- an acceptable safety profile of oral sulopenem and sulopenem following approval.

Many of these factors are beyond our control, including clinical development, the regulatory submission process, potential threats to our intellectual property rights, manufacturing and the impact of competition. If we are unable to develop, receive marketing approval for, or successfully commercialize oral sulopenem and sulopenem, or if we experience delays as a result of any of these factors or otherwise, our business could be materially harmed.

### ***As Iterum, we have no experience in obtaining regulatory approval for a drug.***

As Iterum, we have never obtained regulatory approval for, or commercialized, a drug. We must complete extensive preclinical and clinical trials to demonstrate the safety and efficacy of our product candidates in humans before we will be able to obtain these approvals. To gain approval to market a product candidate, we must provide the FDA and foreign regulatory authorities with non-clinical, clinical and chemistry, manufacturing, and controls (CMC) data that adequately demonstrates the safety and efficacy of the product for the intended indication applied for in the new drug application (NDA) or other respective regulatory filing. It is possible that the FDA may refuse to accept any or all of our planned NDAs for substantive review or may conclude after review of our data that our application is insufficient to obtain regulatory approval for any current or future product candidates. If the FDA does not approve any of our planned NDAs, it may require that we conduct additional costly clinical, nonclinical or manufacturing validation studies before it will reconsider our applications. Depending on the extent of these or any other FDA-required studies, approval of any NDA or other application that we submit may be significantly delayed, possibly for several years, or may require us to expend more resources than we have available. Any failure or delay in obtaining regulatory approvals would prevent us from commercializing oral sulopenem and sulopenem, generating revenues and achieving and sustaining profitability. It is also possible that additional studies, if performed and completed, may not be considered sufficient by the FDA to approve any NDA or other application that we submit. If any of these outcomes occur, we may be forced to abandon the development of our product candidates, which would materially adversely affect our business and could potentially cause us to cease operations. We face similar risks for our applications in other countries.

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***If clinical trials of oral sulopenem, sulopenem or any other product candidate that we may advance to clinical trials fail to demonstrate safety and efficacy to the satisfaction of the FDA or comparable foreign regulatory authorities, or do not otherwise produce favorable results, we may incur additional costs or experience delays in completing, or ultimately be unable to complete, the development and commercialization of oral sulopenem, sulopenem or any other product candidate.***

We may not commercialize, market, promote, or sell any product candidate in the United States without obtaining marketing approval from the FDA or in other countries without obtaining approvals from comparable foreign regulatory authorities, such as the EMA, and we may never receive such approvals. Clinical testing is expensive, difficult to design and implement, can take many years to complete and is inherently uncertain as to outcome. We have not previously submitted an NDA to the FDA or similar applications to comparable foreign regulatory authorities for any of our product candidates.

Our business currently depends entirely on the successful development, regulatory approval and commercialization of our sulopenem program. The clinical development of our sulopenem program is susceptible to the risk of failure inherent at any stage of drug development, including failure to demonstrate efficacy in a clinical trial or across a broad population of patients, the occurrence of severe adverse events, failure to comply with protocols or applicable regulatory requirements, and determination by the FDA or any comparable foreign regulatory authority that a drug product is not approvable. A number of companies in the pharmaceutical industry, including biotechnology companies, have suffered significant setbacks in clinical trials, even after promising results in earlier nonclinical studies or clinical trials. The results of preclinical and other nonclinical studies and/or early clinical trials of our product candidates may not be predictive of the results of later-stage clinical trials. Notwithstanding any promising results in early nonclinical studies or clinical trials, we cannot be certain that we will not face similar setbacks.

For example, we present data from clinical trials conducted by Pfizer Japan in the 1990s. The data from those clinical trials is not directly comparable to data from clinical trials that would be conducted today or the data that we anticipate from our Phase 3 program for a variety of reasons, including that protocols were designed for different purposes and as a consequence had different enrollment and efficacy evaluation criteria. For example, while a subjective investigator assessment of outcome is typically included in all cUTI protocols and was performed in the Japanese program, more structured endpoints are required as part of current FDA guidelines for registrational trials. Current FDA guidelines define the primary efficacy outcome based on both clinical and microbiological success, while EMA guidelines recommend microbiologic outcome. The structured endpoint in the Japanese program assessed outcome based on resolution of pyuria and microbiologic outcome. In addition, the pathogens isolated in the course of a clinical trial will vary depending on the types of patients enrolled, the geographic location of the sites that contribute to the study and the year in which the study is performed. While the organisms seen in the Japanese study are similar to those we anticipate in the Phase 3 program, we expect the frequency distribution of these pathogens may be different. Furthermore, adverse event reports can vary by geographic region and we may see a different adverse event rate and different types of events, in patients that we study in the Phase 3 program relative to the experience in Japan.

The clinical development of oral sulopenem, sulopenem and other product candidates is susceptible to the risk of failure inherent at any stage of drug development, including failure to achieve efficacy in a clinical trial or across a broad population of patients, the occurrence of severe adverse events, failure to comply with protocols or applicable regulatory requirements, and determination by the FDA or any comparable foreign regulatory authority that a drug product is not approvable. The outcome of preclinical studies and early clinical trials may not be predictive of the success of later clinical trials, and interim results of a clinical trial do not necessarily predict final results.

In addition, preclinical and clinical data are often susceptible to varying interpretations and analyses. Although data from Phase 1 and Phase 2 clinical trials of oral sulopenem and sulopenem provides support for the overall safety profile of the product candidates, many companies that believed their product candidates performed satisfactorily in preclinical studies and clinical trials have nonetheless failed to obtain marketing approval for the product candidates. Even if we believe that the results of our clinical trials warrant marketing

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approval, the FDA or comparable foreign regulatory authorities may disagree and may not grant marketing approval of our product candidates.

In some instances, there can be significant variability in safety and/or efficacy results between different clinical trials of the same product candidate due to numerous factors, including changes in trial procedures set forth in protocols, differences in the size and type of the patient populations, adherence to the dosing regimen and other trial protocols and the rate of dropout among clinical trial participants, among others. It is possible that even if one or more of our product candidates has a beneficial effect, that effect will not be detected during clinical evaluation as a result of one of the factors listed or otherwise. Conversely, as a result of the same factors, our clinical trials may indicate an apparent positive effect of a product candidate that is greater than the actual positive effect, if any. Similarly, in our clinical trials, we may fail to detect toxicity or intolerability of our product candidates or may determine that our product candidates are toxic or not well tolerated when that is not in fact the case. In the case of our clinical trials, results may differ on the basis of the type of bacteria with which patients are infected. We cannot assure you that any Phase 3 or other clinical trials that we may conduct will demonstrate consistent or adequate efficacy and safety to obtain regulatory approval to market our product candidates.

We may encounter unforeseen events prior to, during, or as a result of, clinical trials that could delay or prevent us from obtaining regulatory approval for oral sulopenem, sulopenem or any of our other product candidates, including:

- although we expect to conduct our Phase 3 clinical trials pursuant to Special Protocol Assessment (SPA) agreements, the FDA or other comparable foreign regulatory authorities may ultimately disagree as to the design or implementation of our Phase 3 clinical trials or other clinical trials;
- we may not reach agreement on acceptable terms with prospective contract research organizations (CROs), and clinical trial sites, the terms of which can be subject to extensive negotiation and may vary significantly among different CROs and trial sites;
- clinical trials of our product candidates may produce unfavorable or inconclusive results;
- we may decide, or regulators may require us, to conduct additional clinical trials or abandon product development programs;
- our third-party contractors, including those manufacturing our product candidates or conducting clinical trials on our behalf, may fail to comply with regulatory requirements or meet their contractual obligations to us in a timely manner, or at all;
- the FDA, the local National Health Authorities or institutional review boards may not authorize us or our investigators to commence a clinical trial or conduct a clinical trial at a prospective trial site;
- we may have to suspend or terminate clinical trials of a product candidate for various reasons, including noncompliance with regulatory requirements or a finding that the participants are being exposed to unacceptable health risks, undesirable side effects or other unexpected characteristics of the product candidate;
- the FDA or comparable foreign regulatory authorities may fail to approve the manufacturing processes or facilities of third-party manufacturers with which we enter into agreement for clinical and commercial supplies; or
- the supply or quality of our product candidates or other materials necessary to conduct clinical trials of our product candidates may be insufficient or inadequate.

If we are required to conduct additional clinical trials or other testing of oral sulopenem, sulopenem or any other product candidate beyond the clinical trials and testing that we contemplate, if we are unable to successfully complete clinical trials or other testing of our product candidates, if the results of these clinical trials

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or tests are unfavorable or are only modestly favorable or if there are safety concerns associated with oral sulopenem, sulopenem or any other product candidate, we may:

- incur additional unplanned costs;
- be delayed in obtaining marketing approval for our product candidates;
- not obtain marketing approval at all;
- obtain approval for indications or patient populations that are not as broad as intended or desired;
- obtain approval with labeling that includes significant use or distribution restrictions or significant safety warnings, including boxed warnings;
- be subject to additional post-marketing testing or other requirements; or
- be required to remove the product from the market after obtaining marketing approval.

Our failure to successfully initiate and complete clinical trials of our product candidates and to demonstrate the efficacy and safety necessary to obtain regulatory approval to market any of our product candidates would significantly harm our business. We cannot assure you that our clinical trials will begin as planned or be completed on schedule, if at all, or that we will not need to restructure our clinical trials. Significant clinical trial delays also could shorten any periods during which we may have the exclusive right to commercialize our product candidates or allow our competitors to bring products to market before we do and impair our ability to successfully commercialize our product candidates, which may harm our business and results of operations. In addition, many of the factors that cause, or lead to, delays of clinical trials may ultimately lead to the denial of regulatory approval of oral sulopenem, sulopenem or any other product candidate.

***If we experience delays or difficulties in the enrollment of patients in clinical trials, clinical development activities could be delayed or otherwise adversely affected.***

The timely completion of clinical trials in accordance with their protocols depends, among other things, on our ability to enroll a sufficient number of patients who remain in the study until its conclusion. We may not be able to initiate, continue or complete clinical trials of oral sulopenem, sulopenem or any other product candidate that we develop if we are unable to locate and enroll a sufficient number of eligible patients to participate in clinical trials as required by the FDA or comparable foreign regulatory authorities, such as the EMA. Patient enrollment is a significant factor in the timing of clinical trials, and is affected by many factors, including:

- the size and nature of the patient population;
- the severity of the disease under investigation;
- the proximity of patients to clinical sites;
- the eligibility criteria for participation in the clinical trial;
- the number of sites at which we conduct the trial and the speed at which we are able to open such sites;
- the prevalence of antibiotic resistance to pathogens where we conduct the clinical trial;
- the accuracy of certain estimates and assumptions upon which the design of the protocols are predicated;
- our ability to recruit clinical trial investigators with appropriate experience;
- competing clinical trials and clinicians' and patients' perceptions as to the potential advantages and risks of the product candidate being studied in relation to other available therapies, including any new drugs that may be approved for the indications that we are investigating;
- our ability to obtain and maintain patient consents; and
- the risk that patients enrolled in clinical trials will drop out of the clinical trials before completion.

The inclusion and exclusion criteria for our contemplated Phase 3 clinical trials of oral sulopenem and sulopenem may adversely affect our enrollment rates for patients in these clinical trials. In addition, we may face

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competition in enrolling suitable patients as a result of other companies conducting clinical trials for antibiotic product candidates that are intended to treat similar infections, resulting in slower than anticipated enrollment in our clinical trials. Enrollment delays in our clinical trials may result in increased development costs for oral sulopenem and sulopenem, or slow down or halt our product development for oral sulopenem and sulopenem.

Our inability to enroll a sufficient number of patients for our clinical trials would result in significant delays or might require us to abandon one or more clinical trials altogether. Enrollment delays in our clinical trials may result in increased development costs for our product candidates, slow down or halt our product candidate development and approval process and jeopardize our ability to seek and obtain the marketing approval required to commence product sales and generate revenue, which would cause the value of our company to decline and limit our ability to obtain additional financing if needed. Furthermore, we rely on and expect to continue to rely on CROs and clinical trial sites to ensure the proper and timely conduct of our clinical trials, and we will have limited influence over their performance.

***Success in non-clinical testing and early clinical trials does not ensure that later clinical trials will be successful, and we cannot assure you that any of our current clinical trials, planned Phase 3 clinical trials or any other clinical trials that we may conduct will demonstrate consistent or adequate efficacy and safety to obtain regulatory approval to market our sulopenem program in any indication.***

Our planned pivotal Phase 3 clinical trials of oral sulopenem and sulopenem are subject to a number of specific risks arising from our clinical program and the design of such clinical trials.

We have not previously conducted Phase 3 clinical trials of oral sulopenem or sulopenem in the indications uUTI, cUTI and cIAI, and we have not documented to the satisfaction of regulators that these treatments are effective in treating uUTIs, cUTIs or cIAIs in humans. Although we believe that oral sulopenem and sulopenem have the potential to treat uUTIs, cUTIs, and cIAIs in humans based on the results of prior preclinical studies and clinical trials, the results of these preclinical studies and clinical trials are not necessarily predictive of the results of our planned clinical trials, and we cannot guarantee that oral sulopenem will demonstrate the expected efficacy in our planned pivotal Phase 3 clinical trial patients. We also cannot guarantee that the projections made from the pharmacokinetic and pharmacodynamic models that we developed from nonclinical and clinical oral sulopenem and sulopenem studies will be validated in our planned pivotal Phase 3 clinical trials.

Other companies in the pharmaceutical industry have frequently suffered significant setbacks in later clinical trials, even after achieving promising results in earlier nonclinical studies or clinical trials.

***Serious adverse events or undesirable side effects or other unexpected properties of oral sulopenem, sulopenem or any other product candidate may be identified during development or after approval that could delay, prevent or cause the withdrawal of regulatory approval, limit the commercial potential, or result in significant negative consequences following marketing approval.***

Serious adverse events or undesirable side effects caused by, or other unexpected properties of, our product candidates could cause us, an institutional review board (IRB), or regulatory authorities to interrupt, delay or halt our clinical trials and could result in a more restrictive label, the imposition of distribution or use restrictions or the delay or denial of regulatory approval by the FDA or comparable foreign regulatory authorities. If oral sulopenem, sulopenem or any of our other product candidates is associated with serious or unexpected adverse events or undesirable side effects, the FDA or the IRBs at the institutions in which our studies are conducted, could suspend or terminate our clinical trials or the FDA or comparable foreign regulatory authorities could order us to cease clinical trials or deny approval of our product candidates for any or all targeted indications. Treatment-related side effects could also affect patient recruitment or the ability of enrolled patients to complete the clinical trial or result in potential product liability claims. Any of these occurrences may harm our business, financial condition and prospects significantly.

While the active pharmaceutical ingredient in the bilayer tablet is sulopenem etzadroxil, the combination product with probenecid has not yet been tested extensively in patients. There may be unforeseen serious adverse

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events or side effects that differ from those seen in Phase 1 normal healthy volunteers with oral sulopenem or the prior post-marketing experience with probenecid. There may also be unexpected adverse events associated with probenecid that have not been seen to date. We may see higher rates of adverse events than were reported in the clinical trials Pfizer conducted in Japan.

To date, sulopenem and sulopenem etzadroxil have generally been well tolerated in clinical trials conducted in healthy subjects and patients. During the development of oral sulopenem and sulopenem, patients have experienced drug-related side effects including diarrhea, temporary increases in hepatic enzymes, allergic reactions, and rash. In the Japanese program, one patient reported a serious adverse event related to sulopenem of a transient elevation in liver function tests. The patient died due to metastatic lung cancer. Other serious adverse events recorded in patients receiving sulopenem in the Japanese program, which were not considered by the investigator to be related to sulopenem, included myocardial infarction with respiratory failure and progression of underlying ovarian carcinoma, in both cases resulting in death. For each of these patients, sulopenem was not determined to be the cause of death. If unexpected adverse events occur in any of our planned clinical trials, we may need to abandon development of our product candidates, or limit development to lower doses or to certain uses or subpopulations in which the undesirable side effects or other unfavorable characteristics are less prevalent, less severe or more acceptable from a risk-benefit perspective. Many compounds that initially showed promise in clinical or earlier stage testing are later found to cause undesirable or unexpected side effects that prevented further development of the compound.

Undesirable side effects or other unexpected adverse events or properties of oral sulopenem, sulopenem or any of our other product candidates could arise or become known either during clinical development or, if approved, after the approved product has been marketed. If such an event occurs during development, our clinical trials could be suspended or terminated and the FDA or comparable foreign regulatory authorities could order us to cease further development of, or could deny approval of, oral sulopenem, sulopenem or our other product candidates. If such an event occurs after such product candidates are approved, a number of potentially significant negative consequences may result, including:

- regulatory authorities may withdraw the approval of such product;
- we may be required to recall a product or change the way such product is administered to patients;
- regulatory authorities may require additional warnings on the label or impose distribution or use restrictions;
- regulatory authorities may require one or more post-marketing studies;
- regulatory authorities may require the addition of a “black box” warning;
- we may be required to implement a Risk Evaluation and Mitigation Strategy (REMS), including the creation of a medication guide outlining the risks of such side effects for distribution to patients;
- we could be sued and held liable for harm caused to patients;
- our product may become less competitive; and
- our reputation may suffer.

Any of these events could prevent us from achieving or maintaining market acceptance of the affected product candidate, if approved, or could substantially increase commercialization costs and expenses, which could delay or prevent us from generating revenue from the sale of our products and harm our business and results of operations.

***Even if a product candidate does obtain regulatory approval, it may never achieve the market acceptance by physicians, patients, hospitals, third-party payors and others in the medical community that is necessary for commercial success, and the market opportunity may be smaller than we estimate.***

Even if we obtain FDA or other regulatory approvals and are able to launch oral sulopenem, sulopenem or any other product candidate commercially, the product candidate may not achieve market acceptance among

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physicians, patients, hospitals (including pharmacy directors) and third-party payors and, ultimately, may not be commercially successful. For example, physicians are often reluctant to switch their patients from existing therapies even when new and potentially more effective or convenient treatments enter the market. Moreover, many antibiotics currently exist for the pathogens underlying uUTI, cUTI and cIAI. While many of those pathogens are resistant to certain drugs in the market, the selection is broad, and individual physicians' prescribing patterns vary widely and are affected by resistance rates in their geographies, whether their patients are at elevated risk, the ability of patients to afford branded drugs and concerns regarding generating resistance with specific classes of antibiotics.

Efforts to educate the medical community and third-party payors on the benefits of our product candidates may require significant resources and may not be successful. If oral sulopenem, sulopenem or any other product candidate that we develop does not achieve an adequate level of market acceptance, we may not generate significant product revenues and, therefore, we may not become profitable. Market acceptance of any product candidate for which we receive approval depends on a number of factors, including:

- the efficacy and safety of the product candidate as demonstrated in clinical trials as compared to alternative treatments;
- the potential and perceived advantages and disadvantages of the product candidates, including cost and clinical benefit relative to alternative treatments;
- relative convenience and ease of administration;
- the clinical indications for which the product candidate is approved;
- the willingness of physicians to prescribe the product;
- the willingness of hospital pharmacy directors to purchase the product for their formularies;
- acceptance by physicians, patients, operators of hospitals and treatment facilities and parties responsible for coverage and reimbursement of the product;
- the availability of coverage and adequate reimbursement by third-party payors and government authorities;
- the effectiveness of our sales and marketing efforts;
- the strength of marketing and distribution support;
- limitations or warnings, including distribution or use restrictions, contained in the product's approved labeling or an approved risk evaluation and mitigation strategy;
- whether the product is designated under physician treatment guidelines as a first-line therapy or as a second- or third-line therapy for particular infections;
- the approval of other new products for the same indications;
- the timing of market introduction of the approved product as well as competitive products;
- adverse publicity about the product or favorable publicity about competitive products;
- the emergence of bacterial resistance to the product; and
- the rate at which resistance to other drugs in the target infections grows.

In addition, the potential market opportunity for oral sulopenem and sulopenem is difficult to estimate. Our estimates of the potential market opportunity are predicated on several key assumptions such as industry knowledge and publications, third-party research reports and other surveys. While we believe that our internal assumptions are reasonable, these assumptions involve the exercise of significant judgment on the part of our management, are inherently uncertain and the reasonableness of these assumptions has not been assessed by an independent source. If any of the assumptions proves to be inaccurate, then the actual market for oral sulopenem and sulopenem could be smaller than our estimates of the potential market opportunity. If the actual market for oral sulopenem and sulopenem is smaller than we expect, or if the product fails to achieve an adequate level of acceptance by physicians, health care payors and patients, our product revenue may be limited and it may be more difficult for us to achieve or maintain profitability.



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***We currently have no commercial organization. If we are unable to establish sales, marketing and distribution capabilities or enter into sales, marketing and distribution agreements with third parties, we may not be successful in commercializing oral sulopenem, sulopenem or any other product candidate if such product candidate is approved.***

If we are unable to establish sales, marketing and distribution capabilities or enter into sales, marketing and distribution agreements with third parties, we may not be successful in commercializing oral sulopenem, sulopenem or any other product candidate if such product candidate is approved.

We currently do not have a sales, marketing or distribution infrastructure and we have no experience in the sales, marketing or distribution of pharmaceutical products. To achieve commercial success for any approved product, we must either build our marketing, sales, distribution, managerial and other non-technical capabilities, or make arrangements to outsource those functions to third parties. If oral sulopenem and sulopenem receive regulatory approval, we intend to build a commercial organization in the United States and recruit a targeted sales force with technical expertise, an internal marketing and health resource group, as well as a managed markets group focused on reimbursement activities with third-party payors and a specialty distribution team to ensure pharmacy-level stocking. The development of sales, marketing and distribution capabilities will require substantial resources, will be time-consuming and could delay any product launch. If the commercial launch of a product candidate for which we recruit a sales force and establish marketing and distribution capabilities is delayed or does not occur for any reason, we would have prematurely or unnecessarily incurred these commercialization costs. This may be costly, and our investment would be lost if we cannot retain or reposition our sales and marketing personnel. In addition, we may not be able to hire a sales force in the United States that is sufficient in size or has adequate expertise in the medical markets that we intend to target. If we are unable to establish a sales force and marketing and distribution capabilities, our operating results may be adversely affected. Any failure or delay in the development of our internal sales, marketing and distribution capabilities would adversely impact the commercialization of our product candidates.

Factors that may inhibit our efforts to commercialize our products on our own include:

- our inability to recruit and retain adequate numbers of effective sales and marketing personnel;
- our inability to identify the best territories to target based on resistance statistics and prescribers within those territories;
- the inability of a health resources group to obtain access to educate physicians regarding the attributes of our future products;
- the lack of complementary products to be offered by sales personnel, which may put us at a competitive disadvantage relative to companies with more extensive product lines; and
- unforeseen costs and expenses associated with creating an independent sales and marketing organization.

We are focusing our initial commercial efforts on the United States market, which we believe represents the largest market opportunity for our sulopenem program. We are currently evaluating our commercialization strategy outside the United States. For those countries in which we choose not to commercialize directly ourselves, we intend to use collaborators that have direct sales forces and established distribution systems to assist with the commercialization of oral sulopenem, sulopenem and any other product candidate. As a result of entering into arrangements with third parties to perform sales, marketing and distribution services, our product revenues or the profitability of these product revenues to us would likely be lower than if we were to directly market and sell products in those markets.

Furthermore, we may be unsuccessful in entering into the necessary arrangements with third parties or may be unable to do so on terms that are favorable to us. In addition, we likely would have little control over such third parties, and any of them might fail to devote the necessary resources and attention to sell and market our products effectively.



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If we do not establish sales and marketing capabilities successfully, either on our own or in collaboration with third parties, we will not be successful in commercializing our product candidates.

***We face substantial competition from other pharmaceutical and biotechnology companies and our business may suffer if we fail to compete effectively.***

The development and commercialization of new drug products is highly competitive. We face competition from major pharmaceutical companies, specialty pharmaceutical companies and biotechnology companies worldwide with respect to oral sulopenem, sulopenem and our other product candidates that we may seek to develop and commercialize in the future. There are a number of pharmaceutical and biotechnology companies that currently market and sell products or are pursuing the development of product candidates for the treatment of multi-drug resistant infections. Potential competitors also include academic institutions, government agencies and other public and private research organizations. Our competitors may succeed in developing, acquiring or licensing technologies and drug products that are more effective or less costly than oral sulopenem, sulopenem or any other product candidates that we may develop, which could render our product candidates obsolete and noncompetitive.

There are a variety of available oral therapies marketed for the treatment of multi-drug resistant infections that we would expect would compete with oral sulopenem and sulopenem, such as levofloxacin, ciprofloxacin, nitrofurantoin, fosfomycin, amoxicillin-clavulanate, cephalexin and trimethoprim-sulfamethoxazole. Many of the available therapies are well established and widely accepted by physicians, patients and third-party payors. Insurers and other third-party payors may also encourage the use of generic products, for example in the fluoroquinolone class. If oral sulopenem or sulopenem is approved, the pricing may be at a significant premium over other competitive products that are generic. This may make it difficult for oral sulopenem or sulopenem to compete with these products.

There are also a number of oral product candidates in clinical development by third parties that are intended to treat UTIs. Some mid- to late-stage product candidates include ceftibuten clavulanate from Achaogen, Inc., tebipenem pivoxil from Spero Therapeutics, Inc., delafloxacin from Melinta Therapeutics, Inc. and omadacycline from Paratek Pharmaceuticals, Inc. If our competitors obtain marketing approval from the FDA or comparable foreign regulatory authorities for their product candidates more rapidly than us, it could result in our competitors establishing a strong market position before we are able to enter the market.

There are several IV-administered products marketed for the treatment of infections resistant to first-line therapy for gram-negative infections, including Avycaz from Allergan plc and Pfizer Inc., Vabomere from Melinta Therapeutics, Inc., and Zerbaxa from Merck & Co. There are also a number of IV-administered product candidates in late-stage clinical development that are intended to treat resistant gram-negative infections, including plazomicin from Achaogen, Inc., cefiderocol from Shionogi & Co. Ltd. and imipenem-relabactam from Merck & Co.

Many of our competitors have significantly greater financial resources and expertise in research and development, manufacturing, preclinical testing, conducting clinical trials, obtaining regulatory approvals and marketing approved products than we do. Mergers and acquisitions in the pharmaceutical and biotechnology industries may result in even more resources being concentrated among a smaller number of our competitors. Smaller and other early stage companies may also prove to be significant competitors, particularly through collaborative arrangements with large and established companies. These third parties compete with us in recruiting and retaining qualified scientific and management personnel, establishing clinical trial sites and patient registration for clinical trials, as well as in acquiring technologies complementary to, or necessary for, our programs.

In July 2012, the Food and Drug Administration Safety and Innovation Act was passed, which included the Generating Antibiotics Incentives Now Act (the GAIN Act). The GAIN Act is intended to provide incentives for

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the development of new, qualified infectious disease products (QIDP). One such incentive is that, once a product receives QIDP designation and completes the necessary clinical trials and is approved by the FDA, it will be given an additional five years of regulatory exclusivity regardless of whether it is protected by a patent, provided that it is already eligible for another type of regulatory exclusivity. The FDA has designated sulopenem and oral sulopenem as QIDPs for the indications of uUTI, cUTI and cIAI. In December 2016, the Cures Act was passed, providing additional support for the development of new infectious disease products. These incentives may result in more competition in the market for new antibiotics, and may cause pharmaceutical and biotechnology companies with more resources than we have to shift their efforts towards the development of product candidates that could be competitive with oral sulopenem, sulopenem and our other product candidates.

***Even if we are able to commercialize oral sulopenem, sulopenem or any other product candidate, the product may become subject to unfavorable pricing regulations, or third-party payor coverage and reimbursement policies that could harm our business.***

Marketing approvals, pricing, coverage and reimbursement for new drug products vary widely from country to country. Some countries require approval of the sale price of a drug before it can be marketed. In many countries, the pricing review period begins after marketing or product licensing approval is granted. In some foreign markets, prescription pharmaceutical pricing remains subject to continuing governmental control even after initial approval is granted. As a result, we might obtain marketing approval for a product in a particular country, but then be subject to price regulations that delay our commercial launch of the product, possibly for lengthy time periods, which may negatively affect the revenues that we are able to generate from the sale of the product in that country. Adverse pricing limitations may hinder our ability to recoup our investment in one or more product candidates, even if our product candidates obtain marketing approval.

We currently expect that oral sulopenem will be used in the community setting. The commercial success of oral sulopenem will depend substantially, both in the United States and outside the United States, on the extent to which adequate coverage and reimbursement for this product and related treatments are available from government health programs, private health insurers and other third-party payors. If coverage is not available, or reimbursement is limited, we may not be able to successfully commercialize our product candidates. Even if coverage is provided, the approved reimbursement amount may not be high enough to allow us to establish or maintain pricing sufficient to realize a sufficient return on our investments. Government authorities and third-party payors, such as health insurers and managed care organizations, publish formularies that identify the medications they will cover and the related payment levels. The healthcare industry is focused on cost containment, both in the United States and elsewhere. Government authorities and third-party payors have attempted to control costs by limiting coverage and the amount of reimbursement for particular medications, which could affect our ability to sell our product candidates profitably.

In the United States, sales of our product candidates will depend, in part, on the availability and extent of coverage and reimbursement by third-party payors, such as government health programs, including Medicare and Medicaid, commercial insurance and managed healthcare organizations. There is no uniform coverage and reimbursement policy among third-party payors; however, private third-party payors often follow Medicare coverage policy and payment limitations in setting their own reimbursement rates. Obtaining coverage and reimbursement approval for a product candidate from third-party payors is a time-consuming and costly process that may require the provision of supporting scientific, clinical and cost effectiveness data for the use of product candidate to the third-party payor. There may be significant delays in obtaining such coverage and reimbursement for newly approved products, and coverage may be more limited than the purposes for which the product candidate is approved by the FDA. Moreover, eligibility for coverage and reimbursement does not imply that a product candidate will be paid for in all cases or at a rate that covers operating costs, including research, development, intellectual property, manufacture, sales and distribution expenses. Reimbursement rates may vary according to the use of the product candidate and the clinical setting in which it is used, may be based on reimbursement levels already set for lower cost products and may be incorporated into existing payments for other services. It is difficult to predict what third-party payors will decide with respect to coverage and reimbursement for our product candidates.

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We currently expect that sulopenem IV, if approved, will be administered in a hospital setting, and oral sulopenem, if approved, will be used in a community setting and possibly be administered in a hospital inpatient setting as well. In the United States, third-party payors generally reimburse hospitals a single bundled payment established on a prospective basis intended to cover all items and services provided to the patient during a single hospitalization. Hospitals bill third-party payors for all or a portion of the fees associated with the patient's hospitalization and bill patients for any deductibles or co-payments. Because there is typically no separate reimbursement for drugs administered in a hospital inpatient setting, some of our target customers may be unwilling to adopt our product candidates in light of the additional associated cost. If we are forced to lower the price we charge for our product candidates, if approved, our gross margins may decrease, which would adversely affect our ability to invest in and grow our business.

An inability to promptly obtain coverage and adequate payment rates from third-party payors for any approved product candidates that we develop could have a material adverse effect on our operating results, our ability to raise capital needed to commercialize products and our overall financial condition.

***We cannot predict whether bacteria may develop resistance to oral sulopenem or sulopenem, which could affect their revenue potential.***

We are developing oral sulopenem and sulopenem to treat drug-resistant bacterial infections. The bacteria responsible for these infections evolve quickly and readily transfer their resistance mechanisms within and between species. We cannot predict whether or when bacterial resistance to oral sulopenem and sulopenem may develop.

As with some commercially available carbapenems, oral sulopenem and sulopenem are not active against organisms expressing a resistance mechanism mediated by enzymes known as carbapenemases. Although occurrence of this resistance mechanism is currently uncommon, we cannot predict whether carbapenemase-mediated resistance will become widespread in regions where we intend to market sulopenem if it is approved. The use of carbapenems or penems in areas with drug resistant infections or in countries with poor public health infrastructures, or the potentially extensive use of oral sulopenem or sulopenem outside of controlled hospital settings or in the community, could contribute to the rise of resistance. In addition, prescribers may be less likely to prescribe oral sulopenem and sulopenem if they are concerned about contributing to the rise of antibiotic resistance. If resistance to oral sulopenem or sulopenem becomes prevalent, or concerns about such resistance are strong, our ability to generate revenue from oral sulopenem and sulopenem could suffer.

***We may be subject to costly product liability claims related to our clinical trials and product candidates and, if we are unable to obtain adequate insurance or are required to pay for liabilities resulting from a claim excluded from, or beyond the limits of our insurance coverage, a material liability claim could adversely affect our financial condition.***

Because we conduct clinical trials with human patients, we face the risk that the use of our product candidates may result in adverse side effects to patients in our clinical trials. We face even greater risks upon any commercialization of our product candidates. Although we have product liability insurance, which covers our clinical trials for up to \$10 million, our insurance may be insufficient to reimburse us for any expenses or losses we may suffer, and we will be required to increase our product liability insurance coverage for our advanced clinical trials that we plan to initiate. We will need to increase our insurance coverage if and when we receive marketing approval for and begin selling oral sulopenem, sulopenem or any other product candidate. We do not know whether we will be able to continue to obtain product liability coverage and obtain expanded coverage if we require it, on acceptable terms, if at all.

We may not have sufficient resources to pay for any liabilities resulting from a claim excluded from, or beyond the limits of, our insurance coverage. Where we have provided indemnities in favor of third parties under our agreements with them, there is also a risk that these third parties could incur liability and bring a claim under

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such indemnities. An individual may bring a product liability claim against us alleging that one of our product candidates or products causes, or is claimed to have caused, an injury or is found to be unsuitable for consumer use. Any product liability claim brought against us, with or without merit, could result in:

- withdrawal of clinical trial volunteers, investigators, patients or trial sites;
- the inability to commercialize our product candidates;
- decreased demand for our product candidates;
- regulatory investigations that could require costly recalls or product modifications;
- loss of revenue;
- substantial costs of litigation;
- liabilities that substantially exceed our product liability insurance, which we would then be required to pay ourselves;
- an increase in our product liability insurance rates or the inability to maintain insurance coverage in the future on acceptable terms, if at all;
- the diversion of management's attention from our business; and
- damage to our reputation and the reputation of our products.

***Our operations, including our use of hazardous materials, chemicals, bacteria and viruses, require us to comply with regulatory requirements and expose us to significant potential liabilities.***

Our operations involve the use of hazardous materials, including chemicals, and may produce dangerous waste products. Accordingly, we, along with the third parties that conduct clinical trials and manufacture our products and product candidates on our behalf, are subject to federal, state, local and foreign laws and regulations that govern the use, manufacture, distribution, storage, handling, exposure, disposal and recordkeeping with respect to these materials. We are also subject to a variety of environmental and occupational health and safety laws. Compliance with current or future laws and regulations can require significant costs and we could be subject to substantial fines and penalties in the event of noncompliance. In addition, the risk of contamination or injury from these materials cannot be completely eliminated. In such event, we could be held liable for substantial civil damages or costs associated with the cleanup of hazardous materials.

***If we experience a significant disruption in our information technology systems or breaches of data security, our business could be adversely affected.***

We rely on information technology systems to keep financial records, capture laboratory data, maintain clinical trial data and corporate records, communicate with staff and external parties and operate other critical functions. Our information technology systems are potentially vulnerable to disruption due to breakdown, malicious intrusion and computer viruses or other disruptive events including but not limited to natural disaster. If we were to experience a prolonged system disruption in our information technology systems or those of certain of our vendors, it could delay or negatively impact the development and commercialization of our sulopenem program and any future product candidates or technology, which could adversely impact our business. Although we maintain offsite back-ups of our data, if operations at our facilities were disrupted, it may cause a material disruption in our business if we are not capable of restoring function on an acceptable timeframe. In addition, our information technology systems are potentially vulnerable to data security breaches—whether by employees or others—which may expose sensitive data to unauthorized persons. Such data security breaches could lead to the loss of trade secrets or other intellectual property, or could lead to the public exposure of personal information (including sensitive personal information) of our employees, customers and others, any of which could have a material adverse effect on our business, financial condition and results of operations. Moreover, a security breach or privacy violation that leads to disclosure or modification of, personally identifiable information, could harm

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our reputation, compel us to comply with applicable Irish, and United States federal and/or state, breach notification laws, subject us to mandatory corrective action, require us to verify the correctness of database contents and otherwise subject us to litigation and liability under laws and regulations that protect personal data, resulting in increased costs or loss of revenue. In addition, a data security breach could result in loss of clinical trial data or damage to the integrity of that data. If we are unable to prevent such security breaches or privacy violations or implement satisfactory remedial measures, our operations could be disrupted, and we may suffer loss of reputation, financial loss and other negative consequences because of lost or misappropriated information. In addition, these breaches and other inappropriate access can be difficult to detect, and any delay in identifying them may lead to increased harm of the type described above.

### **Risks Related to Our Dependence on Third Parties**

***If we fail to comply with our obligations in our agreement with Pfizer, we could lose such rights that are important to our business.***

We rely heavily on the Pfizer License pursuant to which we exclusively in-license certain patents and know-how related to sulopenem etzadroxil and certain know-how related to the IV formulation of sulopenem. The Pfizer License imposes, and we may enter into additional agreements, including license agreements, with other parties in the future that impose diligence, development and commercialization timelines, milestone payments, royalties, insurance and other obligations on us.

The Pfizer License gives us exclusive worldwide rights to develop, manufacture, and commercialize sulopenem etzadroxil and sulopenem, or any other prodrug of sulopenem previously identified by Pfizer as well as the right to use relevant information and regulatory documentation developed by Pfizer to support any regulatory filing worldwide. In exchange for those rights, we are obligated to satisfy diligence requirements, including using commercially reasonable efforts to develop, obtain regulatory approval for and commercialize sulopenem etzadroxil and sulopenem by implementing a specified development plan and providing an update on progress on an annual basis. Under the Pfizer License, we paid Pfizer a one-time nonrefundable upfront fee of \$5.0 million and are obligated to pay Pfizer milestone payments upon the achievement of specified clinical, regulatory and sales milestones as well as royalties ranging from a single-digit to mid-teens percentage based on the amount of marginal net sales of each licensed product. Pfizer also received 381,922 of our Series A preferred shares as additional payment for the licensed rights. For a more detailed summary of the Pfizer License, please see the section titled “Business—Pfizer License Agreement.”

If we fail to comply with our obligations to Pfizer under the Pfizer License, Pfizer may have the right to terminate the Pfizer License, in which event we would not be able to develop, obtain regulatory approval for, manufacture or market any product candidate that is covered by the Pfizer License, including sulopenem etzadroxil and sulopenem, which would materially harm our business, financial condition, results of operations and growth prospects. Any termination of the Pfizer License or reduction or elimination of our rights thereunder may result in our having to negotiate new or reinstated agreements with less favorable terms. Any termination of the Pfizer License would cause us to lose our rights to important intellectual property or technology.

***We expect to depend on collaborations with third parties for the development and commercialization of oral sulopenem and sulopenem in certain territories. Our prospects with respect to those product candidates will depend in part on the success of those collaborations.***

Although we are focusing our initial commercial efforts on the United States market, which we believe represents the largest market opportunity for our sulopenem program, we are also evaluating our commercialization strategy outside the United States. For those countries in which we choose not to commercialize directly ourselves, we intend to seek to commercialize oral sulopenem and sulopenem through collaboration arrangements. In addition, we may seek third-party collaborators for development and commercialization of other product candidates. Our likely collaborators for any marketing, distribution,

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development, licensing or broader collaboration arrangements include large and mid-size pharmaceutical companies, regional and national pharmaceutical companies and biotechnology companies. We are not currently party to any such arrangements.

We may derive revenue from research and development fees, license fees, milestone payments and royalties under any collaborative arrangement into which we enter. Our ability to generate revenue from these arrangements will depend on our collaborators' abilities to successfully perform the functions assigned to them in these arrangements. In addition, our collaborators may have the right to abandon research or development projects and terminate applicable agreements, including funding obligations, prior to or upon the expiration of the agreed upon terms. As a result, we can expect to relinquish some or all of the control over the future success of a product candidate that we license to a third party.

We face significant competition in seeking and obtaining appropriate collaborators. Collaborations involving our product candidates may pose a number of risks, including the following:

- collaborators have significant discretion in determining the efforts and resources that they will apply to these collaborations;
- collaborators may not perform their obligations as expected;
- collaborators may not pursue development and commercialization of our product candidates or may elect not to continue or renew development or commercialization programs based on clinical trial results, changes in the collaborators' strategic focus or available funding, or external factors, such as an acquisition, that divert resources or create competing priorities;
- collaborators may delay clinical trials, provide insufficient funding for a clinical trial program, stop a clinical trial or abandon a product candidate, repeat or conduct new clinical trials or require a new formulation of a product candidate for clinical testing;
- product candidates discovered in collaboration with us may be viewed by our collaborators as competitive with their own product candidates or products, which may cause collaborators to cease to devote resources to the commercialization of our product candidates;
- a collaborator with marketing and distribution rights to one or more products may not commit sufficient resources to the marketing and distribution of such product or products;
- disagreements with collaborators, including disagreements over proprietary rights, contract interpretation or the preferred course of development, might cause delays or termination of the research, development or commercialization of product candidates, might lead to additional responsibilities for us with respect to product candidates, or might result in litigation or arbitration, any of which would be time-consuming and expensive;
- collaborators may not properly maintain, defend or enforce our intellectual property rights or may use our proprietary information in such a way as to invite litigation that could jeopardize or invalidate our intellectual property or proprietary information or expose us to potential litigation;
- collaborators may infringe, misappropriate or otherwise violate the intellectual property rights of third parties, which may expose us to litigation and potential liability; and
- collaborations may be terminated and, if terminated, may result in a need for additional capital to pursue further development or commercialization of the applicable product candidates.

Collaboration agreements may not lead to development or commercialization of product candidates in the most efficient manner or at all. If a collaborator of ours is involved in a business combination, it could decide to delay, diminish or terminate the development or commercialization of any product candidate licensed to it by us.

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***We rely on third parties to conduct our preclinical studies and our clinical trials. If these third parties do not successfully carry out their contractual duties or meet expected deadlines, we may be unable to obtain regulatory approval for or commercialize any of our product candidates. If they do not perform satisfactorily, our business may be materially harmed.***

We do not independently conduct nonclinical studies that comply with good laboratory practice (GLP) requirements. We also do not have the ability to independently conduct clinical trials of any of our product candidates. We rely on third parties, such as contract research organizations (CROs), clinical data management organizations, medical institutions, and clinical investigators, to conduct our clinical trials of oral sulopenem and sulopenem and expect to rely on these third parties to conduct clinical trials of any potential product candidates. Any of these third parties may terminate their engagements with us at any time. If we need to enter into alternative arrangements, it would delay our product development activities.

Our reliance on these third parties for clinical development activities limits our control over these activities but we remain responsible for ensuring that each of our studies is conducted in accordance with the applicable protocol, legal, regulatory and scientific standards. For example, notwithstanding the obligations of a CRO for a clinical trial of one of our product candidates, we remain responsible for ensuring that each of our clinical trials is conducted in accordance with the general investigational plan and protocols for the clinical trial. While we will have agreements governing their activities, we control only certain aspects of their activities and have limited influence over their actual performance. The third parties with whom we contract for execution of our GLP studies and our clinical trials play a significant role in the conduct of these studies and clinical trials and the subsequent collection and analysis of data. Although we rely on these third parties to conduct our GLP-compliant nonclinical studies and clinical trials, we remain responsible for ensuring that each of our nonclinical studies and clinical trials are conducted in accordance with applicable laws and regulations, and our reliance on the CROs does not relieve us of our regulatory responsibilities. The FDA and regulatory authorities in other jurisdictions also require us to comply with standards, commonly referred to as good clinical practices (GCPs), for conducting, monitoring, recording and reporting the results of clinical trials to assure that data and reported results are accurate and that the trial subjects are adequately informed of the potential risks of participating in clinical trials. The FDA enforces these GCPs through periodic inspections of trial sponsors, principal investigators, clinical trial sites and institutional review boards. If we or our third-party contractors fail to comply with applicable GCPs, the clinical data generated in our clinical trials may be deemed unreliable and the FDA may require us to perform additional clinical trials before approving our product candidates, which would delay the regulatory approval process. We cannot assure you that, upon inspection, the FDA will determine that any of our clinical trials comply with GCPs. We are also required to register clinical trials and post the results of completed clinical trials on a government-sponsored database, ClinicalTrials.gov, within certain timeframes. Failure to do so can result in fines, adverse publicity and civil and criminal sanctions.

Furthermore, the third parties conducting clinical trials on our behalf are not our employees, and except for remedies available to us under our agreements with such contractors, we cannot control whether or not they devote sufficient time and resources to our ongoing development programs. These contractors may also have relationships with other commercial entities, including our competitors, for whom they may also be conducting clinical trials or other drug development activities, which could impede their ability to devote appropriate time to our clinical programs. If these third parties do not successfully carry out their contractual duties, meet expected deadlines or conduct our clinical trials in accordance with regulatory requirements or our stated protocols, we may not be able to obtain, or may be delayed in obtaining, marketing approvals for our product candidates. If that occurs, we may not be able to, or may be delayed in our efforts to, successfully commercialize our product candidates. In such an event, our financial results and the commercial prospects for oral sulopenem, sulopenem or other product candidates could be harmed, our costs could increase and our ability to generate revenue could be delayed, impaired or foreclosed.

We also rely on other third parties to store and distribute drug supplies for our clinical trials. Any performance failure on the part of our distributors could delay clinical development or marketing approval of our product candidates or commercialization of any resulting products, producing additional losses and depriving us of potential product revenue.



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***We contract with third parties for the manufacture of preclinical and clinical supplies of oral sulopenem and sulopenem and expect to continue to do so in connection with any future commercialization and for any future clinical trials and commercialization of our other product candidates and potential product candidates. This reliance on third parties increases the risk that we will not have sufficient quantities of our product candidates or such quantities at an acceptable cost, which could delay, prevent or impair our development or commercialization efforts.***

We do not have the internal infrastructure or capability to manufacture oral sulopenem and sulopenem for use in the conduct of our preclinical research or clinical trials. We rely on third-party contract manufacturers to manufacture supplies of oral sulopenem and sulopenem, and we expect to rely on third-party contract manufacturers to manufacture commercial quantities of any product candidate that we commercialize following approval for marketing by applicable regulatory authorities, if any. Reliance on third-party manufacturers entails risks, including:

- manufacturing delays if our third-party manufacturers give greater priority to the supply of other products over our product candidates or otherwise do not satisfactorily perform according to the terms of the agreement between us;
- the possible termination or nonrenewal of the agreement by the third party at a time that is costly or inconvenient for us;
- the possible breach of the manufacturing agreement by the third party;
- the failure of the third-party manufacturer to comply with applicable regulatory requirements; and
- the possible misappropriation of our proprietary information, including our trade secrets and know-how.

We currently rely on a small number of third-party contract manufacturers for all of our required raw materials, drug substance and finished product for our preclinical research and clinical trials. We do not have long-term agreements with any of these third parties. We also do not have any current contractual relationships for the manufacture of commercial supplies of any of our product candidates. If any of our existing manufacturers should become unavailable to us for any reason, we may incur delays in identifying or qualifying replacements.

We will enter into agreements with third-party contract manufacturers for the commercial production of oral sulopenem and sulopenem. This process is difficult and time consuming and we may face competition for access to manufacturing facilities as there are a limited number of contract manufacturers operating under cGMPs that are capable of manufacturing our product candidates. Consequently, we may not be able to reach agreement with third-party manufacturers on satisfactory terms, which could delay our commercialization.

Third-party manufacturers are required to comply with cGMPs and similar regulatory requirements outside the United States. Facilities used by our third-party manufacturers must be approved by the FDA after we submit an NDA and before potential approval of the product candidate. Similar regulations apply to manufacturers of our product candidates for use or sale in countries outside of the United States. We have no direct control over the ability of our third-party manufacturers to maintain adequate quality control, quality assurance and qualified personnel, and are completely dependent on our third-party manufacturers for compliance with the applicable regulatory requirements for the manufacture of our product candidates. If our manufacturers cannot successfully manufacture material that conforms to the strict regulatory requirements of the FDA and any applicable regulatory authority, they will not be able to secure the applicable approval for their manufacturing facilities. If these facilities are not approved for commercial manufacture, we may need to find alternative manufacturing facilities, which could result in delays in obtaining approval for the applicable product candidate. In addition, our manufacturers are subject to ongoing periodic unannounced inspections by the FDA and corresponding state and foreign agencies for compliance with current Good Manufacturing Practicing, or cGMPs, and similar regulatory



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requirements. Failure by any of our manufacturers to comply with applicable cGMPs or other regulatory requirements could result in sanctions being imposed on us, including fines, injunctions, civil penalties, delays, suspensions or withdrawals of approvals, operating restrictions, interruptions in supply and criminal prosecutions, any of which could significantly and adversely affect supplies of our product candidates and have a material adverse effect on our business, financial condition and results of operations.

We and our third-party suppliers also continue to refine and improve the manufacturing process, certain aspects of which are complex and unique, and we may encounter difficulties with new or existing processes, particularly as we seek to significantly increase our capacity to commercialize oral sulopenem and sulopenem. Our reliance on contract manufacturers also exposes us to the possibility that they, or third parties with access to their facilities, will have access to and may appropriate our trade secrets or other proprietary information.

As drug candidates are developed through nonclinical studies to late-stage clinical trials towards approval and commercialization, it is common that various aspects of the development program, such as manufacturing methods, methods of making drug formulations, and drug formulations, are altered along the way in an effort to optimize processes and results. Such changes carry the risk that they will not achieve these intended objectives. Any of these changes could cause our drug candidates to perform differently and affect the results of planned clinical trials or other future clinical trials conducted with the altered materials. Such changes may also require additional testing, FDA notification or FDA approval. This could delay completion of clinical trials, require the conduct of bridging clinical trials or the repetition of one or more clinical trials, increase clinical trial costs, delay approval of our drug candidates and jeopardize our ability to commence sales and generate revenue.

Our current and anticipated future dependence upon others for the manufacture of oral sulopenem and sulopenem and any future product candidates may adversely affect our future profit margins and our ability to commercialize any products for which we receive marketing approval on a timely and competitive basis.

### **Risks Related to Our Intellectual Property**

***We rely heavily on the Pfizer License for the patent rights and know-how required to develop and commercialize oral sulopenem and the know-how required to develop the IV formulation of sulopenem.***

We currently do not own any patents or patent applications and rely heavily on the Pfizer License for intellectual property rights that are important or necessary for the development of oral sulopenem and sulopenem. We do not own or license any patent rights that cover the IV formulation of sulopenem. In addition, all patents directed to the compound sulopenem expired prior to us entering into the Pfizer License. Licenses to additional third-party intellectual property, technology and materials that may be required for the development and commercialization of our sulopenem program or any other product candidates or technology may not be available at all or on commercially reasonable terms. In that event, we may be required to expend significant time and resources to redesign our sulopenem program and any other product candidates or technology we may obtain in the future or to develop or license replacement technology, all of which may not be feasible on a technical or commercial basis. If we are unable to do so, we may be unable to develop or commercialize oral sulopenem or sulopenem or other future product candidates or technologies, which could materially harm our business, financial condition, results of operations and growth prospects.

Under the Pfizer License, and we expect under certain of our future license agreements, we are responsible for prosecution and maintenance of the licensed patents and for bringing any actions against any third party for infringing on such patents. In addition, the Pfizer License requires, and we expect certain of our future license agreements would also require, us to meet certain development thresholds to maintain the license, including establishing a set timeline for developing and commercializing products. In addition, such license agreements are complex, and certain provisions in such agreements may be susceptible to multiple interpretations. The resolution of any contract interpretation disagreement that may arise could narrow what we believe to be the scope of our rights to the relevant intellectual property or technology, or increase what we believe to be our financial or other

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obligations under the relevant agreement, either of which could have a material adverse effect on our business, financial condition, results of operations and growth prospects. Disputes may arise regarding intellectual property subject to the Pfizer License or any of our future license agreements, including:

- the scope of rights granted under the license agreement and other interpretation-related issues;
- the extent to which our technology and processes infringe, misappropriate or otherwise violate any intellectual property of the licensor that is not subject to the licensing agreement;
- the sublicensing of patent and other rights under the license agreement;
- our diligence obligations under the license agreement and what activities satisfy those diligence obligations;
- the inventorship and ownership of inventions and know-how resulting from the joint creation or use of intellectual property by our licensors and us and our partners; and
- the priority of invention of patented technology.

In spite of our best efforts, Pfizer and any potential future licensors might conclude that we have materially breached our license agreements and might therefore terminate the relevant license agreements, thereby removing our ability develop and commercialize products and technology covered by such license agreements. If any of our inbound license agreements are terminated, or if the underlying patents fail to provide the intended exclusivity, competitors would have the freedom to seek regulatory approval of, and to market, products identical to ours. This could have a material adverse effect on our competitive position, business, financial conditions, results of operations and growth prospects.

***If we are unable to obtain and maintain patent protection or other intellectual property rights for oral sulopenem or our other technology and product candidates, or if the scope of the patent protection or intellectual property rights we obtain is not sufficiently broad, we may not be able to successfully develop or commercialize oral sulopenem or any other product candidates or technology or otherwise compete effectively in our markets.***

We rely upon a combination of patents, trademarks, trade secret protection, confidentiality agreements and other proprietary rights to protect the intellectual property related to our development programs and product candidates. Our success depends, in part, on obtaining and maintaining patent protection and successfully enforcing these patents and defending them against third-party challenges in the United States and other countries. If we or our licensors are unable to obtain or maintain patent protection with respect to oral sulopenem or any other product candidates or technology we develop, our business, financial condition, results of operations and prospects could be materially harmed.

We have sought to protect our proprietary position by in-licensing patents in the United States and abroad related to oral sulopenem. The patent prosecution process is expensive and time-consuming, and we and our licensors may not be able to file and prosecute all necessary or desirable patent applications at a reasonable cost or in a timely manner or in all jurisdictions. It is also possible that we will fail to identify patentable aspects of our research and development output before it is too late to obtain patent protection. Moreover, although we control prosecution of the patents we have licensed from Pfizer related to our sulopenem program, we may not always have the right to control the preparation, filing and prosecution of patent applications, or to maintain, enforce or defend the patents, covering technology that we may license from third parties. Therefore, these patents and patent applications may not be prosecuted, maintained, enforced or defended in a manner consistent with the best interests of our business. The patent applications that we may own in the future or in-license may fail to result in issued patents with claims that cover our current and future product candidates in the United States or in other countries. Patent applications cannot be enforced against third parties practicing the technology claimed in such applications unless, and until, a patent issues from such applications, and then only to the extent the issued claims cover the technology.

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If any patent applications we may in-license in the future with respect to our development programs or product candidates fail to issue, if their breadth or strength of protection is threatened or if they fail to provide meaningful exclusivity for our current and future product candidates, it could dissuade companies from collaborating with us to develop product candidates and threaten our ability to commercialize products. Any such outcome could materially harm our competitive position, business, financial conditions, results of operations and growth prospects.

The patent position of pharmaceutical companies generally is highly uncertain, involves complex legal and factual questions and has in recent years been the subject of much litigation. In addition, the laws of countries outside the United States may not protect our rights to the same extent as the laws of the United States. For example, EU patent law restricts the patentability of methods of treatment of the human body more than U.S. law does. In addition, publications of discoveries in scientific literature often lag behind the actual discoveries, patent applications in the United States and other jurisdictions remain confidential for a period after filing, and some remain so until issued. Therefore, we cannot know with certainty whether we were the first to make the inventions claimed in the patents or pending patent applications we currently license or may own or license in the future, or that we were the first to file for patent protection of such inventions. As a result, the issuance, scope, validity, enforceability and commercial value of our patent rights are highly uncertain. There is no assurance that all potentially relevant prior art relating to our patent rights has been found, and such prior art could potentially invalidate one or more of the patents we currently license or may own or license in the future or prevent a patent from issuing from one or more pending patent applications we may own or license in the future. There is also no assurance that prior art of which we are aware, but which we do not believe affects the validity or enforceability of a claim in our patent rights, may, nonetheless, ultimately be found to affect the validity or enforceability of a claim. Even if patents do successfully issue and even if such patents cover our current and future product candidates, third parties may challenge their ownership, validity, enforceability or scope, which may result in such patents being narrowed, invalidated or held unenforceable, which could allow third parties to commercialize our technology or products and compete directly with us, without payment to us, or result in our inability to manufacture or commercialize products without infringing third-party patent rights. Any successful opposition to these patents or any other patents owned by us in the future or licensed to us could deprive us of rights necessary for the successful commercialization of any product candidates that we may develop. Furthermore, even if they are unchallenged, our patents rights may not adequately protect our product candidates and technology, provide exclusivity for our product candidates, prevent others from designing around our claims or provide us with a competitive advantage. Any of these outcomes could impair our ability to prevent competition from third parties. Changes in either the patent laws or interpretation of the patent laws in the United States or other countries may diminish the value of our patent rights or narrow the scope of our patent protection.

We cannot offer any assurances about whether any issued patents will be found invalid and unenforceable or will be challenged by third parties. Any successful challenge or opposition to patents owned by or licensed to us could deprive us of rights necessary for the successful commercialization of any product candidates that we may develop. Further, if we encounter delays in regulatory approvals, the period of time during which we could market a product candidate under patent protection could be reduced.

Furthermore, our patent rights may be subject to a reservation of rights by one or more third parties. For example, certain research we conducted was funded in part by the U.S. government. As a result, the U.S. government may have certain march-in rights to patents and technology arising out of such research, if any. When new technologies are developed with government funding, the government generally obtains certain rights in any resulting patents, including a non-exclusive license authorizing the government to use the invention. These rights may permit the government to disclose our confidential information to third parties and to exercise march-in rights to use or allow third parties to use our licensed technology. The government can exercise its march-in rights if it determines that action is necessary because we fail to achieve practical application of the government-funded technology, to alleviate health or safety needs, to meet requirements of federal regulations or to give preference to U.S. industry. In addition, our rights in such inventions may be subject to certain requirements to manufacture products embodying such inventions in the United States. Any exercise by the

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government of such rights could harm our competitive position, business, financial condition, results of operations and growth prospects. For example, under the CARB-X grant funding program, the U.S. Department of Health and Human Services (HHS) awarded us a grant in connection with research to reduce the threat to human health from antimicrobial resistance and we granted the U.S. government a nonexclusive, nontransferable, irrevocable, paid-up license to practice or have practiced for or on behalf of the U.S. government any inventions arising out of our research globally. In addition, under such agreement, if we or our licensees do not use commercially reasonable efforts to exploit or further the development of any intellectual property rights we have generated out of such research within five years of the end date of our research project, Wellcome Trust Limited has the option to take responsibility for the commercialization and exploitation of such intellectual property rights, including by way of sale, assignment and license of such intellectual property rights.

***We may not identify relevant third party patents or may incorrectly interpret the relevance, scope or expiration of a third party patent which might adversely affect our ability to develop and market our product candidates.***

We cannot guarantee that any of our or our licensors' patent searches or analyses, including but not limited to the identification of relevant patents, the scope of patent claims or the expiration of relevant patents, are complete or thorough, nor can we be certain that we have identified each and every third party patent and pending application in the United States and abroad that is relevant to or necessary for the commercialization of our product candidates in any jurisdiction. For example, U.S. applications filed before November 29, 2000 and certain U.S. applications filed after that date that will not be filed outside the United States remain confidential until patents issue. Patent applications in the United States and elsewhere are published approximately 18 months after the earliest filing for which priority is claimed, with such earliest filing date being commonly referred to as the priority date. Therefore, patent applications covering our product candidates could have been filed by others without our knowledge. Additionally, pending patent applications that have been published can, subject to certain limitations, be later amended in a manner that could cover our product candidates or the use of our product candidates. The scope of a patent claim is determined by an interpretation of the law, the written disclosure in a patent and the patent's prosecution history. Our interpretation of the relevance or the scope of a patent or a pending application may be incorrect, which may negatively impact our ability to market our product candidates. We may incorrectly determine that our product candidates are not covered by a third party patent or may incorrectly predict whether a third party's pending application will issue with claims of relevant scope. Our determination of the expiration date of any patent in the United States or abroad that we consider relevant may be incorrect, which may negatively impact our ability to develop and market our product candidates. Our failure to identify and correctly interpret relevant patents may negatively impact our ability to develop and market our product candidates.

***The patent protection for our product candidates may expire before we are able to maximize their commercial value which may subject us to increased competition and reduce or eliminate our opportunity to generate product revenue.***

Patents have a limited lifespan. In the United States, if all maintenance fees are paid timely, the natural expiration of a patent is generally 20 years from its earliest U.S. non-provisional filing date. Various extensions may be available, but the life of a patent, and the protection it affords, is limited. The patents for our product candidates have varying expiration dates and, if these patents expire, we may be subject to increased competition and we may not be able to recover our development costs. For example, our licensed U.S. patent claim for a composition of matter patent for oral sulopenem is due to expire in 2029, subject to potential extension to 2034 under the Drug Price Competition and Patent Term Restoration Act of 1984 (the Hatch-Waxman Act). Given the amount of time required for the development, testing and regulatory review of new product candidates, patents protecting such product candidates might expire before or shortly after such product candidates are commercialized. As a result, our patent rights may not provide us with sufficient rights to exclude others from commercializing product candidates similar or identical to ours.

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The FDA designated sulopenem and oral sulopenem as QIDPs for the indications of uUTI, cUTI and cIAI, however that does not guarantee that we will receive any regulatory exclusivity extensions or that any such extensions will be for a period sufficient to provide us with any commercial advantage. Moreover, we do not own or license any patent directed to the compound sulopenem.

Depending upon the timing, duration and conditions of FDA marketing approval of our product candidates, one or more of the U.S. patents we currently license may be eligible for limited patent term extension under the Drug Price Competition and Patent Term Restoration Act of 1984, referred to as the Hatch-Waxman Amendments, and similar legislation in the European Union. The Hatch-Waxman Amendments permit a patent term extension of up to five years for a patent covering an approved product as compensation for effective patent term lost during product development and the FDA regulatory review process. A patent term extension cannot extend the remaining term of a patent beyond a total of 14 years from the date of product approval, only one patent may be extended and only those claims covering the approved drug, a method for using it or a method for manufacturing it may be extended. We may not receive an extension if we fail to apply within applicable deadlines, fail to apply prior to expiration of the relevant patents or otherwise fail to satisfy applicable requirements and the length of the extension could be less than we request. To the extent we wish to pursue patent term extension based on a patent that we in-license from Pfizer or another third party, we would need the cooperation of Pfizer or the third party. Moreover, similar extensions may be available in some of the larger economic territories, such as Europe, but may not be available in all of our markets of interest.

If we are unable to obtain patent term extension/restoration or some other exclusivity, or the term of any such extension is less than we request, the period during which we can enforce our exclusive rights for that product will be shortened and our competitors may obtain approval to market competing products sooner. As a result, we could be subject to increased competition and our opportunity to establish or maintain product revenue could be substantially reduced or eliminated. Furthermore, we may not have sufficient time to recover our development costs prior to the expiration of our U.S. and non-U.S. patent rights. If this occurs, our competitors may take advantage of our investment in development and trials by referencing our clinical and preclinical data and launch their product earlier than might otherwise be the case. Any of the foregoing would materially harm our business, financial condition, results of operations and prospects.

### ***Intellectual property rights do not necessarily address all potential threats to our business.***

Once granted, patents may remain open to opposition, interference, re-examination, post-grant review, *inter partes* review, nullification or derivation action in court or before patent offices or similar proceedings for a given period after allowance or grant, during which time third parties can raise objections against such grant. In the course of such proceedings, which may continue for a protracted period of time, the patent owner may be compelled to limit the scope of the allowed or granted claims thus attacked, or may lose the allowed or granted claims altogether. In addition, the degree of future protection afforded by our intellectual property rights is uncertain because even granted intellectual property rights have limitations, and may not adequately protect our business. The following examples are illustrative:

- others may be able to make compounds or formulations that are similar to oral sulopenem and sulopenem compounds or formulations but that are not covered by the claims of our patent rights;
- the patents of third parties may have an adverse effect on our business;
- we or our licensors or any future strategic partners might not have been the first to conceive or reduce to practice the inventions covered by the issued patents that we own or have exclusively licensed;
- we or our licensors or any future strategic partners might not have been the first to file patent applications covering certain of our inventions;
- others may independently develop similar or alternative technologies or duplicate any of our technologies without infringing our intellectual property rights;

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- it is possible any future pending patent applications will not lead to issued patents;
- issued patents that we may own in the future or have exclusively licensed may not provide us with any competitive advantage, or may be held invalid or unenforceable, as a result of legal challenges by our competitors;
- our competitors might conduct research and development activities in countries where we do not have patent rights and then use the information learned from such activities to develop competitive products for sale in our major commercial markets;
- third parties performing manufacturing or testing for us using our product candidates or technologies could use the intellectual property of others without obtaining a proper license;
- we may not develop additional proprietary technologies that are patentable; and
- the patents of others may have an adverse effect on our business.

Should any of these events occur, they could have a material adverse effect on our business, financial condition, results of operations and prospects.

### ***Changes in patent laws or patent jurisprudence could diminish the value of patents in general, thereby impairing our ability to protect our product candidates.***

As is the case with other pharmaceutical companies, our success is heavily dependent on intellectual property, particularly patents. Obtaining and enforcing patents in the pharmaceutical industry involve both technological complexity and legal complexity. Therefore, obtaining and enforcing pharmaceutical patents is costly, time-consuming and inherently uncertain. In addition, the America Invents Act (the AIA) was signed into law on September 16, 2011, and many of its substantive changes became effective on March 16, 2013.

An important change introduced by the AIA is that, as of March 16, 2013, the United States transitioned to a “first-to-file” system for deciding which party should be granted a patent when two or more patent applications are filed by different parties claiming the same invention. A third party that files a patent application in the U.S. Patent and Trademark Office, or USPTO, after that date but before us could therefore be awarded a patent covering an invention of ours even if we had made the invention before it was made by the third party. This will require us to be cognizant going forward of the time from invention to filing of a patent application, but circumstances could prevent us from promptly filing patent applications on our inventions.

Among some of the other changes introduced by the AIA are changes that limit where a patentee may file a patent infringement suit and providing opportunities for third parties to challenge any issued patent in the USPTO, including through post-issuance patent review procedures such as *inter partes* review, post-grant review and covered business methods. This applies to all U.S. patents, including those issued before March 16, 2013. Because of a lower evidentiary standard in USPTO proceedings compared to the evidentiary standard in United States federal courts necessary to invalidate a patent claim, a third party could potentially provide evidence in a USPTO proceeding sufficient for the USPTO to hold a claim invalid even though the same evidence would be insufficient to invalidate the claim if first presented in a district court action. Accordingly, a third party may attempt to use the USPTO procedures to invalidate our patent claims that would not have been invalidated if first challenged by the third party as a defendant in a district court action. The AIA and its implementation could increase the uncertainties and costs surrounding the prosecution of our patent applications and the enforcement or defense of our issued patents.

The USPTO has developed in the last few years regulations and procedures to govern administration of the AIA, and many of the substantive changes to patent law associated with the AIA, and, in particular, the first to file provisions, only became effective on March 16, 2013. Accordingly, it is not clear what, if any, impact the AIA will have on the operation of our business. However, the AIA and its implementation could increase the



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uncertainties and costs surrounding the prosecution of our or our licensors' or collaboration partners' patent applications and the enforcement or defense of our or our licensors' or collaboration partners' issued patents, all of which could have an adverse effect on our business and financial condition.

Moreover, the standards that the USPTO and foreign patent offices use to grant patents are not always applied predictably or uniformly and can change. Consequently, any patents we currently license or may own or license in the future may have a shorter patent term than expected or may not contain claims that will permit us to stop competitors from using our technology or similar technology or from copying our products. Similarly, the standards that courts use to interpret patents are not always applied predictably or uniformly and may evolve, particularly as new technologies develop. In addition, changes to patent laws in the United States or other countries may be applied retroactively to affect the ownership, validity, enforceability or term of patents we currently license or may own or license in the future.

For example, the U.S. Supreme Court's rulings on several patent cases in recent years, such as *Association for Molecular Pathology v. Myriad Genetics, Inc.*, *Mayo Collaborative Services v. Prometheus Laboratories, Inc.*, and *Alice Corporation Pty. Ltd. v. CLS Bank International*, either narrow the scope of patent protection available in certain circumstances or weaken the rights of patent owners in certain situations. In addition to increasing uncertainty with regard to our ability to obtain patents in the future, this combination of events has created uncertainty with respect to the value of patents, once obtained. Depending on decisions by the U.S. Congress, the federal courts and the USPTO, the laws and regulations governing patents could change in unpredictable ways that could weaken our ability to obtain new patents or to enforce our existing patents and patents that we might obtain in the future. Similarly, the complexity and uncertainty of European patent laws has also increased in recent years. In addition, the European patent system is relatively stringent in the type of amendments that are allowed during prosecution. These changes could limit our ability to obtain new patents in the future that may be important for our business.

***We may become involved in lawsuits to protect or enforce our patents or other intellectual property, which could be expensive, time consuming and unsuccessful.***

Competitors may infringe, misappropriate or otherwise violate our patents, trademarks, copyrights or other intellectual property or those of our licensors. To counter infringement, misappropriation, unauthorized use or other violations, we may be required to file legal claims, which can be expensive and time consuming and divert the time and attention of our management and scientific personnel. We may not be able to prevent, alone or with our licensors, infringement, misappropriation or other violations of our intellectual property rights, particularly in countries where the laws may not protect those rights as fully as in the United States. Any claims we assert against perceived infringers could provoke these parties to assert counterclaims against us alleging that we infringe their patents. In addition, in a patent infringement proceeding, there is a risk that a court will decide that a patent of ours is invalid or unenforceable, in whole or in part, and that we do not have the right to stop the other party from using the invention at issue. There is also a risk that, even if the validity of such patents is upheld, the court will construe the patent's claims narrowly or decide that we do not have the right to stop the other party from using the invention at issue on the grounds that our patents do not cover the invention. An adverse outcome in a litigation or proceeding involving our patents could limit our ability to assert our patents against those parties or other competitors, and may curtail or preclude our ability to exclude third parties from making and selling similar or competitive products. Any of these occurrences could adversely affect our competitive business position, business prospects and financial condition. Similarly, if we assert trademark infringement claims, a court may determine that the marks we have asserted are invalid or unenforceable, or that the party against whom we have asserted trademark infringement has superior rights to the marks in question. In this case, we could ultimately be forced to cease use of such trademarks.

