

Prospectus

**Traws Pharma, Inc.**
128,942,761 Shares
Common Stock

This prospectus relates to the possible resale or other disposition from time to time by the selling stockholders named in this prospectus of up to an aggregate of 128,942,761 shares of our Common Stock, par value \$0.01 per share (“Common Stock”), which consist of (i) 496,935 shares of our Common Stock that were issued by us pursuant to that certain Securities Purchase Agreement (the “Securities Purchase Agreement”), dated as of April 1, 2024, with TPAV, LLC, an affiliate of Torrey Pines Investment LLC, and OrbiMed Private Investments VIII, LP, an affiliate of OrbiMed Advisors (the “Investors”), (ii) 15,782,120 shares of our Common Stock issuable by us to the Investors upon conversion of 1,578.2120 shares of our Series C Non-Voting Convertible Preferred Stock, par value \$0.01 per share, each of which convertible into 10,000 shares of Common Stock (“Series C Preferred Stock”) pursuant to the Securities Purchase Agreement, (iii) 3,549,538 shares of our Common Stock that were issued by us pursuant to that certain Agreement and Plan of Merger, dated as of April 1, 2024 (the “Merger Agreement”), with Traws Merger Sub I, Inc. (“First Merger Sub”), Traws Merger Sub II, LLC (“Second Merger Sub”), and Trawsfynydd Therapeutics, Inc. (“Trawsfynydd”), (iv) 103,590,916 shares of our Common Stock issuable by us to the stockholders of Trawsfynydd upon conversion of 10,359.0916 shares of our Series C Preferred Stock pursuant to the Merger Agreement, (v) 168,601 shares of our Common Stock that were issued by us to Tungsten Advisors (through its Broker-Dealer, Finalis Securities LLC) (“Tungsten”) for its services as financial advisor in connection with the Merger Agreement, and (vi) 5,354,651 shares of our Common Stock issuable by us to Tungsten upon conversion of 535.46510 shares of our Series C Preferred Stock.

Pursuant to the Merger Agreement, First Merger Sub merged with and into Trawsfynydd, pursuant to which Trawsfynydd was the surviving corporation (the “First Merger”). Immediately following the First Merger, Trawsfynydd merged with and into Second Merger Sub, pursuant to which Second Merger Sub was the surviving entity and a wholly owned subsidiary of the Company (the “Second Merger” and together with the First Merger, the “Merger”). Following the Merger, Trawsfynydd became our wholly owned subsidiary (the “Trawsfynydd Acquisition”).

We agreed to file the registration statement of which this prospectus is a part pursuant to a registration rights agreement, dated as of April 1, 2024, that we entered into in connection with the consummation of the Trawsfynydd Acquisition (the “Registration Rights Agreement”). Additional information with respect to the Registration Rights Agreement is contained in this prospectus under the heading “Selling Stockholders” and in our Current Report on Form 8-K filed with the Securities and Exchange Commission on April 4, 2024.

The selling stockholders or their permitted transferees or other successors-in-interest may, but are not required to, sell, transfer, or otherwise dispose of, any or all of the shares of our Common Stock offered by this prospectus at any time and from time to time in a number of different ways, including sales on any stock exchange or in negotiated transactions, and at varying prices, including fixed prices, at prevailing market prices at the time of sale or disposition, at prices related to the prevailing market price, or at negotiated prices. See “Plan of Distribution” on page 10 for a description of how the selling stockholders may dispose of the shares covered by this prospectus.

We are not selling any shares of our Common Stock under this prospectus and will not receive any of the proceeds from the sale of shares of our Common Stock by the selling stockholders.

We have agreed to pay certain expenses related to the registration of the offer and sale by the selling stockholders of our Common Stock pursuant to the registration statement of which this prospectus forms a part. The selling stockholders will bear all commissions, discounts, concessions and other selling expenses, if any, in connection with the sale of the shares of our Common Stock covered by this prospectus.

