

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

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

TENAX THERAPEUTICS, INC.

(Exact name of registrant as specified in its charter)

Delaware

(State or other jurisdiction
of incorporation or organization)

26-2593535

(I.R.S. Employer
Identification Number)

Tenax Therapeutics, Inc.
101 Glen Lennox Drive, Suite 300
Chapel Hill, North Carolina 27517
Telephone: (919) 855-2100

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

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Approximate date of commencement of proposed sale to the public: From time to time after the effective date of this Registration Statement.

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

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

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

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

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

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

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

Large accelerated filer	<input type="checkbox"/>	Accelerated filer	<input type="checkbox"/>
Non-accelerated filer	<input checked="" type="checkbox"/>	Smaller reporting company	<input checked="" type="checkbox"/>
		Emerging growth company	<input type="checkbox"/>

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

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

The information in this prospectus is not complete and may be changed. The selling stockholders may not sell these securities or accept an offer to buy these securities until the registration statement filed with the Securities and Exchange Commission is effective. This prospectus is not an offer to sell these securities, and the selling stockholders are not soliciting an offer to buy these securities in any jurisdiction where the offer or sale is not permitted.

Subject to completion, dated April 15, 2025

PRELIMINARY PROSPECTUS



**Up to 378,346 Shares of Common Stock
Up to 3,760,726 Shares of Common Stock Underlying Pre-Funded Warrants
Offered by Selling Stockholders**

This prospectus relates to the sale or other disposition from time to time of (i) up to 378,346 shares of our common stock, \$0.0001 par value per share and (ii) up to 3,760,726 shares of our common stock issuable upon the exercise of pre-funded warrants (the “Pre-Funded Warrants”), all held by the selling stockholders named in this prospectus, including their transferees, pledgees, donees or successors. We are not selling any shares of common stock or Pre-Funded Warrants to purchase common stock under this prospectus and will not receive any of the proceeds from the sale of such securities by the selling stockholders.

The shares of common stock and Pre-Funded Warrants were issued to investors in a private placement that closed on March 5, 2025. See “*Prospectus Summary - Recent Events*” for more details.

The selling stockholders may sell or otherwise dispose of the securities covered by this prospectus in a number of different ways and at varying prices. We provide more information about how the selling stockholders may sell or otherwise dispose of their securities in the section entitled “*Plan of Distribution*” beginning on page 15. The selling stockholders will pay all brokerage fees and commissions and similar expenses. We will pay all expenses (except brokerage fees and commissions and similar expenses) relating to the registration of the securities with the U.S. Securities and Exchange Commission. No underwriter or other person has been engaged to facilitate the sale of the securities in this offering.

Our common stock is traded on The Nasdaq Capital Market under the symbol “TENX.” On April 14, 2025, the last reported sale price of our common stock was \$5.46 per share. We recommend that you obtain current market quotations for our common stock prior to making an investment decision.

Investing in our securities involves a high degree of risk. See “*Risk Factors*” beginning on page 11 of this prospectus and in the documents incorporated by reference herein, to read about factors you should consider before investing in our securities.

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

Prospectus dated , 2025

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ABOUT THIS PROSPECTUS

You should rely only on the information that we have provided or incorporated by reference in this prospectus and any prospectus supplement that we may authorize to be provided to you. We have not, and the selling stockholders have not, authorized anyone to provide you with different information. No dealer, salesperson or other person is authorized to give any information or to represent anything not contained in this prospectus or any prospectus supplement that we may authorize to be provided to you. If anyone provides you with different or inconsistent information, you should not rely on it. You should assume that the information in this prospectus and any prospectus supplement or incorporated herein or therein is accurate only as of the date on the cover of such document, regardless of the time of delivery of this prospectus or any prospectus supplement or any sale of a security. Our business, financial condition, results of operations and prospects may have changed since those dates. To the extent there is a conflict between the information contained in this prospectus and any prospectus supplement having a later date, the statement in the prospectus supplement having the later date modifies or supersedes the earlier statement.

We urge you to carefully read this prospectus and any prospectus supplement, together with the information incorporated herein or therein by reference as described under the heading “*Where You Can Find Additional Information*” and “*Incorporation of Certain Information by Reference*.”

This prospectus contains summaries of certain provisions contained in some of the documents described herein, but reference is made to the actual documents for complete information. Copies of some of the documents referred to herein have been filed or are incorporated by reference as exhibits to the registration statement of which this prospectus is a part, and you may obtain copies of those documents as described below under the heading “*Where You Can Find Additional Information*.”

When used herein, unless the context requires otherwise, references to “Tenax,” “Tenax Therapeutics,” the “Company,” “we,” “our” and “us” refer to Tenax Therapeutics, Inc., a Delaware corporation.

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SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus contains various forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended (the “Securities Act”) and Section 21E of the Securities Exchange Act of 1934, as amended (the “Exchange Act”), which represent our expectations or beliefs concerning future events. Forward-looking statements include statements that are predictive in nature, which depend upon or refer to future events or conditions, and/or which include words such as “believes,” “plans,” “intends,” “anticipates,” “estimates,” “expects,” “may,” “will” or similar expressions. These statements are not guarantees of future performance, and we undertake no obligation to publicly update any forward-looking statements, whether as a result of new information, future events, or otherwise, except as required by law.

Forward-looking statements are based on current expectations and projections about future events, actual events and results may differ materially from those expressed or forecasted in forward-looking statements due to a number of factors. You should understand that the following important factors, in addition to those discussed in under the heading “*Risk Factors*” included elsewhere in this prospectus and incorporated herein by reference, could affect our stock price or future results and could cause those results to differ materially from those expressed in such forward-looking statements:

- our ability to develop our current product candidates, and any product candidate which we may develop or in-license in the future;
- delays in the commencement, enrollment and completion of clinical testing, as well as the analysis and reporting of results from such clinical testing;
- our ability, our partners’ abilities, and third parties’ abilities to protect and assert intellectual property rights;
- the success of nonclinical and clinical studies of our product candidates;
- the need to obtain regulatory approval of our product candidates;
- potential risks related to any collaborations we may enter into for our product candidates;
- any delays in regulatory review and approval of product candidates in development;
- our ability to establish an effective sales and marketing infrastructure;
- our estimates regarding the potential market opportunity for our product candidates;
- competition from existing products or new products that may emerge;
- the ability to receive regulatory approval or commercialize our products;
- potential side effects of our product candidates that could delay or prevent commercialization;
- potential product liability claims and adverse events;
- potential liabilities associated with hazardous materials;
- our ability to maintain adequate insurance policies;
- our dependence on third-party manufacturers and clinical research organizations;
- our ability to establish or maintain collaborations, licensing or other arrangements;
- costs related to and outcomes of potential litigation;
- compliance with obligations under intellectual property licenses with third parties;
- our ability to adequately support future growth;
- our ability to attract and retain personnel, including our executive team, advisors and members of our Board of Directors; and
- geopolitical uncertainties, including in the Middle East and the Russian invasion of and war against the country of Ukraine.

