

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

FORM S-3

REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933

NEONC TECHNOLOGIES HOLDINGS, INC.
(Exact name of Registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation or organization)

92-1954864
(I.R.S. Employer
Identification No.)

**23975 Park Sorrento, Suite 205
Calabasas, CA 91302
(310) 663-7831**

(Address including zip code, telephone number, including area code, of Registrant's Principal Executive Offices)

**Amir Heshmatpour
Chief Executive Officer and President
23975 Park Sorrento, Suite 205
Calabasas, CA 91302
(310) 663-7831**

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

Copies To:
**Thomas J. Poletti, Esq.
Manatt, Phelps & Phillips LLP
695 Town Center Drive, 14th Floor
Costa Mesa, CA 92626
(714) 371-2500**

Approximate date of commencement of proposed sale to the public: As soon as practicable after this Registration Statement is declared effective.

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

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

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

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

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

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

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

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

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

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

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

SUBJECT TO COMPLETION, DATED JUNE 15, 2026

PRELIMINARY PROSPECTUS



555,554 shares of Common Stock

This prospectus relates to the resale by the selling stockholder named herein (the “Selling Stockholder”), or its respective transferees, pledgees, donees or other successors-in-interest, from time to time, of up to 555,554 of our shares (the “Shares”) of common stock, par value \$0.0001 (“Common Stock”) of NeOnc Technologies Holdings, Inc., a Delaware corporation (the “Company”) consisting of (i) 277,777 shares of Common Stock and (ii) 277,777 shares of Common Stock issuable upon exercise of a warrant (“Warrant”). We are registering the Shares on behalf of the Selling Stockholder, to be offered and sold from time to time, to satisfy certain registration rights that we have granted to the Selling Stockholder.

On April 20, 2026, the Company entered into a securities purchase agreement with the Selling Stockholder, pursuant to which the Company issued the Selling Stockholder 277,777 shares of Common Stock and a Warrant to purchase 277,777 shares of Common Stock. See “*Description of Private Placement*”, and the section titled “*Selling Stockholder*” for additional information regarding the Selling Stockholder.

The Selling Stockholder may resell or dispose of the Shares, or interests therein, at fixed prices, at prevailing market prices at the time of sale or at prices negotiated with purchasers, to or through underwriters, broker-dealers, agents, or through any other means described under the heading “*Plan of Distribution*” beginning on page 17 of this prospectus. The Selling Stockholder will bear its respective commissions and discounts, if any, attributable to the sale or disposition of the Shares, or interests therein, held by the Selling Stockholder. We will bear all costs, expenses and fees in connection with the registration of the Shares.

Our Common Stock is listed on the Nasdaq Global Market under the symbol “NTHI.” On June 12, 2026, the last reported sale price for our Common Stock on the Nasdaq Global Market was \$4.75 per share.

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 5 of this prospectus, contained in the applicable prospectus and prospectus supplement and in any related free writing prospectus, and under similar headings in the other documents that are incorporated by reference into this prospectus or any prospectus supplement before making a decision to purchase our securities.

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

The date of this prospectus _____, 2026

TABLE OF CONTENTS

	Page
About This Prospectus	ii
Special Note Regarding Forward-Looking Statements	iii
Prospectus Summary	1
The Offering	4
Risk Factors	5
Use of Proceeds	7
Selling Stockholder	10
Description of Securities	11
Plan of Distribution	17
Legal Matters	19
Experts	19
Where You Can Find More Information	19
Incorporation of Certain Information by Reference	20

You should rely only on the information contained in this prospectus. Neither we nor the Selling Stockholder have authorized any other person to provide you with information different from or in addition to that contained in this prospectus. If anyone provides you with different or inconsistent information, you should not rely on it. The Selling Stockholder is not making an offer to sell these securities in any jurisdiction where an offer or sale is not permitted. You should assume that the information appearing in this prospectus is accurate only as of the date on the front cover of this prospectus. Our business, financial condition, results of operations and prospects may have changed since that date.

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

ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement on Form S-3 that NeOnc Technologies Holdings, Inc. (“we,” “us,” “NeOnc,” or the “Company”) filed with the Securities and Exchange Commission (the “SEC”). The Selling Stockholder may sell from time to time up to 277,777 shares of Common Stock and 277,777 shares of Common Stock issuable upon exercise of the Warrant as described in this prospectus. We are not selling any shares of Common Stock under this prospectus, and we will not receive any proceeds from the sale of shares of Common Stock offered hereby by the Selling Stockholder. However, we may receive proceeds from the exercise of the Warrant to the extent it is exercised for cash. Any proceeds we receive from the cash exercise of the Warrant will be used for general corporate purposes. We will not receive any proceeds from the exercise of the Warrant if it is exercised on a cashless basis.

We may also file a prospectus supplement or post-effective amendment to the Registration Statement on Form S-3 of which this prospectus forms a part (the “Registration Statement”) that may contain material information relating to the offering. The prospectus supplement or post-effective amendment may also add, update or change information contained in this prospectus with respect to the offering. If there is any inconsistency between the information in this prospectus and the applicable prospectus supplement or post-effective amendment, you should rely on the prospectus supplement or post-effective amendment, as applicable. Before purchasing any Shares, you should carefully read this prospectus, any post-effective amendment, and any applicable prospectus supplement, together with the additional information described under the headings “*Where You Can Find More Information*” beginning on page 19 and “*Incorporation of Certain Information by Reference*” beginning on page 20.

Neither we, nor the Selling Stockholder, have authorized anyone to provide you with any information or to make any representations other than those contained or incorporated by reference in this prospectus, any post-effective amendment, or any applicable prospectus supplement prepared by or on behalf of us or to which we have referred you. We and the Selling Stockholder take no responsibility for and can provide no assurance as to the reliability of any other information that others may give you. We and the Selling Stockholder will not make an offer to sell these Shares in any jurisdiction where the offer or sale is not permitted. You should assume that the information appearing in this prospectus, any post-effective amendment and any applicable prospectus supplement to this prospectus is accurate only as of the date on its respective cover. Our business, financial condition, results of operations and prospects may have changed since those dates. This prospectus incorporates by reference, and any post-effective amendment or any prospectus supplement may contain or incorporate by reference, market data and industry statistics and forecasts that are based on independent industry publications and other publicly available information. Although we believe these sources are reliable, we do not guarantee the accuracy or completeness of this information and we have not independently verified this information. In addition, the market and industry data and forecasts that may be incorporated by reference in this prospectus, any post-effective amendment or any prospectus supplement may involve estimates, assumptions and other risks and uncertainties and are subject to change based on various factors, including those discussed under the heading “*Risk Factors*” incorporated by reference in this prospectus, any post-effective amendment and any applicable prospectus supplement. Accordingly, investors should not place undue reliance on this information.

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

Except where the context otherwise requires or where otherwise indicated, the terms “NeOnc,” “NTHI,” “we,” “us,” “our,” “our company,” “Company” and “our business” refer to NeOnc Technologies Holdings, Inc.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus and the documents incorporated by reference in this prospectus include forward-looking statements, which involve risks and uncertainties. These forward-looking statements can be identified by the use of forward-looking terminology, including the terms “believe,” “estimate,” “project,” “anticipate,” “expect,” “seek,” “predict,” “continue,” “possible,” “intend,” “may,” “might,” “will,” “could,” “would” or “should” or, in each case, their negative, or other variations or comparable terminology. These forward-looking statements include all matters that are not historical facts. They appear in a number of places throughout this prospectus and the documents incorporated by reference in this prospectus, and include statements regarding our intentions, beliefs or current expectations concerning, among other things, development, manufacturing and sales of our products, our operations, prospects, strategies, and the industry in which we operate. We derive many of our forward-looking statements from our operating budgets and forecasts, which are based upon many detailed assumptions. While we believe that our assumptions are reasonable, we caution that it is very difficult to predict the impact of known factors, and, of course, it is impossible for us to anticipate all factors that could affect our actual results. Forward-looking statements should not be read as a guarantee of future performance or results and may not be accurate indications of when such performance or results will be achieved. In light of these risks and uncertainties, the forward-looking events and circumstances discussed in this prospectus may not occur and actual results could differ materially from those anticipated or implied in the forward-looking statements.

Forward-looking statements speak only as of the date of this prospectus. You should not put undue reliance on any forward-looking statements. We assume no obligation to update forward-looking statements to reflect actual results, changes in assumptions or changes in other factors affecting forward-looking information, except to the extent required by applicable laws. If we update one or more forward-looking statements, no inference should be drawn that we will make additional updates with respect to those or other forward-looking statements. You should read this prospectus, the documents incorporated by reference in this prospectus, and the documents that we reference in this prospectus and have filed with the SEC as exhibits to the registration statement of which this prospectus is a part with the understanding that our actual future results, levels of activity, performance and events and circumstances may be materially different from what we expect. All forward-looking statements are based upon information available to us on the date of this prospectus.

By their nature, forward-looking statements involve risks and uncertainties because they relate to events and depend on circumstances that may or may not occur in the future. We caution you that forward-looking statements are not guarantees of future performance and that our actual results of operations, financial condition, business and prospects may differ materially from those made in or suggested by the forward-looking statements contained in this prospectus. In addition, even if our results of operations, financial condition, business and prospects are consistent with the forward-looking statements contained (or incorporated by reference) in this prospectus, those results may not be indicative of results in subsequent periods.