Our Common Stock is listed on The NASDAQ Capital Market under the symbol “TRAW”. On August 29, 2024, the closing price of our Common Stock was \$0.37 per share.

We may amend or supplement this prospectus from time to time by filing amendments or supplements as required. You should read the entire prospectus and any amendments or supplements carefully before you make your investment decision.

Investing in our Common Stock involves a high degree of risk. You should carefully read the information contained under the heading “Risk Factors” on page 4 of this prospectus, and under similar headings in the documents that are incorporated by reference into this prospectus.

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 August 30, 2024.

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ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement on Form S-3 that we filed with the U.S. Securities and Exchange Commission (the “SEC”), using a “shelf” registration process. By using this registration process, the selling stockholders named in this prospectus may offer and sell shares of our Common Stock from time to time in one or more transactions as described under “Plan of Distribution”.

This prospectus provides you with a general description of us and our securities. We may add, update or change in a prospectus supplement any of the information contained in this prospectus or the documents incorporated by reference. For further information about our business and our securities, you should refer to the registration statement and the reports incorporated by reference in this prospectus, as described in “Additional Information” and “Incorporation of Certain Information by Reference”. This prospectus contains summaries of certain provisions contained in some of the documents described herein, but reference is made to the actual documents for complete information. All of the summaries are qualified in their entirety by the actual documents. Copies of some of the documents referred to herein have been filed, will be filed or will be incorporated by reference as exhibits to the registration statement of which this prospectus is a part, and you may obtain copies of those documents as described below under the heading “Where You Can Find More Information.”

You must not rely upon any information or representation not contained or incorporated by reference in this prospectus. You should rely only on the information contained in this prospectus and in any prospectus supplement (including in any documents incorporated by reference herein or therein). 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 securities are sold on a later date. We and the selling stockholders named in this prospectus have not authorized anyone to provide you with any different information.

Traws Pharma, Inc. and its subsidiaries are collectively referred to herein as “Traws”, “Traws Pharma”, “the Company”, “we”, “us”, and “our”, unless otherwise specified or the context indicates otherwise.

PROSPECTUS SUMMARY

This summary highlights selected information appearing elsewhere or incorporated by reference into this prospectus and may not contain all of the information that you need to consider in making your investment decision. You should carefully read this prospectus, any applicable prospectus supplement, any related free writing prospectus that we have authorized for use in connection with this offering, and any documents incorporated by reference, including the information contained under the heading “Risk Factors” beginning on page 4 in this prospectus and under similar headings in our recent Annual Report on [Form 10-K for the fiscal year ended December 31, 2023](#), before making an investment decision.

The Company

Traws Pharma, Inc. (“Traws Pharma”), formerly known as Onconova Therapeutics, Inc. (the “Company”), was incorporated in the State of Delaware on December 22, 1998 and commenced operations on January 1, 1999. On April 1, 2024, the Company acquired Trawsfynydd Therapeutics, Inc., a Delaware corporation (“Trawsfynydd”), and the name change to Traws Pharma, Inc. was effected. Traws Pharma is a clinical stage biopharmaceutical company aiming to address unmet medical needs in respiratory viral diseases and cancer. The viral respiratory disease program includes a single oral dose CAP dependent inhibitor candidate for influenza, and an oral antiviral candidate designed to target mPro protease without the need for a CYP inhibitor for SARS-CoV-2. In the cancer program, Traws Pharma is developing the novel, proprietary multi-kinase CDK4-plus inhibitor narazaciclib for refractory endometrial cancer and potentially for other cancers.

Our principal executive offices are located at 12 Penns Trail, Newtown, Pennsylvania 18940, and our telephone number is (267) 759-3680. Our website address is www.trawspharma.com. The information on, or that can be accessed through, our website is not part of this prospectus.

