

SUBJECT TO COMPLETION, DATED NOVEMBER 21, 2024**PRELIMINARY PROSPECTUS SUPPLEMENT**

(To Prospectus dated November 13, 2023)



**Shares of Common Stock, Pre-Funded Warrants
to Purchase Shares of Common Stock, and Warrants
to Purchase Shares of Common Stock**

We are offering (i) _____ shares of our common stock and accompanying warrants to purchase _____ shares of our common stock and (ii) in lieu thereof to certain investors that so choose, pre-funded warrants to purchase _____ shares of our common stock, and accompanying warrants to purchase _____ shares of our common stock. The common stock, or pre-funded warrants, as applicable, and the accompanying warrants will be sold in combination, with each share of common stock, or pre-funded warrant to purchase one share of common stock, as applicable, accompanied by a warrant to purchase one share of our common stock. The combined purchase price for each share of common stock and accompanying warrant is \$ _____. The combined purchase price for each pre-funded warrant to purchase one share of common stock and accompanying warrant is \$ _____ per share underlying the pre-funded warrant, which is equal to the purchase price for each share of common stock being sold in this offering, minus \$0.001, which is the pre-funded warrant's exercise price per share.

The pre-funded warrants will have an exercise price of \$0.001 per share of common stock and will be exercisable at any time after the date of issuance of such pre-funded warrants, subject to certain ownership limitations. Each accompanying warrant will have an exercise price of \$ _____ per share of common stock, will be exercisable at any time after the date of issuance of such warrant, subject to certain ownership limitations, and will expire five years from the date of issuance.

The shares of common stock, or pre-funded warrants, as applicable, and the accompanying warrants are immediately separable and will be issued separately, but must be purchased together in this offering. This prospectus supplement also relates to the offering of the shares of our common stock issuable upon the exercise of the pre-funded warrants and accompanying warrants.

Our common stock is listed on The Nasdaq Capital Market under the symbol "BTAI." On November 20, 2024, the last reported sale price of our common stock on The Nasdaq Capital Market was \$0.588 per share. There is no established trading market for the pre-funded warrants or the accompanying warrants, and we do not expect a market to develop. In addition, we do not intend to list the pre-funded warrants or the accompanying warrants on any securities exchange or automated quotation system.

We are a smaller reporting company as defined in Rule 12b-2 promulgated under the Securities Exchange Act of 1934, as amended. As such, we have elected to rely on certain reduced public company disclosure requirements. See the section entitled "Summary — Implications of Being a Smaller Reporting Company" in this prospectus supplement.

INVESTING IN OUR SECURITIES INVOLVES RISKS. SEE "RISK FACTORS" ON PAGE S-11 OF THIS PROSPECTUS SUPPLEMENT, ON PAGE 5 OF THE ACCOMPANYING BASE PROSPECTUS AND OUR FILINGS WITH THE SECURITIES AND EXCHANGE COMMISSION (THE "SEC") THAT ARE INCORPORATED BY REFERENCE HEREIN AND THEREIN TO READ ABOUT FACTORS YOU SHOULD CONSIDER BEFORE INVESTING IN OUR SECURITIES.

	PER SHARE AND ACCOMPANYING WARRANT	PER PRE-FUNDED WARRANT AND ACCOMPANYING WARRANT	TOTAL
Public offering price	\$	\$	\$
Underwriting discounts and commissions ⁽¹⁾	\$	\$	\$
Proceeds, before expenses, to us	\$	\$	\$

(1) See "Underwriting" for additional information regarding compensation payable to the underwriter.

The underwriter expects to deliver the shares of common stock, or pre-funded warrants to purchase common stock, as applicable, and the accompanying warrants on or about _____, 2024.

Neither the SEC nor any state securities commission has approved or disapproved of these securities or passed upon the adequacy or accuracy of this prospectus supplement or the accompanying base prospectus. Any representation to the contrary is a criminal offense.

Canaccord Genuity

The date of this prospectus supplement is _____, 2024.

The information in this preliminary prospectus supplement and the accompanying registration statement under the Securities Act of 1933, as amended, is not complete and may be changed. A registration statement relating to these securities is effective. This preliminary prospectus supplement and the accompanying base prospectus are not an offer to sell these securities and we are not soliciting an offer to buy these securities in any jurisdiction where the offer or sale is not permitted.

Table of Contents

Prospectus Supplement

	<u>Page</u>
<u>ABOUT THIS PROSPECTUS SUPPLEMENT</u>	<u>S-1</u>
<u>WHERE YOU CAN FIND MORE INFORMATION; INCORPORATION BY REFERENCE</u>	<u>S-2</u>
<u>SUMMARY</u>	<u>S-4</u>
<u>THE OFFERING</u>	<u>S-9</u>
<u>RISK FACTORS</u>	<u>S-11</u>
<u>CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS</u>	<u>S-14</u>
<u>USE OF PROCEEDS</u>	<u>S-16</u>
<u>DIVIDEND POLICY</u>	<u>S-17</u>
<u>DILUTION</u>	<u>S-18</u>
<u>DESCRIPTION OF THE SECURITIES WE ARE OFFERING</u>	<u>S-19</u>
<u>MATERIAL U.S. FEDERAL INCOME TAX CONSEQUENCES</u>	<u>S-22</u>
<u>UNDERWRITING</u>	<u>S-30</u>
<u>LEGAL MATTERS</u>	<u>S-34</u>
<u>EXPERTS</u>	<u>S-34</u>
	<u>Page</u>
<u>ABOUT THIS PROSPECTUS</u>	<u>1</u>
<u>WHERE YOU CAN FIND MORE INFORMATION; INCORPORATION BY REFERENCE</u>	<u>2</u>
<u>THE COMPANY</u>	<u>4</u>
<u>RISK FACTORS</u>	<u>5</u>
<u>USE OF PROCEEDS</u>	<u>6</u>
<u>DESCRIPTION OF CAPITAL STOCK</u>	<u>7</u>
<u>DESCRIPTION OF DEBT SECURITIES</u>	<u>10</u>
<u>DESCRIPTION OF WARRANTS</u>	<u>17</u>
<u>DESCRIPTION OF UNITS</u>	<u>18</u>
<u>GLOBAL SECURITIES</u>	<u>19</u>
<u>PLAN OF DISTRIBUTION</u>	<u>23</u>
<u>LEGAL MATTERS</u>	<u>25</u>
<u>EXPERTS</u>	<u>25</u>

ABOUT THIS PROSPECTUS SUPPLEMENT

This prospectus supplement is part of a registration statement that we have filed with the SEC utilizing a “shelf” registration process, and relates to the offering of our common stock, pre-funded warrants to purchase our common stock and accompanying warrants to purchase our common stock. Before buying any of the securities that we are offering, we urge you to carefully read this prospectus supplement, the accompanying base prospectus and all of the information incorporated by reference herein and therein, as well as the additional information described under the heading “Where You Can Find More Information; Incorporation by Reference” in this prospectus supplement. These documents contain important information that you should consider when making your investment decision.

We provide information to you about this offering of our securities in two separate documents that are bound together: (1) this prospectus supplement, which describes the specific details regarding this offering; and (2) the accompanying base prospectus, which provides general information, some of which may not apply to this offering. Generally, when we refer to this “prospectus,” we are referring to both documents combined. If information in this prospectus supplement is inconsistent with the accompanying base prospectus, you should rely on this prospectus supplement. To the extent there is a conflict between the information contained in this prospectus supplement, on the one hand, and the information contained in any document incorporated by reference in this prospectus supplement, on the other hand, you should rely on the information in this prospectus supplement. If any statement in one of these documents is inconsistent with a statement in another document having a later date — for example, a document incorporated by reference in this prospectus supplement — the statement in the document having the later date modifies or supersedes the earlier statement.

You should rely only on the information contained in or incorporated by reference in this prospectus supplement, the accompanying base prospectus and any free writing prospectus that we may authorize for use in connection with this offering. Neither we nor the underwriter have authorized anyone to provide you with different information. If anyone provides you with different or inconsistent information, you should not rely on it. Neither we nor the underwriter are making an offer to sell these securities in any jurisdiction where the offer or sale is not permitted or in which the person making that offer or solicitation is not qualified to do so or to anyone to whom it is unlawful to make an offer or solicitation. You should assume that the information appearing in this prospectus supplement, the accompanying base prospectus, the documents incorporated by reference herein and therein and any free writing prospectus that we have authorized for use in connection with this offering, is accurate only as of the date of those respective documents. Our business, financial condition, results of operations and prospects may have changed since those dates. You should read this prospectus supplement, the accompanying base prospectus, the documents incorporated by reference herein and therein and any free writing prospectus that we have authorized for use in connection with this offering, in their entirety before making an investment decision.

When we refer to “BTI,” “we,” “our,” “us” or the “Company” in this prospectus supplement, we mean BioXcel Therapeutics, Inc., unless otherwise specified.

We have proprietary rights to a number of trademarks used in this prospectus supplement that are important to our business, including the BTI logo. Solely for convenience, the trademarks and trade names in this prospectus supplement are referred to without the ® and TM symbols, but such references should not be construed as any indicator that their respective owners will not assert, to the fullest extent under applicable law, their rights thereto. All other trademarks, trade names and service marks appearing in this prospectus supplement are the property of their respective owners.

WHERE YOU CAN FIND MORE INFORMATION; INCORPORATION BY REFERENCE

Available Information

We are subject to the information and periodic reporting requirements of the Securities Exchange Act of 1934, as amended (the “Exchange Act”) and, in accordance therewith, file reports, proxy statements and other information with the SEC. The SEC maintains a web site that contains reports, proxy and information statements and other information about issuers, such as us, who file electronically with the SEC. The address of that website is www.sec.gov.

Copies of certain information filed by us with the SEC are also available on our web site. Our web site address is www.bioxceltherapeutics.com. The information on our website is not a part of, and should not be construed as being incorporated by reference into, this prospectus supplement.

This prospectus supplement and the accompanying base prospectus are part of a registration statement that we filed with the SEC and do not contain all of the information included in the registration statement. The full registration statement may be obtained from the SEC or us, as provided below. You should review the information and exhibits in the registration statement for further information about us and the securities we are offering. Statements in this prospectus supplement or the accompanying base prospectus about any document we filed as an exhibit to the registration statement or that we have otherwise filed with the SEC are summaries and each statement is qualified in all respects by reference to the document to which it refers. You should refer to the actual documents for a more complete description of the relevant matters. You may inspect a copy of the registration statement through the SEC’s website, as provided above.

Incorporation by Reference

The SEC’s rules allow us to “incorporate by reference” information in this prospectus supplement, which means that we can disclose important information to you by referring you to another document filed separately with the SEC. The information incorporated by reference herein is deemed to be part of this prospectus supplement and the accompanying base prospectus, and subsequent information that we file with the SEC will automatically update and supersede that information. Any statement contained in a previously filed document incorporated by reference will be deemed to be modified or superseded for purposes of this prospectus supplement to the extent that a statement contained in this prospectus supplement modifies or replaces that statement.

We incorporate by reference our documents listed below and any future filings made by us with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act between the date of this prospectus supplement and the termination or completion of the offering of the securities described in this prospectus supplement. We are not, however, incorporating by reference any documents or portions thereof, whether specifically listed below or filed in the future, that are not deemed “filed” with the SEC, including any information furnished pursuant to Items 2.02 or 7.01 of Form 8-K or related exhibits furnished pursuant to Item 9.01 of Form 8-K.

This prospectus supplement incorporates by reference the documents set forth below that have previously been filed with the SEC:

- [Our Annual Report on Form 10-K for the fiscal year ended December 31, 2023, filed with the SEC on March 22, 2024.](#)
- The information specifically incorporated by reference into our [Annual Report on Form 10-K for the year ended December 31, 2023](#) from our [definitive proxy statement for the 2024 Annual Meeting of Stockholders filed on April 29, 2024.](#)
- Our Quarterly Reports on Form 10-Q for the quarters ended March 31, 2024, June 30, 2024 and September 30, 2024, filed with the SEC on [May 9, 2024](#), [August 6, 2024](#) and [November 14, 2024](#), respectively.
- Our Current Reports on Form 8-K, filed with the SEC on [February 8, 2024](#), [February 12, 2024](#), [March 25, 2024](#), [April 10, 2024](#), [April 22, 2024](#), [June 12, 2024](#), [June 25, 2024](#), [July 17, 2024](#), [September 5, 2024](#), [September 9, 2024](#), [September 19, 2024](#), [September 20, 2024](#), [October 9, 2024](#) and

November 21, 2024 (except, in each case, for any portions of such Current Reports on Form 8-K furnished pursuant to Item 2.02 and/or Item 7.01 thereof and any corresponding exhibits thereto not filed with the SEC).

- The description of our common stock contained in our Registration Statement on [Form 8-A, filed with the SEC on March 5, 2018](#), as updated by “Description of the Registrant’s Securities Registered under Section 12 of the Exchange Act” filed as [Exhibit 4.1](#) to our Annual Report on Form 10-K for the fiscal year ended December 31, 2023, and any amendment or report filed with the SEC for the purpose of updating such description.

You may request, and we will provide you with, a copy of these filings, at no cost, by calling us at (475) 238-6837 or by writing to us at the following address:

BioXcel Therapeutics, Inc.
555 Long Wharf Drive
New Haven, Connecticut 06511
Attn.: Secretary

Exhibits to the filings will not be sent, however, unless those exhibits have specifically been incorporated by reference in this prospectus supplement.

SUMMARY

This summary highlights selected information contained elsewhere in this prospectus supplement and the accompanying base prospectus and in the documents we incorporate by reference herein and therein. This summary does not contain all of the information you should consider before investing in our securities. You should read this entire prospectus supplement and the accompanying base prospectus carefully, especially the risks of investing in our common stock, pre-funded warrants and accompanying warrants discussed under “Risk Factors” beginning on page S-11 of this prospectus supplement and page 5 of the accompanying base prospectus, along with our financial statements and notes to those financial statements and the other information incorporated by reference in this prospectus supplement and the accompanying base prospectus.

Overview of the Company

We are a biopharmaceutical company utilizing artificial intelligence (“AI”) to develop transformative medicines in neuroscience and, through our wholly owned subsidiary, OnkosXcel Therapeutics, LLC (“OnkosXcel”), immuno-oncology. We are focused on utilizing cutting-edge technology and innovative research to develop high-value therapeutics aimed at transforming patients’ lives. We employ various AI platforms to reduce therapeutic development costs and potentially accelerate development timelines. Our approach leverages existing approved drugs and/or clinically evaluated product candidates together with big data and proprietary machine learning algorithms to identify new therapeutic indications. We believe this differentiated approach has the potential to reduce the expense and time associated with drug development in diseases with substantial unmet medical needs.

On April 6, 2022, we announced that the United States Food and Drug Administration (“FDA”) approved IGALMI™ (dexmedetomidine), or “Dex,” sublingual film for the acute treatment of agitation associated with schizophrenia or bipolar I or II disorder in adults. IGALMI™ is approved to be self-administered by patients under the supervision of a health care provider. On July 6, 2022, we announced that IGALMI™ was commercially available in doses of 120 and 180 micrograms.

On September 5, 2024, we announced the initiation of patient enrollment in our SERENITY At-Home trial, and also on September 5, 2024, we submitted to the FDA the proposed protocol for our TRANQUILITY In-Care Phase 3 trial designed to evaluate the efficacy and safety of a 60 mcg dose of BXCL501 for agitation associated with Alzheimer’s dementia.

On October 15, 2024, we announced a U.S. Department of Defense grant to the University of North Carolina to fund a study of BXCL501 (Sublingual Dexmedetomidine) for treating Acute Stress Disorder (ASD).

Our most advanced clinical development program is BXCL501. In indications other than those approved by the FDA as IGALMI™, BXCL501 is an investigational, proprietary, orally dissolving film formulation of Dex in development for the treatment of agitation associated with psychiatric and neurological disorders.

Our most advanced immuno-oncology candidate, BXCL701, is an investigational, orally administered systemic innate immune activator for the treatment of a rare form of prostate cancer and advanced solid tumors that are refractory or treatment naïve to checkpoint inhibitors.

Our Corporate Information

We were originally incorporated on March 29, 2017, and filed a certificate of amendment to our amended and restated certificate of incorporation with the Secretary of State of Delaware on June 10, 2024. Our principal executive offices are located at 555 Long Wharf Drive, New Haven, Connecticut 06511, and our telephone number is (475) 238-6837. Our website address is www.bioxceltherapeutics.com. The information contained in, or accessible through, our website does not constitute a part of this prospectus.

Recent Developments

Credit Agreement Amendment

On November 21, 2024, the Company entered into the Fifth Amendment to Credit Agreement and Guaranty and First Amendment to Fourth Amendment to Credit Agreement and Guaranty (the “Fifth

Amendment”), which amended the Credit Agreement and Guaranty, dated April 19, 2022, by and among the Company, as the borrower, certain subsidiaries of the Company from time to time party thereto as subsidiary guarantors, the lenders party thereto (the “Lenders”), and Oaktree Fund Administration LLC (“OFA”) as administrative agent (as amended by the Waiver and First Amendment to Credit Agreement and Guaranty, dated as of November 13, 2023, the Second Amendment to Credit Agreement and Guaranty and Termination of Revenue Interest Financing Agreement, dated as of December 5, 2023, the Third Amendment to Credit Agreement, dated as of February 12, 2024, and the Fourth Amendment to Credit Agreement and Guaranty, dated as of March 20, 2024 (the “Fourth Amendment”), the “Existing Credit Agreement”).

Pursuant to the Fifth Amendment, the Lenders agreed to, among other things, (i) waive the Credit Agreement’s covenant that the report and opinion the Company will receive from its independent registered public accounting firm with respect to the financial statements for the year ending December 31, 2024 will not contain a “going concern” or similar qualification, (ii) permanently waive the Credit Agreement’s minimum revenue covenant, and (iii) waive the Fourth Amendment’s requirement that the Company raise, after the effective date of the Fourth Amendment and on or before November 30, 2024, at least \$50.0 million in gross cash proceeds from the issuance of its common stock, warrants, and/or pre-funded warrants, and/or in cash and/or non-cash consideration from newly entered-into partnering transactions.

The Fifth Amendment includes a new capital raising covenant requiring that the Company receive (A) after the effective date of the Fifth Amendment and on or prior to November 27, 2024, at least \$7.0 million in gross cash proceeds from the issuance of the Company’s common stock, warrants and/or pre-funded warrants (“Raise 1”), (B) after the effective date of the Fifth Amendment and on or before March 15, 2025 (provided that the Company will use its commercially reasonable efforts to satisfy the requirement by February 15, 2025), at least \$18.0 million in net cash proceeds (including the proceeds of Raise 1) from (i) the issuance of the Company’s common stock, warrants and/or pre-funded warrants, (ii) non-refundable cash consideration from partnering transactions entered into after the effective date of the Fifth Amendment (so long as such partnering transactions would not require the Company or any of its subsidiaries to make any cash investments in connection with the partnering transactions and no such cash investments are made), (iii) the issuance of the Company’s subordinated debt (subject to terms set forth in the Fifth Amendment), and/or (iv) asset sales permitted pursuant to the Credit Agreement or consented to by the Lenders (such capital raise, “Raise 2”), and (C) after the effective date of the Fifth Amendment and on or prior to the earlier of (x) August 15, 2025 and (y) the date that is 30 days after the final data readout of the SERENITY At-Home Phase 3 trial, at least \$29.0 million in net cash proceeds (including the proceeds from Raise 1 and Raise 2) from the same permitted capital raising activities listed in the preceding clause (B).

