

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

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

TANGO THERAPEUTICS, INC.

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation or organization)

85-1195036
(I.R.S. Employer
Identification Number)

201 Brookline Avenue, Suite 901
Boston, MA 02215
(857) 320-4900

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

Barbara Weber, M.D.
President and Chief Executive Officer
201 Brookline Avenue, Suite 901
Boston, MA 02215
(857) 320-4900

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

Copies to:

Mitchell S. Bloom, Esq.
Sarah Ashfaq, Esq.
Goodwin Procter LLP
100 Northern Avenue
Boston, MA 02210
(617) 570-1000

Julie Fogarty
Vice President, Legal
Tango Therapeutics, Inc.
201 Brookline Avenue, Suite 901
Boston, MA 02215
(857) 320-4900

Approximate date of commencement of proposed sale to the public: From time to time after this registration statement becomes effective.

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. (Check one):

Large accelerated filer

Non-accelerated filer

Accelerated filer

Smaller reporting company

Emerging growth company

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

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

PRELIMINARY PROSPECTUS

1,732,101 Shares

**Offered by the Selling Stockholder
Tango Therapeutics, Inc.**

Common Stock

This prospectus relates to the proposed resale or other disposition from time to time of up to 1,732,101 shares of our common stock (the "Shares") by the selling stockholder identified in this prospectus (the "Selling Stockholder"). The Shares being offered were issued and sold to the Selling Stockholder in a private placement, pursuant to a securities purchase agreement, dated October 23, 2025, by and between Tango Therapeutics, Inc. and the Selling Stockholder.

The Selling Stockholder (which term as used herein includes its respective donees, pledgees, assignees, transferees and other successors in interest) may sell any or all of its securities from time to time on the Nasdaq Global Market or any other stock exchange, market, or trading facility on which the securities are traded or in private transactions. These sales may be at fixed or negotiated prices. See "Plan of Distribution" which begins on page S-20.

We are not offering any shares of our common stock for sale under this prospectus and will not receive any of the proceeds from the sale of common stock by the Selling Stockholder. All expenses of registration incurred in connection with this offering are being borne by us. All selling and other expenses incurred by the Selling Stockholder will be borne by the Selling Stockholder.

The Selling Stockholder may sell any, all or none of the Shares offered by this prospectus and we do not know when or in what amount the Selling Stockholder may sell their Shares hereunder.

We may amend or supplement this prospectus from time to time by filing amendments or supplements as required. You should carefully read this prospectus, as well as any documents incorporated by reference, before you invest in any of the securities being offered. Our common stock is listed on The Nasdaq Global Market under the symbol "TNGX." On November 20, 2025, the closing price for our common stock, as reported on The Nasdaq Global Market, was \$8.90 per share.

Investing in these securities involves certain risks. See "[Risk Factors](#)" on page 2 of this prospectus as well as those included in any accompanying prospectus and in the documents incorporated by reference in this prospectus for a discussion of the factors you should carefully consider before deciding to purchase these securities.

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

The date of this prospectus is _____, 2025.

The information in this prospectus is not complete and may be changed. The selling stockholder named in this prospectus may not sell 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 we are not soliciting offers to buy these securities in any jurisdiction where the offer or sale is not permitted.

TABLE OF CONTENTS

<u>ABOUT THIS PROSPECTUS</u>	1
<u>RISK FACTORS</u>	2
<u>SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS</u>	3
<u>OUR COMPANY</u>	6
<u>THE OFFERING</u>	8
<u>USE OF PROCEEDS</u>	9
<u>SECURITIES THAT MAY BE OFFERED</u>	
<u>SELLING STOCKHOLDER</u>	14
<u>MATERIAL UNITED STATES FEDERAL INCOME TAX CONSIDERATIONS</u>	15
<u>PLAN OF DISTRIBUTION</u>	20
<u>LEGAL MATTERS</u>	22
<u>EXPERTS</u>	22
<u>WHERE YOU CAN FIND MORE INFORMATION</u>	22
<u>INCORPORATION BY REFERENCE</u>	23

ABOUT THIS PROSPECTUS

This document is part of the registration statement that we filed with the U.S. Securities and Exchange Commission, or the SEC, using a “shelf” registration process. Under this shelf registration process, the Selling Stockholder may, from time to time, sell the shares of common stock described in this prospectus in one or more offerings.

We and the Selling Stockholder have not authorized anyone to provide you with information or to make any representation other than the information and representations contained or incorporated by reference in this prospectus and the accompanying prospectus and the documents incorporated by reference herein and therein, along with the information contained in any permitted free writing prospectuses we have authorized for use in connection with this offering. We and the Selling Stockholder take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you.

Neither we, nor the Selling Stockholder, have authorized anyone to give any information or to make any representation other than those contained or incorporated by reference in this prospectus. You must not rely upon any information or representation not contained or incorporated by reference in this prospectus. The Selling Stockholder is offering to sell, and seeking offers to buy, shares of our common stock only in jurisdictions where it is lawful to do so. This prospectus does not constitute an offer to sell or the solicitation of an offer to buy any shares other than the registered shares to which it relates, nor does this prospectus constitute an offer to sell or the solicitation of an offer to buy shares in any jurisdiction to any person to whom it is unlawful to make such offer or solicitation in such jurisdiction. You should not assume that the information contained in this prospectus is accurate on any date subsequent to the date set forth on the front of the document or that any information we have incorporated by reference is correct on any date subsequent to the date of the document incorporated by reference, even though this prospectus is delivered or shares are sold on a later date. Our business, financial condition, results of operations and prospects may have changed since those dates. This prospectus incorporates by reference market data and industry statistics and forecasts that are based on independent industry publications and other publicly available information. Although we believe these sources are reliable, and are responsible for accuracy of such data and statistics, the industry in which we operate is subject to a high degree of uncertainty and risk due to a variety of factors, including those described in the section entitled “Risk Factors” of our most recent Annual Report on Form 10-K. These and other factors could cause the estimates to differ materially from those expressed in these publications. In addition, the market and industry data and forecasts that may be included or incorporated by reference in this prospectus may involve estimates, assumptions and other risks and uncertainties and are subject to change based on various factors, including those discussed under the heading “Risk Factors” contained in this prospectus, and under similar headings in other documents that are incorporated by reference into this prospectus. Accordingly, investors should not place undue reliance on this information.

A prospectus may add to, update or change the information contained in this prospectus. You should read this prospectus and any applicable prospectus, as well as the documents incorporated by reference herein and therein and the additional information described under “Where You Can Find More Information” and “Incorporation by Reference” in this prospectus, before investing in our common stock. As used in this prospectus, unless the context otherwise requires, references to “Tango,” “company,” “we,” “us” and “our” refer to Tango Therapeutics, Inc. and, where appropriate, our subsidiaries.

We were formerly known as BCTG Acquisition Corp. (“BCTG”) and were incorporated in Delaware in May 2020 as a special purpose acquisition company, formed for the purpose of effecting a merger, capital stock exchange, asset acquisition, stock purchase, reorganization or other similar business. On August 10, 2021, we consummated the merger pursuant to the Agreement and Plan of Merger, dated as of April 13, 2021, by and among BCTG, BCTG Merger Sub Inc. and Tango Therapeutics Sub, Inc. Upon the consummation of the merger, we changed our name to “Tango Therapeutics, Inc.” We own various U.S. federal trademarks, trademark applications and unregistered trademarks, including our company name. All other trademarks or trade names referred to in this prospectus are the property of their respective owners. Solely for convenience, the trademarks and trade names in this prospectus are referred to without the symbols ® and ™, but such references should not be construed as any indicator that their respective owners will not assert, to the fullest extent under applicable law, their rights thereto.

RISK FACTORS

Investing in our securities involves a high degree of risk. You should carefully consider the risks set forth in our filings with the SEC that are incorporated by reference herein and any prospectus supplement, as well as other information we include or incorporate by reference into this prospectus and any applicable prospectus supplement, before making an investment decision. Our business, financial condition or results of operations could be materially adversely affected by the materialization of any of these risks. The trading price of our securities could decline due to the materialization of any of these risks, and you may lose all or part of your investment. This prospectus and the documents incorporated herein by reference also contain forward-looking statements that involve risks and uncertainties. Actual results could differ materially from those anticipated in these forward-looking statements as a result of certain factors, including the risks described in the documents incorporated herein by reference, including our most recent Annual Report on Form 10-K, our Quarterly Reports on Form 10-Q and our Current Reports on Form 8-K and the other documents we file with the SEC that are deemed incorporated by reference into this prospectus.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus, including the documents that we incorporate by reference, includes 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”). Forward-looking statements relate to, among others, our plans, objectives and expectations for our business, operations and financial performance and condition, and can be identified by terminology such as “may,” “will,” “could,” “should,” “expect,” “intend,” “plan,” “anticipate,” “believe,” “estimate,” “predict,” “potential,” “project,” “seek,” “endeavor,” “target,” “continue” and similar expressions that do not relate solely to historical matters. Forward-looking statements are based on management’s belief and assumptions and on information currently available to management. Although we believe that the expectations reflected in forward-looking statements are reasonable, such statements involve known and unknown risks, uncertainties and other factors that may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by forward-looking statements.

