

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

Form S-1
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933

Kiromic BioPharma, Inc.

(Exact name of Registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation or organization)

2836
(Primary Standard Industrial
Classification Code Number)

46-4762913
(I.R.S. Employer
Identification Number)

7707 Fannin, Suite 140
Houston, TX 77054
(832) 968-4888

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

Pietro Bersani, CPA.
Chief Executive Officer
7707 Fannin, Suite 140
Houston, TX 77054
(832) 968-4888

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

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Approximate date of commencement of proposed sale to the public: As soon as practicable after this registration statement becomes effective.

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, 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 post-effective amendment filed pursuant to Rule 462(d) 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.

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 the 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, as amended, or until the registration statement shall become effective on such date as the Securities and Exchange 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 U.S. Securities and Exchange Commission is effective. This prospectus is not an offer to sell these securities and it is not soliciting an offer to buy these securities in any jurisdiction where the offer or sale is not permitted.

SUBJECT TO COMPLETION, DATED JUNE 29, 2023

PRELIMINARY PROSPECTUS

**Up to [•] shares of Common Stock
Pre-Funded Warrants to Purchase up to [•] shares of Common Stock
Warrants to Purchase up to [•] shares of Common Stock
Shares of Common Stock underlying the Pre-Funded Warrants and Warrants**

KIROMIC BIOPHARMA, INC.

We are offering up to [•] shares of our common stock, together with warrants to purchase up to [•] shares of our common stock (and the shares of common stock that are issuable from time to time upon exercise of the warrants), at an assumed combined public offering price of \$[•] (equal to the last sale price of our common stock as reported by The Nasdaq Capital Market on [•], 2023). We are also offering to certain purchasers whose purchase of shares of common stock in this offering would otherwise result in the purchaser, together with its affiliates and certain related parties, beneficially owning more than 4.99% (or, at the election of the purchaser, 9.99%) of our outstanding common stock immediately following the consummation of this offering, the opportunity to purchase, if any such purchaser so chooses, pre-funded warrants to purchase shares of our common stock, in lieu of shares of common stock that would otherwise result in such purchaser's beneficial ownership exceeding 4.99% (or, at the election of the purchaser, 9.99%) of our outstanding common stock. Each pre-funded warrant will be exercisable for one share of our common stock. The purchase price of each pre-funded warrant and accompanying warrant will be equal to the price at which a share of common stock and accompanying warrant are sold to the public in this offering, minus \$0.0001, and the exercise price of each pre-funded warrant will be \$0.0001 per share. The pre-funded warrants will be immediately exercisable and may be exercised at any time until all of the pre-funded warrants are exercised in full. This offering also relates to the shares of common stock issuable upon exercise of any pre-funded warrants sold in this offering. Each share of common stock and pre-funded warrant are being sold together with a warrant to purchase [one] share of our common stock at an exercise price of \$[•] per share (representing 100% of the price at which a share of common stock and accompanying warrant are sold to the public in this offering). The warrants will be exercisable immediately and will expire five years from the date of issuance. For each pre-funded warrant we sell, the number of shares of common stock we are offering will be decreased on a one-for-one basis. Because we will issue a warrant for each share of our common stock and for each pre-funded warrant to purchase one share of our common stock sold in this offering, the number of warrants sold in this offering will not change as a result of a change in the mix of the shares of our common stock and pre-funded warrants sold. The shares of common stock and pre-funded warrants, and the accompanying warrants, can only be purchased together in this offering but will be issued separately and will be immediately separable upon issuance.

Our common stock is listed on The Nasdaq Capital Market under the symbol "KRBP". On June •, 2023, the closing price as reported on The Nasdaq Capital Market was \$[•] per share.

The public offering price per share of common stock and accompanying warrant and any pre-funded warrant and accompanying warrant, as the case may be, will be determined by us at the time of pricing, may be at a discount to the current market price, and the recent market price used throughout this prospectus may not be indicative of the final public offering price.

We are an "emerging growth company" as that term is used in the Jumpstart Our Business Startups Act of 2012 (the "JOBS Act") and, as such, we have elected to comply with certain reduced public company reporting requirements for this prospectus and future filings with the Securities and Exchange Commission.

We may amend or supplement this prospectus from time to time by filing amendments or supplements as required. You should read this prospectus, together with additional information described under the heading "*Where You Can Find More Information*", and any amendments or supplements carefully before you invest in any of our securities.

INVESTING IN OUR COMMON STOCK INVOLVES SUBSTANTIAL RISKS. YOU SHOULD REVIEW CAREFULLY THE RISKS AND UNCERTAINTIES DESCRIBED UNDER THE HEADING "RISK FACTORS" BEGINNING ON PAGE [] OF THIS PROSPECTUS.

We have engaged Roth Capital Partners, LLC as our placement agent ("Roth" or the "Placement Agent") to use its reasonable best efforts to solicit offers to purchase our securities in this offering. The offering of the securities will terminate on _____, 2023, unless we decide to terminate the offering (which we may do at any time in our discretion) prior to that date. The Placement Agent has no obligation to purchase any of the securities from us or to arrange for the purchase or sale of any specific number or dollar amount of the securities. Because there is no minimum offering amount required as a condition to closing, the Placement Agent's fee, and proceeds to us, if any, are not presently determinable and may be substantially less than the total maximum offering amounts set forth

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above and throughout this prospectus. We have agreed to pay the Placement Agent the placement agent fees set forth in the table below and to provide certain other compensation to the Placement Agent. See “Plan of Distribution” beginning on page 23 of this prospectus for more information regarding these arrangements.

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

	Per Share and Accompanying Warrant⁽²⁾	Per Pre-Funded Warrant and Accompanying Warrant⁽²⁾	Total
Price to the public ⁽¹⁾	\$	\$	
Placement Agent fees	\$	\$	
Proceeds to us, before expenses ⁽³⁾	\$	\$	

- (1) The public offering price corresponds to (x)(i) a public offering price per share of \$ and (ii) a public offering price per warrant of \$[•], and (y)(i) a public offering price per pre-funded warrant of \$ and (ii) a public offering price per warrant of \$[•].
- (2) Based on an assumed public offering price of \$[•] per share of common stock and associated warrant, or in the case of pre-funded warrants, \$[•] per pre-funded warrant to purchase one share of common stock and one warrant. The final public offering price per share and associated warrant or pre-funded warrant to purchase one share of common stock and associated warrant, as the case may be, will be determined by the Company, Placement Agent and the investors in this offering and may be a discount to the market price of the Company’s common stock.
- (3) Because there is no minimum number of securities or amount of proceeds required as a condition to closing in this offering, the actual public offering amount, Placement Agent fees, and proceeds to us, if any, are not presently determinable and may be substantially less than the total maximum offering amounts set forth above. For more information, see “Plan of Distribution”. We estimate the total expenses of this offering will be approximately \$[•].

We expect this offering to be completed within two business days following the commencement of this offering and we will deliver all securities to be issued in connection with this offering delivery versus payment upon receipt of investor funds received by us. Accordingly, there is no arrangement to receive or place investor funds in an escrow, trust or any similar account.

We anticipate that delivery of the securities against payment will be made on or about , 2023.

Roth Capital Partners

The date of this prospectus is , 2023

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You should rely only on the information we have provided in this prospectus, any applicable prospectus supplement and any related free writing prospectus. Neither we nor the Placement Agent have authorized anyone to provide you with information different from that contained in this prospectus, any applicable prospectus supplement or any related free writing prospectus. No dealer, salesperson or other person is authorized to give any information or to represent anything not contained in this prospectus, any applicable prospectus supplement or any related free writing prospectus. You must not rely on any unauthorized information or representation. This prospectus is an offer to sell only the securities offered hereby, but only under circumstances and in jurisdictions where it is lawful to do so. You should assume that the information in this prospectus, any applicable prospectus supplement or any related free writing prospectus is accurate only as of the date on the front of the document, regardless of the time of delivery of this prospectus or any sale of a security. Since the date of this prospectus and the documents incorporated by reference into this prospectus, our business, financial condition, results of operations and prospects may have changed.

ABOUT THIS PROSPECTUS

We incorporate by reference important information into this prospectus. You may obtain the information incorporated by reference without charge by following the instructions under “Where You Can Find More Information.” You should carefully read this prospectus as well as additional information described under “Information Incorporated by Reference,” before deciding to invest in our securities.

Neither we nor the Placement Agent have authorized anyone to provide you with additional information or information different from that contained or incorporated by reference in this prospectus filed with the Securities and Exchange Commission (the “SEC”). We take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. The Placement Agent is offering to sell, and seeking offers to buy, our securities only in jurisdictions where offers and sales are permitted. The information contained in this prospectus, or any document incorporated by reference in this prospectus, is accurate only as of the date of those respective documents, regardless of the time of delivery of this prospectus or any sale of our securities. Our business, financial condition, results of operations and prospects may have changed since that date.

The information incorporated by reference or provided in this prospectus contains estimates and other statistical data made by independent parties and by us relating to market size and growth and other data about our industry. We obtained the industry and market data in this prospectus from our own research as well as from industry and general publications, surveys and studies conducted by third parties. This data involves a number of assumptions and limitations and contains projections and estimates of the future performance of the industries in which we operate that are subject to a high degree of uncertainty, including those discussed in “Risk Factors.” We caution you not to give undue weight to such projections, assumptions, and estimates. Further, industry and general publications, studies and surveys generally state that they have been obtained from sources believed to be reliable, although they do not guarantee the accuracy or completeness of such information. While we believe that these publications, studies, and surveys are reliable, we have not independently verified the data contained in them. In addition, while we believe that the results and estimates from our internal research are reliable, such results and estimates have not been verified by any independent source.

For investors outside the United States (“U.S.”): We and the Placement Agent have not done anything that would permit this offering or the possession or distribution of this prospectus in any jurisdiction where action for those purposes is required, other than in the U.S. Persons outside the U.S. who come into possession of this prospectus must inform themselves about, and observe any restrictions relating to, the offering of the securities and the distribution of this prospectus outside of the U.S.

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

Certain statements contained in this prospectus may constitute “forward-looking statements” for purposes of federal securities laws. Such statements can be identified by the fact that they do not relate strictly to historical or current facts. Forward-looking statements appear in a number of places in this prospectus.” In addition, any statements that refer to projections, forecasts or other characterizations of future events or circumstances, including any underlying assumptions, are forward-looking statements. Forward-looking statements are typically identified by words such as “plan,” “believe,” “expect,” “anticipate,” “contemplate,” “intend,” “outlook,” “estimate,” “forecast,” “project,” “continue,” “could,” “may,” “might,” “possible,” “potential,” “predict,” “should,” “will,” “would” and other similar words and expressions (including the negative of any of the foregoing), but the absence of these words does not mean that a statement is not forward-looking.

These forward-looking statements are based on information available as of the date of this prospectus and our managements’ current expectations, forecasts and assumptions, and involve a number of judgments, known and unknown risks and uncertainties and other factors, many of which are outside the control of the Company and our directors, officers and affiliates. There can be no assurance that future developments will be those that have been anticipated. Accordingly, forward-looking statements should not be relied upon as representing our views as of any subsequent date.

These forward-looking statements involve a number of risks, uncertainties or other assumptions that may cause actual results or performance to be materially different from those expressed or implied by these forward-looking statements.