In connection with the Fifth Amendment and the required capital raises described in the preceding paragraph, the Lenders agreed to modify the Credit Agreement’s minimum liquidity covenant to require minimum cash liquidity of \$7.5 million (instead of \$25.0 million) from and after the closing of Raise 1 until March 30, 2025. On March 31, 2025, the minimum liquidity amount will increase to \$10.0 million, and on September 30, 2025, the minimum liquidity amount will further increase to \$15.0 million.

In connection with the Fifth Amendment, on or prior to December 31, 2024, the Company is required to make a one-time amortization payment of \$2.5 million principal amount, together with accrued and unpaid interest and a portion of the prepayment fee and other fees payable.

The Fifth Amendment also modifies the interest rate of the loans provided under the Credit Agreement from a floating rate of Term SOFR plus 7.50% per annum, to a fixed rate of 13% per annum, retroactive to and effective as of September 30, 2024. For the quarterly payment dates ending December 31, 2024, March 31, 2025, and June 30, 2025, the Company will have the ability to make interest payments of up to 10% per annum “in-kind” by capitalizing and adding such interest to the outstanding principal amount of the loans under the Credit Agreement. In addition, pursuant to the Fifth Amendment, the Company will be required to make quarterly amortization payments equal to 5.0% of the principal amount of funded loans, together with applicable prepayment fees, beginning on March 31, 2026.

On the effective date of the Fifth Amendment and as a condition to effectiveness thereof, the Company’s wholly owned subsidiaries OnkosXcel Therapeutics, LLC and OnkosXcel Employee Holdings, LLC

(collectively, “OnkosXcel”), which previously provided unsecured guarantees of the Company’s obligations under the Credit Agreement, granted security interests in substantially all of their assets to support such obligations.

The Fifth Amendment amends the negative covenants under the Credit Agreement to remove flexibility the Company and its subsidiaries previously had thereunder to undertake various transactions, including, without limitation, with respect to potential dispositions of OnkosXcel or out-licenses by OnkosXcel of its intellectual property.

Pursuant to the Fifth Amendment, the Company committed to appoint a new independent board director (subject to customary background checks, applicable law, confirmation of independence and Nasdaq rules), and to provide the independent director with various privileges and committee memberships on the board of directors of the Company (including the appointment of such director on committee to be formed to focus on capital raising and evaluate strategic options). The Company also agreed to engage an investment banker reasonably acceptable to OFA and the Lenders to assist the Company and its board of directors with evaluating and exploring strategic options.

The Company also agreed to covenants requiring that the Company’s cash expenditures be monitored by the Lenders according to a board-approved budget provided to the Lenders prior to the signing of the Fifth Amendment, which cash budget will be updated on a bi-weekly basis going forward. The Company will not be permitted to make disbursements for any two-week period in excess of 115% of the aggregate budgeted amount of disbursements for the applicable period. Finally, pursuant to the Fifth Amendment, the Company is restricted from paying cash bonuses its employees or executives during the fiscal years 2024 and 2025 without OFA’s consent or increasing the cash compensation for fiscal year 2025 for certain senior officers of the Company from their compensation for fiscal year 2024.

Company Warrants and Registration Rights Agreement

In connection with the closing of the Fifth Amendment, the Company agreed to, substantially concurrently with the closing of Raise 1, grant new warrants to the Lenders to purchase 5.0 million shares of common stock of the Company, at an exercise price of \$0.01 per share (the “New Warrants”). The New Warrants will expire on the seventh anniversary of their issuance.

In addition, the Company agreed to, substantially concurrently with the closing of Raise 1, amend and restate all warrants to purchase stock of the Company issued to the Lenders prior to the effective date of the Fifth Amendment, to revise the exercise price thereunder to an exercise price equal to the lower of (i) the price per share of the common stock of the Company issued in Raise 1 and (ii) arithmetic average of the volume-weighted average price of the Company’s common stock on the Nasdaq Capital Market during the 30 trading days preceding Raise 1 (such existing warrants, as amended and restated, the “Original Warrants”). The Original Warrants provide the Lenders with the right to purchase a total of 448,150 shares of common stock of the Company.

On the date of issuance of the New Warrants, the Company agreed to amend and restate its Second Amended and Restated Registration Rights Agreement with the Lenders, dated March 20, 2024. Pursuant to such amendment and restatement, the Company will agree to register the shares of common stock issuable under the New Warrants, in addition to all Original Warrants, for resale.

Warrant Exercise Price Adjustment

We expect to amend the terms of certain outstanding warrants to purchase up to an aggregate of 8,545,398 shares of common stock with an exercise price of \$3.20 per warrant. Under the amended terms, the exercise price of such warrants will be equal to the lower of: (i) the closing price on November 21, 2024 or (ii) the average closing price of the common stock (as reflected on Nasdaq.com) for the immediately preceding five trading days.

Director Appointment

On November 21, 2024, the Board of Directors of the Company (the “Board”) increased the size of the Board from six to seven directors.

On November 21, 2024, the Board appointed David Mack to the Board, effective November 21, 2024. Mr. Mack will serve as a Class I director for a term expiring at the Company's annual meeting of stockholders to be held in 2025 and until his successor is duly elected and qualified or his earlier death, disqualification, resignation or removal. In connection with his appointment, Mr. Mack was also appointed to the Compensation Committee, effective with his commencement of service, as well as the newly formed Capital Raising Committee.

Mr. Mack is eligible to participate in the Company's Non-Employee Director Compensation Program, which provides for annual compensation in the form of cash and equity-based awards. In addition, pursuant to the terms of the Offer Letter, Mr. Mack shall receive (i) a cash payment of \$90,000, paid in monthly installments of \$15,000 on the last date of each month for six months beginning November 30, 2024, with such cash amount to be accelerated in full if Mr. Mack resigns or is removed from the Board any time after four months from the effective date of his appointment and (ii) a grant of RSUs under the Company's 2020 Incentive Award Plan to receive an aggregate of 325,077 shares of the Company's common stock underlying the RSUs that vest in twelve equal installments on the last date of each month beginning on November 30, 2024. Following his service as a member of the Board for 12 months, he will receive compensation in accordance with the Company's Non-Employee Director Compensation Program.

Intellectual Property Updates

The Company previously announced that it had received an issue notification from the USPTO for U.S. Patent Application No. 18/600,431, from which U.S. Patent No. 12,138,247 (the "'431 Patent") was issued on November 12, 2024. The '431 Patent claims a method of treating agitation using an oromucosal formulation of dexmedetomidine. The '431 Patent has an expiration date of January 12, 2043, subject to PTA, PTE and terminal disclaimers.

As of November 18, 2024, the '431 Patent has been accepted for listing in the FDA Approved Drug Products with Therapeutic Equivalence Evaluations (commonly known as the "Orange Book").

Nasdaq Matters

On September 16, 2024, the Company received a letter from The Nasdaq Stock Market, LLC ("Nasdaq") notifying us that for the last 30 consecutive business days, the bid price for the Company's common stock, par value \$0.001 per share, had closed below the \$1.00 per share minimum bid price requirement for continued listing on The Nasdaq Capital Market under Nasdaq Listing Rule 5550(a)(2) (the "Bid Price Notice"). The Bid Price Notice has no immediate effect on the listing of our common stock, which continues to trade on The Nasdaq Capital Market under the symbol "BTAI."

In accordance with Nasdaq Listing Rule 5810(c)(3)(A), we have a period of 180 calendar days, or until March 17, 2025 (the "Bid Price Compliance Date"), to regain compliance. To regain compliance with the Nasdaq minimum bid price requirement, the closing bid price of our common stock must be at least \$1.00 per share for a minimum of 10 consecutive business days prior to the Bid Price Compliance Date. We intend to monitor the bid price of our common stock and consider available options if our common stock does not trade at a level likely to result in us regaining compliance with Nasdaq's minimum bid price rule by the Bid Price Compliance Date.

In addition, on September 20, 2024, we received a letter from Nasdaq notifying us that for the last 30 consecutive business days prior to the date of the letter, our minimum market value of listed securities was below the minimum of \$35 million required for continued listing on the Nasdaq Capital Market pursuant to Nasdaq Listing Rule 5550(b)(2) (the "Market Value Notice"). The Market Value Notice has no immediate effect on the listing of our common stock, which continues to trade on The Nasdaq Capital Market under the symbol "BTAI."

In accordance with Nasdaq Listing Rule 5810(c)(3)(C), we have a period of 180 calendar days, or until March 19, 2025 (the "Market Value Compliance Date"), to regain compliance. To regain compliance with the minimum market value of listed securities requirement, the market value of our common stock must meet or exceed \$35.0 million for a minimum of 10 consecutive business days during the 180-day grace period ending on the Market Value Compliance Date. If we do not regain compliance with Nasdaq's minimum

market value of listed securities requirement by the Market Value Compliance Date, we will receive written notification that its securities are subject to delisting, at which point we may appeal the delisting determination.

Liquidity

Based upon preliminary information available to us as of the date of this prospectus supplement, as of October 31, 2024, we estimate that we had approximately \$34.9 million of cash and cash equivalents. This estimate is based on currently available information, does not present all necessary information for an understanding of our financial condition as of October 31, 2024, and is subject to change upon completion of our financial statement closing procedures. Our independent registered public accounting firm has not audited, reviewed or performed any procedures with respect to this estimate and, accordingly, does not express an opinion or any other form of assurance about it.

Implications of Being a Smaller Reporting Company

We are a “smaller reporting company” as defined in the Exchange Act, which allows us to take advantage of many of the same exemptions available to emerging growth companies as defined in the Jumpstart Our Business Startups Act of 2012, including not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act and reduced disclosure obligations regarding executive compensation. We will be able to take advantage of these scaled disclosures for so long as our voting and non-voting common stock held by non-affiliates is less than \$250.0 million measured on the last business day of our second fiscal quarter, or our annual revenue is less than \$100.0 million during the most recently completed fiscal year and our voting and non-voting common stock held by non-affiliates is less than \$700.0 million measured on the last business day of our second fiscal quarter.

THE OFFERING

Common stock offered by us	shares.
Pre-funded warrants offered by us	Pre-funded warrants to purchase _____ shares of our common stock. The purchase price of the pre-funded warrants matches the price per share at which the shares of our common stock are being sold to the public in this offering, minus \$0.001, which is the per share exercise price of the pre-funded warrants. Each pre-funded warrant will be exercisable at any time after the date of issuance of such pre-funded warrant, subject to certain ownership limitations. This prospectus supplement also relates to the offering of the shares of our common stock issuable upon exercise of the pre-funded warrants. For more information regarding the pre-funded warrants, you should carefully read the section entitled “Description of the Securities We Are Offering” on page S-19 of this prospectus supplement.
Accompanying warrants offered by us	Accompanying warrants to purchase _____ shares of our common stock at an exercise price of \$ _____ per share of common stock. The common stock, or pre-funded warrants, as applicable, and the accompanying warrants are being sold in combination, with each share of common stock, or share of common stock underlying a pre-funded warrant, being accompanied by a warrant to purchase one share of common stock. Each warrant is immediately exercisable and will expire on the fifth anniversary of the date of issuance. This prospectus supplement also relates to the offering of the shares of our common stock issuable upon exercise of the accompanying warrants. For more information regarding the accompanying warrants, you should carefully read the section entitled “Description of the Securities We Are Offering” on page S-19 of this prospectus supplement.
Common stock to be outstanding after this offering	_____ shares, assuming none of the pre-funded warrants and accompanying warrants being offered hereby are exercised.
Use of proceeds	We intend to use the net proceeds of this offering to fund the SERENITY At-Home trial, prepare for the initiation of the Tranquility In-Care trial, working capital and general corporate purposes. See the section entitled “Use of Proceeds” on page S-16 of this prospectus supplement.
Risk factors	See “Risk Factors” beginning on page S-11 of this prospectus supplement and in the documents included in, or incorporated by reference into, this prospectus supplement for a discussion of certain factors you should carefully consider before deciding to invest in our securities.
Nasdaq Capital Market symbol	“BTAI”. There is no established public trading market for the pre-funded warrants or the accompanying warrants being offered hereby and we do not expect a market to develop. We do not intend to list the pre-funded warrants or the accompanying warrants on Nasdaq or any other nationally recognized securities exchange or trading system.

The number of shares of our common stock to be outstanding immediately after this offering is based on 42,461,501 shares of our common stock outstanding as of September 30, 2024 and excludes:

- 5,228,626 shares of common stock issuable upon exercise of stock options outstanding as of September 30, 2024, at a weighted average exercise price of \$16.32 per share;
- 135,792 shares of common stock issuable upon vesting of restricted stock units outstanding as of September 30, 2024;
- 1,790,000 shares of common stock issuable upon vesting of performance stock units outstanding as of September 30, 2024;
- 9,067,786 shares of common stock issuable upon exercise of warrants at a weighted average exercise price of \$3.2157 per share outstanding as of September 30, 2024 (see “Recent Developments” regarding reductions in the exercise price);
- 369,379 shares of common stock reserved for future issuance under the BioXcel Therapeutics, Inc. 2020 Incentive Award Plan (the “2020 Incentive Award Plan”) as of September 30, 2024; and
- 1,204,746 shares of common stock reserved for future issuance under the BioXcel Therapeutics, Inc. 2020 Employee Stock Purchase Plan (the “2020 Employee Stock Purchase Plan”) as of September 30, 2024.

Unless otherwise indicated, this prospectus supplement does not reflect the following:

- The potential issuance of shares of common stock that remain available for sale as of the date of this prospectus supplement under our “at the market offering” program, pursuant to which we may sell shares of common stock for aggregate gross proceeds of up to \$150.0 million from time to time, of which approximately \$139.9 million remains available for future sales as of September 30, 2024 (the “ATM Program”);
- the issuance of the Oaktree Warrants after September 30, 2024;
- any exercise of the outstanding options or warrants or vesting of restricted stock units or performance stock units after September 30, 2024; and
- the exercise of the pre-funded warrants and the warrants offered hereby.

RISK FACTORS

Investment in the securities offered pursuant to this prospectus supplement and the accompanying base prospectus involves risks. You should carefully consider the risk factors described below and in our [Annual Report on Form 10-K for the fiscal year ended December 31, 2023](#) and our [Quarterly Reports on Form 10-Q for the quarterly periods ended March 31, 2024, June 30, 2024 and September 30, 2024](#), incorporated by reference in this prospectus supplement, any amendment or update thereto reflected in subsequent filings with the SEC and all other information contained or incorporated by reference in this prospectus supplement, as updated by our subsequent filings under the Exchange Act. The occurrence of any of these risks might cause you to lose all or part of your investment.

Risks Relating to this Offering

If you purchase our securities sold in this offering, you will experience immediate and substantial dilution in the net tangible book value of your shares. In addition, we may issue additional equity or convertible debt securities in the future, which may result in additional dilution to you.

The public offering price of our securities in this offering is substantially higher than the net tangible book value per share of our common stock before giving effect to this offering. Accordingly, if you purchase securities in this offering, you will incur immediate and substantial dilution of \$ _____ per share, based on our net tangible book value as of September 30, 2024 and the sale of _____ shares of our common stock and accompanying warrants at a public offering price of \$ _____ per share and accompanying warrant, and the sale of pre-funded warrants to purchase _____ shares of common stock and accompanying warrants at a public offering price of \$ _____ per share underlying the pre-funded warrant and accompanying warrant. For a more detailed discussion of the foregoing, see the section entitled “Dilution” below.

In the event any of the warrants sold in this offering are exercised, you will experience additional dilution. To the extent outstanding stock options or warrants are exercised, there will be further dilution to new investors in this offering. In addition, to the extent we need to raise additional capital in the future and we issue additional shares of common stock or securities convertible or exchangeable for our common stock, our then existing stockholders may experience dilution and the new securities may have rights senior to those of our common stock offered in this offering. The price per share at which we sell additional shares of our common stock, or securities convertible or exchangeable into common stock, in future transactions may be higher or lower than the price per share paid by investors in this offering.

We have broad discretion in the use of the net proceeds from this offering 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,” and you will not have the opportunity as part of your investment decision to assess whether the net proceeds are being used appropriately. Because of the number and variability of factors that will determine our use of the net proceeds from this offering, their ultimate use may vary substantially from their currently intended use. Our management might not apply our net proceeds in ways that ultimately increase the value of your investment. The failure by our management to apply these funds effectively could harm our business. Pending their use, we intend to invest the net proceeds from this offering in short-term, investment-grade, interest-bearing instruments. These investments may not yield a favorable return to our stockholders. If we do not invest or apply the net proceeds from this offering in ways that enhance stockholder value, we may fail to achieve expected financial results, which could cause our stock price to decline.

We do not expect to pay dividends in the foreseeable future. As a result, you may have to rely on stock appreciation for any return on your investment.

We do not anticipate paying cash dividends on our common stock in the foreseeable future. Any payment of cash dividends will, among other things, depend on our financial condition, results of operations, capital requirements and other factors and will be at the discretion of our board of directors. Accordingly, you may have to rely on capital appreciation, if any, to earn a return on your investment in our common stock.

Furthermore, we may in the future become subject to additional contractual restrictions on, or prohibitions against, the payment of dividends.

A substantial number of shares of our common stock will be sold in this offering, which could cause the price of our common stock to decline.

In this offering, assuming the exercise in full of the pre-funded warrants and no exercise of the accompanying warrants, we will sell _____ shares of our common stock, which represented approximately _____ % of our outstanding shares of common stock as of September 30, 2024 after giving effect to this offering. This sale could adversely affect the price of our common stock on The Nasdaq Capital Market. We cannot predict the effect, if any, that market sales of the shares of common stock issued in this offering or issued upon exercise of the warrants issued in this offering will have on the market price of our common stock. In addition, a decline in the price of our common stock might impede our ability to raise capital through the issuance of additional shares of our common stock or other equity securities, and may cause you to lose part or all of your investment in our securities.

There is no public market for the pre-funded warrants or the accompanying warrants being offered hereby.

There is no established public trading market for the pre-funded warrants or the accompanying warrants being offered in this offering, and we do not expect a market to develop. In addition, we do not intend to apply to list the pre-funded warrants or the accompanying warrants on any national securities exchange or other nationally recognized trading system, including The Nasdaq Capital Market. Without an active market, the liquidity of the pre-funded warrants and the accompanying warrants will be limited.

Except as otherwise provided in the warrants, holders of each of the warrants purchased in this offering will have no rights as common stockholders until such holders exercise their warrants and acquire our common stock.

Until holders of pre-funded warrants and/or accompanying warrants acquire shares of our common stock upon exercise thereof, except as otherwise provided in each of the warrants, such holders will have no rights with respect to the shares of our common stock underlying such warrants. Upon exercise of the pre-funded warrants or the accompanying warrants, the holders will be entitled to exercise the rights of a common stockholder only as to matters for which the record date occurs after the exercise date.

Provisions of the pre-funded warrants could discourage an acquisition of us by a third party.

Certain provisions of the pre-funded warrants and accompanying warrants could make it more difficult or expensive for a third party to acquire us. The pre-funded warrants prohibit us from engaging in certain transactions constituting “fundamental transactions” unless, among other things, the surviving entity assumes our obligations under such warrants. These and other provisions of the pre-funded warrants and accompanying warrants offered pursuant to this prospectus supplement could prevent or deter a third party from acquiring us even where the acquisition could be beneficial to you.

