

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

FORM S-1
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933
DECOY THERAPEUTICS INC.

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of incorporation or
organization)

2834
(Primary Standard Industrial Classification Code
Number)

46-5087339
(I.R.S. Employer Identification
Number)

**2450 Holcombe Blvd., Suite X
Houston, TX 77021
(713) 913-5608**

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

**Frederick E. Pierce
Chief Executive Officer
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(Name, address, including zip code, and telephone number, including area code, of agent for service)

**Copies to:
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Approximate date of commencement of proposed sale to the public: From time to time after the effective date of this registration statement, as determined by the selling stockholder.

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, check the following box. ☒

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

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

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

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

Large accelerated filer	☐	Accelerated filer	☐
Non-accelerated filer	☒	Smaller reporting company	☒
		Emerging growth company	☐

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

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

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

SUBJECT TO COMPLETION, DATED OCTOBER 7, 2026

PRELIMINARY PROSPECTUS



DECOY THERAPEUTICS INC.

Up to 2,368,868 Shares of Common Stock

This prospectus relates to the resale from time to time by the selling stockholder identified in this prospectus (the “selling stockholder”) of up to 2,368,868 shares of our common stock, par value \$0.0001 per share (“common stock”) issuable upon the exercise of common stock purchase warrants (the “New Warrants”). We issued the New Warrants to a certain investor as consideration for such investor’s exercise of Series B milestone-based common stock purchase warrants (the “Existing Series B Warrants”) issued on June 29, 2026, pursuant to the terms of a warrant inducement offer letter (the “Inducement Letter”) with the investor to immediately exercise its Existing Series B Warrants. The New Warrants were issued in a private placement that closed on September 23, 2026, as described under “The Private Placement.”

We are not selling any securities under this prospectus and will not receive any of the proceeds from the resale of shares of common stock by the selling stockholder. We will, however, receive the proceeds of any cash exercise of the New Warrants. See “Use of Proceeds.”

The selling stockholder may sell or otherwise dispose of the shares of common stock described in this prospectus in a number of different ways and at varying prices. See “Plan of Distribution.” We have agreed to pay certain expenses in connection with the registration of the shares of common stock and to indemnify the selling stockholder against certain liabilities. See “Plan of Distribution.”

We are filing the registration statement on Form S-1 of which this prospectus forms a part to fulfill our contractual obligations to the selling stockholder to provide for the resale by the selling stockholder of the shares of common stock issuable upon exercise of the New Warrants. See “Selling Stockholder” beginning on page 17 of this prospectus for more information about the selling stockholder. Our registration of the securities covered by this prospectus does not mean that either we or the selling stockholder will issue, offer or sell any of the shares of common stock.

Our common stock is listed on The Nasdaq Capital Market (“Nasdaq”) under the symbol “DCOY.” On October 6, 2026, the last reported sale price of our common stock was \$1.55 per share. As of such date, we had 2,385,282 shares of common stock outstanding.

Our cash, cash equivalents and restricted cash balance as of September 30, 2026 was approximately \$8.0 million, of which \$2.5 million is restricted for use under our Gates Foundation Grant Agreement and can only be used for specific development purpose.

We are a “smaller reporting company” under the federal securities laws and have elected to comply with certain reduced public company reporting requirements. See “Prospectus Summary — Implications of Being a Smaller Reporting Company.”

Investing in our securities involves a high degree of risk. You should review carefully the risks and uncertainties described under the heading “Risk Factors” beginning on page 10 of this prospectus, and under

similar headings in any amendment of or supplement to this prospectus or in any other documents that are incorporated by reference into this prospectus.

NEITHER THE SEC 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 , 2026.

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ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement on Form S-1 that we have filed with the Securities and Exchange Commission (the “SEC”), and includes exhibits that provide more detail of the matters discussed in this prospectus. You should read this prospectus, the related exhibits filed with the SEC, and the documents incorporated by reference herein before making your investment decision. You should rely only on the information provided in this prospectus and the documents incorporated by reference herein or any amendment thereto.

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 herein or therein 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. This prospectus contains or incorporates by reference 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.

Neither we nor the selling stockholder has authorized anyone to provide you with different or additional information. If anyone provides you with different or inconsistent information, you should not rely on it. Neither we nor the selling stockholder are making an offer to sell these securities in any jurisdiction where the offer or sale is not permitted. You should assume that the information appearing in this prospectus and the documents incorporated by reference herein is accurate only as of their respective dates.

Unless the context otherwise requires, references in this prospectus to the “Company,” “we,” “us,” “our,” “Decoy” and similar references refer to Decoy Therapeutics Inc. and, where appropriate, its consolidated subsidiaries. References to “Legacy Decoy” refer to Decoy Therapeutics Inc. as it existed prior to the Merger described herein, and references to “Salarius” refer to the Company when it was known as Salarius Pharmaceuticals, Inc. prior to the name change described herein.

PROSPECTUS SUMMARY

This summary highlights selected information appearing elsewhere in, or incorporated by reference into, this prospectus. This summary is not complete and does not contain all of the information that you should consider before investing in our common stock. You should carefully read this entire prospectus, including the information under “Risk Factors” and the financial statements and related notes and other information that we incorporate by reference herein, including our Annual Report on Form 10-K for the fiscal year ended December 31, 2025, as amended, and our Quarterly Reports on Form 10-Q for the quarters ended March 31, 2026 and June 30, 2026, before making an investment decision.

Overview

We are a pre-clinical stage biotechnology company focused on advancing our pipeline of peptide conjugate therapeutics engineered through our proprietary IMP3ACT™ platform. Our IMP3ACT™ platform represents a paradigm shift in peptide conjugate drug discovery and manufacturing, leveraging machine learning (“ML”) and artificial intelligence (“AI”) tools alongside high-speed synthesis techniques to rapidly engineer, optimize and manufacture peptide conjugates that target serious unmet medical needs. Utilizing our novel IMP3ACT™ platform, we aim to build a robust portfolio of novel peptide conjugate therapeutics, initially focusing on infectious diseases and oncology. The Decoy IMP3ACT platform is generating a pipeline of Designable Multi-Antivirals (“D-MAV”) candidates across respiratory viruses, and our portfolio also includes two legacy small molecule clinical candidates: SP-3164, a targeted protein degrader, and seclidemstat (“SP-2577”), a targeted protein inhibitor. We have no products approved for commercial sale and have not generated any revenue from product sales.

The Merger and Name Change

Prior to January 8, 2026, we were known as Salarius Pharmaceuticals, Inc. On November 12, 2025, pursuant to an Agreement and Plan of Merger dated January 10, 2025, as amended (the “Merger Agreement”), a wholly owned subsidiary of Salarius merged with and into Legacy Decoy, with Legacy Decoy surviving and becoming a wholly owned subsidiary of the Company (the “Merger”). In connection with the Merger, we issued 877.709 shares of Series A Non-Voting Convertible Preferred Stock (the “Series A Preferred Stock”) and 796.306 shares of Series B Non-Voting Convertible Preferred Stock (the “Series B Preferred Stock”) to former Legacy Decoy stockholders and debtholders. The shares of Series A Preferred Stock and Series B Preferred Stock are not convertible into common stock until our stockholders approve such conversion in accordance with Nasdaq Rule 5635 and we satisfy the Nasdaq initial listing requirements applicable to the combined company. On January 8, 2026, we filed a certificate of amendment to change our corporate name to “Decoy Therapeutics Inc.,” and our common stock, which had traded under the symbol “SLRX,” began trading under the symbol “DCOY.”

The Private Placement

On September 22, 2026, we entered into the Inducement Letter with a single healthcare-focused institutional and accredited investor (the “Purchaser”), pursuant to which the Purchaser agreed to exercise for cash, in full, the Existing Series B Warrants to purchase an aggregate of 1,184,434 shares of common stock.

Pursuant to the Inducement Letter, we agreed to reduce the exercise price of the Existing Series B Warrants from \$5.91 per share to \$3.25 per share. In connection with the transaction, the exercise price of outstanding milestone-based Series A and Series C common warrants issued on June 29, 2026 was also reduced from \$5.91 per share to \$3.25 per share. The Existing Series B Warrants were exercised in full on September 22, 2026, and the transaction closed on September 23, 2026, resulting in aggregate gross proceeds of approximately \$3.85 million, before deducting other expenses.

Pursuant to the Inducement Letter and as consideration for the immediate exercise of the Existing Series B Warrants, on September 23, 2026, we issued to the Purchaser in a private placement New Warrants to purchase up to 2,368,868 shares of common stock, representing 200% of the number of shares underlying the exercised Existing Series B Warrants (the “Private Placement”). We agreed to register the resale of the shares of common stock issuable upon exercise of the New Warrants, and the registration statement of which this prospectus forms a part is being filed in part to satisfy that obligation. See “The Private Placement.”

Corporate Information

We were incorporated in Delaware in February 2014 as Flex Pharma, Inc. In July 2019, our predecessor merged with Salarius Pharmaceuticals, LLC and we changed our name to Salarius Pharmaceuticals, Inc., and effective January 8, 2026, we changed our name to Decoy Therapeutics Inc. Our principal executive offices are located at 2450 Holcombe Blvd., Suite X, Houston, TX 77021, and our telephone number is (713) 913-5608. Our website address is www.decoytx.com. Information on, or accessible through, our website is not part of this prospectus.

