Filed Pursuant to Rule 424(b)(5)
Registration No. 333-273153

PROSPECTUS SUPPLEMENT
(to Prospectus dated July 7, 2023)

$6,500,000
Common Stock

This prospectus supplement relates to the issuance and sale of shares of our common stock, par value $0.001 per share, having an aggregate offering price of up to $6.50 million, from time to time solely through R.F. Lafferty & Co., Inc., as exclusive sales agent (who we refer to herein as "Lafferty" or the "Sales Agent"). Any sales consummated under this prospectus supplement will be made under an "at-the-market" offering program under the terms of an At the Market Offering Agreement between us and Lafferty, dated July 18, 2025 (the "Sales Agreement"), pursuant to which we may sell up to $6.50 million shares of our common stock. See "*Plan of Distribution*."

Our common stock is listed on the Nasdaq Capital Market under the symbol "ARTL." On July 17, 2025, the last reported sale price for our common stock on the Nasdaq Capital Market was $15.67 per share.

Sales of our common stock, if any, under this prospectus supplement may be made in sales deemed to be "at-the-market offerings" as defined in Rule 415(a)(4) promulgated under the Securities Act of 1933, as amended, or the Securities Act. The Sales Agent is not required to sell any specific number or dollar amount of securities but will act as the sales agent on a best efforts basis and will use commercially reasonable efforts, consistent with the Sales Agent's normal trading and sales practices, to sell on our behalf all of the shares of common stock requested to be sold by us on mutually agreed terms between the Sales Agent and us. There is no arrangement for funds to be received in any escrow, trust or similar arrangement. If we and the Sales Agent agree on any method of distribution other than sales of shares of our common stock on or through the Nasdaq Capital Market or another existing trading market in the United States at market prices, we will file a further prospectus supplement providing all information about such offering as required by Rule 424(b) under the Securities Act.

The Sales Agent will be entitled to compensation under the terms of the Sales Agreement at a commission rate of 2.0% of the gross sales price per share of common stock sold. In connection with the sale of the common stock on our behalf, the Sales Agent will be deemed to be an "underwriter" within the meaning of the Securities Act and the compensation of the Sales Agent will be deemed to be underwriting commissions or discounts. We have also agreed to provide indemnification and contribution to the Sales Agents against certain civil liabilities, including liabilities under the Securities Act.

As of the date of this prospectus supplement, the aggregate market value of our outstanding common stock held by non-affiliates was approximately $19,960,602, based on 700,372 shares of outstanding common stock held by non-affiliates, and a per share price of $28.50 based on the closing sale price of our common stock on July 10, 2025. In no event will the aggregate market value of securities sold by us or on our behalf under this prospectus supplement pursuant to General Instruction I.B.6 of Form S-3 during the twelve-month period immediately prior to, and including, the date of any such sale, exceed one-third of the aggregate market value of our common stock held by non-affiliates. During the twelve-month period that ends on and includes the date hereof, we have sold no shares of our common stock pursuant to General Instruction I.B.6 of Form S-3.

Investing in our common stock involves a high degree of risk. Please read "Risk Factors" beginning on page S-9 of this prospectus supplement, page 10 of the accompanying prospectus, and the documents incorporated by reference into this prospectus supplement and the accompanying prospectus for a discussion of the factors you should carefully consider before deciding to purchase our common stock.

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

R.F. Lafferty & Co., Inc.

Prospectus Supplement dated July 18, 2025

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Prospectus Supplement

Prospectus

ABOUT THIS PROSPECTUS SUPPLEMENT

This document is in two parts. The first part is this prospectus supplement, which describes the specific terms of this offering of common stock and also adds to and updates information contained in the accompanying prospectus, or the base prospectus, and the documents incorporated by reference in this prospectus supplement and the accompanying prospectus. The second part, the accompanying prospectus, dated July 7, 2023, provides more general information, some of which may not apply to this offering. Generally, when we refer to this prospectus supplement, we are referring to both parts of this document combined. To the extent there is a conflict between the information contained in this prospectus supplement and the information contained in the accompanying prospectus or any document incorporated by reference that was filed with the U.S. Securities and Exchange Commission, or SEC, before the date of this prospectus supplement, you should rely on the information in this prospectus supplement; provided that if any statement in one of these documents is inconsistent with a statement in another document having a later date-for example, a document incorporated by reference in the accompanying prospectus-the statement in the document having the later date modifies or supersedes the earlier statement.

This prospectus supplement and the accompanying prospectus are part of a registration statement on Form S-3 that we filed with the SEC, using a "shelf" registration process. The $6.50 million of common stock that may be offered, issued and sold under this prospectus is included in the $75.0 million of securities that may be offered, issued and sold by us pursuant to our shelf registration statement. This prospectus is deemed a prospectus supplement to the accompanying prospectus included in the registration statement of which this prospectus forms a part.

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

We are offering to sell, and seeking offers to buy, shares of our common stock only in jurisdictions where offers and sales are permitted. The distribution of this prospectus supplement and the accompanying prospectus and the offering of the common stock in certain jurisdictions may be restricted by law. Persons outside the United States who come into possession of this prospectus supplement and the accompanying prospectus must inform themselves about, and observe any restrictions relating to, the offering of the common stock and the distribution of this prospectus supplement and the accompanying prospectus outside the United States. This prospectus supplement and the accompanying prospectus do not constitute, and may not be used in connection with, an offer to sell, or a solicitation of an offer to buy, any securities offered by this prospectus supplement and the accompanying prospectus by any person in any jurisdiction in which it is unlawful for such person to make such an offer or solicitation.

As permitted by the rules and regulations of the SEC, the registration statement, of which this prospectus supplement and the accompanying prospectus form a part, includes additional information not contained in this prospectus supplement or the accompanying prospectus. You should read this prospectus supplement, the registration statement and the accompanying prospectus together with the documents incorporated by reference into this prospectus supplement and into the accompanying prospectus before buying any shares of our common stock in this offering. See "*Where You Can Find Additional Information*" on page S-24 of this prospectus supplement.

You should not assume that the information in this prospectus supplement, the accompanying prospectus or any other offering materials is accurate as of any date other than the date on the front of each document, regardless of the time of delivery of this prospectus supplement, the accompanying prospectus or such other offering materials or the time of any sale of securities. Our business, financial condition, results of operations and prospects may have changed since then.

Any portion of the $6.50 million included in this prospectus supplement that is not previously sold or included in an active placement notice pursuant to the Sales Agreement is available for sale in other offerings pursuant to the base prospectus, and if no shares are sold under the Sales Agreement, the full $75.0 million of securities may be sold in other offerings pursuant to the base prospectus and a corresponding prospectus supplement, in accordance with securities laws.

Except where the context otherwise requires or where otherwise indicated, the terms "we," "us," "our," "Artelo," "Artelo Biosciences" and "the Company" refer to Artelo Biosciences, Inc., a Nevada corporation, and its consolidated subsidiaries.

FORWARD-LOOKING STATEMENTS

The information in this prospectus supplement and the accompanying prospectus and the information incorporated herein and therein by reference includes forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, or the Securities Act, and Section 21E of the Securities Exchange Act of 1934, as amended, or the Exchange Act. These forward-looking statements are based on current expectations and beliefs and involve numerous risks and uncertainties that could cause actual results to differ materially from expectations. These forward-looking statements should not be relied upon as predictions of future events as we cannot assure you that the events or circumstances reflected in these statements will be achieved or will occur. When used in this report, the words "believe," "may," "could," "will," "estimate," "continue," "anticipate," "intend," "expect," "indicate," "seek," "should," "would" and similar expressions are intended to identify forward-looking statements, though not all forward-looking statements contain these identifying words. All statements, other than statements of historical fact, are statements that could be deemed forward-looking statements.

You should not rely upon forward-looking statements as guarantees of future performance or as predictions of future events. We have based these forward-looking statements largely on our current estimates of our financial results and our current expectations and projections about future events and financial trends that we believe may affect our financial condition, results of operations, business strategy, short-term and long-term business operations and objectives, and financial needs. These forward-looking statements are subject to a number of risks, uncertainties and assumptions that may cause our actual results to differ materially from those contained in any forward-looking statements, including those described in "*Risk Factors*" in this prospectus supplement, the accompanying prospectus and in our most recent Annual Report on Form 10-K and subsequent Quarterly Reports on Form 10-Q and in our other filings with the SEC that are incorporated by reference in this prospectus supplement or the accompanying prospectus. Moreover, we operate in a very competitive and rapidly changing environment and new risks emerge from time to time. In light of these risks, uncertainties and assumptions, the forward-looking statements discussed in this prospectus supplement, the accompanying prospectus and in our most recent Annual Report on Form 10-K, subsequent Quarterly Reports on Form 10-Q and any other filings with the SEC that are incorporated by reference in this prospectus supplement or the accompanying prospectus may not occur and actual results could differ materially and adversely from those anticipated or implied in the forward-looking statements.

