

Global Blood Therapeutics, Inc.

Form 424B5

December 11, 2018

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Filed Pursuant to Rule 424(b)(5)
Registration No. 333-220127

CALCULATION OF REGISTRATION FEE

Title of each class of securities to be registered	Amount to be registered(1)	Maximum price per share offering	Maximum aggregate offering price	Amount of registration fee(2)
Common stock, par value \$0.001 per share	3,920,453 shares	\$44.00	\$172,499,932.00	\$20,906.99

- (1) Includes 511,363 shares of common stock issuable upon exercise of the underwriters' option to purchase additional shares of common stock.
- (2) This filing fee is calculated and being paid pursuant to Rule 457(r) of the Securities Act of 1933, as amended, and relates to our Registration Statement on Form S-3ASR (File No. 333-220127).

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PROSPECTUS SUPPLEMENT

(To Prospectus dated August 23, 2017)

3,409,090 Shares

Global Blood Therapeutics, Inc.

We are offering 3,409,090 shares of our common stock.

Our common stock is listed on The Nasdaq Global Select Market under the symbol GBT. On December 6, 2018, the last reported sale price of our common stock on The Nasdaq Global Select Market was \$46.67 per share.

The underwriters have agreed to purchase our common stock from us at a price of \$41.54 per share which will result in approximately \$141.6 million of proceeds to us, before offering expenses, and assuming no exercise by the underwriters of the option described below. The underwriters may offer the shares of common stock from time to time for sale in one or more transactions on The Nasdaq Global Select Market, in the over-the-counter market, through negotiated transactions or otherwise at market prices prevailing at the time of sale, at prices related to prevailing market prices or at negotiated prices subject to receipt and acceptance by it and subject to its right to reject any order in whole or in part.

Investing in our common stock involves risks. See the section entitled Risk Factors on page S-10 of this prospectus supplement.

We have granted the underwriters a 30-day option to purchase up to an additional 511,363 shares of common stock from us. If the underwriters exercise the option in full, the total proceeds to us, before offering expenses, will be approximately \$162.9 million.

Neither the Securities and Exchange Commission nor any other regulatory body has approved or disapproved of these securities or passed upon the adequacy or accuracy of this prospectus supplement or the accompanying prospectus. Any representation to the contrary is a criminal offense.

The underwriters expect to deliver the shares of common stock to purchasers on or about December 11, 2018.

Sole Book-Running Manager

Cantor

Lead Manager

H.C. Wainwright & Co.

Prospectus supplement dated December 7, 2018

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ABOUT THIS PROSPECTUS SUPPLEMENT

This document is part of the registration statement on Form S-3 that we filed with the Securities and Exchange Commission, or the SEC, using a shelf registration process and consists of two parts. The first part is this prospectus supplement, including the documents incorporated by reference herein, which describes the specific terms of this offering. The second part is the accompanying prospectus, including the documents incorporated by reference therein, which provides more general information, some of which may not apply to this offering. Generally, when we refer to the prospectus, we are referring to both parts combined. This prospectus supplement may add to, update or change information in the accompanying prospectus and the documents incorporated by reference into this prospectus supplement or the accompanying prospectus.

If information in this prospectus supplement is inconsistent with the accompanying prospectus or with any document incorporated by reference that was filed with the SEC before the date of this prospectus supplement, you should rely on this prospectus supplement. This prospectus supplement, the accompanying prospectus and the documents incorporated by reference into each include important information about us, the securities being offered and other information you should know before investing in our securities. You should also read and consider information in the documents to which we have referred you in the sections of this prospectus supplement entitled **Where You Can Find More Information** and **Incorporation by Reference**. If any statement in one of these documents is inconsistent with a statement in another document having a later date, the statement in the document having the later date modifies or supersedes the earlier statement.

We further note that the representations, warranties and covenants made by us in any agreement that is filed as an exhibit to any document that is incorporated by reference into this prospectus supplement or the accompanying prospectus were made solely for the benefit of the parties to such agreement, including, in some cases, for the purpose of allocating risk among the parties to such agreements, and should not be deemed to be a representation, warranty or covenant to you. Moreover, such representations, warranties or covenants were accurate only as of the date when made. Accordingly, such representations, warranties and covenants should not be relied on as accurately representing the current state of our affairs.

We take no responsibility for, and can provide no assurances as to the reliability of, any information that is in addition to or different from that contained or incorporated by reference in this prospectus supplement and the accompanying prospectus. We are not offering to sell these securities in any jurisdiction where the offer or sale is not permitted. You should not assume that the information contained or incorporated by reference in this prospectus supplement or the accompanying prospectus is accurate as of any date other than as of the date of this prospectus supplement or the accompanying prospectus, as the case may be, or in the case of the documents incorporated by reference, the date of such documents regardless of the time of delivery of this prospectus supplement and the accompanying prospectus or any sale of our securities. Our business, financial condition, liquidity, results of operations and prospects may have changed since those dates.

Unless the context suggests otherwise, all references to us, our, GBT, we, the Company and similar designations refer to Global Blood Therapeutics, Inc. and, where appropriate, our subsidiaries. We use various trademarks and trade names in our business, including without limitation our corporate name and logo. All other trademarks or trade names referred to in this prospectus are the property of their respective owners. Solely for convenience, the trademarks and trade names in this prospectus may be referred to without the ® and symbols, but such references should not be construed as an indication that their respective owners will not assert, to the fullest extent under applicable law, their rights thereto.

No action is being taken in any jurisdiction outside of the United States to permit a public offering of the securities or possession or distribution of this prospectus supplement or the accompanying prospectus in that jurisdiction. Persons who come into possession of this prospectus supplement or the accompanying prospectus in jurisdictions outside of the United States are required to inform themselves about, and to observe any restrictions as to, this offering and the distribution of this prospectus supplement or the accompanying prospectus applicable to that jurisdiction.

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CAUTIONARY STATEMENT REGARDING FORWARD-LOOKING STATEMENTS

This prospectus supplement, the accompanying prospectus and the information and documents incorporated by reference herein and therein, contain forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, or the Securities Act, and Section 21E of the Securities Exchange Act of 1934, as amended, or the Exchange Act. Any statements about our expectations, beliefs, plans, objectives, assumptions or future events or performance are not historical facts and may be forward-looking. These statements are often, but are not always, made through the use of words or phrases such as may, will, could, should, expects, intends, plans, anticipates, believes, predicts, projects, potential, continue and similar expressions, or the negative of these terms and similar expressions. Accordingly, these statements involve estimates, assumptions, risks and uncertainties which could cause actual results to differ materially from those expressed in them. Any forward-looking statements are qualified in their entirety by reference to the factors discussed throughout this prospectus supplement, the accompanying prospectus and the documents incorporated by reference herein and therein, and in particular those factors referenced in the sections entitled Risk Factors.

This prospectus supplement, the accompanying prospectus and the information and documents incorporated by reference herein and therein contain forward-looking statements that are based on our management's belief and assumptions and on information currently available to our management. These statements relate to future events or our future financial performance, and involve known and unknown risks, uncertainties and other factors that may cause our actual results, levels of activity, performance or achievements to be materially different from any future results, levels of activity, performance or achievements expressed or implied by these forward-looking statements. Forward-looking statements include, but are not limited to, statements about:

the timing and the success of the Phase 3 HOPE Study and the Phase 2a HOPE-KIDS 1 Study, our ongoing clinical trials of voxelotor (previously known as GBT440) in adult and adolescent patients with sickle cell disease, or SCD;

the timing and success of our additional clinical trials of voxelotor, including in pediatric patients with SCD, and of any other product candidates we may develop in our target indications;

our plans and ability to submit, and the sufficiency of our data to support, a new drug application, or NDA, with the U.S. Food and Drug Administration, or FDA, for accelerated regulatory approval of voxelotor for SCD;

our plan to request and ability to schedule a pre-NDA meeting with the FDA and the timing thereof;

our ability to enroll patients in our clinical trials at the pace that we project;

whether the results of our trials will be sufficient to support domestic or foreign regulatory approvals for voxelotor or any other product candidates we may develop in our target indications;

our ability to obtain, including under any expedited development or review programs, and maintain regulatory approval of voxelotor or any other product candidates we may develop;

our ability to advance any other programs through preclinical and clinical development, and the timing and scope of these development activities;

the limitations of current treatment options for SCD;

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our expectations regarding the use of our existing capital resources and any proceeds we may receive from the sale of securities offered under this prospectus supplement;

the benefits of the use of voxelotor, inclacumab or any other product candidates we may identify and develop;

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our ability to successfully commercialize voxelotor, inclacumab or any other product candidates we may identify and pursue, if approved;

the potential market opportunity for, and rate and degree of market acceptance of, voxelotor, inclacumab, or any other product candidates we may identify and pursue;

our ability to maintain, or to recognize the anticipated benefits of, orphan drug designation for voxelotor or to obtain orphan drug designation for any other product candidates we may identify and pursue in the United States, Europe or any other jurisdiction;

our ability to maintain, or to recognize the anticipated benefits of, access to accelerated development and review programs through the FDA, such as the fast track and breakthrough therapy programs, or through the EMA's PRIME program, for voxelotor or any other product candidates we may identify and pursue;

our expectations regarding government and third-party payor coverage and reimbursement;

our ability to manufacture voxelotor in conformity with the FDA's requirements and to scale up manufacturing of voxelotor to commercial scale;

our ability to successfully build a specialty sales force and commercial infrastructure;

our ability to compete with companies currently producing or engaged in the clinical development of treatments for the disease indications that we pursue;

our reliance on third parties to conduct our clinical trials;

our reliance on third-party contract manufacturers to manufacture and supply our product candidates for us;

our ability to retain and recruit key personnel;

our ability to obtain and maintain intellectual property protection for voxelotor or any other product candidates we may identify and pursue;

our estimates of our expenses, ongoing losses, future revenue, capital requirements, sufficiency of capital resources and our needs for, or ability to obtain, additional financing;

our financial performance;

developments and projections relating to our competitors or our industry;

our plans to explore strategic transactions to broaden our pipeline; and

our ability to implement our strategic plans for our business and technology.