THE OFFERING**Shares of Common Stock offered
for resale by the Selling
Stockholders:**

Up to an aggregate of 128,942,761 shares of our Common Stock, which consist of (i) 496,935 shares of our Common Stock that were issued by us pursuant to the Securities Purchase Agreement, (ii) 15,782,120 shares of our Common Stock issuable by us to the Investors upon conversion of 1,578.2120 shares Series C Preferred Stock pursuant to the Securities Purchase Agreement, (iii) 3,549,538 shares of our Common Stock that were issued by us pursuant to the Merger Agreement, (iv) 103,590,916 shares of our Common Stock issuable by us to the stockholders of Trawsfynydd upon conversion of 10,359.0916 shares of our Series C Preferred Stock pursuant to the Merger Agreement, (v) 168,601 shares of our Common Stock that were issued by us to Tungsten for its services as financial advisor in connection with the Merger Agreement, and (vi) 5,354,651 shares of our Common Stock issuable by us to Tungsten upon conversion of 535.46510 shares of our Series C Preferred Stock.

Use of Proceeds:

We will not receive any of the proceeds from the sale of any of the shares of our Common Stock that may be offered from time to time by the selling stockholders.

Risk Factors:

Investing in our Common Stock involves risks. Please refer to the information contained under the heading "Risk Factors" beginning on page 4 of this prospectus for a discussion of factors you should carefully consider before investing our securities.

NASDAQ Capital Market:

TRAW

RISK FACTORS

An investment in our securities involves a high degree of risk. Before making an investment decision, you should carefully consider the risks described under “Risk Factors” contained in our [proxy statement filed with the SEC on August 9, 2024](#), 2024 and our most recent Annual Report on Form 10-K, and in our updates to those Risk Factors in our Quarterly Reports on Form 10-Q or Current Reports on Form 8-K following the most recent Annual Report on Form 10-K, and in all other information appearing in this prospectus or incorporated by reference into this prospectus and any applicable prospectus supplement. The material risks and uncertainties that management believes affect us will be described in those documents. In addition to those risk factors, there may be additional risks and uncertainties of which management is not aware or focused on or that management deems immaterial. Our business, financial condition or results of operations could be materially adversely affected by any of these risks. The trading price of our securities could decline due to any of these risks, and you may lose all or part of your investment. This prospectus is qualified in its entirety by these risk factors.

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus and each prospectus supplement, including the documents that we incorporate by reference, contains or may contain forward-looking statements as that term is defined in the federal securities laws. The events described in forward-looking statements contained in this prospectus, including the documents that we incorporate by reference, may not occur. Generally, these statements relate to our business plans or strategies, projected or anticipated benefits or other consequences of our plans or strategies, financing plans, projected or anticipated benefits from acquisitions that we may make, or projections involving anticipated revenues, earnings or other aspects of our operating results or financial position, and the outcome of any contingencies. Any such forward-looking statements are based on current expectations, estimates and projections of management. We intend for these forward-looking statements to be covered by the safe-harbor provisions for forward-looking statements. Words such as “anticipate,” “expect,” “project,” “intend,” “believe,” “may,” “will,” “should,” “plan,” “could,” “continue,” “target,” “contemplate,” “estimate,” “forecast,” “guidance,” “predict,” “possible,” “potential,” “pursue,” “likely,” and their opposites and similar expressions are intended to identify forward-looking statements. All statements, other than historical facts, including statements regarding estimations of projected cash runway; our future product development plans; the potential, safety, efficacy, and regulatory and clinical progress of the our product candidates, including the anticipated timing for initiation of clinical trials and release of clinical trial data and the expectations surrounding potential regulatory submissions, approvals and timing thereof; and any assumptions underlying any of the foregoing, are forward-looking statements.

Forward looking statements involve known and unknown risks, uncertainties and other important 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 the forward looking statements. We believe that these factors include, but are not limited to, the factors that we identify in any of the documents incorporated or deemed incorporated into this prospectus and the registration statement by reference, including in our [Annual Report on Form 10-K for the year ended December 31, 2023](#) and in any of our subsequent Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and Annual Reports on Form 10-K for any year ended after December 31, 2023.