These forward-looking statements include, among other things, statements about:

- our financial condition and our ability to continue as a going concern;
- our plans to obtain funding for our operations, including funding necessary to complete our clinical trials, develop, manufacture and commercialize our product candidates;
- our ability to raise any current or future funding to meet our capital requirements;
- the expected timing of the initiation and completion of our clinical studies for our product candidates;
- the size and growth of the markets for our product candidates;
- our commercialization, marketing, and manufacturing capabilities and strategies;
- geopolitical tensions, including tariffs and any war, regional conflict, or acts of terror, that can disrupt investment, supply chains and the economy generally;
- our ability to compete with companies currently producing alternative treatment methods;
- the cost, timing and outcomes of any potential litigation involving our product candidates;
- regulatory developments in the U.S. and internationally;
- the development, regulatory approval, efficacy and commercialization of competing product candidates;

- our ability to attract and retain key scientific or management personnel;
- the scope of protection we are able to establish and maintain for intellectual property rights covering our products and technology;
- the terms and conditions of licenses granted to us and our ability to license additional intellectual property related to our product candidates, as appropriate;
- potential claims related to our intellectual property;
- the accuracy of our estimates regarding expenses, future revenue, capital requirements and needs for additional financing;
- our ability to regain and maintain compliance with Nasdaq listing requirements;
- our ability to develop and maintain our corporate infrastructure, including our internal controls;
- our cash investment strategy;
- our ability to develop innovative new product candidates; and
- our financial performance.

If any of these risks or uncertainties materialize or any of these assumptions prove incorrect, our results could differ materially from the forward-looking statements in this prospectus supplement. All forward-looking statements in this prospectus supplement are current only as of the date of this prospectus supplement. We do not undertake any obligation to publicly update any forward-looking statement to reflect events or circumstances after the date on which any statement is made or to reflect the occurrence of unanticipated events except as required by law.

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

PROSPECTUS SUPPLEMENT SUMMARY

This summary description about us and our business highlights selected information contained elsewhere in this prospectus supplement or incorporated by reference in this prospectus supplement and the accompanying prospectus. This summary does not contain all of the information that you should consider before deciding to invest in our common stock pursuant to this prospectus supplement and the accompanying prospectus. You should carefully read this entire prospectus supplement, the accompanying prospectus and any related free writing prospectus, including each of the documents incorporated herein or therein by reference, before making an investment decision. Investors should carefully consider the information set forth under "Risk Factors" in this prospectus supplement on page S-9, in any related free writing prospectus, and under similar headings in the other documents that are incorporated by reference into this prospectus supplement. You also should carefully read the information incorporated by reference into this prospectus supplement, including our financial statements, other information and the exhibits to the registration statement of which the accompanying prospectus is a part.

Corporate Overview

We are a clinical stage biopharmaceutical company focused on the development and commercialization of therapeutics that target lipid-signaling modulation pathways, including the endocannabinoid system (the "ECS"), a network of receptors and neurotransmitters that form a biochemical communication system throughout the body.

Our product candidate pipeline broadly leverages leading scientific methodologies and balances risk across mechanisms of action and stages of development. Our programs represent a comprehensive approach in utilizing the power and promise of lipid signaling to develop pharmaceuticals for patients with unmet healthcare needs. We are currently developing a dual cannabinoid (CB) agonist that targets both the CB_1 and CB_2 receptors. This synthetic small molecule program is a G protein-coupled receptor ("GPCR") designated ART27.13. We are developing ART27.13 as a potential treatment for cancer-related anorexia in a Phase 1b/2a trial, titled the Cancer Appetite Recovery Study ("CAReS").

Our second program, ART26.12 is a small molecule and the lead product candidate from our chemical library of inhibitors of fatty acid binding proteins, notably Fatty Acid Binding Protein 5 ("FABP5"). We received U.S. Food & Drug Administration (the "FDA") clearance for our Investigational New Drug ("IND") application for ART26.12 in July 2024 and have completed enrolment to a Phase 1 clinical trial in healthy subjects to support the development towards an agent intended to treat chemotherapy-induced peripheral neuropathy. In addition, ART26.12 may have broad applications as a cancer therapeutic, as a treatment for dermatologic conditions, such as psoriasis, as a treatment for pain and inflammation, and potential use in anxiety-related disorders, including post-traumatic stress disorder. In June 2025, we announced favorable results from our first-in-human study evaluating ART26.12. The Phase 1 Single Ascending Dose (SAD) study was designed to assess the safety, tolerability, and pharmacokinetics of ART26.12 in healthy volunteers and enrolled 49 subjects. All adverse events (AEs) were mild, transient, and self-resolving. No drug-related AEs were observed in the blinded dataset, and no tolerability issues or safety signals were detected across multiple assessments (vital signs, ECGs, clinical laboratory tests, physical examinations, and visual analogue mood scales). In addition, full dose-exposure profiles were successfully explored. Plasma analysis confirmed dose-dependent, linear absorption across the evaluated range. A wide safety margin was observed between estimated therapeutic plasma concentrations and the highest exposure levels achieved, supporting potential titration for maximum efficacy in future studies.

We are also developing our own invention ART12.11 (the "CBD cocrystal"). ART12.11 is our patented solid-state composition of cannabidiol ("CBD") and tetramethylpyrazine ("TMP"). TMP serves as the coformer in the CBD cocrystal. ART12.11 may be considered by the regulatory authorities as a fixed drug combination instead of a new chemical entity ("NCE").

We obtained two of our patent protected product candidates through our in-licensing activities. Our first in-licensed program, ART27.13, is being developed for cancer-related anorexia. ART27.13 is a peripherally-selective high-potency dual CB_1 and CB_2 full-receptor agonist, which was originally invented at AstraZeneca plc ("AstraZeneca"). We exercised our option to exclusively license this product candidate through the NEOMED Institute ("NEOMED"), a Canadian not-for-profit corporation, renamed adMare Bioinnovations ("adMare") in June 2019, which had obtained rights to ART27.13 from AstraZeneca. In Phase 1, single dose studies in healthy volunteers and a multiple ascending dose study in individuals with chronic low back pain conducted by AstraZeneca, ART27.13 exhibited an attractive pharmacokinetic and absorption, distribution, metabolism, and excretion profile and was well tolerated within the target exposure range. It also exhibited dose-dependent and potentially clinically meaningful increases in body weight. Importantly, the changes in body weight were not associated with fluid retention or other adverse effects and occurred at exposures without central nervous system ("CNS") side effects. Discussions with United Kingdom ("UK"), U.S. and Canadian regulators indicate there is a potential pathway for development of ART27.13 for the treatment of cancer-related anorexia, which affects approximately 60% of advanced stage cancer patients.

We commenced enrollment and dosed the first patient in CAReS, our Phase 1b/2a clinical study of cancer-related anorexia with ART27.13, in April 2021 and completed enrolling patients in the Phase 1b during the first quarter of 2023. Data from the Phase 1b stage was used to determine the most effective and safe dose selected as the starting dose for the Phase 2a portion of CAReS. We received approval from the regulatory authorities in the UK, Ireland and Norway to increase the daily dose from the starting dose of 650 micrograms to 1,000 micrograms after 4 weeks and up to 1,300 micrograms initiated at 8 weeks in patients for whom intra-patient dose escalation is expected to be well tolerated. We also received approval from the regulatory authorities to enroll 40 evaluable patients into the Phase 2a stage with a 3:1 randomization of ART27.13 to placebo. We initiated the Phase 2a portion of CAReS during April 2023. As of May 6, 2025, 18 clinical sites across five countries are open and enrollment of approximately 40 participants is projected during the first half of 2025.

Our second in-licensed patented program is being advanced from our platform of small-molecule inhibitors of fatty acid binding proteins, notably FABP5. Fatty acid binding proteins ("FABPs") are attractive therapeutic targets, however, the high degree of sequence and structural similarities among family members made the creation of drugs targeting specific FABPs challenging. FABP5 is believed to specifically target and regulate one of the body's endogenous cannabinoids, anandamide ("AEA"). While searching for a FABP5 inhibitor to regulate AEA, researchers at Stony Brook University ("SBU") discovered the chemistry for creating a large library of compounds which we believe to be highly specific and potent small molecule inhibitors of FABP5 and other isoforms. SBU had received approximately $8.0 million in funding from the National Institutes of Health to develop FABP5 inhibitor candidates including a $4.2 million grant in 2020 to advance research of FABP5 inhibition in prostate cancer. We licensed the rights to world-wide intellectual property in all fields and certain know-how to these inhibitors from SBU.

Our lead FABP5 inhibitor program is designated ART26.12. Preclinical research with ART26.12 showed evidence of activity in multiple pain models including osteoarthritis, cancer bone pain, and neuropathic pain. Based upon positive preclinical evidence from five separate studies showing promising activity and a differentiated mechanism-of-action for the prevention and treatment of painful neuropathies, including diabetic neuropathy and Chemotherapy Induced Peripheral Neuropathy ("CIPN"), we prioritized CIPN as the initial indication for development of ART26.12. Treatment and/or prevention of CIPN is a significant unmet need, often resulting in anti-cancer treatment delays or discontinuations, and there are currently no approved treatments for CIPN by the regulatory authorities in the U.S., UK or EU. We submitted an IND application for ART26.12 to the FDA on 10th of June 2024 and received a study may proceed notice from the FDA on the 8th of July 2024. First-in-human studies for ART26.12 began in Q4 of 2024 and we successfully completed dosing all 48 healthy volunteers planned for the Phase 1 Single Ascending Dose study at the end of April 2025. In addition to its potential as a synthetic endocannabinoid modulator with development targeting pain, inflammation, dermatologic conditions such as psoriasis, FABP5 is understood to play an important role in lipid signaling and is believed to be an attractive strategy for drug development in oncology. Large amounts of human biomarker and animal model data support FABP5 as an oncology target, including triple negative breast cancer, ovarian cancer, cervical cancer, and castration-resistant prostate cancer. Through our sponsored research we have also subsequently identified a potential role for FABP5 inhibition to treat anxiety disorders, such as Post Traumatic Stress Disorder ("PTSD"). We have been awarded a research grant in Canada to expand on our earlier research at the University of Western Ontario in this new development area.