These forward-looking statements are neither promises nor guarantees of future performance due to a variety of risks and uncertainties, many of which are beyond our control, which could cause actual results to differ materially from those indicated by these forward-looking statements, including, without limitation the risk factors and cautionary statements described in other documents that we file from time to time with the SEC, specifically under Item 1A. Risk Factors and elsewhere in our most recent Annual Report on Form 10-K for the year ended December 31, 2017 and our Current Reports on Form 8-K, and the section of this prospectus supplement and the accompanying prospectus entitled Risk Factors.

The forward-looking statements in this prospectus supplement, the accompanying prospectus and the documents incorporated by reference herein and therein represent our views as of their respective dates. We anticipate that subsequent events and developments will cause our views to change. However, while we may elect to update these forward-looking statements at some point in the future, we assume no obligation to update or revise any forward-looking statements except to the extent required by applicable law. You should, therefore, not rely on these forward-looking statements as representing our views as of any date subsequent to the dates on which they were made.

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This prospectus supplement, the accompanying prospectus and the documents incorporated by reference herein and therein also contain estimates, projections and other information concerning our industry, our business, and the markets for certain disease treatments, including data regarding the estimated size of those markets, and the incidence and prevalence of certain medical conditions. Information that is based on estimates, forecasts, projections, market research or similar methodologies is inherently subject to uncertainties and actual events or circumstances may differ materially from events and circumstances reflected in this information. Unless otherwise expressly stated, we obtained this industry, business, market and other data from reports, research surveys, studies and similar data prepared by market research firms and other third parties, industry, medical and general publications, government data and similar sources.

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PROSPECTUS SUPPLEMENT SUMMARY

This summary highlights selected information contained elsewhere or incorporated by reference in this prospectus supplement and the accompanying prospectus and does not contain all of the information that you should consider before investing in our common stock. Before investing in our common stock, you should carefully read this entire prospectus supplement and the accompanying prospectus, including the sections entitled Risk Factors, our consolidated financial statements and related notes and the information in our filings with the SEC, which are incorporated by reference in this prospectus supplement and the accompanying prospectus. This prospectus supplement may add to, update or change information in the accompanying prospectus.

Our Company

We are a clinical-stage biopharmaceutical company determined to discover, develop and deliver innovative treatments that provide hope to underserved patient communities. Our lead product candidate is voxelotor (previously known as GBT440), an oral, once-daily therapy that modulates hemoglobin's affinity for oxygen, which we believe inhibits hemoglobin polymerization in sickle cell disease, or SCD. We are developing voxelotor for SCD.

We are currently evaluating voxelotor in adult and adolescent patients with SCD in a Phase 3 clinical trial, which we call the HOPE Study. In June 2018, we completed a planned review of Part A of the HOPE Study. On the primary endpoint (the proportion of patients with greater than 1 g/dL increase in hemoglobin versus baseline), a statistically significant increase was demonstrated with voxelotor at both the 1,500 mg and 900 mg doses after 12 weeks of treatment versus placebo.

We are also evaluating the safety and pharmacokinetics of single and multiple doses of voxelotor in adolescent and pediatric patients with SCD in a Phase 2a clinical trial, which we call the HOPE-KIDS 1 Study.

In October 2015, the U.S. Food and Drug Administration, or FDA, granted Fast Track Designation for voxelotor for the treatment of SCD. In December 2015, the FDA granted Orphan Drug Designation for voxelotor for the treatment of SCD. In November 2016 voxelotor was granted Orphan Drug Designation in Europe for the treatment of SCD. In June 2017, the European Medicines Agency, or EMA, granted PRIME designation for voxelotor for the treatment of SCD. The PRIME program is a new regulatory mechanism that provides for early and proactive EMA support to medicine developers to help patients benefit as early as possible from innovative new products that have demonstrated the potential to significantly address an unmet medical need. In September 2017, the FDA granted Rare Pediatric Disease designation to voxelotor for the treatment of SCD. In January 2018, the FDA granted Breakthrough Designation to voxelotor for the treatment of SCD.

In August 2018, we entered into a license agreement with F. Hoffmann-La Roche Ltd. and Hoffmann-La Roche Inc., or taken together Roche, pursuant to which Roche granted us an exclusive and sublicensable worldwide license under certain patent rights and know-how to develop and commercialize inclacumab, a novel fully human monoclonal antibody against P-selectin, including any modified compounds targeting P-selectin and derived from inclacumab, for all indications and uses, except diagnostic use. Roche retained a non-exclusive, worldwide, perpetual, royalty-free license to inclacumab solely for any diagnostic use. We plan to develop inclacumab as a treatment for vaso-occlusive crises in patients with SCD.

SCD is marked by red blood cell, or RBC, destruction and occluded blood flow and hypoxia, leading to anemia, stroke, multi-organ failure, severe pain crises and shortened patient life span. Voxelotor inhibits abnormal hemoglobin polymerization, the underlying mechanism that causes sickling of RBCs. In our clinical trials to date of voxelotor in SCD patients, we observed reduced markers of RBC destruction, improvements in anemia, improvements in markers of tissue oxygenation, and reduced numbers of sickled RBCs.

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We own or jointly own and have exclusively licensed rights to our product candidates in the United States, Europe and other major markets. We are the sole owner of issued U.S. patents covering voxelotor, including its composition of matter, methods of use and a polymorph of voxelotor. These issued patents covering voxelotor will expire between 2032 and 2035, absent any applicable patent term extensions. We own or co-own additional pending patent applications in the United States and multiple foreign countries relating to voxelotor.

Beyond evaluation of voxelotor in SCD, we are also engaged in other research and development activities, all of which are currently in earlier development stages. In addition, we regularly evaluate opportunities to in-license, acquire or invest in new business, technology or assets or engage in related discussions with other business entities.

Since our inception in 2011, we have devoted substantially all of our resources to identifying and developing our product candidates, including conducting clinical trials and nonclinical studies and providing general and administrative support for these operations.

We have never been profitable and have incurred net losses in each year since inception. Our net losses were (i) \$117.0 million, \$82.5 million and \$46.4 million for the years ended December 31, 2017, December 31, 2016 and December 31, 2015, respectively; and (ii) \$125.0 million and \$75.8 million for the nine months ended September 30, 2018 and 2017, respectively. As of September 30, 2018, we had an accumulated deficit of \$422.9 million. To date, we have not generated any revenue. We do not expect to receive any revenue from any product candidates that we develop until we obtain regulatory approval and commercialize our products or enter into collaborative agreements with third parties. Substantially all of our net losses have resulted from costs incurred in connection with our research and development programs and from general and administrative costs associated with our operations. As of September 30, 2018, we had \$194.9 million in cash and cash equivalents and \$287.2 million in marketable securities.

Recent Developments

In December 2018, we announced that we plan to submit a new drug application, or NDA, under an accelerated regulatory approval pathway under Subpart H for voxelotor for the treatment of SCD. The FDA grants accelerated approval under Subpart H for new drugs that address serious or life-threatening illnesses and that provide meaningful therapeutic benefit to patients over existing treatments. Pursuing accelerated approval under Subpart H does not ensure faster development timelines or ensure regulatory approval. In addition, any drug approved under Subpart H, including voxelotor if it were approved, is required to be further evaluated in post-marketing studies to verify clinical benefit. We plan to request a pre-NDA meeting for the first quarter of 2019 and to provide further details regarding our plans and timing for the NDA submission following this meeting.

Also, in December 2018, we announced updated efficacy and safety results from Part A of the Phase 3 HOPE Study of voxelotor in patients aged 12 and older with SCD. Preliminary results from 154 adolescents and adults with SCD treated with voxelotor for 24 weeks demonstrated rapid, robust and sustained improvements in hemoglobin levels and measures of hemolysis with a favorable safety and tolerability profile.

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Corporate History and Information

We were incorporated under the laws of the State of Delaware in February 2011 and commenced operations in May 2012. Our principal executive office is located at 171 Oyster Point Blvd., Suite 300, South San Francisco, California 94080, and our telephone number is (650) 741-7700. Our website address is www.gbt.com. We do not incorporate the information on or accessible through our website into this prospectus supplement or the accompanying prospectus, and you should not consider any information on, or that can be accessed through, our website as part of this prospectus supplement or the accompanying prospectus.

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THE OFFERING

Common stock offered by us 3,409,090 shares

Common stock outstanding immediately following the offering 55,529,477 shares

Option to purchase additional shares We have granted the underwriters an option for a period of 30 days to purchase an additional 511,363 shares of our common stock.

Use of proceeds We intend to use the net proceeds from this offering and our existing capital resources, consisting of cash and cash equivalents and marketable securities, to fund our clinical development of voxelotor for the treatment of SCD, including our ongoing clinical studies, to prepare for the potential commercial launch of voxelotor, if approved by the FDA, future clinical studies of voxelotor and other product candidates that we may elect to pursue, including inlacumab our other research and development activities and for working capital and general corporate purposes. We may also use a portion of the net proceeds to in-license, acquire or invest in new business, technology or assets, or pursue strategic opportunities although we have no material agreements, commitments or understandings at this time. See **Use of Proceeds** for additional information.

Risk factors Investing in our securities involves risks. See **Risk Factors** beginning on page S-10 of this prospectus supplement.