You should also consider carefully the information set forth in the section titled “Risk Factors” or elsewhere in this prospectus and the documents incorporated or deemed incorporated herein by reference, including in our most recent Annual Report on Form 10-K and in our updates to those risk factors in our Quarterly Reports on Form 10-Q and Current Reports on Form 8-K and other factors described elsewhere in this prospectus. Any one or more of these uncertainties, risks, factors and other influences could materially affect our results of operations and whether forward-looking statements made by us ultimately prove to be accurate. Our actual results, performance and achievements could differ materially from those expressed or implied in these forward-looking statements. Except as otherwise required by law, we undertake no obligation to publicly update or revise any forward-looking statements, whether from new information, future events or otherwise.

USE OF PROCEEDS

We will not receive any proceeds from the sale of our Common Stock by the selling stockholders.

SELLING STOCKHOLDERS

The term “selling stockholders” includes the stockholders listed below and their transferees, pledges, donees or other successors-in-interest who may acquire shares from a selling stockholder as a gift, pledge, partnership distribution or other non-sale related transfer after the date of this prospectus. Information concerning the selling stockholders may change after the date of this prospectus and changed information will be presented in a supplement to this prospectus if and when required.

This prospectus covers the offering for resale from time to time, in one or more offerings, of up to an aggregate of 128,942,761 shares of Common Stock, which consist of (i) 496,935 shares of our Common Stock that were issued by us to the Investors pursuant to the Securities Purchase Agreement, (ii) 15,782,120 shares of our Common Stock issuable by us to the Investors upon conversion of 1,578.2120 shares Series C Preferred Stock pursuant to the Securities Purchase Agreement, (iii) 3,549,538 shares of our Common Stock that were issued by us pursuant to the Merger Agreement, (iv) 103,590,916 shares of our Common Stock issuable by us to the stockholders of Trawsfynydd upon conversion of 10,359.0916 shares of our Series C Preferred Stock pursuant to the Merger Agreement, (v) 168,601 shares of our Common Stock that were issued by us to Tungsten for its services as financial advisor in connection with the Merger Agreement, and (vi) 5,354,651 shares of our Common Stock issuable by us to Tungsten upon conversion of 535.46510 shares of our Series C Preferred Stock.

We agreed to file the registration statement of which this prospectus is a part pursuant to the Registration Rights Agreement. Additional information with respect to the Registration Rights Agreement is contained in this section and in our Current Report on Form 8-K filed with the Securities and Exchange Commission on April 4, 2024.

The table below sets forth (i) the name of each selling stockholder, (ii) the number of shares of Common Stock owned by each selling stockholder as of August 29, 2024 (solely for purposes of the table below, treating all 12,472.7687 shares of Series C Preferred Stock outstanding as of August 29, 2024 as if they had been converted into 124,727,687 shares of our Common Stock as of August 29, 2024 and disregarding certain of the terms of the Series C Preferred Stock that would prevent or limit such conversion as further described in the next paragraph), (iii) the number of shares of Common Stock offered by each selling stockholder hereunder, (iv) the number of shares of Common Stock owned by each selling stockholder following the completion of this offering (assuming each selling stockholder sells all of the shares of our Common Stock that are being offered by such selling stockholder pursuant to this prospectus), and (v) the percentage of Common Stock owned by each selling stockholder following the completion of this offering (assuming each selling stockholder sells all of the shares of our Common Stock that are being offered by such selling stockholder pursuant to this prospectus), based on 25,311,493 shares of our Common Stock outstanding as of August 29, 2024 and, solely for purposes of the table below, treating all 12,472.7687 shares of Series C Preferred Stock outstanding as of August 29, 2024 as if they had been converted into 124,727,687 shares of our Common Stock that were also outstanding as of August 29, 2024 and disregarding certain of the terms of the Series C Preferred Stock that would prevent or limit such conversion as further described in the next paragraph. Stock Information with respect to ownership is based upon information obtained from the selling stockholders.