In any infringement, misappropriation or other intellectual property litigation, any award of monetary damages we receive may not be commercially valuable. Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation, there is a risk that some of our confidential

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information could be compromised by disclosure during litigation. Moreover, there can be no assurance that we will have sufficient financial or other resources to file and pursue such infringement claims, which typically last for years before they are concluded. Even if we ultimately prevail in such claims, the monetary cost of such litigation and the diversion of the attention of our management and scientific personnel could outweigh any benefit we receive as a result of the proceedings.

***Third parties may initiate legal proceedings alleging that we are infringing, misappropriating or otherwise violating their intellectual property rights, the outcome of which would be uncertain and could have a negative impact on the success of our business.***

Our commercial success depends, in part, upon our ability, and the ability of our future collaborators, to develop, manufacture, market and sell oral sulopenem, sulopenem and any future product candidates, if approved, and use our proprietary technologies without alleged or actual infringement, misappropriation or other violation of the patents and other intellectual property rights of third parties. There have been many lawsuits and other proceedings involving patent and other intellectual property rights in the biotechnology and pharmaceutical industries, including patent infringement lawsuits, interferences, oppositions and reexamination proceedings before the USPTO and corresponding foreign patent offices. Numerous U.S. and foreign issued patents and pending patent applications, which are owned by third parties, exist in the fields in which we are developing product candidates. Some claimants may have substantially greater resources than we do and may be able to sustain the costs of complex intellectual property litigation to a greater degree and for longer periods of time than we could. In addition, patent holding companies that focus solely on extracting royalties and settlements by enforcing patent rights may target us. As the biotechnology and pharmaceutical industries expand and more patents are issued, the risk increases that our product candidates may be subject to claims of infringement of the intellectual property rights of third parties.

We may in the future become party to, or be threatened with, adversarial proceedings or litigation regarding intellectual property rights with respect to oral sulopenem, sulopenem or any future product candidates and technology, including interference or derivation proceedings, post grant review and *inter partes* review before the USPTO or similar adversarial proceedings or litigation in other jurisdictions. Similarly, we or our licensors or collaborators may initiate such proceedings or litigation against third parties, e.g., to challenge the validity or scope of intellectual property rights controlled by third parties. In order to successfully challenge the validity of any U.S. patent in federal court, we would need to overcome a presumption of validity. As this burden is a high one requiring us to present clear and convincing evidence as to the invalidity of any such U.S. patent claim, there is no assurance that a court would invalidate the claims of any such U.S. patent. Moreover, third parties may assert infringement claims against us based on existing patents or patents that may be granted in the future, regardless of their merit. There is a risk that third parties may choose to engage in litigation with us to enforce or to otherwise assert their patent rights against us. Even if we believe such claims are without merit, a court of competent jurisdiction could hold that these third-party patents are valid, enforceable and infringed, and the holders of any such patents may be able to block our ability to commercialize such product candidate unless we obtained a license under the applicable patents, or until such patents expire or are finally determined to be invalid or unenforceable. Similarly, if any third-party patents were held by a court of competent jurisdiction to cover aspects of our compositions, formulations, or methods of treatment, prevention or use, the holders of any such patents may be able to block our ability to develop and commercialize the applicable product candidate unless we obtained a license or until such patent expires or is finally determined to be invalid or unenforceable. In either case, such a license may not be available on commercially reasonable terms, or at all. Even if we were able to obtain a license, it could be nonexclusive, thereby giving our competitors access to the same technologies licensed to us. Furthermore, even in the absence of litigation, we may need to obtain licenses from third parties to advance our research. We may fail to obtain any of these licenses at a reasonable cost or on reasonable terms, if at all. In such an event, we would be unable to further practice our technologies or develop and commercialize any of our product candidates at issue, which could harm our business significantly.



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Parties making claims against us may obtain injunctive or other equitable relief, which could effectively block our ability to further develop and commercialize one or more of our product candidates, if approved. Defense of these claims, regardless of their merit, would involve substantial litigation expense and would be a substantial diversion of management and employee time and resources from our business. Third parties making such claims may have the ability to dedicate substantially greater resources to these legal actions than we or our licensors or collaborators can. In the event of a successful claim of infringement, misappropriation or other violation against us, we may have to pay substantial damages, including treble damages and attorneys' fees for willful infringement, pay royalties, redesign our infringing products or obtain one or more licenses from third parties, which may be impossible or require substantial time and monetary expenditure.

There has been substantial litigation and other proceedings regarding patent and other intellectual property rights in the pharmaceutical and biotechnology industries. In addition to infringement claims against us, we may become a party to other patent litigation and other adversarial proceedings such as proceedings before the Patent Trial and Appeal Board and opposition proceedings in the European Patent Office regarding intellectual property rights with respect to our products and technology.

Patent litigation and other proceedings may also absorb significant management time. The cost to us of any patent litigation or other proceeding, even if resolved in our favor, could be substantial. During the course of any patent or other intellectual property litigation or other proceeding, there could be public announcements of the results of hearings, rulings on motions, and other interim proceedings or developments and if securities analysts or investors regard these announcements as negative, the perceived value of our product candidates or intellectual property could be diminished. Accordingly, the market price of our ordinary shares may decline. Uncertainties resulting from the initiation and continuation of patent litigation or other proceedings could have a material adverse effect on our business, ability to compete in the marketplace, financial condition, results of operations and prospects.

### ***We may not be able to protect our intellectual property rights globally, which could negatively impact our business.***

Filing, prosecuting and defending patents covering oral sulopenem, sulopenem and any future product candidates globally would be prohibitively expensive, and our intellectual property rights in some countries outside the United States can be less extensive than those in the United States. In addition, the laws of some countries do not protect intellectual property rights to the same extent as federal and state laws in the United States. Further, licensing partners may not prosecute patents in certain jurisdictions in which we may obtain commercial rights, thereby precluding the possibility of later obtaining patent protection in these countries. Consequently, we may not be able to prevent third parties from practicing our inventions in all countries outside the United States, or from selling or importing products made using our inventions in and into the United States or other jurisdictions. Competitors may use our technologies in jurisdictions where we have not obtained patent protection to develop their own products and may also export infringing products to territories where we have patent protection, but enforcement is not as strong as that in the United States. These products may compete with our product candidates, and our patents or other intellectual property rights may not be effective or sufficient to prevent them from competing.

Many companies have encountered significant problems in protecting and defending intellectual property rights in foreign jurisdictions. The legal systems of certain countries, particularly certain developing countries, do not favor the enforcement of patents, trade secrets and other intellectual property protection, particularly those relating to biotechnology products, which could make it difficult for us to stop the infringement of our patents or marketing of competing products in violation of our proprietary rights generally. Proceedings to enforce our patent rights in foreign jurisdictions, whether or not successful, could result in substantial costs and divert our efforts and attention from other aspects of our business, could put our patents at risk of being invalidated or interpreted narrowly and any future patent applications at risk of not issuing, and could provoke third parties to assert claims against us. We may not prevail in any lawsuits that we initiate and the damages or other remedies

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awarded, if any, may not be commercially meaningful. Accordingly, our efforts to enforce our intellectual property rights around the world may be inadequate to obtain a significant commercial advantage from the intellectual property that we develop or license. Furthermore, while we intend to protect our intellectual property rights in our expected significant markets, we cannot ensure that we will be able to initiate or maintain similar efforts in all jurisdictions in which we may wish to market our product candidates. Accordingly, our efforts to protect our intellectual property rights in such countries may be inadequate, which may have an adverse effect on our ability to successfully commercialize our product candidates in all of our expected significant foreign markets.

Additionally, the requirements for patentability may differ in certain countries, particularly developing countries. For example, unlike other countries, China has a heightened requirement for patentability, and specifically requires a detailed description of medical uses of a claimed drug. In India, unlike the United States, there is no link between regulatory approval of a drug and its patent status. Furthermore, generic or biosimilar drug manufacturers or other competitors may challenge the scope, validity or enforceability of our or our licensors' patents, requiring us or our licensors to engage in complex, lengthy and costly litigation or other proceedings. Generic or biosimilar drug manufacturers may develop, seek approval for, and launch biosimilar versions of our products. In addition, certain countries in Europe and developing countries, including China and India, have compulsory licensing laws under which a patent owner may be compelled to grant licenses to third parties. In those countries, we and our licensors may have limited remedies if patents are infringed or if we or our licensors are compelled to grant a license to a third party, which could materially diminish the value of those patents. This could limit our potential revenue opportunities. Accordingly, our and our licensors' efforts to enforce intellectual property rights around the world may be inadequate to obtain a significant commercial advantage from the intellectual property that we own or license.

***We may be subject to claims that we or our employees, consultants, contractors or advisors have infringed, misappropriated or otherwise violated the intellectual property of a third party, or claiming ownership of what we regard as our own intellectual property.***

Many of our employees were previously employed at universities or other biotechnology or pharmaceutical companies, including our competitors or potential competitors. Although we try to ensure that our employees do not use the intellectual property and other proprietary information, know-how or trade secrets of others in their work for us, we may be subject to claims that we or these employees have used or disclosed such intellectual property or other proprietary information. Litigation may be necessary to defend against these claims.

In addition, we may in the future be subject to claims that former employees, collaborators or other third parties have an interest in our patents or other intellectual property as an inventor or co-inventor. While we typically require our employees, consultants and contractors who may be involved in the development of intellectual property to execute agreements assigning such intellectual property to us, we may be unsuccessful in executing such an agreement with each party who in fact develops intellectual property that we regard as our own. To the extent that we fail to obtain such assignments, such assignments do not contain a self-executing assignment of intellectual property rights or such assignments are breached, we may be forced to bring claims against third parties, or defend claims they may bring against us, to determine the ownership of what we regard as our intellectual property. If we fail in prosecuting or defending any such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights or personnel. Such intellectual property rights could be awarded to a third party, and we could be required to obtain a license from such third party to commercialize our technology or products. Such a license may not be available on commercially reasonable terms or at all. Even if we are successful in prosecuting or defending against such claims, litigation could result in substantial costs and be a distraction to our management and scientific personnel.

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***Obtaining and maintaining our patent protection depends on compliance with various procedural, document submission, fee payment and other requirements imposed by governmental patent agencies, and our patent protection could be reduced or eliminated for non-compliance with these requirements.***

Periodic maintenance and annuity fees on any issued patent are due to be paid to the USPTO and foreign patent agencies in several stages over the lifetime of the patent. The USPTO and various foreign governmental patent agencies require compliance with a number of procedural, documentary, fee payment and other similar provisions during the patent application process. While an inadvertent lapse can in many cases be cured by payment of a late fee or by other means in accordance with the applicable rules, there are situations in which noncompliance can result in abandonment or lapse of the patent or patent application, resulting in partial or complete loss of patent rights in the relevant jurisdiction. Non-compliance events that could result in abandonment or lapse of a patent or patent application include failure to respond to official actions within prescribed time limits, non-payment of fees and failure to properly legalize and submit formal documents. If we or our licensors fail to maintain the patents covering our products, our competitors might be able to enter the market, which would have a material adverse effect on our business, financial conditions, results of operations and prospects.

***If we are unable to protect the confidentiality of our trade secrets, the value of our technology could be materially adversely affected and our business would be harmed.***

In addition to seeking patents for some of our technology and products, we also rely on trade secrets, including unpatented know-how, technology and other proprietary information, in seeking to develop and maintain a competitive position. We seek to protect these trade secrets, in part, by entering into non-disclosure and confidentiality agreements with parties who have access to them, such as our employees, consultants, independent contractors, advisors, corporate collaborators, outside scientific collaborators, contract manufacturers, suppliers and other third parties. We, as well as our licensors, also enter into confidentiality and invention or patent assignment agreements with employees and certain consultants. We also seek to preserve the integrity and confidentiality of our data, trade secrets and know-how by maintaining physical security of our premises and physical and electronic security of our information technology systems. Monitoring unauthorized uses and disclosures is difficult, and we do not know whether the steps we have taken to protect our proprietary technologies will be effective. We cannot guarantee that our trade secrets and other proprietary and confidential information will not be disclosed or that competitors will not otherwise gain access to our trade secrets. Any party with whom we have executed such an agreement may breach that agreement and disclose our proprietary information, including our trade secrets, and we may not be able to obtain adequate remedies for such breaches. Enforcing a claim that a party illegally disclosed or misappropriated a trade secret is difficult, expensive and time-consuming, and the outcome is unpredictable. In addition, some courts both within and outside the United States may be less willing or unwilling to protect trade secrets. Further, if any of our trade secrets were to be lawfully obtained or independently developed by a competitor, we would have no right to prevent such third party, or those to whom they communicate such technology or information, from using that technology or information to compete with us. If any of our trade secrets were to be disclosed to or independently developed by a competitor, our business and competitive position could be harmed.

Trade secrets and know-how can be difficult to protect as trade secrets and know-how will over time be disseminated within the industry through independent development, the publication of journal articles, and the movement of personnel skilled in the art from company to company or academic to industry scientific positions. If we fail to prevent material disclosure of the know-how, trade secrets and other intellectual property related to our technologies to third parties, we will not be able to establish or maintain a competitive advantage in our market, which could materially adversely affect our business, results of operations and financial condition. Even if we are able to adequately protect our trade secrets and proprietary information, our trade secrets could otherwise become known or could be independently discovered by our competitors. For example, competitors could purchase our products and attempt to replicate some or all of the competitive advantages we derive from our development efforts, design around our protected technology or develop their own competitive technologies

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that fall outside of our intellectual property rights. If any of our trade secrets were to be lawfully obtained or independently developed by a competitor, in the absence of patent protection, we would have no right to prevent them, or those to whom they communicate, from using that technology or information to compete with us.

We may not be able to prevent misappropriation of our intellectual property, trade secrets or confidential information, particularly in countries where the laws may not protect those rights as fully as in the United States. Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation, there is a risk that some of our confidential information could be compromised by disclosure during this type of litigation.

***We have not yet registered our trademarks in certain jurisdictions. Failure to secure those registrations could adversely affect our business.***

We have a pending application for the trademark “Iterum” in Canada, and we have registered trademarks for “Iterum” in the United States, European Union, Japan and Switzerland. If we are unable to secure registrations for our trademarks in other countries, we may encounter more difficulty in enforcing them against third parties than we otherwise would, which could adversely affect our business. We have also not yet registered trademarks for any of our product candidates in any jurisdiction. Any trademark applications we may file for our product candidates are not guaranteed to be allowed for registration, and even if they are, we may fail to maintain or enforce such registered trademarks. During trademark registration proceedings in the United States and other jurisdictions, we may receive rejections. We are given an opportunity to respond to those rejections, but we may not be able to overcome such rejections. In addition, in the USPTO and in comparable agencies in many other jurisdictions, third parties are given an opportunity to oppose pending trademark applications and to seek to cancel registered trademarks. Opposition or cancellation proceedings may be filed against our trademarks, and our trademarks may not survive such proceedings.

In addition, any proprietary name we propose to use with oral sulopenem, sulopenem or any other product candidate in the United States must be approved by the FDA, regardless of whether we have registered it, or applied to register it, as a trademark. The FDA typically conducts a review of proposed product names, including an evaluation of potential for confusion with other product names. If the FDA objects to any of our proposed proprietary product names, we may be required to expend significant additional resources in an effort to identify a suitable proprietary product name that would qualify under applicable trademark laws, not infringe, misappropriate or otherwise violate the existing rights of third parties and be acceptable to the FDA.

Over the long term, if we are unable to establish name recognition based on our trademarks and trade names, then we may not be able to compete effectively and our business may be adversely affected. Our efforts to enforce or protect our proprietary rights related to trademarks, trade secrets, domain names, copyrights or other intellectual property may be ineffective and could result in substantial costs and diversion of resources and could adversely impact our business, financial conditions, results of operations and prospects.

## **Risks Related to Regulatory Approval and Other Legal Compliance Matters**

***If we are not able to obtain, or if there are delays in obtaining, required regulatory approvals, we will not be able to commercialize oral sulopenem, sulopenem or other future product candidates, and our ability to generate revenue will be materially impaired.***

Our product candidates, oral sulopenem and sulopenem, and the activities associated with their development and commercialization, including their design, testing, manufacture, safety, efficacy, recordkeeping, labeling, storage, approval, advertising, promotion, sale and distribution, are subject to comprehensive regulation by the FDA and other regulatory agencies in the United States and by comparable foreign regulatory authorities, with regulations differing from country to country. Failure to obtain marketing approval for a product candidate will

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prevent us from commercializing the product candidate. We currently do not have any products approved for sale in any jurisdiction. We have only limited experience in filing and supporting the applications necessary to gain marketing approvals and expect to rely on third-party contract research organizations to assist us in this process.

Although we have QIDP status for sulopenem and oral sulopenem for the indications of uUTI, cUTI and cIAI which may provide for a more rapid new drug application review cycle, the time required to obtain approval, if any, by the FDA and comparable foreign authorities is unpredictable and typically takes many years following the commencement of clinical trials and depends upon numerous factors, including the substantial discretion of the regulatory authorities. In addition, approval policies, regulations, or the type and amount of clinical data necessary to gain approval may change during the course of a product candidate's clinical development and may vary among jurisdictions. We have not obtained regulatory approval for any product candidate and it is possible that none of our existing product candidates or any product candidates we may seek to develop in the future will ever obtain regulatory approval. Neither we nor any future collaborator is permitted to market any of our product candidates in the United States until we or they receive regulatory approval of an NDA from the FDA.

In order to obtain approval to commercialize a product candidate in the United States or abroad, we or our collaborators must demonstrate to the satisfaction of the FDA or foreign regulatory agencies, that such product candidates are safe and effective for their intended uses. Results from nonclinical studies and clinical trials can be interpreted in different ways. Even if we believe that the nonclinical or clinical data for our product candidates are promising, such data may not be sufficient to support approval by the FDA and other regulatory authorities. Although we expect to conduct our Phase 3 clinical trials pursuant to SPA agreements, the FDA may still require us to conduct additional nonclinical studies or clinical trials for our product candidates either prior to or post-approval, and it may otherwise object to elements of our clinical development program.

We have not submitted an NDA for any of our product candidates. An NDA must include extensive preclinical and clinical data and supporting information to establish the product candidate's safety and efficacy for each desired indication. The NDA must also include significant information regarding the chemistry, manufacturing and controls for the product candidate. Obtaining approval of an NDA is a lengthy, expensive and uncertain process. The FDA has substantial discretion in the review and approval process and may refuse to accept for filing any application or may decide that our data are insufficient for approval and require additional nonclinical, clinical or other studies. Foreign regulatory authorities have differing requirements for approval of drugs with which we must comply prior to marketing. Obtaining marketing approval for marketing of a product candidate in one country does not ensure that we will be able to obtain marketing approval in other countries, but the failure to obtain marketing approval in one jurisdiction could negatively affect our ability to obtain marketing approval in other jurisdictions. The FDA or any foreign regulatory bodies can delay, limit or deny approval of our product candidates or require us to conduct additional nonclinical or clinical testing or abandon a program for many reasons, including:

- although we expect to conduct our Phase 3 clinical trials pursuant to SPA agreements, the FDA or the applicable foreign regulatory agency's disagreement with the design or implementation of our clinical trials;
- negative or ambiguous results from our clinical trials or results that may not meet the level of statistical significance required by the FDA or comparable foreign regulatory agencies for approval;
- serious and unexpected drug-related side effects experienced by participants in our clinical trials or by individuals using drugs similar to our product candidates;
- our inability to demonstrate to the satisfaction of the FDA or the applicable foreign regulatory body that our product candidates are safe and effective for the proposed indication;
- the FDA's or the applicable foreign regulatory agency's disagreement with the interpretation of data from nonclinical studies or clinical trials;

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- our inability to demonstrate the clinical and other benefits of our product candidates outweigh any safety or other perceived risks;
- the FDA's or the applicable foreign regulatory agency's requirement for additional nonclinical studies or clinical trials;
- the FDA's or the applicable foreign regulatory agency's disagreement regarding the formulation, labeling and/or the specifications for our product candidates; or
- the potential for approval policies or regulations of the FDA or the applicable foreign regulatory agencies to significantly change in a manner rendering our clinical data insufficient for approval.

Of the large number of drugs in development, only a small percentage complete the FDA or foreign regulatory approval processes and are successfully commercialized. The lengthy review process as well as the unpredictability of future clinical trial results may result in our failing to obtain regulatory approval, which would significantly harm our business, financial condition, results of operations and prospects.

Even if we eventually receive approval of an NDA or foreign marketing application for our product candidates, the FDA or the applicable foreign regulatory agency may grant approval contingent on the performance of costly additional clinical trials, often referred to as Phase 4 clinical trials, and the FDA may require the implementation of a REMS, which may be required to ensure safe use of the drug after approval. The FDA or the applicable regulatory agency also may approve a product candidate for a more limited indication or patient population than we originally requested, and the FDA or applicable foreign regulatory agency may not approve the labeling that we believe is necessary or desirable for the successful commercialization of a product candidate. Any delay in obtaining, or inability to obtain, applicable regulatory approval would delay or prevent commercialization of that product candidate and would materially adversely impact our business and prospects.

***Future legislation and/or regulations and policies adopted by the FDA, the EMA or similar regulatory authorities may increase the time and cost required for us to conduct and complete clinical trials of oral sulopenem, sulopenem and other potential product candidates.***

The FDA has established regulations to govern the drug development and approval process, as have foreign regulatory authorities. The policies of the FDA and other regulatory authorities may change and additional laws may be enacted or government regulations may be promulgated that could prevent, limit, delay, or alternatively accelerate regulatory review of our product candidates.

***If we are unable to obtain marketing approval in jurisdictions outside the United States, we will not be able to market our product candidates outside of the United States.***

In order to market and sell oral sulopenem, sulopenem or our other future product candidates in the European Union and many other jurisdictions, we must obtain separate marketing approvals and comply with numerous and varying regulatory requirements. Approval by the FDA does not ensure approval by regulatory authorities in other countries or jurisdictions, and approval by one regulatory authority outside the United States does not ensure approval by regulatory authorities in other countries or jurisdictions or by the FDA. The approval procedure varies among countries and can involve additional testing. In addition, clinical trials conducted in one country may not be accepted by regulatory authorities in other countries. The time required to obtain approval may differ substantially from that required to obtain FDA approval. The regulatory approval process outside the United States generally includes all of the risks associated with obtaining FDA approval. In addition, in many countries outside the United States, it is required that the product be approved for reimbursement before the product can be approved for sale in that country. We may not obtain approvals from regulatory authorities outside the United States on a timely basis or at all.

We are currently evaluating our commercialization strategy outside the United States, but believe that Europe represents a significant market opportunity because of rising rates of extended spectrum.  $\beta$ -lactamases



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(ESBL) resistance. On June 23, 2016, the electorate in the United Kingdom voted in favor of leaving the European Union, commonly referred to as Brexit. On March 29, 2017, the country formally notified the European Union of its intention to withdraw pursuant to Article 50 of the Lisbon Treaty. Since a significant proportion of the regulatory framework in the United Kingdom is derived from European Union directives and regulations, the referendum could materially impact the regulatory regime with respect to the approval of our product candidates in the United Kingdom or the European Union. Any delay in obtaining, or an inability to obtain, any regulatory approvals, as a result of Brexit or otherwise, would prevent us from commercializing our product candidates in the United Kingdom and/or the European Union and restrict our ability to generate revenue and achieve and sustain profitability. If any of these outcomes occur, we may be forced to restrict or delay efforts to seek regulatory approval in the United Kingdom and/or European Union for our product candidates, which could significantly and materially harm our business.

### ***Non-U.S. regulatory authorities may require us to conduct additional clinical trials or nonclinical studies to accommodate submission for the cUTI indication.***

We obtained scientific advice from the EMA for each of the Phase 3 clinical trials in the uUTI, cUTI and cIAI indications, as well as to gain alignment on nonclinical supportive information required for EMA submission. We are not in alignment with regard to the comparator agent selected for the cUTI clinical trial and are considering other options to accommodate a European filing for this indication. The EMA may request that we conduct one or more additional clinical trials or nonclinical studies to support potential approval for oral sulopenem and sulopenem for the cUTI indication. We cannot predict how the EMA will interpret the data and results from our Phase 3 clinical trial and other elements of our development program, or whether oral sulopenem or sulopenem will receive any regulatory approvals in the EU.

### ***If we receive regulatory approval for any product candidate we will be subject to ongoing obligations and continuing regulatory review, which may result in significant additional expense. Our product candidates, including oral sulopenem and sulopenem, if approved, could be subject to restrictions or withdrawal from the market, and we may be subject to penalties if we fail to comply with regulatory requirements or if we experience unanticipated problems with our product candidates, when and if approved.***

Any product candidate, including oral sulopenem and sulopenem, for which we obtain marketing approval will also be subject to ongoing regulatory requirements for labeling, packaging, storage, distribution, advertising, promotion, record-keeping and submission of safety and other post-marketing information. For example, approved products, manufacturers and manufacturers' facilities are required to comply with extensive FDA requirements, including ensuring that quality control and manufacturing procedures conform to cGMPs. As such, we and our contract manufacturers will be subject to continual review and periodic inspections to assess compliance with cGMPs. Accordingly, we and others with whom we work must continue to expend time, money and effort in all areas of regulatory compliance, including manufacturing, production and quality control. We will also be required to report certain adverse reactions and production problems, if any, to the FDA and to comply with requirements concerning advertising and promotion for our products.

In addition, even if marketing approval of a product candidate is granted, the approval may be subject to limitations on the indicated uses for which the product may be marketed, may be subject to significant conditions of approval or may impose requirements for costly post-marketing testing and surveillance to monitor the safety or efficacy of the product. The FDA may also require a REMS as a condition of approval of our product candidates, which could include requirements for a medication guide, physician communication plans or additional elements to ensure safe use, such as restricted distribution methods, patient registries and other risk minimization tools. The FDA closely regulates the post-approval marketing and promotion of drugs to ensure that drugs are marketed only for the approved indications and in accordance with the provisions of the approved labeling and regulatory requirements. The FDA also imposes stringent restrictions on manufacturers' communications regarding off-label use and if we do not restrict the marketing of our products only to their approved indications, we may be subject to enforcement action for off-label marketing.



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If a regulatory agency discovers previously unknown problems with a product, such as adverse events of unanticipated severity or frequency, or problems with the facility where the product is manufactured, or disagrees with the promotion, marketing or labeling of a product, it may impose restrictions on that product or us. In addition, if any product fails to comply with applicable regulatory requirements, a regulatory agency may:

- issue fines, warning letters, untitled letters or impose holds on clinical trials if any are still on-going;
- mandate modifications to promotional materials or require provision of corrective information to healthcare practitioners;
- impose restrictions on the product or its manufacturers or manufacturing processes;
- impose restrictions on the labeling or marketing of the product;
- impose restrictions on product distribution or use;
- require post-marketing clinical trials;
- require withdrawal of the product from the market;
- refuse to approve pending applications or supplements to approved applications that we submit;
- require recall of the product;
- require entry into a consent decree, which can include imposition of various fines (including restitution or disgorgement of profits or revenue), reimbursements for inspection costs, required due dates for specific actions and penalties for noncompliance;
- suspend or withdraw marketing approvals;
- refuse to permit the import or export of the product;
- seize or detain supplies of the product; or
- issue injunctions or impose civil or criminal penalties.

***If we fail to comply with federal and state healthcare laws, including fraud and abuse and health information privacy and security laws, we could face substantial penalties and our business, results of operations, financial condition and prospects could be adversely affected.***

As a pharmaceutical company, even though we do not provide healthcare services or receive payments directly from or bill directly to Medicare, Medicaid or other third-party payors for our products, certain federal and state healthcare laws and regulations pertaining to fraud and abuse, patients' rights and other healthcare laws and regulations, are applicable to our business. We are subject to healthcare laws and regulations by both the federal government and the states in which we conduct our business. The laws that may affect our ability to operate include:

- the federal Anti-Kickback Statute which prohibits, among other things, any person or entity, from knowingly and willfully soliciting, receiving, offering or paying any remuneration (including any kickback, bribe or rebate), directly or indirectly, overtly or covertly, in cash or in kind, to induce, or in return for either the referral of an individual, or the purchase, lease, furnishing, prescribing, ordering or recommendation of an item, good, facility or service reimbursable by a federally funded healthcare program, such as the Medicare or Medicaid program. This statute has been interpreted to apply to arrangements between pharmaceutical manufacturers on the one hand, and prescribers, purchasers and formulary managers on the other hand. The term "remuneration" has been interpreted broadly and may constrain our marketing practices, educational programs, pricing policies and relationships with healthcare providers or other entities, among other activities;
- the federal civil and criminal false claims laws, including the federal False Claims Act, and false statement laws and civil monetary penalty laws, which prohibit, among other things, individuals or

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entities from knowingly presenting, or causing to be presented, claims for payment or approval from Medicare, Medicaid or other government payors that are false or fraudulent or making any materially false statement in connection with the delivery or payment for healthcare benefits, items or services. Pharmaceutical manufacturers can be held liable under the federal False Claims Act even when they do not submit claims directly to government payors if they are deemed to “cause” the submission of false or fraudulent claims;

- the Health Insurance Portability and Accountability Act of 1996 (HIPAA), which, among other things, imposes criminal liability for executing or attempting to execute a scheme to defraud any healthcare benefit program, including private third-party payors, knowingly and willfully embezzling or stealing from a healthcare benefit program, willfully obstructing a criminal investigation of a healthcare offense, and creates federal criminal laws that prohibit knowingly and willfully falsifying, concealing or covering up a material fact or making any materially false, fictitious or fraudulent statements or representations, or making or using any false writing or document knowing the same to contain any materially false, fictitious or fraudulent statement or entry in connection with the delivery of, or payment for, benefits, items or services;
- HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act of 2009 (HITECH) and their respective implementing regulations, including the final omnibus rule published on January 25, 2013, mandates, among other things, the adoption of uniform standards for the electronic exchange of information in common healthcare transactions, as well as standards relating to the privacy, security, transmission and breach reporting of individually identifiable health information, upon certain health plans, healthcare clearinghouses and healthcare providers and their respective business associates that perform services for them involve individually identifiable health information, which require the adoption of administrative, physical and technical safeguards to protect such information. Among other things, HITECH also created new tiers of civil monetary penalties, amended HIPAA to make civil and criminal penalties directly applicable to business associates, and gave state attorneys general new authority to file civil actions for damages or injunctions in U.S. federal courts to enforce the federal HIPAA laws and seek attorneys’ fees and costs associated with pursuing federal civil actions;
- the federal physician payment transparency requirements, sometimes referred to as the “Physician Payments Sunshine Act,” and its implementing regulations, which imposes annual disclosure requirements to HHS on certain manufacturers of drugs, biologics, devices and medical supplies for which payment is available under Medicare, Medicaid or the Children’s Health Insurance Program (with certain exceptions), of certain payments or other transfers of value made to physicians and teaching hospitals, as well as ownership or investment interests held by physicians and their immediate family members;
- state and foreign law equivalents of each of the above federal laws, such as anti-kickback and false claims laws, which may apply to items or services reimbursed by any third-party payor, including commercial insurers, which may impose similar or more prohibitive restrictions;
- state and foreign laws governing the privacy and security of health information in certain circumstances, many of which differ from each other in significant ways and may not have the same effect, thus complicating compliance efforts;
- state, local and foreign laws that require pharmaceutical companies to comply with the pharmaceutical industry’s voluntary compliance guidelines and the relevant compliance guidance promulgated by the federal government, obtain pharmaceutical agent licensure, and/or otherwise restrict payments that may be made to healthcare providers; state and local laws that require the registration of pharmaceutical sales representatives; and
- state, local and foreign laws that require drug manufacturers to report information related to payments and other transfers of value to other healthcare providers or entities or marketing expenditures.

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Because of the breadth of these laws and the narrowness of the statutory exceptions and safe harbors available, it is possible that some of our business activities could be subject to challenge under one or more of such laws. The scope and enforcement of each of these laws is uncertain and subject to rapid change in the current environment of healthcare reform, especially in light of the lack of applicable precedent and regulations. Federal and state enforcement bodies have recently increased their scrutiny of interactions between healthcare companies and healthcare providers, which has led to a number of investigations, prosecutions, convictions and settlements in the healthcare industry. Additionally, the Patient Protection and Affordable Care Act (as amended by the Health Care and Education Reconciliation Act), enacted in 2010 (ACA), among other things, amended the intent requirement of the federal Anti-Kickback Statute and criminal health care fraud statutes, so that a person or entity no longer needs to have actual knowledge of the statute or specific intent to violate it. In addition, the ACA provides that the government may assert that a claim including items or services resulting from a violation of the federal Anti-Kickback Statute constitute a false or fraudulent claim for purposes of the False Claims Act.

Recently, several pharmaceutical and other healthcare companies have been prosecuted under the federal false claims laws for allegedly inflating drug prices they report to pricing services, which in turn are used by the government to set Medicare and Medicaid reimbursement rates, and for allegedly providing free product to customers with the expectation that the customers would bill federal programs for the product. In addition, certain marketing practices, including off-label promotion, may also violate false claims laws. To the extent that any product we make is sold in a country outside of the United States, we may be subject to similar laws and regulations.

The risks of complying with these laws cannot be entirely eliminated. Any action against us for violation of these laws, even if we successfully defend against it, could cause us to incur significant legal expenses and divert our management's attention from the operation of our business. Moreover, achieving and sustaining compliance with applicable federal and state privacy, security, fraud and transparency laws is time consuming and costly. If our past or present operations, or those of our distributors are found to be in violation of any of the laws described above or any other governmental regulations that apply to us, we may be subject to sanctions, including civil, criminal and administrative penalties, fines, damages, disgorgement, exclusion from participation in U.S. federal or state health care programs, individual imprisonment, additional reporting obligations and oversight if subject to a corporate integrity agreement or other agreement to resolve allegations of non-compliance with these laws, reputational harm, diminished profits and future earnings, and the curtailment or restructuring of our operations, any of which could materially adversely affect our ability to operate our business and our financial results. Similarly, if healthcare providers, distributors or other entities with whom we do business are found to be out of compliance with applicable laws and regulations, they may be subject to sanctions, which could also have a negative impact on us.

***We are subject to various laws protecting the confidentiality of certain patient health information, and our failure to comply could result in penalties and reputational damage.***

Certain countries in which we operate have, or are developing, laws protecting the confidentiality of certain patient health information. EU member states and other jurisdictions have adopted data protection laws and regulations, which impose significant compliance obligations.

For example, the EU Data Protection Directive, as implemented into national laws by the EU member states, imposes strict obligations and restrictions on the ability to collect, analyze and transfer personal data, including health data from clinical trials and adverse event reporting. Data protection authorities from different EU member states may interpret the EU Data Protection Directive and national laws differently, which adds to the complexity of processing personal data in the EU, and guidance on implementation and compliance practices are often updated or otherwise revised. The EU Data Protection Directive prohibits the transfer of personal data to countries outside of the EU member states that are not considered by the European Commission to provide an adequate level of data protection, and transfers of personal data to such countries can only be made in certain circumstances—for example, where the transfer is required by law or the data subject (i.e. the individual to

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whom the personal data relates) has given his or her consent to the transfer. We have policies and practices that we believe make us compliant with applicable privacy regulations. Nevertheless, any failure to comply with the rules arising from the EU Data Protection Directive and related national laws of EU member states, as well as privacy laws in other countries in which we operate, could lead to government enforcement actions and significant sanctions or penalties against us, adversely impact our results of operations and subject us to negative publicity.

The EU Data Protection Regulation, which will replace the current EU Data Protection Directive, was adopted in 2016 and will become enforceable on May 25, 2018. The EU Data Protection Regulation will introduce new data protection requirements in the EU and substantial fines for breaches of the data protection rules, may increase our responsibility and liability in relation to personal data that we process and may require us to put in place additional mechanisms to ensure compliance with the new EU data protection rules.

### ***Healthcare legislative reform measures may have a material adverse effect on our business and results of operations.***

In the United States, there have been and continue to be a number of legislative and regulatory changes, and proposed changes, that could affect the future results of our business and operations. In particular, there have been and continue to be a number of initiatives at the federal and states levels that seek to reduce healthcare costs. For example, in March 2010 the ACA was enacted, which has substantially changed the way health care is financed by both governmental and private insurers, and significantly impacted the U.S. pharmaceutical industry. Among the provisions of the ACA, of greatest importance to the pharmaceutical and biotechnology industry are the following:

- an annual, nondeductible fee on any entity that manufactures or imports certain specified branded prescription drugs and biologic agents apportioned among these entities according to their market share in some government healthcare programs;
- an increase in the statutory minimum rebates a manufacturer must pay under the Medicaid Drug Rebate Program to 23.1% and 13% of the average manufacturer price for most branded and generic drugs, respectively, and capped the total rebate amount for innovator drugs at 100% of the Average Manufacturer Price (AMP);
- a new methodology by which rebates owed by manufacturers under the Medicaid Drug Rebate Program are calculated for certain drugs and biologics that are inhaled, infused, instilled, implanted or injected;
- extension of manufacturers' Medicaid rebate liability to covered drugs dispensed to individuals who are enrolled in Medicaid managed care organizations;
- expansion of eligibility criteria for Medicaid programs by, among other things, allowing states to offer Medicaid coverage to additional individuals and by adding new mandatory eligibility categories for individuals with income at or below 133% of the federal poverty level, thereby potentially increasing manufacturers' Medicaid rebate liability;
- a new Medicare Part D coverage gap discount program, in which manufacturers must agree to offer 50% (and 70% commencing January 1, 2019) point-of-sale discounts off negotiated prices of applicable brand drugs to eligible beneficiaries during their coverage gap period, as a condition for the manufacturer's outpatient drugs to be covered under Medicare Part D;
- expansion of the entities eligible for discounts under the Public Health program;
- a new Patient-Centered Outcomes Research Institute to oversee, identify priorities in, and conduct comparative clinical effectiveness research, along with funding for such research;
- establishment of a Center for Medicare Innovation at CMS to test innovative payment and service delivery models to lower Medicare and Medicaid spending; and

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- implementation of the federal physician payment transparency requirements, sometimes referred to as the “Physician Payments Sunshine Act.”

Some of the provisions of the ACA have yet to be fully implemented, and there have been legal and political challenges to certain aspects of the ACA. Since January 2017, President Trump has signed two executive orders and other directives designed to delay, circumvent, or loosen certain requirements mandated by the ACA. Concurrently, Congress has considered legislation that would repeal or repeal and replace all or part of the ACA. While Congress has not passed comprehensive repeal legislation, two bills affecting the implementation of certain taxes under the ACA have been signed into law. The Tax Cuts and Jobs Act of 2017 includes a provision repealing, effective January 1, 2019, the tax-based shared responsibility payment imposed by the ACA on certain individuals who fail to maintain qualifying health coverage for all or part of a year, that is commonly referred to as the “individual mandate.” Additionally, on January 22, 2018, President Trump signed a continuing resolution on appropriations for fiscal year 2018 that delayed the implementation of certain ACA-mandated fees, including the so-called “Cadillac” tax on certain high cost employer-sponsored insurance plans, the annual fee imposed on certain health insurance providers based on market share, and the medical device excise tax on non-exempt medical devices. Further, the Bipartisan Budget Act of 2018 (BBA), among other things, amends the ACA, effective January 1, 2019, to close the coverage gap in most Medicare drug plans, commonly referred to as the “donut hole”. We continue to evaluate how the ACA and recent efforts to repeal and replace or limit the implementation of the ACA will impact our business.

In addition, other legislative changes have been proposed and adopted in the United States since the ACA was enacted. On August 2, 2011, the Budget Control Act of 2011, among other things, created measures for spending reductions by Congress. A Joint Select Committee on Deficit Reduction, tasked with recommending a targeted deficit reduction of at least \$1.2 trillion for the years 2013 through 2021, was unable to reach required goals, thereby triggering the legislation’s automatic reduction to several government programs. This includes aggregate reductions of Medicare payments to providers of 2 percent per fiscal year. These reductions went into effect on April 1, 2013 and, due to subsequent legislative amendments to the statute, including the BBA, will remain in effect through 2027 unless additional Congressional action is taken. Moreover, in January 2013, President Obama signed into law the American Taxpayer Relief Act of 2012, which, among other things, further reduced Medicare payments to several providers, including hospitals, imaging centers and cancer treatment centers, and increased the statute of limitations period for the government to recover overpayments to providers from three to five years.

Further, there has been heightened governmental scrutiny in the United States of the manner in which manufacturers set prices for their marketed products in light of the rising cost of prescription drugs and biologics. Such scrutiny has resulted in several recent Congressional inquiries and proposed and enacted federal and state legislation designed to, among other things, bring more transparency to drug pricing, review the relationship between pricing and manufacturer patient programs, and reform government program reimbursement methodologies for drug products. At the federal level, the Trump administration’s budget proposal for fiscal year 2019 contains further drug price control measures that could be enacted during the 2019 budget process or in other future legislation, including, for example, measures to permit Medicare Part D plans to negotiate the price of certain drugs under Medicare Part B, to allow some states to negotiate drug prices under Medicaid, and to eliminate cost sharing for generic drugs for low-income patients. While any proposed measures will require authorization through additional legislation to become effective, Congress and the Trump Administration have each indicated that it will continue to seek new legislative and/or administrative measures to control drug costs. At the state level, legislatures have increasingly passed legislation and implemented regulations designed to control pharmaceutical and biological product pricing, including price or patient reimbursement constraints, discounts, restrictions on certain product access and marketing cost disclosure and transparency measures, and, in some cases, designed to encourage importation from other countries and bulk purchasing. These new laws and initiatives may result in additional reductions in Medicare and other healthcare funding, as well as limit the amounts that federal and state governments will pay for healthcare products and services, which could result in reduced demand for our product candidates or additional pricing pressures, all of which could have a material adverse effect on our future customers and accordingly, our financial operations.

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***Our employees, independent contractors, principal investigators, CROs, consultants or vendors may engage in misconduct or other improper activities, including noncompliance with regulatory standards and requirements.***

We are exposed to the risk that our employees, independent contractors, principal investigators, CROs, consultants or vendors may engage in fraudulent or other illegal activity. Misconduct by these parties could include intentional, reckless and/or negligent conduct or disclosure of unauthorized activities to us that violates: FDA regulations, including those laws requiring the reporting of true, complete and accurate information to the FDA; manufacturing standards; federal and state healthcare fraud and abuse laws and regulations; or laws that require the true, complete and accurate reporting of financial information or data. Specifically, sales, marketing and business arrangements in the healthcare industry are subject to extensive laws and regulations intended to prevent fraud, kickbacks, self-dealing and other abusive practices. These laws and regulations may restrict or prohibit a wide range of pricing, discounting, marketing and promotion, sales commission, customer incentive programs and other business arrangements. Activities subject to these laws also involve the improper use or misrepresentation of information obtained in the course of clinical trials or creating fraudulent data in our preclinical studies or clinical trials, which could result in regulatory sanctions and serious harm to our reputation. It is not always possible to identify and deter misconduct by our employees and other third parties, and the precautions we take to detect and prevent this activity may not be effective in controlling unknown or unmanaged risks or losses or in protecting us from governmental investigations or other actions or lawsuits stemming from a failure to be in compliance with such laws or regulations. Additionally, we are subject to the risk that a person could allege such fraud or other misconduct, even if none occurred. If any such actions are instituted against us, and we are not successful in defending ourselves or asserting our rights, those actions could have a significant impact on our business, including the imposition of civil, criminal and administrative penalties, damages, monetary fines, disgorgement, possible exclusion from participation in Medicare, Medicaid and other federal healthcare programs, individual imprisonment, additional reporting obligations and oversight if subject to a corporate integrity agreement or other agreement to resolve allegations of non-compliance with these laws, curtailment of our operations, contractual damages, reputational harm, and diminished potential profits and future earnings, any of which could adversely affect our business, financial condition, results of operations or prospects.

### **Risks Related to Employee Matters and Managing Growth**

***Our future success depends on our ability to retain our Chief Executive Officer and other key executives and to attract, retain and motivate qualified personnel.***

Our industry has experienced a high rate of turnover of management personnel in recent years. We are highly dependent on the development, regulatory, commercialization and business development expertise of Corey N. Fishman, our Chief Executive Officer, and Michael W. Dunne, M.D., our Chief Scientific Officer, as well as the other principal members of our management, scientific and clinical team. Although we have formal employment agreements with our executive officers, these agreements do not prevent them from terminating their employment with us at any time. We do not maintain “key man” insurance with respect to any of our executive officers or key employees.

If we lose one or more of our executive officers or key employees, our ability to implement our business strategy successfully could be seriously harmed. Furthermore, replacing executive officers and key employees may be difficult and may take an extended period of time because of the limited number of individuals in our industry with the breadth of skills and experience required to develop, gain regulatory approval of and commercialize product candidates successfully. Competition to hire from this limited pool is intense, and we may be unable to hire, train, retain or motivate these additional key personnel on acceptable terms given the competition among numerous pharmaceutical and biotechnology companies for similar personnel. We also experience competition for the hiring of scientific and clinical personnel from universities and research institutions. In addition, we rely on consultants and advisors, including scientific and clinical advisors, to assist us in formulating our research and development and commercialization strategy. Our consultants and advisors may be engaged by entities other than us and may have commitments under consulting or advisory contracts with other entities that may limit their availability to us. If we are unable to continue to attract and retain high quality personnel, our ability to develop and commercialize product candidates will be limited.

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### ***We expect to grow our organization, and as a result, we may encounter difficulties in managing our growth, which could disrupt our operations.***

We expect to experience significant growth in the number of our employees and the scope of our operations, particularly in the areas of product clinical manufacturing development, regulatory affairs, sales, marketing and health resources. Our management may need to divert a disproportionate amount of its attention away from our day-to-day activities to devote time to managing these growth activities. To manage these growth activities, we must continue to implement and improve our managerial, operational and financial systems, expand our facilities and continue to recruit and train additional qualified personnel. Due to our limited financial resources and the limited experience of our management team in managing a company with such anticipated growth, we may not be able to effectively manage the expansion of our operations or recruit and train additional qualified personnel. Our inability to effectively manage the expansion of our operations may result in weaknesses in our infrastructure, give rise to operational mistakes, loss of business opportunities, loss of employees and reduced productivity among remaining employees. Our expected growth could require significant capital expenditures and may divert financial resources from other projects, such as the development of additional product candidates. If our management is unable to effectively manage our expected growth, our expenses may increase more than expected, our potential ability to generate revenue could be reduced and we may not be able to implement our business strategy.

### ***If approvals are obtained outside of the United States, we will be subject to additional risks in conducting business in those markets.***

Even if we are able to obtain approval for commercialization of a product candidate in a country outside of the United States, we will be subject to additional risks related to international business operations, including:

- potentially reduced protection for intellectual property rights;
- the potential for so-called parallel importing, which is what happens when a local seller, faced with high or higher local prices, opts to import goods from a market outside of the United States (with low or lower prices) rather than buying them locally;
- unexpected changes in tariffs, trade barriers and regulatory requirements;
- economic weakness, including inflation, or political instability in particular economies and markets;
- workforce uncertainty in countries where labor unrest is more common than in the United States;
- production shortages resulting from any events affecting a product candidate and/or finished drug product supply or manufacturing capabilities abroad;
- business interruptions resulting from geo-political actions, including war and terrorism, or natural disasters, including earthquakes, hurricanes, typhoons, floods and fires; and
- failure to comply with Office of Foreign Asset Control rules and regulations and the Foreign Corrupt Practices Act.

These and other risks may materially adversely affect our ability to attain or sustain revenue from markets outside of the United States.

### ***We may engage in acquisitions that could disrupt our business, cause dilution to our shareholders or reduce our financial resources.***

In the future, we may enter into transactions to acquire other businesses, products or technologies. If we do identify suitable candidates, we may not be able to make such acquisitions on favorable terms, or at all. Any acquisitions we make may not strengthen our competitive position, and these transactions may be viewed negatively by customers or investors. We may decide to incur debt in connection with an acquisition or issue our



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ordinary shares or other equity securities to the shareholders of the acquired company, which would reduce the percentage ownership of our existing shareholders. We could incur losses resulting from undiscovered liabilities of the acquired business that are not covered by the indemnification we may obtain from the seller. In addition, we may not be able to successfully integrate the acquired personnel, technologies and operations into our existing business in an effective, timely and nondisruptive manner. Acquisitions may also divert management attention from day-to-day responsibilities, increase our expenses and reduce our cash available for operations and other uses. We cannot predict the number, timing or size of future acquisitions or the effect that any such transactions might have on our operating results.

### **Risks Related to Taxation**

***We have been a passive foreign investment company for U.S. federal income tax purposes in the past and we could be a passive foreign investment company in the future, which could subject U.S. Holders to adverse U.S. federal income tax consequences.***

We were a passive foreign investment company (PFIC) for U.S. federal income tax purposes for our taxable year ended December 31, 2017. We do not expect to be a PFIC for our current taxable year or in the future; however, our status as a PFIC is determined annually and subject to change. We will be a PFIC in any taxable year if at least (i) 75% of our gross income is “passive income” or (ii) 50% of the average gross value of our assets, determined on a quarterly basis, is attributable to assets that produce, or are held for the production of, passive income. We refer to the passive income test as the “PFIC Income Test” and the asset test as the “PFIC Asset Test.” The proceeds from this offering will be a passive asset under these rules and could cause us to meet the PFIC Asset Test for our taxable year that includes this offering. If we are a PFIC in any taxable year in which you hold shares and you are a “U.S. Holder” (as described in the section of this prospectus titled “Taxation—Material U.S. Federal Income Tax Considerations for U.S. Holders”), we always will be a PFIC with respect to your shares. If we are a PFIC and you are a U.S. Holder and do not make a mark-to-market election (discussed below) with respect to our ordinary shares, you may be subject to adverse tax consequences, including deferred tax and interest charges, with respect to certain distributions on our ordinary shares, any gain realized on a disposition of our ordinary shares and certain other events. The effect of these adverse tax consequences could be materially adverse to you.

If you are a U.S. Holder and make a valid, timely mark-to-market election with respect to our ordinary shares, you will recognize as ordinary income or loss in each year that we meet the PFIC Income Test or PFIC Asset Test an amount equal to the difference between your basis in our ordinary shares and the fair market value of the ordinary shares, thus also possibly giving rise to phantom income and a potential out-of-pocket tax liability. Ordinary loss generally is recognized only to the extent of net mark-to-market gains previously included in income. U.S. Holders should also be aware that the mark-to-market election generally will not be available with respect to any of our subsidiaries that is a PFIC and that gain recognized on the sale of our ordinary shares that is attributable to a subsidiary that is a PFIC may result in such gain being subject to deferred tax and interest charges. See the section of this prospectus titled “Taxation—Material U.S. Federal Income Tax Considerations for U.S. Holders—Passive Foreign Investment Company Consequences” for a discussion of the PFIC and mark-to-market rules.

We do not expect to provide U.S. Holders with the information necessary for a U.S. Holder to make a qualified electing fund, or “QEF election,” under the U.S. federal income tax laws, and prospective investors should assume that a QEF election will not be available.

***If the IRS determines that we are not a PFIC, and you previously paid taxes pursuant to a mark-to-market election, you may have paid more taxes than you legally owed.***

If the U.S. Internal Revenue Service (IRS) makes a determination that we were not a PFIC in a prior taxable year and you previously paid taxes pursuant to a mark-to-market election, then you may have paid more taxes than you legally owed due to such election. If you do not, or are not able to, file a refund claim before the expiration of the applicable statute of limitations, you will not be able to claim a refund for those taxes.

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### ***Changes to U.S. federal income tax laws could have material consequences for us and U.S. Holders of our ordinary shares.***

On December 22, 2017, U.S. President Donald Trump signed into law a bill that enacts comprehensive changes to the U.S. federal income tax system. This law and related future legislation, regulations and rulings could affect the U.S. federal income tax treatment of us and U.S. Holders of our ordinary shares. You should consult your tax advisors regarding such changes and their potential impact related to an investment in our ordinary shares.

### ***A future transfer of your ordinary shares, other than one effected by means of the transfer of book entry interests in DTC, may be subject to Irish stamp duty.***

Transfers of our ordinary shares effected by means of the transfer of book entry interests in the Depository Trust Company (DTC) should not be subject to Irish stamp duty. However, if you hold your ordinary shares directly rather than beneficially through DTC, any transfer of your ordinary shares could be subject to Irish stamp duty (currently at the rate of 1% of the higher of the price paid or the market value of the shares acquired). Payment of Irish stamp duty is generally a legal obligation of the transferee. The potential for stamp duty to arise could adversely affect the price of our ordinary shares. See “Irish Tax Considerations—Stamp Duty” for more information.

### ***Dividends paid by us may be subject to Irish dividend withholding tax.***

As noted elsewhere in this prospectus, we do not expect to pay dividends for the foreseeable future. To the extent that we do make dividend payments (or other returns to shareholders that are treated as “distributions” for Irish tax purposes), it should be noted that, in certain limited circumstances, dividend withholding tax (currently at a rate of 20%) may arise in respect of dividends paid on our ordinary shares. A number of exemptions from dividend withholding tax exist, such that shareholders resident in EU member states (other than Ireland) or other countries with which Ireland has signed a double tax treaty, which would include the United States, should generally be entitled to exemptions from dividend withholding tax provided that the appropriate documentation is in place. See the section titled “Irish Tax Considerations—Withholding Tax on Dividends Paid on Our Ordinary Shares” for more information and, in particular, please note the requirement to complete certain dividend withholding tax forms in order to qualify for many of the exemptions.

### ***Dividends received by Irish residents and certain other shareholders may be subject to Irish income tax.***

As noted elsewhere in this prospectus, we do not expect to pay dividends for the foreseeable future. To the extent that we do make dividend payments (or other returns to shareholders that are treated as “distributions” for Irish tax purposes), it should be noted that shareholders who are entitled to an exemption from Irish dividend withholding tax on dividends received from us will not be subject to Irish income tax in respect of those dividends, unless they have some connection with Ireland other than their shareholding in Iterum (for example, they are resident in Ireland). Shareholders who are not resident nor ordinarily resident in Ireland, but who are not entitled to an exemption from Irish dividend withholding tax, will generally have no further liability to Irish income tax on those dividends which suffer dividend withholding tax. See the section titled “Irish Tax Considerations—Income Tax on Dividends Paid on Our Ordinary Shares.”

### ***Our ordinary shares received by means of a gift or inheritance could be subject to Irish capital acquisitions tax.***

Irish capital acquisitions tax (CAT) could apply to a gift or inheritance of our ordinary shares irrespective of the place of residence, ordinary residence or domicile of the parties. This is because our ordinary shares will be regarded as property situated in Ireland. The person who receives the gift or inheritance has primary liability for CAT. Gifts and inheritances passing between spouses are exempt from CAT. Children have a tax-free threshold of €310,000 in respect of taxable gifts or inheritances received from their parents. See the section titled “Irish Tax Considerations—Capital Acquisitions Tax” for more information.

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### **Risks Related to this Offering and Our Ordinary Shares**

***No active market for our ordinary shares exists or may develop, and you may not be able to resell your ordinary shares at or above the initial public offering price.***

Prior to this offering, there has been no public market for our ordinary shares, and an active public market for our ordinary shares may not develop or be sustained after this offering. We and the representatives of the underwriters have determined the initial public offering price of our ordinary shares by arm's-length negotiations, and the initial public offering price does not necessarily reflect the price at which investors in the market will be willing to buy and sell our ordinary shares following this offering. In addition, an active trading market may not develop following completion of this offering or, if it is developed, may not be sustained. The lack of an active market may impair your ability to sell your ordinary shares at the time you wish to sell them or at a price that you consider reasonable. The lack of an active market may also adversely affect our ability to raise capital by selling securities in the future, or impair our ability to in-license or acquire other product candidates, businesses or technologies using our ordinary shares as consideration.

***The price of our ordinary shares could be subject to volatility related or unrelated to our operations and your investment in us could suffer a decline in value.***

If a market for our ordinary shares develops following this offering, the trading price of our ordinary shares could be subject to wide fluctuations in response to various factors, some of which are beyond our control. These factors include those discussed elsewhere in this "Risk Factors" section of this prospectus and others, such as:

- results from, and any delays in, our current and future clinical trials, in particular our Phase 3 clinical trials related to oral sulopenem and sulopenem;
- announcements of regulatory approval or disapproval of oral sulopenem and sulopenem or future product candidates;
- delays in the commercialization of oral sulopenem and sulopenem or any future product candidates;
- manufacturing and supply issues related to our development programs and commercialization of oral sulopenem and sulopenem or any of our future product candidates;
- quarterly variations in our results of operations or those of our competitors;
- changes in our earnings estimates or recommendations by securities analysts;
- announcements by us or our competitors of new product candidates, significant contracts, commercial relationships, acquisitions or capital commitments;
- announcements relating to future development or license agreements including termination of such agreements;
- adverse developments with respect to our intellectual property rights or those of our principal collaborators;
- commencement of litigation involving us or our competitors;
- changes in our board of directors or management;
- new legislation in the United States relating to the prescription, sale, distribution or pricing of drugs;
- product liability claims, other litigation or public concern about the safety of oral sulopenem or sulopenem or future products;
- market conditions in the healthcare market in general, or in the antibiotics segment in particular, including performance of our competitors; and
- general economic conditions in the United States and abroad.

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In addition, the stock market in general, or the market for equity securities in our industry or industries related to our industry, may experience extreme volatility unrelated to our operating performance. These broad market fluctuations may adversely affect the trading price or liquidity of our ordinary shares. Any sudden decline in the market price of our ordinary shares could trigger securities class-action lawsuits against us. If any of our shareholders were to bring such a lawsuit against us, we could incur substantial costs defending the lawsuit and the time and attention of our management would be diverted from our business and operations. We also could be subject to damages claims if we are found to be at fault in connection with a decline in our share price.

***If securities or industry analysts do not publish research or reports about our company, or if they issue adverse or misleading opinions regarding us or our ordinary shares, our share price and trading volume could decline.***

We do not currently have research coverage by securities and industry analysts, and if no significant coverage is initiated or maintained following this offering, the market price for our ordinary shares may be adversely affected. Our share price also may decline if any analyst who covers us issues an adverse or misleading opinion regarding us, our business model, our intellectual property or our share performance, or if our pivotal safety and efficacy studies and operating results fail to meet analysts' expectations. If one or more analysts cease coverage of us or fail to regularly publish reports on us, we could lose visibility in the financial markets, which could cause our share price or trading volume to decline and possibly adversely affect our ability to engage in future financings.

***Our principal shareholders and management own a significant percentage of our ordinary shares and will be able to exert significant control over matters subject to shareholder approval.***

Upon the completion of this offering, based on shares outstanding as of March 31, 2018, our executive officers, directors, holders of 5% or more of our ordinary shares and their respective affiliates will beneficially own in the aggregate approximately 70.0% of our outstanding ordinary shares, including shares such holders have agreed to purchase in this offering. As a result of their share ownership, these holders may have the ability to influence our management and policies and will be able to significantly affect the outcome of matters requiring shareholder approval such as elections of directors, amendments of our organizational documents or approvals of any merger, sale of assets or other major corporate transaction. This may prevent or discourage unsolicited acquisition proposals or offers for our ordinary shares that our shareholders may feel are in their best interest.

***We will have broad discretion regarding use of the net proceeds from this offering, and we may use them in ways that do not enhance our operating results or the market price of our ordinary shares.***

Our management will have broad discretion regarding the use of the net proceeds from this offering, and we could spend the net proceeds in ways our shareholders may not agree with or that do not yield a favorable return, if any. We intend to use the net proceeds from this offering to initiate, complete enrollment, and produce top-line results relating to our three Phase 3 clinical trials and to make payments under the Pfizer License. We intend to use the remainder of the net proceeds from this offering for working capital and other general corporate purposes. We may also use a portion of the net proceeds to further pursue the establishment of additional sources for the manufacture of sulopenem tablets and IV vials or to acquire or in-license additional product candidates or complementary assets or businesses; however, we currently have no agreements, commitments or understandings to complete any such transaction. Our actual use of these proceeds may differ substantially from our current intentions. If we do not invest or apply the proceeds from this offering in ways that improve our operating results or our prospects, our share price could decline.

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### ***Purchasers in this offering will experience immediate and substantial dilution in the book value of their investment.***

The initial public offering price of our ordinary shares is substantially higher than the pro forma net tangible book value per ordinary share before giving effect to this offering. Accordingly, if you purchase our ordinary shares in this offering, based on the initial public offering price and the issuance of 6,150,000 ordinary shares in this offering, you will incur immediate dilution of approximately \$3.58 per ordinary share, representing the difference between the price per share you pay for our ordinary shares and our pro forma as adjusted net tangible book value per ordinary share as of March 31, 2018. Furthermore, if the underwriters exercise their option to purchase additional shares, if outstanding stock options are exercised, if we issue awards to our employees under our equity incentive plans, or if we otherwise issue additional ordinary shares, you could experience further dilution. See the section titled “Dilution” for additional information.

### ***If we raise additional capital in the future, your level of ownership in us could be diluted or require us to relinquish rights.***

Any issuance of securities we may undertake in the future to raise additional capital could cause the price of our ordinary shares to decline, or require us to issue shares at a price that is lower than that paid by holders of our ordinary shares in the past, which would result in those newly issued shares being dilutive.

Further, if we obtain funds through a debt financing or through the issuance of debt or preference securities, these securities would likely have rights senior to your rights as an ordinary shareholder, which could impair the value of our ordinary shares. Any debt financing we enter into may include covenants that limit our flexibility in conducting our business. We also could be required to seek funds through arrangements with collaborators or others, which might require us to relinquish valuable rights to our intellectual property or product candidates that we would have otherwise retained.

### ***Sales of a substantial number of our ordinary shares in the public market could cause our share price to fall.***

If our existing shareholders sell, or indicate an intention to sell, substantial amounts of our ordinary shares in the public market after the lock-up and other legal restrictions on resale discussed in this prospectus lapse, the trading price of our ordinary shares could decline. Based upon the number of ordinary shares outstanding as of March 31, 2018, upon the completion of this offering, we will have 13,959,423 ordinary shares outstanding, assuming (i) the conversion of all outstanding preference shares into 7,396,313 ordinary shares, which we expect to automatically occur immediately prior to the completion of this offering, (ii) no exercise of the underwriters’ option to purchase 922,500 additional ordinary shares and (iii) no exercise of options or warrants outstanding as of March 31, 2018. Of these outstanding ordinary shares, the 6,150,000 ordinary shares sold in this offering will be freely tradable, except that any ordinary shares acquired by our “affiliates” as that term is defined in Rule 144 promulgated under the Securities Act of 1933, as amended, or the Securities Act, including any ordinary shares acquired by existing holders of our ordinary shares that have indicated an interest in purchasing ordinary shares in this offering, may only be sold if registered under the Securities Act or if such registration is not required, such as in compliance with Rule 144.

The remaining 7,809,423 ordinary shares are subject to lock-up agreements. The lock-up agreements pertaining to this offering will expire 180 days from the date of this prospectus. The representatives of the underwriters, however, may permit our shareholders who are subject to these lock-up agreements to sell their ordinary shares prior to the expiration of the lock-up agreements. After the lock-up agreements expire, these 7,809,423 ordinary shares will be eligible for sale in the public market, 6,751,348 of which shares are held by directors, executive officers and other affiliates (not taking into account any shares that may be purchased in this offering by existing holders of our ordinary shares) and will be subject to volume limitations under Rule 144 under the Securities Act.

In addition, ordinary shares that are issuable upon exercise of outstanding options, or reserved for future issuance under our equity incentive plans or issuable upon exercise of outstanding warrants will become eligible

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for sale in the public market to the extent permitted by the provisions of various vesting schedules, the lock-up agreements and Rule 144 and Rule 701 under the Securities Act. If these additional ordinary shares are sold, or if it is perceived that they will be sold, in the public market, the trading price of our ordinary shares could decline.

After this offering, the holders of 7,809,423 ordinary shares, or 100% of our total outstanding ordinary shares as of March 31, 2018, will be entitled to rights with respect to the registration of their shares under the Securities Act, subject to the lock-up agreements described above. Registration of these shares under the Securities Act would result in the shares becoming freely tradable without restriction under the Securities Act, except for shares purchased by affiliates. Any sales of securities by these shareholders could have an adverse effect on the trading price of our ordinary shares.

### ***Participation in this offering by certain of our existing shareholders would reduce the available public float for our ordinary shares.***

Entities or individuals affiliated with Advent Life Sciences, Arix Bioscience Holdings Ltd., Canaan X, L.P., Frazier Healthcare, New Leaf Ventures III, L.P., Pivotal bioVenture Partners Fund I, L.P., and Sofinnova Venture Partners IX, L.P., which hold more than 5% of our ordinary shares, other existing holders of our ordinary shares and entities affiliated with our directors that had submitted indications of interest have agreed to purchase an aggregate of 3,304,839 of our ordinary shares in this offering. After these holders of our ordinary shares purchase all of these ordinary shares, they, together with our executive officers, directors and their respective affiliates, will beneficially own, in the aggregate, approximately 76.6% of our outstanding ordinary shares after this offering, based on the number of shares outstanding as of April 30, 2018.

If these holders of our ordinary shares were to purchase all or a portion of these ordinary shares, such purchases would reduce the available public float for our ordinary shares because such shareholders would be restricted from selling the shares by a lock-up agreement they have entered into with the underwriters and by restrictions under applicable securities laws. As a result, any purchase of ordinary shares by such shareholders in this offering may reduce the liquidity of our ordinary shares relative to what it would have been had these shares been purchased by investors that were not affiliated with us.

### ***Irish law differs from the laws in effect in the United States and may afford less protection to holders of our securities.***

You may have difficulties enforcing, in actions brought in courts in jurisdictions located outside the United States, judgments obtained in the U.S. courts under the U.S. securities laws. In particular, if you sought to bring proceedings in Ireland based on U.S. securities laws, the Irish court might consider:

- that it did not have jurisdiction;
- that it was not the appropriate forum for such proceedings;
- that, applying Irish conflict of law rules, U.S. law (including U.S. securities laws) did not apply to the relationship between you and us or our directors and officers; or
- that the U.S. securities laws were of a penal nature and violated Irish public policy and should not be enforced by the Irish court.

It may not be possible to enforce court judgments obtained in the United States against us in Ireland based on the civil liability provisions of the U.S. federal or state securities laws. In addition, there is some uncertainty as to whether the courts of Ireland would recognize or enforce judgments of U.S. courts obtained against us or our directors or officers based on the civil liabilities provisions of the U.S. federal or state securities laws. We have been advised that the United States currently does not have a treaty with Ireland providing for the reciprocal recognition and enforcement of judgments in civil and commercial matters. Therefore, a final judgment for the payment of money rendered by any U.S. federal or state court based on civil liability, whether or not based solely on U.S. federal or state securities laws, would not automatically be enforceable in Ireland.

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A judgment obtained against us will be enforced by the courts of Ireland only if the following general requirements are met:

- U.S. courts must have had jurisdiction in relation to the particular defendant according to Irish conflict of law rules (the submission to jurisdiction by the defendant would satisfy this rule); and
- the judgment must be final and conclusive and the decree must be final and unalterable in the court which pronounces it.

A judgment can be final and conclusive even if it is subject to appeal or even if an appeal is pending. But where the effect of lodging an appeal under the applicable law is to stay execution of the judgment, it is possible that in the meantime the judgment may not be actionable in Ireland. It remains to be determined whether final judgment given in default of appearance is final and conclusive. Irish courts may also refuse to enforce a judgment of the U.S. courts which meets the above requirements for one of the following reasons:

- the judgment is not for a definite sum of money;
- the judgment was obtained by fraud;
- the enforcement of the judgment in Ireland would be contrary to natural or constitutional justice;
- the judgment is contrary to Irish public policy or involves certain U.S. laws which will not be enforced in Ireland; or
- jurisdiction cannot be obtained by the Irish courts over the judgment debtors in the enforcement proceedings by personal service in Ireland or outside Ireland under Order 11 of the Irish Superior Courts Rules.

As an Irish company, we are governed by the Irish Companies Act 2014 (the Irish Companies Act), which differs in some material respects from laws generally applicable to U.S. corporations and shareholders, including, among others, differences relating to interested director and officer transactions and shareholder lawsuits. Likewise, the duties of directors and officers of an Irish company generally are owed to the company only. Shareholders of Irish companies generally do not have a personal right of action against directors or officers of the company and may exercise such rights of action on behalf of the company only in limited circumstances. Accordingly, holders of our securities may have more difficulty protecting their interests than would holders of securities of a corporation incorporated in a jurisdiction of the United States.

You should also be aware that Irish law does not allow for any form of legal proceedings directly equivalent to the class action available in the United States. For further information with respect to your rights as a holder of our ordinary shares, see “Description of Share Capital.”

***As a newly public company, we will incur significant additional costs, and our management will be required to devote substantial time and attention to our public reporting obligations.***

As a publicly-traded company, we will incur significant additional legal, accounting and other expenses compared to historical levels. In addition, new and changing laws, regulations and standards relating to corporate governance and public disclosure, including the Dodd-Frank Wall Street Reform and Consumer Protection Act and the rules and regulations promulgated and to be promulgated thereunder, as well as under the Sarbanes-Oxley Act of 2002 (the Sarbanes-Oxley Act), the JOBS Act and the rules and regulations of the U.S. Securities and Exchange Commission (the SEC), and the Nasdaq Global Market, have created uncertainty for public companies and increased our costs and time that our board of directors and management must devote to complying with these rules and regulations. We expect these rules and regulations to increase our legal and financial compliance costs substantially and lead to diversion of management time and attention from revenue-generating activities.



