

As filed with the Securities and Exchange Commission on January 12, 2024

Registration No. 333-

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION**
Washington D.C. 20549

Form S-3
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933

BioXcel Therapeutics, Inc.

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation or organization)

82-1386754
(I.R.S. Employer
Identification Number)

**555 Long Wharf Drive
New Haven, CT 06511
(475) 238-6837**

(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

**Vimal Mehta, Ph.D.
Chief Executive Officer
BioXcel Therapeutics, Inc.
780 East Main Street
Branford, CT 06405
(203) 643-8060**

(Address, including zip code, and telephone number, including area code, of agent for service)

Copies to:

**Peter N. Handrinon
Keith L. Halverstam
Latham & Watkins LLP
200 Clarendon Street
Boston, MA 02116
(617) 948 6000**

**APPROXIMATE DATE OF COMMENCEMENT OF PROPOSED SALE TO THE PUBLIC:
From time to time after the effective date of this registration statement.**

If the only securities being registered on this Form are being offered pursuant to dividend or interest reinvestment plans, please check the following box.

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, other than securities offered only in connection with dividend or interest reinvestment plans, check the following box.

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a registration statement pursuant to General Instruction I.D. or a post-effective amendment thereto that shall become effective on filing with the Commission pursuant to Rule 462(e) under the Securities Act, check the following box.

If this Form is a post-effective amendment to a registration statement filed pursuant to General Instruction I.D. filed to register additional securities or additional classes of securities pursuant to Rule 413(b) under the Securities Act, check the following box.

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer

Accelerated filer

Non-accelerated filer

Smaller reporting company
Emerging growth company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 7(a)(2)(B) of Securities Act.

The registrant hereby amends this registration statement on such date or dates as may be necessary to delay its effective date until the registrant shall file a further amendment which specifically states that this registration statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933 or until the registration statement shall become effective on such date as the Commission, acting pursuant to said Section 8(a), may determine.

The information in this preliminary prospectus is not complete and may be changed. These securities may not be sold until the registration statement filed with the Securities and Exchange Commission is effective. This preliminary prospectus is not an offer to sell nor does it seek an offer to buy these securities in any jurisdiction where the offer or sale is not permitted.

SUBJECT TO COMPLETION, DATED JANUARY 12, 2024

PROSPECTUS



BioXcel Therapeutics, Inc.

69,630 Shares of Common Stock

This prospectus relates to the resale by the selling stockholders named herein, or their pledgees, donees, transferees or other successors in interest, from time to time, of up to 69,630 shares of our common stock issuable upon exercise of warrants granted in connection with that certain second amendment to credit agreement and guaranty and termination of revenue interest financing agreement, dated as of December 5, 2023, to the credit agreement and guaranty dated as of April 19, 2022, by and among BioXcel Therapeutics, Inc., Oaktree Fund Administration, LLC as the administrative agent, and the lenders party thereto, as amended. The shares of common stock issuable upon exercise of the warrants are referred to herein as the Securities. We are registering the Securities on behalf of the selling stockholders, to be offered and sold from time to time, to satisfy certain registration rights that we have granted to the selling stockholders.

The selling stockholders may resell or dispose of the Securities, or interests therein, at fixed prices, at prevailing market prices at the time of sale or at prices negotiated with purchasers, to or through underwriters, broker-dealers, agents, or through any other means described in the section of this prospectus entitled "Plan of Distribution". The selling stockholders will each bear their respective commissions and discounts, if any, attributable to the sale or disposition of the Securities, or interests therein, held by such selling stockholder. We will bear all costs, expenses and fees in connection with the registration of the Securities. We will not receive any of the proceeds from the sale of the Securities by the selling stockholders.

Our common stock is listed on the Nasdaq Capital Market under the symbol "BTAI." On January 11, 2024, the last reported sale price of our common stock on the Nasdaq Capital Market was \$2.68 per share.

INVESTING IN OUR SECURITIES INVOLVES RISKS. SEE THE "RISK FACTORS" CONTAINED OR INCORPORATED BY REFERENCE IN THIS PROSPECTUS CONCERNING FACTORS YOU SHOULD CONSIDER BEFORE INVESTING IN OUR SECURITIES.

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 _____, 2024.

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ABOUT THIS PROSPECTUS

This prospectus is part with the U.S. Securities and Exchange Commission, or the SEC, using a “shelf” registration process. By using a shelf registration statement, the selling stockholders may sell up to 69,630 shares of our common stock from time to time in one or more offerings as described in this prospectus. We will not receive any proceeds from the sale by the selling stockholders of the Securities offered pursuant to this prospectus.

We may also file a prospectus supplement or post-effective amendment to the registration statement of which this prospectus forms a part that may contain material information relating to these offerings. The prospectus supplement or post-effective amendment 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 post-effective amendment, you should rely on the prospectus supplement or post-effective amendment, as applicable. Before purchasing any securities, you should carefully read this prospectus, any post-effective amendment, and any applicable prospectus supplement, together with the additional information described under the heading “Where You Can Find More Information.”