Implications of Being a Smaller Reporting Company

We are a “smaller reporting company” as defined in Rule 12b-2 under the Securities Exchange Act of 1934, as amended (the “Exchange Act”). We may take advantage of certain scaled disclosure requirements available to smaller reporting companies, including presenting only two years of audited financial statements and reduced executive compensation disclosure. We will remain a smaller reporting company until the last day of the fiscal year in which (i) the market value of our common stock held by non-affiliates is \$250 million or more measured as of the last business day of our most recently completed second fiscal quarter, or (ii) our annual revenue is \$100 million or more during the most recently completed fiscal year and the market value of our common stock held by non-affiliates is \$700 million or more measured as of the last business day of our most recently completed second fiscal quarter.

THE OFFERING

Common stock offered by the selling stockholder
Common stock outstanding prior to this offering
Common stock outstanding after this offering

Up to 2,368,868 shares of common stock issuable upon exercise of the New Warrants.
2,385,282 shares of common stock outstanding as of October 6, 2026.

Use of proceeds

Up to 4,754,150 shares of common stock, assuming the exercise in full of all of the New Warrants and the issuance and resale of all 2,368,868 shares offered hereby.

We will not receive any proceeds from the resale of shares by the selling stockholder. We will receive the proceeds of any cash exercise of the New Warrants, which we intend to use, for working capital and general corporate purposes. See “Use of Proceeds.”

Terms of the New Warrants

Each New Warrant has an exercise price of \$3.25 per share, is immediately exercisable upon issuance and will expire on the fifth anniversary of the date of issuance, subject to the beneficial ownership limitation described below. See “The Private Placement.”

Beneficial ownership limitation

The New Warrants may not be exercised to the extent that, after giving effect to the exercise, the holder, together with its affiliates and attribution parties, would beneficially own more than 4.99% of our outstanding common stock, which limitation the holder may adjust upon 61 days’ prior notice to us, subject to the maximum percentage set forth in the New Warrants.

Risk factors

Investing in our common stock involves a high degree of risk. See “Risk Factors” beginning on page 10.

Nasdaq Capital Market symbol

“DCOY”

Except as otherwise indicated, the number of shares of our common stock to be outstanding after this offering is based on 2,385,282 shares of common stock outstanding as of October 6, 2026, and does not give effect to the conversion of our outstanding Series A Preferred Stock or Series B Preferred Stock, which are not convertible into common stock unless and until our stockholders approve such conversion in accordance with Nasdaq Listing Rule 5635 and the Company satisfies the applicable Nasdaq initial listing requirements. As of October 6, 2026, the issued and reserved shares of Series A Preferred Stock and Series B Preferred Stock would, upon such approval, be convertible into an aggregate of 390,604 shares of common stock. The number of shares of common stock to be outstanding after this offering excludes:

- the 390,604 shares of common stock issuable upon conversion of our outstanding Series A Preferred Stock and Series B Preferred Stock issued, which conversion remains subject to stockholder approval under Nasdaq Listing Rule 5635 and satisfaction of the applicable Nasdaq initial listing requirements;
- 2,922,730 shares of common stock issuable upon the exercise of warrants outstanding as of October 6, 2026 (which do not include the New Warrants issued in the Private Placement), at a weighted-average exercise price of \$10.59 per share;
- 28,707 shares of common stock issuable upon the exercise of stock options outstanding under our equity incentive plans as of October 6, 2026, at a weighted-average exercise price of \$229.48 per share;

Unless otherwise indicated, this prospectus assumes no conversion of the preferred stock and no exercise of outstanding warrants or options.

RISK FACTORS

Investing in our common stock involves a high degree of risk. Before making an investment decision, you should carefully consider the risks described below, together with the risk factors described in our Annual Report on Form 10-K for the fiscal year ended December 31, 2025, as amended, and our Quarterly Reports on Form 10-Q for the quarters ended March 31, 2026 and June 30, 2026, each of which is incorporated by reference herein, as well as the other information contained in or incorporated by reference into this prospectus. The risk factors set forth below are limited to those arising primarily from this offering and the Private Placement and supplement, and should be read together with the risk factors incorporated by reference herein; they do not purport to be a complete statement of all risks relevant to an investment in our common stock. If any of these risks actually occur, our business, financial condition, results of operations and prospects could be materially and adversely affected, the trading price of our common stock could decline, and you could lose all or part of your investment.

Risks Related to Our Liquidity and Capital Needs

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

We have incurred recurring losses from operations since inception and have not generated any revenue from product sales. Our independent registered public accounting firm and management have concluded that there is substantial doubt about our ability to continue as a going concern, and the report of our independent registered public accounting firm on our consolidated financial statements for the year ended December 31, 2025 includes an explanatory paragraph to that effect. We believe our existing cash and cash equivalents will be sufficient to fund our operations only into early 2027. If we are unable to obtain additional capital in the near term, we may be forced to delay, reduce or eliminate some or all of our development programs, or cease operations, in which case you could lose all or part of your investment.

The cash proceeds we may receive upon exercise of the New Warrants are uncertain and may never be realized.

We will not receive any proceeds from the resale of the shares of common stock by the selling stockholder. We may receive proceeds from the cash exercise of the New Warrants, but the New Warrants may be exercised on a cashless basis in the circumstances specified in the New Warrants, in which case we would receive no cash proceeds. Accordingly, the amount of cash, if any, ultimately available to fund our operations from exercise of the New Warrants is uncertain.

Risks Related to This Offering and the Private Placement

The number of shares being registered for resale is significant in relation to our outstanding common stock, and resales may cause the market price of our common stock to decline.

This prospectus covers the resale of up to 2,368,868 shares of common stock, which substantially exceeds the 2,385,282 shares of common stock outstanding as of October 6, 2026. The resale of all or a substantial portion of these shares in the public market, or the perception that these resales may occur, could cause the market price of our common stock to decline significantly and could impair our ability to raise capital through the sale of additional equity securities.

Future resales or issuances of our common stock, or the perception that such sales may occur, may cause the market price of our common stock to decline.

In addition to the shares offered hereby, we have a significant number of shares of common stock issuable upon the conversion of our outstanding Series A Preferred Stock and Series B Preferred Stock (subject to stockholder approval) and upon the exercise of other outstanding warrants and options. The issuance and subsequent resale of these shares, or the perception that such sales may occur, could depress the market price of our common stock and impair our ability to raise capital.

Risks Related to Nasdaq Listing

Our common stock may be delisted from Nasdaq, which would adversely affect the liquidity and market price of our common stock.

We have a history of non-compliance with Nasdaq continued listing requirements, including the minimum bid price requirement and the stockholders’ equity requirement, and we remain subject to a mandatory panel monitor through March 31, 2027 (the “Mandatory Panel Monitor”). If we again fail to comply with Nasdaq’s continued listing requirements, Nasdaq may take expedited delisting action, and our common stock could be delisted, which would adversely affect the liquidity and market price of our common stock and our ability to raise capital.

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus and the documents incorporated by reference herein contain forward-looking statements within the meaning of Section 27A of the Securities Act and Section 21E of the Exchange Act. All statements other than statements of historical fact are forward-looking statements. In some cases, you can identify forward-looking statements by terms such as “may,” “will,” “could,” “would,” “should,” “expect,” “intend,” “plan,” “anticipate,” “believe,” “estimate,” “predict,” “potential,” “continue,” “seek,” “target” or the negative of these terms or other comparable terminology. These forward-looking statements include, among others, statements about:

- our ability to continue as a going concern and to support our operations;
- our expectations regarding the timing, likelihood and expected benefits of, and the potential value created by, the recently completed Merger with Legacy Decoy, and the execution of our related integration plans;
- our ability to maintain the listing of our common stock on Nasdaq, including specifically our ability to continue to comply with the minimum \$2.5 million stockholders’ equity requirement and the conditions of the Mandatory Panel Monitor, and the effect of any noncompliance on the liquidity and trading of our common stock;
- whether and when the milestone events applicable to the milestone-based Series A and Series C warrants will be achieved;
- our ability to successfully manage our cash and cash equivalents and any anticipated proceeds from financing transactions;
- our ability to acquire sufficient sources of funding if and when needed, and on acceptable terms;
- the plans, strategies and objectives of management for future operations, including the execution of our integration plans and the anticipated timing of filings and of the commencement of preclinical studies or clinical trials of our current and future product candidates, including the timing of our planned regulatory communications, submissions and approvals and the release of data from such studies or trials;
- our financial performance, and our estimates and expectations as to expenses, ongoing losses, future revenue, cash flow, capital requirements and our need for, or ability to obtain, additional funding before we can expect to generate any revenue from product sales;
- our belief regarding the sufficiency of our cash resources, and our liquidity position and the expected sufficiency of that position for our anticipated operating and capital requirements;
- our plans to develop and commercialize our product candidates, including planned preclinical, clinical, regulatory, commercialization and manufacturing activities, and our expectations regarding the scope of any approved indication for any product candidate, if approved;
- our use of artificial intelligence and machine learning to identify and develop current and future product candidates, and the risks associated with the use of such technologies;
- the attraction and retention of highly qualified personnel;
- our ability to protect and enhance our products and intellectual property;
- developments and projections relating to our competitors and our industry, and future regulatory, judicial and legislative changes affecting our industry;

- our relationships and actions with third parties; and
- our anticipated use of the net proceeds, if any, that we may receive upon the exercise of the New Warrants.

The forward-looking statements in this prospectus and the documents incorporated by reference herein are subject to known and unknown risks, uncertainties and assumptions, including those described under “Risk Factors” in this prospectus and the risks set forth under Item 1A of our Annual Report on Form 10-K for the fiscal year ended December 31, 2025, as amended, as supplemented by Part II, Item 1A of our Quarterly Reports on Form 10-Q for the quarters ended March 31, 2026 and June 30, 2026, each of which is incorporated by reference herein, and the other documents incorporated by reference herein, that could cause our actual results to differ materially from those expressed or implied by these forward-looking statements. These forward-looking statements speak only as of the date of this prospectus or, in the case of forward-looking statements contained in any document incorporated by reference herein, as of the date of that document. Except as required by law, we undertake no obligation to update or revise publicly any forward-looking statement, whether as a result of new information, future events or otherwise.

