

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

FORM S-1

**REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933**

Imunon, Inc.

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction
of incorporation or organization)

2834
(Primary Standard Industrial
Classification Code Number)

52-1256615
(I.R.S. Employer
Identification No.)

**997 Lenox Drive, Suite 100
Lawrenceville, New Jersey 08648
(609) 896-9100**

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

**Stacy Lindborg
President and Chief Executive Officer
Imunon, Inc.**

**997 Lenox Drive, Suite 100
Lawrenceville, NJ 08648
(609) 896-9100**

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

**Copies to:
Jurgita Ashley
Thompson Hine LLP
3900 Key Center
127 Public Square
Cleveland, OH 44114
(216) 566-5500**

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

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

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

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

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

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

Large accelerated filer
Non-accelerated filer

Accelerated filer
Smaller reporting company
Emerging growth company

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

The registrant hereby amends this registration statement on such date or dates as may be necessary to delay its effective date until the registrant shall file a further amendment that specifically states that this registration statement shall thereafter become effective in accordance with Section

8(a) of the Securities Act of 1933 or until the registration statement shall become effective on such date as the Securities and Exchange Commission, acting pursuant to said Section 8(a), may determine.

THE INFORMATION IN THIS PROSPECTUS IS NOT COMPLETE AND MAY BE CHANGED. THE SELLING SECURITY HOLDERS IDENTIFIED IN THIS PROSPECTUS MAY NOT SELL THESE SECURITIES UNTIL THE REGISTRATION STATEMENT FILED WITH THE SECURITIES AND EXCHANGE COMMISSION IS EFFECTIVE. THIS PRELIMINARY PROSPECTUS IS NOT AN OFFER TO SELL THESE SECURITIES AND IS NOT SOLICITING AN OFFER TO BUY THESE SECURITIES IN ANY STATE WHERE THE OFFER OR SALE IS NOT PERMITTED.

SUBJECT TO COMPLETION, DATED MAY 30, 2025

PRELIMINARY PROSPECTUS



**IMUNON, INC.
UP TO 22,027,780 SHARES OF COMMON STOCK**

This prospectus relates to the offer and resale, from time to time, by the selling securityholders named in this prospectus (the “Selling Securityholders”) of up to an aggregate of 22,027,780 shares of common stock, par value \$0.01 per share, of Imunon, Inc. (the “Common Stock”), consisting of (i) 2,777,779 shares of Common Stock, (ii) up to 4,444,444 shares of Common Stock issuable upon the exercise of pre-funded warrants (the “Pre-Funded Warrants”), (iii) up to 14,444,446 shares of Common Stock issuable upon the exercise of common warrants (the “Common Warrants”), and (iv) 361,111 shares of Common Stock issuable upon the exercise of placement agent warrants (the “Placement Agent Warrants” and, together with the Pre-Funded Warrants and the Common Warrants, the “Warrants”).

The shares of Common Stock being registered for resale by the Selling Securityholders in the registration statement of which this prospectus forms a part were issued and sold pursuant to a private placement (the “Private Placement”), which was priced at the market at a combined purchase price per share of Common Stock and accompanying Warrant of \$0.45 and closed on May 27, 2025. The Common Warrants and Placement Agent Warrants will be exercisable upon receipt of Stockholder Approval (as defined below). We are filing the registration statement of which is prospectus is a part pursuant to the registration rights agreement (the “Registration Rights Agreement”), dated as of May 23, 2025, entered into with the purchasers in the Private Placement. In addition, the Company issued to the placement agent for the Private Placement the Placement Agent Warrants to purchase up to an aggregate of 361,111 shares of Common Stock, at an exercise price equal to \$0.5625 per share.

We will not receive any proceeds from the sale of the shares by the Selling Securityholders. Our registration of the shares of Common Stock covered by this prospectus does not mean that the Selling Securityholders will offer or sell any of the shares of Common Stock.

We will bear all costs, expenses and fees in connection with the registration of the shares of Common Stock. The Selling Securityholders will bear all commissions and discounts, if any, attributable to their sales of the shares of Common Stock. The Selling Securityholders and any of their permitted transferees may offer and sell the shares covered by this prospectus in a number of different ways and at varying prices. The Securities and Exchange Commission may take a position that each of the Selling Securityholders is an “underwriter” within the meaning of Section 2(a)(11) of the Securities Act of 1933, as amended (the “Securities Act”). Additional information on the Selling Securityholders, and the times and manner in which they may offer and sell shares of our common stock under this prospectus, is provided under “Selling Securityholders” and “Plan of Distribution” in this prospectus.

Our Common Stock is listed on Nasdaq under the symbol “IMNN.” On May 28, 2025, the last reported sale price of our Common Stock was \$1.52 per share.

Investing in our securities involves a high degree of risk. You should carefully review the risks and uncertainties referenced under the heading “Risk Factors” beginning on page 5 of this prospectus and in the other documents that are incorporated by reference into this prospectus before purchasing any of the shares offered by this prospectus.

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 is _____, 2025.

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ABOUT THIS PROSPECTUS

As used in this prospectus, unless the context otherwise requires or indicates, references to “the Company,” “we,” “our,” “ourselves,” and “us” refer to Imunon, Inc.

This prospectus is part of a registration statement that we filed with the Securities and Exchange Commission (the “SEC”), under which the Selling Securityholders may, from time to time, sell the securities described in this prospectus in one or more offerings or otherwise described under “*Plan of Distribution*.”

We may also file a prospectus supplement or post-effective amendment to the registration statement of which this prospectus forms a part that may contain material information relating to these offerings. Such prospectus supplement or post-effective amendment may also add, update or change information contained in this prospectus with respect to that 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 securities, 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*” and “*Incorporation by Reference*.”

Neither we, nor the Selling Securityholders, have authorized anyone to provide you with any information or to make any representations other than those contained 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 Securityholders take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. The Selling Securityholders will not make an offer to sell these securities in any jurisdiction where the offer or sale is not permitted. You should assume that the information appearing in this prospectus, any post-effective amendment and any applicable prospectus supplement to this prospectus is accurate only as of the date on its respective cover and that any information incorporated by reference is accurate only as of the date of the document incorporated by reference or, in each case, any earlier date specified for such information, unless we indicate otherwise. Our business, financial condition, results of operations and prospects may have changed since those dates. To the extent there is a conflict between the information contained in this prospectus, on the one hand, and the information contained in any document incorporated by reference filed with the SEC before the date of this prospectus, on the other hand, you should rely on the information in this prospectus. If any statement in a document incorporated by reference is inconsistent with a statement in another document incorporated by reference having a later date, the statement in the document having the later date modifies or supersedes the earlier statement.

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, neither we nor the Selling Securityholders guarantee the accuracy or completeness of this information and neither we nor the Selling Securityholders have independently verified this information. In addition, the market and industry data and forecasts that may be included or 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*” contained in this prospectus, any post-effective amendment and any applicable prospectus supplement, and under similar headings in other documents that are incorporated by reference into this prospectus. Accordingly, investors should not place undue reliance on this information.

The Company’s brand and product names contained in this prospectus are trademarks, registered trademarks, or service marks of Imunon, Inc. or its subsidiary in the United States (“U.S.”) and certain other countries.

All other trademarks, trade names and service marks appearing in this prospectus or the documents incorporated by reference herein are the property of their respective owners. Use or display by us of other parties’ trademarks, trade dress or products is not intended to and does not imply a relationship with, or endorsements or sponsorship of, us by the trademark or trade dress owner. Solely for convenience, trademarks, tradenames and service marks referred to in this prospectus appear without the ® and ™ symbols, but those references are not intended to indicate, in any way, that we will not assert, to the fullest extent under applicable law, our rights or that the applicable owner will not assert its rights, to these trademarks and trade names.