In addition to our in-licensed programs, we have internal discovery research initiatives which resulted in ART12.11, a proprietary cocrystal composition of CBD and TMP. The crystal structure of CBD is known to exhibit solid polymorphism, or the ability to manifest in different forms. Polymorphism can adversely affect stability, dissolution, and bioavailability of a drug product and thus may affect its quality, safety, and efficacy. Based upon our research, we believe our CBD cocrystal exists as a single crystal form and as such is anticipated to have advantages over other solid forms of CBD that exhibit polymorphism. Emerging data demonstrates potential advantages of this single crystal structure, including improved stability, solubility, and a more consistent absorption profile. We believe these features have contributed to a more consistent and improved bioavailability and pharmacokinetic profile which may ultimately lead to improved safety and efficacy in human therapeutics, as already demonstrated in animal studies.

Presently, we have two U.S. patents, one pending U.S. patent application, six foreign patents (Australia, Brazil, China, Mexico, Japan and Taiwan) and three pending foreign patent applications (Canada, Europe, and South Korea) directed to our cocrystal composition of CBD. Composition claims are generally known in the pharmaceutical industry as the most desired type of intellectual property and should provide for long lasting market exclusivity for our synthetic CBD cocrystal drug product candidate. In addition, due to the reasons outlined above, we believe that our synthetic CBD cocrystal will continue to demonstrate a superior set of pharmaceutical properties compared to non-cocrystal CBD compositions. We plan to develop ART12.11 for multiple potential indications where CBD has shown activity of such anxiety disorders, including PTSD, depression, and other possible uses such as epilepsy and insomnia.

We are developing our product candidates in accordance with traditional regulated drug development standards and expect to make them available to patients via prescription or physician orders only after obtaining marketing authorization from a country's regulatory authority, such as the FDA. Our management team has experience developing, commercializing, and partnering ethical pharmaceutical products, including several first-in-class therapeutics. Based upon our current management's capabilities and the future talent we may attract, we plan to retain rights to internally develop and commercialize products; however, we may seek collaborations with partners in the biopharmaceutical industry when a partnering strategy serves to maximize value for our stockholders.

Product Candidate Pipeline:

Product Candidate	Target Indication(s)	Development Phase	Estimated Global Market Size
ART27.13 – Synthetic Dual Cannabinoid GPCR Agonist	Cancer-related anorexia	Clinical	Cancer anorexia cachexia syndrome: >$3 billion
ART26.12 – FABP5 inhibitor	CIPN, prostate cancer and breast cancer, pain, dermatologic conditions, and anxiety disorders	Clinical	CIPN: >$2 billion Prostate cancer: approximately $13 billion Breast cancer: approximately $33 billion Psoriasis: $31 billion PTSD: approximately $13 billion
ART12.11 – Synthetic CBD Cocrystal	Anxiety, depression, PTSD, and other potential indications	Pre-clinical	Anxiety disorders: >$13 billion PTSD: approximately $13 billion

Background

Emerging science suggests that modulating lipid-signaling pathways can unlock novel therapeutic strategies for diseases and medical conditions for which there are no or limited options. Lipids are critical to certain cell signaling pathways. Lipid-signaling modulation is the alteration of the signaling of lipid molecules to change biological activity or function within cellular communication pathways. Lipids contain various fatty acids as their building blocks and are the key components of lipid activity. Fatty Acid Binding Proteins (FABPs) facilitate lipid-signaling by binding to fatty acids which control various cellular functions. FABPs are essential mediators of normal cell signaling processes and under certain conditions can be associated with dysfunctional signaling. Inhibition of specific FABPs may correct abnormal lipid-signaling or improve the function of the ECS, which holds promise as new treatment modalities. We are at the forefront of advancing the application of lipid-modulating therapeutics.

The ECS is composed of cannabinoid receptors, endogenous receptor ligands ("endocannabinoids") and their associated transporter mechanisms, as well as enzymes responsible for the synthesis and degradation of endocannabinoids and has emerged as a considerable target for pharmacotherapy approaches of numerous human diseases. As a widespread modulatory and lipid-signaling system, the ECS plays important roles in the CNS, development, synaptic plasticity, and the response to endogenous and environmental factors.

The modulation of the ECS can be affected by using selective or non-selective agonists, partial agonists, inverse agonists, and antagonists of the cannabinoid receptors, CB_1 and CB_2. The CB_1 receptor is distributed in brain areas associated with motor control, emotional responses, motivated behavior and energy homeostasis. In the periphery, CB_1 is ubiquitously expressed in the adipose tissue, pancreas, liver, gastrointestinal tract, skeletal muscles, heart and the reproductive system. The CB_2 receptor is mainly expressed in the immune system regulating its functions and is upregulated in response to tissue stress or damage in most cell types. The ECS is therefore involved in pathophysiological conditions in both the central and peripheral tissues.

The actions of endogenous ligands can be enhanced or attenuated by targeting mechanisms that are associated with their transport within the cellular and extra cellular matrix as well as their synthesis and breakdown. Small molecule chemical modulators of the ECS can be derived from plants (phytocannabinoids), can be semi-synthetic derivatives of phytocannabinoids or endocannabinoids, or can be completely synthetic new chemical entities. We plan to develop approaches within our portfolio that address receptor binding and endocannabinoid transport modulation using only synthetic new chemical entities. Future approaches may also involve targeting synthesis or breakdown enzymes.

ECS targeting cannabinoid-based medicines are already approved and used to treat numerous medical conditions. The ECS is further implicated in many disease states within the peer reviewed literature including conditions which involve the regulation of food intake, central nervous system, pain, cardiovascular, gastrointestinal, immune and inflammation, behavioral, antiproliferative and reproductive functions. These areas of ECS pathophysiology are aligned with our therapeutic areas of focus: anxiety, pain, inflammation, anorexia, and cancer.

Business Strategy

Our objective is to develop and commercialize ethical pharmaceutical products that provide physicians access to the therapeutic potential of lipid signaling modulation, including within the ECS. We intend to pursue technologies and compounds that offer promising therapeutic approaches to known and validated signaling pathways, specifically lipid-signaling which includes compounds that promote the effectiveness of the ECS. While several of our programs are directed towards improving the lives of people suffering with cancer and cancer treatments, our portfolio may ultimately be used to treat a wide range of diseases and conditions where lipid-signaling modulation is particularly promising, including pain, inflammation, various neurological diseases, epilepsy, anxiety disorders, and dermatologic conditions.

Risk Factor Summary

Investing in our securities involves a high degree of risk. You should carefully consider the risks described below, as well as other information and risk factors included in our Quarterly Report on Form 10-Q for the period ended March 31, 2025, and our Annual Report on Form 10-K for the fiscal year ended December 31, 2024, including our financial statements and the related notes, and the section titled "*Management's Discussion and Analysis of Financial Condition and Results of Operations*," any of which may be relevant to decisions regarding an investment in or ownership of our securities. The occurrence of any of these risks could have a significant adverse effect on our reputation, business, financial condition, results of operations, growth and ability to accomplish our strategic objectives. We have organized the description of these risks into groupings in an effort to enhance readability, but many of the risks interrelate or could be grouped or ordered in other ways, so no special significance should be attributed to the groupings or order below.

Risks Related to This Offering

- We have broad discretion in the use of our available cash and other sources of funding, including the net proceeds we receive from this offering, and may not use them effectively.
- If you purchase shares of our common stock sold in this offering, you will experience immediate and substantial dilution in the net tangible book value of your shares. In addition, we may issue additional equity or convertible debt securities in the future, which may result in additional dilution to investors.
- Resales of our common stock in the public market during this offering by our stockholders may cause the market price of our common stock to fall.
- The actual number of shares we will issue under the Sales Agreement, at any one time or in total, is uncertain.
- The shares of common stock offered under this prospectus supplement and the accompanying prospectus may be sold in "at the market" offerings, and investors who buy shares at different times will likely pay different prices.

Risks Related to Our Common Stock

- Our financial condition raises substantial doubt as to our ability to continue as a going concern.
- Our common stock may be delisted from Nasdaq if we fail to comply with continued listing standards.
- Any market activity involving short selling or other market making activities could result in negative impact to the market price for our common stock.
- We have never paid dividends on our capital stock, and we do not anticipate paying dividends in the foreseeable future.
- The market price of our shares may be subject to fluctuation and volatility. You could lose all or part of your investment.
- We are obligated to use commercially reasonable efforts to invest $250,000 of our current cash to purchase Solana, a cryptocurrency, the price of which has been, and will likely continue to be, highly volatile.
- Any Solana we purchase may be less liquid than our existing cash and cash equivalents and may not be able to serve as a source of liquidity for us to the same extent as cash and cash equivalents.