The accompanying warrants issued in this offering may not have any value.

The accompanying warrants offered hereby have an exercise price of \$ _____ per share, are immediately exercisable and will expire on the fifth anniversary of the date of issuance. In the event our common stock price does not exceed the exercise price of the accompanying warrants during the period when such warrants are exercisable, the warrants may not have any value.

Significant holders or beneficial holders of our common stock may not be permitted to exercise the pre-funded warrants that they hold.

A holder of pre-funded warrants will not be entitled to exercise any portion of such pre-funded warrants which, upon giving effect to such exercise, would cause (i) the aggregate number of shares of our common stock beneficially owned by the holder (together with its affiliates) to exceed 9.99% of the number of shares of our common stock outstanding immediately after giving effect to the exercise, or (ii) the combined voting power of our securities beneficially owned by the holder (together with its affiliates) to exceed 9.99% of the combined voting power of all of our securities then outstanding immediately after giving

effect to the exercise, as such percentage ownership is determined in accordance with the terms of the pre-funded warrant. A holder of accompanying warrants will not be entitled to exercise any portion of such warrants which, upon giving effect to such exercise, would cause (i) the aggregate number of shares of our common stock beneficially owned by the holder (together with its affiliates) to exceed 4.99% of the number of shares of our common stock outstanding immediately after giving effect to the exercise, or (ii) the combined voting power of our securities beneficially owned by the holder (together with its affiliates) to exceed 4.99% of the combined voting power of all of our securities then outstanding immediately after giving effect to the exercise, as such percentage ownership is determined in accordance with the terms of the warrant. Such percentage may be increased by a holder of pre-funded warrants to any other percentage not in excess of 19.99% upon at least 61 days' prior notice from the holder to us. As a result, you may not be able to exercise your pre-funded warrants for shares of our common stock at a time when it would be financially beneficial for you to do so. In such circumstance you could seek to sell your warrants to realize value, but you may be unable to do so in the absence of an established trading market for the warrants.

We will need to raise additional capital beyond this offering in the future to remain a going concern, which may not be available on acceptable terms, or at all.

As of September 30, 2024, we had \$40.4 million in cash and cash equivalents and aggregate principal indebtedness of \$106.5 million outstanding under our Credit Agreement. Based on our existing cash, cash equivalents and lack of current availability under our funding facilities, we do not believe we currently have sufficient cash to meet our obligations through the end of 2024 without additional funding. Although the Fifth Amendment waived the covenant in the Credit Agreement that we not receive a report and opinion from our independent registered public accounting firm that contains a “going concern” or similar qualification with respect to the financial statements for the year ending December 31, 2024, we are subject to the same requirement for our financial statements for the year ending December 31, 2025. Failure to continue as a going concern in connection with our Annual Report on Form 10-K for the fiscal year ending December 31, 2025 could trigger an event of default under the Credit Agreement.

Pursuant to the Fifth Amendment, we are subject to certain capital raising covenants requiring us to raise capital through securities offerings or other strategic transactions by specific dates in 2025, and the failure to comply with such capital-raising requirements could result in an event of default under the Credit Agreement. See — Recent Developments — Credit Agreement Amendment.

Additionally, even if this offering is successful, we will only be able to extend our cash runway into the first quarter of 2025 and will need to raise capital through securities offerings or other strategic transactions during the second quarter of 2025 to continue to fund our operations and complete our ongoing SERENITY At-Home trial. If we are unsuccessful in our operations to secure additional financing, or if any such incremental financing is not sufficient to fund our operations, we may be forced to sell material assets or need to commence bankruptcy proceedings, which would have a material adverse impact on our business, financial condition, and results of operations.

Our Lenders could exert significant control over our business.

Following the Fifth Amendment, our Lenders will have the ability, should they choose to do so, to exert significant control over our board of directors, including regarding the election of directors and any merger, consolidation or sale of all or substantially all of our assets. In addition, our Lenders may sell some or all of their shares of our common stock or warrants to purchase common stock in a privately negotiated transaction, which could result in another party gaining significant influence over us.

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus supplement, the accompanying base prospectus and the documents that we incorporate by reference herein and therein, contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended (the “Securities Act”) and Section 2 IE of the Exchange Act. Any statements in this prospectus supplement, the accompanying base prospectus and the documents that we incorporate by reference herein and therein about our expectations, beliefs, plans, objectives, assumptions or future events or performance are not historical facts and are forward-looking statements. These statements are often, but not always, made through the use of words or phrases such as “believe,” “will,” “expect,” “anticipate,” “estimate,” “intend,” “plan,” and “would.” For example, statements concerning financial condition, possible or assumed future results of operations, growth opportunities, industry ranking, plans and objectives of management, markets for our common stock and future management and organizational structure are all forward-looking statements. Forward-looking statements are not guarantees of performance. They involve known and unknown risks, uncertainties and assumptions that may cause actual results, levels of activity, performance or achievements to differ materially from any results, levels of activity, performance or achievements expressed or implied by any forward-looking statement.

Any forward-looking statements are qualified in their entirety by reference to the risk factors discussed throughout this prospectus supplement, the accompanying base prospectus and the documents incorporated by reference herein and therein. Some of the risks, uncertainties and assumptions that could cause actual results to differ materially from estimates or projections contained in the forward-looking statements include, but are not limited to:

- our sales strategy for IGALMI™;
- strategy relating to, anticipated benefits from, and cost savings from our strategic reprioritization of our commercialization and development efforts;
- our ability to raise additional capital and continue as a going concern;
- developments relating to our TRANQUILITY program;
- the size of our total addressable markets and related underlying estimates;
- our plans relating to clinical trials and marketing applications for our product candidates;
- our plans to research, develop and commercialize our current and future product candidates;
- our plans to seek to enter into collaborations for the development and commercialization of certain product candidates;
- the potential benefits of any future collaboration;
- the timing of and our ability to obtain and maintain regulatory approvals for our product candidates;
- the timing of and results of discussions we have with regulators;
- the rate and degree of market acceptance, clinical utility, number of prescribers and formulary wins of IGALMI™ and any product candidates for which we receive marketing approval;
- our commercialization, marketing and manufacturing capabilities and strategy, including the potential benefits from any advertising campaigns;
- our participation in, and any potential benefits from, events, conferences, presentations and conventions;
- our intellectual property position and strategy;
- our estimates regarding expenses, future revenue, capital requirements and need for additional financing;
- potential investments in, or other strategic options for, our subsidiary, OnkosXcel;
- developments relating to our competitors and our industry;
- compliance with covenants under our financing arrangements;

- the impact of government laws and regulations;
- developments related to legal proceedings and investigations;
- our relationship with BioXcel LLC;
- the sufficiency of the proceeds from this offering combined with our existing cash and cash equivalents to fund our operating expenses and capital expenditure requirements; and
- the use of proceeds from this offering.

The foregoing list sets forth some, but not all, of the factors that could affect our ability to achieve results described in any forward-looking statements. You should read this prospectus supplement, the accompanying base prospectus and the documents incorporated by reference herein and therein completely and with the understanding that our actual future results may be materially different from what we expect. You should assume that the information appearing in this prospectus supplement is accurate as of the date on the front cover of this prospectus supplement only. Because the risk factors referred to on page [S-11](#) of this prospectus supplement and page 5 of the accompanying base prospectus and incorporated herein by reference could cause actual results or outcomes to differ materially from those expressed in any forward-looking statements made by us or on our behalf, you should not place undue reliance on any forward-looking statements. Further, any forward-looking statement speaks only as of the date on which it is made, and we undertake no obligation to update any forward-looking statement to reflect events or circumstances after the date on which the statement is made or to reflect the occurrence of unanticipated events. New factors emerge from time to time, and it is not possible for us to predict which factors will arise. In addition, we cannot assess the impact of each factor on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements. We qualify all of the information presented in this prospectus supplement, the accompanying base prospectus and the documents incorporated by reference herein and therein, and particularly our forward-looking statements, by these cautionary statements.

USE OF PROCEEDS

We estimate that the net proceeds to us from this offering, after deducting underwriting discounts and commissions and estimated offering expenses payable by us, will be approximately \$ million. This estimate excludes the proceeds, if any, from the exercise of the pre-funded warrants or the accompanying warrants sold in this offering. We cannot predict when or if any such warrants will be exercised. It is possible that the accompanying warrants may expire and may never be exercised.

We intend to use the net proceeds of this offering to fund the SERENITY At-Home trial, prepare for the initiation of the Tranquility In-Care trial, working capital and general corporate purposes.

We expect the net proceeds from this offering combined with our existing cash and cash equivalents will be sufficient to fund our operations and service our debt obligations into the first quarter of 2025. Our expectations regarding our anticipated cash runway into the first quarter of 2025 will be affected by many factors, our ability to execute our current business plan, the progress of our clinical trials and regulatory interactions. We do not expect that the proceeds from this offering will provide enough funding for us to generate preliminary data from our SERENITY clinical trial. These expectations are based on estimates and the judgment of management. Our cash runway may not extend as far as we have forecast and anticipated cash needs could be greater than we expect.

The amounts and timing of our actual expenditures will depend on numerous factors, including the factors described under “Risk Factors” in this prospectus supplement, the accompanying base prospectus and the documents incorporated by reference herein and therein, as well as the amount of cash used in our operations. We may find it necessary or advisable to use the net proceeds for other purposes, and we will have broad discretion in the application of the net proceeds from this offering. Pending the uses described above, we plan to invest the net proceeds from this offering in short-term, investment-grade, interest-bearing instruments.

DIVIDEND POLICY

We have never paid or declared any cash dividends on our common stock, and we do not anticipate paying any cash dividends on our common stock in the foreseeable future. We intend to retain all available funds and any future earnings to fund the development and expansion of our business. Any future determination to pay dividends will be at the discretion of our board of directors and will depend upon a number of factors, including our results of operations, financial condition, future prospects, contractual restrictions in the Credit Agreement, restrictions imposed by applicable law and other factors that our board of directors deems relevant.

DILUTION

If you invest in our securities in this offering, your ownership interest will be diluted to the extent of the difference between the price per share of common stock and accompanying warrant, or price per pre-funded warrant and accompanying warrant, as applicable, you pay in this offering and the net tangible book value per share of our common stock immediately after this offering. Our net tangible book value as of September 30, 2024 was approximately \$(85.6) million, or approximately \$(2.02) per share of common stock, based upon 42,461,501 shares of common stock outstanding as of September 30, 2024. Net tangible book value per share is equal to our total tangible assets, less our total liabilities, divided by the total number of shares of common stock outstanding.

Without taking into account any other changes in our net tangible book value after September 30, 2024, other than to give effect to the sale by us of _____ shares of our common stock and accompanying warrants to purchase shares of our common stock at a public offering price of \$ _____ per share and the sale by us of pre-funded warrants to purchase up to _____ shares of our common stock and accompanying warrants to purchase shares of our common stock at a public offering price of \$ _____ per share underlying each pre-funded warrant and accompanying warrant in this offering and after deducting underwriting discounts and commission and estimated offering expenses payable by us, our as adjusted net tangible book value as of September 30, 2024 would have been \$ _____ million, or \$ _____ per share of common stock (and assuming the exercise in full of the pre-funded warrants offered hereby). This represents an immediate increase in as adjusted net tangible book value of \$ _____ per share to our existing stockholders and an immediate dilution in as adjusted net tangible book value of \$ _____ per share to new investors in this offering.

Dilution per share is calculated by subtracting as adjusted net tangible book deficit per share after this offering from the public offering price per share paid by new investors.

The following table illustrates this calculation on a per share basis.

Public offering price per share of common stock and accompanying warrant	\$
Net tangible book value per share as of September 30, 2024	\$(2.02)
Increase in net tangible book value per share attributable to the offering	\$ _____
As adjusted net tangible book value per share after giving effect to the offering	\$ _____
Dilution per share to new investors participating in this offering	\$ _____

The above table is based on 42,461,501 shares of common stock outstanding as of September 30, 2024, and excludes:

- 5,228,626 shares of common stock issuable upon exercise of stock options outstanding as of September 30, 2024, at a weighted average exercise price of \$16.32 per share;
- 135,792 shares of common stock issuable upon vesting of restricted stock units outstanding as of September 30, 2024;
- 1,790,000 shares of common stock issuable upon vesting of performance stock units outstanding as of September 30, 2024;
- 9,067,786 shares of common stock issuable upon exercise of warrants at a weighted average exercise price of \$3.2157 per share outstanding as of September 30, 2024 (see “Recent Developments” regarding reductions in the exercise price);
- 369,379 shares of common stock reserved for future issuance under the BioXcel Therapeutics, Inc. 2020 Incentive Award Plan (the “2020 Incentive Award Plan”) as of September 30, 2024; and
- 1,204,746 shares of common stock reserved for future issuance under the BioXcel Therapeutics, Inc. 2020 Employee Stock Purchase Plan (the “2020 Employee Stock Purchase Plan”) as of September 30, 2024.

To the extent options or warrants are exercised or restricted stock units vest, there may be further dilution to new investors.

DESCRIPTION OF THE SECURITIES WE ARE OFFERING

The following is a brief summary of certain terms and conditions of our common stock and the warrants being offered in this offering. The following description is subject in all respects to the provisions contained in the form of pre-funded warrant. This prospectus supplement also relates to the offering of the shares of our common stock issuable upon exercise of the pre-funded warrants.

Common Stock

The material terms and provisions of our common stock are described under the caption “Description of Capital Stock” in the accompanying base prospectus.

Pre-Funded Warrants

The following is a brief summary of certain terms and conditions of the pre-funded warrants to purchase common stock being offered in this offering. The following summary of certain terms and provisions of the pre-funded warrants is not complete and is subject to, and qualified in its entirety by, the provisions of the form of pre-funded warrant. Prospective investors should carefully review the terms and provisions of the form of pre-funded warrant for a complete description of the terms and conditions of the pre-funded warrants.

Form. The form of pre-funded warrant will be filed as an exhibit to our Current Report on Form 8-K in connection with this offering. The pre-funded warrants will be issued in certificated form.

Exercisability. The pre-funded warrants will be exercisable at any time after the date of issuance of such pre-funded warrants, subject to certain ownership limitations. The pre-funded warrants will be exercisable, at the option of each holder, in whole or in part by delivering to us a duly executed exercise notice and payment in full in immediately available funds for the number of shares of common stock purchased upon such exercise. As an alternative to payment in immediately available funds, a holder may, in its sole discretion, elect to exercise pre-funded warrants through a cashless exercise, in which such holder would receive upon such exercise the net number of shares of our common stock determined according to the formula set forth in the pre-funded warrants. No fractional shares of common stock will be issued in connection with the exercise of the pre-funded warrants.

Exercise Limitation. A holder will not have the right to exercise any portion of the pre-funded warrants held by such holder if the holder (together with its affiliates) would beneficially own in excess of 9.99% of the number of shares of our common stock outstanding immediately after giving effect to the exercise, as such percentage ownership is determined in accordance with the terms of the pre-funded warrants. However, any holder may increase or decrease such percentage to any other percentage not in excess of 19.99%, provided that any increase in such percentage shall not be effective until 61 days following notice from the holder to us.

Exercise Price. The pre-funded warrants are exercisable for an aggregate of _____ shares of our common stock, at an initial exercise price of \$0.001 per whole share of common stock. The initial exercise price and number of shares of common stock issuable upon exercise of the pre-funded warrants will proportionally adjust in the event of certain stock dividends and distributions, stock splits, stock combinations, reclassifications or similar events affecting our common stock.

Transferability. Subject to applicable laws, the pre-funded warrants may be offered for sale, sold, transferred or assigned without our consent.

Fundamental Transaction. In the event we consummate a merger or consolidation with or into another person and our stockholders own less than 50% of the voting power of the surviving entity, we sell all or substantially all of our assets to another person, pursuant to a tender offer or exchange offer, our stockholders tender or exchange shares representing more than 50% of the voting power of our capital stock, we consummate a business combination with another person where the other person acquires more than 50% of the voting power of our capital stock, or we effect any reclassification of our common stock or any compulsory share exchange pursuant to which shares of our common stock are effectively converted

into or exchanged for other securities, cash or property, then following such event, the holders of the pre-funded warrants will be entitled to receive upon exercise of such pre-funded warrants the same kind and amount of securities, cash or property which the holders would have received had they exercised their pre-funded warrants immediately prior to such fundamental transaction. Any successor to us or surviving entity shall assume the obligations under the pre-funded warrants. However, if the consideration in such a fundamental transaction consists solely of cash, solely of marketable securities (as defined in the pre-funded warrants), or a combination of cash and marketable securities, the pre-funded warrants will be deemed exercised in full pursuant to the “cashless exercise” provision in the pre-funded warrants immediately prior to and contingent upon the consummation of the fundamental transaction.

Exchange Listing. There is no established public trading market for the pre-funded warrants, and we do not expect a market to develop. In addition, we do not intend to list the pre-funded warrants on any securities exchange or nationally recognized trading system. Without an active trading market, the liquidity of the pre-funded warrants will be limited.

No Rights as a Stockholder. Except as otherwise provided in the pre-funded warrants or by virtue of such holder’s ownership of shares of our common stock, the holders of the pre-funded warrants do not have the rights or privileges of holders of our common stock, including any voting rights, until they exercise their pre-funded warrants.

Accompanying Warrants

The following is a brief summary of certain terms and conditions of the accompanying warrants to purchase common stock being offered in this offering. The following summary of certain terms and provisions of the accompanying warrants is not complete and is subject to, and qualified in its entirety by, the provisions of the form of accompanying warrant. Prospective investors should carefully review the terms and provisions of the form of accompanying warrant for a complete description of the terms and conditions of the accompanying warrants.

Form. The form of accompanying warrant will be filed as an exhibit to our Current Report on Form 8-K in connection with this offering. The accompanying warrants will be issued in certificated form.

Exercisability. The accompanying warrants will be exercisable immediately and at any time until the fifth anniversary of the date of issuance, subject to certain ownership limitations. The accompanying warrants will be exercisable, at the option of each holder, in whole or in part by delivering to us a duly executed exercise notice and payment in full in immediately available funds for the number of shares of common stock purchased upon such exercise. As an alternative to payment in immediately available funds, a holder may, under certain circumstances, elect to exercise the accompanying warrants through a cashless exercise, in which such holder would receive upon such exercise the net number of shares of our common stock determined according to the formula set forth in the accompanying warrants. No fractional shares of common stock will be issued in connection with the exercise of the accompanying warrants.

Exercise Limitation. A holder will not have the right to exercise any portion of the accompanying warrants held by such holder if the holder (together with its affiliates) would beneficially own in excess of 4.99% of the number of shares of our common stock outstanding immediately after giving effect to the exercise, as such percentage ownership is determined in accordance with the terms of the accompanying warrants. However, any holder may increase or decrease such percentage to any other percentage not in excess of 19.99%, provided that any increase in such percentage shall not be effective until 61 days following notice from the holder to us

Exercise Price. The accompanying warrants are exercisable for an aggregate of _____ shares of our common stock, at an initial exercise price of \$ _____ per share of common stock. The initial exercise price and number of shares of common stock issuable upon exercise of the accompanying warrants will proportionally adjust in the event of certain stock dividends and distributions, stock splits, stock combinations, reclassifications or similar events affecting our common stock.

Transferability. Subject to applicable laws, the accompanying warrants may be offered for sale, sold, transferred or assigned without our consent.