USE OF PROCEEDS

This prospectus relates to the resale of shares of our common stock that may be offered and sold from time to time by the selling stockholder. We will not receive any proceeds from the resale of shares of common stock by the selling stockholder.

We will receive proceeds from any exercise of the New Warrants for cash. If all of the New Warrants were exercised for cash in full, we would receive aggregate gross proceeds of approximately \$7.7 million from the exercise of the New Warrants (at an exercise price of \$3.25 per share). We cannot predict when or whether any New Warrants will be exercised, and the New Warrants may be exercised on a cashless basis under the circumstances specified in the New Warrants, in which case we would not receive any cash proceeds upon exercise. We intend to use any net proceeds we receive from the cash exercise of the New Warrants for working capital and general corporate purposes.

MARKET INFORMATION, DETERMINATION OF OFFERING PRICE AND DIVIDEND INFORMATION

Market Price and Determination of Offering Price

Our common stock is listed on the Nasdaq Capital Market under the symbol “DCOY.” Prior to January 8, 2026, our common stock traded on Nasdaq under the symbol “SLRX.” On October 6, 2026, the last reported sale price of our common stock on Nasdaq was \$1.55 per share.

The selling stockholder will determine at what price(s) it may sell the shares of common stock, and such sales may be made at prevailing market prices, or at privately negotiated prices.

Holders

As of October 6, 2026, we had approximately 21 holders of record of our common stock. Because many of our shares of common stock are held by brokers and other institutions on behalf of stockholders, this number is not representative of the number of beneficial holders of our common stock or the total number of stockholders.

Dividend Policy

We have never declared or paid any cash dividends on our common stock and do not anticipate paying any cash dividends in the foreseeable future. We currently intend to retain all available funds and any future earnings, if any, to fund the development and growth of our business. Any future determination to declare and pay cash dividends, if any, will be made at the discretion of our board of directors and will depend on a number of factors, including our financial condition, results of operations, capital requirements, contractual restrictions, general business conditions and other factors that our board of directors deems relevant.

THE PRIVATE PLACEMENT

Overview

On September 22, 2026, we entered into the Inducement Letter with the Purchaser, pursuant to which the Purchaser agreed to exercise for cash, in full, the Existing Series B Warrants to purchase an aggregate of 1,184,434 shares of common stock.

Pursuant to the Inducement Letter, we agreed to reduce the exercise price of the Existing Series B Warrants from \$5.91 per share to \$3.25 per share. In connection with the transaction, the exercise price of outstanding milestone-based Series A and Series C common warrants was also reduced from \$5.91 per share to \$3.25 per share. The Existing Series B Warrants were exercised in full on September 22, 2026, and the transaction closed on September 23, 2026, resulting in aggregate gross proceeds of approximately \$3.85 million, before deducting expenses.

As consideration for the immediate exercise of the Existing Series B Warrants, on September 23, 2026, we issued to the Purchaser New Warrants to purchase up to 2,368,868 shares of common stock, representing 200% of the number of shares underlying the exercised Existing Series B Warrants. The Purchaser is an institutional accredited investor, and the New Warrants were issued in a private placement pursuant to Section 4(a)(2) and Regulation D promulgated under the Securities Act.

New Warrants

Each New Warrant has an exercise price of \$3.25 per share, is exercisable immediately upon issuance and will expire on the fifth anniversary of the date of issuance. The New Warrants contain customary anti-dilution adjustments and may be exercised on a cashless basis in the event the Company fails to keep an active registration statement effective covering the shares underlying the New Warrants. The exercise price of each warrant is subject to appropriate adjustment in the event of certain stock dividends and distributions, stock splits, stock combinations, reclassifications or similar events affecting our common stock and also upon any distributions of assets, including cash, stock or other property to our stockholders.

Beneficial Ownership Limitation

The New Warrants may not be exercised to the extent that, after giving effect to the exercise, the holder, together with its affiliates and attribution parties, would beneficially own more than 4.99% of our outstanding common stock, which limitation the holder may adjust upon 61 days' prior notice to us, subject to the maximum percentage set forth in the New Warrants.

Transferability

In accordance with its terms and subject to applicable laws, the New Warrants may be transferred at the option of the holder upon surrender of the New Warrants to us together with the appropriate instruments of transfer and payment of funds sufficient to pay any transfer taxes (if applicable).

Exchange Listing

There is no established public trading market for the New Warrants that were issued in the Private Placement, and we do not expect a market to develop. We do not intend to apply for listing of the New Warrants on any securities exchange or other nationally recognized trading system. Without an active trading market, the liquidity of the New Warrants will be limited.

Fundamental Transactions

In the event of any fundamental transaction, as described in the New Warrants and generally including any merger with or into another entity, sale of all or substantially all of our assets, tender offer or exchange offer, or reclassification of our common stock, then upon any subsequent exercise of a New Warrant, the holder will have the right to receive as alternative consideration, for each share of common stock that would have been issuable upon such exercise immediately prior to the occurrence of such fundamental transaction, the number of shares of common stock of the successor or acquiring corporation or of our company, if it is the surviving corporation, and any additional consideration receivable upon or as a result of such transaction by a holder of the number of shares of common stock for which the New Warrant is exercisable immediately prior to such event. In addition, in the event of a fundamental transaction, we or any successor entity will be required to purchase, at a holder's option, exercisable at any time concurrently with or within 30 days after the consummation of the fundamental transaction (or, if later, the date of the public announcement of the applicable fundamental transaction), such holder's New Warrants in an amount equal to the value of the remaining unexercised portion of such holder's New Warrants, determined in accordance with the Black Scholes option pricing model as more particularly set forth in the New Warrants.

Rights as a Stockholder

Except as otherwise provided in the New Warrants or by virtue of such holder's ownership of our common stock, the holder of a New Warrant does not have the rights or privileges of a holder of our common stock, including any voting rights, until the holder exercises the New Warrant.

Registration Rights

In connection with the Private Placement, we entered into an Inducement Letter, pursuant to which we agreed to file a registration statement covering the resale of the shares of common stock issuable upon exercise of the New Warrants within 15 calendar days following the date of the Inducement Letter and to use commercially reasonable efforts to cause such registration statement to become effective within the periods set forth in the Inducement Letter. The resale of the shares of common stock issuable upon exercise of the Existing Series B Warrants has been registered pursuant to the Company's effective registration statement on Form S-1 (File No. 333-297381). In the Inducement Letter, we also agreed, subject to certain exceptions, not to issue any shares of common stock or common stock equivalents, or file any registration statement, for 30 days following the date of the Inducement Letter, and, subject to certain exceptions, not to enter into any variable rate transaction until 180 days after the effective date of the resale registration statement covering the shares of common stock issuable upon exercise of the New Warrants. The registration statement of which this prospectus forms a part is being filed in part to satisfy our obligations under the Inducement Letter.

The foregoing summaries of the Inducement Letter and the New Warrants do not purport to be complete and are qualified in their entirety by reference to the full text of each such document, copies of which are filed as exhibits to, or incorporated by reference into, the registration statement of which this prospectus forms a part.

SELLING STOCKHOLDER

This prospectus relates to the possible resale from time to time by the selling stockholder of up to 2,368,868 shares of common stock issuable upon exercise of the New Warrants issued in the Private Placement. For additional information regarding the issuance of the New Warrants, see “The Private Placement” above. We are registering the shares of common stock in order to permit the selling stockholder to offer the shares for resale from time to time.

Except for the transactions contemplated by the Inducement Letter and New Warrants, and except as set forth below or in the documents incorporated by reference herein, the selling stockholder has not had any material relationship with us within the past three years.

The table below presents information regarding the selling stockholder and the shares of common stock that it may offer from time to time under this prospectus. The number of shares in the column “Shares Beneficially Owned Prior to Offering” assumes the exercise in full of all New Warrants held by the selling stockholder as of the trading day immediately preceding the date this registration statement was initially filed with the SEC, without regard to any limitations on exercise. The number of shares in the column “Maximum Number of Shares of Common Stock to be Offered Pursuant to this Prospectus” represents all of the shares of common stock that the selling stockholder may offer under this prospectus, without giving effect to the beneficial ownership limitations contained in the New Warrants. The percentage of beneficial ownership is based on 2,385,282 shares of common stock outstanding as of October 6, 2026.

In accordance with the terms of the Inducement Letter with the selling stockholder, this prospectus generally covers the resale of the maximum number of shares of common stock issuable upon exercise of the related warrants, determined as if the outstanding New Warrants were exercised in full as of the trading day immediately preceding the date this registration statement was initially filed with the SEC, each as of the trading day immediately preceding the applicable date of determination and all subject to adjustment as provided in the Inducement Letter, without regard to any limitations on the exercise of the New Warrants. The fourth column assumes the sale of all of the shares offered by the selling stockholder pursuant to this prospectus

Under the terms of the New Warrants, the selling stockholder may not exercise the New Warrants to the extent such exercise would cause such selling stockholder, together with its affiliates and attribution parties, to beneficially own a number of shares of common stock which would exceed 4.99% of our then outstanding common stock following such exercise, excluding for purposes of such determination shares of common stock issuable upon exercise of such New Warrants which have not been exercised. The number of shares in the columns below does not reflect this limitation. The selling stockholder may sell all, some or none of its shares in this offering. See “Plan of Distribution.”