Forward-looking statements include, but are not limited to, statements about:

- the initiation, timing, progress, results, and cost of our research and development programs and our current and future preclinical studies and clinical trials and combination clinical trials, including statements regarding the timing of IND filings and acceptance, active enrollment and dosing in clinical trials (including combination clinical trials), future plans for dose expansions and dose escalations, and initiation and completion of studies or clinical trials (including combination trials), plans for initiating a registrational trial for vopimetostat (TNG462) in 2026 and the continued enrollment in our vopimetostat monotherapy and combination clinical trials (and related preparatory work for each), plans for the TNG456 clinical trial, and the period during which the results of our clinical trials (including initial and final trial results) will become available (such as the clinical data update from the lung cohort of the ongoing Phase 1/2 clinical trial in vopimetostat expected in 2026);
- our ability to discover and develop product candidates efficiently (including the advancement of development candidates on the timelines identified and the ability to identify and contract with clinical trial sites and investigators to use our product candidates in trials);
- our ability and potential (or those of third parties) to manufacture our drug product, drug substance and product candidates successfully for preclinical use, for clinical trials and on a larger scale for commercial use, if approved;
- the ability and willingness of our third-party strategic collaborators to continue research and development activities relating to our development candidates and product candidates;
- our ability to obtain funding for our operations necessary to complete further research, development and commercialization of our product candidates (and that existing cash, cash equivalents and marketable securities will enable us to fund our operating expenses and capital expenditure requirements into 2028);
- our ability to obtain and, if approved, maintain regulatory approval of our product candidates (as well as approval or clearance of screening tests and companion diagnostic tests for our product candidates) and the potential paths to approval our product candidates, including for vopimetostat as a monotherapy or in combination in MTAP-deleted pancreatic and lung cancer;
- our ability to commercialize our products, if approved;
- the pricing and reimbursement of our product candidates, if approved;
- the implementation of our business model, and strategic plans for our business and product candidates;
- the scope of protection we are able to establish and maintain for intellectual property rights covering our product candidates and our ability to enforce our intellectual property rights;

- estimates of our future expenses, capital requirements, and our need for additional financing;
- the potential benefits of strategic collaboration agreements, our ability to enter into strategic collaborations or arrangements, and our ability to attract collaborators with development, regulatory and commercialization expertise;
- future agreements with third parties in connection with the commercialization of product candidates (if approved) and any other approved products;
- the size and growth potential of the markets for our product candidates, and our ability to serve those markets;
- our financial performance, including the expectation that we will continue to incur operating losses and negative cash flow;
- the rate and degree of market acceptance of our product candidates, if approved;
- regulatory developments in the United States and foreign countries, including product approval requirements and pricing regulations by U.S. regulatory authorities (such as the Centers for Medicare & Medicaid Services) and foreign regulatory authorities;
- our ability to contract with third-party suppliers and manufacturers and their ability to perform adequately;
- our ability (or the ability of third parties with whom we contract) to produce our products or product candidates with advantages in turnaround times or manufacturing cost;
- our ability to deliver the deep, durable target inhibition—with favorable tolerability and safety profiles—necessary to maximize clinical benefit as a result of the unique ability of synthetic lethal targeting to spare normal cells, as well as the success of competing therapies that are or may become available;
- our ability to attract and retain key scientific or management personnel;
- the impact of laws and regulations;
- developments relating to our competitors and industry;
- the impact of trade restrictions (such as sanctions or tariffs); regulatory requirements, legal actions, or enforcement; inflation rates; and inadequate funding for government agencies on our business, financial condition, and results of operations;
- the effect of public health crises on our business operations, including but not limited to our preclinical studies and clinical trials and any future studies or trials;
- the expected benefits of the use of our drugs in patients as single agents and/or in combination, including our belief that TNG456 has sufficient brain penetrance to potentially have meaningful efficacy in glioblastoma and our expectations regarding future clinical trials, including our belief that the ongoing Phase 1/2 combination study of vopimetostat and RAS(ON) inhibitors has the potential to support a first line pancreatic cancer pivotal study in MTAP-deleted/RAS mutated patients; and
- other risks and uncertainties, including those under the caption “*Risk Factors*.”

The forward-looking statements in this prospectus represent our views as of the date of this prospectus. We anticipate that subsequent events and developments will cause our views to change. However, while we may elect to update these forward-looking statements at some point in the future, we have no current intention of doing so except to the extent required by applicable law. You should therefore not rely on these forward-looking statements as representing our views as of any date subsequent to the date of this prospectus.

We may from time-to-time provide estimates, projections and other information concerning our industry, our financial performance, our business and the markets for our programs, product candidates and collaborations.

Information that is based on estimates, forecasts, projections, market research or similar methodologies is inherently subject to uncertainties and actual events or circumstances may differ materially from events and circumstances that are assumed in this information. Unless otherwise expressly stated, we obtained this industry, business, market, and other data from our own internal estimates and research as well as from reports, research surveys, studies, and similar data prepared by market research firms and other third parties, industry, medical and general publications, government data and similar sources. While we are not aware of any misstatements regarding any third-party information presented in this prospectus, their estimates, in particular, as they relate to projections, involve numerous assumptions, are subject to risks and uncertainties and are subject to change based on various factors. You should read this prospectus, any applicable prospectus supplement and any related free writing prospectus and the documents that we reference therein and have filed with the SEC as exhibits thereto completely and with the understanding that our actual future results may be materially different from any future results expressed or implied by these forward-looking statements. These estimates involve numerous assumptions, are subject to risks and uncertainties and are subject to change based on various factors, including those discussed under "Item 1A: Risk Factors" and elsewhere in our most recent Annual Report on Form 10-K, our subsequent Quarterly Reports on Form 10-Q and our Current Reports on Form 8-K, and the section of any accompanying prospectus supplement entitled "*Risk Factors*."

Overview

Tango Therapeutics was founded with a clear mission: to discover the next wave of targeted therapies in oncology by addressing the specific genetic alterations that drive cancer. We develop new drugs directed at tumor suppressor gene loss in defined patient populations with high unmet medical need. Tumor suppressor gene loss remains a largely unaddressed target space specifically because these genetic events cannot be directly targeted. Our novel small molecules are designed to be selectively active in cancer cells with specific genetic alterations, killing those cancer cells while sparing normal cells. We also are extending this target space beyond the classic, cell-autonomous effects of tumor suppressor gene loss to include the discovery of novel targets that reverse tumor suppressor gene mediated immune evasion which prevents the immune system from recognizing and killing cancer cells. We believe our approach will provide the ability to deliver deep, durable target inhibition with favorable tolerability and safety profiles, thus potentially maximizing clinical benefit.

We are currently developing two methylthioadenosine phosphorylase (MTAP)-deleted selective PRMT5 inhibitors: vopimetostat (TNG462) for non-central nervous system cancers, including pancreatic and lung cancer, and TNG456, our next-generation, brain-penetrant protein arginine methyltransferase 5 (PRMT5) inhibitor, for central nervous system (CNS) cancers, including glioblastoma (GBM).

In October 2025, we reported positive data from the ongoing Phase 1/2 clinical trial of vopimetostat in patients with MTAP-deleted selective cancers, demonstrating clinical activity across multiple cancer types with a favorable safety and tolerability profile to date. The cutoff date for the analysis was September 1, 2025 and included all evaluable patients at active doses (200 mg QD and above). Overall response rates were calculated in all tumor-evaluable patients enrolled more than six months prior to the efficacy analysis. Median progression free survival (mPFS) was calculated in all patients who received a first scan (~8 weeks).

Across all MTAP-deleted tumor types, there were 94 tumor evaluable patients. We observed an ORR (objective response rate) of 27% and mPFS of 6.4 months. In the 29 patients with second line (2L) MTAP-deleted pancreatic cancer, mPFS was 7.2 months. In patients with 2L pancreatic cancer that were enrolled more than 6 months prior to the data cutoff and were tumor evaluable (n=8), the ORR was 25%, more than double that observed in historical chemotherapy studies (~10%), supporting the planned initiation of a pivotal trial in this patient population in 2026. In the histology selective cohort with 37 evaluable late line patients, we observed a 49% ORR and mPFS of 9.1 months. The histology selective cohort excludes pancreatic and lung cancer patients, as those indications were enrolled in separate cohorts and are being developed independently. Sarcoma patients are also excluded from this analysis, as no activity was observed in this indication (ORR 0%), which will not be pursued in future development. As of September 1, 2025, 41 patients with 2L+ lung cancer were enrolled in the Phase 1/2 clinical trial at active doses, 12 of whom were enrolled more than 6 months prior to the analysis. Emerging data from the lung cohort are consistent with expectations, and we anticipate providing a safety and efficacy update in 2026.