Neither we, nor the selling stockholders, have authorized anyone to provide you with any information or to make any representations other than those contained or incorporated by reference in this prospectus, any post-effective amendment, or any applicable prospectus supplement prepared by or on behalf of us or to which we have referred you. We and the selling stockholders take no responsibility for and can provide no assurance as to the reliability of any other information that others may give you. We and the selling stockholders 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, any post-effective amendment and any applicable prospectus supplement to this prospectus is accurate only as of the date on its respective cover. Our business, financial condition, results of operations and prospects may have changed since those dates. This prospectus incorporates by reference, and any post-effective amendment or any prospectus supplement may contain or 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 incorporated by reference in this prospectus, any post-effective amendment or any prospectus supplement 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” incorporated by reference in this prospectus, any post-effective amendment and any applicable prospectus supplement. 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 purchasers of the 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.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. We intend such forward-looking statements to be covered by the safe harbor provisions for forward-looking statements contained in Section 27A of the Securities Act of 1933, as amended (the “Securities Act”) and Section 21E of the Securities Exchange Act of 1934, as amended (the “Exchange Act”). The words “anticipate,” “believe,” “can,” “continue,” “could,” “designed,” “estimate,” “expect,” “forecast,” “goal,” “intend,” “may,” “might,” “plan,” “possible,” “potential,” “predict,” “project,” “should,” “target,” “will,” “would” and similar expressions are intended to identify forward-looking statements, though not all forward-looking statements use these words or expressions. All statements contained or incorporated by reference in this prospectus, other than statements of historical fact, are forward-looking statements, including, without limitation, statements regarding:

- our sales strategy for IGALMI™;
- strategy relating to, anticipated benefits from, and cost savings from our reprioritization of certain indications for BXCL501 and the deprioritization of certain other indications of BXCL501, including as a potential adjunctive treatment for major depressive disorder, as well as our BXCL701 immunology program;
- developments relating to our TRANQUILITY II clinical trial;
- our ability to extend our cash runway;
- our plans relating to clinical trials 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, including 505(b)(2) regulatory approval, for our product candidates;
- 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 Therapeutics, LLC;
- developments relating to our competitors and our industry;
- the impact of government laws and regulations; and
- our relationship with BioXcel LLC.

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 and the documents incorporated by reference herein 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 is accurate as of the date on the front cover of this prospectus only. Because the risk factors referred to in this 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 and the documents incorporated by reference herein, and particularly our forward-looking statements, by these cautionary statements.

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 contained in, or accessible through, 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. 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 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 Quarterly Reports on Form 10-Q for the quarters ended March 31, 2023, June 30, 2023 and September 30, 2023 filed with the SEC on [May 9, 2023](#), [August 14, 2023](#) and [November 14, 2023](#), respectively.
- 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](#), [September 25, 2023](#), [December 6, 2023](#), [December 12, 2023](#) and [December 18, 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.

SUMMARY

The following summary highlights information contained elsewhere in this prospectus. This summary is not complete and does not contain all of the information that you need to consider before making an investment decision. For a more complete understanding of our company, you should read and consider carefully the more detailed information included or incorporated by reference in this prospectus and any applicable prospectus supplement, including the factors described under the heading “Risk Factors” of this prospectus, as well as the information incorporated by reference from our most recent Annual Report on Form 10-K and our most recent Quarterly Reports on Form 10-Q, before making an investment decision.

Overview of 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 immunoncology. 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. 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.

Recent Developments

On December 5, 2023 (the “Effective Date”), we entered into the Second Amendment to Credit Agreement and Guaranty and Termination of Revenue Interest Financing Agreement (the “Second 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 “First Amendment”), the “Existing Credit Agreement,” and the Existing Credit Agreement, as amended by the Second Amendment, the “Credit Agreement”). The terms of the Second Amendment are substantially the same as disclosed in Part II, Item 5 of the Company’s [Quarterly Report on Form 10-Q for the quarterly period ended September 30, 2023](#), which summary is incorporated herein by reference. In addition, pursuant to the Second Amendment, the Lenders agreed to permit the Company to invest up to a maximum of \$30,865,000 at any time outstanding in OnkosXcel Therapeutics, LLC, increased from \$30,000,000. In connection with the Second Amendment, the Company agreed to pay to the Lenders an exit fee equal to 0.25% of the loans under the Credit Agreement repaid upon maturity or prepayment of the loans (which exit fee is in addition to, and not in lieu of, the exit fee provided for by the First Amendment).

On the Effective Date, and in connection with the Second Amendment, the Company terminated the Revenue Interest Financing Agreement (as amended from time to time, the “RIFA”) by and among the Company, the purchasers party thereto and OFA, as administrative agent. The \$30,000,000 in financing previously provided to the Company under the RIFA was converted to an outstanding loan under the Credit Agreement pursuant to the Second Amendment. All commitments for potential future funding under the RIFA were terminated.

In connection with the closing of the Second Amendment, on the Effective Date, the Company amended and restated the warrants granted to the Lenders on April 19, 2022 to purchase up to 278,520 shares of the Company's common stock at an exercise price of \$20.04 per share (the "Original Warrants"). Pursuant to the amendment and restatement of the Original Warrants, dated December 5, 2023 (the "Amended and Restated Original Warrants"), the exercise price of the Original Warrants has been reduced to \$3.6452 per share, which represents the 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 the Effective Date.

In connection with the Second Amendment, on the Effective Date, the Company granted new warrants to the Lenders to purchase up to 69,630 shares of the Company's common stock (the "New Warrant Shares") at an exercise price of \$3.6452 per share (the "New Warrants"), which represents the 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 the Effective Date. The New Warrants will expire on April 19, 2029 and may be net exercised at the holder's election.

On the Effective Date, Company amended and restated its Registration Rights Agreement (the "Amended and Restated Registration Rights Agreement") with the Lenders, dated April 19, 2022, pursuant to which the Company agreed to register the New Warrant Shares for resale.

Our Corporate Information

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, 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.