Name of Selling Stockholder	Shares Beneficially Owned Prior to Offering ⁽¹⁾	% Prior to Offering ⁽²⁾	Maximum Shares Offered Hereby	Number of Shares of Common Stock Owned After Offering	
				Number ⁽²⁾	Percent ⁽²⁾
Armistice Capital Master Fund Ltd. ⁽³⁾	4,367,743	64.68%	2,368,868	1,998,875	29.6%
TOTAL	4,367,743	64.68%	2,368,868	1,998,875	29.6%

- (1) Represents the shares of common stock issuable upon exercise of the New Warrants held by the selling stockholder, without giving effect to the beneficial ownership limitations contained in the New Warrants.

- (2) Assumes the sale of all shares of common stock offered hereby. Percentages are based on 2,385,282 shares of common stock outstanding as of October 6, 2026 and treat as outstanding the shares of common stock issuable upon exercise of the New Warrants held by the selling stockholder, in each case assuming exercise in full and without giving effect to the beneficial ownership limitations contained in the New Warrants. Beneficial ownership determined in accordance with Rule 13d-3 under the Exchange Act, which gives effect to those limitations and conditions, would be substantially lower. See footnotes (1) and (3).
- (3) The securities are directly held by Armistice Capital Master Fund Ltd., a Cayman Islands exempted company (the “Master Fund”), and may be deemed to be beneficially owned by: (i) Armistice Capital, LLC (“Armistice Capital”), as the investment manager of the Master Fund; and (ii) Steven Boyd, as the Managing Member of Armistice Capital. The warrants are subject to a beneficial ownership limitation of 4.99%, which such limitation restricts the Selling Stockholder from exercising that portion of the warrants that would result in the Selling Stockholder and its affiliates owning, after exercise, a number of shares of common stock in excess of the beneficial ownership limitation. The address of Armistice Capital Master Fund Ltd. is c/o Armistice Capital, LLC, 510 Madison Avenue, 7th Floor, New York, NY 10022.

PLAN OF DISTRIBUTION

The selling stockholder of the securities covered by this prospectus 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 Nasdaq 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; and in the case of a principal transaction a markup or markdown 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 its short positions, or loan or pledge the securities to broker-dealers that in turn may sell these securities. 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 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. The selling stockholder has informed us that it does not have 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 stockholder 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 stockholder without registration and without regard to any volume or manner-of-sale limitations by reason of Rule 144, without the requirement for us to be in compliance with the current public information requirement under Rule 144 under the Securities Act or any other rule of similar effect 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 securities covered hereby will be sold only through registered or licensed brokers or dealers if required under applicable state securities laws. In addition, in certain states, the 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 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 securities by the selling stockholder or any other person. We will make copies of this prospectus available to the selling stockholder and have informed the selling stockholder 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).

Our common stock is currently listed on The Nasdaq Capital Market under the symbol “DCOY.”

MANAGEMENT’S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

Our discussion and analysis of financial condition and results of operations is incorporated by reference from Part II, Item 7 of the Company’s Annual Report on Form 10-K, as filed with the SEC on March 31, 2026, as amended by Amendment No. 1 on Form 10-K/A, filed with the SEC on April 30, 2026 (see “Incorporation of Certain Information by Reference”).

BUSINESS

The description of our business is incorporated by reference from Part I, Item 1 of the Company’s Annual Report on Form 10-K, as filed with the SEC on March 31, 2026, as amended by Amendment No. 1 on Form 10-K/A, filed with the SEC on April 30, 2026 (see “Incorporation of Certain Information by Reference”).

DESCRIPTION OF CAPITAL STOCK

The selling stockholder is offering for resale up to an aggregate of 2,368,868 shares of our common stock. The terms of our common stock are contained in our amended and restated certificate of incorporation, as amended (the “Amended and Restated Certificate of Incorporation”), and our second amended and restated bylaws, each as filed or incorporated by reference as exhibits to our Annual Report on Form 10-K for the fiscal year ended December 31, 2025, as amended. For a description of our common stock, see Exhibit 4.9—Description of The Company’s Securities Registered Under Section 12 of the Securities Exchange Act of 1934, As Amended, to our Annual Report on Form 10-K for the fiscal year ended December 31, 2025, filed with the SEC on March 31, 2026, as amended by Amendment No. 1 on Form 10-K/A filed with the SEC on April 30, 2026.

Our Amended and Restated Certificate of Incorporation authorizes the issuance of up to 100,000,000 shares of common stock, par value \$0.0001 per share, and up to 10,000,000 shares of preferred stock, par value \$0.0001 per share, of which we have designated (i) 877.709 shares of Series A Preferred Stock, 877.709 of which are issued and outstanding as of October 6, 2026; and (ii) 796.306 of our shares of Series B Preferred Stock, 796.306 of which are issued and outstanding as of October 6, 2026. As of October 6, 2026, we had 2,385,282 shares of common stock outstanding. The Series A Preferred Stock and Series B Preferred Stock are not convertible into common stock until our stockholders approve such conversion in accordance with Nasdaq Listing Rule 5635 and we satisfy the applicable Nasdaq initial listing requirements. Our board of directors may establish the rights and preferences of any additional series of preferred stock from time to time.

DIRECTORS, EXECUTIVE OFFICERS, AND CORPORATE GOVERNANCE

The description of our directors, executive officers and corporate governance is incorporated by reference from Part III, Item 10 of the Company’s Annual Report on Form 10-K, as filed with the SEC on March 31, 2026, as amended by Amendment No. 1 on Form 10-K/A, filed with the SEC on April 30, 2026 (see “Incorporation of Certain Information by Reference”).

EXECUTIVE COMPENSATION

The description of our executive compensation is incorporated by reference from Part III, Item 11 of the Company’s Annual Report on Form 10-K, as filed with the SEC on March 31, 2026, as amended by Amendment No. 1 on Form 10-K/A, filed with the SEC on April 30, 2026 (see “Incorporation of Certain Information by Reference”).

SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

The description of the security ownership of certain beneficial owners and management and related stockholder matters is incorporated by reference from Part III, Item 12 of the Company's Annual Report on Form 10-K, as filed with the SEC on March 31, 2026, as amended by Amendment No. 1 on Form 10-K/A, filed with the SEC on April 30, 2026 (see "Incorporation of Certain Information by Reference").

CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS AND DIRECTOR INDEPENDENCE

The description of certain relationships and related transactions and director independence is incorporated by reference from Part III, Item 13 of the Company's Annual Report on Form 10-K, as filed with the SEC on March 31, 2026, as amended by Amendment No. 1 on Form 10-K/A, filed with the SEC on April 30, 2026 (see "Incorporation of Certain Information by Reference").

LEGAL MATTERS

The validity of the shares of common stock offered by this prospectus will be passed upon for us by Honigman LLP.

EXPERTS

Ernst & Young LLP, independent registered public accounting firm, has audited our consolidated financial statements included in our Annual Report on Form 10-K for the year ended December 31, 2025, 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), which is incorporated by reference in this prospectus and elsewhere in the registration statement. Our financial statements are incorporated by reference in reliance on Ernst & Young LLP's report, given on their authority as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

We file annual, quarterly and current reports, proxy statements and other information with the SEC. The SEC maintains a website at www.sec.gov that contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC. We also maintain a website at www.decoytx.com. Information on, or accessible through, our website is not part of this prospectus. We have filed with the SEC a registration statement on Form S-1 under the Securities Act with respect to the shares of common stock offered by this prospectus. This prospectus does not contain all of the information set forth in the registration statement and its exhibits and schedules. For further information, we refer you to the registration statement and its exhibits and schedules.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The SEC allows us to “incorporate by reference” into this prospectus the information in other documents that we file with it, 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, and information that we file later with the SEC will automatically update and supersede this information. We incorporate 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 Exchange Act (other than information furnished and not filed) after the date of the initial registration statement and prior to effectiveness, and after the date of this prospectus and prior to the termination of the offering:

- our Annual Report on Form 10-K for the fiscal year ended December 31, 2025, filed with the SEC on [March 31, 2026](#), as amended by Amendment No. 1 on Form 10-K/A filed with the SEC on [April 30, 2026](#);
- our Quarterly Reports on Form 10-Q for the quarter ended [March 31, 2026](#), filed with the SEC on May 8, 2026, and the quarter ended [June 30, 2026](#), filed with the SEC on August 12, 2026;
- our Current Reports on Form 8-K and Form 8-K/A (other than portions thereof furnished under Item 2.02 or Item 7.01 of Form 8-K and exhibits accompanying such reports that relate to such items) filed with the SEC on [January 2, 2026](#), [January 2, 2026](#), [January 8, 2026](#), [February 25, 2026](#), [March 5, 2026](#), [April 2, 2026](#), [May 19, 2026](#), [June 29, 2026](#), [July 15, 2026](#), [September 15, 2026](#), and [September 23, 2026](#);
- the description of our common stock contained in our Registration Statement on [Form 8-A](#) filed on January 23, 2015, as updated by [Exhibit 4.9](#) to the Registrant’s Annual Report on [Form 10-K](#) for the fiscal year ended December 31, 2025, including any amendments or reports filed for the purpose of updating such description.

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

You also may access the reports and documents incorporated by reference herein on our website at www.decoytx.com. We will also provide, without charge, to each person to whom a copy of this prospectus is delivered, including any beneficial owner, upon written or oral request, a copy of any or all of the documents incorporated by reference into this prospectus (other than exhibits, unless those exhibits are specifically incorporated by reference). Requests should be directed to Decoy Therapeutics Inc., 2450 Holcombe Blvd., Suite X, Houston, TX 77021, Attn: Corporate Secretary, (713) 913-5608.