Fundamental Transaction. In the event we consummate a merger or consolidation with or into another person and our stockholders own less than 50% of the voting power of the surviving entity, we sell all or substantially all of our assets to another person, pursuant to a tender offer or exchange offer, our stockholders tender or exchange shares representing more than 50% of the voting power of our capital stock, we consummate a business combination with another person where the other person acquires more than 50% of the voting power of our capital stock, or we effect any reclassification of our common stock or any compulsory share exchange pursuant to which shares of our common stock are effectively converted into or exchanged for other securities, cash or property, then following such event, the holders of the warrants will be entitled to receive upon exercise of such warrants the same kind and amount of securities, cash or property which the holders would have received had they exercised their warrants immediately prior to such fundamental transaction.

Exchange Listing. There is no established public trading market for the accompanying warrants, and we do not expect a market to develop. In addition, we do not intend to list the accompanying warrants on any securities exchange or nationally recognized trading system. Without an active trading market, the liquidity of the accompanying warrants will be limited.

No Rights as a Stockholder. Except as otherwise provided in the accompanying warrants or by virtue of such holder's ownership of shares of our common stock, the holders of the accompanying warrants do not have the rights or privileges of holders of our common stock, including any voting rights, until they exercise their accompanying warrants.

U.S. Tax Considerations. In the event of a pro-rata payment (including a cash dividend) to holders of common stock for no consideration, or an adjustment (or nonoccurrence of an adjustment) to the exercise price or the number of shares of common stock or other consideration for which a pre-funded warrant or accompanying warrant may be exercised, the holders of the pre-funded warrants or accompanying warrants may, in certain circumstances, be deemed to have received a distribution subject to U.S. federal income tax as a dividend. See "Material U.S. Federal Income Tax Consequences." Because this deemed income would not give rise to any cash from which any applicable withholding tax could be satisfied, if withholding taxes (including backup withholding taxes) are paid on behalf of a holder, those withholding taxes may be set off against any cash or shares received pursuant to the pre-funded warrants or accompanying warrants, or payments on or sales proceeds of common stock received by the warrant holder, or other funds or assets of the warrant holder.

MATERIAL U.S. FEDERAL INCOME TAX CONSEQUENCES

The following discussion is a summary of material U.S. federal income tax consequences of the purchase, ownership, and disposition of shares of our common stock, pre-funded warrants and accompanying warrants issued pursuant to this offering and shares of our common stock received upon exercise of the pre-funded warrants and accompanying warrants (collectively, the “Securities”), but does not purport to be a complete analysis of all potential tax effects. For example, this discussion does not address any tax consequences to holders of a “fundamental transaction” as described in this prospectus supplement. The effects of other U.S. federal tax laws, such as estate and gift tax laws, and any applicable state, local, or non-U.S. tax laws are not discussed. This discussion is based on the U.S. Internal Revenue Code of 1986, as amended (the “Code”), Treasury Regulations promulgated thereunder, judicial decisions, and published rulings and administrative pronouncements of the U.S. Internal Revenue Service (the “IRS”), in each case in effect as of the date hereof. These authorities may change or be subject to differing interpretations. Any such change or differing interpretation may be applied retroactively in a manner that could adversely affect a holder of Securities. We have not sought and will not seek any rulings from the IRS regarding the matters discussed below. There can be no assurance the IRS or a court will not take a contrary position to that discussed below regarding the tax consequences of the purchase, ownership, and disposition of the Securities.

This discussion is limited to holders that hold the Securities as “capital assets” within the meaning of Section 1221 of the Code (generally, property held for investment). This discussion does not address all U.S. federal income tax consequences relevant to a holder’s particular circumstances, including the impact of the Medicare contribution tax on net investment income and any alternative minimum tax. In addition, it does not address consequences relevant to holders subject to special rules, including, without limitation:

- U.S. expatriates and former citizens or long-term residents of the United States;
- persons holding the Securities as part of a hedge, straddle, or other risk reduction strategy or as part of a conversion transaction or other integrated investment;
- banks, insurance companies, and other financial institutions;
- regulated investment companies or real estate investment trusts;
- brokers, dealers, or traders in securities;
- “controlled foreign corporations,” “passive foreign investment companies,” and corporations that accumulate earnings to avoid U.S. federal income tax;
- partnerships or other entities or arrangements treated as partnerships for U.S. federal income tax purposes (and investors therein);
- tax-exempt organizations or governmental organizations;
- persons deemed to sell the Securities under the constructive sale provisions of the Code;
- persons who have elected to mark securities to market;
- persons who hold or receive the Securities pursuant to the exercise of any employee stock option or otherwise as compensation;
- persons subject to special tax accounting rules as a result of any item of gross income with respect to the Securities being taken into account in an “applicable financial statement” (as defined in the Code);
- tax-qualified retirement plans; and
- “qualified foreign pension funds” as defined in Section 897(1)(2) of the Code and entities all of the interests of which are held by qualified foreign pension funds.

If an entity or arrangement treated as a partnership for U.S. federal income tax purposes holds the Securities, the tax treatment of a partner in the partnership will depend on the status of the partner, the activities of the partnership, and certain determinations made at the partner level. Accordingly, partnerships

holding the Securities and the partners in such partnerships should consult their tax advisors regarding the U.S. federal income tax consequences to them.

THIS DISCUSSION IS FOR INFORMATIONAL PURPOSES ONLY AND IS NOT TAX ADVICE. INVESTORS SHOULD CONSULT THEIR TAX ADVISORS WITH RESPECT TO THE APPLICATION OF THE U.S. FEDERAL INCOME TAX LAWS TO THEIR PARTICULAR SITUATIONS AS WELL AS ANY TAX CONSEQUENCES OF THE PURCHASE, OWNERSHIP AND DISPOSITION OF THE SECURITIES ARISING UNDER THE U.S. FEDERAL ESTATE OR GIFT TAX LAWS OR UNDER THE LAWS OF ANY STATE, LOCAL, OR NON-U.S. TAXING JURISDICTION OR UNDER ANY APPLICABLE INCOME TAX TREATY.

Allocation of Purchase Price

Each share of common stock or pre-funded warrant, as applicable, and accompanying warrant purchased at original issuance pursuant to this offering will be treated for U.S. federal income tax purposes as an investment unit consisting of one share of our common stock or pre-funded warrant, as applicable, and one accompanying warrant to purchase one share of our common stock. In determining a holder's initial tax basis for the share of common stock or pre-funded warrant and accompanying warrant constituting an investment unit, holders should allocate their purchase price for the investment unit between the share of common stock or pre-funded warrant, as applicable, and the accompanying warrant on the basis of their respective fair market values at the time of issuance. We do not intend to advise holders with respect to this determination, and holders are advised to consult their tax and financial advisors with respect to the relative fair market values of the shares of common stock or pre-funded warrants, as applicable, and the accompanying warrants for U.S. federal income tax purposes.

Treatment of Pre-funded Warrants

Although not free from doubt, a pre-funded warrant should be treated as a share of our common stock for U.S. federal income tax purposes, and a holder of pre-funded warrants should generally be taxed in the same manner as a holder of common stock, as described below. Accordingly, no gain or loss should be recognized upon the exercise of a pre-funded warrant (other than with respect to cash paid in lieu of a fractional share, and except in the case of a cashless exercise, the treatment of which for U.S. federal income tax purposes is not clear) and, upon exercise, the holding period of a pre-funded warrant should carry over to the share of common stock received. Similarly, the tax basis of the pre-funded warrant should carry over to the share of common stock received upon exercise, increased by the exercise price. The discussion below assumes the characterization described above is respected for U.S. federal income tax purposes. Holders should consult their tax advisors regarding the risks associated with the acquisition of pre-funded warrants pursuant to this offering (including alternative characterizations).

Treatment of Pre-Funded Warrants and Accompanying Warrants in Connection with Declaration of Distribution on Common Stock

If, on or after the purchase date and on or prior to termination of a pre-funded warrant or accompanying warrant, as applicable, we declare a distribution on shares of common stock, then, upon exercise of such pre-funded warrant or accompanying warrant, as applicable, the holder shall generally be entitled to share in such declared distribution on an as-converted basis. We intend to treat such distribution as a distribution on the pre-funded warrant or accompanying warrant, as applicable, at the time the distribution is made on the shares of common stock, regardless of whether the holder of the pre-funded warrant or accompanying warrant, as applicable, exercises its warrant at that time and actually receives the distribution. See “— Tax Considerations Applicable to U.S. Holders — Distributions” and “Tax Considerations Applicable to Non-U.S. Holders — Distributions,” below. Holders of pre-funded warrants and accompanying warrants should consult their tax advisors regarding the consequences to them with respect to distributions made on shares of common stock, including the allocation of amounts received upon a subsequent sale of, and the basis of any subsequent property received upon subsequent exercise of, such pre-funded warrant or accompanying warrant.

Tax Considerations Applicable to U.S. Holders

Definition of a U.S. Holder

For purposes of this discussion, a “U.S. Holder” is any beneficial owner of the Securities that, for U.S. federal income tax purposes, is or is treated as any of the following:

- an individual who is a citizen or resident of the United States;
- a corporation (or other entity treated as a corporation for U.S. federal income tax purposes) created or organized under the laws of the United States, any state thereof, or the District of Columbia;
- an estate, the income of which is subject to U.S. federal income tax regardless of its source; or
- a trust that (1) is subject to the primary supervision of a U.S. court and the control of one or more “United States persons” (within the meaning of Section 7701(a)(30) of the Code), or (2) has a valid election in effect to be treated as a United States person for U.S. federal income tax purposes.

Distributions

As described in the section entitled “Dividend Policy,” we do not anticipate declaring or paying dividends to holders of our common stock in the foreseeable future. However, if we do make distributions of cash or property on our common stock (other than certain distributions of common stock), such distributions generally will constitute dividends to the extent paid out of our current or accumulated earnings and profits, as determined for U.S. federal income tax purposes. As noted above, under “— Treatment of Pre-Funded Warrants and Accompanying Warrants in Connection with Declaration of Distribution on Common Stock,” distributions made to holders of shares of common stock may result in distributions being deemed received by holders of pre-funded warrants and accompanying warrants as well. Dividends received by a corporate U.S. Holder may be eligible for a dividends received deduction, subject to applicable limitations. Dividends received by certain non-corporate U.S. Holders, including individuals, are generally taxed at the lower applicable capital gains rate provided certain holding period and other requirements are satisfied. Distributions in excess of our current and accumulated earnings and profits will constitute a return of capital and first be applied against and reduce a U.S. Holder’s adjusted tax basis in its common stock, pre-funded warrants or accompanying warrants, as applicable, but not below zero.

Any excess will be treated as capital gain and will be treated as described below in the section relating to the sale or disposition of our common stock, pre-funded warrants or accompanying warrants, as applicable.

Sale or Other Taxable Disposition of Common Stock or Pre-funded Warrants

Upon the sale or other taxable disposition of the common stock or pre-funded warrants, a U.S. Holder generally will recognize capital gain or loss equal to the difference between (i) the amount of cash and the fair market value of any property received upon the sale or other taxable disposition and (ii) such U.S. Holder’s adjusted tax basis in the common stock or pre-funded warrant. Such capital gain or loss generally will be long-term capital gain or loss if the U.S. Holder’s holding period in such common stock or pre-funded warrant is more than one year at the time of the sale or other taxable disposition. Long-term capital gains recognized by certain non-corporate U.S. Holders, including individuals, generally will be subject to reduced rates of U.S. federal income tax. The deductibility of capital losses is subject to certain limitations.

Sale or Other Taxable Disposition, Exercise or Expiration of the Accompanying Warrants

Upon the sale or other taxable disposition of an accompanying warrant (other than by exercise), a U.S. Holder will generally recognize capital gain or loss equal to the difference between the amount realized on the sale or other disposition and the U.S. Holder’s tax basis in such warrant. This capital gain or loss generally will be long-term capital gain or loss if the U.S. Holder’s holding period in such warrant is more than one year at the time of the sale or other disposition. The deductibility of capital losses is subject to certain limitations.

In general, and subject to the discussion of cashless exercise below, a U.S. Holder will not be required to recognize income, gain or loss upon exercise of an accompanying warrant for its exercise price (except to the extent the U.S. Holder receives a cash payment for a fractional share that would otherwise have been issuable upon exercise of such warrant, which will be treated as a sale as described above under “Sale or Other Taxable Disposition of Common Stock or Pre-funded Warrants”). A U.S. Holder’s tax basis in a share of common stock received upon exercise of accompanying warrants will be equal to the sum of (1) the U.S. Holder’s tax basis in the warrants exchanged therefor and (2) the exercise price of such warrants. A U.S. Holder’s holding period in the shares of common stock received upon exercise will commence on the day after such U.S. Holder exercises the accompanying warrants. Although there is no direct legal authority as to the U.S. federal income tax treatment of an exercise of a warrant on a cashless basis, it is possible that a cashless exercise will be treated as non-taxable, either because the exercise is not a gain realization event or because it qualifies as a tax-free recapitalization. In the former case, the holding period of the shares of common stock received upon exercise of warrants should commence on the day after the warrants are exercised. In the latter case, the holding period of the shares of common stock received upon exercise of warrants would include the holding period of the exercised warrants.

However, it is also possible that a cashless exercise of an accompanying warrant will be treated as in part a taxable exchange, in which case gain or loss would be recognized to the extent a portion of the warrants are deemed surrendered to pay the exercise price of the remaining warrants. U.S. Holders are urged to consult their tax advisors as to the consequences of an exercise of an accompanying warrant on a cashless basis, including with respect to their holding period and tax basis in the common stock received.

If an accompanying warrant expires without being exercised, a U.S. Holder will recognize a capital loss in an amount equal to such U.S. Holder’s tax basis in such warrant. Such loss generally will be long-term capital loss if, at the time of the expiration, the U.S. Holder’s holding period in such warrant is more than one year. The deductibility of capital losses is subject to certain limitations.

Constructive Dividends on Pre-funded Warrants or Accompanying Warrants

As described in the section entitled “Dividend Policy,” we do not anticipate declaring or paying dividends to holders of our common stock in the foreseeable future. However, if at any time during the period in which a U.S. Holder holds pre-funded warrants or accompanying warrants, the exercise price or shares or other consideration issuable on conversion of the pre-funded warrants or accompanying warrants is adjusted as a result of certain events affecting our common stock (or in certain circumstances, there is a failure to make adjustments), such adjustments may result in the deemed payment of a distribution to a U.S. Holder. Any such deemed distribution would be taxable as a dividend, return of capital or capital gain as described above under “— Distributions.” U.S. Holders should consult their tax advisors regarding the proper treatment of any adjustments to the exercise price and shares or other consideration issuable on conversion of the pre-funded warrants and accompanying warrants.

It is unclear whether a constructive dividend deemed paid to a non-corporate U.S. Holder would be eligible for the lower applicable long-term capital gains rates as described above under “— Distributions.” It is also unclear whether corporate U.S. Holders would be entitled to claim the dividends received deduction with respect to any such deemed dividends. Generally, a U.S. Holder’s adjusted tax basis in a pre-funded warrant or accompanying warrant will be increased to the extent any such deemed distribution is treated as a dividend. U.S. Holders should consult their tax advisors regarding the effect a deemed distribution may have on their holding period in the pre-funded warrants or accompanying warrants.

We are currently required to report the amount of any deemed distributions on our website or to the IRS and to holders not exempt from reporting. The IRS has proposed regulations addressing the amount and timing of deemed distributions, as well as obligations of withholding agents and filing and notice obligations of issuers in respect of such deemed distributions. If adopted as proposed, the regulations would generally provide that (i) the amount of a deemed distribution is the excess of the fair market value of the right to acquire stock immediately after the exercise price adjustment over the fair market value of the right to acquire stock (after the exercise price adjustment) without the adjustment, (ii) the deemed distribution occurs at the earlier of the date the adjustment occurs under the terms of the instrument and the date of the distribution of cash or property that results in the deemed distribution, (iii) subject to certain limited exceptions, a withholding agent is required to impose any applicable withholding on deemed distributions

and, if there is no associated cash payment, may withhold the required amounts from, or set off the required amounts against, payments on the pre-funded warrants or accompanying warrants, payments on our common stock or sales proceeds received by or other funds or assets of an investor, and (iv) we are required to report the amount of any deemed distributions on our website or to the IRS and to all holders (including holders that would otherwise be exempt from reporting). The final regulations will be effective for deemed distributions occurring on or after the date of adoption, but holders and withholding agents may rely on them prior to that date under certain circumstances.

Information Reporting and Backup Withholding

A U.S. Holder may be subject to information reporting and backup withholding when such holder receives payments (including constructive dividends) on the Securities or receives proceeds from the sale or other taxable disposition of the Securities. Certain U.S. Holders are exempt from backup withholding, including corporations and certain tax-exempt organizations. A U.S. Holder will be subject to backup withholding if such holder is not otherwise exempt and such holder:

- fails to furnish the holder's taxpayer identification number, which for an individual is ordinarily his or her social security number;
- furnishes an incorrect taxpayer identification number;
- is notified by the IRS that the holder previously failed to properly report payments of interest or dividends; or
- fails to certify under penalties of perjury that the holder has furnished a correct taxpayer identification number and that the IRS has not notified the holder that the holder is subject to backup withholding.

Backup withholding is not an additional tax. Any amounts withheld under the backup withholding rules may be allowed as a refund or a credit against a U.S. Holder's U.S. federal income tax liability, provided the required information is timely furnished to the IRS. U.S. Holders should consult their tax advisors regarding their qualification for an exemption from backup withholding and the procedures for obtaining such an exemption.

Tax Considerations Applicable to Non-U.S. Holders

For purposes of this discussion, a "Non-U.S. Holder" is any beneficial owner of the Securities that is neither a U.S. Holder nor an entity or arrangement treated as a partnership for U.S. federal income tax purposes.

Distributions

As described in the section entitled "Dividend Policy," we do not anticipate paying any cash dividends on our common stock in the foreseeable future. However, if we do make distributions of cash or property (other than certain distributions of common stock) on our common stock, such distributions 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. As noted above, under "— Treatment of Pre-Funded Warrants and Accompanying Warrants in Connection with Declaration of Distribution on Common Stock," distributions made to holders of shares of common stock may result in distributions being deemed received by holders of pre-funded warrants and accompanying warrants as well. Amounts not treated as dividends for U.S. federal income tax purposes will constitute a return of capital and first be applied against and reduce a Non-U.S. Holder's adjusted tax basis in its common stock, pre-funded warrant or accompanying warrant, as applicable, but not below zero. Any excess will be treated as capital gain and will be treated as described below under "— Sale or Other Taxable Disposition." Because we may not know the extent to which a distribution is a dividend for U.S. federal income tax purposes at the time it is made, for purposes of these withholding rules we or the applicable withholding agent may treat the entire distribution as a dividend.

Subject to the discussion below on effectively connected income, dividends paid to a Non-U.S. Holder will be subject to U.S. federal withholding tax at a rate of 30% of the gross amount of the dividends (or such lower rate specified by an applicable income tax treaty, provided the Non-U.S. Holder furnishes a valid

IRS Form W-8BEN or W-8BEN-E (or other applicable documentation) certifying qualification for the lower treaty rate). A Non-U.S. Holder that does not timely furnish the required documentation, but that qualifies for a reduced treaty rate, may obtain a refund of any excess amounts withheld by timely filing an appropriate claim for refund with the IRS. Non-U.S. Holders should consult their tax advisors regarding their entitlement to benefits under any applicable income tax treaty.