The forward-looking statements in this prospectus represent our views as of the date such statements are made. These forward-looking statements should not be relied upon as representing our views as of any date subsequent to the date such statements are made.

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INDUSTRY AND MARKET DATA

Unless otherwise indicated, information contained in this prospectus concerning our industry and the market in which we operate, including our market position, market opportunity and market size, is based on information from various sources, on assumptions that we have made based on such data and other similar sources and on our knowledge of the markets for our products. These data sources involve a number of assumptions and limitations, and you are cautioned not to give undue weight to such estimates.

We have not independently verified any third-party information. While we believe the market position, market opportunity and market size information included in this prospectus is generally reliable, such information is inherently imprecise. In addition, projections, assumptions and estimates of our future performance and the future performance of the industry in which we operate is necessarily subject to a high degree of uncertainty and risk due to a variety of factors, including those described under the heading “*Risk Factors*” and elsewhere in this prospectus and incorporated herein by reference. These and other factors could cause results to differ materially from those expressed in the estimates made by the independent parties and by us.

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PROSPECTUS SUMMARY

This summary highlights selected information from this prospectus and does not contain all of the information that you need to consider in making your investment decision. You should carefully read this entire prospectus and any prospectus supplement, including the risks of investing in our securities discussed under the heading “Risk Factors” contained in this prospectus and any prospectus supplement, and under similar headings in the other documents that are incorporated by reference into this prospectus or any prospectus supplement. You should also carefully read the information incorporated by reference into this prospectus, including our financial statements, and the exhibits to the registration statement of which this prospectus is a part.

Recent Events

In March 2025, we closed a private placement financing (the “March 2025 Offering”) in which we sold to institutional investors (each a “Purchaser”) an aggregate of 378,346 shares of the Company’s common stock and Pre-Funded Warrants to purchase an aggregate of 3,760,726 shares of the Company’s common stock for gross proceeds of approximately \$25 million, before deducting placement agent fees and estimated offering expenses payable by the Company.

The Pre-Funded Warrants have an exercise price of \$0.01 and are exercisable at any time after their original issuance and do not expire. The Pre-Funded Warrants include beneficial ownership limitations such that each Purchaser, together with its affiliates, will not own more than 9.99% (or, at the election of the Purchaser, not more than 19.99%) of the Company’s outstanding common stock.

In connection with the Securities Purchase Agreement, dated March 4, 2025, by and among the Company and the selling stockholders signatory thereto (the “Purchase Agreement”) for the March 2025 Offering, on March 5, 2025, the Company entered into a registration rights agreement with the Purchasers (the “Registration Rights Agreement”). Pursuant to the Registration Rights Agreement, the Company has agreed to file a registration statement registering for resale (i) 378,346 shares of common stock issued pursuant to the Purchase Agreement and (ii) 3,760,726 shares of common stock issuable upon the exercise of Pre-Funded Warrants (collectively, the “Registrable Securities”). The Company agreed to file such registration statement within 45 days of March 5, 2025, and have such registration statement declared effective within 75 days of March 5, 2025. The Company also agreed to use its best efforts to keep the registration statement effective under the Securities Act until all Registrable Securities have been publicly sold by the holders thereof. The registration statement of which this prospectus is a part is being filed in order to satisfy our obligations under the Registration Rights Agreement.

We have also agreed, among other things, to indemnify the selling stockholder, each Person, if any, who controls the selling stockholder, the members, the directors, officers, partners, employees, members, managers, agents, representatives and advisors of the selling stockholders from certain liabilities and pay all fees and expenses (including any reasonable legal fees) incident to our obligations under the Registration Rights Agreement.

Our Strategy

Tenax Therapeutics is a clinical-stage pharmaceutical company using clinical insights to develop novel cardiopulmonary therapies. We employ a clinician-focused drug development approach, led by key opinion leaders and heart failure experts and their clinical insights to precisely target disease pathophysiology. We are currently actively conducting the LEVEL clinical trial to evaluate levosimendan as our prioritized product candidate and have a clinical trial on hold with imatinib, two drugs supported by promising evidence that they may significantly improve the lives of patients with pulmonary hypertension. Importantly, both levosimendan and imatinib have already been approved in other indications and prescribed around the world for more than 20 years, and we believe their mechanisms of action are uniquely suitable to target and treat pulmonary hypertension. We believe this derisked approach of using already-approved drugs that provide well-established safety profiles from millions of patients, combined with a development path led by preeminent cardiology and pulmonary hypertension experts, puts us in a strong position to deliver breakthrough cardiopulmonary therapies designed to improve patients’ function and quality of life.

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In August 2024, we closed a private placement financing (the “August 2024 Offering”) raising gross proceeds of approximately \$100.0 million, in addition to the \$25.0 million of gross proceeds we raised in the March 2025 Offering. We intend to use the net proceeds from the August 2024 Offering and March 2025 Offering to advance our Phase 3 oral levosimendan program, by completing our ongoing Phase 3 LEVEL study and initiating a second planned global Phase 3 study, LEVEL-2. We intend to submit marketing authorization applications following completion of the two Phase 3 trials of levosimendan and, when appropriate, a single Phase 3 trial of imatinib.

Our Strategy

The key elements of our business strategy are outlined below.

Efficiently conduct clinical development to establish clinical proof of principle in new indications, refine dosage levels and dosing strategies, conduct other required clinical and nonclinical testing as FDA and other regulators may require, and continue Phase 3 testing of oral levosimendan, as our prioritized product candidate.

Levosimendan and imatinib have already been approved and prescribed in other indications in many countries around the world. We are conducting clinical development with the intent to establish proof of beneficial activity in cardiopulmonary diseases in which these therapeutics would be expected to have benefit for patients with diseases for which either no pharmaceutical therapies are approved at all, or in the case of pulmonary arterial hypertension), where numerous, expensive therapies generally offer a modest reduction of symptoms. Our focus is primarily on designing and executing formulation improvements, protecting these innovations with patents and other forms of exclusivity, and employing innovative clinical trial science to establish a robust foundation for subsequent development, product approval, and commercialization. We intend to submit marketing authorization applications following two Phase 3 trials of levosimendan, as our prioritized drug candidate. Our trials are designed to incorporate and reflect advanced clinical trial design science and the regulatory and advisory experience of our team. We intend to continue partnering with innovative companies, renowned biostatisticians and trialists, medical leaders, formulation and regulatory experts, and premier clinical testing organizations to help expedite development, and continue expanding into complementary areas when opportunities arise through our development, research, and discoveries. We also intend to continue outsourcing to clinical research organizations, and seeking and acting upon the advice of preeminent scientists focused on cardiovascular and pulmonary drug development, when designing and executing our research.