Up to 2,368,868 Shares of Common Stock

Preliminary Prospectus

, 2026

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PART II
INFORMATION NOT REQUIRED IN PROSPECTUS

Item 13. Other Expenses of Issuance and Distribution

The following table sets forth the fees and expenses in connection with the issuance and distribution of the securities being registered (other than underwriting discount and commissions). Except for the SEC registration fee, all amounts are estimates.

SEC registration fee	\$	330.78
Legal fees and expenses	\$	30,000
Accounting fees and expenses	\$	12,500
Miscellaneous expenses	\$	5,000
Total	\$	47,830.78

Item 14. Indemnification of Directors and Officers

Section 102 of the Delaware General Corporation Law (the “DGCL”) permits a corporation to eliminate the personal liability of its directors or its stockholders for monetary damages for a breach of fiduciary duty as a director, except where the director breached his or her duty of loyalty, failed to act in good faith, engaged in intentional misconduct or knowingly violated a law, authorized the payment of a dividend or approved a stock repurchase in violation of Delaware corporate law or obtained an improper personal benefit. The Registrant’s Amended and Restated Certificate of Incorporation provides that no director shall be personally liable to the Registrant or its stockholders for monetary damages for any breach of fiduciary duty as a director, notwithstanding any provision of law imposing such liability, except to the extent that the DGCL prohibits the elimination or limitation of liability of directors for breaches of fiduciary duty.

Section 145 of the DGCL provides that a corporation has the power to indemnify a director, officer, employee or agent of the corporation and certain other persons serving at the request of the corporation in related capacities against expenses (including attorneys’ fees), judgments, fines and amounts paid in settlements actually and reasonably incurred by the person in connection with an action, suit or proceeding to which he or she is or is threatened to be made a party by reason of such position, if such person acted in good faith and in a manner he or she reasonably believed to be in or not opposed to the best interests of the corporation, and, in any criminal action or proceeding, had no reasonable cause to believe his or her conduct was unlawful, except that, in the case of actions brought by or in the right of the corporation, no indemnification shall be made with respect to any claim, issue or matter as to which such person shall have been adjudged to be liable to the corporation unless and only to the extent that the Court of Chancery or other adjudicating court determines that, despite the adjudication of liability but in view of all of the circumstances of the case, such person is fairly and reasonably entitled to indemnification for such expenses which the Court of Chancery or such other court shall deem proper.

The Registrant’s Amended and Restated Certificate of Incorporation provides that the Registrant will indemnify each person who was or is a party or threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative (other than an action by or in the right of the Registrant), by reason of the fact that he or she is or was, or has agreed to become, the Registrant's director or officer, or is or was serving, or has agreed to serve, at the Registrant's request as a director, officer, partner, employee or trustee of, or in a similar capacity with, another corporation, partnership, joint venture, trust or other enterprise (all such persons being referred to as an Indemnitee), or by reason of any action alleged to have been taken or omitted in such capacity, against all expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred in connection with such action, suit or proceeding and any appeal therefrom if

such indemnitee acted in good faith and in a manner he or she reasonably believed to be in, or not opposed to, the Registrant's best interests, and, with respect to any criminal action or proceeding, he or she had no reasonable cause to believe his or her conduct was unlawful.

The Registrant's Amended and Restated Certificate of Incorporation also provides that the Registrant will indemnify any Indemnitee who was or is a party to an action or suit by or in the right of the Registrant to procure a judgment in the Registrant's favor by reason of the fact that the Indemnitee is or was, or has agreed to become, the Registrant's director or officer, or is or was serving, or has agreed to serve, at the Registrant's request as a director, officer, partner, employee or trustee of, or in a similar capacity with, another corporation, partnership, joint venture, trust or other enterprise, or by reason of any action alleged to have been taken or omitted in such capacity, against all expenses (including attorneys' fees) and, to the extent permitted by law, amounts paid in settlement actually and reasonably incurred in connection with such action, suit or proceeding, and any appeal therefrom, if the Indemnitee acted in good faith and in a manner he or she reasonably believed to be in, or not opposed to, the Registrant's best interests, except that no indemnification shall be made with respect to any claim, issue or matter as to which such person shall have been adjudged to be liable to the Registrant, unless a court determines that, despite such adjudication but in view of all of the circumstances, he or she is entitled to indemnification of such expenses. Notwithstanding the foregoing, to the extent that any Indemnitee has been successful, on the merits or otherwise, he or she will be indemnified by the Registrant against all expenses (including attorneys' fees) actually and reasonably incurred by him or her or on his or her behalf in connection therewith. If the Registrant does not assume the defense, expenses must be advanced to an Indemnitee under certain circumstances.

The Registrant maintains a general liability insurance policy that covers certain liabilities of the Registrant's directors and officers arising out of claims based on acts or omissions in their capacities as directors or officers.

Insofar as the foregoing provisions permit indemnification of directors, executive officers, or persons controlling the Registrant for liability arising under the Securities Act, the Registrant has been informed that, in the opinion of the SEC, such indemnification is against public policy as expressed in the Securities Act and is therefore unenforceable.

Item 15. Recent Sales of Unregistered Securities

The following sets forth information regarding all securities sold or issued by the Registrant within the past three years that were not registered under the Securities Act. Unless otherwise indicated, the offers, sales and issuances described below were made in reliance on the exemption from registration provided by Section 4(a)(2) of the Securities Act, and/or Regulation D promulgated thereunder, as transactions by an issuer not involving any public offering, and no underwriting discounts or commissions were paid in connection therewith.

On November 12, 2025, in connection with the closing of the Merger, the Registrant issued 877,709 shares of Series A Preferred Stock and 796,306 shares of Series B Preferred Stock to former stockholders and debtholders of Legacy Decoy as merger consideration, and reserved 45,098 shares of Series A Preferred Stock for assumed in-the-money options and warrants of Legacy Decoy. These securities were issued in reliance on Section 4(a)(2) of the Securities Act and Regulation D thereunder.

The Registrant issued and sold to C/M Capital Master Fund, LP an aggregate of 37,035 shares of common stock (the “Purchase Shares”) and 370 related commitment shares of common stock (the “Commitment Shares”), at a weighted-average price of approximately \$128.76 per share, for aggregate gross proceeds of approximately \$4.8 million through June 9, 2026, in private placements pursuant to the Securities Purchase Agreement, dated as of December 12, 2024, as amended, by and between the Company and C/M Capital Master Fund, LP in reliance on Section 4(a)(2) of the Securities Act. The Commitment Shares were issued as consideration for C/M Capital Master Fund, LP’s execution and delivery of the Purchase Agreement, in an amount equal to 1% of the Purchase Shares sold.

On November 12, 2025, in connection with the Registrant’s November 2025 underwritten public offering, the Registrant issued to Ladenburg Thalmann & Co. Inc. (the “Underwriter”) representative warrants (the “Representative Warrants”) to purchase up to 22,361 shares of common stock at an exercise price of \$27.90 per share. The aggregate discounts and commissions to the Underwriter was approximately \$628,980. The Representative Warrants were issued in reliance on Section 4(a)(2) of the Securities Act.

On June 29, 2026, pursuant to a securities purchase agreement dated June 26, 2026, the Registrant issued to an institutional investor, in a private placement, (i) pre-funded warrants to purchase up to 592,217 shares of common stock at an exercise price of \$0.0001 per share and (ii) milestone-based Series A, Series B and Series C common warrants to purchase up to an aggregate of 2,961,085 shares of common stock at an exercise price of \$5.91 per share, for aggregate gross proceeds at the closing of approximately \$3.5 million. In connection with the private placement, the Registrant issued to Curvature Securities, LLC, the placement agent, and its designee, warrants to purchase up to an aggregate of 213,198 shares of common stock at an exercise price of \$7.3875 per share. These securities were issued in reliance on Section 4(a)(2) of the Securities Act and/or Regulation D promulgated thereunder.

On September 22, 2026, we entered into the Inducement Letter with the Purchaser, as described in detail under The Private Placement above, pursuant to which the Purchaser agreed to exercise for cash, in full, the Existing Series B Warrants to purchase an aggregate of 1,184,434 shares of common stock.

Pursuant to the Inducement Letter, we agreed to reduce the exercise price of the Existing Series B Warrants from \$5.91 per share to \$3.25 per share. In connection with the transaction, the exercise price of outstanding milestone-based Series A and Series C common warrants issued on June 29, 2026 was also reduced from \$5.91 per share to \$3.25 per share. The Existing Series B Warrants were exercised in full on September 22, 2026, and the transaction closed on September 23, 2026, resulting in aggregate gross proceeds of approximately \$3.85 million, before deducting expenses.

Pursuant to the Inducement Letter and as consideration for the immediate exercise of the Existing Series B Warrants, on September 23, 2026, we issued to the Purchaser in a private placement New Warrants to purchase up to 2,368,868 shares of common stock, representing 200% of the number of shares underlying the exercised Existing Series B Warrants. We agreed to register the resale of the shares of common stock issuable upon exercise of the New Warrants, and the registration statement of which this prospectus forms a part is being filed in part to satisfy that obligation. The resale of the shares of common stock issuable upon exercise of these warrants is being registered pursuant to this registration statement.

Item 16. Exhibits and Financial Statement Schedules

(a) The exhibits to this registration statement are listed in the Exhibit Index below.