THE OFFERING

Securities	69,630 shares of our common stock, issuable upon the exercise of the New Warrants granted in connection with the Second Amendment.
Terms of the offering	The selling stockholders will each determine when and how they will sell the Securities offered in this prospectus, as described in the “Plan of Distribution.”
Terms of the New Warrants	Each New Warrant entitles the holder to purchase one share of common stock, subject to any adjustments, at an exercise price of \$3.6452 per share. The New Warrants will expire on April 19, 2029 and may be net exercised at the holder’s election.
Use of proceeds	We will not receive any proceeds from the sale of the Securities by the selling stockholders in this offering. See “Use of Proceeds.”
Risk factors	See the section under the heading “Risk Factors” in this prospectus and the other information included in, or incorporated by reference into, this prospectus or any prospectus supplement for a discussion of certain factors you should carefully consider before deciding to invest in shares of our common stock.
Nasdaq Capital Market symbol	BTAI

RISK FACTORS

Investment in the Securities offered pursuant to this prospectus and any 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 will not receive any proceeds from the sale of the Securities covered by this prospectus and any accompanying prospectus supplement. All proceeds from the sale of the Securities will be for the respective accounts of the selling stockholders named herein. We will bear all other costs, fees and expenses incurred in effecting the registration of the Securities covered by this prospectus and any accompanying prospectus supplement, including, without limitation, all registration and filing fees, Nasdaq listing fees and fees and expenses of our counsel and our accountants, in accordance with the terms of the Amended and Restated Registration Rights Agreement entered into by and among the Company and the selling stockholders in connection with the Credit Agreement. Each selling stockholder will each pay any discounts, commissions, and fees of underwriters, selling brokers, dealer managers or similar securities industry professionals incurred by such selling stockholder in disposing of the Securities covered by this prospectus.

SELLING STOCKHOLDERS

We have prepared this prospectus to allow the selling stockholders or their pledgees, donees, transferees or other successors in interest, to sell or otherwise dispose of, from time to time, up to 69,630 shares of our common stock issuable pursuant to the New Warrants.

We are registering the above-referenced Securities to permit the selling stockholders and their donees, pledgees, transferees or other successors in interest that receive Securities after the date of this prospectus to resell or otherwise dispose of the Securities in the manner contemplated under “Plan of Distribution” below.

In connection with certain registration rights that we granted to the selling stockholders pursuant to the Amended and Restated Registration Rights Agreement, we filed with the SEC a Registration Statement on Form S-3, of which this prospectus forms a part, with respect to the resale or other disposition of the Securities offered by this prospectus from time to time on Nasdaq, in privately negotiated transactions or otherwise.

The following table sets forth the names of each of the selling stockholders and the aggregate number of Securities that the selling stockholders may offer and sell pursuant to this prospectus, as well as other information regarding the beneficial ownership (as determined under Section 13(d) of the Exchange Act and the rules and regulations thereunder) of the shares of common stock of the Company held by the selling stockholder.

The selling stockholders may sell some, all or none of the Securities. We do not know how long the selling stockholders will hold the Securities before selling them, and we currently have no agreements, arrangements or understandings with any selling stockholder regarding the sale or other disposition of any of the Securities. The Securities may be offered and sold from time to time by the selling stockholders pursuant to this prospectus. The information below assumes the offer and sale of all Securities beneficially owned by the selling stockholders and available for sale under this prospectus and assumes no further acquisitions or dispositions of Securities by the selling stockholders. The information set forth below is based upon information obtained from the selling stockholders and upon information in our possession regarding the original issuance of the New Warrants. The percentages of shares owned after the offering are based on 29,929,997 shares of common stock outstanding as of December 31, 2023.

SELLING STOCKHOLDER	SHARES BENEFICIALLY OWNED PRIOR TO THE OFFERING ⁽³⁾	SHARES BEING OFFERED HEREBY ⁽⁴⁾	SHARES BENEFICIALLY OWNED AFTER THE OFFERING	
			NUMBER OF SHARES	PERCENTAGE
Oaktree-TCDRS Strategic Credit, LLC ⁽¹⁾	3,591	718	2,873	*
Oaktree-Forrest Multi-Strategy, LLC ⁽¹⁾	2,898	580	2,318	*
Oaktree-TBMR Strategic Credit Fund C, LLC ⁽¹⁾	1,748	350	1,398	*
Oaktree-TBMR Strategic Credit Fund F, LLC ⁽¹⁾	2,738	548	2,190	*
Oaktree-TBMR Strategic Credit Fund G, LLC ⁽¹⁾	4,470	894	3,576	*
Oaktree-TSE 16 Strategic Credit, LLC ⁽¹⁾	4,490	898	3,592	*
INPRS Strategic Credit Holdings, LLC ⁽¹⁾	1,370	274	1,096	*
Oaktree Specialty Lending Corporation ⁽¹⁾	27,710	6,533	21,177	*

SELLING STOCKHOLDER	SHARES BENEFICIALLY OWNED PRIOR TO THE OFFERING ⁽³⁾	SHARES BEING OFFERED HEREBY ⁽⁴⁾	SHARES BENEFICIALLY OWNED AFTER THE OFFERING	
			NUMBER OF SHARES	PERCENTAGE
Oaktree Strategic Credit Fund ⁽¹⁾	15,566	3,113	12,453	*
Oaktree GCP Fund Delaware Holdings, L.P. ⁽¹⁾	1,991	398	1,593	*
Oaktree Diversified Income Fund Inc. ⁽¹⁾	4,359	872	3,487	*
Oaktree AZ Strategic Lending Fund, L.P. ⁽¹⁾	25,546	5,109	20,437	*
Oaktree LSL Fund Holdings EURRC S.à.r.l	26,982	10,377	16,605	*
Oaktree LSL Fund Delaware Holdings EURRC, L.P. ⁽¹⁾	4,151	4,151	—	*
Q Boost Holding LLC ⁽²⁾	174,075	34,815	139,260	*

* Less than 1%.