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These risks and uncertainties include, but are not limited to, those factors described in “*Risk Factors*,” our periodic filings with the SEC and the following:

- Our goals and strategies.
- Our future business development, financial condition and results of operations.
- Our expected timing of human clinical trials and other related milestones.
- Expected changes in our revenue, costs or expenditures.
- Our ability to obtain financing in amounts sufficient to fund our operations and continue as a going concern and avoid seeking protection under Chapters 7 or 11 of the United States Bankruptcy Code.
- Difficulties or delays in the product development process, including the results of preclinical studies or clinical trials.
- Difficulties or delays in the regulatory approval process.
- Manufacturing, sales, marketing and distribution of any of our products that may be successfully developed and approved for commercialization.
- Growth of and competition trends in our industry.
- Our expectations regarding demand for, and market acceptance of, our products.
- Our expectations regarding our relationships with investors, institutional funding partners and other parties we collaborate with.
- Fluctuations in general economic and business conditions in the markets in which we operate; including those fluctuations caused by COVID-19.
- Our ability to raise capital when needed.
- Relevant government policies and regulations relating to our industry.
- The outcome of any pending or threatened litigation.

We cannot guarantee that the results and other expectations expressed, anticipated or implied in any forward-looking statement will be realized. The risks set forth under Item 1A of our Annual Report on Form 10-K for the fiscal year ended December 31, 2022 and subsequent quarterly reports on Form 10-Q describe major risks to our business, and you should read and interpret any forward-looking statements together with these risks. A variety of factors, including these risks, could cause our actual results and other expectations to differ materially from the anticipated results or other expectations expressed, anticipated or implied in our forward-looking statements. Should known or unknown risks materialize, or should underlying assumptions prove inaccurate, actual results could differ materially from past results and those anticipated, estimated or projected in the forward-looking statements. You should bear this in mind as you consider any forward-looking statements.

Our forward-looking statements speak only as of the dates on which they are made. We do not undertake any obligation to publicly update or revise our forward-looking statements even if experience or future changes makes it clear that any projected results expressed or implied in such statements will not be realized, except as may be required by law.

PROSPECTUS SUMMARY

This summary highlights selected information that is presented in greater detail elsewhere in this prospectus. Because it is only a summary, it does not contain all of the information you should consider before investing in our securities and it is qualified in its entirety by, and should be read in conjunction with, the more detailed information included elsewhere in this prospectus. Before you decide whether to purchase our securities, you should read this entire prospectus carefully, including the section of this prospectus titled “Risk Factors”. You should also carefully read the information in this prospectus, including our financial statements, and the exhibits to the registration statement of which this prospectus is a part.

Overview

Kiromic BioPharma, Inc. (together with its subsidiary, “we,” “us,” “our” or the “Company”) is an Artificial Intelligence (“AI”) driven, end-to-end allogeneic cell therapy company, currently developing multi-indication allogeneic T cell therapies that exploits the natural potency of Gamma Delta T cells (“GDTs”) to target solid tumors. Our end-to-end approach consists of target discovery and validation, product development, and current good manufacturing practices (“cGMP”), which we believe will allow us to leverage a new framework for the next generation of cell therapies. We also have new technologies in development that we believe will support our end-to-end approach.

From a development standpoint, we utilize innovative engineered and non-engineered GDT manufacturing technologies and are developing proprietary, virus-free gene editing tools, to develop novel therapies for solid tumors that we believe will be effective and cost-efficient. Deltacel is our first allogeneic off-the-shelf gamma delta T cell-based product in clinical stage of development. Our Procel, and Isocel product candidates consist of allogeneic, cryopreserved, and engineered gamma delta T cells and they are currently in the preclinical development stage of development. Our Deltacel product candidate consists of non-engineered GDTs that have been expanded, enriched, and activated ex-vivo through a proprietary process, and will be investigated in the treatment of solid tumors regardless of the specific tumor antigen expression. Our Procel product candidate consists of engineered GDTs and will be used to target PD-L1. Our Isocel product candidate consists of engineered GDTs and will be used to target Mesothelin Isoform 2 positive tumors (“Iso-Meso”).

We currently have three product candidates: 1) Deltacel: not-engineered gamma delta T cells, expanded and activated with proprietary technology; 2) Procel: gamma delta T cells engineered with a PD-1 switch receptor; 3) Isocel: gamma delta T cells engineered with an anti-Mesothelin isoform 2 Chimeric Antigen Receptor.

We have a total of five clinical programs to study our key product candidates:

- 1) Deltacel-01: this phase 1 clinical trial will evaluate Deltacel in combination with low-dose radiation for patients with non-small cell lung cancer (NSCLC)
- 2) Procel combination: this phase 1 clinical trial is expected to evaluate Procel in combination with low-dose radiation for patients with PD-L1 positive solid malignancies.
- 3) Alexis-PRO-1: this phase 1 clinical trial is expected to evaluate Procel in patients with PD-L1 positive solid malignancies.
- 4) Isocel combination: this phase 1 clinical trial is expected to evaluate Isocel in combination with low-dose radiation for patients with Mesothelin Isoform 2 positive solid malignancies.
- 5) Alexis-ISO-1: this phase 1 clinical trial is expected to evaluate Isocel in patients with Mesothelin Isoform 2 positive solid malignancies.

Since the second half of 2022, we have been developing a novel, non-engineered GDT cell therapy based on a proprietary methodology of expanding and activating GDT cells from healthy donors. The product candidate, Deltacel, is intended to be used in combination with a low-dose radiation.

Accordingly, we have entered into a Sponsored Research Agreement (the “SRA”) with Principal Investigator James W. Welsh, M.D. of The University of Texas MD Anderson Cancer Center, to facilitate the development of our Deltacel,

Procel, and Isocel product candidates. We believe this SRA will generate sufficient in-vivo pre-clinical data to enhance our GDT product platform, supporting three new IND submissions: (1) Deltacel in combination with low-dose radiation (“IND #1”); (2) Procel in combination with a low-dose radiation (“IND #2”); and (3) Isocel in combination with a low-dose radiation (“IND #3”). The first IND submitted to the FDA and that received FDA authorization was IND#1, as explained in further detail below. For all of our Phase 1 INDs, the beginning of the clinical trial activation process will begin after the following two events: (1) the IND receives FDA authorization to begin the clinical trial (which would take place 30 days after receipt by the FDA, unless the FDA raises concerns or questions regarding the proposed clinical trials and places the trial on a clinical hold within that 30-day time period); and (2) commencing the review and approval process by an independent institutional review board (“IRB”) or ethics committee at the selected clinical trial site(s).

IND #1 will evaluate Deltacel GDTs in combination with low-dose radiation. We submitted the IND for the Deltacel trial on March 31, 2023. On April 28, 2023, the FDA authorized the Deltacel-01 IND application. We expect to begin the activation of clinical trial process in Q2 2023. IND #2 combines a low-dose radiation and our genetically engineered product candidate targeting PD-L1, which is the target associated with the ALEXIS-PRO-1 clinical trial candidate on the Procel product candidate platform. IND #3 combines a low-dose radiation and our genetically engineered product candidate targeting Iso-Meso, the target associated with the ALEXIS-ISO-1 clinical trial candidate on the Isocel product candidate platform. Since the Company has aligned its operations with the Deltacel product candidate and IND #1, we are planning to submit INDs for IND #2 and IND #3 when we obtain sufficient financing to support the progression of the development of those additional clinical trial candidates.

We have not generated any revenue from sales to date, and we continue to incur significant research and development and other expenses related to our ongoing operations. As a result, we are not and have never been profitable and have incurred losses in each period since we began principal business operations in 2012. As discussed in more detail below, we are currently in discussions with financing sources in an attempt to secure short-term financing to continue operations and fund other liquidity needs through the end of the year. In the absence of such financing, management anticipates that existing cash resources will not be sufficient to meet operating and liquidity needs beyond the beginning of October, 2023.

YA Purchase Agreement

On October 13, 2022, we entered into a standby equity purchase agreement (the “YA Purchase Agreement”) with YA II PN, Ltd., a Cayman Islands exempt limited partnership (“YA II”), pursuant to which we will have the right, but not the obligation, to sell to YA II up to \$5,000,000 of our common stock, subject to increase by an additional \$3,000,000 of common stock at our election. Upon the satisfaction of the conditions to YA II’s purchase obligations set forth in the YA Purchase Agreement, we will have the right, but not the obligation, from time to time at our discretion until November 1, 2024, to direct YA II to purchase a specified amount of shares of common stock (each such sale, a “YA Advance”) by delivering written notice to YA II (each, a “YA Advance Notice”).

While there is no mandatory minimum amount for any YA Advance, a YA Advance may be for a number of shares of common stock not to exceed the greater of (i) 100% of the average of the daily trading volume of the common stock on the Nasdaq Capital Market during regular trading hours as reported by Bloomberg L.P. during the five trading days immediately preceding the date of the YA Advance Notice or (ii) \$1,000,000 worth of shares. The shares of common stock, if any, that we elect to sell to YA II pursuant to a YA Advance will be purchased at a price equal to 95% of the lowest daily VWAP (as defined below) during the three consecutive trading days commencing on the date of delivery of a YA Advance Notice. “VWAP” means, for any trading day, the daily volume weighted average price of the common stock for such trading day on the Nasdaq Capital Market as reported by Bloomberg L.P. during regular trading hours. As of June 9, 2023, we have sold 197,000 shares of common stock pursuant to the YA Purchase Agreement.

Senior Convertible Promissory Notes

On May 24, 2023, we issued a 25% Senior Secured Convertible Promissory Note (the “May 2024 Note”) to an accredited investor. The May 2024 Note has a principal amount of \$2,000,000, bears interest at a rate of 25% per annum (the “Stated Rate”) and matures on May 24, 2024 (the “May 2024 Maturity Date”), on which the principal balance and accrued but unpaid interest under the May 24, 2024 Note shall be due and payable. The Stated Rate will increase to 27% per annum or the highest rate then allowed under applicable law (whichever is lower) upon occurrence of an event of default, including the failure by us to make payment of principal or interest due under the May 2024 Note on the May 2024 Maturity Date, and any commencement by us of a case under any applicable bankruptcy or insolvency laws.

On June 26, 2023, we issued a 25% Senior Secured Convertible Promissory Note (the “June 2024 Note”) to an accredited investor. The June 2024 Note has a principal amount of \$2,400,000, bears interest at a rate of 25% per annum (the “Stated Rate”) and matures on June 26, 2024 (the “June 2024 Maturity Date”), on which the principal balance and accrued but unpaid interest under the June 2024 Note shall be due and payable. The Stated Rate will increase to 27% per annum or the highest rate then allowed under applicable law (whichever is lower) upon occurrence of an event of default, including the failure by us to make payment of principal or interest due under the June 2024 Note on the June 2024 Maturity Date, and any commencement by us of a case under any applicable bankruptcy or insolvency laws.

The two notes above are convertible into shares of our common stock, par value \$0.001 per share, at an initial conversion price of \$6.50 per share, subject to a beneficial ownership limitation equivalent to 9.99%.

Corporate Information

We were first organized as a corporation in the State of Texas on August 6, 2006 under the name “Kiromic, Inc.” On May 27, 2016, we converted to a corporation in the State of Delaware under the name “Kiromic, Inc” and on December 16, 2019, we changed our name to “Kiromic BioPharma, Inc.” Our principal executive office is 7707 Fannin, Suite 140, Houston, TX 77054. Our telephone number is (832) 968-4888. Our website is www.kiromic.com. The information contained on our website is not a part of this prospectus, nor is such content incorporated by reference herein, and should not be relied upon in determining whether to make an investment in our common stock.

Kiromic, Kiromic BioPharma, Diamond, Deltacel, Procel, Isocel, and our logo are some of our trademarks used in this prospectus. This prospectus also includes trademarks, tradenames and service marks that are the property of other organizations. Solely for convenience, our trademarks and tradenames referred to in this prospectus may appear without the ® and ™ symbols, but those references are not intended to indicate, in any way, that we will not assert, to the fullest extent under applicable law, our rights or the right of the applicable licensor to these trademarks and tradenames.