If dividends paid to a Non-U.S. Holder are effectively connected with the Non-U.S. Holder's conduct of a trade or business within the United States (and, if required by an applicable income tax treaty, the Non-U.S. Holder maintains a permanent establishment in the United States to which such dividends are attributable), the Non-U.S. Holder will be exempt from the U.S. federal withholding tax described above. To claim the exemption, the Non-U.S. Holder must furnish to the applicable withholding agent a valid IRS Form W-8ECI, certifying that the dividends are effectively connected with the Non-U.S. Holder's conduct of a trade or business within the United States.

Any such effectively connected dividends will be subject to U.S. federal income tax on a net income basis at the regular rates. A Non-U.S. Holder that is a corporation also may be subject to a branch profits tax at a rate of 30% (or such lower rate specified by an applicable income tax treaty) on such effectively connected dividends, as adjusted for certain items. Non-U.S. Holders should consult their tax advisors regarding any applicable tax treaties that may provide for different rules.

Exercise of Accompanying Warrants

A Non-U.S. holder generally will not be subject to U.S. federal income tax on the exercise of accompanying warrants. However, if a cashless exercise of accompanying warrants results in a taxable exchange, as described above under “— Tax Considerations Applicable to U.S. Holders — Sale or Other Taxable Disposition, Exercise or Expiration of Accompanying Warrants,” the rules described below under “— Sale or Other Taxable Disposition” would apply.

Sale or Other Taxable Disposition

A Non-U.S. Holder will not be subject to U.S. federal income tax on any gain realized, and will not be able to utilize any loss realized, upon the sale or other taxable disposition (including, for this purpose, the expiration of an accompanying warrant) of the Securities unless:

- the gain or loss is effectively connected with the Non-U.S. Holder's conduct of a trade or business within the United States (and, if required by an applicable income tax treaty, the Non-U.S. Holder maintains a permanent establishment in the United States to which such gain is attributable);
- the Non-U.S. Holder is a nonresident alien individual present in the United States for 183 days or more during the taxable year of the disposition and certain other requirements are met; or
- the Securities constitute U.S. real property interests, or USRPIs, by reason of our status as a U.S. real property holding corporation, or USRPHC, for U.S. federal income tax purposes.

Gain described in the first bullet point above generally will be subject to U.S. federal income tax on a net income basis at the regular rates. A Non-U.S. Holder that is a corporation also may be subject to a branch profits tax at a rate of 30% (or such lower rate specified by an applicable income tax treaty) on such effectively connected gain, as adjusted for certain items.

A Non-U.S. Holder described in the second bullet point above will be subject to U.S. federal income tax at a rate of 30% (or such lower rate specified by an applicable income tax treaty) on gain realized upon the sale or other taxable disposition of the Securities, which may be offset by certain U.S. source capital losses of the Non-U.S. Holder (even though the individual is not considered a resident of the United States), provided the Non-U.S. Holder has timely filed U.S. federal income tax returns with respect to such losses.

With respect to the third bullet point above, we believe we currently are not, and do not anticipate becoming, a USRPHC. Because the determination of whether we are a USRPHC depends, however, on the fair market value of our USRPIs relative to the fair market value of our non-U.S. real property interests and our other business assets, there can be no assurance we currently are not a USRPHC or will not become

one in the future. Non-U.S. Holders should consult their tax advisors regarding potentially applicable income tax treaties that may provide for different rules.

Constructive Dividends on Our Pre-funded Warrants or Accompanying Warrants

As described in the section entitled “Dividend Policy,” we do not expect to pay any cash dividends on our common stock in the foreseeable future. However, if at any time during the period in which a Non-U.S. Holder holds pre-funded warrants or accompanying warrants, the exercise price or shares or other consideration issuable on conversion of the pre-funded warrants or accompanying warrants is adjusted as a result of certain events affecting our common stock (or in certain circumstances, there is a failure to make adjustments), such adjustments may also result in the deemed payment of a distribution to a Non-U.S. Holder. Any such deemed distribution would be taxable as a dividend, return of capital or capital gain as described above under “— Distributions.” Any resulting withholding tax attributable to deemed dividends may be collected from other amounts payable or distributable to, or other assets of, the Non-U.S. Holder. See the section above entitled “— Tax Considerations Applicable to U.S. Holders — Constructive Dividends on Pre-funded Warrants or Accompanying Warrants.” Non-U.S. Holders should consult their tax advisors regarding the proper treatment of any adjustments (or absence of adjustments) to the exercise price or shares or other consideration issuable on conversion of the pre-funded warrants and accompanying warrants.

Information Reporting and Backup Withholding

Payments of dividends on the Securities (including deemed distributions) will not be subject to backup withholding, provided the applicable withholding agent does not have actual knowledge or reason to know the holder is a United States person and the holder either certifies its non-U.S. status, such as by furnishing a valid IRS Form W-8BEN, W-8BEN-E, or W-8ECI, or otherwise establishes an exemption. However, information returns are required to be filed with the IRS in connection with any distributions (including deemed distributions) on the Securities paid to the Non-U.S. Holder, regardless of whether such distributions constitute dividends or whether any tax was actually withheld.

In addition, proceeds of the sale or other taxable disposition of the Securities within the United States or conducted through certain U.S.-related brokers generally will not be subject to backup withholding or information reporting if the applicable withholding agent receives the certification described above and does not have actual knowledge or reason to know that such holder is a United States person or the holder otherwise establishes an exemption. Proceeds of a disposition of the Securities conducted through a non-U.S. office of a non-U.S. broker generally will not be subject to backup withholding or information reporting.

Copies of information returns that are filed with the IRS may also be made available under the provisions of an applicable treaty or agreement to the tax authorities of the country in which the Non-U.S. Holder resides or is established.

Backup withholding is not an additional tax. Any amounts withheld under the backup withholding rules may be allowed as a refund or a credit against a Non-U.S. Holder’s U.S. federal income tax liability, provided the required information is timely furnished to the IRS.

Additional Withholding Tax on Payments Made to Foreign Accounts

Withholding taxes may be imposed under Sections 1471 to 1474 of the Code (such Sections commonly referred to as the Foreign Account Tax Compliance Act, or FATCA) on certain types of payments made to non-U.S. financial institutions and certain other non-U.S. entities. Specifically, a 30% withholding tax may be imposed on dividends (including deemed dividends) paid on our Securities or (subject to the proposed Treasury Regulations discussed below) gross proceeds from the sale or other disposition of our Securities paid to a “foreign financial institution” or a “non-financial foreign entity” (each as defined in the Code), unless (1) the foreign financial institution undertakes certain diligence and reporting obligations, (2) the non-financial foreign entity either certifies it does not have any “substantial United States owners” (as defined in the Code) or furnishes identifying information regarding each substantial United States owner, or (3) 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 diligence and reporting requirements referenced in (1) above, it must enter into an agreement with the U.S. Department of the

Treasury requiring, among other things, that it undertake to identify accounts held by certain “specified United States persons” or “United States owned foreign entities” (each as defined in the Code), annually report certain information about such accounts, and withhold 30% on certain payments to non-compliant foreign financial institutions and certain other account holders. Foreign financial institutions located in jurisdictions that have an intergovernmental agreement with the United States governing FATCA may be subject to different rules.

Under the applicable Treasury Regulations and administrative guidance, withholding under FATCA generally applies to payments of dividends (including deemed dividends). Because we may not know the extent to which a distribution is a dividend for U.S. federal income tax purposes at the time it is made, for purposes of these withholding rules we or the applicable withholding agent may treat the entire distribution as a dividend. While withholding under FATCA would have applied also to payments of gross proceeds from the sale or other disposition of our Securities on or after January 1, 2019, proposed Treasury Regulations eliminate FATCA withholding on payments of gross proceeds entirely. Taxpayers generally may rely on these proposed Treasury Regulations until final Treasury Regulations are issued.

Prospective investors should consult their tax advisors regarding the potential application of withholding under FATCA to their investment in our common stock.

UNDERWRITING

We and the underwriter for the offering named below have entered into an underwriting agreement with respect to the securities being offered. Subject to the terms and conditions of the underwriting agreement, the underwriter has agreed to purchase from us the number of securities set forth opposite its name below.

Underwriter	Number of Shares	Number of Pre-Funded Warrants	Number of Accompanying Common Warrants
Canaccord Genuity LLC			
Total			

The underwriting agreement provides that the obligations of the underwriter are subject to certain conditions precedent and that the underwriter has agreed to purchase all of the securities sold under the underwriting agreement if any of these securities are purchased.

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

Our common stock is listed on The Nasdaq Capital Market under the symbol "BTAI." There is no established public trading market for the pre-funded warrants and accompanying common warrants, and we do not expect a market to develop. We do not intend to list the pre-funded warrants and accompanying common warrants on The Nasdaq Capital Market, any other national securities exchange or any other nationally recognized trading system.

The underwriter is offering the shares of common stock (or pre-funded warrants in lieu thereof) and accompanying common warrants, subject to prior sale, when, as and if issued to and accepted by it, subject to approval of legal matters by its counsel and other conditions specified in the underwriting agreement. The underwriter reserves the right to withdraw, cancel or modify offers and to reject orders in whole or in part.

Discounts. The following table shows the combined offering price, underwriting discounts and proceeds, before expenses, to us from the sale of the shares of common stock (or pre-funded warrants in lieu thereof) and accompanying common warrants, offered hereby.

	Per Share and Accompanying Common Warrant	Per Pre-Funded and Accompanying Common Warrant	Total
Combined public offering price	\$	\$	\$
Underwriting discounts and commissions	\$	\$	\$
Proceeds to us, before expenses	\$	\$	\$

We estimate that the total expenses of the offering payable by us, excluding underwriting discounts, will be approximately \$. We have agreed to reimburse the underwriters for certain expenses, including the fees and expenses of counsel for the underwriter, in an amount equal to \$.

The underwriter proposes to offer the securities at the applicable offering prices set forth on the cover of this prospectus supplement and to certain dealers at that price less a concession not in excess of \$ per share. If all of the securities are not sold at the applicable offering price, the underwriter may change the offering price and other selling terms.

Discretionary Accounts. The underwriter does not intend to confirm sales of the securities to any accounts over which it has discretionary authority.

Stabilization. In connection with this offering, the underwriter may engage in stabilizing transactions, which involves making bids for, purchasing and selling shares of common stock in the open market for the purpose of preventing or retarding a decline in the market price of the common stock while this offering is in progress. These stabilizing transactions may include making short sales of the common stock, which

involves the sale by the underwriter of a greater number of shares of common stock than it is required to purchase in this offering, and purchasing shares of common stock on the open market to cover positions created by short sales.

The underwriter has advised us that, pursuant to Regulation M of the Securities Act, the underwriter may also engage in other activities that stabilize, maintain or otherwise affect the price of the common stock, including the imposition of penalty bids.

These activities may have the effect of raising or maintaining the market price of the common stock or preventing or retarding a decline in the market price of the common stock, and, as a result, the price of the common stock may be higher than the price that otherwise might exist in the open market. If the underwriter commences these activities, it may discontinue them at any time. The underwriter may carry out these transactions on The Nasdaq Capital Market, in the over the counter market or otherwise.

Passive Market Making. In connection with this offering, the underwriter may engage in passive market making transactions in our common stock on The Nasdaq Capital Market in accordance with Rule 103 of Regulation M under the Securities Exchange Act of 1934, as amended, during a period before the commencement of offers or sales of securities 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, such bid must then be lowered when specified purchase limits are exceeded.

Lock-Up Agreements. Pursuant to certain "lock-up" agreements, we, our executive officers and directors and BioXcel LLC, our former parent company and significant stockholder, have agreed, subject to certain exceptions, not to (i) directly or indirectly, offer for sale, sell, pledge, or otherwise dispose of, or sell or grant any options, rights or warrants to purchase or otherwise transfer or dispose of any shares of our common stock or any securities convertible into or exercisable or exchangeable for our common stock or file any registration statement under the Securities Act with respect to any of the foregoing or (ii) enter into any swap or other derivatives transaction that transfers, in whole or in part, any of the economic benefits or risks of ownership of our common stock, whether any such swap or transaction described in clause (i) or (ii) above is to be settled by delivery of our common stock or other securities, in cash or otherwise, without the prior written consent of Canaccord Genuity LLC from the pricing of the offering, through and including January 5, 2025. We have further agreed not to engage in any variable rate transactions for a period of one year after the date of the pricing of the offering, provided that we may sell shares of our common stock pursuant to an "at the market" program after January 5, 2025, as long as the price of our common stock on the Nasdaq Capital Market at the time of such sales is above \$1.50 per share (subject to price adjustment for reverse and forward stock splits, stock dividends, stock combinations, and other similar transactions of the Common Stock that occur after the offering).

Canaccord Genuity LLC, in its sole discretion, may release our common stock and other securities subject to the lock-up agreements described above in whole or in part at any time. When determining whether or not to release our common stock and other securities from lock-up agreements, Canaccord Genuity LLC will consider, among other factors, the holder's reasons for requesting the release, the number of shares for which the release is being requested and market conditions at the time of the request.

Canada. The securities may be sold only to purchasers purchasing, or deemed to be purchasing, as principal that are accredited investors, as defined in National Instrument 45-106 Prospectus Exemptions or subsection 73.3(1) of the Securities Act (Ontario), and are permitted clients, as defined in National Instrument 31-103 Registration Requirements, Exemptions and Ongoing Registrant Obligations. Any resale of the securities must be made in accordance with an exemption from, or in a transaction not subject to, the prospectus requirements of applicable securities laws.

Securities legislation in certain provinces or territories of Canada may provide a purchaser with remedies for rescission or damages if this prospectus supplement (including any amendment thereto) contains a misrepresentation, provided that the remedies for rescission or damages are exercised by the purchaser within the time limit prescribed by the securities legislation of the purchaser's province or territory. The purchaser should refer to any applicable provisions of the securities legislation of the purchaser's province or territory for particulars of these rights or consult with a legal advisor.

Pursuant to section 3A.3 of National Instrument 33-105 Underwriting Conflicts (NI 33-105), the underwriter is not required to comply with the disclosure requirements of NI 33-105 regarding underwriter conflicts of interest in connection with this offering.

Israel. In the State of Israel this prospectus supplement shall not be regarded as an offer to the public to purchase the securities offered hereby 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. We have 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. We have not and will not distribute this prospectus supplement or make, distribute or direct an offer to subscribe for the securities offered hereby 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 securities, 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 securities; (iv) that the securities 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.

Switzerland. The securities will not be offered, directly or indirectly, to the public in Switzerland and this prospectus supplement does not constitute a public offering prospectus as that term is understood pursuant to article 652a or 1156 of the Swiss Federal Code of Obligations.

United Kingdom. The underwriter has represented and agreed that: (a) it has only communicated or caused to be communicated and will only communicate or cause to be communicated an invitation or inducement to engage in investment activity (within the meaning of Section 21 of the Financial Services and Markets Act 2000 (“FSMA”) received by it in connection with the issue or sale of the shares of our common stock in circumstances in which Section 21(1) of the FSMA does not apply to us; and (b) it has complied and will comply with all applicable provisions of the FSMA with respect to anything done by it in relation to the securities in, from or otherwise involving the United Kingdom.

European Economic Area. In relation to each Member State of the European Economic Area and the United Kingdom (each, a “Relevant State”), no securities have been offered or will be offered pursuant to the offering to the public in that Relevant State prior to the publication of a prospectus in relation to the securities which has been approved by the competent authority in that Relevant State or, where appropriate, approved in another Relevant State and notified to the competent authority in that Relevant State, all in accordance with the Prospectus Regulation, except that offers of securities may be made to the public in that Relevant State at any time under the following exemptions under the Prospectus Regulation:

- (a) to any legal entity which is a qualified investor as defined under the Prospectus Regulation;
- (b) to fewer than 150 natural or legal persons (other than qualified investors as defined under the Prospectus Regulation), subject to obtaining the prior consent of the underwriter; or
- (c) in any other circumstances falling within Article 1(4) of the Prospectus Regulation,

provided that no such offer of securities shall require us or any of our representatives to publish a prospectus pursuant to Article 3 of the Prospectus Regulation or supplement a prospectus pursuant to Article 23 of the Prospectus Regulation.

For the purposes of this provision, the expression an “offer to the public” in relation to any securities in any Relevant State means the communication in any form and by any means of sufficient information on the terms of the offer and any securities to be offered so as to enable an investor to decide to purchase any securities, and the expression “Prospectus Regulation” means Regulation (EU) 2017/1129 (as amended).

Electronic Offer, Sale and Distribution of Securities. A prospectus supplement in electronic format may be made available on the website maintained by the underwriter and the underwriter may distribute prospectus supplements electronically. The underwriter may agree to allocate a number of securities for sale to its online brokerage account holders. Internet distributions will be allocated by the underwriters on the same basis as other allocations. Other than the prospectus supplement in electronic format, the information on this website is not part of this prospectus supplement or the registration statement of which this prospectus supplement forms a part, has not been approved or endorsed by us or the underwriter in its capacity as underwriter, and should not be relied upon by investors.

Other Relationships. The underwriter and its affiliates may have provided in the past, and may in the future provide, various investment banking, commercial banking and other financial services for us and our affiliates for which it has received, or may in the future receive, customary fees.

LEGAL MATTERS

Honigman LLP, Washington D.C., will pass upon certain legal matters in connection with this offering and the validity of the securities offered by this prospectus supplement on behalf of BioXcel Therapeutics, Inc. Wilmer Cutler Pickering Hale and Dorr LLP, New York, New York, is acting as counsel for the underwriter in connection with this offering.

EXPERTS

The consolidated financial statements of BioXcel Therapeutics, Inc. appearing in BioXcel Therapeutics, Inc.'s [Annual Report \(Form 10-K\) for the year ended December 31, 2023](#), have been audited by Ernst & Young LLP, independent registered public accounting firm, as set forth in their report thereon (which contains an explanatory paragraph describing conditions that raise substantial doubt about the Company's ability to continue as a going concern as described in Note 2 to the consolidated financial statements), included therein, and incorporated herein by reference. Such consolidated financial statements are incorporated herein by reference in reliance upon such report given on the authority of such firm as experts in accounting and auditing.

PROSPECTUS

**BioXcel Therapeutics, Inc.****\$350,000,000****Common Stock
Preferred Stock
Debt Securities
Warrants
Units**

We may offer and sell up to \$350,000,000 in the aggregate of the securities identified above from time to time in one or more offerings. This prospectus provides you with a general description of the securities.

Each time we offer and sell securities, we will provide a supplement to this prospectus that contains specific information about the offering, as well as the amounts, prices and terms of the securities. The supplement may also add, update or change information contained in this prospectus with respect to that offering. You should carefully read this prospectus and the applicable prospectus supplement before you invest in any of our securities.

We may offer and sell the securities described in this prospectus and any prospectus supplement to or through one or more underwriters, dealers and agents, or directly to purchasers, or through a combination of these methods. If any underwriters, dealers or agents are involved in the sale of any of the securities, their names and any applicable purchase price, fee, commission or discount arrangement between or among them will be set forth, or will be calculable from the information set forth, in the applicable prospectus supplement. See the sections of this prospectus entitled “About this Prospectus” and “Plan of Distribution” for more information. No securities may be sold without delivery of this prospectus and the applicable prospectus supplement describing the method and terms of the offering of such securities.