Additionally, vopimetostat demonstrated a favorable safety and tolerability profile with no drug-related dose discontinuations and ~8% dose reduction in patients dosed at 250 mg QD as of the data cutoff date. We have FDA agreement on 250 mg QD as the go-forward dose.

In June 2025, the first patient was treated in the combination clinical trial that is evaluating vopimetostat with the RAS(ON) multi-selective inhibitor, daraxonrasib, and RAS(ON) G12D-selective inhibitor, zoldonrasib (Revolution Medicines). In the first cohort in the trial (n=7), both combinations have been well-tolerated to date with exposures in the active range for all compounds and early signs of activity. We believe this ongoing clinical trial has the potential to support a first line pancreatic cancer pivotal study in MTAP-deleted/RAS mutated patients.

In May 2025, the first patient was treated with TNG456 in the dose escalation portion of the Phase 1/2 clinical trial to evaluate the safety, pharmacokinetics, pharmacodynamics and antitumor activity of TNG456 as a

monotherapy. The trial is currently enrolling patients with MTAP-deleted solid tumors, with a focus on GBM. Preclinical data for TNG456 showed favorable potency and MTAP selectivity and sufficient brain penetrance to potentially have meaningful efficacy in GBM.

TNG260 is a first-in-class Co-repressor of Repressor Element-1 Silencing Transcription (CoREST) inhibitor, which in preclinical studies reversed the immune evasion effect of serine-threonine kinase 11 (STK11) loss-of-function mutations. TNG260 had a favorable safety, tolerability and pharmacokinetic profile in dose escalation. In November 2025, we announced that forty-one patients with STK11-mutant, locally advanced or metastatic solid tumors were enrolled in three dose escalation cohorts of the Phase 1/2 clinical trial. 21/41 patients were evaluable at active doses. The maximum tolerated dose (MTD) was 80 mg QD. Patients with checkpoint inhibitor resistant STK11 mutant/KRAS wild-type NSCLC receiving clinically active doses of TNG260 plus pembrolizumab had a mPFS of 27 weeks (n=5), more than double the standard of care PFS of ~10 weeks. There was no evidence of activity in other STK11 mutant cancers. 80 mg QD TNG260 was selected for dose optimization, which is ongoing for patients with advanced STK11 mutant/KRAS wild type NSCLC, representing ~10% of lung adenocarcinoma annually in the US (~10,000 patients).

TNG961 is a development candidate targeting HBS1L in focadhesin (FOCAD)-deleted solid tumors. FOCAD deletion occurs in 20-40% of all MTAP-deleted cancers. FOCAD deletion is common in NSCLC, occurring in ~5% of these patients. 20-40% of cancers with MTAP deletion have a coincident FOCAD deletion on chromosome 9, and cancers with FOCAD deletion are dependent on HBS1L for mRNA processing, thus protein synthesis. By degrading HBS1L and disrupting the HBS1L/PELO complex, TNG961 causes tumor regression in FOCAD-deleted preclinical models of multiple histologies.

The Private Placement

On October 23, 2025, we and a certain accredited investor entered into a Securities Purchase Agreement, or the Purchase Agreement, pursuant to which we agreed to sell and issue and such investor agreed to purchase 1,732,101 shares of common stock at a purchase price of \$8.66 per share, in a private placement transaction, or the Private Placement. The closing of the Private Placement occurred on October 24, 2025. The aggregate gross cash proceeds to the Company for the shares of common stock sold pursuant to the Purchase Agreement, was \$15 million. The purchaser of the Shares is the Selling Stockholder named in this prospectus.

Corporate History and Information

We were formerly known as BCTG Acquisition Corp. (“BCTG”) and were incorporated in Delaware May 2020 as a special purpose acquisition company, formed for the purpose of effecting a merger, capital stock exchange, asset acquisition, stock purchase, reorganization or other similar business combination. On August 10, 2021, we consummated the merger pursuant to the Agreement and Plan of Merger, dated as of April 13, 2021, by and among BCTG, BCTG Merger Sub Inc. and Tango Therapeutics Sub, Inc. Upon the consummation of the merger, we changed our name to Tango Therapeutics, Inc.

Our principal corporate office is located at 201 Brookline Avenue, Suite 901, Boston, MA 02215, and our telephone number is 857-320-4900. Our website address is <https://tangotx.com>. We do not incorporate the information on or accessible through our website into this prospectus, and you should not consider any information on, or that can be accessed through, our website as part of this prospectus.

THE OFFERING

Shares Offered by the Selling Stockholder	1,732,101 shares of our common stock.
Use of Proceeds	We will not receive any of the proceeds from the sale of the Shares covered by this prospectus.
Nasdaq Symbol	TNGX.
Offering Price	The Selling Stockholder may offer the Shares offered by this prospectus 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.
Risk Factors	You should read the “Risk Factors” section of this prospectus for a discussion of factors to consider carefully before deciding to invest in our common stock.

USE OF PROCEEDS

This prospectus relates to the potential resale from time to time of some of or all 1,732,101 Shares. The Selling Stockholder will receive all of the proceeds from any sale of such shares. We will not receive any proceeds from any sales of shares of our common stock by the Selling Stockholder. We have agreed to bear the expenses in connection with the registration of our common stock to be offered by this prospectus by the Selling Stockholder other than any underwriting discounts and commissions relating to the sale of Shares.

DESCRIPTION OF CAPITAL STOCK

The following description of our capital stock is intended as a summary only and therefore is not a complete description of our capital stock. This description is based upon, and is qualified by reference to, our certificate of incorporation, our bylaws, and applicable provisions of Delaware corporate law. You should read our certificate of incorporation and our bylaws, in each case, as amended and supplemented, which are filed as exhibits to the registration statement of which this prospectus forms a part, for the provisions that are important to you.

Authorized and Outstanding Stock

Our certificate of incorporation authorizes the issuance of 410,000,000 shares, consisting of 400,000,000 shares of common stock, \$0.001 par value per share, and 10,000,000 shares of preferred stock, \$0.001 par value, all of which shares of preferred stock are undesignated.

Common Stock

Our certificate of incorporation provides the following with respect to the rights, powers, preferences and privileges of the common stock.

Voting Power. Except as otherwise required by law or as otherwise provided in any certificate of designation for any series of preferred stock, the holders of common stock possess all voting power for the election of Tango's directors and all other matters requiring stockholder action. Holders of common stock are entitled to one vote per share on matters to be voted on by stockholders.

Dividends. Holders of common stock will be entitled to receive such dividends, if any, as may be declared from time to time by our board of directors in its discretion out of funds legally available therefor. In no event will any stock dividends or stock splits or combinations of stock be declared or made on common stock unless the shares of common stock at the time outstanding are treated equally and identically.

Liquidation, Dissolution and Winding Up. In the event of Tango's voluntary or involuntary liquidation, dissolution, distribution of assets or winding-up, the holders of the common stock will be entitled to receive an equal amount per share of all of Tango's assets of whatever kind available for distribution to stockholders, after the rights of the holders of the preferred stock have been satisfied.

Preemptive or Other Rights. Our common stock has no preemptive rights, conversion rights or other subscription rights or redemption or sinking fund provisions.

Listing of Securities

Our common stock is listed on the Nasdaq Global Market under the symbol "TNGX".

Transfer Agent

The transfer agent for our common stock is Computershare Trust Company, N.A.

Preferred stock

Our board of directors will have the authority, without further action by our stockholders, to issue up to 10,000,000 shares of preferred stock in one or more series and to fix the rights, preferences, privileges and restrictions thereof. These rights, preferences and privileges could include dividend rights, conversion rights, voting rights, terms of redemption, liquidation preferences, sinking fund terms and the number of shares constituting, or the designation of, such series, any or all of which may be greater than the rights of common

stock. The issuance of our preferred stock could adversely affect the voting power of holders of common stock and the likelihood that such holders will receive dividend payments and payments upon our liquidation. In addition, the issuance of preferred stock could have the effect of delaying, deferring or preventing a change in control of our company or other corporate action. No shares of convertible preferred stock are outstanding, and we have no present plan to issue any shares of convertible preferred stock.

Registration Rights

Certain of our stockholders (“Holders”) hold registration rights pursuant to an amended and restated registration and stockholder rights agreement (the “Amended and Restated Registration and Stockholder Rights Agreement”). Stockholders holding a majority-in-interest of such registrable securities are entitled to make a written demand for registration under the Securities Act of 1933, as amended (the “Securities Act”), of all or part of their registrable securities.