Implications of Being an Emerging Growth Company and a Smaller Reporting Company

We qualify as an “emerging growth company” as defined in the Jumpstart Our Business Startups Act of 2012, as amended. As an emerging growth company, we may take advantage of specified reduced disclosure and other requirements that are otherwise applicable generally to public companies. These provisions include:

- being permitted to only disclose two years of audited financial statements in addition to any required unaudited interim financial statements with correspondingly reduced “Management’s Discussion and Analysis of Financial Condition and Results of Operations” disclosure;
- reduced disclosure about our executive compensation arrangements;
- not being required to hold advisory votes on executive compensation or to obtain stockholder approval of any golden parachute arrangements not previously approved; and
- an exemption from the auditor attestation requirement of Section 404 of the Sarbanes-Oxley Act of 2002, as amended, in the assessment of our internal control over financial reporting.

We may take advantage of these exemptions until the fifth anniversary of our initial public offering or such earlier time that we are no longer an emerging growth company. We would cease to be an emerging growth company on the date that is the earliest of (i) the last day of the fiscal year in which we have total annual gross revenue of \$1.235 billion or more; (ii) the last day of our fiscal year following the fifth anniversary of the date of the completion of our initial public offering; (iii) the date on which we have issued more than \$1.0 billion in nonconvertible debt during the previous three years; or (iv) the last day of the fiscal year in which we are deemed to be a large accelerated filer under the rules of the SEC, which means the market value of our common stock that is held by non-affiliates exceeds \$700.0 million as of the prior June 30th. We may choose to take advantage of some but not all of these exemptions. We have taken advantage of reduced reporting requirements in this prospectus. Accordingly, the information contained herein may be different from the information you receive from other public companies in which you hold stock. We are in the process of

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evaluating the benefits of relying on other exemptions and reduced reporting requirements under the JOBS Act. Subject to certain conditions, as an emerging growth company, we may rely on certain of these exemptions, including without limitation, providing an auditor’s attestation report on our system of internal controls over financial reporting pursuant to Section 404(b) of the Sarbanes-Oxley Act.

We are also a “smaller reporting company” as defined under the Securities Act and Exchange Act. We may continue to be a smaller reporting company so long as either (i) the market value of shares of our common stock held by non-affiliates is less than \$250 million or (ii) our annual revenue was less than \$100 million during the most recently completed fiscal year and the market value of shares of our common stock held by non-affiliates is less than \$700 million. If we are a smaller reporting company at the time we cease to be an emerging growth company, we may continue to rely on exemptions from certain disclosure requirements that are available to smaller reporting companies. Specifically, as a smaller reporting company, we may choose to present only the two most recent fiscal years of audited financial statements in our Annual Report on Form 10-K and have reduced disclosure obligations regarding executive compensation, and, similar to emerging growth companies, if we are a smaller reporting company under the requirements of (ii) above, we would not be required to obtain an attestation report on internal control over financial reporting issued by our independent registered public accounting firm.

THE OFFERING

Common stock offered by us	Up to [•] shares of common stock, based on an assumed combined public offering price of \$[•] per share of common stock and accompanying warrant, which is the last reported sale price of our common stock on The Nasdaq Capital Market on [•], 2023, and no sale of any pre-funded warrants.
Pre-funded warrants offered by us	We are also offering to certain purchasers whose purchase of shares of common stock in this offering would otherwise result in the purchaser, together with its affiliates and certain related parties, beneficially owning more than 4.99% (or, at the election of the purchaser, 9.99%) of our outstanding common stock immediately following the consummation of this offering, the opportunity to purchase, if such purchasers so choose, pre-funded warrants to purchase shares of common stock, in lieu of shares of common stock that would otherwise result in any such purchaser's beneficial ownership exceeding 4.99% (or, at the election of the purchaser, 9.99%) of our outstanding common stock. Each pre-funded warrant will be exercisable for one share of our common stock. The purchase price of each pre-funded warrant and accompanying warrant will equal the price at which the share of common stock and accompanying warrant are being sold to the public in this offering, minus \$0.0001, and the exercise price of each pre-funded warrant will be \$0.0001 per share. The pre-funded warrants will be exercisable immediately and may be exercised at any time until all of the pre-funded warrants are exercised in full. This offering also relates to the shares of common stock issuable upon exercise of any pre-funded warrants sold in this offering. For each pre-funded warrant we sell, the number of shares of common stock we are offering will be decreased on a one-for-one basis. Because we will issue a warrant for each share of our common stock and for each pre-funded warrant to purchase one share of our common stock sold in this offering, the number of warrants sold in this offering will not change as a result of a change in the mix of the shares of our common stock and pre-funded warrants sold.
Warrants offered by us	Warrants to purchase up to an aggregate of [•] shares of our common stock, based on an assumed combined public offering price of \$[•] per share of common stock and accompanying warrant, which is the last reported sale price of our common stock on The Nasdaq Capital Market on [•], 2023. Each share of our common stock and each pre-funded warrant to purchase one share of our common stock is being sold together with a warrant to purchase one share of our common stock. Each warrant will have an exercise price of \$[•] per share (representing 100% of the price at which a share of common stock and accompanying warrant are sold to the public in this offering), will be immediately exercisable and will expire on the [fifth] anniversary of the original issuance date. Each warrant is exercisable for one share of common stock, subject to adjustment in the event of stock dividends, stock splits, stock combinations, reclassifications, reorganizations or similar events affecting our common stock. The shares of common stock and pre-funded warrants, and the accompanying warrants, as the case may be, can only be purchased together in this offering but will be issued separately and will be immediately separable upon issuance. This prospectus also relates to the offering of the shares of common stock issuable upon exercise of the warrants.
Common stock outstanding immediately prior to this offering ⁽¹⁾	1,176,260 shares
Common stock outstanding immediately after this offering ⁽¹⁾	[•] shares (assuming no exercise of the warrants and pre-funded warrants issued in connection with this offering).
Use of proceeds	We estimate that the net proceeds from this offering will be approximately \$[•] million, at an assumed combined public offering price of \$[•] per share and accompanying warrant, which was the closing price of our common stock on The

	Nasdaq Capital Market on [•], 2023, after deducting the Placement Agent fees and estimated offering expenses payable by us. We intend to use the net proceeds from this offering for clinical development, working capital and other general corporate purposes. See “Use of Proceeds” for a more complete description of the intended use of proceeds from this offering.
Risk factors	See “Risk Factors” on page 15 and other information included and incorporated by reference in this prospectus for a discussion of factors to consider carefully before deciding to invest in our securities.
Lock-Up Agreements	We and each of our officers and directors have agreed to be subject to a lock-up period of 90 days following the closing date of this offering. This means that, during the applicable lock-up period, we may not offer for sale, contract to sell, or sell any shares of our common stock or any securities convertible into, or exercisable or exchangeable for, shares of our common stock subject to certain customary exceptions. See “Plan of Distribution” on page [].
Nasdaq Capital Market symbols	Shares of our common stock are listed on The Nasdaq Capital Market under the symbol “KRBP.” There is no established trading market for the warrants or pre-funded warrants, and we do not expect such trading markets to develop. We do not intend to list the warrants or pre-funded warrants on any securities exchange or other trading market. Without a trading market, the liquidity of the warrants and pre-funded warrants will be extremely limited.

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- (1) The number of shares of common stock that will be outstanding after this offering is based on 1,176,260 shares of common stock outstanding as of June 9, 2023, assumes no sale of any pre-funded warrants and excludes:
- 5,853 shares of our common stock issuable upon the exercise of outstanding options with a weighted-average exercise price of \$285.36 per share;
 - 1,160 shares of our common stock issuable upon the vesting of outstanding restricted stock units, with a weighted-average grant date fair value of \$258.51 per share;
 - 2,083 shares of our common stock underlying outstanding warrants that were issued in October 2020 with an exercise price of \$450 per share;
 - 13,333 shares of our common stock underlying outstanding warrants that were issued in July 2021 with an exercise price of \$187.50 per share;
 - zero shares of our common stock reserved for future issuance under our Omnibus 2021 Equity Incentive Plan; and no exercise of the pre-funded warrants sold in this offering; and
 - () shares of our common stock underlying the warrants issued as part of this offering.

RISK FACTORS

Investing in our securities involves a high degree of risk. Before making an investment decision, you should consider carefully the following risk factors, as well as the other information set forth in this prospectus, including matters addressed in the section titled “Cautionary Note Regarding Forward-Looking Statements”. If any of these risks actually occur, it may materially harm our business, financial condition, liquidity and results of operations. As a result, the market price of our securities could decline, and you could lose all or part of your investment. Additionally, the risks and uncertainties described in this prospectus, any prospectus supplement, any post-effective amendment or in any document incorporated by reference herein or therein are not the only risks and uncertainties that we face. We may face additional risks and uncertainties that are not presently known to us, or that we currently deem immaterial. The following discussions should be read in conjunction with our financial statements and the notes to the financial statements included therein.

Risks Related to 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 currently intended purposes described in the section entitled “Use of Proceeds.” 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 may not apply our cash from this offering in ways that ultimately increase the value of any investment in our securities or enhance stockholder value. The failure by our management to apply these funds effectively could harm our business. Pending their use, we may invest the net proceeds from this offering in short-term, investment-grade, interest-bearing securities. These investments may not yield a favorable return to our stockholders. If we do not invest or apply our cash in ways that enhance stockholder value, we may fail to achieve expected financial results, which may result in a decline in the price of our shares of common stock, and, therefore, may negatively impact our ability to raise capital, invest in or expand our business, acquire additional products or licenses, commercialize our product, or continue our operations.

As the public offering price is substantially higher than our net tangible book value per share, you will experience immediate and substantial dilution.

If you purchase common stock in this offering, you will pay more for your shares of common stock than the amount paid by our existing stockholders for their shares on a per share basis. As a result, you will experience immediate and substantial dilution in net tangible book value per share in relation to the price that you paid for your shares. We expect the dilution as a result of the offering to be \$[•] per share to new investors purchasing our shares of common stock and warrants in this offering. In addition, you will experience further dilution to the extent that our shares are issued upon the exercise of any warrants or exercise of stock options under any stock incentive plans. See “Dilution” for a more complete description of how the value of your investment in our shares will be diluted upon completion of this offering.

There is no public market for the pre-funded warrants or warrants being offered in this offering.

There is no established public trading market for the pre-funded warrants or 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 warrants on any securities exchange or nationally recognized trading system, including The Nasdaq Capital Market. Without an active market, the liquidity of the pre-funded warrants and warrants will be limited.

Holders of pre-funded warrants and warrants purchased in this offering will have no rights as common stockholders until such holders exercise such warrants and acquire our common stock.

Until holders of pre-funded warrants or warrants acquire shares of our common stock upon exercise of such warrants, holders of pre-funded warrants or warrants will have no rights with respect to the shares of our common stock underlying such warrants. Upon exercise of the pre-funded warrants or 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.

Purchasers who purchase our securities in this offering pursuant to a securities purchase agreement may have rights not available to purchasers that purchase without the benefit of a securities purchase agreement.

In addition to rights and remedies available to all purchasers in this offering under federal securities and state law, the purchasers that enter into a securities purchase agreement will also be able to bring claims of breach of contract against us. The ability to pursue a claim for breach of contract provides those investors with the means to enforce the covenants uniquely available to them under the securities purchase agreement including, but not limited to: (i) timely delivery of securities; (ii) agreement to not enter into any financings for 90 days from closing; and (iii) indemnification for breach of contract.

This is a best efforts offering, no minimum amount of securities is required to be sold, and we may not raise the amount of capital we believe is required for our business plans, including our near-term business plans.