Forward-looking statements necessarily involve risks and uncertainties, and our actual results could differ materially from those anticipated in the forward-looking statements due to several factors, including those set forth under the heading “*Risk Factors*” in our most recent Annual Report on Form 10-K filed with the SEC, as such risk factors may be amended, supplemented, or superseded from time to time by other reports we file with the SEC, including subsequent Annual Reports on Form 10-K and Quarterly Reports on Form 10-Q and any amendments thereof, and the risk factors described under the caption “*Risk Factors*” in any applicable prospectus supplement. See “*Where You Can Find More Information*” and “*Information Incorporated by Reference*.” The factors set forth below under “*Risk Factors*” and other cautionary statements made in this prospectus should be read and understood as being applicable to all related forward-looking statements wherever they appear in this prospectus. The forward-looking statements contained in this prospectus represent our judgment as of the date of this prospectus. We caution readers not to place undue reliance on such statements. Except as required by law, we undertake no obligation to update publicly any forward-looking statements for any reason, even if new information becomes available or other events occur in the future. All subsequent written and oral forward-looking statements attributable to us or persons acting on our behalf are expressly qualified in their entirety by the cautionary statements contained above and throughout this prospectus.

You should read this prospectus, the documents incorporated by reference in this prospectus, and the documents that we reference in this prospectus and have filed as exhibits to the registration statement of which this prospectus is a part completely and with the understanding that our actual future results may be materially different from what we expect. We qualify all of our forward-looking statements by these cautionary statements.

PROSPECTUS SUMMARY

The following summary highlights information contained elsewhere in this prospectus and in documents incorporated by reference. This summary is not complete and may not contain all the information you should consider before investing in our securities. You should read this entire prospectus and the documents incorporated by reference in this prospectus carefully, especially the risks of investing in our securities discussed under the heading "Risk Factors," and our financial statements and related notes incorporated by reference in this prospectus before making an investment decision. Except as otherwise indicated herein or as the context otherwise requires, references in this prospectus and the documents incorporated by reference in this prospectus to, the "Company", "we", "us", "our", "NeOnc" refer to NeOnc Technologies Holdings, Inc., a Delaware corporation, and its consolidated subsidiaries. This prospectus includes forward-looking statements that involve risks and uncertainties. See "Cautionary Note Regarding Forward-Looking Statements." This prospectus includes trademarks, service marks and trade names owned by us or other companies. All trademarks, service marks and trade names included in this prospectus are the property of their respective owners.

About NeOnc Technologies Holdings, Inc.

Our Company (f/k/a NAS-ONC, Inc.) was formed in 2008, devoted to developing new drugs with new delivery modes. As a clinical-stage biopharmaceutical company, we have focused on establishing treatments for intracranial malignancies, i.e., aggressive cancers located in the brain. These cancer types include primary brain cancers, such as glioblastoma, and secondary brain cancers, that have arrived through metastatic spread from other cancers throughout the body, such as melanoma or breast and lung cancer. Brain-localized malignancies are particularly difficult to treat because the blood-brain barrier prevents efficient entry of most pharmacotherapeutic agents into the brain. As a result, these patients are faced with poor prognoses and shortened average life expectancy. NeOnc is developing novel drug delivery methods to be used in combination with novel drug candidates.

NeOnc has two lead products in development: NEO100 and NEO12. NEO100 is a purified form of perillyl alcohol ("POH") which is administered to brain cancer patients via intranasal delivery. Ongoing activities for intranasal delivery of NEO100:

- We have completed human testing in a Phase I clinical trial and are currently conducting a Phase IIa trial with recurrent malignant glioma (Grade IV, IDH1 mutant and Grade III Astrocytoma, IDH1 mutant) patients.
- A similar Phase IIa trial of intranasal NEO100 (NEO 100-02) for patients with malignant skull-based meningioma is also ongoing. Meningiomas are slow-growing tumors originating in the meninges, the membranous layers surrounding the brain and spinal cord. We initiated this because these patients lack effective treatment options. These tumors are notoriously difficult to access, and conventional methods like surgery often lead to significant neurological deficits. Additionally, radiation therapy has shown limited effectiveness. The trial was officially launched in July 2023. As NEO100 uses the same treatment platform as the malignant gliomas, we bypassed the Phase I trial and received FDA approval for a Phase II trial within just 30 days.
- Separate from this single-drug application, NEO100 is further being investigated as a drug delivery vehicle, where the results of NeOnc's preclinical studies suggest evidence that the combination of NEO100 with other drugs may enable a patient's improved brain tumor delivery via the intranasal route. Intranasal NEO100, mixed with levodopa (L-DOPA), is in the planning stages for a clinical trial in patients with Parkinson's disease (PD). NeOnc's laboratory experiments showed that intranasal NEO100 mixed with levodopa was able to reverse PD symptoms in mice. A Phase I clinical trial is planned to study the impact on human patients.

Our initial application for the Phase I/IIa trial for NEO 100 focused on an enrollment population with recurrent glioblastoma. Based on our Phase I results, NEO 100 showed more promise in patients with IDH1,2 mutant Grade IV astrocytomas. However, this patient population represented less than 5-10 percent of all patients with recurrent glioblastoma. As we planned for a total of 31 patients for Phase IIa in our initial analysis, enrollment of recurrent Grade IV, IDH1,2 mutants was limited due to the fact that only 5-10 percent of Grade IV astrocytomas have IDH1,2 mutations. Independent biostatistical review of clinical progression patterns of recurrent IDH1,2 mutated Grade III astrocytomas compared to recurrent IDH1,2 mutated Grade IV astrocytomas revealed that these two tumors have the same prognosis. As a result, in June 2023 we requested that the FDA not object to the inclusion of patients with recurrent Grade III IDH1,2 mutant astrocytomas in the Phase IIa trial. The FDA did not object and, as a result, the population of patients available to be enrolled is now much larger. Because the prognosis of recurrent Grade III IDH1,2 mutants is similar to recurrent IDH1,2 Grade IV astrocytomas, the number of patients needed to be enrolled in the Phase IIa trial to assess the clinical efficacy of NEO100 in the population of high grade astrocytomas did not change. The expanded patient population means that there are a significant number of additional patients that can be targeted for potential enrollment in the Phase IIa study; in an initial review, we have identified approximately 80 grade III IDH1,2 mutation-positive candidates. Patients with residual measurable disease are now followed via MRI scans to determine if there is progression, (recurrent disease), making them eligible for enrollment. We believe this focused enrollment strategy for Grade III and IV IDH1/2-mutant patients has the potential to support a more efficient trial process. Based on our current planning assumptions, we believe a Phase II data readout for NEO100 may be achievable by the end of 2026.

Our second lead product, NEO212, a covalently conjugated molecule combining the chemotherapeutic drug temozolomide with perillyl alcohol, has completed preclinical testing and has received investigational new drug (IND) approval from the United States Food and Drug Administration (FDA), i.e., it has been authorized to proceed to clinical testing in cancer patients. We have designed a Phase I/II trial for oral NEO212, which began in the fourth quarter of 2023. In this trial, NEO212 will be administered orally to patients with primary brain tumors (i.e., malignant gliomas) and secondary brain tumors (i.e., brain metastases derived from peripheral tumors, such as tumors of the lung, breast, skin/melanoma, etc.). Furthermore, NEO212 is undergoing development towards intranasal application specifically for patients with uncontrolled brain metastases derived from peripheral tumors (lung, breast, skin, etc.), but has not yet been studied in human patients.

Currently, none of our product candidates have been approved for sale in the United States or elsewhere. We have no commercial products nor do we have a sales or marketing infrastructure. In order to market and sell our products we must conduct clinical trials on patients and obtain regulatory approvals from appropriate regulatory agencies, like the FDA in the United States, and similar organizations elsewhere in the world.

We have not generated any revenue from product sales and from January 1, 2023 to December 31, 2025 have only generated revenue of \$193,452. We do not anticipate generating significant revenues for the foreseeable future. We had net loss of \$62,146,210 and \$11,898,464 for the years ended December 31, 2025 and 2024, respectively. At December 31, 2025, we had an accumulated deficit of \$112,754,655.

Implications of Being an “Emerging Growth Company”

We are an “emerging growth company” as defined under the federal securities laws. For so long as we remain an emerging growth company, we are permitted to rely on exemptions from specified disclosure requirements that are applicable to other public companies that are not emerging growth companies. These exemptions include the following:

- not being required to comply with the auditor attestation requirements in the assessment of our internal controls over financial reporting;
- not being required to comply with any requirement that may be adopted in the future by the Public Company Accounting Oversight Board regarding mandatory audit firm rotation or a supplement to the auditor’s report providing additional information about the audit and the financial statements;
- reduced disclosure obligations regarding executive compensation; and
- exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and shareholder approval of any golden parachute payments not previously approved.

An emerging growth company may delay the adoption of certain accounting standards until those standards would otherwise apply to private companies. We have irrevocably elected not to take advantage of the extended transition period for complying with new or revised accounting standards provided to emerging growth companies.

We will remain an emerging growth company until the earliest of (i) the last day of the fiscal year following the fifth anniversary of the completion of our direct listing, (ii) the last day of the first fiscal year in which our annual gross revenues exceed \$1.235 billion, (iii) the date on which we have, during the immediately preceding three-year period, issued more than \$1.0 billion in non-convertible debt securities and (iv) the end of any fiscal year in which the market value of our Common Stock held by non-affiliates exceeds \$700 million as of the end of the second quarter of that fiscal year.

Implications of Being a Smaller Reporting Company

We are a “smaller reporting company” as defined in Rule 10(f)(1) of Regulation S-K. Smaller reporting companies may take advantage of certain reduced disclosure obligations, including, among other things, providing only two years of audited financial statements. We will remain a smaller reporting company until the last day of the fiscal year in which (1) the market value of our shares held by non-affiliates equals or exceeds \$250 million as of the prior June 30th, or (2) our annual revenues equaled or exceeded \$100 million during such completed fiscal year and the market value of our shares held by non-affiliates equals or exceeds \$700 million as of the prior June 30th. Such reduced disclosure and corporate governance obligations may make it more challenging for investors to analyze our results of operations and financial prospects.