Exhibit No.	Description
2.1	<u>Agreement and Plan of Merger, dated as of January 10, 2025, by and among the Registrant, Decoy Therapeutics Inc., Decoy Therapeutics MergerSub I, Inc. and Decoy Therapeutics MergerSub II, LLC (incorporated by reference to Exhibit 2.1 to the Registrant's Current Report on Form 8-K filed with the SEC on January 13, 2025).</u>
2.1	<u>Amendment No. 1 to the Agreement and Plan of Merger, dated as of March 28, 2025, by and among Salarius Pharmaceuticals, Inc., Decoy Therapeutics, Inc., Decoy Therapeutics MergerSub I, Inc. and Decoy Therapeutics MergerSub II, LLC (incorporated by reference to Exhibit 2.1 to the Registrant's Current Report on Form 8-K filed with the SEC on March 28, 2025).</u>
2.3	<u>Amendment No. 2 to the Agreement and Plan of Merger, dated as of June 10, 2025, by and among Salarius Pharmaceuticals, Inc., Decoy Therapeutics, Inc., Decoy Therapeutics MergerSub I, Inc., and Decoy Therapeutics MergerSub II, LLC (incorporated by reference to Exhibit 2.1 to the Registrant's Current Report on Form 8-K filed with the SEC on June 11, 2025).</u>
2.4	<u>Amendment No. 3 to the Agreement and Plan of Merger, dated as of July 18, 2025, by and among Salarius Pharmaceuticals, Inc., Decoy Therapeutics, Inc., Decoy Therapeutics MergerSub I, Inc., and Decoy Therapeutics MergerSub II, LLC (incorporated by reference to Exhibit 2.1 to the Registrant's Current Report on Form 8-K filed with the SEC on July 21, 2025).</u>
2.5	<u>Amendment No. 4 to the Agreement and Plan of Merger, dated as of July 29, 2025, by and among Salarius Pharmaceuticals, Inc., Decoy Therapeutics, Inc., Decoy Therapeutics MergerSub I, Inc., and Decoy Therapeutics MergerSub II, LLC (incorporated by reference to Exhibit 2.1 to the Registrant's Current Report on Form 8-K filed with the SEC on July 29, 2025).</u>
2.6	<u>Amendment No. 5 to the Agreement and Plan of Merger, dated as of July 29, 2025, by and among Salarius Pharmaceuticals, Inc., Decoy Therapeutics, Inc., Decoy Therapeutics MergerSub I, Inc., and Decoy Therapeutics MergerSub II, LLC (incorporated by reference to Exhibit 2.1 to the Registrant's Current Report on Form 8-K filed with the SEC on September 18, 2025).</u>
3.1	<u>Amended and Restated Certificate of Incorporation (incorporated herein by reference to Exhibit 3.1 to our Current Report on Form 8-K filed with the Commission on February 9, 2015).</u>
3.2	<u>Certificate of Amendment to Amended and Restated Certificate of Incorporation of the Registrant filed with the Secretary of State of the State of Delaware on July 18, 2019 (incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K filed with the SEC on July 22, 2019).</u>
3.3	<u>Certificate of Amendment to Restated Certificate of Incorporation of the Registrant filed with the Secretary of State of the State of Delaware on October 14, 2022 (incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K filed with the SEC on October 14, 2022).</u>
3.4	<u>Certificate of Amendment to Amended and Restated Certificate of Incorporation of the Registrant filed with the Secretary of State of the State of Delaware on June 14, 2024 (incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K filed with the SEC on June 14, 2024).</u>
3.5	<u>Certificate of Amendment to the Amended and Restated Certificate of Incorporation of Salarius Pharmaceuticals, Inc., effective August 15, 2025 (incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K filed with the SEC on August 15, 2025).</u>
3.6	<u>Certificate of Amendment to the Amended and Restated Certificate of Incorporation of Salarius Pharmaceuticals, Inc., effective January 8, 2026 (incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K filed with the SEC on January 8, 2026).</u>
3.7	<u>Certificate of Amendment to the Amended and Restated Certificate of Incorporation of Decoy Therapeutics Inc. effective March 6, 2026 (incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K filed with the SEC on March 5, 2026).</u>
3.8	<u>Second Amended and Restated Bylaws of the Registrant, effective January 8, 2026 (incorporated by reference to Exhibit 3.2 to the Registrant's Current Report on Form 8-K filed with the SEC on January 8, 2026).</u>

3.11 [Form of Certificate of Designation of Series A Non-Voting Convertible Preferred Stock \(incorporated by reference to Exhibit 2.2 to the Registrant's Current Report on Form 8-K filed with the SEC on September 18, 2025\).](#)

3.13 [Form of Certificate of Designation of Series B Non-Voting Convertible Preferred Stock \(incorporated by reference to Exhibit 2.3 to the Registrant's Current Report on Form 8-K filed with the SEC on September 18, 2025\).](#)

3.14 [Certificate of Amendment to the Amended and Restated Certificate of Incorporation of Saliarius Pharmaceuticals, Inc., effective January 8, 2026 \(incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K filed with the SEC on January 8, 2026\).](#)

3.15 [Second Amended and Restated Bylaws of the Registrant, effective January 8, 2026 \(incorporated by reference to Exhibit 3.2 to the Registrant's Current Report on Form 8-K filed with the SEC on January 8, 2026\).](#)

3.16 [Certificate of Amendment to the Amended and Restated Certificate of Incorporation of Decoy Therapeutics Inc., effective March 6, 2026 \(incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K filed with the SEC on March 5, 2026\).](#)

4.1 [Form of Common Stock Certificate of Registrant \(incorporated by reference to Exhibit 4.1 to the Registrant's registration statement on Form S-1 \(File No. 333-201276\), as amended, filed January 13, 2015\).](#)

4.2 [Form of Common Warrant \(incorporated by reference to Exhibit 4.1 to the Registrant's Current Report on Form 8-K filed with the SEC on September 23, 2026\).](#)

5.1* [Opinion of Honigman LLP.](#)

10.1+ [Form of Indemnification Agreement between the Registrant and its directors and officers \(incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed with the SEC on July 22, 2019\).](#)

10.2+ [Indemnification Agreement, dated February 20, 2024, between Saliarius Pharmaceuticals, Inc. and David J. Arthur \(incorporated by reference to Exhibit 10.4 to the Registrant's Current Report on Form 8-K filed with the SEC on February 23, 2024\).](#)

10.3^ [Exclusive License Agreement, dated August 3, 2011, between the University of Utah Research Foundation and Saliarius Pharmaceuticals, LLC \(incorporated by reference to Exhibit 10.1 to the Registrant's Registration Statement on Form S-4 filed with the SEC on February 14, 2019 \(the "S-4"\)\).](#)

10.4^ [Cancer Research Grant Contract, dated June 1, 2016, between the Cancer Prevention and Research Institute of Texas and Saliarius Pharmaceuticals, LLC \(incorporated by reference to Exhibit 10.3 to the S-4\).](#)

10.5+ [Amended and Restated Executive Employment Agreement, dated February 5, 2019, between David J. Arthur and Saliarius Pharmaceuticals, LLC \(incorporated by reference to Exhibit 10.5 to the S-4\).](#)

10.6+ [Amendment to Amended and Restated Executive Employment Agreement dated September 10, 2019, among David J. Arthur, the Registrant and Saliarius Pharmaceuticals, LLC \(incorporated by reference to Exhibit 10.5 to the Registrant's Current Report on Form 8-K filed with the SEC on September 16, 2019\).](#)

10.7+ [Separation and Release Agreement, dated February 20, 2024, between David J. Arthur and Saliarius Pharmaceuticals, Inc. \(incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed with the SEC on February 23, 2024\).](#)

10.8+ [Executive Employment Agreement, dated April 24, 2020, between Mark J. Rosenblum and Saliarius Pharmaceuticals, Inc. \(incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed with the SEC on April 29, 2020\).](#)

10.9+ [Amendment to Executive Employment Agreement, dated February 20, 2024, between Mark J. Rosenblum and Saliarius Pharmaceuticals, Inc. \(incorporated by reference to Exhibit 10.5 to the Registrant's Current Report on Form 8-K filed with the SEC on February 23, 2024\).](#)

10.10+ [Executive Employment Agreement by and between Frederick E. Pierce and Saliarius Pharmaceuticals, Inc., dated November 18, 2025 \(incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed with the SEC on November 19, 2025\).](#)

10.11+ [Executive Employment Agreement, dated November 18, 2025, between Barbara Hibner and Saliarius Pharmaceuticals, Inc. \(incorporated by reference to Exhibit 10.2 to the Registrant's Current Report on Form 8-K filed with the SEC on November 19, 2025\).](#)

10.12+ [Executive Employment Agreement, dated November 18, 2025, between Peter Marschel, and Salarius Pharmaceuticals, Inc. \(incorporated by reference to Exhibit 10.3 to the Registrant's Current Report on Form 8-K filed with the SEC on November 19, 2025\).](#)

10.13+ [Forms of Stock Option Agreement, Notice of Exercise and Stock Option Grant Notice under the Flex Pharma, Inc. 2015 Equity Incentive Plan \(incorporated by reference to Exhibit 10.4 to the Registrant's Annual Report on Form 10-K filed with the SEC on March 24, 2015\).](#)

10.14+ [Notice of Stock Option Amendment, dated February 20, 2024, between David J. Arthur and Salarius Pharmaceuticals, Inc. \(incorporated by reference to Exhibit 10.3 to the Registrant's Current Report on Form 8-K filed with the SEC on February 23, 2024\).](#)

10.15+ [Amended and Restated Salarius Pharmaceuticals, Inc. 2015 Employee Stock Purchase Plan \(incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed with the SEC on June 15, 2023\).](#)