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***We are an “emerging growth company,” and the reduced disclosure requirements applicable to “emerging growth companies” may make our ordinary shares less attractive to investors.***

We are an “emerging growth company” as defined in the JOBS Act, and, therefore, we may take advantage of reduced disclosure and regulatory requirements that are otherwise generally applicable to public companies, including presenting only two years of audited financial statements and related financial disclosure, not being required to have our internal control over financial reporting audited by our independent registered public accounting firm pursuant to Section 404 of the Sarbanes-Oxley Act, reduced disclosure obligations regarding executive compensation in our periodic reports and proxy statements, and exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and any golden parachute payments. We may take advantage of these reduced disclosure and regulatory requirements until we are no longer an “emerging growth company.” We may remain an “emerging growth company” until as late as December 31, 2023 (the fiscal year-end following the fifth anniversary of the completion of this initial public offering), although we may cease to be an “emerging growth company” earlier under certain circumstances, including if the market value of our ordinary shares that is held by non-affiliates exceeds \$700 million as of any December 31, in which case we would cease to be an “emerging growth company” as of the following December 31, or if our gross revenue exceeds \$1.07 billion in any fiscal year. In addition, the JOBS Act provides that an emerging growth company can delay adopting new or revised accounting standards until those standards apply to private companies. We have irrevocably elected not to avail ourselves of this delayed adoption of new or revised accounting standards and, therefore, we are subject to the same new or revised accounting standards as public companies that are not emerging growth companies.

The exact implications of the JOBS Act are still subject to interpretations and guidance by the SEC and other regulatory agencies, and we may not be able to take advantage of all of the benefits of the JOBS Act. In addition, investors may find our ordinary shares less attractive if we rely on the exemptions and relief granted by the JOBS Act. If some investors find our ordinary shares less attractive as a result, there may be a less active trading market for our ordinary shares and our share price may decline or become more volatile.

***If we fail to maintain an effective system of disclosure controls and internal control over financial reporting, our ability to produce timely and accurate financial statements or comply with applicable regulations could be impaired.***

As a public company, we will be subject to the reporting requirements of the Exchange Act, the Sarbanes-Oxley Act, and the rules and regulations of the applicable listing standards of the Nasdaq Global Market. We expect that the requirements of these rules and regulations will continue to increase our legal, accounting and financial compliance costs, make some activities more difficult, time-consuming and costly and place significant strain on our personnel, systems and resources. The Sarbanes-Oxley Act requires, among other things, that we maintain effective disclosure controls and procedures and internal control over financial reporting. We are continuing to develop and refine our disclosure controls and other procedures that are designed to ensure that information required to be disclosed by us in the reports that we will file with the SEC is recorded, processed, summarized and reported within the time periods specified in SEC rules and forms and that information required to be disclosed in reports under the Exchange Act is accumulated and communicated to our principal executive and financial officers. We are also continuing to improve our internal control over financial reporting. In order to develop, maintain and improve the effectiveness of our disclosure controls and procedures and internal control over financial reporting, we have expended, and anticipate that we will continue to expend, significant resources, including accounting-related costs and significant management oversight.

Our current controls and any new controls that we develop may become inadequate because of changes in conditions in our business. Further, weaknesses in our disclosure controls and internal control over financial reporting may be discovered in the future. Any failure to develop or maintain effective controls or any difficulties encountered in their implementation or improvement could harm our results of operations or cause us to fail to meet our reporting obligations and may result in a restatement of our consolidated financial statements for prior

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periods. Any failure to implement and maintain effective internal control over financial reporting could also adversely affect the results of periodic management evaluations and annual independent registered public accounting firm attestation reports regarding the effectiveness of our internal control over financial reporting that we will eventually be required to include in our periodic reports that will be filed with the SEC. Ineffective disclosure controls and procedures and internal control over financial reporting could also cause investors to lose confidence in our reported financial and other information, which would likely have a negative effect on the trading price of our ordinary shares. In addition, if we are unable to continue to meet these requirements, we may not be able to remain listed on the Nasdaq Global Market. We are not currently required to comply with the SEC rules that implement Section 404 of the Sarbanes-Oxley Act and are therefore not required to make a formal assessment of the effectiveness of our internal control over financial reporting for that purpose. As a public company, we will be required to provide an annual management report on the effectiveness of our internal control over financial reporting commencing with our second annual report on Form 10-K.

Any failure to maintain effective disclosure controls and internal control over financial reporting could have a material and adverse effect on our business, results of operations and financial condition and could cause a decline in the trading price of our ordinary shares.

***We have never paid cash dividends, do not anticipate paying any cash dividends and our ability to pay dividends, or repurchase or redeem our ordinary shares, is limited by law.***

We have never declared or paid cash dividends on our ordinary shares and do not anticipate paying any dividends on our ordinary shares in the foreseeable future. Any determination to pay dividends in the future will be at the sole discretion of our board of directors after considering our financial condition, results of operations, capital requirements, contractual restrictions, general business conditions and other factors our board of directors deems relevant, and subject to compliance with applicable laws, including the Irish Companies Act which requires Irish companies to have distributable reserves available for distribution equal to or greater than the amount of the proposed dividend. Distributable reserves are the accumulated realized profits of the company that have not previously been utilized in a distribution or capitalization less accumulated realized losses that have not previously been written off in a reduction or reorganization of capital. Unless the company creates sufficient distributable reserves from its business activities, the creation of such distributable reserves would involve a reduction of the company's share premium account, which would require the approval of (i) 75% of our shareholders present and voting at a shareholder meeting, and (ii) the Irish High Court. In the event that we do not undertake a reduction of capital to create distributable reserves, no distributions by way of dividends, share repurchases or otherwise will be permitted under Irish law until such time as the company has created sufficient distributable reserves from its business activities. In addition, our ability to pay cash dividends is currently prohibited by the terms of our credit facility with SVB.

Accordingly, the only opportunity to achieve a return on your investment in our company is expected to be if the market price of our ordinary shares appreciates and you sell your ordinary shares at a profit. The price of our ordinary shares prevailing in the market after this offering may not exceed the price that you pay.

***Anti-takeover provisions in our Articles and under Irish law could make an acquisition of us more difficult, limit attempts by our shareholders to replace or remove our current directors and management team, and limit the market price of our ordinary shares.***

Our Articles will contain provisions that may delay or prevent a change of control, discourage bids at a premium over the market price of our ordinary shares, and adversely affect the market price of our ordinary shares and the voting and other rights of the holders of our ordinary shares. These provisions will include:

- dividing our board of directors into three classes, with each class serving a staggered three-year term;
- permitting our board of directors to adopt a shareholder rights plan upon such terms and conditions as it deems expedient and in our best interests;

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- permitting our board of directors to issue additional preference shares, with such rights, preferences and privileges as they may designate;
- establishing an advance notice procedure for shareholder proposals to be brought before an annual meeting, including proposed nominations of persons for election to our board of directors; and
- imposing particular approval and other requirements in relation to certain business combinations.

These provisions would apply even if the offer may be considered beneficial by some shareholders. In addition, these provisions may frustrate or prevent any attempts by our shareholders to replace or remove our current management team by making it more difficult for shareholders to replace members of our board of directors, which is responsible for appointing the members of our management.

***Irish law differs from the laws in effect in the United States with respect to defending unwanted takeover proposals and may give our board of directors less ability to control negotiations with hostile offerors.***

Following the authorization for trading of our ordinary shares on Nasdaq, we became subject to the Irish Takeover Panel Act, 1997, Irish Takeover Rules 2013 (Irish Takeover Rules). Under the Irish Takeover Rules, our board of directors is not permitted to take any action that might frustrate an offer for our ordinary shares once our board of directors has received an approach that may lead to an offer or has reason to believe that such an offer is or may be imminent, subject to certain exceptions. Potentially frustrating actions such as (i) the issue of shares, options, restricted share units or convertible securities, (ii) material acquisitions or disposals, (iii) entering into contracts other than in the ordinary course of business or (iv) any action, other than seeking alternative offers, which may result in frustration of an offer, are prohibited during the course of an offer or at any earlier time during which our board of directors has reason to believe an offer is or may be imminent. These provisions may give our board of directors less ability to control negotiations with hostile offerors than would be the case for a corporation incorporated in a jurisdiction of the United States.

***The operation of the Irish Takeover Rules may affect the ability of certain parties to acquire our ordinary shares.***

Under the Irish Takeover Rules, if an acquisition of ordinary shares were to increase the aggregate holding of the acquirer and its concert parties to ordinary shares that represent 30% or more of the voting rights of the company, the acquirer and, in certain circumstances, its concert parties would be required (except with the consent of the Irish Takeover Panel) to make an offer for the outstanding ordinary shares at a price not less than the highest price paid for the ordinary shares by the acquirer or its concert parties during the previous 12 months. This requirement would also be triggered by an acquisition of ordinary shares by a person holding (together with its concert parties) ordinary shares that represent between 30% and 50% of the voting rights in the company if the effect of such acquisition were to increase that person's percentage of the voting rights by 0.05% within a 12 month period. Following the authorization for trading of our ordinary shares on Nasdaq, under the Irish Takeover Rules, certain separate concert parties are presumed to be acting in concert. Our board of directors and their relevant family members, related trusts and "controlled companies" are presumed to be acting in concert with any corporate shareholder who holds 20% or more of our shares. The application of these presumptions may result in restrictions upon the ability of any of the concert parties and/or members of our board of directors to acquire more of our securities, including under the terms of any executive incentive arrangements. Following the listing of our ordinary shares on Nasdaq, we may consult with the Irish Takeover Panel with respect to the application of this presumption and the restrictions on the ability to acquire further securities, although we are unable to provide any assurance as to whether the Irish Takeover Panel will overrule this presumption. For a description of certain takeover provisions applicable to us, see the section titled "Description of Share Capital—Irish Takeover Rules and Substantial Acquisition Rules." Accordingly, the application of the Irish Takeover Rules may restrict the ability of certain of our shareholders and directors to acquire our ordinary shares.

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*As an Irish public limited company, certain capital structure decisions require shareholder approval, which may limit our flexibility to manage our capital structure.*

Under Irish law, our authorized share capital can be increased by an ordinary resolution of our shareholders and the directors may issue new ordinary or preferred shares up to a maximum amount equal to the authorized but unissued share capital, without shareholder approval, once authorized to do so by our Articles of Association or by an ordinary resolution of our shareholders. Additionally, subject to specified exceptions, Irish law grants statutory preemption rights to existing shareholders where shares are being issued for cash consideration but allows shareholders to disapply such statutory preemption rights either in our Articles of Association or by way of special resolution. Such disapplication can either be generally applicable or be in respect of a particular allotment of shares. Accordingly, our Articles of Association adopted on closing of this offering will contain, as permitted by Irish company law, provisions authorizing the board to issue new shares, and to disapply statutory preemption rights. The authorization of the directors to issue shares and the disapplication of statutory preemption rights must both be renewed by the shareholders at least every five years, and we cannot provide any assurance that these authorizations will always be approved, which could limit our ability to issue equity and thereby adversely affect the holders of our securities.

## **SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS AND INDUSTRY DATA**

This prospectus contains forward-looking statements that involve risks and uncertainties. All statements other than statements of historical facts contained in this prospectus are forward-looking statements. In some cases, you can identify forward-looking statements by words such as “anticipate,” “believe,” “contemplate,” “continue,” “could,” “estimate,” “expect,” “intend,” “may,” “plan,” “potential,” “predict,” “project,” “seek,” “should,” “target,” “will,” “would,” or the negative of these words or other comparable terminology. These forward-looking statements include, but are not limited to, statements about:

- our use of the net proceeds from this offering;
- the initiation, timing, progress and results of our preclinical studies and clinical trials, and our research and development programs;
- our ability to retain the continued service of our key professionals and to identify, hire and retain additional qualified professionals;
- our ability to advance product candidates into, and successfully complete, clinical trials;
- the timing or likelihood of regulatory filings and approvals;
- the commercialization of our product candidates, if approved;
- our ability to draw down our second term loan with Silicon Valley Bank;
- our manufacturing plans;
- market acceptance of any product we successfully commercialize;
- the pricing, coverage and reimbursement of our product candidates, if approved;
- the implementation of our business model, strategic plans for our business and product candidates;
- the scope of protection we are able to establish and maintain for intellectual property rights covering our product candidates;
- our ability to enter into strategic arrangements and/or collaborations and the potential benefits of such arrangements;
- our estimates regarding expenses, capital requirements and needs for additional financing;
- our financial performance; and
- developments relating to our competitors and our industry.

These forward-looking statements are subject to a number of risks, uncertainties and assumptions, including those described in “Risk Factors” and elsewhere in this prospectus. Moreover, we operate in a very competitive and rapidly changing environment, and new risks emerge from time to time. It is not possible for our management to predict all risks, nor can we assess the impact of all factors on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements we may make. In light of these risks, uncertainties and assumptions, the forward-looking events and circumstances discussed in this prospectus may not occur and actual results could differ materially and adversely from those anticipated or implied in the forward-looking statements.

You should not rely upon forward-looking statements as predictions of future events. Although we believe that the expectations reflected in the forward-looking statements are reasonable, we cannot guarantee that the future results, levels of activity, performance or events and circumstances reflected in the forward-looking statements will be achieved or occur. We undertake no obligation to update publicly any forward-looking statements for any reason after the date of this prospectus to conform these statements to new information, actual results or to changes in our expectations, except as required by law.

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You should read this prospectus and the documents that we reference in this prospectus and have filed with the SEC as exhibits to the registration statement of which this prospectus is a part with the understanding that our actual future results, levels of activity, performance, and events and circumstances may be materially different from what we expect.

This prospectus also contains industry, market and competitive position data from our own internal estimates and research as well as industry and general publications and research surveys and studies conducted by third parties. Industry publications, studies, and surveys generally state that they have been obtained from sources believed to be reliable, although they do not guarantee the accuracy or completeness of such information. Our internal data and estimates are based upon information obtained from trade and business organizations and other contacts in the markets in which we operate and our management's understanding of industry conditions. While we believe that each of these studies and publications is reliable, we have not independently verified market and industry data from third-party sources. While we believe our internal company research is reliable and the market definitions are appropriate, neither such research nor these definitions have been verified by any independent source. The industry in which we operate is subject to a high degree of uncertainty and risks due to various factors, including those described in the section titled "Risk Factors."

In addition, statements that "we believe" and similar statements reflect our beliefs and opinions on the relevant subject. These statements are based upon information available to us as of the date of this prospectus, and while we believe such information forms a reasonable basis for such statements, such information may be limited or incomplete, and our statements should not be read to indicate that we have conducted an exhaustive inquiry into, or review of, all potentially available relevant information. These statements are inherently uncertain and investors are cautioned not to unduly rely upon these statements.

## USE OF PROCEEDS

We estimate that the net proceeds from the sale of 6,150,000 ordinary shares in this offering will be approximately \$71.8 million, based on the initial public offering price of \$13.00 per share, after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us. If the underwriters exercise their over-allotment option to purchase additional ordinary shares from us, we estimate that our net proceeds will be approximately \$82.9 million, after deducting underwriting discounts and commissions and estimated offering expenses payable by us.

We estimate that we will use the net proceeds from this offering, together with our cash, cash equivalents, short-term investments and available borrowing under our credit facility, as follows:

- approximately \$65.0 million to fund our Phase 3 clinical trials of oral sulopenem and sulopenem in three indications;
- approximately \$15.0 million for milestone payments to Pfizer Inc. payable upon commencement of Phase 3 clinical development for oral sulopenem and sulopenem pursuant to the exclusive license agreement we have entered into with Pfizer; and
- the balance for working capital and other general corporate purposes, including regulatory, manufacturing, clinical supply and related costs.

We believe the anticipated net proceeds from this offering, together with our existing cash, cash equivalents, short-term investments and available borrowing under our credit facility, will enable us to complete our three planned Phase 3 clinical trials. However, we expect that we will require additional capital to submit our applications to regulatory agencies and to commercialize oral sulopenem and sulopenem, if we receive regulatory approval.

The expected use of proceeds from this offering represent our intentions based upon our current plans and business conditions. The amounts and timing of our actual expenditures may vary significantly depending on numerous factors and any unforeseen cash needs. As a result, management will retain broad discretion over the allocation of the net proceeds from this offering.

Pending the use of the proceeds from this offering, we intend to invest the net proceeds in interest-bearing, investment-grade securities, certificates of deposit or government securities.



## **DIVIDEND POLICY**

We have never declared or paid dividends on our ordinary shares. We currently intend to retain all available funds and any future earnings to support operations and to finance the growth and development of our business. In addition, our ability to pay dividends is currently restricted by the terms of our credit facility with Silicon Valley Bank. We do not intend to declare or pay cash dividends on our ordinary shares in the foreseeable future. Any future determination to pay dividends will be made at the discretion of our board of directors subject to applicable laws (including the Irish Companies Act, which requires, inter alia, Irish companies to have profits available for distribution equal to or greater than the amount of the proposed dividend), and will depend upon, among other factors, our results of operations, financial condition, contractual restrictions and capital requirements. Our future ability to pay cash dividends on our shares may be limited by the terms of any future debt or preferred securities.

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### CAPITALIZATION

The following table sets forth our cash, cash equivalents, restricted cash and short-term investments and capitalization as of March 31, 2018:

- on an actual basis;
- on a pro forma basis, to reflect: (1) the conversion of all outstanding preferred shares into 7,396,313 of our ordinary shares immediately prior to the closing of this offering, (2) the drawdown of \$15.0 million under our credit facility with Silicon Valley Bank in April 2018, and (3) the filing and effectiveness of our amended and restated constitution in connection with the closing of this offering; and
- on a pro forma as adjusted basis, to further reflect the sale by us of 6,150,000 ordinary shares in this offering at the initial public offering price of \$13.00 per share, after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us.

You should read the information in this table together with our consolidated financial statements and related notes included elsewhere in this prospectus and the sections titled “Selected Consolidated Financial and Other Data” and “Management’s Discussion and Analysis of Financial Condition and Results of Operations.”

	As of March 31, 2018		
	Actual	Pro Forma	Pro Forma As Adjusted
	(in thousands, except share and per share data)		
Cash, cash equivalents, restricted cash and short-term investments	\$ 59,754	\$ 74,754	\$ 146,508
Credit facility	—	15,000	15,000
Convertible preferred shares, \$0.01 par value; 7,833,956 shares authorized, 7,396,313 shares issued and outstanding, actual; no shares authorized, issued or outstanding, pro forma and pro forma as adjusted	74	—	—
Shareholders’ equity:			
Preferred shares, \$0.01 par value; no shares authorized, issued or outstanding, actual; 100,000,000 shares authorized and no shares issued or outstanding, pro forma and pro forma as adjusted	—	—	—
Ordinary shares, \$0.01 par value; 44,557,606 shares authorized, 413,110 shares issued and outstanding, actual; 50,000,000 shares authorized, 7,809,423 shares issued and outstanding, pro forma; 50,000,000 shares authorized, 13,959,423 shares issued and outstanding, pro forma as adjusted	4	78	140
Additional paid-in capital	126,535	126,535	198,227
Accumulated deficit	(66,883)	(66,883)	(66,883)
Total shareholders’ equity	59,656	59,730	131,484
Total capitalization	59,730	74,730	146,484

The number of ordinary shares to be outstanding after this offering is based on 7,809,423 ordinary shares outstanding as of March 31, 2018 and excludes:

- 248,128 ordinary shares issuable upon the exercise of outstanding stock options as of March 31, 2018, with a weighted-average exercise price of \$3.31 per share;
- 194,901 ordinary shares reserved for future issuance under our 2015 Equity Incentive Plan as of March 31, 2018; all shares reserved for future issuance and not subject to an outstanding stock option ceased to be available for issuance at the time our 2018 Equity Incentive Plan became effective in connection with this offering;

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- 1,018,459 ordinary shares reserved for future issuance under our 2018 Equity Incentive Plan, as well as any increases in the number of ordinary shares reserved for future issuance under this plan, which became effective upon the execution of the underwriting agreement for this offering. Of the 1,018,459 ordinary shares reserved for future issuance under our 2018 Equity Incentive Plan, upon the execution of the underwriting agreement for this offering, options to purchase 417,867 ordinary shares were granted to our employees and 59,406 additional options and/or restricted stock units were granted to our non-employee directors; and
- 19,890 ordinary shares issuable upon exercise of outstanding warrants issued subsequent to March 31, 2018 at a price of \$18.85 per share.

## DILUTION

If you invest in our ordinary shares in this offering, your interest will be diluted to the extent of the difference between the initial public offering price per ordinary share and the pro forma as adjusted net tangible book value per ordinary share after the closing of the offering.

Our pro forma net tangible book value as of March 31, 2018 was \$59.7 million, or \$7.65 per share. Pro forma net tangible book value per share is determined by subtracting our total liabilities from the total book value of our tangible assets and dividing the difference by the number of ordinary shares deemed to be outstanding at that date, after giving effect to (i) the conversion of all outstanding preferred shares into an aggregate of 7,396,313 ordinary shares immediately prior to the closing of this offering; and (ii) the drawdown of \$15.0 million under our credit facility with Silicon Valley Bank in April 2018.

After giving effect to the sale of 6,150,000 ordinary shares in this offering at the initial public offering price of \$13.00 per share, after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us, our pro forma as adjusted net tangible book value as of March 31, 2018, would have been \$131.5 million, or \$9.42 per share. This represents an immediate increase in pro forma as adjusted net tangible book value of \$1.77 per share to our existing shareholders and immediate dilution of \$3.58 per share to investors purchasing ordinary shares in this offering.

The following table illustrates this dilution on a per share basis to investors purchasing shares in this offering:

Initial public offering price per share	\$13.00
Pro forma net tangible book value per share as of March 31, 2018	\$7.65
Increase in pro forma net tangible book value per share attributable to investors purchasing shares in this offering	<u>1.77</u>
Pro forma as adjusted net tangible book value per share after this offering	<u>9.42</u>
Dilution in net tangible book value per share to investors purchasing shares in this offering	<u>\$ 3.58</u>

The following table summarizes, as of March 31, 2018, on the pro forma as adjusted basis described above:

- the total number of ordinary shares purchased from us by our existing shareholders and by investors purchasing shares in this offering;
- the total consideration paid to us by our existing shareholders and by investors purchasing shares in this offering, at the initial public offering price of \$13.00 per share, before deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us; and
- the average price per share paid by existing shareholders and by investors purchasing shares in this offering.

	Shares Purchased		Total Consideration		Average Price Per Share
	Number	Percent	Amount	Percent	
Existing shareholders	7,809,423	55.9%	\$ 125,738,633	61.1%	\$ 16.10
Investors participating in this offering	6,150,000	44.1	79,950,000	38.9	\$ 13.00
Total	<u>13,959,423</u>	<u>100.0%</u>	<u>\$205,688,633</u>	<u>100.0%</u>	<u>\$14.73</u>

The tables and calculations above are based on 7,809,423 ordinary shares outstanding as of March 31, 2018, and exclude:

- 248,128 ordinary shares issuable upon the exercise of outstanding stock options as of March 31, 2018, with a weighted-average exercise price of \$3.31 per share;

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- 194,901 ordinary shares reserved for future issuance under our 2015 Equity Incentive Plan as of March 31, 2018; all shares reserved for future issuance and not subject to an outstanding stock option ceased to be available for issuance at the time our 2018 Equity Incentive Plan became effective in connection with this offering;
- 1,018,459 ordinary shares reserved for future issuance under our 2018 Equity Incentive Plan, as well as any increases in the number of ordinary shares reserved for future issuance under this plan, which became effective upon the execution of the underwriting agreement for this offering. Of the 1,018,459 ordinary shares reserved for future issuance under our 2018 Equity Incentive Plan, upon the execution of the underwriting agreement for this offering, options to purchase 417,867 ordinary shares were granted to our employees and 59,406 additional options and/or restricted stock units were granted to our non employee directors; and
- 19,890 ordinary shares issuable upon exercise of outstanding warrants issued subsequent to March 31, 2018 at a price of \$18.85 per share.

To the extent any outstanding options are exercised, new options are issued under our equity incentive plans, or we issue additional ordinary shares in the future, there will be further dilution to investors participating in this offering. If all outstanding options as of March 31, 2018 and warrants issued subsequent to March 31, 2018 were exercised, then our existing shareholders, including the holders of these options and warrants, would own 56.8%, excluding any shares purchased by them in this offering, and investors participating in this offering would own 43.2% of the total number of ordinary shares outstanding upon the closing of this offering.

## SELECTED CONSOLIDATED FINANCIAL DATA

You should read the selected consolidated financial data below in conjunction with “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and the consolidated financial statements, related notes, and other financial information included elsewhere in this prospectus. The selected consolidated financial and other data in this section are not intended to replace the consolidated financial statements and are qualified in their entirety by the consolidated financial statements and related notes included elsewhere in this prospectus.

The following selected consolidated statements of operations data for the years ended December 31, 2016 and 2017 and selected consolidated balance sheet data as of December 31, 2017 have been derived from our audited consolidated financial statements included elsewhere in this prospectus. The consolidated statements of operations data for the three months ended March 31, 2017 and 2018 and the consolidated balance sheet data as of March 31, 2018 are derived from our unaudited interim consolidated financial statements included elsewhere in this prospectus. Our unaudited interim consolidated financial statements were prepared on a basis consistent with our audited consolidated financial statements and include, in our opinion, all adjustments, consisting only of normal recurring adjustments, that we consider necessary for a fair presentation of the financial information set forth in those statements included elsewhere in this prospectus. Our historical results are not necessarily indicative of the results that may be expected in any future period, and the results for the three months ended March 31, 2018 are not necessarily indicative of the results to be expected for the full year or any other period.

	Year Ended December 31,		Three Months Ended March 31,	
	2016	2017	2017	2018
	(unaudited)			
	(in thousands, except share and per share data)			
<b>Consolidated Statements of Operations Data:</b>				
Revenue	\$ —	\$ 508	\$ —	\$ 191
Operating expenses:				
Research and development	(10,101)	(25,499)	(4,534)	(10,879)
General and administrative	(3,258)	(4,464)	(1,008)	(1,515)
Total operating expenses	(13,359)	(29,963)	(5,542)	(12,394)
Operating loss	(13,359)	(29,455)	(5,542)	(12,203)
Interest income, net	—	277	—	85
Other income/(expense), net	8	216	(68)	61
Total other income	8	493	(68)	146
Loss before income taxes	(13,351)	(28,962)	(5,610)	(12,057)
Income tax expense	(113)	(444)	(227)	(89)
Net loss and comprehensive loss	(13,464)	(29,406)	(5,837)	(12,146)
Net loss attributable to ordinary shareholders	\$(13,464)	\$ (29,406)	\$ (5,837)	\$ (12,146)
Net loss per share attributable to ordinary shareholders, basic and diluted <sup>(1)</sup>	\$(568.87)	\$ (170.84)	\$(103.68)	\$ (61.36)
Weighted average ordinary shares outstanding, basic and diluted	23,668	172,130	56,301	197,949
Pro forma net loss per share attributable to ordinary shareholders (unaudited)		\$ (5.02)		\$ (1.60)
Pro forma weighted average ordinary shares outstanding, basic and diluted (unaudited) <sup>(2)</sup>		5,858,793		7,594,262

(1) Net loss per share, basic and diluted is the same due to our net loss.

(2) Assumes automatic conversion of all shares of convertible preferred shares into ordinary shares at a 1:1 conversion rate.

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	<u>As of December 31,</u>		<u>As of March 31,</u>
	<u>2016</u>	<u>2017</u>	<u>2018</u>
	<u>(in thousands)</u>		
<b>Consolidated Balance Sheet Data:</b>			
Cash, cash equivalents, restricted cash and short-term investments	\$24,809	\$39,216	\$ 59,754
Working capital <sup>(1)</sup>	21,643	37,047	57,062
Total assets	26,917	46,757	68,131
Total liabilities	4,219	7,206	8,401
Convertible preferred shares	30	57	74
Total shareholders' equity	22,668	39,494	59,656

(1) Working capital is equal to current assets minus current liabilities.

## Recent Developments

In April 2018, we entered into a secured credit facility with Silicon Valley Bank and made an initial drawdown of \$15 million.



## MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

*You should read the following discussion and analysis of our financial condition and results of operations together with the section titled "Selected Consolidated Financial Data" and our consolidated financial statements and the related notes appearing at the end of this prospectus. Some of the information contained in this discussion and analysis or set forth elsewhere in this prospectus, including information with respect to our plans and strategy for our business and related financing, includes forward-looking statements that involve risks and uncertainties. As a result of many factors, including those factors set forth in the "Risk Factors" section of this prospectus, our actual results could differ materially from the results described in or implied by these forward-looking statements.*

### Overview

We are a pharmaceutical company dedicated to developing and commercializing sulopenem to be potentially the first and only oral and intravenous (IV) branded penem available globally. Penems, including thiopenems and carbapenems, belong to a class of antibiotics more broadly defined as  $\beta$ -lactam antibiotics, the original example of which was penicillin, but which now also includes cephalosporins. Sulopenem is a potent, thiopenem antibiotic delivered intravenously which is active against bacteria that belong to the group of organisms known as gram-negatives and cause urinary tract and intra-abdominal infections. We have successfully developed sulopenem in an oral tablet formulation, sulopenem etzadroxil-probenecid, which we refer to herein as oral sulopenem. Both sulopenem products have the potential to be important new treatment alternatives to address growing concerns related to antibacterial resistance without the known toxicities of some of the most widely used antibiotics, specifically fluoroquinolones. We see two distinct opportunities for our sulopenem program: patients at elevated risk for treatment failure in the community setting suffering from uncomplicated urinary tract infections (uUTI) and hospitalized patients suffering from complicated, resistant infections. Therefore, we plan to initiate a Phase 3 clinical program in the second half of 2018 for the treatment of adults in three indications: uUTI, complicated urinary tract infections (cUTI) and complicated intra-abdominal infections (cIAI). We designed one Phase 3 clinical trial in each indication based on our end of Phase 2 meeting with the U.S. Food and Drug Administration (FDA) and feedback from the European Medicines Agency (EMA). We intend to conduct the Phase 3 clinical trials under Special Protocol Assessment (SPA) agreements from the FDA. We expect to complete enrollment and produce topline data for all three clinical trials in the second half of 2019, and submit our new drug applications (NDAs) to the FDA by the end of 2019.

Since our inception in June 2015, we have devoted substantially all of our resources to organizing and staffing our company, business planning, raising capital, establishing a supply chain, planning for commercialization, and conducting research and development activities for our sulopenem program. We do not have any products approved for sale and have not generated any revenue from product sales. In June 2017, we were granted a sub-award of up to \$1.5 million from the Trustees of Boston University under the Combating Antibiotic Resistant Bacteria Biopharmaceutical Accelerator (CARB-X) program (the CARB-X Award). The CARB-X Award supports preclinical and clinical trials in support of our potential regulatory filings for oral sulopenem and sulopenem, along with chemistry, manufacturing and controls optimization and development of our commercial bilayer tablet. We have funded our operations to date primarily with proceeds from the sale of preferred shares and ordinary shares and payments received under the funding arrangement with CARB-X. Through March 31, 2018, we had received gross cash proceeds of \$119.6 million from sales of our preferred shares and ordinary shares. In April 2018, we entered into a secured credit facility with Silicon Valley Bank (SVB) and made an initial drawdown of \$15.0 million.

In November 2015, we acquired an exclusive, worldwide license under certain patents and know-how to develop and commercialize sulopenem and its oral prodrug, sulopenem etzadroxil, from Pfizer Inc. (Pfizer). We have developed an oral formulation, sulopenem etzadroxil-probenecid combined in a single bilayer tablet. We

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refer to sulopenem delivered intravenously as sulopenem and, together with oral sulopenem, as our sulopenem program. Under an exclusive license agreement with Pfizer (the Pfizer License), we paid Pfizer a one-time nonrefundable upfront fee of \$5.0 million and are obligated to pay Pfizer potential future clinical and regulatory milestone payments, as well as sales milestones upon achievement of net sales ranging from \$250.0 million to \$1.0 billion for each product type (sulopenem etzadroxil and other prodrugs, and sulopenem and other non-prodrugs). We are obligated to pay Pfizer royalties ranging from a single-digit to mid-teens percentage based on marginal net sales of each licensed product. Pfizer also received 381,922 Series A preferred shares as additional payment for the licensed rights. In addition, if we sublicense or assign our rights to licensed products to a third party, and we receive in connection with such transaction a threshold amount of at least a low nine figure dollar amount over a specified period of time, we will be obligated to pay Pfizer an additional one-time payment of a low eight figure dollar amount.

Since our inception, we have incurred significant operating losses. Our ability to generate product revenue sufficient to achieve profitability will depend heavily on the successful development and eventual commercialization of oral sulopenem and sulopenem. Our net losses for 2016 and 2017 were \$13.5 million and \$29.4 million, respectively. Our net losses for the three months ended March 31, 2017 and 2018 were \$5.8 million and \$12.1 million, respectively. As of March 31, 2018, we had an accumulated deficit of \$66.9 million. We expect to continue to incur significant expenses for at least the next two years as we advance our sulopenem program through Phase 3 clinical trials, seek regulatory approval and engage in market preparation activities. In addition, if we obtain marketing approval for oral sulopenem and sulopenem, we expect to incur significant commercialization expenses related to product manufacturing, marketing, sales and distribution. Furthermore, we may incur expenses in connection with the establishment of additional sources for the manufacture of sulopenem tablets and IV vials or the in-license or acquisition of additional product candidates. Additionally, upon the closing of this offering, we expect to incur additional costs associated with operating as a public company, including significant legal, accounting, investor relations and other expenses that we did not incur as a private company.

As a result, we will require additional capital to fund our operations, continue to develop our sulopenem program and to execute our strategy. Until such time as we can obtain marketing approval for oral sulopenem, sulopenem or any future product candidate and generate significant revenue from product sales, if ever, we expect to finance our operations through public or private equity offerings, debt financings, collaboration agreements, other third-party funding, strategic alliances, licensing arrangements, marketing and distribution arrangements or government funding. We may be unable to raise additional funds or enter into such other agreements or arrangements when needed on favorable terms, or at all. If we fail to raise capital or enter into such agreements as, and when, needed, we may have to significantly delay, scale back, discontinue the development and commercialization of our sulopenem program, or otherwise change our strategy.

Because of the numerous risks and uncertainties associated with product development, we are unable to predict the timing or amount of increased expenses or when or if we will be able to achieve or maintain profitability. Even if we are able to generate product sales, we may not become profitable. If we fail to become profitable or are unable to sustain profitability on a continuing basis, then we may be unable to continue our operations at planned levels and be forced to reduce or terminate our operations.

As of March 31, 2018, we had cash, cash equivalents, restricted cash and short-term investments of \$59.8 million. In April 2018, we entered into a secured credit facility with SVB and made an initial drawdown of \$15.0 million. We believe that the anticipated net proceeds from this offering, together with our existing cash, cash equivalents, restricted cash short-term investments and available borrowings under our credit facility, will enable us to fund our operating expenses and capital expenditure requirements through the fourth quarter of 2019. We have based these estimates on assumptions that may prove to be wrong, and we could exhaust our available capital resources sooner than we expect. See the section titled “—Liquidity and Capital Resources.”

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### **Components of Our Results of Operations**

#### ***Revenue***

To date, we have not generated any revenue from product sales and do not expect to generate any revenue from the sale of oral sulopenem or sulopenem in the near future. If our development efforts for our sulopenem program are successful and result in regulatory approval and/or license agreements with third parties, we may generate revenue in the future from product sales. To date, all of our revenue has been derived from our CARB-X Award. We expect that our revenue for the next few years will be derived primarily from payments under the CARB-X Award or government awards that we may enter into in the future. In June 2017, CARB-X awarded us funds of up to \$1.5 million to advance the development of our sulopenem program. We receive funding from CARB-X as we incur qualifying expenses. During the year ended December 31, 2017, we recognized \$0.5 million of revenue under this award. During the three months ended March 31, 2018, we recognized \$0.2 million under this award.

#### ***Operating Expenses***

##### ***Research and Development Expenses***

Research and development expenses consist primarily of costs incurred in connection with the development of our sulopenem program, which include:

- expenses incurred under agreements with contract research organizations (CROs), contract manufacturing organizations (CMOs), as well as investigative sites and consultants that conduct our clinical trials, preclinical studies and other scientific development services;
- manufacturing scale-up expenses and the cost of acquiring and manufacturing preclinical and clinical trial materials and commercial materials, including manufacturing validation batches;
- employee-related expenses, including salaries, related benefits, travel and share-based compensation expense for employees engaged in research and development functions;
- costs related to compliance with regulatory requirements;
- facilities costs, depreciation and other expenses, which include rent and utilities; and
- payments made in cash, equity securities or other forms of consideration under third-party licensing agreements.

We expense research and development costs as incurred. Advance payments we make for goods or services to be received in the future for use in research and development activities are recorded as prepaid expenses. We recognize external development costs based on an evaluation of the progress to completion of specific tasks using information provided to us by our service providers.

Research and development activities are central to our business model. Product candidates in advanced stages of clinical development generally have higher development costs than those in earlier stages of clinical development, primarily due to the increased size and duration of later stage clinical trials. As a result, we expect that our research and development expenses will increase substantially over the next two years as we increase personnel costs, including share-based compensation, commence Phase 3 clinical trials for our sulopenem program, conduct other clinical trials and prepare regulatory filings for oral sulopenem and sulopenem. We also expect to incur additional expenses related to milestone and royalty payments payable to Pfizer with whom we have entered into the Pfizer License to acquire the rights to oral sulopenem and sulopenem.

The successful development and commercialization of oral sulopenem and sulopenem is highly uncertain. At this time, we cannot reasonably estimate or know the nature, timing and costs of the efforts that will be necessary to complete the clinical development of our sulopenem program or when, if ever, material net cash

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inflows may commence from any of our product candidates. This uncertainty is due to the numerous risks and uncertainties associated with product development and commercialization, including the uncertainty of:

- the scope, progress, outcome and costs of our clinical trials and other research and development activities;
- successful patient enrollment in, and the initiation and completion of, clinical trials;
- the timing, receipt and terms of any marketing approvals from applicable regulatory authorities;
- establishing commercial manufacturing capabilities or making arrangements with third-party manufacturers;
- development and timely delivery of commercial drug formulations that can be used in our clinical trials and for commercial launch;
- obtaining, maintaining, defending and enforcing patent claims and other intellectual property rights;
- significant and changing government regulation;
- launching commercial sales of our product candidates, if and when approved, whether alone or in collaboration with others; and
- maintaining a continued acceptable safety profile of the product candidates following approval.

We may never succeed in achieving regulatory approval for any of our product candidates. We may obtain unexpected results from our clinical trials. We may elect to discontinue, delay or modify clinical trials of some product candidates or focus on others. Any changes in the outcome of any of these variables with respect to the development of our product candidates in clinical development could mean a significant change in the costs and timing associated with the development of these product candidates. For example, if we experience significant delays in enrollment in any of our planned clinical trials, or are required to add additional patients to a study to remain consistent with our original trial design assumptions, we could be required to expend significant additional financial resources and time on the completion of clinical development of that product candidate.

### *General and Administrative Expenses*

General and administrative expenses consist primarily of salaries, related benefits, travel and share-based compensation expense for personnel in executive, finance and administrative functions. General and administrative expenses also include director compensation and travel expenses and professional fees for legal, patent, consulting, accounting and audit services.

We anticipate that our general and administrative expenses will increase in the future as we increase our headcount to support our continued development of our sulopenem program. We also anticipate that we will incur increased accounting, audit, legal, regulatory, compliance, director compensation, director and officer insurance costs as well as investor and public relations expenses associated with being a public company. We anticipate the additional costs for these services will increase our general and administrative expenses by approximately \$1.5 million to \$2.0 million on an annual basis. Additionally, if and when we believe regulatory approval of oral sulopenem and sulopenem appears likely, we anticipate an increase in payroll and expenses as a result of our preparation for commercial operations.

### ***Other Income (Expense)***

#### *Interest Income, Net*

Interest income consists of interest earned and any unrealized gains or losses on our cash equivalents and short-term investments, which are invested in money market accounts. Our interest income has not been significant due to low interest earned on those balances.

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### *Foreign Exchange Gain (Loss)*

We realize foreign currency gains (losses) in the normal course of business based on movement in the applicable exchange rates. These gains (losses) have been insignificant to date and are included as a component of other income (expense).

### *Provision for Income Taxes*

We recognize income taxes under the asset and liability method. Deferred income taxes are recognized for differences between the financial reporting and tax bases of assets and liabilities at enacted statutory tax rates in effect for the years in which the differences are expected to reverse. The effect on deferred taxes of a change in tax rates is recognized in income in the period that includes the enactment date. In evaluating our ability to recover our deferred tax assets, we consider all available positive and negative evidence including past operating results, the existence of cumulative income in the most recent fiscal years, changes in the business in which we operate and our forecast of future taxable income. In determining future taxable income, we are responsible for assumptions utilized including the amount of Irish, U.S. and other foreign pre-tax operating income, the reversal of temporary differences and the implementation of feasible and prudent tax planning strategies. These assumptions require significant judgment about the forecasts of future taxable income and are consistent with the plans and estimates that we are using to manage the underlying business.

We account for uncertain tax positions using a more-likely-than-not threshold for recognizing and resolving uncertain tax positions. The evaluation of uncertain tax positions is based on factors including, but not limited to, changes in tax law, the measurement of tax positions taken or expected to be taken in tax returns, the effective settlement of matters subject to audit, new audit activity and changes in facts or circumstances related to a tax position. We evaluate our tax position on a quarterly basis. We also accrue for potential interest and penalties related to unrecognized tax benefits in income tax expense.

### **Critical Accounting Policies and Significant Judgments and Estimates**

Our consolidated financial statements are prepared in accordance with generally accepted accounting principles in the United States. The preparation of our consolidated financial statements and related disclosures requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, revenue, costs and expenses, and the disclosure of contingent assets and liabilities in our financial statements. We base our estimates on historical experience, known trends and events and various other factors that we believe are reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. We evaluate our estimates and assumptions on an ongoing basis. Our actual results may differ from these estimates under different assumptions or conditions.

While our significant accounting policies are described in more detail in Note 2 to our consolidated financial statements appearing at the end of this prospectus, we believe that the following accounting policies are those most critical to the judgments and estimates used in the preparation of our consolidated financial statements.

### *Accrued Research and Development Expenses*

As part of the process of preparing our consolidated financial statements, we are required to estimate our accrued research and development expenses. This process involves reviewing open contracts and purchase orders, communicating with our personnel to identify services that have been performed on our behalf and estimating the level of service performed and the associated cost incurred for the service when we have not yet been invoiced or otherwise notified of actual costs. The majority of our service providers invoice us in arrears for services performed, on a pre-determined schedule or when contractual milestones are met; however, some require advanced payments. We make estimates of our accrued expenses as of each balance sheet date in the

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consolidated financial statements based on facts and circumstances known to us at that time. We periodically confirm the accuracy of these estimates with the service providers and make adjustments if necessary. Examples of estimated accrued research and development expenses include fees paid to:

- vendors, including central laboratories, in connection with preclinical development activities;
- CROs and investigative sites in connection with preclinical and clinical studies; and
- CMOs in connection with drug substance and drug product formulation of preclinical and clinical trial materials.

We base our expenses related to preclinical studies and clinical trials on our estimates of the services received and efforts expended pursuant to quotes and contracts with multiple research institutions and CROs that conduct and manage preclinical studies and clinical trials on our behalf. The financial terms of these agreements are subject to negotiation, vary from contract to contract and may result in uneven payment flows. There may be instances in which payments made to our vendors will exceed the level of services provided and result in a prepayment of the expense. Payments under some of these contracts depend on factors such as the successful enrollment of patients and the completion of clinical trial milestones. In accruing service fees, we estimate the time period over which services will be performed and the level of effort to be expended in each period. If the actual timing of the performance of services or the level of effort varies from the estimate, we adjust the accrual or the amount of prepaid expenses accordingly. Although we do not expect our estimates to be materially different from amounts actually incurred, our understanding of the status and timing of services performed relative to the actual status and timing of services performed may vary and may result in reporting amounts that are too high or too low in any particular period. To date, there have not been any material adjustments to our prior estimates of accrued research and development expenses.

### ***Share-Based Compensation***

We measure share options and other share-based awards granted to employees and directors based on the fair value on the date of the grant and recognize the corresponding compensation expense of those awards over the requisite service period, which is generally the vesting period of the respective award. We have only issued share awards with service-based vesting conditions and record the expense for these awards using the straight-line method.

For share-based awards granted to consultants and non-employees, we recognize compensation expense over the period during which services are rendered by such consultants and non-employees until completed. At the end of each financial reporting period prior to completion of the service, the fair value of these awards is remeasured using the then-current fair value of our ordinary shares and updated assumption inputs in the Black-Scholes option-pricing model.

We estimate the fair value of each share option grant using the Black-Scholes option-pricing model, which uses as inputs the fair value of our ordinary shares and assumptions we make for the volatility of our ordinary shares, the expected term of our share options, the risk-free interest rate for a period that approximates the expected term of our share options and our expected dividend yield.

### ***Determination of the Fair Value of Ordinary Shares***

As there has been no public market for our ordinary shares to date, the estimated fair value of our ordinary shares has been determined by our board of directors as of the date of each option grant, with input from management, considering our most recently available third-party valuation of our ordinary shares as well as our board of directors' assessment of additional objective and subjective factors that it believed were relevant and which may have changed from the date of the most recent third-party valuation through the date of the grant. Our

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board of directors considered various objective and subjective factors to determine the fair value of our ordinary shares as of each grant date, including:

- the prices at which we sold preferred shares and the superior rights and preferences of the preferred shares relative to our ordinary shares at the time of each grant;
- the progress of our research and development programs, including the status of preclinical studies and clinical trials for our product candidates;
- our stage of development and commercialization and our business strategy;
- external market conditions affecting the pharmaceutical industry and trends within the pharmaceutical industry;
- our financial position, including cash on hand, and our historical and forecasted performance and operating results;
- the lack of an active public market for our ordinary shares and our preferred shares;
- the likelihood of achieving a liquidity event, such as an initial public offering, or IPO, or a sale of our company in light of prevailing market conditions; and
- the analysis of IPOs and the market performance of similar companies in the pharmaceutical and biotechnology industries.

Our third-party valuations of ordinary shares were prepared using the option-pricing method (OPM), which used an income and market approach to estimate our enterprise value. The OPM treats ordinary shares and preferred shares as call options on the total equity value of a company, with exercise prices based on the value thresholds at which the allocation among the various holders of a company's securities changes. Under this method, the ordinary shares have value only if the funds available for distribution to shareholders exceeded the value of the preferred share liquidation preferences at the time of the liquidity event, such as a strategic sale or a merger. Discounts for lack of control and marketability of the ordinary shares were applied directly or were inherent in the methodologies employed to arrive at an indication of the value for the ordinary shares.

The assumptions underlying these valuations represent management's best estimates, which involve inherent uncertainties and the application of management judgment. As a result, if factors or expected outcomes change and we use significantly different assumptions or estimates, our share-based compensation expense could be materially different.

Following the closing of this offering, the fair value of our ordinary shares will be determined based on the quoted market price of our ordinary shares.

### *Grants of Share-based awards*

The following table sets forth by grant date the number of ordinary shares subject to awards granted between November 18, 2015 and March 31, 2018, the per share exercise price of the options and the per share estimated fair value of the options utilized to calculate share-based compensation expense:

<b>Date of Grant</b>	<b>Type of Award</b>	<b>Number of shares underlying awards granted</b>	<b>Exercise price per share</b>	<b>Fair value per share on grant date</b>
3/8/2016	Option	19,096	\$3.14	\$1.80
5/25/2016	Option	6,365	3.14	1.80
8/15/2016	Option	9,547	3.14	1.80
12/7/2016	Option	14,322	3.14	1.80
3/24/2017	Option	14,320	3.30	1.88
6/6/2017	Option	3,182	3.30	1.88
9/12/2017	Option	170,794	3.30	1.88
12/5/2017	Option	10,502	4.40	2.50

The Board awarded 417,867 stock options to employees and 59,406 additional stock options and/or restricted stock units to our non-employee directors on March 14, 2018 under the 2018 Plan. These options and/or restricted stock units were granted and priced upon execution of the underwriting agreement related to this offering.



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### Results of Operations

#### Comparison of the Years Ended December 31, 2016 and 2017

The following table summarizes our operating losses for the years ended December 31, 2016 and 2017:

	Year Ended December 31,		
	2016	2017	Change
	(in thousands)		
Revenue	\$ —	\$ 508	\$ 508
Operating expenses:			
Research and development	\$ 10,101	\$ 25,499	\$ 15,398
General and administrative	3,258	4,464	1,206
Total operating expenses	<u>\$ 13,359</u>	<u>\$ 29,963</u>	<u>\$ 16,604</u>
Operating loss	(13,359)	(29,455)	(16,096)

#### Revenue

In June 2017, CARB-X awarded us funds of up to \$1.5 million to advance the development of our sulopenem program. We receive funding from CARB-X as we incur qualifying expenses. During the year ended December 31, 2017, we recognized \$0.5 million of revenue under this award.

#### Research and Development Expenses

	Year Ended December 31,		
	2016	2017	Change
	(in thousands)		
Chemistry, manufacturing and control (CMC) related expenses	\$ 4,030	\$ 15,237	\$ 11,207
CRO and other preclinical and clinical trial related expenses	2,894	4,665	1,771
Personnel related (including share-based compensation)	1,717	3,527	1,810
Consulting fees	1,460	2,070	610
Total research and development expenses	<u>\$ 10,101</u>	<u>\$ 25,499</u>	<u>\$ 15,398</u>

The increase in CMC related expenses of \$11.2 million was primarily due to formulation development, manufacturing process, and manufacturing of clinical trial material in anticipation of our Phase 3 clinical trials in the second half of 2018. CRO and other preclinical and clinical trial related expenses increased by \$1.8 million due to increased Phase 1 and Phase 4 clinical trial activity. Personnel related costs increased by \$1.8 million as a result of an increase in headcount in our CMC, clinical development and regulatory functions. Personnel related costs for the years ended December 31, 2016 and 2017 included share-based compensation expense of \$0.1 million and \$0.1 million, respectively. The increase in consulting fees of \$0.6 million was primarily due to the increase in consultants used for preclinical and clinical trial activity.

#### General and Administrative Expenses

	Year Ended December 31,		
	2016	2017	Change
	(in thousands)		
Personnel related (including share-based compensation)	\$ 2,003	\$ 2,463	\$ 460
Professional and consultant fees	903	929	26
Facility related and other	352	1,072	720
Total general and administrative expenses	<u>\$ 3,258</u>	<u>\$ 4,464</u>	<u>\$ 1,206</u>

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The increase in facility related and other costs of \$0.7 million was primarily due to the lease of office space in Dublin that we entered into at the end of 2016, software costs, director compensation and travel expenses, and general support costs for the increase in headcount. Personnel-related costs increased by \$0.5 million as a result of an increase in headcount in our general and administrative function. Personnel related costs for the years ended December 31, 2016 and 2017 included share-based compensation expense of \$0.2 million and \$0.3 million, respectively.

### *Comparison of the Three Months Ended March 31, 2017 and 2018*

The following table summarizes our operating losses for the three months ended March 31, 2017 and 2018:

	Three Months Ended March 31,		Change
	2017	2018	
	(in thousands)		
Revenue	\$ —	\$ 191	\$ 191
Operating expenses:			
Research and development	\$ 4,534	\$ 10,879	\$ 6,345
General and administrative	1,008	1,515	507
Total operating expenses	<u>\$ 5,542</u>	<u>\$ 12,394</u>	<u>\$ 6,852</u>
Operating loss	(5,542)	(12,203)	(6,661)

#### *Revenue*

In June 2017, CARB-X awarded us funds of up to \$1.5 million to advance the development of our sulopenem program. We receive funding from CARB-X as we incur qualifying expenses. During the three months ended March 31, 2018, we recognized \$0.2 million of revenue under this award.

#### *Research and Development Expenses*

	Three Months Ended March 31,		Change
	2017	2018	
	(in thousands)		
Chemistry, manufacturing and control (CMC) related expenses	\$ 1,479	\$ 6,670	\$ 5,191
CRO and other preclinical and clinical trial related expenses	1,956	2,002	46
Personnel related (including share-based compensation)	649	1,971	1,322
Consulting fees	450	236	(214)
Total research and development expenses	<u>\$ 4,534</u>	<u>\$ 10,879</u>	<u>\$ 6,345</u>

The increase in CMC related expenses of \$5.2 million was primarily due to formulation development, manufacturing process, and manufacturing of clinical trial material in anticipation of our Phase 3 clinical trials in the second half of 2018. CRO and other preclinical and clinical trial related expenses remained flat period over period at approximately \$2.0 million. Personnel related costs increased by \$1.3 million as a result of an increase in headcount in our CMC, clinical development and regulatory functions. Personnel related costs for the three months ended March 31, 2017 and 2018 included share-based compensation expense of \$0.0 million and \$0.1 million, respectively. The decrease in consulting fees of \$0.2 million was primarily due to the increase in headcount.

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### *General and Administrative Expenses*

	Three Months Ended March 31,		Change
	2017	2018	
	(in thousands)		
Personnel related (including share-based compensation)	\$ 551	\$ 906	\$ 355
Professional and consultant fees	177	299	122
Facility related and other	280	310	30
Total general and administrative expenses	<u>\$ 1,008</u>	<u>\$ 1,515</u>	<u>\$ 507</u>

Personnel-related costs increased by \$0.4 million as a result of an increase in headcount in our general and administrative function. Personnel related costs for the three months ended March 31, 2017 and 2018 included share-based compensation expense of \$0.1 million and \$0.1 million, respectively. Professional and consultant fees increased by \$0.1 million due to pre-commercialization activities. Facility related and other costs remained flat period over period at approximately \$0.3 million.

### **Liquidity and Capital Resources**

Since our inception, we have incurred significant operating losses and negative cash flows from our operations. We have generated limited revenue to date from a funding arrangement with CARB-X. We have funded our operations to date primarily with proceeds from the sale of preferred shares and ordinary shares and payments received under the funding arrangement with CARB-X. Through March 31, 2018, we had received gross cash proceeds of \$119.6 million from sales of our Series A and Series B preferred shares and ordinary shares. As of March 31, 2018, we had cash, cash equivalents, restricted cash and short-term investments of \$59.8 million.

#### ***Secured credit facility***

On April 27, 2018, our subsidiaries, Iterum Therapeutics International Limited, Iterum Therapeutics US Holding Limited and Iterum Therapeutics US Limited (Borrowers) entered into a loan and security agreement with SVB pursuant to which SVB agreed to lend the Borrowers up to \$30.0 million in two term loans. \$15.0 million of the secured credit facility was available on closing and the other \$15.0 million is available at our option upon the satisfaction of certain draw requirements: (i) the achievement of both primary endpoints from our Phase 3 uUTI trial and reporting satisfactory safety data; or (ii) the achievement of non-inferiority primary endpoints from both our Phase 3 uUTI and cUTI trials as well as reporting satisfactory safety data. A non-utilization fee of 1.5% of the aggregate undrawn principal amount shall apply if we satisfy the second draw requirements but choose not to draw down the second term loan. The principal borrowed under the secured credit facility bears interest at a floating per annum rate equal to the greater of (i) 8.31%; or (ii) 3.89% above The Wall Street Journal prime rate, which interest is payable monthly in arrears.

The initial draw will require monthly amortization payments commencing November 1, 2019, which will be extended to April 1, 2020 if the second draw is made. All outstanding principal, plus a 4.2% final interest payment, will be due and payable on March 1, 2022 (Maturity Date).

The secured credit facility draws are subject to prepayment fees in the event of prepayment at any time prior to the Maturity Date.

In connection with the initial \$15.0 million draw, we issued to SVB and Life Sciences Fund II LLC (LSF) warrants to purchase 19,890 Series B-2 preferred shares at an exercise price of \$18.85 per share. If we draw down the second term loan, each of SVB and LSF will be entitled, pursuant to additional share warrants issued to

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each of them at closing, to purchase such number of additional ordinary shares in an aggregate amount equal to 2.5% of the funded amount, divided by the applicable exercise price. Obligations under the secured credit facility are secured by substantially all of our existing and future assets and the existing and future assets of our subsidiaries, including intellectual property.

### **Cash Flows**

The following table summarizes our cash flows for each of the periods presented:

	Year Ended December 31,		Three Months Ended March 31,	
	2016	2017	2017	2018
	(unaudited)			
	(in thousands)			
Net cash used in operating activities	\$(11,298)	\$(30,604)	\$(5,435)	\$(11,640)
Net cash (used in)/provided by investing activities	—	(31,587)	(518)	9,357
Net cash provided by financing activities	20,851	45,867	—	32,176
Net increase (decrease) in cash	\$ 9,553	\$(16,324)	\$(5,953)	\$ 29,893

### *Operating Activities*

During the three months ended March 31, 2017, operating activities used \$5.4 million of cash, resulting from our net loss of \$5.8 million, partially offset by net cash provided by changes in our operating assets and liabilities of \$0.3 million and non-cash charges of \$0.1 million. Net cash provided by changes in our operating assets and liabilities for the three months ended March 31, 2017 consisted primarily of increases in accrued expenses related to clinical trial expenses and clinical trial supply costs, partially offset by an increase in prepaid expenses and other assets primarily related to advance payments to contract manufacturing organizations and a reduction in accounts payable.

During the three months ended March 31, 2018, operating activities used \$11.6 million of cash, resulting from our net loss of \$12.1 million, partially offset by net cash provided by changes in our operating assets and liabilities of \$0.3 million and non-cash charges of \$0.2 million. Net cash provided by changes in our operating assets and liabilities for the three months ended March 31, 2018 consisted primarily of increases in accrued expenses and accounts payable primarily due to increases in clinical trial expenses and clinical trial supply costs, partially offset by increases in prepaid expenses and other assets primarily related to professional fees associated with the initial public offering.

During the year ended December 31, 2016, operating activities used \$11.3 million of cash, resulting from our net loss of \$13.5 million, partially offset by non-cash charges of \$0.4 million and net cash provided by changes in our operating assets and liabilities of \$1.8 million. Net cash provided by changes in our operating assets and liabilities for the year ended December 31, 2016 consisted primarily of increases in accrued expenses and accounts payable primarily due to increases in clinical trial supply and costs, partially offset by increases in prepaid expenses and other assets primarily related to advance payments to contract manufacturing organizations.

During the year ended December 31, 2017, operating activities used \$30.6 million of cash, resulting from our net loss of \$29.4 million and net cash used in changes in our operating assets and liabilities of \$1.6 million, partially offset by non-cash charges of \$0.4 million. Net cash used in changes in our operating assets and liabilities for the year ended December 31, 2017 consisted of increases in prepaid expenses and other assets primarily related to advance payments to contract manufacturing organizations, partially offset by increases in accrued expenses and accounts payable primarily due to increases in clinical trial supply and costs.

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### *Investing Activities*

During the three months ended March 31, 2017, net cash used in investing activities of \$0.5 million was primarily related to fixed asset purchases.

During the three months ended March 31, 2018, net cash provided by investing activities of \$9.4 million was primarily related to sales of short-term investments of \$15.8 million, partially offset by purchases of short-term investments of \$6.4 million.

We did not use any cash for investing activities during the year ended December 31, 2016. During the year ended December 31, 2017, net cash used in investing activities of \$31.6 million was primarily related to purchases of short-term investments of \$53.3 million and fixed asset purchases of \$0.8 million, partially offset by sales of short-term investments of \$22.5 million.

### *Financing Activities*

During the three months ended March 31, 2018, net cash provided by financing activities was \$32.2 million and consisted of net cash proceeds from the issuance of Series B-2 preferred shares in February 2018.

During the year ended December 31, 2016, net cash provided by financing activities was \$20.9 million, and consisted of gross cash proceeds from the issuance of Series A preferred shares in December 2016.

During the year ended December 31, 2017, net cash provided by financing activities was \$45.9 million, and consisted of gross cash proceeds from the issuance of Series B-1 preferred shares in May 2017.

### *Funding Requirements*

We expect our expenses to increase substantially in connection with our ongoing activities, particularly as we advance the clinical trials of oral sulopenem and sulopenem. In addition, upon the closing of this offering, we expect to incur additional costs associated with operating as a public company. Our expenses will also increase if and as we:

- conduct additional clinical trials for oral sulopenem and sulopenem, which include our planned Phase 1 clinical trials, which we expect will occur in 2018 and 2019, and our three planned pivotal Phase 3 clinical trials, which we plan to initiate in the second half of 2018;
- initiate other studies as part of our sulopenem program, some of which may be required for regulatory approval of our product candidates;
- establish a sales, marketing and distribution infrastructure to commercialize oral sulopenem and sulopenem in the United States if we obtain marketing approval from the FDA;
- establish manufacturing and supply chain capacity sufficient to provide commercial quantities of oral sulopenem and sulopenem, if we obtain marketing approval;
- pursue the development of our sulopenem program in additional indications;
- maintain, expand, defend and protect our intellectual property portfolio;
- hire additional clinical, scientific and commercial personnel;
- add operational, financial and management information systems and personnel, including personnel to support our product development and planned future commercialization efforts, as well as to support our transition to a public reporting company; and
- acquire or in-license other product candidates or technologies.

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We believe that the anticipated net proceeds from this offering, together with our existing cash, cash equivalents, restricted cash, short-term investments and available borrowings under our credit facility, will enable us to fund our operating expenses and capital expenditure requirements through the fourth quarter of 2019. We have based these estimates on assumptions that may prove to be wrong, and we could utilize our available capital resources sooner than we expect. We expect that we will require additional capital to file with regulatory agencies and commercialize oral sulopenem and sulopenem, if we receive regulatory approval, and to pursue in-licenses or acquisitions of other product candidates. If we receive regulatory approval for oral sulopenem or sulopenem, we expect to incur significant commercialization expenses related to product manufacturing, sales, marketing and distribution, depending on where we choose to commercialize.

Because of the numerous risks and uncertainties associated with research, development and commercialization of pharmaceutical product candidates, we are unable to estimate the exact amount of our working capital requirements. Our future funding requirements, both short-term and long-term will depend on many factors, including:

- the timing and costs of our planned clinical trials of oral sulopenem and sulopenem;
- the initiation, progress, timing, costs and results of preclinical studies and clinical trials of other potential product candidates and of our current product candidates in additional indications;
- the amount of funding that we receive under government awards that we have applied for or may apply for in the future;
- the number and characteristics of product candidates that we pursue;
- the outcome, timing and costs of seeking regulatory approvals;
- the costs of commercialization activities for oral sulopenem and sulopenem and other product candidates if we receive marketing approval, including the costs and timing of establishing product sales, marketing, distribution and manufacturing capabilities;
- the receipt of marketing approval and revenue received from any potential commercial sales of oral sulopenem and sulopenem;
- the terms and timing of any future collaborations, licensing or other arrangements that we may establish;
- the amount and timing of any payments we may be required to make, or that we may receive, in connection with the licensing, filing, prosecution, defense and enforcement of any patents or other intellectual property rights, including milestone and royalty payments and patent prosecution fees that we are obligated to pay pursuant to the Pfizer License or other future license agreements;
- the costs of preparing, filing and prosecuting patent applications, maintaining and protecting our intellectual property rights and defending against any intellectual property related claims;
- the costs of operating as a public company; and
- the extent to which we in-license or acquire other products and technologies.

Until such time, if ever, that we can generate product revenue sufficient to achieve profitability, we expect to finance our cash needs through a combination of public or private equity offerings, debt financings, collaboration agreements, other third-party funding, strategic alliances, licensing arrangements, marketing and distribution arrangements or government funding. To the extent that we raise additional capital through the sale of equity or convertible debt securities, your ownership interest will be diluted, and the terms of these securities may include liquidation or other preferences that adversely affect your rights as an ordinary shareholder. Debt financing and preferred equity financing, if available, may involve agreements that include covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, making capital expenditures or declaring dividends. Our secured credit facility with SVB imposes operating and other restrictions on us. Such restrictions affect, and in many cases limit or prohibit, our ability to dispose of certain assets, pay dividends and

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incur additional indebtedness, among other things. If we raise additional funds through other third-party funding, collaboration agreements, strategic alliances, licensing arrangements or marketing and distribution arrangements, we may have to relinquish valuable rights to our technologies, future revenue streams, research programs or product candidates or grant licenses on terms that may not be favorable to us. If we are unable to raise additional funds through equity or debt financings when needed, we may be required to delay, limit, reduce or terminate our product development or future commercialization efforts or grant rights to develop and market products or product candidates that we would otherwise prefer to develop and market ourselves.

### Contractual Obligations and Commitments

The following table summarizes our contractual obligations as of December 31, 2017 and the effects that such obligations are expected to have on our liquidity and cash flows in future periods:

	Payments Due by Period				
	Total	Less than 1 Year	1 to 3 Years	4 to 5 Years	More than 5 Years
	(in thousands)				
Operating lease commitments <sup>(1)</sup>	\$3,692	\$ 487	\$954	\$894	\$ 1,357
Total	\$3,692	\$ 487	\$954	\$894	\$ 1,357

(1) Reflects payments due for our leases of office space under operating lease agreements that expire in 2018, 2022 and 2026.

Under our license agreement with Pfizer, we have agreed to make certain clinical, regulatory and sales milestone payments, pay royalties and make a potential one-time payment related to sublicensing income that exceeds a certain threshold. We have not included any contingent payment obligations, such as milestones, royalties, or one-time payments, in the table above as the amount, timing and likelihood of such payments are not known. We expect to use \$15.0 million of the proceeds from this offering for milestone payments to Pfizer. We are obligated to pay Pfizer royalties ranging from a single-digit to mid-teens percentage based on marginal net sales of each licensed product.

In June 2016, we entered into an agreement with a supplier whereby we agreed to pay \$3.0 million to the supplier to acquire equipment, which will be used solely to manufacture product for us. This payment will be offset against the price of the product to be supplied under a future supply agreement. As of December 31, 2017, \$0.6 million remained outstanding to the supplier.

In March 2018, we entered into an operating lease agreement for office space in Chicago for a period of five years that commences in June 2018. The aggregate lease payments over the five-year lease term are approximately \$1.4 million.

### Emerging Growth Company Status

The Jumpstart Our Business Startups Act of 2012 permits an “emerging growth company” such as us to take advantage of an extended transition period to comply with new or revised accounting standards applicable to public companies until those standards would otherwise apply to private companies. We have irrevocably elected to “opt out” of this provision and, as a result, we will comply with new or revised accounting standards when they are required to be adopted by public companies that are not emerging growth companies.

### Off-Balance Sheet Arrangements

We did not have during the periods presented, and we do not currently have, any off-balance sheet arrangements, as defined in the rules and regulations of the Securities and Exchange Commission.



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### **Recently Issued Accounting Pronouncements**

A description of recently issued accounting pronouncements that may potentially impact our financial position and results of operations is disclosed in Note 2 to our consolidated financial statements appearing at the end of this prospectus.

### **Quantitative and Qualitative Disclosures about Market Risks**

We had cash and cash equivalents of \$38.3 million as of March 31, 2018, consisting of cash in non-interest bearing accounts in highly rated financial institutions in the United States and Ireland and money market accounts.

We contract with CROs and CMOs globally. We may be subject to fluctuations in foreign currency rates in connection with certain of these agreements. Transactions denominated in currencies other than the functional currency are recorded based on exchange rates at the time such transactions arise. As of December 31, 2016 and 2017 and March 31, 2018, substantially all of our liabilities were denominated in U.S. dollars. Net foreign currency gains and losses did not have a material effect on our results of operations for the years ended December 31, 2016 and 2017 or the three months ended March 31, 2017 and 2018.

The interest rate on our secured credit facility is sensitive to changes in interest rates. Interest accrues at a per annum rate equal to the greater of (i) 8.31%; or (ii) 3.89% above The Wall Street Journal prime rate.

## BUSINESS

### Overview

We are a pharmaceutical company dedicated to developing and commercializing sulopenem to be potentially the first and only oral and intravenous (IV) branded penem available globally. Penems, including thiopenems and carbapenems, belong to a class of antibiotics more broadly defined as  $\beta$ -lactam antibiotics, the original example of which was penicillin, but which now also includes cephalosporins. Sulopenem is a potent, thiopenem antibiotic delivered intravenously which is active against bacteria that belong to the group of organisms known as gram-negatives and cause urinary tract and intra-abdominal infections. We have successfully developed sulopenem in an oral tablet formulation, sulopenem etzadroxil-probenecid. Both sulopenem product candidates have the potential to be important new treatment alternatives to address growing concerns related to antibacterial resistance without the known toxicities of some of the most widely used antibiotics, specifically fluoroquinolones. We see two distinct opportunities for our sulopenem program: patients at elevated risk for treatment failure in the community setting suffering from uncomplicated urinary tract infections (uUTI) and hospitalized patients suffering from complicated, antibiotic-resistant infections. Therefore, we plan to initiate a Phase 3 clinical program in the second half of 2018 for the treatment of adults in three indications: uUTI, complicated urinary tract infections (cUTI) and complicated intra-abdominal infections (cIAI). We designed one Phase 3 clinical trial in each indication based on our end of Phase 2 meeting with the U.S. Food and Drug Administration (FDA) and feedback from the European Medicines Agency (EMA). We intend to conduct the Phase 3 clinical trials under Special Protocol Assessment (SPA) agreements from the FDA. We expect to complete enrollment and produce top-line data for all three clinical trials in the second half of 2019, and to submit our new drug applications (NDAs) to the FDA by the end of 2019.

In November 2015, we acquired an exclusive, worldwide license under certain patents and know-how to develop and commercialize sulopenem and its oral prodrug, sulopenem etzadroxil, from Pfizer Inc. (Pfizer). Pfizer conducted Phase 1 and Phase 2 clinical trials of sulopenem delivered intravenously in Japan in over 1,450 patients with a variety of hospital and community acquired infections. These clinical trials documented a treatment effect in the indications studied and provided preliminary insights into the safety profile for sulopenem, which will continue to be assessed with additional clinical trials. Pfizer subsequently developed sulopenem into a prodrug formulation, sulopenem etzadroxil, to enable oral delivery. Once this prodrug is absorbed in the gastrointestinal tract, the etzadroxil ester is immediately cleaved off and the active moiety, sulopenem, is released into the bloodstream. We have further enhanced this prodrug formulation with the addition of probenecid to extend sulopenem's half-life and enhance its antibacterial potential. Probenecid is a pharmacokinetic enhancer that has been safely and extensively used globally for decades. The oral dose of sulopenem etzadroxil-probenecid will be combined in a single bilayer tablet, which we refer to as oral sulopenem. We refer to sulopenem delivered intravenously as sulopenem and, together with oral sulopenem, as our sulopenem program.