Corporate Information

NeOnc Technologies Holdings, Inc. (“NeOnc” or the “Company”) was incorporated in the State of Delaware. The Company was formed as a holding company in connection with a share exchange transaction completed on April 7, 2023, pursuant to which all of the common stockholders of NeOnc Technologies, Inc. (“NTI”), the Company’s wholly owned operating subsidiary, exchanged their shares in NTI for shares of common stock of the Company. NTI was originally incorporated in California in 2008 under the name NAS-ONC, Inc. and subsequently redomiciled and renamed NeOnc Technologies, Inc. Following the share exchange, NTI became a wholly owned subsidiary of the Company, which conducts all of the Company’s research and development and clinical operations.

Our principal executive office is located at 23975 Park Sorrento, Suite 205, Calabasas, CA 91302, and our telephone number is (310) 663-7831. We maintain a website at www.neonc.com/. Information available on our website is not incorporated by reference in and is not deemed a part of this prospectus.

Other Information

For a complete description of our business, financial condition, results of operations and other important information, we refer you to our filings with the Securities and Exchange Commission (the “SEC”) that are incorporated by reference in this prospectus, including our Annual Report on Form 10-K for the year ended December 31, 2025 as filed with the SEC on March 31, 2026 and as further amended and filed with the SEC on May 5, 2026. For instructions on how to find copies of these documents, please see the section titled “*Incorporation of Certain Information by reference*” beginning on page 20 of this prospectus.

THE OFFERING

Securities Offered by the Selling Stockholder	555,554 shares of Common Stock, consisting of (i) 277,777 shares of Common Stock, and (ii) 277,777 shares of Common Stock issuable upon exercise of the Warrant.
Common Stock Outstanding⁽¹⁾	25,933,365 shares of Common Stock as of June 12, 2026.
Use of Proceeds	We will not receive any of the proceeds from the sale by the Selling Stockholder of shares of Common Stock, although we will receive the exercise price of the Warrant not exercised by the Selling Stockholder on a cashless exercise basis. Any proceeds received by us from the exercise of the Warrant will be used for general corporate purposes. We will bear all fees and expenses incident to our obligation to register the shares of Common Stock. See “ <i>Use of Proceeds</i> ” for more information.
Nasdaq Trading Symbol	Our shares of Common Stock are listed on the Nasdaq Global Market under the symbol “NTHI”.
Risk Factors:	Investing in these securities involves a high degree of risk. As an investor, you should be able to bear a complete loss of your investment. You should carefully consider the information set forth in the “ <i>Risk Factors</i> ” section of this prospectus before deciding to invest in our securities.

(1) Does not give effect to the following:

- 2,093,305 shares of Common Stock issuable upon exercise of outstanding warrants;
- 573,666 unvested shares of restricted stock issued pursuant to our 2023 Equity Incentive Plan;
- Shares of Common Stock issuable pursuant to a \$50 million Equity Purchase Agreement; and
- 249,507 shares of Common Stock reserved for future issuance under our 2023 Equity Incentive Plan.

RISK FACTORS

Investing in our Common Stock involves a high degree of risk. Before you invest you should carefully consider the risks and uncertainties described below and the other information in this prospectus, and under the caption "Risk Factors" in our Annual Report on Form 10-K for the fiscal year ended December 31, 2025 as filed with the SEC on March 31, 2026 and as further amended and filed with the SEC on May 5, 2026, which is incorporated by reference, as well as the other information in this prospectus, before deciding whether to invest in shares of our Common Stock. If any of the following risks actually occur, our business, results of operations and financial condition could be materially adversely affected. In this case, the trading price of our Common Stock would likely decline, and you might lose part or all your investment in our Common Stock. Additional risks not currently known to us or which we consider immaterial based on information currently available to us may also materially adversely affect us.

Risks Related to the Private Placement Financing

The holder of the Warrant may, at its option, at any time, exercise its Warrant for, Common Stock based on agreed-upon formulas. Any such conversion or exercise will result in significant dilution to our stockholders.

Our stockholders may experience significant dilution as a result of our issuance of the Warrant offered hereby. The Warrant is exercisable for five years to purchase up to 277,777 shares of Common Stock at an initial exercise price of \$9.00, subject to adjustment under certain circumstances described in the Warrant and will expire on the fifth-year anniversary of the date of issuance. See "Description of Private Placement" for additional information. The issuance of material amounts of Common Stock by us pursuant to the exercise of the Warrant would cause our stockholders to experience significant dilution in their investment in our Company.

Any further issuances of our Common Stock may adversely affect the market price of our Common Stock.

We are filing this prospectus in accordance with the Securities Purchase Agreement entered into with the Selling Stockholder. Any further issuances, or the perception of further issuances, of our Common Stock or securities convertible or exercisable for our Common Stock may cause our share price to decline.

Our management team will have broad discretion over the use of the net proceeds from the Common Stock issued to the Selling Stockholder following their exercise of the Warrant for cash, if any, and you may not agree with how we use the proceeds and the proceeds may not be invested successfully.

Our management team will have broad discretion as to the use of the net proceeds from the Common Stock issued to the Selling Stockholder following its exercise of Warrant for cash, if any, and we could use such proceeds for purposes other than those contemplated at the time of commencement of this offering. Accordingly, you will be relying on the judgment of our management team with regard to the use of those net proceeds, and you will not have the opportunity, as part of your investment decision, to assess whether the proceeds are being used appropriately. It is possible that, pending their use, we may invest those net proceeds in a way that does not yield a favorable, or any, return for us. The failure of our management team to use such funds effectively could have a material adverse effect on our business, financial condition, operating results and cash flows.

Risks Related to Our Intellectual Property

The United States (“U.S.”) government may have certain rights to intellectual property embodied in our current or future drug candidates.

Some of our intellectual property rights were generated through the use of U.S. government funding and are subject to certain federal regulations, such as the Bayh-Dole Act of 1980 (the “Bayh-Dole Act”). Pursuant to the Bayh-Dole Act, the U.S. government may have certain rights to intellectual property embodied in our current or future drug candidates. U.S. government rights in any inventions developed under a government funded program include a non-exclusive, non-transferable, irrevocable worldwide license to use inventions for any government purpose. In addition, under certain limited circumstances, the U.S. government would have the right to require us to grant exclusive, partially exclusive, or non-exclusive licenses to these inventions to a third party if it determines that: (1) adequate steps have not been taken to commercialize the invention; (2) government action is necessary to meet public health or safety needs; or (3) government action is necessary to meet requirements for public use under federal regulations (referred to as “march-in rights”). The U.S. government also has the right to take title to these inventions, if any, if we fail to disclose the invention to the government or fail to file an application to register the intellectual property within specified time limits. Intellectual property generated under a government funded program is also subject to certain reporting requirements, compliance with which may require us to expend substantial resources. The U.S. government also requires that any products embodying the subject invention or produced through the use of the subject invention be manufactured substantially in the United States. This manufacturing preference requirement can be waived if the owner of the intellectual property can show reasonable but unsuccessful efforts have been made to grant licenses on similar terms to potential licensees that would be likely to manufacture substantially in the United States or that, under the circumstances, domestic manufacture is not commercially feasible. The preference for U.S. manufacturers may limit our ability to contract with non-U.S. product manufacturers for products covered by such intellectual property. To the extent any of our current or future intellectual property is generated through the use of U.S. government funding, the provisions of the Bayh-Dole Act may similarly apply.

Risks Related to our Financial Position and Need for Additional Capital

We have outstanding tax liabilities and could be subject to additional tax liabilities.

We are subject to federal, state, and local tax provisions in the United States. In connection with the granting and vesting of restricted stock under our 2023 Equity Incentive Plan to our employees, officers, directors, and advisory board members, we are required to pay federal and state withholding tax. To date, we have not paid such required taxes which to date, with accrued penalties and interest, totals approximately \$7.0 million. While we currently do not have sufficient cash to satisfy this obligation, we plan to utilize net proceeds from future offerings of securities to pay such tax in full. However, there can be no assurance that proceeds from the sale of securities further to such offerings, when and if received, will be sufficient to satisfy such obligation or that sufficient proceeds will be received in time to pay such taxes without penalty or interest charges. In the absence of such proceeds, we will be required to secure alternate sources of funding which may not be available on favorable terms or at all. Without adequate monies to cover such taxes, we not only will continue to incur additional penalties and interest charges, but we may be subject to collection actions by state and federal taxing authorities. There can be no assurance that such penalties will not be substantial or that collection actions, if initiated, will not have a material adverse effect on our financial condition or results of operations.

USE OF PROCEEDS

The Selling Stockholder may, or may not, elect to sell shares of our Common Stock covered by this prospectus. To the extent the Selling Stockholder chooses to sell shares of our Common Stock covered by this prospectus, we will not receive any proceeds from any such sales of our Common Stock, although we will receive the exercise price of the Warrant if not exercised by the Selling Stockholder on a cashless exercise basis. Any proceeds received by us from the exercise of the Warrant will be used for general corporate purposes. We will bear all fees and expenses incident to our obligation to register the shares of Common Stock. See “*Selling Stockholder*.”

DESCRIPTION OF PRIVATE PLACEMENT

On January 29, 2026, the Company entered into Securities Purchase Agreements (the “Agreements”) to issue and sell up to 2,222,222 shares of Common Stock at a per share purchase price of \$7.20 (the “Shares”) and five-year warrants to purchase up to 2,222,222 shares of Common Stock at a per share exercise price of \$9.00 (the “Warrants” and together with the Shares, the “Securities”).

The initial closing further to the Agreement consisted of the issuance of 1,388,888 Shares and Warrants to purchase 1,388,888 shares of Common Stock to a single institutional investor at a purchase price of \$10 million. The subsequent closing further to the Agreement consisted of the issuance of 86,361 Shares and Warrants to purchase 86,361 shares of Common Stock to three investors at an aggregate purchase price of \$621,804.11. The offering of Securities further to the Agreement terminated on January 31, 2026.