The terms of the Series C Preferred Stock provide that (i) each outstanding share of Series C Preferred Stock is convertible into 10,000 shares of our Common Stock, subject to and contingent upon obtaining the requisite vote from our stockholders approving such conversion in accordance with the applicable listing rules of the Nasdaq Stock Market (the “Nasdaq Preferred Conversion Limitation”), and (ii) such conversion will occur automatically, except as described in the next sentence, at 5:00 p.m. Eastern Time on the third business day after we obtain such requisite vote from our stockholders approving such conversion. As of the date of this prospectus, we have not obtained such requisite vote from our stockholders approving such conversion and, therefore, in accordance with the terms of the Series C Preferred Stock, at this time none of the outstanding shares of Series C Preferred Stock have converted or are convertible into shares of our Common Stock. The terms of the Series C Preferred Stock also provide that, notwithstanding the automatic conversion of the Series C Preferred Stock into shares of our Common Stock upon obtaining the requisite vote from our stockholders approving such conversion, no shares of Series C Preferred Stock shall automatically convert, or at any time thereafter be convertible voluntarily by the holder thereof, into shares of our Common Stock if and to the extent that such conversion would result in the holder of such shares

of Series C Preferred Stock being converted, together with such holder's affiliates and certain other persons or entities that are aggregated with such holder and its affiliates, beneficially owning more than 19.9% initially of the number of shares of our Common Stock outstanding immediately after giving effect to such conversion (the "Beneficial Ownership Limitation"). For purposes of the Beneficial Ownership Limitation, beneficial ownership is determined in accordance with Section 13(d) of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), and the rules and regulation promulgated thereunder. By written notice to us, a holder of Series C Preferred Stock may increase or decrease the Beneficial Ownership Limitation applicable to such holder to any percentage between 4.9% and 19.9%. Any increase in the Beneficial Ownership Limitation would not be effective until 61 days after written notice is received by us.

If our stockholders do not approve the conversion of the Series C Preferred Stock within six months after the initial issuance of the Series C Preferred Stock, then the holders of Series C Preferred Stock will be entitled to elect to have their shares of Series C Preferred Stock redeemed for cash at a price per share equal to the last reported closing trading price of the Common Stock at such time on an as-converted to Common Stock basis.

Solely for purposes of the table below, the information under the headings "Shares of Common Stock Owned Prior to the Offering" and "Shares of Common Stock Owned After the Offering" disregards the Nasdaq Preferred Conversion Limitation and the Beneficial Ownership Limitation described above and treats all 12,472,7687 shares of Series C Preferred Stock outstanding as of August 29, 2024 as if they had been converted into 124,727,687 shares of our Common Stock as of August 29, 2024. Accordingly, to that extent and solely for purposes of the table below, each selling stockholder's beneficial ownership of our Common Stock has not been determined in accordance with Section 13(d) of the Exchange Act and the rules and regulation promulgated thereunder. Each selling stockholder and its affiliates and other aggregation persons or entities disclaim beneficial ownership of any shares of our Common Stock that are reflected in the table below as beneficially owned by such selling stockholder or any of its affiliates and other aggregation person or entities solely because the Nasdaq Preferred Conversion Limitation and the Beneficial Ownership Limitation have been disregarded.

The selling stockholders are not making any representation that any shares of Common Stock covered by this prospectus will be offered for sale. Because each selling stockholder may dispose of all, none or some portion of the shares of Common Stock covered by this prospectus, no estimate can be given as to the number of shares that will be owned by a selling stockholder upon termination of this offering. In addition, the selling stockholders may have sold, transferred or otherwise disposed of their shares of Common Stock in transactions exempt from the registration requirements of the Securities Act of 1933, as amended (the "Securities Act"), after the date on which the information in the table is presented. For purposes of the table below, however, we have assumed that after termination of this offering, none of the shares of our Common Stock registered for resale under this prospectus will be owned by the selling stockholders, and we have further assumed that the selling stockholders will not acquire beneficial ownership of any additional shares of our Common Stock during this offering.