- (1) The principal business address and address for notice of the selling stockholder is 333 S. Grand Avenue, 28th Fl., Los Angeles, California, 90071.
- (2) The principal business address and address for notice of the selling stockholder is c/o Qatar Investment Authority, Ooredoo Tower (Building 14), Al Dafna Street (Street 801), Al Dafna (Zone 61), Doha, Qatar.
- (3) Consists of shares of common stock issuable upon exercise of the Amended and Restated Original Warrants and the New Warrants.
- (4) Consists solely of shares of common stock issuable upon exercise of the New Warrants.

Relationship with the Selling Stockholders

We and the selling stockholders are party to the Credit Agreement, the Amended and Restated Registration Rights Agreement, the Amended and Restated Original Warrants and the New Warrants. During the last three years, we and the selling stockholders were also party to the RIFA, which was terminated in December 2023.

Credit Agreement and RIFA

For additional information regarding the Credit Agreement and the RIFA, refer to Note 9 to [our Quarterly Report on Form 10-Q for the quarterly period ended September 30, 2023, filed with the SEC on November 14, 2023](#), and [our Current Report on Form 8-K, filed with the SEC on December 6, 2023](#), both of which reports are incorporated by reference herein.

Amended and Restated Registration Rights Agreement

Pursuant to the Amended and Restated Registration Rights Agreement, we agreed to prepare and file with the SEC: (1) a registration statement on Form S-3 for the resale of the shares issuable upon the exercise of the Amended and Restated Original Warrants granted to the selling stockholders and, subject to certain exceptions, use reasonable best efforts to keep the registration statement of which this prospectus forms a part effective under the Securities Act until the earlier of (i) the 30-month anniversary of the Closing Date (as defined in the Amended and Restated Registration Rights Agreement), (2) a Change of Control (as defined in the Amended and Restated Registration Rights Agreement) and (3) such time as there are no Registrable Securities (as defined in the Amended and Restated Registration Rights Agreement) remaining or issuable upon exercise of the Amended and Restated Original Warrants; and (2) a registration statement on Form S-3 for the resale of the shares issuable upon the exercise of the New Warrants granted to the selling

stockholders and, subject to certain exceptions, use reasonable best efforts to keep the registration statement of which this prospectus forms a part effective under the Securities Act until the earlier of (i) the 30-month anniversary of the Effective Date, (2) a Change of Control and (3) such time as there are no Registrable Securities remaining or issuable upon exercise of the New Warrants.

We have also agreed, among other things, to indemnify the selling stockholders, their officers, directors, members, employees and agents, successors and assigns, and each other person, if any, who controls such selling stockholders from certain liabilities and to pay all reasonable fees and expenses (except legal fees of more than one counsel to the selling stockholders and excluding discounts, commissions and fees of underwriters, selling brokers, dealer managers or similar securities industry professionals) incurred by us in connection with the registration of the ordinary shares held by the selling stockholders.

Amended and Restated Original Warrants

The Amended and Restated Original Warrants are exercisable at any time until April 19, 2029 and entitle the selling stockholders to purchase an aggregate of 278,520 shares of our common stock at an exercise price per share of \$3.6452 per share, subject to certain adjustments.

New Warrants

The New Warrants are exercisable at any time until April 19, 2029 and entitle the selling stockholders to purchase an aggregate of 69,630 shares of our common stock at an exercise price per share of \$3.6452 per share, subject to certain adjustments.

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 Equiniti Trust Company, LLC (formerly 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.

PLAN OF DISTRIBUTION

The selling stockholders, including their pledgees, donees, transferees, distributees, beneficiaries or other successors in interest, may from time to time offer some or all of the Securities by this prospectus. We will not receive any of the proceeds from the sale of the Securities covered by this prospectus by the selling stockholders. The selling stockholders will act independently of us in making decisions with respect to the timing, manner and size of each sale. We will bear all fees and expenses incident to our obligation to register the Securities covered by this prospectus.

The selling stockholders may each sell all or a portion of the Securities beneficially owned by it and offered hereby from time to time directly or through one or more underwriters, broker-dealers or agents. If the Securities are sold through underwriters or broker-dealers, the selling stockholders will each be responsible for underwriting discounts or commissions or agent's commissions in connection with the Securities held by such selling stockholders. The Securities may be sold on any national securities exchange or quotation service on which the Securities may be listed or quoted at the time of sale, in the over-the-counter market or in transactions otherwise than on these exchanges or systems or in the over-the-counter market and in one or more transactions at fixed prices, at prevailing market prices at the time of the sale, at varying prices determined at the time of sale, or at privately negotiated prices. These sales may be effected in transactions, which may involve crosses or block transactions.