Efficiently explore new high-potential therapeutic applications, in particular where expedited regulatory pathways are available, leveraging third-party research collaborations and our results from related areas.

Levosimendan has shown promise in multiple disease areas in the more than two decades following its approval. Our own Phase 2 study and open-label extension has demonstrated that levosimendan's property of relaxing the venous circulation, a formerly under-appreciated mechanism of action of levosimendan, brings durable improvements in exercise capacity and quality of life, as well as other clinical assessments, in patients with PH-HFpEF. The FDA has not approved a therapy for this disease. We are committed to exploring potential clinical indications where our therapies may achieve best-in-class profile, and where we can address significant unmet medical needs.

We believe these factors will support approval by the FDA of this product candidate based on positive Phase 3 data. Through our agreement with our licensor, Orion Corporation, we have access to a library of ongoing and completed trials and research projects, including certain documentation, which we believe, in combination with positive Phase 3 data we hope to generate in at least one indication, will support FDA approval of levosimendan. In order to achieve our objective of developing this medicine for new groups of patients, we have established collaborative research relationships with investigators from leading research and clinical institutions, and our strategic partners. These collaborative relationships have enabled us to explore where our product candidate may have therapeutic relevance, gain the advice and support of key opinion leaders in medicine and clinical trial science, and invest in development efforts to exploit opportunities to advance beyond current clinical care.

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Continue to expand our intellectual property portfolio.

Our intellectual property and the confidentiality of all our Company information is important to our business and we take significant steps to help protect its value. Our research and development efforts, both through internal activities and through collaborative research activities with others, aim to develop new intellectual property and enable us to file patent applications that cover new uses of our existing technologies, alone or in combination with existing therapies, as well as other product candidates.

Enter into licensing or product co-development arrangements.

In addition to our internal development efforts, an important part of our product development strategy is to work with collaborators and partners to accelerate product development, maintain our low development and business operations costs, and broaden our commercialization capabilities globally. We believe this strategy will help us develop a portfolio of high-quality product development opportunities, enhance our clinical development and commercialization capabilities, and increase our ability to generate value from our proprietary technologies.

We also continue to position ourselves to execute upon licensing and other partnering opportunities. To do so, we need to continue to maintain our strategic direction, manage and deploy our available cash efficiently, and strengthen our collaborative research development and partner relationships.

Regulation

There is no guarantee that our products will obtain regulatory approval by the FDA and comparable foreign regulatory authorities. The FDA approval process is complex, time-consuming, and expensive. It typically involves the following prior to submitting a new drug application (NDA) or biologics license application (BLA): preclinical laboratory and animal testing, submission of an IND application, and human clinical trials to establish safety and efficacy. Human clinical trials typically include: Phase 1 studies to evaluate the safety and tolerability of the drug, generally in normal, healthy volunteers; Phase 2 studies to evaluate safety and efficacy, as well as appropriate doses; these studies are typically conducted in patient volunteers who suffer from the particular disease condition that the drug is designed to treat; and Phase 3 studies to evaluate safety and efficacy of the product at specific doses in one or more larger pivotal trials. Upon submission of an NDA or BLA, the FDA reviews the application including potentially an FDA advisory committee review and inspects manufacturing facilities prior to FDA approval or rejection of the application. Even if a product receives FDA approval, the agency may impose post-approval requirements or withdraw approval if safety or efficacy issues arise.

Corporate Information

The Company was originally formed as a New Jersey corporation in 1967 under the name Rudmer, David & Associates, Inc., and subsequently changed its name to Synthetic Blood International, Inc. Effective June 30, 2008, we changed the domiciliary state of the corporation to Delaware and changed the Company name to Oxygen Biotherapeutics, Inc. On September 19, 2014, we changed the Company name to Tenax Therapeutics, Inc. Our principal executive offices are located at 101 Glen Lennox Drive, Suite 300, Chapel Hill, North Carolina 27517, and our telephone number is (919) 855-2100. Our website address is www.tenaxthera.com. The information contained on, or that can be accessed through, our website is not a part of this prospectus. We have included our website address in this prospectus solely as an inactive textual reference.

“Tenax”, the Tenax logo and other trademarks or service marks of Tenax Therapeutics, Inc. appearing in this prospectus are the property of Tenax Therapeutics, Inc. Our company is a “smaller reporting company” as defined in Rule 12b-2 of the Exchange Act, and we have elected to take advantage of certain of the scaled disclosure available to smaller reporting companies under the Exchange Act.

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THE OFFERING

Up to 378,346 Shares of Common Stock Up to 3,760,726 Shares of Common Stock Underlying Pre-Funded Warrants

This prospectus relates to the resale or other disposition from time to time of (i) up to 378,346 shares of our common stock and (ii) up to 3,760,726 shares of our common stock issuable upon the exercise of Pre-Funded Warrants, all held by the selling stockholders named in this prospectus, including their transferees, pledgees, donees or successors. All of the shares of common stock and Pre-Funded Warrants were issued on March 5, 2025, to certain investors in our March 2025 Offering, all of whom are identified as selling stockholders hereunder.

Common stock offered by the selling stockholders	4,139,072 (consisting of 378,346 shares of Common Stock outstanding before the resale offering and 3,760,726 shares of Common Stock underlying Pre-Funded Warrants)
Common stock outstanding before the offering ⁽¹⁾	4,148,495
Common stock to be outstanding after the offering ⁽²⁾	7,909,221
Common stock Nasdaq Capital Market Symbol	TENX

(1) The total number of shares of our Common Stock reflected in the discussion and table above is based on the number of shares outstanding as of April 8, 2025, and excludes:

- 3,126,436 shares are reserved for issuance upon exercise of outstanding options issued under our stock option plans;
- 250,314 shares are reserved for issuance upon exercise of outstanding options issued pursuant to the employment inducement award exemption provided by Nasdaq Listing Rule 5635(c)(4);
- 5,211,121 shares are reserved for issuance pursuant to our 2022 Stock Incentive Plan, as amended;
- 19,740,999 shares are reserved for issuance upon exercise of outstanding warrants to purchase Common Stock;
- 31,666,789 shares are reserved for issuance upon exercise of outstanding pre-funded warrants to purchase Common Stock, excluding the March 2025 Offering Pre-Funded Warrants; and
- 212 shares of convertible preferred stock, convertible into 1 share of Common Stock.