INVESTING IN OUR SECURITIES INVOLVES RISKS. SEE THE “*RISK FACTORS*” ON PAGE 5 OF THIS PROSPECTUS AND ANY SIMILAR SECTION CONTAINED IN THE APPLICABLE PROSPECTUS SUPPLEMENT CONCERNING FACTORS YOU SHOULD CONSIDER BEFORE INVESTING IN OUR SECURITIES.

Our common stock is listed on the Nasdaq Capital Market under the symbol “BTAI.” On October 30, 2023, the last reported sale price of our common stock on the Nasdaq Capital Market was \$3.99 per share.

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

The date of this prospectus is November 13, 2023.

CONTENTS

	<u>Page</u>
<u>ABOUT THIS PROSPECTUS</u>	<u>1</u>
<u>WHERE YOU CAN FIND MORE INFORMATION; INCORPORATION BY REFERENCE</u>	<u>2</u>
<u>THE COMPANY</u>	<u>4</u>
<u>RISK FACTORS</u>	<u>5</u>
<u>USE OF PROCEEDS</u>	<u>6</u>
<u>DESCRIPTION OF CAPITAL STOCK</u>	<u>7</u>
<u>DESCRIPTION OF DEBT SECURITIES</u>	<u>10</u>
<u>DESCRIPTION OF WARRANTS</u>	<u>17</u>
<u>DESCRIPTION OF UNITS</u>	<u>18</u>
<u>GLOBAL SECURITIES</u>	<u>19</u>
<u>PLAN OF DISTRIBUTION</u>	<u>23</u>
<u>LEGAL MATTERS</u>	<u>25</u>
<u>EXPERTS</u>	<u>25</u>

ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement that we filed with the U.S. Securities and Exchange Commission, or the SEC using a “shelf” registration process. By using a shelf registration statement, we may sell securities from time to time and in one or more offerings as described in this prospectus. Each time that we offer and sell securities, we will provide a prospectus supplement to this prospectus that contains specific information about the securities being offered and sold and the specific terms of that offering. We may also authorize one or more free writing prospectuses to be provided to you that may contain material information relating to these offerings. The prospectus supplement or free writing prospectus may also add, update or change information contained in this prospectus with respect to that offering. If there is any inconsistency between the information in this prospectus and the applicable prospectus supplement or free writing prospectus, you should rely on the prospectus supplement or free writing prospectus, as applicable. Before purchasing any securities, you should carefully read both this prospectus and the applicable prospectus supplement (and any applicable free writing prospectuses), together with the additional information described under the heading “Where You Can Find More Information; Incorporation by Reference.”

We have not authorized anyone to provide you with any information or to make any representations other than those contained in this prospectus, any applicable prospectus supplement or any free writing prospectuses prepared by or on behalf of us or to which we have referred you. We take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. We will not make an offer to sell these securities in any jurisdiction where the offer or sale is not permitted. You should assume that the information appearing in this prospectus and the applicable prospectus supplement to this prospectus is accurate only as of the date on its respective cover, that the information appearing in any applicable free writing prospectus is accurate only as of the date of that free writing prospectus, and that any information incorporated by reference is accurate only as of the date of the document incorporated by reference, unless we indicate otherwise. Our business, financial condition, results of operations and prospects may have changed since those dates. This prospectus incorporates by reference, and any prospectus supplement or free writing prospectus may contain and incorporate by reference, market data and industry statistics and forecasts that are based on independent industry publications and other publicly available information. Although we believe these sources are reliable, we do not guarantee the accuracy or completeness of this information and we have not independently verified this information. In addition, the market and industry data and forecasts that may be included or incorporated by reference in this prospectus, any prospectus supplement or any applicable free writing prospectus may involve estimates, assumptions and other risks and uncertainties and are subject to change based on various factors, including those discussed under the heading “Risk Factors” contained in this prospectus, the applicable prospectus supplement and any applicable free writing prospectus, and under similar headings in other documents that are incorporated by reference into this prospectus. Accordingly, investors should not place undue reliance on this information.

When we refer to “BioXcel,” “we,” “our,” “us” and the “Company” in this prospectus, we mean BioXcel Therapeutics, Inc. and its consolidated subsidiaries, unless otherwise specified. When we refer to “you,” we mean the potential holders of the applicable series of securities.

We have proprietary rights to a number of trademarks used in this prospectus which are important to our business, including the BTI logo. Solely for convenience, the trademarks and trade names in this prospectus are referred to without the ® and ™ symbols, but such references should not be construed as any indicator that their respective owners will not assert, to the fullest extent under applicable law, their rights thereto. All other trademarks, trade names and service marks appearing in this prospectus are the property of their respective owners.

WHERE YOU CAN FIND MORE INFORMATION; INCORPORATION BY REFERENCE

Available Information

We file reports, proxy statements and other information with the SEC. The SEC maintains a web site that contains reports, proxy and information statements and other information about issuers, such as us, who file electronically with the SEC. The address of that website is <http://www.sec.gov>.

Our web site address is <https://www.bioxceltherapeutics.com/>. The information on our web site, however, is not, and should not be deemed to be, a part of this prospectus.

This prospectus and any prospectus supplement are part of a registration statement that we filed with the SEC and do not contain all of the information in the registration statement. The full registration statement may be obtained from the SEC or us, as provided below. Forms of the indenture and other documents establishing the terms of the offered securities are or may be filed as exhibits to the registration statement or documents incorporated by reference in the registration statement. Statements in this prospectus or any prospectus supplement about these documents are summaries and each statement is qualified in all respects by reference to the document to which it refers. You should refer to the actual documents for a more complete description of the relevant matters. You may inspect a copy of the registration statement through the SEC's website, as provided above.

Incorporation by Reference

The SEC's rules allow us to "incorporate by reference" information into this prospectus, which means that we can disclose important information to you by referring you to another document filed separately with the SEC. The information incorporated by reference is deemed to be part of this prospectus, and subsequent information that we file with the SEC will automatically update and supersede that information. Any statement contained in this prospectus or a previously filed document incorporated by reference will be deemed to be modified or superseded for purposes of this prospectus to the extent that a statement contained in this prospectus or a subsequently filed document incorporated by reference modifies or replaces that statement.

This prospectus and any accompanying prospectus supplement incorporate by reference the documents set forth below that have previously been filed with the SEC:

- Our Quarterly Reports on Form 10-Q for the quarters ended March 31, 2023 and June 30, 2023, filed with the SEC on [May 9, 2023](#) and [August 14, 2023](#).
- Our Current Reports on Form 8-K filed with the SEC on [February 13, 2023](#), [February 21, 2023](#), [March 10, 2023](#), [March 15, 2023](#), [March 16, 2023](#), [April 20, 2023](#), [June 29, 2023](#), [June 30, 2023](#), [August 22, 2023](#), [September 7, 2023](#), [September 12, 2023](#), [September 19, 2023](#) and [September 25, 2023](#).
- [Our Annual Report on Form 10-K for the fiscal year ended December 31, 2022, filed with the SEC on March 16, 2023, as amended on May 1, 2023.](#)
- [Our Definitive Proxy Statement on Schedule 14A, filed with the SEC on May 17, 2023](#) (to the extent specifically incorporated by reference into our Annual Report on Form 10-K).
- The description of our common stock contained in [our Registration Statement on Form 8-A, filed with the SEC on March 5, 2018](#), as updated by "Description of the Registrant's Securities Registered under Section 12 of the Exchange Act" filed as [Exhibit 4.1](#) to our Annual Report on Form 10-K for the fiscal year ended December 31, 2019, and any amendment or report filed with the SEC for the purpose of updating such description.

All reports and other documents we subsequently file pursuant to Section 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934, as amended, which we refer to as the "Exchange Act" in this prospectus, prior to the termination of this offering, including all such documents we may file with the SEC after the date of filing of this registration statement and prior to the effectiveness of this registration statement, but excluding any information furnished to, rather than filed with, the SEC, will also be incorporated by reference into this prospectus and deemed to be part of this prospectus from the date of the filing of such reports and documents.

You may request a free copy of any of the documents incorporated by reference in this prospectus by writing or telephoning us at the following address:

BioXcel Therapeutics, Inc.
555 Long Wharf Drive
New Haven, CT 06511
(475) 238-6837

Exhibits to the filings will not be sent, however, unless those exhibits have specifically been incorporated by reference in this prospectus or any accompanying prospectus supplement.

THE COMPANY

BioXcel Therapeutics, Inc. (“BTI” or the “Company”) is a biopharmaceutical company utilizing artificial intelligence (“AI”) approaches to develop transformative medicines in neuroscience and immunology. We are focused on utilizing cutting-edge technology and innovative research to develop high-value therapeutics aimed at transforming patients’ lives. We employ proprietary AI platforms to reduce therapeutic development costs and potentially accelerate development timelines. Our approach leverages existing approved drugs and/or clinically evaluated product candidates together with big data and proprietary machine learning algorithms to identify new therapeutic indications. We believe this differentiated approach has the potential to reduce the expense and time associated with drug development in diseases with substantial unmet medical needs.

Our most advanced neuroscience asset is BXCL501. In indications other than those approved by the United States (“U.S.”) Food and Drug Administration (“FDA”) as IGALMI™, BXCL501 is an investigational, proprietary, orally dissolving film formulation of dexmedetomidine (or “Dex”) in development for the treatment of agitation associated with psychiatric and neurological disorders. Our most advanced immuno-oncology asset, BXCL701, is an investigational oral innate immune activator currently being developed as a potential therapy for the treatment of aggressive forms of prostate cancer, pancreatic cancer, and other solid and liquid tumors.

On April 6, 2022, we announced that the FDA approved IGALMI™ sublingual film for the acute treatment of agitation associated with schizophrenia or bipolar I or II disorder in adults. IGALMI is approved to be self-administered by patients under the supervision of a health care provider. On July 6, 2022, we announced that IGALMI was commercially available in doses of 120 and 180 microgram through the Company’s third-party logistics provider and was available for order through wholesalers.

We are continuing to develop BXCL501 for the acute treatment of agitation associated with bipolar disorders or schizophrenia in the at-home setting and for the acute treatment of agitation associated with mild to moderate dementia due to probable Alzheimer’s disease in the at-home setting or in assisted living facilities. We have recently deprioritized certain other indications of BXCL501, including as a potential adjunctive treatment for major depressive disorder, as well as our BXCL701 program.

We filed a certificate of amendment to our amended and restated certificate of incorporation with the Secretary of State of Delaware on June 14, 2021. Our principal executive offices are located at 555 Long Wharf Drive, New Haven, CT 06511, and our telephone number is (475) 238-6837.

RISK FACTORS

Investment in any securities offered pursuant to this prospectus and the applicable prospectus supplement involves risks. You should carefully consider the risk factors incorporated by reference to our most recent Annual Report on Form 10-K, our most recent Quarterly Report on Form 10-Q, and our recently filed Current Reports on Form 8-K, as well as any subsequent Annual Report on Form 10-K, Quarterly Reports on Form 10-Q or Current Reports on Form 8-K we file after the date of this prospectus, and all other information contained or incorporated by reference into this prospectus, as updated by our subsequent filings under the Exchange Act, and the risk factors and other information contained in the applicable prospectus supplement and any applicable free writing prospectus before acquiring any of such securities. The occurrence of any of these risks might cause you to lose all or part of your investment in the offered securities.

USE OF PROCEEDS

We intend to use the net proceeds from the sale of the securities as set forth in the applicable prospectus supplement.

DESCRIPTION OF CAPITAL STOCK

The following description of our capital stock is not complete and may not contain all the information you should consider before investing in our capital stock. This description is summarized from, and qualified in its entirety by reference to, our first amendment to our amended and restated certificate of incorporation, which has been publicly filed with the SEC. See “Where You Can Find More Information; Incorporation by Reference.”

Our authorized capital stock consists of:

- 100,000,000 shares of common stock, \$0.001 par value; and
- 10,000,000 shares of preferred stock, \$0.001 par value.

Common Stock

We are authorized to issue up to a total of 100,000,000 shares of common stock, par value \$0.001 per share. Holders of our common stock are entitled to one vote for each share held on all matters submitted to a vote of our stockholders. Holders of our common stock have no cumulative voting rights. Further, holders of our common stock have no preemptive or conversion rights or other subscription rights.

Upon our liquidation, dissolution or winding-up, holders of our common stock are entitled to share in all assets remaining after payment of all liabilities and the liquidation preferences of any of our outstanding shares of preferred stock. Subject to preferences that may be applicable to any outstanding shares of preferred stock, holders of our common stock are entitled to receive dividends, if any, as may be declared from time to time by our board of directors out of our assets which are legally available. Such dividends, if any, are payable in cash, in property or in shares of capital stock.

The holders of one-third of the voting power of our issued and outstanding capital stock, represented in person or by proxy, are necessary to constitute a quorum for the transaction of business at any meeting. If a quorum is present, an action by stockholders entitled to vote on a matter is approved if the number of votes cast in favor of the action exceeds the number of votes cast in opposition to the action unless a different vote is required by law, the charter, the by-laws or, with respect to a class or series of preferred stock, the terms of any resolution or resolutions adopted by the board of directors. Pursuant to our charter, the election of directors requires a plurality of the votes cast by the stockholders present in person or represented by proxy at the meeting and entitled to vote thereon.

Transfer Agent

The Transfer Agent and Registrar for our common stock is American Stock Transfer and Trust Company.

Dividend

We have never paid or declared any cash dividends on our common stock, and we do not anticipate paying any cash dividends on our common stock in the foreseeable future. We intend to retain all available funds and any future earnings to fund the development and expansion of our business. Any future determination to pay dividends will be at the discretion of our board of directors and will depend upon a number of factors, including our results of operations, financial condition, future prospects, contractual restrictions, restrictions imposed by applicable law and other factors that our board of directors deems relevant.

Preferred Stock

Our board of directors has the authority, without further action by the stockholders, to issue up to 10,000,000 shares of preferred stock in one or more series and to fix the designations, powers, preferences, privileges, and relative participating, optional, or special rights as well as the qualifications, limitations, or restrictions of the preferred stock, including dividend rights, conversion rights, voting rights, terms of redemption, and liquidation preferences, any or all of which may be greater than the rights of the common stock. Our board of directors, without stockholder approval, can issue convertible preferred stock with voting,

conversion, or other rights that could adversely affect the voting power and other rights of the holders of common stock. Preferred stock could be issued quickly with terms calculated to delay or prevent a change of control or make removal of management more difficult. Additionally, the issuance of preferred stock may have the effect of decreasing the market price of our common stock, and may adversely affect the voting and other rights of the holders of common stock.

Anti-Takeover Effects of Certain Provisions of our Charter and Bylaws and the DGCL

Delaware Law

We are governed by the provisions of Section 203 of the Delaware General Corporation Law. In general, Section 203 prohibits a publicly traded Delaware corporation from engaging in a business combination with an interested stockholder for a period of three years after the date of the transaction in which the person became an interested stockholder, unless the business combination is approved in a prescribed manner. A business combination includes mergers, asset sales or other transactions resulting in a financial benefit to the stockholder. An interested stockholder is a person who, together with affiliates and associates, owns (or within three years, did own) 15% or more of the corporation's voting stock, subject to certain exceptions. The statute could have the effect of delaying, deferring or preventing a change in control of our Company.

Classified Board of Directors

Our charter provides that our Board is divided into three classes, with the classes as nearly equal in number as possible and each class serving three-year staggered terms. Directors may only be removed from our board of directors for cause and only by the affirmative vote of holders of a majority of the voting power of all then-outstanding shares of capital stock of the Company entitled to vote generally in the election of directors, voting together as a single class. These provisions may have the effect of deferring, delaying or discouraging hostile takeovers, or changes in control of us or our management.

Board of Directors Vacancies

Our charter and bylaws authorize only our board of directors to fill vacant directorships. In addition, the number of directors constituting our board of directors may be set only by resolution of the majority of the incumbent directors.

Stockholder Action; Special Meeting of Stockholders

Our charter and bylaws provide that our stockholders may not take action by written consent. Our charter and bylaws further provide that special meetings of our stockholders may be called by a majority of the board of directors, the Chief Executive Officer, or the Chairman of the board of directors.

Advance Notice Requirements for Stockholder Proposals and Director Nominations

Our bylaws provide that stockholders seeking to bring business before our annual meeting of stockholders, including to nominate candidates for election as directors at our annual meeting of stockholders, must provide timely notice of their intent in writing. To be timely, a stockholder's notice must be delivered to the Secretary at our principal executive offices not later than the close of business on the 90th day nor earlier than the close of business on the 120th day prior to the first anniversary of the preceding year's annual meeting; provided, however, that in the event the date of the annual meeting is more than 30 days before or more than 60 days after such anniversary date, or if no annual meeting was held in the preceding year, notice by the stockholder to be timely must be so delivered not earlier than the close of business on the 120th day prior to such annual meeting and not later than the close of business on the later of the 90th day prior to such annual meeting or the 10th day following the day on which a public announcement of the date of such meeting is first made by us. These provisions may preclude our stockholders from bringing matters before our annual meeting of stockholders or from making nominations for directors at our annual meeting of stockholders.

Authorized but Unissued Shares

Our authorized but unissued shares of common stock and preferred stock are available for future issuance without stockholder approval and may be utilized for a variety of corporate purposes, including future public offerings to raise additional capital, corporate acquisitions and employee benefit plans. The existence of authorized but unissued and unreserved common stock and preferred stock could render more difficult or discourage an attempt to obtain control of us by means of a proxy contest, tender offer, merger or otherwise.

DESCRIPTION OF DEBT SECURITIES

The following description, together with the additional information we include in any applicable prospectus supplement or free writing prospectus, summarizes certain general terms and provisions of the debt securities that we may offer under this prospectus. When we offer to sell a particular series of debt securities, we will describe the specific terms of the series in a supplement to this prospectus. We will also indicate in the supplement to what extent the general terms and provisions described in this prospectus apply to a particular series of debt securities.

We may issue debt securities either separately, or together with, or upon the conversion or exercise of or in exchange for, other securities described in this prospectus. Debt securities may be our senior, senior subordinated or subordinated obligations and, unless otherwise specified in a supplement to this prospectus, the debt securities will be our direct, unsecured obligations and may be issued in one or more series.

The debt securities will be issued under an indenture between us and a trustee to be named in the applicable indenture. We have summarized select portions of the indenture below. The summary is not complete. The form of the indenture has been filed as an exhibit to the registration statement and you should read the indenture for provisions that may be important to you. In the summary below, we have included references to the section numbers of the indenture so that you can easily locate these provisions. Capitalized terms used in the summary and not defined herein have the meanings specified in the indenture.

As used in this section only, “BioXcel,” “we,” “our” or “us” refer to BioXcel Therapeutics, Inc., excluding our subsidiaries, unless expressly stated or the context otherwise requires.

General

The terms of each series of debt securities will be established by or pursuant to a resolution of our board of directors and set forth or determined in the manner provided in a resolution of our board of directors, in an officer’s certificate or by a supplemental indenture. (Section 2.2) The particular terms of each series of debt securities will be described in a prospectus supplement relating to such series (including any pricing supplement or term sheet).