The selling stockholders may use any one or more of the following methods when disposing of Securities or interests therein:

- ordinary brokerage transactions and transactions in which the broker-dealer solicits purchasers;
- block trades in which the broker-dealer will attempt to sell the Securities as agent, but may position and resell a portion of the
- block as principal to facilitate the transaction
- purchases by a broker-dealer as principal and resale by the broker-dealer for its account;
- an over-the-counter distribution;
- an exchange distribution in accordance with the rules of the applicable exchange;
- privately negotiated transactions;
- short sales effected after the effective date of the registration statement of which this prospectus is a part;
- through the writing or settlement of options or other hedging transactions, whether through an options exchange or otherwise
- in "at the market" offerings, as defined in Rule 415 under the Securities Act, at negotiated prices, at prices prevailing at the time of sale or prices related to such prevailing market prices, including sales made directly on a national securities exchange or sales made through a market maker other than on an exchange or other similar offerings through sales agents;
- through trading plans entered into by the selling stockholders pursuant to Rule 10b5-1 under the Exchange Act, that are in place at the time of an offering pursuant to this prospectus and any applicable prospectus supplement hereto that provide for periodic sales of their securities on the basis of parameters described in such trading plans;
- through firm-commitment underwritten public offerings;
- a combination of any such methods of sale; or
- any other method permitted pursuant to applicable law.

The selling stockholders may each, from time to time, pledge or grant a security interest in some or all of the Securities owned and, if any selling stockholder defaults in the performance of its secured obligations, the pledgees or secured parties may offer and sell the Securities, from time to time, under this prospectus, or under an amendment to this prospectus under Rule 424(b)(3) or other applicable provision of the Securities

Act amending the list of the selling stockholders to include the pledgee, transferee, or other successors in interest as the selling stockholders under this prospectus. The selling stockholders also may transfer the Securities in other circumstances, in which case the transferees, pledgees or other successors in interest will be the beneficial owners for purposes of this prospectus.

In connection with the sale of Securities, or interests therein, the selling stockholders may enter into hedging transactions with broker-dealers or other financial institutions, which may in turn engage in short sales of the Common Stock in the course of hedging the positions it assumes. The selling stockholders may also sell Securities short and deliver the Securities to close out any such short positions, or loan or pledge the Securities to broker-dealers that in turn may sell these Securities. The selling stockholders may also enter into option or other transactions with broker-dealers or other financial institutions or the creation of one or more derivative securities which require the delivery to such broker-dealer or other financial institution of Securities offered by this prospectus, which Securities such broker-dealer or other financial institution may resell pursuant to this prospectus (as supplemented or amended to reflect such transaction).

Broker-dealers engaged by the selling stockholders may arrange for other broker-dealers to participate in sales. If the selling stockholders effect certain transactions by selling Securities to or through underwriters, broker-dealers or agents, such underwriters, broker-dealers or agents may receive commissions in the form of discounts, concessions or commissions from such selling stockholders or commissions from purchasers of the Securities for whom they may act as agent or to whom they may sell as principal. Such commissions will be in amounts to be negotiated, but, except as set forth in a supplement to this prospectus, in the case of an agency transaction will not be in excess of a customary brokerage commission in compliance with applicable rules of the Financial Industry Regulatory Authority, or FINRA, and in the case of a principal transaction, a markup or markdown in compliance with applicable FINRA rules.

The aggregate proceeds to the selling stockholders from the sale of the Securities offered will be the purchase price of the Securities less discounts or commissions, if any. The selling stockholders reserve the right to accept and, together with their respective agents from time to time, to reject, in whole or in part, any proposed purchase of Securities to be made directly or through agents. The selling stockholders also may resell all or a portion of the Securities in open market transactions in reliance upon Rule 144 under the Securities Act, rather than under this prospectus, provided that each meets the criteria and conforms to the requirements of that rule.

The selling stockholders and any underwriters, broker-dealers or agents that participate in the sale of the Securities, or interests therein, may be deemed to be “underwriters” within the meaning of Section 2(a)(11) of the Securities Act. Any discounts, commissions, concessions or profit they earn on any resale of the Securities may be underwriting discounts and commissions under the Securities Act. The selling stockholders are subject to the prospectus delivery requirements of the Securities Act.

To the extent required pursuant to Rule 424(b) under the Securities Act, the Securities to be sold, the names of the selling stockholders, the purchase price and public offering price, the names of any agents, dealer or underwriter, and any applicable commissions or discounts with respect to a particular offer will be set forth in an accompanying prospectus supplement or, if appropriate, a post-effective amendment to the registration statement that includes this prospectus.

In order to comply with the securities laws of some states, if applicable, the Securities may be sold in these jurisdictions only through registered or licensed brokers or dealers. In addition, in some states the Securities may not be sold unless they have been registered or qualified for sale, or an exemption from registration or qualification requirements is available and the selling stockholder complies with such exemption’s requirements.

The selling stockholders and any other person participating in a sale of the Securities registered under this prospectus will be subject to applicable provisions of the Exchange Act, and the rules and regulations

thereunder, including, without limitation, to the extent applicable, Regulation M of the Exchange Act, which may limit the timing of purchases and sales of any of the Securities by the selling stockholders and any other participating person.

All of the foregoing may affect the marketability of the Securities and the ability of any person or entity to engage in market-making activities with respect to the Securities. In addition, we will make copies of this prospectus (as it may be supplemented or amended from time to time) available to the selling stockholders for the purpose of satisfying the prospectus delivery requirements of the Securities Act. The selling stockholders may indemnify any broker-dealer that participates in transactions involving the sale of the Securities against certain liabilities, including liabilities arising under the Securities Act.

LEGAL MATTERS

Latham & Watkins LLP will pass upon certain legal matters relating to the issuance and sale of the common stock offered hereby on behalf of BioXcel Therapeutics, Inc.

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.



69,630 Shares of Common Stock

PROSPECTUS

, 2024

PART II
INFORMATION NOT REQUIRED IN PROSPECTUS

Item 14. Other Expenses of Issuance and Distribution

The following is an estimate of the expenses (all of which are to be paid by the registrant) that we may incur in connection with the securities being registered hereby.