On February 24, 2026, the Company entered into a second Securities Purchase Agreement to issue and sell up to the remaining 746,973 Shares at the same per Share purchase price of \$7.20 and Warrants to purchase up to 746,973 shares of Common Stock at the same per share exercise price of \$9.00. The initial closing further to this second Securities Purchase Agreement took place on February 25, 2026, and consisted of the issuance of an aggregate of 201,390 Shares and Warrants to purchase 201,390 shares of Common Stock to four investors at a combined purchase price of \$1,450,004. The offering of Securities further to the second Securities Purchase Agreement terminated on February 28, 2026.

On March 20, 2026, the Company entered into a third Securities Purchase Agreement to issue and sell up to the remaining 545,583 Shares at the same per Share purchase price of \$7.20 and Warrants to purchase up to 545,583 shares of Common Stock at the same per share exercise price of \$9.00. The initial closing further to this third Securities Purchase Agreement took place on March 20, 2026, and consisted of the issuance of an aggregate of 138,889 Shares and Warrants to purchase 138,889 shares of Common Stock to one investor at a purchase price of \$1,000,000. This third Securities Purchase Agreement contains customary representations, warranties and agreements of the Company, customary conditions to closing and obligations of the parties and the offering of Securities further to the third Securities Purchase Agreement terminated on April 30, 2026.

On April 20, 2026, the Company entered into a fourth Securities Purchase Agreement to issue and sell up to the remaining 406,694 Shares at the same per Share purchase price of \$7.20 and Warrants to purchase up to 406,694 shares of Common Stock at the same per share exercise price of \$9.00. The initial closing further to this fourth Securities Purchase Agreement took place on April 20, 2026, and consisted of the issuance of an aggregate of 277,777 Shares and a Warrant to purchase 277,777 shares of Common Stock to one investor at a purchase price of approximately \$2,000,000. This fourth Securities Purchase Agreement contains customary representations, warranties and agreements of the Company, customary conditions to closing and obligations of the parties and the offering of Securities further to the fourth Securities Purchase Agreement terminated on April 30, 2026. The registration statement/prospectus is hereby filed to register the 277,777 shares of Common Stock and 277,777 shares of Common Stock issuable upon exercise of the Warrant.

The following is a summary of certain terms and provisions of the Warrants. The summary is not complete and is subject to and qualified in its entirety by the provisions of the form of Warrant, which is filed as an exhibit to the registration statement of which this prospectus forms a part. Prospective investors should carefully review the terms and provisions set forth in the form of Warrant.

Exercisability. The Warrants expire five (5) years from the date of issuance. The Warrants are exercisable, at the option of each holder, in whole or in part by delivering to us a duly executed exercise notice and, at any time a registration statement registering the issuance of the shares of Common Stock underlying the Warrants under the Securities Act of 1933, as amended (the “Securities Act”) is effective and available for the issuance of such shares, by payment in full in immediately available funds for the number of shares of Common Stock purchased upon such exercise. If a registration statement registering the issuance of the shares of Common Stock underlying the Warrants under the Securities Act is not effective, the holder may elect to exercise the Warrants through a cashless exercise, in which case the holder would receive upon such exercise the net number of shares of Common Stock determined according to the formula set forth in the Warrant. No fractional shares of Common Stock will be issued in connection with the exercise of Warrants. In lieu of fractional shares, we will pay the holder an amount in cash equal to the fractional amount multiplied by the exercise price or round up to the next whole share.

Exercise Limitation. A holder does not have the right to exercise any portion of the Warrants if the holder (together with its affiliates) would beneficially own in excess of 9.99% of the number of shares of our Common Stock outstanding immediately after giving effect to the exercise, as such percentage ownership is determined in accordance with the terms of the Warrants.

Exercise Price. The exercise price per whole share of Common Stock purchasable upon exercise of the Warrants is \$9.00. The exercise price is subject to weighted average price adjustment in the event of certain issuances of securities below the exercise price of the Warrants and price adjustment in the event of certain stock dividends and distributions, stock splits, stock combinations, reclassifications or similar events affecting our Common Stock.

The foregoing descriptions of the Agreements and the Warrants do not purport to be complete and are qualified in their entirety by reference to the full text of the forms of Agreement filed as Exhibits 10.1, 10.2, 10.3 and 10.4 hereto, and the forms of Warrant filed as 4.8, 4.9, 4.10 and 4.11 hereto, and incorporated by reference herein.

SELLING STOCKHOLDER

The shares of Common Stock being offered by Selling Stockholder are the Shares. For additional information regarding the transactions in which the shares of Common Stock were issued, refer the section entitled “*Description of Private Placement*” and description of the Securities Purchase Agreement dated April 20, 2026.

We are registering the shares of Common Stock in order to permit the Selling Stockholder to offer its shares of Common Stock for resale from time to time pursuant to the Securities Purchase Agreement dated April 20, 2026. Except for the ownership of the securities issued in the Private Placement, the Selling Stockholder has not had any material relationship with us within the past three years.

The table below lists the Selling Stockholder and other information regarding the beneficial ownership (as determined under Section 13(d) of the Securities Exchange Act of 1934, as amended, and the rules and regulations thereunder) of the shares of Common Stock held by the Selling Stockholder. The second column lists the number of shares of Common Stock beneficially owned by the Selling Stockholder, based on the Selling Stockholder’s ownership of securities issued in the Private Placement held by such Selling Stockholder on that date but taking account of any limitations on conversion and exercise set forth therein.

The third column lists the shares of Common Stock being offered by this prospectus by the Selling Stockholder and does not take into account any limitations on exercise of the warrants set forth therein.

In accordance with the terms of the Securities Purchase Agreement dated April 20, 2026 with the Selling Stockholder, this prospectus generally covers the resale of the sum of shares of Common Stock, and the maximum number of shares of Common Stock issued or issuable upon exercise of the Warrant, determined as if the outstanding Warrant were exercised in full (without regard to any limitations on conversion or exercise contained therein solely for the purpose of such calculation) at the exercise price calculated as of the trading day immediately preceding the date this registration statement was initially filed with the SEC. Because the exercise price of the Warrant may be adjusted, the number of shares that will actually be issued may be more or less than the number of shares being offered by this prospectus. 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 Warrant, the Selling Stockholder may not exercise the Warrant to the extent (but only to the extent) such Selling Stockholder or any of its affiliates would beneficially own a number of our Common Stock which would exceed 4.99% or 9.99% of our outstanding shares (the “Maximum Percentage”). The number of shares in the second column reflects these limitations. The Selling Stockholder may sell all, some or none of its shares in this offering. See “*Plan of Distribution*.”

Name of Selling Stockholder	Number of Shares of Common Stock Beneficially Owned Prior to Effective Date of this Prospectus ⁽¹⁾		Maximum Number of Shares of Common Stock to be Offered Pursuant to this Prospectus	Number of Shares of Common Stock Beneficially Owned After the Maximum Number of Common Stock Offered Hereby are Sold	
	Number	Percent		Number	Percent
64K Capital, LLC ⁽²⁾	555,554	*	555,554 ⁽³⁾	0	*%

* Less than 1%

(1) Applicable percentage ownership is based on 25,933,365 shares of our Common Stock outstanding as of June 12, 2026.

(2) The address of 64K Capital, LLC is 3889 Maple Ave, Suite 500, Dallas, Texas 75219.

(3) This column lists the number of Common Stock beneficially owned by the Selling Stockholder as of June 12, 2026, consisting of 277,777 shares of Common Stock and 277,777 shares of Common Stock issuable upon exercise of the Warrant.

DESCRIPTION OF SECURITIES

The following descriptions are summaries of the material terms of our Amended and Restated Certificate of Incorporation and Amended and Restated Bylaws.

General

The following description summarizes the most important terms of our capital stock and certain provisions of our amended and restated certificate of incorporation and amended and restated bylaws. This summary does not purport to be complete and is qualified in its entirety by the provisions of our amended and restated certificate of incorporation and amended and restated bylaws, copies of which have been filed as exhibits to the Registration Statement of which this prospectus is a part, and by the applicable provisions of Delaware law.

Our authorized capital stock consists of 110,000,000 shares of capital stock, of which (i) 100,000,000 shares are Common Stock with a par value \$0.0001 per share and (ii) 10,000,000 shares are preferred stock with a par value of \$0.0001 per share. All of our authorized shares of preferred stock are undesignated. As of April 30, 2026, there are 25,194,259 shares of Common Stock and no shares of preferred stock issued and outstanding.

Common Stock

Voting Rights

Holders of Common Stock are entitled to one vote per share on all matters to be voted upon by the shareholders, including the election of directors. Such holders are not entitled to vote cumulatively for the election of directors. Our amended and restated certificate of incorporation establishes a classified board of directors that is divided into three classes with staggered three-year terms. Only the directors in one class will be subject to election by a plurality of the votes cast at each annual meeting of our shareholders, with the directors in the other classes continuing for the remainder of their respective three-year terms. The affirmative vote of holders of at least 66 2/3% of the voting power of all of the then-outstanding shares of capital stock, voting as a single class, will be required to amend certain provisions of our amended and restated certificate of incorporation, including provisions relating to amending our amended and restated bylaws and our amended and restated certificate of incorporation, the classified structure of our board of directors, the size of our board of directors, removal of directors, director liability, vacancies on our board of directors, special meetings, shareholder notices, actions by written consent, and exclusive jurisdiction.

Dividends

Subject to preferences that may be applicable to any outstanding preferred stock, our common shareholders are entitled to receive ratably such dividends, if any, as may be declared from time to time by the board of directors out of funds legally available for that purpose. We have never declared or paid any cash dividends on our capital stock. We currently expect to retain future earnings, if any, to finance the growth and development of our business and do not anticipate paying any cash dividends in the foreseeable future.

Liquidation Rights

In the event of our liquidation, dissolution or winding up, our common shareholders are entitled to share ratably in all assets remaining after payment of liabilities, subject to prior distribution rights of preferred stock, if any, then outstanding.