(2) The total number of shares of our Common Stock reflected in the discussion and table above is based on the 4,148,495 shares outstanding as of April 8, 2025, plus the 3,760,726 shares of Common Stock underlying the Pre-Funded Warrants.

The Pre-Funded Warrants have an exercise price of \$0.01 and are exercisable at any time after their original issuance and do not expire. The Pre-Funded Warrants include beneficial ownership limitations such that each Purchaser, together with its affiliates, will not own more than 9.99% (or, at the election of the Purchaser, not more than 19.99%) of the Company’s outstanding common stock.

Use of Proceeds

The selling stockholders will receive all of the net proceeds from the sale of the shares offered pursuant to this prospectus. We will not receive any of the proceeds from these sales. However, we may receive nominal proceeds from the exercise of the Pre-Funded Warrants, to the extent they are not exercised on a cashless basis. For further information, see “*Use of Proceeds*” in this prospectus.

We will incur all costs associated with this registration statement and prospectus.

Plan of Distribution

The selling stockholders may sell or otherwise dispose the shares of our common stock covered by this prospectus in a number of different ways and at varying prices. For further information, see “*Plan of Distribution*” in this prospectus.

Dividend Policy

We have never paid dividends on our capital stock and do not anticipate paying any dividends for the foreseeable future.

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RISK FACTORS

Investing in our securities involves a high degree of risk. Before purchasing our common stock, you should consider carefully the risks and uncertainties described in the section entitled “*Risk Factors*” contained in our Annual Report on Form 10-K for the year ended December 31, 2024, as filed with SEC on

March 25, 2025, which are incorporated in this prospectus by reference in their entirety, as well as in subsequently filed SEC reports and any prospectus supplement, together with all of the other information included in this prospectus. These risks and uncertainties are not the only risks and uncertainties we face. Additional risks and uncertainties not currently known to us, or that we currently view as immaterial, may also impair our business. If any of the risks or uncertainties described in our SEC filings or any additional risks and uncertainties actually occur, our business, financial condition, results of operations and cash flow could be materially and adversely affected. In that case, the trading price of our common stock could decline and you might lose all or part of your investment. Please also refer to the section entitled “*Special Note Regarding Forward-Looking Statements.*”

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

In this offering, the 4,139,072 shares of common stock represents approximately 100% of the number of shares of common stock outstanding on April 8, 2025. The sale of a substantial number of shares of our securities in the public market, or the perception that such sales may occur, could adversely affect the price of our common stock on the Nasdaq Capital Market. We cannot predict the effect, if any, that market sales of those shares of common stock or the availability of those shares of common stock for sale will have on the market price of our common stock.

In addition, in the future, we may also issue shares of our common stock in connection with investments or acquisitions. The amount of shares of our common stock issued in connection with an investment or acquisition could substantially increase our shares of common stock outstanding, which could adversely affect the price of our common stock on the Nasdaq Capital Market.

The price of our common stock could be subject to rapid and substantial volatility. Such volatility, including any stock run-ups, may be unrelated to our actual or expected operating performance and financial condition or prospects, making it difficult for prospective investors to assess the rapidly changing value of our common stock. Volatility in our common stock price may subject us to securities litigation.

The market for our common stock may have, when compared to seasoned issuers, significant price volatility and we expect that the price of our shares of common stock may continue to be more volatile than that of a seasoned issuer for the indefinite future. As a public company with a very small public float, we may experience greater share price volatility, extreme price run-ups, lower trading volume, and less liquidity than large-capitalization companies. In particular, our common stock may be subject to rapid and substantial price volatility, low volumes of trades, and large spreads in bid and ask prices. Such volatility, including any stock run-ups, may be unrelated to our actual or expected operating performance and financial condition or prospects, making it difficult for prospective investors to assess the rapidly changing value of our common stock.

In addition, if the trading volumes of our common stock are low, persons buying or selling in relatively small quantities may easily influence the price of our common stock. This low volume of trades could also cause the price of our common stock to fluctuate greatly, with large percentage changes in price occurring in any trading day session. Holders of our common stock may also not be able to readily liquidate their investment or may be forced to sell at depressed prices due to low volume trading. Broad market fluctuations and general economic and political conditions may also adversely affect the market price of our common stock. As a result of this volatility, investors may experience losses on their investment in our common stock. A decline in the market price of our common stock also could adversely affect our ability to issue additional common stock or other securities and our ability to obtain additional financing in the future.

In addition, in the past, plaintiffs have often initiated securities class action litigation against a company following periods of volatility in the market price of its securities. We may, in the future, be the target of similar litigation. Securities litigation could result in substantial costs and liabilities to the Company and could divert our management’s attention and resources.

Because we do not intend to declare cash dividends on our shares of common stock in the foreseeable future, stockholders must rely on appreciation of the value of our common stock for any return on their investment.

We have never declared or paid cash dividends on our common stock. The continued operation and expansion of our business will require substantial funding. We currently intend to retain all of our future earnings, if any, to finance the growth and development of our business. Accordingly, we do not anticipate that we will pay any cash dividends on shares of our common stock for the foreseeable future. Consequently, stockholders must rely on sales of their common stock after price appreciation, which may never occur, as the only way to realize any gains on their investment. Any determination to pay dividends in the future will be at the discretion of our board of directors and will depend upon results of operations, financial condition, contractual restrictions, restrictions imposed by applicable law and other factors our board of directors deems relevant.

USE OF PROCEEDS

The (i) up to 378,346 shares of our common stock and (ii) up to 3,760,726 shares of our common stock issuable upon the exercise of Pre-Funded Warrants are being offered for resale by the selling stockholders and will be sold for the accounts of the selling stockholders named in this prospectus. As a result, all proceeds from the sales of such securities offered for resale hereby will go to the selling stockholders and we will not receive any proceeds from the resale of those securities by the selling stockholders.

We may receive up to a total of \$37,607 in gross proceeds if all of the Pre-Funded Warrants to purchase up to 3,760,726 shares of our common stock are exercised for cash for shares of common stock. However, as we are unable to predict the timing or amount of potential exercises of the Pre-Funded Warrants, we have not allocated any proceeds of such exercises to any particular purpose. Accordingly, all such proceeds are allocated to working capital. Pursuant to conditions set forth in the Pre-Funded Warrants, the Pre-Funded Warrants are exercisable on a cashless basis, and should a selling stockholder elect to exercise on a cashless basis we will not receive any proceeds from the sale of common stock issued upon the cashless exercise of the Pre-Funded Warrants.