In particular, the Amended and Restated Registration and Stockholder Rights Agreement provides for the following registration rights:

- *Shelf registration/demand registration rights.* At any time and from time to time when an effective shelf registration statement is on file with the SEC, a Holder may request to sell all or any portion of such Holder’s registrable securities by means of an underwritten takedown off of the shelf registration statement, except that we are only obligated to effect such underwritten shelf takedown if such offering will include registrable securities proposed to be sold by the requesting Holder, either individually or together with other requesting Holders, with a total offering price reasonably expected to exceed, in the aggregate, \$20.0 million. Additionally, we are not required to effect more than one underwritten shelf takedown in any six-month period.
- *Piggyback registration rights.* Subject to exceptions for certain offerings and registration statements, if at any time, we propose to file a registration statement under the Securities Act, in connection with an offering of our equity securities or securities or other obligations exercisable or exchangeable for, or convertible into, our equity securities, either for our own account or for the account of other stockholders, the Holders are entitled to include their registrable securities in such registration statement.
- *Indemnification.* The Amended and Restated Registration and Stockholder Rights Agreement contains customary cross-indemnification provisions, under which we are obligated to indemnify Holders of registrable securities in the event of material misstatements or omissions in the registration statement attributable to us, and Holders of registrable securities are obligated to indemnify us for material misstatements or omissions attributable to them.

Expiration of Registration Rights

The registration rights granted under the Amended and Restated Registration and Stockholder Rights Agreement will terminate on the earlier of (i) the 10th anniversary of the date of the agreement and (ii) with respect to any Holder, on the date that such Holder no longer holds any Registrable Securities.

Anti-Takeover Effects of our Certificate of Incorporation and Bylaws and Delaware Law

Certificate of Incorporation and Bylaws

Our certificate of incorporation and bylaws include a number of provisions that may have the effect of delaying, deferring or preventing another party from acquiring control of us and encouraging persons considering unsolicited tender offers or other unilateral takeover proposals to negotiate with our board of directors rather than pursue non-negotiated takeover attempts. These provisions include the items described below:

- permit our board of directors to issue up to 10,000,000 shares of preferred stock, with any rights, preferences and privileges as they may designate, including the right to approve an acquisition or other change of control;

- provide that the authorized number of directors may be changed only by resolution of our board of directors;
- provide that, subject to the rights of any series of preferred stock to elect directors, directors may be removed only with cause by the holders of at least two thirds (2/3) of all of our then-outstanding shares of the capital stock entitled to vote generally at an election of directors;
- provide that, subject to the rights of any series of preferred stock to fill director vacancies, all director vacancies, including newly created directorships, may, except as otherwise required by law, be filled by the affirmative vote of a majority of directors then in office, even if less than a quorum; provide that stockholders seeking to present proposals before a meeting of stockholders or to nominate candidates for election as directors at a meeting of stockholders must provide advance notice in writing, and also specify requirements as to the form and content of a stockholder's notice;
- provide that special meetings of our stockholders may be called by our board of directors pursuant to a resolution adopted by a majority of the total number of authorized directors;
- provide that our board of directors will be divided into three classes of directors, with the classes to be as nearly equal as possible, and with the directors serving three-year terms, therefore making it more difficult for stockholders to change the composition of our board of directors;
- provide that any amendment of our certificate of incorporation must first be approved by a majority of our board of directors, and if required by law or our certificate of incorporation, must thereafter be approved by a majority of the outstanding shares entitled to vote on the amendment and a majority of the outstanding shares of each class entitled to vote thereon as a class, except that the amendment of the provisions relating to stockholder action, board composition, limitation of liability and certificate of incorporation must be approved by not less than two-thirds of the outstanding shares entitled to vote on the amendment, and not less than two-thirds of the outstanding shares of each class entitled to vote thereon as a class. Our Bylaws may be amended by the affirmative vote of a majority of the directors then in office, subject to any limitations set forth in the bylaws; and may also be amended by the affirmative vote of a majority of the outstanding shares entitled to vote on the amendment; and
- not provide for cumulative voting rights, therefore allowing the holders of a majority of the shares of common stock entitled to vote in any election of directors to elect all of the directors standing for election, if they should so choose.

Delaware Anti-Takeover Law

Tango has opted out of Section 203 of the Delaware General Corporation Law (the "DGCL"). Section 203 of the DGCL prohibits a Delaware corporation from engaging in a "business combination" with an "interested stockholder" (i.e., a stockholder owning 15% or more of company's voting stock) for three years following the time that the "interested stockholder" becomes such, subject to certain exceptions.

Exclusive Jurisdiction of Certain Actions

Our bylaws require, to the fullest extent permitted by law, unless we consent in writing to the selection of an alternative forum, that derivative actions brought in the name of Tango, actions against any current or former directors, officers and employees for breach of fiduciary duty, actions asserting a claim arising pursuant to any provision of the DGCL or our certificate of incorporation or our bylaws, actions to interpret, apply, enforce or determine the validity of our certificate of incorporation or our bylaws and actions asserting a claim governed by the internal affairs doctrine may be brought only in the Court of Chancery in the State of Delaware (the "Delaware Forum Provision"). The Delaware Forum Provision will not apply to any causes of action arising under the Securities Act and the Securities Exchange Act of 1934. Our bylaws further provide that unless we consent in writing to the selection of an alternative forum, the federal district courts of the United States shall be the sole and exclusive forum for resolving any complaint asserting a cause of action arising under the Securities

Act. We refer to such provision as the Federal Forum Provision. Our bylaws provide that any person or entity purchasing or otherwise acquiring any interest in shares of our capital stock is deemed to have notice of and consented to the Delaware Forum Provision and the Federal Forum Provision; provided, however, that stockholders cannot and will not be deemed to have waived our compliance with the U.S. federal securities laws and the rules and regulations thereunder. Any person or entity purchasing or otherwise acquiring any interest in shares of capital stock of Tango shall be deemed to have notice of and consented to this choice of forum provision.

SELLING STOCKHOLDER

The common stock being offered by the Selling Stockholder are those previously issued to the Selling Stockholder. The Selling Stockholder acquired these shares from us in a private offering pursuant to an exemption from registration afforded by Section 4(a)(2) of the Securities Act and/or Regulation D promulgated thereunder.

The information presented regarding the Selling Stockholder is based, in part, on information the Selling Stockholder provided to us specifically for use in this prospectus. The Selling Stockholder may sell all, some or none of their shares in this offering. See “Plan of Distribution.” We may supplement this prospectus from time to time in the future to update or change the Selling Stockholder list and the number of Shares that may be offered and sold by the Selling Stockholder. The registration for resale of the Shares does not necessarily mean that the Selling Stockholder will sell all or any of these shares. In addition, the Selling Stockholder may have sold, transferred or otherwise disposed of, or may sell, transfer or otherwise dispose of, at any time and from time to time, Shares in transactions exempt from the registration requirements of the Securities Act, after the date on which it provided the information set forth in the table below.

This prospectus covers the resale or other disposition by the Selling Stockholder or their transferees of up to the total number of Shares issued to the Selling Stockholder pursuant to the Purchase Agreement. Throughout this prospectus, when we refer to the Selling Stockholder, we are referring to the purchaser under the Purchase Agreement and, as applicable, any donees, pledgees, assignees, transferees or other successors-in-interest selling the Shares received after the date of this prospectus from the Selling Stockholder as a gift, pledge, or other non-sale related transfer.

Beneficial ownership for the purposes of the table below is determined in accordance with the rules and regulations of the SEC. These rules generally provide that a person is the beneficial owner of securities if such person has or shares the power to vote or direct the voting thereof, or to dispose or direct the disposition thereof or has the right to acquire such powers within 60 days. Unless otherwise indicated below, to our knowledge, the persons and entities named in the tables have sole voting and sole investment power with respect to all securities that they beneficially own, subject to community property laws where applicable.

The following table sets forth, as of the date of this prospectus, the name of the Selling Stockholder, the aggregate number of shares of common stock beneficially owned thereby, the aggregate number of Shares that the Selling Stockholder may offer pursuant to this prospectus and the number of shares of common stock beneficially owned by the Selling Stockholder after the sale of the Shares offered hereby. Because the Selling Stockholder is not obligated to sell the Shares, we cannot estimate the amount of shares of common stock that the Selling Stockholder will hold upon consummation of any such sales. For purposes of the following table, we have assumed the sale of all Shares that may be offered for sale pursuant to this prospectus. Percentage of beneficial ownership is based on 134,677,094 common shares outstanding as of November 1, 2025. Pursuant to Rule 416 under the Securities Act, the prospectus also covers any additional shares of common stock that may become issuable in connection with the Shares by reason of a share dividend, share split or similar transaction.

Name of Selling Stockholder	Shares Beneficially Owned Before the Offering		Number of Shares that May be Offered Hereby	Shares Beneficially Owned After the Offering	
	Number	Percentage		Number	Percentage
NEXTECH CROSSOVER I SCP (1)	7,266,081	5.40%	1,732,101	5,533,980	4.11%

- (1) The shares reported under “Shares Beneficially Owned Before the Offering”, consist of 7,266,081 Common Stock held by Nextech Crossover I SCSp (“Nextech”), Nextech Crossover I GP S. à r.l. (“Nextech S. à r.l.”), Ian Charoub, Costas Constantinides and Rocco Sgobbo (collectively with Nextech and Nextech S. à r.l., the “Nextech Entities”). The shares reported under “Number of Shares that May be Offered Hereby” consist of 1,732,101 Common Stock held by Nextech. The general partner of Nextech is Nextech S. à r.l. Ian Charoub, Costas Constantinides and Rocco Sgobbo are members of the board of managers of Nextech S. à r.l. and share voting and dispositive power over the shares held by Nextech, and may be deemed to own beneficially the shares held by Nextech. The address for the Nextech Entities is 8, rue Lou Hemmer, L-1748 Senningerberg, Grand-Duché de Luxembourg.