No Preemptive or Similar Rights

Our common shareholders have no preemptive or conversion rights or other subscription rights. There are no redemption or sinking fund provisions applicable to the Common Stock.

Preferred Stock

Pursuant to our amended and restated certificate of incorporation, our board of directors is authorized, without action by the shareholders, to designate and issue up to 10,000,000 shares of preferred stock in one or more series and to designate the powers, preferences and rights of each series, which may be greater than the rights of the Common Stock. It is not possible to state the actual effect of the issuance of any shares of preferred stock upon the rights of holders of the Common Stock until the board of directors determines the specific rights of the holders of such preferred stock. However, the effects might include, among other things:

- impairing dividend rights of the Common Stock;
- diluting the voting power of the Common Stock;
- impairing the liquidation rights of the Common Stock; and
- delaying or preventing a change in control of us without further action by the shareholders

Series A Convertible Preferred Stock

As of the date of this registration statement, 6,000 shares of Series A Convertible Preferred Stock (“Series A Preferred Stock”) are outstanding.

Authorized Shares, Par Value

Pursuant to the Series A Preferred Certificate of Designation, we authorized 6,000 Series A Preferred Shares, par value \$0.0001 per share. Each share of the Series A Preferred Stock has a stated value of \$1,000.

Voting Rights.

The holders of the Series A Preferred Stock have no voting rights except as required by applicable law.

Ranking and Liquidation Preference.

The Series A Preferred Stock ranks senior to the Company’s common stock and any junior securities, on parity with any parity securities, and junior to any senior securities with respect to dividends and distributions upon liquidation, dissolution or winding up of the Company. In the event of a liquidation event, the holders of the Series A Preferred Stock shall be entitled to receive in cash out of the assets of the Company, whether from capital or from earnings available for distribution to its stockholders, before any amount shall be paid to the holders of any of shares of junior securities, but pari passu with any parity securities then outstanding, an amount per share of the Series A Preferred Stock equal to the conversion amount as defined in the Certificate of Designation.

Redemption; Conversion only in the Event of an Election not to Redeem.

The Company has the right to redeem all of the Series A Preferred Stock at the then stated value on or before a date that is four months from the date of issuance (with two options to extend for an additional one month at the Company’s discretion, with each extension adding \$50.00 per share to the then stated value of such Series A Preferred Stocks). Only in the event that the Company elects not to redeem all of the Series A Preferred Stock on or before said date(s), then an additional \$166.67 per share shall be added to the then stated value of such shares and each share of Series A Preferred Stock shall then become convertible, at the option of the holder, into that number of shares of common stock (subject to the beneficial ownership limitation) determined by dividing the then stated value of such share by the conversion price, which will be 80% of the lowest closing price of the Company’s common stock during the five trading days prior to conversion, subject to a floor price of \$1.00 and subject to adjustment for reverse and forward stock splits, stock dividends and other similar transactions. Conversion is subject to a 19.99% beneficial ownership limitation unless stockholder approval is obtained.

Beneficial Ownership Limitation.

The Company shall not effect any conversion of the Series A Preferred Stock, and a holder shall not have the right to convert any portion of the Series A Preferred Stock, to the extent that after giving effect to the conversion sought by the holder such holder (together with such holder's affiliates) would beneficially own more than 4.99% (or upon election by a holder, 9.99%) of the number of shares of common stock outstanding immediately after giving effect to the issuance of shares of common stock issuable upon such conversion.

Convertible Promissory Note

In 2022, NeOnc Technologies, Inc. issued a \$50,000 convertible note to a shareholder due August 30, 2023 ("Note"). The Note bears interest at 2% per annum and is convertible. The Note and all accrued interest thereon is convertible, at the option of the noteholder, into the class and series of equity securities ("Conversion Stock") that is sold by us in its next issuance of equity securities in a Financing Transaction (as defined below), consummated after the issuance date of the note. A Financing Transaction is a sale, other than in an initial public offering, of equity securities by us to investors for cash. The Financing Transaction does not include the issuance of stock, options, or warrants to service providers in connection with the rendition of such services or to third parties in connection with the contribution of non-cash assets to us. The number of shares of Conversion Stock to be issued to the noteholder upon such conversion shall be equal to the quotient obtained by dividing (i) the entire principal amount of the Note plus accrued interest by (ii) the Financing Transaction conversion price, which shall be equal to 75% of the price paid for one share of Conversion Stock by the investors in the Financing Transaction. The entire principal amount of and accrued interest of the Note shall automatically be converted, without further action on the part of the noteholder or us, into the class and series of stock issued by us, at the closing of an initial public offering. The number of shares of stock to be issued to the holder upon such conversion shall be equal to the quotient obtained by dividing (i) the entire principal amount of the Note plus accrued interest by (ii) the initial public offering conversion price, which shall be equal to 75% of the price paid for one share of Conversion Stock by the investors in the initial public offering. On January 31, 2024, the Note was assigned to HCWG LLC (an entity owned by certain shareholders, directors, and officers of the Company). Additionally, as part of the assignment, the Note was amended to increase the principal balance to \$62,500, amend the maturity date to the date that the Company completes its initial public offering, and the Note was subordinated to the Bridge Loan.

Warrants

As of April 30, 2026, warrants to purchase 2,093,305 shares of our common stock with an exercise price per share of \$9.00 were outstanding (the "Warrants"). The Warrants were issued on January 29, 2026, February 24, 2026, March 20, 2026, and April 20, 2026. The following is a summary of certain terms and provisions of the Warrants, and the summary is not complete and is subject to and qualified in its entirety by the provisions of the form of Warrant:

Exercisability. The Warrants expire five (5) years from the date of issuance. The Warrants are exercisable, at the option of each holder, in whole or in part by delivering to us a duly executed exercise notice and, at any time a registration statement registering the issuance of the shares of Common Stock underlying the Warrants under the Securities Act of 1933, as amended (the "Securities Act") is effective and available for the issuance of such shares, by payment in full in immediately available funds for the number of shares of Common Stock purchased upon such exercise. If a registration statement registering the issuance of the shares of Common Stock underlying the Warrants under the Securities Act is not effective, the holder may elect to exercise the Warrants through a cashless exercise, in which case the holder would receive upon such exercise the net number of shares of Common Stock determined according to the formula set forth in the Warrant. No fractional shares of Common Stock will be issued in connection with the exercise of Warrants. In lieu of fractional shares, we will pay the holder an amount in cash equal to the fractional amount multiplied by the exercise price or round up to the next whole share.

Exercise Limitation. A holder does not have the right to exercise any portion of the Warrants if the holder (together with its affiliates) would beneficially own in excess of 9.99% of the number of shares of our Common Stock outstanding immediately after giving effect to the exercise, as such percentage ownership is determined in accordance with the terms of the Warrants.

Exercise Price. The exercise price per whole share of Common Stock purchasable upon exercise of the Warrants is \$9.00. The exercise price is subject to weighted average price adjustment in the event of certain issuances of securities below the exercise price of the Warrants and price adjustment in the event of certain stock dividends and distributions, stock splits, stock combinations, reclassifications or similar events affecting our Common Stock.

Anti-Takeover Provisions

Amended and Restated Certificate of Incorporation and Amended and Restated Bylaws

Because our shareholders do not have cumulative voting rights, our shareholders holding a plurality of the outstanding shares of Common Stock outstanding will be able to elect all of our directors. Our amended and restated certificate of incorporation and our amended and restated bylaws provide for shareholder actions at a duly called meeting of shareholders. A special meeting of shareholders may be called by a majority of our board of directors, the chair of our board of directors, or our chief executive officer or president. Our amended and restated bylaws will establish an advance notice procedure for shareholder proposals to be brought before an annual meeting of our shareholders, including proposed nominations of persons for election to our board of directors.

In accordance with our amended and restated certificate of incorporation, our board of directors is divided into three classes with staggered three-year terms.

The foregoing provisions will make it more difficult for our existing shareholders to replace our Board of Directors as well as for another party to obtain control of us by replacing our Board of Directors. Since our board of directors has the power to retain and discharge our officers, these provisions could also make it more difficult for existing shareholders or another party to effect a change in management. In addition, the authorization of undesignated preferred stock makes it possible for our Board of Directors to issue preferred stock with voting or other rights or preferences that could impede the success of any attempt to change our control.

These provisions are intended to enhance the likelihood of continued stability in the composition of our Board of Directors and its policies and to discourage certain types of transactions that may involve an actual or threatened acquisition of us. These provisions are also designed to reduce our vulnerability to an unsolicited acquisition proposal and to discourage certain tactics that may be used in proxy fights. However, such provisions could have the effect of discouraging others from making tender offers for our shares and may have the effect of deterring hostile takeovers or delaying changes in our control or management.

Section 203 of the Delaware General Corporation Law

We are subject to Section 203 of the Delaware General Corporation Law, which prohibits a Delaware corporation from engaging in any business combination with any interested shareholder for a period of three years after the date that such shareholder became an interested shareholder, with the following exceptions:

- before such date, the board of directors of the corporation approved either the business combination or the transaction that resulted in the shareholder becoming an interested shareholder;
- upon closing of the transaction that resulted in the shareholder becoming an interested shareholder, the interested shareholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction began, excluding for purposes of determining the voting stock outstanding (but not the outstanding voting stock owned by the interested shareholder) those shares owned by (i) persons who are directors and also officers and (ii) employee stock plans in which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer; or
- on or after such date, the business combination is approved by the board of directors and authorized at an annual or special meeting of the shareholders, and not by written consent, by the affirmative vote of at least 66 2/3% of the outstanding voting stock that is not owned by the interested shareholder.