The treatment of urinary tract and intra-abdominal infections has become more challenging because of the development of resistance by pathogens responsible for these diseases. There are approximately 13.5 million emergency room and office visits for symptoms of urinary tract infections (UTIs) and approximately 21 million uUTIs in the United States annually. Based on market research, physicians estimated that approximately 35% of these patients are at elevated risk for treatment failure. Proper antibiotic treatment of resistant infections in this group is particularly important due to the risks associated with treatment failure. Elevated risk patients were defined in the research as patients with recurrent UTIs, elderly patients, those who have a suspected or confirmed drug-resistant infection, patients with comorbidities (e.g., Diabetes mellitus) or that are immunocompromised, patients that have had a recent hospitalization, patients with a history of prior antibiotic failure and patients in a long-term care setting. Treatment failures pose significant clinical and economic challenges to the healthcare system. There are also approximately 3.6 million patients with cUTI and approximately 350,000 patients with cIAI that require antibiotic therapy every year in the United States.

Growing antibiotic resistance to *E. coli*, the primary cause of UTIs, has complicated the choice of treatment alternatives in both the community and hospital settings, reducing effective treatment choices for physicians. In

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addition, the Infectious Diseases Society of America and European Society for Microbiology and Infectious Diseases recommend against empiric use, or prescribing without results from a bacterial culture, of fluoroquinolones for uUTIs in their 2010 Update to the International Clinical Practice Guidelines for the Treatment of Acute Uncomplicated Cystitis and Pyelonephritis in Women. Similarly, the FDA in its November 2015 Advisory Committee meeting stated that the risk of serious side effects caused by fluoroquinolones generally outweighs the benefits for patients with uUTIs and other uncomplicated infections. Subsequently, the FDA mandated labeling modifications for fluoroquinolone antibiotics directing healthcare professionals to reserve fluoroquinolones for patients with no other treatment alternatives.

None of the most commonly used oral antibiotics for treatment of uUTIs were initially approved by the FDA within the last two decades. We believe oral sulopenem will be an important empiric treatment option for elevated risk uUTI patients because of its potency against resistant pathogens, as well as its spectrum of antibacterial activity. In addition, oral sulopenem will allow patients who develop an infection with a resistant pathogen, but are stable enough to be treated in the community, to avoid the need for an IV catheter and even hospitalization. The primary endpoint of our uUTI Phase 3 clinical trial is designed to demonstrate non-inferiority in patients with ciprofloxacin-susceptible pathogens but also provides an opportunity to demonstrate superiority to ciprofloxacin for oral sulopenem in patients with ciprofloxacin-resistant pathogens.

In the hospital setting, the lack of effective oral stepdown options results in the potential for lengthy hospital stays or insertion of a peripherally inserted central catheter (PICC) to facilitate administration of IV antibiotics, even for some patients with relatively straightforward infections. Our sulopenem program may enable faster discharges, providing cost-saving advantages for the hospital and mitigating the risk of catheter-related infection for patients. Based on potency, safety and formulation advantages, we believe our sulopenem program is uniquely positioned to address unmet medical needs for patients suffering from uncomplicated and complicated infections in both the community and hospital settings.

If the FDA approves oral sulopenem and sulopenem, we plan to build a commercial infrastructure to launch both product candidates in the United States. Data from a study we commissioned in 2017 to quantify quinolone resistance by zip code, in addition to data from our clinical trials and available prescriber data, will inform our initial targeted sales force as to where the medical need for a new, effective therapy for UTIs is highest in the community and hospital settings. Outside of the United States, we are evaluating our options to maximize the value of our sulopenem program.

We plan to employ a dual sourcing strategy for critical elements of our sulopenem supply chain. We expect to register two suppliers and validate at least one supplier for the manufacture of the active pharmaceutical ingredient (API) at the time of our planned regulatory filings in the United States by the end of 2019. We will initially rely on a single third-party facility to manufacture all of our sulopenem tablets. In the future, given the importance of oral sulopenem to our potential commercial results, we will consider establishing additional sources.

Sulopenem etzadroxil has an issued composition of matter patent in the United States (which we have exclusively licensed from Pfizer) that is scheduled to expire in 2029, subject to potential extension to 2034 under the Drug Price Competition and Patent Term Restoration Act of 1984 (the Hatch-Waxman Act). In addition, the FDA has designated sulopenem and oral sulopenem as Qualified Infectious Disease Products (QIDP) for the indications of uUTI, cUTI and cIAI pursuant to the Generating Antibiotic Incentives Now Act (the GAIN Act), which provides the potential for a more rapid NDA review cycle and could add five years to any regulatory exclusivity period that we may be granted. QIDP status for other indications, such as respiratory tract infections, gonorrhea and diabetic foot infection is also possible given the coverage of gram-negative and gram-positive bacteria by sulopenem, pending submission of additional documentation and acceptance by the FDA. None of our licensed patents cover the IV formulation of sulopenem.

We were founded in June 2015 by former executives of Durata Therapeutics, Inc. (Durata), a biopharmaceutical company, which developed dalbavancin, another antibiotic from the Pfizer portfolio, and

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successfully obtained FDA approval, launched the product in the United States, and submitted a marketing authorization application (MAA) to the EMA (approval was received in 2015). Durata was acquired by Allergan plc (formerly Actavis, Inc.) in late 2014. To date, we have raised approximately \$120 million to develop our sulopenem program from a leading investor group including Advent Life Sciences LLP, Aris Bioscience plc, Bay City Capital LLC, Canaan Partners, Domain Associates L.L.C., Frazier Healthcare Partners, New Leaf Venture Partners, Pivotal bioVenture Partners, and Sofinnova Ventures, Inc., as well as our founders. Pfizer is also one of our shareholders.

### Sulopenem Program, Clinical and Regulatory Status

We plan to pursue three initial indications for oral sulopenem and sulopenem, as summarized in the chart below. We designed these Phase 3 clinical trials based on extensive *in vitro* microbiologic surveillance data, Phase 1 pharmacokinetic data from healthy volunteers as well as population pharmacokinetic data from patients, animal models in relevant disease settings, Phase 2 data from a program performed with sulopenem by Pfizer in Japan in the early 1990s, and regulatory feedback from FDA at an end of Phase 2 meeting, all supported by an advanced commercial manufacturing program which will provide clinical supplies.

We intend to conduct the Phase 3 clinical trials under SPA agreements from the FDA. We expect to complete enrollment and produce top-line data for all three clinical trials in the second half of 2019, and submit our NDAs to the FDA by the end of 2019.

	Formulation	2H-17	1H-18	2H-18	1H-19	2H-19
Uncomplicated Urinary Tract Infection						
Sulopenem etzadroxil-probenecid	Oral Bilayer Tablet		SPA received	Pivotal Phase 3		Top-line results
Complicated Urinary Tract Infection						
Sulopenem	Intravenous		SPA received	Pivotal Phase 3		Top-line results
Sulopenem etzadroxil-probenecid	Oral Bilayer Tablet					
Complicated Intra-abdominal Infection						
Sulopenem	Intravenous	SPA received	Pivotal Phase 3		Top-line results	
Sulopenem etzadroxil-probenecid	Oral Bilayer Tablet					

### Our Strategy

Our strategy is to develop and commercialize our sulopenem program for multiple indications, and in the long term to build a market-leading anti-infective business. The key elements of this strategy include the following:

- **Complete sulopenem clinical development in three initial indications.** Conduct single Phase 3 clinical trials in each of our three initial indications: uUTI, cUTI and cIAI. We have received SPA agreements from the FDA for each of these trials. We plan to begin enrollment in all three clinical trials in the second half of 2018 and expect to conclude enrollment in the second half of 2019, with top-line data available in the same period.
- **Obtain regulatory approval for oral sulopenem and sulopenem in the United States and subsequently in the European Union.** We designed our Phase 3 clinical program based on extensive discussions with the FDA, including our end of Phase 2 meeting in July 2017, and considered scientific advice received from the EMA to meet the regulatory filing requirements in the European Union. If our Phase 3 clinical trials are successful, we plan to submit NDAs for both oral sulopenem and sulopenem to the FDA by the end of 2019 and subsequently submit an MAA to the EMA.

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- **Maximize commercial potential of our sulopenem program.** If approved, we intend to directly commercialize our sulopenem program in the United States with a targeted sales force across the community and hospital settings. Outside of the United States, we are evaluating our options to maximize the value of our sulopenem program.
- **Pursue the development of oral sulopenem and sulopenem in additional indications.** In the future, we may pursue development of our sulopenem program in additional indications in adults and children, including respiratory tract infections, gonorrhea and diabetic foot infection, as well as new formulations to support these indications.
- **Build a portfolio of differentiated anti-infective products.** We intend to enhance our product pipeline through strategically in-licensing or acquiring clinical stage product candidates or approved products for the community and/or hospital and acute care markets. We believe that our focus on acute care in both the community and hospital markets will make us an attractive partner for companies seeking to out-license products or product candidates in our areas of focus.

### ***The Medical Need***

#### *Urinary Tract and Intra-Abdominal Infections*

UTIs are among the most common bacterial infections encountered in the ambulatory setting. A UTI occurs when one or more parts of the urinary system (kidneys, ureters, bladder or urethra) become infected with a pathogen (most frequently, bacteria). While many UTIs are not considered life-threatening, if the infection reaches the kidneys, serious illness, and even death, can occur. UTI diagnoses are stratified between either complicated or uncomplicated infections. uUTI refers to the invasion of a structurally and functionally normal urinary tract by a nonresident infectious organism (e.g., acute cystitis), and is diagnosed and commonly treated in an outpatient setting with an oral agent. Conversely, cUTIs, including acute pyelonephritis, are defined as a UTI ascending from the bladder accompanied by local and systemic signs and symptoms, including fever, chills, malaise, flank pain, back pain, and/or costo-vertebral angle pain or tenderness, that occur in the presence of a functional or anatomical abnormality of the urinary tract or in the presence of catheterization, with treatment typically initiated by IV therapy in a hospital setting.

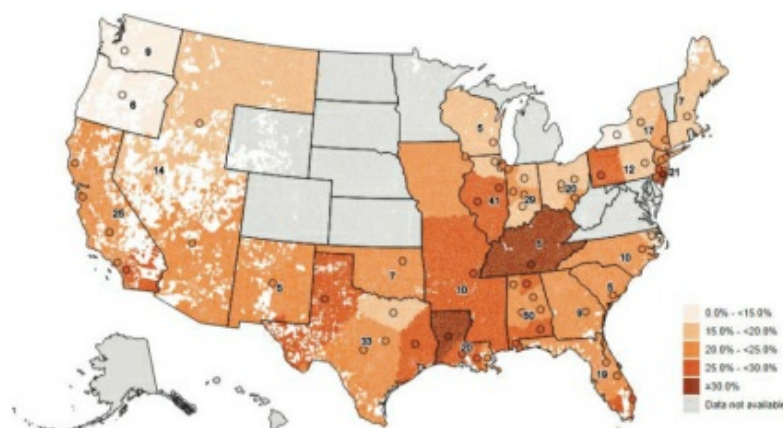
cIAIs have similar challenges to those of cUTIs. These complicated infections extend from a gastrointestinal source, such as the appendix or the colon, into the peritoneal space and can be associated with abscess formation.

#### *Antimicrobial Resistance is Increasing*

*E. coli* is growing increasingly resistant to many classes of antibiotics, which is especially problematic for patients suffering from UTIs because *E. coli* is the primary cause of those infections. The market-leading antibiotics, fluoroquinolones (e.g., Cipro, Levaquin) and trimethoprim-sulfamethoxazole (e.g., Bactrim, Septra), currently have *E. coli* resistance rates over 20% nationally. In 2015, approximately 75% of oral prescriptions for UTIs given in the United States were for fluoroquinolones or trimethoprim-sulfamethoxazole. In hospitals, fluoroquinolones have greater than 30% resistance to *E. coli* in approximately half the states in the United States, and have greater than 25% resistance rates in nearly 80% of the states. Between 2000 and 2009 the prevalence of extended spectrum  $\beta$ -lactamases (ESBL)-producing *E. coli* and ESBL-producing *K. pneumoniae* more than doubled from 3.3% to 8.0% and from 9.1% to 18.6%, respectively. During the same timeframe, hospitalizations caused by ESBL-producing organisms increased by about 300%. The national resistance rate of *E. coli* to cephalosporins was estimated to be approximately 13% for the combined years of 2011 to 2015.

We have further delineated the prevalence of bacterial resistance to antibiotics used to treat UTIs in the United States. Based on urine culture results obtained at the zip code level from outpatient UTIs, we concluded that the prevalence of resistance of Enterobacteriaceae to quinolone antibiotics is over 20% in a significant portion of the country. In addition, in 2015, 25 states identified as high prevalence for *E. coli* resistance produced approximately 75% of all UTI prescriptions in the United States.

**Geographic prevalence of quinolone non-susceptible Enterobacteriaceae by zip code in outpatient urine cultures.**



*Numbers represent hospital centers from which data were derived.*

As antibiotic resistance leads to increased costs of treatment and increased morbidity as well as increased mortality, there is an urgent unmet medical need for antimicrobial agents that can be utilized in community and hospital infections. The antimicrobial class of penems has the potential to address many of the relevant resistance issues associated with  $\beta$ -lactam antibiotics because of a targeted spectrum of antibacterial activity and intrinsic stability against hydrolytic attack by many  $\beta$ -lactamases, including ESBL and AmpC enzymes.

*There is a Significant Population at Risk*

There are approximately 13.5 million emergency room and office visits for symptoms of UTIs and approximately 21 million uUTIs in the United States annually. Based on market research, physicians estimated that approximately 35% of these patients are at elevated risk for treatment failure. Proper antibiotic treatment of resistant infections in this group is particularly important due to the consequences associated with treatment failure. Elevated risk patients were defined in the research as patients with recurrent UTIs, elderly patients, those patients who have a suspected or confirmed drug-resistant infection, patients with comorbidities (e.g., Diabetes mellitus) or that are immunocompromised, patients that have had a recent hospitalization, patients with a history of prior antibiotic failure and patients in a long-term care setting.

There are also approximately 3.6 million patients with cUTI and approximately 350,000 patients with cIAI that require antibiotic therapy every year in the United States.

*Limited Treatment Options*

In addition to worsening antibiotic resistance, many of the antibiotics currently used for first-line empiric oral treatment of uUTIs, such as nitrofurantoin and trimethoprim-sulfamethoxazole, suffer from significant safety and tolerability concerns. Pulmonary fibrosis and diffuse interstitial pneumonitis has been observed in patients treated with nitrofurantoin, which is contraindicated in pregnant women after 38 weeks of gestation and newborn children due to hemolytic anemia and in patients with poor renal function. Trimethoprim-sulfamethoxazole is associated with fatal hypersensitivity reactions, embryofetal toxicity, hyperkalemia, gastrointestinal disturbances and rashes, including rare cases of Stevens-Johnson Syndrome. In addition, some antibiotics, such as nitrofurantoin and fosfomycin, have poor tissue penetration. The limited oral antibiotic treatment options for patients with uUTIs can sometimes result in hospitalization to facilitate administration of IV antibiotics for patients whose infection progresses; in addition, some patients whose uUTI remains uncomplicated may require

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hospital admission for IV therapy. For patients with cUTIs, the lack of effective oral stepdown options, which is demonstrated by the fact that none of the most commonly used oral agents were initially approved by the FDA in the last two decades, results in the potential for lengthy hospital stays or insertion of a PICC to facilitate administration of IV antibiotics, even for some patients with relatively straightforward infections. Therefore, based both on the epidemiology described above and confirmed after recent discussions with practicing clinicians and pharmacists, we believe there is a pressing need for a novel oral antibacterial therapy for UTI, both complicated and uncomplicated, that has potent activity against ESBL producing and quinolone resistant gram-negative organisms.

### *The Challenge of Developing Antibiotics*

Antibiotics work by targeting a critical function of the bacteria and rendering it non-functional. These critical functions include the ability to make proteins, to replicate further, and to build protective envelopes against the harsh external environment. These functions are coded in the bacteria's DNA, which is copied over to each generation. Occasionally errors are made in the copying; typically, these errors kill off the progeny but can sometimes actually help them survive under specific circumstances, namely when threatened by an antibiotic.

Bacterial mutations, these changes in DNA coding, allow the organism to adapt their protein structures so as to prevent target-specific antibiotics from working. Over time, subsequent generations of bacteria retain these mutations and even develop additional ones making them resistant to multiple classes of antibiotics, and generating what is known as multi-drug resistant (MDR) pathogens. Furthermore, bacteria have also developed mechanisms that allow them to pass these genetic mutations directly to other nearby bacteria, even those from a different species. As there are a limited number of antibiotic classes available today, there is a concern that eventually we will not have any antibiotics to treat patients who develop an infection caused by these MDR bacteria. We continue to need new antibiotics that stay one step ahead of these mutating bacteria in order to protect against the infections that they cause.

### *Market Leader for Treatment of UTIs is Failing Patients*

Fluoroquinolones are now the most widely used antibiotic class in treating community and hospital gram-negative infections. However, the Infectious Diseases Society of America and the European Society for Microbiology and Infectious Diseases now recommend against empiric use of fluoroquinolones for uUTIs in their 2010 Update to the International Clinical Practice Guidelines for the Treatment of Acute Uncomplicated Cystitis and Pyelonephritis in Women as they "have a propensity for collateral damage and should be reserved for important uses other than acute cystitis and thus should be considered alternative antimicrobials for acute cystitis." Similarly, the FDA in its November 2015 Advisory Committee meeting stated that the risk of serious side effects caused by fluoroquinolones generally outweighs the benefits for patients with uUTIs and other uncomplicated infections. Serious side effects associated with fluoroquinolones include tendon rupture, tendinitis, and worsening symptoms of myasthenia gravis and peripheral neuropathy. Subsequently, the FDA mandated labeling modifications for fluoroquinolones antibiotics directing healthcare professionals to reserve fluoroquinolones for patients with no other treatment alternatives.

### *The Solution to Rising Resistance*

The solution to the problem of resistance is based on strategies to use those antibiotics only when patients really need them, limiting the number of opportunities for the bacteria to develop these mutations, and to continue efforts aimed at the discovery and development of new and effective antibacterial agents.

These new agents will need to:

- kill the organisms responsible for the actual infection;
- target a specific bacterial function and overcome the existing resistance mechanisms around that function;



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- be powerful enough to require a minimal amount of drug to kill the organism at the site of infection; and
- be delivered to a patient in a manner which is safe, tolerable and convenient.

For the last thirty years, the penem class of antibiotics, including carbapenems such as imipenem, meropenem, doripenem and ertapenem, have been potent and reliable therapeutic options for patients with serious infections. Their spectrum of activity includes those pathogens responsible for infections such as those in the intra-abdominal space, urinary tract, and respiratory tract with a potency as good or better than any other antibiotic class, targeting the cell wall of bacteria, a critical element of bacterial defense. Resistance to the class, generally caused by organisms which have acquired a carbapenemase, is rarely, if ever, seen in the community setting and is primarily localized to patients with substantial healthcare exposures, particularly recent hospitalizations. These drugs are generally very well tolerated. Their limitation is the requirement to be delivered intravenously, restricting their utility to hospitalized patients.

### ***Our Sulopenem Program***

Our sulopenem program has the potential to offer a solution to the problem of antibiotic resistance and the limitations of existing agents. Sulopenem has *in vitro* activity against gram-negative organisms with resistance to one or more established antibiotics and can be delivered in an oral formulation. If a UTI occurs in the community setting, oral sulopenem can be provided as a tablet, offering an option for care of those with a culture proven or suspected MDR pathogen, potentially avoiding the need for hospitalization. If a patient requires hospitalization for an infection due to a resistant organism, treatment can be initiated intravenously with sulopenem and once the infection begins to improve, stepped down to oral sulopenem, potentially enabling the patient to leave the hospital.

### ***Potential Advantages of Oral Sulopenem and Sulopenem***

We are developing our sulopenem program to offer patients and clinical care providers a new option to treat resistant gram-negative infections with confidence in its antimicrobial activity, and the flexibility to treat patients in the community while getting those hospitalized back home.

Sulopenem's differentiating characteristics include:

- ***Activity as an oral agent and favorable pharmacokinetic profile.*** Sulopenem is the active moiety with antibacterial activity. Oral sulopenem is a prodrug specifically selected among many other prodrug candidates because it enables the absorption of sulopenem from the gastrointestinal tract. It is this oral agent, sulopenem etzadroxil, that we believe meets an urgent medical need to allow patients with resistant pathogens to be treated safely in the community, as well as allowing hospitalized patients to continue their treatment at home. Oral sulopenem is sufficiently absorbed from the gastrointestinal tract to allow the parent compound, sulopenem, to achieve adequate exposure in the tissues and, as demonstrated in animal models, to significantly reduce the burden of offending pathogens. Based on pharmacokinetic modeling and supported by prior clinical data from Japan, we believe dosing of the oral agent twice daily will provide tissue exposure sufficient to resolve clinical infection.
- ***Targeted spectrum of activity against relevant pathogens without pressure on other incidental gram-negative organisms.*** Sulopenem is active against the pathogens that are most likely to cause infection of the urinary and gastrointestinal tract, including *E. coli*, *K. pneumoniae*, *P. mirabilis* and *B. fragilis*. Like ertapenem, sulopenem is not active against certain gram-negative organisms such as *Pseudomonas aeruginosa* and *Acinetobacter baumannii*. These organisms are not typically seen in community UTIs and are infrequently identified in UTIs in the hospital, except when patients have had an indwelling urinary catheter for an extended duration. As a result, we believe the targeted spectrum of sulopenem is less likely to put pressure on those pathogens which could otherwise have led to carbapenem resistance.

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- **Activity against multidrug resistant pathogens.** Bacteria are accumulating resistance mechanisms to multiple classes of antibiotics within the same organism, and as a consequence physicians are losing confidence in existing antibiotics as empiric therapy before culture results become available. Sulopenem is active against organisms that have multiple resistance mechanisms and can help avoid some of the consequences of ineffective antibiotic therapy.
- **Documented safety and tolerability profile.** Adverse event data collected as part of the Japanese Phase 2 development program with the IV formulation provided preliminary insights into the safety profile for sulopenem, which will continue to be assessed with additional clinical trials. Data is also available for the oral formulation collected in healthy volunteers in the Phase 1 program conducted by us that is consistent with a well-tolerated regimen and similar to the adverse event profile observed with the IV formulation. One additional adverse event identified with the oral prodrug is loose stools, which were considered of mild severity and were self-limited, as seen with other broad spectrum oral antibiotics with activity against the anaerobic flora of the gastrointestinal tract. In the Japanese program, one patient reported a serious adverse event related to sulopenem of a transient elevation in liver function tests. The patient died due to metastatic lung cancer. Other serious adverse events recorded in patients receiving sulopenem in the Japanese program, which were not related by the investigator to sulopenem, included myocardial infarction with respiratory failure and progression of underlying ovarian carcinoma, in both cases resulting in death. For each of these patients, sulopenem was not determined to be the cause of death.
- **Availability of an IV formulation.** Sulopenem is expected to be available intravenously. Patients sick enough to require hospitalization may not be good candidates for initial oral therapy, given potential uncertainties around the ability to absorb drugs due to diminished gastrointestinal and target tissue perfusion in patients with compromised cardiovascular status associated with sepsis or reduced gastrointestinal motility. An IV and oral formulation will enable the conduct of clinical registration trials in a manner consistent with typical clinical practice, allow for confidence in the initiation of therapy in seriously ill patients and, if approved, offer both important formulations as therapeutic options.
- **Advanced manufacturing program.** The synthetic pathway for sulopenem, initially defined in the 1980s, has now evolved through its third iteration, incorporating improvements in yield and scalability. We expect to register two different contract manufacturing organizations to manufacture the active pharmaceutical ingredient (API) for oral sulopenem and sulopenem. Both of the contract manufacturers have the capability to produce vials for IV delivery. We will initially rely on a single third-party facility to manufacture all of our sulopenem tablets. In the future, given the importance of sulopenem to our potential commercial results, we will consider establishing additional sources.

### ***Market Opportunity for Oral Sulopenem and Sulopenem***

Based upon the clinical evidence to date in eradicating key pathogens, coupled with unmet medical needs, if approved, we expect the commercial opportunity for oral sulopenem and sulopenem to be substantial with initial focus on the following areas:

- treating uUTI with an oral formulation in community treatment settings;
- treating cUTI with initiation of IV therapy in the hospital, and transitioning to oral formulation upon discharge to complete therapy in the community setting; and
- treating cIAI with initiation of IV therapy in the hospital, and transitioning to oral formulation upon discharge to complete therapy in the community setting.

Acute cystitis remains one of the most common indications for prescribing antimicrobials to otherwise healthy women, resulting in as many as 13.5 million office or emergency room visits in the United States annually, according to a review published in 2015. Up to 50% of all women experience one episode by 32 years of age. In addition, there are approximately 3.6 million patients a year in the United States for the more serious cases of cUTI.

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In addition, cIAIs are the second most common cause of infectious mortality in intensive care units. Among approximately 350,000 cIAI patients in the United States each year, broad spectrum antibiotics are generally administered as first line treatment; treatment failure is more common due to the serious nature of these infections.

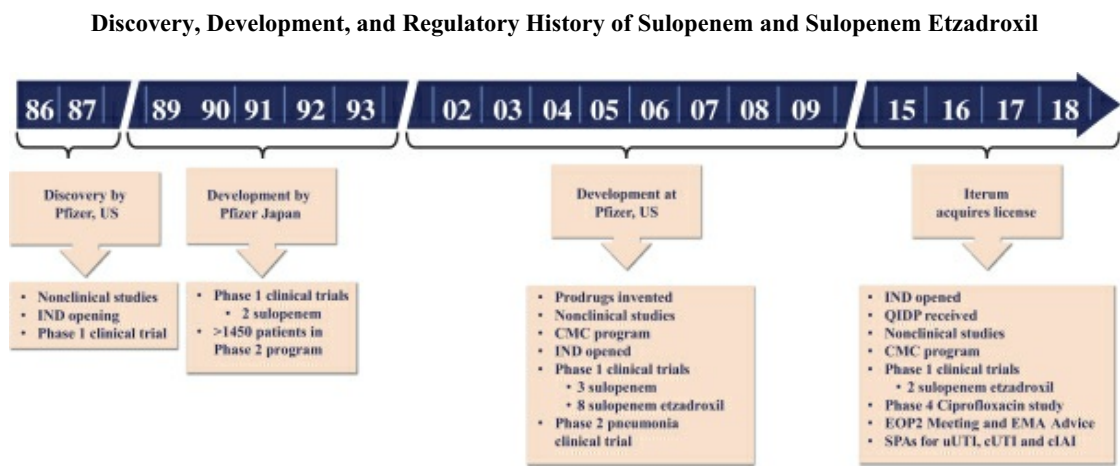
In the United States, *E. coli* resistance presently exceeds 20% for fluoroquinolones, trimethoprim-sulfamethoxazole and ampicillin. Our market research indicated that physicians identified the lack of effective oral agents for these more difficult drug-resistant infections as a key unmet need in their practice. Physicians are particularly concerned by drug-resistant infections in the 35% of patients considered to be at elevated risk for treatment failure, as they pose significant potential clinical and economic challenges to the healthcare system when initial therapy is unsuccessful.

Given the growing prevalence of bacterial resistance that has rendered existing oral therapies ineffective, coupled with the FDA mandating new safety labeling changes to enhance warnings limiting fluoroquinolone use in uncomplicated infections due to the association with disabling and potentially permanent side effects, physicians are seeking new alternatives to safely and effectively treat their patients.

We believe oral sulopenem’s value proposition will aid physicians in the community setting to address the unmet need for a safe and effective oral uUTI therapy to treat the growing number of patients with suspected or confirmed resistant pathogen(s). In addition, we believe our sulopenem program will offer a compelling value proposition to hospitals by enabling the transition of patients from IV therapy in the inpatient setting to an oral therapy in the community.

***Oral Sulopenem and Sulopenem Clinical Development Program***

The following graphic provides an overview of the past development of sulopenem etzadroxil and sulopenem by Pfizer and Iterum.



The objective of our sulopenem program is to deliver to patients an oral and IV formulation of sulopenem approved in the United States and Europe for the treatment of infections due to resistant gram-negative pathogens. Sulopenem’s spectrum of activity, the availability of an oral agent delivered in a convenient dosing schedule and the evolving safety profile support its further development for the target indications of uUTI, cUTI and cIAI. Oral sulopenem is the oral prodrug metabolized to sulopenem, its therapeutically active form, combined with probenecid.

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Both sulopenem and oral sulopenem have received QIDP designation status for the indications of uUTI, cUTI and cIAI. QIDP designation status for other indications, such as respiratory tract infections, gonorrhea and diabetic foot infection, is also possible given the coverage of gram-negative and gram-positive bacteria by sulopenem, pending submission of additional documentation and acceptance by the FDA. We have received feedback on the development program in an end of Phase 2 meeting with the FDA, which provided guidance on the size of the safety database, the nonclinical study requirements, the design of the Phase 1 and Phase 3 clinical trials, the pediatric development plan, as well as support for the proposed CMC development activities through production of commercial supplies. The Phase 3 clinical trials for treatment of cIAI, cUTI and uUTI have received SPA agreements with the FDA. We expect top-line delivery of data and submission of the program for regulatory review to the FDA in the second half of 2019.

### Microbiology Surveillance Data

Sulopenem has demonstrated potent *in vitro* activity, as defined by its minimum inhibitory concentration (MIC), against nearly all genera of Enterobacteriaceae, in anaerobes such as Bacteroides, Prevotella, Porphyromonas, Fusobacterium and Peptostreptococcus, gram-positive organisms including methicillin-susceptible staphylococci, *Streptococcus pyogenes* and *Streptococcus pneumoniae*, as well as other community respiratory pathogens such as *Haemophilus influenzae* and *Moraxella catarrhalis*. The MIC is a measure used to describe the results of an *in vitro* assay in which a fixed number of a strain of bacteria are added to a 96-well plate and increasing concentrations of antibiotic are sequentially added to the wells. The concentration of antibiotic which inhibits growth of the bacteria in a well is considered the MIC. When looking across a collection of many strains of a species of bacteria, the MIC<sub>90</sub> is the lowest concentration of antibiotic at which 90% of the strains are inhibited. Sulopenem lacks *in vitro* activity (MIC<sub>90</sub> <sup>3</sup> 16 µg/mL) against the oxidative non-fermenting pathogens such as *Pseudomonas aeruginosa*, *Acinetobacter baumannii*, *Burkholderia cepacia*, and *Stenotrophomonas maltophilia*. Given its lack of potency against *Pseudomonas aeruginosa*, its use in treatment of infections caused by pathogenic Enterobacteriaceae should not select for pseudomonas resistant to carbapenems, as can occur with imipenem and meropenem. For various species of enterococci, the MIC<sub>90</sub> values were 4 to <sup>3</sup> 64 µg/mL. Methicillin-resistant staphylococci also have high MIC values.

The table below highlights the MIC<sub>50</sub> and MIC<sub>90</sub> of key target pathogens collected by International Health Management Associates (IHMA) between 2013 and 2015 responsible for the infections that will be studied in our planned Phase 3 program.

Organism Class	N	MIC <sub>50</sub> (µg/mL)	MIC <sub>90</sub> (µg/mL)
<i>E. coli</i>	189	0.015	0.03
ESBL negative	169	0.015	0.03
ESBL positive	20	0.03	0.06
<i>Klebsiella spp.</i>	124	0.03	0.06
ESBL negative	108	0.03	0.06
ESBL positive	16	0.03	0.25
<i>P. mirabilis</i>	14	0.12	0.25
<i>E. aerogenes</i>	57	0.06	0.25
<i>C. koseri</i>	60	0.03	0.03
<i>S. marcescens</i>	55	0.12	0.50
Gram-negative anaerobes	125	0.12	0.25
<i>Staphylococcus saprophyticus</i>	31	0.25	0.25

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A comparison of the *in vitro* activity of sulopenem relative to other carbapenems, as well as to currently prescribed oral agents for UTI, is provided below. The activity of sulopenem at slightly higher doses was very similar to that of ertapenem and meropenem, which are currently commercially available. In addition, sulopenem is noted to have potent *in vitro* activity against relevant organisms that are resistant to fluoroquinolones and trimethoprim-sulfamethoxazole and are ESBL positive. The prevalence of resistance for the existing generic antibiotics, now exceeding 20% for many pathogens, underscores the challenge of treating patients with uUTI in an outpatient setting or releasing patients from the hospital with a cUTI or cIAI on a reliable stepdown oral therapy.

Penem Class:	<i>E. coli</i> N=189		<i>K. pneumoniae</i> N=65		<i>P. mirabilis</i> N=19	
	MIC <sub>90</sub> (µg/mL)	% S	MIC <sub>90</sub> (µg/mL)	% S	MIC <sub>90</sub> (µg/mL)	% S
<b>Sulopenem</b>	<b>0.06</b>	*	<b>0.12</b>	*	<b>0.25</b>	*
Ertapenem	0.015	100	0.12	97	0.03	100
Meropenem	0.03	100	0.06	97	0.12	100
<b>Oral Agents Currently on Market:</b>						
Nitrofurantoin	16	97	<sup>3</sup> 64	23	<sup>3</sup> 64	0
Fosfomycin	8	98	128	86	64	95
Ciprofloxacin	<sup>3</sup> 2	77	1	91	<sup>3</sup> 2	74
Trimethoprim-Sulfamethoxazole	<sup>3</sup> 32	74	<sup>3</sup> 32	86	<sup>3</sup> 32	58
Amoxicillin-Clavulanate	16	76	<sup>3</sup> 16	80	<sup>3</sup> 16	74

N = bacterial samples; each product candidate was tested using the same sample size

% S = percentage susceptible, meaning the proportion of the number of isolates tested that had a MIC below the FDA defined susceptibility breakpoint; boxed values signify a percentage susceptible below 80%, which is the threshold for concern for use of an antibiotic before a culture is available

\* Susceptibility breakpoints are established by the FDA and documented in product labeling based on the antibacterial agent treatment efficacy in Phase 3 clinical trials associated with a specific MIC. As such, susceptibility breakpoints have not yet been determined for sulopenem.

### Animal Models

Sulopenem reduced the bacterial burden in the bladder and tissues of infected animals in a uUTI model in both diabetic and normal C3H/HeN mice using a MDR ST131 *E. coli*, a strain which is ESBL positive and resistant to fluoroquinolones and trimethoprim-sulfamethoxazole. Sulopenem was highly efficacious and remarkably robust in its reduction in bacterial burden, leading to complete resolution of bacteriuria in all or most of the animals in both study arms with the high dose treatment regimen also reducing bacterial burden in bladder tissue and the kidney.

### Nonclinical Pharmacology

Metabolic clearance is primarily characterized by hydrolysis of the  $\beta$ -lactam ring. Sulopenem does not inhibit the major cytochrome P450 isoforms suggesting a low potential for drug interactions at therapeutic concentrations. It is predominantly excreted in the urine. Plasma protein binding for sulopenem is low at approximately 11%.

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### Phase 1 Program

The table below outlines the Phase 1 clinical trials that have been conducted with sulopenem etzadroxil and sulopenem.

Protocol	Year	Dose (mg), other medication	Subjects on sulopenem or sulopenem etzadroxil	Treatment (Days)
<b>Sulopenem (CP-70,429)—Phase 1 Single Dose Clinical Trials</b>				
A109001	1987	1000 mg	6	1
Japanese PK		250 mg, 500 mg, 1000 mg	18	1
A7371007	2007	400 mg, 800 mg, 1600 mg, 2400 mg, 2800 mg, placebo	24	1
<b>Sulopenem (CP-70,429)—Phase 1 Multiple Dose Clinical Trials</b>				
Japanese PK		500 mg, 1000 mg	12	5
Japanese PK		1000 mg	6	5
A1091001	2009	800 mg, 1200 mg, 1600 mg, 2000 mg, placebo	40	14
<b>Sulopenem etzadroxil (PF-03709270)—Phase 1 Single Dose Clinical Trials</b>				
A8811001	2007	400 mg, 600 mg, 1000 mg, 2000 mg, placebo	9	1
A8811006	2008	2000 mg	4	1
A8811007	2007	600 mg, probenecid	4	1
A8811008	2008	1200 mg, probenecid	24	1
A8811018	2008	1000 mg, 1200 mg, probenecid, aluminum hydroxide, pantoprazole	17	1
A8811003	2008	2000 mg, 4000 mg, 6000 mg, 8000 mg, placebo	11	1
IT001-101	2017	500 mg, 1000 mg, probenecid	48	1
IT001-102 <sup>(1)</sup>	2017	500 mg, probenecid	13	1
<b>Sulopenem etzadroxil (PF-03709270)—Phase 1 Multiple Dose Clinical Trials</b>				
A8811003	2008	2000 mg, 1200 mg, probenecid, placebo	18	10
A8811015	2009	500 mg, 1000 mg, 1500 mg, probenecid, placebo, Augmentin	48	7
IT001-101	2017	500 mg, probenecid	64	7
<b>Sulopenem (CP-70,429), Sulopenem etzadroxil (PF-03709270)—Phase 1 Renal Impairment Clinical Trial</b>				
A8811009	2010	200mg, 800 mg sulopenem or 1000 mg sulopenem etzadroxil	29	1
Total			395	

(1) Final report pending.

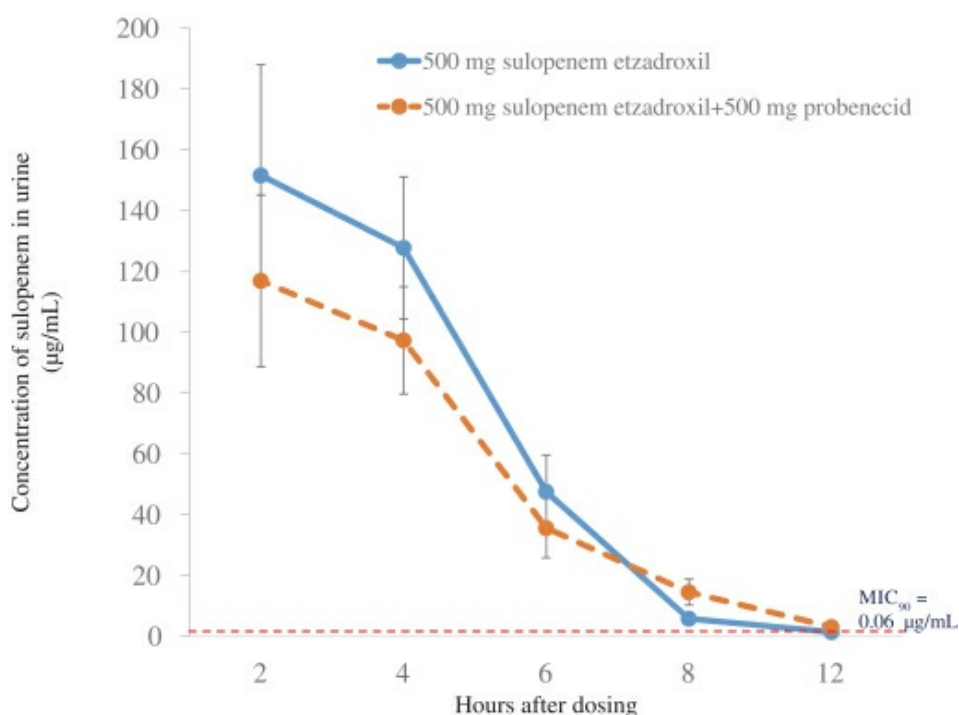
### Oral Sulopenem

We have designed oral sulopenem to include probenecid, a pharmacokinetic enhancer that delays the excretion through the kidneys of sulopenem and other  $\beta$ -lactam antibiotics and has been extensively used for this purpose and the treatment of gout. It enables us to maximize the antibacterial potential of any given dose of oral sulopenem.

We conducted two Phase 1 clinical trials, IT001-101 and IT001-102, in healthy volunteers, in part to select the prodrug and explore various doses of probenecid combined with 500 mg of sulopenem etzadroxil. Findings from these clinical trials are consistent with those from other pharmacokinetic studies that employed different total doses of sulopenem etzadroxil. Specifically, the AUC (area under the curve, a measure of total exposure) and  $C_{max}$  (maximum plasma concentration) are generally dose-proportional, and the concomitant use of probenecid increases the plasma exposure of sulopenem with any dose with which it was studied.

The mean total sulopenem exposures in the urine after a single 500 mg dose in IT001-101 exceeded the MIC<sub>90</sub> for the entire twice-daily dosing interval in the 32 healthy volunteers who received 500 mg of sulopenem etzadroxil, as illustrated in the graph below. In a urine antibacterial assay, urine collected at two hours post-dose was bactericidal for numerous strains of *E. coli* and *K. pneumoniae*, including a strain of *K. pneumoniae* that was resistant to meropenem and imipenem, with a sulopenem MIC of 16  $\mu$ g/mL.

### Mean total sulopenem exposure in urine after single 500 mg dose of sulopenem etzadroxil with or without probenecid



In IT001-102, we evaluated sulopenem etzadroxil administered with and without probenecid in a randomized cross-over trial in healthy volunteers in a fasted state. Subjects receiving sulopenem etzadroxil co-administered with probenecid demonstrated an increase in the time over MIC (of a 12 hour dosing interval) and AUC of sulopenem, as shown in the table below.

Treatment	N	Descriptive Statistic	Sulopenem Parameter (Day 1)			
			C <sub>max</sub> (ng/mL)	AUC <sub>0-∞</sub> (hr*ng/mL)	T>MIC (0.5 µg/mL) [hr]	T>MIC (0.5 µg/mL) [%]
500 mg Sulopenem etzadroxil	10	Mean	1928	3871	2.8	23.3
500 mg Sulopenem etzadroxil + 500 mg probenecid	11	Mean	1929	4964	3.6	30.2

N = number of subjects; C<sub>max</sub> = maximum plasma concentration; AUC<sub>0-∞</sub> = area under the curve from the initiation of dosing extrapolated through infinite time

In addition, results from IT001-101 demonstrated that food increases the mean AUC and mean time over MIC (0.5 µg/mL) of 500 mg sulopenem etzadroxil dosed with 500 mg probenecid on Day 1 by 62% and 68%, respectively.

We plan to conduct additional Phase 1 clinical trials, including drug interaction studies with itraconazole and valproic acid and standard bioavailability and bioequivalency studies of new formulations, to support our NDAs. Other Phase 1 clinical trials may be added as the needs of the program dictate.



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### *Sulopenem, IV Formulation*

Doses of sulopenem up to 2800 mg as a single IV dose and 2000 mg BID, or twice daily, of sulopenem as IV over fourteen days were studied in three Phase 1 clinical trials in healthy adults, one study in patients with renal insufficiency in the United States and two Phase 1 clinical trials in Japan. Results from these pharmacokinetic studies with various IV doses of sulopenem delivered over various durations established dose proportionality among the regimens with regard to AUC and maximal plasma concentrations ( $C_{\max}$ ). A representative analysis of pharmacokinetic parameters, a subset of study A1091001, is described in the table below.

	N	Dose (mg)	Infusion duration (h)	$C_{\max}$ ( $\mu\text{g/mL}$ )	AUC $0-\infty$ ( $\mu\text{g hr/mL}$ )	$T_{1/2}$ (h)	$CL_{\text{total}}$ ( $\text{mL/min/kg}$ )
Day 1	8	800	3	7.27	22.4	0.83	
	8	1200	1	32.5	42.3	1.04	
	8	1200	2.5	16.6	41.9	1.12	
Day 14	5	800	3	8.97	26.5	0.89	15.4
	6	1200	1	30.7	41.4	1.05	14.7
	6	1200	2.5	13.5	34.6	1.01	18.8

N = number of subjects;  $C_{\max}$  = maximum plasma concentration; AUC  $0-\infty$  = area under the curve from the initiation of dosing extrapolated through infinite time;  $T_{1/2}$  = half-life;  $CL_{\text{total}}$  = clearance (only measured on Day 14)

### *Modeling and Dose Selection*

Based on *in vitro* susceptibility data from surveillance studies, pharmacokinetics gathered from Phase 1 clinical trials, and population pharmacokinetic data from patients, we performed modeling to help choose the doses for the Phase 3 program. The MIC<sub>90</sub> for all Enterobacteriaceae potentially involved in the target indications was 0.25  $\mu\text{g/mL}$  and for the weighted distribution of pathogens most likely to be associated with the indication was 0.06  $\mu\text{g/mL}$ . We have performed modeling both for the weighted distribution of MICs expected in the clinical trials as well as at a fixed MIC of 0.5  $\mu\text{g/mL}$ . Data obtained from animal experiments confirmed that, similar to carbapenems and lower than that for other  $\beta$ -lactams, the %T<sub>free</sub> >MIC required for bacteriostasis is approximately 10–19%, depending on the dosing regimen; we have used 17% in our models. Based on the outputs from those models, the IV dose of sulopenem will be 1000 mg sulopenem delivered over 3 hours once a day. The oral dose will be 500 mg of sulopenem etzadroxil given with 500 mg of probenecid in a single bilayer tablet twice daily.

### *Japanese Clinical Data*

Pfizer's affiliate in Japan conducted extensive clinical development of sulopenem in over 1,450 patients in Phase 1 and Phase 2 clinical trials in Japan in patients with skin infections, respiratory tract infections, gynecologic infections, cUTI and intra-abdominal infections.

### Phase 2 clinical trials conducted by Pfizer in Japan, 1991-1993

Study #	Description	Sulopenem Dose	Comparator	N
91-002	Multiple infections in: Internal medicine Surgery: includes cIAI Urology: pyelonephritis cystitis	250 mg IV BID 500 mg IV BID	None	108
92-002	Multiple infections in: Internal medicine Surgery: includes cIAI Urology: pyelonephritis cystitis	250 mg IV BID 500 mg IV BID	None	961
91-002 92-002	Population-Pharmacokinetics (only)	250 mg IV BID 500 mg IV BID	N/A	216
93-001	Respiratory Tract Infection	250 mg IV BID 500 mg IV BID	Cefotiam IV	75
93-002	cUTI	250 mg IV BID 500 mg IV BID	Imipenem IV	114
<b>Total</b>				<b>1474</b>

A treatment effect in small Phase 2 clinical trials was observed in a number of infections including skin infections, respiratory tract infections, gynecologic infections and, most relevant to the targeted indications being pursued in our Phase 3 program, cUTI and cIAI. The data from these clinical trials may not be directly comparable to data from clinical trials that would be conducted today or the data that we anticipate from our Phase 3 program for a variety of reasons, including that the protocols were designed for different purposes and as a consequence had different enrollment and efficacy evaluation criteria. While these data are not required for approval of our intended indications, we believe these results support our decision to develop sulopenem for our targeted indications and informed our dose selection.

In 1993, Pfizer Japan conducted 93-002, a randomized clinical trial in subjects with cUTI, comparing 250 mg twice daily and 500 mg twice daily of sulopenem administered intravenously to an intravenously-delivered imipenem-cilastatin, also given twice daily.

The trial enrolled patients who were hospitalized, with an underlying disease of the urinary tract and with evidence of pyuria, measured by  $\geq 5$  WBC/hpf (white blood cells per high power field, a measure of inflammation in the urinary tract) at baseline. Study therapy was administered for five days and was open-label with respect to sulopenem versus the comparator, but was blinded as to the sulopenem dose. Efficacy was assessed by the investigator based on subjective and objective criteria, as shown below.

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The criteria for patient enrollment in the Phase 2 clinical trial 93-002 are different than those currently established by the FDA in guidelines for Phase 3 cUTI registrational trials published in 2015. In addition to an Intent-to-Treat (ITT) analysis, which includes all randomized patients, of the investigator's assessment of overall efficacy based on the original inclusion criteria, a *post hoc* analysis was also performed by Iterum of the investigator's assessment of overall efficacy in the population of patients that met enrollment criteria consistent with current FDA guidance, such as baseline urinalysis with >10 WBC/hpf and a urine culture which grew >10<sup>5</sup> susceptible organisms, as shown below. ITT analyses are performed in the population of all randomized patients. Success, as determined by the investigator and specified in the protocol, was judged for each patient based on resolution of symptoms, pyuria and bacteriuria.

Investigator Assessment of Overall Efficacy	Sulopenem (CP 70,429) 250 mg BID IV n/N (%)	Sulopenem (CP 70,429) 500 mg BID IV n/N (%)	Comparator n/N (%)
ITT			
Success	33/36 (91.7)	36/38 (94.7)	32/39 (82.1)
Failure	2/36 (5.6)	2/38 (5.3)	2/39 (5.1)
Indeterminant	1/36 (2.8)	0	5/39 (12.8)
Difference vs. comparator (95% CI)	9.6 (-6.6, 25.9)	12.7 (-2.1, 28.4)	
Clinically Evaluable using FDA inclusion criteria ( <i>post hoc</i> )			
Success	19/20 (95.0)	22/22 (100.0)	16/16 (100.0)
Failure	1/20 (5.0)	0	0
Difference vs. comparator (95% CI)	-5.0 (-24.0, 15.3)	0 (-15.2, 19.8)	

One patient received a dose other than 250 mg or 500 mg IV BID.

The results of a subset analysis that included patients from clinical trials conducted in 1991 and 1992, 91-002 and 92-002, with a diagnosis that fit the FDA's definition of complicated intra-abdominal infections are provided below, based on the investigator's assessment of clinical response at the end of therapy in the ITT and clinically evaluable populations. Success, as determined by the investigator and specified in the protocol, was judged for each patient based on resolution of cIAI signs and symptoms and improvement in relevant laboratory tests.

Investigator Assessment of Outcome	Sulopenem (CP 70,429) 250 mg BID IV n/N (%)	Sulopenem (CP 70,429) 500 mg BID IV n/N (%)
ITT		
Success	14/15 (93.3)	78/88 (88.6)
Failure	1/15 (6.7)	4/88 (4.5)
Indeterminant		6/88 (6.8)
Clinically Evaluable		
Success	14/15 (93.3)	77/81 (95.1)
Failure	1/15 (6.7)	4/81 (4.9)

Three patients received a dose other than 250 mg or 500 mg IV BID.

We used the data collected in these studies to inform the design of the cUTI proposed regimens.

The results of a Phase 2 clinical trial conducted in 1993 in hospitalized patients with community acquired pneumonia (CAP), 93-001, are provided below, including the investigator's assessment of clinical response at the end of therapy in the ITT and clinically and bacteriologically evaluable populations with the bacteriologically evaluable population meaning the clinically evaluable patients who had a baseline pathogen and follow up microbiology data to allow an assessment of bacteriological efficacy. Success, as determined by the investigator and specified in the protocol, was judged for each patient based on resolution of the signs and symptoms of pneumonia, and improvement in radiologic findings and other relevant tests.

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Investigator Response at End of Treatment	Sulopenem CP 70,429 250 mg BID IV n/N (%)	Sulopenem CP 70,429 500 mg BID IV n/N (%)	Comparator n/N (%)
<b>ITT</b>			
Success	19/26 (73.1)	17/23 (73.9)	22/25 (88.0)
Failure	4/26 (15.4)	3/23 (13.0)	2/25 (8.0)
Indeterminant	3/26 (11.5)	3/23 (13.0)	1/25 (4.0)
Difference vs. comparator (95% CI)	-14.9 (-36.7, 7.7)	-14.1 (-37.1, 8.8)	
<b>Clinically Evaluable</b>			
Success	18/20 (90.0)	15/17 (88.2)	20/20 (100.0)
Failure	2/20 (10.0)	2/17 (11.8)	
Difference vs. comparator (95% CI)	-10.0 (-30.4, 7.3)	-11.8 (-34.7, 5.8)	
<b>Bacteriologically Evaluable</b>			
Success	8/8 (100.0)	5/6 (83.3)	9/9 (100.0)
Failure	—	1/6 (16.7)	—
Difference vs. comparator (95% CI)	0.0 (-33.8, 31.2)	-16.7 (-57.6, 18.1)	

### *Phase 2 Clinical Trial with sulopenem and sulopenem etzadroxil*

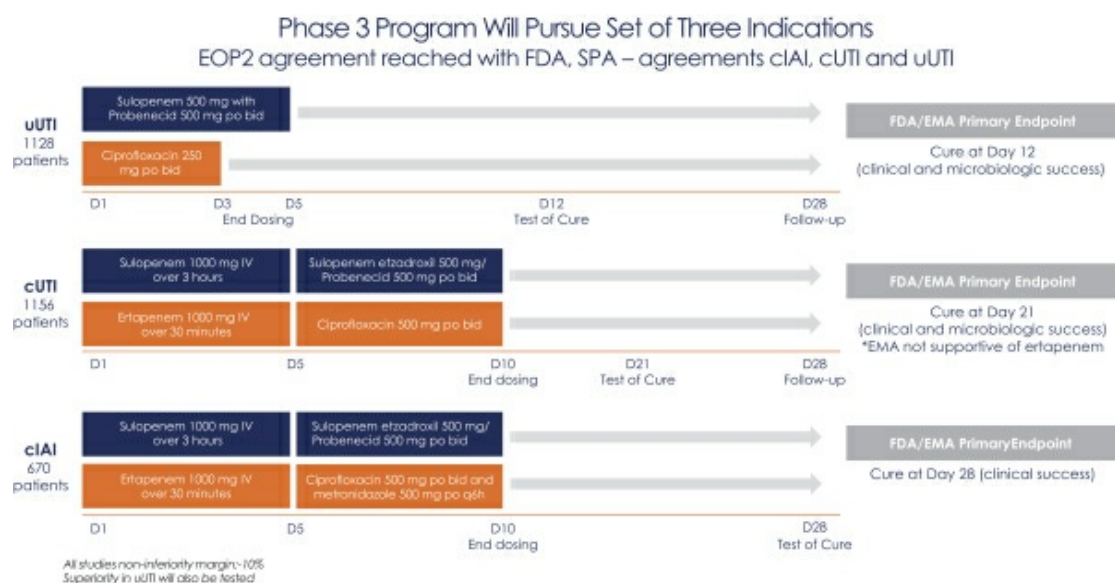
In 2009, Pfizer initiated a Phase 2, randomized, double-blind, double-dummy clinical trial in hospitalized patients with CAP comparing two regimens of IV sulopenem followed by sulopenem etzadroxil to ceftriaxone IV followed by amoxicillin-clavulanate. The sulopenem regimens were a single 600 mg IV dose of sulopenem followed by 1000 mg BID of sulopenem etzadroxil or a 600 mg of sulopenem for a minimum of four doses followed by 1000 mg BID of sulopenem etzadroxil. The clinical trial was terminated early for business reasons after 33 of 250 planned total patients were enrolled and treated. Clinical response rates at the test of cure visit (7–14 days after end of therapy) of the ITT patients were similar on each regimen (9/10, 9/11 and 7/12, on sulopenem single IV dose, sulopenem multidose IV and ceftriaxone, respectively). Treatment-emergent adverse events were reported in six subjects each in the sulopenem groups and eight subjects in the ceftriaxone group. The most common treatment-emergent adverse event was diarrhea, reported by a total of six subjects (two in each treatment group). Treatment related diarrhea was reported by one subject following sulopenem single dose IV, and by a further two subjects following ceftriaxone. There was one treatment-related serious adverse event in the ceftriaxone group. There were no deaths reported in this clinical trial.

### *Planned Phase 3 Clinical Trials*

Based on FDA Guidance from February 2015 (Complicated Intra-Abdominal Infections: Developing Drugs for Treatment. Guidance for Industry; Complicated Urinary Tract Infections: Developing Drugs for Treatment. Guidance for Industry) and on recently conducted studies by other sponsors, we negotiated SPA agreements for cUTI, cIAI and uUTI. Oral sulopenem alone will be studied for the treatment of outpatients with uUTI, while oral sulopenem and sulopenem will be studied for the treatment of cUTI and cIAI. A brief overview of the comparator agents, sample size, timing of efficacy assessments and duration of oral and IV dosing is provided in the graphic below. Non-inferiority in these clinical trials is defined by the lower limit of the confidence interval in the treatment difference of no more than -10%. The uUTI clinical trial will also test for superiority in the subset of patients with ciprofloxacin resistant pathogens at baseline. An open-label noncomparative treatment study of oral ciprofloxacin 250 mg twice daily for three days in uUTI patients is underway to help characterize certain sample size assumptions as well as enable study logistics for this Phase 3 clinical trial. Patients in the cUTI and cIAI clinical trials will receive five days of sulopenem IV or comparator and then step down to two to five additional days of oral treatment with either oral sulopenem or ciprofloxacin. In the cIAI trial, clinical outcome at the test of cure visit will be noted as cure for those patients who are alive, have resolution in signs and symptoms of the index infection and for whom no new antibiotics or interventions for treatment failure were required. In the uUTI and cUTI trials, clinical outcome at the test of cure visit will be noted as cure for patients who are alive and who demonstrate resolution of the symptoms of uUTI or cUTI, as applicable, present at trial entry (and no new symptoms) such that no new antibiotics are required, as well as the demonstration that the bacterial pathogen(s) found at trial entry are reduced to  $<10^3$  CFU/mL on urine culture on Day 12 or Day 21, respectively.

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Patients with an organism resistant to ciprofloxacin in the cUTI and cIAI clinical trials will be allowed to substitute amoxicillin-clavulanate for the stepdown oral therapy. Patients getting ciprofloxacin in the cIAI trial will also receive metronidazole. Patients receiving oral sulopenem will be encouraged, but not required, to dose with food.



### Safety of Oral Sulopenem and Sulopenem

Sulopenem is a thiopenem and a member of the class of  $\beta$ -lactam antibiotics, a class from which numerous safe and well tolerated antibiotics have been available for over thirty years. Adverse event data collected as part of the Japanese Phase 2 development program with the IV formulation provided preliminary insights into the safety profile for sulopenem, which will continue to be assessed with additional clinical trials. We view the clinical safety profile of sulopenem established by the Japanese data as also relevant and supportive of oral sulopenem because it metabolizes to the active metabolite, sulopenem, in plasma. A summary of the adverse event data from the Japanese program is provided below:

	Sulopenem			Comparators (N = 64)	Total (N = 1474)
	250 mg BID (N = 296)	500 mg BID (N = 867)	Miscellaneous* (N = 247)		
No. of patients who experienced at least one:					
Adverse Event	14 (4.7)	35 (4.0)	1 (0.4)	3 (4.7)	53 (3.6)
Drug-Related Adverse Event	9 (3.0)	22 (2.5)	1 (0.4)	3 (4.7)	35 (2.4)
Serious Adverse Event	2 (0.7)	1 (0.1)	—	1 (1.6)	4 (0.3)
Drug-Related Serious Adverse Event	1 (0.3)	—	—	1 (1.6)	2 (0.1)
SAE Leading to Death	2 (0.7)	1 (0.1)	—	1 (1.6)	4 (0.3)
AE Leading to Premature Discontinuation of Study Drug	8 (2.7)	16 (1.8)	—	2 (3.1)	26 (1.8)
SAE Leading to Premature Discontinuation of Study Drug	1 (0.3)	—	—	—	1 (0.1)

\* Miscellaneous doses include patients receiving a total daily dose of 250 mg, 750 mg, 1500 mg or 2000 mg, including patients receiving a single dose of sulopenem in the population PK sub-study.

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Common adverse events occurring in more than one patient on a sulopenem regimen included diarrhea (0.7%), pyrexia (0.5%) and rash (1.0%). The most common adverse event leading to discontinuation was rash (0.7%). Clinically significant laboratory test abnormalities were infrequent. Elevations in serum aminotransferases occurred in approximately 4% of patients.

Data is also available for the oral formulation collected in healthy volunteers in the Phase 1 program conducted by Pfizer and Iterum that is consistent with the adverse event profile observed with the IV formulation. One additional adverse event of interest identified with the oral prodrug, as further assessed in detail in clinical trial IT001-101, is loose stool/diarrhea which was considered of mild severity and self-limited, as seen with other broad spectrum oral antibiotics with activity against the anaerobic flora of the gastrointestinal tract. During the seven-day dosing interval, the incidence of diarrhea, defined as having three or more episodes of loose stool in one day or having two or more episodes of loose stool per day for two consecutive days, peaked at 13% on Day 3 and fell to 2% by Day 7, with no patient discontinuing their dosing due to this event. For patients who took their dose with food, the peak incidence was 9%, dropping again to 3% by Day 4, similar to placebo. Some patients also identified a mild change in the odor of their urine after dosing with either the oral or IV formulations, as can be seen with other  $\beta$ -lactam antibiotics.

We have received a waiver from the FDA for the requirement of performing a thorough QT interval study given the lack both of any significant preclinical findings and signals in Phase 1 clinical trials during which intensive electrocardiogram monitoring was performed. The EMA in written scientific advice also agreed that a QT interval study is not warranted. A preclinical study of the hydrolysis product of etzadroxil (2-ethylbutyric acid) has been performed in which no effect on plasma carnitine in rats was identified, while a significant effect of a different prodrug moiety, pivoxil, was observed. No reports of seizures, seen with some members of the carbapenem class, were noted in preclinical studies or clinical trials.

### **Pfizer License Agreement**

In November 2015, we and our wholly owned subsidiary, Iterum Therapeutics International Limited, entered into a license agreement with Pfizer (the Pfizer License), pursuant to which we acquired from Pfizer an exclusive, royalty-bearing license under certain patents and know-how to develop, manufacture and commercialize sulopenem and related compounds, including, among others, sulopenem etzadroxil and three other sulopenem prodrugs, globally for the treatment, diagnosis and prevention of infectious diseases and infections in humans. The licensed patents include two U.S. patents, one of which covers the composition of matter of sulopenem etzadroxil, one patent in Japan, one patent in Hong Kong and one patent in Mexico. None of the licensed patents cover the IV formulation of sulopenem. All patents directed to the compound sulopenem expired prior to us entering into the Pfizer License. Pursuant to the Pfizer License, our exclusive license from Pfizer includes certain know-how, data and regulatory documents that will support the development of sulopenem. We have the right to grant sublicenses to third parties, provided that we (1) obtain Pfizer's prior written consent in connection with such sublicense, (2) enter into a written sublicense agreement consistent with the terms and conditions of the Pfizer License and (3) include Pfizer as a third-party beneficiary under such sublicense. As between Pfizer and us, we own all right, title and interest in any intellectual property rights that are developed by us in connection with the Pfizer License.

Under the Pfizer License, we have sole responsibility for and control over the development, regulatory approval, manufacture and commercialization of licensed products worldwide, including bearing all costs and expenses associated therewith. We are obligated to use commercially reasonable efforts to develop and seek regulatory approval for one licensed product in the United States and in at least one in each of France, Germany, Italy, Japan, Spain or the United Kingdom (Major Market Countries) and, if deemed appropriate by us in our exercise of commercially reasonable efforts, for a second licensed product in the United States and at least one Major Market Country. In addition, we must use commercially reasonable efforts to commercialize a licensed product in the United States and each Major Market Country in which we have received regulatory approval for such product.

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Under the Pfizer License, we have paid Pfizer a one-time nonrefundable upfront fee of \$5.0 million and are obligated to pay Pfizer potential future clinical and regulatory milestone payments, as well as potential sales milestones upon achievement of net sales ranging from \$250.0 million to \$1.0 billion for each product type (sulopenem etzadroxil and other prodrugs, and sulopenem and other non-prodrugs). We are obligated to pay Pfizer royalties ranging from a single-digit to mid-teens percentage of marginal net sales of each licensed product. Pfizer also received 381,922 of our Series A preferred shares at a value of \$15.71 per share as additional payment for the licensed rights. In addition, if we sublicense or assign our rights to licensed products to a third party, and we receive in connection with such transaction a threshold amount of at least a low nine figure dollar amount over a specified period of time, we will be obligated to pay Pfizer an additional one-time payment of a low eight figure dollar amount.

At our cost and expense, we are responsible for the prosecution and maintenance of the licensed patents worldwide, using specific legal counsel in various jurisdictions as set forth in the Pfizer License. If we elect to forgo prosecution or maintenance of a licensed patent, we must notify Pfizer and Pfizer has the right to continue prosecution and maintenance of such licensed patent and the exclusive license granted to us under such licensed patent will become a non-exclusive and non-sublicensable license. Subject to certain consultation rights granted to Pfizer, we have the first right, but not the obligation, to enforce the licensed patents at our cost and expense. If we elect to enforce any licensed patent, we may not enter into a settlement agreement that would: (1) adversely affect the validity, enforceability or scope of any of the licensed patents, (2) give rise to any liability for Pfizer, (3) admit non-infringement of any of the licensed patents or (4) otherwise impair Pfizer's rights in any of the licensed patents or licensed know-how without the prior written consent of Pfizer.

The Pfizer License continues in effect until the expiration of all royalty terms thereunder, unless earlier terminated. The royalty term for each licensed product in each country begins as of the first commercial sale of such licensed product in such country and lasts until the later of (1) the expiration of the applicable licensed patents in such country, (2) the expiration of regulatory or data exclusivity for such licensed product in such country and (3) fifteen years after the first commercial sale of such licensed product in such country. Pursuant to the terms of the Pfizer License, each party has the right to terminate the Pfizer License upon the other party's (1) material breach of the Pfizer License that remains uncured after 60 days (or, if the breach cannot be cured in 60 days, up to 150 days) of receipt of notice or (2) insolvency. In addition, we have the unilateral right to terminate the Pfizer License for convenience by providing 90 days' written notice to Pfizer.

### **Intellectual Property**

We strive to protect the proprietary technology that we believe is important to our business, including seeking and maintaining rights in patents intended to cover our product candidates and compositions, their methods of use and processes for their manufacture and any other inventions that are commercially important to the development of our business. However, we do not own any patents or patent applications and rely heavily on the Pfizer License for intellectual property rights that are important or necessary for the development of oral sulopenem and the IV formulation of sulopenem. In addition, we do not license any patent rights that cover the IV formulation of sulopenem and all patent rights covering the compound sulopenem expired prior to us entering into the Pfizer License. We also rely, in some circumstances, on trade secrets to protect aspects of our business that are not amenable to, or that we do not consider appropriate for, patent protection.

Our success will significantly depend on our ability to obtain and maintain patent and other proprietary protection for commercially important technology and inventions and know-how related to our business, defend and enforce our in-licensed patents and patents we may own in the future, preserve the confidentiality of our trade secrets and operate without infringing the valid and enforceable patents and other proprietary rights of third parties. We also rely on know-how and continuing technological innovation to develop and maintain our proprietary position.



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### ***Licensed Intellectual Property Relating to Oral Sulopenem***

As noted above, we have been granted an exclusive license from Pfizer under one patent in the United States and one patent each in Japan, Mexico and Hong Kong directed to the composition of matter, formulation and/or use of oral sulopenem. Our sulopenem program contains one United States patent covering composition of matter of sulopenem etzadroxil licensed exclusively to us. This United States patent is scheduled to expire in 2029, subject to potential extension under the Hatch-Waxman Act to 2034. The FDA has designated sulopenem and oral sulopenem as QIDPs for the indications of uUTI, cUTI and cIAI. QIDP status provides the potential for a more rapid new drug application (NDA) review cycle and adds five years to any other regulatory exclusivity period awarded. QIDP status for other indications, such as respiratory tract infections, gonorrhea and diabetic foot infection is also possible given the coverage of gram-negative and gram-positive bacteria by sulopenem, pending submission of additional documentation and acceptance by the FDA. Patent term adjustments or patent term extensions could result in later expiration dates.

### ***Patent Term and Patent Term Extensions***

The term of individual patents depends upon the legal term for patents in the countries in which they are obtained. In most countries, including the United States, the patent term is 20 years from the earliest filing date of a non-provisional patent application. In the United States, a patent's term may be lengthened by patent term adjustment, which compensates a patentee for administrative delays by the United States Patent and Trademark Office in examining and granting a patent, or may be shortened if a patent is terminally disclaimed over an earlier filed patent. The term of a patent that covers a drug, biological product or medical device approved pursuant to a pre-market approval may also be eligible for patent term extension when FDA approval is granted, provided statutory and regulatory requirements are met. The length of the patent term extension is related to the length of time the drug is under regulatory review while the patent is in force. The Hatch-Waxman Act permits a patent term extension of up to five years beyond the expiration date set for the patent. Patent extension cannot extend the remaining term of a patent beyond a total of 14 years from the date of product approval, only one patent applicable to each regulatory review period may be granted an extension and only those claims reading on the approved drug are extended. Similar provisions are available in Europe and other foreign jurisdictions to extend the term of a patent that covers an approved drug.

### ***Trade Secrets***

We rely, in some circumstances, on trade secrets to protect our unpatented technology. However, trade secrets can be difficult to protect. We seek to protect our trade secrets and proprietary technology and processes, in part, by entering into non-disclosure and confidentiality agreements with our employees, consultants, scientific advisors, suppliers, contractors and other third parties. We also seek to preserve the integrity and confidentiality of our data and trade secrets by maintaining physical security of our premises and physical and electronic security of our information technology systems. While we have confidence in these individuals, organizations and systems, agreements or security measures may be breached and our trade secrets and other proprietary information may be disclosed. We may not have adequate remedies for any breach and could lose our trade secrets and other proprietary information through such a breach. In addition, our trade secrets may otherwise become known or be independently discovered by competitors. To the extent that our consultants, contractors or collaborators use intellectual property owned by others in their work for us, disputes may arise as to the rights in related or resulting trade secrets, know-how and inventions. For more information regarding the risks related to our intellectual property, see the section titled "Risk Factors—Risks Related to our Intellectual Property."