The Placement Agent has agreed to use its reasonable best efforts to solicit offers to purchase the securities in this offering. The Placement Agent has no obligation to buy any of the securities from us or to arrange for the purchase or sale of any specific number or dollar amount of the securities. There is no required minimum number of securities that must be sold as a condition to completion of this offering. Because there is no minimum offering amount required as a condition to the closing of this offering, the actual offering amount, Placement Agent fees and proceeds to us are not presently determinable and may be substantially less than the maximum amounts set forth above. We may sell fewer than all of the securities offered hereby, which may significantly reduce the amount of proceeds received by us, and investors in this offering will not receive a refund in the event that we do not sell an amount of securities sufficient to support our continued operations, including our near-term continued operations. Thus, we may not raise the amount of capital we believe is required for our operations in the short-term and may need to raise additional funds, which may not be available or available on terms acceptable to us.

USE OF PROCEEDS

We estimate that the net proceeds from our issuance and sale of our securities in this offering will be approximately \$[•] million, based on an assumed combined public offering price of \$[•] per share and accompanying warrant, which was the closing price of our common stock on The Nasdaq Capital Market on June [•], 2023, after deducting Placement Agent fees and estimated offering expenses payable by us.

The foregoing discussion assumes no sale of pre-funded warrants, which if sold, would reduce the number of shares of common stock that we are offering on a one-for-one basis.

We intend to use the net proceeds from this offering for clinical development, working capital and other general corporate purposes.

A \$0.10 increase or decrease in the assumed public offering price of \$[•] per share would increase or decrease the net proceeds from this offering by approximately \$[•] million, assuming that the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting placement agent fees and certain other compensation to the Placement Agent.

An increase (decrease) of [1.0] million shares in the number of shares offered by us, as set forth on the cover page of this prospectus, would increase (decrease) the net proceeds from this offering by approximately \$[•], assuming no change in the assumed public offering price per share and after deducting placement agent fees and certain other compensation to the Placement Agent.

This expected use of the net proceeds from this offering and our existing cash represents our intentions based upon our current plans, financial condition and business conditions. Predicting the cost necessary to develop product candidates can be difficult and the amounts and timing of our actual expenditures may vary significantly depending on numerous factors, including the progress of our development and commercialization efforts, any collaborations that we may enter into with third parties for our product candidates and any unforeseen cash needs. As a result, our management will retain broad discretion over the allocation of the net proceeds from this offering and our existing cash.

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

DILUTION

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

As of March 31, 2023 we had a historical net tangible book deficit of \$ (8,140,000), or \$ (8.31) per share of common stock, based on 979,243 shares of common stock outstanding at March 31, 2023. Our historical net tangible book value per share is the amount of our total tangible assets less our total liabilities at March 31, 2023, divided by the number of shares of common stock outstanding at March 31, 2023.

After giving effect to the sale of shares of common stock and accompanying warrants in this offering at an assumed combined public offering price of \$[•] per share, which was the closing price of our common stock on The Nasdaq Capital Market on [•], 2023 and after deducting the Placement Agent fees and estimated offering expenses payable by us, excluding the proceeds, if any, from the cash exercise of the warrants issued in this offering, and assuming no sale of pre-funded warrants in this offering, our as adjusted net tangible book value at March 31, 2023 would have been \$[•] million, or \$[•] per share of common stock. This represents an immediate [decrease] in as adjusted net tangible book value of \$[•] per share to existing stockholders and immediate dilution of \$[•] per share to new investors purchasing shares of common stock in this offering. The final public offering price will be determined through negotiation between us, the Placement Agent and the investors in the offering and may be at a discount to the current market price. Therefore, the assumed public offering price used throughout this prospectus may not be indicative of the final public offering price.

The following table illustrates this dilution on a per share basis:

Assumed combined public offering price per share and accompanying warrant	\$ [•]
Net tangible book value per share as of March 31, 2023	\$ [•]
[Decrease] in net tangible book value per share attributable to new investors in this offering	<u>[•]</u>
As adjusted net tangible book value per share immediately after this offering	<u>[•]</u>
Dilution per share to new investors in this offering	<u>\$ [•]</u>

A \$0.10 increase (decrease) in the assumed combined public offering price of \$[•] per share and accompanying warrant, which was the closing price of our common stock on The Nasdaq Capital Market on [•], 2023, would increase (decrease) our as adjusted net tangible book value after this offering by \$[•] per share and the dilution to new investors purchasing common stock in this offering by \$[•] per share, assuming that the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same and after deducting Placement Agent fees and estimated offering expenses payable by us. An increase (decrease) of [1.0] million shares in the number of shares offered by us, as set forth on the cover page of this prospectus, would increase our as adjusted net tangible book value after this offering by \$[•] per share and decrease the dilution to new investors purchasing common stock in this offering by \$[•] per share, assuming no change in the assumed combined public offering price per share and accompanying warrant and after deducting Placement Agent fees and estimated offering expenses payable by us.

To the extent that stock options or warrants are exercised, new stock options are issued under our equity incentive plan, or we issue additional common stock in the future, there will be further dilution to investors participating in this offering. In addition, we may choose to raise additional capital because of market conditions or strategic considerations, even if we believe that we have sufficient funds for our current or future operating plans. If we raise additional capital through the sale of equity or convertible debt securities, the issuance of these securities could result in further dilution to our stockholders.

PRINCIPAL SECURITYHOLDERS

The following table sets forth certain information regarding beneficial ownership of shares of our common stock as of June 9, 2023 by (i) each person known to beneficially own more than 5% of our outstanding common stock, (ii) each of our directors, (iii) each of our named executive officers, and (iv) all of our directors and executive officers as a group. Except as otherwise indicated, the persons named in the table below have sole voting and investment power with respect to all shares beneficially owned, subject to community property laws, where applicable.

Beneficial ownership is determined in accordance with the rules of the Securities and Exchange Commission and includes voting or investment power with respect to the securities. Shares of common stock that may be acquired by an individual or group within 60 days of June 9, 2023, pursuant to the exercise of options or warrants, are deemed to be outstanding for the purpose of computing the percentage ownership of such individual or group, but are not deemed to be outstanding for the purpose of computing the percentage ownership of any other person shown in the table. Percentage of ownership is based on 1,176,260 shares of common stock outstanding on June 9, 2023. In computing the number of shares of common stock beneficially owned by a person and the percentage ownership of that person, we deemed to be outstanding all shares of common stock subject to options or other convertible securities held by that person or entity that are currently exercisable or releasable or that will become exercisable or releasable within 60 days of June 9, 2023. We did not deem these shares outstanding, however, for the purpose of computing the percentage ownership of any other person.

Except as indicated in footnotes to this table, we believe that the stockholders named in this table have sole voting and investment power with respect to all shares of common stock shown to be beneficially owned by them, based on information provided to us by such stockholders. Unless otherwise indicated, the address for each director and executive officer listed is: c/o Kiroomic BioPharma, Inc., 7707 Fannin Street, Suite 140, Houston, TX 77008.

Beneficial Owner	Number of Shares Beneficially Owned	Shares of	Shares of common	Percentage of Common Stock Beneficially Owned
		common stock issuable upon exercise of stock options	stock issuable upon vesting of restricted stock units	
Directors and Executive Officers				
Pietro Bersani	21,453	—	—	1.82 %
Americo Cicchetti	6,296	—	—	*
Michael Nagel	6,296	—	—	*
All current directors and executive officers as a group (3 persons)	34,045	—	—	2.89 %
5% Stockholders				
Sabby Volatility Warrant Master Fund, Ltd	214,095	—	—	18.20 %
YA II PN, Ltd	253,366	—	—	21.54 %

* Less than 1%

DESCRIPTION OF SECURITIES WE ARE OFFERING

Common Stock

Our Certificate of Incorporation authorizes us to issue up to 300,000,000 shares of common stock, \$0.001 par value per share. As of June 9, 2023, we had 1,176,260 shares of common stock outstanding, held by 81 stockholders of record. The actual number of holders of our common stock is greater than this number of record holders, and includes stockholders who are beneficial owners, but whose shares are held in street name by brokers or held by other nominees.

Holders of shares of common stock are entitled to one vote per share on all matters to be voted upon by the stockholders generally. The holders of shares of common stock have no preemptive, conversion, subscription rights or cumulative voting rights.

Warrants

General

The following summary of certain terms and provisions of the warrants that are being offered hereby is not complete and is subject to, and qualified in its entirety by, the provisions of the warrant, the form of which will be filed as an exhibit to the registration statement of which this prospectus forms a part. Prospective investors should carefully review the terms and provisions of the form of warrant for a complete description of the terms and conditions of the warrants..

Duration and Exercise Price

The warrants offered hereby will have an exercise price of \$[•] per share. The warrants will be immediately exercisable and may be exercised at any time on or after the initial exercise date and on or before the five-year anniversary of the date of issuance. The exercise prices and numbers of shares of common stock issuable upon exercise are subject to appropriate adjustment in the event of stock dividends, stock splits, reorganizations or similar events affecting our common stock. Pursuant to a warrant agency agreement between us and [], as warrant agent, the warrants will be issued in book-entry form and shall initially be represented only by one or more global warrants deposited with the warrant agent, as custodian, on behalf of The Depository Trust Company, or DTC, and registered in the name of Cede & Co., a nominee of DTC, or as otherwise directed by DTC.

Exercisability

The warrants will be exercisable, at the option of each holder, in whole or in part, by delivering to us a duly executed exercise notice accompanied by payment in full for the number of shares of our common stock purchased upon such exercise (except in the case of a cashless exercise as discussed below). A holder (together with its affiliates) may not exercise any portion of such holder's warrants to the extent that the holder would own more than 4.99% (or 9.99%, at the holder's election) of our outstanding common stock immediately after exercise, except that upon notice from the holder to us, the holder may decrease or increase the limitation of ownership of outstanding stock after exercising the holder's warrants up to 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 warrants, provided that any increase in such limitation shall not be effective until 61 days following notice to us.

Cashless Exercise

If, at the time a holder exercises its warrants, a registration statement registering the issuance of the shares of common stock underlying the warrants under the Securities Act, is not then effective or available for the issuance of such shares, then in lieu of making the cash payment otherwise contemplated to be made to us upon such exercise in payment of the aggregate exercise price, the holder may elect instead to receive upon such exercise (either in whole or in part) the net number of shares of common stock determined according to a formula set forth in the warrant.

Transferability

A warrant may be transferred at the option of the holder upon surrender of the warrant to us together with the appropriate instruments of transfer.

Fractional Shares

No fractional shares of common stock will be issued upon the exercise of the warrants. Rather, the number of shares of common stock to be issued will, at our election, either be rounded up to the nearest whole number or we will pay a cash adjustment in respect of such final fraction in an amount equal to such fraction multiplied by the exercise price.

Trading Market

There is no established trading market for any of the warrants, and we do not expect a market to develop. We do not intend to apply for a listing for any of the warrants on any securities exchange or other nationally recognized trading system. Without an active trading market, the liquidity of the warrants will be limited.

Rights as a Shareholder

Except as otherwise provided in the warrants or by virtue of the holders' ownership of shares of our common stock, the holders of warrants do not have the rights or privileges of holders of our common stock, including any voting rights, until such warrant holders exercise their warrants.

Fundamental Transaction

In the event of a fundamental transaction, as described in the warrants and generally including any reorganization, recapitalization or reclassification of our common stock, the sale, transfer or other disposition of all or substantially all of our properties or assets, our consolidation or merger with or into another person, the acquisition of more than 50% of our outstanding common stock, or any person or group becoming the beneficial owner of 50% of the voting power represented by our outstanding common stock, the holders of the warrants will be entitled to receive upon exercise of the warrants the kind and amount of securities, cash or other property that the holders would have received had they exercised the warrants immediately prior to such fundamental transaction. Additionally, as more fully described in the warrants, in the event of certain fundamental transactions, the holders of the warrants will be entitled to receive consideration in an amount equal to the Black Scholes Value (as defined in the warrants) of the warrants on the date of consummation of such transaction.