In general, Section 203 defines business combination to include the following:

- any merger or consolidation involving the corporation and the interested shareholder;
- any sale, transfer, pledge or other disposition of 10% or more of the assets of the corporation involving the interested shareholder;
- subject to certain exceptions, any transaction that results in the issuance or transfer by the corporation of any stock of the corporation to the interested shareholder;
- any transaction involving the corporation that has the effect of increasing the proportionate share of the stock or any class or series of the corporation beneficially owned by the interested shareholder; or
- the receipt by the interested shareholder of the benefit of any loss, advances, guarantees, pledges or other financial benefits by or through the corporation.

In general, Section 203 defines an “interested shareholder” as an entity or person who, together with the person’s affiliates and associates, beneficially owns, or within three years prior to the time of determination of interested shareholder status did own, 15% or more of the outstanding voting stock of the corporation.

Exclusive forum for adjudication of disputes provision which limits the forum to the Delaware Court of Chancery for certain shareholder litigation matters actions against us, which may limit an investor’s ability to obtain a favorable judicial forum for disputes with us or our directors, officers, employees or shareholders.

Our amended and restated bylaws dictate that, unless we consent in writing to the selection of an alternative forum, the Delaware Court of Chancery (or, if the Delaware Court of Chancery does not have jurisdiction, the federal district court for the State of Delaware) is, to the fullest extent permitted by law, the sole and exclusive forum for certain actions including derivative action or proceeding brought on our behalf; an action asserting a breach of fiduciary duty owed by any current or former officer, director, employee or to the shareholders of our company; any claim arising under Delaware corporate law, our certificate of incorporation or our bylaws, as amended from time to time; and any action asserting a claim governed by the internal affairs doctrine. Any person or entity purchasing or otherwise acquiring any interest in shares of capital stock of our company shall be deemed to have notice of and consented to the provisions of our amended and restated bylaws.

However, this provision of our amended and restated bylaws will not apply to suits brought to enforce any liability or duty created by the Exchange Act or any other claim for which the federal courts have exclusive jurisdiction. To the extent that any such claims may be based upon federal law claims, Section 27 of the Exchange Act creates exclusive federal jurisdiction over all suits brought to enforce any duty or liability created by the Exchange Act or the rules and regulations thereunder.

Furthermore, unless we consent in writing to the selection of an alternative forum, the federal district courts of the United States of America will be the exclusive forum for the resolution of any complaint asserting a cause of action arising under the Securities Act, or the rules and regulations promulgated thereunder. We note, however, that Section 22 of the Securities Act creates concurrent jurisdiction for federal and state courts over all suits brought to enforce any duty or liability created by the Securities Act or the rules and regulations thereunder. There is uncertainty as to whether a court would enforce this provision and that investors cannot waive compliance with the federal securities laws and the rules and regulations thereunder.

A Delaware corporation is allowed to mandate in its corporate governance documents a chosen forum for the resolution of state law-based shareholder actions, derivative suits and other intra-corporate disputes. With respect to such state law claims, our management believes limiting state law based claims to Delaware will provide the most appropriate outcomes as the risk of another forum misapplying Delaware law is avoided, Delaware courts have a well-developed body of case law and limiting the forum will preclude costly and duplicative litigation and avoids the risk of inconsistent outcomes. Additionally, Delaware Chancery Courts can typically resolve disputes on an accelerated schedule when compared to other forums.

The choice of forum provisions contained in our amended and restated bylaws may limit a shareholder's ability to bring a claim in a judicial forum that it finds favorable for disputes with our company or any of our directors, officers, other employees or shareholders, which may discourage lawsuits with respect to such claims. Alternatively, the enforceability of similar choice of forum provisions in other issuers' bylaws and certificates of incorporation has been challenged in legal proceedings, and it is possible that in connection with any applicable action brought against our company, a court could find the choice of forum provisions contained in our bylaws, as amended, to be inapplicable or unenforceable in such action. As a result, we could incur additional costs associated with resolving such actions in other jurisdictions, which could harm our business, operating results and financial condition.

Transfer Agent and Registrar

We have appointed VStock Transfer LLC, 18 Lafayette Pl Woodmere, NY 11598, telephone: (212) 828-8436, as the transfer agent for our Common Stock.

Trading Symbol and Market

Our shares of Common Stock are listed on the Nasdaq Global Market under the symbol "NTHI".

PLAN OF DISTRIBUTION

The Selling Stockholder of the securities and any of its pledgees, assignees and successors-in-interest may, from time to time, sell any or all of their securities covered hereby on the Nasdaq Global Market or any other stock exchange, market or trading facility on which the securities are traded or in private transactions. These sales may be at fixed or negotiated prices. 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 of 1933, as amended (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 their 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 the Company that it does not have any written or oral agreement or understanding, directly or indirectly, with any person to distribute the securities.

The Company is required to pay certain fees and expenses incurred by the Company incident to the registration of the securities. The Company has 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 the Company to be in compliance with the current public information under Rule 144 under the Securities Act or any other rule of similar effect or (ii) all of the securities have been sold pursuant to this prospectus or Rule 144 under the Securities Act or any other rule of similar effect. The resale securities will be sold only through registered or licensed brokers or dealers if required under applicable state securities laws. In addition, in certain states, the resale securities covered hereby may not be sold unless they have been registered or qualified for sale in the applicable state or an exemption from the registration or qualification requirement is available and is complied with.

Under applicable rules and regulations under the Exchange Act, any person engaged in the distribution of the resale securities may not simultaneously engage in market making activities with respect to the shares of 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 shares of Common Stock by the Selling Stockholder or any other person. We will make copies of this prospectus available to the Selling Stockholder and have informed them of the need to deliver a copy of this prospectus to each purchaser at or prior to the time of the sale (including by compliance with Rule 172 under the Securities Act).

LEGAL MATTERS

The validity of the Common Stock offered hereby will be passed upon for us by Manatt, Phelps & Phillips, LLP, Costa Mesa, California.

EXPERTS

The financial statements of NeOnc Technologies Holdings Inc. incorporated in this prospectus by reference to the Annual Report on Form 10-K for the year ended December 31, 2025 have been so incorporated in reliance on (i) the report of CBIZ CPAs P.C., an independent registered public accounting firm, given on the authority of said firm as experts in auditing and accounting, with respect to the financial statements of the Company for the year ended December 31, 2025, and (ii) the report of Marcum LLP, an independent registered public accounting firm, given on the authority of said firm as experts in auditing and accounting, with respect to the financial statements of the Company for the year ended December 31, 2024. Such financial reports are incorporated by reference in reliance upon the reports of such firm given upon their authority as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

We have filed with the SEC a registration statement on Form S-3 under the Securities Act with respect to the shares of Common Stock offered by this prospectus. This prospectus, which constitutes a part of the registration statement, does not contain all the information set forth in the registration statement, some of which is contained in exhibits to the registration statement as permitted by the rules and regulations of the SEC. For further information with respect to us and our Common Stock, we refer you to the registration statement, including the exhibits filed as a part of the registration statement. Statements contained in this prospectus concerning the contents of any contract or any other document are not necessarily complete. If a contract or document has been filed as an exhibit to the registration statement, please see the copy of the contract or document that has been filed. Each statement in this prospectus relating to a contract or document filed as an exhibit is qualified in all respects by the filed exhibit. The SEC maintains an internet website that contains reports and other information about issuers, like us, that file electronically with the SEC. The address of that website is <http://www.sec.gov>.

Our SEC filings, including the registration statement on Form S-3 and the exhibits filed with the registration statement, are also available from the SEC's website at www.sec.gov, which contains reports, proxy and information statements and other information regarding issuers that file electronically with the SEC. Additionally, we will make these filings available, free of charge, on our website at www.neonc.com as soon as reasonably practicable after we electronically file such materials with, or furnish them to, the SEC. The information on our website, other than these filings, is not, and should not be, considered part of this prospectus and is not incorporated by reference into this document.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The SEC allows us to “incorporate by reference” the information 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 considered to be part of this prospectus and information we file later with the SEC will automatically update and supersede this information. We incorporate by reference into this prospectus the documents listed below and any future filings made by us with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act (1) after the date of this prospectus and prior to the time that we sell all of the securities offered by this prospectus or the earlier termination of the offering, and (2) after the date of the initial registration statement of which this prospectus forms a part and prior to the effectiveness of the registration statement (except in each case the information contained in such documents to the extent “furnished” and not “filed”). The documents we are incorporating by reference as of their respective dates of filing are:

- our Annual Report on [Form 10-K](#) for the fiscal year ended December 31, 2025, as filed with the SEC on March 31, 2026 and as further amended on [Form 10-K/A](#) and filed with the SEC on May 5, 2026;
- our Quarterly Report on [Form 10-Q](#) for the fiscal quarter ended March 31, 2026, as filed with the SEC on May 15, 2026;
- our Current Reports on Form 8-K filed with the SEC on [April 10, 2026](#), [April 24, 2026](#) and [June 12, 2026](#) (except for the information furnished under Items 2.02 or 7.01 and the exhibits under Item 9.01 thereto); and
- the description of our common stock, which is contained in the Registrant’s Annual Report on [Form 10-K](#) for the fiscal year ended December 31, 2025 filed on March 31, 2026, as amended by our Current Reports on [Form 8-K](#) filed with the SEC on June 12, 2026 (File No.: 001-42567), and any amendment, supplements or report filed with the SEC for the purpose of updating such description, including Exhibit 4.1 to the Annual Report.

In addition, all reports and other documents filed by us pursuant to the Exchange Act after the date of the initial registration statement and prior to effectiveness of the registration statement shall be deemed to be incorporated by reference into this prospectus and deemed to be a part of this prospectus from the date of filing of such reports and documents. Notwithstanding the foregoing, we are not incorporating by reference any documents or portions thereof that are not deemed “filed” with the SEC, including any information furnished pursuant to Items 2.02 or 7.01 of Form 8-K or related exhibits furnished pursuant to Item 9.01 of Form 8-K. Any statement contained in a document incorporated or deemed to be incorporated by reference herein shall be deemed to be modified or superseded for purposes of the registration statement of which this prospectus forms a part to the extent that a statement contained in any subsequently filed document, which also is deemed to be incorporated by reference herein, modifies or supersedes such statement.