Risks Related to our Business and Product Candidates

- We will need to raise additional financing to support our business objectives. We cannot be sure we will be able to obtain additional financing on terms favorable to us when needed, or at all. If we are unable to obtain additional financing to meet our needs, our operations may be adversely affected or terminated.
- We are currently receiving Research and Development, or R&D, tax credits from the UK in connection with our clinical trials being conducted in the UK. With effect for accounting periods starting on or after April 1, 2024, expenditure on certain staffing costs in connection with activities which take place outside the UK as part of our clinical trials, will not qualify for R&D tax credits unless restrictive conditions are met.
- If we fail to comply with our obligations under our patent licenses with third parties, we could lose license rights that are vital to our business.
- Changes in regulatory requirements or other unforeseen circumstances may impact the timing of the initiation or completion of our clinical trials.
- We face many of the risks and difficulties frequently encountered by relatively new companies with respect to our operations.
- We have no mature product candidates and may not be successful in licensing any.
- Even if we are successful in licensing lead product candidates, resource limitations may limit our ability to successfully develop them.

Risks Related to our Intellectual Property

- If we are unable to obtain and maintain patent protection for our products, our competitors could develop and commercialize products and technology similar or identical to our product candidates, and our ability to successfully commercialize any product candidates we may develop, and our science may be adversely affected.
- Obtaining and maintaining our patent protection depends on compliance with various procedural measures, document submissions, fee payments and other requirements imposed by government patent agencies, and our patent protection could be reduced or eliminated for non-compliance with these requirements.
- We may be subject to claims challenging the inventorship of our patents and other intellectual property.
- Intellectual property rights do not necessarily address all potential threats.
- Intellectual property litigation could cause us to spend substantial resources and distract our personnel from their normal responsibilities.

Risks Related to our Securities

- If we sell securities in future financings stockholders may experience immediate dilution and, as a result, our stock price may decline.
- The price of our securities may be volatile, and you could lose all or part of your investment. Further, we do not know whether an active, liquid and orderly trading market will continue for our securities or what the market price of our securities will be and as a result it may be difficult for you to sell your shares of our securities.
- Shares of our common stock that have not been registered under federal securities laws are subject to resale restrictions imposed by Rule 144, including those set forth in Rule 144(i) which apply to a former “shell company.”
- Sales of our currently issued and outstanding stock may become freely tradable pursuant to Rule 144 and sales of such shares may have a depressive effect on the share price of our common stock.

Recent Developments

On May 22, 2025, we received a letter from the staff (the "Staff") of Nasdaq indicating that we are no longer in compliance with the minimum stockholders' equity requirement for continued listing pursuant to Nasdaq Listing Rule 5550(b)(1), which requires listed companies to maintain stockholders' equity of at least $2,500,000 or meet the alternative compliance standards relating to the market value of listed securities or net income from continuing operations, which we do not currently meet. Nasdaq's notice has no immediate effect on the listing of our common stock on Nasdaq, which continues to trade under the symbol "ARTL." Pursuant to the notice and the Listing Rules of Nasdaq, we submitted a plan to regain compliance with the minimum stockholders' equity requirement within 45 calendar days of receiving the letter from the Staff. If our plan to regain compliance is accepted, the Staff can grant an extension of up to 180 calendar days from the date of the Notice to evidence compliance. If our plan to regain compliance is not accepted, or if it is accepted and we do not regain compliance in the timeframe required by Nasdaq, the Staff could provide notice that our shares of common stock are subject to delisting. In such an event, we would have the right to request a hearing before a Nasdaq Hearings Panel. We are currently evaluating options to regain compliance and have timely submitted a plan to regain compliance with the minimum stockholders' equity requirement. Although we intend to use all reasonable efforts to achieve compliance with the minimum stockholders' equity requirement, there can be no assurance that we will be able to regain compliance with the minimum stockholders' equity requirement or that we will otherwise be in compliance with other applicable Nasdaq listing criteria. The notice is unrelated to our previously disclosed deficiency relating to Nasdaq's minimum bid price requirement.

On June 11, 2025, we filed a Certificate of Change (the "Certificate of Change") to our Amended and Restated Articles of Incorporation (as amended, the "Articles of Incorporation") with the Secretary of State of Nevada to effect a 1-for-6 reverse stock split of the shares of our common stock, par value $0.001 per share, either issued and outstanding, held by us as treasury stock and authorized, effective as of 2:01 a.m. (Eastern time) on June 13, 2025 (the "Reverse Stock Split"). All common stock share and per share amounts in this prospectus have been adjusted to give effect to the Reverse Stock Split unless otherwise stated.

Corporate Information

We were incorporated in the State of Nevada on May 2, 2011 as Knight Knox Development Corp. On January 19, 2017 we changed our name to Reactive Medical, Inc. and on April 14, 2017 we changed our name to Artelo Biosciences, Inc. Our principal executive office is located at 505 Loma Santa Fe, Suite 160, Solana Beach, California 92075 and our telephone number is (858) 925-7049. Our corporate website address is www.artelobio.com. Information contained on or that can be accessed through the website is not incorporated by reference into this prospectus supplement or accompanying base prospectus and should not be considered to be part of this prospectus supplement or the accompanying base prospectus.

Implications of Being an Smaller Reporting Company

We are a "smaller reporting company" as defined in Rule 10(f)(1) of Regulation S-K. Smaller reporting companies may take advantage of certain reduced disclosure obligations, including, among other things, providing only two years of audited financial statements. We may continue to be a smaller reporting company in any given year if either (1) the market value of our common stock held by non-affiliates is less than $250 million as of the end of the most recently completed fiscal year's second fiscal quarter, or (2) our annual revenue is less than $100 million during the most recently completed fiscal year and the market value of our common stock held by non-affiliates is less than $700 million as of the end of the most recently completed fiscal year's second fiscal quarter.

For further information regarding us and our financial information, you should refer to our recent filings with the SEC. See "*Where You Can Find Additional Information*."

THE OFFERING

Common stock offered by us	Shares of our common stock having an aggregate offering price of up to $6,500,000.
Plan of distribution	"At-the-market" offering that may be made from time to time through our Sales Agent, R.F. Lafferty & Co. Inc. See "*Plan of Distribution*."
Use of proceeds	We intend to use the net proceeds from this offering, if any, to advance our product candidates, as well as for working capital and general corporate purposes. See "*Use of Proceeds.*"
Common Stock to be outstanding immediately after this offering	Up to 1,119,230 shares of common stock, assuming sales of 414,805 shares of common stock in this offering at an assumed offering price of $15.67 per share (the closing price on July 17, 2025). The actual number of shares sold will vary depending on the price at which the shares may be sold from time to time during this offering.
Risk Factors	See "*Risk Factors*" in this prospectus supplement, the accompanying prospectus and otherwise incorporated by reference into this prospectus supplement and the accompanying prospectus for a discussion of factors you should consider carefully before deciding to invest in shares of our common stock.
Nasdaq Capital Market symbol	"ARTL"

The number of shares of our common stock to be outstanding immediately after this offering is based on 704,425 shares of our common stock outstanding as of June 30, 2025, and excludes as of that date:

- 128,976 shares of our common stock issuable upon the exercise of options or restricted stock awards granted under our 2018 Equity Incentive Plan (the "2018 Plan"), with a weighted-average exercise price of $11.02 per share;
- 23,315 shares of our common stock issuable upon the exercise of warrants, with a weighted-average exercise price of $67.50 per share issued prior to June 2025;
- 123,255 shares of common stock issuable upon the voluntary conversion of convertible notes issued in our May 2025 private placement;
- 246,511 shares of common stock issuable upon the automatic conversion of convertible notes issued in our May 2025 private placement to warrants to purchase common stock, with an exercise price of $1.04 per share;
- 93,180 shares of our common stock issuable upon the exercise of pre-funded warrants issued in our June 2025 private placement, with an exercise price of $0.001 per share;
- 460,046 shares of our common stock issuable upon the exercise of warrants issued in our June 2025 private placement, with an exercise price of $5.82 per share;
- 230,023 shares of our common stock issuable upon the exercise of warrants issued in our June 2025 private placement, with a weighted-average exercise price of $10.00 per share; and
- 206,588 shares of our common stock reserved for future issuance under our 2018 Plan.

Except as otherwise indicated, all information in this prospectus supplement assumes no exercise of outstanding options or warrants to purchase common stock or conversion of convertible notes since June 30, 2025. The number of shares outstanding does not include options to purchase common stock issued after June 30, 2025.

RISK FACTORS

Before you invest in our securities, you should be aware that our business faces numerous financial and market risks, including those described below, as well as general economic and business risks. Our securities are speculative, and you should not make an investment in Artelo unless you can afford to bear the loss of your entire investment. Prior to making a decision about investing in our common stock, you should carefully consider the risks, uncertainties and assumptions discussed under Item 1A, "Risk Factors," in our Annual Report on Form 10-K for the fiscal year ended December 31, 2024, and in our Quarterly Reports on Form 10-Q as updated by our subsequent filings with the Securities and Exchange Commission, or the SEC, under the Securities Exchange Act of 1934, as amended, or the Exchange Act, which are incorporated herein by reference, together with the information in this prospectus supplement and the base prospectus and any other information incorporated by reference herein or therein. Before you decide whether to invest in our securities, you should carefully consider these risks and uncertainties, together with all of the other information included in or incorporated by reference into, this prospectus supplement or the base prospectus. The risks and uncertainties identified are not the only risks and uncertainties we face. If any of the material risks or uncertainties that we face were to occur, you could lose part or all of your investment.