PROSPECTUS SUMMARY

This summary highlights selected information from this prospectus and does not contain all of the information that is important to you in making an investment decision. This summary is qualified in its entirety by the more detailed information included in or incorporated by reference into this prospectus. Before making your investment decision with respect to our securities, you should carefully read the entire prospectus, including the risks of investing in our securities discussed under the heading “Risk Factors” and under similar headings in the other documents that are incorporated by reference into this prospectus. You should also carefully read the information incorporated by reference into this prospectus, including our financial statements, and the exhibits to the registration statement of which this prospectus is a part.

Business Overview

Imunon is a clinical-stage biotechnology company focused on advancing a portfolio of innovative treatments that harness the body’s natural mechanisms with the aim to generate safe, effective and durable responses across a broad array of human diseases, constituting a differentiating approach from conventional therapies. Imunon is developing its non-viral DNA technology across its modalities. The first modality, TheraPlas®, is developed for the coding of proteins and cytokines in the treatment of solid tumors where an immunological approach is deemed promising. The second modality, PlaCCine®, is developed for the coding of viral antigens that can elicit a strong immunological response. This technology may represent a promising platform for the development of vaccines in infectious diseases.

The Company’s lead clinical program, IMNN-001, is a DNA-based immunotherapy for the localized treatment of advanced ovarian cancer that has completed multiple clinical trials including one Phase II clinical trial (OVATION 2). IMNN-001 works by instructing the body to produce safe and durable levels of powerful cancer-fighting molecules, such as interleukin-12 and interferon gamma, at the tumor site. Additionally, the Company has completed a first-in-human study of its COVID-19 booster vaccine (IMNN-101). The Company will continue to leverage these modalities and to advance, either directly or through partnerships, the technological frontier of plasmid DNA to better serve patients with difficult-to-treat conditions.

Private Placement

On May 23, 2025, the Company entered into a securities purchase agreement (the “Purchase Agreement”) with certain institutional and accredited investors for the issuance and sale in the Private Placement of (i) 2,777,779 shares of Common Stock, (ii) Pre-Funded Warrants to purchase up to 4,444,444 shares of Common Stock, at an exercise price of \$0.0001 per share, and (iii) Common Warrants to purchase up to 14,444,446 shares of Common Stock, at an exercise price of \$0.45 per share. The Private Placement was priced at the market at a combined purchase price per share and accompanying Common Warrant of \$0.45. The Private Placement closed on May 27, 2025.

The Pre-Funded Warrants are exercisable from the date of issuance until exercised in full. The Common Warrants will be exercisable upon receipt of such approval as may be required by the applicable rules and regulations of Nasdaq (or any successor entity) from the stockholders of the Company with respect to issuance of all of the Common Warrants and the shares of Common Stock upon the exercise thereof (“Stockholder Approval,” and such date, the “Stockholder Approval Date”) and have a term of three years from the Stockholder Approval Date. The Company agreed to hold a stockholder meeting on or prior to August 25, 2025 for the purpose of obtaining Stockholder Approval and to file a proxy statement for such meeting by June 16, 2025 and to use the record date that was previously set on May 13, 2025 for the stockholder meeting to seek Stockholder Approval. If the Company does not obtain Stockholder Approval at the first meeting, the Company will call a meeting every 90 days thereafter to seek Stockholder Approval until the earlier of the date on which Stockholder Approval is obtained or the Common Warrants are no longer outstanding. In the event that we are unable to obtain the required Stockholder Approval for the Common Warrants, such warrants will not be exercisable and therefore have no value.

A holder of the Pre-Funded Warrants and the Common Warrants may not exercise any portion of such holder’s Pre-Funded Warrants or Warrants to the extent that the holder, together with its affiliates, would beneficially own more than 4.99% (or, at the election of the holder, 9.99%) of the Company’s outstanding shares of Common Stock immediately after exercise, except that upon at least 61 days’ prior notice from the holder to the Company, the holder may increase the beneficial ownership limitation to up to 9.99% of the number of shares of Common Stock outstanding immediately after giving effect to the exercise.

In connection with the Private Placement, the Company entered into the Registration Rights Agreement, dated as of May 23, 2025, with the purchasers in the Private Placement, pursuant to which the Company agreed to prepare and file a registration statement with the SEC registering the resale of the shares of Common Stock and the shares of Common Stock underlying the Pre-Funded Warrants and the Common Warrants.

H.C. Wainwright & Co., LLC acted as the Company's lead placement agent, and Brookline Capital Markets, a division of Arcadia Securities, LLC, acted as co-placement agent, in connection with the Private Placement, pursuant to that certain engagement letter, dated as of May 22, 2025, between the Company and H.C. Wainwright & Co., LLC (the "Engagement Letter"). In addition, the Company issued to designees of H.C. Wainwright & Co., LLC the Placement Agent Warrants to purchase up to an aggregate of 361,111 shares of Common Stock at an exercise price equal to \$0.5625 per share. The Placement Agent Warrants have substantially the same terms as the Common Warrants and will be exercisable upon receipt of Stockholder Approval.

Recent Developments

On March 24, 2025, we issued a press release announcing finalization of our Phase 3 study design for IMNN-001, a treatment for women with newly diagnosed advanced ovarian cancer, and that the U.S. Food and Drug Administration is aligned with the protocol for the Phase 3 pivotal trial, called OVATION 3, of our lead candidate IMNN-001. On May 23, 2025, we issued a press release announcing new positive data from our Phase 2 OVATION 2 Study of IMNN-001, an investigational therapy for the treatment of advanced ovarian cancer.

On May 12, 2025, the Company entered into an exchange agreement (the "Exchange Agreement") with the holders (the "Existing Warrant Holders") of certain warrants of the Company (the "Existing Warrants") issued on August 1, 2024, which were exercisable for an aggregate of 5,000,000 shares of Common Stock. Pursuant to the terms of the Exchange Agreement, the Company issued to the Existing Warrant Holders an aggregate of 2,921,000 shares of Common Stock (the "Warrant Exchange Shares"), on a one-for-one basis, in exchange for shares issuable under the Existing Warrants (the "Warrant Exchange"), in reliance on an exemption from registration provided by Section 3(a)(9) of the Securities Act. The Warrant Exchange closed on May 13, 2025. The number of Warrant Exchange Shares issued pursuant to the Exchange Agreement represented 19.98% of the shares of Common Stock outstanding as of the date of the Exchange Agreement.

On May 19, 2025, the Company received a letter from the staff (the "Staff") of Nasdaq indicating that it is no longer in compliance with the minimum stockholders' equity requirement for continued listing pursuant to Nasdaq Listing Rule 5550(b)(1), which requires listed companies to maintain stockholders' equity of at least \$2,500,000 or meet the alternative compliance standards relating to the market value of listed securities or net income from continuing operations, which the Company does not currently meet. Nasdaq's notice has no immediate effect on the listing of the Company's Common Stock on Nasdaq, which continues to trade under the symbol "IMNN." Pursuant to the notice and the Listing Rules of Nasdaq, Nasdaq has provided the Company with 45 calendar days, or until July 3, 2025, to submit a plan to regain compliance with the minimum stockholders' equity requirement. If the Company's plan to regain compliance is accepted, the Staff can grant an extension of up to 180 calendar days from the date of the Notice to evidence compliance. If the Company's plan to regain compliance is not accepted, or if it is accepted and the Company does not regain compliance in the timeframe required by Nasdaq, the Staff could provide notice that the Company's shares of common stock are subject to delisting. In such an event, the Company would have the right to request a hearing before a Nasdaq Hearings Panel. The Company is currently evaluating options to regain compliance and intends to timely submit a plan to regain compliance with the minimum stockholders' equity requirement. Although the Company intends to use all reasonable efforts to achieve compliance with the minimum stockholders' equity requirement, there can be no assurance that the Company will be able to regain compliance with the minimum stockholders' equity requirement or that the Company will otherwise be in compliance with other applicable Nasdaq listing criteria. The notice is unrelated to the Company's previously disclosed deficiency relating to Nasdaq's minimum bid price requirement.