We can issue an unlimited amount of debt securities under the indenture that may be in one or more series with the same or various maturities, at par, at a premium, or at a discount. (Section 2.1) We will set forth in a prospectus supplement (including any pricing supplement or term sheet) relating to any series of debt securities being offered, the aggregate principal amount and the following terms of the debt securities, if applicable:

- the title and ranking of the debt securities (including the terms of any subordination provisions);
- the price or prices (expressed as a percentage of the principal amount) at which we will sell the debt securities;
- any limit on the aggregate principal amount of the debt securities;
- the date or dates on which the principal of the securities of the series is payable;
- the rate or rates (which may be fixed or variable) per annum or the method used to determine the rate or rates (including any commodity, commodity index, stock exchange index or financial index) at which the debt securities will bear interest, the date or dates from which interest will accrue, the date or dates on which interest will commence and be payable and any regular record date for the interest payable on any interest payment date;
- the place or places where principal of, and interest, if any, on the debt securities will be payable (and the method of such payment), where the securities of such series may be surrendered for registration of transfer or exchange, and where notices and demands to us in respect of the debt securities may be delivered;
- the period or periods within which, the price or prices at which and the terms and conditions upon which we may redeem the debt securities;

- any obligation we have to redeem or purchase the debt securities pursuant to any sinking fund or analogous provisions or at the option of a holder of debt securities and the period or periods within which, the price or prices at which and in the terms and conditions upon which securities of the series shall be redeemed or purchased, in whole or in part, pursuant to such obligation;
- the dates on which and the price or prices at which we will repurchase debt securities at the option of the holders of debt securities and other detailed terms and provisions of these repurchase obligations;
- the denominations in which the debt securities will be issued, if other than denominations of \$1,000 and any integral multiple thereof;
- whether the debt securities will be issued in the form of certificated debt securities or global debt securities;
- the portion of principal amount of the debt securities payable upon declaration of acceleration of the maturity date, if other than the principal amount;
- the currency of denomination of the debt securities, which may be United States Dollars or any foreign currency, and if such currency of denomination is a composite currency, the agency or organization, if any, responsible for overseeing such composite currency;
- the designation of the currency, currencies or currency units in which payment of principal of, premium and interest on the debt securities will be made;
- if payments of principal of, premium or interest on the debt securities will be made in one or more currencies or currency units other than that or those in which the debt securities are denominated, the manner in which the exchange rate with respect to these payments will be determined;
- the manner in which the amounts of payment of principal of, premium, if any, or interest on the debt securities will be determined, if these amounts may be determined by reference to an index based on a currency or currencies or by reference to a commodity, commodity index, stock exchange index or financial index;
- any provisions relating to any security provided for the debt securities;
- any addition to, deletion of or change in the Events of Default described in this prospectus or in the indenture with respect to the debt securities and any change in the acceleration provisions described in this prospectus or in the indenture with respect to the debt securities;
- any addition to, deletion of or change in the covenants described in this prospectus or in the indenture with respect to the debt securities;
- any depositaries, interest rate calculation agents, exchange rate calculation agents or other agents with respect to the debt securities;
- the provisions, if any, relating to conversion or exchange of any debt securities of such series, including if applicable, the conversion or exchange price and period, provisions as to whether conversion or exchange will be mandatory, the events requiring an adjustment of the conversion or exchange price and provisions affecting conversion or exchange;
- any other terms of the debt securities, which may supplement, modify or delete any provision of the indenture as it applies to that series, including any terms that may be required under applicable law or regulations or advisable in connection with the marketing of the securities; and
- whether any of our direct or indirect subsidiaries will guarantee the debt securities of that series, including the terms of subordination, if any, of such guarantees. (Section 2.2).

We may issue debt securities that provide for an amount less than their stated principal amount to be due and payable upon declaration of acceleration of their maturity pursuant to the terms of the indenture. We will provide you with information on the federal income tax considerations and other special considerations applicable to any of these debt securities in the applicable prospectus supplement.

If we denominate the purchase price of any of the debt securities in a foreign currency or currencies or a foreign currency unit or units, or if the principal of and any premium and interest on any series of debt

securities is payable in a foreign currency or currencies or a foreign currency unit or units, we will provide you with information on the restrictions, elections, general tax considerations, specific terms and other information with respect to that issue of debt securities and such foreign currency or currencies or foreign currency unit or units in the applicable prospectus supplement.

Transfer and Exchange

Each debt security will be represented by either one or more global securities registered in the name of The Depository Trust Company, or the Depository, or a nominee of the Depository (we will refer to any debt security represented by a global debt security as a “book-entry debt security”), or a certificate issued in definitive registered form (we will refer to any debt security represented by a certificated security as a “certificated debt security”) as set forth in the applicable prospectus supplement. Except as set forth under the heading “Global Debt Securities and Book-Entry System” below, book-entry debt securities will not be issuable in certificated form.

Certificated Debt Securities. You may transfer or exchange certificated debt securities at any office we maintain for this purpose in accordance with the terms of the indenture. (Section 2.4) No service charge will be made for any transfer or exchange of certificated debt securities, but we may require payment of a sum sufficient to cover any tax or other governmental charge payable in connection with a transfer or exchange. (Section 2.7).

You may effect the transfer of certificated debt securities and the right to receive the principal of, premium and interest on certificated debt securities only by surrendering the certificate representing those certificated debt securities and either reissuance by us or the trustee of the certificate to the new holder or the issuance by us or the trustee of a new certificate to the new holder.

Global Debt Securities and Book-Entry System. Each global debt security representing book-entry debt securities will be deposited with, or on behalf of, the Depository, and registered in the name of the Depository or a nominee of the Depository. Please see “Global Securities.”

Covenants

We will set forth in the applicable prospectus supplement any restrictive covenants applicable to any issue of debt securities. (Article IV).

No Protection in the Event of a Change of Control

Unless we state otherwise in the applicable prospectus supplement, the debt securities will not contain any provisions which may afford holders of the debt securities protection in the event we have a change in control or in the event of a highly leveraged transaction (whether or not such transaction results in a change in control) which could adversely affect holders of debt securities.

Consolidation, Merger and Sale of Assets

We may not consolidate with or merge with or into, or convey, transfer or lease all or substantially all of our properties and assets to any person (a “successor person”) unless:

- we are the surviving corporation or the successor person (if other than BioXcel) is a corporation organized and validly existing under the laws of any U.S. domestic jurisdiction and expressly assumes our obligations on the debt securities and under the indenture; and
- immediately after giving effect to the transaction, no Default or Event of Default, shall have occurred and be continuing.

Notwithstanding the above, any of our subsidiaries may consolidate with, merge into or transfer all or part of its properties to us. (Section 5.1).

Events of Default

“Event of Default” means with respect to any series of debt securities, any of the following:

- default in the payment of any interest upon any debt security of that series when it becomes due and payable, and continuance of such default for a period of 30 days (unless the entire amount of the payment is deposited by us with the trustee or with a paying agent prior to the expiration of the 30-day period);
- default in the payment of principal of any security of that series at its maturity;
- default in the performance or breach of any other covenant or warranty by us in the indenture (other than a covenant or warranty that has been included in the indenture solely for the benefit of a series of debt securities other than that series), which default continues uncured for a period of 60 days after we receive written notice from the trustee or BioXcel and the trustee receive written notice from the holders of not less than 25% in principal amount of the outstanding debt securities of that series as provided in the indenture;
- certain voluntary or involuntary events of bankruptcy, insolvency or reorganization of BioXcel;
- any other Event of Default provided with respect to debt securities of that series that is described in the applicable prospectus supplement. (Section 6.1).

No Event of Default with respect to a particular series of debt securities (except as to certain events of bankruptcy, insolvency or reorganization) necessarily constitutes an Event of Default with respect to any other series of debt securities. (Section 6.1) The occurrence of certain Events of Default or an acceleration under the indenture may constitute an event of default under certain indebtedness of ours or our subsidiaries outstanding from time to time.

We will provide the trustee written notice of any Default or Event of Default within 30 days of becoming aware of the occurrence of such Default or Event of Default, which notice will describe in reasonable detail the status of such Default or Event of Default and what action we are taking or propose to take in respect thereof. (Section 6.1).

If an Event of Default with respect to debt securities of any series at the time outstanding occurs and is continuing, then the trustee or the holders of not less than 25% in principal amount of the outstanding debt securities of that series may, by a notice in writing to us (and to the trustee if given by the holders), declare to be due and payable immediately the principal of (or, if the debt securities of that series are discount securities, that portion of the principal amount as may be specified in the terms of that series) and accrued and unpaid interest, if any, on all debt securities of that series. In the case of an Event of Default resulting from certain events of bankruptcy, insolvency or reorganization, the principal (or such specified amount) of and accrued and unpaid interest, if any, on all outstanding debt securities will become and be immediately due and payable without any declaration or other act on the part of the trustee or any holder of outstanding debt securities. At any time after a declaration of acceleration with respect to debt securities of any series has been made, but before a judgment or decree for payment of the money due has been obtained by the trustee, the holders of a majority in principal amount of the outstanding debt securities of that series may rescind and annul the acceleration if all Events of Default, other than the non-payment of accelerated principal and interest, if any, with respect to debt securities of that series, have been cured or waived as provided in the indenture. (Section 6.2) We refer you to the prospectus supplement relating to any series of debt securities that are discount securities for the particular provisions relating to acceleration of a portion of the principal amount of such discount securities upon the occurrence of an Event of Default.

The indenture provides that the trustee may refuse to perform any duty or exercise any of its rights or powers under the indenture unless the trustee receives indemnity satisfactory to it against any cost, liability or expense which might be incurred by it in performing such duty or exercising such right or power. (Section 7.1(e)) Subject to certain rights of the trustee, the holders of a majority in principal amount of the outstanding debt securities of any series will have the right to direct the time, method and place of conducting any proceeding for any remedy available to the trustee or exercising any trust or power conferred on the trustee with respect to the debt securities of that series. (Section 6.12).

No holder of any debt security of any series will have any right to institute any proceeding, judicial or otherwise, with respect to the indenture or for the appointment of a receiver or trustee, or for any remedy under the indenture, unless:

- that holder has previously given to the trustee written notice of a continuing Event of Default with respect to debt securities of that series; and
- the holders of not less than 25% in principal amount of the outstanding debt securities of that series have made written request, and offered indemnity or security satisfactory to the trustee, to the trustee to institute the proceeding as trustee, and the trustee has not received from the holders of not less than a majority in principal amount of the outstanding debt securities of that series a direction inconsistent with that request and has failed to institute the proceeding within 60 days. (Section 6.7).

Notwithstanding any other provision in the indenture, the holder of any debt security will have an absolute and unconditional right to receive payment of the principal of, premium and any interest on that debt security on or after the due dates expressed in that debt security and to institute suit for the enforcement of payment. (Section 6.8).

The indenture requires us, within 120 days after the end of our fiscal year, to furnish to the trustee a statement as to compliance with the indenture. (Section 4.3) If a Default or Event of Default occurs and is continuing with respect to the securities of any series and if it is known to a responsible officer of the trustee, the trustee shall mail to each securityholder of the securities of that series notice of a Default or Event of Default within 90 days after it occurs or, if later, after a responsible officer of the trustee has knowledge of such Default or Event of Default. The indenture provides that the trustee may withhold notice to the holders of debt securities of any series of any Default or Event of Default (except in payment on any debt securities of that series) with respect to debt securities of that series if the trustee determines in good faith that withholding notice is in the interest of the holders of those debt securities. (Section 7.5).

Modification and Waiver

We and the trustee may modify, amend or supplement the indenture or the debt securities of any series without the consent of any holder of any debt security:

- to cure any ambiguity, defect or inconsistency;
- to comply with covenants in the indenture described above under the heading “Consolidation, Merger and Sale of Assets”;
- to provide for uncertificated securities in addition to or in place of certificated securities;
- to add guarantees with respect to debt securities of any series or secure debt securities of any series;
- to surrender any of our rights or powers under the indenture;
- to add covenants or events of default for the benefit of the holders of debt securities of any series;
- to comply with the applicable procedures of the applicable depository;
- to make any change that does not adversely affect the rights of any holder of debt securities;
- to provide for the issuance of and establish the form and terms and conditions of debt securities of any series as permitted by the indenture;
- to effect the appointment of a successor trustee with respect to the debt securities of any series and to add to or change any of the provisions of the indenture to provide for or facilitate administration by more than one trustee; or
- to comply with requirements of the SEC in order to effect or maintain the qualification of the indenture under the Trust Indenture Act. (Section 9.1).

We may also modify and amend the indenture with the consent of the holders of at least a majority in principal amount of the outstanding debt securities of each series affected by the modifications or amendments. We may not make any modification or amendment without the consent of the holders of each

affected debt security then outstanding if that amendment will:

- reduce the amount of debt securities whose holders must consent to an amendment, supplement or waiver;
- reduce the rate of or extend the time for payment of interest (including default interest) on any debt security;
- reduce the principal of or premium on or change the fixed maturity of any debt security or reduce the amount of, or postpone the date fixed for, the payment of any sinking fund or analogous obligation with respect to any series of debt securities;
- reduce the principal amount of discount securities payable upon acceleration of maturity;
- waive a default in the payment of the principal of, premium or interest on any debt security (except a rescission of acceleration of the debt securities of any series by the holders of at least a majority in aggregate principal amount of the then outstanding debt securities of that series and a waiver of the payment default that resulted from such acceleration);
- make the principal of or premium or interest on any debt security payable in currency other than that stated in the debt security;
- make any change to certain provisions of the indenture relating to, among other things, the right of holders of debt securities to receive payment of the principal of, premium and interest on those debt securities and to institute suit for the enforcement of any such payment and to waivers or amendments; or
- waive a redemption payment with respect to any debt security. (Section 9.3).

Except for certain specified provisions, the holders of at least a majority in principal amount of the outstanding debt securities of any series may on behalf of the holders of all debt securities of that series waive our compliance with provisions of the indenture. (Section 9.2) The holders of a majority in principal amount of the outstanding debt securities of any series may on behalf of the holders of all the debt securities of such series waive any past default under the indenture with respect to that series and its consequences, except a default in the payment of the principal of, premium or any interest on any debt security of that series; provided, however, that the holders of a majority in principal amount of the outstanding debt securities of any series may rescind an acceleration and its consequences, including any related payment default that resulted from the acceleration. (Section 6.13).

Defeasance of Debt Securities and Certain Covenants in Certain Circumstances

Legal Defeasance. The indenture provides that, unless otherwise provided by the terms of the applicable series of debt securities, we may be discharged from any and all obligations in respect of the debt securities of any series (subject to certain exceptions). We will be so discharged upon the irrevocable deposit with the trustee, in trust, of money and/or U.S. government obligations or, in the case of debt securities denominated in a single currency other than U.S. Dollars, government obligations of the government that issued or caused to be issued such currency, that, through the payment of interest and principal in accordance with their terms, will provide money or U.S. government obligations in an amount sufficient in the opinion of a nationally recognized firm of independent public accountants or investment bank to pay and discharge each installment of principal, premium and interest on and any mandatory sinking fund payments in respect of the debt securities of that series on the stated maturity of those payments in accordance with the terms of the indenture and those debt securities.

This discharge may occur only if, among other things, we have delivered to the trustee an opinion of counsel stating that we have received from, or there has been published by, the United States Internal Revenue Service a ruling or, since the date of execution of the indenture, there has been a change in the applicable United States federal income tax law, in either case to the effect that, and based thereon such opinion shall confirm that, the holders of the debt securities of that series will not recognize income, gain or loss for United States federal income tax purposes as a result of the deposit, defeasance and discharge and will be subject to United States federal income tax on the same amounts and in the same manner and at the same times as would have been the case if the deposit, defeasance and discharge had not occurred. (Section 8.3).

Defeasance of Certain Covenants. The indenture provides that, unless otherwise provided by the terms of the applicable series of debt securities, upon compliance with certain conditions:

- we may omit to comply with the covenant described under the heading “Consolidation, Merger and Sale of Assets” and certain other covenants set forth in the indenture, as well as any additional covenants which may be set forth in the applicable prospectus supplement; and
- any omission to comply with those covenants will not constitute a Default or an Event of Default with respect to the debt securities of that series (“covenant defeasance”).

The conditions include:

- depositing with the trustee money and/or U.S. government obligations or, in the case of debt securities denominated in a single currency other than U.S. Dollars, government obligations of the government that issued or caused to be issued such currency, that, through the payment of interest and principal in accordance with their terms, will provide money in an amount sufficient in the opinion of a nationally recognized firm of independent public accountants or investment bank to pay and discharge each installment of principal of, premium and interest on and any mandatory sinking fund payments in respect of the debt securities of that series on the stated maturity of those payments in accordance with the terms of the indenture and those debt securities; and
- delivering to the trustee an opinion of counsel to the effect that the holders of the debt securities of that series will not recognize income, gain or loss for United States federal income tax purposes as a result of the deposit and related covenant defeasance and will be subject to United States federal income tax on the same amounts and in the same manner and at the same times as would have been the case if the deposit and related covenant defeasance had not occurred. (Section 8.4).

No Personal Liability of Directors, Officers, Employees or Securityholders

None of our past, present or future directors, officers, employees or securityholders, as such, will have any liability for any of our obligations under the debt securities or the indenture or for any claim based on, or in respect or by reason of, such obligations or their creation. By accepting a debt security, each holder waives and releases all such liability. This waiver and release is part of the consideration for the issue of the debt securities.

However, this waiver and release may not be effective to waive liabilities under U.S. federal securities laws, and it is the view of the SEC that such a waiver is against public policy.

Governing Law

The indenture and the debt securities, including any claim or controversy arising out of or relating to the indenture or the securities, will be governed by the laws of the State of New York.

The indenture will provide that we, the trustee and the holders of the debt securities (by their acceptance of the debt securities) irrevocably waive, to the fullest extent permitted by applicable law, any and all right to trial by jury in any legal proceeding arising out of or relating to the indenture, the debt securities or the transactions contemplated thereby.

The indenture will provide that any legal suit, action or proceeding arising out of or based upon the indenture or the transactions contemplated thereby may be instituted in the federal courts of the United States of America located in the City of New York or the courts of the State of New York in each case located in the City of New York, and we, the trustee and the holder of the debt securities (by their acceptance of the debt securities) irrevocably submit to the non-exclusive jurisdiction of such courts in any such suit, action or proceeding. The indenture will further provide that service of any process, summons, notice or document by mail (to the extent allowed under any applicable statute or rule of court) to such party’s address set forth in the indenture will be effective service of process for any suit, action or other proceeding brought in any such court. The indenture will further provide that we, the trustee and the holders of the debt securities (by their acceptance of the debt securities) irrevocably and unconditionally waive any objection to the laying of venue of any suit, action or other proceeding in the courts specified above and irrevocably and unconditionally waive and agree not to plead or claim any such suit, action or other proceeding has been brought in an inconvenient forum. (Section 10.10).

DESCRIPTION OF WARRANTS

We may issue warrants for the purchase of shares of our common stock or preferred stock or of debt securities. We may issue warrants independently or together with other securities, and the warrants may be attached to or separate from any offered securities. Each series of warrants will be issued under a separate warrant agreement to be entered into between us and the investors or a warrant agent. The following summary of material provisions of the warrants and warrant agreements are subject to, and qualified in their entirety by reference to, all the provisions of the warrant agreement and warrant certificate applicable to a particular series of warrants. The terms of any warrants offered under a prospectus supplement may differ from the terms described below. We urge you to read the applicable prospectus supplement and any related free writing prospectus, as well as the complete warrant agreements and warrant certificates that contain the terms of the warrants.