### ***Competition***

The pharmaceutical industry is characterized by intense competition and rapid innovation. Our potential competitors include large pharmaceutical and biotechnology companies, specialty pharmaceutical companies and generic drug companies. Many of our potential competitors have greater financial, technical and human resources than we do, as well as greater experience in the discovery and development of product candidates, obtaining FDA

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and other regulatory approvals of products and the commercialization of those products. Accordingly, our potential competitors may be more successful than us in obtaining FDA approved drugs and achieving widespread market acceptance. We anticipate that we will face intense and increasing competition as new drugs enter the market and advanced technologies become available. Finally, the development of new treatment methods for the diseases we are targeting could render our product candidates non-competitive or obsolete.

We believe the key competitive factors that will affect the development and commercial success of oral sulopenem and sulopenem, if approved, will be efficacy, coverage of drug-resistant strains of bacteria, safety and tolerability profile, reliability, convenience of oral dosing, price, availability of reimbursement from governmental and other third-party payors and susceptibility to drug resistance.

If approved, oral sulopenem would compete with several oral antibiotics currently in clinical development, including ceftibuten clavulanate from Achaogen, Inc., tebipenem pivoxil from Spero Therapeutics, Inc., delafloxacin from Melinta Therapeutics, Inc, and omadacycline from Paratek Pharmaceuticals, Inc.

We also expect that oral sulopenem, if approved, would compete with future and current generic versions of marketed oral antibiotics. If approved, we believe that oral sulopenem would compete effectively against these compounds on the basis of sulopenem's potential:

- broad range of activity against a wide variety of resistant and MDR gram-negative bacteria;
- low probability of drug resistance;
- a favorable safety and tolerability profile;
- a convenient oral dosing regimen and opportunity to step down from IV-administered therapy; and
- as a monotherapy treatment for resistant and MDR gram-negative infections.

If approved, sulopenem would compete with several IV-administered product candidates marketed for the treatment of gram-negative infections, including Avycaz from Allergan plc and Pfizer, Zerbaxa from Merck & Co. and Vabomere from Melinta Therapeutics, Inc. There are also a number of IV-administered product candidates in late-stage clinical development that are intended to treat gram-negative infections, including plazomicin from Achaogen Inc., cefiderocol from Shionogi & Co. Ltd. and imipenem-relabactam from Merck & Co.

If approved, we believe that sulopenem would compete effectively and potentially occupy an earlier place in treatment against these compounds on the basis of sulopenem's potential, including that sulopenem:

- allows physicians to stay in the same molecule with stepdown therapy to oral sulopenem;
- has a convenient once a day dosing over a three-hour infusion period;
- has a broad spectrum activity against a wide variety of resistant and MDR gram-negative bacteria;
- has a low probability of drug resistance; and
- has a favorable safety and tolerability profile.

## **Government Regulation and Product Approval**

Government authorities in the United States, at the federal, state and local level, and in other countries, extensively regulate, among other things, the research, development, clinical trials, testing, manufacture, including any manufacturing changes, authorization, pharmacovigilance, adverse event reporting, recalls, packaging, storage, recordkeeping, labeling, advertising, promotion, distribution, marketing, import and export of pharmaceutical products and product candidates such as those we are developing. The processes for obtaining regulatory approvals in the United States and in other countries, along with subsequent compliance with applicable statutes and regulations, require the expenditure of substantial time and financial resources.

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### ***United States Government Regulation***

In the United States, the FDA regulates drugs under the Federal Food, Drug, and Cosmetic Act (FDCA) and implementing regulations. The process of obtaining regulatory approvals and the subsequent compliance with appropriate federal, state, local and foreign statutes and regulations requires the expenditure of substantial time and financial resources. Failure to comply with the applicable United States requirements at any time during the product development process, approval process or after approval, may subject an applicant to a variety of administrative or judicial sanctions, such as the FDA's refusal to approve pending NDAs, withdrawal of an approval, imposition of a clinical hold, issuance of warning letters, product recalls, product seizures, total or partial suspension of production or distribution, injunctions, fines, refusals of government contracts, restitution, disgorgement or civil and/or criminal penalties.

The process required by the FDA before a drug may be marketed in the United States generally involves the following:

- completion of preclinical laboratory tests, animal studies and formulation studies in compliance with good laboratory practices (GLP) regulations;
- submission to the FDA of an investigational new drug (IND) application which must become effective before human clinical trials may begin;
- approval by an independent institutional review board (IRB) at each clinical site before each trial may be initiated;
- performance of adequate and well-controlled human clinical trials in accordance with good clinical practices (GCPs) to establish the safety and efficacy of the proposed drug product for each indication;
- submission to the FDA of an NDA;
- satisfactory completion of an FDA advisory committee review, if applicable;
- satisfactory completion of an FDA pre-approval inspection of the manufacturing facility or facilities at which the product is produced to assess compliance with current good manufacturing practices (cGMP), and to assure that the facilities, methods and controls are adequate to preserve the drug's identity, strength, quality and purity;
- satisfactory completion of FDA audits of clinical trial sites to assure compliance with GCPs and the integrity of clinical data; and
- payment of user fees and securing FDA review and approval of the NDA.

### ***Preclinical Studies***

Preclinical studies include laboratory evaluation of product chemistry, toxicity and formulation, as well as animal studies to assess potential safety and efficacy. Preclinical tests intended for submission to the FDA to support the safety of a product candidate must be conducted in compliance with GLP regulations and the United States Department of Agriculture's Animal Welfare Act. A drug sponsor must submit the results of the preclinical tests, together with manufacturing information, analytical data and any available clinical data or literature, among other things, to the FDA as part of an IND. Some preclinical testing may continue even after the IND is submitted. An IND automatically becomes effective 30 days after receipt by the FDA, unless before that time the FDA raises concerns or questions related to one or more proposed clinical trials and places the clinical trial on a clinical hold. In such a case, the IND sponsor and the FDA must resolve any outstanding concerns before the clinical trial can begin. As a result, submission of an IND may not result in the FDA allowing clinical trials to commence.

### ***Clinical Trials***

Clinical trials involve the administration of the IND to human subjects under the supervision of qualified investigators in accordance with GCP requirements, which include the requirement that all research subjects

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provide their informed consent in writing for their participation in any clinical trial along with the requirement to ensure that the data and results reported from the clinical trials are credible and accurate. Clinical trials are conducted under protocols detailing, among other things, the objectives of the trial, the criteria for determining subject eligibility, the dosing plan, the parameters to be used in monitoring safety, the procedure for timely reporting of adverse events, and the effectiveness criteria to be evaluated. A protocol for each clinical trial and any subsequent protocol amendments must be submitted to the FDA as part of the IND. In addition, an IRB at each institution participating in the clinical trial must review and approve the plan for any clinical trial before it commences at that institution. Information about certain clinical trials must be submitted within specific timeframes to the National Institutes of Health for public dissemination on their [www.clinicaltrials.gov](http://www.clinicaltrials.gov) website.

Human clinical trials are typically conducted in three sequential phases, which may overlap or be combined:

**Phase 1:** The drug is initially introduced into healthy human subjects or patients with the target disease or condition and tested for safety, dosage tolerance, absorption, metabolism, distribution, excretion and, if possible, to gain an early indication of its effectiveness. During Phase 1 clinical trials, sufficient information about the investigational drug's pharmacokinetics and pharmacological effects may be obtained to permit the design of well-controlled and scientifically valid Phase 2 clinical trials.

**Phase 2:** The drug is administered to a larger, but still limited patient population to identify possible adverse effects and safety risks, to preliminarily evaluate the efficacy of the product for specific targeted indications and to determine dosage tolerance and optimal dosage. Phase 2 clinical trials are typically well-controlled and closely monitored.

**Phase 3:** The drug is administered to an expanded patient population, generally at geographically dispersed clinical trial sites, in well-controlled clinical trials to generate enough data to statistically evaluate the efficacy and safety of the product for approval, to establish the overall risk-benefit profile of the product, and to provide adequate information for the labeling of the product. Phase 3 clinical trials usually involve a larger number of participants than a Phase 2 clinical trial.

Progress reports detailing the results of the clinical trials must be submitted at least annually to the FDA and more frequently if serious adverse events occur. Phase 1, Phase 2 and Phase 3 clinical trials may not be completed successfully within any specified period, or at all. Results from one trial may not be predictive of results from subsequent trials. Furthermore, the FDA or the sponsor may suspend or terminate a clinical trial at any time on various grounds, including a finding that the research subjects are being exposed to an unacceptable health risk. Similarly, an IRB can suspend or terminate approval of a clinical trial at its institution if the clinical trial is not being conducted in accordance with the IRB's requirements or if the drug has been associated with unexpected serious harm to patients.

### *Marketing Approval*

Assuming successful completion of the required clinical testing, the results of the preclinical studies and clinical trials, together with detailed information relating to the product's chemistry, manufacture, controls and proposed labeling, among other things, are submitted to the FDA as part of an NDA requesting approval to market the product for one or more indications. In most cases, the submission of an NDA is subject to a substantial application user fee. Under the Prescription Drug User Fee Act (PDUFA) guidelines that are currently in effect, the FDA has a goal of ten months from the date of "filing" of a standard NDA for a new molecular entity to review and act on the submission. This review typically takes twelve months from the date the NDA is submitted to the FDA because the FDA has approximately two months to make a "filing" decision. Furthermore, the FDA is not required to complete its review within the established ten-month timeframe and may extend the review process by issuing requests for additional information or clarification.

In addition, under the Pediatric Research Equity Act of 2003, as amended and reauthorized, certain NDAs or supplements to an NDA must contain data that are adequate to assess the safety and effectiveness of the drug for

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the claimed indications in all relevant pediatric subpopulations, and to support dosing and administration for each pediatric subpopulation for which the product is safe and effective. The FDA may, on its own initiative or at the request of the applicant, grant deferrals for submission of some or all pediatric data until after approval of the product for use in adults or full or partial waivers from the pediatric data requirements.

The FDA also may require submission of a risk evaluation and mitigation strategy (REMS) plan to mitigate any identified or suspected serious risks. The REMS plan could include medication guides, physician communication plans, assessment plans, and elements to assure safe use, such as restricted distribution methods, patient registries, or other risk minimization tools.

The FDA conducts a preliminary review of all NDAs within the first 60 days after submission, before accepting them for filing, to determine whether they are sufficiently complete to permit substantive review. The FDA may request additional information rather than accept an NDA for filing. In this event, the application must be resubmitted with the additional information. The resubmitted application is also subject to review before the FDA accepts it for filing. Once the submission is accepted for filing, the FDA begins an in-depth substantive review. The FDA reviews an NDA to determine, among other things, whether the drug is safe and effective and whether the facilities in which it is manufactured, processed, packaged or held meet standards designed to assure the product's continued safety, quality and purity.

The FDA may refer an application for a novel drug to an advisory committee. An advisory committee is a panel of independent experts, including clinicians and other scientific experts, that reviews, evaluates and provides a recommendation as to whether the application should be approved and under what conditions. The FDA is not bound by the recommendations of an advisory committee, but it considers such recommendations carefully when making decisions.

Before approving an NDA, the FDA typically will inspect the facility or facilities where the product is manufactured. The FDA will not approve an application unless it determines that the manufacturing processes and facilities are in compliance with cGMP requirements and adequate to assure consistent production of the product within required specifications. Additionally, before approving an NDA, the FDA will typically inspect one or more clinical trial sites to assure compliance with GCP.

The FDA generally accepts data from foreign clinical trials in support of an NDA if the trials were conducted under an IND. If a foreign clinical trial is not conducted under an IND, the FDA nevertheless may accept the data in support of an NDA if the study was conducted in accordance with GCPs and the FDA is able to validate the data through an on-site inspection, if deemed necessary. The testing and approval process for an NDA requires substantial time, effort and financial resources, and each may take several years to complete. Data obtained from preclinical and clinical testing are not always conclusive and may be susceptible to varying interpretations, which could delay, limit or prevent regulatory approval. The FDA may not grant approval on a timely basis, or at all.

After evaluating the NDA and all related information, including the advisory committee recommendation, if any, and inspection reports regarding the manufacturing facilities and clinical trial sites, the FDA may issue an approval letter, or, in some cases, a complete response letter. A complete response letter generally contains a statement of specific conditions that must be met in order to secure final approval of the NDA and may require additional clinical or preclinical testing in order for FDA to reconsider the application. Even with submission of this additional information, the FDA ultimately may decide that the application does not satisfy the regulatory criteria for approval. If and when those conditions have been met to the FDA's satisfaction, the FDA will typically issue an approval letter. An approval letter authorizes commercial marketing of the drug with specific prescribing information for specific indications.

Even if the FDA approves a product, it may limit the approved indications for use of the product, require that contraindications, warnings or precautions be included in the product labeling, require that post-approval

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studies, including Phase 4 clinical trials, be conducted to further assess a drug's safety after approval, require testing and surveillance programs to monitor the product after commercialization, or impose other conditions, including distribution and use restrictions or other risk management mechanisms under a REMS which can materially affect the potential market and profitability of the product. The FDA may prevent or limit further marketing of a product based on the results of post-marketing studies or surveillance programs. After approval, some types of changes to the approved product, such as adding new indications, manufacturing changes, and additional labeling claims, are subject to further testing requirements and FDA review and approval.

### *Special FDA Expedited Review and Approval Programs*

The FDA has various programs that are intended to expedite or simplify the process for the development and FDA review of drugs that are intended for the treatment of serious or life threatening diseases or conditions and demonstrate the potential to address unmet medical needs. The purpose of these programs is to provide important new drugs to patients earlier than under standard FDA review procedures.

To be eligible for a fast track designation, the FDA must determine, based on the request of a sponsor, that a product is intended to treat a serious or life threatening disease or condition and demonstrates the potential to address an unmet medical need, or if the drug qualifies as a QIDP under the GAIN Act. We obtained a QIDP designation for sulopenem and oral sulopenem for the indications of cUTI, uUTI and cIAI in 2016 and 2017, respectively. The FDA will determine that a product will fill an unmet medical need if it will provide a therapy where none exists or provide a therapy that may be potentially superior to existing therapy based on efficacy or safety factors. Fast track designation provides additional opportunities for interaction with the FDA's review team and may allow for rolling review of NDA components before the completed application is submitted, if the sponsor provides a schedule for the submission of the sections of the NDA, the FDA agrees to accept sections of the NDA and determines that the schedule is acceptable, and the sponsor pays any required user fees upon submission of the first section of the NDA. The FDA may decide to rescind the fast track designation if it determines that the qualifying criteria no longer apply.

The FDA may give a priority review designation to drugs that offer major advances in treatment for a serious condition, or provide a treatment where no adequate therapy exists. Most products that are eligible for fast track designation are also likely to be considered appropriate to receive a priority review. A priority review means that the goal for the FDA to review an application is six months, rather than the standard review of ten months under current PDUFA guidelines. These six and ten month review periods are measured from the "filing" date for NDAs for new molecular entities.

Even if a product qualifies for one or more of these programs, the FDA may later decide that the product no longer meets the conditions for qualification or decide that the time period for FDA review or approval will not be shortened.

### *Post-Approval Requirements*

Drugs manufactured or distributed pursuant to FDA approvals are subject to pervasive and continuing regulation by the FDA, including, among other things, requirements relating to recordkeeping, periodic reporting, product sampling and distribution, advertising and promotion and reporting of adverse experiences with the product. After approval, most changes to the approved product, such as adding new indications or other labeling claims, are subject to prior FDA review and approval. There also are continuing, annual program user fee requirements for any marketed products, as well as new application fees for supplemental applications with clinical data.

The FDA may impose a number of post-approval requirements as a condition of approval of an NDA. For example, the FDA may require post-marketing testing, including Phase 4 clinical trials, and surveillance to further assess and monitor the product's safety and effectiveness after commercialization.

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In addition, drug manufacturers and other entities involved in the manufacture and distribution of approved drugs are required to register their establishments with the FDA and state agencies, and are subject to periodic unannounced inspections by the FDA and these state agencies for compliance with cGMP requirements. Changes to the manufacturing process are strictly regulated and often require prior FDA approval before being implemented. FDA regulations also require investigation and correction of any deviations from cGMP and impose reporting and documentation requirements upon the sponsor and any third-party manufacturers that the sponsor may decide to use. Accordingly, manufacturers must continue to expend time, money, and effort in the area of production and quality control to maintain cGMP compliance.

The FDA strictly regulates the marketing, labeling, advertising and promotion of drug products that are placed on the market. A product cannot be commercially promoted before it is approved, and approved drugs may generally be promoted only for their approved indications. Promotional claims must also be consistent with the product's FDA-approved label, including claims related to safety and effectiveness. The FDA and other federal agencies also closely regulate the promotion of drugs in specific contexts such as direct-to-consumer advertising, industry-sponsored scientific and education activities, and promotional activities involving the Internet and social media.

Once an approval is granted, the FDA may withdraw the approval if compliance with regulatory requirements and standards is not maintained or if problems occur after the product reaches the market.

Later discovery of previously unknown problems with a product, including adverse events of unanticipated severity or frequency, or with manufacturing processes or failure to comply with regulatory requirements, may result in mandatory revisions to the approved labeling to add new safety information; imposition of post-market studies or clinical trials to assess new safety risks; or imposition of distribution or other restrictions under a REMS program. Other potential consequences of regulatory non-compliance include, among other things:

- restrictions on, or suspensions of, the marketing or manufacturing of the product, complete withdrawal of the product from the market or product recalls;
- interruption of production processes, including the shutdown of manufacturing facilities or production lines or the imposition of new manufacturing requirements;
- fines, warning letters or other enforcement letters or holds on post-approval clinical trials;
- refusal of the FDA to approve pending NDAs or supplements to approved NDAs, or suspension or revocation of product license approvals;
- product seizure or detention, or refusal to permit the import or export of products; or
- injunctions or the imposition of civil or criminal penalties.

In addition, the distribution of prescription pharmaceutical products is subject to the Prescription Drug Marketing Act (PDMA), which regulates the distribution of drugs and drug samples at the federal level, and sets minimum standards for the registration and regulation of drug distributors by the states. Both the PDMA and state laws limit the distribution of prescription pharmaceutical product samples and impose requirements to ensure accountability in distribution.

### *Exclusivity and Approval of Competing Products*

#### *Hatch-Waxman Exclusivity*

Market and data exclusivity provisions under the FDCA can delay the submission or the approval of certain applications for competing products. The FDCA provides a five-year period of non-patent data exclusivity within the United States to the first applicant to gain approval of an NDA for a new chemical entity. A drug is a new chemical entity if the FDA has not previously approved any other new drug containing the same active moiety,



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which is the molecule or ion responsible for the activity of the drug substance. We believe that our product candidates are new chemical entities. During the exclusivity period, the FDA may not accept for review an abbreviated new drug application (ANDA), or a 505(b)(2) NDA, submitted by another company that references the previously approved drug. However, an ANDA or 505(b)(2) NDA may be submitted after four years if it contains a certification of patent invalidity or non-infringement. The FDCA also provides three years of marketing exclusivity for an NDA, 505(b)(2) NDA, or supplement to an existing NDA or 505(b)(2) NDA if new clinical investigations, other than bioavailability studies, that were conducted or sponsored by the applicant, are deemed by the FDA to be essential to the approval of the application or supplement. Three year exclusivity may be awarded for changes to a previously approved drug product, such as new indications, dosages, strengths or dosage forms of an existing drug. This three-year exclusivity covers only the conditions of use associated with the new clinical investigations and, as a general matter, does not prohibit the FDA from approving ANDAs or 505(b)(2) NDAs for generic versions of the original, unmodified drug product. Five-year and three-year exclusivity will not delay the submission or approval of a full NDA; however, an applicant submitting a full NDA would be required to conduct or obtain a right of reference to all of the preclinical studies and adequate and well-controlled clinical trials necessary to demonstrate safety and effectiveness.

### *Qualified Infectious Disease Product Exclusivity*

Under the GAIN Act, the FDA may designate a product as a QIDP. In order to receive this designation, a drug must qualify as an antibiotic or antifungal drug for human use intended to treat serious or life-threatening infections, including those caused by either (i) an antibiotic or antifungal resistant pathogen, including novel or emerging infectious pathogens, or (ii) a so-called “qualifying pathogen” found on a list of potentially dangerous, drug-resistant organisms established and maintained by the FDA. A sponsor must request such designation before submitting a marketing application. We obtained QIDP designation for sulopenem and oral sulopenem for the indications of cUTI, uUTI and cIAI in 2016 and 2017, respectively.

Upon approving an application for a QIDP, the FDA will extend by an additional five years any regulatory exclusivity period awarded, such as a five-year exclusivity period awarded for a new molecular entity. This extension is in addition to any pediatric exclusivity extension awarded, and the extension will be awarded only to a drug first approved on or after the date of enactment.

The GAIN Act provisions prohibit the grant of an exclusivity extension where the application is a supplement to an application for which an extension is in effect or has expired, is a subsequent application for a specified change to an approved product, or is an application for a product that does not meet the definition of QIDP based on the uses for which it is ultimately approved.

### *Regulation Outside of the United States*

In addition to regulations in the United States, we will be subject to a variety of regulations governing clinical trials and commercial sales and distribution of our products outside of the United States. Whether or not we obtain FDA approval for a product, we must obtain approval by the comparable regulatory authorities of other countries or economic areas, such as the European Union, before we may commence clinical trials or market products in those countries or areas. The approval process and requirements governing the conduct of clinical trials, product authorization, pricing and reimbursement vary greatly from place to place, and the time may be longer or shorter than that required for FDA approval.

Under European Union regulatory systems, a company may submit marketing authorization applications either under a centralized or decentralized procedure. The centralized procedure is compulsory for medicinal products produced by biotechnology or those medicinal products containing new active substances for specific indications such as the treatment of AIDS, cancer, neurodegenerative disorders, diabetes, viral diseases and designated orphan medicines, and optional for other medicines which are highly innovative. Under the centralized procedure, a marketing application is submitted to the EMA where it will be evaluated by the

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Committee for Medicinal Products for Human Use and a favorable opinion typically results in the grant by the European Commission of a single marketing authorization that is valid for all European Union member states within 67 days of receipt of the opinion. The initial marketing authorization is valid for five years, but once renewed is usually valid for an unlimited period. The decentralized procedure provides for approval by one or more “concerned” member states based on an assessment of an application performed by one member state, known as the “reference” member state. Under the decentralized approval procedure, an applicant submits an application, or dossier, and related materials to the reference member state and concerned member states. The reference member state prepares a draft assessment and drafts of the related materials within 120 days after receipt of a valid application. Within 90 days of receiving the reference member state’s assessment report, each concerned member state must decide whether to approve the assessment report and related materials. If a member state does not recognize the marketing authorization, the disputed points are eventually referred to the European Commission, whose decision is binding on all member states.

### **Pharmaceutical Coverage and Reimbursement**

Sales of drug products depend, in part, on the availability and extent of coverage and reimbursement by third-party payors, such as government health programs, including Medicare and Medicaid, commercial insurance and managed healthcare organizations. Obtaining coverage and reimbursement approval for a drug product from third-party payors is a time-consuming and costly process that can require the provision of supporting scientific, clinical and cost effectiveness data for the use of drug products to the payor. There may be significant delays in obtaining such coverage and reimbursement for newly approved drug products, and coverage may be more limited than the purposes for which the drug product is approved by the FDA or similar regulatory authorities outside of the United States. Moreover, eligibility for coverage and reimbursement does not imply that a drug product will be paid for in all cases or at a rate that covers operating costs, including research, development, intellectual property, manufacture, sale and distribution expenses. Reimbursement rates may vary according to the use of the drug product and the clinical setting in which it is used, may be based on reimbursement levels already set for lower cost drug products and may be incorporated into existing payments for other services.

There is significant uncertainty related to the insurance coverage and reimbursement of newly approved drug products. In the United States, third-party payors often rely upon Medicare coverage policy and payment limitations in setting their own reimbursement policies, but also have their own methods and approval process apart from Medicare coverage and reimbursement determinations. It is difficult to predict what third party payors will decide with respect to coverage and reimbursement for new drug products. An inability to promptly obtain coverage and adequate reimbursement rates from third-party payors for any approved drug products could have a material adverse effect on a pharmaceutical manufacturer’s operating results, ability to raise capital needed to commercialize drug products and overall financial condition.

Reimbursement may impact the demand for, and/or the price of, any drug product which obtains marketing approval. Even if coverage is obtained for a given drug product by a third-party payor, the resulting reimbursement payment rates may not be adequate or may require co-payments that patients find unacceptably high. Patients who are prescribed medications for the treatment of their conditions, and their prescribing physicians, generally rely on third-party payors to reimburse all or part of the costs associated with those medications. Patients are unlikely to use a drug product, and physicians may be less likely to prescribe a drug product, unless coverage is provided and reimbursement is adequate to cover all or a significant portion of the cost of the drug product. Therefore, coverage and adequate reimbursement is critical to new drug product acceptance. Coverage decisions may depend upon clinical and economic standards that disfavor new drug products when more established or lower cost therapeutic alternatives are already available or subsequently become available.

The containment of healthcare costs has become a priority of federal and state governments, and the prices of drugs have been a focus in this effort. The U.S. government, state legislatures and foreign governments have

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shown significant interest in implementing cost-containment programs, including price controls, restrictions on coverage and reimbursement, and requirements for substitution of generic drug products. Adoption of price controls and cost-containment measures, and adoption of more restrictive policies in jurisdictions with existing controls and measures, could further limit a pharmaceutical manufacturer's net revenue and results.

In addition, it is expected that the increased emphasis on managed care and cost containment measures in the United States by third-party payors will continue and place further pressure on pharmaceutical pricing and coverage. Coverage policies and third-party reimbursement rates may change at any time. Even if favorable coverage and reimbursement status is attained for one or more drug products that gain regulatory approval, less favorable coverage policies and reimbursement rates may be implemented in the future.

In addition, in some foreign countries, the proposed pricing for a drug must be approved before it may be lawfully marketed. The requirements governing drug pricing vary widely from country to country. For example, in the EU, the sole legal instrument at the EU level governing the pricing and reimbursement of medicinal products is Council Directive 89/105/EEC (the Price Transparency Directive). The aim of the Price Transparency Directive is to ensure that pricing and reimbursement mechanisms established in the EU Member States are transparent and objective, do not hinder the free movement of and trade in medicinal products in the EU, and do not hinder, prevent or distort competition on the market. The Price Transparency Directive does not provide any guidance concerning the specific criteria on the basis of which pricing and reimbursement decisions are to be made in individual EU Member States, nor does it have any direct consequence for pricing or reimbursement levels in individual EU Member States. The EU Member States are free to restrict the range of medicinal products for which their national health insurance systems provide reimbursement, and to control the prices and/or reimbursement levels of medicinal products for human use. An EU Member State may approve a specific price or level of reimbursement for the medicinal product, or alternatively adopt a system of direct or indirect controls on the profitability of the company responsible for placing the medicinal product on the market, including volume-based arrangements, caps and reference pricing mechanisms.

Health Technology Assessment (HTA) of medicinal products is becoming an increasingly common part of the pricing and reimbursement procedures in some EU Member States, including the United Kingdom, France, Germany, Ireland, Italy and Sweden. The HTA process in the EU Member States is governed by the national laws of these countries. HTA is the procedure according to which the assessment of the public health impact, therapeutic impact, and the economic and societal impact of use of a given medicinal product in the national healthcare systems of the individual country is conducted. HTA generally focuses on the clinical efficacy and effectiveness, safety, cost, and cost-effectiveness of individual medicinal products as well as their potential implications for the healthcare system. Those elements of medicinal products are compared with other treatment options available on the market. The outcome of HTA regarding specific medicinal products will often influence the pricing and reimbursement status granted to these medicinal products by the competent authorities of individual EU Member States. The extent to which pricing and reimbursement decisions are influenced by the HTA of the specific medicinal product vary between EU Member States. A negative HTA of one of our products by a leading and recognized HTA body, such as the National Institute for Health and Care Excellence in the United Kingdom, could not only undermine our ability to obtain reimbursement for such product in the EU Member State in which such negative assessment was issued, but also in other EU Member States. For example, EU Member States that have not yet developed HTA mechanisms could rely to some extent on the HTA performed in countries with a developed HTA framework, such as the United Kingdom, when adopting decisions concerning the pricing and reimbursement of a specific medicinal product.

### **Other Healthcare Laws**

Healthcare providers, physicians and third-party payors play a primary role in the recommendation and prescription of drug product candidates which obtain marketing approval. In addition to FDA restrictions on marketing of pharmaceutical products, pharmaceutical manufacturers are exposed, directly, or indirectly, through customers, to broadly applicable fraud and abuse and other healthcare laws and regulations that may affect the

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business or financial arrangements and relationships through which a pharmaceutical manufacturer can market, sell and distribute drug products. Such laws include, without limitation:

- the federal Anti-Kickback Statute, which prohibits, among other things, persons or entities from knowingly and willfully soliciting, receiving, offering or paying any remuneration (including any kickback, bribe or rebate), directly or indirectly, overtly or covertly, in cash or in kind, in return for either the referral of an individual, or the purchase, leasing, furnishing or arranging for the purchase, lease or order of a good, facility, item or service reimbursable under a federal healthcare program, such as the Medicare and Medicaid programs. This statute has been interpreted to apply to arrangements between pharmaceutical manufacturers on the one hand, and prescribers, purchasers and formulary managers on the other hand. The Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act, (ACA) amended the intent requirement of the federal Anti-Kickback Statute, such that a person or entity no longer needs to have actual knowledge of this statute or specific intent to violate it;
- the federal false claims and civil monetary penalty laws, including the federal False Claims Act, which prohibits, among other things, individuals or entities from knowingly presenting, or causing to be presented, claims for payment or approval from Medicare, Medicaid or other government payors that are false or fraudulent. In addition, the ACA provides, and recent government cases against pharmaceutical and medical device manufacturers support the view, that federal Anti-Kickback Statute violations and certain marketing practices, including off-label promotion, may implicate the federal False Claims Act. Further, pharmaceutical manufacturers can be held liable under the federal False Claims Act even when they do not submit claims directly to government payors if they are deemed to “cause” the submission of false or fraudulent claims. Criminal prosecution is also possible for making or presenting a false, fictitious or fraudulent claim to the federal government;
- the federal Health Insurance Portability and Accountability Act of 1996 (HIPAA), which, among other things, imposes criminal liability for executing or attempting to execute a scheme to defraud any healthcare benefit program, including private third-party payors, knowingly and willfully embezzling or stealing from a healthcare benefit program, willfully obstructing a criminal investigation of a healthcare offense, and creates federal criminal laws that prohibit knowingly and willfully falsifying, concealing or covering up a material fact or making any materially false, fictitious or fraudulent statements or representations, or making or using any false writing or document knowing the same to contain any materially false, fictitious or fraudulent statement or entry in connection with the delivery of, or payment for, benefits, items or services;
- HIPAA, as amended by the Health Information Technology and Clinical Health Act of 2009 (HITECH) and its implementing regulations, which impose certain requirements relating to the privacy, security, transmission and breach reporting of individually identifiable health information upon certain health plans, healthcare clearinghouses and healthcare providers and their respective business associates that perform services for them that involve individually identifiable health information. HITECH also created new tiers of civil monetary penalties, amended HIPAA to make civil and criminal penalties directly applicable to business associates, and gave state attorneys general new authority to file civil actions for damages or injunctions in U.S. federal courts to enforce the federal HIPAA laws and seek attorneys’ fees and costs associated with pursuing federal civil actions;
- the federal physician payment transparency requirements, sometimes referred to as the “Physician Payments Sunshine Act,” and its implementing regulations, which require certain manufacturers of drugs, devices, biologics and medical supplies for which payment is available under Medicare, Medicaid or the Children’s Health Insurance Program (with certain exceptions) to report annually to the United States Department of Health and Human Services (HHS) information related to payments or other transfers of value made to physicians (defined to include doctors, dentists, optometrists, podiatrists and chiropractors) and teaching hospitals, as well as ownership and investment interests held by physicians and their immediate family members;

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- state and foreign law equivalents of each of the above federal laws, such as anti-kickback and false claims laws, that may impose similar or more prohibitive restrictions, and may apply to items or services reimbursed by non-governmental third-party payors, including private insurers; and
- state and foreign laws that require pharmaceutical companies to implement compliance programs, comply with the pharmaceutical industry's voluntary compliance guidelines and the relevant compliance guidance promulgated by the federal government, or to track and report gifts, compensation and other remuneration provided to physicians and other healthcare providers, state and local laws that require the registration of pharmaceutical sales representatives, and other federal, state and foreign laws that govern the privacy and security of health information or personally identifiable information in certain circumstances, including state health information privacy and data breach notification laws which govern the collection, use, disclosure, and protection of health-related and other personal information, many of which differ from each other in significant ways and often are not pre-empted by HIPAA, thus requiring additional compliance efforts.

Because of the breadth of these laws and the narrowness of their exceptions and safe harbors, it is possible that business activities can be subject to challenge under one or more of such laws. The scope and enforcement of each of these laws is uncertain and subject to rapid change in the current environment of healthcare reform, especially in light of the lack of applicable precedent and regulations. Federal and state enforcement bodies have recently increased their scrutiny of interactions between healthcare companies and healthcare providers, which has led to a number of investigations, prosecutions, convictions and settlements in the healthcare industry.

Ensuring that business arrangements with third parties comply with applicable healthcare laws and regulations is costly and time consuming. If business operations are found to be in violation of any of the laws described above or any other applicable governmental regulations a pharmaceutical manufacturer may be subject to penalties, including civil, criminal and administrative penalties, damages, fines, disgorgement, individual imprisonment, exclusion from governmental funded healthcare programs, such as Medicare and Medicaid, contractual damages, reputational harm, diminished profits and future earnings, additional reporting obligations and oversight if subject to a corporate integrity agreement or other agreement to resolve allegations of non-compliance with these laws, and curtailment or restructuring of operations, any of which could adversely affect a pharmaceutical manufacturer's ability to operate its business and the results of its operations.

### **Healthcare Reform**

In the United States, there have been, and continue to be, a number of legislative and regulatory changes and proposed changes to the healthcare system that could affect the future results of pharmaceutical manufacturers' operations. In particular, there have been and continue to be a number of initiatives at the federal and state levels that seek to reduce healthcare costs. Most recently, ACA, which was enacted in March 2010, includes measures to significantly change the way healthcare is financed by both governmental and private insurers. Among the provisions of the ACA, of greatest importance to the pharmaceutical and biotechnology industry are the following:

- an annual, nondeductible fee on any entity that manufactures or imports certain specified branded prescription drugs and biologic agents apportioned among these entities according to their market share in some government healthcare programs;
- an increase in the statutory minimum rebates a manufacturer must pay under the Medicaid Drug Rebate Program to 23.1% and 13% of the average manufacturer price for most branded and generic drugs, respectively, and capped the total rebate amount for innovator drugs at 100% of the Average Manufacturer Price (AMP);
- a new methodology by which rebates owed by manufacturers under the Medicaid Drug Rebate Program are calculated for certain drugs and biologics that are inhaled, infused, instilled, implanted or injected;

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- extension of manufacturers' Medicaid rebate liability to covered drugs dispensed to individuals who are enrolled in Medicaid managed care organizations;
- expansion of eligibility criteria for Medicaid programs by, among other things, allowing states to offer Medicaid coverage to additional individuals and by adding new mandatory eligibility categories for individuals with income at or below 133% of the federal poverty level, thereby potentially increasing manufacturers' Medicaid rebate liability;
- a new Medicare Part D coverage gap discount program, in which manufacturers must agree to offer 50% (and 70% commencing on January 1, 2019) point-of-sale discounts off negotiated prices of applicable brand drugs to eligible beneficiaries during their coverage gap period, as a condition for the manufacturer's outpatient drugs to be covered under Medicare Part D;
- expansion of the entities eligible for discounts under the Public Health program;
- a new Patient-Centered Outcomes Research Institute to oversee, identify priorities in, and conduct comparative clinical effectiveness research, along with funding for such research;
- establishment of a Center for Medicare Innovation at CMS to test innovative payment and service delivery models to lower Medicare and Medicaid spending; and
- implementation of the federal physician payment transparency requirements, sometimes referred to as the "Physician Payments Sunshine Act."

Some of the provisions of the ACA have yet to be implemented, and there have been legal and political challenges to certain aspects of the ACA. Since January 2017, President Trump has signed two executive orders and other directives designed to delay, circumvent, or loosen certain requirements mandated by the ACA. Concurrently, Congress has considered legislation that would repeal or repeal and replace all or part of the ACA. While Congress has not passed comprehensive repeal legislation, two bills affecting the implementation of certain taxes under the ACA have been signed into law. The Tax Cuts and Jobs Act of 2017 includes a provision repealing, effective January 1, 2019, the tax-based shared responsibility payment imposed by the ACA on certain individuals who fail to maintain qualifying health coverage for all or part of a year that is commonly referred to as the "individual mandate." Additionally, on January 22, 2018, President Trump signed a continuing resolution on appropriations for fiscal year 2018 that delayed the implementation of certain ACA-mandated fees, including the so-called "Cadillac" tax on certain high cost employer-sponsored insurance plans, the annual fee imposed on certain health insurance providers based on market share, and the medical device excise tax on non-exempt medical devices. Further, the Bipartisan Budget Act of 2018 (the BBA), among other things, amends the ACA, effective January 1, 2019, to close the coverage gap in most Medicare drug plans, commonly referred to as the "donut hole". Congress may consider other legislation to repeal or replace elements of the ACA.

Other legislative changes have been proposed and adopted in the United States since the ACA was enacted. For example, the Budget Control Act of 2011, among other things, created measures for spending reductions by Congress. A Joint Select Committee on Deficit Reduction, tasked with recommending a targeted deficit reduction of at least \$1.2 trillion for the years 2012 through 2021, was unable to reach required goals, thereby triggering the legislation's automatic reduction to several government programs. This includes aggregate reductions of Medicare payments to providers of up to 2% per fiscal year, which went into effect in April 2013 and due to subsequent legislative amendments to the statute, including the BBA, will remain in effect through 2027 unless additional Congressional action is taken. In January 2013, President Obama signed into law the American Taxpayer Relief Act of 2012, which, among other things, further reduced Medicare payments to several providers, including hospitals, imaging centers and cancer treatment centers, and increased the statute of limitations period for the government to recover overpayments to providers from three to five years.

Further, there has been heightened governmental scrutiny in the United States of pharmaceutical pricing practices in light of the rising cost of prescription drugs and biologics. Such scrutiny has resulted in several recent Congressional inquiries and proposed and enacted federal and state legislation designed to, among other



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things, bring more transparency to product pricing, review the relationship between pricing and manufacturer patient programs, and reform government program reimbursement methodologies for products. At the federal level, the Trump administration's budget proposal for fiscal year 2019 contains further drug price control measures that could be enacted during the 2019 budget process or in other future legislation, including, for example, measures to permit Medicare Part D plans to negotiate the price of certain drugs under Medicare Part B, to allow some states to negotiate drug prices under Medicaid, and to eliminate cost sharing for generic drugs for low-income patients. While any proposed measures will require authorization through additional legislation to become effective, Congress and the Trump Administration have each indicated that it will continue to seek new legislative and/or administrative measures to control drug costs. At the state level, legislatures have increasingly passed legislation and implemented regulations designed to control pharmaceutical and biological product pricing, including price or patient reimbursement constraints, discounts, restrictions on certain product access and marketing cost disclosure and transparency measures, and, in some cases, designed to encourage importation from other countries and bulk purchasing.

### **Commercialization Strategy and Organization**

Given our stage of development, we have not yet established a commercial organization or distribution capabilities. If approved, we intend to directly commercialize our sulopenem program in the United States with a targeted sales force across the community and hospital settings.

Prior to receiving approval, we plan to establish a health resources group to familiarize doctors in the community setting with the rising rate of resistance of pathogens to the current oral therapies for UTI. If approved, we will direct our health resources group to promote antibiotic stewardship, particularly of oral sulopenem, by educating physicians in the community setting about patients for whom sulopenem may be an appropriate treatment option. In the hospital setting, we believe our sulopenem program will support stewardship efforts in the hospital focused on reduction in treatment length-of-stay by providing a safe and effective oral therapy that can be completed in an outpatient setting. A team of regional medical physicians will also work with hospitals, provider organizations and payors to demonstrate that the use of sulopenem may reduce the length of a patients' hospital stay or avoid hospital admission altogether, which we believe would lower the total cost of treatment of cUTI, and in some cases uUTI when inappropriate therapy leads to higher hospitalization rates or poor clinical outcomes for elevated risk patients. In addition, we expect that our health resources group will also work with doctors in the infectious disease field to answer questions regarding sulopenem's clinical results and its pharmacokinetic profile, conduct medical education events regarding the emerging science and build awareness of sulopenem.

If the FDA approves oral sulopenem and sulopenem, we plan to build a commercial infrastructure to launch both product candidates in the United States. We expect that our commercial infrastructure, led by highly-experienced management personnel, would be comprised of a targeted sales force, an internal marketing and health resources group, as well as a managed markets group focused on reimbursement activities with third-party payors and a specialty distribution team. We also plan to have in place a patient and healthcare practitioner support group to assist with information requests, reimbursement logistics and assistance, and provide educational materials where appropriate. To ensure successful execution of these critical activities, we may need to hire personnel to fill some of these functions in advance of the anticipated approval date.

We expect to direct our sales and marketing efforts toward the community and hospital practitioner settings that account for a substantial majority of the potential market for oral sulopenem and sulopenem across geographies with the highest prevalence of bacterial resistance to fluoroquinolones. Based on a 2017 market survey data of outpatient urine cultures of Enterobacteriaceae and quinolone resistance by zip code, we estimate that our initial sales force could successfully target key customers including top hospitals and emergency room clinics, as well as specialty and primary care practices in the community setting. As access for, and awareness of, our sulopenem program increases, we would plan to broaden our target audience and geography by increasing the number of sales representatives to capture a larger percentage of the market.



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We are focusing our initial commercial efforts on the U.S. market, which we believe represents the largest market opportunity for our sulopenem program. We are currently evaluating our commercialization strategy outside the United States, and believe that Europe and Asia represent significant opportunities because of rising rates of ESBL and quinolone resistance in these geographies, which in many countries exceeds the United States' resistance rate.

### **Manufacturing**

We do not currently own or operate manufacturing facilities for the production of any of our product candidates. We currently rely on four third-party contract manufacturers for all of our required raw materials, drug substance, and finished drug product for our preclinical research and clinical trials. We currently have a ten person team dedicated to managing the relationships with these manufacturers and the manufacturing process. Due to the complex and critical nature of drug manufacturing, we have employed a dual sourcing strategy in order to register two suppliers and validate at least one supplier for sulopenem's active pharmaceutical ingredient at the time of submitting our NDAs, with each supplier capable of producing kilogram quantities for commercial scale under cGMP conditions. We also intend to have a third-party manufacturer to produce the oral sulopenem bilayer tablets. In the future, given the importance of our oral formulation, we plan to pursue additional sources to manufacture tablets. We plan to use another third party to manufacture the IV vials. Potential additional sources to manufacture IV vials have also been identified.

### **Legal Proceedings**

From time to time, we may be involved in legal proceedings or be subject to claims arising out of our operations. We are not currently a party to any legal proceedings that in the opinion of our management, would have a material adverse effect on our business.

### **Facilities**

Our headquarters are located in Dublin, Ireland, where we lease approximately 5,551 square feet of office space. Our lease extends through November 2026, and we have the option to terminate the lease in November 2021 with one year's notice and a six months' rent penalty. We also lease office space in Old Saybrook, CT. Our lease extends through June 2022, and we have the option to extend the term of the lease for such space through June 2025. We also lease office space in Chicago, Illinois. Our lease extends through June 2023, and we have the option to extend the term of the lease for such space through June 2028. We believe that our current facilities are adequate to meet our near-term needs, and that suitable additional or substitute space will be available as needed on commercially reasonable terms.

### **Employees**

As of March 31, 2018, we had 38 full-time employees, including a total of nine employees with M.D., Pharm.D. or Ph.D. degrees. Twenty-seven employees were primarily engaged in research and development activities, with the rest providing administrative, business and operations support. None of our employees are represented by labor unions or covered by collective bargaining agreements. We consider our employee relations to be good.

## MANAGEMENT

### Executive Officers and Directors

The following table sets forth certain information regarding our current executive officers and directors as of April 30, 2018:

Name	Age	Position(s)
Corey N. Fishman	53	President, Chief Executive Officer and Director
Michael W. Dunne, M.D.	58	Chief Scientific Officer
Judith M. Matthews	48	Chief Financial Officer
Jeff Schaffnit	47	Chief Commercial Officer
Paul R. Edick <sup>(1)(3)</sup>	62	Chairman of the Board of Directors
Brenton K. Ahrens <sup>(2)</sup>	55	Director
Mark Chin <sup>(1)(2)</sup>	36	Director
James I. Healy, M.D., Ph.D <sup>(1)</sup>	53	Director
Patrick J. Heron <sup>(3)</sup>	47	Director
Robert Hopfner, Ph.D	45	Director
Ronald M. Hunt <sup>(1)(3)</sup>	53	Director
David G. Kelly <sup>(2)(3)</sup>	57	Director
Shahzad Malik, M.D. <sup>(1)(3)</sup>	51	Director

(1) Member of the compensation committee.

(2) Member of the audit committee.

(3) Member of the nominating and corporate governance committee.

### Executive Officers

*Corey N. Fishman* has served as our Chief Executive Officer and member of our board of directors since November 2015. From August 2010 to February 2015, Mr. Fishman served as chief operating officer of Durata Therapeutics, Inc., a pharmaceutical company acquired by Actavis plc, a pharmaceutical company, and he also served as chief financial officer of Durata from June 2012 to February 2015. From 2008 to 2010, Mr. Fishman served as chief financial officer of GANIC Pharmaceuticals, Inc., a pharmaceutical company. From 2002 to 2008, Mr. Fishman served in a variety of roles at MedPointe Healthcare, Inc., a specialty pharmaceutical company acquired by Meda AB, including as chief financial officer from 2006 to 2008. Mr. Fishman currently serves as a member of the board of directors of Momenta Pharmaceuticals, Inc. Mr. Fishman holds a B.A. in economics from the University of Illinois at Urbana-Champaign and an M.S.M. in finance from the Krannert School of Management at Purdue University. We believe Mr. Fishman is qualified to serve on our board of directors due to his role as a founder of our company, his deep knowledge of our company and his extensive background in the pharmaceutical industry.

*Michael W. Dunne, M.D.* has served as our Chief Scientific Officer since November 2015. From November 2014 until September 2015, Dr. Dunne was vice president research and development at Actavis. From September 2010 to October 2014, Dr. Dunne served as chief medical officer of Durata, where he previously served as acting chief medical officer on a consulting basis from December 2009 to September 2010. From 1992 to 2009, Dr. Dunne served in a variety of roles in connection with the clinical development of numerous infectious disease compounds at Pfizer Inc., a biopharmaceutical company, including as the vice president, therapeutic head of development for infectious disease from 2001 to 2009. Dr. Dunne holds a B.A. in economics from Northwestern University and an M.D. from the State University of New York Health Sciences Center. He completed his internal medicine residency and fellowships in infectious diseases and pulmonary medicine at Yale University School of Medicine.

*Judith M. Matthews* has served as our Chief Financial Officer since November 2015. From 2012 to February 2015, Ms. Matthews served as vice president of finance at Durata. From 2009 to 2012, Ms. Matthews served as

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head of financial planning & analysis at Bally Total Fitness Corporation, a fitness club chain. From 2004 to 2008, Ms. Matthews served as vice president of finance for the Sterno Group, a subsidiary of Blyth, Inc., a home products company. Ms. Matthews holds a B.A. in accounting from the University of Illinois at Urbana-Champaign and a Master of Management in finance and marketing from the Kellogg School of Management at Northwestern University.

*Jeff Schaffnit* has served as our Chief Commercial Officer since February 2018. From April 2017 to January 2018, Mr. Schaffnit served as group vice president and head of patient engagement and experience at Shire plc, a biopharmaceutical company, where he previously served as vice president and head of U.S. hematology from June 2016 to March 2017. From January 2016 to June 2016, Mr. Schaffnit served as vice president and North American region head, hematology at Baxalta Inc., a biopharmaceutical company acquired by Shire. From January 2015 to December 2015, Mr. Schaffnit served as vice president of hemophilia marketing for Baxalta Inc. From August 2013 to December 2014, Mr. Schaffnit served as senior director, U.S. hemophilia marketing at Baxter International Inc., a healthcare company. From October 2012 to July 2013, Mr. Schaffnit served as vice president of sales and marketing at Mérieux NutriSciences Corporation, a food safety and nutrition consulting company. Mr. Schaffnit has a B.S. in chemical engineering from the University of Illinois at Urbana-Champaign and an M.B.A. in strategy, finance and marketing from the Kellogg School of Management at Northwestern University.

### ***Non-Employee Directors***

*Paul R. Edick* has served as Chairman of our board of directors since November 2015. Since January 2017, Mr. Edick has served as president, chief executive officer and a director of Xeris Pharmaceuticals, Inc., a biopharmaceutical company. Since November 2014, Mr. Edick served as founding partner of 3G Advisors, LLC, a consultancy to the pharmaceutical, healthcare and healthcare investor communities. From July 2010 to November 2014, Mr. Edick served as chief executive officer and member of the board of directors of Durata. From 2008 to 2010, Mr. Edick served as chief executive officer of GANIC Pharmaceuticals, Inc., a pharmaceutical company. From 2002 to 2008, Mr. Edick served in a variety of roles at MedPointe, including as chief executive officer from 2006 to 2008. Mr. Edick currently serves as a member of the board of directors of Newlink Genetics Corporation, Sucampo Pharmaceuticals, Inc., Neos Therapeutics, Inc., PDL BioPharma, Inc. and Xeris Pharmaceuticals. Mr. Edick previously served on the boards of directors of Circassia Pharmaceuticals and Durata. Mr. Edick holds a B.A. in psychology from Hamilton College in Clinton, New York. We believe Mr. Edick is qualified to serve on our board of directors due to his extensive experience with pharmaceutical companies at various stages of development, including service on the boards of directors of other healthcare companies.

*Brenton K. Ahrens* has served as a member of our board of directors since November 2015. Since 1999, Mr. Ahrens has served as a general partner with Canaan Partners LLP, a venture capital firm. Prior to joining Canaan Partners, Mr. Ahrens worked in both commercial and technical roles at General Surgical Innovations, Ethicon (J&J), and IAP Research. Mr. Ahrens previously served on the board of directors of Durata. Mr. Ahrens holds a B.S. and an M.S. in mechanical engineering from the University of Dayton and an M.B.A. from the Tuck School of Business at Dartmouth College. We believe Mr. Ahrens is qualified to serve on our board of directors due to his investment experience, including service on the boards of directors of other healthcare companies.

*Mark Chin* has served as a member of our board of directors since May 2017. Since August 2016, Mr. Chin has served as an investment manager at Aris Bioscience plc, a life science investment company. From September 2012 to July 2016, Mr. Chin served as a principal at Longitude Capital LLC, a healthcare venture capital firm. From January 2011 to September 2012, Mr. Chin served as a consultant with the Boston Consulting Group. Mr. Chin has a B.S. in management science from the University of California at San Diego, an M.B.A. from the Wharton School at the University of Pennsylvania and an M.S. in biotechnology from the University of Pennsylvania. We believe Mr. Chin is qualified to serve on our board of directors due to his investment experience in biotechnology and medical technology industries.

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*James I. Healy, M.D., Ph.D.* has served as a member of our board of directors since November 2015. Dr. Healy has been a general partner at Sofinnova Ventures, Inc. since 2000. Prior to this, Dr. Healy held positions at Bayer Healthcare Pharmaceuticals Inc. and Sanderling Ventures. Dr. Healy is currently on the board of directors of Ascendis Pharma A/S, Coherus BioSciences, Inc., Edge Therapeutics, Inc., ObsEva SA, Natera, Inc., NuCana plc and several private companies. Previously, Dr. Healy served as a board member of Amarin Corporation plc, Anthera Pharmaceuticals, Inc., Auris Medical Holding AG, Durata, Hyperion Therapeutics, Inc., InterMune, Inc., KaloBios Pharmaceuticals, Inc., Movetis NV and a number of private companies. Dr. Healy holds a B.A. in molecular biology and a B.A. in Scandinavian studies from the University of California at Berkeley and an M.D. and Ph.D. in immunology from Stanford University School of Medicine. We believe Dr. Healy is qualified to serve on our board of directors due to his medical training and his extensive experience in the biopharmaceutical industry, including as a venture capital investor and a member of the boards of directors of other biopharmaceutical companies.

*Patrick J. Heron* has served as a member of our board of directors since November 2015. Since 1999, Mr. Heron has served as a general partner with Frazier Healthcare Partners, a venture capital firm. Prior to joining Frazier Healthcare Partners, Mr. Heron worked at the management consulting firm McKinsey & Company. Before McKinsey, Mr. Heron held positions with Massachusetts General Hospital and biotechnology firm Cetus Corporation. Mr. Heron previously served on the boards of directors of Tobira Therapeutics, Inc. and Collegium Pharmaceuticals, Inc. Mr. Heron holds a B.A. in political science from the University of North Carolina at Chapel Hill and received an M.B.A. from Harvard Business School. We believe Mr. Heron is qualified to serve on our board of directors due to his extensive business experience, his experience in investing, and his experience in the life sciences industry.

*Robert Hopfner, Ph.D.* served as a member of our board of directors from December 2017 to May 24, 2018. Since October 2017, Dr. Hopfner has served as a managing partner at Pivotal bioVenture Partners LLC, a venture capital firm. From 2007 to September 2017, Dr. Hopfner served as an investment partner at Bay City Capital, a venture capital firm. Before joining Bay City Capital, Dr. Hopfner worked as an associate in DuPont Pharmaceuticals' business development & strategic planning group and as an analyst at Ag-West Biotech, a Western Canadian seed-stage biotech venture capital firm. Dr. Hopfner previously served on the boards of directors of Durata and Hyperion Therapeutics, Inc. Dr. Hopfner holds Ph.D. in pharmacology and a B.S. in pharmacy from the University of Saskatchewan and an M.B.A. with specializations in entrepreneurship, finance and strategy from the University of Chicago Booth School of Business. We believe Dr. Hopfner is qualified to serve on our board of directors due to his investment experience in the life science industry, as well as his medical background.

*Ronald M. Hunt* has served as a member of our board of directors since November 2015. Since 2005, Mr. Hunt has served as a managing director and member of New Leaf Venture Partners, L.L.C., a venture capital firm. Previously, Mr. Hunt served at the Sprout Group, a venture capital firm and was a consultant with consulting firms Coopers & Lybrand Consulting and The Health Care Group. Mr. Hunt also previously served in various sales and marketing positions at Johnson & Johnson and SmithKline Beecham Pharmaceuticals. Mr. Hunt previously served on the board of directors of Durata and Relypsa, Inc. Mr. Hunt holds a B.S. from Cornell University and an M.B.A. from the Wharton School of the University of Pennsylvania. We believe Mr. Hunt is qualified to serve on our board of directors due to his investment experience, his experience in the pharmaceuticals industry and his service on the boards of directors of other biopharmaceutical companies.

*David G. Kelly* has served as a member of our board of directors since August 2016. Since September 2014, Mr. Kelly has served as the executive vice president, managing director, Ireland of Horizon Pharma, plc, a biopharmaceutical company. From February 2012 to September 2014, Mr. Kelly served as chief financial officer of Vidara Therapeutics Inc., a pharmaceutical company. From May 2005 to January 2012, Mr. Kelly served as chief financial officer of AGI Therapeutics plc, a pharmaceutical company. Mr. Kelly also served as senior vice president, finance and planning of Warner Chilcott plc (formerly Galen Holdings plc), a pharmaceutical company listed on the London Stock Exchange (LSE). In addition, Mr. Kelly held roles at Elan Corporation and KPMG.

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Mr. Kelly holds a B.A. in economics from Trinity College, Dublin and is also a member of the Institute of Chartered Accountants in Ireland (ACA). We believe Mr. Kelly is qualified to serve on our board of directors due to his experience as a senior executive, particularly within the life science industry, including his experience in finance.

*Shahzad Malik, M.D.* has served as a member of our board of directors since May 2017. Since 1999, Dr. Malik has served as a general partner at Advent Life Sciences LLP, a venture capital firm. Prior to joining Advent, Dr. Malik spent six years practicing medicine before joining the London office of McKinsey & Company, a management consulting firm. Dr. Malik also currently serves on the board of directors of Versartis, Inc. He previously served on the boards of directors of Conatus Pharmaceuticals Inc. and Agenus Inc. Dr. Malik holds an M.A. from Oxford University and an M.D. from Cambridge University. He subsequently specialized in interventional cardiology while also pursuing research interests in heart muscle disorders both in the clinic and basic science laboratory. We believe Dr. Malik is qualified to serve on our board of directors due to his experience practicing medicine and his investment experience.

### **Family Relationships**

There are no family relationships among any of the directors or executive officers.

### **Board Composition**

Our business and affairs are managed under the direction of our board of directors, which currently consists of nine members. Certain members of our board of directors were elected pursuant to the provisions of a voting agreement among certain of our shareholders. Under the terms of this voting agreement, the shareholders who are party to the voting agreement have agreed to vote their respective shares so as to elect directors as follows: (i) one individual designated by Frazier Healthcare VII, L.P. and Frazier Healthcare VII-A, L.P. (Mr. Heron), (ii) one individual designated by Canaan X, L.P. (Mr. Ahrens), (iii) one individual designated by New Leaf Ventures III, L.P. (Mr. Hunt), (iv) one individual designated by Sofinnova Venture Partners IX, L.P. (Dr. Healy), (v) one individual designated by Arix Bioscience Holdings Ltd. (Mr. Chin), (vi) one individual designated by Pivotal bioVenture Partners I, L.P. (formerly Dr. Hopfner), (vii) one individual designated by Advent Life Sciences LLP and Advent Life Sciences Fund II LP (Dr. Malik), (viii) the person then serving as Chief Executive Officer (Mr. Fishman), (ix) a Chairman of the Board acceptable to at least a majority of the board of directors (Mr. Edick) and (x) one industry representative not affiliated with our company or any investor in our company acceptable to at least a majority of the board of directors (Mr. Kelly). The voting agreement will terminate upon the completion of this offering and none of our shareholders will have any special rights regarding the election or designation of members of our board of directors.

Contingent upon and immediately prior to the effectiveness of the registration statement of which this prospectus forms a part, Dr. Hopfner resigned from our board of directors, and on completion of this offering, we will reduce our authorized number of directors to nine. Upon completion of this offering, our directors will be divided among three classes with staggered three-year terms as follows:

- Class I, whose members will be Mark Chin, Paul Edick and David G. Kelly. The terms of the Class I directors will expire at our 2019 annual meeting of shareholders;
- Class II, whose members will be Patrick J. Heron, Shahzad Malik, M.D. and Brenton K. Ahrens. The terms of the Class II directors will expire at our 2020 annual meeting of shareholders; and
- Class III, whose members will be Corey Fishman, James I. Healy, Ph.D., M.D. and Ronald M. Hunt. The terms of the Class III directors will expire at our 2021 annual meeting of shareholders.

We have been approved to list our ordinary shares on the Nasdaq Global Market, or Nasdaq. Applicable Nasdaq rules require a majority of a listed company's board of directors to be comprised of independent directors within one year of listing. In addition, the Nasdaq rules require that, (i) on the date of the completion of the offering, at least one member of each of a listed company's audit, compensation and nominating and corporate governance

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committees be independent, (ii) within 90 days of the date of the completion of the offering, a majority of the members of such committees be independent and (iii) within one year of the date of the completion of the offering, all the members of such committees be independent. Audit committee members must also satisfy the independence criteria set forth in Rule 10A-3 under the Securities Exchange Act of 1934, as amended, or the Exchange Act. Under applicable Nasdaq rules, a director will only qualify as an “independent director” if, in the opinion of the listed company’s board of directors, that person does not have a relationship that would interfere with the exercise of independent judgment in carrying out the responsibilities of a director.

In order to be considered independent for purposes of Rule 10A-3 under the Exchange Act, a member of an audit committee of a listed company may not, other than in his or her capacity as a member of the audit committee, the board of directors, or any other board committee, accept, directly or indirectly, any consulting, advisory, or other compensatory fee from the listed company or any of its subsidiaries or otherwise be an affiliated person of the listed company or any of its subsidiaries.

Our board of directors undertook a review of the composition of our board of directors and its committees and the independence of each director. Based upon information requested from and provided by each director concerning his or her background, employment and affiliations, including family relationships, our board of directors has determined that all directors other than Corey Fishman are “independent directors” as defined under applicable Nasdaq rules. In making such determination, our board of directors considered the relationships that each such non-employee director has with our company and all other facts and circumstances that our board of directors deemed relevant in determining his or her independence, including the beneficial ownership of our capital stock by each non-employee director.

### **Committees of the Board of Directors**

Our board of directors has the authority to appoint committees to perform certain management and administration functions. Our board of directors has established an audit committee, a compensation committee, and a nominating and corporate governance committee. The composition and responsibilities of each committee are described below. Members will serve on these committees until their resignation or until otherwise determined by the board of directors. Following the closing of this offering, the charters for each of these committees will be available on our website at [www.iterumtx.com](http://www.iterumtx.com). Information contained on or accessible through our website is not a part of this prospectus, and the inclusion of our website address in this prospectus is an inactive textual reference only. The composition of all of our committees will comply with all applicable requirements of the Irish Companies Act, the Sarbanes-Oxley Act of 2002, Nasdaq and Securities and Exchange Commission (SEC), rules and regulations.

#### ***Audit Committee***

Upon the completion of this offering, our audit committee will consist of Brenton K. Ahrens, Mark Chin and David G. Kelly. Our board of directors has determined each of Mr. Ahrens, Mr. Chin and Mr. Kelly to be independent under the listing standards and Rule 10A-3(b)(1) of the Exchange Act and for the purposes of Section 167(4) of the Irish Companies Act. The chairperson of our audit committee is Mr. Kelly. Our board of directors has determined that Mr. Kelly is an “audit committee financial expert” within the meaning of SEC regulations. Our board of directors has also determined that each member of our audit committee has the requisite financial expertise required under the applicable requirements of Nasdaq. In arriving at this determination, the board of directors has examined each audit committee member’s scope of experience and the nature of their employment in the corporate finance sector.

The primary purpose of the audit committee is to discharge the responsibilities of our board of directors with respect to our accounting, financial, and other reporting and internal control practices and to oversee our independent registered accounting firm. Specific responsibilities of our audit committee include:

- recommending a qualified firm to serve as the independent registered public accounting firm to audit our financial statements to the board of directors;

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- helping to ensure the independence and performance of the independent registered public accounting firm;
- discussing the scope and results of the audit with the independent registered public accounting firm, and reviewing, with management and the independent accountants, our interim and year-end operating results;
- reviewing, upon completion of the audit, the Irish statutory financial statements proposed to be filed with our annual return at the Irish Companies Registration Office;
- developing procedures for employees to submit concerns anonymously about questionable accounting or audit matters;
- reviewing our policies on risk assessment and risk management;
- reviewing related party transactions;
- coordinating the board of directors' oversight of our internal controls over financial reporting, including discussing with management and the independent registered public accounting firm the integrity of our financial reporting processes and internal controls; and
- approving (or, as permitted, pre-approving) all audit and all permissible non-audit services to be performed by the independent registered public accounting firm.

### ***Compensation Committee***

Our compensation committee consists of Paul R. Edick, Mark Chin, James I. Healy, M.D., Ph.D., Ronald M. Hunt and Shahzad Malik, M.D. Our board of directors has determined each of Mr. Edick, Mr. Chin, Dr. Healy, Mr. Hunt and Dr. Malik to be a "non-employee director" as defined in Rule 16b-3 promulgated under the Exchange Act. The chairperson of our compensation committee is Mr. Hunt.

The primary purpose of our compensation committee is to discharge the responsibilities of our board of directors to oversee our compensation policies, plans and programs and to review and determine the compensation to be paid to our executive officers, directors and other senior management, as appropriate. Specific responsibilities of our compensation committee include:

- reviewing and approving, or recommending that our board of directors approve, the compensation of our executive officers;
- reviewing and recommending to our board of directors the compensation of our directors;
- reviewing and approving, or recommending that our board of directors approve, the terms of compensatory arrangements with our executive officers;
- administering our stock and equity incentive plans;
- selecting independent compensation consultants, legal counsel or other advisors;
- reviewing and approving, or recommending that our board of directors approve, incentive compensation and equity plans, severance agreements, change-of-control protections and any other compensatory arrangements for our executive officers; and
- reviewing and making recommendations to our board of directors regarding incentive compensation and equity plans.

### ***Nominating and Corporate Governance Committee***

Our nominating and corporate governance committee consists of Paul R. Edick, Patrick J. Heron, Ronald M. Hunt, David G. Kelly and Shahzad Malik, M.D. Our board of directors has determined each of Mr. Edick, Mr. Heron, Mr. Hunt, Mr. Kelly and Dr. Malik to be independent under the listing standards. The chairperson of our nominating and corporate governance committee is Mr. Edick.



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Specific responsibilities of our nominating and corporate governance committee include:

- reviewing periodically and evaluating director performance on our board of directors and its applicable committees, and recommending to our board of directors and management areas for improvement;
- interviewing, evaluating, nominating and recommending individuals for membership on our board of directors;
- administering the process outlined in our constitution concerning shareholder nominations for director candidates;
- reviewing developments in corporate governance practices;
- overseeing and reviewing our processes and procedures to provide information to our board of directors and its committees;
- overseeing succession planning for senior executives;
- reviewing and recommending to our board of directors any amendments to our corporate governance policies; and
- reviewing and assessing, at least annually, the performance of the nominating and corporate governance committee and the adequacy of its charter.

### **Code of Business Conduct and Ethics**

We will adopt a Code of Business Conduct and Ethics that applies to all of our employees, officers and directors, including those officers responsible for financial reporting. Following the closing of this offering, the Code of Business Conduct and Ethics will be available on our website at [www.iterumtx.com](http://www.iterumtx.com). Information contained on or accessible through our website is not a part of this prospectus, and the inclusion of our website address in this prospectus is an inactive textual reference only. We intend to disclose any amendments to the Code of Business Conduct and Ethics, or any waivers of its requirements, on our website to the extent required by the applicable rules and exchange requirements.

### **Compensation Committee Interlocks and Insider Participation**

No member of our compensation committee has ever been an officer or employee of our company. None of our executive officers serve, or have served during the last year, as a member of the board of directors, compensation committee, or other board committee performing equivalent functions of any other entity that has one or more executive officers serving as one of our directors or on our compensation committee.

### **2017 Non-Employee Director Compensation**

The following table sets forth information regarding compensation earned by or paid to our non-employee directors during 2017.

<b>Name</b>	<b>Fees Earned or Paid in Cash</b>	<b>Option Awards<sup>(1)</sup></b>	<b>Other Compensation</b>	<b>Total</b>
Brenton K. Ahrens	\$ —	\$ —	\$ —	\$ —
Mark Chin	—	—	—	—
Paul R. Edick <sup>(2)</sup>	30,000	1,992 <sup>(2)</sup>	—	31,992
James I. Healy	—	—	—	—
Patrick J. Heron	—	—	—	—
Robert Hopfner, Ph.D	—	—	—	—
Ronald M. Hunt	—	—	—	—
David G. Kelly <sup>(3)(4)</sup>	25,000	1,195 <sup>(3)</sup>	—	26,195
Shahzad Malik, M.D.	—	—	—	—

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- (1) The amounts reported do not reflect the amounts actually received by our non-employee directors. Instead, these amounts reflect the aggregate grant date fair value of each stock option granted to our non-employee directors during 2017, as computed in accordance with Financial Accounting Standards Board, or FASB, Accounting Standards Codification, or ASC, 718. Assumptions used in the calculation of these amounts are included in Note 9 to our audited financial statements included in this prospectus. As required by SEC rules, the amounts shown exclude the impact of estimated forfeitures related to service-based vesting conditions. Our non-employee directors who have received options will only realize compensation with regard to these options to the extent the trading price of our ordinary shares is greater than the exercise price of such options. The table below lists the aggregate number of shares subject to outstanding option awards held by each of our non-employee directors.

Name	Number of Shares Subject to Outstanding Options as of December 31, 2017
Brenton K. Ahrens	—
Mark Chin	—
Paul R. Edick <sup>(2)</sup>	1,060
James I. Healy	—
Patrick J. Heron	—
Robert Hopfner, Ph.D	—
Ronald M. Hunt	—
David G. Kelly <sup>(3)</sup>	3,182
Shahzad Malik, M.D.	—

- (2) Mr. Edick was granted an option to purchase 1,060 of our ordinary shares at an exercise price of \$3.30 per share on September 12, 2017. The shares are scheduled to vest over a four-year period as follows: 1/4<sup>th</sup> of the shares vest on the one-year anniversary of the vesting commencement date, September 12, 2017, and 1/48<sup>th</sup> of the total shares will vest each month thereafter, subject to continued service with us through each relevant vesting date. The vesting of Mr. Edick's option award will accelerate in full if within 30 days prior to or 12 months following a change of control Mr. Edick (i) is terminated without cause or (ii) resigns for good reason.
- (3) Mr. Kelly was granted an option to purchase 636 of our ordinary shares at an exercise price of \$3.30 per share on September 12, 2017. The shares are scheduled to vest over a four-year period as follows: 1/4<sup>th</sup> of the shares vest on the one-year anniversary of the vesting commencement date, September 12, 2017, and 1/48<sup>th</sup> of the total shares will vest each month thereafter, subject to continued service with us through each relevant vesting date. The vesting of Mr. Kelly's option award will accelerate in full if within 30 days prior to or 12 months following a change of control Mr. Kelly (i) is terminated without cause or (ii) resigns for good reason.
- (4) Mr. Kelly receives \$20,000 per annum for his service as a director of Iterum Therapeutics plc, and \$5,000 for his service as a director of our Irish subsidiary, Iterum Therapeutics International Limited. Mr. Kelly's compensation is set in US\$, however he is paid in Euros using the average exchange rate for the 12 months ended December 31, 2016. Applying this formula to the year ended December 31, 2017, US\$1.00 was equal to €0.9034.