SEC registration fee	\$ 28.78
Printing expenses	\$10,000
Legal fees and expenses	\$50,000
Accounting fees and expenses	\$30,000
Miscellaneous	\$971.22
Total	<u>\$91,000</u>

Item 15. Indemnification of Directors and Officers

Section 102 of the General Corporation Law of the State of Delaware, or the DGCL, permits a corporation to eliminate the personal liability of directors of a corporation to the corporation or its stockholders for monetary damages for a breach of fiduciary duty as a director, except where the director breached his duty of loyalty, failed to act in good faith, engaged in intentional misconduct or knowingly violated a law, authorized the payment of a dividend or approved a stock repurchase in violation of Delaware corporate law or obtained an improper personal benefit. Our charter provides that no director of the Company shall be personally liable to it or its stockholders for monetary damages for any breach of fiduciary duty as a director, notwithstanding any provision of law imposing such liability, except to the extent that the DGCL prohibits the elimination or limitation of liability of directors for breaches of fiduciary duty.

Section 145 of the DGCL provides that a corporation has the power to indemnify a director, officer, employee, or agent of the corporation, or a person serving at the request of the corporation for another corporation, partnership, joint venture, trust or other enterprise in related capacities against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by the person in connection with an action, suit or proceeding to which he was or is a party or is threatened to be made a party to any threatened, ending or completed action, suit or proceeding by reason of such position, if such person acted in good faith and in a manner he reasonably believed to be in or not opposed to the best interests of the corporation, and, in any criminal action or proceeding, had no reasonable cause to believe his conduct was unlawful, except that, in the case of actions brought by or in the right of the corporation, no indemnification shall be made with respect to any claim, issue or matter as to which such person shall have been adjudged to be liable to the corporation unless and only to the extent that the Court of Chancery or other adjudicating court determines that, despite the adjudication of liability but in view of all of the circumstances of the case, such person is fairly and reasonably entitled to indemnity for such expenses which the Court of Chancery or such other court shall deem proper.

Section 145 further authorizes a corporation to purchase and maintain insurance on behalf of any person who is or was a director, officer, employee or agent of the corporation or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation or enterprise, against any liability asserted against such person and incurred by such person in any such capacity, or arising out of his or her status as such, whether or not the corporation would otherwise have the power to indemnify him or her under Section 145.

Any underwriting agreement or distribution agreement that the registrant enters into with any underwriters or agents involved in the offering or sale of any securities registered hereby may require such underwriters or dealers to indemnify the registrant, some or all of its directors and officers and its controlling persons, if any, for specified liabilities, which may include liabilities under the Securities Act of 1933, as amended.

Our charter and bylaws provide for indemnification and advancement of expenses to our directors and officers to the fullest extent permitted by the DGCL. We will indemnify each person who was or is a party

or threatened to be made a party to any threatened, pending or completed action, suit or proceeding (other than an action by or in the right of the Company) by reason of the fact that he or she is or was, or has agreed to become, a director or officer, or is or was serving, or has agreed to serve, at our request as a director, officer, partner, employee or trustee of, or in a similar capacity with, another corporation, partnership, joint venture, trust or other enterprise (all such persons being referred to as an "Indemnitee"), or by reason of any action alleged to have been taken or omitted in such capacity, against all expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred in connection with such action, suit or proceeding and any appeal therefrom, if such Indemnitee acted in good faith and in a manner he or she reasonably believed to be in, or not opposed to, our best interests, and, with respect to any criminal action or proceeding, he or she had no reasonable cause to believe his or her conduct was unlawful. Our charter and bylaws provide that we will indemnify any Indemnitee who was or is a party to an action or suit by or in the right of the Company to procure a judgment in the Company's favor by reason of the fact that the Indemnitee is or was, or has agreed to become, a director or officer, or is or was serving, or has agreed to serve, at our request as a director, officer, partner, employee or trustee of, or in a similar capacity with, another corporation, partnership, joint venture, trust or other enterprise, or by reason of any action alleged to have been taken or omitted in such capacity, against all expenses (including attorneys' fees) and, to the extent permitted by law, amounts paid in settlement actually and reasonably incurred in connection with such action, suit or proceeding, and any appeal therefrom, if the Indemnitee acted in good faith and in a manner he or she reasonably believed to be in, or not opposed to, the Company's best interests, except that no indemnification shall be made with respect to any claim, issue or matter as to which such person shall have been adjudged to be liable to the Company, unless a court determines that, despite such adjudication but in view of all of the circumstances, he or she is entitled to indemnification of such expenses. Notwithstanding the foregoing, to the extent that any Indemnitee has been successful, on the merits or otherwise, he or she will be indemnified by the Company against all expenses (including attorneys' fees) actually and reasonably incurred in connection therewith. Expenses must be advanced to an Indemnitee under certain circumstances. The limitation of liability and indemnification provisions in our charter and bylaws may discourage stockholders from bringing a lawsuit against directors for breach of their fiduciary duty. These provisions may also have the effect of reducing the likelihood of derivative litigation against our directors and officers, even though such an action, if successful, might otherwise benefit us and our stockholders. However, these provisions do not limit or eliminate our rights, or those of any stockholder, to seek non-monetary relief such as injunction or rescission in the event of a breach of a director's duty of care. These provisions will not alter the liability of directors under federal securities laws.