MATERIAL UNITED STATES FEDERAL INCOME TAX CONSIDERATIONS

The following is a general discussion of certain material U.S. federal income tax consequences of the acquisition, ownership and disposition of our shares of common stock, which we refer to as our securities. This discussion applies only to securities that are held as capital assets within the meaning of Section 1221 of the Internal Revenue Code of 1986, as amended (the "Code") for U.S. federal income tax purposes and is applicable only to holders who are receiving our securities in this offering.

This discussion is a summary only and does not describe all of the tax consequences that may be relevant to you in light of your particular circumstances, including but not limited to the alternative minimum tax, the Medicare tax on certain investment income and the different consequences that may apply if you are subject to special rules that apply to certain types of investors (such as the effects of Section 451 of the Code), including but not limited to:

- financial institutions or financial services entities;
- broker-dealers;
- mutual funds;
- retirement plans, individual retirement accounts or other tax-deferred accounts;
- governments or agencies or instrumentalities thereof;
- regulated investment companies;
- pension plans;
- "controlled foreign corporations," "passive foreign investment companies," and corporations that accumulate earnings to avoid U.S. federal income tax;
- real estate investment trusts;
- expatriates or former long-term residents of the United States;
- persons that actually or constructively own five percent or more of our voting shares;
- insurance companies;
- dealers or traders subject to a mark-to-market method of accounting with respect to the securities;
- persons holding the securities as part of a "straddle," hedge, integrated transaction or similar transaction;
- U.S. holders (as defined below) whose functional currency is not the U.S. dollar;
- persons subject to alternative minimum tax;
- partnerships or other pass-through entities for U.S. federal income tax purposes and any beneficial owners of such entities; and
- tax-exempt entities.

This discussion is based on the Code, and administrative pronouncements, judicial decisions and final, temporary and proposed Treasury regulations as of the date hereof, which are subject to change, possibly on a retroactive basis, and changes to any of which subsequent to the date of this prospectus may affect the tax consequences described herein. This discussion does not address any aspect of state, local or non-U.S. taxation, or any U.S. federal taxes other than income taxes (such as gift and estate taxes).

We have not sought, and will not seek, a ruling from the IRS as to any U.S. federal income tax consequence described herein. The IRS may disagree with the discussion herein, and its determination may be upheld by a

court. Moreover, there can be no assurance that future legislation, regulations, administrative rulings or court decisions will not adversely affect the accuracy of the statements in this discussion. You are urged to consult your tax advisor with respect to the application of U.S. federal tax laws to your particular situation, as well as any tax consequences arising under the laws of any state, local or foreign jurisdiction.

This discussion does not consider the tax treatment of partnerships or other pass-through entities or persons who hold our securities through such entities. If a partnership (or other entity or arrangement classified as a partnership or other pass-through entity for United States federal income tax purposes) is the beneficial owner of our securities, the United States federal income tax treatment of a partner or member in the partnership or other pass-through entity generally will depend on the status of the partner or member and the activities of the partnership or other pass-through entity. If you are a partner or member of a partnership or other pass-through entity holding our securities, we urge you to consult your own tax advisor.

THIS DISCUSSION IS ONLY A SUMMARY OF CERTAIN UNITED STATES FEDERAL INCOME TAX CONSIDERATIONS ASSOCIATED WITH THE ACQUISITION, OWNERSHIP AND DISPOSITION OF OUR SECURITIES. EACH PROSPECTIVE INVESTOR IN OUR SECURITIES IS URGED TO CONSULT ITS OWN TAX ADVISOR WITH RESPECT TO THE PARTICULAR TAX CONSEQUENCES TO SUCH INVESTOR OF THE ACQUISITION, OWNERSHIP AND DISPOSITION OF OUR SECURITIES, INCLUDING THE APPLICABILITY AND EFFECT OF ANY UNITED STATES FEDERAL NON-INCOME, STATE, LOCAL, AND NON-U.S. TAX LAWS.

U.S. Holders

This section applies to you if you are a “U.S. holder.” A U.S. holder is a beneficial owner of our shares of common stock who or that is, for U.S. federal income tax purposes:

- an individual who is a citizen or resident of the United States;
- a corporation (or other entity taxable as a corporation) organized in or under the laws of the United States, any state thereof or the District of Columbia; or
- an estate the income of which is includible in gross income for U.S. federal income tax purposes regardless of its source; or
- a trust, if (i) a court within the United States is able to exercise primary supervision over the administration of the trust and one or more U.S. persons (as defined in the Code) have authority to control all substantial decisions of the trust or (ii) it has a valid election in effect under Treasury Regulations to be treated as a U.S. person.

Taxation of Distributions. If we pay distributions in cash or other property (other than certain distributions of our stock or rights to acquire our stock) to U.S. holders of shares of our common stock, such distributions generally 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. Distributions in excess of current and accumulated earnings and profits will constitute a return of capital that will be applied against and reduce (but not below zero) the U.S. holder’s adjusted tax basis in our common stock. Any remaining excess will be treated as gain realized on the sale or other disposition of the common stock and will be treated as described under “U.S. Holders—Gain or Loss on Sale, Taxable Exchange or Other Taxable Disposition of common stock” below.

Dividends we pay to a U.S. holder that is a taxable corporation generally will qualify for the dividends received deduction if the requisite holding period is satisfied. With certain exceptions (including, but not limited to, dividends treated as investment income for purposes of investment interest deduction limitations), and provided certain holding period requirements are met, dividends we pay to a non-corporate U.S. holder may constitute “qualified dividend income” that will be subject to tax at the maximum tax rate accorded to long-term capital

gains. If the holding period requirements are not satisfied, then a corporation may not be able to qualify for the dividends received deduction and would have taxable income equal to the entire dividend amount, and non-corporate holders may be subject to tax on such dividend at regular ordinary income tax rates instead of the preferential rate that applies to qualified dividend income.

Gain or Loss on Sale, Taxable Exchange or Other Taxable Disposition of common stock. Upon a sale or other taxable disposition of our common stock, a U.S. holder generally will recognize capital gain or loss in an amount equal to the difference between the amount realized and the U.S. holder's adjusted tax basis in the common stock. Any such capital gain or loss generally will be long-term capital gain or loss if the U.S. holder's holding period for the common stock so disposed of exceeds one year. If the holding period requirements are not satisfied, any gain on a sale or taxable disposition of the shares would be subject to short-term capital gain treatment and would be taxed at regular ordinary income tax rates. Long-term capital gains recognized by non-corporate U.S. holders will be eligible to be taxed at reduced rates. The deductibility of capital losses is subject to limitations.

Generally, the amount of gain or loss recognized by a U.S. holder is an amount equal to the difference between (i) the sum of the amount of cash and the fair market value of any property received in such disposition and (ii) the U.S. holder's adjusted tax basis in its common stock so disposed of. A U.S. holder's adjusted tax basis in its common stock generally will equal the U.S. holder's acquisition cost for the common stock or less, in the case of a share of common stock, any prior distributions treated as a return of capital. In the case of any shares of common stock originally acquired as part of an investment unit, the acquisition cost for the share of common stock that were part of such unit would equal an allocable portion of the acquisition cost of the unit based on the relative fair market values of the components of the unit at the time of acquisition.

Information Reporting and Backup Withholding. In general, information reporting requirements may apply to distributions paid or deemed paid to a U.S. holder and to the proceeds of the sale or other disposition of our shares of common stock, unless the U.S. holder is an exempt recipient, regardless of whether any tax was actually withheld. Backup withholding (currently at a 24% rate) may apply to such payments if the U.S. holder fails to provide a taxpayer identification number, a certification of exempt status or has been notified by the IRS that it is subject to backup withholding (and such notification has not been withdrawn).

Backup withholding is not an additional tax. Any amounts withheld under the backup withholding rules generally should be allowed as a refund or a credit against a U.S. holder's U.S. federal income tax liability provided the required information is timely furnished to the IRS.

Non-U.S. Holders

This section applies to you if you are a "Non-U.S. holder." As used herein, the term "Non-U.S. holder" means a beneficial owner of our common stock who or that is for U.S. federal income tax purposes:

- a non-resident alien individual (other than certain former citizens and residents of the U.S. subject to U.S. tax as expatriates);
- a foreign corporation or
- an estate or trust that is not a U.S. holder;

but generally does not include an individual who is present in the United States for 183 days or more in the taxable year of disposition. If you are such an individual, you should consult your tax advisor regarding the U.S. federal income tax consequences of the acquisition, ownership or sale or other disposition of our securities.