To our knowledge, except as indicated in the footnotes to this table, each selling stockholder named in the table has sole voting and investment power with respect to all shares of our Common Stock shown in the table to be owned by such stockholder. Except as described below, none of the selling stockholders has had any position, office or other material relationship with us or any of our predecessors or affiliates within the past three years. In addition, based on information provided to us, none of the selling stockholders that are affiliates of broker-dealers, if any, purchased the shares of our Common Stock outside the ordinary course of business or, at the time of their acquisition of such shares, had any agreements, understandings or arrangements with any other persons, directly or indirectly, to dispose of the shares. Information concerning the selling stockholders may change from time to time, and any changed information will be set forth in supplements to this prospectus to the extent required.

| Name and Address of Selling Stockholder | Shares of Common Stock Owned Prior to the Offering | | Maximum Number of Shares of Common Stock to be Sold Pursuant to this Prospectus | Shares of Common Stock Owned After the Offering | |
|---|--|-------------|---|---|-------------|
| | Number | Percent (%) | | Number | Percent (%) |
| TPAV, LLC ⁽¹⁾ | 37,775,701 | 25.18 | 37,775,701 | 0 | — |
| OrbiMed Private Investments VIII, LP ⁽²⁾ | 31,961,744 | 21.30 | 31,961,744 | 0 | — |
| Iain Dukes ⁽³⁾ | 2,012,910 | 1.34 | 2,012,910 | 0 | — |
| Nikolay Savchuk ⁽⁴⁾ | 2,012,910 | 1.34 | 2,012,910 | 0 | — |
| Viriom, Inc. ⁽⁵⁾ | 49,656,244 | 33.10 | 49,656,244 | 0 | — |
| Finalis Securities LLC | 52,470 | * | 52,470 | 0 | — |
| Romy Seth | 2,735,391 | 1.82 | 2,735,391 | 0 | — |
| Lacarya Scott | 2,735,391 | 1.82 | 2,735,391 | 0 | — |

* Less than 1%.

- (1) Nikolay Savchuk is the sole manager on the Board of Managers of TPAV, LLC. Nikolay Savchuk disclaims beneficial ownership of the securities held by TPAV, LLC except to the extent of his pecuniary interest therein.
- (2) These shares are held of record by OrbiMed Private Investments VIII, LP (“OPI VIII”). OrbiMed Capital GP VIII LLC (“OrbiMed GP”) is the general partner of OPI VIII. OrbiMed Advisors LLC (“OrbiMed Advisors”) is the managing member of OrbiMed GP. By virtue of such relationships, OrbiMed Advisors and OrbiMed GP may be deemed to have voting power and investment power over the securities held by OPI VIII and as a result, may be deemed to have beneficial ownership over such securities. OrbiMed Advisors exercises voting power and investment power through a management committee comprised of Carl L. Gordon, Sven H. Borho, and W. Carter Neild, each of whom disclaims beneficial ownership of the securities held by OPI VIII.
- (3) Iain Dukes is the Executive Chairman of our Board of Directors
- (4) Nikolay Savchuk serves on our Board of Directors and is our Chief Operating Officer.
- (5) Nikolay Savchuk is a director of Viriom, Inc. and has investment control over the securities held by Viriom, Inc. Dr. Savchuk also indirectly holds a majority of shares of common stock through AAAn LLC, a limited liability company of which Dr. Savchuk is the managing member. Iain Dukes is the Chief Executive Officer of Viriom, Inc. Each of Drs. Savchuk and Dukes disclaims any excess of his pecuniary interest in the securities held by Viriom, Inc.