Risks Related to this Offering

We have broad discretion in the use of our available cash and other sources of funding, including the net proceeds we receive from this offering, and may not use them effectively.

Our management has broad discretion in the use of our available cash and other sources of funding, including the net proceeds we receive in this offering, and could spend those resources for purposes other than those described in the "*Use of Proceeds*" portion of this prospectus supplement, and in ways that do not improve our results of operations or enhance the value of our common stock. The failure by our management to apply these funds effectively could result in financial losses that could have a material adverse effect on our business, cause the price of our common stock to decline and delay the development of our product candidates. Pending their use, we may invest our available cash, including the net proceeds we receive in this offering, in a manner that does not produce income or that loses value.

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

The price per share of our common stock being offered may be higher than the net tangible book value per share of our outstanding common stock prior to this offering. Assuming that an aggregate of 414,805 shares of our common stock are sold at a price of $15.67 per share, the last reported sale price of our common stock on the Nasdaq Capital Market on July 17, 2025, for aggregate gross proceeds of approximately $6.50 million and after deducting commissions and estimated offering expenses payable by us, new investors in this offering will incur immediate dilution of $10.80 per share. For a more detailed discussion of the foregoing, see the section entitled "*Dilution*" on page S-16 of this prospectus supplement. To the extent outstanding stock options or warrants are exercised, there will be further dilution to new investors.

Resales of our common stock in the public market during this offering by our stockholders may cause the market price of our common stock to fall.

We may issue common stock from time to time in connection with this offering. This issuance from time to time of these new shares of our common stock, or our ability to issue these shares of common stock in this offering, could result in resales of our common stock by our current stockholders concerned about the potential dilution of their holdings. In turn, these resales could have the effect of depressing the market price for our common stock.

The actual number of shares we will issue under the Sales Agreement, at any one time or in total, is uncertain.

Subject to certain limitations in the Sales Agreement with Lafferty and compliance with applicable law, we have the discretion to deliver placement notices to Lafferty at any time throughout the term of the Sales Agreement. The number of shares that are sold by Lafferty after our delivering a placement notice will fluctuate based on the market price of the common stock during the sales period and limits we set with Lafferty.

The shares of common stock offered under this prospectus supplement and the accompanying prospectus may be sold in "at the market" offerings, and investors who buy shares at different times will likely pay different prices.

Investors who purchase shares under this prospectus supplement and the accompanying prospectus at different times will likely pay different prices, and so may experience different outcomes in their investment results. We will have discretion, subject to market demand, to vary the timing, prices, and numbers of shares sold, and there is no minimum or maximum sales price. Investors may experience declines in the value of their shares as a result of share sales made at prices lower than the prices they paid.

We may be required to raise additional financing by issuing new securities with terms or rights superior to those of our existing securityholders, which could adversely affect the market price of shares of common stock and our business.

We will require additional financing to fund future operations, including for research and development, clinical trials, expansion in current and new markets, development and acquisition, capital costs and the costs of any necessary implementation of technological innovations or alternative technologies. We may not be able to obtain financing on favorable terms, if at all. If we raise additional funds by issuing equity securities, the percentage ownership of our current stockholders will be reduced, and the holders of the new equity securities may have rights superior to those of our existing securityholders, which could adversely affect the market price of our common stock and the voting power of shares of our common stock.

Risks Related to Our Common Stock

Our financial condition raises substantial doubt as to our ability to continue as a going concern.

As of March 31, 2025, we had approximately $0.7 million in cash and cash equivalents, and working capital of negative $1.4 million, and we have incurred and expect to continue to incur significant costs in pursuit of our drug candidates. For the three months ended March 31, 2025, we recorded a net loss of approximately $2.4 million and used cash in operations of approximately $1.6 million. Our financial statements for the three months ended March 31, 2025 have been prepared assuming that we will continue to operate as a going concern, which contemplates the realization of assets and the satisfaction of liabilities in the normal course of business. To date, we have not generated substantial product revenues from our activities and have incurred substantial operating losses. We expect that we will continue to generate substantial operating losses for the foreseeable future until we complete development and approval of one of our product candidates. We expect to continue to fund our operations primarily through utilization of our current financial resources and additional raises of capital.

These conditions raise substantial doubt about our ability to continue as a going concern. We have evaluated the significance of the uncertainty regarding our financial condition in relation to our ability to meet our obligations, which has raised substantial doubt about our ability to continue as a going concern. While it is very difficult to estimate our future liquidity requirements, we believe if we are unable to obtain additional financing, existing cash resources will not be sufficient to enable us to fund the anticipated level of operations through one year from the date the accompanying financial statements are issued. There can be no assurances that we will be able to secure additional financing on acceptable terms. In the event we do not secure additional financing, we will be forced to delay, reduce, or eliminate some or all of its discretionary spending, which could adversely affect our business prospects, ability to meet long-term liquidity needs and the ability to continue operations.

Our common stock may be delisted from Nasdaq if we fail to comply with continued listing standards.

Our common stock is currently traded on Nasdaq under the symbol "ARTL." If we fail to comply with Nasdaq's continued listing standards, we may be delisted and our common stock will trade, if at all, only on the over-the-counter market, such as the OTC Bulletin Board or OTCQX market, and then only if one or more registered broker-dealer market makers comply with quotation requirements. In addition, delisting of our common stock could depress our stock price, substantially limit liquidity of our common stock and materially adversely affect our ability to raise capital on terms acceptable to us, or at all. Further, delisting of our common stock would likely result in our common stock becoming a "penny stock" under the Exchange Act.

On May 22, 2025, we received a notice from the Staff notifying us that, because our stockholders' equity was below $2.5 million as reported on our Quarterly Report on Form 10-Q for the quarter ended March 31, 2025, we no longer meet the minimum stockholders' equity requirement for continued listing on Nasdaq under Nasdaq Rule 5550(b)(1). Pursuant to the notice and the Listing Rules of Nasdaq, we submitted a plan to regain compliance with the minimum stockholders' equity requirement within 45 calendar days of receiving the letter from the Staff. If such compliance plan is accepted, Nasdaq may grant an extension of 180 calendar days from the date of the notice. If the plan is not accepted, we may appeal the Staff's determination to a Nasdaq Hearings Panel. We are currently evaluating options to regain compliance and intend to timely submit a plan to regain compliance with the minimum stockholders' equity requirement. Although we intend to use all reasonable efforts to achieve compliance with all Nasdaq listing standards, there can be no assurance that we will be able to regain compliance with the listing standards or that we will otherwise be in compliance with other applicable Nasdaq listing criteria. Furthermore, Nasdaq may delist our common stock for public interest concerns, even if we are able to regain compliance for continued listing on Nasdaq under the listing requirements.

If our common stock were to be delisted by Nasdaq, it may be eligible for quotation on an over-the-counter quotation system or on the pink sheets. Upon any such delisting, our common stock would become subject to the regulations of the SEC relating to the market for penny stocks. A penny stock is any equity security not traded on a national securities exchange that has a market price of less than $5.00 per share. The regulations applicable to penny stocks may severely affect the market liquidity for our common stock and could limit the ability of stockholders to sell securities in the secondary market. In such a case, an investor may find it more difficult to dispose of or obtain accurate quotations as to the market value of our common stock, and there can be no assurance that our common stock will be eligible for trading or quotation on any alternative exchanges or markets.

Delisting from Nasdaq could adversely affect our ability to raise additional financing through public or private sales of equity securities, would significantly affect the ability of investors to trade our securities and would negatively affect the value and liquidity of our common stock. Delisting could also have other negative results, including the potential loss of confidence by employees, the loss of institutional investor interest and fewer business development opportunities.

Any market activity involving short selling or other market making activities could result in negative impact to the market price for our common stock.

Short selling is a method used to capitalize on an expected decline in the market price of a security and could depress the price of our common stock, which could further increase the potential for future short sales. Sales of our common stock could encourage short sales by market participants, which could create negative market momentum. Continued short selling may bring about a temporary, or possibly long term, decline in the market price of our common stock. We cannot predict the size of future issuances or sales of common stock or the effect, if any, that future issuances and sales of common stock will have on its market price or the activities of short sellers. Sales involving significant amounts of common stock, including issuances made in the ordinary course of our business, or the perception that such sales could occur, may materially and adversely affect prevailing market prices of the common stock.

We have never paid dividends on our capital stock, and we do not anticipate paying dividends in the foreseeable future.

We have never paid dividends on any of our capital stock and currently intend to retain any future earnings to fund the growth of our business. We may also enter into credit agreements or other borrowing arrangements in the future that will restrict our ability to declare or pay cash dividends on our common stock. Any determination to pay dividends in the future will be at the discretion of our board of directors and will depend on our financial condition, operating results, capital requirements, general business conditions and other factors that our board of directors may deem relevant. As a result, capital appreciation, if any, of the securities will be the sole source of gain, if any, for the foreseeable future.

The market price of our shares may be subject to fluctuation and volatility. You could lose all or part of your investment.