Taxation of Distributions. In general, any distributions we make to a Non-U.S. holder of shares of our common stock, to the extent paid out of our current or accumulated earnings and profits (as determined under U.S. federal

income tax principles), will constitute dividends for U.S. federal income tax purposes and, provided such dividends are not effectively connected with the Non-U.S. holder's conduct of a trade or business within the United States (or, if required by an applicable income tax treaty, attributable to a U.S. permanent establishment or fixed base maintained by such non-U.S. holder in the United States), we (or any applicable withholding agent) will be required to withhold tax from the gross amount of the dividend at a rate of 30%, unless such Non-U.S. holder is eligible for a reduced rate of withholding tax under an applicable income tax treaty and provides proper certification of its eligibility for such reduced rate (usually on an IRS Form W-8BEN or W-8BEN-E, as applicable). Any distribution not constituting a dividend will be treated first as reducing (but not below zero) the Non-U.S. holder's adjusted tax basis in its shares of our common stock and, to the extent such distribution exceeds the Non-U.S. holder's adjusted tax basis, as gain realized from the sale or other disposition of the common stock, which will be treated as described under "Non-U.S. Holders—Gain on Sale, Taxable Exchange or Other Taxable Disposition of common stock" below. If we are unable to determine, at a time reasonably close to the date of payment of a distribution on our common stock, what portion, if any, of the distribution will constitute a dividend, then we may withhold U.S. federal income tax on the basis of assuming that the full amount of the distribution will be a dividend. If we or another withholding agent apply over-withholding, a non-U.S. holder may be entitled to a refund or credit of any excess tax withheld by timely filing an appropriate claim with the IRS.

The withholding tax does not apply to dividends paid to a Non-U.S. holder who provides a Form W-8ECI, certifying that the dividends are effectively connected with the Non-U.S. holder's conduct of a trade or business within the United States (and, if a tax treaty applies, are attributable to a permanent establishment or fixed base maintained by the non-U.S. holder in the United States). Instead, the effectively connected dividends will be subject to regular U.S. income tax as if the Non-U.S. holder were a U.S. resident, subject to an applicable income tax treaty providing otherwise. A Non-U.S. corporation receiving effectively connected dividends may also be subject to an additional "branch profits tax" imposed at a rate of 30% (or a lower treaty rate).

Any documentation provided to an applicable withholding agent may need to be updated in certain circumstances. The certification requirements described above also may require a non-U.S. holder to provide its U.S. taxpayer identification number.

Gain on Sale, Taxable Exchange or Other Taxable Disposition of common stock. A Non-U.S. holder generally will not be subject to U.S. federal income or withholding tax in respect of gain recognized on a sale, taxable exchange or other taxable disposition of our common stock, unless:

- the gain is effectively connected with the conduct of a trade or business by the Non-U.S. holder within the United States (and, under certain income tax treaties, is attributable to a United States permanent establishment or fixed base maintained by the Non-U.S. holder);
- the non-U.S. holder is a nonresident alien individual who is present in the United States for a period or periods aggregating 183 days or more in the taxable year of the disposition and certain other conditions are met; or
- we are or have been a "U.S. real property holding corporation" for U.S. federal income tax purposes at any time during the shorter of the five-year period ending on the date of disposition or the period that the Non-U.S. holder held our common stock, and, in the case where shares of our common stock are regularly traded on an established securities market, the Non-U.S. holder has owned, directly or constructively, more than 5% of our common stock at any time within the shorter of the five-year period preceding the disposition or such Non-U.S. holder's holding period for the shares of our common stock. There can be no assurance that our common stock will be treated as regularly traded on an established securities market for this purpose. Generally, a corporation is a U.S. real property holding corporation if the fair market value of its U.S. real property interests, as defined in the Code and applicable U.S. Treasury Regulations, equals or exceeds 50% of the sum of the fair market value of its worldwide real property interests plus its other assets used or held for use in a trade or business.

Although there can be no assurance, we do not believe that we are, or have been, a U.S. real property holding corporation for U.S. federal income tax purposes, or that we are likely to become one in the future.

Unless an applicable treaty provides otherwise, gain described in the first bullet point above will be subject to tax at generally applicable U.S. federal income tax rates as if the Non-U.S. holder were a U.S. resident. Any gains described in the first bullet point above of a Non-U.S. holder that is a foreign corporation may also be subject to an additional "branch profits tax" at a 30% rate (or lower treaty rate).

If the second bullet point applies to a non-U.S. holder, such non-U.S. holder will be subject to a 30% tax (or such lower rate as may be specified by an applicable income tax treaty) on the amount by which the non-U.S. holder's capital gains allocable to U.S. sources exceed capital losses allocable to U.S. sources during the taxable year of the disposition (without taking into account any capital loss carryovers), provided the Non-U.S. holder has timely filed U.S. federal income tax returns with respect to such losses.

If the third bullet point above applies to a Non-U.S. holder, gain recognized by such holder on the sale, exchange or other disposition of our common stock will be subject to tax at generally applicable U.S. federal income tax rates.

Information Reporting and Backup Withholding. Information returns will be filed with the IRS in connection with payments of distributions and the proceeds from a sale or other disposition of our shares of common stock. A Non-U.S. holder may have to comply with certification procedures to establish that it is not a United States person in order to avoid information reporting and backup withholding requirements. The certification procedures required to claim a reduced rate of withholding under a treaty will satisfy the certification requirements necessary to avoid the backup withholding as well. The amount of any backup withholding from a payment to a Non-U.S. holder will be allowed as a credit against such holder's U.S. federal income tax liability and may entitle such holder to a refund, provided that the required information is timely furnished to the IRS.

FATCA Withholding Taxes. Provisions in Sections 1471 through 1474 of the Code and the Treasury Regulations and administrative guidance promulgated there under commonly referred to as "FATCA" impose withholding of 30% on payments of dividends (including constructive dividends) on our common stock to "foreign financial institutions" (which is broadly defined for this purpose and in general includes investment vehicles) and certain other Non-U.S. entities unless various U.S. information reporting and due diligence requirements (generally relating to ownership by U.S. persons of interests in or accounts with those entities) have been satisfied by, or an exemption applies to, the payee (typically certified as to by the delivery of a properly completed IRS Form W-8BEN or W-8BEN-E). Foreign financial institutions located in jurisdictions that have an intergovernmental agreement with the United States governing FATCA may be subject to different rules. Under certain circumstances, a Non-U.S. holder might be eligible for refunds or credits of such withholding taxes, and a Non-U.S. holder might be required to file a U.S. federal income tax return to claim such refunds or credits. Prospective investors should consult their tax advisers regarding the effects of FATCA on their investment in our securities.

The preceding discussion of material U.S. federal tax considerations is for general information only. It is not tax advice. You should consult your own tax advisors regarding the particular U.S. federal, state, local and non-U.S. tax consequences of purchasing, holding and disposing of our common stock, including the consequences of any proposed changes in applicable laws.

PLAN OF DISTRIBUTION

The Selling Stockholder of the securities and any of its pledgees, assignees and successors-in-interest may, from time to time, sell any or all of their securities covered hereby on the principal trading market or any other stock exchange, market or trading facility on which the securities are traded or in private transactions. These sales may be at fixed or negotiated prices. The Selling Stockholder may use any one or more of the following methods when selling securities:

- ordinary brokerage transactions and transactions in which the broker dealer solicits purchasers;
- block trades in which the broker dealer will attempt to sell the securities as agent but may position and resell a portion of the block as principal to facilitate the transaction;
- purchases by a broker dealer as principal and resale by the broker dealer for its account;
- an exchange distribution in accordance with the rules of the applicable exchange;
- privately negotiated transactions;
- settlement of short sales;
- in transactions through broker dealers that agree with the Selling Stockholder to sell a specified number of such securities at a stipulated price per security;
- through the writing or settlement of options or other hedging transactions, whether through an options exchange or otherwise;
- a combination of any such methods of sale; or
- any other method permitted pursuant to applicable law.

The Selling Stockholder may also sell securities under Rule 144 or any other exemption from registration under the Securities Act, if available, rather than under this prospectus.

Broker-dealers engaged by the Selling Stockholder may arrange for other brokers dealers to participate in sales. Broker-dealers may receive commissions or discounts from the Selling Stockholder (or, if any broker dealer acts as agent for the purchaser of securities, from the purchaser) in amounts to be negotiated, but, except as set forth in a supplement to this prospectus, in the case of an agency transaction not in excess of a customary brokerage commission in compliance with FINRA Rule 2121.

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

The Selling Stockholder may, from time to time, pledge or grant a security interest in some or all of the shares of common stock owned by it 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 pursuant to this prospectus or any amendment to this prospectus under Rule 424(b)(3) or other applicable provision of the Securities Act of 1933, as amended, amending, if necessary, the list of Selling Stockholder to include the pledgee, transferee or other successors in interest as Selling Stockholder under this prospectus. The Selling Stockholder also may transfer and donate the shares of common stock in other circumstances in which case the transferees, donees, pledgees or other successors in interest will be the selling beneficial owners for purposes of this prospectus.