We will incur all costs associated with this registration statement and prospectus.

SELLING STOCKHOLDERS

The common stock being offered by the selling stockholders are those issued to the selling stockholders in the March 2025 Offering and those issuable to the selling stockholders upon exercise of the Pre-Funded Warrants sold in the March 2025 Offering pursuant to the Purchase Agreement. For additional information regarding the March 2025 Offering, see “*Prospectus Summary - Recent Events.*” We are registering the Registrable Securities in order to permit the selling stockholders to offer such shares for sale from time to time. Except for the purchase and ownership of the Registrable Securities, the selling stockholders have not had any material relationship with us within the past three years.

The table below lists the selling stockholders and other information regarding the beneficial ownership of our common stock of each of the selling stockholders. The second column lists the number of shares of common stock beneficially owned by each selling stockholder, including their ownership of the Pre-Funded Warrants and our common stock, as of April 8, 2025, assuming exercise of all Pre-Funded Warrants held by such selling stockholder on that date, without regard to any limitations on exercise.

This prospectus generally covers the resale of the maximum number of shares of common stock issuable upon exercise of the Pre-Funded Warrants, determined as if the outstanding Pre-Funded Warrants were exercised in full as of the trading day immediately preceding the date the registration statement of which this prospectus forms a part was initially filed with the SEC, each as of the trading day immediately preceding the applicable date of determination and all subject to adjustment as provided in the registration right agreement, without regard to any limitations on the exercise of the Pre-Funded Warrants. The third column assumes the sale of all of the shares of common stock offered by the selling stockholders pursuant to this prospectus.

Under the terms of the Pre-Funded Warrants, a selling securityholder may not exercise the Pre-Funded Warrants to the extent such exercise would cause such selling stockholder, together with its affiliates and attribution parties, to beneficially own a number of shares of common stock which would exceed 9.99% (or, at the direction of the selling securityholder, up to 19.99%), of our then outstanding shares of common stock following such exercise, excluding for purposes of such determination of the shares of common stock issuable upon exercise of such Pre-Funded Warrants which have not been exercised. The number of shares of common stock in the columns below do not reflect this limitation. The selling stockholders may sell all, some or none of their shares of common stock acquired in the March 2025 Offering in this offering. See “*Plan of Distribution.*”

Name of Selling Stockholder	Shares Beneficially Owned prior to this Offering	Maximum Number of Shares to be Sold Pursuant to this Prospectus	Shares Beneficially Owned after this Offering ⁽¹⁾	
			Shares	Percentage
RTW Master Fund, Ltd. ⁽²⁾⁽³⁾	1,920,451	1,920,451	--	*
RTW Innovation Master Fund, Ltd. ⁽³⁾⁽⁴⁾	1,445,281	1,445,281	--	*
RTW Biotech Opportunities Operating Ltd. ⁽³⁾⁽⁵⁾	773,340	773,340	--	*

* Represents beneficial ownership of less than one percent of the outstanding shares of our common stock.

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- (1) Based on the 4,148,495 shares outstanding as of April 8, 2025. The number and percentage of shares beneficially owned is determined in accordance with Rule 13d-3 of the Exchange Act and the information is not necessarily indicative of beneficial ownership for any other purpose. Under such rule, beneficial ownership includes any shares as to which the person has sole or shared voting power or investment power and also any shares that the person has the right to acquire within 60 days of April 8, 2025 through the exercise of any stock options, warrants or other rights or the conversion of preferred stock. Any shares that a person has the right to acquire within 60 days are deemed to be outstanding for the purpose of computing the percentage ownership of such person but are not deemed outstanding for the purpose of computing the percentage ownership of any other person.
- (2) Consists of (i) 175,545 shares of common stock issued pursuant to the Purchase Agreement and (ii) 1,744,906 shares of common stock issuable upon the exercise of Pre-Funded Warrants.
- (3) Subject to a beneficial ownership limitation of 9.99% on an aggregated basis with RTW Master Fund, Ltd., RTW Innovation Master Fund, Ltd. and RTW Biotech Opportunities Operating Ltd. (together, the “RTW Funds”), which are related entities. RTW Investments, LP (“RTW”), in its capacity as the investment manager of the RTW Funds, has the power to vote and the power to direct the disposition of the shares held by the RTW Funds. Accordingly, RTW may be deemed to be the beneficial owner of such securities. Roderick Wong, M.D., as the Managing Partner of RTW, has the power to direct the vote and disposition of the securities held by RTW. Dr. Wong disclaims beneficial ownership of the shares held by RTW Funds, except to the extent of his pecuniary interest therein. The address and principal office of RTW Investments, LP is 40 10th Avenue, Floor 7, New York, NY 10014, and the address of Dr. Wong and each of the RTW Funds is c/o RTW Investments, LP, 40 10th Avenue, Floor 7, New York, NY 10014.
- (4) Consists of (i) 132,111 shares of common stock issued pursuant to the Purchase Agreement and (ii) 1,313,170 shares of common stock issuable upon the exercise of Pre-Funded Warrants.
- (5) Consists of (i) 70,690 shares of common stock issued pursuant to the Purchase Agreement and (ii) 702,650 shares of common stock issuable upon the exercise of Pre-Funded Warrants.

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PLAN OF DISTRIBUTION

The selling stockholders, which as used herein includes donees, pledgees, transferees or other successors-in-interest selling shares of common stock or interests in shares of common stock received after the date of this prospectus from a selling stockholder as a gift, pledge, partnership distribution or other transfer, may, from time to time, sell, transfer or otherwise dispose of any or all of their shares of common stock or interests in shares of common stock on any stock exchange, market or trading facility on which the shares are traded or in private transactions. These dispositions may be at fixed prices, at prevailing market prices at the time of sale, at prices related to the prevailing market price, at varying prices determined at the time of sale, or at negotiated prices.

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

- distributions to members, partners, stockholders or other equityholders of the selling stockholders;
- ordinary brokerage transactions and transactions in which the broker-dealer solicits purchasers;
- block trades in which the broker-dealer will attempt to sell the shares as agent, but may position and resell a portion of the block as principal to facilitate the transaction;
- purchases by a broker-dealer as principal and resale by the broker-dealer for its account;
- an exchange distribution in accordance with the rules of the applicable exchange;
- privately negotiated transactions;
- short sales and settlement of short sales entered into after the effective date of the registration statement of which this prospectus is a part;
- through the writing or settlement of options or other hedging transactions, whether through an options exchange or otherwise;
- broker-dealers may agree with the selling stockholders to sell a specified number of such shares at a stipulated price per share;
- a combination of any such methods of sale; and
- any other method permitted pursuant to applicable law.