10.16+ [Salarius Pharmaceuticals, Inc., 2015 Equity Incentive Plan, as amended \(incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed with the SEC on June 19, 2020\).](#)

10.17 [At the Market Offering Agreement, dated February 5, 2021, between Salarius Pharmaceuticals, Inc. and Ladenburg Thalmann & Co. Inc. \(incorporated by reference to Exhibit 1.1 to the Registrant's Current Report on Form 8-K filed with the SEC on February 5, 2021\).](#)

10.18 [Securities Purchase Agreement, dated April 22, 2022 \(incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed with the SEC on April 22, 2022\).](#)

10.19 [Form of Securities Purchase Agreement \(incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed with the SEC on May 16, 2023\).](#)

10.20 [Form of Registration Rights Agreement \(incorporated by reference to Exhibit 10.2 to the Registrant's Current Report on Form 8-K filed with the SEC on May 16, 2023\).](#)

10.21 [Securities Purchase Agreement, dated December 12, 2024, by and between Salarius Pharmaceuticals, Inc. and C/M Capital Master Fund, L.P. \(incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed with the SEC on December 13, 2024\).](#)

10.22 [Registration Rights Agreement, dated December 12, 2024, by and between Salarius Pharmaceuticals, Inc. and C/M Capital Master Fund, L.P. \(incorporated by reference to Exhibit 10.2 to the Registrant's Current Report on Form 8-K filed with the SEC on December 13, 2024\).](#)

10.23 [Warrant Cancellation Agreement, dated as of January 10, 2025, by and among the Registrant and an Investor \(incorporated by reference to Exhibit 10.4 to the Registrant's Current Report on Form 8-K filed with the SEC on January 13, 2025\).](#)

10.24+ [Amendment 1 to Consulting Agreement, effective February 20, 2024, by and between the Registrant and David J. Arthur \(incorporated by reference to Exhibit 10.25 to the Registrant's Annual Report on Form 10-K filed with the SEC on March 21, 2025\).](#)

10.25 [Grant Agreement, dated September 9, 2021, by and between Decoy Therapeutics, Inc. and The Gates Foundation \(formerly known as the Bill & Melinda Gates Foundation\) \(incorporated by reference to Exhibit 10.26 to the Registrant's Amendment No. 1 to Form S-1, as filed with the SEC on April 17, 2025\).](#)

10.26 [Amendment 1 to Grant Agreement, dated August 29, 2023, by and between Decoy Therapeutics, Inc. and The Gates Foundation \(formerly known as the Bill & Melinda Gates Foundation\) \(incorporated by reference to Exhibit 10.27 to the Registrant's Amendment No. 1 to Form S-1 filed with the SEC on April 17, 2025\).](#)

10.27 [Amendment 2 to Grant Agreement, dated February 26, 2025, by and between Decoy Therapeutics, Inc. and The Gates Foundation \(formerly known as the Bill & Melinda Gates Foundation\) incorporated by reference to Exhibit 10.28 to the Registrant's Amendment No. 1 to Form S-1 filed with the SEC on April 17, 2025.](#)

10.28 [Letter Agreement, dated January 31, 2023, by and between Decoy Therapeutics Inc. and Johnson & Johnson Innovation LLC \(incorporated by reference to Exhibit 10.29 to the Registrant's Amendment No. 1 to Form S-1 filed with the SEC on April 17, 2025\).](#)

10.29 [Letter Agreement, dated July 28, 2023, by and between Decoy Therapeutics, Inc. and Johnson & Johnson Innovation LLC \(incorporated by reference to Exhibit 10.30 to the Registrant's Amendment No. 1 to Form S-1 filed with the SEC on April 17, 2025\).](#)

10.30 [Letter Agreement, dated March 11, 2024, by and between Decoy Therapeutics, Inc. and Johnson & Johnson Innovation LLC \(incorporated by reference to Exhibit 10.31 to the Registrant's Amendment No. 1 to Form S-1 filed with the SEC on April 17, 2025\).](#)

10.31	<u>Form of Decoy Note Conversion Agreement (incorporated by reference to Exhibit 10.32 to the Registrant's Form S-1, as filed with the Securities and Exchange Commission on October 21, 2025).</u>
10.32	<u>Form of Decoy Series A Amended and Restated Note Conversion Agreement (incorporated by reference to Exhibit 10.33 to the Registrant's Form S-1, as filed with the Securities and Exchange Commission on October 21, 2025).</u>
10.33	<u>Form of Decoy Series B Amended and Restated Note Conversion Agreement (incorporated by reference to Exhibit 10.34 to the Registrant's Form S-1, as filed with the Securities and Exchange Commission on October 21, 2025).</u>
10.34	<u>Grant Agreement, dated September 9, 2021, by and between Decoy Therapeutics, Inc. and The Gates Foundation (formerly known as the Bill & Melinda Gates Foundation) (incorporated by reference to Exhibit 10.26 to the Registrant's Form S-1, as filed with the Securities and Exchange Commission on October 21, 2025).</u>
10.35	<u>Amendment 1 to Grant Agreement, dated August 29, 2023, by and between Decoy Therapeutics, Inc. and The Gates Foundation (formerly known as the Bill & Melinda Gates Foundation) (incorporated by reference to Exhibit 10.27 to the Registrant's Form S-1, as filed with the Securities and Exchange Commission on October 21, 2025).</u>
10.36	<u>Amendment 2 to Grant Agreement, dated February 26, 2025, by and between Decoy Therapeutics, Inc. and The Gates Foundation (formerly known as the Bill & Melinda Gates Foundation) (incorporated by reference to Exhibit 10.28 to the Registrant's Form S-1, as filed with the Securities and Exchange Commission on October 21, 2025).</u>
10.37	<u>Securities Purchase Agreement (incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed with the SEC on June 29, 2026).</u>
10.38	<u>Registration Rights Agreement (incorporated by reference to Exhibit 10.2 to the Registrant's Current Report on Form 8-K filed with the SEC on June 29, 2026).</u>
10.39	<u>Form of Lock-Up Agreement (incorporated by reference to Exhibit 10.3 to the Registrant's Current Report on Form 8-K filed with the SEC on June 29, 2026).</u>
10.40	<u>Placement Agency Agreement (incorporated by reference to Exhibit 10.4 to the Registrant's Current Report on Form 8-K filed with the SEC on June 29, 2026).</u>
10.41	<u>Form of Warrant Inducement Offer Letter, dated September 22, 2026, by and between the Registrant and the Holder (incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K filed with the SEC on September 23, 2026).</u>
10.42+	<u>Decoy Therapeutics Inc. 2026 Equity Incentive Plan (incorporated herein by reference to Annex A to the Registrant's Definitive Proxy Statement on Schedule 14A filed with the Commission on January 9, 2026).</u>
21.1	<u>Subsidiaries of the Registrant (incorporated by reference to Exhibit 21.1 to the Registrant's Form S-1 filed with the SEC on January 10, 2020).</u>
23.1*	<u>Consent of Ernst & Young LLP, independent registered public accounting firm</u>
23.2*	<u>Consent of Honigman LLP (included in Exhibit 5.1).</u>
24.1*	<u>Power of Attorney (included on the signature page hereto).</u>
107*	<u>Filing Fee Table.</u>

* Filed herewith.

^ Exhibits and/or schedules or portions thereof have been omitted pursuant to Item 601(a)(5) Item 601(b)(10)(iv) of Regulation S-K and provided separately to the SEC pursuant to a request for confidential treatment.

+ Management contract or compensatory plans or arrangements.

- (a) All financial statement schedules are omitted because the information required to be set forth therein is not applicable or is included in the consolidated financial statements or related notes incorporated herein by reference.

Item 17. Undertakings

The undersigned Registrant hereby undertakes:

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

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

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

(iii) To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement; provided, however, that paragraphs (1)(i), (1)(ii) and (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 Commission by the Registrant pursuant to Section 13 or Section 15(d) of the Securities Exchange Act of 1934 that are incorporated by reference in the registration statement.

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

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

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

(5) That, for the purpose of determining liability of the Registrant under the Securities Act of 1933 to any purchaser in the initial distribution of the securities, the undersigned Registrant undertakes that in a primary offering of securities of the undersigned Registrant pursuant to this registration statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned Registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:

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

- (ii) Any free writing prospectus relating to the offering prepared by or on behalf of the undersigned Registrant or used or referred to by the undersigned Registrant;
 - (iii) The portion of any other free writing prospectus relating to the offering containing material information about the undersigned Registrant or its securities provided by or on behalf of the undersigned Registrant; and
 - (iv) Any other communication that is an offer in the offering made by the undersigned Registrant to the purchaser.
- (6) That, for purposes of determining any liability under the Securities Act of 1933, each filing of the Registrant's annual report pursuant to Section 13(a) or Section 15(d) of the Securities Exchange Act of 1934 (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Securities Exchange Act of 1934) that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.
- (7) Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the Registrant pursuant to the foregoing provisions, or otherwise, the Registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Securities Act of 1933 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 of 1933 and will be governed by the final adjudication of such issue.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the Registrant has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Houston, State of Texas, on the 7th day of October, 2026.

DECOY THERAPEUTICS INC.

By: /s/ Mark J. Rosenblum
Mark J. Rosenblum
Chief Financial Officer

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Frederick E. Pierce and Mark J. Rosenblum, and each of them, his or her true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution, for him or her and in his or her name, place and stead, in any and all capacities, to sign any and all amendments (including post-effective amendments) to this registration statement, and any registration statement relating to the same offering as this registration statement 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 other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully to all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents, or any of them, or their or his or her substitute or substitutes, 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 persons in the capacities and on the dates indicated.