On November 26, 2024, we received a notice from the Staff notifying us that, based upon the closing bid price of our Common Stock, for the 30 consecutive business days prior to the notice, we no longer met the requirement to maintain a minimum closing bid price of \$1.00 per share, as set forth in Nasdaq Listing Rule 5550(a)(2). In accordance with Nasdaq Listing Rule 5810(c)(3)(A), we were granted 180 calendar days, or until May 27, 2025, to regain compliance with the minimum bid price rule. To regain compliance, the closing bid price of our Common Stock was required to be \$1.00 per share or more for a minimum of 10 consecutive business days at any time before May 27, 2025. As of May 27, 2025, we were not eligible for an additional 180 calendar day compliance period, as we did not meet the required Nasdaq initial listing standards, and, on May 28, 2025, we received a delisting notice from Nasdaq. We have requested an appeal with a Nasdaq Hearings Panel. There can be no assurance the Staff will grant our request for continued listing.

Corporate Information

We were founded in 1982 and are a Delaware corporation. Our principal executive offices are located at 997 Lenox Drive, Suite 100, Lawrenceville, NJ 08648. Our telephone number is (609) 896-9100. Our website is www.imunon.com. The information contained on or that can be accessed through our website is not incorporated by reference into this prospectus, and you should not consider information on our website to be part of this prospectus or in deciding to purchase our Common Stock.

THE OFFERING

Shares of Common Stock Offered by the Selling Securityholders	Up to 22,027,780 shares of Common Stock, consisting of: (i) up to 2,777,779 shares of Common Stock, (ii) up to 4,444,444 shares of Common Stock issuable upon the exercise of the Pre-Funded Warrants, (iii) up to 14,444,446 shares of Common Stock issuable upon the exercise of the Common Warrants, and (iv) 361,111 shares of Common Stock issuable upon the exercise of the Placement Agent Warrants.
Use of Proceeds	We will not receive any proceeds from any sale of the shares being offered for sale by the Selling Securityholders. We will, however, receive the net proceeds of any Warrants exercised for cash.
Risk Factors	Investing in our securities involves a high degree of risk. See the “ <i>Risk Factors</i> ” section of this prospectus for a discussion of factors that you should consider carefully before buying our securities.
Trading Symbol	Our Common Stock is listed on Nasdaq under the symbol “IMNN.”

RISK FACTORS

Investing in our securities involves significant risk. Prior to making a decision about investing in our securities, you should carefully consider the specific factors discussed under the heading “*Risk Factors*” in our Annual Report on Form 10-K for the fiscal year ended December 31, 2024 filed with the SEC on February 27, 2025 and other filings we make with the SEC from time to time, which are incorporated by reference herein in their entirety, together with other information in this prospectus and the information incorporated by reference herein. If any of these risks actually occurs, our business, financial condition, results of operations or cash flow could suffer materially. In such event, the trading price of our common stock could decline, and you might lose all or part of your investment.

Risks Related Investing in our Common Stock

The sale or availability for sale of shares issuable pursuant to this prospectus may depress the price of our Common Stock, dilute the interest of our existing stockholders, and encourage short sales by third parties, which could further depress the price of our Common Stock.

To the extent that the Selling Securityholders sell shares of our Common Stock pursuant to this prospectus, the market price of our Common Stock may decrease due to the additional selling pressure in the market. In addition, the dilution from exercise of the Warrants may cause stockholders to sell their shares of our Common Stock, which could further contribute to any decline in the price of our Common Stock. Any downward pressure on the price of our Common Stock caused by the sale or potential sale of such shares could encourage short sales by third parties. Such sales could place downward pressure on the price of our Common Stock by increasing the number of shares of our Common Stock being sold, which could further contribute to any decline in the market price of our Common Stock.

Any market activity involving short selling or other market making activities could result in negative impact to the market price for our Common Stock.

Short selling is a method used to capitalize on an expected decline in the market price of a security and could depress the price of our Common Stock, which could further increase the potential for future short sales. Sales of our Common Stock could encourage short sales by market participants, which could create negative market momentum. Continued short selling may bring about a temporary, or possibly long term, decline in the market price of our Common Stock. The Company cannot predict the size of future issuances or sales of Common Stock or the effect, if any, that future issuances and sales of Common Stock will have on its market price or the activities of short sellers. Sales involving significant amounts of Common Stock, including issuances made in the ordinary course of the Company’s business, or the perception that such sales could occur, may materially and adversely affect prevailing market prices of the Common Stock.

Our Common Stock may be delisted from Nasdaq if we fail to comply with continued listing standards.

Our Common Stock is currently traded on Nasdaq under the symbol “IMNN.” If we fail to comply with Nasdaq’s continued listing standards, we may be delisted and our Common Stock will trade, if at all, only on the over-the-counter market, such as the OTC Bulletin Board or OTCQX market, and then only if one or more registered broker-dealer market makers comply with quotation requirements. In addition, delisting of our Common Stock could depress our stock price, substantially limit liquidity of our Common Stock and materially adversely affect our ability to raise capital on terms acceptable to us, or at all. Further, delisting of our Common Stock would likely result in our Common Stock becoming a “penny stock” under the Exchange Act.

On November 26, 2024, we received a notice from the Staff notifying us that, based upon the closing bid price of our Common Stock, for the 30 consecutive business days prior to the notice, we no longer met the requirement to maintain a minimum closing bid price of \$1.00 per share, as set forth in Nasdaq Listing Rule 5550(a)(2). In accordance with Nasdaq Listing Rule 5810(c)(3)(A), we were granted 180 calendar days, or until May 27, 2025, to regain compliance with the minimum bid price rule. To regain compliance, the closing bid price of our Common Stock was required to be \$1.00 per share or more for a minimum of 10 consecutive business days at any time before May 27, 2025. As of May 27, 2025, we were not eligible for an additional 180 calendar day compliance period, as we did not meet the required Nasdaq initial listing standards, and, on May 28, 2025, we received a delisting notice from Nasdaq. We have requested an appeal with a Nasdaq Hearings Panel. There can be no assurance the Staff will grant our request for continued listing. In addition, on May 19, 2025, we received a notice from the Staff notifying us that, because our stockholders' equity was below \$2.5 million as reported on our Quarterly Report on Form 10-Q for the quarter ended March 31, 2025, we no longer meet the minimum stockholders' equity requirement for continued listing on Nasdaq under Nasdaq Rule 5550(b)(1). Such notice is unrelated to our deficiency relating to Nasdaq's minimum bid price requirement and has no immediate effect on our continued listing on Nasdaq. For this deficiency, we have until July 3, 2025 to submit a plan to regain compliance. If such compliance plan is accepted, Nasdaq may grant an extension of 180 calendar days from the date of the notice. If the plan is not accepted, we may appeal the Staff's determination to a Nasdaq Hearings Panel. We are currently evaluating options to regain compliance and intend to timely submit a plan to regain compliance with the minimum stockholders' equity requirement. Although we intend to use all reasonable efforts to achieve compliance with all Nasdaq listing standards, there can be no assurance that we will be able to regain compliance with the listing standards or that we will otherwise be in compliance with other applicable Nasdaq listing criteria. Furthermore, Nasdaq may delist our Common Stock for public interest concerns, even if we are able to regain compliance for continued listing on Nasdaq under the minimum closing bid price and stockholders' equity listing requirements.

If our Common Stock were to be delisted by Nasdaq, it may be eligible for quotation on an over-the-counter quotation system or on the pink sheets. Upon any such delisting, our Common Stock would become subject to the regulations of the SEC relating to the market for penny stocks. A penny stock is any equity security not traded on a national securities exchange that has a market price of less than \$5.00 per share. The regulations applicable to penny stocks may severely affect the market liquidity for our Common Stock and could limit the ability of stockholders to sell securities in the secondary market. In such a case, an investor may find it more difficult to dispose of or obtain accurate quotations as to the market value of our Common Stock, and there can be no assurance that our Common Stock will be eligible for trading or quotation on any alternative exchanges or markets.

Delisting from Nasdaq could adversely affect our ability to raise additional financing through public or private sales of equity securities, would significantly affect the ability of investors to trade our securities and would negatively affect the value and liquidity of our Common Stock. Delisting could also have other negative results, including the potential loss of confidence by employees, the loss of institutional investor interest and fewer business development opportunities.