Waivers and Amendments

No term of the warrants may be amended or waived without the written consent of the holder of such warrant.

Pre-Funded Warrants

The following summary of certain terms and provisions of the pre-funded warrants that are being offered hereby is not complete and is subject to, and qualified in its entirety by, the provisions of the pre-funded warrant, the form of which will be filed as an exhibit to the registration statement of which this prospectus forms a part. 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.

Duration and Exercise Price

Each pre-funded warrant offered hereby will have an initial exercise price per share equal to \$0.001. The pre-funded warrants will be immediately exercisable and may be exercised at any time until the pre-funded warrants are exercised in full. The exercise price and number of shares of common stock issuable upon exercise is subject to appropriate adjustment in the event of stock dividends, stock splits, reorganizations or similar events affecting our common stock and the exercise price. The pre-funded warrants will be issued in certificated form only.

Exercisability

Each pre-funded warrant may be exercised, in cash or by a cashless exercise at the election of the holder at any time following the date of issuance and from time to time thereafter until the pre-funded warrants are exercised in full. The pre-funded warrants will be exercisable in whole or in part by delivering to the Company a completed instruction form for exercise and complying with the requirements for exercise set forth in the pre-funded warrant. Payment of the

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exercise price may be made in cash or pursuant to a cashless exercise, in which case the holder would receive upon such exercise the net number of shares of common stock determined according to the formula set forth in the pre-funded warrant.

Cashless Exercise

At the time a holder exercises its pre-funded warrants, in lieu of making the cash payment otherwise contemplated to be made to us upon such exercise in payment of the aggregate exercise price, the holder may elect instead to receive upon such exercise (either in whole or in part) the net number of shares of common stock determined according to a formula set forth in the pre-funded warrants.

Exercise Limitation

In general, a holder will not have the right to exercise any portion of a pre-funded warrant if the holder (together with its Attribution Parties (as defined in the pre-funded warrant)) would beneficially own in excess of 4.99% or 9.99%, at the election of the holder, 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 warrant. However, any holder may increase or decrease such percentage to any other percentage not in excess of 9.99% upon notice to us, provided, that any increase in this limitation will not be effective until 61 days after such notice from the holder to us and such increase or decrease will apply only to the holder providing such notice.

Transferability

Subject to applicable laws, a pre-funded warrant may be transferred at the option of the holder upon surrender of the pre-funded warrant to us together with the appropriate instruments of transfer.

Fractional Shares

No fractional shares of common stock will be issued upon the exercise of the pre-funded warrants. Rather, the number of shares of common stock to be issued will, at our election, either be rounded up to the nearest whole number or we will pay a cash adjustment in respect of such final fraction in an amount equal to such fraction multiplied by the exercise price.

Trading Market

There is no trading market available for the pre-funded warrants on any securities exchange or nationally recognized trading system. 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.

Right 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.

Fundamental Transaction

In the event of a fundamental transaction, as described in the pre-funded warrants and generally including any reorganization, recapitalization or reclassification of our common stock, the sale, transfer or other disposition of all or substantially all of our properties or assets, our consolidation or merger with or into another person, the acquisition of more than 50% of our outstanding common stock, or any person or group becoming the beneficial owner of 50% of the voting power represented by our outstanding common stock, the holders of the pre-funded warrants will be entitled to receive upon exercise of the pre-funded warrants the kind and amount of securities, cash or other property that the holders would have received had they exercised the pre-funded warrants immediately prior to such fundamental transaction.

Waivers and Amendments

No term of the pre-funded warrants may be amended or waived without the written consent of the holder of such pre-funded warrant.

PLAN OF DISTRIBUTION

Pursuant to a placement agency agreement, dated as of [redacted], 2023, we have engaged Roth Capital Partners, LLC, or the Placement Agent, to act as our placement agent to solicit offers to purchase the securities offered by this prospectus on a reasonable best efforts basis. The Placement Agent is not purchasing or selling any securities, nor is it required to arrange for the purchase and sale of any specific number or dollar amount of securities, other than to use its “reasonable best efforts” to arrange for the sale of the securities by us. Therefore, we may not sell the entire amount of securities being offered, or any at all. The terms of this offering were subject to market conditions and negotiations between us, the Placement Agent and prospective investors. The Placement Agent may engage one or more subagents or selected dealers in connection with this offering.

Investors purchasing securities offered hereby will have the option to execute a securities purchase agreement with us. In addition to rights and remedies available to all investors in this offering under federal securities and state law, the investors which enter into a securities purchase agreement will also be able to bring claims of breach of contract against us. The ability to pursue a claim for breach of contract is material to larger investors in this offering as a means to enforce the following covenants uniquely available to them under the securities purchase agreement: (i) a covenant to not enter into variable rate financings for a period of [redacted] following the closing of the offering, subject to certain exceptions; and (ii) a covenant to not enter into any equity financings for 90 days from closing of the offering, subject to certain exceptions. Investors who do not enter into a securities purchase agreement shall rely solely on this prospectus in connection with the purchase of our securities in this offering.

The placement agency agreement provides that the Placement Agent’s obligations are subject to conditions contained in the placement agency agreement.

We will deliver the securities being issued to the investors upon receipt of investor funds for the purchase of the securities offered pursuant to this prospectus. We expect to deliver the securities being offered pursuant to this prospectus on or about [redacted], 2023. There is no minimum number of securities or amount of proceeds that is a condition to closing of this offering.

Placement Agent Fees and Expenses

Upon the closing of this offering, we will pay the Placement Agent a cash transaction fee equal to 8.0% of the aggregate gross proceeds to us from the sale of the securities in the offering. In addition, we will reimburse the Placement Agent for its out-of-pocket expenses incurred in connection with this offering, including the fees and expenses of the counsel for the Placement Agent, up to \$125,000.

The following table shows the public offering price, Placement Agent fees and proceeds, before expenses, to us, assuming the purchase of all the securities we are offering.

	Per Share and Accompanying Warrant	Per Pre-Funded Warrant and Accompanying Warrant	Total
Public offering price ⁽¹⁾	\$ [redacted]	\$ [redacted]	\$ [redacted]
Placement Agent fees	\$ [redacted]	\$ [redacted]	\$ [redacted]
Proceeds, before expenses, to us	\$ [redacted]	\$ [redacted]	\$ [redacted]

(1)The public offering price corresponds to (x)(i) a public offering price per share of \$ [redacted] and (ii) a public offering price per warrant of \$[•], and (y)(i) a public offering price per pre-funded warrant of \$ [redacted] and (ii) a public offering price per warrant of \$[•].

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We estimate that the total expenses of the offering, including registration, filing and listing fees, printing fees and legal and accounting expenses, but excluding Placement Agent fees, will be approximately \$[], all of which are payable by us. This figure includes the Placement Agent's accountable expenses, including, but not limited to, legal fees for Placement Agent's legal counsel, that we have agreed to pay at the closing of the offering up to an aggregate expense reimbursement of \$125,000.

Other Relationships

The Placement Agent may, from time to time, engage in transactions with or perform services for us in the ordinary course of its business and may continue to receive compensation from us for such services. However, except as disclosed in this prospectus, we have no present arrangements with the Placement Agent for any service. East Wind Securities, LLC, a member of FINRA, will be paid an advisory fee out of the Placement Agent fees.

Determination of Offering Price and Warrant Exercise Price

The actual public offering price of the securities we are offering, and the exercise price of the warrants and pre-funded warrants that we are offering, were negotiated between us, the Placement Agent and the investors in the offering based on the trading of our common stock prior to the offering, among other things. Other factors considered in determining the public offering price of the securities we are offering, as well as the exercise price of the warrants and pre-funded warrants that we are offering include our history and prospects, the stage of development of our business, our business plans for the future and the extent to which they have been implemented, an assessment of our management, the general conditions of the securities markets at the time of the offering and such other factors as were deemed relevant.

Transfer Agent and Registrar and Warrant Agent

The transfer agent and warrant agent is and will be VStock Transfer, LLC, 18 Lafayette Place Woodmere, New York, 11598.

Lock-Up Agreements

We and each of our officers and directors have agreed to be subject to a lock-up period of 90 days following the closing date of this offering. This means that, during the applicable lock-up period, we may not offer for sale, contract to sell, or sell any shares of our common stock or any securities convertible into, or exercisable or exchangeable for, shares of our common stock subject to certain customary exceptions. In addition, we have agreed to not issue any securities that are subject to a price reset based on trading prices of our common stock or upon a specified or contingent event in the future, or enter into an agreement to issue securities at a future determined price, for [] after the closing date of the offering.

Right of First Refusal

We have granted the Placement Agent a right of first refusal for a period of nine months following closing of the offering to place or underwrite our subsequent offering, subject to certain exceptions and conditions.

Indemnification

We have agreed to indemnify the Placement Agent against certain liabilities, including liabilities under the Securities Act, and to contribute to payments that the Placement Agent may be required to make for these liabilities.

Regulation M

The Placement Agent may be deemed to be an underwriter within the meaning of Section 2(a)(11) of the Securities Act and any fees received by it and any profit realized on the sale of the securities by it while acting as principal might be deemed to be underwriting discounts or commissions under the Securities Act. The Placement Agent will be required to comply with the requirements of the Securities Act and the Exchange Act, including, without limitation, Rule 10b-5 and Regulation M under the Exchange Act. These rules and regulations may limit the timing of purchases and sales of our securities by the Placement Agent. Under these rules and regulations, the Placement Agent may not (i) engage in any stabilization activity in connection with our securities; and (ii) bid for or purchase any of our securities or attempt to

induce any person to purchase any of our securities, other than as permitted under the Exchange Act, until they have completed their participation in the distribution.

Electronic Distribution

This prospectus in electronic format may be made available on websites or through other online services maintained by the Placement Agent, or by its affiliates. Other than this prospectus in electronic format, the information on the Placement Agent's websites and any information contained in any other websites maintained by the Placement Agent is not part of this prospectus or the registration statement of which this prospectus forms a part, has not been approved and/or endorsed by us or the Placement Agent in its capacity as placement agent, and should not be relied upon by investors.

Offer Restrictions Outside of the United States

Other than in the United States, no action has been taken that would permit a public offering of our common stock in any jurisdiction where action for the purpose is required. The securities offered by this prospectus may not be offered or sold, directly or indirectly, nor may this prospectus or any other offering material or advertisements in connection with the offer and sale of any such securities be distributed or published in any jurisdiction, except under circumstances that will result in compliance with the applicable rules and regulations of that country or jurisdiction. Persons into whose possession this prospectus comes are advised to inform themselves about and to observe any restrictions relating to the offering and the distribution of this prospectus. This prospectus does not constitute an offer to sell or a solicitation of an offer to buy any securities offered by this prospectus in any jurisdiction in which such an offer or a solicitation is unlawful.

Australia

This prospectus is not a disclosure document under Chapter 6D of the Australian Corporations Act, has not been lodged with the Australian Securities and Investments Commission and does not purport to include the information required of a disclosure document under Chapter 6D of the Australian Corporations Act. Accordingly, (i) the offer of the securities under this prospectus is only made to persons to whom it is lawful to offer the securities without disclosure under Chapter 6D of the Australian Corporations Act under one or more exemptions set out in section 708 of the Australian Corporations Act, (ii) this prospectus is made available in Australia only to those persons as set forth in clause (i) above, and (iii) the offeree must be sent a notice stating in substance that by accepting this offer, the offeree represents that the offeree is such a person as set forth in clause (i) above, and, unless permitted under the Australian Corporations Act, agrees not to sell or offer for sale within Australia any of the securities sold to the offeree within 12 months after its transfer to the offeree under this prospectus.