You may request, orally or in writing, a copy of any or all of the documents incorporated herein by reference. These documents will be provided to you at no cost, by calling us at (310) 663-7831 or by contacting: 23975 Park Sorrento, Suite 205 Calabasas, California 91302, Attn: Corporate Secretary. In addition, copies of any or all of the documents incorporated herein by reference may be accessed at our website at www.neonc.com. The information contained on, or that can be accessed through, our website is not a part of this prospectus, and our reference to the address for our website is intended to be an inactive textual reference only.



555,554 shares of Common Stock

Prospectus

_____, 2026

PART II

INFORMATION NOT REQUIRED IN PROSPECTUS

Item 14. Other Expenses of Issuance and Distribution.

The following table sets forth the estimated costs and expenses, other than underwriting discounts and commissions, payable by us in connection with the offering of the securities being registered. All the amounts shown are estimates, except for the SEC, registration fee.

SEC registration fee	\$	340.26
FINRA filing fee (if applicable)		*
Accounting fees and expenses		*
Legal fees and expenses		*
Transfer agent fees and expenses		*
Trustee fees and expenses		*
Printing and miscellaneous expenses		*
Total	\$	*

* These fees and expenses depend on the securities offered and the number of issuances, and accordingly cannot be estimated at this time.

Item 15. Indemnification of Directors and Officers

Section 102 of the DGCL permits a corporation to eliminate the personal liability of directors of a corporation to the corporation or its shareholders for monetary damages for a breach of fiduciary duty as a director, except where the director breached his 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. Our amended and restated certificate of incorporation provides that no director of the registrant shall be personally liable to it or its shareholders 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, or a person serving at the request of the corporation for another corporation, partnership, joint venture, trust or other enterprise in related capacities against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by the person in connection with an action, suit or proceeding to which he was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding by reason of such position, if such person acted in good faith and in a manner he 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 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 indemnity for such expenses which the Court of Chancery or such other court shall deem proper.

Our amended and restated bylaws authorize the indemnification of our officers and directors, consistent with Section 145 of the DGCL, as amended. Reference is made to Section 102(b)(7) of the DGCL, which enables a corporation in its original certificate of incorporation or an amendment thereto to eliminate or limit the personal liability of a director for violations of the director's fiduciary duty, except (i) for any breach of the director's duty of loyalty to the corporation or its shareholders, (ii) for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law, (iii) pursuant to Section 174 of the DGCL, which provides for liability of directors for unlawful payments of dividends or unlawful stock purchase or redemptions or (iv) for any transaction from which a director derived an improper personal benefit.

We have entered into indemnification agreements with each of our directors and officers. These indemnification agreements require us, among other things, to indemnify our directors and officers for some expenses, including attorneys' fees, judgments, fines and settlement amounts incurred by a director or officer in any action or proceeding arising out of his or her service as one of our directors or officers, or any of our subsidiaries or any other company or enterprise to which the person provides services.

We maintain a general liability insurance policy that covers certain liabilities of directors and officers of our corporation arising out of claims based on acts or omissions in their capacities as directors or officers.

Item 16. Exhibits.**EXHIBIT INDEX**

Exhibit Number	Description
3.1	Amended and Restated Certificate of Incorporation (incorporated by reference to Exhibit 3.1 filed on Form 8-K filed by the Registrant on March 27, 2025).
3.2	Amended and Restated Bylaws (incorporated by reference to Exhibit 3.2 filed on Form 8-K filed by the Registrant on March 27, 2025).
3.3	Certificate of Designation for the Series A Convertible Preferred Share (incorporated by reference to Exhibit 3.1 filed on Form 8-K filed by the Registrant on June 12, 2026).
4.1	Description of Securities (incorporated by reference to Exhibit 4.1 filed on Form 10-K filed by the Registrant on March 31, 2026).
4.2	Form of Common Stock Certificate (incorporated by reference to Exhibit 4.1 filed with the Registration Statement on Form S-1 filed by the Registrant on January 3, 2025).
4.3	Fourth Amended & Restated Promissory Note, dated December 4, 2023, by NeOnc Technologies Holdings, Inc. and Holders (incorporated by reference to Exhibit 4.2 filed with the Registration Statement on Form S-1 filed by the Registrant on January 3, 2025).
4.4	Promissory Note, dated October 11, 2024, by NeOnc Technologies Holdings, Inc. and HCWG LLC (incorporated by reference to Exhibit 4.3 filed with the Registration Statement on Form S-1 filed by the Registrant on January 3, 2025).
4.5	Common Stock Purchase Warrant, dated October 11, 2024, by NeOnc Technologies Holdings, Inc. and HCWG LLC (incorporated by reference to Exhibit 4.4 filed with the Registration Statement on Form S-1 filed by the Registrant on January 3, 2025).
4.6	Promissory Note, dated February 25, 2025, by NeOnc Technologies Holdings, Inc. and Amir Heshmatpour (incorporated by reference to Exhibit 4.5 filed with the Registration Statement on Form S-1 filed by the Registrant on February 26, 2025).
4.7	Form of Convertible Promissory Note (incorporated by reference to Exhibit 4.1 filed on Form 8-K filed by the Registrant on July 22, 2025).
4.8	Form of Warrant (incorporated by reference to Exhibit 4.1 filed on Form 8-K filed by the Registrant on January 29, 2026).
4.9	Form of Warrant (incorporated by reference to Exhibit 4.1 filed on Form 8-K filed by the Registrant on March 3, 2026).
4.10	Form of Warrant (incorporated by reference to Exhibit 4.1 filed on Form 8-K filed by the Registrant on March 23, 2026).
4.11	Form of Warrant (incorporated by reference to Exhibit 4.1 filed on Form 8-K filed by the Registrant on April 24, 2026).
5.1	Opinion of Manatt, Phelps & Phillips, LLP
10.1	Form of Securities Purchase Agreement (incorporated by reference to Exhibit 10.1 filed on Form 8-K filed by the Registrant on January 29, 2026).
10.2	Form of Securities Purchase Agreement (incorporated by reference to Exhibit 10.1 filed on Form 8-K filed by the Registrant on March 3, 2026).
10.3	Form of Securities Purchase Agreement (incorporated by reference to Exhibit 10.1 filed on Form 8-K filed by the Registrant on March 23, 2026).
10.4	Form of Securities Purchase Agreement (incorporated by reference to Exhibit 10.1 filed on Form 8-K filed by the Registrant on April 24, 2026).
23.1	Consent of Manatt, Phelps & Phillips, LLP (included in Exhibit 5.1).
23.2	Consent of CBIZ CPAs P.C.
23.3	Consent of Marcum LLP
24.1	Powers of Attorney (included on signature page to this Registration Statement)
107	Filing Fee Table

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, as amended (the “Securities Act”);
 - (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 percent change in the maximum aggregate offering price set forth in the “Calculation of Filing Fee Tables” or “Calculation of Registration Fee” table, as applicable, 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 the undertakings set forth in paragraphs (1)(i), (1)(ii) and (1)(iii) above do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the Commission by the registrant pursuant to Section 13 or Section 15(d) of the Exchange Act that are incorporated by reference in the registration statement or is contained in a form of prospectus filed pursuant to Rule 424(b) that is part of the registration statement.
- (2) That, for the purpose of determining any liability under the Securities Act, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof.
- (3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.
- (4) That, for the purpose of determining liability under the Securities Act to any purchaser:
 - (i) Each prospectus filed by the registrant pursuant to Rule 424(b)(3) shall be deemed to be part of the registration statement as of the date the filed prospectus was deemed part of and included in the registration statement; and
 - (ii) Each prospectus required to be filed pursuant to Rule 424(b)(2), (b)(5), or (b)(7) as part of a registration statement in reliance on Rule 430B relating to an offering made pursuant to Rule 415(a)(1)(i), (vii), or (x) for the purpose of providing the information required by Section 10(a) of the Securities Act shall be deemed to be part of and included in the registration statement as of the earlier of the date such form of prospectus is first used after effectiveness or the date of the first contract of sale of securities in the offering described in the prospectus. As provided in Rule 430B, for liability purposes of the issuer and any person that is at that date an underwriter, such date shall be deemed to be a new effective date of the registration statement relating to the securities in the registration statement to which that prospectus relates, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof. *Provided, however*, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such effective date, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such effective date.

- (5) That, for the purpose of determining liability of the registrant under the Securities Act to any purchaser in the initial distribution of the securities, the undersigned registrant undertakes that in a primary offering of securities of 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, each filing of the registrant's annual report pursuant to Section 13(a) or 15(d) of the Exchange Act (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Exchange Act) that is incorporated by reference in 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) That for purposes of determining any liability under the Securities Act, (i) the information omitted from the form of prospectus filed as part of the registration statement in reliance upon Rule 430A and contained in the form of prospectus filed by the registrant pursuant to Rule 424(b)(1) or (4) or 497(h) under the Securities Act shall be deemed to be a part of the registration statement as of the time it was declared effective; and (ii) each post-effective amendment that contains a form of prospectus 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.

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

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-3 and has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in Los Angeles, California, on June 15, 2026.

NEONC TECHNOLOGIES HOLDINGS, INC.