We will need to raise additional capital to fund our planned future operations, and we may be unable to secure such capital without significant dilutive financing transactions, or at all. If we are not able to raise additional capital, we may not be able to complete the development, testing and commercialization of our drug candidates and will not be able to continue as a going concern.

We have not generated significant revenue and have incurred significant net losses in each year since our inception. For the quarter ended March 31, 2025 and the year ended December 31, 2024, we incurred a net loss of \$4.1 million and \$18.6 million, respectively, and used \$2.8 million and \$18.9 million, respectively, to fund operations. As of March 31, 2025, we have incurred approximately \$411 million of cumulative net losses. As of March 31, 2025 and December 31, 2024, we had cash and cash equivalents of \$2.9 million and \$5.9 million, respectively.

We have substantial future capital requirements, including to continue our research and development activities and advance our drug candidates through various development stages, including the Phase 3 registrational trial of IMNN-001 in advanced ovarian cancer. We are unable to estimate the duration and completion costs of our research and development projects or when, if ever, and to what extent we will receive cash inflows from the commercialization and sale of a product. Our inability to complete any of our research and development activities, preclinical studies or clinical trials in a timely manner or our failure to enter into collaborative agreements when appropriate could significantly increase our capital requirements and could adversely impact our liquidity. While our estimated future capital requirements are uncertain and could increase or decrease as a result of many factors, including the extent to which we choose to advance our research, development activities, preclinical studies and clinical trials, or if we are in a position to pursue manufacturing or commercialization activities, we will need significant additional capital to develop our drug candidates through development and clinical trials, obtain regulatory approvals and manufacture and commercialize approved products, if any. We do not know whether we will be able to access additional capital when needed or on terms favorable to us or our stockholders. Our inability to raise additional capital, or to do so on terms reasonably acceptable to us, would jeopardize the future success of our business.

In addition, our unaudited financial statements for the quarter ended March 31, 2025 and our audited financial statements for the year ended December 31, 2024 were prepared under the assumption that we would continue as a going concern. However, we have concluded that there is substantial doubt about our ability to continue as a going concern, therefore our independent registered public accounting firm included a "going concern" explanatory paragraph in its report on our financial statements for the year ended December 31, 2024 included in our Annual Report on Form 10-K for the year ended December 31, 2024, indicating that, without additional sources of funding, our cash at December 31, 2024 is not sufficient for us to operate as a going concern for a period of at least one year from the date that the financial statements included in the Annual Report on Form 10-K for the year ended December 31, 2024 were issued. Management's plans concerning these matters, including our need to raise additional capital, are described in the Quarterly Report on Form 10-Q for the quarter ended March 31, 2025 and the Annual Report on Form 10-K for the year ended December 31, 2024, however, management cannot assure you that its plans will be successful. If we cannot continue as a viable entity, our stockholders would likely lose most or all of their investment in us.

We have never paid dividends on our capital stock, and we do not anticipate paying dividends in the foreseeable future.

We have never paid dividends on any of our capital stock and currently intend to retain any future earnings to fund the growth of our business. We may also enter into credit agreements or other borrowing arrangements in the future that will restrict our ability to declare or pay cash dividends on our Common Stock. Any determination to pay dividends in the future will be at the discretion of our board of directors and will depend on our financial condition, operating results, capital requirements, general business conditions and other factors that our board of directors may deem relevant. As a result, capital appreciation, if any, of the securities will be the sole source of gain, if any, for the foreseeable future.

CAUTIONARY NOTICE REGARDING FORWARD-LOOKING STATEMENTS

Certain statements contained or incorporated by reference in this prospectus may constitute forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995 and releases issued by the SEC and within the meaning of Section 27A of the Securities Act, and Section 21E of the Securities Exchange Act of 1934, as amended (the “Exchange Act”). Forward-looking statements may relate to such matters as anticipated financial performance, business prospects, technological developments, product pipelines, clinical trials and research and development activities, the adequacy of capital reserves and anticipated operating results and cash expenditures, current and potential collaborations, strategic alternatives and other aspects of our present and future business operations and similar matters. These statements involve known and unknown risks, uncertainties and other factors, many of which are outside of our control, that may cause our or our industry’s actual results, levels of activity, performance or achievements to be materially different from any future results, levels of activity, performance or achievements expressed or implied by such forward-looking statements. Such statements include, without limitation:

- any statements regarding future operations, plans, regulatory filings or approvals, including the plans and objectives of management for future operations or programs or proposed new products or services;
- any statements regarding the performance, or likely performance, or outcomes or economic benefit of any of our research and development activities, proposed or potential clinical trials or new drug filing strategies or timelines, including whether any of our clinical trials will be completed successfully within any specified time period or at all;
- any projections of earnings, cash resources, revenue, expense or other financial terms;
- any statements regarding the initiation, timing, progress and results of our research and development programs, preclinical studies, any clinical trials and Investigational New Drug application, New Drug Application and other regulatory submissions;
- any statements regarding cost and timing of development and testing, capital structure, financial condition, working capital needs and other financial items, including our ability to continue as a going concern;
- any statements regarding the implementation of our business model and integration of acquired technologies, assets or businesses and existing or future collaborations, mergers, acquisitions or other strategic transactions;
- any statements regarding approaches to medical treatment, any introduction of new products by others, any possible licenses or acquisitions of other technologies, assets or businesses, or possible actions by customers, suppliers, strategic partners, potential strategic partners, competitors or regulatory authorities;
- any statements regarding development or success of our collaboration arrangements or future payments that may come due to us under these arrangements;
- any statements regarding compliance with Nasdaq’s listing standards and our ability to remain listed on Nasdaq; and
- any statements regarding future economic conditions or performance and any statement of assumptions underlying any of the foregoing.

In some cases, you can identify forward-looking statements by terminology such as “expect,” “anticipate,” “estimate,” “continue,” “plan,” “believe,” “could,” “intend,” “predict,” “project,” “may,” “should,” “will,” “would” and words of similar import regarding our expectations. Forward-looking statements are only predictions. Actual events or results may differ materially. Although we believe that our expectations are based on reasonable assumptions within the bounds of our knowledge of our industry, business and operations, we cannot guarantee that actual results will not differ materially from our expectations. In evaluating such forward-looking statements, you should specifically consider various factors, including, but not limited to, the inherent uncertainty in the drug development process, our ability to raise additional capital to fund our planned future operations and continue as a going concern, our ability to obtain or maintain U.S. Food and Drug Administration and foreign regulatory approvals for our drug candidates, potential impact of the Russian invasion of Ukraine and the unrest in the Middle East on our business, our ability to enroll patients in our clinical trials, risks relating to third parties’ conduct of our clinical trials, risks relating to government, private health insurers and other third-party payers coverage or reimbursement, risks relating to commercial potential of a drug candidate in development, changes in technologies for the treatment of cancer, impact of development of competitive drug candidates by others, risks relating to intellectual property, volatility in the market price of our Common Stock, potential inability remain listed on Nasdaq and the impact of adverse capital and credit market conditions. These and other risks and assumptions are outlined under “*Risk Factors*” contained in this prospectus and any related free writing prospectus, and in our most recent Annual Report on Form 10-K, as revised or supplemented by our subsequent Quarterly Reports on Form 10-Q, incorporated by reference into this prospectus, as well as any amendments thereto reflected in subsequent filings with the SEC. The discussion of risks and uncertainties set forth in this prospectus or referenced in those filings is not necessarily a complete or exhaustive list of all risks facing us at any particular point in time. We operate in a highly competitive, highly regulated and rapidly changing environment, and our business is in a state of evolution. Therefore, it is likely that new risks will emerge, and the nature and elements of existing risks will change. It is not possible for management to predict all such risk factors or changes therein or to assess either the impact of all such risk factors on our business or the extent to which any individual risk factor, combination of factors or new or altered factors may cause results to differ materially from those contained in any forward-looking statement. Forward-looking statements represent our estimates and assumptions only as of the date such forward-looking statements are made. You should carefully read this prospectus and any related free writing prospectus, together with the information incorporated herein or therein by reference as described under the section titled “*Incorporation of Certain Information by Reference*,” and with the understanding that our actual future results may materially differ from what we expect.