The selling stockholders may, from time to time, pledge or grant a security interest in some or all of the shares of common stock owned by them and, if they default in the performance of their secured obligations, the pledgees or secured parties may offer and sell the shares of common stock, from time to time, under this prospectus, or under an amendment to this prospectus under Rule 424(b)(3) or other applicable provision of the Securities Act, amending the list of selling stockholders to include the pledgee, transferee or other successors in interest as selling stockholders under this prospectus. The selling stockholders also may transfer the shares of common stock in other circumstances, in which case the transferees, pledgees or other successors in interest will be the selling stockholders for purposes of this prospectus.

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

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The aggregate proceeds to the selling stockholders from the sale of the common stock offered by them will be the purchase price of the common stock less discounts or commissions, if any. Each of the selling stockholders reserves the right to accept and, together with their agents from time to time, to reject, in whole or in part, any proposed purchase of common stock to be made directly or through agents. We will not receive any of the proceeds from this offering. Upon any exercise of the Pre-Funded Warrants by payment of cash, however, we will receive the nominal exercise price of the Pre-Funded Warrants.

The selling stockholders also may resell all or a portion of the shares in open market transactions in reliance upon Rule 144 under the Securities Act, provided that they meet the criteria and conform to the requirements of that rule, or another available exemption from the registration requirements under the Securities Act.

The selling stockholders and any underwriters, broker-dealers or agents that participate in the sale of the common stock or interests therein may be “underwriters” within the meaning of Section 2(a)(11) of the Securities Act (it being understood that the selling stockholders shall not be deemed to be underwriters solely as a result of their participation in this offering). Any discounts, commissions, concessions or profit they earn on any resale of the shares may be underwriting discounts and commissions under the Securities Act. Selling stockholders who are “underwriters” within the meaning of Section 2(a)(11) of the Securities Act will be subject to the prospectus delivery requirements of the Securities Act.

To the extent required, the shares of our common stock to be sold, the names of the selling stockholders, the respective purchase prices and public offering prices, the names of any agent, dealer or underwriter, and any applicable commissions or discounts with respect to a particular offer will be set forth in an accompanying prospectus supplement or, if appropriate, a post-effective amendment to the registration statement that includes this prospectus.

In order to comply with the securities laws of some states, if applicable, the common stock may be sold in these jurisdictions only through registered or licensed brokers or dealers. In addition, in some states the common stock may not be sold unless it has been registered or qualified for sale or an exemption from registration or qualification requirements is available and is complied with.

We have advised the selling stockholders that the anti-manipulation rules of Regulation M under the Exchange Act may apply to sales of shares in the market and to the activities of the selling stockholders and their affiliates. In addition, to the extent applicable, we will make copies of this prospectus (as it may be supplemented or amended from time to time) available to the selling stockholders for the purpose of satisfying the prospectus delivery requirements of the Securities Act. The selling stockholders may indemnify any broker-dealer that participates in transactions involving the sale of the shares against certain liabilities, including liabilities arising under the Securities Act.

We have agreed to indemnify the selling stockholders against liabilities, including liabilities under the Securities Act and state securities laws, relating to the registration of the shares offered by this prospectus.

We have agreed with the selling stockholders to use commercially reasonable efforts to cause the registration statement of which this prospectus constitutes a part to become effective and to remain continuously effective until the earlier of: (i) the date on which the selling stockholders shall have resold or otherwise disposed of all the shares covered by this prospectus and (ii) the date on which the shares covered by this prospectus no longer constitute “Registrable Securities” as such term is defined in the Registration Rights Agreement, such that they may be resold by the selling stockholders without registration and without regard to any volume or manner-of-sale limitations and without current public information pursuant to Rule 144 under the Securities Act or any other rule of similar effect.

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LEGAL MATTERS

The validity of the securities being offered hereby will be passed upon for us by Wyrick Robbins Yates & Ponton LLP, Raleigh, North Carolina.

EXPERTS

The historical consolidated financial statements of our Company as of December 31, 2024 and 2023 and for each of the two years in the period ended December 31, 2024 included in this prospectus and in the registration statement have been so included in reliance on the report of Cherry Bekaert 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 current reports, proxy statements and other information with the SEC. The SEC maintains a website at www.sec.gov that contains reports, proxy and information statements and other information regarding registrants. Our SEC filings, including our registration statement of which this prospectus is a part and the exhibits and schedules thereto, are available on the SEC website at www.sec.gov.

We also maintain a website at www.tenaxthera.com, at which you may access these materials free of charge as soon as reasonably practicable after they are electronically filed with, or furnished to, the SEC. Information contained in or accessible through our website does not constitute a part of this prospectus. You may also request a copy of these filings, at no cost, by writing or telephoning us at: 101 Glen Lennox Drive, Suite 300, Chapel Hill, North Carolina 27517, (919) 855-2100.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The SEC allows us to “incorporate by reference” information into this prospectus, which means that we can disclose important information to you by referring you to another document filed separately with the SEC. The documents incorporated by reference into this prospectus contain important information that you should read about us. Because we are incorporating by reference future filings with the SEC, this prospectus is continually updated and those future filings may modify or supersede some of the information included or incorporated in this prospectus. This means that you must look at all of the SEC filings that we incorporate by reference to determine if any of the statements in this prospectus or in any document previously incorporated by reference have been modified or superseded.

The following documents are incorporated by reference into this document:

- our Annual Report on [Form 10-K](#) for the fiscal year ended December 31, 2024, as filed with the SEC on March 25, 2025;
- our Current Report on [Form 8-K](#) filed with the SEC on March 6, 2025, only to the extent the information in such report is filed and not furnished; and
- the description of our common stock filed with the SEC on March 25, 2025 as [Exhibit 4.17](#) to our Annual Report on [Form 10-K](#) for the fiscal year ended December 31, 2024.

We also incorporate by reference into this prospectus all documents (other than current reports 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) that are filed by us with the SEC pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act prior to the termination of the offering. These documents include periodic reports, such as Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q and Current Reports on Form 8-K, as well as proxy statements.

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

We will furnish without charge to you, on written or oral request, a copy of any or all of the documents incorporated by reference in this prospectus, including exhibits to these documents. You should direct any requests for documents to Tenax Therapeutics, Inc., 101 Glen Lennox Drive, Suite 300, Chapel Hill, North Carolina 27517; Telephone: (919) 855-2100.

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Up to 378,346 Shares of Common Stock

PRELIMINARY PROSPECTUS

, 2025

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PART II

INFORMATION NOT REQUIRED IN THE PROSPECTUS

Item 14. Other Expenses of Issuance and Distribution.