Any broker-dealers or agents that are involved in selling the securities may be deemed to be “underwriters” within the meaning of the Securities Act in connection with such sales. In such event, any commissions received by such broker-dealers or agents and any profit on the resale of the securities purchased by them may be deemed to be underwriting commissions or discounts under the Securities Act. Each Selling Stockholder has informed the Company that it does not have any written or oral agreement or understanding, directly or indirectly, with any person to distribute the securities.

We will pay all expenses of the registration of the shares of common stock pursuant to the Purchase Agreement, including, without limitation, SEC filing fees and expenses of compliance with state securities or “blue sky” laws; provided, however, that the Selling Stockholder will pay all underwriting discounts and selling commissions, if any and any related legal expenses incurred by it. We have agreed to indemnify the Selling Stockholder against certain losses, claims, damages and liabilities, including liabilities under the Securities Act, or the Selling Stockholder will be entitled to contribution.

We agreed to keep this prospectus effective continuously effective under the Securities Act until the earliest of (i) the third (3rd) anniversary of the effective date of the registration statement, (ii) such time as all of the Shares have been sold pursuant to the registration statement, or (iii) such time as the Shares become eligible for resale by non-affiliates without any volume limitations or other restrictions pursuant to Rule 144 under the Securities Act. The resale securities will be sold only through registered or licensed brokers or dealers if required under applicable state securities laws. In addition, in certain states, the resale securities covered hereby may not be sold unless they have been registered or qualified for sale in the applicable state or an exemption from the registration or qualification requirement is available and is complied with.

Under applicable rules and regulations under the Exchange Act, any person engaged in the distribution of the resale securities may not simultaneously engage in market making activities with respect to the common stock for the applicable restricted period, as defined in Regulation M, prior to the commencement of the distribution. In addition, the Selling Stockholder will be subject to applicable provisions of the Exchange Act and the rules and regulations thereunder, including Regulation M, which may limit the timing of purchases and sales of the common stock by the Selling Stockholder or any other person. We will make copies of this prospectus available to the Selling Stockholder and have informed it of the need to deliver a copy of this prospectus to each purchaser at or prior to the time of the sale (including by compliance with Rule 172 under the Securities Act).

LEGAL MATTERS

The validity of the Shares being offered by this prospectus has been passed upon by Goodwin Procter LLP, Boston, Massachusetts.

EXPERTS

The financial statements and management's assessment of the effectiveness of internal control over financial reporting (which is included in Management's Report on Internal Control Over Financial Reporting) 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 emphasis of matter paragraph relating to the Company's incurrence of significant operating losses and expectation to continue generating operating losses and negative cash flows from operations for the foreseeable future as described in Note 1 to the financial statements) of PricewaterhouseCoopers LLP, an independent registered public accounting firm, given on the authority of said firm as experts in auditing and accounting.

WHERE YOU CAN FIND MORE INFORMATION

We file annual, quarterly and current 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 www.sec.gov and on our investor website at <https://ir.tangotx.com/>. Our website is not a part of this prospectus and is not incorporated by reference in this prospectus.

This prospectus is part of a registration statement on Form S-3 we filed with the SEC. This prospectus omits some information contained in the registration statement in accordance with SEC rules and regulations. You should review the information and exhibits in the registration statement for further information about us and our consolidated subsidiaries and the securities we are offering. Statements in this prospectus concerning any document we filed as an exhibit to the registration statement or that we otherwise filed with the SEC are not intended to be comprehensive and are qualified by reference to these filings. You should review the complete document to evaluate these statements.

INCORPORATION BY REFERENCE

The SEC allows us to incorporate by reference much of the information we file with the SEC, which means that we can disclose important information to you by referring you to those publicly available documents. The information that we incorporate by reference in this prospectus is considered to be part of this prospectus. 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. This prospectus incorporates by reference the documents listed below and any future filings we make with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934, as amended (the "Exchange Act") (in each case, other than those documents or the portions of those documents not deemed to be filed) between the date of the initial registration statement and the effectiveness of the registration statement and following the effectiveness of the registration statement until the offering of the securities under the registration statement is terminated or completed:

- Annual Report on Form 10-K for the fiscal year ended [December 31, 2024](#) filed with the SEC on February 27, 2025;
- The information specifically incorporated by reference into our Annual Report on Form 10-K for the year ended [December 31, 2024](#) from our amended definitive proxy statement on Schedule 14A (other than information furnished rather than filed) filed with the SEC on [April 21, 2025](#);
- Quarterly Reports on Form 10-Q for the quarters ended [March 31, 2025](#), [June 30, 2025](#) and [September 30, 2025](#), filed with the SEC on May 12, 2025, August 5, 2025 and November 4, 2025 respectively;
- Current Reports on Form 8-K filed with the SEC on [June 6, 2025](#), [August 25, 2025](#), [October 23, 2025](#), [October 24, 2025](#), but only to the extent that such information is filed, not furnished; and
- The description of our common stock contained in our Registration Statement on Form 8-A filed on [September 2, 2020](#), including any amendments or reports filed for the purpose of updating such description.

This prospectus is part of a registration statement we filed with the SEC. We have incorporated exhibits into this registration statement. You should read the exhibits carefully for provisions that may be important to you.

In addition, all reports and other documents filed by us pursuant to the Exchange Act after the date of the initial registration statement and prior to effectiveness of the registration statement shall be deemed to be incorporated by reference into this prospectus.

Notwithstanding the foregoing, unless specifically stated to the contrary, information that we furnish (and that is not deemed "filed" with the SEC) under Items 2.02 and 7.01 of any Current Report on Form 8-K, including the related exhibits under Item 9.01, is not incorporated by reference into this prospectus or the registration statement of which this prospectus is a part.

You may request a copy of these filings, at no cost, by writing or telephoning us at the following address or telephone number:

201 Brookline Avenue, Suite 901
Boston, MA 02215
Attn: Corporate Secretary
(857) 320-4900

1,732,101 Shares

Tango Therapeutics, Inc.

Common Stock

PROSPECTUS

, 2025

PART II
INFORMATION NOT REQUIRED IN PROSPECTUS

Item 14. Other Expenses of Issuance and Distribution.

The following table sets forth the various expenses to be incurred in connection with the sale and distribution of the securities being registered. All amounts shown are estimates except the SEC registration fee.

SEC registration fee	\$ 1,908.84
Legal fees and expenses	\$ 100,000.00
Accountant's fees and expenses	*
Miscellaneous fees and expenses	*
Total expenses	\$ 101,908.84

Item 15. Indemnification of Directors and Officers.

Section 145 of the Delaware General Corporation Law ("DGCL"), authorizes a corporation to indemnify its directors and officers against liabilities arising out of actions, suits and proceedings to which they are made or threatened to be made a party by reason of the fact that they have served or are currently serving as a director or officer to a corporation. The indemnity may cover expenses (including attorneys' fees) judgments, fines and amounts paid in settlement actually and reasonably incurred by the director or officer in connection with any such action, suit or proceeding. Section 145 permits corporations to pay expenses (including attorneys' fees) incurred by directors and officers in advance of the final disposition of such action, suit or proceeding. In addition, Section 145 provides that a corporation has the power to purchase and maintain insurance on behalf of its directors and officers against any liability asserted against them and incurred by them in their capacity as a director or officer, or arising out of their status as such, whether or not the corporation would have the power to indemnify the director or officer against such liability under Section 145.

We have adopted provisions in our certificate of incorporation and bylaws that limit or eliminate the personal liability of our directors to the fullest extent permitted by the DGCL, as it now exists or may in the future be amended. Consequently, a director will not be personally liable to us or our stockholders for monetary damages or breach of fiduciary duty as a director, except for liability for:

- any breach of the director's duty of loyalty to us or our stockholders;
- any act or omission not in good faith or that involves intentional misconduct or a knowing violation of law;
- any unlawful payments related to dividends or unlawful stock purchases, redemptions or other distributions; or
- any transaction from which the director derived an improper personal benefit.

These limitations of liability do not alter director liability under the federal securities laws and do not affect the availability of equitable remedies such as an injunction or rescission.

In addition, our bylaws provide that:

- we will indemnify our directors, officers and, in the discretion of our board of directors, certain employees to the fullest extent permitted by the DGCL, as it now exists or may in the future be amended; and
- we will advance reasonable expenses, including attorneys' fees, to our directors and, in the discretion of our board of directors, to our officers and certain employees, in connection with legal proceedings relating to their service for or on behalf of us, subject to limited exceptions.