### **Non-Employee Director Compensation Policy**

In May 2018, our board of directors adopted a non-employee director compensation policy effective upon execution of the underwriting agreement for this offering, pursuant to which our non-employee directors are compensated with an annual cash retainer. Each such director receives an annual base cash retainer of \$35,000 for such service, to be paid quarterly. The non-executive chairperson of our board of directors receives an additional annual base cash retainer of \$27,500 for such service, to be paid quarterly.

The policy also provides that we compensate the members of our board of directors for service on our committees as follows:

- The chairperson of our audit committee receives an annual cash retainer of \$15,000 for such service, paid quarterly, and each of the other members of the audit committee receives an annual cash retainer of \$7,500, paid quarterly.
- The chairperson of our compensation committee receives an annual cash retainer of \$12,000 for such service, paid quarterly, and each of the other members of the compensation committee receives an annual cash retainer of \$6,000, paid quarterly.
- The chairperson of our nominating and corporate governance committee receives an annual cash retainer of \$8,000 for such service, paid quarterly, and each of the other members of the nominating and corporate governance committee receives an annual cash retainer of \$4,000, paid quarterly.

The policy further provides for the grant of annual equity awards as follows:

- Each director will receive annual equity awards with a fixed value of \$80,000.
- The equity awards will be granted as a mix of options and restricted stock units, at such director's discretion. Each director must determine their mix of equity awards no later than 30 days prior to the applicable grant date.
- All equity awards will vest on the one-year anniversary of the grant date.
- The value of a stock option to be granted under this policy will be determined using the same method we use to calculate the grant-date fair value of stock options in our financial statements, except that no provision will be made for estimated forfeitures related to service-based vesting. The actual number of shares to be granted under a restricted stock unit award under this policy will be determined by dividing the grant date value by a 30-day volume weighted average trading price (ending on the trading day immediately preceding the grant date).

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## EXECUTIVE COMPENSATION

Our named executive officers, consisting of our principal executive officer and the next two most highly compensated executive officers, as of December 31, 2017, were:

- Corey N. Fishman, President and Chief Executive Officer;
- Michael W. Dunne, M.D., Chief Scientific Officer; and
- Judith M. Matthews, Chief Financial Officer.

### 2017 Summary Compensation Table

The following table presents all of the compensation paid or awarded to or earned by our named executive officers during 2017:

Name and Principal Position	Year	Salary	Option Awards <sup>(1)</sup>	Non-Equity Incentive Plan Compensation <sup>(2)</sup>	All Other Compensation <sup>(3)</sup>	Total
Corey N. Fishman <i>President and Chief Executive Officer</i>	2017	\$420,000	\$122,694	\$ 210,000	\$ 2,208	\$754,902
Michael W. Dunne, M.D. <i>Chief Scientific Officer</i>	2017	367,500	78,078	154,350	3,741	603,669
Judith M. Matthews <i>Chief Financial Officer</i>	2017	236,250	22,038	59,063	788	318,139

(1) The amounts reported do not reflect the amounts actually received by our executive officers. Instead, these amounts reflect the aggregate grant date fair value of each stock option granted to our executive officers during 2017, as computed in accordance with Financial Accounting Standards Board, or FASB, Accounting Standards Codification, or ASC, 718. Assumptions used in the calculation of these amounts are included in Note 9 to our audited financial statements included in this prospectus. As required by SEC rules, the amounts shown exclude the impact of estimated forfeitures related to service-based vesting conditions. Our executive officers who have received options will only realize compensation with regard to these options to the extent the trading price of our ordinary shares is greater than the exercise price of such options.

(2) Amount represents cash bonuses earned for the 12-month period from January 1, 2017 to December 31, 2017, and exclude payments made in 2017 for 2016 bonuses.

(3) Includes the dollar value of life insurance premiums paid by the company for the benefit of such executive.

### Outstanding Equity Awards as of December 31, 2017

The following table presents information regarding outstanding equity awards held by our named executive officers as of December 31, 2017. All stock options were granted under our 2015 Equity Incentive Plan.

Name	Grant Date	Vesting Commencement Date	Option Awards			
			Number of Securities Underlying Unexercised Options (#) Exercisable	Number of Securities Underlying Unexercised Options (#) Unexercisable <sup>(1)(2)</sup>	Option Exercise Price Per Share <sup>(3)</sup>	Option Expiration Date
Corey N. Fishman	09/12/2017	09/12/2017	—	65,351	\$ 3.30	09/11/2027
Michael W. Dunne, M.D.	09/12/2017	09/12/2017	—	41,587	3.30	09/11/2027
Judith M. Matthews	09/12/2017	09/12/2017	—	11,882	3.30	09/11/2027

(1) The shares are scheduled to vest over a four-year period as follows: 1/4<sup>th</sup> of the shares underlying the options vest on the one-year anniversary of the vesting commencement date and thereafter 1/48<sup>th</sup> of the total shares vest each month, subject to continued service with us through each relevant vesting date.

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- (2) Pursuant to the equity agreements between the named executive officer and us, the vesting of such named executive officer's stock and option awards will accelerate under certain circumstances as described under the section titled "—Employment, Severance and Change in Control Arrangements."
- (3) The exercise price per share of the stock options reflects the fair market value per ordinary share on the date of grant.

### **Pension Benefits**

Our named executive officers did not participate in, or otherwise receive any benefits under, any pension or defined benefit retirement plan sponsored by us in 2017.

### **Nonqualified Deferred Compensation**

Our named executive officers did not participate in, or earn any benefits under, a non-qualified deferred compensation plan sponsored by us during 2017.

### **Emerging Growth Company Status**

We are an "emerging growth company," as defined in the JOBS Act. As an emerging growth company we will be exempt from certain requirements related to executive compensation, including, but not limited to, the Nasdaq requirements to hold a nonbinding advisory vote on executive compensation and to provide information relating to the ratio of total compensation of our Chief Executive Officer to the median of the annual total compensation of all of our employees, each as required by the Investor Protection and Securities Reform Act of 2010, which is part of the Dodd-Frank Wall Street Reform and Consumer Protection Act.

### **Employment, Severance and Change in Control Arrangements**

We have entered into offer letters with each of our named executive officers. The offer letters generally provide for at-will employment and set forth the executive's initial base salary, target variable compensation, eligibility for employee benefits, the terms of initial equity grants and in some cases severance benefits on a qualifying termination. Each of our named executive officers has also executed our standard form of proprietary information agreement. Any potential payments and benefits due upon a termination of employment or a change of control of us are further described below.

#### ***Corey N. Fishman***

Mr. Fishman serves as our President and Chief Executive Officer. On November 18, 2015, Mr. Fishman entered into an offer letter with Iterum Therapeutics US Limited, our indirect wholly owned subsidiary. The offer letter has no specific term and constitutes an at-will employment arrangement. Effective upon the closing of this offering, Mr. Fishman's base salary will be \$540,000, and his discretionary annual target performance bonus will be 55% of his annual base salary. In connection with his employment, in September 2017 Mr. Fishman was granted an option to purchase 65,351 of our ordinary shares at an exercise price of \$3.30 per share. The shares underlying the option vest as to 1/4<sup>th</sup> on the one-year anniversary of the vesting commencement date and 1/48<sup>th</sup> of the total shares vest each month thereafter, subject to Mr. Fishman's continued service with us through each relevant vesting date. The vesting of Mr. Fishman's option award is also subject to acceleration as detailed in the section titled "—Potential Payments Upon Termination or Change in Control."

#### ***Michael W. Dunne, M.D.***

Dr. Dunne serves as our Chief Scientific Officer. On November 18, 2015, Dr. Dunne entered into an offer letter with Iterum Therapeutics US Limited, our indirect wholly owned subsidiary. The offer letter has no specific term and constitutes an at-will employment arrangement. Dr. Dunne's current base salary is \$367,500, and his discretionary annual target performance bonus is 40% of his annual base salary. In connection with his employment, in September 2017 Dr. Dunne was granted an option to purchase 41,587 of our ordinary shares at

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an exercise price of \$3.30 per share. The shares underlying the option vest as to 1/4<sup>th</sup> on the one-year anniversary of the vesting commencement date and 1/48<sup>th</sup> of the total shares vest each month thereafter, subject to Dr. Dunne's continued service with us through each relevant vesting date. The vesting of Dr. Dunne's option award is also subject to acceleration as detailed in the section titled "—Potential Payments Upon Termination or Change in Control."

### ***Judith M. Matthews***

Ms. Matthews serves as our Chief Financial Officer. On November 18, 2015, Ms. Matthews entered into an offer letter with Iterum Therapeutics US Limited, our indirect wholly owned subsidiary. The offer letter has no specific term and constitutes an at-will employment arrangement. Effective upon the closing of this offering, Ms. Matthews' base salary will be \$350,000, and her discretionary annual target performance bonus will be 35% of her annual base salary. In connection with her employment, in September 2017 Ms. Matthews was granted an option to purchase 11,882 of our ordinary shares at an exercise price of \$3.30 per share. The shares underlying the option vest as to 1/4<sup>th</sup> on the one-year anniversary of the vesting commencement date and 1/48<sup>th</sup> of the total shares vest each month thereafter, subject to Ms. Matthews' continued service with us through each relevant vesting date. The vesting of Ms. Matthews' option award is also subject to acceleration as detailed in the section titled "—Potential Payments Upon Termination or Change in Control."

### ***Potential Payments Upon Termination or Change in Control***

Our offer letter agreements with each of our named executive officers provide that upon the termination of his or her employment by us other than for cause, or by the named executive officer with good reason (each as defined in the offer letters), he or she will, effective upon the closing of this offering, be entitled to receive the following severance benefits:

- cash severance equal to a fixed number of months of such executive's base salary (effective upon the closing of this offering, twelve months in the case of Mr. Fishman and nine months in the case of Dr. Dunne and Ms. Matthews); and
- company-paid COBRA premiums for up to 12 months following such executive's termination date.

If such a qualifying termination occurs within the period beginning one month prior to and ending 12 months following a change of control of us, the cash severance payment entitlement described above will increase to twelve months of such executive's then current base salary in the case of Dr. Dunne and Ms. Matthews, and to eighteen months of his then current base salary in the case of Mr. Fishman. The executives will also be entitled to an additional cash payment equal to a percentage of such executives' target annual bonus for the year of termination, equal to 100% in the case of Dr. Dunne and Ms. Matthews and 150% in the case of Mr. Fishman. In addition, each of Mr. Fishman, Dr. Dunne and Ms. Matthews' currently outstanding stock options will accelerate in full.

Each offer letter also contains a "better after-tax" provision, which provides that if any of the payments to such named executive officer constitutes a parachute payment under Section 280G of the Internal Revenue Code of 1986, as amended, or the Code, the payments will either be (i) reduced or (ii) provided in full to the executive, whichever results in the executive receiving the greater amount after taking into consideration the payment of all taxes, including the excise tax under Section 4999 of the Code, in each case based upon the highest marginal rate for the applicable tax.

Payment of any of the severance benefits described above is also conditioned on the named executive officer's delivery and non-revocation of a general release of claims in our favor.

In addition, pursuant to ordinary share subscription deeds dated as of October 14, 2015, upon a change in control each of Mr. Fishman, Dr. Dunne and Ms. Matthews are entitled to acceleration of all of the remaining unvested ordinary shares issued thereunder, provided that such individual remains a service provider as of the time of consummation of the change in control.

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### **Equity Incentive Plans**

We believe that our ability to grant equity-based awards is a valuable and necessary compensation tool that aligns the long-term financial interests of our employees, consultants, and directors with the financial interests of our shareholders. In addition, we believe that our ability to grant options and other equity-based awards helps us to attract, retain, and motivate employees, consultants, and directors and encourages them to devote their best efforts to our business and financial success. The principal features of our equity incentive plans are summarized below. These summaries are qualified in their entirety by reference to the actual text of the plans, which are filed as exhibits to the registration statement of which this prospectus is a part.

#### ***2018 Equity Incentive Plan***

Our board of directors adopted the 2018 Equity Incentive Plan, or the 2018 Plan, in March 2018 and our shareholders approved the 2018 Plan in May 2018. The 2018 Plan became effective immediately on the execution and delivery of the underwriting agreement related to this offering. No further grants will be made under the 2015 Equity Incentive Plan, or the 2015 Plan.

*Authorized Awards.* Our 2018 Plan authorizes the award of incentive stock options that may qualify for favorable tax treatment under U.S. tax laws to their recipients under Section 422 of the Code, or ISOs, nonstatutory stock options, or NSOs, stock appreciation rights, or SARs, restricted stock, restricted stock units, or RSUs, performance-based awards, and other stock awards, which are collectively referred to as awards. We may grant awards under the 2018 Plan to our employees, including our officers, and employees of our affiliates. A separate sub-plan to the 2018 Plan has been established for the purpose of granting awards to our non-employee directors and consultants and non-employee directors and consultants of our affiliates. We may grant ISOs to our employees and employees of a subsidiary corporation or parent corporation (within the meaning of Sections 424(e) and 424(f) of the Code).

*Share Reserve.* Initially, the aggregate number of our ordinary shares that may be issued pursuant to awards under our 2018 Plan is 1,018,459 shares, which includes any shares subject to outstanding options or other awards that were granted under our 2015 Plan and that are forfeited, terminated, expire or are otherwise not issued. Additionally, upon board or committee approval the number of ordinary shares reserved for issuance under our 2018 Plan will increase on January 1 of each calendar year for ten years, starting on January 1, 2019 and ending on and including January 1, 2028, in an amount up to 4% of the total number of our ordinary shares outstanding on December 31 of the prior calendar year, or a lesser number of shares determined by our board of directors. The maximum number of our ordinary shares that may be issued upon the exercise of ISOs under our 2018 Plan is equal to 3,055,377.

Shares subject to awards granted under our 2018 Plan that expire or terminate without being exercised in full, or that are paid out in cash rather than in shares, do not reduce the number of shares available for issuance under our 2018 Plan. Additionally, shares become available for future grant under our 2018 Plan if they were issued under awards under our 2018 Plan if we repurchase them or they are forfeited. This includes shares used to pay the exercise price of an award or to satisfy the tax withholding obligations related to an award.

*Plan Administration.* Our 2018 Plan will be administered by our compensation committee, or by our board of directors or another duly authorized committee or by our board of directors, acting in place of our compensation committee. Our board of directors or our compensation committee may also delegate to one or more of our officers the authority to designate employees (other than officers) to receive specified stock awards, and determine the number of shares subject to such stock awards.

Our compensation committee will have the authority to construe and interpret our 2018 Plan, grant and amend awards, determine the terms of such awards and make all other determinations necessary or advisable for the administration of the plan, including, but not limited to, repricing options or SARs without prior shareholder approval. Awards granted under the 2018 Plan may vest over time based on the holder's continued service with us, or following the achievement of certain pre-established performance goals.



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*Options.* Options represent the right to purchase our ordinary shares on the date of exercise at a stated exercise price. ISOs may only be granted to employees of the Company and its subsidiaries. The exercise price of an option generally must be at least equal to the fair market value of our ordinary shares on the date of grant. Our compensation committee may provide for options to be exercised only as they vest or to be immediately exercisable with any shares issued on exercise being subject to our right of repurchase that lapses as the shares vest. The maximum term of options granted under our 2018 Plan is ten years.

*Restricted Stock Awards.* Restricted stock awards represent an offer by us to issue or sell our ordinary shares subject to vesting restrictions, which may lapse based on time or achievement of performance conditions. The price (if any) of a restricted stock award will be determined by our compensation committee. Unless otherwise determined by our compensation committee at the time of grant, vesting will cease on the date the participant no longer provides services to us and unvested shares will be forfeited to or repurchased by us.

*Restricted Stock Unit Awards.* RSUs represent the right to receive our ordinary shares at a specified date in the future, subject to forfeiture of that right because of termination of employment or failure to achieve certain performance conditions. If an RSU award has not been forfeited, then on the date specified in the RSU agreement, we will deliver to the holder a number of whole ordinary shares, cash or a combination of our ordinary shares and cash. Additionally, dividend equivalents may be credited in respect of shares covered by an RSU award.

*Stock Appreciation Rights.* SARs provide for a payment, or payments, in cash or ordinary shares, to the holder based upon the difference between the fair market value of our ordinary shares on the date of exercise and the stated exercise price. The maximum term of SARs granted under our 2018 Plan is ten years.

*Other Stock Awards.* Our compensation committee may grant other awards based in whole or in part by reference to our ordinary shares. Our compensation committee will determine the number of shares under such award and all other terms and conditions of such awards.

*Transferability.* Awards granted under our 2018 Plan may not be transferred in any manner other than by will or by the laws of descent and distribution or as otherwise determined by our compensation committee or under the terms of our 2018 Plan or an applicable award agreement.

*Changes to Capital Structure.* In the event that there is a specified type of change in our capital structure, such as a share split or recapitalization, appropriate adjustments will be made to (i) the class and the maximum number of shares reserved for issuance under our 2018 Plan, (ii) the class and the maximum number of shares by which the share reserve may increase automatically each year, (iii) the class and the maximum number of shares that may be issued upon the exercise of ISOs, and (iv) the class and the number of shares and exercise price, strike price, or purchase price, if applicable, of all outstanding awards.

*Corporate Transactions.* Our 2018 Plan provides that in the event of certain specified significant corporate transactions, each outstanding award will be treated as determined by our board of directors unless otherwise provided in an award agreement or other written agreement between us and the award holder. The board of directors may take one of the following actions with respect to such awards:

- arrange for the assumption, continuation or substitution of an award by a successor corporation;
- arrange for the assignment of any reacquisition or repurchase rights held by us to a successor corporation;
- accelerate the vesting, in whole or in part, of the award and provide for its termination prior to the transaction;
- arrange for the lapse, in whole or in part, of any reacquisition or repurchase rights held by us;

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- cancel or arrange for the cancellation of the award, to the extent not vested or not exercised prior to the closing of the transaction, in exchange for a cash payment or no payment, as determined by our board of directors; and
- cancel or arrange for the cancellation of the award to the extent not vested but not exercised prior to the closing of the transaction, in exchange for a payment, in the form determined by our board of directors, equal to the excess, if any, of (A) the per share amount payable to holders of our ordinary shares in the transaction over (B) any exercise price payable by the participant in connection with the award, multiplied by the number of shares subject to the award.

A corporate transaction generally will be deemed to occur in the event of: (i) a sale of all or substantially all of our assets, (ii) the sale or disposition of more than 50% of our outstanding securities, (iii) the consummation of a merger or consolidation where we do not survive the transaction and (iv) the consummation of a merger or consolidation where we do survive the transaction but our ordinary shares outstanding prior to such transaction are converted or exchanged into other property by virtue of the transaction. In addition, any one or more of the above events may be effected pursuant to (x) a takeover under Irish takeover rules; (y) a compromise or arrangement under Chapter 1 of Part 9 of the Companies Act 2014 of the Republic of Ireland or (z) Chapter 2 of Part 9 of the Companies Act 2014 of the Republic of Ireland.

The board of directors is not obligated to treat all awards or portions of stock awards, even those that are of the same type, in the same manner.

*Amendment and Termination.* Our board of directors or another duly authorized committee has the authority to amend, suspend, or terminate our 2018 Plan, provided that such action does not materially impair the existing rights of any participant without such participant's written consent. Certain material amendments also require the approval of our stockholders. No ISOs may be granted after the tenth anniversary of the date our board of directors adopted our 2018 Plan, and no awards may be granted under our 2018 Plan while it is suspended or after it is terminated.

### **2015 Equity Incentive Plan**

Our board of directors adopted and our shareholders approved the 2015 Plan in November 2015. The 2015 Plan was amended most recently in May 2017. The 2015 Plan provides for the grant of ISOs, NSOs, restricted stock awards, RSUs, SARs, and other stock awards to our employees, directors and consultants.

Upon the effectiveness of the 2018 Plan, we will no longer grant awards under the 2015 Plan. However, any outstanding awards granted under the 2015 Plan will remain outstanding, subject to the terms of the 2015 Plan and stock option agreements, until such outstanding options are exercised or until they terminate or expire by their terms.

*Authorized Shares.* As of March 31, 2018, we have reserved 443,029 ordinary shares for issuance under our 2015 Plan. As of March 31, 2018, options to purchase 248,128 ordinary shares were outstanding under our 2015 Plan, with a weighted-average exercise price of \$3.31 per share. The maximum number of ordinary shares that may be issued on the exercise of ISO under our 2015 Plan is the share reserve.

*Plan Administration.* Our 2015 Plan is administered by our board of directors or another duly authorized committee. Following the offering, our 2015 Plan will be administered by our compensation committee. Our board of directors or another duly authorized committee has the authority to construe and interpret our 2015 Plan, amend the plan and outstanding awards and make all other determinations necessary or advisable for the administration of the plan, including, but not limited to, repricing options or SARs without prior shareholder approval.

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*Corporate Transactions.* Our 2015 Plan provides that in the event of a corporate transaction, each outstanding award will be treated as determined by our board of directors unless otherwise provided in an award agreement or other written agreement between us and the award holder. The board of directors may generally take the same actions as summarized above in connection with awards under the 2018 Plan, and the definition of a corporate transaction under the 2015 Plan is the substantially the same such defined term in the 2018 Plan.

*Transferability.* Awards granted under our 2015 Plan may not be transferred in any manner other than by will or by the laws of descent and distribution or as otherwise determined by our compensation committee or under the terms of our 2015 Plan or an applicable award agreement.

*Plan Amendment or Termination.* Our board of directors or another duly authorized committee has the authority to amend, suspend, or terminate our 2015 Plan, provided that such action does not materially impair the existing rights of any participant without such participant's written consent. Certain material amendments also require the approval of our stockholders.

### **Health and Welfare Benefits**

All of our named executive officers are eligible to participate in our employee benefit plans, including our medical, dental, and vision insurance plans, in each case on the same basis as all of our other full-time employees.

### **401(k) Plan**

We maintain a defined contribution retirement plan that provides eligible U.S. employees with an opportunity to save for retirement on a tax advantaged basis. Eligible employees may defer eligible compensation on a pre-tax basis, up to the statutorily prescribed annual limits on contributions under the Code. The Company is required to contribute a deferral rate of up to 3% to the 401(k) Plan on behalf of certain employees. We have not historically made discretionary contributions to the 401(k) plan for the benefit of employees. Employee contributions are allocated to each participant's individual account and are then invested in selected investment alternatives according to the participant's directions. Employees are immediately and fully vested in their contributions. The 401(k) plan is intended to be qualified under Section 401(a) of the Code with the 401(k) plan's related trust intended to be tax exempt under Section 501(a) of the Code. As a tax-qualified retirement plan, contributions to the 401(k) plan and earnings on those contributions are not taxable to the employees until distributed from the 401(k) plan.

### **Limitation on Liability and Indemnification of Directors and Officers**

Our Articles of Association, and indemnification agreements with our board of directors and executive officers provide for indemnification for our directors and officers. For a description of these protections, see the section titled "Description of Share Capital—Indemnification of Directors and Officers; Insurance."

### **Rule 10b5-1 Sales Plans**

Our directors and officers may adopt written plans, known as Rule 10b5-1 plans, in which they will contract with a broker to buy or sell ordinary shares on a periodic basis. Under a Rule 10b5-1 plan, a broker executes trades pursuant to parameters established by the director or officer when entering into the plan, without further direction from them. The director or officer may amend a Rule 10b5-1 plan in some circumstances and may terminate a plan at any time. Our directors and executive officers also may buy or sell additional shares outside of a Rule 10b5-1 plan when they are not in possession of material nonpublic information, subject to compliance with the terms of our insider trading policy. Prior to 180 days after the date of this offering, the sale of any shares under such plan would be subject to the lock-up agreement that the director or officer has entered into with the underwriters.

## CERTAIN RELATIONSHIPS AND RELATED PARTY TRANSACTIONS

The following is a summary of transactions since January 1, 2015 to which we have been a participant, in which:

- the amount involved exceeded or will exceed \$120,000; and
- any of our directors, executive officers, or holders of more than 5% of our ordinary shares, or any member of the immediate family of the foregoing persons, had or will have a direct or indirect material interest, other than compensation and other arrangements that are described in the section titled “Executive Compensation” or that were approved by our compensation committee.

We believe the terms obtained or consideration that we paid or received, as applicable, in connection with the transactions described below were comparable to terms available or the amounts that would be paid or received, as applicable in arm’s-length transactions.

### Sales of Preferred Shares

In November 2015, we issued an aggregate of 1,514,320 of our Series A preferred shares at a purchase price of \$15.71 per share for an aggregate cash purchase price of \$20.7 million plus the receipt of intellectual property pursuant to our license agreement with Pfizer. In December 2016, we issued an aggregate of 1,518,137 of our Series A preferred shares at a purchase price of \$15.71 per share for an aggregate cash purchase price \$20.9 million plus the receipt of intellectual property pursuant to our license agreement with Pfizer. In May 2017, we issued an aggregate of 2,654,206 of our Series B-1 preferred shares at a purchase price of \$17.28 per share for an aggregate purchase price \$45.9 million. In February 2018, we issued an aggregate of 1,709,650 of our Series B-2 preferred shares at a purchase price of \$18.85 per share for an aggregate purchase price of \$32.2 million. The following table summarizes purchases of preferred shares by holders of more than 5% of our capital shares and their affiliated entities, our directors and our executive officers.

Name	Series A Preferred Shares	Series B-1 Preferred Shares	Series B-2 Preferred Shares	Aggregate Purchase Price
Entities affiliated with Advent Life Sciences <sup>(1)</sup>	—	405,068	226,109	\$ 11,262,624
Arix Bioscience Holdings Ltd. <sup>(2)</sup>	—	445,576	248,721	12,388,888
Canaan X, L.P. <sup>(3)</sup>	721,408	275,446	229,660	20,422,894
Entities affiliated with Frazier Healthcare <sup>(4)</sup>	636,536	243,040	202,641	18,020,199
New Leaf Ventures III, L.P. <sup>(5)</sup>	466,793	178,230	148,603	13,214,813
Pivotal bioVenture Partners Fund I, L.P. <sup>(6)</sup>	—	405,069	226,109	11,262,625
Sofinnova Venture Partners IX, L.P. <sup>(7)</sup>	721,408	275,446	229,660	20,422,894
Corey N. Fishman	33,259	4,050	1,591	622,500
Michael W. Dunne, M.D.	12,730	4,050	2,917	324,999
Judith M. Matthews	10,980	3,038	2,466	271,500
Paul R. Edick	15,913	4,050	1,591	350,000
David G. Kelly	9,548	—	—	150,000

(1) Includes preferred shares purchased by Advent Life Sciences LLP and Advent Life Sciences Fund II LP. Dr. Malik, a member of our board of directors, is a general partner of Advent Life Sciences.

(2) Mr. Chin, a member of our board of directors, is an investment director of Arix Bioscience.

(3) Mr. Ahrens, a member of our board of directors, is a general partner of Canaan.

(4) Includes preferred shares purchased by Frazier Healthcare VII, L.P. and Frazier Healthcare VII-A, L.P. Mr. Heron, a member of our board of directors, is a general partner of Frazier Healthcare Partners.

(5) Mr. Hunt, a member of our board of directors, is a managing director of New Leaf Ventures Partners.

(6) Dr. Hopfner, a former member of our board of directors, is a managing partner of Pivotal bioVenture Partners.

(7) Dr. Healy, a member of our board of directors, is a general partner of Sofinnova Ventures.

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### **Investor Rights Agreement**

In May 2017, we entered into an amended and restated investor rights agreement with holders of our preferred shares and ordinary shares, including certain holders of more than 5% of our capital stock, our executive officers, certain of our directors, and entities affiliated with certain of our directors. After the closing of this offering, these holders will be entitled to certain registration rights, including the right to demand that we file a registration statement or request that their shares be covered by a registration statement that we are otherwise filing. For a more detailed description of these registration rights, see the section titled “Description of Share Capital—Registration Rights.” In addition, this agreement gives the shareholders that are parties thereto the right to participate in new issuances of equity securities by us, subject to certain exceptions. This right to participate in new issuances of equity securities will terminate by its terms upon the completion of our initial public offering.

### **Offer Letters**

We have entered into offer letters with our executive officers. For more information regarding these offer letters, see the section titled “Executive Compensation—Employment, Severance and Change in Control Arrangements.”

### **Equity Grants**

We have granted stock options to certain non-employee members of our board of directors. For a description of these stock options, see the section titled “Management—2017 Non-Employee Director Compensation.”

### **Indemnification Agreements**

We have entered into indemnification agreements with each of our directors and executive officers. In addition, our subsidiary, Iterum Therapeutics US Limited, has entered into an indemnification agreement with each of our directors and executive officers. These agreements, among other things, require us to indemnify an indemnitee to the fullest extent permitted by applicable law, including indemnification of expenses such as attorneys’ fees, judgments, fines and settlement amounts incurred by the indemnitee in any action or proceeding, including any action or proceeding by us or in our right, arising out of the person’s services as a director or executive officer.

### **Related Party Transaction Policy**

We will adopt a formal written policy in connection with this offering that our executive officers, directors, key employees, holders of more than 5% of any class of our voting securities, and any member of the immediate family of and any entity affiliated with any of the foregoing persons, are not permitted to enter into a related-party transaction with us without the prior consent of our audit committee, or other independent body of our board of directors in the event it is inappropriate for our audit committee to review such transaction due to a conflict of interest. Any request for us to enter into a transaction with an executive officer, director, principal shareholder, or any of their immediate family members or affiliates, in which the amount involved exceeds \$120,000, will be required to first be presented to our audit committee for review, consideration, and approval. In approving or rejecting any such proposal, our audit committee will consider the relevant facts and circumstances available and deemed relevant to our audit committee, including, but not limited to, whether the transaction will be on terms no less favorable than terms generally available to an unaffiliated third party under the same or similar circumstances and the extent of the related party’s interest in the transaction.

All of the transactions described in this section were entered into prior to the adoption of this policy. Although we have not had a written policy for the review and approval of transactions with related persons, our board of directors has historically reviewed and approved any transaction where a director or officer had a financial interest, including the transactions described above. Prior to approving such a transaction, the material facts as to a director’s or officer’s relationship or interest in the agreement or transaction were disclosed to our board of directors. Our board of directors took this information into account when evaluating the transaction and in determining whether such transaction was fair to us and in the best interest of all our shareholders.

## PRINCIPAL SHAREHOLDERS

The following table sets forth information with respect to the beneficial ownership of our ordinary shares as of April 30, 2018 by:

- each person, or group of affiliated persons, known by us to beneficially own more than 5% of our ordinary shares;
- each of our named executive officers;
- each of our directors; and
- all of our executive officers and directors as a group.

The percentage of shares beneficially owned before the offering shown in the table is based on 7,809,423 ordinary shares outstanding as of April 30, 2018, after giving effect to the conversion of all of our Series A preferred shares, Series B-1 preferred shares and Series B-2 preferred shares into ordinary shares. The percentage of shares beneficially owned after this offering assumes the sale by us of 6,150,000 ordinary shares in this offering.

Certain of our directors and existing shareholders, or their affiliates, have agreed to purchase an aggregate of 3,304,839 ordinary shares in this offering.

Beneficial ownership is determined according to the rules of the SEC and generally means that a person has beneficial ownership of a security if he, she, or it possesses sole or shared voting or investment power of that security, including stock options that are exercisable within 60 days of April 30, 2018. Our ordinary shares issuable pursuant to stock options are deemed outstanding for computing the percentage of the person holding such options and the percentage of any group of which the person is a member but are not deemed outstanding for computing the percentage of any other person. Except as indicated by the footnotes below, we believe, based on the information furnished to us, that the persons named in the table below have sole voting and investment power with respect to all ordinary shares shown that they beneficially own, subject to community property laws where applicable. The information does not necessarily indicate beneficial ownership for any other purpose, including for purposes of Section 13(d) and 13(g) of the Securities Act.

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Unless otherwise indicated, the address of each beneficial owner listed in the table below is c/o Iterum Therapeutics plc, 200 South Wacker Dr., Suite 650, Chicago, IL 60606.

Name of Beneficial Owner	Shares Beneficially Owned Prior to Offering		Shares Beneficially Owned After the Offering	
	Number	Percent	Number	Percent
<b>Greater than 5% shareholders:</b>				
Entities affiliated with Advent Life Sciences <sup>(1)</sup>	631,177	8.1%	868,161	6.2%
Arix Bioscience Holdings Ltd. <sup>(2)</sup>	694,297	8.9	1,031,903	7.4
Canaan X L.P. <sup>(3)</sup>	1,226,514	15.7	1,733,170	12.4
Entities affiliated with Frazier Healthcare <sup>(4)</sup>	1,082,217	13.9	1,538,316	11.0
New Leaf Ventures III, L.P. <sup>(5)</sup>	793,626	10.2	1,071,688	7.7
Pivotal bioVenture Partners Fund I, L.P. <sup>(6)</sup>	631,178	8.1	945,086	6.8
Sofinnova Venture Partners IX, L.P. <sup>(7)</sup>	1,226,514	15.7	1,726,514	12.4
<b>Directors and Named Executive Officers:</b>				
Corey N. Fishman	234,953	3.0	237,953	1.7
Michael Dunne, MD	144,458	1.8	146,458	1.0
Judith M. Matthews	52,130	*	56,130	*
Brenton K. Ahrens <sup>(3)</sup>	—	—	—	—
Mark Chin <sup>(2)</sup>	694,297	8.9	1,031,903	7.4
Paul R. Edick	24,736	*	24,736	*
James I. Healy, M.D., Ph.D. <sup>(7)</sup>	1,226,514	15.7	1,726,514	12.4
Patrick J. Heron <sup>(4)</sup>	1,082,217	13.9	1,538,316	11.0
Ronald M. Hunt <sup>(5)</sup>	793,626	10.2	1,456,303	10.4
David G. Kelly <sup>(8)</sup>	10,714	*	10,714	*
Shahzad Malik, M.D. <sup>(1)</sup>	631,177	8.1	868,161	6.2
All current executive officers and directors as a group <sup>(9)</sup>	4,894,822	62.7	7,097,188	50.8

- (1) Consists of (a) 29,836 shares (including 8,144 shares purchased in the offering) held by Advent Life Sciences LLP and (b) 838,325 (including 228,840 shares purchased in the offering) shares held by Advent Life Sciences Fund II LP. Advent Life Sciences LLP is the general partner of Advent Life Sciences Fund II LP. Dr. Malik, a member of our board of directors, is a general partner of Advent Life Sciences LLP. The address for each of these entities is 158-160 North Gower Street, London, NW1 2ND England.
- (2) The shares are held directly by Arix Bioscience Holdings Ltd. Mr. Chin, a member of our board of directors, is an investment director of Arix Bioscience Holdings Ltd. The address for Arix Bioscience Holdings Ltd. is 20 Berkeley Square, Mayfair, London W1J 6EQ, United Kingdom.
- (3) The shares are held by Canaan X L.P. Canaan Partners X LLC is the general partner of Canaan X L.P. and may be deemed to have sole investment and voting power over the shares held by Canaan X L.P. Brenton K. Ahrens, Stephen M. Bloch, Daniel T. Ciporin, Wende S. Hutton, Maha S. Ibrahim, Deepak Kamra, Nina Kjellson, Guy M. Russo, Timothy Shannon and Hrach Simonian are the managing members of Canaan Partners X LLC. Investment, voting and dispositive decisions with respect to the shares held by Canaan X L.P. are made by the managers of Canaan Partners X LLC, collectively. Mr. Ahrens, a member of our board of directors, is a managing member of Canaan Partners X LLC. No manager or member of Canaan Partners X LLC has beneficial ownership (within the meaning of Rule 13d-3 promulgated under the Exchange Act) of any shares held by Canaan X L.P. The address for Canaan X L.P. is 2765 Sand Hill Road, Menlo Park, CA 94025.
- (4) Consists of (a) 1,197,161 (including 354,949 shares purchased in the offering) shares held directly by Frazier Healthcare VII, L.P. and (b) 341,155 (including 101,150 shares purchased in the offering) shares held directly by Frazier Healthcare VII-A, L.P. The general partner of Frazier Healthcare VII, L.P. and Frazier Healthcare VII-A, L.P. is FHM VII, L.P., a Delaware limited partnership. The general partner of FHM VII, L.P. is FHM VII, L.L.C., a Delaware limited liability company. Dr. Heron, a member of our board of directors, Alan Frazier, Nader Naini, Nathan Every, Brian Morfitt, and James Topper are members of FHM VII, L.L.C. and may be deemed to share voting and investment power with respect to the shares held by FHM VII, L.L.C. The address for these entities is 601 Union Street, Suite 3200, Seattle WA 98101.
- (5) Represents shares directly beneficially owned by New Leaf Ventures III, L.P. (“NLV-III”). New Leaf Venture Associates III, L.P. (“NLVA-III LP”) is the general partner of NLV-III and New Leaf Venture Management III, L.L.C. (“NLVM-III LLC”) is the general partner of NLVA-III LP. Mr. Hunt, a member of our board of directors, Vijay K. Lathi, and Liam Ratcliffe are individual managers of NLVM-III LLC. The address for this stockholder is Times Square Tower, 7 Times Square, Suite 3502, New York, NY 10036.
- (6) The shares are held directly by Pivotal bioVenture Partners Fund I, L.P. Pivotal bioVenture Partners Fund I G.P., L.P. is the general partner of Pivotal bioVenture Partners Fund I, L.P. and Pivotal bioVenture Partners Fund I U.G.P., Ltd is the general partner of Pivotal bioVenture Partners Fund I, G.P., L.P. The board of directors of Pivotal bioVenture Partners Fund I U.G.P., Ltd retains ultimate voting and investment control and power over the shares owned by Pivotal bioVenture Partners Fund I, L.P. The registered office for these entities is Cricket Square, Hutchins Drive, PO Box 2681, George Town, Grand Cayman, KY1-1111. The address for these entities is 1700 Owners Street, Suite 595, San Francisco, CA 94158.
- (7) The shares are held directly by Sofinnova Venture Partners IX, L.P. (“SVP IX”). Sofinnova Management IX, L.L.C. (“SM IX”) is the general partner of SVP IX. Each of Dr. Healy, a member of our board of directors, Anand Mehra and Michael Powell is a managing member of SM IX and may, along with SM IX, be deemed to have shared voting and dispositive power over the shares owned by SVP IX. The address for these entities is 3000 Sand Hill Road, Bldg. 4, Suite 250, Menlo Park, CA 94025.



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- (8) Consists of (a) 9,548 shares held directly and (b) 1,166 shares issuable pursuant to stock options exercisable within 60 days of April 30, 2018.
- (9) Consists of (a) 7,096,022 shares held by the current directors and executive officers and (b) 1,166 shares issuable pursuant to stock options exercisable within 60 days of April 30, 2018.

## DESCRIPTION OF SHARE CAPITAL

The following is a summary of some of the terms of our ordinary shares, based on our Articles of Association, as they will become effective upon their amendment prior to the completion of this offering, and the Irish Companies Act.

The following summary is subject to, and is qualified in its entirety by reference to, the provisions of our Articles of Association, the form of which is filed as an exhibit to the registration statement of which this prospectus is a part.

Except as otherwise specified below, references to voting by our shareholders contained in this Description of Share Capital are references to voting by holders of ordinary shares entitled to attend and vote generally at general meetings of our shareholders.

### Organization

We are an Irish public limited company. We were incorporated in Ireland on June 24, 2015 under the name Iterum Therapeutics Limited with registered number 563531 and were re-registered as a public limited company in March 2018 under the name Iterum Therapeutics plc. Our affairs are governed by our Constitution including our Articles of Association that will come into effect immediately upon completion of this offering and Irish law.

### Objective

As provided by and described in our Constitution, our principal objective is to carry on the business of a holding company and all associated related activities and to carry on various activities associated with that objective.

### Share Capital

Immediately after the completion of this offering, our authorized share capital will be \$1,500,000, divided into 50,000,000 ordinary shares with a nominal value of \$0.01 per share and 100,000,000 undesignated preferred shares with a nominal value of \$0.01 per share. Upon the completion of this offering, we expect to have 13,959,423 ordinary shares outstanding, including 146,309 ordinary shares issued pursuant to restricted stock issuances that are subject to repurchase, and no outstanding shares of any other class.

The rights and restrictions to which the ordinary shares will be subject will be prescribed in our Articles of Association. Our Articles of Association entitle the Board, without shareholder approval, to determine the terms of the undesignated preferred shares issued by us.

Irish law does not recognize fractional shares held of record. Accordingly, our Articles of Association will not provide for the issuance of fractional shares of Iterum, and the official Irish register of Iterum will not reflect any fractional shares.

Whenever an alteration or reorganization of the share capital of Iterum would result in any Iterum shareholder becoming entitled to fractions of a share, the Board of Iterum may, on behalf of those shareholders that would become entitled to fractions of a share, arrange for the sale of the shares representing fractions and the distribution of the net proceeds of sale in due proportion among the shareholders who would have been entitled to the fractions.

### Transfer and Registration of Shares

Our share register will be maintained by our transfer agent. Registration in this share register will be determinative of membership in us. Any of our shareholders who only hold ordinary shares beneficially will not

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be the holder of record of such ordinary shares. Instead, the depository or other nominee will be the holder of record of such shares. Accordingly, a transfer of ordinary shares from a person who holds such ordinary shares beneficially to a person who will also hold such ordinary shares beneficially through the same depository or other nominee will not be registered in our official share register, as the depository or other nominee will remain the holder of record of such ordinary shares.

A written instrument of transfer will be required under Irish law in order to register on our official share register any transfer of ordinary shares (i) from a person who holds such ordinary shares directly to any other person or (ii) from a person who holds such ordinary shares beneficially to another person who also will hold such ordinary shares beneficially where the transfer involves a change in the depository or other nominee that is the record owner of the transferred ordinary shares. An instrument of transfer will be required for a shareholder who directly holds ordinary shares to transfer those ordinary shares into his or her own broker account (or vice versa). Such instruments of transfer may give rise to Irish stamp duty, which must be paid prior to registration of the transfer on our official Irish share register. However, a shareholder who directly holds ordinary shares may transfer those ordinary shares into his or her own broker account (or vice versa) without giving rise to Irish stamp duty, provided that there is no change in the beneficial ownership of the ordinary shares as a result of the transfer and the transfer is not made in contemplation of a sale of the ordinary shares.

Accordingly, we strongly recommend that shareholders hold their shares through DTC (or through a broker who holds such shares through DTC).

Any transfer of our ordinary shares that is subject to Irish stamp duty will not be registered in the name of the buyer unless such stamp duty is paid and details of the transfer are provided to our transfer agent. Our Articles of Association allow us, in our absolute discretion, to pay (or cause one of our affiliates to pay) any stamp duty. We do not expect to pay any stamp duty on behalf of any acquirer of ordinary shares in our capital. See the section titled “Taxation—Material Irish Tax Considerations.”

Our Articles of Association provide that, in the event of any such payment, we (i) may seek reimbursement from the transferor or transferee (at our discretion), (ii) may set-off the amount of the stamp duty against future dividends payable to the transferor or transferee (at our discretion) and (iii) will have a lien against our shares in respect of which we have paid stamp duty.

Our Articles of Association grant our board of directors general discretion to decline to register an instrument of transfer unless the transfer is in respect of one class of shares only, the instrument of transfer is accompanied by the certificate of shares to which it relates (if any) and such other evidence as the directors may reasonably require to show the right of the transferor to make the transfer, the instrument of transfer is in favor of not more than four transferees and it is lodged at our registered office or such other place as our directors or secretary may appoint.

The registration of transfers may be suspended at such times and for such periods, not exceeding 30 days in any year, as our board of directors may from time to time determine (except as may be required by law).

## **Issuance of Shares**

We have the authority, pursuant to our Articles of Association, to increase or reduce our authorized but unissued share capital by ordinary resolution (unless otherwise determined by the Board) by creating additional shares of any class or series. An ordinary resolution of our company requires more than 50% of the votes cast at the shareholder meeting by shareholders entitled to vote at that meeting. As a matter of Irish law, the board of directors of a company may issue authorized but unissued new shares without shareholder approval once authorized to do so by the Articles of Association of the company or by an ordinary resolution adopted by the shareholders at a general meeting. The authority conferred can be granted for a maximum period of five years, at which point it must be renewed by the shareholders by an ordinary resolution. Because of this requirement of

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Irish law, our Articles of Association will authorize our board of directors to issue new shares up to the amount of our authorized but unissued share capital without shareholder approval for a period of five years from the date our Articles of Association are adopted in substantially the form attached as an exhibit to the registration statement of which this prospectus forms a part. We expect that we will seek to renew such general authority at an annual general meeting before the end of that five-year period.

### **Share Certificates**

Pursuant to the Irish Companies Act, a shareholder is entitled to be issued a share certificate on request and subject to payment of a nominal fee.

### **No Sinking Fund**

Our ordinary shares will have no sinking fund provisions.

### **No Liability for Further Calls or Assessments**

The ordinary shares to be sold in this offering will be duly and validly issued, will be credited as fully paid up and will be non-assessable.

### **Pre-emption Rights, Share Warrants and Share Options**

Under Irish law, certain statutory pre-emption rights apply automatically in favor of our ordinary shareholders when our ordinary shares are issued for cash. However, we will opt out of these pre-emption rights in our Articles of Association as permitted under Irish law. This opt-out may be renewed every five years under Irish law by a special resolution of the shareholders. A special resolution requires not less than 75% of the votes cast by our shareholders at a meeting of shareholders. We expect that we will seek renewal of the opt-out at an annual general meeting within five years from the date on which our Articles of Association are adopted in substantially the form attached as an exhibit to the registration statement of which this prospectus forms a part. If the opt-out expires and is not renewed, ordinary shares issued for cash must be offered to our pre-existing ordinary shareholders pro rata based on their existing shareholding before the ordinary shares can be issued to any new shareholders or pre-existing shareholders in an amount greater than their pro rata entitlements. The statutory pre-emption rights:

- generally do not apply where shares are issued for non-cash consideration;
- do not apply to the issuance of non-equity shares (that is, shares that have the right to participate only up to a specified amount in any dividend and capital distribution, which are sometimes referred to as non-participating shares); and
- do not apply to the issuance of shares pursuant to certain employee compensation plans.

Our Articles of Association provide that, subject to any shareholder approval requirement under any laws, regulations or the rules of any stock exchange to which we are subject, the board is authorized, from time to time, in its discretion, to grant such persons, for such periods and upon such terms as the board deems advisable, options to purchase such number of shares of any class or classes or of any series of any class as the board of directors may deem advisable, and to cause warrants or other appropriate instruments evidencing such options to be issued. The Irish Companies Act provides that directors may issue share warrants or options without shareholder approval once authorized to do so by the articles of association. We will be subject to the rules of Nasdaq that require shareholder approval of certain equity plans and share issuances. Our board of directors may authorize the issuance of shares upon exercise of warrants or options without shareholder approval or authorization (up to the relevant authorized share capital limit).

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Under Irish law, we are prohibited from allotting shares without consideration. Accordingly, at least the nominal value of the shares issued underlying any restricted share award, restricted share unit, performance share award, bonus share or any other share based grant must be paid pursuant to the Irish Companies Act.

### **Registration Rights**

We are party to an investor rights agreement that provides that holders of our preferred shares, including certain officers, holders of 5% of our capital shares and entities affiliated with certain of our directors, have certain registration rights, as set forth below. This investor rights agreement was entered into in November 2015 and has been amended and restated from time to time in connection with our preferred share financings. The registration of our ordinary shares pursuant to the exercise of registration rights described below would enable the holders to sell these shares without restriction under the Securities Act when the applicable registration statement is declared effective. We will pay the registration expenses, other than underwriting discounts and selling commissions, of the shares registered pursuant to the demand, piggyback and Form S-3 registrations described below.

Generally, in an underwritten offering, the managing underwriter, if any, has the right, subject to specific conditions, to limit the number of shares such holders may include. The demand, piggyback and Form S-3 registration rights described below will expire after both (i) the effective date of the registration statement, of which this prospectus forms a part, and (ii) all shareholders entitled to registration rights can sell all of their shares under Rule 144 of the Securities Act during any 90-day period.

#### ***Demand Registration Rights***

The holders of 7,396,313 ordinary shares issuable upon conversion of outstanding preferred shares will be entitled to certain demand registration rights. Beginning after the expiration of the lock-up period on these shares, the holders of a majority of these shares may, on not more than two occasions, request that we file a registration statement having an aggregate offering price to the public of not less than \$10,000,000, net of selling expenses, to register the offer and sale of all or a portion of their shares.

#### ***Piggyback Registration Rights***

In connection with this offering, the holders of 7,809,423 ordinary shares issued or issuable upon the conversion of outstanding preferred shares were entitled to, and the necessary percentage of holders waived, their rights to include their shares of registrable securities in this offering. If we propose to register the offer and sale of any of our securities under the Securities Act either for our own account or for the account of other security holders, the holders of these shares will be entitled to certain “piggyback” registration rights allowing them to include their shares in such registration, subject to certain marketing and other limitations. As a result, whenever we propose to file a registration statement under the Securities Act including a registration statement on Form S-3 as discussed below, other than with respect to a demand registration or a registration statement on Forms S-4 or S-8, the holders of these shares are entitled to notice of the registration and have the right, subject to limitations that the underwriters may impose on the number of shares included in the registration, to include their shares in the registration.

#### ***Form S-3 Registration Rights***

The holders of 7,396,313 ordinary shares issued or issuable upon the conversion of outstanding preferred shares will be entitled to certain Form S-3 registration rights. The holders of at least 20% of these shares may make a request that we register their shares on Form S-3 if we are qualified to file a registration statement on Form S-3. Such request for registration on Form S-3 must cover securities with an aggregate offering price of at least \$1,000,000.

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### **Share Repurchases and Redemptions**

#### ***Overview***

Our Articles of Association provide that any ordinary share we agree to acquire shall be deemed to be a redeemable share. Accordingly, for Irish law purposes, the repurchase of ordinary shares by us may technically be effected as a redemption of those ordinary shares as described below under “Repurchases and Redemptions.” If our Articles of Association did not contain such provisions, repurchases by us would be subject to many of the same rules that apply to purchases of our ordinary shares by subsidiaries described below under “Purchases by Subsidiaries,” including the shareholder approval requirements described below. Except where otherwise noted, when we refer elsewhere in this prospectus to repurchasing or buying back our ordinary shares, we are referring to the redemption of ordinary shares by us pursuant to the Articles of Association or the purchase of our ordinary shares by a subsidiary of the Company, in each case in accordance with our Articles of Association and Irish law as described below.

#### ***Repurchases and Redemptions***

Under Irish law, a company can issue redeemable shares and redeem them out of distributable reserves (which are described below under “Dividends”) or the proceeds of a new issue of shares for that purpose. The redemption of redeemable shares may only be made by a public limited company where the nominal value of the issued share capital that is not redeemable is not less than 10% of the nominal value of the total issued share capital of the company. All redeemable shares must also be fully paid and the terms of redemption of the shares must provide for payment on redemption. Redeemable shares may, upon redemption, be cancelled or held in treasury. Shareholder approval will not be required to redeem our shares.

The board of directors will also be entitled to issue other classes or series of shares that may be redeemed at the option of either us or the shareholder, depending on the terms of such shares. See the section titled “— Share Capital.” Repurchased and redeemed shares may be cancelled or held as treasury shares. The nominal value of treasury shares held by us at any time must not exceed 10% of the nominal value of our issued share capital. While we hold shares as treasury shares, we cannot exercise any voting rights in respect of those shares. Treasury shares may be cancelled by us or re-issued subject to certain conditions.

#### ***Purchases by Subsidiaries***

Under Irish law, it may be permissible for an Irish or non-Irish subsidiary to purchase our shares. A general authority of our shareholders is required to allow a subsidiary of ours to make on-market purchases of our shares; however, as long as this general authority has been granted, no specific shareholder authority for a particular on-market purchase by a subsidiary of our shares is required. We may elect to seek such general authority, which must expire no later than 18 months after the date on which it was granted, at our annual general meetings. For an off-market purchase by our subsidiary, the proposed purchase contract must be authorized by special resolution of our shareholders before the contract is entered into. The person whose shares are to be bought back cannot vote in favor of the special resolution and, from the date of the notice of the meeting at which the resolution approving the contract is to be proposed, the purchase contract must be on display or must be available for inspection by shareholders at our registered office.

The number of shares held by our subsidiaries at any time will count as treasury shares and will be included in any calculation of the permitted treasury share threshold of 10% of the nominal value of our issued share capital. While a subsidiary holds our shares, it cannot exercise any voting rights in respect of those shares. The acquisition of our shares by a subsidiary must be funded out of distributable reserves of the subsidiary.

#### ***Dividends***

Under Irish law, dividends and distributions may only be made from distributable reserves. Distributable reserves, broadly, means the accumulated realized profits of a company, less accumulated realized losses of the

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company on a standalone basis. In addition, no dividend or distribution may be made unless the net assets of a company are not less than the aggregate of a company's called up share capital plus undistributable reserves and the distribution does not reduce the company's net assets below such aggregate. Undistributable reserves include a company's undenominated capital (effectively its share premium and capital redemption reserve) and the amount by which the company's accumulated unrealized profits, so far as not previously utilized by any capitalization, exceed the company's accumulated unrealized losses, so far as not previously written off in a reduction or reorganization of capital. The determination as to whether or not a company has sufficient distributable reserves to fund a dividend must be made by reference to "relevant accounts" of the company. The "relevant accounts" are either the last set of unconsolidated annual audited financial statements or unaudited financial statements prepared in accordance with the Irish Companies Act, which give a "true and fair view" of the company's unconsolidated financial position in accordance with accepted accounting practice in Ireland. These "relevant accounts" must be filed in the Companies Registration Office (the official public registry for companies in Ireland). Our Articles of Association authorize the board of directors to declare such dividends as appear justified from the profits of the company without the approval of the shareholders. The board of directors may also recommend a dividend to be approved and declared by our shareholders at a general meeting. Our dividends can be declared and paid in the form of cash or non-cash assets, subject to applicable law. We may pay dividends in any currency but, if we elect to pay dividends, we intend to do so in US dollars. Our board of directors may deduct from any dividend or other moneys payable to any shareholder all sums of money, if any, due from the shareholder to the company in respect of ordinary shares of the Company. Our board of directors is also authorized to issue shares in the future with preferred rights to participate in dividends declared by the Company. The holders of such preference shares may, depending on their terms, rank senior to the holders of the ordinary shares of the company with respect to dividends. We do not anticipate paying any cash dividends in the foreseeable future.

For information about the Irish tax considerations relating to dividend payments, see the section titled "Taxation—Irish Tax Considerations."

### **Bonus Shares**

Under our Articles of Association, our board of directors may resolve to capitalize any amount credited to any reserve or fund available for distribution or the share premium account or other of our undistributable reserves for issuance and distribution to shareholders as fully paid up bonus shares on the same basis of entitlement as would apply in respect of a dividend distribution.

### **Lien on Shares, Calls on Shares and Forfeiture of Shares**

Our Articles of Association provide that we will have a first and paramount lien on every share for all debts and liabilities of any shareholder to the company, whether presently due or not, payable in respect of such share. Subject to the terms of the allotment, directors may call for any unpaid amounts in respect of any shares to be paid, and if payment is not made, the shares may be forfeited. These provisions are standard inclusions in the articles of association of an Irish company limited by shares such as Iterum and will only be applicable to shares of Iterum that have not been fully paid up.

### **Consolidation and Division; Subdivision**

Under our Articles of Association, we may, by ordinary resolution (unless the board of directors determines otherwise), divide any or all of our share capital into shares of smaller nominal value than its existing shares (often referred to as a share split) or consolidate any or all of our share capital into shares of larger nominal value than its existing shares (often referred to as a reverse share split).



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### **Reduction of Share Capital**

We may, by ordinary resolution, reduce our authorized but unissued share capital. We also may, by special resolution and subject to confirmation by the Irish High Court, reduce our issued share capital, and any undenominated share capital.

### **General Meetings of Shareholders**

We are required under Irish law to hold an annual general meeting within 18 months of incorporation and thereafter at intervals of no more than 15 months, provided that an annual general meeting is held in each calendar year and no more than nine months after our fiscal year-end. Any annual general meeting may be held outside Ireland, provided that technological means are provided to enable shareholders to participate in the meeting without leaving Ireland. Our Articles of Association include a provision requiring annual general meetings to be held within such time periods as required by Irish law.

The only matters which must, as a matter of Irish company law, be transacted at an annual general meeting are (i) the consideration of the statutory financial statements, report of the directors and report of the statutory auditors, (ii) review by the members of the company's affairs and (iii) the appointment or re-appointment of the statutory auditors.

At any annual general meeting, only such business may be conducted as has been brought before the meeting:

- in the notice of the meeting;
- by or at the direction of the Board of Directors;
- in certain circumstances, at the direction of the Irish High Court;
- as required by law; or
- that the chairman of the meeting determines is properly within the scope of the meeting.

In addition, and subject to compliance with our Articles of Association, shareholders entitled to vote at an annual general meeting may propose business to be considered thereat.

Our extraordinary general meetings may be convened (i) by our board of directors, (ii) on requisition of the shareholders holding the number of our shares prescribed by the Irish Companies Act (currently 10% of the paid-up share capital of the Company carrying voting rights), or (iii) in certain circumstances, on requisition of our auditors.

Extraordinary general meetings are generally held for the purposes of approving such of our shareholder resolutions as may be required from time to time. The business to be conducted at any extraordinary general meeting must be set forth in the notice of the meeting.

In the case of an extraordinary general meeting requisitioned by our shareholders, the proposed purpose of the meeting must be set out in the requisition notice of the meeting. The requisition notice can propose any business to be considered at the meeting. Under Irish law, upon receipt of this requisition notice, the board of directors has 21 days to convene the extraordinary general meeting of our shareholders to vote on the matters set out in the requisition notice. This meeting must be held within two months of receipt of the requisition notice. If the board does not proceed to convene the meeting within such 21-day period, the requisitioning shareholders, or any of them representing more than one-half of the total voting rights of all of them, may themselves convene a meeting, which meeting must be held within three months of the receipt of the requisition notice by the board.

If our board of directors becomes aware that our net assets are half or less of the amount of our called up share capital, the board must, not later than 28 days from the date that it learns of this fact, convene an extraordinary general meeting of our shareholders to be held not later than 56 days from such date.

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This meeting must be convened for the purposes of considering whether any, and if so what, measures should be taken to address the situation.

At least 21 days' notice of any annual general meeting or general meeting at which a special resolution is proposed and 14 days in all other circumstances must be given to shareholders, each director and our auditors, under our Articles of Association.

### **Quorum for Shareholder Meetings**

Under our Articles of Association, the presence, in person or by proxy, of one or more shareholders holding not less than a majority of our issued shares that carry the right to vote at the meeting constitutes a quorum for the conduct of any business at a general meeting.

### **Voting**

#### ***Generally***

Holders of our ordinary shares vote on all matters submitted to a vote of shareholders and are entitled to one vote per share.

All votes at a general meeting will be decided by way of a poll. Voting rights on a poll may be exercised by shareholders registered in our share register as of the record date for the meeting or by a duly appointed proxy of such a registered shareholder, which proxy need not be a shareholder. All proxies must be appointed in accordance with our Articles of Association. Our Articles of Association provide that our board of directors may permit the appointment of proxies by the shareholders to be notified to us electronically.

In accordance with our Articles of Association, our board of directors may, from time to time, cause us to issue preferred or any other class or series of shares. These shares may have such voting rights, if any, as may be specified in the terms of such shares (e.g., they may carry more votes per share or may entitle their holders to a class vote on such matters as may be specified in the terms of the shares).

Treasury shares (i.e., shares held by us) and our shares held by our subsidiaries will not entitle their holders to vote at general meetings of shareholders.

Except where a greater threshold is required by Irish law or our Articles of Association, any question proposed for consideration at any of our general meetings or of any class of shareholders will be decided by an ordinary resolution passed by a simple majority of the votes cast by shareholders entitled to vote at such meeting.

Irish law requires special resolutions of the shareholders at a general meeting to approve certain matters. A special resolution requires not less than 75% of the votes cast by shareholders at a meeting of shareholders.

Examples of matters requiring special resolutions include:

- amending our objects as contained in our Memorandum of Association;
- amending our Articles of Association;
- approving a change of name;
- authorizing the entry into a guarantee or the granting of security in connection with a loan, quasi loan or credit transaction in favor of a director or connected person of a director (which generally includes a family member or business partner of the director and any entity controlled by the director);
- opting out of pre-emption rights on the issuance of new shares;
- re-registering from a public limited company to a private company;

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- purchasing of our own shares off-market;
- reducing issued share capital;
- resolving that we be wound up by the Irish courts;
- resolving in favor of a shareholders' voluntary winding-up;
- re-designating shares into different share classes; and
- setting the re-issue price of treasury shares.

### ***Action by Written Consent***

Written resolutions by shareholders are not permitted under our Articles of Association.

### ***Variation of Rights Attaching to a Class or Series of Shares***

Under our Articles of Association and the Irish Companies Act, any variation of class rights attaching to our issued shares by us must be approved by an ordinary resolution passed at a general meeting of the shareholders of the affected class or with the consent in writing of the holders of a majority of the issued shares of that class of shares entitled to vote on such variation. The rights conferred upon the holder of any pre-existing issued shares in Iterum shall not be deemed to be varied by the issuance of any preferred shares.

The provisions of our Articles of Association relating to general meetings apply to general meetings of the holders of any class of shares except that the necessary quorum is determined in reference to the shares of the holders of the class. Accordingly, for general meetings of holders of a particular class of shares, a quorum consists of one or more shareholders present in person or by proxy holding not less than a majority of the issued and outstanding shares of the class entitled to vote at the meeting in question.

### ***Record Dates***

Our Articles of Association provide that the board may fix in advance a date as the record date (i) for any such determination of members entitled to notice of or to vote at a meeting of the members, which record date shall not be more than sixty (60) days before the date of such meeting, and (ii) for the purpose of determining the members entitled to receive payment of any dividend or other distribution, or in order to make a determination of members for any other proper purpose, which record date shall not be more than sixty (60) days prior to the date of payment of such dividend or other distribution or the taking of any action to which such determination of members is relevant.

If no record date is fixed for the determination of members entitled to notice of or to vote at a meeting of members, the date immediately preceding the date on which notice of the meeting is deemed given under our Articles of Association will be the record date for such determination of members.

### ***Shareholder Proposals***

Under Irish law, there is no general right for a shareholder to put items on the agenda of an annual general meeting of a U.S.-listed company, other than as set out in the Articles of Association of a company. Under our Articles of Association, in addition to any other applicable requirements, for business or nominations to be properly brought before an annual general meeting by a shareholder, such shareholder must have given timely notice thereof in proper written form to our corporate secretary.

To be timely for an annual general meeting, a shareholder's notice to our secretary as to the business or nominations to be brought before the meeting must be delivered to or mailed and received at our registered office

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(i) with respect to our first annual general meeting as a public limited company, not later than the 10<sup>th</sup> day following the day on which public announcement of the date of such annual general meeting is made and (ii) with respect to all other annual general meetings not less than 90 days nor more than 120 days before the first anniversary of the notice convening our annual general meeting for the prior year. In the event that the date of the annual general meeting is changed by more than 30 days from the first anniversary date of the preceding year's annual general meeting, notice by the member must be so delivered by close of business on the day that is not earlier than 120 days prior to such annual general meeting and not later than the close of business on the later of (a) 90 days prior to the day of the contemplated annual general meeting or (b) ten days after the day on which public announcement of the date of the contemplated annual general meeting is first made by us. In no event shall the public announcement of an adjournment or postponement of an annual general meeting commence a new time period (or extend any time period) for the giving of a shareholder's notice.

To be timely for business or nominations of a director at an extraordinary general meeting, notice must be delivered, or mailed and received not less than 90 days nor more than 120 days prior to the date of such extraordinary general meeting. If the first public announcement of the date of the extraordinary general meeting is less than 100 days prior to the date of the meeting, by close of business 10 days after the day on which the public announcement of the date of the extraordinary general meeting is first made by us.

For nominations to the board, the notice must include all information about the director nominee that is required to be disclosed by SEC rules regarding the solicitation of proxies for the election of directors pursuant to Regulation 14A under the Exchange Act. For other business that a shareholder proposes to bring before the meeting, the notice must include a brief description of the business, the reasons for proposing the business at the meeting and a discussion of any material interest of the shareholder in the business. Whether the notice relates to a nomination to the board of directors or to other business to be proposed at the meeting, the notice also must include information about the shareholder and the shareholder's holdings of our shares. The chairman of the meeting shall have the power and duty to determine whether any business proposed to be brought before the meeting was made or proposed in accordance with these procedures (as set out in our Articles of Association), and if any proposed business is not in compliance with these provisions, to declare that such defective proposal shall be disregarded.

### **Shareholders' Suits**

In Ireland, the decision to institute proceedings on behalf of a company is generally taken by the company's board of directors. In certain limited circumstances, a shareholder may be entitled to bring a derivative action on our behalf. The central question at issue in deciding whether a minority shareholder may be permitted to bring a derivative action is whether, unless the action is brought, a wrong committed against us would otherwise go unredressed. The cause of action may be against a director, another person or both.

A shareholder may also bring proceedings against us in his or her own name where the shareholder's rights as such have been infringed or where our affairs are being conducted, or the powers of the board of directors are being exercised, in a manner oppressive to any shareholder or shareholders or in disregard of their interests as shareholders. Oppression connotes conduct that is burdensome, harsh or wrong. This is an Irish statutory remedy under Section 212 of the Irish Companies Act and the court can grant any order it sees fit, including providing for the purchase or transfer of the shares of any shareholder.

### **Inspection of Books and Records**

Under Irish law, shareholders have the right to (i) receive a copy of our constitution, (ii) inspect and obtain copies of the minutes of our general meetings and resolutions, (iii) inspect and receive a copy of the register of shareholders, register of directors and secretaries, register of directors' interests and other statutory registers maintained by us, (iv) receive copies of financial statements and directors' and auditors' reports which have previously been sent to shareholders prior to an annual general meeting, and (v) receive financial statements of a

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subsidiary company of ours which have previously been sent to shareholders prior to an annual general meeting for the preceding ten years. Our auditors will also have the right to inspect all of our books, records and vouchers. The auditors' report must be circulated to the shareholders with our audited financial statements 21 days before the annual general meeting and must be presented to our shareholders at our annual general meeting.

### **Acquisitions**

There are a number of mechanisms for acquiring an Irish public limited company, including:

- a court-approved scheme of arrangement under the Irish Companies Act. A scheme of arrangement with one or more classes of shareholders requires a court order from the Irish High Court and the approval of: (i) more than 50% in number of the shareholders of each participating class or series voting on the scheme of arrangement, and (ii) representing 75% or more by value of the shares of such participating class or series held by the shareholders voting on the scheme of arrangement, in each case at the relevant meeting or meetings. A scheme of arrangement, if authorized by the shareholders of each participating class or series and the court, is binding on all of the shareholders of each participating class or series;
- through a tender offer by a third party pursuant to the Irish Takeover Rules. Where the holders of 80% or more in value of a class of our shares (excluding any shares already beneficially owned by the offeror) have accepted an offer for their shares, the remaining shareholders in that class may be statutorily required to also transfer their shares, unless, within one month, the non-tendering shareholders can obtain an Irish court order otherwise providing. If the offeror has acquired acceptances of 80% of all of our shares but does not exercise this "squeeze out" right, the non-accepting shareholders also have a statutory right to require the offeror to acquire their shares on the same terms as the original offer, or such other terms as the offeror and the non-tendering shareholders may agree or on such terms as an Irish court, on application of the offeror or non-tendering shareholder, may order. If our shares were listed on the Irish Stock Exchange or another regulated stock exchange in the European Union, this 80% threshold would be increased to 90%; and
- by way of a merger with a company incorporated in the European Economic Area (EEA) under the European Communities (Cross-Border Mergers) Regulations 2008, which implement the EU Cross Border Merger Directive 2005/56 in Ireland or with another Irish company under the Irish Companies Act. Such a merger must be approved by a special resolution. Shareholders also may be entitled to have their shares acquired for cash. See the section titled "—Appraisal Rights."

The approval of our board of directors, but not shareholder approval, is required for a sale, lease or exchange of all or substantially all of our assets, except that such a transaction between us and one of our directors or a person or entity connected to such a director may require shareholder approval.

### **Appraisal Rights**

Generally, under Irish law, shareholders of an Irish company do not have statutory appraisal rights. If we are being merged as the transferor company with another EEA company under the European Communities (Cross-Border Mergers) Regulations 2008 or if we are being merged with another Irish company under the Irish Companies Act, (i) any of our shareholders who voted against the special resolution approving the merger or (ii) if 90% of our shares are held by the successor company, any other of our shareholder, may be entitled to require that the successor company acquire its shares for cash.

### **Disclosure of Interests in Shares**

Under the Irish Companies Act, there is a notification requirement for shareholders who acquire or cease to be interested in 3% of the shares of an Irish public limited company. Our shareholders must therefore make such

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a notification to us if as a result of a transaction the shareholder will be interested in 3% or more of our shares; or if as a result of a transaction a shareholder who was interested in more than 3% of our shares ceases to be so interested. Where a shareholder is interested in more than 3% of our shares, any alteration of his or her interest that brings his or her total holding through the nearest whole percentage number, whether an increase or a reduction, must be notified to us. The relevant percentage figure is calculated by reference to the aggregate par value of the shares in which the shareholder is interested as a proportion of the entire par value of our share capital. Where the percentage level of the shareholder's interest does not amount to a whole percentage this figure may be rounded down to the next whole number. All such disclosures should be notified to us within five business days of the transaction or alteration of the shareholder's interests that gave rise to the requirement to notify. Where a person fails to comply with the notification requirements described above no right or interest of any kind whatsoever in respect of any of our shares concerned, held by such person, shall be enforceable by such person, whether directly or indirectly, by action or legal proceeding. However, such person may apply to the court to have the rights attaching to the shares concerned reinstated.

In addition to the above disclosure requirement, under the Irish Companies Act, we may by notice in writing require a person whom we know or have reasonable cause to believe to be, or at any time during the three years immediately preceding the date on which such notice is issued, to have been interested in shares comprised in our relevant share capital to (a) indicate whether or not it is the case and (b) where such person holds or has during that time held an interest in our shares, to give such further information as may be required by us including particulars of such person's own past or present interests in our shares. Any information given in response to the notice is required to be given in writing within such reasonable time as may be specified in the notice.