Forward-looking statements speak only as of the date they are made, and we assume no obligation to update any forward-looking statements publicly, or to update the reasons why actual results could differ materially from those anticipated in any forward-looking statements, even if new information becomes available, except as required by law.

USE OF PROCEEDS

All shares of our Common Stock offered by this prospectus are being registered for resale by the Selling Securityholders identified herein. We will not receive any of the proceeds from the sale of the shares of our Common Stock being offered for sale by the Selling Securityholders.

The shares of Common Stock covered by the registration statement of which this prospectus is a part includes 14,805,557 shares of Common Stock issuable upon exercise of the Common Warrants and the Placement Agent Warrants. If all such warrants are exercised in cash, then we will receive gross proceeds of approximately \$6.7 million. Proceeds to us from the exercise of such warrants will be used for general corporate purposes, including working capital.

The Selling Securityholders will pay any underwriting discounts and commissions and expenses incurred by the Selling Securityholders for brokerage, accounting, tax or legal services or any other expenses incurred by the Selling Securityholders in disposing of the securities. We will bear the costs, fees and expenses incurred in effecting the registration of the shares of Common Stock covered by this prospectus, including all registration and filing fees, Nasdaq listing fees and fees and expenses of our counsel and our independent registered public accounting firm.

DIVIDEND POLICY

We have never declared or paid any cash dividends on our Common Stock and we do not currently intend to pay any cash dividends on our Common Stock in the foreseeable future. We expect to retain all available funds and future earnings, if any, to fund the development and growth of our business. Any future determination to pay dividends, if any, on our Common Stock will be at the discretion of our board of directors and will depend on, among other factors, the terms of any outstanding preferred stock, our results of operations, financial condition, capital requirements and contractual restrictions.

SELLING SECURITYHOLDERS

This prospectus covers the resale or other disposition by the Selling Securityholders of the Common Stock and the shares of Common Stock underlying the Warrants that were issued and sold pursuant to the Private Placement. The Selling Securityholders listed in the table below may from time to time offer and sell any or all of the shares of Common Stock set forth below pursuant to this prospectus. When we refer to the “Selling Securityholders” in this prospectus, we refer to the persons listed in the table below and the permitted transferees that hold any of the Selling Securityholders’ interest in the shares of Common Stock after the date of this prospectus.

The following table sets forth certain information concerning the Common Stock that may be offered from time to time by each Selling Securityholder pursuant to this prospectus. The number of shares beneficially owned by each Selling Securityholder is determined under rules issued by the SEC. Under these rules, beneficial ownership includes any shares as to which the individual or entity has sole or shared voting power or investment power. Percentage ownership is based on 20,319,511 shares of common stock outstanding as of May 28, 2025. In computing the number of shares beneficially owned by an individual or entity and the percentage ownership of that person or entity, shares of Common Stock subject to warrants or other rights held by such person or entity that are currently exercisable or convertible or will become exercisable or convertible or will vest within 60 days of such date are considered outstanding, although these shares are not considered outstanding for purposes of computing the percentage ownership of any other person. The percentages included in the table below do not take into account the beneficial ownership limitations included in the Pre-Funded Warrants and the Common Warrants, which provide that a holder of such warrants may not exercise any portion of such holder’s Pre-Funded Warrants or Common Warrants to the extent that the holder, together with its affiliates, would beneficially own more than 4.99% (or, at the election of the holder, 9.99%) of the Company’s outstanding shares of Common Stock immediately after exercise, except that upon at least 61 days’ prior notice from the holder to the Company, the holder may increase the beneficial ownership limitation to up to 9.99% of the number of shares of Common Stock outstanding immediately after giving effect to the exercise. Except as otherwise indicated, to our knowledge, each of the Selling Securityholders listed has sole voting and investment power with respect to the shares beneficially owned by the Selling Securityholder, subject to community property laws where applicable.

The Selling Securityholders identified below may have sold, transferred or otherwise disposed of all or a portion of their securities included in the table below in transactions exempt from the registration requirements of the Securities Act. Any changed or new information provided to us by the Selling Securityholders, including regarding the identity of, and the securities held by, each Selling Securityholder, will be set forth in a prospectus supplement or amendments to the registration statement of which this prospectus is a part, if and when necessary. A Selling Securityholder may sell all, some or none of such securities in this offering. See “*Plan of Distribution.*” For purposes of this table, we have assumed that the Selling Securityholders will have sold all of the securities covered by this prospectus upon the completion of the offering.

The Selling Securityholders do not have, and within the past three years have not had, any position, office or other material relationship with us.

Selling Securityholder⁽¹⁾	Number of Shares of Common Stock Beneficially Owned Prior to Offering	Percentage of Shares Beneficially Owned Prior to Offering %	Maximum Number of Shares of Common Stock to be Sold Pursuant to this Prospectus	Number of Shares of Common Stock Beneficially Owned After Offering	Percentage of Shares Beneficially Owned after Shares are Sold
Sabby Volatility Warrant Master Fund, Ltd. ⁽²⁾	13,865,332	40.6%	13,333,332	532,000	2.6%
Lincoln Alternative Strategies LLC ⁽³⁾	5,000,001	21.1%	5,000,001	—	—
Intracoastal Capital LLC ⁽⁴⁾	3,333,336	14.8%	3,333,336	—	—
Michael Vasinkevich ⁽⁵⁾	231,562	1.1%	231,562	—	—
Craig Schwabe ⁽⁵⁾	12,187	*	12,187	—	—
Charles Worthman ⁽⁵⁾	3,611	*	3,611	—	—
Michael Mirsky ⁽⁵⁾	68,612	*	68,612	—	—
Noam Rubinstein ⁽⁵⁾	45,139	*	45,139	—	—

* Less than 1.0%.

- (1) This table and the information in the notes below are based upon information supplied by the Selling Securityholders.
- (2) Consists of 532,000 shares of Common Stock issuable upon exercise of Existing Warrants, 4,444,444 shares of Common Stock issuable upon exercise of the Pre-Funded Warrants and 8,888,888 shares of Common Stock issuable upon exercise of the Common Warrants. Sabby Management, LLC, the investment manager to Sabby Volatility Warrant Master Fund, Ltd. (“Sabby”), has discretionary authority to vote and dispose of the shares held by Sabby and may be deemed to be the beneficial owner of these shares. Hal Mintz, in his capacity as manager of Sabby Management, LLC, may also be deemed to have investment discretion and voting power over the shares held by Sabby. Sabby Management, LLC and Mr. Mintz each disclaim any beneficial ownership of these shares. The address for Sabby is c/o Captiva (Cayman) Ltd., Governors Square, Bldg. 4, 2nd Floor, 23 Lime Tree Bay Avenue, P.O. Box 32315, Grand Cayman KY1-1209, Cayman Islands.
- (3) Consists of 1,666,667 shares of Common Stock and 3,333,334 shares of Common Stock issuable upon exercise of the Common Warrants. Stephen Temes is the managing member of Lincoln Alternative Strategies LLC (“LAS”), has discretionary authority to vote and dispose of the shares held by LAS and may be deemed to be the beneficial owner of these shares. The address for LAS is 404 Washington Ave. #650, Miami Beach, Florida 33139.
- (4) Consists of 1,111,112 shares of Common Stock and 2,222,224 shares of Common Stock issuable upon exercise of the Common Warrants. Mitchell P. Kopin and Daniel B. Asher, each of whom are managers of Intracoastal Capital LLC (“Intracoastal”), have shared voting control and investment discretion over the securities reported herein that are held by Intracoastal. As a result, each of Mr. Kopin and Mr. Asher may be deemed to have beneficial ownership of the securities reported herein that are held by Intracoastal. The address for Intracoastal is 245 Palm Trail, Delray Beach, Florida 33483.
- (5) Each of these Selling Securityholders is affiliated with H.C. Wainwright & Co., LLC, a registered broker dealer with a registered address of 430 Park Ave, 3rd Floor, New York, New York 10022, and has sole voting and dispositive power over the securities held. The number of shares beneficially owned consists of shares of Common Stock issuable upon exercise of the Placement Agent Warrants, which were received as compensation in connection with the Private Placement. Each Selling Securityholder acquired the Placement Agent Warrants in the ordinary course of business and, at the time the Placement Agent Warrants were acquired, each Selling Securityholder had no agreement or understanding, directly or indirectly, with any person to distribute such securities. H.C. Wainwright & Co., LLC served as our lead placement agent in connection with the Private Placement, for which it received compensation.