The particular terms of any issue of warrants will be described in the prospectus supplement relating to the issue. Those terms may include:

- the number of shares of common stock or preferred stock purchasable upon the exercise of warrants to purchase such shares and the price at which such number of shares may be purchased upon such exercise;
- the designation, stated value and terms (including, without limitation, liquidation, dividend, conversion and voting rights) of the series of preferred stock purchasable upon exercise of warrants to purchase preferred stock;
- the principal amount of debt securities that may be purchased upon exercise of a debt warrant and the exercise price for the warrants, which may be payable in cash, securities or other property;
- the date, if any, on and after which the warrants and the related debt securities, preferred stock or common stock will be separately transferable;
- the terms of any rights to redeem or call the warrants;
- the date on which the right to exercise the warrants will commence and the date on which the right will expire;
- U.S. federal income tax consequences applicable to the warrants; and
- any additional terms of the warrants, including terms, procedures and limitations relating to the exchange, exercise and settlement of the warrants.

Holders of equity warrants will not be entitled:

- to vote, consent or receive dividends;
- receive notice as stockholders with respect to any meeting of stockholders for the election of our directors or any other matter; or
- exercise any rights as stockholders of BioXcel.

Each warrant will entitle its holder to purchase the principal amount of debt securities or the number of shares of preferred stock or common stock at the exercise price set forth in, or calculable as set forth in, the applicable prospectus supplement. Unless we otherwise specify in the applicable prospectus supplement, holders of the warrants may exercise the warrants at any time up to the specified time on the expiration date that we set forth in the applicable prospectus supplement. After the close of business on the expiration date, unexercised warrants will become void. A holder of warrant certificates may exchange them for new warrant certificates of different denominations, present them for registration of transfer and exercise them at the corporate trust office of the warrant agent or any other office indicated in the applicable prospectus supplement. Until any warrants to purchase debt securities are exercised, the holder of the warrants will not have any rights of holders of the debt securities that can be purchased upon exercise, including any rights to receive payments of principal, premium or interest on the underlying debt securities or to enforce covenants in the applicable indenture. Until any warrants to purchase common stock or preferred stock are exercised, the holders of the warrants will not have any rights of holders of the underlying common stock or preferred stock, including any rights to receive dividends or payments upon any liquidation, dissolution or winding up on the common stock or preferred stock, if any.

DESCRIPTION OF UNITS

We may issue units consisting of any combination of the other types of securities offered under this prospectus in one or more series. We may evidence each series of units by unit certificates that we will issue under a separate agreement. We may enter into unit agreements with a unit agent. Each unit agent will be a bank or trust company that we select. We will indicate the name and address of the unit agent in the applicable prospectus supplement relating to a particular series of units.

The following description, together with the additional information included in any applicable prospectus supplement, summarizes the general features of the units that we may offer under this prospectus. You should read any prospectus supplement and any free writing prospectus that we may authorize to be provided to you related to the series of units being offered, as well as the complete unit agreements that contain the terms of the units. Specific unit agreements will contain additional important terms and provisions, and we will file as an exhibit to the registration statement of which this prospectus is a part, or will incorporate by reference from another report that we file with the SEC, the form of each unit agreement relating to units offered under this prospectus.

If we offer any units, certain terms of that series of units will be described in the applicable prospectus supplement, including, without limitation, the following, as applicable:

- the title of the series of units;
- identification and description of the separate constituent securities comprising the units;
- the price or prices at which the units will be issued;
- the date, if any, on and after which the constituent securities comprising the units will be separately transferable;
- a discussion of certain U.S. federal income tax considerations applicable to the units; and
- any other terms of the units and their constituent securities.

GLOBAL SECURITIES

Book-Entry, Delivery and Form

Unless we indicate differently in any applicable prospectus supplement or free writing prospectus, the securities initially will be issued in book-entry form and represented by one or more global notes or global securities, or, collectively, global securities. The global securities will be deposited with, or on behalf of, The Depository Trust Company, New York, New York, as depository, or DTC, and registered in the name of Cede & Co., the nominee of DTC. Unless and until it is exchanged for individual certificates evidencing securities under the limited circumstances described below, a global security may not be transferred except as a whole by the depository to its nominee or by the nominee to the depository, or by the depository or its nominee to a successor depository or to a nominee of the successor depository.

DTC has advised us that it is:

- a limited-purpose trust company organized under the New York Banking Law;
- a “banking organization” within the meaning of the New York Banking Law;
- a member of the Federal Reserve System;
- a “clearing corporation” within the meaning of the New York Uniform Commercial Code; and
- a “clearing agency” registered pursuant to the provisions of Section 17A of the Exchange Act.

DTC holds securities that its participants deposit with DTC. DTC also facilitates the settlement among its participants of securities transactions, such as transfers and pledges, in deposited securities through electronic computerized book-entry changes in participants’ accounts, thereby eliminating the need for physical movement of securities certificates. “Direct participants” in DTC include securities brokers and dealers, including underwriters, banks, trust companies, clearing corporations and other organizations. DTC is a wholly-owned subsidiary of The Depository Trust & Clearing Corporation, or DTCC. DTCC is the holding company for DTC, National Securities Clearing Corporation and Fixed Income Clearing Corporation, all of which are registered clearing agencies. DTCC is owned by the users of its regulated subsidiaries. Access to the DTC system is also available to others, which we sometimes refer to as indirect participants, that clear through or maintain a custodial relationship with a direct participant, either directly or indirectly. The rules applicable to DTC and its participants are on file with the SEC.

Purchases of securities under the DTC system must be made by or through direct participants, which will receive a credit for the securities on DTC’s records. The ownership interest of the actual purchaser of a security, which we sometimes refer to as a beneficial owner, is in turn recorded on the direct and indirect participants’ records. Beneficial owners of securities will not receive written confirmation from DTC of their purchases. However, beneficial owners are expected to receive written confirmations providing details of their transactions, as well as periodic statements of their holdings, from the direct or indirect participants through which they purchased securities. Transfers of ownership interests in global securities are to be accomplished by entries made on the books of participants acting on behalf of beneficial owners. Beneficial owners will not receive certificates representing their ownership interests in the global securities, except under the limited circumstances described below.

To facilitate subsequent transfers, all global securities deposited by direct participants with DTC will be registered in the name of DTC’s partnership nominee, Cede & Co., or such other name as may be requested by an authorized representative of DTC. The deposit of securities with DTC and their registration in the name of Cede & Co. or such other nominee will not change the beneficial ownership of the securities. DTC has no knowledge of the actual beneficial owners of the securities. DTC’s records reflect only the identity of the direct participants to whose accounts the securities are credited, which may or may not be the beneficial owners. The participants are responsible for keeping account of their holdings on behalf of their customers.

So long as the securities are in book-entry form, you will receive payments and may transfer securities only through the facilities of the depository and its direct and indirect participants. We will maintain an office or agency in the location specified in the prospectus supplement for the applicable securities, where notices and demands in respect of the securities and the indenture may be delivered to us and where certificated securities may be surrendered for payment, registration of transfer or exchange.

Conveyance of notices and other communications by DTC to direct participants, by direct participants to indirect participants and by direct participants and indirect participants to beneficial owners will be governed by arrangements among them, subject to any legal requirements in effect from time to time.

Redemption notices will be sent to DTC. If less than all of the securities of a particular series are being redeemed, DTC's practice is to determine by lot the amount of the interest of each direct participant in the securities of such series to be redeemed.

Neither DTC nor Cede & Co. (or such other DTC nominee) will consent or vote with respect to the securities. Under its usual procedures, DTC will mail an omnibus proxy to us as soon as possible after the record date. The omnibus proxy assigns the consenting or voting rights of Cede & Co. to those direct participants to whose accounts the securities of such series are credited on the record date, identified in a listing attached to the omnibus proxy.

So long as securities are in book-entry form, we will make payments on those securities to the depository or its nominee, as the registered owner of such securities, by wire transfer of immediately available funds. If securities are issued in definitive certificated form under the limited circumstances described below and unless if otherwise provided in the description of the applicable securities herein or in the applicable prospectus supplement, we will have the option of making payments by check mailed to the addresses of the persons entitled to payment or by wire transfer to bank accounts in the United States designated in writing to the applicable trustee or other designated party at least 15 days before the applicable payment date by the persons entitled to payment, unless a shorter period is satisfactory to the applicable trustee or other designated party.

Redemption proceeds, distributions and dividend payments on the securities will be made to Cede & Co., or such other nominee as may be requested by an authorized representative of DTC. DTC's practice is to credit direct participants' accounts upon DTC's receipt of funds and corresponding detail information from us on the payment date in accordance with their respective holdings shown on DTC records. Payments by participants to beneficial owners will be governed by standing instructions and customary practices, as is the case with securities held for the account of customers in bearer form or registered in "street name." Those payments will be the responsibility of participants and not of DTC or us, subject to any statutory or regulatory requirements in effect from time to time. Payment of redemption proceeds, distributions and dividend payments to Cede & Co., or such other nominee as may be requested by an authorized representative of DTC, is our responsibility, disbursement of payments to direct participants is the responsibility of DTC, and disbursement of payments to the beneficial owners is the responsibility of direct and indirect participants.

Except under the limited circumstances described below, purchasers of securities will not be entitled to have securities registered in their names and will not receive physical delivery of securities. Accordingly, each beneficial owner must rely on the procedures of DTC and its participants to exercise any rights under the securities and the indenture.

The laws of some jurisdictions may require that some purchasers of securities take physical delivery of securities in definitive form. Those laws may impair the ability to transfer or pledge beneficial interests in securities.

DTC may discontinue providing its services as securities depository with respect to the securities at any time by giving reasonable notice to us. Under such circumstances, in the event that a successor depository is not obtained, securities certificates are required to be printed and delivered.

As noted above, beneficial owners of a particular series of securities generally will not receive certificates representing their ownership interests in those securities. However, if:

- DTC notifies us that it is unwilling or unable to continue as a depository for the global security or securities representing such series of securities or if DTC ceases to be a clearing agency registered under the Exchange Act at a time when it is required to be registered and a successor depository is not appointed within 90 days of the notification to us or of our becoming aware of DTC's ceasing to be so registered, as the case may be;

- we determine, in our sole discretion, not to have such securities represented by one or more global securities; or
- an Event of Default has occurred and is continuing with respect to such series of securities,

we will prepare and deliver certificates for such securities in exchange for beneficial interests in the global securities. Any beneficial interest in a global security that is exchangeable under the circumstances described in the preceding sentence will be exchangeable for securities in definitive certificated form registered in the names that the depository directs. It is expected that these directions will be based upon directions received by the depository from its participants with respect to ownership of beneficial interests in the global securities.

Euroclear and Clearstream

If so provided in the applicable prospectus supplement, you may hold interests in a global security through Clearstream Banking S.A., which we refer to as “Clearstream,” or Euroclear Bank S.A./N.V., as operator of the Euroclear System, which we refer to as “Euroclear,” either directly if you are a participant in Clearstream or Euroclear or indirectly through organizations which are participants in Clearstream or Euroclear. Clearstream and Euroclear will hold interests on behalf of their respective participants through customers’ securities accounts in the names of Clearstream and Euroclear, respectively, on the books of their respective U.S. depositories, which in turn will hold such interests in customers’ securities accounts in such depositories’ names on DTC’s books.

Clearstream and Euroclear are securities clearance systems in Europe. Clearstream and Euroclear hold securities for their respective participating organizations and facilitate the clearance and settlement of securities transactions between those participants through electronic book-entry changes in their accounts, thereby eliminating the need for physical movement of certificates.

Payments, deliveries, transfers, exchanges, notices and other matters relating to beneficial interests in global securities owned through Euroclear or Clearstream must comply with the rules and procedures of those systems. Transactions between participants in Euroclear or Clearstream, on one hand, and other participants in DTC, on the other hand, are also subject to DTC’s rules and procedures.

Investors will be able to make and receive through Euroclear and Clearstream payments, deliveries, transfers and other transactions involving any beneficial interests in global securities held through those systems only on days when those systems are open for business. Those systems may not be open for business on days when banks, brokers and other institutions are open for business in the United States.

Cross-market transfers between participants in DTC, on the one hand, and participants in Euroclear or Clearstream, on the other hand, will be effected through DTC in accordance with the DTC’s rules on behalf of Euroclear or Clearstream, as the case may be, by their respective U.S. depositories; however, such cross-market transactions will require delivery of instructions to Euroclear or Clearstream, as the case may be, by the counterparty in such system in accordance with the rules and procedures and within the established deadlines (European time) of such system. Euroclear or Clearstream, as the case may be, will, if the transaction meets its settlement requirements, deliver instructions to its U.S. depository to take action to effect final settlement on its behalf by delivering or receiving interests in the global securities through DTC, and making or receiving payment in accordance with normal procedures for same-day fund settlement. Participants in Euroclear or Clearstream may not deliver instructions directly to their respective U.S. depositories.

Due to time zone differences, the securities accounts of a participant in Euroclear or Clearstream purchasing an interest in a global security from a direct participant in DTC will be credited, and any such crediting will be reported to the relevant participant in Euroclear or Clearstream, during the securities settlement processing day (which must be a business day for Euroclear or Clearstream) immediately following the settlement date of DTC. Cash received in Euroclear or Clearstream as a result of sales of interests in a global security by or through a participant in Euroclear or Clearstream to a direct participant in DTC will be received with value on the settlement date of DTC but will be available in the relevant Euroclear or Clearstream cash account only as of the business day for Euroclear or Clearstream following DTC’s settlement date.

Other

The information in this section of this prospectus concerning DTC, Clearstream, Euroclear and their respective book-entry systems has been obtained from sources that we believe to be reliable, but we do not take responsibility for this information. This information has been provided solely as a matter of convenience. The rules and procedures of DTC, Clearstream and Euroclear are solely within the control of those organizations and could change at any time. Neither we nor the trustee nor any agent of ours or of the trustee has any control over those entities and none of us takes any responsibility for their activities. You are urged to contact DTC, Clearstream and Euroclear or their respective participants directly to discuss those matters. In addition, although we expect that DTC, Clearstream and Euroclear will perform the foregoing procedures, none of them is under any obligation to perform or continue to perform such procedures and such procedures may be discontinued at any time. Neither we nor any agent of ours will have any responsibility for the performance or nonperformance by DTC, Clearstream and Euroclear or their respective participants of these or any other rules or procedures governing their respective operations.

PLAN OF DISTRIBUTION

We may sell the securities from time to time pursuant to underwritten public offerings, negotiated transactions, block trades or a combination of these methods or through underwriters or dealers, through agents and/or directly to one or more purchasers. The securities may be distributed from time to time in one or more transactions:

- at a fixed price or prices, which may be changed;
- at market prices prevailing at the time of sale;
- at prices related to such prevailing market prices;
- at negotiated prices;
- ordinary brokerage transactions and transactions in which the broker solicits purchasers; or
- any other method permitted pursuant to applicable law.

Each time that we sell securities covered by this prospectus, we will provide a prospectus supplement or supplements that will describe the method of distribution and set forth the terms and conditions of the offering of such securities, including the offering price of the securities and the proceeds to us.

Offers to purchase the securities being offered by this prospectus may be solicited directly. Agents may also be designated to solicit offers to purchase the securities from time to time. Any agent involved in the offer or sale of our securities will be identified in a prospectus supplement.

If a dealer is utilized in the sale of the securities being offered by this prospectus, the securities will be sold to the dealer, as principal. The dealer may then resell the securities to the public at varying prices to be determined by the dealer at the time of resale.

If an underwriter is utilized in the sale of the securities being offered by this prospectus, an underwriting agreement will be executed with the underwriter at the time of sale and the name of any underwriter will be provided in the prospectus supplement that the underwriter will use to make resales of the securities to the public. In connection with the sale of the securities, we or the purchasers of securities for whom the underwriter may act as agent, may compensate the underwriter in the form of underwriting discounts or commissions. The underwriter may sell the securities to or through dealers, and those dealers may receive compensation in the form of discounts, concessions or commissions from the underwriters and/or commissions from the purchasers for which they may act as agent. Unless otherwise indicated in a prospectus supplement, an agent will be acting on a best efforts basis and a dealer will purchase securities as a principal, and may then resell the securities at varying prices to be determined by the dealer.

Any compensation paid to underwriters, dealers or agents in connection with the offering of the securities, and any discounts, concessions or commissions allowed by underwriters to participating dealers will be provided in the applicable prospectus supplement. Underwriters, dealers and agents participating in the distribution of the securities may be deemed to be underwriters within the meaning of the Securities Act of 1933, as amended, and any discounts and commissions received by them and any profit realized by them on resale of the securities may be deemed to be underwriting discounts and commissions. We may enter into agreements to indemnify underwriters, dealers and agents against civil liabilities, including liabilities under the Securities Act, or to contribute to payments they may be required to make in respect thereof and to reimburse those persons for certain expenses.

Any common stock will be listed on the Nasdaq Global Market, but any other securities may or may not be listed on a national securities exchange. To facilitate the offering of securities, certain persons participating in the offering may engage in transactions that stabilize, maintain or otherwise affect the price of the securities. This may include over-allotments or short sales of the securities, which involve the sale by persons participating in the offering of more securities than were sold to them. In these circumstances, these persons would cover such over-allotments or short positions by making purchases in the open market or by exercising their over-allotment option, if any. In addition, these persons may stabilize or maintain the price of the securities by bidding for or purchasing securities in the open market or by imposing penalty bids, whereby selling concessions allowed to dealers participating in the offering may be reclaimed if securities

sold by them are repurchased in connection with stabilization transactions. The effect of these transactions may be to stabilize or maintain the market price of the securities at a level above that which might otherwise prevail in the open market. These transactions may be discontinued at any time.

We may engage in at the market offerings into an existing trading market in accordance with Rule 415(a)(4) under the Securities Act. In addition, we may enter into derivative transactions with third parties, or sell securities not covered by this prospectus to third parties in privately negotiated transactions. If the applicable prospectus supplement so indicates, in connection with those derivatives, the third parties may sell securities covered by this prospectus and the applicable prospectus supplement, including in short sale transactions. If so, the third party may use securities pledged by us or borrowed from us or others to settle those sales or to close out any related open borrowings of stock, and may use securities received from us in settlement of those derivatives to close out any related open borrowings of stock. The third party in such sale transactions will be an underwriter and, if not identified in this prospectus, will be named in the applicable prospectus supplement (or a post-effective amendment). In addition, we may otherwise loan or pledge securities to a financial institution or other third party that in turn may sell the securities short using this prospectus and an applicable prospectus supplement. Such financial institution or other third party may transfer its economic short position to investors in our securities or in connection with a concurrent offering of other securities.

The specific terms of any lock-up provisions in respect of any given offering will be described in the applicable prospectus supplement.

The underwriters, dealers and agents may engage in transactions with us, or perform services for us, in the ordinary course of business for which they receive compensation.

LEGAL MATTERS

Latham & Watkins LLP will pass upon certain legal matters relating to the issuance and sale of the securities offered hereby on behalf of BioXcel Therapeutics, Inc. Additional legal matters may be passed upon for us or any underwriters, dealers or agents, by counsel that we will name in the applicable prospectus supplement.

EXPERTS

The consolidated financial statements of BioXcel Therapeutics, Inc. appearing in BioXcel Therapeutics, Inc.'s [Annual Report \(Form 10-K\) for the year ended December 31, 2022](#), have been audited by Ernst & Young LLP, independent registered public accounting firm, as set forth in their report thereon, included therein, and incorporated herein by reference. Such consolidated financial statements are incorporated herein by reference in reliance upon such report given on the authority of such firm as experts in accounting and auditing.



**Shares of Common Stock, Pre-Funded Warrants
to Purchase Shares of Common Stock, and Warrants
to Purchase Shares of Common Stock**

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PROSPECTUS SUPPLEMENT
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Canaccord Genuity

, 2024