Canada

The shares of common stock 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 (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 Placement Agent is not required to comply with the disclosure requirements of NI 33-105 regarding underwriter conflicts of interest in connection with this offering.

China

The information in this document does not constitute a public offer of the securities, whether by way of sale or subscription, in the People's Republic of China (excluding, for purposes of this paragraph, Hong Kong Special Administrative Region, Macau Special Administrative Region and Taiwan). The securities may not be offered or sold directly or indirectly in the PRC to legal or natural persons other than directly to "qualified domestic institutional investors."

European Economic Area—Belgium, Germany, Luxembourg and Netherlands

The information in this document has been prepared on the basis that all offers of securities will be made pursuant to an exemption under the Directive 2003/71/EC ("Prospectus Directive"), as implemented in Member States of the European Economic Area (each, a "Relevant Member State"), from the requirement to produce a prospectus for offers of securities. An offer to the public of securities has not been made, and may not be made, in a Relevant Member State except pursuant to one of the following exemptions under the Prospectus Directive as implemented in that Relevant Member State:

- to legal entities that are authorized or regulated to operate in the financial markets or, if not so authorized or regulated, whose corporate purpose is solely to invest in securities;
- to any legal entity that has two or more of (i) an average of at least 250 employees during its last fiscal year; (ii) a total balance sheet of more than €43,000,000 (as shown on its last annual unconsolidated or consolidated financial statements) and (iii) an annual net turnover of more than €50,000,000 (as shown on its last annual unconsolidated or consolidated financial statements);
- to fewer than 100 natural or legal persons (other than qualified investors within the meaning of Article 2(1)(e) of the Prospectus Directive) subject to obtaining the prior consent of the Company or any underwriter for any such offer; or
- in any other circumstances falling within Article 3(2) of the Prospectus Directive, provided that no such offer of securities shall result in a requirement for the publication by the Company of a prospectus pursuant to Article 3 of the Prospectus Directive.

France

This document is not being distributed in the context of a public offering of financial securities (offre au public de titres financiers) in France within the meaning of Article L.411-1 of the French Monetary and Financial Code (Code Monétaire et Financier) and Articles 211-1 et seq. of the General Regulation of the French Autorité de marchés financiers ("AMF"). The securities have not been offered or sold and will not be offered or sold, directly or indirectly, to the public in France.

This document and any other offering material relating to the securities have not been, and will not be, submitted to the AMF for approval in France and, accordingly, may not be distributed or caused to be distributed, directly or indirectly, to the public in France.

Such offers, sales and distributions have been and shall only be made in France to (i) qualified investors (investisseurs qualifiés) acting for their own account, as defined in and in accordance with Articles L.411-2-II-2° and D.411-1 to D.411-3, D.744-1, D.754-1 ;and D.764-1 of the French Monetary and Financial Code and any implementing regulation and/or (ii) a restricted number of non-qualified investors (cercle restreint d'investisseurs) acting for their own account, as defined in and in accordance with Articles L.411-2-II-2° and D.411-4, D.744-1, D.754-1; and D.764-1 of the French Monetary and Financial Code and any implementing regulation.

Pursuant to Article 211-3 of the General Regulation of the AMF, investors in France are informed that the securities cannot be distributed (directly or indirectly) to the public by the investors otherwise than in accordance with Articles L.411-1, L.411-2, L.412-1 and L.621-8 to L.621-8-3 of the French Monetary and Financial Code.

Hong Kong

Neither the information in this document nor any other document relating to the offer has been delivered for registration to the Registrar of Companies in Hong Kong, and its contents have not been reviewed or approved by any regulatory

authority in Hong Kong, nor have we been authorized by the Securities and Futures Commission in Hong Kong. This document does not constitute an offer or invitation to the public in Hong Kong to acquire securities. Accordingly, unless permitted by the securities laws of Hong Kong, no person may issue or have in its possession for the purpose of issue, this document or any advertisement, invitation or document relating to the securities, whether in Hong Kong or elsewhere, which is directed at, or the contents of which are likely to be accessed or read by, the public in Hong Kong other than in relation to securities which are intended to be disposed of only to persons outside Hong Kong or only to “professional investors” (as such term is defined in the Securities and Futures Ordinance (Cap. 571 of the Laws of Hong Kong) (“SFO”) and the subsidiary legislation made thereunder) or in circumstances which do not result in this document being a “prospectus” as defined in the Companies (Winding Up and Miscellaneous Provisions) Ordinance of Hong Kong (Cap. 32 of the Laws of Hong Kong) (the “CO”) or which do not constitute an offer or an invitation to the public for the purposes of the SFO or the CO. The offer of the securities is personal to the person to whom this document has been delivered by or on behalf of our company, and a subscription for securities will only be accepted from such person. No person to whom a copy of this document is issued may issue, circulate or distribute this document in Hong Kong or make or give a copy of this document to any other person. You are advised to exercise caution in relation to the offer. If you are in any doubt about any of the contents of this document, you should obtain independent professional advice. No document may be distributed, published or reproduced (in whole or in part), disclosed by or to any other person in Hong Kong or to any person to whom the offer of sale of the securities would be a breach of the CO or SFO.

Ireland

The information in this document does not constitute a prospectus under any Irish laws or regulations and this document has not been filed with or approved by any Irish regulatory authority as the information has not been prepared in the context of a public offering of securities in Ireland within the meaning of the Irish Prospectus (Directive 2003/71/EC) Regulations 2005 (the “Prospectus Regulations”). The securities have not been offered or sold, and will not be offered, sold or delivered directly or indirectly in Ireland by way of a public offering, except to (i) qualified investors as defined in Regulation 2(l) of the Prospectus Regulations and (ii) fewer than 100 natural or legal persons who are not qualified investors.

Israel

The securities offered by this prospectus have not been approved or disapproved by the Israeli Securities Authority (the “ISA”), nor have such securities been registered for sale in Israel. The shares may not be offered or sold, directly or indirectly, to the public in Israel, absent the publication of a prospectus. The ISA has not issued permits, approvals or licenses in connection with the offering or publishing the prospectus; nor has it authenticated the details included herein, confirmed their reliability or completeness, or rendered an opinion as to the quality of the securities being offered. Any resale in Israel, directly or indirectly, to the public of the securities offered by this prospectus is subject to restrictions on transferability and must be effected only in compliance with the Israeli securities laws and regulations.

Italy

The offering of the securities in the Republic of Italy has not been authorized by the Italian Securities and Exchange Commission (Commissione Nazionale per le Società e la Borsa, or “CONSOB”) pursuant to the Italian securities legislation and, accordingly, no offering material relating to the securities may be distributed in Italy and such securities may not be offered or sold in Italy in a public offer within the meaning of Article 1.1(t) of Legislative Decree No. 58 of 24 February 1998 (“Decree No. 58”), other than:

- to Italian qualified investors, as defined in Article 100 of Decree no.58 by reference to Article 34-ter of CONSOB Regulation no. 11971 of 14 May 1999 (“Regulation no. 11971”) as amended (“Qualified Investors”); and
- in other circumstances that are exempt from the rules on public offer pursuant to Article 100 of Decree No. 58 and Article 34-ter of Regulation No. 11971 as amended.
- Any offer, sale or delivery of the securities or distribution of any offer document relating to the securities in Italy (excluding placements where a Qualified Investor solicits an offer from the issuer) under the paragraphs above must be:
- made by investment firms, banks or financial intermediaries permitted to conduct such activities in Italy in accordance with Legislative Decree No. 385 of 1 September 1993 (as amended), Decree No. 58, CONSOB Regulation No. 16190 of 29 October 2007 and any other applicable laws; and
- in compliance with all relevant Italian securities, tax and exchange controls and any other applicable laws.

Any subsequent distribution of the securities in Italy must be made in compliance with the public offer and prospectus requirement rules provided under Decree No. 58 and the Regulation No. 11971 as amended, unless an exception from those rules applies. Failure to comply with such rules may result in the sale of such securities being declared null and void and in the liability of the entity transferring the securities for any damages suffered by the investors.

Japan

The securities have not been and will not be registered under Article 4, paragraph 1 of the Financial Instruments and Exchange Law of Japan (Law No. 25 of 1948), as amended (the “FIEL”) pursuant to an exemption from the registration requirements applicable to a private placement of securities to Qualified Institutional Investors (as defined in and in accordance with Article 2, paragraph 3 of the FIEL and the regulations promulgated thereunder). Accordingly, the securities may not be offered or sold, directly or indirectly, in Japan or to, or for the benefit of, any resident of Japan other than Qualified Institutional Investors. Any Qualified Institutional Investor who acquires securities may not resell them to any person in Japan that is not a Qualified Institutional Investor, and acquisition by any such person of securities is conditional upon the execution of an agreement to that effect.

Portugal

This document is not being distributed in the context of a public offer of financial securities (oferta pública de valores mobiliários) in Portugal, within the meaning of Article 109 of the Portuguese Securities Code (Código dos Valores Mobiliários). The securities have not been offered or sold and will not be offered or sold, directly or indirectly, to the public in Portugal. This document and any other offering material relating to the securities have not been, and will not be, submitted to the Portuguese Securities Market Commission (Comissão do Mercado de Valores Mobiliários) for approval in Portugal and, accordingly, may not be distributed or caused to be distributed, directly or indirectly, to the public in Portugal, other than under circumstances that are deemed not to qualify as a public offer under the Portuguese Securities Code. Such offers, sales and distributions of securities in Portugal are limited to persons who are “qualified investors” (as defined in the Portuguese Securities Code). Only such investors may receive this document and they may not distribute it or the information contained in it to any other person.

Sweden

This document has not been, and will not be, registered with or approved by Finansinspektionen (the Swedish Financial Supervisory Authority). Accordingly, this document may not be made available, nor may the securities be offered for sale in Sweden, other than under circumstances that are deemed not to require a prospectus under the Swedish Financial Instruments Trading Act (1991:980) (Sw. lag (1991:980) om handel med finansiella instrument). Any offering of securities in Sweden is limited to persons who are “qualified investors” (as defined in the Financial Instruments Trading Act). Only such investors may receive this document and they may not distribute it or the information contained in it to any other person.

Switzerland

The securities may not be publicly offered in Switzerland and will not be listed on the SIX Swiss Exchange (“SIX”) or on any other stock exchange or regulated trading facility in Switzerland. This document has been prepared without regard to the disclosure standards for issuance prospectuses under art. 652a or art. 1156 of the Swiss Code of Obligations or the disclosure standards for listing prospectuses under art. 27 ff. of the SIX Listing Rules or the listing rules of any other stock exchange or regulated trading facility in Switzerland. Neither this document nor any other offering material relating to the securities may be publicly distributed or otherwise made publicly available in Switzerland.

Neither this document nor any other offering material relating to the securities have been or will be filed with or approved by any Swiss regulatory authority. In particular, this document will not be filed with, and the offer of securities will not be supervised by, the Swiss Financial Market Supervisory Authority (“FINMA”).

This document is personal to the recipient only and not for general circulation in Switzerland.

United Arab Emirates

Neither this document nor the securities have been approved, disapproved or passed on in any way by the Central Bank of the United Arab Emirates or any other governmental authority in the United Arab Emirates, nor have we received authorization or licensing from the Central Bank of the United Arab Emirates or any other governmental authority in the United Arab Emirates to market or sell the securities within the United Arab Emirates. This document does not constitute and may not be used for the purpose of an offer or invitation. No services relating to the securities, including the receipt of applications and/or the allotment or redemption of such shares, may be rendered within the United Arab Emirates by us.