PLAN OF DISTRIBUTION

Each selling stockholder of the securities named herein may, from time to time, sell any or all of their securities covered hereby on any stock exchange, market or trading facility on which the securities are traded, in private transactions or otherwise. These sales may be at fixed or negotiated prices or at market prices prevailing at the time of sale. A 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 stockholders 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 stockholders 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 stockholders may arrange for other broker-dealers to participate in sales. Broker-dealers may receive commissions or discounts from the selling stockholders (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 2440; and in the case of a principal transaction a markup or markdown in compliance with FINRA IM-2440.

In connection with the sale of the securities or interests therein, the selling stockholders may enter into hedging transactions with broker-dealers or other financial institutions, which may in turn engage in short sales of the securities in the course of hedging the positions they assume. The selling stockholders 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 stockholders 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 stockholders may pledge or grant a security interest in some or all of the shares of Common Stock owned by them and, if any of them defaults in the performance of its 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 supplement or amendment to this prospectus under Rule 424(b)(3) or other applicable provision of the Securities Act, amending, if necessary, the list of selling stockholders to include the pledgee, transferee or other successors in interest as selling stockholders under this prospectus. The selling stockholders also may transfer and donate the shares of Common Stock in other circumstances in which case the transferees, donees or other successors in interest will be the selling beneficial owners for purposes of this prospectus.

The selling stockholders and 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. We are not aware that any selling stockholder has any written or oral agreement or understanding, directly or indirectly, with any person to distribute the securities.

We are required to pay certain fees and expenses incurred by us incident to the registration of the securities. We have agreed to indemnify the selling stockholders against certain losses, claims, damages and liabilities, including liabilities under the Securities Act.

We agreed to keep this prospectus effective until the earlier of (i) the date on which the securities may be resold by the selling stockholders pursuant to Rule 144 without any volume or manner-of-sale limitations or (ii) the date on which all of the securities have been sold pursuant to this prospectus or Rule 144 under the Securities Act or any other rule of similar effect. The resale securities will be sold only through registered or licensed brokers or dealers if required under applicable state securities laws.

Under applicable rules and regulations under the Exchange Act, any person engaged in the distribution of the shares of Common Stock 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 stockholders 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 stockholders or any other person. We will make copies of this prospectus available to the selling stockholders.

LEGAL MATTERS

The validity of the securities being offered hereby will be passed upon by Morgan, Lewis & Bockius LLP.

EXPERTS

The consolidated financial statements of Traws Pharma, Inc. (formerly Onconova Therapeutics, Inc.), appearing in Traws Pharma, Inc.'s Annual Report on Form 10-K for the year ended December 31, 2023 have been audited by Ernst & Young LLP, independent registered public accounting firm, as set forth in their report thereon (which contains an explanatory paragraph describing conditions that raise substantial doubt about the Company's ability to continue as a going concern as described in Note 1 to the consolidated financial statements), included therein, and incorporated herein by reference. Such consolidated financial statements are incorporated herein by reference in reliance upon such report given on the authority of such firm as experts in accounting and auditing.

**DISCLOSURE OF COMMISSION POSITION
ON INDEMNIFICATION FOR SECURITIES ACT LIABILITIES**

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to our directors, officers and controlling persons pursuant to the foregoing provisions, or otherwise, we have 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, we will, unless in the opinion of our counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by us is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

ADDITIONAL INFORMATION

This prospectus is part of a Registration Statement on Form S-3 that we have filed with the SEC relating to the shares of our securities being offered hereby. This prospectus does not contain all of the information in the Registration Statement and its exhibits. The Registration Statement, its exhibits and the documents incorporated by reference in this prospectus and their exhibits, all contain information that is material to the offering of the Securities hereby. Whenever a reference is made in this prospectus to any of our contracts or other documents, the reference may not be complete. You should refer to the exhibits that are a part of the Registration Statement in order to review a copy of the contract or documents. The Registration Statement and the exhibits are available at the SEC's Public Reference Room or through its Website.