Where such a notice is served by us on a person who is or was interested in our shares and that person fails to give us any information required within the reasonable time specified, we may apply to court for an order directing that the affected shares be subject to certain restrictions. Failure to comply with such a court order is a criminal offence.

Under the Irish Companies Act, the restrictions that may be placed on the shares by the court are as follows:

- any transfer of those shares, or in the case of unissued shares any transfer of the right to be issued with shares and any issue of shares, shall be void;
- no voting rights shall be exercisable in respect of those shares;
- no further shares shall be issued in right of those shares or in pursuance of any offer made to the holder of those shares; and
- no payment shall be made of any sums due from us on those shares, whether in respect of capital or otherwise.

Where our shares are subject to these restrictions, the court may order the shares to be sold and may also direct that the shares shall cease to be subject to these restrictions.

## **Anti-Takeover Provisions**

### ***Business Combinations with Interested Shareholders***

Our Articles of Association provide that, subject to certain exceptions, we may not engage in certain business combinations with any person that acquires beneficial ownership of 15% or more of our outstanding voting shares for a period of three years following the date on which the person became a 15% shareholder unless: (i) prior to the date on which the person becomes a 15% shareholder a committee of our disinterested directors approved the business combination; and (ii) in certain circumstances, the business combination is authorized by a special resolution of disinterested shareholders.

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### ***Shareholder Rights Plans and Share Issuances***

Irish law does not expressly authorize or prohibit companies from issuing share purchase rights or adopting a shareholder rights plan as an anti-takeover measure; there is no directly relevant case law on this issue. We do not currently have a rights plan in place.

Our Articles of Association expressly authorize our board of directors to adopt a shareholder rights plan, subject to applicable law, including the Irish Takeover Rules and Substantial Acquisition Rules described below and the requirement for shareholder authorization for the issue of shares described above.

Subject to the Irish Takeover Rules described below, our board of directors also has power to issue any of our authorized and unissued shares on such terms and conditions as it may determine and any such action should be taken in the best interests of Iterum. It is possible, however, that the terms and conditions of any issue of preferred shares could discourage a takeover or other transaction that holders of some or a majority of the ordinary shares believe to be in their best interests or in which holders might receive a premium for their shares over the then market price of the shares.

### ***Irish Takeover Rules and Substantial Acquisition Rules***

A transaction by virtue of which a third party is seeking to acquire 30% or more of our voting rights will be governed by the Irish Takeover Panel Act 1997 and the Irish Takeover Rules made thereunder and will be regulated by the Irish Takeover Panel. The “General Principles” of the Irish Takeover Rules and certain important aspects of the Irish Takeover Rules are described below.

#### ***General Principles***

The Irish Takeover Rules are built on the following General Principles which will apply to any transaction regulated by the Irish Takeover Panel:

- in the event of an offer, all classes of shareholders of the target company should be afforded equivalent treatment and, if a person acquires control of a company, the other holders of securities must be protected;
- the holders of securities in the target company must have sufficient time to allow them to make an informed decision regarding the offer;
- the board of a company must act in the interests of the company as a whole. If the board of the target company advises the holders of securities as regards the offer it must advise on the effects of the implementation of the offer on employment, employment conditions and the locations of the target company’s place of business;
- false markets in the securities of the target company or any other company concerned by the offer must not be created;
- a bidder can only announce an offer after ensuring that he or she can fulfill in full the consideration offered;
- a target company may not be hindered longer than is reasonable by an offer for its securities. This is a recognition that an offer will disrupt the day-to-day running of a target company particularly if the offer is hostile and the board of the target company must divert its attention to resist the offer; and
- a “substantial acquisition” of securities (whether such acquisition is to be effected by one transaction or a series of transactions) will only be allowed to take place at an acceptable speed and shall be subject to adequate and timely disclosure.



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### *Mandatory Bid*

Under certain circumstances, a person who acquires shares or other of our voting rights may be required under the Irish Takeover Rules to make a mandatory cash offer for our remaining outstanding shares at a price not less than the highest price paid for the shares by the acquirer (or any parties acting in concert with the acquirer) during the previous 12 months. This mandatory bid requirement is triggered if, unless the Irish Takeover Panel otherwise consents, an acquisition of shares would (i) increase the aggregate holding of an acquirer (including the holdings of any parties acting in concert with the acquirer) to shares representing 30% or more of our voting rights, or (ii) in the case of a person holding (together with its concert parties) shares representing 30% or more of our voting rights, after giving effect to the acquisition, increase the percentage of the voting rights held by that person (together with its concert parties) by 0.05% within a 12-month period. Any person (excluding any parties acting in concert with the holder) holding shares representing more than 50% of the voting rights of a company is not subject to these mandatory offer requirements in purchasing additional securities.

### *Voluntary Bid; Requirements to Make a Cash Offer and Minimum Price Requirements*

A voluntary offer is an offer that is not a mandatory offer. If a bidder or any of its concert parties acquire our ordinary shares within the period of three months prior to the commencement of the offer period, the offer price must be not less than the highest price paid for our ordinary shares by the bidder or its concert parties during that period. The Irish Takeover Panel has the power to extend the “look back” period to 12 months if the Irish Takeover Panel, having regard to the General Principles, believes it is appropriate to do so.

If the bidder or any of its concert parties has acquired our ordinary shares: (i) during the period of 12 months prior to the commencement of the offer period which represent more than 10% of our total ordinary shares or (ii) at any time after the commencement of the offer period, the offer shall be in cash (or accompanied by a full cash alternative) and the price per ordinary share shall be not less than the highest price paid by the bidder or its concert parties during, in the case of (i), the period of 12 months prior to the commencement of the offer period and, in the case of (ii), the offer period. The Irish Takeover Panel may apply this rule to a bidder who, together with its concert parties, has acquired less than 10% of our total ordinary shares in the 12-month period prior to the commencement of the offer period if the Panel, having regard to the General Principles, considers it just and proper to do so.

An offer period will generally commence from the date of the first announcement of the offer or proposed offer.

### *Substantial Acquisition Rules*

The Irish Takeover Rules also contain rules governing substantial acquisitions of shares which restrict the speed at which a person may increase his or her holding of shares and rights over shares to an aggregate of between 15% and 30% of our voting rights. Except in certain circumstances, an acquisition or series of acquisitions of shares or rights over shares representing 10% or more of our voting rights is prohibited, if such acquisition(s), when aggregated with shares or rights already held, would result in the acquirer holding 15% or more but less than 30% of our voting rights and such acquisitions are made within a period of seven days. These rules also require accelerated disclosure of acquisitions of shares or rights over shares relating to such holdings.

### *Frustrating Action*

Under the Irish Takeover Rules, our board of directors is not permitted to take any action which might frustrate an offer for our shares once the board of directors has received an approach which may lead to an offer or has reason to believe an offer is imminent except as noted below. Potentially frustrating actions such as (i) the issue of shares, options or convertible securities, (ii) material acquisitions or disposals, (iii) entering into

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contracts other than in the ordinary course of business or (iv) any action, other than seeking alternative offers, which may result in frustration of an offer, are prohibited during the course of an offer or at any time during which the board has reason to believe an offer is imminent. Exceptions to this prohibition are available where:

- the action is approved by the offeree at a general meeting; or
- with the consent of the Irish Takeover Panel where:
  - the Irish Takeover Panel is satisfied the action would not constitute a frustrating action;
  - the holders of 50% of the voting rights state in writing that they approve the proposed action and would vote in favor of it at a general meeting;
  - the action is taken in accordance with a contract entered into prior to the announcement of the offer; or
  - the decision to take such action was made before the announcement of the offer and either has been at least partially implemented or is in the ordinary course of business.

For other provisions that could be considered to have an anti-takeover effect, see the sections titled “—Transfer and Registration of Shares,” “—Pre-emption Rights, Share Warrants and Share Options,” “—Voting—Generally,” “—Disclosure of Interests in Shares” and “—Corporate Governance.”

## **Corporate Governance**

### ***Generally***

Our Articles of Association allocate authority over the management of the Company to our board of directors. Our board of directors may then delegate management of the Company to committees of the board or such other persons as it thinks fit. Regardless of any delegation, the board of directors will remain responsible, as a matter of Irish law, for the proper management of the affairs of our Company. The board of directors may create new committees or change the responsibilities of existing committees from time to time. See the section titled “Management—Committees of the Board of Directors.”

### ***Directors: Term and Appointment***

Directors are elected or appointed at the annual general meeting or at any extraordinary general meeting called for that purpose. Each director is elected by the affirmative vote of a majority of the votes cast with respect to such director. In the event of a “contested election” of directors, directors shall be elected by the vote of a plurality of the votes cast at any meeting for the election of directors at which a quorum is present.

Our Articles of Association provide that our board of directors is divided into three classes serving staggered three-year terms. Shareholders do not have cumulative voting rights. Accordingly, the holders of a majority of the voting rights attaching to our ordinary shares will, as a practical matter, be entitled to control the election of all directors. At each annual general meeting, directors will be elected for a full term of three years to succeed those directors of the relevant class whose terms are expiring.

Under our Articles of Association, our board of directors has the authority to appoint directors to the board either to fill a vacancy or as an additional director. A vacancy on the board of directors created by the removal of a director may be filled by an ordinary resolution of the shareholders at the meeting at which such director is removed and, in the absence of such election or appointment, the remaining directors may fill the vacancy. The board of directors may fill a vacancy by an affirmative vote of a majority of the directors constituting a quorum. If there is an insufficient number of directors to constitute a quorum, the board may nonetheless act to fill such vacancies or call a general meeting of the shareholders. Under our Articles of Association, if the board fills a

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vacancy, the director will hold this position as a director for a term that will coincide with the remaining term of the relevant class of director. If there is an appointment to fill a casual vacancy or an addition to the board, the total number of directors shall not at any time exceed the number of directors from time to time fixed by the board in accordance with our Articles of Association.

### ***Removal of Directors***

The Irish Companies Act provides that, notwithstanding anything contained in the Articles of Association of a company or in any agreement between that company and a director, the shareholders may, by an ordinary resolution, remove a director from office before the expiration of his or her term, provided that notice of any such resolution be given to the shareholders not less than 28 days before the meeting at which the director is to be removed, and the director will be entitled to be heard at such meeting. The power of removal is without prejudice to any claim for damages for breach of contract (e.g., employment agreement) that the director may have against us in respect of his or her removal.

### ***Directors' Duties***

Our directors have certain statutory and fiduciary duties. All of the directors have equal and overall responsibility for the management of the Company (although directors who also serve as employees will have additional responsibilities and duties arising under their employment agreements and will be expected to exercise a greater degree of skill and diligence than non-executive directors). The principal fiduciary duties include the statutory and common law fiduciary duties of acting in good faith in the interests of the company and exercising due care and skill. Other statutory duties include ensuring the maintenance of proper books of account, having annual accounts prepared, having an annual audit performed, maintaining certain registers and making certain filings as well as the disclosure of personal interests. Particular duties also apply to directors of insolvent companies (for example, the directors could be liable to sanctions where they are deemed by the court to have carried on our business while insolvent, without due regard to the interests of creditors). For public limited companies, directors are under a specific duty to ensure that the corporate secretary is a person with the requisite knowledge and experience to discharge the role.

### ***Conflicts of Interest***

As a matter of Irish law, a director is under a fiduciary duty to avoid conflicts of interest. Irish law and our Articles of Association provide that: (i) a director may be a director of or otherwise interested in a company relating to us and will not be accountable to us for any remuneration or other benefits received as a result, unless we otherwise direct; (ii) a director or a director's firm may act for us in a professional capacity other than as auditor; and (iii) a director may hold an office or place of profit in us and will not be disqualified from contracting with us. If a director has a personal interest in an actual or proposed contract with us, the director must declare the nature of his or her interest and we are required to maintain a register of such declared interests that must be available for inspection by the shareholders. Such a director may vote on any resolution of the board of directors in respect of such a contract, and such a contract will not be voidable solely as a result.

### ***Indemnification of Directors and Officers; Insurance***

To the fullest extent permitted by Irish law, our Articles of Association will confer an indemnity on our directors and officers. However, this indemnity is limited by the Irish Companies Act, which prescribes that an advance commitment to indemnify only permits a company to pay the costs or discharge the liability of a director or corporate secretary where judgment is given in favor of the director or corporate secretary in any civil or criminal action in respect of such costs or liability, or where an Irish court grants relief because the director or corporate secretary acted honestly and reasonably and ought fairly to be excused. Any provision whereby an Irish company seeks to commit in advance to indemnify its directors or corporate secretary over and above the limitations imposed by the Irish Companies Act will be void under Irish law, whether contained in its Articles of

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Association or any contract between the company and the director or corporate secretary. This restriction does not apply to our executives who are not directors, the corporate secretary or other persons who would be considered “officers” within the meaning of that term under the Irish Companies Act.

Our Articles of Association will also contain indemnification and expense advancement provisions for persons who are not directors or our corporate secretary.

We are permitted under our Articles of Association and the Irish Companies Act to take out directors’ and officers’ liability insurance, as well as other types of insurance, for our directors, officers, employees and agents.

Additionally, we and certain of our subsidiaries have entered into agreements to indemnify our directors and our executive officers to the maximum extent allowed under applicable law. These agreements, among other things, provide that we will indemnify our directors and executive officers for certain expenses (including attorneys’ fees), judgments, fines and settlement amounts reasonably incurred by such person in any action or proceeding, including any action by or in our right, on account of any services undertaken by such person on our behalf or that person’s status as our director or executive officer.

### **Duration; Dissolution; Rights upon Liquidation**

Our duration will be unlimited. We may be dissolved at any time by way of either a shareholder’s voluntary winding up or a creditors’ winding up. In the case of a shareholder’s voluntary winding up, the Company must be solvent and a special resolution of the shareholders is required. We may also be dissolved by way of court order on the application of a creditor, or by the Director of Corporate Enforcement in Ireland where the affairs of the Company have been investigated by an inspector and it appears from the report or any information obtained by the Director of Corporate Enforcement that the Company should be wound up.

The rights of the shareholders to a return of our assets on dissolution or winding up, following the settlement of all claims of creditors, may be prescribed in our Articles of Association or the terms of any shares issued by the board of directors from time to time. If the Articles of Association and terms of issue of the shares of the Company contain no specific provisions in respect of a dissolution or winding up then, subject to the shareholder priorities and the rights of any creditors, the assets will be distributed to shareholders in proportion to the paid-up nominal value of the shares held. Our Articles of Association provide that our ordinary shareholders may be entitled to participate in a winding up, and the method by which the property will be divided shall be determined by the liquidator, subject to a special resolution of the shareholders, but such rights of ordinary shareholders to participate may be subject to the rights of any preferred shareholders to participate under the terms of any series or class of preferred shares.

### **Transfer Agent and Registrar**

The transfer agent and registrar for our ordinary shares is Computershare Limited. The transfer agent’s address is 1290 Avenue of Americas 9th Floor, New York, New York 10104.

### **Listing**

We have been approved to list our ordinary shares on the Nasdaq Global Market under the symbol “ITRM.”

## SHARES ELIGIBLE FOR FUTURE SALE

Prior to this offering, no public market for our ordinary shares existed, and a liquid trading market for our ordinary shares may not develop or be sustained after this offering. Future sales of our ordinary shares in the public market could adversely affect prevailing market prices of our ordinary shares from time to time and could impair our future ability to raise equity capital in the future. As described below, only a limited number of shares will be available for sale shortly after this offering due to contractual and legal restrictions on resale. Nevertheless, sales of our ordinary shares in the public market after such restrictions lapse, or the perception that those sales may occur, could adversely affect the prevailing market price at such time and our ability to raise equity capital in the future.

Based upon the number of shares outstanding as of March 31, 2018, upon the closing of this offering 13,959,423 of our ordinary shares will be outstanding, assuming no exercise of the underwriters' over-allotment option to purchase additional ordinary shares from us and no exercise of outstanding options or warrants. All of the shares sold in this offering will be freely tradable, except that any shares held by our affiliates, as that term is defined in Rule 144 under the Securities Act, may only be sold in compliance with the limitations described below.

The remaining 7,809,423 ordinary shares outstanding after this offering are restricted securities as defined in Rule 144 under the Securities Act or are subject to lock-up agreements with us as described below. Following the expiration of the lock-up period, restricted securities may be sold in the public market only if the offer and sale is registered or if the offer and sale qualifies for an exemption from registration, including under Rule 144 or 701 promulgated under the Securities Act, described in greater detail below. These remaining shares will generally become available for sale in the public market as follows:

- no shares will be eligible for sale in the public market on the date of this prospectus; and
- approximately 7,809,423 shares will be eligible for sale in the public market upon the expiration of lock-up agreements 180 days after the date of this prospectus, subject in certain circumstances to the volume, manner of sale and other limitations of Rule 144 and Rule 701.

Upon the closing of this offering, 19,890 ordinary shares issuable upon exercise of warrants granted by us will be eligible for sale 180 days after the date of this prospectus.

As of March 31, 2018, of the 248,128 ordinary shares issuable upon exercise of options outstanding, approximately 91,251 shares will be vested and eligible for sale 180 days after the date of this prospectus.

We may issue ordinary shares from time to time as consideration for future acquisitions, investments, or other corporate purposes. In the event that any such acquisition, investment, or other transaction is significant, the number of ordinary shares that we may issue may in turn be significant. We may also grant registration rights covering those ordinary shares issued in connection with any such acquisition and investment.

In addition, the ordinary shares reserved for future issuance under our 2018 Plan will become eligible for sale in the public market to the extent permitted by the provisions of various vesting schedules, the lock-up agreements, a registration statement under the Securities Act or an exemption from registration, including Rule 144 and Rule 701.

### Rule 144

In general, persons who have beneficially owned restricted ordinary shares for at least six months, and any affiliate of the company who owns either restricted or unrestricted ordinary shares, are entitled to sell their securities without registration with the SEC under an exemption from registration provided by Rule 144 under the Securities Act.

Persons who have beneficially owned our restricted ordinary shares for at least six months would be entitled to sell their securities provided that (i) such person is not deemed to have been one of our affiliates at the time

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of, or at any time during the 90 days preceding a sale and (ii) we are subject to the periodic reporting requirements of the Exchange Act for at least 90 days before the sale and (iii) we are current in our Exchange Act reporting at the time of sale.

Persons who have beneficially owned our restricted ordinary shares for at least six months but who are our affiliates at the time of, or any time during the 90 days preceding, a sale, would be subject to additional restrictions, by which such person would be entitled to sell within any three-month period only a number of securities that does not exceed the greater of either of the following:

- 1% of the number of ordinary shares outstanding after this offering, which will equal approximately 139,594 shares immediately after the closing of this offering, based on the number of ordinary shares outstanding as of March 31, 2018; or
- the average weekly trading volume of our ordinary shares during the four calendar weeks preceding the filing of a notice on Form 144 with respect to the sale; provided, in each case, that we are subject to the periodic reporting requirements of the Exchange Act for at least 90 days before the sale.

Such sales by affiliates must also comply with the manner of sale, current public information and notice provisions of Rule 144.

### **Rule 701**

Rule 701 under the Securities Act, as in effect on the date of this prospectus, permits resales of shares in reliance upon Rule 144 but without compliance with certain restrictions of Rule 144, including the holding period requirement. Most of our employees, executive officers or directors who purchased shares under a written compensatory plan or contract may be entitled to rely on the resale provisions of Rule 701, but all holders of Rule 701 shares are required to wait until 90 days after the date of this prospectus before selling their shares. However, substantially all Rule 701 shares are subject to lock-up agreements as described below and in the section of this prospectus titled “Underwriting” and will become eligible for sale upon the expiration of the restrictions set forth in those agreements.

### **Regulation S**

Regulation S under the Securities Act, as in effect on the date of this prospectus, provides an exemption from registration for certain sales of securities made outside of the United States. Many of our securities sold to non-U.S. shareholders have been issued pursuant to Regulation S. Securities sold pursuant to Regulation S are deemed to be “restricted securities” and any resale of such securities may only be made in accordance with Regulation S, the registration requirements of the Securities Act or an exemption from registration, such as Rule 144 under the Securities Act, which is described above. In general, persons who have beneficially owned our restricted ordinary shares, including shares issued in accordance with Regulation S, and any affiliate of ours who owns either our restricted or unrestricted ordinary shares, including shares issued in accordance with Regulation S, are entitled to sell their securities without registration with the SEC under an exemption from registration provided by Rule 144 (subject to the volume limitations and other restrictions described above). In addition, our ordinary shares issued in accordance with Regulation S may be resold in accordance with Regulation S or the registration requirements of the Securities Act.

### **Form S-8 Registration Statements**

As soon as practicable after the closing of this offering, we intend to file a Form S-8 registration statement under the Securities Act to register the issuance of our ordinary shares under our equity compensation plans and agreements. This registration statement will become effective immediately upon filing, and shares covered by such registration statement will be eligible for sale in the public markets, subject to vesting restrictions, the lock-up agreements described above and Rule 144 limitations applicable to affiliates. For a more complete discussion of our equity compensation plans, see the section titled “Executive Compensation—Equity Incentive Plans.”

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### **Lock-Up Arrangements**

Our officers, directors, and substantially all of our shareholders, option holders and holders of warrants have agreed with the underwriters that for a period of 180 days following the date of this prospectus, subject to certain exceptions, that they will not offer, sell, contract to sell, pledge or otherwise dispose of, directly or indirectly, any of our ordinary shares or securities convertible into or exchangeable or exercisable for any of our ordinary shares, enter into a transaction that would have the same effect, or enter into any swap, hedge or other arrangement that transfers, in whole or in part, any of the economic consequences of ownership of our ordinary shares, whether any of these transactions are to be settled by delivery of our ordinary shares or other securities, in cash or otherwise. Leerink Partners LLC and RBC Capital Markets, LLC may, in their sole discretion, at any time, release all or any portion of the shares from the restrictions in this agreement.

In addition to the restrictions contained in the lock-up agreement described above, we have entered into agreements with certain securityholders, including the investor rights agreement and our standard form option agreement, that contain market stand-off provisions imposing restrictions on the ability of such securityholders to offer, sell, or transfer our equity securities for a period of 180 days following the date of this prospectus.

### **Registration Rights**

Upon the closing of this offering, the holders of 7,809,423 ordinary shares or their transferees, will be entitled to certain rights with respect to the registration of those shares under the Securities Act. If the offer and sale of these shares are registered, they will be freely tradable without restriction under the Securities Act immediately upon the effectiveness of the registration. For a description of these registration rights, see the section titled “Description of Share Capital—Registration Rights.”



## TAXATION

### **Irish Tax Considerations**

#### ***Scope of Discussion***

The following is a summary of the material Irish tax considerations for certain beneficial owners of our ordinary shares. The summary is based upon Irish tax laws and the practice of the Irish Revenue Commissioners in effect on the date of this prospectus and correspondence with the Irish Revenue Commissioners. Changes in law and/or administrative practice may result in alteration of the tax considerations described below, possibly with retrospective effect.

The summary does not constitute tax advice and is intended only as a general guide. This summary is not exhaustive and shareholders should consult their own tax advisors about the Irish tax consequences (and the tax consequences under the laws of other relevant jurisdictions) which may arise as a result of being a shareholder in our company including the acquisition, ownership and disposition of our ordinary shares. The summary applies only to shareholders who will own our ordinary shares as capital assets and does not apply to other categories of shareholders, such as dealers in securities, trustees, insurance companies, collective investment schemes and shareholders who have, or who are deemed to have, acquired our ordinary shares by virtue of an Irish office or employment (performed or carried on in Ireland).

#### ***Tax on Chargeable Gains***

The current rate of tax on chargeable gains (where applicable) in Ireland is 33%.

A disposal of our ordinary shares by a shareholder who is not resident or ordinarily resident for tax purposes in Ireland will not give rise to Irish tax on any chargeable gain realized on such disposal unless such shares are used, held or acquired for the purposes of a trade or business carried on by such shareholder through a branch or agency in Ireland.

A holder of our ordinary shares who is an individual and who is temporarily non-resident in Ireland may, under Irish anti-avoidance legislation, be liable to Irish tax on any chargeable gain realized on a disposal of our ordinary shares during the period in which such individual is non-resident.

#### ***Stamp Duty***

The rate of stamp duty (where applicable) on transfers of shares of Irish incorporated companies is 1% of the price paid or the market value of the shares acquired, whichever is greater. Where Irish stamp duty arises, it is generally a liability of the transferee.

Irish stamp duty may, depending on the manner in which our ordinary shares are held, be payable in respect of transfers of our ordinary shares.

#### ***Shares Held through DTC***

It is expected that a transfer of our ordinary shares effected by means of the transfer of book entry interests in DTC will not be subject to Irish stamp duty.

#### ***Shares Held Outside of DTC or Transferred Into or Out of DTC***

A transfer of our ordinary shares where any party to the transfer holds such shares outside of DTC may be subject to Irish stamp duty. Shareholders wishing to transfer their shares into (or out of) DTC may do so without giving rise to Irish stamp duty provided that:

- there is no change in the beneficial ownership of such shares as a result of the transfer; and

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- the transfer into (or out of) DTC is not effected in contemplation of a sale of such shares by a beneficial owner to a third party.

### ***Withholding Tax on Dividends Paid on Our Ordinary Shares***

As noted elsewhere in this prospectus, we do not expect to pay dividends for the foreseeable future. In addition, our ability to pay dividends is currently restricted by the terms of our secured credit facility with Silicon Valley Bank. To the extent that Iterum does make dividend payments (or other returns to shareholders that are treated as “distributions” for Irish tax purposes), it should be noted that such distributions made by Iterum will, in the absence of one of many exemptions, be subject to Irish dividend withholding tax, which is referred to in this prospectus as “DWT,” currently at a rate of 20%.

For DWT purposes, a distribution includes any distribution that may be made by Iterum to its shareholders, including cash dividends, non-cash dividends and additional stock taken in lieu of a cash dividend. Where an exemption does not apply in respect of a distribution made to a particular shareholder, we are responsible for withholding DWT prior to making such distribution.

### ***General Exemptions***

The following is a general overview of the scenarios where it will be possible for us to make payments of dividends without deduction of DWT.

Irish domestic law provides that a non-Irish resident shareholder is not subject to DWT on dividends received from Iterum if such shareholder is beneficially entitled to the dividend and is either:

- a person (not being a company) resident for tax purposes in a Relevant Territory (including the United States) and is neither resident nor ordinarily resident in Ireland (for a list of Relevant Territories for DWT purposes as at February 7, 2018, see the section titled “—Relevant Territories for the Purposes of Irish Dividend Withholding Tax”);
- a company resident for tax purposes in a Relevant Territory, provided such company is not under the control, whether directly or indirectly, of a person or persons who is or are resident in Ireland;
- a company, wherever resident, that is controlled, directly or indirectly, by persons resident in a Relevant Territory and who is or are (as the case may be) not controlled by, directly or indirectly, persons who are not resident in a Relevant Territory;
- a company, wherever resident, whose principal class of shares (or those of its 75% direct or indirect parent) is substantially and regularly traded on a stock exchange in Ireland, on a recognized stock exchange in a Relevant Territory or on such other stock exchange approved by the Irish Minister for Finance; or
- a company, wherever resident, that is wholly-owned, directly or indirectly, by two or more companies where the principal class of shares of each of such companies is substantially and regularly traded on a stock exchange in Ireland, on a recognized stock exchange in a Relevant Territory or on such other stock exchange approved by the Irish Minister for Finance,

and provided, in all cases noted above, Iterum has received from the shareholder, where required, the relevant Irish Revenue Commissioners DWT form(s) which are referred to in this prospectus as “DWT Forms,” prior to the payment of the dividend and such DWT Form(s) remain valid.

For non-Irish resident shareholders that cannot avail themselves of one of Ireland’s domestic law exemptions from DWT, it may be possible for such shareholders to rely on the provisions of a double tax treaty to which Ireland is party to reduce the rate of DWT.

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Iterum shareholders that do not fall within any of the categories specifically referred to above may nonetheless fall within other exemptions from DWT. If any Iterum shareholders are exempt from DWT, but receive dividends subject to DWT, such shareholders may apply for refunds of such DWT from the Irish Revenue Commissioners.

### ***Income Tax on Dividends Paid on Our Ordinary Shares***

Irish income tax may arise for certain persons in respect of dividends received from Irish resident companies. A shareholder that is not resident or ordinarily resident in Ireland and that is entitled to an exemption from DWT generally has no liability to Irish income tax or the universal social charge on a dividend received from us. An exception to this position may apply where such shareholder holds our ordinary shares through a branch or agency in Ireland through which a trade is carried on.

A shareholder that is not resident or ordinarily resident in Ireland and that is not entitled to an exemption from DWT generally has no additional Irish income tax liability or a liability to the universal social charge. The DWT deducted by us discharges the liability to income tax. An exception to this position may apply where the shareholder holds our ordinary shares through a branch or agency in Ireland through which a trade is carried on.

### ***Capital Acquisitions Tax***

Irish capital acquisitions tax (CAT) comprises principally gift tax and inheritance tax. CAT could apply to a gift or inheritance of our ordinary shares irrespective of the place of residence, ordinary residence or domicile of the parties. This is because our ordinary shares are regarded as property situated in Ireland for Irish CAT purposes as our share register must be held in Ireland. The person who receives the gift or inheritance has primary liability for CAT.

CAT is levied at a rate of 33% above certain tax-free thresholds. The appropriate tax free threshold is dependent upon (i) the relationship between the donor and the donee, and (ii) the aggregation of the values of previous gifts and inheritances received by the donee from persons within the same group threshold. Gifts and inheritances passing between spouses of the same marriage or civil partners of the same civil partnership are exempt from CAT. Children have a tax free threshold of €310,000 in respect of taxable gifts or inheritances received from their parents. Our shareholders should consult their own tax advisors as to whether CAT is creditable or deductible in computing any domestic tax liabilities.

There is also a “small gift exemption” from CAT whereby the first €3,000 of the taxable value of all taxable gifts taken by a donee from any one donor, in each calendar year, is exempt from CAT and is also excluded from any future aggregation. This exemption does not apply to an inheritance.

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### **Relevant Territories for the Purposes of Irish Dividend Withholding Tax (as at February 7, 2018)**

Albania	Ethiopia	Macedonia	Singapore
Armenia	Finland	Malaysia	Slovak Republic
Australia	France	Malta	Slovenia
Austria	Georgia	Mexico	South Africa
Bahrain	Germany	Moldova	Spain
Belarus	Ghana	Montenegro	Sweden
Belgium	Greece	Morocco	Switzerland
Bosnia & Herzegovina	Hong Kong	Netherlands	Thailand
Botswana	Hungary	New Zealand	The Republic Of Turkey
Bulgaria	Iceland	Norway	Ukraine
Canada	India	Pakistan	United Arab Emirates
Chile	Israel	Panama	United Kingdom
China	Italy	Poland	United States
Croatia	Japan	Portugal	Uzbekistan
Cyprus	Kazakhstan	Qatar	Vietnam
Czech Republic	Korea	Romania	Zambia
Denmark	Kuwait	Russia	
Egypt	Latvia	Saudi Arabia	
Estonia	Lithuania	Serbia	
	Luxembourg		

THE IRISH TAX CONSIDERATIONS SUMMARIZED ABOVE ARE FOR GENERAL INFORMATION ONLY. EACH SHAREHOLDER SHOULD CONSULT HIS OR HER OWN TAX ADVISOR AS TO THE PARTICULAR CONSEQUENCES THAT MAY APPLY TO SUCH SHAREHOLDER.

### **Material U.S. Federal Income Tax Considerations for U.S. Holders**

The following discussion describes the material U.S. federal income tax consequences relating to the ownership and disposition of our ordinary shares by U.S. Holders (as defined below). This discussion applies to U.S. Holders that purchase our ordinary shares pursuant to this offering and hold such ordinary shares as capital assets. This discussion is based on the U.S. Internal Revenue Code of 1986, as amended (the Code), U.S. Treasury regulations promulgated thereunder and administrative and judicial interpretations thereof, all as in effect on the date hereof and all of which are subject to change, possibly with retroactive effect. This discussion does not address all of the U.S. federal income tax consequences that may be relevant to specific U.S. Holders in light of their particular circumstances or to U.S. Holders subject to special treatment under U.S. federal income tax law (such as certain financial institutions; insurance companies; brokers, dealers or traders in securities or other persons that generally mark their securities to market for U.S. federal income tax purposes; tax-exempt entities or governmental organizations; retirement plans; regulated investment companies; real estate investment trusts; grantor trusts; brokers, dealers or traders in commodities, currencies or notional principal contracts; certain former citizens or long-term residents of the United States; persons who hold our ordinary shares as part of a “straddle,” “hedge,” “conversion transaction,” “synthetic security” or integrated investment; persons that have a “functional currency” other than the U.S. dollar; persons that own directly, indirectly or through attribution 10% or more of our ordinary shares; corporations that accumulate earnings to avoid U.S. federal income tax; and partnerships and other pass-through entities and investors in such pass-through entities). This discussion does not address any U.S. state or local or non-U.S. tax consequences or any U.S. federal estate, gift or alternative minimum tax consequences.

- As used in this discussion, the term “U.S. Holder” means a beneficial owner of our ordinary shares that is, for U.S. federal income tax purposes, (1) an individual who is a citizen or resident of the United States, (2) a corporation (or entity treated as a corporation for U.S. federal income tax purposes) created or organized in or under the laws of the United States, any state thereof, or the District of Columbia, (3) an estate the income of which is subject to U.S. federal income tax regardless of its

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source or (4) a trust (x) with respect to which a court within the United States is able to exercise primary supervision over its administration and one or more United States persons have the authority to control all of its substantial decisions or (y) that has elected under applicable U.S. Treasury regulations to be treated as a domestic trust for U.S. federal income tax purposes.

If an entity treated as a partnership for U.S. federal income tax purposes holds our ordinary shares, the U.S. federal income tax treatment of a partner with respect to an investment in such ordinary shares will depend in part upon the status and activities of such entity and the particular partner. Any such entity, and any partners in such an entity, should consult their own tax advisor regarding the U.S. federal income tax consequences of the purchase, ownership and disposition of our ordinary shares.

Persons considering an investment in our ordinary shares should consult their own tax advisors as to the particular tax consequences applicable to them relating to the purchase, ownership and disposition of our ordinary shares, including the applicability of U.S. federal, state and local tax laws and non-U.S. tax laws.

### ***Passive Foreign Investment Company Consequences***

In general, a corporation organized outside the United States will be treated as a passive foreign investment company, or PFIC, for any taxable year in which either (1) at least 75% of its gross income is “passive income” (the PFIC Income Test), or (2) on average at least 50% of its assets, determined on a quarterly basis, are assets that produce passive income or are held for the production of passive income (the PFIC Asset Test). Passive income for this purpose generally includes, among other things, dividends, interest, royalties, rents, and gains from the sale or exchange of property that give rise to passive income. Assets that produce or are held for the production of passive income generally include cash, even if held as working capital or raised in a public offering, marketable securities, and other assets that may produce passive income. Generally, in determining whether a non-U.S. corporation is a PFIC, a proportionate share of the income and assets of each corporation in which it owns, directly or indirectly, at least a 25% interest (by value) is taken into account.

Although PFIC status is determined on an annual basis and generally cannot be determined until the end of the taxable year, based on the nature of our current and expected income and the current and expected value and composition of our assets, we were a PFIC for our 2017 tax year but we do not expect to be a PFIC for our current taxable year. In part, because we may hold a substantial amount of cash and cash equivalents following this offering, and because the calculation of the value of our assets after this offering may be based in part on the value of our ordinary shares, which may fluctuate considerably, there can be no assurance that we will not be a PFIC in future taxable years. Even if we determine that we are not a PFIC for a taxable year, there can be no assurance that the Internal Revenue Service (the IRS) will agree with our conclusion and that the IRS would not successfully challenge our position. Because of the uncertainties involved in establishing our PFIC status, our U.S. counsel expresses no opinion regarding our PFIC status.

If we are a PFIC in any taxable year during which a U.S. Holder owns our ordinary shares, the U.S. Holder could be liable for additional taxes and interest charges under the “PFIC excess distribution regime” upon (1) a distribution paid during a taxable year that is greater than 125% of the average annual distributions paid in the three preceding taxable years, or, if shorter, the U.S. Holder’s holding period for our ordinary shares, and (2) any gain recognized on a sale, exchange or other disposition (including, in certain circumstances, a pledge) of our ordinary shares, whether or not we continue to be a PFIC. Under the PFIC excess distribution regime, the tax on such distribution or gain would be determined by allocating the distribution or gain ratably over the U.S. Holder’s holding period for our ordinary shares. The amount allocated to the current taxable year (i.e., the year in which the distribution occurs or the gain is recognized) and any year prior to the first taxable year in which we are a PFIC will be taxed as ordinary income earned in the current taxable year. The amount allocated to other taxable years will be taxed at the highest marginal rates in effect for individuals or corporations, as applicable, to ordinary income for each such taxable year, and an interest charge, generally applicable to underpayments of tax, will be added to the tax.

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If we are a PFIC for any year during which a U.S. Holder holds our ordinary shares, we must generally continue to be treated as a PFIC by that holder for all succeeding years during which the U.S. Holder holds such ordinary shares, unless we cease to meet the requirements for PFIC status and the U.S. Holder makes a “deemed sale” election with respect to our ordinary shares. If the election is made, the U.S. Holder will be deemed to sell our ordinary shares it holds at their fair market value on the last day of the last taxable year in which we qualified as a PFIC, and any gain recognized from such deemed sale would be taxed under the PFIC excess distribution regime, as described above. After the deemed sale election, the U.S. Holder’s ordinary shares will not be treated as shares of a PFIC unless we subsequently become a PFIC.

If we are a PFIC for any taxable year during which a U.S. Holder holds our ordinary shares and one of our non-United States subsidiaries is also a PFIC (i.e., a lower-tier PFIC), such U.S. Holder would be treated as owning a proportionate amount (by value) of the shares of the lower-tier PFIC and would be taxed under the PFIC excess distribution regime on distributions by the lower-tier PFIC and on gain from the disposition of shares of the lower-tier PFIC even though such U.S. Holder would not receive the proceeds of those distributions or dispositions.

If we are a PFIC, a U.S. Holder will not be subject to tax under the PFIC excess distribution regime on distributions or gain recognized on our ordinary shares if a valid “mark-to-market” election is made by the U.S. Holder for our ordinary shares. An electing U.S. Holder generally would take into account as ordinary income each year, the excess of the fair market value of our ordinary shares held at the end of such taxable year over the adjusted tax basis of such ordinary shares. The U.S. Holder would also take into account, as an ordinary loss each year, the excess of the adjusted tax basis of such ordinary shares over those shares’ fair market value at the end of the taxable year, but only to the extent of the excess of amounts previously included in income over ordinary losses deducted as a result of the mark-to-market election. The U.S. Holder’s tax basis in our ordinary shares would be adjusted to reflect any income or loss recognized as a result of the mark-to-market election. Any gain from a sale, exchange or other disposition of our ordinary shares in any taxable year in which we are a PFIC would be treated as ordinary income and any loss from such sale, exchange or other disposition would be treated first as ordinary loss (to the extent of any net mark-to-market gains previously included in income) and thereafter as capital loss. If, after having been a PFIC for a taxable year, we cease to be classified as a PFIC because we no longer meet the PFIC Income Test or PFIC Asset Test, the U.S. Holder would not be required to take into account any latent gain or loss in the manner described above and any gain or loss recognized on the sale or exchange of the ordinary shares would be classified as a capital gain or loss.

A mark-to-market election is available to a U.S. Holder only for “marketable stock.” Generally, stock will be considered marketable stock if it is “regularly traded” on a “qualified exchange” within the meaning of applicable U.S. Treasury regulations. A class of stock is regularly traded during any calendar year during which such class of stock is traded, other than in de minimis quantities, on at least 15 days during each calendar quarter.

Our ordinary shares will be marketable stock as long as they remain listed on Nasdaq and are regularly traded. A mark-to-market election will not apply to the ordinary shares for any taxable year during which we are not a PFIC, but will remain in effect with respect to any subsequent taxable year in which we become a PFIC. Such election will not apply to any of our non-U.S. subsidiaries. Accordingly, a U.S. Holder may continue to be subject to tax under the PFIC excess distribution regime with respect to any lower-tier PFICs notwithstanding the U.S. Holder’s mark-to-market election for the ordinary shares.

The tax consequences that would apply if we are a PFIC would also be different from those described above if a U.S. Holder were able to make a valid qualified electing fund (QEF) election. As we do not expect to provide U.S. Holders with the information necessary for a U.S. Holder to make a QEF election, prospective investors should assume that a QEF election will not be available.

**The U.S. federal income tax rules relating to PFICs are very complex. Prospective U.S. investors are strongly urged to consult their own tax advisors with respect to the impact of the purchase, ownership and**

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**disposition of our ordinary shares, the consequences to them of an investment in a PFIC, any elections available with respect to the ordinary shares and the IRS information reporting obligations with respect to the purchase, ownership and disposition of ordinary shares of a PFIC.**

### ***Distributions***

Subject to the discussion above under “—Passive Foreign Investment Company Consequences,” a U.S. Holder that receives a distribution with respect to our ordinary shares generally will be required to include the gross amount of such distribution in gross income as a dividend when actually or constructively received by the U.S. Holder to the extent of the U.S. Holder’s pro rata share of our current or accumulated earnings and profits (as determined under U.S. federal income tax principles). To the extent a distribution received by a U.S. Holder is not a dividend because it exceeds the U.S. Holder’s pro rata share of our current and accumulated earnings and profits, it will be treated first as a tax-free return of capital and reduce (but not below zero) the adjusted tax basis of the U.S. Holder’s ordinary shares. To the extent the distribution exceeds the adjusted tax basis of the U.S. Holder’s ordinary shares, the remainder will be taxed as capital gain. Because we may not account for our earnings and profits in accordance with U.S. federal income tax principles, U.S. Holders should expect all distributions to be reported to them as dividends. The amount of a dividend will include any amounts withheld by the Company in respect of Irish taxes.

Subject to applicable limitations, some of which vary depending upon the U.S. Holder’s particular circumstances, Irish income taxes withheld from dividends on the ordinary shares at a rate not exceeding the rate provided by the income tax treaty between Ireland and the United States will be creditable against the U.S. Holder’s U.S. federal income tax liability. The rules governing foreign tax credits are complex and U.S. Holders should consult their tax advisors regarding the creditability of foreign taxes in their particular circumstances. In lieu of claiming a foreign tax credit, U.S. Holders may, at their election, deduct foreign taxes, including any Irish income tax withheld from dividends on ordinary shares. An election to deduct foreign taxes instead of claiming foreign tax credits applies to all foreign taxes paid or accrued by a taxpayer in a taxable year.

Distributions on our ordinary shares that are treated as dividends generally will constitute income from sources outside the United States for foreign tax credit purposes and generally will constitute passive category income. Such dividends will not be eligible for the “dividends received” deduction generally allowed to corporate shareholders with respect to dividends received from U.S. corporations. Dividends paid by a “qualified foreign corporation” are eligible for taxation at a reduced capital gains rate rather than the marginal tax rates generally applicable to ordinary income provided that a holding period requirement (more than 60 days of ownership, without protection from the risk of loss, during the 121-day period beginning 60 days before the ex-dividend date) and certain other requirements are met. Each U.S. Holder is advised to consult its tax advisor regarding the availability of the reduced tax rate on dividends. However, if we are a PFIC for the taxable year in which the dividend is paid or the preceding taxable year, we will not be treated as a qualified foreign corporation, and therefore the reduced capital gains tax rate described above will not apply. See the discussion above under “—Passive Foreign Investment Company Consequences.

A non-United States corporation (other than a corporation that is classified as a PFIC for the taxable year in which the dividend is paid or the preceding taxable year) generally will be considered to be a qualified foreign corporation with respect to any dividend it pays on ordinary shares if (i) such foreign corporation is eligible for benefits under a comprehensive income tax treaty that the IRS determines is satisfactory and that includes an exchange of information program and (ii) such ordinary shares are readily tradable on an established securities market in the United States.

### ***Sale, Exchange or Other Disposition of Our Ordinary Shares***

Subject to the discussion above under “—Passive Foreign Investment Company Consequences,” a U.S. Holder generally will recognize capital gain or loss for U.S. federal income tax purposes upon the sale, exchange



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or other disposition of our ordinary shares in an amount equal to the difference, if any, between the amount realized (i.e., the amount of cash plus the fair market value of any property received) on the sale, exchange or other disposition and such U.S. Holder's adjusted tax basis in the ordinary shares. Such capital gain or loss generally will be long-term capital gain taxable at a reduced rate for non-corporate U.S. Holders or long-term capital loss if, on the date of sale, exchange or other disposition, the ordinary shares are held by the U.S. Holder for more than one year. Any capital gain of a non-corporate U.S. Holder that is not long-term capital gain is taxed at ordinary income rates. The deductibility of capital losses is subject to limitations. Any gain or loss recognized from the sale or other disposition of our ordinary shares will generally be gain or loss from sources within the United States for U.S. foreign tax credit purposes.

### ***Medicare Tax***

Certain U.S. Holders that are individuals, estates or trusts and whose income exceeds certain thresholds generally are subject to a 3.8% tax on all or a portion of their net investment income, which may include their gross dividend income and net gains from the disposition of our ordinary shares. If you are a United States person that is an individual, estate or trust, you are encouraged to consult your tax advisors regarding the applicability of this Medicare tax to your income and gains in respect of your investment in our ordinary shares.

### ***Information Reporting and Backup Withholding***

U.S. Holders may be required to file certain U.S. information reporting returns with the IRS with respect to an investment in our ordinary shares, including, among others, IRS Form 8938 (Statement of Specified Foreign Financial Assets). As described above under "Passive Foreign Investment Company Consequences," each U.S. Holder who is a shareholder of a PFIC must file an annual report containing certain information. U.S. Holders paying more than \$100,000 for our ordinary shares may be required to file IRS Form 926 (Return by a U.S. Transferor of Property to a Foreign Corporation) reporting this payment. Substantial penalties may be imposed upon a U.S. Holder that fails to comply with the required information reporting.

Dividends on and proceeds from the sale or other disposition of our ordinary shares may be reported to the IRS unless the U.S. Holder establishes a basis for exemption. Backup withholding may apply to amounts subject to reporting if the holder (1) fails to provide an accurate U.S. taxpayer identification number or otherwise establish a basis for exemption, or (2) is described in certain other categories of persons. However, U.S. Holders that are corporations generally are excluded from these information reporting and backup withholding tax rules.

Backup withholding is not an additional tax. Any amounts withheld under the backup withholding rules generally will be allowed as a refund or a credit against a U.S. Holder's U.S. federal income tax liability if the required information is furnished by the U.S. Holder on a timely basis to the IRS.

**U.S. Holders should consult their own tax advisors regarding the backup withholding tax and information reporting rules.**

**EACH PROSPECTIVE INVESTOR IS URGED TO CONSULT ITS OWN TAX ADVISOR ABOUT THE TAX CONSEQUENCES TO IT OF AN INVESTMENT IN OUR ORDINARY SHARES IN LIGHT OF THE INVESTOR'S OWN CIRCUMSTANCES. IN ADDITION, SIGNIFICANT CHANGES IN U.S. FEDERAL INCOME TAX LAWS WERE RECENTLY ENACTED. PROSPECTIVE INVESTORS SHOULD ALSO CONSULT WITH THEIR TAX ADVISORS WITH RESPECT TO SUCH CHANGES IN U.S. TAX LAW AS WELL AS POTENTIAL CONFORMING CHANGES IN STATE TAX LAWS.**

## UNDERWRITING

Leerink Partners LLC and RBC Capital Markets, LLC are acting as representatives of each of the underwriters named below and as joint bookrunning managers for this offering. Subject to the terms and conditions set forth in the underwriting agreement among us and the underwriters, we have agreed to issue to the underwriters, and each of the underwriters has agreed, severally and not jointly, to subscribe for, the number of ordinary shares set forth opposite its name below.

<b>Underwriter</b>	<b>Number of Shares</b>
Leerink Partners LLC	2,644,500
RBC Capital Markets, LLC	1,968,000
Guggenheim Securities, LLC	922,500
Needham & Company, LLC	615,000
<b>Total</b>	<b>6,150,000</b>

Subject to the terms and conditions set forth in the underwriting agreement, the underwriters have agreed, severally and not jointly, to subscribe for all of the shares (other than those covered by the over-allotment option described below) issuable under the underwriting agreement if they subscribe for any of the shares. If an underwriter defaults, the underwriting agreement provides that the purchase commitments of the non-defaulting underwriters may be increased or the underwriting agreement may be terminated.

We have agreed to indemnify the underwriters against certain liabilities, including liabilities under the Securities Act, or to contribute to payments the underwriters may be required to make in respect of those liabilities.

The underwriters are offering the shares, subject to prior sale, when, as and if issued to and accepted by them, subject to approval of legal matters by their counsel, including the validity of the shares, and other conditions contained in the underwriting agreement, such as the receipt by the underwriters of officers' certificates and legal opinions. The underwriters reserve the right to withdraw, cancel or modify offers to the public and to reject orders in whole or in part.

### Commissions and Discounts

The representatives have advised us that the underwriters propose initially to offer the shares to the public at the public offering price set forth on the cover page of this prospectus and to dealers at that price less a concession not in excess of \$0.546 per share. After the initial offering of the shares, the public offering price, concession or any other term of the offering may be changed by the representatives.

The following table shows the public offering price, underwriting discounts and commissions and proceeds before expenses to us. The information assumes either no exercise or full exercise by the underwriters of their over-allotment option.

	<b>Per Share</b>		<b>Total</b>	
	<b>Without Option</b>	<b>With Option</b>	<b>Without Option</b>	<b>With Option</b>
Public offering price	\$ 13.00	\$13.00	\$79,950,000	\$91,942,500
Underwriting discounts and commissions	0.91	0.91	5,596,500	6,435,975
Proceeds, before expenses, to us	12.09	12.09	74,353,500	85,506,525

We estimate net expenses payable by us in connection with this offering, other than the underwriting discounts and commissions referred to above, will be approximately \$2.6 million. We also have agreed to reimburse the underwriters for up to \$35,000 for their FINRA counsel fee. In accordance with FINRA Rule 5110, this reimbursed fee is deemed underwriting compensation for this offering. The underwriters have agreed to reimburse us for certain expenses incurred by us in connection with this offering.

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### **Over-Allotment Option**

We have granted an option to the underwriters, exercisable for 30 days after the date of this prospectus, to subscribe for up to 922,500 additional shares at the public offering price, less the underwriting discounts and commissions. If the underwriters exercise this option, each underwriter will be obligated, subject to conditions contained in the underwriting agreement, to subscribe for a number of additional shares proportionate to that underwriter's initial amount reflected in the above table. The underwriters may exercise this option solely for the purpose of covering over-allotments, if any, made in connection with the offering of the ordinary shares offered by this prospectus.

### **No Sales of Similar Securities**

We, our executive officers and directors and all of our other existing shareholders have agreed not to sell or transfer any ordinary shares or securities convertible into or exchangeable or exercisable for ordinary shares, for 180 days after the date of this prospectus without first obtaining the written consent of Leerink Partners LLC and RBC Capital Markets, LLC on behalf of the underwriters. Specifically, we and these other persons have agreed, with certain limited exceptions, not to directly or indirectly:

- offer, pledge, sell or contract to sell any ordinary shares;
- sell any option or contract to purchase any ordinary shares;
- purchase any option or contract to sell any ordinary shares;
- grant any option, right or warrant for the sale of any ordinary shares;
- otherwise dispose of or transfer any ordinary shares;
- request or demand that we file a registration statement related to the ordinary shares; or
- enter into any swap or other agreement or any transaction that transfers, in whole or in part, the economic consequence of ownership of any ordinary shares, whether any such swap, agreement or transaction is to be settled by delivery of ordinary shares or other securities, in cash or otherwise.

This lock-up provision applies to ordinary shares and to securities convertible into or exchangeable or exercisable for ordinary shares. It also applies to ordinary shares owned now or acquired later by the person executing the agreement or for which the person executing the agreement later acquires the power of disposition.

### **Nasdaq Global Market Listing**

We have been approved to list our ordinary shares on the Nasdaq Global Market, subject to notice of issuance, under the symbol "ITRM."

### **Determination of Offering Price**

Before this offering, there has been no public market for our ordinary shares. The initial public offering price was determined through negotiations between us and the representatives. In addition to prevailing market conditions, the factors that were considered in determining the initial public offering price were:

- the valuation multiples of publicly traded companies that the representatives believe to be comparable to us;
- our financial information;
- the history of, and the prospects for, our company and the industry in which we compete;
- an assessment of our management, its past and present operations, and the prospects for, and timing of, our future revenues;

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- the present state of our development; and
- the above factors in relation to market values and various valuation measures of other companies engaged in activities similar to ours.

An active trading market for the shares may not develop. It is also possible that after the offering the shares will not trade in the public market at or above the initial public offering price.

The underwriters do not expect to sell more than 5% of the shares in the aggregate to accounts over which they exercise discretionary authority.

### **Price Stabilization, Short Positions and Penalty Bids**

Until the distribution of the shares is completed, SEC rules may limit underwriters and selling group members from bidding for and purchasing our ordinary shares. However, the representatives may engage in transactions that stabilize the price of the ordinary shares, such as bids or purchases to peg, fix or maintain that price.

In connection with the offering, the underwriters may purchase and sell our ordinary shares in the open market. These transactions may include short sales, purchases on the open market to cover positions created by short sales, which may include purchases pursuant to the over-allotment option, and stabilizing transactions. Short sales involve the sale by the underwriters of a greater number of shares than they are required to purchase in the offering. “Covered” short sales are sales made in an amount not greater than the underwriters’ over-allotment option described above. The underwriters may close out any covered short position by either exercising their over-allotment option or purchasing shares in the open market. In determining the source of shares to close out the covered short position, the underwriters will consider, among other things, the price of shares available for purchase in the open market as compared to the price at which they may purchase shares through the over-allotment option granted to them. “Naked” short sales are sales in excess of such over-allotment option. The underwriters must close out any naked short position by purchasing shares in the open market. A naked short position is more likely to be created if the underwriters are concerned that there may be downward pressure on the price of our ordinary shares in the open market after pricing that could adversely affect investors who purchase in the offering. Stabilizing transactions consist of various bids for or purchases of ordinary shares made by the underwriters in the open market prior to the closing of the offering.

The underwriters may also impose a penalty bid. This occurs when a particular underwriter repays to the underwriters a portion of the underwriting discount received by it because the representatives have repurchased shares sold by or for the account of such underwriter in stabilizing or short covering transactions.

Similar to other purchase transactions, the underwriters’ purchases to cover the syndicate short sales may have the effect of raising or maintaining the market price of our ordinary shares or preventing or retarding a decline in the market price of our ordinary shares. As a result, the price of our ordinary shares may be higher than the price that might otherwise exist in the open market. The underwriters may conduct these transactions on the Nasdaq Global Market, in the over-the-counter market or otherwise.

Neither we nor any of the underwriters make any representation or prediction as to the direction or magnitude of any effect that the transactions described above may have on the price of our ordinary shares. In addition, neither we nor any of the underwriters make any representation that the representatives will engage in these transactions or that these transactions, once commenced, will not be discontinued without notice.

### **Electronic Distribution**

In connection with the offering, certain of the underwriters or securities dealers may distribute prospectuses by electronic means, such as e-mail.

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### **Other Relationships**

The underwriters and certain of their affiliates are full service financial institutions engaged in various activities, which may include securities trading, commercial and investment banking, financial advisory, investment management, investment research, principal investment, hedging, financing and brokerage activities. Some of the underwriters and certain of their affiliates may in the future engage in investment banking and other commercial dealings in the ordinary course of business with us and our affiliates, for which they may in the future receive customary fees, commissions and expenses.

In addition, in the ordinary course of their business activities, the underwriters and their affiliates may make or hold a broad array of investments and actively trade debt and equity securities (or related derivative securities) and financial instruments (including bank loans) for their own account and for the accounts of their customers. Such investments and securities activities may involve securities and/or instruments of ours or our affiliates. The underwriters and their affiliates may also make investment recommendations and/or publish or express independent research views in respect of such securities or financial instruments and may hold, or recommend to clients that they acquire, long and/or short positions in such securities and instruments.

### **Selling Restrictions**

#### ***Notice to Prospective Investors in the European Economic Area***

In relation to each Member State of the European Economic Area which has implemented the Prospectus Directive (each, a “Relevant Member State”), with effect from and including the date on which the Prospectus Directive is implemented in that Relevant Member State, no offer of shares may be made to the public in that Relevant Member State other than:

- A. to any legal entity which is a qualified investor as defined in the Prospectus Directive;
- B. to fewer than 150 natural or legal persons (other than qualified investors as defined in the Prospectus Directive), as permitted under the Prospectus Directive, subject to obtaining the prior consent of the representatives; or
- C. in any other circumstances falling within Article 3(2) of the Prospectus Directive,

provided that no such offer of shares shall require the Company or the representatives to publish a prospectus pursuant to Article 3 of the Prospectus Directive or supplement a prospectus pursuant to Article 16 of the Prospectus Directive.

Each person in a Relevant Member State who initially acquires any shares or to whom any offer is made will be deemed to have represented, acknowledged and agreed that it is a “qualified investor” within the meaning of the law in that Relevant Member State implementing Article 2(1)(e) of the Prospectus Directive. In the case of any shares being offered to a financial intermediary as that term is used in Article 3(2) of the Prospectus Directive, each such financial intermediary will be deemed to have represented, acknowledged and agreed that the shares acquired by it in the offer have not been acquired on a non-discretionary basis on behalf of, nor have they been acquired with a view to their offer or resale to, persons in circumstances which may give rise to an offer of any shares to the public other than their offer or resale in a Relevant Member State to qualified investors as so defined or in circumstances in which the prior consent of the representatives has been obtained to each such proposed offer or resale.

We, the representatives and each of our and the representatives’ and their affiliates will rely upon the truth and accuracy of the foregoing representations, acknowledgements and agreements.

This prospectus has been prepared on the basis that any offer of shares in any Relevant Member State will be made pursuant to an exemption under the Prospectus Directive from the requirement to publish a prospectus

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for offers of shares. Accordingly, any person making or intending to make an offer in that Relevant Member State of shares which are the subject of the offering contemplated in this prospectus may only do so in circumstances in which no obligation arises for the company or any of the underwriters to publish a prospectus pursuant to Article 3 of the Prospectus Directive in relation to such offer. Neither the company nor the underwriters have authorized, nor do they authorize, the making of any offer of shares in circumstances in which an obligation arises for the company or the underwriters to publish a prospectus for such offer.

For the purpose of the above provisions, the expression “an offer to the public” in relation to any shares in any Relevant Member State means the communication in any form and by any means of sufficient information on the terms of the offer and the shares to be offered so as to enable an investor to decide to purchase or subscribe the shares, as the same may be varied in the Relevant Member State by any measure implementing the Prospectus Directive in the Relevant Member State and the expression “Prospectus Directive” means Directive 2003/71/EC (including the 2010 PD Amending Directive, to the extent implemented in the Relevant Member States) and includes any relevant implementing measure in the Relevant Member State and the expression “2010 PD Amending Directive” means Directive 2010/73/EU.

### ***MiFID II Product Governance***

Any person offering, selling or recommending the shares (a “distributor”) should take into consideration the manufacturers’ target market assessment; however, a distributor subject to MiFID II is responsible for undertaking its own target market assessment in respect of the shares (by either adopting or refining the manufacturers’ target market assessment) and determining appropriate distribution channels.

### ***Notice to Prospective Investors in the United Kingdom***

In addition, in the United Kingdom, this document is being distributed only to, and is directed only at, and any offer subsequently made may only be directed at persons who are “qualified investors” (as defined in the Prospectus Directive) (i) who have professional experience in matters relating to investments falling within Article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005, as amended (the “Order”) and/or (ii) who are high net worth companies (or persons to whom it may otherwise be lawfully communicated) falling within Article 49(2)(a) to (d) of the Order (all such persons together being referred to as “relevant persons”) or otherwise in circumstances which have not resulted and will not result in an offer to the public of the shares in the United Kingdom within the meaning of the Financial Services and Markets Act 2000.

Any person in the United Kingdom that is not a relevant person should not act or rely on the information included in this document or use it as basis for taking any action. In the United Kingdom, any investment or investment activity that this document relates to may be made or taken exclusively by relevant persons.

### ***Notice to Prospective Investors in Canada***

The shares may be sold only to purchasers purchasing, or deemed to be purchasing, as principal that are accredited investors, as defined in National Instrument 45-106 Prospectus Exemptions or subsection 73.3(1) of the Securities Act (Ontario), and are permitted clients, as defined in National Instrument 31-103 Registration Requirements, Exemptions and Ongoing Registrant Obligations. Any resale of the shares must be made in accordance with an exemption from, or in a transaction not subject to, the prospectus requirements of applicable securities laws.

Securities legislation in certain provinces or territories of Canada may provide a purchaser with remedies for rescission or damages if this prospectus (including any amendment thereto) contains a misrepresentation, provided that the remedies for rescission or damages are exercised by the purchaser within the time limit prescribed by the securities legislation of the purchaser’s province or territory. The purchaser should refer to any applicable provisions of the securities legislation of the purchaser’s province or territory for particulars of these rights or consult with a legal advisor.

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Pursuant to section 3A.3 of National Instrument 33-105 Underwriting Conflicts (NI 33-105), the underwriters are not required to comply with the disclosure requirements of NI 33-105 regarding underwriter conflicts of interest in connection with this offering.

### ***Notice to Prospective Investors in Switzerland***

The shares may not be publicly offered in Switzerland and will not be listed on the SIX Swiss Exchange (“SIX”) or on any other stock exchange or regulated trading facility in Switzerland. This document does not constitute a prospectus within the meaning of, and has been prepared without regard to the disclosure standards for issuance prospectuses under art. 652a or art. 1156 of the Swiss Code of Obligations or the disclosure standards for listing prospectuses under art. 27 ff. of the SIX Listing Rules or the listing rules of any other stock exchange or regulated trading facility in Switzerland. Neither this document nor any other offering or marketing material relating to the shares or the offering may be publicly distributed or otherwise made publicly available in Switzerland.

Neither this document nor any other offering or marketing material relating to the offering, the Company, the shares have been or will be filed with or approved by any Swiss regulatory authority. In particular, this document will not be filed with, and the offer of shares will not be supervised by, the Swiss Financial Market Supervisory Authority (“FINMA”), and the offer of shares has not been and will not be authorized under the Swiss Federal Act on Collective Investment Schemes (“CISA”). The investor protection afforded to acquirers of interests in collective investment schemes under the CISA does not extend to acquirers of shares.

### ***Notice to Prospective Investors in the Dubai International Financial Centre (“DIFC”)***

This document relates to an Exempt Offer in accordance with the Markets Rules 2012 of the Dubai Financial Services Authority (“DFSA”). This document is intended for distribution only to persons of a type specified in the Markets Rules 2012 of the DFSA. It must not be delivered to, or relied on by, any other person. The DFSA has no responsibility for reviewing or verifying any documents in connection with Exempt Offers. The DFSA has not approved this prospectus supplement nor taken steps to verify the information set forth herein and has no responsibility for this document. The securities to which this document relates may be illiquid and/or subject to restrictions on their resale. Prospective purchasers of the securities offered should conduct their own due diligence on the securities. If you do not understand the contents of this document you should consult an authorized financial advisor.

In relation to its use in the DIFC, this document is strictly private and confidential and is being distributed to a limited number of investors and must not be provided to any person other than the original recipient, and may not be reproduced or used for any other purpose. The interests in the securities may not be offered or sold directly or indirectly to the public in the DIFC.

### ***Notice to Prospective Investors in the United Arab Emirates***

The shares have not been, and are not being, publicly offered, sold, promoted or advertised in the United Arab Emirates (including the Dubai International Financial Center) other than in compliance with the laws of the United Arab Emirates (and the Dubai International Financial Center) governing the issue, offering and sale of securities. Further, this prospectus does not constitute a public offer of securities in the United Arab Emirates (including the Dubai International Financial Center) and is not intended to be a public offer. This prospectus has not been approved by or filed with the Central Bank of the United Arab Emirates, the Securities and Commodities Authority or the Dubai Financial Services Authority.

### ***Notice to Prospective Investors in Australia***

This prospectus:

- does not constitute a product disclosure document or a prospectus under Chapter 6D.2 of the Corporations Act 2001 (Cth) (the “Corporations Act”);



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- has not been, and will not be, lodged with the Australian Securities and Investments Commission (“ASIC”), as a disclosure document for the purposes of the Corporations Act and does not purport to include the information required of a disclosure document under Chapter 6D.2 of the Corporations Act;
- does not constitute or involve a recommendation to acquire, an offer or invitation for issue or sale, an offer or invitation to arrange the issue or sale, or an issue or sale, of interests to a “retail client” (as defined in section 761G of the Corporations Act and applicable regulations) in Australia; and
- may only be provided in Australia to select investors who are able to demonstrate that they fall within one or more of the categories of investors, or Exempt Investors, available under section 708 of the Corporations Act.

The shares may not be directly or indirectly offered for subscription or purchased or sold, and no invitations to subscribe for or buy the shares may be issued, and no draft or definitive offering memorandum, advertisement or other offering material relating to any shares may be distributed in Australia, except where disclosure to investors is not required under Chapter 6D of the Corporations Act or is otherwise in compliance with all applicable Australian laws and regulations. By submitting an application for the shares, you represent and warrant to us that you are an Exempt Investor.

As any offer of shares under this document will be made without disclosure in Australia under Chapter 6D.2 of the Corporations Act, the offer of those securities for resale in Australia within 12 months may, under section 707 of the Corporations Act, require disclosure to investors under Chapter 6D.2 if none of the exemptions in section 708 applies to that resale. By applying for the shares you undertake to us that you will not, for a period of 12 months from the date of issue of the shares, offer, transfer, assign or otherwise alienate those securities to investors in Australia except in circumstances where disclosure to investors is not required under Chapter 6D.2 of the Corporations Act or where a compliant disclosure document is prepared and lodged with ASIC.

### ***Notice to Prospective Investors in Japan***

The shares have not been and will not be registered pursuant to Article 4, Paragraph 1 of the Financial Instruments and Exchange Act. Accordingly, none of the shares nor any interest therein may be offered or sold, directly or indirectly, in Japan or to, or for the benefit of, any “resident” of Japan (which term as used herein means any person resident in Japan, including any corporation or other entity organized under the laws of Japan), or to others for re-offering or resale, directly or indirectly, in Japan or to or for the benefit of a resident of Japan, except pursuant to an exemption from the registration requirements of, and otherwise in compliance with, the Financial Instruments and Exchange Act and any other applicable laws, regulations and ministerial guidelines of Japan in effect at the relevant time.

### ***Notice to Prospective Investors in Hong Kong***

The shares have not been offered or sold and will not be offered or sold in Hong Kong, by means of any document, other than (a) to “professional investors” as defined in the Securities and Futures Ordinance (Cap. 571) of Hong Kong and any rules made under that Ordinance; or (b) in other circumstances which do not result in the document being a “prospectus” as defined in the Companies (Winding Up and Miscellaneous Provisions) Ordinance (Cap. 32) of Hong Kong or which do not constitute an offer to the public within the meaning of that Ordinance. No advertisement, invitation or document relating to the shares has been or may be issued or has been or may be in the possession of any person for the purposes of issue, whether in Hong Kong or elsewhere, which is directed at, or the contents of which are likely to be accessed or read by, the public of Hong Kong (except if permitted to do so under the securities laws of Hong Kong) other than with respect to shares which are or are intended to be disposed of only to persons outside Hong Kong or only to “professional investors” as defined in the Securities and Futures Ordinance and any rules made under that Ordinance.

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### ***Notice to Prospective Investors in Singapore***

This prospectus has not been registered as a prospectus with the Monetary Authority of Singapore. Accordingly, this prospectus and any other document or material in connection with the offer or sale, or invitation for subscription or purchase, of shares may not be circulated or distributed, nor may the shares be offered or sold, or be made the subject of an invitation for subscription or purchase, whether directly or indirectly, to persons in Singapore other than (i) to an institutional investor under Section 274 of the Securities and Futures Act, Chapter 289 of Singapore (the “SFA”), (ii) to a relevant person pursuant to Section 275(1), or any person pursuant to Section 275(1A), and in accordance with the conditions specified in Section 275 of the SFA, or (iii) otherwise pursuant to, and in accordance with the conditions of, any other applicable provision of the SFA.

Where the shares are subscribed or purchased under Section 275 of the SFA by a relevant person which is:

- a corporation (which is not an accredited investor (as defined in Section 4A of the SFA)) the sole business of which is to hold investments and the entire share capital of which is owned by one or more individuals, each of whom is an accredited investor; or
- a trust (where the trustee is not an accredited investor) whose sole purpose is to hold investments and each beneficiary of the trust is an individual who is an accredited investor,

securities (as defined in Section 239(1) of the SFA) of that corporation or the beneficiaries’ rights and interest (howsoever described) in that trust shall not be transferred within six months after that corporation or that trust has acquired the shares pursuant to an offer made under Section 275 of the SFA except:

- to an institutional investor or to a relevant person defined in Section 275(2) of the SFA, or to any person arising from an offer referred to in Section 275(1A) or Section 276(4)(i)(B) of the SFA;
- where no consideration is or will be given for the transfer;
- where the transfer is by operation of law;
- as specified in Section 276(7) of the SFA; or
- as specified in Regulation 32 of the Securities and Futures (Offers of Investments) (Shares and Debentures) Regulations 2005 of Singapore.

### ***Notice to Prospective Investors in China***

This prospectus does not constitute a public offer of shares, whether by sale or subscription, in the People’s Republic of China (the “PRC”). The shares are not being offered or sold directly or indirectly in the PRC to or for the benefit of, legal or natural persons of the PRC.

Further, no legal or natural persons of the PRC may directly or indirectly purchase any of the shares or any beneficial interest therein without obtaining all prior PRC’s governmental approvals that are required, whether statutorily or otherwise. Persons who come into possession of this document are required by the issuer and its representatives to observe these restrictions.