We have entered into separate indemnification agreements with each of our directors and executive officers. Each indemnification agreement provides, among other things, for indemnification to the fullest extent permitted by law and our charter and bylaws any and all expenses, judgments, fines, penalties and amounts paid in settlement of any claim. The indemnification agreements provide for the advancement or payment of all expenses to the indemnitee and for the reimbursement to us if it is found that such indemnitee is not entitled to such indemnification under applicable law and our charter and bylaws.

We maintain a general liability insurance policy that covers certain liabilities of our directors and officers arising out of claims based on acts or omissions in their capacities as our directors or officers.

Item 16. Exhibits

Exhibit Number	Description
3.1	Amended and Restated Certificate of Incorporation of BioXcel Therapeutics, Inc. (incorporated by reference to the Company's 10-Q filed on August 10, 2021) (File No. 001-38410).
3.2	Bylaws of BioXcel Therapeutics, Inc. (incorporated by reference to the Company's 8-K filed on March 13, 2018) (File No. 001-38410).
4.1	Form of Specimen Certificate Representing Common Stock (incorporated by reference to the Company's S-1/A filed on February 26, 2018 (File No. 333-22990)).
4.2	Form of Amended and Restated Original Warrant (incorporated by reference to Exhibit 4.1 of the Company's Current Report on Form 8-K (File No. 001-38410) filed with the SEC on December 6, 2023).
4.3	Form of New Warrant (incorporated by reference to Exhibit 4.2 of the Company's Current Report on Form 8-K (File No. 001-38410) filed with the SEC on December 6, 2023).
4.4	Amended and Restated Registration Rights Agreement, dated December 5, 2023, among the Company and Oaktree-TCDRS Strategic Credit, LLC, Oaktree-Forrest Multi-Strategy, LLC, Oaktree-TBMR Strategic Credit Fund C, LLC, Oaktree-TBMR Strategic Credit Fund F, LLC, Oaktree-TBMR Strategic Credit Fund G, LLC, Oaktree-TSE 16 Strategic Credit, LLC, INPRS Strategic Credit Holdings, LLC, Oaktree Specialty Lending Corporation, Oaktree Strategic Credit Fund, Oaktree GCP Fund Delaware Holdings, L.P., Oaktree Diversified Income Fund Inc., Oaktree AZ Strategic Lending Fund, L.P., Oaktree LSL Fund Holdings EURRC S.a.r.l., Oaktree LSL Fund Delaware Holdings EURRC, L.P., and Q Boost Holding LLC (incorporated by reference to Exhibit 4.3 of the Company's Current Report on Form 8-K (File No. 001-38410) filed with the SEC on December 6, 2023).
5.1	Opinion of Latham & Watkins LLP.
23.1	Consent of Latham & Watkins LLP (included in Exhibit 5.1).
23.2	Consent of Ernst & Young, LLP, independent registered public accounting firm.
24.1	Powers of Attorney (incorporated by reference to the signature page hereto).
107	Filing fee table.

Item 17. Undertakings

(a) The undersigned registrant hereby undertakes:

- (1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:
 - (i) To include any prospectus required by Section 10(a)(3) of the Securities Act of 1933;
 - (ii) To reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement; and
 - (iii) To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement;

provided, however, that paragraphs (a)(1)(i), (a)(1)(ii), and (a)(1)(iii) above do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the Commission by the registrant pursuant to section 13 or section 15(d) of the Securities Exchange Act of 1934 that are incorporated by reference in the registration statement, or is contained in a form of prospectus filed pursuant to Rule 424(b) that is a part of the registration statement.

- (2) That, for the purpose of determining any liability under the Securities Act of 1933, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.
- (3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.
- (4) That, for the purpose of determining liability under the Securities Act of 1933 to any purchaser:
- (A) Each prospectus filed by the registrant pursuant to Rule 424(b)(3) shall be deemed to be part of the registration statement as of the date the filed prospectus was deemed part of and included in the registration statement; and
- (B) Each prospectus required to be filed pursuant to Rule 424(b)(2), (b)(5), or (b)(7) as part of a registration statement in reliance on Rule 430B relating to an offering made pursuant to Rule 415(a)(1)(i), (vii), or (x) for the purpose of providing the information required by section 10(a) of the Securities Act of 1933 shall be deemed to be part of and included in the registration statement as of the earlier of the date such form of prospectus is first used after effectiveness or the date of the first contract of sale of securities in the offering described in the prospectus. As provided in Rule 430B, for liability purposes of the issuer and any person that is at that date an underwriter, such date shall be deemed to be a new effective date of the registration statement relating to the securities in the registration statement to which that prospectus relates, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof. *Provided, however,* that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such effective date, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such effective date.
- (5) That, for the purpose of determining liability of the registrant under the Securities Act of 1933 to any purchaser in the initial distribution of the securities:

The undersigned registrant undertakes that in a primary offering of securities of the undersigned registrant pursuant to this registration statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:

- (i) Any preliminary prospectus or prospectus of the undersigned registrant relating to the offering required to be filed pursuant to Rule 424;
- (ii) Any free writing prospectus relating to the offering prepared by or on behalf of the undersigned registrant or used or referred to by the undersigned registrant;
- (iii) The portion of any other free writing prospectus relating to the offering containing material information about the undersigned registrant or its securities provided by or on behalf of the undersigned registrant; and
- (iv) Any other communications that is an offer in the offering made by the undersigned registrant to the purchaser.
- (b) The undersigned registrant hereby undertakes that, for purposes of determining any liability under the Securities Act of 1933, each filing of the registrant's annual report pursuant to Section 13(a) or Section 15(d) of the Securities Exchange Act of 1934 (and, where applicable, each filing of an employee benefit plan's annual report pursuant to section 15(d) of the Securities Exchange Act of 1934) that is incorporated by reference in the registration statement shall be deemed to be a new registration statement

relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof.