PLAN OF DISTRIBUTION

Each Selling Securityholder of the shares of the securities and any of their pledgees, assignees and successors-in-interest may, from time to time, sell any or all of their securities covered hereby on Nasdaq or any other stock exchange, market or trading facility on which the securities are traded or in private transactions. These sales may be at fixed or negotiated prices. A Selling Securityholder 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 Securityholders 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;
- to or through one or more underwriters or dealers in a public offering and sale by them, whether individually or through an underwriting syndicate led by one or more managing underwriters;
- through agents;
- a combination of any such methods of sale; or
- any other method permitted pursuant to applicable law.

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

If underwriters are used in the sale of any securities, such securities will be acquired by the underwriters for their own account and may be resold from time to time in one or more transactions described above. Securities may be either offered to the public through underwriting syndicates represented by managing underwriters or directly by underwriters.

If a dealer is used in an offering of securities, the dealer may purchase the securities, as principal. The dealer may then resell the securities to the public at varying prices to be determined by the dealer at the time of sale.

Securities may be sold directly or through agents designated from time to time. We will name any agent involved in the offering and sale of such securities and we will describe any commissions paid to the agent in the prospectus supplement. Unless the prospectus supplement states otherwise, the agent will act on a best-efforts basis for the period of its appointment.

Underwriters, dealers and agents may be entitled to indemnification by the Selling Securityholders and/or us against certain civil liabilities, including liabilities under the Securities Act, or to contribution with respect to payments which the agents, broker-dealers or underwriters may be required to make in respect thereof.

Underwriters, dealers or agents may receive compensation in the form of discounts, concessions or commissions from the Selling Securityholders or the purchasers, as their agents in connection with the sale of securities. If the shares are sold through underwriters, broker-dealers or agents, the Selling Securityholders will be responsible for underwriting discounts or commissions or agent's commissions. These underwriters, dealers or agents may be considered to be underwriters under the Securities Act. As a result, discounts, commissions or profits on resale received by the underwriters, dealers or agents may be treated as underwriting discounts and commissions. Each accompanying prospectus supplement will identify any such underwriter, dealer or agent and describe any compensation received by them from the Selling Securityholders. Any initial public offering price and any discounts or concessions allowed or re-allowed or paid to dealers may be changed from time to time.

In connection with the sale of the securities or interests therein, the Selling Securityholders 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 Securityholders 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 Securityholders 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 Securityholders 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. If the Selling Securityholders are deemed to be underwriters, the Selling Securityholders may be subject to certain liabilities under statutes including, but not limited to, Section 11, 12 and 17 of the Securities Act and Section 10(b) and Rule 10b-5 under the Exchange Act.

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 Securityholders against certain losses, claims, damages and liabilities, including liabilities under the Securities Act.

We have agreed to keep this prospectus effective until 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.

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

Under applicable rules and regulations under the Exchange Act, any person engaged in the distribution of the resale securities may not simultaneously engage in market making activities with respect to the common stock for the applicable restricted period, as defined in Regulation M, prior to the commencement of the distribution. In addition, the Selling Securityholders will be subject to applicable provisions of the Exchange Act and the rules and regulations thereunder, including Regulation M, which may limit the timing of purchases and sales of the common stock by the Selling Securityholders or any other person. We will make copies of this prospectus available to the Selling Securityholders 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).

DESCRIPTION OF CAPITAL STOCK

The following summary of the general terms and provisions of our capital stock does not purport to be complete and is subject to, and qualified in its entirety by, reference to our Amended and Restated Certificate of Incorporation (“Certificate of Incorporation”) and our Amended and Restated Bylaws (“Bylaws”), each of which is incorporated by reference as an exhibit to our most recent Annual Report filed with the SEC, and applicable provisions of the Delaware General Corporation Law (the “DGCL”). The summaries below do not purport to be complete statements of the relevant provisions of the Certificate of Incorporation, the Bylaws or the DGCL.

Authorized Capital Stock

Our authorized capital stock consists of 112,500,000 shares of Common Stock, par value \$0.01 per share and 100,000 shares of preferred stock, par value \$0.01 per share, all of which preferred stock is undesignated.

Common Stock

Holders of Common Stock are entitled to one vote for each share held of record on all matters submitted to a vote of stockholders and do not have cumulative voting rights. Subject to any preferential rights of any outstanding preferred stock, holders of Common Stock are entitled to receive ratably such dividends, if any, as may be declared from time to time by our board of directors out of funds legally available therefor. In the event of a dissolution, liquidation or winding-up of the Company, holders of Common Stock are entitled to share ratably in all assets remaining after payment of liabilities and any preferential rights of any outstanding preferred stock.

Holders of Common Stock have no preemptive or conversion rights or other subscription rights. There are no redemption or sinking fund provisions applicable to our Common Stock. All outstanding shares of Common Stock are fully paid and non-assessable. The rights, preferences and privileges of the holders of Common Stock are subject to, and may be adversely affected by, the rights of the holders of shares of any series of preferred stock which may be designated and issued in the future.

Our Common Stock is listed on Nasdaq under the symbol “IMNN.”

Transfer Agent and Registrar

The transfer agent and registrar for our Common Stock is Equiniti Trust Company, LLC. Equiniti Trust Company, LLC is located at 6201 15th Avenue, Brooklyn, NY 11219. Their telephone number is (888) 999-0032.

Preferred Stock

Undesignated Preferred Stock

Pursuant to our Certificate of Incorporation, our board of directors has the authority, without further action by the stockholders (unless such stockholder action is required by applicable law or Nasdaq rules), to designate and issue shares of preferred stock in one or more series, to establish from time to time the number of shares to be included in each such series, to fix the designations, powers (including voting), privileges, preferences and relative participating, optional or other rights, if any, of the shares of each such series and the qualifications, limitations or restrictions thereof and to increase or decrease the number of shares of any such series, but not below the number of shares of such series then outstanding.

We will fix the designations, powers (including voting), privileges, preferences and relative participating, optional or other rights, if any, of the preferred stock of each series, as well as the qualifications, limitations or restrictions thereof, in the certificate of designation relating to that series. The certificate of designation will describe the terms of the series of preferred stock. This description will include:

- the title and stated value;
- the number of shares we are offering;

- the liquidation preference per share;
- the purchase price;
- the dividend rate, period and payment date and method of calculation for dividends;
- whether dividends will be cumulative or non-cumulative and, if cumulative, the date from which dividends will accumulate;
- the procedures for any auction or remarketing, if any;
- the provisions for a sinking fund, if any;
- the provisions for redemption or repurchase, if applicable, and any restrictions on our ability to exercise those redemption and repurchase rights;
- any listing of the preferred stock on any securities exchange or market;
- whether the preferred stock will be convertible into or exchangeable for other securities and, if applicable, the conversion price, or how it will be calculated, and the conversion period;
- voting rights, if any, of the preferred stock;
- preemptive rights, if any;
- restrictions on transfer, sale or other assignment, if any;
- liability as to further calls or to assessment by the Company, if any;
- a discussion of any material U.S. federal income tax considerations applicable to the preferred stock;
- the relative ranking and preferences of the preferred stock as to dividend rights and rights if we liquidate, dissolve or wind up our affairs;
- any limitations on the issuance of any class or series of preferred stock ranking senior to or on a parity with the series of preferred stock as to dividend rights and rights if we liquidate, dissolve or wind up our affairs; and
- any other specific terms, preferences, rights or limitations of, or restrictions on, the preferred stock.