The market price of our common stock is subject to wide fluctuations in response to various factors, some of which are beyond our control. The market price of our shares on the Nasdaq Capital Market may fluctuate as a result of a number of factors, some of which are beyond our control, including, but not limited to:

- actual or anticipated variations in our and our competitors' results of operations and financial condition
- changes in earnings estimates or recommendations by securities analysts, if our shares are covered by analysts;
- market acceptance of our product candidates;
- our obligation to use commercially reasonable efforts to use $250,000 of the net proceeds from our June 2025 private placement to purchase Solana, as required by the related purchase agreement;
- development of technological innovations or new competitive products by others;
- announcements of technological innovations or new products by us;
- publication of the results of preclinical or clinical trials for our product candidates;
- failure by us to achieve a publicly announced milestone;
- delays between our expenditures to develop and market new or enhanced products and the generation of sales from those products;
- developments concerning intellectual property rights, including our involvement in litigation brought by or against us;
- regulatory developments and the decisions of regulatory authorities as to the approval or rejection of new or modified products;
- changes in the amounts that we spend to develop, acquire or license new products, technologies or businesses;
- changes in our expenditures to promote our product candidates;
- our sale or proposed sale, or the sale by our significant stockholders, of our shares or other securities in the future;
- changes in key personnel;
- success or failure of our research and development projects or those of our competitors;
- the trading volume of our shares; and
- general economic and market conditions and other factors, including factors unrelated to our operating performance.

These factors and any corresponding price fluctuations may materially and adversely affect the market price of our shares and result in substantial losses being incurred by our investors. In the past, following periods of market volatility, public company stockholders have often instituted securities class action litigation. If we were involved in securities litigation, it could impose a substantial cost upon us and divert the resources and attention of our management from our business.

We are obligated to use commercially reasonable efforts to invest $250,000 of our current cash to purchase Solana, a cryptocurrency, the price of which has been, and will likely continue to be, highly volatile.

As a condition of our June 2025 private placement, we are obligated to use commercially reasonable efforts to use $250,000 of the net proceeds from the private placement to purchase Solana, a cryptocurrency. Solana is a highly volatile asset. Solana does not pay interest, but if management determines to stake the Solana tokens in treasury, certain rewards can be earned on Solana. The ability to generate a return on investment from the purchase of Solana will depend on whether there is appreciation in the value of Solana. Future fluctuations in Solana's trading prices may result in our converting Solana into cash with a value substantially below the value at which such Solana was purchased.

Any Solana we purchase may be less liquid than our existing cash and cash equivalents and may not be able to serve as a source of liquidity for us to the same extent as cash and cash equivalents.

Historically, the crypto markets have been characterized by: significant volatility in price, limited liquidity and trading volumes compared to sovereign currencies markets; relative anonymity; a developing regulatory landscape; potential susceptibility to market abuse and manipulation; compliance and internal control failures at exchanges; and various other risks inherent in its entirely electronic, virtual form and decentralized network. During times of market instability, we may not be able to sell our Solana at favorable prices or at all. Further, Solana which we may hold with a custodian does not enjoy the same protections as are available to cash or securities deposited with or transacted by institutions subject to regulation by the Federal Deposit Insurance Corporation or the Securities Investor Protection Corporation. If we are unable to sell our Solana or otherwise generate funds using our Solana holdings, or if we are forced to sell our Solana at a significant loss, in order to meet our working capital requirements, our business and financial condition could be negatively impacted.

USE OF PROCEEDS

We may issue and sell shares of our common stock having aggregate gross sales proceeds of up to $6.50 million from time to time under this prospectus supplement and the accompanying prospectus. Because there is no minimum offering amount required as a condition to close this offering, the actual total public offering amount, commissions and proceeds to us, if any, are not determinable at this time. The amount of proceeds from this offering will depend upon the number of shares of our common stock sold and the market price at which they are sold. There can be no assurance that we will be able to sell any shares under or fully utilize the Sales Agreement.

We intend to use the net proceeds from this offering to advance our product candidates through preclinical and clinical development, including manufacturing, research and technical development, clinical studies, capital expenditures, and for working capital and general corporate purposes. In addition, we may use the net proceeds from this offering for investments in products or technologies that are complementary to our business, although we have no present commitments or agreements to make any such investments as of the date of this prospectus.

This expected use of net proceeds from this offering represents our intentions based upon our current plans and business conditions, which could change in the future as our plans and business conditions evolve. As a result, we cannot specify with certainty all of the particular uses of the proceeds from this offering. Accordingly, our management will retain broad discretion over the allocation of the net proceeds from this offering.

Pending use of the proceeds as described above or otherwise, we intend to invest the net proceeds of this offering in government securities, high quality short-term corporate debt obligations and SEC-registered money market accounts.

DIVIDEND POLICY

We have never declared or paid any cash dividends on our common stock and do not anticipate paying any cash dividends on our common stock at any time in the foreseeable future. We currently intend to retain all available funds and any future earnings for use in the operation of our business and do not anticipate paying any dividends on our common stock in the foreseeable future. Any future determination to declare dividends will be made at the discretion of our Board and will depend on, among other factors, our financial condition, operating results, capital requirements, general business conditions, the terms of any future credit agreements and other factors that our Board may deem relevant.

DILUTION

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

As of March 31, 2025, our net tangible book value was $(1,4) million, or $(2.44) per share of our common stock, based upon 567,582 shares of common stock outstanding as of that date. Historical net tangible book value per share is equal to our total tangible assets, less total liabilities, divided by the number of outstanding shares of our common stock. Dilution in net tangible book value per share represents the difference between the amount per share paid by purchasers of shares of common stock in this offering and the net tangible book value per share of common stock immediately after this offering.

On a pro forma basis, after giving effect to our receipt of $6.2 million of estimated net proceeds (after deducting commissions and estimated offering expenses payable by us) from our sale of $6.50 million of common stock in this offering at an assumed offering price of $15.67 per share (the last reported sale price of our common stock on the Nasdaq Capital Market on July 17, 2025), our as adjusted net tangible book value as of March 31, 2025 would have been $4.8 million, or $4.87 per share. This amount would represent an immediate increase in net tangible book value of $7.31 per share of our common stock to existing stockholders and an immediate and substantial dilution in net tangible book value of $10.80 per share of our common stock to new investors purchasing shares of common stock in this offering at the assumed public offering price.

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

Public offering price per share	$	15.67
Historical net tangible book value per share as of March 31, 2025	$	(2.44)
Increase in net tangible book value per share attributable to new investors in this offering	$	7.31
As adjusted net tangible book value per share after giving effect to this offering	$	4.87
Dilution per share to new investors participating in this offering	$	10.80

The information discussed above is illustrative only and will adjust based on the actual public offering price and other terms of this offering determined at pricing and will also be affected by any securities sold by us, if any, pursuant the accompanying base prospectus. An increase of $1.00 per share in the price at which the shares are sold from the assumed offering price of $16.67 per share shown in the table above, assuming all of our common stock in the aggregate amount of $6.50 million is sold at that price, would increase our as adjusted net tangible book value per share after the offering to $5.00 per share and would increase the dilution in net tangible book value per share to new investors to $11.67 per share, after deducting commissions and estimated aggregate offering expenses payable by us. A decrease of $1.00 per share in the price at which the shares are sold from the assumed offering price of $14.67 per share shown in the table above, assuming all of our common stock in the aggregate amount of $6.50 million is sold at that price, would decrease our as adjusted net tangible book value per share after the offering to $4.73 per share and would decrease the dilution in net tangible book value per share to new investors to $9.949 per share, after deducting commissions and estimated aggregate offering expenses payable by us.

The foregoing table assumes for illustrative purposes that an aggregate of 414,805 shares of our common stock are sold at a price of $15.67 per share, the last reported sale price of our common stock on the Nasdaq Capital Market on July 17, 2025, for aggregate gross proceeds of $6.50 million. The shares sold in this offering, if any, will be sold from time to time at various prices. The foregoing table also excludes the following as of that date:

- 128,976 shares of our common stock issuable upon the exercise of options or restricted stock awards granted under our 2018 Equity Incentive Plan (the "2018 Plan"), with a weighted-average exercise price of $11.02 per share;
- 23,315 shares of our common stock issuable upon the exercise of warrants, with a weighted-average exercise price of $67.50 per share issued prior to June 2025;
- 123,255 shares of common stock issuable upon the voluntary conversion of convertible notes issued in our May 2025 private placement;
- 246,511 shares of common stock issuable upon the automatic conversion of convertible notes issued in our May 2025 private placement to warrants to purchase common stock, with an exercise price of $1.04 per share;
- 136,843 shares of our common stock issued in our June 2025 private placement;
- 93,180 shares of our common stock issuable upon the exercise of pre-funded warrants issued in our June 2025 private placement, with an exercise price of $0.001 per share;
- 460,046 shares of our common stock issuable upon the exercise of warrants issued in our June 2025 private placement, with an exercise price of $5.82 per share;
- 230,023 shares of our common stock issuable upon the exercise of warrants issued in our June 2025 private placement, with a weighted-average exercise price of $10.00 per share; and
- 206,588 shares of our common stock reserved for future issuance under our 2018 Plan.

To the extent that any outstanding stock options or warrants are exercised or convertible notes converted, new stock options or warrants are issued, or we otherwise issue additional shares of common stock in the future at a price less than the offering price, there will be further dilution to new investors.