## **LEGAL MATTERS**

The validity of the ordinary shares being offered by this prospectus will be passed upon for us by A&L Goodbody, Dublin, Ireland. Certain other legal matters relating to this offering will be passed upon for us by Cooley LLP. Certain legal matters in connection with this offering will be passed upon for the underwriters by Davis Polk & Wardwell LLP.

## **EXPERTS**

The consolidated financial statements of Iterum Therapeutics plc (formerly known as Iterum Therapeutics Limited) as of December 31, 2016 and December 31, 2017 and for each of the years in the two-year period ended December 31, 2017, have been included herein in reliance upon the report of KPMG, independent registered public accounting firm, appearing elsewhere herein, and upon the authority of said firm as experts in accounting and auditing.

## **WHERE YOU CAN FIND ADDITIONAL INFORMATION**

We have submitted with the SEC a registration statement on Form S-1, including exhibits and schedules, under the Securities Act, with respect to the ordinary shares being offered by this prospectus. This prospectus, which constitutes part of the registration statement, does not contain all of the information in the registration statement and its exhibits. For further information with respect to us and the ordinary shares offered by this prospectus, we refer you to the registration statement and its exhibits. Statements contained in this prospectus as to the contents of any contract or any other document referred to are not necessarily complete, and in each instance, we refer you to the copy of the contract or other document filed as an exhibit to the registration statement. Each of these statements is qualified in all respects by this reference.

You can read our SEC filings, including the registration statement, over the internet at the SEC's website at [www.sec.gov](http://www.sec.gov). You may also read and copy any document we file with the SEC at its public reference facilities at 100 F Street, NE, Washington, D.C. 20549. You may also obtain copies of these documents at prescribed rates by writing to the Public Reference Section of the SEC at 100 F Street, NE, Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for further information on the operation of the public reference facilities. You may also request a copy of these filings, at no cost, by writing us at 200 South Wacker Dr., Suite 650, Chicago, IL 60606.

Upon the closing of this offering, we will be subject to the information reporting requirements of the Securities Exchange Act of 1934 and we will file reports, proxy statements and other information with the SEC. These reports, proxy statements and other information will be available for inspection and copying at the public reference room and web site of the SEC referred to above. We also maintain a website at [www.iterumtx.com](http://www.iterumtx.com), at which, following the closing of this offering, you may access these materials free of charge as soon as reasonably practicable after they are electronically filed with, or furnished to, the SEC. Information contained on or accessible through our website is not a part of this prospectus, and the inclusion of our website address in this prospectus is an inactive textual reference only.

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**Report of Independent Registered Public Accounting Firm**

To the Shareholders and Board of Directors  
Iterum Therapeutics plc (formerly Iterum Therapeutics Limited):

*Opinion on the Consolidated Financial Statements*

We have audited the accompanying consolidated balance sheets of Iterum Therapeutics plc (formerly Iterum Therapeutics Limited) and subsidiaries (the Company) as of December 31, 2016 and 2017, the related consolidated statements of operations and comprehensive loss, changes in convertible preferred shares and shareholders' equity, and cash flows for each of the years in the two-year period ended December 31, 2017, and the related notes (collectively, the consolidated financial statements). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2016 and 2017, and the results of its operations and its cash flows for each of the years in the two-year period ended December 31, 2017, in conformity with U.S. generally accepted accounting principles.

*Basis for Opinion*

These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ KPMG

We have served as the Company's auditor since December 31, 2015.

Dublin, Ireland

March 9, 2018, except for the effects of the Reverse Share Split discussed in Note 12 to the consolidated financial statements, as to which the date is May 16, 2018

**ITERUM THERAPEUTICS PLC**  
**Consolidated Balance Sheets**  
(In thousands, except share and per share data)

	December 31, 2016	December 31, 2017	March 31, 2018	Pro Forma March 31, 2018 (unaudited)
<b>Assets</b>				
Current assets:				
Cash and cash equivalents	\$ 24,809	\$ 8,485	\$ 38,258	38,258
Short-term investments	—	30,731	21,376	21,376
Prepaid expenses and other current assets	1,053	4,957	5,751	5,751
Total current assets	25,862	44,173	65,385	65,385
Property and equipment, net	—	747	737	737
Restricted cash	—	—	120	120
Other assets	1,055	1,837	1,889	1,889
Total assets	<u>\$ 26,917</u>	<u>\$ 46,757</u>	<u>\$ 68,131</u>	<u>\$ 68,131</u>
<b>Liabilities, Convertible Preferred Shares and Shareholders' Equity</b>				
Current liabilities:				
Accounts payable	\$ 1,481	\$ 3,152	\$ 3,575	\$ 3,575
Accrued expenses	2,738	3,974	4,748	4,748
Total current liabilities	4,219	7,126	8,323	8,323
Other liabilities	—	80	78	78
Total liabilities	<u>\$ 4,219</u>	<u>\$ 7,206</u>	<u>\$ 8,401</u>	<u>\$ 8,401</u>
Commitments and contingencies (Note 11)				
Series A convertible preferred shares, \$0.01 par value per share; 3,032,463 shares authorized, 3,032,457 shares issued at December 31, 2016 and 2017 and March 31, 2018 (unaudited); no shares issued at March 31, 2018 pro forma (unaudited)				
	30	30	30	—
Series B convertible preferred shares, \$0.01 par value per share; 3,696,943 shares authorized, 2,654,206 shares issued at December 31, 2017; 4,801,493 shares authorized, 4,363,856 shares issued at March 31, 2018 (unaudited); no shares issued at March 31, 2018 pro forma (unaudited)				
	—	27	44	—
Shareholders' equity:				
Ordinary shares, \$0.01 par value per share; 3,659,453 and 7,956,715 shares authorized at December 31, 2016 and 2017, 413,110 shares issued at December 31, 2016 and 2017; 44,557,606 shares authorized, 413,110 shares issued at March 31, 2018 (unaudited); 7,809,423 shares issued at March 31, 2018 pro forma (unaudited)				
	4	4	4	78
Additional paid-in capital	47,995	94,227	126,535	126,535
Accumulated deficit	(25,331)	(54,737)	(66,883)	(66,883)
Total shareholders' equity	22,668	39,494	59,656	59,730
Total liabilities, convertible preferred shares and shareholders' equity	<u>\$ 26,917</u>	<u>\$ 46,757</u>	<u>\$ 68,131</u>	<u>\$ 68,131</u>

See Accompanying Notes to the Consolidated Financial Statements

**ITERUM THERAPEUTICS PLC**  
**Consolidated Statements of Operations and Comprehensive Loss**  
(In thousands, except share and per share data)

	Year Ended December 31,		Three Months Ended March 31,	
	2016	2017	2017	2018
			(unaudited)	
Revenue	\$ —	\$ 508	\$ —	\$ 191
Operating expenses:				
Research and development	\$ (10,101)	\$ (25,499)	\$ (4,534)	\$ (10,879)
General and administrative	(3,258)	(4,464)	(1,008)	(1,515)
Total operating expenses	(13,359)	(29,963)	(5,542)	(12,394)
Operating loss	(13,359)	(29,455)	(5,542)	(12,203)
Interest income, net	—	277	—	85
Other income/(expense), net	8	216	(68)	61
Total other income	8	493	(68)	146
Loss before income taxes	(13,351)	(28,962)	(5,610)	(12,057)
Income tax expense	(113)	(444)	(227)	(89)
Net loss and comprehensive loss	(13,464)	(29,406)	(5,837)	(12,146)
Net loss attributable to ordinary shareholders	\$ (13,464)	\$ (29,406)	\$ (5,837)	\$ (12,146)
Net loss per share attributable to ordinary shareholders—basic and diluted	\$ (568.87)	\$ (170.84)	\$ (103.68)	\$ (61.36)
Weighted average ordinary shares outstanding—basic and diluted	23,668	172,130	56,301	197,949
Pro forma net loss per share attributable to ordinary shareholders—basic and diluted (unaudited)		\$ (5.02)		\$ (1.60)
Pro forma weighted average ordinary shares outstanding—basic and diluted (unaudited)		5,858,793		7,594,262

See Accompanying Notes to the Consolidated Financial Statements



**ITERUM THERAPEUTICS PLC**
**Consolidated Statements of Changes in Convertible Preferred Shares and Shareholders' Equity**
**(In thousands, except share and per share data)**

	<b>Convertible Preferred Shares</b>		<b>Ordinary Shares</b>		<b>Preferred Shares to be Issued</b>	<b>Additional Paid in Capital</b>	<b>Accumulated Deficit</b>	<b>Total</b>
	<b>Shares</b>	<b>Amount</b>	<b>Shares</b>	<b>Amount</b>				
Balance, December 31, 2015	1,514,320	\$ 15	413,110	\$ 4	\$ 3,000	\$ 23,813	\$ (11,867)	\$ 14,950
Issuance of Series A convertible preferred shares	1,518,137	15	—	—	(3,000)	23,834	—	20,834
Share-based compensation expense	—	—	—	—	—	348	—	348
Net loss	—	—	—	—	—	—	(13,464)	(13,464)
Balance, December 31, 2016	3,032,457	\$ 30	413,110	\$ 4	\$ —	\$ 47,995	\$ (25,331)	\$ 22,668
Issuance of Series B convertible preferred shares	2,654,206	27	—	—	—	45,840	—	45,840
Share-based compensation expense	—	—	—	—	—	392	—	392
Net loss	—	—	—	—	—	—	(29,406)	(29,406)
Balance, December 31, 2017	5,686,663	\$ 57	413,110	\$ 4	\$ —	\$ 94,227	\$ (54,737)	\$ 39,494
Issuance of Series B convertible preferred shares, net	1,709,650	17	—	—	—	32,159	—	32,159
Share-based compensation expense	—	—	—	—	—	149	—	149
Net loss	—	—	—	—	—	—	(12,146)	(12,146)
Balance, March 31, 2018 (unaudited)	7,396,313	\$ 74	413,110	\$ 4	\$ —	\$ 126,535	\$ (66,883)	\$ 59,656

See Accompanying Notes to the Consolidated Financial Statements

**ITERUM THERAPEUTICS PLC**  
**Consolidated Statements of Cash Flows**  
(In thousands)

	Year Ended December 31, 2016	Year Ended December 31, 2017	Three Months Ended March 31, 2017	2018 (unaudited)
<b>Cash flows from operating activities:</b>				
Net loss	\$ (13,464)	\$ (29,406)	\$ (5,837)	\$ (12,146)
Adjustments to reconcile net loss to cash used in operating activities:				
Depreciation	—	65	—	31
Share-based compensation expense	348	392	89	149
Non-cash loss on short-term investments	—	44	—	(23)
Interest on short-term investments	—	(95)	—	—
Changes in operating assets and liabilities:				
Prepaid expenses and other current assets	(966)	(3,815)	(246)	(793)
Other assets	(1,052)	(782)	(464)	(52)
Accounts payable	1,188	1,671	(361)	422
Accrued expenses	2,665	1,236	1,099	692
Income taxes	(17)	6	198	82
Other liabilities	—	80	87	(2)
Net cash used in operating activities	(11,298)	(30,604)	(5,435)	(11,640)
<b>Cash flows from investing activities:</b>				
Purchases of property and equipment	—	(812)	(518)	(21)
Purchases of short-term investments	—	(53,275)	—	(6,372)
Proceeds from sale of short-term investments	—	22,500	—	15,750
Net cash (used in) / provided by investing activities	—	(31,587)	(518)	9,357
<b>Cash flows from financing activities:</b>				
Proceeds from issuance of Series A convertible preferred shares	20,851	—	—	—
Proceeds from issuance of Series B convertible preferred shares	—	45,867	—	32,176
Net cash provided by financing activities	20,851	45,867	—	32,176
Net increase / (decrease) in cash, cash equivalents and restricted cash	9,553	(16,324)	(5,953)	29,893
Cash, cash equivalents and restricted cash, at beginning of period	15,256	24,809	24,809	8,485
Cash, cash equivalents and restricted cash, at end of period	\$ 24,809	\$ 8,485	\$ 18,856	\$ 38,378
<b>Supplemental Disclosure of Cash Flow Information:</b>				
Income tax paid—U.S.	\$ 130	\$ 439	\$ —	\$ —

See Accompanying Notes to the Consolidated Financial Statements

**ITERUM THERAPEUTICS PLC**

**Notes to Consolidated Financial Statements  
(In thousands, except share and per share data)**

**(1) Nature of Operations and Basis of Presentation**

Iterum Therapeutics plc (the “Company”) was incorporated under the laws of the state of Ireland in June 2015 as a limited company and re-registered as a plc on March 20, 2018. The Company maintains its registered office at Block 2 Floor 3 Harcourt Centre, Harcourt Street, Dublin 2, Ireland. The Company commenced operations in November 2015. The Company licensed global rights to its novel anti-infective compound, sulopenem, from Pfizer Inc. (“Pfizer”). The Company is a clinical-stage pharmaceutical company dedicated to developing and commercializing sulopenem to be the first and only oral and intravenous (“IV”) branded penem available globally.

Since inception, the Company has devoted substantially all of its efforts to research and development, recruiting management and technical staff, and raising capital, and has financed its operations through the issuance of convertible preferred shares. The Company has not generated any product revenue. The Company is subject to risks and uncertainties common to early-stage companies in the pharmaceutical industry, including, but not limited to, development by competitors of new technological innovations, dependence on key personnel, protection of proprietary technology, compliance with government regulations and the ability to secure additional capital to fund operations. Product candidates currently under development will require significant additional research and development efforts, including preclinical and clinical testing and regulatory approval prior to commercialization. Even if the Company’s product development efforts are successful, it is uncertain when, if ever, the Company will realize significant revenue from product sales.

The accompanying consolidated financial statements have been prepared in accordance with accounting principles generally accepted in the United States of America (“GAAP”) and include the accounts of the Company and its subsidiaries.

***Going Concern***

In accordance with Accounting Standards Update (“ASU”) 2014-15, *Disclosure of Uncertainties about an Entity’s Ability to Continue as a Going Concern (Subtopic 205-40)*, the Company has evaluated whether there are conditions and events, considered in aggregate, that raise substantial doubt about the Company’s ability to continue as a going concern within one year of the date of issue of the consolidated financial statements.

The Company has incurred operating losses since inception, including a net loss of \$5,837 and \$12,146 for the periods ended March 31, 2017 and March 31, 2018, respectively and a net loss of \$13,464 and \$29,406 for the years end December 31, 2016 and December 31, 2017 respectively. The Company had an accumulated deficit of \$66,883 as of March 31, 2018. The Company expects to continue to incur net losses for the next several years and is highly dependent on its ability to find additional sources of funding in the form of debt or equity financing to fund its operations. Management believe that its cash and cash equivalents balance of \$38,258 and short-term investments balance of \$21,376 at March 31, 2018, together with the \$15,000 loan drawn down from a secured credit facility with Silicon Valley Bank in April 2018, are sufficient to fund operations for at least one year from the date the consolidated financial statements are issued. In making this assessment management have considered the future financing options available to the Company, the planned operations of the Company and the ability to adjust its plans if required.

The Company will be required to obtain additional funding in order to continue to fund its operations after at least one year from the date the consolidated financial statements are issued and intends to pursue a public offering of its ordinary shares to fund future operations. However, if the Company is unable to complete a sufficient public offering in a timely manner it would need to pursue other financing alternatives including

**ITERUM THERAPEUTICS PLC**

**Notes to Consolidated Financial Statements  
(In thousands, except share and per share data)**

private financing of debt or equity or collaboration agreements. There can be no assurances, however, that the current operating plan will be achieved or that additional funding will be available on terms acceptable to the Company, or at all.

**(2) Summary of Significant Accounting Policies**

***Use of Estimates***

The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of expenses during the reporting period. Significant estimates and assumptions reflected in these consolidated financial statements include, but are not limited to, the accrual for research and development expenses, revenue from grant awards, the valuation of restricted ordinary shares and the valuation of share-based compensation awards. The Company bases its estimates on historical experience, known trends and other market-specific or other relevant factors that it believes to be reasonable under the circumstances. On an ongoing basis, management evaluates its estimates as there are changes in circumstances, facts and experience. Actual results could differ materially from those estimates.

***Unaudited Interim Financial Information***

The accompanying consolidated balance sheet as of March 31, 2018, the consolidated statements of operations and comprehensive loss and the consolidated statements of cash flows for the three months ended March 31, 2017 and 2018, and the consolidated statement of changes in convertible preferred shares and shareholders' equity for the three months ended March 31, 2018 are unaudited. The unaudited interim consolidated financial statements have been prepared on the same basis as the audited annual consolidated financial statements and, in the opinion of management, reflect all adjustments, which include only normal recurring adjustments, necessary for the fair statement of the Company's financial position as of March 31, 2018 and the results of its operations and its cash flows for the three months ended March 31, 2017 and 2018. The financial data and other information disclosed in these notes related to the three months ended March 31, 2017 and 2018 are also unaudited. The results for the three months ended March 31, 2018 are not necessarily indicative of results to be expected for the year ending December 31, 2018, any other interim periods, or any future year or period.

***Unaudited Pro Forma Information***

The accompanying unaudited pro forma consolidated balance sheet as of March 31, 2018 has been prepared to give effect, upon the closing of a qualified Initial Public Offering (IPO) (see *Note 8*), to the automatic conversion of all shares of convertible preferred shares outstanding as of March 31, 2018 into 7,396,313 ordinary shares as if the proposed IPO had occurred on March 31, 2018. In the accompanying consolidated statements of operations and comprehensive loss, the unaudited pro forma basic and diluted net loss per share attributable to ordinary shareholders for the year ended December 31, 2017 and the three months ended March 31, 2018 have been prepared to give effect, upon the closing of a qualified IPO, to the automatic conversion of all shares of convertible preferred shares into ordinary shares as if the proposed IPO had occurred on the later of January 1, 2017 or the issuance date of the convertible preferred shares.

**ITERUM THERAPEUTICS PLC**  
**Notes to Consolidated Financial Statements**  
**(In thousands, except share and per share data)**

***Comprehensive Loss***

Comprehensive loss includes net loss as well as other changes in shareholders' equity that result from transactions and economic events other than those with shareholders. For the periods presented in the accompanying consolidated financial statements, there was no difference between net loss and comprehensive loss.

***Consolidation***

The accompanying consolidated financial statements include the accounts of Iterum Therapeutics plc and its wholly owned subsidiaries (collectively, the "Company"). All significant intercompany balances and transactions have been eliminated on consolidation. The Company has no involvement with variable interest entities.

***Short-term investments***

The Company classifies short-term investments as available for sale in accordance with the terms of FASB ASC 320, *Investments - Debt and Equity Securities*. Realized gains and losses are determined using specific identification. The investments are reported at fair value, with unrealized gains or losses recorded in the consolidated statements of operations and comprehensive loss. Any difference between the cost and fair value of the investments are represented by unrealized gains or losses.

***Cash and Cash Equivalents***

The Company's cash and cash equivalents consist of cash balances and highly liquid investments with maturities of three months or less at the date of purchase. Accounts held at U.S. financial institutions are insured by the FDIC up to \$250, while accounts held at Irish financial institutions are insured under the Deposit Guarantee Scheme up to €100 (\$123).

Cash accounts with any type of restriction are classified as restricted cash. If restrictions are expected to be lifted in the next twelve months, the restricted cash account is classified as current. Included within restricted cash on the Company's consolidated balance sheet is a certificate of deposit for \$120 which is being held by a third party bank as collateral for the irrevocable letter of credit issued in March 2018 to secure an office lease (see *Note 11, Commitments and Contingencies*).

***Foreign currencies***

Items included in the consolidated financial statements are measured using the currency of the primary economic environment in which the entity operates ('functional currency'). The consolidated financial statements are presented in U.S. dollars.

Transactions in foreign currencies are recorded at the rate of exchange at the date of the transaction. Monetary assets and liabilities denominated in foreign currencies at the balance sheet date are retranslated into the functional currency at the rate of exchange at the balance sheet date, and the resulting gains and losses are recognized in the consolidated statement of operations and comprehensive loss. Non-monetary items in a foreign currency that are measured in terms of historical cost are translated using the exchange rate at the date of transaction.

**ITERUM THERAPEUTICS PLC**  
**Notes to Consolidated Financial Statements**  
**(In thousands, except share and per share data)**

***Property and Equipment***

Property and equipment are stated at cost less accumulated depreciation. Property and equipment are depreciated using the straight-line method over the estimated useful life of each asset as follows:

<u>Asset class</u>	<u>Years</u>
Leasehold improvements	Shorter of lease term or 10 years
Furniture and fixtures	5
Laboratory equipment	5
Computer equipment	3

Upon retirement or sale, the cost of assets disposed of and the related accumulated depreciation are removed from the accounts and any resulting gain or loss is included in loss from operations. Repairs and maintenance costs are expensed as incurred. The Company reviews the recoverability of all long-lived assets, including the related useful life, whenever events or changes in circumstances indicate that the carrying amount of a long-lived asset might not be recoverable.

***Research and Development Expenses***

The Company expenses the cost of research and development as incurred. Research and development expenses comprise costs incurred in performing research and development activities, including salaries, share-based compensation and benefits, facilities costs, depreciation, manufacturing expenses and external costs of third-parties engaged to supply active pharmaceutical ingredient and drug product and conduct preclinical and clinical development activities and trials, as well as the cost of licensing technology, license fees, and other external costs. Advance payments for goods and services that will be used in future research and development activities are recorded as prepaid expenses and expensed when the activity is performed or when the goods have been received.

***Accrued Research and Development Expenses***

The Company has entered into various research and development contracts with research institutions and other companies both inside and outside of Ireland. These agreements are generally cancelable, and related payments are recorded as research and development expenses as incurred. This process involves reviewing open contracts and purchase orders, communicating with Company personnel to identify services that have been performed on the Company's behalf and estimating the level of service performed and the associated cost incurred for the service when the Company has not yet been invoiced or otherwise notified of actual costs. The majority of the Company's service providers invoice in arrears for services performed, on a pre-determined schedule or when contractual milestones are met; however, some require advanced payments. The Company estimates accrued expenses as of each balance sheet date in the consolidated financial statements based on facts and circumstances known at that time. It periodically confirms the accuracy of these estimates with the service providers and makes adjustments if necessary. Examples of estimated accrued research and development expenses include fees paid to:

- Vendors, including central laboratories, in connection with preclinical development activities;
- Clinical Research Organizations, or CROs, and investigative sites in connection with preclinical and clinical studies; and
- Contract Manufacturing Organizations, or CMOs, in connection with drug substance and drug product formulation of preclinical and clinical trial materials.

**ITERUM THERAPEUTICS PLC**

**Notes to Consolidated Financial Statements  
(In thousands, except share and per share data)**

The Company bases expenses related to preclinical studies and clinical trials on estimates of the services received and efforts expended pursuant to quotes and contracts with multiple research institutions and CROs that conduct and manage preclinical studies and clinical trials on its behalf. The financial terms of these agreements are subject to negotiation, vary from contract to contract and may result in uneven payment flows. There may be instances in which payments made to vendors will exceed the level of services provided and result in a prepayment of the expense. Payments under some of these contracts depend on factors such as the successful enrollment of patients and the completion of clinical trial milestones. In accruing service fees, the Company estimates the time period over which services will be performed and the level of effort to be expended in each period. If the actual timing of the performance of services or the level of effort varies from the estimate, the accrual or the amount of prepaid expenses is adjusted accordingly. Although the Company does not expect the estimates to be materially different from amounts actually incurred, its understanding of the status and timing of services performed relative to the actual status and timing of services performed may vary and may result in reporting amounts that are too high or too low in any particular period. To date, there have not been any material adjustments to prior estimates of accrued research and development expenses.

***Patent Costs***

All patent related costs incurred in connection with filing and prosecuting patent applications are expensed as incurred due to the uncertainty about the recovery of the expenditure. Amounts incurred are classified as general and administrative expenses.

***Share-Based Compensation***

The Company measures all share-based awards granted to employees and directors based on the fair value on the date of grant using the Black-Scholes option-pricing model. Compensation expense of those awards is recognized over the requisite service period, which is generally the vesting period of the respective award. The Company issues awards with only service based vesting conditions and records the expense for these awards using the straight-line method.

For awards granted to consultants and non-employees, compensation expense is recognized over the period during which services are rendered until completed. At the end of each financial reporting period prior to completion of the service, the fair value of these awards is remeasured using the then-current fair value of the Company's ordinary shares and updated assumption inputs in the Black-Scholes option-pricing model.

The Company classifies share-based compensation expense in its consolidated statement of operations and comprehensive loss in the same manner in which the award recipient's payroll costs are classified or in which the award recipient's service payments are classified.

The Black-Scholes option-pricing model uses key inputs and assumptions including the expected term of the option, share price volatility, risk-free interest rate, dividend yield, share price and exercise price. Many of the assumptions require significant judgment and any changes could have a material impact in the determination of share-based compensation expense. The Company has elected to account for forfeitures as they occur. There have been no forfeitures through March 31, 2018.

***Grant Awards***

The Company may generate revenue from grant awards that reimburse certain allowable costs for specified projects. For contracts with third parties, when the Company has concluded that it is the principal in conducting



**ITERUM THERAPEUTICS PLC**

**Notes to Consolidated Financial Statements  
(In thousands, except share and per share data)**

the research and development, and where the funding arrangement is considered central to the Company's ongoing operations, it classifies the recognized funding received as revenue.

In June 2017, the Company was granted a sub-award from the Trustees of Boston University under the Combating Antibiotic Resistant Bacteria Biopharmaceutical Accelerator ("CARB-X") program (the "CARB-X award") in the amount of \$1,497. The CARB-X award is structured as a cost reimbursement arrangement and is being recognized over a period of 20 months from August 2017.

The Company recognizes the CARB-X award as revenue, rather than as a reduction of research and development expenses, because the Company is the principal in conducting the research and development activities and this contract is central to its ongoing operations. Revenue is recognized as the qualifying expenses related to the contract are incurred. Revenue recognition commences only once persuasive evidence of a contract exists, services have been rendered, the reimbursement amounts under the contract are fixed or determinable, and collectability is reasonably assured. Revenue recognized upon incurring qualifying expenses in advance of receipt of funding is recorded in the Company's consolidated balance sheet as other prepaid assets. The related costs incurred by the Company are included in research and development expenses in the Company's consolidated statements of operations and comprehensive loss. There was no revenue recognized for the year ended December 31, 2016. \$508 and \$191 was recognized as revenue for the year ended December 31, 2017 and for the period ended March 31, 2018, respectively.

***Research and Development Credits***

Research and development credits are available to the Company under the tax laws in Ireland, based on qualifying research and development spend as defined under those tax laws. Research and development credits are generally recognized as a reduction of research and development expenses.

***Deferred Transaction Costs***

Deferred transaction costs primarily consist of direct incremental legal, accounting, and other fees relating to the Company's contemplated IPO and are capitalized as incurred. The deferred transaction costs will be offset against IPO proceeds upon the consummation of the offering. In the event the IPO is terminated, which would include a postponement of 90 days or greater, any deferred transaction costs will be expensed. There were no transaction costs deferred as of December 31, 2016. Transaction costs of \$180 and \$1,615 were deferred as of December 31, 2017 and March 31, 2018, respectively, and are included within prepaid expenses and other current assets in the accompanying consolidated balance sheets.

***Fair Value of Financial Instruments***

Financial Accounting Standards Board ("FASB") guidance specifies a hierarchy of valuation techniques based on whether the inputs to those valuation techniques are observable or unobservable. Observable inputs reflect market data obtained from independent sources, while unobservable inputs reflect market assumptions. The hierarchy gives the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (Level 1 measurement) and the lowest priority to unobservable inputs (Level 3 measurement).

The three levels of the fair value hierarchy are as follows:

- Level 1—Unadjusted quoted prices in active markets for identical assets or liabilities that the reporting entity has the ability to access at the measurement date. Level 1 primarily consists of financial instruments whose value is based on quoted market prices such as exchange-traded instruments and listed equities.

**ITERUM THERAPEUTICS PLC**

**Notes to Consolidated Financial Statements  
(In thousands, except share and per share data)**

- Level 2—Inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly or indirectly (e.g. quoted prices of similar assets or liabilities in active markets, or quoted prices for identical or similar assets or liabilities in markets that are not active). Level 2 includes financial instruments that are valued using models or other valuation methodologies.
- Level 3—Unobservable inputs for the asset or liability. Financial instruments are considered Level 3 when their fair values are determined using pricing models, discounted cash flows or similar techniques and at least one significant model assumption or input is unobservable.

The Company's short-term investments and its advance payments to a supplier are carried at fair value, determined according to the fair value hierarchy above, see *Note 3* for further details. The carrying amounts reported in the consolidated balance sheets for prepaid expenses and other current assets, accounts payable and accrued expenses approximate their fair value based on the short-term maturity of these instruments.

***Concentration of Credit Risk***

Financial instruments that potentially expose the Company to concentrations of credit risk consist primarily of cash and cash equivalents and short-term investments. The Company has most of its cash and cash equivalents and short-term investments at two accredited financial institutions in the United States, in amounts that exceed federally insured limits. The Company does not believe that it is subject to unusual credit risk beyond the normal credit risk associated with commercial banking relationships.

***Income Taxes***

The Company accounts for income taxes under the asset and liability method which requires deferred tax assets and liabilities to be recognized for the estimated future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases, as well as net operating loss carryforwards and research and development tax credits.

Valuation allowances are provided if it is more likely than not that some portion or all of the deferred tax assets will not be realized.

Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in income in the period that includes the enactment date. The Company recognizes the effect of income tax positions only if those positions are more likely than not of being sustained. Recognized income tax positions are measured at the largest amount that is greater than 50% likely of being realized. Changes in recognition or measurement are reflected in the period in which the change in judgment occurs. The Company records interest related to unrecognized tax benefits in interest expense and penalties in general and administrative expenses.

***Net Loss Per Ordinary Share***

Basic and diluted net loss per ordinary share is determined by dividing net loss attributable to ordinary shareholders by the weighted-average ordinary shares outstanding during the period; in accordance with ASC 260, *Earnings per Share*. For the periods presented, the ordinary shares underlying the convertible preferred shares and options, and unvested restricted ordinary shares have been excluded from the calculation because they would be anti-dilutive.

# ITERUM THERAPEUTICS PLC

## Notes to Consolidated Financial Statements (In thousands, except share and per share data)

The following potentially dilutive securities have been excluded from the computation of diluted weighted-average shares outstanding as they would be anti-dilutive:

	Year Ended December 31,		Three Months Ended March 31,	
	2016	2017	2017	2018
			(unaudited)	
Options to purchase ordinary shares	49,330	248,128	63,650	248,128
Preferred shares convertible into ordinary shares	3,032,457	5,686,663	3,032,457	7,396,313
Unvested restricted ordinary shares	292,620	189,342	266,800	163,523
Total	<u>3,374,407</u>	<u>6,124,133</u>	<u>3,362,907</u>	<u>7,807,964</u>

The weighted-average shares outstanding used to calculate both basic and diluted loss per ordinary share are the same.

### Segment Information

The Company determines and presents operating segments based on the information that is internally provided to the Chief Executive Officer, Chief Scientific Officer, Chief Financial Officer and Chief Commercial Officer, who together are considered the Company's chief operating decision maker, in accordance with ASC 280, *Segment Reporting*. The Company has determined that it operates as a single business segment, which is the development and commercialization of innovative treatments for drug resistant bacterial infections.

The distribution of total operating expenses by geographical area was as follows:

	Year Ended December 31,		Three Months Ended March 31,	
	2016	2017	2017	2018
			(unaudited)	
<b>Operating expenses</b>				
Ireland	\$ 9,864	\$24,619	4,469	9,964
U.S.	3,495	5,344	1,073	2,430
Total	<u>\$13,359</u>	<u>\$29,963</u>	<u>5,542</u>	<u>12,394</u>

The distribution of long-lived assets by geographical area was as follows:

	December 31, 2016	December 31, 2017	March 31, 2018
			(unaudited)
<b>Long-lived assets</b>			
Ireland	\$ 1,044	\$ 2,341	2,378
U.S.	11	243	368
Total	<u>\$ 1,055</u>	<u>\$ 2,584</u>	<u>2,746</u>

### Retirement Plan

The Company has a defined contribution plan under Section 401(k) of the Internal Revenue Code (the "401(k) Plan"). The 401(k) Plan covers all U.S. employees who meet defined minimum age and service requirements, and allows participants to defer a portion of their annual compensation on a pre-tax basis. The Company is required to contribute a deferral rate of up to 3% to the 401(k) Plan on behalf of certain employees.

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***Inventory***

Inventories are valued at the lower of cost or market. Cost is determined using the first-in, first-out method for all inventories. The Company's policy is to write down inventory that has become obsolete, inventory that has a cost basis in excess of its expected net realizable value and inventory in excess of expected requirements. The estimate of excess quantities is subjective and primarily dependent on the estimates of future demand for a particular product. If the estimate of future demand changes, the Company considers the impact on the reserve for excess inventory and adjusts the reserve as required. Increases in the reserve are recorded as charges in cost of product sales. For product candidates that have not been approved by the FDA, inventory used in clinical trials is expensed at the time of production and recorded as research and development expenses. For products that have been approved by the FDA, inventory used in clinical trials is expensed at the time the inventory is packaged for the clinical trial. Prior to an advisory committee providing a recommendation to the FDA that the Company's application should be approved, costs related to purchases of the API and the manufacturing of the product candidate are recorded as research and development expenses. All direct manufacturing costs incurred after this recommendation will be capitalized into inventory. The Company had no inventory as of December 31, 2016, December 31, 2017 or March 31, 2018.

***Contingent Consideration***

Certain licence agreements contain milestone payments that could result in the requirement to make contingent consideration payments, see *Note 11* for further details. Contingent consideration is recorded at the acquisition date estimated fair value of the contingent payment. The fair value of the contingent consideration is measured at each reporting period. Any related unwinding of discount is recognized as a finance expense. Other changes in fair value are recognized in profit or loss or capitalized as an intangible asset depending on the stage of development.

***Recent Accounting Pronouncements***

In July 2017, the FASB issued ASU 2017-11, *Earnings Per Share (Topic 260), Distinguishing Liabilities from Equity (Topic 480), Derivatives and Hedging (Topic 815) I. Accounting for Certain Financial Instruments with Down Round Features II. Replacement of the Indefinite Deferral for Mandatorily Redeemable Financial Instruments of Certain Nonpublic Entities and Certain Mandatorily Redeemable Noncontrolling Interests with a Scope Exception*.

Part I applies to entities that issue financial instruments such as warrants, convertible debt or convertible preferred shares that contain down-round features. Part II replaces the indefinite deferral for certain mandatorily redeemable noncontrolling interests and mandatorily redeemable financial instruments of nonpublic entities contained within ASC Topic 480 with a scope exception and does not impact the accounting for these mandatorily redeemable instruments. ASU 2017-11 is required to be adopted for annual periods beginning after December 15, 2018, including interim periods within those fiscal years. The adoption of ASU 2017-11 is not expected to have a significant impact on the consolidated financial statements.

In February 2016, the FASB issued ASU 2016-02, *Leases (Topic 842)*. ASU 2016-02 was issued to increase transparency and comparability among entities by recognizing lease assets and lease liabilities on the consolidated balance sheet and disclosing key information about lease arrangements. ASU 2016-02 is effective for public companies for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2018. The Company is currently evaluating the impact of adopting ASU 2016-02 on the consolidated financial statements.

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In March 2017, the FASB issued ASU 2017-07, Compensation—Retirement Benefits (Topic 715): Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost, which requires companies to present the service cost component of net benefit cost in the same line items in which they report compensation cost. Companies will present all other components of net benefit cost outside operating income, if this subtotal is presented. This ASU is effective for public business entities for annual and interim periods in fiscal years beginning after December 15, 2017. The adoption of ASU 2017-07 did not have an impact on the Company's consolidated financial statements.

In August 2016, the FASB issued ASU No. 2016-15, Statement of Cash Flows: Classification of Certain Cash Receipts and Cash Payments ("ASU 2016-15"), to address diversity in practice in how certain cash receipts and cash payments are presented and classified in the statement of cash flows. The standard is effective for annual periods beginning after December 15, 2017, including interim periods within those fiscal years. The adoption of ASU 2016-15 did not have an impact on the Company's consolidated financial statements.

In May 2014, the FASB issued ASU No. 2014-09, *Revenue from Contracts with Customers (Topic 606)* ("ASU 2014-09"), which supersedes existing revenue recognition guidance under GAAP. The standard's core principle is that a company will recognize revenue when it transfers promised goods or services to customers in an amount that reflects the consideration to which the Company expects to be entitled in exchange for those goods or services. The standard defines a five-step process to achieve this principle, and will require companies to use more judgment and make more estimates than under the current guidance. The Company expects that these judgments and estimates will include identifying performance obligations in the customer contract, estimating the amount of variable consideration to include in the transaction price and allocating the transaction price to each separate performance obligation. ASU 2014-09 also requires additional disclosure about the nature, amount, timing and uncertainty of revenue and cash flows arising from customer contracts. In August 2015, the FASB issued ASU 2015-14, *Revenue from Contracts with Customers (Topic 606): Deferral of the Effective Date*, which delays the effective date of ASU 2014-09 such that the standard is effective for public entities for annual periods beginning after December 15, 2017 and for interim periods within those fiscal years. In March 2016, the FASB issued ASU No. 2016-08, *Revenue from Contracts with Customers (Topic 606): Principal versus Agent Considerations* ("ASU 2016-08"), which further clarifies the implementation guidance on principal versus agent considerations in ASU 2014-09. In April 2016, the FASB issued ASU No. 2016-10, *Revenue from Contracts with Customers (Topic 606): Identifying Performance Obligations and Licensing*, clarifying the implementation guidance on identifying performance obligations and licensing. Specifically, the amendments in this update reduce the cost and complexity of identifying promised goods or services and improve the guidance for determining whether promises are separately identifiable. The amendments in this update also provide implementation guidance on determining whether an entity's promise to grant a license provides a customer with either a right to use the entity's intellectual property (which is satisfied at a point in time) or a right to access the entity's intellectual property (which is satisfied over time). In May 2016, the FASB issued ASU No. 2016-12, *Revenue from Contracts with Customers (Topic 606): Narrow-Scope Improvements and Practical Expedients* ("ASU 2016-12"), which clarifies the objective of the collectability criterion, presentation of taxes collected from customers, non-cash consideration, contract modifications at transition, completed contracts at transition and how guidance in ASU 2014-09 is retrospectively applied. ASU 2016-08, ASU 2016-10 and ASU 2016-12 have the same effective dates and transition requirements as ASU 2014-09. The Company determined that the CARB-X award is outside the scope of ASC 606. Therefore, the adoption of ASC 606 did not impact the Company's consolidated financial statements as the only revenue currently being recorded by the Company as of March 31, 2018 is the sub-award granted by CARB-X.

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**(3) Fair Value of Financial Assets**

The following table presents information about the Company's financial assets that have been measured at fair value at December 31, 2016, December 31, 2017 and March 31, 2018 and indicates the fair value hierarchy of the valuation inputs utilized to determine such fair value.

**December 31, 2016**

<u>Assets</u>	<u>Total</u>	<u>Level 1</u>	<u>Level 2</u>	<u>Level 3</u>
Other asset—advance payment to supplier	\$740	—	—	740
Total	\$740	—	—	740

**December 31, 2017**

<u>Assets</u>	<u>Total</u>	<u>Level 1</u>	<u>Level 2</u>	<u>Level 3</u>
Short-term investments	\$30,731	30,731	—	—
Other asset—advance payments to supplier	1,472	—	—	1,472
Total	\$32,203	30,731	—	1,472

**March 31, 2018 (unaudited)**

<u>Assets</u>	<u>Total</u>	<u>Level 1</u>	<u>Level 2</u>	<u>Level 3</u>
Short-term investments	21,376	21,376	—	—
Other asset—advance payments to supplier	1,515	—	—	1,515
Total	22,891	21,376	—	1,515

See *Note 4* for further details on the short-term investments held. The other asset above relates to advance payments made to a supplier that were recorded at fair value using the discounted cash flow model, or DCF, as of December 31, 2016, December 31, 2017 and March 31, 2018. Key assumptions used in the DCF include a discount rate of 15% and the expected time to recovery of the payment. See *Note 11—Payment to Supplier*, for further details on these advance payments.

**(4) Short-term Investments**

The Company classifies its short-term investments as available for sale. Short-term investments comprise highly liquid investments with minimum "A-" rated securities and as at period-end consist of U.S. Treasury and agency bonds and corporate entity commercial paper with maturities of more than three months but less than one year at the date of purchase. Short-term investments as of March 31, 2018 have an average maturity of 0.17 years. The investments are reported at fair value with unrealized gains or losses recorded in the consolidated statements of operations and comprehensive loss. Any differences between the cost and fair value of investments are represented by unrealized gains or losses. The fair value of short-term investments are represented by Level 1 fair value measurements – quoted prices in active markets for identical assets.

The Company did not hold any available for sale securities as of December 31, 2016.

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The following table represents the Company's available for sale short-term investments by major security type as of December 31, 2017 and March 31, 2018:

December 31, 2017	Cost Total	Unrealized gains	Unrealized (losses)	Fair Value Total	Maturity by period	
					Less than 1 year	1 to 5 years
<b>Available for sale</b>						
Commercial paper	\$22,538	8	(27)	22,519	22,519	—
U.S. Treasury and Agency Bonds	8,205	18	(11)	8,212	8,212	—
<b>Total</b>	<b>\$30,743</b>	<b>26</b>	<b>(38)</b>	<b>30,731</b>	<b>30,731</b>	<b>—</b>

March 31, 2018 (unaudited)	Cost Total	Unrealized gains	Unrealized (losses)	Fair Value Total	Maturity by period	
					Less than 1 year	1 to 5 years
<b>Available for sale</b>						
Commercial paper	\$14,755	28	(15)	14,768	14,768	—
U.S. Treasury and Agency Bonds	6,617	18	(27)	6,608	6,608	—
<b>Total</b>	<b>\$21,372</b>	<b>46</b>	<b>(42)</b>	<b>21,376</b>	<b>21,376</b>	<b>—</b>

**(5) Prepaid Expenses and Other Current Assets**

Prepaid expenses and other current assets consist of the following:

	December 31, 2016	December 31, 2017	March 31, 2018 (unaudited)
Prepaid research and development expenses	\$ 264	\$ 2,289	\$ 1,716
Short-term deposits	404	1,346	1,006
Other prepaid assets	63	516	827
Value added tax receivable	245	281	297
Deferred IPO expenses	—	180	1,615
Research and development tax credit receivable	—	133	137
Prepaid insurance	77	117	85
Interest receivable	—	95	68
<b>Total</b>	<b>\$ 1,053</b>	<b>\$ 4,957</b>	<b>\$ 5,751</b>

**(6) Property and Equipment, net**

Property and equipment and related accumulated depreciation are as follows:

	December 31, 2016	December 31, 2017	March 31, 2018 (unaudited)
Leasehold improvements	\$ —	\$ 579	\$ 579
Furniture and fixtures	—	108	112
Laboratory equipment	—	81	81
Computer equipment	—	44	61
	—	812	833
Less: accumulated depreciation	—	(65)	(96)
	<b>\$ —</b>	<b>\$ 747</b>	<b>\$ 737</b>

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Depreciation expense was \$65 for the year ended December 31, 2017 and \$31 for the three month period ended March 31, 2018. There was no depreciation expense for the year ended December 31, 2016.

**(7) Accrued Expenses**

Accrued expenses consist of the following:

	December 31, 2016	December 31, 2017	March 31, 2018 (unaudited)
Accrued manufacturing expenses	\$ 1,373	\$ 2,031	\$ 2,355
Accrued payroll and bonus expenses	789	1,059	482
Accrued clinical trial costs	426	594	978
Accrued other expenses	150	290	933
Total	<u>\$ 2,738</u>	<u>\$ 3,974</u>	<u>4,748</u>

**(8) Shareholders' Equity**

The Company's capital structure consists of ordinary shares and convertible preferred shares with certain rights and privileges summarized below. Under Irish law, the Company is prohibited from allotting shares without consideration. Accordingly, at least the nominal value of the shares issued underlying any restricted share award, restricted share unit, performance share award, bonus share or any other share based grant must be paid pursuant to the Irish Companies Act.

***Ordinary Shares***

The Company was initially incorporated without a cap on its authorized share capital as permitted by the Companies Act 2014 of Ireland. On October 14, 2015, the Company authorized and issued 413,110 ordinary shares of \$0.01 each (after taking account of the reverse share split and redenomination of the ordinary shares from \$0.0157 (the nominal value resulting from the reverse share split) to \$0.01 on May 15, 2018). On March 13, 2018, the Company redenominated its 44,557,606 authorized and 413,110 issued ordinary shares from \$0.0001 to \$0.001 per share in accordance with section 83(1)(c) of the Companies Act 2014 in Ireland.

On November 18, 2015, the Company increased the authorized ordinary share capital to 3,659,453 shares of \$0.01 each.

On May 18, 2017, the Company increased the authorized ordinary share capital to 7,956,715 shares of \$0.01 each.

On February 16, 2018, the Company increased its authorized ordinary shares by 36,600,891 to 44,557,606 ordinary shares of \$0.01 each.

The holders of ordinary shares are entitled to one vote for each share held. The holders of ordinary shares have no preemptive or other subscription rights, and there are no redemption or sinking fund provisions with respect to such shares. The ordinary shares are subordinate to the convertible preferred shares with respect to dividend rights and rights upon liquidation, winding up and dissolution of the Company. The holders of ordinary shares are entitled to liquidation proceeds after all liquidation preferences for the convertible preferred shares are satisfied.



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***Convertible Preferred Shares***

On November 18, 2015, the Company authorized 3,022,915 Series A convertible preferred shares of \$0.01 each. On the same day, the Company issued 1,514,320 Series A convertible preferred shares for \$15.71 each for: (1) gross cash proceeds of \$20,701; (2) the issue of 190,961 convertible preferred shares to Pfizer as part consideration for the licence agreement; and (3) the conversion of \$90 debt owed by the Company to the founders for a total of 5,728 preferred shares (after taking account of the reverse share split and redenomination of the convertible preferred shares from \$0.0157 (the nominal value resulting from the reverse share split) per share to \$0.01 on May 15, 2018). On March 13, 2018, the Company redenominated its 3,032,463 authorized and 3,032,457 issued Series A convertible preferred shares from \$0.0001 to \$0.001 per share in accordance with section 83(1)(c) of the Companies Act 2014 in Ireland.

On December 9, 2016, the Company authorized 9,548 Series A convertible preferred shares of \$0.01 each.

On December 16, 2016, the Company issued 1,518,137 Series A convertible preferred shares for \$15.71 each for: (1) gross cash proceeds of \$20,851; and (2) the issue of an additional 190,961 convertible preferred shares to Pfizer as part consideration for the license agreement.

On May 18, 2017, the Company authorized 2,654,215 Series B-1 convertible preferred shares of \$0.01 each and 1,042,728 Series B-2 convertible preferred shares of \$0.01 each (the "Series B convertible preferred shares"). On the same day, the Company issued 2,654,206 Series B-1 convertible preferred shares for \$17.28 each, for gross cash proceeds of \$45,867 (after taking account of the reverse share split and redenomination of the convertible preferred shares from \$0.0157 (the nominal value resulting from the reverse share split) per share to \$0.01 on May 15, 2018). On March 13, 2018, the Company redenominated its 4,801,493 authorized and 4,363,856 issued Series B convertible preferred shares from \$0.0001 to \$0.001 per share in accordance with section 83(1)(c) of the Companies Act 2014 in Ireland.

On February 16, 2018, the Company increased its authorized Series B-2 convertible preferred shares to 2,147,278 shares of \$0.01 each. On the same day, the Company issued 1,709,650 Series B-2 convertible preferred shares for consideration of \$18.85 each, for gross cash proceeds of \$32,230.

The holders of the convertible preferred shares have the following rights and preferences:

***Voting Rights***

The holders of convertible preferred shares are entitled to vote, together with the holders of ordinary shares, on all matters submitted to shareholders for a vote, except the election of ordinary share directors and except as required by law. In addition, a number of actions require consent of at least two thirds of the holders of the convertible preferred shares which must include holders of at least 55% of the then outstanding Series B convertible preferred shares. Each preferred shareholder is entitled to the number of votes equal to the number of ordinary shares into which each preferred share is convertible as of the day of the vote (being 1:1, subject to any adjustments arising).

***Liquidation Preferences***

In the event that the Company liquidates, dissolves or winds up, whether voluntarily or involuntarily, or sells all or substantially all of its assets, or sells the Company or a controlling interest in the Company or if certain events deemed to be a liquidation occur, then the holders of the Series B convertible preferred shares shall be entitled to receive in preference to the holders of the Series A convertible preferred shares and the ordinary shares; and the holders of the Series A convertible preferred shares shall be entitled to receive in preference of the ordinary shares, an amount per share equal to the original purchase price for the convertible preferred shares, plus any dividends, if declared but unpaid thereon. Following all preferential payments to holders of the

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convertible preferred shares as required, any remaining undistributed assets shall be shared ratably to the holders of the ordinary shares and the convertible preferred shares with the latter's share number being determined on an "as-if-converted" basis, until such time as the preferred shareholders have received, in total, an amount equal to three times the applicable original purchase price. Thereafter, any remaining net assets available are distributed ratably to the ordinary shareholders only.

***Dividends***

The holders of the convertible preferred shares are entitled to receive, if declared by the Board, non-cumulative dividends at the rate of 8% of the original purchase price per annum. Such dividends shall only be payable when and if declared and are not cumulative.

The holders of convertible preferred shares have liquidation and dividend rights in preference to the holders of ordinary shares. No dividends on the ordinary shares shall be declared and paid unless dividends on the convertible preferred shares have been declared and paid. Through March 31, 2018, the Company has not declared any dividends.

***Redemption Rights***

The convertible preferred shares are not redeemable at the option of the holder.

***Conversion Rights***

Each preferred share is convertible at any time at the option of the shareholder into fully paid ordinary shares. The conversion ratio is fixed at 1:1, except in the event that the Company issues additional shares of stock below the purchase price of the preferred share, share splits and combinations, dividends and distributions whereby, the conversion price may be adjusted, with certain exceptions. In the event of a liquidation, dissolution, winding up or deemed liquidation event, the conversion rights will be terminated at the close of business on the last day preceding the date fixed for payment of liquidation amounts to the holders of convertible preferred shares.

***Mandatory Conversion***

All outstanding shares will automatically convert into ordinary shares, based on the then effective applicable conversion price upon the closing of the sale of ordinary shares to the public in a firm-commitment underwritten public offering on the New York Stock Exchange, the Nasdaq Global Market, Nasdaq Global Select Market or such other market or exchange as approved by the Board pursuant to an effective registration statement under the Securities Act of 1933, as amended, in which the per share price is at least \$51.84 and the gross cash proceeds to the company are at least forty million dollars (\$40,000); or the affirmative election (in writing) of the holders of at least two thirds of the convertible preferred shares, which must include holders of at least 55% of the then outstanding Series B convertible preferred shares.

**(9) Share-Based Compensation**

On November 18, 2015, the Company's Board of Directors adopted and approved the 2015 Equity Incentive Plan (the "2015 Plan"), which authorized the Company to grant up to 223,424 ordinary shares in the form of

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incentive stock options, nonstatutory stock options, stock appreciation rights, restricted stock awards, restricted stock units and other stock awards. The types of share-based awards, including share purchase rights amount, terms, and exercisability provisions of grants are determined by the Company's Board of Directors. The purpose of the 2015 Plan is to provide the Company with the flexibility to issue share-based awards as part of an overall compensation package to attract and retain qualified personnel. On May 18, 2017, the Company amended the 2015 Equity Incentive Plan to increase the number of ordinary shares available for issuance under the 2015 Plan by 219,605 shares to 443,029 shares.

On March 14, 2018, the Company's Board of Directors adopted and approved the 2018 Equity Incentive Plan (the "2018 Plan"), which will become effective immediately on the execution and delivery of the underwriting agreement related to the IPO. Once the 2018 Plan is effective, no further grants will be made under the 2015 Equity Incentive Plan.

The 2018 Plan authorizes the Company to grant up to 1,018,459 ordinary shares in the form of incentive stock options, nonstatutory stock options, stock appreciation rights, restricted stock awards, restricted stock units, performance stock awards, performance cash awards and other stock awards. The types of share-based awards, including share purchase rights amount, terms, and exercisability provisions of grants are determined by the Company's Board of Directors.

***Restricted Ordinary Shares***

In connection with the Company's formation, 413,110 restricted ordinary shares were issued on October 14, 2015 to the Company's founders at par value. These ordinary shares are subject to various restrictions pursuant to ordinary share purchase agreements between the Company and each founder, including restrictions on transfer and a Company right of repurchase. The restricted ordinary shares were 25% vested as of October 14, 2016 and 1/36<sup>th</sup> of the remaining restricted ordinary shares vest on a monthly basis thereafter (subject to acceleration of vesting in connection with certain change of control transactions). A change in status occurred on November 18, 2015 when the founders became employees of the Company. The grant date of these shares is now considered to be November 18, 2015 when the fair value was \$3.14 per share.

The Company records share-based compensation expense for the restricted ordinary shares based on the grant date fair value. The Company recorded an expense of \$333 and \$333 for the years ended December 31, 2016 and December 31, 2017, respectively. Total unamortized compensation expense related to restricted ordinary shares was \$925 and \$592 as of December 31, 2016 and December 31, 2017, respectively, expected to be recognized over a weighted average period of 2.88 years and 1.88 years as of December 31, 2016 and December 31, 2017, respectively.

The Company recorded an expense of \$82 and \$82 for the restricted ordinary shares for the periods ended March 31, 2017 and March 31, 2018, respectively. Total unamortized compensation expense related to restricted ordinary shares was \$843 and \$510 as of March 31, 2017 and March 31, 2018, respectively, expected to be recognized over a weighted average period of 2.63 years and 1.63 years as of March 31, 2017 and March 31, 2018, respectively.

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A summary of the Company's restricted ordinary share activity and related information is as follows:

	<b>Number of Shares</b>	<b>Weighted Average grant date fair value per share</b>
Unvested at December 31, 2015	413,110	\$ 3.14
Granted	—	
Vested	(120,490)	\$ 3.14
Forfeited	—	
Unvested at December 31, 2016	292,620	\$ 3.14
Granted	—	
Vested	(103,278)	\$ 3.14
Forfeited	—	
Unvested at December 31, 2017	189,342	\$ 3.14
Granted	—	
Vested	(25,819)	\$ 3.14
Forfeited	—	
Unvested at March 31, 2018 (unaudited)	163,523	\$ 3.14

***Share Options***

Unless specified otherwise in an individual option agreement, share options granted under the 2015 Plan generally have a ten year term and a four year vesting period. The vesting requirement is conditioned upon a grantee's continued service with the Company during the vesting period. Once vested, all awards are exercisable from the date of grant until they expire. The option grants are non-transferable. Vested options generally remain exercisable for 90 days subsequent to the termination of the option holder's service with the Company. In the event of an option holder's disability or death while employed by or providing service to the Company, the exercisable period extends to twelve months or eighteen months, respectively.

The fair value of options granted during the years ended December 31, 2016 and December 31, 2017 and for the period ended March 31, 2018 was estimated using the Black-Scholes option-pricing model. The inputs for the Black-Scholes model require management's significant assumptions. The ordinary share price was determined by the Board of Directors. In the absence of market data for the Company's ordinary shares, the Board of Directors considered various factors in estimating the fair value of the ordinary shares at the time of grant which include but are not limited to the ordinary shares valuation performed by a third-party independent valuation firm, the Company's performance and future economic outlook, the potential financing available to the Company, and the valuation of ordinary shares of similar companies in the industry. Following the closing of this offering, the fair value of ordinary shares will be determined based on the quoted market price of the Company's shares. The risk-free interest rate was based on a normalized estimate of the 7-year U.S. treasury yield. The expected life was based on the simplified method in accordance with the Securities and Exchange Commission ("SEC") Staff Accounting Bulletin Nos. 107 and 110 as the Company's shares are not publicly traded. The expected volatility was estimated based on historical volatility information of reasonably comparable guideline public companies that are publicly available. Expected dividend yield is based on the fact that the Company has never paid cash dividends and the Company's future ability to pay cash dividends on its shares may be limited by the terms of any future debt or preferred securities.

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The Company granted 49,330 and 198,798 stock options to employees and directors during the years ended December 31, 2016 and December 31, 2017, respectively. There were 49,330 and 228,809 unvested employee options outstanding as of December 31, 2016 and December 31, 2017, respectively. Total expense recognized related to the employee stock options was \$15 and \$59 for the years ended December 31, 2016 and December 31, 2017, respectively. Total unamortized compensation expense related to employee stock options was \$75 and \$396 as of December 31, 2016 and December 31, 2017, respectively which is expected to be recognized over a remaining average vesting period of 3.54 years and 3.51 years as of December 31, 2016 and December 31, 2017, respectively.

The Company granted 14,320 stock options to employees and directors for the three month period ended March 31, 2017. The Company awarded 74,152 stock options to employees during the period ended March 31, 2018 under the 2018 Plan. These options will be granted and priced upon execution of the underwriting agreement related to the IPO. There were 58,801 and 221,553 unvested employee options outstanding as of March 31, 2017 and March 31, 2018, respectively. Total expense recognized related to the employee stock options was \$7 and \$67 for the periods ended March 31, 2017 and March 31, 2018, respectively. Total unamortized compensation expense related to employee stock options was \$95 and \$1,132 as of March 31, 2017 and March 31, 2018, respectively, which is expected to be recognized over a remaining average vesting period of 3.43 years and 3.27 years as of March 31, 2017 and March 31, 2018, respectively.

The assumptions that the Company used to determine the grant date fair value of employee and director options granted were as follows, presented on a weighted average basis:

	Year Ended December 31,		Three Months Ended March 31,	
	2016	2017	2017 (unaudited)	2018
Volatility	60%	60%	60%	60%
Expected term in years	6.25	6.25	6.25	6.25
Dividend rate	0%	0%	0%	0%
Risk-free interest rate	2.00%	1.63%	1.63%	1.63%
Share price	\$3.14	\$3.36	\$ 3.30	—
Fair value of option on grant date	\$1.80	\$1.91	\$ 1.88	—

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The following table summarizes the number of options outstanding and the weighted-average exercise price:

	<u>Number of Shares</u>	<u>Weighted Average Exercise Price</u>	<u>Weighted Average Remaining Contractual Life in Years</u>	<u>Aggregate Intrinsic Value (In thousands)</u>
Options outstanding at December 31, 2015	—			
Granted	49,330	\$ 3.14		
Exercised	—			
Forfeited	—			
Options outstanding at December 31, 2016	<u>49,330</u>	\$ 3.14	8.51	
Granted	198,798	\$ 3.36	9.67	
Exercised	—			
Forfeited	—			
Options outstanding at December 31, 2017	<u>248,128</u>	\$ 3.31	9.44	
Granted	—			
Exercised	—			
Forfeited	—			
Options Outstanding March 31, 2018	<u>248,128</u>	\$ 3.31	9.19	3,856
Vested at March 31, 2018 (unaudited)	26,575			417
Exercisable at March 31, 2018 (unaudited)	26,575	\$ 3.17	8.33	417

The aggregate intrinsic value of share options is calculated as the difference between the exercise price of the share options and the fair value of the Company's ordinary shares for those share options that had exercise prices lower than the fair value of the Company's ordinary shares at March 31, 2018.

The Company's share-based compensation expense was classified in the consolidated statements of operations and comprehensive loss as follows:

	<u>Year Ended December 31,</u>		<u>Three Months Ended March 31,</u>	
	<u>2016</u>	<u>2017</u>	<u>2017</u>	<u>2018</u>
			<u>(unaudited)</u>	
Research and development expense	\$115	\$139	\$ 31	\$ 71
General and administrative expense	233	253	58	78

There was a total of \$1,000 and \$988 unamortized share-based compensation expense for restricted ordinary shares and options as of December 31, 2016 and December 31, 2017, respectively, which is expected to be recognized over a remaining average vesting period of 2.93 years and 2.53 years as of December 31, 2016 and December 31, 2017, respectively.

There was a total of \$938 and \$1,642 unamortized share-based compensation expense for restricted ordinary shares and options as of March 31, 2017 and March 31, 2018, respectively, which is expected to be recognized over a remaining average vesting period of 2.71 years and 2.32 years as of March 31, 2017 and March 31, 2018, respectively.

#### **(10) Income Taxes**

During the years ended December 31, 2016 and 2017 and the three months ended March 31, 2017 and 2018 (unaudited), the Company recorded no income tax benefits for the net operating losses incurred in each year or interim period due to its uncertainty of realizing a benefit from those items.

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The provision for income taxes consists of the following components:

	Year ended December 31, 2016	Year ended December 31, 2017
Current		
U.S.	\$ 113	\$ 444
Ireland	—	—
Total current	113	444
Deferred		
U.S.	—	—
Ireland	—	—
Total deferred	—	—
Income tax provision	<u>\$ 113</u>	<u>\$ 444</u>

Income taxes have been based on the following components of income (loss) before provision for income taxes:

	Year ended December 31, 2016	Year ended December 31, 2017
U.S.	\$ (50)	\$ 875
Ireland	(13,414)	(30,281)
Total	<u>\$ (13,464)</u>	<u>\$ (29,406)</u>

The Irish federal statutory rate is reconciled to the effective tax rate as follows:

	Year ended December 31, 2016	
Statutory rate	12.50%	\$(1,683)
Impact of U.S. tax rate	0.10%	(48)
Impact of valuation allowance	(12.69%)	1,709
Other, net	(0.75%)	135
Effective tax rate	<u>(0.84%)</u>	<u>113</u>

	Year ended December 31, 2017	
Statutory rate	12.50%	\$(3,676)
Impact of U.S. tax rate	(0.79%)	232
Impact of valuation allowance	(13.43%)	3,949
Research and development tax credit	0.75%	(220)
Other, net	(0.54%)	159
Effective tax rate	<u>(1.51%)</u>	<u>\$ 444</u>

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The significant components of the Company's deferred tax assets and liabilities are as follows:

	December 31, 2016	December 31, 2017
Deferred tax assets		
Share-based compensation	\$ 1	\$ 3
Depreciation	—	6
Net operating loss carryforwards	1,706	5,409
Other	2	240
Valuation allowance	(1,709)	(5,658)
Total deferred tax assets	—	—
Deferred tax liabilities	—	—
Total deferred tax liabilities	—	—
Net deferred tax asset	\$ —	\$ —

As a Company incorporated in Ireland, it is principally subject to taxation in Ireland.

The Company has net operating loss carryforwards in Ireland which result in tax benefits of approximately \$1,706 and \$5,409 for the years ended December 31, 2016 and December 31, 2017, respectively, for which a full valuation allowance has been recognized as it was determined that it is more-likely-than-not that these net deferred tax assets will not be realized. The net operating loss carryforwards do not expire, but are carried forward indefinitely. Realization of these deferred tax assets is dependent on the generation of sufficient taxable income. If the Company demonstrates consistent profitability in the future, the evaluation of the recoverability of these deferred tax assets may change and the remaining valuation allowance may be released in part or in whole. While management expects to realize the deferred tax assets, net of valuation allowances, changes in estimates of future taxable income or in tax laws may alter this expectation.

A reconciliation of the beginning and ending amount of gross unrecognized tax benefits is as follows:

	2016	2017
Balance at January 1	\$ —	\$ —
Additions	—	30
Balance at December 31	\$ —	\$ 30

The Company is generally subject to examination in the Company's primary tax jurisdictions for tax years beginning 2015. The Company is not currently subject to any audits or examination.

**(11) Commitments and Contingencies**

***Operating Leases***

In March 2018, the Company entered into an operating lease agreement for office space in Chicago for a period of five years that commences in June 2018. Annual lease payments are \$258, subject to certain escalations, with a renewal option to extend the lease for an additional five years. Under the terms of the lease, the Company provided a security deposit in the form of a letter of credit for the benefit of the landlord in the amount of \$120 which will be reduced incrementally over the term of the lease. The letter of credit outstanding is collateralized with a certificate of deposit.



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In April 2017, the Company entered into an operating lease agreement for office space in Connecticut for a period of five years that commenced in July 2017. Annual lease payments are \$131, subject to certain escalations, with a renewal option to extend the lease for an additional three years. Under the terms of the lease, the Company provided a security deposit of \$17 to the landlord, which is included in other assets in the accompanying consolidated balance sheets.

In December 2016, the Company entered into an operating lease agreement for office space in Dublin that commenced on December 1, 2016 and expires on December 1, 2026. The lease requires annual payments of \$375 over the ten-year term with a renewal option to extend the lease for an additional five years. Under the terms of the lease, the Company provided a security deposit of \$356 to the landlord, which is included in other assets in the accompanying consolidated balance sheets. The lease is subject to a review in December 2022.

The following table summarizes the future minimum payments due under the operating leases as of March 31, 2018:

<b>Year Ending March 31,</b>	
2019	\$ 698
2020	750
2021	759
2022	769
2023	710
Thereafter	<u>1,353</u>
	<u>\$5,039</u>

***License Agreement***

On November 18, 2015, the Company entered into a license agreement with Pfizer for the worldwide exclusive rights to research, develop, manufacture and commercialize sulopenem.

As part of the license agreement, the Company is obligated to pay Pfizer potential future development milestone payments, as well as sales milestones upon achievement of net sales ranging from \$250.0 million to \$1.0 billion for each product type. The Company is also obligated to pay Pfizer royalties ranging from a single-digit to mid-teens percentage based on marginal net sales of each licensed product.

***Payments to Supplier***

In June 2016, the Company entered into an agreement with a supplier whereby the Company would pay \$3,017 to the supplier to acquire equipment which will be used solely to manufacture product for the Company. This payment will be offset against the price of the product to be supplied under a future supply agreement. \$1,578, \$599 and \$616 remained outstanding to the supplier as of December 31, 2016, December 31, 2017 and March 31, 2018, respectively.

***Contingencies***

Liabilities for loss contingencies arising from claims, assessments, litigation, fines, penalties and other sources are recorded when it is probable that a liability has been incurred and the amount can be reasonably estimated. At each reporting date the Company evaluates whether or not a potential loss amount or a potential loss range is probable and reasonably estimable under the provisions of the authoritative guidelines that address accounting for contingencies. The Company expenses costs as incurred in relation to such legal proceedings. The Company is not currently involved in any legal matters arising in the normal course of business.

**ITERUM THERAPEUTICS PLC**

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Under the terms of their respective employment agreements, each of the named executive officers is eligible to receive severance payments and benefits upon a termination without “cause” or due to “permanent disability”, or upon “resignation for good reason”, contingent upon the named executive officer’s delivery to the Company of a satisfactory release of claims, and subject to the named executive officer’s compliance with non-competition and non-solicitation restrictive covenants for one year following the termination date.

**(12) Subsequent Events**

The Company has evaluated subsequent events through March 9, 2018, the date the annual consolidated financial statements were issued. For the issuance of the financial statements for the three months ended March 31, 2018, the unaudited interim period presented herein, such evaluation has been performed through May 4, 2018.

***Debt***

On April 27, 2018, the Company’s subsidiaries, Iterum Therapeutics International Limited, Iterum Therapeutics US Holding Limited and Iterum Therapeutics US Limited, entered into a Loan and Security Agreement with Silicon Valley Bank (SVB) and made an initial draw of \$15,000 on closing. A second draw of up to \$15,000 will be available to the Company through October 31, 2019, upon satisfaction of either (i) the achievement by the Company of both primary endpoints from its Phase 3 uncomplicated urinary tract infection (uUTI) trial, as well as reporting satisfactory safety data from the trial, or (ii) the achievement of non-inferiority primary endpoints from both its Phase 3 uUTI and complicated urinary tract infection (cUTI) trials, as well as reporting satisfactory safety data from the trial.

The initial draw will require monthly amortization payments commencing on November 1, 2019; however this will extend to April 1, 2020 if the second draw is funded. Interest will accrue at a floating per annum rate equal to the greater of (i) 8.31%; or (ii) 3.89% above the Wall Street Journal prime rate, and is payable monthly in arrears. All outstanding principal, plus a 4.2% final interest payment, will be due and payable on March 1, 2022. Voluntary prepayments will be permitted at any time, subject to a prepayment fee of 3% in the first year, 2% in the second year, and 1% thereafter.

In connection with the initial \$15,000 draw, the Company issued to SVB and Life Sciences Fund II LLC (LSF) warrants to purchase an aggregate of 19,890 Series B convertible preferred shares at an exercise price of \$18.85 per share. On the funding date of the second term loan, each of SVB and LSF will be automatically entitled to purchase additional ordinary shares in an aggregate amount equal to 2.5% of the second term loan divided by the applicable exercise price.

***Reverse Share Split***

On May 15, 2018, the Company’s shareholders approved a consolidation of its ordinary shares and convertible preferred shares at a 1-for-15.71 ratio (the “Reverse Share Split”), effective on that date. Fractional entitlements to ordinary shares and convertible preferred shares arising as a result of the Reverse Share Split were rounded down to the nearest whole number for each holder of ordinary shares and convertible preferred shares. Those fractional entitlements were aggregated and surrendered to the Company for cancellation. Immediately following the Reverse Share Split, the Company redenominated its ordinary shares and convertible preferred shares from \$0.01571 (the nominal value resulting from the Reverse Share Split) per share to \$0.01 per share (the “Renominalisation”). All issued and outstanding ordinary shares, convertible preferred shares, options for ordinary shares, restricted stock awards, warrants and per share amounts have been retroactively adjusted to reflect this Reverse Share Split and Renominalisation for all periods presented.



## **6,150,000 Ordinary Shares**

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### **Prospectus**

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May 24, 2018

**Leerink Partners**

**RBC Capital Markets**

**Guggenheim Securities**

**Needham & Company**

Through and including June 18, 2018 (the 25th day after the date of this prospectus), all dealers effecting transactions in these securities, whether or not participating in this offering, may be required to deliver a prospectus. This is in addition to a dealer's obligation to deliver a prospectus when acting as an underwriter and with respect to an unsold allotment or subscription.