The following table sets forth an itemization of the various expenses, all of which we will pay, in connection with the issuance and distribution of the securities being registered. The selling stockholder will not be responsible for any of the expenses of this offering. All of the amounts shown are estimated except the SEC registration fee.

SEC registration fee	\$ 3,495
Legal fees and expenses	\$ 100,000
Accounting fees and expenses	\$ 15,000
Printing expenses	\$ -
Total	<u>\$ 118,495</u>

Item 15. Indemnification of Directors and Officers.

Section 145 of the Delaware General Corporation Law (“DGCL”) provides that a corporation has the power to indemnify a director, officer, employee, or agent of the corporation and certain other persons serving at the request of the corporation in related capacities against amounts paid and expenses incurred in connection with an action or proceeding to which he or she is or is threatened to be made a party by reason of such position, if such person acted in good faith and in a manner he or she reasonably believed to be in or not opposed to the best interests of the corporation, and, in any criminal proceeding, if such person had no reasonable cause to believe his or her conduct was unlawful. In the case of actions brought by or in the right of the corporation, no indemnification shall be made with respect to any matter as to which such person has been adjudged to be liable to the corporation unless and only to the extent that the adjudicating court determines that such indemnification is proper under the circumstances.

Our Certificate of Incorporation, as amended (the “Certificate of Incorporation”), and our Fourth Amended and Restated Bylaws (the “Bylaws”), provide that our directors and officers will be indemnified by us to the fullest extent authorized by the DGCL. In addition, our Certificate of Incorporation provides, as permitted by Section 102(b)(7) of DGCL, that our directors will not be liable for monetary damages to us for breaches of their fiduciary duty as directors, unless they (i) violated their duty of loyalty to us or our stockholders, (ii) acted, or failed to act, in good faith, (iii) acted with intentional misconduct, (iv) knowingly or intentionally violated the law, (v) authorized unlawful payments of dividends, unlawful stock purchases or unlawful redemptions, or (vi) derived an improper personal benefit from their actions as directors.

Our Bylaws also permit us to secure insurance on behalf of any officer, director, employee, or agent for any liability arising out of his or her actions, regardless of whether DGCL would permit indemnification. We have purchased a policy of directors’ and officers’ liability insurance that insures our directors and officers.

In addition, we have also entered into an indemnification agreement with certain of our directors and officers. The indemnification agreements require us to indemnify and hold harmless and advance expenses to each indemnitee in respect of acts or omissions occurring prior to the time the indemnitee ceases to be an officer and/or director of the Company to the fullest extent permitted by applicable law. The rights provided in the indemnification agreements are in addition to the rights provided in our Certificate of Incorporation, Bylaws, and the DGCL.

The indemnification rights set forth above shall not be exclusive of any other right which an indemnified person may have or hereafter acquire under any statute, provision of our Certificate of Incorporation, our Bylaws, or any agreement, vote of stockholders or disinterested directors or otherwise.

We maintain standard policies of insurance that provide coverage (1) to our directors and officers against loss rising from claims made by reason of breach of duty or other wrongful act and (2) to us with respect to indemnification payments that we may make to such directors and officers.

See “Item 17. Undertakings” for a description of the SEC’s position regarding such indemnification provisions.

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[Table of Contents](#)**Item 16. Exhibits and Financial Statement Schedules.**

(a) Exhibits.

**Incorporated by Reference
(Unless Otherwise Indicated)**

Exhibit Number	Exhibit Title	Form	File	Exhibit	Filing Date
-------------------	---------------	------	------	---------	----------------

4.1	Form of Pre-Funded Warrant to Purchase Common Stock.	8-K	001-34600	4.1	March 6, 2025
5.1	Opinion of Wyrick Robbins Yates & Ponton LLP	--	--	--	Filed herewith
10.1	Form of Securities Purchase Agreement, dated March 4, 2025, by and among Tenax Therapeutics, Inc. and the investors signatory thereto.	8-K	001-34600	10.1	March 6, 2025
10.2	Form of Registration Rights Agreement.	8-K	001-34600	10.2	March 6, 2025
23.1	Consent of Cherry Bekaert LLP, Independent Registered Public Accounting Firm.	--	--	--	Filed herewith
23.2	Consent of Wyrick Robbins Yates & Ponton (included in Exhibit 5.1).	--	--	--	Filed herewith
24.1	Power of Attorney (included on the signature page of the registration statement).	--	--	--	Filed herewith
107	Filing Fee Table	--	--	--	Filed herewith

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Item 17. Undertakings.

(a) The undersigned registrant hereby undertakes:

(1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:

(i) To include any prospectus required by Section 10(a)(3) of the Securities Act of 1933;

(ii) To reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the SEC pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20% change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement;

(iii) To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement;

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

(2) That, for the purpose of determining any liability under the Securities Act of 1933, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

(5) That, for the purpose of determining liability of the registrant under the Securities Act of 1933 to any purchaser, each prospectus filed pursuant to Rule 424(b) as part of a registration statement relating to an offering, other than registration statements relying on Rule 430B or other than prospectuses filed in reliance on Rule 430A, shall be deemed to be part of and included in the registration statement as of the date it is first used after effectiveness. Provided, however, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such first use, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such date of first use.

(b) The undersigned registrant hereby undertakes that, for purposes of determining any liability under the Securities Act of 1933, each filing of the registrant's annual report pursuant to Section 13(a) or Section 15(d) of the Securities Exchange Act of 1934 (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Securities Exchange Act of 1934) that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

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

[Table of Contents](#)**SIGNATURES**

Pursuant to the requirements of the Securities Act of 1933, the registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-3 and has duly caused this Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the Town of Chapel Hill, State of North Carolina, on the 15th day of April, 2025.

TENAX THERAPEUTICS, INC.By: /s/ Christopher T. Giordano

Name: Christopher T. Giordano

Title: President and Chief Executive Officer

KNOW ALL PERSONS BY THESE PRESENTS that each individual whose signature appears below constitutes and appoints Christopher T. Giordano and Gerald Proehl, and each of them as his or her true and lawful attorney-in-fact and agent with full power of substitution and resubstitution, for him or her and in his or her name, place and stead, in any and all capacities, to sign any and all amendments (including post-effective amendments) to this Registration Statement, and to file the same, with all exhibits thereto, and all documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorney-in-fact and agent full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as fully to all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that said attorney-in-fact and agent, or his or her substitute, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, the following persons in the capacities and on the dates indicated have signed this registration statement below.