United Kingdom

Neither the information in this document nor any other document relating to the offer has been delivered for approval to the Financial Services Authority in the United Kingdom and no prospectus (within the meaning of section 85 of the Financial Services and Markets Act 2000, as amended (“FSMA”) has been published or is intended to be published in respect of the securities. This document is issued on a confidential basis to “qualified investors” (within the meaning of section 86(7) of FSMA) in the United Kingdom, and the securities may not be offered or sold in the United Kingdom by means of this document, any accompanying letter or any other document, except in circumstances which do not require the publication of a prospectus pursuant to section 86(1) FSMA. This document should not be distributed, published or reproduced, in whole or in part, nor may its contents be disclosed by recipients to any other person in the United Kingdom.

Any invitation or inducement to engage in investment activity (within the meaning of section 21 of FSMA) received in connection with the issue or sale of the securities has only been communicated or caused to be communicated and will only be communicated or caused to be communicated in the United Kingdom in circumstances in which section 21(1) of FSMA does not apply to the Company.

In the United Kingdom, this document is being distributed only to, and is directed at, persons (i) who have professional experience in matters relating to investments falling within Article 19(5) (investment professionals) of the Financial Services and Markets Act 2000 (Financial Promotions) Order 2005 (“FPO”), (ii) who fall within the categories of persons referred to in Article 49(2)(a) to (d) (high net worth companies, unincorporated associations, etc.) of the FPO or (iii) to whom it may otherwise be lawfully communicated (together “relevant persons”). The investments to which this document relates are available only to, and any invitation, offer or agreement to purchase will be engaged in only with, relevant persons. Any person who is not a relevant person should not act or rely on this document or any of its contents.

LEGAL MATTERS

The validity of the securities being offered by this prospectus will be passed upon for us by Sheppard Mullin Richter & Hampton LLP, New York, NY. Ellenoff, Grossman & Schole LLP, New York, NY, has acted as counsel for the Placement Agent in connection with certain legal matters related to this offering.

EXPERTS

The financial statements of Kiromic BioPharma, Inc. and subsidiaries as of and for the year ended December 31, 2022, incorporated by reference in this prospectus and elsewhere in the registration statement have been audited by Whitley Penn LLP, an independent registered public accounting firm. As stated in their report dated April 17, 2023, the retrospective adjustments to the financial statements have also been audited by Whitley Penn LLP, and such report also includes an explanatory paragraph regarding the existence of substantial doubt about the Company's ability to continue as a going concern. Such financial statements are incorporated by reference in reliance upon the report of Whitley Penn LLP given their authority as experts in accounting and auditing.

The financial statements of Kiromic BioPharma, Inc. for the year ended December 31, 2021 (before the effects of the retrospective adjustments to the financial statements) (not separately presented herein) have been audited by Deloitte & Touche LLP, an independent registered public accounting firm, as stated in their report incorporated by reference in the Prospectus. The retrospective adjustments to the 2021 financial statements have been audited by Whitley Penn LLP. Such financial statements are incorporated by reference in reliance upon the respective reports of Deloitte & Touche LLP and Whitley Penn LLP given their authority as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

We have filed a registration statement on Form S-1, including exhibits, under the Securities Act, with respect to the securities offered by this prospectus. This prospectus does not contain all of the information included in the registration statement. For further information pertaining to us and our securities, you should refer to the registration statement of which this prospectus is a part and the exhibits to such registration statement. The descriptions in this prospectus of the provisions of documents filed as exhibits to this prospectus are only summaries of those documents' material terms. You can read copies of such documents, along with copies of reports, proxy statements and other information filed by us with the SEC at the SEC's website at <http://www.sec.gov>.

We also maintain a website at www.kiromic.com. Through our website, we make available, free of charge, annual, quarterly and current reports, proxy statements and other information as soon as reasonably practicable after they are electronically filed with, or furnished to, the SEC. The information contained on, or that may be accessed through, our website is not part of, and is not incorporated into, this prospectus and the inclusion of our website address in this prospectus is an inactive textual reference only.

INCORPORATION OF DOCUMENTS BY REFERENCE

This prospectus is part of the registration statement but the registration statement includes and incorporates by reference additional information and exhibits. The SEC permits us to "incorporate by reference" the information contained in documents we file with the SEC, which means that we can disclose important information to you by referring you to those documents rather than by including them in this prospectus. Information that is incorporated by reference is considered to be part of this prospectus and you should read it with the same care that you read this prospectus. Information that we file later with the SEC will automatically update and supersede the information that is either contained, or incorporated by reference, in this prospectus, and will be considered to be a part of this prospectus from the date those documents are filed. We have filed with the SEC, and incorporate by reference in this prospectus:

- [Annual Report on Form 10-K for the year ended December 31, 2022 filed with the SEC on April 17, 2023](#) and [Annual Report on Form 10-K/A for the year ended December 31, 2022 filed with the SEC on April 28, 2023](#);
- [Quarterly Report on Form 10-Q for the quarter ended March 31, 2023 filed with the SEC on May 15, 2023](#);
- Current Reports on Form 8-K, filed with the SEC on [January 26, 2023](#); [February 27, 2023](#); [March 7, 2023](#); [March 10, 2023](#); [March 17, 2023](#); [March 31, 2023](#); [April 28, 2023](#); [May 12, 2023](#); [May 30, 2023](#); [June 12, 2023](#) and [June 27, 2023](#); and
- the description of our common stock set forth in the Registration Statement on Form [8-A12B filed on October 14, 2020](#), including any amendment or report filed for the purpose of updating such description.

In addition, all documents subsequently filed by us pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934, as amended, prior to the termination of the offering (excluding any information furnished rather than filed) shall be deemed to be incorporated by reference into this prospectus.

Notwithstanding the statements in the preceding paragraphs, no document, report or exhibit (or portion of any of the foregoing) or any other information that we have "furnished" to the SEC pursuant to the Securities Exchange Act of 1934, as amended shall be incorporated by reference into this prospectus.

We will furnish without charge to you, on written or oral request, a copy of any or all of the documents incorporated by reference in this prospectus, including exhibits to these documents. You should direct any requests for documents to:

Kiromic Biopharma, Inc.
7707 Fannin, Suite 140
Houston, TX 77054
Phone: (832) 968-4888

You also may access these filings on our website at <http://www.kiromic.com>. We do not incorporate the information on our website into this prospectus or any supplement to this prospectus and you should not consider any information on, or

that can be accessed through, our website as part of this prospectus or any supplement to this prospectus (other than those filings with the SEC that we specifically incorporate by reference into this prospectus or any supplement to this prospectus).

Any statement contained in a document incorporated or deemed to be incorporated by reference in this prospectus will be deemed modified, superseded or replaced for purposes of this prospectus to the extent that a statement contained in this prospectus modifies, supersedes or replaces such statement. Any statement contained herein or in any document incorporated or deemed to be incorporated by reference shall be deemed to be modified or superseded for purposes of the registration statement of which this prospectus forms a part to the extent that a statement contained in any other subsequently filed document which also is or is deemed to be incorporated by reference modifies or supersedes such statement. Any such statement so modified or superseded shall not be deemed to constitute a part of the registration statement of which this prospectus forms a part, except as so modified or superseded.

**Up to [•] shares of Common Stock
Pre-Funded Warrants to Purchase up to [•] shares of Common Stock
Warrants to Purchase up to [•] shares of Common Stock
Shares of Common Stock underlying the Pre-Funded Warrants and Warrants**

Kiromic Biopharma, Inc.

PROSPECTUS

Roth Capital Partners

, 2023

PART II**INFORMATION NOT REQUIRED IN THE PROSPECTUS****Item 13. Other Expenses of Issuance and Distribution.**

The following table sets forth all expenses, other than the agency fees, payable by the registrant in connection with the sale of the securities being registered. All the amounts shown are estimates except the SEC registration fee and the FINRA filing fee.

	Amount to be paid
SEC registration fee	\$ 2,204
FINRA filing fee	\$ 3,500
Accounting fees and expenses	\$ *
Legal fees and expenses	\$ *
Printing and engraving expenses	\$ *
Miscellaneous	\$ *
Total	\$ *

* To be filed by amendment

Item 14. Indemnification of Directors and Officers.

Section 102 of the General Corporation Law of the State of Delaware (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 Amended and Restated Certificate of Incorporation, as amended, 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 General Corporation Law of the State of Delaware provides that a corporation may indemnify directors and officers as well as other employees and individuals against expenses, including attorneys' fees, judgments, fines and amounts paid in settlement in connection with specified actions, suits and proceedings whether civil, criminal, administrative, or investigative, other than a derivative action by or in the right of the corporation, if they acted in good faith and in a manner they reasonably believed to be in or not opposed to the best interests of the corporation and, with respect to any criminal action or proceeding, had no reasonable cause to believe their conduct was unlawful. A similar standard is applicable in the case of derivative actions, except that indemnification extends only to expenses, including attorneys' fees, incurred in connection with the defense or settlement of such action and the statute requires court approval before there can be any indemnification where the person seeking indemnification has been found liable to the corporation. The statute provides that it is not exclusive of other indemnification that may be granted by a corporation's certificate of incorporation, bylaws, disinterested director vote, stockholder vote, agreement or otherwise.

Our Fourth Amended and Restated Certificate of Incorporation and Second Amended and Restated Bylaws provide for indemnification of directors and officers to the fullest extent permitted by law, including payment of expenses in advance of resolution of any such matter.

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

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We maintain standard policies of insurance under which coverage is provided (a) to our directors and officers against loss rising from claims made by reason of breach of duty or other wrongful act, and (b) to us with respect to payments which we may make to such officers and directors pursuant to the above indemnification provision or otherwise as a matter of law.

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers or persons controlling us under the foregoing provisions, we have been informed that in the opinion of the SEC such indemnification is against public policy as expressed in the Securities Act and is therefore unenforceable.

Item 15. Recent Sales of Unregistered Securities.

During the past three years, we issued the following securities, which were not registered under the Securities Act.

On January 24, 2020, we issued 4,782,608 shares of Series B Preferred Stock for \$2,200,000. On January 29, 2020, we filed a certificate of correction to its amended and restated its certificate of incorporation to authorize the issuance of up to 16,500,000 shares of Series B Preferred Stock. On January 31, 2020, the Company issued an additional 1,739,130 shares of Series B Preferred Stock for \$800,000.

We also issued each investor a warrant to purchase 0.0859 shares of common stock for each Series B Preferred Share purchased, or warrants for an aggregate of 1,399,921 shares of common stock (the “Pre-Funded Warrants”). The Pre-Funded Warrants had an exercise price of \$0.003494 per share and expired ten years after the date of issuance. On June 8, 2020 and June 10, 2020, the holders of all the outstanding Pre-Funded Warrants exercised the warrants for cash and received 1,399,921 shares of common stock upon exercise. On June 19, 2020, we issued an aggregate of 722,000 shares of common stock to our former Chief Financial Officer and former Chief Strategy and Innovation Officer for prior services rendered.

No underwriters were involved in these issuances. We believe that each of the above issuances was exempt from registration under the Securities Act in reliance on Regulation S under the Securities Act or pursuant to Section 4(2) of the Securities Act regarding transactions not involving a public offering.

Item 16. Exhibits.