Nasdaq Global Select Market symbol GBT

The number of shares of our common stock to be outstanding after the offering is based on 52,120,387 shares of common stock outstanding as of September 30, 2018, and excludes:

3,200,529 shares of common stock issuable upon exercise of outstanding options as of September 30, 2018 at a weighted-average exercise price of \$29.15 per share;

71,246 shares of restricted common stock which were subject to our right of repurchase as of September 30, 2018;

140,000 shares of common stock issuable upon exercise of options granted subsequent to September 30, 2018 through December 1, 2018 at a weighted-average exercise price of \$36.21 per share;

926,244 shares of common stock issuable upon the vesting of outstanding restricted stock units as of September 30, 2018;

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93,630 shares of common stock issuable upon the vesting of restricted stock units granted subsequent to September 30, 2018 through December 1, 2018;

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2,543,178 shares of common stock reserved for future issuance under our 2015 Stock Option and Incentive Plan, or the 2015 Plan, as of September 30, 2018;

240,935 shares of common stock reserved for future issuance under our 2015 Employee Stock Purchase Plan, or the 2015 ESPP, as of September 30, 2018; and

646,600 shares of common stock reserved for future issuance under our 2017 Inducement Equity Plan, or the 2017 Inducement Plan, as of September 30, 2018.

Except as otherwise indicated, all information in this prospectus supplement assumes no exercise by the underwriters of their option to purchase additional shares of our common stock.

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RISK FACTORS

Investing in our securities involves a high degree of risk. You should carefully consider the risks referenced below and described in the documents incorporated by reference in this prospectus supplement and the accompanying prospectus, as well as other information we include or incorporate by reference into this prospectus supplement and the accompanying prospectus, before making an investment decision. Our business, financial condition or results of operations could be materially adversely affected by the materialization of any of these risks. The trading price of our securities could decline due to the materialization of any of these risks, and you may lose all or part of your investment. This prospectus supplement, the accompanying prospectus and the documents incorporated herein and therein by reference also contain forward-looking statements that involve risks and uncertainties. Actual results could differ materially from those anticipated in these forward-looking statements as a result of certain factors, including the risks referenced below and described in the accompanying prospectus and the documents incorporated herein and therein by reference, including (i) our Annual Report on Form 10-K for the fiscal year ended December 31, 2017 and our Quarterly Report on Form 10-Q for the three and nine months ended September 30, 2018 and (ii) other documents we file with the SEC that are deemed incorporated by reference into this prospectus supplement or the accompanying prospectus.

Risks Related to This Offering

We have broad discretion in the use of the net proceeds from this offering and our existing cash and cash equivalents, and may not use them effectively.

Our management will have broad discretion in the application of the net proceeds from this offering, including for any of the purposes described in the section entitled “Use of Proceeds,” as well as our existing cash and cash equivalents and marketable securities, and you will be relying on the judgment of our management regarding such application. You will not have the opportunity, as part of your investment decision, to assess whether the proceeds are being used appropriately. Our management might not apply the net proceeds or our existing cash in ways that ultimately increase the value of your investment. If we do not invest or apply the net proceeds from this offering or our existing cash and cash equivalents in ways that enhance stockholder value, we may fail to achieve expected results, which could cause our stock price to decline. Pending their use, we may invest the net proceeds from this offering in investment-grade, interest-bearing securities. These investments may not yield a favorable return to our stockholders.

If you purchase our common stock in this offering, you will incur immediate and substantial dilution in the book value of your shares.

Investors purchasing shares of common stock in this offering will pay a price per share that substantially exceeds the as adjusted book value per share of our tangible assets as of September 30, 2018 after subtracting our liabilities. As a result, investors purchasing shares of common stock in this offering will incur immediate dilution of \$32.96 per share, based on the difference between the assumed public offering price of \$44.00 per share, and the as adjusted net tangible book value per share of our outstanding common stock as of September 30, 2018.

This dilution is due to the substantially lower price paid by some of our investors who purchased shares prior to this offering as compared to the price offered to the public in this offering, and the exercise of stock options granted to our employees. In addition, as of September 30, 2018, options to purchase 3,200,529 shares of our common stock at a weighted-average exercise price of \$29.15 per share were outstanding, and there were 926,244 shares of our common stock underlying restricted stock units subject to future vesting. The exercise of any of these options and the vesting of any shares underlying outstanding restricted stock units would result in additional dilution. As a result of the dilution to investors purchasing shares in this offering, investors may receive significantly less than the purchase price paid in this offering, if anything, in the event of our liquidation. Further, because we will need to raise additional capital to fund our future activities, we may in the future sell substantial amounts of common stock or securities convertible into or exchangeable for common stock.

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These future issuances of common stock or common stock-related securities, together with the exercise of outstanding options and any additional shares issued in connection with acquisitions, if any, may result in further dilution. For a further description of the dilution that you will experience immediately after this offering, please refer to the section entitled "Dilution."

Sales of a substantial number of shares of our common stock in the public market after this offering could cause our stock price to fall.

Sales of a substantial number of shares of our common stock in the public market or the perception that these sales might occur could depress the market price of our common stock, could impair our ability to raise capital through the sale of additional equity securities. We are unable to predict the effect that sales may have on the prevailing market price of our common stock.

In addition, the sale of substantial amounts of our common stock could adversely impact the price of our common stock. As of September 30, 2018, 52,120,387 shares of our common stock, and options to purchase 3,200,529 shares of our common stock and 926,244 restricted stock units, were outstanding. The sale or the availability for sale of a large number of shares of our common stock in the public market could cause the price of our common stock to decline.

We and our directors and executive officers have agreed for a period of 90 days after the date of this prospectus supplement, subject to specified exceptions including, with respect to certain of our executive officers, trades under existing 10b5-1 plans, that we or they will not offer, sell, contract to sell, pledge or otherwise dispose of, directly or indirectly, any shares of our common stock or securities convertible into or exchangeable or exercisable for any shares of our common stock. We and certain of our directors and executive officers may be released from these restrictions at the sole discretion of Cantor Fitzgerald & Co. Sales of stock by any of our directors or executive officers could have a material adverse effect on the trading price of our common stock.

Certain holders of shares of our common stock are entitled to rights with respect to the registration of their shares under the Securities Act. 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 stockholders could have a material adverse effect on the trading price of our common stock.

Risks Related to Our Business

We may be subject to adverse legislative or regulatory tax changes that could negatively impact our financial condition.

The rules dealing with U.S. federal, state and local income taxation are constantly under review by persons involved in the legislative process and by the IRS and the U.S. Treasury Department. Changes to tax laws (which changes may have retroactive application) could adversely affect our stockholders or us. In recent years, many such changes have been made and changes are likely to continue to occur in the future. For example, in December 2017, U.S. Congress passed the Tax Cuts and Jobs Act, which made broad and complex changes to the tax laws. We cannot predict whether, when, in what form or with what effective dates, tax laws, regulations and rulings may be enacted, promulgated or decided, which could result in an increase in our, or our stockholders', tax liability or require changes in the manner in which we operate in order to minimize increases in our tax liability.

Our future ability to utilize our net operating loss carryforwards and certain other tax attributes may be limited.

We have incurred substantial losses during our history and do not expect to become profitable in the near future and we may never achieve profitability. To the extent that we continue to generate taxable losses, unused losses will carry forward to offset future taxable income, if any, until such unused losses

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expire. Under Sections 382 and 383 of the Internal Revenue Code of 1986, as amended, if a corporation undergoes an ownership change, generally defined as a greater than 50% change (by value) in its equity ownership over a three-year period, the corporation's ability to use its pre-change net operating loss carryforwards, or NOLs, and other pre-change tax attributes (such as research tax credits) to offset its post-change income or taxes may be limited. We experienced an ownership change as a result of our IPO and an ownership change as a result of our follow-on offerings. However, we do not believe that these ownership changes will significantly limit our ability to use these pre-change NOL carryforwards. We may experience subsequent shifts in our stock ownership, including as a result of our future follow-on offerings, some of which are outside of our control. As a result, if we earn net taxable income, our ability to use our pre-change NOL carryforwards to offset U.S. federal taxable income may become subject to limitations, which could potentially result in increased future tax liability to us. In addition, at the state level, there may be periods during which the use of NOLs is suspended or otherwise limited, which could accelerate or permanently increase state taxes owed. In addition, pursuant to the Tax Cuts and Jobs Act of 2017, we may not use operating loss carry forwards generated after December 31, 2017 to reduce our taxable income in any year by more than 80% and we may not carry back any net operating losses to prior years. These new rules apply regardless of the occurrence of an ownership change.

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USE OF PROCEEDS

We estimate that the net proceeds from our issuance and sale of shares of our common stock in this offering will be approximately \$140.9 million (\$162.2 million if the underwriters' option to purchase additional shares is exercised in full), after deducting the underwriting discounts and commissions and estimated offering expenses payable by us.

We intend to use the net proceeds from this offering and our existing capital resources, consisting of cash and cash equivalents and marketable securities, to fund our clinical development of voxelotor for the treatment of SCD, including our ongoing clinical studies, to prepare for the potential commercial launch of voxelotor, if approved by the FDA, future clinical studies of voxelotor and other product candidates that we may elect to pursue, including inclacumab, our other research and development activities and for working capital and general corporate purposes.

We are working to diversify our pipeline, both through internal research as well as through business development efforts. We may therefore also use a portion of the net proceeds to in-license, acquire or invest in new businesses, technology or assets or pursue strategic opportunities. Although at this time we have no material agreements, commitments or understandings with respect to any in-license or acquisition, we have and plan to continue to evaluate such opportunities and engage in related discussions with other business entities from time to time.