We file annual, quarterly and current reports, proxy statements and other information with the SEC. You can read and copy any materials we file with the SEC at its Public Reference Room at 100 F Street, N.E., Washington, D.C. 20549 and at its regional offices, a list of which is available on the Internet at <http://www.sec.gov/contact/addresses.htm>. You may obtain information on the operation of the Public Reference Room by calling the SEC at 1-800-SEC-0330. The SEC maintains an Internet site at <http://www.sec.gov> that contains reports, proxy and information statements, and other information regarding issuers, such as us, that file electronically with the SEC. Additionally, you may access our filings with the SEC through our website at <http://www.trawspharma.com>. The information on our website is not part of this prospectus.

We will provide you without charge, upon your oral or written request, with a copy of any or all reports, proxy statements and other documents we file with the SEC, as well as any or all of the documents incorporated by reference in this prospectus or the Registration Statement (other than exhibits to such documents unless such exhibits are specifically incorporated by reference into such documents). Requests for such copies should be directed to:

Investor Relations
Traws Pharma, Inc.
12 Penns Trail
Newtown, PA 18940
(267) 759-3680

You should rely only on the information in this prospectus and the additional information described above and under the heading "Incorporation of Certain Information by Reference" below. We have not, and the Selling Stockholders have not, authorized any other person to provide you with different information. If anyone provides you with different or inconsistent information, you should not rely upon it. The Selling Stockholders are not making an offer to sell these securities in any jurisdiction where the offer or sale is not permitted. You should assume that the information in this prospectus was accurate on the date of the front cover of this prospectus only, and that any information we have incorporated by reference was accurate on the date of the document incorporated by reference only. Our business, financial condition, results of operations and prospects may have changed since such date.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The SEC allows us to “incorporate by reference” information that we file with it into this prospectus, which means that we can disclose important information to you by referring you to those documents. The information incorporated by reference is an important part of this prospectus. The information incorporated by reference is considered to be a part of this prospectus, and information that we file later with the SEC will automatically update and supersede information contained in documents filed earlier with the SEC or contained in this prospectus and any accompanying prospectus supplement.

We incorporate by reference the documents listed below that we have previously filed with the SEC:

- our Annual Report on [Form 10-K for the fiscal year ended December 31, 2023, filed with the SEC on April 1, 2024](#), as amended by [Form 10-K/A, filed with the SEC of April 29, 2024](#);
- our [Definitive Proxy Statement on Schedule 14A, filed with the SEC on August 9, 2024](#);
- our Quarterly Reports on [Form 10-Q for the quarters ended March 31, 2024, filed with the SEC on May 15, 2024](#) and [June 30, 2024, filed with the SEC on August 15, 2024](#);
- our Current Reports on Form 8-K filed on [April 4, 2024](#), as amended on [June 17, 2024](#), [May 22, 2024](#), [June 21, 2024](#), [June 28, 2024](#), [July 19, 2024](#) and [August 23, 2024](#); and
- the description of our Common Stock contained in our registration statement on [Form 8-A filed on July 23, 2013 \(Registration no. 001-36020\)](#) with the SEC, including any amendment or report filed for the purpose of updating such description.

All reports and other documents that we file with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act after the date of the Registration Statement but before the termination of the offering of the Securities hereunder will also be considered to be incorporated by reference into this prospectus from the date of the filing of these reports and documents, and will supersede the information herein; provided, however, that all reports or portions thereof that we “furnish” to the SEC will not be considered incorporated by reference into this prospectus. We undertake to provide without charge to each person (including any beneficial owner) who receives a copy of this prospectus, upon written or oral request, a copy of all of the preceding documents that are incorporated by reference (other than exhibits, unless the exhibits are specifically incorporated by reference into these documents). You may request a copy of these materials in the manner set forth under the heading “Additional Information,” above.

128,942,761 Shares

Common Stock



PROSPECTUS

August 30, 2024