(a) Exhibits

Exhibit No.	Description of Exhibit
3.1	Fourth Amended and Restated Certificate of Incorporation of Kiromic BioPharma, Inc. (incorporated by reference to Exhibit 3.1 to the Current Report on Form 8-K filed on October 21, 2020).
3.2	Certificate of Designation of Preferences, Rights and Limitations of the Series C Convertible Voting Preferred Stock dated March 28, 2023 (incorporated by reference to Exhibit 3.1 to the Current Report on Form 8-K filed on March 31, 2023).
3.3	Second Amended and Restated Bylaws of Kiromic BioPharma, Inc. (incorporated by reference to Exhibit 3.5 to the Company’s Registration Statement on Form S-1/A filed on October 6, 2020).
4.1*	Form of Warrant Agency Agreement
4.2*	Form of Warrant
4.3*	Form of Pre-Funded Warrant
5.1*	Opinion of Sheppard Mullin Richter & Hampton LLP
10.1*	Form of Securities Purchase Agreement
10.2*	Form of Placement Agency Agreement
10.3#	License Agreement, dated December 1, 2016, between Mercer University and Kiromic BioPharma, Inc. (incorporated by reference to Exhibit 10.10 to the Company’s Registration Statement on Form S-1/A filed on October 6, 2020).

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10.4#	<u>License Agreement, dated September 14, 2018, between CGA 369 Intellectual Holdings, Inc. and Kiromic BioPharma, Inc. (incorporated by reference to Exhibit 10.11 to the Company's Registration Statement on Form S-1/A filed on October 6, 2020)</u>
10.5#	<u>Amendment to License Agreement, dated October 16, 2019, between CGA 369 Intellectual Holdings, Inc. and Kiromic BioPharma, Inc. (incorporated by reference to Exhibit 10.12 to the Company's Registration Statement on Form S-1/A filed on October 6, 2020)</u>
10.6#	<u>Collaboration Agreement, dated February 6, 2020, between University of Texas MD Anderson Cancer Center and Kiromic BioPharma, Inc. (incorporated by reference to Exhibit 10.14 to the Company's Registration Statement on Form S-1/A filed on October 6, 2020)</u>
10.7†	<u>Employment Agreement dated January 1, 2020 between Kiromic BioPharma, Inc and Scott Dahlbeck (incorporated by reference to Exhibit 10.19 to the Company's Registration Statement on Form S-1/A filed on October 6, 2020)</u>
10.8†	<u>Kiromic, Inc. 2017 Equity Incentive Plan (incorporated by reference to Exhibit 10.22 to the Company's Registration Statement on Form S-1/A filed on October 6, 2020)</u>
10.9#	<u>Joint venture agreement, dated 4.06.2020, between Molipharma S.R.L. and Kiromic BioPharma, Inc. (incorporated by reference to Exhibit 10.23 to the Company's Registration Statement on Form S-1/A filed on October 6, 2020)</u>
10.10†	<u>Form of Director Services Agreement between Kiromic BioPharma, Inc. and all independent directors (incorporated by reference to Exhibit 10.24 to the Company's Registration Statement on Form S-1/A filed on October 6, 2020)</u>
10.11†	<u>Amended and Restated License Agreement by and between the Company and Longwood University, dated as of November 30, 2020 (incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed on January 29, 2021)</u>
10.12	<u>Strategic Alliance Agreement by and between the Company and Leon Office (H.K.) Ltd, effective as of January 28, 2021 (incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed on February 12, 2021)</u>
10.13	<u>Executive Employment Agreement by and between the Company and Dr. Michael Ryan, effective as of July 1, 2021 (incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed on July 8, 2021)</u>
10.14	<u>Separation Agreement by and between Kiromic Biopharma, Inc. and Ignacio Nunez, effective as of December 8, 2021 (incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed on December 10, 2021)</u>
10.15	<u>Executive Employment Agreement by and between the Company and Pietro Bersani, effective as of January 27, 2022 (incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed on February 2, 2022)</u>
10.16	<u>Confidential Information, Inventions, Non-Solicitation and Non-Competition Agreement by and between the Company and Pietro Bersani effective as of January 27, 2022 (incorporated by reference to Exhibit 10.2 to the Current Report on Form 8-K filed on February 2, 2022)</u>
10.17	<u>Indemnification Agreement by and between the Company and Pietro Bersani effective as of January 27, 2022 (incorporated by reference to Exhibit 10.3 to the Current Report on Form 8-K filed on February 2, 2022)</u>
10.18	<u>Transition and Consulting Agreement effective as of February 9, 2022, by and between Kiromic BioPharma, Inc. and Gianluca Rotino (incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed on February 16, 2022)</u>
10.19	<u>Modification to Employment Agreement effective as of February 9, 2022, by and between Kiromic BioPharma, Inc. and Scott Dahlbeck (incorporated by reference to Exhibit 10.2 to the Current Report on Form 8-K filed on February 16, 2022)</u>

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10.20	Stipulation of Settlement and Mutual Release, dated October 10, 2022, by and among Kiromic Biopharma, Inc., Empery Asset Master, Ltd. and other parties (incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed on October 14, 2022)
10.21	Stipulation of Settlement and Mutual Release, dated October 10, 2022, by and among Kiromic Biopharma, Inc., Sabby Volatility Warrant Master Fund Ltd. and other parties (incorporated by reference to Exhibit 10.2 to the Current Report on Form 8-K filed on October 14, 2022)
10.22	Form of the Subordinated Convertible Promissory Note (incorporated by reference to Exhibit 10.3 to the Current Report on Form 8-K filed on October 14, 2022)
10.23	Standby Equity Purchase Agreement, dated October 13, 2022, by and between Kiromic Biopharma, Inc. and YA II PN, Ltd. (incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed on October 19, 2022)
10.24	Form of the 25% Senior Secured Convertible Promissory Note (incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed on October 27, 2022)
10.25	Amended Stipulation of Settlement and Mutual Release, dated October 27, 2022, by and among Kiromic Biopharma, Inc., Empery Asset Master, Ltd. and other parties (incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed on November 2, 2022)
10.26	Amended Stipulation of Settlement and Mutual Release, dated October 27, 2022, by and among Kiromic Biopharma, Inc., Sabby Volatility Warrant Master Fund Ltd. and other parties (incorporated by reference to Exhibit 10.2 to the Current Report on Form 8-K filed on November 2, 2022)
10.27	Form of Note Purchase Agreement (incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed on January 26, 2023)
10.28	Form of Exchange Agreement dated as of March 28, 2023 between the Company and the holder of the Exchange Securities (incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed on March 31, 2023)
21.1	List of Subsidiaries (incorporated by reference to Exhibit 21.1 to the Annual Report on Form 10-K filed on April 17, 2023)
23.1*	Consent of Sheppard Mullin Richter & Hampton LLP (included in Exhibit 5.1)
23.2	Consent of Whitley Penn LLP, independent registered public accounting firm
23.3	Consent of Deloitte & Touche LLP
24.1	Power of Attorney (included on signature page)
107	Fee Table

* To be filed by amendment

† Executive Compensation Plan or Agreement

Portions of this exhibit (indicated by asterisks) have been redacted in compliance with Regulation S-K Item 601(b)(10) (iv).

(b) Financial Statement Schedules

Item 17. Undertakings.

(a) The undersigned registrant hereby undertakes as follows:

(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;

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(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. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than 20 percent change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement;

(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.

(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, each prospectus filed pursuant to Rule 424(b) as part of a registration statement relating to an offering, other than registration statements relying on Rule 430B or other than prospectuses filed in reliance on Rule 430A, shall be deemed to be part of and included in the registration statement as of the date it is first used after effectiveness. 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 first use, 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 date of first use.

(5) That, for the purpose of determining any liability 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 our securities provided by or on behalf of the undersigned registrant; and

(iv) Any other communication that is an offer in the offering made by the undersigned registrant to the purchaser.

(b) Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the undersigned pursuant to the foregoing provisions, or otherwise, the undersigned has been advised that in the opinion of the SEC 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 undersigned of expenses incurred or paid by a director, officer or controlling person of the undersigned 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 undersigned will, unless in the opinion of our 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 Act and will be governed by the final adjudication of such issue.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, as amended, the registrant has duly caused this Registration Statement on Form S-1 to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Houston, State of Texas, on June 29, 2023.

KIROMIC BIOPHARMA, INC.

By: /s/ Pietro Bersani
Pietro Bersani
Chief Executive Officer (Principal Executive Officer)

POWER OF ATTORNEY

Each person whose signature appears below constitutes and appoints Pietro Bersani as his or her true and lawful attorneys-in-fact and agent with full power of substitution and resubstitution, for him and his name, place and stead, in any and all capacities, to sign any or all amendments (including post-effective amendments) to this registration statement and to file a new registration statement under Rule 461, and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorney-in-fact and agent full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the foregoing, as fully to all intents and purposes as he might or could do in person, hereby ratifying and confirming all that said attorney-in-fact and agents, or his substitute, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, as amended, this Registration Statement on Form S-1 has been signed by the following persons in the capacities and on the dates indicated.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/S/ PIETRO BERSANI</u> Pietro Bersani	Chief Executive Officer (Principal Executive Officer)	June 29, 2023
<u>/S/ BRIAN HUNGERFORD</u> Brian Hungerford	Interim Chief Financial Officer (Principal Financial and Accounting Officer)	June 29, 2023
<u>/S/ AMERICO CICCHETTI</u> Americo Cicchetti	Director	June 29, 2023
<u>/S/ MICHAEL NAGEL</u> Michael Nagel	Director	June 29, 2023

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the Registration Statement on Form S-1 of Kiromic BioPharma, Inc. and subsidiaries of our report dated April 17, 2023 relating to the consolidated financial statements appearing in the Annual Report on Form 10-K of Kiromic BioPharma, Inc. and subsidiaries for the year ended December 31, 2022. We also consent to the reference to our firm under the heading “Experts” in such Registration Statement.

/s/ Whitley Penn LLP

Houston, Texas
June 29, 2023

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in this Registration Statement on Form S-1 of our report dated April 8, 2022 relating to the financial statements of Kiromic BioPharma, Inc. appearing in the Annual Report on Form 10-K of Kiromic BioPharma, Inc. for the year ended December 31, 2022. We also consent to the reference to us under the heading "Experts" in such Registration Statement.

/s/ Deloitte & Touche LLP

Houston, Texas

June 29, 2023

Calculation of Filing Fee Tables

Form S-1 (Form Type)

Kiromic Biopharma, inc.

(Exact Name of Registrant as Specified in its Charter)

Table 1: Newly Registered Securities

Title of each Class of Securities to be Registered (1)	Fee Calculation Rule	Amount Registered	Proposed Maximum Offering Price Per Share	Proposed Maximum Aggregate Offering Price(2)	Amount of Registration Fee(3)
Common Stock, \$0.001 par value(3)	Rule 457(o)			\$20,000,000	\$2,204(4)
Pre-funded Warrants to purchase Common Stock (3)(5)	Rule 457(g)				
Common Warrants to purchase Common Stock(5)	Rule 457(g)				
Total					\$2,204
Registration Fee Previously Paid					
Registration Fee Paid Herewith					\$2,204

(1) Pursuant to Rule 416 under the Securities Act of 1933, as amended (the "Securities Act"), there are also being registered such additional securities that may be issued because of events such as recapitalizations, stock dividends, stock splits and reverse stock splits, and similar transactions.

(2) Estimated solely for the purpose of determining the amount of the registration fee in accordance with Rule 457(o) under the Securities Act.

(3) The proposed maximum aggregate offering price of the shares of common stock proposed to be sold in the offering will be reduced on a dollar-for-dollar basis based on the aggregate offering price of the Pre-Funded Warrants offered and sold in the offering (plus the aggregate exercise price of the shares of common stock issuable upon exercise of the Pre-Funded Warrants), and as such the proposed aggregate maximum offering price of the shares of common stock and Pre-Funded Warrants (including shares of common stock issuable upon exercise of the Pre-Funded Warrants), if any, is \$20,000,000.

(4) Calculated pursuant to Rule 457(o) under the Securities Act based on an estimate of the proposed maximum aggregate offering price.

(5) No fee due pursuant to Rule 457(g) under the Securities Act.