Based on our current plans, we believe our cash and cash equivalents, together with the net proceeds to us from this offering, will be sufficient to fund our operations for at least the next 12 months.

This expected use of the net proceeds from this offering represents our intentions based upon our current plans and business conditions. As of the date of this prospectus supplement, we cannot predict with certainty all of the particular uses for the net proceeds to be received upon the completion of this offering or the amounts that we will actually spend on the uses set forth above or the timing of such events. The amounts and timing of our actual expenditures and the extent of our preclinical and clinical development activities may vary significantly depending on numerous factors, including the progress of our development efforts, the status of and results from our ongoing clinical trials and nonclinical studies or any clinical trials we may commence in the future, our ability to take advantage of expedited programs or to obtain regulatory approval for voxelotor and any other product candidates we may identify and pursue, the timing and costs associated with the manufacture and supply of voxelotor and any other product candidates we may identify and pursue for clinical development or commercialization, our ability to successfully launch and commercialize voxelotor or any other product candidates if approved, any strategic transactions in which we may engage and any unforeseen cash needs. As a result, our management will retain broad discretion over the allocation of the net proceeds from this offering.

Pending our use of the net proceeds from this offering, we intend to invest the net proceeds in a variety of capital preservation investments, including short-term and/or long-term, investment-grade, interest-bearing instruments and U.S. government securities.

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DILUTION

If you invest in our common stock in this offering, your ownership interest will be diluted to the extent of the difference between the price per share of our common stock in this offering and the as adjusted net tangible book value per share of our common stock immediately after this offering.

As of September 30, 2018, we had net tangible book value of approximately \$472.0 million, or \$9.06 per share of our common stock, based upon 52,120,387 shares of our common stock outstanding as of that date. Historical net tangible book value per share is equal to our total tangible assets, less total liabilities, divided by the number of outstanding shares of our common stock. Dilution in net tangible book value per share represents the difference between the amount per share paid by purchasers of shares of common stock in this offering and the net tangible book value per share of our common stock immediately after this offering.

After giving effect to the sale of 3,409,090 shares of common stock in this offering at the assumed public offering price of \$44.00 per share, and after deducting the underwriting discounts and commissions and estimated offering expenses payable by us, our as adjusted net tangible book value as of September 30, 2018 would have been approximately \$612.9 million, or approximately \$11.04 per share of common stock. This represents an immediate increase in as adjusted net tangible book value of \$1.98 per share to our existing stockholders and an immediate dilution of \$32.96 per share to new investors participating in this offering.

Dilution per share to new investors is determined by subtracting net tangible book value per share after this offering from the assumed public offering price per share paid by new investors. The following table illustrates this per share dilution:

Assumed public offering price per share	\$ 44.00
Historical net tangible book value per share as of September 30, 2018	\$ 9.06
Increase in net tangible book value per share attributable to new investors	1.98
As adjusted net tangible book value per share after this offering	11.04
Dilution per share to new investors	\$ 32.96

If the underwriters exercise in full their option to purchase up to an additional 511,363 shares of our common stock at the assumed public offering price of \$44.00 per share the as adjusted net tangible book value after this offering would be \$11.32 per share, representing an increase in net tangible book value of \$2.26 per share to existing stockholders and immediate dilution of \$32.68 per share to investors purchasing our common stock in this offering at the assumed public offering price.

The foregoing table and discussion is based on 52,120,387 shares of common stock outstanding as of September 30, 2018, and excludes:

3,200,529 shares of common stock issuable upon exercise of outstanding options as of September 30, 2018 at a weighted-average exercise price of \$29.15 per share;

71,246 shares of restricted common stock which were subject to our right of repurchase as of September 30, 2018;

140,000 shares of common stock issuable upon exercise of options granted subsequent to September 30, 2018 through December 1, 2018 at a weighted-average exercise price of \$36.21 per share;

926,244 shares of common stock issuable upon the vesting of outstanding restricted stock units as of September 30, 2018;

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93,630 shares of common stock issuable upon the vesting of restricted stock units granted subsequent to September 30, 2018 through December 1, 2018;

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2,543,178 shares of common stock reserved for future issuance under our 2015 Stock Option and Incentive Plan, or the 2015 Plan, as of September 30, 2018;

240,935 shares of common stock reserved for future issuance under our 2015 Employee Stock Purchase Plan, or the 2015 ESPP, as of September 30, 2018; and

646,600 shares of common stock reserved for future issuance under our 2017 Inducement Equity Plan, or the 2017 Inducement Plan, as of September 30, 2018.

To the extent that any options are exercised, new options are issued under our equity incentive plans, or we otherwise issue additional shares of common stock in the future (including shares issued in connection with acquisitions), there will be further dilution to new investors.

In addition, we may choose to raise additional capital due to market conditions or strategic considerations, even if we believe we have sufficient funds for our current or future operating plans. To the extent that additional capital is raised through the sale of equity or convertible debt securities, the issuance of these securities could result in further dilution to our stockholders.

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Table of Contents**PRICE RANGE OF COMMON STOCK**

Our common stock began trading on The Nasdaq Global Select Market under the symbol **GBT** on August 12, 2015. Prior to that time, there was no public market for our common stock. The following table sets forth the high and low sale prices per share of our common stock, as reported on The Nasdaq Global Select Market, for the periods indicated:

	High	Low
Year ended December 31, 2015		
Third quarter (from August 12, 2015)	\$ 57.00	\$ 33.01
Fourth quarter	\$ 55.74	\$ 28.73
Year ended December 31, 2016		
First quarter	\$ 31.97	\$ 12.24
Second quarter	\$ 27.99	\$ 14.22
Third quarter	\$ 24.10	\$ 16.07
Fourth quarter	\$ 23.80	\$ 13.35
Year ended December 31, 2017		
First quarter	\$ 41.15	\$ 14.00
Second quarter	\$ 37.50	\$ 25.65
Third quarter	\$ 31.30	\$ 24.03
Fourth quarter	\$ 45.85	\$ 29.45
Year ending December 31, 2018		
First quarter	\$ 68.05	\$ 38.80
Second quarter	\$ 51.65	\$ 33.80
Third quarter	\$ 52.65	\$ 37.75
Fourth quarter (through December 6, 2018)	\$ 50.11	\$ 30.15

On December 6, 2018, the last reported sale price of our common stock as reported on The Nasdaq Global Select Market was \$46.67 per share. As of December 6, 2018, there were approximately 11 record holders of our common stock. The actual number of stockholders is greater than this number of record holders and includes stockholders who are beneficial owners but whose shares are held in street name by brokers and other nominees.

The transfer agent and registrar for our common stock is Continental Stock Transfer & Trust Company. The transfer agent's address is 1 State Street, 30th Floor, New York, NY 10004-1561 and its telephone number is (212) 509-4000.

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DIVIDEND POLICY

We have never declared or paid dividends on our capital stock. We do not anticipate paying any dividends on our capital stock in the foreseeable future. We currently intend to retain all available funds and any future earnings to fund the development and growth of our business. Any future determination to declare dividends will be subject to the discretion of our board of directors and will depend on various factors, including applicable laws, our results of operations, financial condition, future prospects and any other factors deemed relevant by our board of directors. You should not purchase our common stock with the expectation of receiving cash dividends.

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Table of Contents**UNDERWRITING**

We have entered into an underwriting agreement with Cantor Fitzgerald & Co., as representative, with respect to the common stock being offered hereby. Subject to the terms and conditions of the underwriting agreement, the underwriters have agreed to purchase from us the respective number of shares of common stock shown opposite each underwriter's name below.

UNDERWRITERS	NUMBER OF SHARES
Cantor Fitzgerald & Co.	3,348,114
H.C. Wainwright & Co., LLC	60,976
Total	3,409,090

The underwriters are collectively referred to as the underwriters. To the extent there is one underwriter, underwriters refers to the underwriter listed in the table above. The underwriting agreement provides that the obligations of the underwriters are subject to certain conditions precedent and that the underwriters have agreed to purchase all of the shares of common stock sold under the underwriting agreement if any of these shares are purchased.

We have agreed to indemnify the underwriters against specified liabilities, including liabilities under the Securities Act, and to contribute to payments the underwriters may be required to make in respect thereof.

The underwriters are offering the shares of common stock, subject to prior sale, when, as and if issued to and accepted by them, subject to approval of legal matters by their counsel and other conditions specified in the underwriting agreement. The underwriters reserve the right to withdraw, cancel or modify offers to the public and to reject orders in whole or in part.

Underwriting discounts and commissions and offering expenses. The underwriters are purchasing the shares of common stock from us at \$41.54 per share (representing approximately \$141.6 million aggregate proceeds to us, before offering expenses). The underwriters may offer the shares of common stock from time to time to purchasers directly or through agents, or through brokers in brokerage transactions on The Nasdaq Global Select Market, or to dealers in negotiated transactions or in a combination of such methods of sale, or otherwise, at a fixed price or prices, which may be changed, or at market prices prevailing at the time of sale, at prices related to such prevailing market prices or at negotiated prices subject to receipt and acceptance by it and subject to its right to reject any order in whole or in part. The difference between the price, at which the underwriters purchase shares from us and the price at which the underwriters resell such shares may be deemed underwriting compensation. If the underwriters effect such transactions by selling shares of common stock to or through dealers, such dealers may receive compensation in the form of discounts, concessions or commissions from the underwriters and/or purchasers of shares of common stock for whom they may act as agents or to whom they may sell as principal.