Signature	Title	Date
/s/ Frederick E. Pierce Frederick E. Pierce	Chief Executive Officer and Director <i>(Principal Executive Officer)</i>	October 7, 2026
/s/ Mark J. Rosenblum Mark J. Rosenblum	Chief Financial Officer <i>(Principal Financial Officer and Principal Accounting Officer)</i>	October 7, 2026
/s/ William K. McVicar William K. McVicar	Chairman of the Board of Directors	October 7, 2026
/s/ Patricia Gauthier Patricia Gauthier	Director	October 7, 2026
/s/ Tess Burleson Tess Burleson	Director	October 7, 2026
/s/ Arnold Hanish Arnold Hanish	Director	October 7, 2026
/s/ Paul Lammers Paul Lammers	Director	October 7, 2026
/s/ Jonathan Lieber Jonathan Lieber	Director	October 7, 2026

October 7, 2026

Decoy Therapeutics Inc.
2450 Holcombe Blvd., Suite X
Houston, Texas 77021

Re: Registration Statement on Form S-1

Ladies and Gentlemen:

We have acted as counsel to Decoy Therapeutics Inc., a Delaware corporation (the “**Company**”), in connection with preparing and filing with the U.S. Securities and Exchange Commission (the “**Commission**”) pursuant to the Securities Act of 1933, as amended (the “**Securities Act**”), a Registration Statement on Form S-1 (the “**Registration Statement**”), in connection with the registration under the Securities Act for resale from time to time by the selling stockholder named in the related prospectus included in the Registration Statement (the “**Selling Stockholder**”) of up to 2,368,868 shares (the “**Shares**”) of the Company’s common stock, par value \$0.0001 per share (the “**Common Stock**”) issuable upon the exercise of warrants (the “**Warrants**”) issued pursuant to the terms of a warrant inducement offer letter (the “**Inducement Letter**”) between the Company and the selling stockholder, as described in the Registration Statement and the related prospectus. This opinion is being furnished in connection with the requirements of Item 601(b)(5) of Regulation S-K under the Securities Act, and no opinion is expressed herein as to any matter pertaining to the contents of the Registration Statement or the related prospectus, other than as expressly stated herein with respect to the issuance of the Shares.

In connection with this opinion letter, we examined originals or copies of such records, instruments, certificates, opinions, memoranda and other documents as in our judgment are necessary or appropriate to enable us to render the opinions expressed below. We have not independently sought to verify factual matters. In conducting our examination, we assumed, without independent investigation, the genuineness and authenticity of all signatures on original documents, the accuracy, completeness and authenticity of all certificates, the authenticity of all documents submitted to us as originals, the conformity to original documents of all documents submitted as copies, and the authenticity of the originals of such copies, the accuracy and completeness of all records made available to us by the Company, and the due authorization, execution and delivery by the Selling Stockholder of all documents where authorization, execution and delivery are prerequisites to the legal effectiveness of such documents. In addition, in connection with this opinion letter, we have assumed that the Shares will be offered in the manner and on the terms identified or referred to in the Registration Statement and the accompanying prospectus, including all supplements and amendments thereto.

Our opinions herein are limited solely to the matters set forth herein. The law covered by the opinions expressed herein is limited to the Delaware General Corporation Law as in effect on the date hereof (the “**DGCL**”). We are not admitted to practice in the State of Delaware and, with respect to the opinions set forth below, with your permission, we have (i) limited our review to standard compilations available to us of the DGCL, which we have assumed to be accurate and complete, and (ii) not reviewed case law. We express no opinion as to whether the laws of any jurisdiction are applicable to the subject matter hereof. We are not rendering any opinion with respect to federal law, including federal securities laws, or state blue sky securities laws. It is understood that this opinion letter is to be used only in connection with the offer and resale of the Shares while the Registration Statement is effective under the Securities Act.

Based upon, subject to and limited by the foregoing and the following, we are of the opinion that, when the Shares are issued and delivered to the Selling Stockholder upon exercise of the Warrants against payment in full of the consideration therefor (in an amount not less than the par value thereof) in accordance with the terms and conditions of the applicable Warrants and in the manner described in the Registration Statement and the included

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prospectus, and upon the due registration of the Shares on the books of the transfer agent and registrar of the Company in the name of or on behalf of the Selling Stockholder, the Shares will be validly issued, fully paid and non-assessable.

In giving the opinions set forth above, with respect to the Shares opined on in this opinion letter, we have assumed that (i) at or prior to the time of the delivery of such Shares, the authorization of such Shares will not have been modified or rescinded, and there will not have occurred any change in law affecting such Shares, including their validity or enforceability, (ii) the Company will comply with all applicable notice requirements regarding uncertificated shares provided in the DGCL, (iii) the Inducement Letter and the Warrants have been duly authorized, executed and delivered by the Company and the other parties thereto and constitute valid and legally binding obligations of the Company enforceable in accordance with their terms; and (iv) upon the issuance of any of the Shares, the total number of shares of Common Stock then issued and outstanding and reserved for issuance will not exceed the total number of shares of Common Stock that the Company is then authorized to issue under its Amended and Restated Certificate of Incorporation, as amended, and by the board of directors of the Company in connection with the offering contemplated by the Registration Statement.

We hereby consent to the filing of this opinion letter with the Commission as Exhibit 5.1 to the Registration Statement and to the reference to our firm under the caption “Legal Matters” in the Registration Statement and the related prospectus. In giving such consent, we do not admit that we are within the category of persons whose consent is required by Section 7 of the Securities Act or the rules and regulations promulgated thereunder by the Commission. This opinion speaks only at and as of its date and is based solely on the facts and circumstances known to us as of such date. In addition, in rendering this opinion, we assume no obligation to revise, update or supplement this opinion (i) should the present aforementioned laws be changed by legislative action, judicial decision or otherwise, or (ii) to reflect any facts or circumstances which may hereafter come to our attention.

Very truly yours,

/s/ Honigman LLP

HONIGMAN LLP

JHK/SEME/JPk

Honigman LLP • 660 Woodward Ave • Suite 2290 • Detroit, Michigan 48226

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Consent of Independent Registered Public Accounting Firm

We consent to the reference to our firm under the caption "Experts" in the Registration Statement (Form S-1) and related Prospectus of Decoy Therapeutics Inc. (formerly Salarius Pharmaceuticals, Inc.) for the registration of up to 2,368,868 shares of its common stock and to the incorporation by reference therein of our report dated March 31, 2026, with respect to the consolidated financial statements of Decoy Therapeutics Inc. included in its Annual Report (Form 10-K) for the year ended December 31, 2025, filed with the Securities and Exchange Commission.

/s/ Ernst & Young LLP

Houston, Texas
October 7, 2026

Calculation of Filing Fee Tables

S-1

Decoy Therapeutics Inc.

Table 1: Newly Registered and Carry Forward Securities

☐ Not Applicable

	Security Type	Security Class Title	Fee Calculation or Carry Forward Rule	Amount Registered	Proposed Maximum Offering Price Per Unit	Maximum Aggregate Offering Price	Fee Rate	Amount of Registration Fee	Carry Forward Form Type	Carry Forward File Number	Carry Forward Initial Effective Date	Filing Fee Previously Paid in Connection with Unsold Securities to be Carried Forward
Newly Registered Securities												
Fees to be Paid	1 Equity	Common Stock, par value \$0.0001 per share	Other	2,368,868	\$ 1.605	3,802,033.14	\$ 0.000087	\$ 330.78				
Fees Previously Paid												
Carry Forward Securities												
Carry Forward Securities												
Total Offering Amounts:						\$ 3,802,033.14	\$ 330.78					
Total Fees Previously Paid:								\$ 0.00				
Total Fee Offsets:								\$ 0.00				
Net Fee Due:								\$ 330.78				

Offering Note

1

(1) Pursuant to Rule 416(a) under the Securities Act of 1933, as amended (the "Securities Act"), this Registration Statement shall also cover an indeterminate number of additional shares of common stock, par value \$0.0001 per share (Common Stock"), of Decoy Therapeutics Inc. (the "Registrant") as may be issued or issuable resulting from stock splits, stock dividends or similar transactions.

(2) Consists of up to 2,368,868 shares of Common Stock issuable upon exercise of warrants issued in a private placement that closed on September 23, 2026. The Registrant will not receive any proceeds from the resale of such shares by the selling stockholder.

(3) Estimated solely for the purpose of calculating the registration fee pursuant to Rule 457(c) of the Securities Act, based on the average of the high and low prices for a share of the Registrant's Common Stock as reported on the Nasdaq Stock Market, LLC on October 6, 2026, which is a date within five business days of the filing of the Registration Statement.

Table 2: Fee Offset Claims and Sources

☒ Not Applicable

	Registrant or Filer Name	Form or Filing Type	File Number	Initial Filing Date	Filing Date	Fee Offset Claimed	Security Type Associated with Fee Offset Claimed	Security Title Associated with Fee Offset Claimed	Unsold Securities Associated with Fee Offset Claimed	Unsold Aggregate Offering Amount Associated with Fee Offset Claimed	Fee Paid with Fee Offset Source
Rules 457(b) and 0-11(a)(2)											
Fee Offset Claims											
Fee Offset Sources											
Rule 457(p)											
Fee Offset Claims											
Fee Offset Sources											

Table 3: Combined Prospectuses

☒ Not Applicable

Security Type	Security Class Title	Amount of Securities Previously Registered	Maximum Aggregate Offering Price of Securities Previously Registered	Form Type	File Number	Initial Effective Date
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