We have entered into indemnification agreements with each of our directors and executive officers. These agreements provide that we will indemnify each of our directors, our executive officers and, at times, their affiliates to the fullest extent permitted by Delaware law. We will advance expenses, including attorneys' fees (but excluding judgments, fines and settlement amounts), to each indemnified director, executive officer or affiliate in connection with any proceeding in which indemnification is available and we will indemnify our directors and officers for any action or proceeding arising out of that person's services as a director or officer brought on behalf of us or in furtherance of our rights. Additionally, certain of our directors or officers may have certain rights to indemnification, advancement of expenses or insurance provided by their affiliates or other third parties, which indemnification relates to and might apply to the same proceedings arising out of such director's or officer's services as a director referenced herein. Nonetheless, we have agreed in the indemnification agreements that our obligations to those same directors or officers are primary and any obligation of such affiliates or other third parties to advance expenses or to provide indemnification for the expenses or liabilities incurred by those directors are secondary.

We also maintain general liability insurance which covers certain liabilities of our directors and officers arising out of claims based on acts or omissions in their capacities as directors or officers, including liabilities under the Securities Act of 1933, as amended (the "Securities Act").

Item 16. Exhibits.

EXHIBIT INDEX

EXHIBIT NO.	DESCRIPTION
3.1	Second Amended and Restated Certificate of Incorporation of Tango Therapeutics, Inc., as amended (incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 10-Q filed with the SEC on August 7, 2024).
3.2	Amended and Restated Bylaws of Tango Therapeutics, Inc. (incorporated by reference to Exhibit 4.2 to the Registrant's registration statement on Form S-8 filed with the SEC on October 14, 2021).
3.3	Certificate of Amendment to the Second Amended and Restated Certificate of Incorporation of the Registrant (incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K filed with the SEC on June 6, 2025).
5.1	Opinion of Goodwin Procter LLP
23.1	Consent of PricewaterhouseCoopers LLP, independent registered public accounting firm
23.2	Consent of Goodwin Procter LLP (included in Exhibit 5.1)
24	Power of Attorney (included in the signature pages to the Registration Statement)
107	Filing Fee Table

Item 17. Undertakings.

The undersigned Registrant hereby undertakes:

(a)

(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, as amended (the "Securities Act");

(ii) to reflect in the prospectus any facts or events arising after the effective date of this 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 this 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 percent change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement; and

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

provided, however, that paragraphs (a)(1)(i), (a)(1)(ii) and (a)(1)(iii) 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, as amended (the "Exchange Act"), that are incorporated by reference in this registration statement, or is contained in a form of prospectus filed pursuant to Rule 424(b) that is part of this registration statement.

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

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

(4) That, for the purpose of determining liability under the Securities Act to any purchaser:

(i) each prospectus filed by the Registrant pursuant to Rule 424(b)(3) shall be deemed to be part of the registration statement as of the date the filed prospectus was deemed part of and included in the registration statement; and

(ii) each prospectus required to be filed pursuant to Rule 424(b)(2), (b)(5), or (b)(7) as part of a registration statement in reliance on Rule 430B relating to an offering made pursuant to Rule 415(a)(1)(i), (vii) or (x) for the purpose of providing the information required by Section 10(a) of the Securities Act shall be deemed to be part of and included in the registration statement as of the earlier of the date such form of prospectus is first used after effectiveness or the date of the first contract of sale of securities in the offering described in the prospectus. As provided in Rule 430B, for liability purposes of the issuer and any person that is at that date an underwriter, such date shall be deemed to be a new effective date of the registration statement relating to the securities in the registration statement to which that prospectus relates, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof; *provided, however*, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such effective date, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such effective date.

(5) That, for the purpose of determining liability of the Registrant under the Securities Act to any purchaser in the initial distribution of the securities, the undersigned Registrant undertakes that in a primary offering of securities of such undersigned Registrant pursuant to this registration statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, such undersigned Registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:

(i) any preliminary prospectus or prospectus of such undersigned Registrant relating to the offering required to be filed pursuant to Rule 424;

- (ii) any free writing prospectus relating to the offering prepared by or on behalf of such undersigned Registrant or used or referred to by such undersigned Registrant;
- (iii) the portion of any other free writing prospectus relating to the offering containing material information about such undersigned Registrant or its securities provided by or on behalf of such undersigned Registrant; and
- (iv) any other communication that is an offer in the offering made by such undersigned Registrant to the purchaser.
- (6) That, for purposes of determining any liability under the Securities Act, each filing of the Registrant's annual report pursuant to Section 13(a) or 15(d) of the Exchange Act (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Exchange Act) that is incorporated by reference in this 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;
- (7) Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the Registrant pursuant to the indemnification provisions described herein, or otherwise, the Registrant has been advised that in the opinion of the SEC such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the Registrant of expenses incurred or paid by a director, officer or controlling person of the Registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the Registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue; and
- (8) To file an application for the purpose of determining the eligibility of the trustee to act under subsection (a) of Section 310 of the Trust Indenture Act of 1939 in accordance with the rules and regulations prescribed by the SEC under Section 305(b)(2) of the Trust Indenture Act of 1939.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, as amended, 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 City of Boston, Commonwealth of Massachusetts, on this 21st day of November, 2025.

TANGO THERAPEUTICS, INC.

By: /s/ Barbara Weber
Barbara Weber, MD
President and Chief Executive Officer

POWER OF ATTORNEY

KNOW ALL BY THESE PRESENT, that each individual whose signature appears below hereby constitutes and appoints Barbara Weber and Daniella Beckman, and each of them, with full power of substitution and resubstitution and full power to act without the other, as such person's true and lawful attorney-in-fact and agent with full power of substitution and resubstitution, for such person in such person's name, place and stead, in any and all capacities, to sign any and all amendments (including, without limitation, post-effective amendments) to this Registration Statement on Form S-3 or any registration statement for the same offering that is to be effective upon filing pursuant to Rule 462(b) under the Securities Act of 1933, and to file the same, with all exhibits thereto, and all documents in connection therewith, with the Securities and Exchange Commission granting unto each 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 such person might or could do in person, hereby ratifying and confirming all that any said attorney-in-fact and agent, or any substitute or substitutes of any of them, may lawfully do or cause to be done by virtue hereof. Pursuant to the requirements of the Securities Act of 1933, this Registration Statement has been signed by the following person in the capacities and on the date indicated.

SIGNATURE NAME	TITLE	DATE
<u>/s/ Barbara Weber</u> Barbara Weber, MD	President, Chief Executive Officer and Director (Principal Executive Officer)	November 21, 2025
<u>/s/ Daniella Beckman</u> Daniella Beckman	Chief Financial Officer (Principal Financial and Accounting Officer)	November 21, 2025
<u>/s/ Alexis Borisy</u> Alexis Borisy	Director	November 21, 2025
<u>/s/ Lesley Ann Calhoun</u> Lesley Ann Calhoun	Director	November 21, 2025
<u>/s/ Kanishka Pothula</u> Kanishka Pothula	Director	November 21, 2025
<u>/s/ John Ketchum</u> John Ketchum	Director	November 21, 2025
<u>/s/ Malte Peters</u> Malte Peters, MD	Director	November 21, 2025
<u>/s/ Mace Rothenberg</u> Mace Rothenberg, MD	Director	November 21, 2025

November 21, 2025

Tango Therapeutics, Inc.
201 Brookline Ave., Suite 901
Boston, MA 02215

Re: Securities Registered under Registration Statement on Form S-3

We have acted as counsel to you in connection with your filing of a Registration Statement on Form S-3 (as amended or supplemented, the "Registration Statement") filed on November 21, 2025 with the Securities and Exchange Commission pursuant to the Securities Act of 1933, as amended (the "Securities Act"), relating to the registration by Tango Therapeutics, Inc., a Delaware corporation (the "Company"), of up to 1,732,101 shares (the "Shares") of the Company's common stock, par value \$0.001 per share, to be sold by the selling stockholder listed in the Registration Statement under "Selling Stockholder" (the "Selling Stockholder").

We have reviewed such documents and made such examination of law as we have deemed appropriate to give the opinion set forth below. We have relied, without independent verification, on certificates of public officials and, as to matters of fact material to the opinions set forth below, on certificates of officers of the Company.

The opinion set forth below is limited to the Delaware General Corporation Law.

Based on the foregoing, we are of the opinion that the Shares have been duly authorized and validly issued and are fully paid and nonassessable.

This opinion letter and the opinions it contains shall be interpreted in accordance with the Core Opinion Principles as published in *74 Business Lawyer* 815 (Summer 2019).

We hereby consent to the inclusion of this opinion as Exhibit 5.1 to the Registration Statement and to the references to our firm under the caption "Legal Matters" in the Registration Statement. In giving our consent, we do not admit that we are in the category of persons whose consent is required under Section 7 of the Securities Act or the rules and regulations thereunder.

Very truly yours,

/s/ Goodwin Procter LLP

GOODWIN PROCTER 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 Tango Therapeutics, Inc. of our report dated February 27, 2025 relating to the financial statements and the effectiveness of internal control over financial reporting, which appears in Tango Therapeutics, Inc.'s Annual Report on Form 10-K for the year ended December 31, 2024. We also consent to the reference to us under the heading "Experts" in such Registration Statement.

/s/ PricewaterhouseCoopers LLP
Boston, Massachusetts
November 21, 2025