We estimate that the total expenses of the offering payable by us, other than the underwriting discounts and commissions, will be approximately \$0.7 million. We have agreed to pay a financial advisory fee to a financial advisor upon the completion of this offering. The financial advisory fee relates to financial advice on matters separate from the offering. The financial advisor is not acting as an underwriter and will not sell or offer to sell any securities, and will not identify, solicit or engage directly with potential investors. In addition, the financial advisor will not underwrite or purchase any of the offered securities or otherwise participate in any such undertaking. We have also agreed to reimburse the underwriters for certain of their expenses in an amount up to \$25,000 in the aggregate.

Option to purchase additional shares. We have granted the underwriters an option, exercisable for 30 days from the date of this prospectus supplement, to purchase, from time to time, in whole or in part, up to 511,363 additional shares from us at the price set forth on the cover page of this prospectus supplement, less underwriting discounts and commissions.

Discretionary accounts. The underwriters do not intend to confirm sales of shares of common stock to any accounts over which it has discretionary authority.

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Stabilization. In connection with this offering, the underwriters may engage in stabilizing transactions, overallotment transactions, syndicate covering transactions and purchases to cover positions created by short sales in accordance with Regulation M under the Exchange Act.

Stabilizing transactions permit bids to purchase shares of common stock so long as the stabilizing bids do not exceed a specified maximum, and are engaged in for the purpose of preventing or retarding a decline in the market price of the common stock while the offering is in progress.

Overallotment transactions involve sales by the underwriters of shares of common stock in excess of the number of shares of common stock the underwriters are obligated to purchase. This creates a syndicate short position which may be either a covered short position or a naked short position. In a covered short position, the number of shares of common stock overallotted by the underwriters, if any, is not greater than the number of shares of common stock that they may purchase in the option to purchase additional shares. In a naked short position, the number of shares of common stock involved is greater than the number of shares of common stock in the option to purchase additional shares, if any. The underwriters may close out any short position by exercising their option to purchase additional shares, if any, and/or purchasing shares of common stock in the open market.

Syndicate covering transactions involve purchases of common stock in the open market after the distribution has been completed in order to cover syndicate short positions. In determining the source of shares of common stock to close out the short position, the underwriters will consider, among other things, the price of shares of common stock available for purchase in the open market as compared with the price at which the underwriter may purchase shares of common stock through exercise of the option to purchase additional shares, if any. If the underwriters sell more shares of common stock than could be covered by exercise of the option to purchase additional shares, if any, and, therefore, has a naked short position, the position can be closed out only by buying shares of common stock in the open market. A naked short position is more likely to be created if the underwriters are concerned that after pricing there could be downward pressure on the price of the shares of common stock in the open market that could adversely affect investors who purchase in the offering.

These stabilizing transactions and syndicate covering transactions may have the effect of raising or maintaining the market price of our common stock or preventing or retarding a decline in the market price of our common stock. As a result, the price of our common stock in the open market may be higher than it would otherwise be in the absence of these transactions. Neither we nor the underwriters make any representation or prediction as to the effect that the transactions described above may have on the price of our common stock. These transactions may be effected on The Nasdaq Global Select Market, in the over-the-counter market or otherwise and, if commenced, may be discontinued at any time.

Passive market making. In connection with this offering, the underwriters may engage in passive market making transactions in our common stock on The Nasdaq Global Select Market in accordance with Rule 103 of Regulation M under the Exchange Act, during a period before the commencement of offers or sales of common stock and extending through the completion of the distribution. A passive market maker must display its bid at a price not in excess of the highest independent bid of that security. However, if all independent bids are lowered below the passive market maker's bid that bid must then be lowered when specified purchase limits are exceeded.

Lock-up agreements. We and our executive officers and directors have agreed that for a period of 90 days after the date of this prospectus (the restricted period), without the prior written consent of Cantor Fitzgerald & Co. on behalf of the underwriters, we and they will not:

offer, pledge, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, lend or otherwise transfer or dispose of, directly or indirectly, any shares of common stock or any securities convertible into or exercisable or exchangeable for shares of common stock;

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file any registration statement with the Securities and Exchange Commission relating to the offering of any shares of common stock or any securities convertible into or exercisable or exchangeable for common stock; or

enter into any swap or other arrangement that transfers to another, in whole or in part, any of the economic consequences of ownership of our common stock;

whether any such transaction described above is to be settled by delivery of common stock or such other securities, in cash or otherwise. In addition, we and each such person agrees that, without the prior written consent of Cantor Fitzgerald & Co., we or such other person will not, during the restricted period, make any demand for, or exercise any right with respect to, the registration of any shares of common stock or any security convertible into or exercisable or exchangeable for common stock.

The restrictions described in the immediately preceding paragraph do not apply to:

the sale of shares to the underwriters;

our issuance of common stock upon the exercise of an option or a warrant or the conversion of a security outstanding on the date of, and described in, this prospectus;

the transfer of common stock to us pursuant to the exercise of our right to repurchase certain shares in connection with the termination of employment or board service under agreements entered into pursuant to our equity incentive plans;

transactions by any person other than us relating to shares of common stock or other securities acquired in open market transactions after the completion of the offering of the shares; provided that no filing under Section 16(a) of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), is required or voluntarily made in connection with subsequent sales of the common stock or other securities acquired in such open market transactions;

our sale or issuance of or entry into an agreement to sell or issue shares of common stock in connection with our acquisition of one or more businesses, products, assets or technologies or in connection with certain strategic transactions; provided, that, the aggregate number of shares of common stock that we may sell or issue or agree to sell or issue pursuant to this provision cannot exceed 5% of the total number of shares of common stock issued and outstanding immediately following the completion of this offering and provided further that each recipient of such shares pursuant to this provision must execute and deliver to the representatives, on or prior to such issuance, a lock-up agreement; or

the establishment of a trading plan pursuant to Rule 10b5-1 under the Exchange Act for the transfer of shares of common stock, provided that (i) such plan does not provide for the transfer of common stock during the restricted period and (ii) to the extent a public announcement or filing under the Exchange Act, if any, is required or voluntarily made regarding the establishment of such plan, such announcement or filing shall include a statement to the effect that no transfer of common stock may be made under such plan during the restricted period.

In addition, the restrictions do not apply to certain of our executive officers with respect to the transfer of shares of common stock pursuant to a trading plan that is existing on the date of this prospectus supplement, provided that to the extent a public announcement or filing under the Exchange Act, if any, is required or voluntarily made regarding such transfer, such announcement or filing shall include a statement that such transfer is in accordance with an established trading plan.

Furthermore, the restrictions do not apply to the offer and sale by us of shares of our common stock or any securities convertible into or exercisable or exchangeable for shares of our common stock pursuant to any equity distribution or similar agreement for sales of securities through an "at the market offering" as such term is defined in Rule 415 of the Securities Act.

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Other Activities and 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. The underwriters and certain of their affiliates have, from time to time, performed, and may in the future perform, various commercial and investment banking and financial advisory services for us and our affiliates, for which they received or will receive customary fees and expenses.

In the ordinary course of their various business activities, the underwriters and certain of 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, and such investment and securities activities may involve securities and/or instruments issued by us and our affiliates. If the underwriters or their respective affiliates have a lending relationship with us, they routinely hedge their credit exposure to us consistent with their customary risk management policies. The underwriters and their respective affiliates may hedge such exposure by entering into transactions which consist of either the purchase of credit default swaps or the creation of short positions in our securities or the securities of our affiliates, including potentially the common stock offered hereby. Any such short positions could adversely affect future trading prices of the common stock offered hereby. The underwriters and certain of their respective affiliates may also communicate independent investment recommendations, market color or trading ideas and/or publish or express independent research views in respect of such securities or instruments and may at any time hold, or recommend to clients that they acquire, long and/or short positions in such securities and instruments.

Notice to Investors

Australia

This prospectus supplement and the accompanying prospectus are not a disclosure document for the purposes of Australia's Corporations Act 2001 (Cth) of Australia, or Corporations Act, has not been lodged with the Australian Securities & Investments Commission and is only directed to the categories of exempt persons set out below. Accordingly, if you receive this prospectus supplement in Australia:

A. You confirm and warrant that you are either:

sophisticated investor under section 708(8)(a) or (b) of the Corporations Act;

a sophisticated investor under section 708(8)(c) or (d) of the Corporations Act and that you have provided an accountant's certificate to the company which complies with the requirements of section 708(8)(c)(i) or (ii) of the Corporations Act and related regulations before the offer has been made;

a person associated with the company under Section 708(12) of the Corporations Act; or

professional investor within the meaning of section 708(11)(a) or (b) of the Corporations Act.

To the extent that you are unable to confirm or warrant that you are an exempt sophisticated investor or professional investor under the Corporations Act, any offer made to you under this prospectus supplement is void and incapable of acceptance.

B. You warrant and agree that you will not offer any of the shares issued to you pursuant to this prospectus supplement for resale in Australia within 12 months of those shares being issued unless any such resale offer is exempt from the requirement to issue a disclosure document under section 708 of the Corporations Act.

Canada

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This prospectus supplement constitutes an exempt offering document as defined in and for the purposes of applicable Canadian securities laws. No prospectus has been filed with any securities commission or similar regulatory authority in Canada in connection with the offer and sale of the common

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stock. No securities commission or similar regulatory authority in Canada has reviewed or in any way passed upon this prospectus supplement or on the merits of the common stock and any representation to the contrary is an offence.

Canadian investors are advised that this prospectus supplement has been prepared in reliance on section 3A.3 of National Instrument 33-105 *Underwriting Conflicts* (NI 33-105). Pursuant to section 3A.3 of NI 33-105, this prospectus supplement is exempt from the requirement that the Company and the underwriter(s) provide investors with certain conflicts of interest disclosure pertaining to connected issuer and/or related issuer relationships that may exist between the Company and the underwriter(s) as would otherwise be required pursuant to subsection 2.1(1) of NI 33-105.