The DGCL provides that the holders of preferred stock will have the right to vote separately as a class or, in some cases, as a series on an amendment to our Certificate of Incorporation if the amendment would change the par value or, unless our Certificate of Incorporation provides otherwise, the number of authorized shares of the class or the powers, preferences or special rights of the class or series so as to adversely affect the class or series, as the case may be. This right is in addition to any voting rights that may be provided in the applicable certificate of designation.

Our board of directors may authorize the issuance of preferred stock with voting or conversion rights that could adversely affect the voting power or other rights of the holders of our Common Stock or other securities. Preferred stock could be issued quickly with terms designed to delay or prevent a change in control of our Company or make removal of management more difficult. Additionally, the issuance of preferred stock may have the effect of decreasing the market price of our Common Stock.

Anti-Takeover Considerations and Special Provisions of Our Certificate of Incorporation, Our Bylaws and the Delaware General Corporation Law

Certificate of Incorporation and Bylaws

A number of provisions of our Certificate of Incorporation and Bylaws concern matters of corporate governance and the rights of our stockholders. Provisions that grant our board of directors the ability to issue shares of preferred stock and to set the voting rights, preferences and other terms thereof may discourage takeover attempts that are not first approved by our board of directors, including takeovers that may be considered by some stockholders to be in their best interests, such as those attempts that might result in a premium over the market price for the shares held by stockholders. Certain provisions could delay or impede the removal of incumbent directors even if such removal would be beneficial to our stockholders, such as the classification of our board of directors and the lack of cumulative voting.

Since our board of directors has the power to retain and discharge our officers, these provisions could also make it more difficult for existing stockholders or another party to effect a change in management.

These provisions may have the effect of deterring hostile takeovers or delaying changes in our control or in our management. These provisions are intended to enhance the likelihood of continued stability in the composition of our board of directors and in the policies they implement and to discourage certain types of transactions that may involve an actual or threatened change of our control. These provisions are designed to reduce our vulnerability to an unsolicited acquisition proposal. The provisions also are intended 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, as a consequence, they also may inhibit fluctuations in the market price of our shares that could result from actual or rumored takeover attempts.

These provisions also could discourage or make more difficult a merger, tender offer or proxy contest, even if they could be favorable to the interests of stockholders and could potentially depress the market price of our Common Stock. Our board of directors believes that these provisions are appropriate to protect our interests and the interests of our stockholders.

Classification of Board; No Cumulative Voting

Our Certificate of Incorporation and Bylaws provide for our board of directors to be divided into three classes, with staggered three-year terms. Only one class of directors is elected at each annual meeting of our stockholders, with the other classes continuing for the remainder of their respective three-year terms. Because our stockholders do not have cumulative voting rights, our stockholders representing a majority of the shares of Common Stock outstanding will be able to elect all of our directors due to be elected at each annual meeting of our stockholders.

Meetings of and Actions by Stockholders

Our Bylaws provide that annual meetings of our stockholders may take place at the time and place designated by our board of directors. A special meeting of our stockholders may be called at any time by our board of directors, the chairman of our board of directors or the president. Our Bylaws provide that (i) our board of directors can fix separate record dates for determining stockholders entitled to receive notice of a stockholder meeting and for determining stockholders entitled to vote at the meeting; (ii) we may hold a stockholder meeting by means of remote communications; (iii) any stockholder seeking to have the stockholders authorize or take corporate action by written consent shall, by written notice to the secretary of the Company, request that the board of directors fix a record date, and that the board of directors shall adopt a resolution fixing the record date in all events within ten calendar days after a request is received; and (iv) a written consent of stockholders shall not be effective unless a written consent signed by a sufficient number of stockholders to take such action is received by us within 60 calendar days of the earliest dated written consent received.

Advance Notice Requirements for Stockholder Proposals and Director Nominations

Our Bylaws provide that stockholders seeking to bring business before an annual meeting of stockholders or to nominate candidates for election as directors at an annual meeting of stockholders must provide timely notice in writing. To be timely, a stockholder's notice must be delivered to, or mailed and received by, the secretary of the Company at our principal executive offices not later than the close of business on the 90th calendar day, nor earlier than the close of business on the 120th calendar day in advance of the date specified in the Company's proxy statement released to stockholders in connection with the previous year's annual meeting of stockholders. If the date of the annual meeting is more than 30 calendar days before or after such anniversary date, notice by the stockholder to be timely must be so not earlier than the close of business on the 120th calendar day in advance of such date of annual meeting and not later than the close of business on the later of the 90th calendar day in advance of such date of annual meeting or the tenth calendar day following the date on which public announcement of the date of the meeting is made. In no event shall the public announcement of an adjournment or postponement of an annual meeting commence a new time period (or extend any time period) for the giving of an advance notice by any stockholder. Any stockholder that proposes director nominations or other business must be a stockholder of record at the time the advance notice is delivered by such stockholder to us and entitled to vote at the meeting. Our Bylaws also specify requirements as to the form and content of a stockholder's notice. These provisions may preclude stockholders from bringing matters before an annual meeting of stockholders or from making nominations for the election of directors at an annual meeting of stockholders. Unless otherwise required by law, any director nomination or other business shall not be made or transacted if the stockholder (or a qualified representative of the stockholder) does not appear at the meeting to present the director nominee or other proposed business.

Filling of Board Vacancies

Our Certificate of Incorporation and Bylaws provide that the authorized size of our board of directors shall be determined by the board of directors by board resolution from time to time and that our board of directors has the exclusive power to fill any vacancies and newly created directorships resulting from any increase in the authorized number of directors and the stockholders do not have the power to fill such vacancies. Vacancies in our board of directors and newly created directorships resulting from any increase in the authorized number of directors on our board of directors may be filled by a majority of the directors remaining in office, even though that number may be less than a quorum of our board of directors, or by a sole remaining director. A director so elected to fill a vacancy shall serve for the remaining term of the predecessor he or she replaced and until his or her successor is elected and has qualified, or until his or her earlier resignation, removal or death.

Amendment of the Certificate of Incorporation

Our Certificate of Incorporation may be amended, altered, changed or repealed at a meeting of our stockholders entitled to vote thereon by the affirmative vote of a majority of the outstanding stock entitled to vote thereon and a majority of the outstanding stock of each class entitled to vote thereon as a class, in the manner prescribed by the DGCL.

Amendment of the Bylaws

Our Bylaws may be amended or repealed, or new Bylaws may be adopted, by either our board of directors or the affirmative vote of at least 66 2/3 percent of the voting power of our outstanding shares of capital stock.

Section 203 of the Delaware General Corporation Law

We are subject to Section 203 of the DGCL, which prohibits a Delaware corporation from engaging in any business combination with any interested stockholder for a period of three years after the date that such stockholder became an interested stockholder, 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 stockholder becoming an interested stockholder;

- Upon completion of the transaction that resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85 percent 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 stockholder) those shares owned (i) by persons who are directors and also officers and (ii) pursuant to 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; and
- 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 stockholders, and not by written consent, by the affirmative vote of at least 66 2/3 percent of the outstanding voting stock that is not owned by the interested stockholder.

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

- any merger or consolidation involving the corporation and the interested stockholder;
- any sale, lease, transfer, pledge or other disposition of ten percent or more of the assets of the corporation to or with the interested stockholder;
- 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 stockholder;
- 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 stockholder; and
- the receipt by the interested stockholder of the benefit of any loss, advances, guarantees, pledges or other financial benefits by or through the corporation.

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

A Delaware corporation may “opt out” of these provisions with an express provision in its Certificate of Incorporation. We have not opted out of these provisions, which may as a result, discourage or prevent mergers or other takeover or change of control attempts of us.

LEGAL MATTERS

The validity of the securities being offered hereby will be passed upon by Thompson Hine LLP.