By: /s/ Amir Heshmatpour

Name: Amir Heshmatpour

Title: Chief Executive Officer and President

SIGNATURES AND POWER OF ATTORNEY

We, the undersigned officers and directors of NeOnc Technologies Holdings, Inc., hereby severally constitute and appoint Amir Heshmatpour and Keithly Garnett, and each of them singly (with full power to each of them to act alone), our true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution in each of them for him and in his name, place and stead, and in any and all capacities, to sign any and all amendments (including without limitation, post-effective amendments) to this registration statement (or any other registration statement for the same offering that is to be effective upon filing pursuant to Rule 462(b) under the Securities Act of 1933), and to file the same, with all exhibits thereto and 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 or necessary to be done in and about the premises, as full to all intents and purposes as she or he 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 her or his 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 below by the following persons in the capacities and on the dates indicated.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ Amir Heshmatpour</u> Amir Heshmatpour	Chief Executive Officer, President and Executive Chairman (<i>Principal Executive Officer</i>)	June 15, 2026
<u>/s/ Keithly Garnett</u> Keithly Garnett	Chief Financial Officer (<i>Principal Financial Officer</i>)	June 15, 2026
<u>/s/ David Suh</u> David Suh	Chief Accounting Officer (<i>Principal Accounting Officer</i>)	June 15, 2026
<u>/s/ Dr. Thomas Chen</u> Dr. Thomas Chen	Chief Scientific Officer, Chief Medical Officer and Vice Chairman	June 15, 2026
<u>/s/ Dr. Ming-Fu Chiang</u> Dr. Ming-Fu Chiang	Director	June 15, 2026
<u>/s/ Victoria Medvec</u> Victoria Medvec	Director	June 15, 2026
<u>/s/ Dr. Steven L. Giannotta</u> Dr. Steven L. Giannotta	Director	June 15, 2026
<u>/s/ Bader Al Monawer</u> Bader Al Monawer	Director	June 15, 2026
<u>/s/ Jim Delshad</u> Jim Delshad	Director	June 15, 2026



June 15, 2026

NeOnc Technologies Holdings, Inc.
23975 Park Sorrento, Suite 205
Calabasas, California 91302

Re: Registration Statement on Form S-3

Ladies and Gentlemen:

We have acted as counsel to NeOnc Technologies Holdings, Inc., a Delaware corporation (the "Company"), in connection with the preparation and filing of a Registration Statement on Form S-3 (the "Registration Statement") with the Securities and Exchange Commission (the "Commission") under the Securities Act of 1933, as amended (the "Securities Act"), including a related prospectus filed with the Registration Statement (the "Prospectus") relating to the registration of 555,554 shares (the "Shares") of the Company's common stock, par value \$0.0001 ("Common Stock"), consisting of 277,777 shares of Common Stock and warrant ("Warrant") to purchase 277,777 shares of Common Stock ("Warrant Shares"), for resale from time to time, pursuant to Rule 415 promulgated under the Securities Act by the selling stockholder as defined and listed in the Registration Statement under "Selling Stockholder" (the "Selling Stockholder"). The Shares may be sold by the Selling Stockholder as set forth in the Registration Statement.

The Shares are being registered pursuant to registration rights of the holders thereto under the securities purchase agreements dated April 20, 2026, entered into with the Selling Stockholder (the "SPA"). This opinion is being furnished in accordance with the requirements of Item 601(b)(5) of Regulation S-K under the Securities Act.

As such counsel and for purposes of our opinion set forth below, we have examined originals or copies, certified or otherwise identified to our satisfaction, of such documents, resolutions, certificates and instruments of the Company and corporate records furnished to us by the Company, certificates of public officials, statutes, records and such other instruments and documents as we have deemed necessary or appropriate as a basis for the opinion set forth below, including without limitation the Amended and Restated Certificate of Incorporation of the Company, the Amended and Restated Bylaws of the Company, certain minutes and consents of the Company's board of directors relating to the Registration Statement, the Certificate and the Bylaws, and such other agreements, documents, certificates and statements of the Company, the SPA, Warrant, and the Registration Statement.

In such examination and in rendering the opinion expressed below, we have assumed, without independent investigation or verification: (i) the genuineness of all signatures on all agreements, instruments, corporate records, certificates and other documents submitted to us, (ii) the legal capacity and authority of all persons or entities (other than the Company) executing all agreements, instruments, corporate records, certificates and other documents submitted to us, (iii) the authenticity and completeness of all agreements, instruments, corporate records, certificates and other documents submitted to us as originals, (iv) that all agreements, instruments, corporate records, certificates and other documents submitted to us as certified, electronic, facsimile, conformed, photostatic or other copies conform to authentic originals thereof, and that such originals are authentic and complete, (v) the due authorization, execution and delivery of all agreements, instruments, certificates and other documents by all parties thereto (other than the Company), (vi) that the statements contained in the certificates and comparable documents of public officials, officers and representatives of the Company and other persons on which we have relied for the purposes of this opinion set forth below are true and correct, and (vii) that the officers and directors of the Company have properly exercised their fiduciary duties. We also have made such further legal and factual examinations and investigations as we deemed necessary for purposes of expressing the opinion set forth herein. We have further obtained from the officers of the Company certificates as to certain factual matters necessary for the purpose of this opinion and, insofar as this opinion is based on such matters of fact, we have relied solely on such certificates without independent investigation.

695 Town Center Drive, 14th Floor, Costa Mesa, CA 92626 Telephone: 714.371.2500 Fax: 714.371.2550
Albany | Boston | Chicago | Los Angeles | New York | Orange County | Sacramento | San Francisco |
Silicon Valley | Washington, D.C.



NeOnc Technologies Holdings, Inc.

June 15, 2026

Page 2 of 2

Based upon the foregoing and subject to the limitations, qualifications, exceptions and assumptions set forth herein, we are of the opinion that the Shares have been issued by the Company in accordance with the SPA and are validly issued, fully paid and nonassessable; the Warrant Shares, when issued by the Company and paid for in accordance with the terms of the SPA and Warrant, will be validly issued, fully paid and nonassessable.

The opinion expressed in this opinion letter is limited to the General Corporation Law of the State of Delaware. We express no opinion as to whether the laws of any jurisdiction are applicable to the subject matter hereof. This opinion is expressly limited to the matters set forth above and we render no opinion, whether by implication or otherwise, as to any other matters relating to the Company or the Shares. We are not rendering any opinion as to compliance with any federal or state law, rule or regulation relating to securities, including any state securities laws, or to the sale or issuance thereof.

We hereby consent to the filing of this opinion with the Commission as an exhibit to the Registration Statement and the use of our name therein under the caption "Legal Matters" in the Registration Statement. In giving this consent, we do not thereby admit that we are experts with respect to any part of the Registration Statement or the Prospectus within the meaning of the term "expert" as used in Section 11 of the Securities Act or the rules and regulations promulgated thereunder by the Commission, nor we do admit that we come within the category of persons whose consent is required under Section 7 of the Securities Act or the rules and regulations of the Commission adopted under the Securities Act.

The opinion included herein is expressed as of the date hereof unless otherwise expressly stated, and we disclaim any undertaking to advise you of any subsequent changes in the facts stated or assumed herein or of any subsequent changes in applicable laws.

Very truly yours,

/s/ Manatt, Phelps & Phillips, LLP

Manatt, Phelps & Phillips, LLP

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in the Registration Statement on Form S-3 of our report dated March 30, 2026, with respect to the financial statements of NeOnc Technologies Holdings, Inc. for the year ended December 31, 2025 included in the Annual Report on Form 10-K. We also consent to the reference to us under the heading “Experts” in such Registration Statement.

/s/ CBIZ CPAs P.C.

Philadelphia, Pennsylvania
June 15, 2026

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in this Registration Statement on Form S-3 of our report dated February 26, 2025 with respect to the financial statements of NeOnc Technologies Holdings, Inc. for the year ended December 31, 2024 included in the Annual Report on Form 10-K. We also consent to the reference to us under the heading “Experts” in such Registration Statement.

/s/ Marcum LLP

Philadelphia, Pennsylvania
June 15, 2026

Calculation of Filing Fee Tables

S-3

(Form Type)

NeOnc Technologies Holdings, Inc.
(Exact Name of Registrant as Specified in its Charter)

Not Applicable
(Translation of Registrant's Name into English)

Table 1: Newly Registered and Carry Forward Securities

	Security Type	Security Class Title	Fee Calculation or Carry Forward Rule	Amount Registered ⁽¹⁾ (3)(4)	Proposed Maximum Offering Price Per Share ⁽²⁾	Maximum Aggregate Offering Price	Fee Rate	Amount of Registration Fee
Newly Registered Securities								
Fees to Be Paid	Equity	Common Stock, \$0.0001 par value per share	Rule 457(c)	277,777	\$4.44	\$1,231,941.00	\$0.00013810	\$170.13
Fees to Be Paid	Equity	Common Stock, \$0.0001 par value per share, issuable upon exercise of the Warrant	Rule 457(c)	277,777	\$4.44	\$1,231,941.00	\$0.00013810	\$170.13
Fees to Be Paid	Other	Warrant to purchase shares of Common Stock, \$0.0001 par value per share ⁽⁵⁾	457(g)	-	-	-	-	-
	Total Offering Amounts						\$2,463,881.99	\$340.26
	Total Fees Previously Paid							N/A
	Total Fee Offsets							N/A
	Net Fee Due							\$340.26

- (1) Pursuant to Rule 416(a) under the Securities Act of 1933, as amended (the "Securities Act"), this registration statement shall also cover any additional common stock, par value \$0.0001 per share (the "Common Stock") of NeOnc Technologies Holdings, Inc. (the "Company") that may become issuable upon any share split, share dividend, recapitalization or other similar transaction effected without the Company's receipt of consideration which results in an increase in the number of the outstanding Common Stock.
- (2) Estimated solely for the purpose of calculating the amount of the registration fee pursuant to Rules 457(c) under the Securities Act of 1933, as amended, based on the average of the high and low prices of the Common Stock on June 9, 2026.
- (3) The Company will not receive any proceeds from the sale of its Common Stock by the Selling Stockholder.
- (4) All the Common Stock are to be offered for resale by the Selling Stockholder named in the prospectus contained in this Registration Statement on Form S-3.
- (5) In accordance with Rule 457(g) under the Securities Act, because the shares of the common stock underlying the warrant are registered hereby, no separate registration fee is required with respect to the warrant registered hereby.