Resale Restrictions

The offer and sale of the common stock in Canada is being made on a private placement basis only and is exempt from the requirement that the Company prepares and files a prospectus under applicable Canadian securities laws. Any resale of the common stock acquired by a Canadian investor in this offering must be made in accordance with applicable Canadian securities laws, which may vary depending on the relevant jurisdiction, and which may require resales to be made in accordance with Canadian prospectus requirements, pursuant to a statutory exemption from the prospectus requirements, in a transaction exempt from the prospectus requirements or otherwise under a discretionary exemption from the prospectus requirements granted by the applicable local Canadian securities regulatory authority. These resale restrictions may under certain circumstances apply to resales of the common stock outside of Canada.

Representations of Purchasers

Each Canadian investor who purchases the common stock will be deemed to have represented to the Company and the underwriter(s) that the investor (i) is purchasing the common stock as principal, or is deemed to be purchasing as principal in accordance with applicable Canadian securities laws, for investment only and not with a view to resale or redistribution; (ii) is an accredited investor as such term is defined in section 1.1 of National Instrument 45-106 *Prospectus Exemptions* (NI 45-106) or, in Ontario, as such term is defined in section 73.3(1) of the Securities Act (Ontario); and (iii) is a permitted client as such term is defined in section 1.1 of National Instrument 31-103 *Registration Requirements, Exemptions and Ongoing Registrant Obligations*.

Taxation and Eligibility for Investment

Any discussion of taxation and related matters contained in this prospectus supplement does not purport to be a comprehensive description of all of the tax considerations that may be relevant to a Canadian investor when deciding to purchase the common stock and, in particular, does not address any Canadian tax considerations. No representation or warranty is hereby made as to the tax consequences to a resident, or deemed resident, of Canada of an investment in the common stock or with respect to the eligibility of the common stock for investment by such investor under relevant Canadian federal and provincial legislation and regulations.

Rights of Action for Damages or Rescission

Securities legislation in certain of the Canadian jurisdictions provides certain purchasers of securities pursuant to an offering memorandum (such as this prospectus supplement), including where the distribution involves an eligible foreign security as such term is defined in Ontario Securities Commission Rule 45-501 *Ontario Prospectus and Registration Exemptions* and in Multilateral Instrument 45-107 *Listing Representation and Statutory Rights of Action Disclosure Exemptions*, as applicable, with a remedy for damages or rescission, or both, in addition to any other rights they may have at law, where the offering memorandum, or other offering document that constitutes an offering memorandum, and any amendment thereto, contains a misrepresentation as defined under applicable Canadian securities laws.

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These remedies, or notice with respect to these remedies, must be exercised or delivered, as the case may be, by the purchaser within the time limits prescribed under, and are subject to limitations and defences under, applicable Canadian securities legislation. In addition, these remedies are in addition to and without derogation from any other right or remedy available at law to the investor.

Language of Documents

Upon receipt of this document, each Canadian investor hereby confirms that it has expressly requested that all documents evidencing or relating in any way to the sale of the securities described herein (including for greater certainty any purchase confirmation or any notice) be drawn up in the English language only. *Par la réception de ce document, chaque investisseur Canadien confirme par les présentes qu'il a expressément exigé que tous les documents faisant foi ou se rapportant de quelque manière que ce soit à la vente des valeurs mobilières décrites aux présentes (incluant, pour plus de certitude, toute confirmation d'achat ou tout avis) soient rédigés en anglais seulement.*

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, which is referred to as the Relevant Implementation Date, no offer of any securities which are the subject of the offering contemplated by this prospectus supplement has been or will be made to the public in that Relevant Member State other than any offer where a prospectus has been or will be published in relation to such securities that has been approved by the competent authority in that Relevant Member State or, where appropriate, approved in another Relevant Member State and notified to the relevant competent authority in that Relevant Member State in accordance with the Prospectus Directive, except that with effect from and including the Relevant Implementation Date, an offer of such securities may be made to the public in that Relevant Member State:

- 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 representative of the underwriters for any such offer; or
- c) to any other circumstances falling within Article 3(2) of the Prospectus Directive, provided that no such offer of securities shall require the Company or any of the underwriters to publish a prospectus pursuant to Article 3 of the Prospectus Directive or supplement a prospectus pursuant to Article 16 of the Prospectus Directive.

For the purposes of this provision, the expression an offer to the public in relation to any securities 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 securities to be offered so as to enable an investor to decide to purchase or subscribe the securities, as the same may be varied in that Relevant Member State by any measure implementing the Prospectus Directive in that Relevant Member State and the expression Prospectus Directive means Directive 2003/71/EC (and amendments thereto, including the 2010 PD Amending Directive, to the extent implemented in the Relevant Member State), and includes any relevant implementing measure in the Relevant Member State.

Hong Kong

No securities have been offered or sold, and no securities may be offered or sold, in Hong Kong, by means of any document, other than to persons whose ordinary business is to buy or sell shares or debentures, whether as principal or agent; or to professional investors as defined in the Securities and Futures Ordinance (Cap. 571) of Hong Kong and any rules made under that Ordinance; or in other circumstances which do not result in the document being a prospectus as defined in the Companies

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Ordinance (Cap. 32) of Hong Kong or which do not constitute an offer to the public within the meaning of the Companies Ordinance (Cap. 32) of Hong Kong. No document, invitation or advertisement relating to the securities has been issued or may be issued or may be in the possession of any person for the purpose of issue (in each case 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 under the securities laws of Hong Kong) other than with respect to securities 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 (Cap. 571) of Hong Kong and any rules made under that Ordinance.

This prospectus supplement has not been registered with the Registrar of Companies in Hong Kong. Accordingly, this prospectus supplement may not be issued, circulated or distributed in Hong Kong, and the securities may not be offered for subscription to members of the public in Hong Kong. Each person acquiring the securities will be required, and is deemed by the acquisition of the securities, to confirm that he is aware of the restriction on offers of the securities described in this prospectus supplement and the relevant offering documents and that he is not acquiring, and has not been offered any securities in circumstances that contravene any such restrictions.

Israel

In the State of Israel this prospectus supplement shall not be regarded as an offer to the public to purchase shares of common stock under the Israeli Securities Law, 5728-1968, which requires a prospectus to be published and authorized by the Israel Securities Authority, if it complies with certain provisions of Section 15 of the Israeli Securities Law, 5728-1968, including, inter alia, if: (i) the offer is made, distributed or directed to not more than 35 investors, subject to certain conditions (the Addressed Investors); or (ii) the offer is made, distributed or directed to certain qualified investors defined in the First Addendum of the Israeli Securities Law, 5728-1968, subject to certain conditions (the Qualified Investors). The Qualified Investors shall not be taken into account in the count of the Addressed Investors and may be offered to purchase securities in addition to the 35 Addressed Investors. The Company has not and will not take any action that would require it to publish a prospectus in accordance with and subject to the Israeli Securities Law, 5728-1968. The Company and the underwriters have not and will not distribute this prospectus supplement or make, distribute or direct an offer to subscribe for our common stock to any person within the State of Israel, other than to Qualified Investors and up to 35 Addressed Investors.

Qualified Investors may have to submit written evidence that they meet the definitions set out in of the First Addendum to the Israeli Securities Law, 5728-1968. In particular, we may request, as a condition to be offered common stock, that Qualified Investors will each represent, warrant and certify to us and/or to anyone acting on our behalf: (i) that it is an investor falling within one of the categories listed in the First Addendum to the Israeli Securities Law, 5728-1968; (ii) which of the categories listed in the First Addendum to the Israeli Securities Law, 5728-1968 regarding Qualified Investors is applicable to it; (iii) that it will abide by all provisions set forth in the Israeli Securities Law, 5728-1968 and the regulations promulgated thereunder in connection with the offer to be issued common stock; (iv) that the shares of common stock that it will be issued are, subject to exemptions available under the Israeli Securities Law, 5728-1968: (a) for its own account; (b) for investment purposes only; and (c) not issued with a view to resale within the State of Israel, other than in accordance with the provisions of the Israeli Securities Law, 5728-1968; and (v) that it is willing to provide further evidence of its Qualified Investor status. Addressed Investors may have to submit written evidence in respect of their identity and may have to sign and submit a declaration containing, inter alia, the Addressed Investor's name, address and passport number or Israeli identification number.

Japan

The offering has not been and will not be registered under the Financial Instruments and Exchange Law of Japan (Law No. 25 of 1948 of Japan, as amended), or FIEL, and the underwriters will not offer or sell any securities, directly or indirectly, in Japan or to, or for the benefit of, any resident of Japan (which term

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as used herein means, unless otherwise provided herein, 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 a resident of Japan, except pursuant to an exemption from the registration requirements of, and otherwise in compliance with, the FIEL and any other applicable laws, regulations and ministerial guidelines of Japan.