Signature	Title	Date
<u>/s/ Christopher T. Giordano</u> Christopher T. Giordano	President and Chief Executive Officer and Director (<i>Principal Executive Officer</i>)	April 15, 2025
<u>/s/ Thomas A. McGauley</u> Thomas A. McGauley	Interim Chief Financial Officer (<i>Principal Financial Officer and Principal Accounting Officer</i>)	April 15, 2025
<u>/s/ Gerald Proehl</u> Gerald Proehl	Director	April 15, 2025
<u>/s/ June Almenoff, MD</u> June Almenoff, MD	Director	April 15, 2025
<u>/s/ Michael Davidson, MD</u> Michael Davidson, MD	Director	April 15, 2025
<u>/s/ Declan Doogan, MD</u> Declan Doogan, MD	Director	April 15, 2025
<u>/s/ Robyn Hunter</u> Robyn Hunter	Director	April 15, 2025
<u>/s/ Stuart Rich, MD</u> Stuart Rich, MD	Director	April 15, 2025

Wyrick Robbins Yates & Ponton LLP
4101 Lake Boone Trail, Suite 300
Raleigh, North Carolina 27607

April 15, 2025

Board of Directors
Tenax Therapeutics, Inc.
101 Glen Lennox Drive, Suite 300
Chapel Hill, North Carolina 27517

Re: Shelf Registration Statement on Form S-3

Ladies and Gentlemen:

We have acted as counsel to Tenax Therapeutics, Inc., a Delaware corporation (the "Company"), in connection with its registration statement on Form S-3 (the "Registration Statement") filed on even date herewith with the Securities and Exchange Commission (the "Commission") under the Securities Act of 1933, as amended (the "Act"). The Registration Statement relates to the resale from time to time by the selling stockholders listed in the Registration Statement under the heading "Selling Stockholders" of up to (i) 378,346 shares (the "Common Shares") of our common stock, \$0.0001 par value per share (the "Common Stock") and (ii) 3,760,726 shares of our Common Stock underlying pre-funded warrants (the "Pre-Funded Warrants"). The shares of Common Stock underlying the Pre-Funded Warrants are referred to herein as the "Warrant Shares".

This opinion is being furnished in accordance with the requirements of Item 16 of Form S-3 and Item 601(b)(5)(i) of Regulation S-K.

In connection with the foregoing, we have relied upon, among other things, our examination of such documents, records of the Company and certificates of its officers and public officials as we deemed necessary for purposes of the opinions expressed below. In our examination of documents for purposes of this opinion, we have assumed, and express no opinion as to, the authenticity and completeness of all documents submitted to us as originals, the conformity to originals and completeness of all documents submitted to us as copies.

Based upon and subject to the foregoing and the additional limitations, qualifications, exceptions and assumptions set forth below, it is our opinion that:

1. The Common Shares are validly issued, fully paid and non-assessable.
2. The Warrant Shares have been duly authorized and, when issued, paid for and delivered as described in the Registration Statement and in accordance with the provisions of the Pre-Funded Warrants, the Warrant Shares will be validly issued, fully paid and non-assessable.

This opinion is limited to the Delaware General Corporation Law, including the statutory provisions of the Delaware General Corporation Law and all applicable provisions of the Delaware Constitution and reported judicial decisions interpreting these laws.

We hereby consent to the filing of this opinion with the Commission as Exhibit 5.1 to the Registration Statement and reference to our firm under the heading "Legal Matters" in the prospectus included therein. In giving this consent, we do not admit that we are within the category of persons whose consent is required by Section 7 of the Act or the rules and regulations promulgated thereunder by the Commission.

This opinion is intended solely for use in connection with the sale of the securities subject to the Registration Statement and is not to be relied upon for any other purpose. This opinion is rendered as of the date first written above and based solely on our understanding of facts in existence as of such date after the aforementioned examination.

We assume no obligation to advise you of any fact, circumstance, event or change in the law or the facts that may hereafter be brought to our attention whether or not such occurrence would affect or modify any of the opinions expressed herein.

Sincerely,

/s/ Wyrick Robbins Yates & Ponton LLP

Consent of Independent Registered Public Accounting Firm

We hereby consent to the incorporation by reference in this Registration Statement on Form S-3 of our report dated March 25, 2025, relating to the consolidated financial statements of Tenax Therapeutics, Inc. and Subsidiaries (the “Company”), appearing in the Annual Report on Form 10-K of the Company as of and for the years ended December 31, 2024 and 2023. We also consent to the reference of our firm under the heading “Experts” in the prospectus.

/s/ Cherry Bekaert LLP

Raleigh, North Carolina
April 15, 2025

Calculation of Filing Fee Tables

Form S-3
(Form Type)Tenax Therapeutics, Inc.
(Exact Name of Registrant as Specified in its Charter)

Table 1: Newly Registered and Carry Forward Securities

	Security Type	Security Class Title	Fee Calculation or Carry Forward Rule	Amount Registered ⁽¹⁾	Proposed Maximum Offering Price Per Unit	Maximum Aggregate Offering Price	Fee Rate	Amount of Registration Fee
Newly Registered Securities								
Fees to Be Paid	Equity	Common Stock, par value \$0.0001 per share	457(c)	4,139,072 ⁽²⁾	\$5.515 ⁽³⁾	\$22,825,947	\$0.0001531000	\$3,495
Fees Previously Paid								
Carry Forward Securities								
Carry Forward Securities	-	-	-	-	-	-		-
Total Offering Amounts						\$22,825,947		\$3,495
Total Fees Previously Paid						-		\$0
Total Fee Offsets						-		\$0
Net Fee Due								\$3,495

- (1) Pursuant to Rule 416 under the Securities Act of 1933, as amended (the "Securities Act"), this registration statement also registers an indeterminate number of shares of common stock, \$0.0001 par value per share (the "Common Stock"), of Tenax Therapeutics, Inc. (the "Registrant") which may become issuable by reason of any stock dividend, stock split or other similar transaction effected without the receipt of consideration that results in an increase in the number of the outstanding shares of the Registrant's Common Stock.
- (2) The shares of common stock will be offered for resale by the selling stockholders pursuant to the prospectus contained in the registration statement to which this exhibit is attached. The registration statement registers the resale of an aggregate of 4,139,072 shares of the registrant's common stock, which consists of (i) 378,346 outstanding shares of common stock and (ii) 3,760,726 shares of common stock issuable upon the exercise of outstanding pre-funded warrants.
- (3) Estimated solely for the purpose of calculating the amount of the registration fee pursuant to Rule 457(c) under the Securities Act, based on the average of the high and low prices of the common stock as reported on Nasdaq Capital Market on April 10, 2025 of \$5.515 per share.