- (h) Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

<u>SIGNATURE</u>	<u>TITLE</u>	<u>DATE</u>
<u>/s/ Michael P. Miller</u> Michael P. Miller	Director	January 12, 2024
<u>/s/ Michal Votruba, M.D., Ph.D.</u> Michal Votruba, M.D., Ph.D.	Director	January 12, 2024

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January 12, 2024

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

Re: Registration Statement on Form S-3; 69,630 shares of Common Stock, par value \$0.001 per share

To the addressee set forth above:

We have acted as special counsel to BioXcel Therapeutics, Inc., a Delaware corporation (the “**Company**”), in connection with the registration for resale from time to time by the selling stockholders (the “**Selling Stockholders**”) named in the Prospectus (as defined below) of 69,630 shares (the “**Shares**”) of the Company’s common stock, \$0.001 par value per share (“**Common Stock**”), issuable upon the exercise of warrants issued to the Selling Stockholders by the Company (the “**Warrants**”). The Shares are included in a registration statement on Form S-3 (the “**Registration Statement**”) under the Securities Act of 1933, as amended (the “**Act**”), and the related prospectus included in the Registration Statement (the “**Prospectus**”), filed with the Securities and Exchange Commission (the “**Commission**”) on January 12, 2024. This opinion is being furnished in connection with the requirements of Item 601(b)(5) of Regulation S-K under the Act, and no opinion is expressed herein as to any matter pertaining to the contents of the Registration Statement or the related Prospectus, other than as expressly stated herein with respect to the issue of the Shares.

As such counsel, we have examined such matters of fact and questions of law as we have considered appropriate for purposes of this letter. With your consent, we have relied upon certificates and other assurances of officers of the Company and others as to factual matters without having independently verified such factual matters. We are opining herein as to the General Corporation Law of the State of Delaware (the “**DGCL**”), and we express no opinion with respect to any other laws.

Subject to the foregoing and the other matters set forth herein, it is our opinion that, as of the date hereof, when the Shares shall have been duly registered on the books of the transfer agent and registrar therefor in the name or on behalf of the Selling Stockholders, and have been issued by the Company against payment therefor (not less than par value) in the circumstances contemplated by the Warrants, the issue of the Shares will have been duly authorized by all necessary corporate action of the Company and the Shares will be validly issued, fully paid and nonassessable.

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In rendering the foregoing opinion, we have assumed that: (i) the Company will comply with all applicable notice requirements regarding uncertificated shares provided in the DGCL; (ii) the Warrants have been duly executed and delivered by the Company and, under the internal laws of the State of New York, constitute valid and legally binding obligations of the Company; and (iii) upon the issue of any of the Shares, the total number of shares of Common Stock then issued and outstanding will not exceed the total number of shares of Common Stock that the Company is then authorized to issue under its certificate of incorporation and by the board of directors of the Company in connection with the offering contemplated by the Registration Statement.

This opinion is for your benefit in connection with the Registration Statement and may be relied upon by you and by persons entitled to rely upon it pursuant to the applicable provisions of the Act. We consent to your filing this opinion as an exhibit to the Registration Statement and to the reference to our firm in the Prospectus under the heading "Legal Matters." In giving such consent, we do not thereby admit that we are in the category of persons whose consent is required under Section 7 of the Act or the rules and regulations of the Commission thereunder.

Sincerely,

/s/ LATHAM & WATKINS LLP

Consent of Independent Registered Public Accounting Firm

We consent to the reference to our firm under the caption "Experts" in the Registration Statement (Form S-3) and related Prospectus of BioXcel Therapeutics, Inc. for the registration of 69,630 shares of its common stock and to the incorporation by reference therein of our report dated March 15, 2023, with respect to the consolidated financial statements of BioXcel Therapeutics, Inc. included in its Annual Report (Form 10-K) for the year ended December 31, 2022, filed with the Securities and Exchange Commission.

/s/ Ernst & Young LLP

Stamford, Connecticut
January 12, 2024

CALCULATION OF FILING FEE TABLE

Registration Statement Form S-3
(Form Type)

BioXcel Therapeutics, Inc.
(Exact Name of Registrant as Specified in its Charter)

Table 1: Newly Registered and Carry Forward Securities

	Security Type	Security Class Title	Fee Calculation Rule	Amount Registered(1)	Proposed Maximum Offering Price Per Unit(2)	Maximum Aggregate Offering Price(2)	Fee Rate	Amount of Registration Fee
Fees to Be Paid	Equity	Common stock, \$0.001 par value per share	Other	69,630	\$2.80	\$194,964	0.00014760	\$28.78
	Total Offering Amounts					\$194,964		\$28.78
	Total Fees Previously Paid							—
	Total Fee Offsets							—
	Net Fee Due							\$28.78

- (1) Consists of shares of our common stock issuable to the selling stockholders upon exercise of warrants to purchase common stock. Pursuant to Rule 416 under the Securities Act of 1933, as amended, the shares of common stock being registered hereunder include such indeterminate number of shares of common stock as may be issuable with respect to the shares of common stock being registered hereunder as a result of stock splits, stock dividends or similar transactions.
- (2) Estimated solely for the purpose of calculating the amount of the registration fee pursuant to Rule 457(c) of the Securities Act, on the basis of the average of the high and low prices for a share of the registrant's common stock as reported on the Nasdaq Capital Market on January 10, 2024, which date is a date within five business days prior to the filing of this registration statement.