Singapore

This prospectus supplement has not been and will not be lodged or registered with the Monetary Authority of Singapore. Accordingly, this prospectus supplement and any other document or material in connection with the offer or sale, or the invitation for subscription or purchase of the securities may not be issued, circulated or distributed, nor may the securities be offered or sold, or be made the subject of an invitation for subscription or purchase, whether directly or indirectly, to the public or any member of the public in Singapore other than (i) to an institutional investor under Section 274 of the Securities and Futures Act, Chapter 289 of Singapore, or the SFA, (ii) to a relevant person as defined under Section 275(2), or any person pursuant to Section 275(1A) of the SFA, 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 securities are subscribed or purchased under Section 275 of the SFA by a relevant person which is:

- a) a corporation (which is not an accredited investor as defined under 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
- b) a trust (where the trustee is not an accredited investor) whose sole purpose is to hold investments and each beneficiary is an accredited investor, shares, debentures and units of shares and debentures of that corporation or the beneficiaries' rights and interest in that trust shall not be transferable for six months after that corporation or that trust has acquired the Offer Shares under Section 275 of the SFA except:
 - i. to an institutional investor under Section 274 of the SFA or to a relevant person defined in Section 275(2) of the SFA, or to any person pursuant to an offer that is made on terms that such shares, debentures and units of shares and debentures of that corporation or such rights and interest in that trust are acquired at a consideration of not less than \$200,000 (or its equivalent in a foreign currency) for each transaction, whether such amount is to be paid for in cash or by exchange of securities or other assets, and further for corporations, in accordance with the conditions, specified in Section 275 of the SFA;
 - ii. where no consideration is given for the transfer; or
 - iii. where the transfer is by operation of law.

Switzerland

The securities may not be publicly offered in Switzerland and will not be listed on the SIX Swiss Exchange, or SIX, or on any other stock exchange or regulated trading facility in Switzerland. This prospectus supplement 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 prospectus supplement nor any other offering or marketing material relating to the securities or the offering may be publicly distributed or otherwise made publicly available in Switzerland.

Neither this prospectus supplement nor any other offering or marketing material relating to the offering, the Company or the securities have been or will be filed with or approved by any Swiss regulatory authority. In particular, this prospectus supplement will not be filed with, and the offer of securities will not

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be supervised by, the Swiss Financial Market Supervisory Authority and the offer of securities has not been and will not be authorized under the Swiss Federal Act on Collective Investment Schemes, or CISA. The investor protection afforded to acquirers of interests in collective investment schemes under the CISA does not extend to acquirers of securities.

United Kingdom

This prospectus supplement is only being distributed to, and is only directed at, persons in the United Kingdom that are qualified investors within the meaning of Article 2(1)(e) of the Prospectus Directive that are also (i) investment professionals falling within Article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005, as amended, which is referred to as the Order, and/or (ii) high net worth entities falling within Article 49(2)(a) to (d) of the Order and other persons to whom it may lawfully be communicated, each such person being referred to as a relevant person.

This prospectus supplement and its contents are confidential and should not be distributed, published or reproduced (in whole or in part) or disclosed by recipients to any other persons in the United Kingdom. Any person in the United Kingdom that is not a relevant person should not act or rely on this document or any of its contents.

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MATERIAL U.S. FEDERAL INCOME TAX CONSIDERATIONS FOR NON-U.S. HOLDERS

The following is a summary of the material U.S. federal income tax consequences of the ownership and disposition of our common stock to non-U.S. holders, but does not purport to be a complete analysis of all the potential tax considerations relating thereto. This summary is based upon the provisions of the Internal Revenue Code of 1986, as amended, or the Code, Treasury regulations promulgated thereunder, administrative rulings and judicial decisions, all as of the date hereof. These authorities may be changed or subject to differing interpretations, possibly with retroactive effect, so as to result in U.S. federal income tax consequences different from those set forth below. We have not sought any ruling from the Internal Revenue Service, or the IRS, with respect to the statements made and the conclusions reached in the following summary, and there can be no assurance that the IRS will agree with such statements and conclusions.

This summary also does not address the tax considerations arising under the laws of any U.S. state or local or any non-U.S. jurisdiction, U.S. federal estate or gift tax laws, the Medicare tax on net investment income or any alternative minimum tax consequences. In addition, this discussion does not address tax considerations applicable to an investor's particular circumstances or to investors that may be subject to special tax rules, including, without limitation:

banks, insurance companies or other financial institutions;

tax-exempt organizations;

dealers in securities or currencies;

traders in securities that elect to use a mark-to-market method of accounting for their securities holdings;

persons that own, or are deemed to own, more than five percent of our capital stock;

certain former citizens or long-term residents of the United States;

persons who hold our common stock as a position in a hedging transaction, straddle, conversion transaction or other risk reduction transaction;

persons who do not hold our common stock as a capital asset within the meaning of Section 1221 of the Code (generally, for investment purposes);

S corporations, partnerships or other entities or arrangements treated as partnerships for U.S. federal income tax purposes (or investors in any such entities);

persons deemed to sell our common stock under the constructive sale provisions of the Code;

regulated investment companies or real estate investment trusts;

pension plans;

controlled foreign corporations;

passive foreign investment companies; or

persons that acquire our common stock as compensation for services.

In addition, if a partnership, including any entity or arrangement classified as a partnership for U.S. federal income tax purposes, holds our common stock, the tax treatment of a partner in such partnership generally will depend on the status of the partner and upon the activities of the partnership. Accordingly, partnerships that hold our common stock, and partners in such partnerships, should consult their tax advisors.

You are urged to consult your tax advisor with respect to the application of the U.S. federal income tax laws to your particular situation, as well as any tax consequences of the purchase,

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ownership and disposition of our common stock arising under the U.S. federal estate or gift tax rules or under the laws of any U.S. state or local or any non-U.S. or other taxing jurisdiction or under any applicable tax treaty.

Non-U.S. Holder Defined

For purposes of this discussion, you are a non-U.S. holder if you are a beneficial owner of our common stock that is for U.S. federal income tax purposes (i) a foreign corporation, (ii) a nonresident alien individual, (iii) a foreign estate, the income of which, if from sources outside the United States and not effectively connected with the conduct of a trade or business within the United States, is not subject to tax in the United States, or (iv) a trust that has not made an election to be treated as a U.S. holder under applicable Treasury regulations and that either (A) is not subject to the primary jurisdiction of a court within the United States, or (B) is not subject to the substantial control of one or more U.S. persons.

Distributions

As discussed under Dividend Policy, above, we do not anticipate paying any dividends on our capital stock in the foreseeable future. If we were to make distributions on our common stock, those payments will constitute dividends for U.S. federal income tax purposes to the extent paid from our current or accumulated earnings and profits, as determined under U.S. federal income tax principles. To the extent those distributions exceed both our current and our accumulated earnings and profits, they will constitute a return of capital and will first reduce your basis in our common stock, but not below zero, and then will be treated as gain from the sale of stock, subject to the tax treatment described in the discussion below regarding taxable dispositions of our common stock. Any such distributions would also be subject to the discussions below regarding backup withholding and FATCA.

Subject to the discussion below regarding a dividend received by you that is effectively connected with the conduct of a U.S. trade or business, a dividend paid to you generally will be subject to U.S. withholding tax either at a rate of 30% of the gross amount of the dividend or such lower rate as may be specified by an applicable income tax treaty. In order to receive a reduced treaty rate, you must provide us with a valid IRS Form W-8BEN, IRS Form W-8-BEN-E or another appropriate version of IRS Form W-8 (or a successor form), in each case, certifying qualification for the reduced rate.

Dividends received by you that are effectively connected with the conduct of a U.S. trade or business (and, if required by an applicable income tax treaty, are attributable to a permanent establishment maintained by you in the United States) generally are exempt from such withholding tax. In order to obtain this exemption, you must provide us with a valid IRS Form W-8ECI or successor form or other applicable IRS Form W-8 properly certifying such exemption. Such effectively connected dividends, although not subject to withholding tax, are taxed at the same graduated rates applicable to U.S. persons, net of certain deductions and credits, subject to an applicable income tax treaty providing otherwise. In addition, if you are a corporate non-U.S. holder, you may also be subject to a branch profits tax at a rate of 30% or such lower rate as may be specified by an applicable income tax treaty on your earnings and profits in respect of such effectively connected dividend income.

If you are eligible for a reduced rate of withholding tax pursuant to a tax treaty, you may be able to obtain a refund of any excess amounts currently withheld if you file an appropriate claim for refund with the IRS.

Gain on Sale or Other Taxable Disposition of Common Stock

Subject to the discussion below regarding backup withholding and FATCA, a non-U.S. Holder generally will not be required to pay U.S. federal income tax on any gain realized upon the sale or other taxable disposition of our common stock unless:

the gain is effectively connected with the conduct of a U.S. trade or business (and, if required by an applicable income tax treaty, the gain is attributable to a permanent establishment maintained by

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you in the U.S.), in which case you will be required to pay tax on the net gain derived from the sale under regular graduated U.S. federal income tax rates, and for a non-U.S. holder that is a corporation, such non-U.S. holder may be subject to the branch profits tax on any earnings and profits attributable to such gains at a 30% rate or such lower rate as may be specified by an applicable income tax treaty;

you are an individual who is present in the United States for a period or periods aggregating 183 days or more during the taxable year in which the sale or disposition occurs and certain other conditions are met, in which case you will be required to pay a flat 30% tax on the gain derived from the sale, which tax may be offset by certain U.S. source capital losses in the taxable year of disposition (even though you are not considered a resident of the United States) (subject to applicable income tax or other treaties); or

our common stock constitutes a U.S. real property interest by reason of our status as a U.S. real property holding corporation for U.S. federal income tax purposes, or a USRPHC, at any time within the shorter of the five-year period preceding the disposition or your holding period for our common stock. We believe that we are not currently and will not become a USRPHC. However, because the determination of whether we are a USRPHC depends on the fair market value of our U.S. real property relative to the fair market value of our other real property and business assets, there can be no assurance that we will not become a USRPHC in the future. Even if we become a USRPHC, however, as long as our common stock is regularly traded on an established securities market (as determined under the Code), such common stock will be treated as U.S. real property interests only if you actually or constructively hold more than five percent of such regularly traded common stock at any time during the applicable period that is specified in the Code.