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

MATERIAL U.S. FEDERAL INCOME AND ESTATE TAX CONSEQUENCES TO NON-U.S. HOLDERS OF OUR COMMON STOCK

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

This summary applies only to common stock acquired in this offering. It does not address the tax considerations arising under the laws of any non-U.S., state or local jurisdiction or under U.S. federal non-income tax laws, except to the limited extent set forth below. In addition, this discussion does not address the potential application of the Medicare surtax on net investment income or any tax considerations applicable to an investor's particular circumstances or to investors that may be subject to special tax rules, including, without limitation:

- banks, insurance companies or other financial institutions;
- persons subject to the alternative minimum tax;
- tax-exempt organizations;
- qualified foreign pension funds;
- "controlled foreign corporations," "passive foreign investment companies" and corporations that accumulate earnings to avoid U.S. federal income tax;
- brokers or dealers in securities or currencies;
- traders in securities that elect to use a mark-to-market method of accounting for their securities holdings;
- persons that own, or are deemed to own, more than 5% of our capital stock (except to the extent specifically set forth below);
- certain former citizens or long-term residents of the United States;
- entities or arrangements treated as partnerships for U.S. federal income tax purposes and other pass-through entities (and investors therein);
- persons who hold our common stock as a position in a "straddle," "conversion transaction" or other risk reduction transaction or integrated transaction;
- persons who do not hold our common stock as a capital asset within the meaning of Code Section 1221 (generally, property held for investment);
- persons subject to special tax accounting rules as a result of any item of gross income with respect to our common stock being taken into account in an applicable financial statement; or
- persons deemed to sell our common stock under the constructive sale provisions of the Code.

If a partnership or entity or arrangement classified as a partnership for U.S. federal income tax purposes holds our common stock, the tax treatment of a partner generally will depend on the status of the partner and upon the activities of the partnership. Accordingly, partnerships that hold our common stock, and partners in such partnerships, should consult their tax advisors regarding the tax consequences of the purchase, ownership and disposition of our common stock.

You are urged to consult your tax advisor with respect to the application of the U.S. federal income tax laws to your particular situation, as well as any tax consequences of the purchase, ownership and disposition of our common stock arising under the U.S. federal non-income tax laws or under the laws of any state, local, non-U.S. or other taxing jurisdiction or under any applicable tax treaty.

Non-U.S. Holder Defined

For purposes of this discussion, except as modified for estate tax purposes, you are a non-U.S. holder if you are a beneficial owner of shares of our common stock, other than a partnership or entity or arrangement classified as a partnership for U.S. federal income tax purposes, or:

- an individual who is a citizen or resident of the United States (for U.S. federal income tax purposes);
- a corporation or other entity taxable as a corporation created or organized in the United States or under the laws of the United States or any political subdivision thereof or entity treated as such for U.S. federal income tax purposes;
- an estate whose income is subject to U.S. federal income tax regardless of its source; or
- a trust (x) whose administration is subject to the primary supervision of a U.S. court and which has one or more U.S. persons who have the authority to control all substantial decisions of the trust or (y) which has made a valid election to be treated as a U.S. person.

Distributions

We have never paid cash distributions on our common stock and do not anticipate doing so in the foreseeable future. However, if we do make distributions on our common stock, those payments will constitute dividends for U.S. federal income tax purposes to the extent paid from our current or accumulated earnings and profits, as determined under U.S. federal income tax principles. To the extent those distributions exceed both our current and our accumulated earnings and profits, they will constitute a return of capital and will first reduce your basis in our common stock, but not below zero, and then will be treated as gain from the sale of stock.

Subject to the discussion below on effectively connected income, any dividend paid to a non-U.S. holder generally will be subject to U.S. withholding tax either at a rate of 30% of the gross amount of the dividend or such lower rate as may be specified by an applicable income tax treaty. In order to receive a reduced treaty rate, a non-U.S. holder must provide us with an IRS Form W-8BEN, IRS Form W-8BEN-E or other appropriate version of IRS Form W-8, including a U.S. taxpayer identification number, if required, certifying qualification for the reduced rate. A non-U.S. holder of shares of our common stock eligible for a reduced rate of U.S. withholding tax pursuant to an income tax treaty may obtain a refund of any excess amounts withheld by filing an appropriate claim for refund with the IRS. If the non-U.S. holder holds the stock through a financial institution or other agent acting on the non-U.S. holder's behalf, the non-U.S. holder will be required to provide appropriate documentation to the agent, which may then be required to provide certification to the relevant paying agent, either directly or through other intermediaries.

Dividends received by a non-U.S. holder that are effectively connected with such holder's conduct of a U.S. trade or business (and, if required by an applicable tax treaty, that are attributable to a permanent establishment maintained in the U.S.), are generally exempt from such withholding tax. In order to obtain this exemption, a non-U.S. holder must provide us with an IRS Form W-8ECI properly certifying such exemption. Such effectively connected dividends, although not subject to withholding tax, generally are taxed at the same graduated rates applicable to U.S. persons, net of certain deductions and credits. In addition, if you are a corporate non-U.S. holder, dividends you receive that are effectively connected with your conduct of a U.S. trade or business may also be subject to a branch profits tax at a rate of 30% or such lower rate as may be specified by an applicable income tax treaty. You should consult your tax advisor regarding any applicable tax treaties that may provide for different rules.

Gain on Disposition of Common Stock

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

- the gain is effectively connected with such holder's conduct of a U.S. trade or business (and, if required by an applicable income tax treaty, the gain is attributable to a permanent establishment maintained in the United States);
- the non-U.S. holder is an individual who is present in the United States for a period or periods aggregating 183 days or more during the taxable year in which the sale or disposition occurs and certain other conditions are met; or
- our common stock constitutes a U.S. real property interest by reason of our status as a "United States real property holding corporation," or USRPHC, for U.S. federal income tax purposes at any time within the shorter of the five year period preceding such holder's disposition of, or the holder's holding period for, our common stock.

We believe that we are not currently and will not become a USRPHC. However, because the determination of whether we are a USRPHC depends on the fair market value of our U.S. real property relative to the fair market value of our other business assets, there can be no assurance that we will not become a USRPHC in the future. Even if we become a USRPHC, however, as long as our common stock is regularly traded on an established securities market, such common stock will be treated as U.S. real property interests only if a non-U.S. holder actually or constructively holds more than 5% of such regularly traded common stock at any time during the shorter of the five year period preceding the holder's disposition of, or the holder's holding period for, our common stock.

If you are a non-U.S. holder described in the first bullet above, you will be required to pay U.S. federal income tax on the net gain derived from the sale under regular graduated U.S. federal income tax rates, and a corporate non-U.S. holder described in the first bullet above also may be subject to the branch profits tax at a 30% rate, or such lower rate as may be specified by an applicable income tax treaty. If you are an individual non-U.S. holder described in the second bullet above, you will be required to pay a flat 30% U.S. federal income tax (or such lower rate specified by an applicable income tax treaty) on the gain derived from the sale, which gain may be offset by U.S.-source capital losses for the year, provided you have timely filed U.S. federal income tax returns with respect to such losses. You should consult any applicable income tax or other treaties that may provide for different rules.

Federal Estate Tax

Our common stock beneficially owned by an individual who is not a citizen or resident of the United States (as defined for U.S. federal estate tax purposes) at the time of death will generally be includable in the decedent's gross estate for U.S. federal estate tax purposes, unless an applicable estate tax treaty provides otherwise.

Backup Withholding and Information Reporting

Generally, we must report annually to the IRS the amount of dividends paid to a non-U.S. holder, such holder's name and address, and the amount of tax withheld, if any. A similar report will be sent to such non-U.S. holder. Pursuant to applicable income tax treaties or other agreements, the IRS may make these reports available to tax authorities in the non-U.S. holder's country of residence.

Payments of dividends on or of proceeds from the disposition of our common stock made to a non-U.S. holder may be subject to additional information reporting and backup withholding at a current rate of 24% unless such holder establishes an exemption, for example, by properly certifying such holder's non-U.S. status on a Form W-8BEN, IRS Form W-8BEN-E or another appropriate version of IRS Form W-8. Notwithstanding the foregoing, backup withholding and information reporting may apply if either we or our paying agent has actual knowledge, or reason to know, that such holder is a U.S. person.

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

Foreign Account Tax Compliance Act

Provisions commonly referred to as "FATCA" impose a U.S. federal withholding tax of 30% on dividends on, and the gross proceeds from a disposition of, our common stock paid to a "foreign financial institution" (as specifically defined under the FATCA rules) unless such institution enters into an agreement with the U.S. government to, among other things, withhold on certain payments and to collect and provide to the U.S. tax authorities substantial information regarding U.S. account holders of such institution (which includes certain equity and debt holders of such institution, as well as certain account holders that are foreign entities with U.S. owners) or otherwise establishes an exemption. FATCA also imposes a U.S. federal withholding tax of 30% to dividends on, and the gross proceeds from a disposition of, our common stock paid to a "non-financial foreign entity" (as specifically defined under the FATCA rules) unless such entity provides the withholding agent with either a certification that it does not have any substantial direct or indirect U.S. owners or provides information regarding direct and indirect U.S. owners of the entity or otherwise establishes an exception.