Backup Withholding and Information Reporting

Generally, we must report annually to the IRS the amount of dividends paid to you, your name and address and the amount of tax withheld, if any. A similar report will generally be sent to you. Pursuant to applicable income tax treaties or other agreements, the IRS may make these reports available to tax authorities in your country of residence.

Payments of dividends or of proceeds on the disposition of stock made to you may be subject to additional information reporting and backup withholding at the then-applicable rate (currently 24%) unless you establish an exemption, for example by properly certifying your non-U.S. status on an IRS Form W-8BEN, IRS Form W-8BEN-E or another appropriate version of IRS Form W-8 (or a successor form). Notwithstanding the foregoing, backup withholding and information reporting may apply if either we or our paying agent has actual knowledge, or reason to know, that you are a U.S. person.

Backup withholding is not an additional tax; rather, the U.S. income tax liability of persons subject to backup withholding will be reduced by the amount of tax withheld. If withholding results in an overpayment of taxes, a refund or credit may generally be obtained from the IRS, provided that the required information is furnished to the IRS in a timely manner.

Foreign Account Tax Compliance Act (FATCA)

Provisions commonly referred to as FATCA may impose withholding tax on certain types of payments made to foreign financial institutions and certain other non-U.S. entities. The legislation imposes a 30% withholding tax on dividends on, or gross proceeds from the sale or other disposition of, our common stock paid to a foreign financial institution or to certain non-financial foreign entities, unless (i) the foreign financial institution undertakes certain diligence and reporting obligations, (ii) the non-financial foreign entity either certifies it does not have any substantial U.S. owners or furnishes identifying information regarding each substantial U.S. owner and such entity meets certain other specified requirements, or (iii) the foreign financial institution or non-financial foreign entity otherwise qualifies for an exemption from these rules. If the payee is a foreign financial institution and is subject to the

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requirements in (i) above, it must enter into an agreement with the U.S. Treasury requiring, among other things, that it undertake to identify accounts held by certain U.S. persons or U.S.-owned foreign entities, annually report certain information about such accounts and withhold 30% on payments to account holders whose actions prevent it from complying with these reporting and other requirements. If the country in which a payee is resident has entered into an intergovernmental agreement with the United States regarding FATCA, that agreement may permit the payee to report to that country rather than to the U.S. Treasury. Under final regulations and published guidance, the obligation to withhold from payments made to a foreign financial institution or a foreign non-financial entity under FATCA with respect to dividends on our common stock are currently in effect, but with respect to the gross proceeds of a sale or other disposition of our common stock will not begin until January 1, 2019. Prospective investors should consult their tax advisors regarding FATCA.

THE PRECEDING DISCUSSION OF U.S. FEDERAL INCOME TAX CONSIDERATIONS IS FOR GENERAL INFORMATION ONLY. IT IS NOT TAX ADVICE. EACH PROSPECTIVE INVESTOR SHOULD CONSULT ITS OWN TAX ADVISOR REGARDING THE PARTICULAR U.S. FEDERAL, STATE AND LOCAL AND NON-U.S. TAX CONSEQUENCES OF PURCHASING, HOLDING AND DISPOSING OF OUR COMMON STOCK, INCLUDING ANY TAX REFORM PROPOSALS PENDING IN THE U.S. CONGRESS.

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LEGAL MATTERS

Certain legal matters with respect to the securities offered by this prospectus supplement will be passed upon for us by Goodwin Procter LLP, San Francisco, California. Certain legal matters will be passed upon for the underwriters by Cooley LLP, San Diego, California.

EXPERTS

The consolidated financial statements of Global Blood Therapeutics, Inc. as of December 31, 2017 and 2016, and for each of the years in the three-year period ended December 31, 2017, and management's assessment of the effectiveness of internal control over financial reporting as of December 31, 2017, have been incorporated by reference herein in reliance upon the reports of KPMG LLP, independent registered public accounting firm, incorporated by reference herein, and upon the authority of said firm as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

We have filed with the SEC a registration statement on Form S-3 under the Securities Act with respect to the common stock offered by this prospectus supplement. This prospectus supplement, filed as part of the registration statement, does not contain all the information set forth in the registration statement and its exhibits and schedules, portions of which have been omitted as permitted by the rules and regulations of the SEC. For further information about us, we refer you to the registration statement and to its exhibits and schedules.

Statements contained in this prospectus supplement or the accompanying prospectus concerning the contents of any contract or any other document are not necessarily complete. If a contract or document has been filed as an exhibit to the registration statement, we refer you to the copy of the contract or document that has been filed. Each statement in this prospectus supplement or the accompanying prospectus relating to a contract or document filed as an exhibit is qualified in all respects by the filed exhibit. The reports and other information we file with the SEC can be read and copied at the SEC's Public Reference Room at 100 F Street, NE, Washington D.C. 20549. You may obtain information regarding the operation of the Public Reference Room by calling 1(800) SEC-0330. The SEC also maintains a website (www.sec.gov) that contains reports, proxy and information statements and other information regarding issuers like us that file electronically with the SEC.

We are subject to the reporting and information requirements of the Exchange Act and, as a result, we file periodic reports, proxy statements and other information with the SEC. These periodic reports, proxy statements and other information will be available for inspection and copying at the SEC's public reference room and the website of the SEC referred to above. Copies of certain information filed by us with the SEC are also available on our website at www.gbt.com. Information contained on our website is not incorporated by reference into this prospectus supplement or the accompanying prospectus and, therefore, is not part of this prospectus supplement or the accompanying prospectus.

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INCORPORATION BY REFERENCE

The SEC allows us to incorporate by reference the information and reports we file with it, which means that we can disclose important information to you by referring you to these documents. The information incorporated by reference is an important part of this prospectus supplement and the accompanying prospectus, and information that we file later with the SEC will automatically update and supersede the information already incorporated by reference. We are incorporating by reference the documents listed below, which we have already filed with the SEC, and any future filings we make with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act, including all filings made after the date of the filing of this prospectus supplement, except as to any portion of any future report or document that is not deemed filed under such provisions, after the date of this prospectus supplement and prior to the termination of this offering:

Annual Report on Form 10-K for the year ended December 31, 2017, filed with the SEC on February 27, 2018;

The information specifically incorporated by reference into our Annual Report on Form 10-K for the year ended December 31, 2017 from our definitive proxy statement on Schedule 14A (other than information furnished rather than filed), which was filed with the SEC on April 26, 2018;

Quarterly Reports on Form 10-Q for the quarters ended March 31, 2018, June 30, 2018 and September 30, 2018, filed with the SEC on May 7, 2018, August 2, 2018 and November 6, 2018, respectively;

Current Reports on Form 8-K filed with the SEC on January 9, 2018, March 12, 2018, June 15, 2018, June 26, 2018, June 27, 2018, August 23, 2018, August 30, 2018 and December 3, 2018 (with respect to Items 8.01 and 9.01 only); and

The description of our common stock contained in our registration statement on Form 8-A (File No. 001-37539) filed with the SEC on August 11, 2015 under Section 12(b) of the Exchange Act, including any amendments or reports filed for the purpose of updating such description.

Upon request, we will provide, without charge, to each person, including any beneficial owner, to whom a copy of this prospectus supplement and the accompanying prospectus is delivered, a copy of the documents incorporated by reference but not delivered herewith. You may request a copy of these filings, and any exhibits we have specifically incorporated by reference in this prospectus supplement, the accompanying prospectus or the related registration statement on Form S-3, at no cost by writing us at: Global Blood Therapeutics, Inc., 171 Oyster Point Blvd., Suite 300, South San Francisco, California 94080, Attention: Secretary; or by calling us at: (650) 741-7700.

You may also access these documents, free of charge on the SEC's website at www.sec.gov or on our website at www.gbt.com. Information contained on our website is not incorporated by reference into this prospectus, and you should not consider any information on, or that can be accessed from, our website as part of this prospectus supplement or the accompanying prospectus, unless specifically incorporated by reference herein.

This prospectus supplement is part of a registration statement on Form S-3 we filed with the SEC. We have incorporated exhibits into this registration statement. You should read the exhibits carefully for provisions that may be important to you.

You should rely only on the information incorporated by reference or provided in this prospectus supplement or the accompanying prospectus. We have not authorized anyone to provide you with different information. We are not making an offer of these securities in any state where the offer is not permitted. You should not assume that the information in this prospectus supplement, the accompanying prospectus or in the documents incorporated by reference is accurate as of any date other than the date on the front of this prospectus supplement or those documents.

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PROSPECTUS

Common Stock

Preferred Stock

Debt Securities

Warrants

Units

We may from time to time issue, in one or more series or classes, our common stock, preferred stock, debt securities, warrants and/or units. We may offer these securities separately or together in units. We will specify in the accompanying prospectus supplement the terms of the securities being offered. We may sell these securities to or through underwriters and also to other purchasers or through agents. We will set forth the names of any underwriters or agents, and any fees, conversions or discount arrangements, in the accompanying prospectus supplement. We may not sell any securities under this prospectus without delivery of the applicable prospectus supplement.

You should read this document and any prospectus supplement or amendment carefully before you invest in our securities.

Our common stock is listed on The NASDAQ Global Select Market under the symbol GBT. On August 21, 2017, the closing price for our common stock, as reported on The NASDAQ Global Select Market, was \$26.80 per share. Our principal executive office is located at 400 East Jamie Court, Suite 101, South San Francisco, California 94080.

Investing in our securities involves a high degree of risk. You should review carefully the risks and uncertainties referenced under the heading Risk Factors contained in this prospectus beginning on page 2 and any applicable prospectus supplement, and under similar headings in the other documents that are incorporated by reference into this prospectus.

This prospectus may not be used to offer or sell securities unless accompanied by a prospectus supplement.

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.

The date of this Prospectus is August 23, 2017.

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