The withholding provisions described above generally apply to payments of dividends on our common stock and will apply to payments of gross proceeds from a sale or other disposition of our common stock However, the U.S. Treasury Department has issued proposed regulations that, if finalized in their present form, would eliminate FATCA withholding on gross proceeds of the sale or other disposition of our common stock (but not on payments of dividends). Taxpayers may rely on the proposed regulations until final regulations are issued or until such proposed regulations are rescinded. An intergovernmental agreement between the United States and an applicable foreign country may modify the requirements described in this section. Under certain circumstances, a non-U.S. holder might be eligible for refunds or credits of such taxes. You should consult your personal tax advisor regarding these withholding provisions.

The preceding discussion of U.S. federal tax considerations is for general information only. It is not tax advice. Each prospective investor should consult its own tax advisor regarding the particular U.S. federal, state and local and non-U.S. tax consequences of purchasing, holding and disposing of our common stock, including the consequences of any proposed change in applicable laws.

PLAN OF DISTRIBUTION

We have entered into the Sales Agreement with Lafferty, under which we may offer and sell up to $6,500,000 of our shares of common stock from time to time through or to Lafferty acting as agent and/or principal. Sales of our shares of common stock, if any, under this prospectus supplement and the accompanying prospectus will be made by any method permitted by law deemed to be an "at the market offering" as defined in Rule 415(a)(4) under the Securities Act, including sales made directly on or through the Nasdaq Capital Market or any other existing trading market in the United States for our common stock. If we and Lafferty agree on any method of distribution other than sales of shares of our common stock on or through the Nasdaq Capital Market or another existing trading market in the United States at market prices, we will file a further prospectus supplement providing all information about such offering as required by Rule 424(b) under the Securities Act.

The Sales Agreement allows for the issuance of up to an aggregate of $6,500,000 of our shares of common stock; however, in no event shall the Company issue or sell to or through Lafferty such number of shares that exceeds (a) the number or dollar amount of shares of common stock registered on the registration statement of which this prospectus forms a part and as reflected on this prospectus supplement, pursuant to which the offering is being made, (b) the number of authorized but unissued shares of our common stock, or (c) the number or dollar amount of shares of common stock that would cause the Company or the offering of the shares to not satisfy the eligibility and transaction requirements for use of Form S-3, including, if applicable, General Instruction I.B.6 of Registration Statement on Form S-3.

Each time we wish to issue and sell our shares of common stock under the Sales Agreement, we will notify Lafferty of the number of shares to be issued, the dates on which such sales are anticipated to be made, any limitation on the number of shares to be sold in any one day and any minimum price below which sales may not be made. Once we have so instructed Lafferty, unless Lafferty declines to accept the terms of such notice in accordance with the Sales Agreement, Lafferty has agreed to use its reasonable best efforts consistent with its normal trading and sales practices to sell such shares up to the amount specified on such terms. The obligations of Lafferty under the Lafferty Agreement to sell our shares of common stock are subject to a number of conditions that we must meet. We or Lafferty may suspend the offering of shares of common stock being made through Lafferty under the Sales Agreement upon proper notice to the other party.

The settlement of sales of shares between us and Lafferty is generally anticipated to occur on the first trading day following the date on which the sale was made. Sales of our shares of common stock as contemplated in this prospectus supplement will be settled through the facilities of The Depository Trust Company or by such other means as we and Lafferty may agree upon. There is no arrangement for funds to be received in an escrow, trust or similar arrangement.

We will pay Lafferty a commission equal to 2.0% of the aggregate gross proceeds we receive from each sale of our shares of common stock by Lafferty. Because there is no minimum offering amount required as a condition to close this offering, the actual total public offering amount, commissions and proceeds to us, if any, are not determinable at this time. In addition, we have agreed to reimburse Lafferty for the fees and disbursements of its counsel, payable upon execution of the Sales Agreement, in an amount not to exceed $50,000, in addition to up to $5,000 per "Representation Date" in connection with ongoing diligence arising from the transactions contemplated by the Sales Agreement. The remaining sale proceeds, after deducting any other transaction fees, will equal our net proceeds from the sale of such shares. We will report at least quarterly the number of shares of common stock sold through Lafferty under the Sales Agreement, the net proceeds to us and the compensation paid by us to Lafferty in connection with the sales of our common stock.

Lafferty is not required to sell any certain number of shares or dollar amount of our common stock, but will use its reasonable best efforts consistent with its normal trading and sales practices to sell on our behalf all of the shares of common stock requested to be sold by us, subject to the conditions set forth in the Sales Agreement. In connection with the sale of our shares of common stock on our behalf, Lafferty will be deemed to be an "underwriter" within the meaning of the Securities Act, and the compensation Lafferty will be deemed to be underwriting commissions or discounts. We have agreed to indemnify Lafferty against certain civil liabilities, including liabilities under the Securities Act. We have also agreed to contribute to payments Lafferty may be required to make in respect of such liabilities. Lafferty will not engage in any market making activities involving shares of our common stock while the offering is ongoing under this prospectus if such activity would be prohibited under Regulation M or other anti-manipulation rules under the Securities Act. As our sales agent, Lafferty will not engage in any transactions that stabilizes shares of our common stock.

The offering of our shares of common stock pursuant to the Sales Agreement will terminate upon the termination of the Sales Agreement as permitted therein. Either party may terminate the Sales Agreement at any time upon five business days' prior written notice to the other party.

Lafferty and its affiliates may in the future provide various investment banking, commercial banking, financial advisory and other financial services for us and our affiliates, for which services they may in the future receive customary fees. In the course of its business, Lafferty may actively trade our securities for its own account or for the accounts of customers, and, accordingly, Lafferty may at any time hold long or short positions in such securities.

This prospectus supplement and the accompanying prospectus in electronic format may be made available on a website maintained by Lafferty, and Lafferty may distribute the prospectus supplement and the accompanying prospectus electronically.

The transfer agent and registrar for our common stock is Equiniti Trust Company, LLC. The transfer agent's principal business address is 28 Liberty Street, 53rd Floor, New York, NY 10005.

Our common stock is listed on The Nasdaq Capital Market under the symbol "ARTL."

LEGAL MATTERS

The validity of the common stock offered by this prospectus supplement and the accompanying prospectus will be passed upon for us by Fennemore Craig, P.C., Reno, Nevada. Ellenoff Grossman & Schole LLP, New York, New York, is counsel for Lafferty in connection with this offering.

EXPERTS

The consolidated financial statements of Artelo Biosciences, Inc. incorporated in this prospectus by reference to the Annual Report on Form 10-K for the year ended December 31, 2024 have been so incorporated in reliance on the report (which contains an explanatory paragraph regarding our ability to continue as a going concern) of MaloneBailey, LLP, an independent registered public accounting firm, given on the authority of said firm as experts in auditing and accounting.

WHERE YOU CAN FIND ADDITIONAL INFORMATION

We file annual, quarterly and other reports, proxy statements and other information with the SEC. Our SEC filings are available to the public over the Internet at the SEC's website at http://www.sec.gov.

Our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, and Current Reports on Form 8-K, including any amendments to those reports, and other information we file with or furnish to the SEC pursuant to Section 13(a) or 15(d) of the Exchange Act can also be accessed free of charge at our website at http://artelobio.com/. Such information is made available on our website as soon as reasonably practicable after we electronically file it with or furnish it to the SEC. Information contained on, or accessible through, our website is not part of this prospectus supplement.

INCORPORATION OF DOCUMENTS BY REFERENCE

The SEC allows us to incorporate by reference into this prospectus supplement the information we file with the SEC, which means we may disclose important information to you by referring you to other documents we file separately with the SEC. The information we incorporate by reference is considered a part of this prospectus supplement. We hereby incorporate by reference the following documents:

- our Annual Report on Form 10-K for the year ended December 31, 2024, filed with the SEC on March 3, 2025;
- our Quarterly Report on Form 10-Q for the three-months ended March 31, 2025, filed with the SEC on May 13, 2025;
- our Current Reports on Form 8-K filed on April 29, 2025, May 1, 2025, May 23, 2025, June 13, 2025, June 26, 2025 and July 11, 2025; and
- the description of our common stock contained in Exhibit 4.1 to our Annual Report on Form 10-K for the year ended December 31, 2024, filed with the SEC on March 3, 2025, including any amendment or report filed for the purpose of updating such description.

Any information in the foregoing documents will automatically be deemed to be modified or superseded to the extent that information in this prospectus supplement modifies or replaces such information. We also incorporate by reference any future filings (other than information furnished under Item 2.02 or Item 7.01 of Form 8-K and exhibits filed on such form that are related to such items) made with the SEC pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act until the termination of the offering of the shares of common stock covered by this prospectus supplement. Information in such future filings shall be deemed to update and supplement the information provided in this prospectus supplement, and any statements in such future filings will automatically be deemed to modify and supersede any information in any document we previously filed with the SEC that is incorporated or deemed to be incorporated herein by reference to the extent that the statements in the later filed document modify or replace such earlier statements.

You may obtain from us copies of the documents incorporated by reference in this prospectus supplement, at no cost, by requesting them in writing or by telephone at:

Artelo Biosciences, Inc.
Attn: Chief Executive Officer
505 Lomas Santa Fe, Suite 160
Solana Beach, California, 92075
(858) 925-7049

$6,500,000
Common Stock

PROSPECTUS SUPPLEMENT

R.F. Lafferty & Co., Inc.

July 18, 2025