EXPERTS

The financial statements incorporated in this prospectus by reference to our Annual Report on Form 10-K for the year ended December 31, 2024 have been so incorporated in reliance on the report of WithumSmith+Brown, PC, an independent registered public accounting firm, which report includes an explanatory paragraph about the existence of substantial doubt concerning the Company's ability to continue as a going concern, given on the authority of said firm as experts in auditing and accounting.

WHERE YOU CAN FIND MORE INFORMATION

We file reports, proxy statements and other information with the SEC. The SEC maintains a website that contains reports, proxy and information statements and other information about issuers, such as us, who file electronically with the SEC. The address of that website is <http://www.sec.gov>.

Our web site address is <http://www.imunon.com>. There we make available free of charge, on or through the investor relations section of our website, annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and amendments to those reports filed pursuant to Section 13(a) or 15(d) of the Exchange Act as soon as reasonably practicable after we electronically file such material with the SEC. The information on our web site, however, is not, and should not be deemed to be, a part of this prospectus. All website addresses in this prospectus are intended to be inactive textual references only.

This prospectus is part of a registration statement we filed with the SEC. This prospectus does not contain all of the information set forth in the registration statement and the exhibits to the registration statement. The registration statement, its exhibits and the documents incorporated by reference in this prospectus and their exhibits, all contain information that is material to the offering of the securities hereby. Whenever a reference is made in this prospectus to any of our contracts or other documents, the reference may not be complete. You should refer to the exhibits that are a part of the registration statement in order to review a copy of the contract or documents. The full registration statement and exhibits may be obtained from the SEC or us, as provided below. You may inspect a copy of the registration statement through the SEC's website, as provided above.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The SEC's rules allow us to "incorporate by reference" information into this prospectus, which means that we can disclose important information to you by referring you to another document filed separately with the SEC. The information incorporated by reference is deemed to be part of this prospectus, and subsequent information that we file with the SEC will automatically update and supersede that information.

We incorporate by reference into this prospectus and the registration statement of which this prospectus is a part the information or documents listed below (except in each case the information contained in such document to the extent "furnished" and not "filed") that we have filed with the SEC:

- Our [Annual Report on Form 10-K for the fiscal year ended December 31, 2024](#) filed on February 27, 2025;
- Our [Quarterly Report on Form 10-Q for the quarter ended March 31, 2025](#) filed on May 12, 2025;
- Our Current Reports on Form 8-K filed with the SEC on [February 10, 2025](#), [March 24, 2025](#), [May 13, 2025](#), [May 20, 2025](#), [May 22, 2025](#), [May 27, 2025](#), and [May 30, 2025](#), excluding any information furnished in such reports under Item 2.02, Item 7.01 or Item 9.01; and
- Description of Securities of the Company, incorporated herein by reference to [Exhibit 4.7](#) to the Annual Report on Form 10-K of the Company for the fiscal year ended December 31, 2024.

In addition, all documents subsequently filed by us pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act, prior to the termination of the offering (excluding any information furnished rather than filed), shall be deemed to be incorporated by reference into this prospectus.

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

You may request a free copy of any of the documents incorporated by reference in this prospectus (other than exhibits, unless they are specifically incorporated by reference in the documents) by writing or telephoning us at the following address:

Imunon, Inc.
997 Lenox Drive, Suite 100
Lawrenceville, NJ 08648
(609) 896-9100

Exhibits to the filings will not be sent, however, unless those exhibits have specifically been incorporated by reference in this prospectus.

The documents incorporated by reference may be accessed at our website: <http://www.imunon.com>.



IMUNON, INC.
UP TO 22,027,780 SHARES OF COMMON STOCK

PROSPECTUS

, 2025

PART II
INFORMATION NOT REQUIRED IN PROSPECTUS

Item 13. Other Expenses of Issuance and Distribution

The following table sets forth the estimated costs and expenses payable by the registrant in connection with the offering of the securities being registered.

SEC registration fee	\$	1,619
Accounting fees and expenses		10,000
Legal fees and expenses		50,000
Miscellaneous expenses		5,000
Total	\$	66,619

Item 14. Indemnification of Directors and Officers

The Company is incorporated under the laws of the State of Delaware. Our Bylaws provide that we shall, to the maximum extent and in the manner permitted by the Delaware General Corporation Law (the “DGCL”), indemnify each of our directors and officers against expenses (including attorneys’ fees), judgments, fines, settlements and other amounts actually and reasonably incurred in connection with any proceeding, arising by reason of the fact that such person is or was an agent of the Company; provided, however, that the Company may modify the extent of such indemnification by individual contracts with its directors and executive officers and, provided, further, that the Company shall not be required to indemnify any director or officer in connection with any proceeding (or part thereof) initiated by such person unless (i) such indemnification is expressly required to be made by law, (ii) the proceeding was authorized in advance by our board of directors, (iii) such indemnification is provided by the Company, in its sole discretion, pursuant to the powers vested in the corporation under the DGCL or (iv) such indemnification is required to be made pursuant to an individual contract.

The DGCL provides that a Delaware corporation has the power generally to indemnify its current and former directors, officers, employees and other agents (each, a “corporation agent”) against expenses and liabilities, including amounts paid in settlement, in connection with any proceeding involving such person by reason of his being a corporation agent, other than a proceeding by or in the right of the corporation, if such person acted in good faith and in a manner such person reasonably believed to be in or not opposed to the best interests of the corporation and, with respect to any criminal proceeding, such person had no reasonable cause to believe such person’s conduct was unlawful.

In the case of an action brought by or in the right of the corporation, indemnification of a corporation agent is permitted if such person acted in good faith and in a manner such person reasonably believed to be in or not opposed to the best interests of the corporation. However, no indemnification is permitted in respect of 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 in which such proceeding was brought shall determine upon application that despite the adjudication of liability, but in view of all the circumstances of the case, such person is fairly and reasonably entitled to such indemnification.

To the extent that a corporation agent has been successful on the merits or otherwise in the defense of such proceeding, whether or not by or in the right of the corporation, or in the defense of any claim, issue or matter therein, the corporation is required to indemnify such person for expenses in connection therewith. Under the DGCL, the corporation may advance expenses incurred by a corporation agent in connection with a proceeding, provided that the corporation agent undertakes to repay such amount if it shall ultimately be determined that such person is not entitled to indemnification. Our Bylaws require us to advance expenses to any director or officer entitled to indemnification, provided that such person undertakes to repay the advancement if it is determined in a final judicial decision from which there is no appeal that such person is not entitled to indemnification.

The power to indemnify and advance the expenses under the DGCL does not exclude other rights to which a corporation agent may be entitled to under our Certificate of Incorporation, Bylaws, agreement, vote of stockholders or disinterested directors or otherwise. Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers or persons controlling the Company pursuant to the foregoing provisions, we have been informed that, in the opinion of the SEC, such indemnification is against public policy as expressed in the Securities Act and is therefore unenforceable.

Our Bylaws permit us to secure insurance on behalf of our directors, officers, employees and agents for any expense, liability or loss incurred in such capacities, whether or not the Company would have the power to indemnify such person against such liability under the provisions of the DGCL. We maintain general liability insurance that covers certain liabilities of our directors and officers arising out of claims based on acts or omissions in their capacities as directors or officers.

The purpose of these provisions is to assist us in retaining qualified individuals to serve as our directors, officers, employees and agents by limiting their exposure to personal liability for serving as such.

Item 15. Recent Sales of Unregistered Securities

On July 30, 2024, we entered into a securities purchase agreement with certain institutional and other accredited investors, pursuant to which we issued and sold 5,000,000 shares of our Common Stock in a registered direct offering and warrants to purchase 5,000,000 shares of Common Stock in a concurrent private placement, for a combined purchase price of \$2.00 per share of Common Stock and accompanying warrant. The closing of the private placement took place on August 1, 2024 and we received total gross proceeds of \$10.0 million. H.C. Wainwright & Co., LLC acted as the lead placement agent, and Brookline Capital Markets, a division of Arcadia Securities, LLC, acted as co-placement agent for the registered direct offering and concurrent private placement. The placement agents were entitled to fees equal to 7.0% of the gross proceeds from the registered direct offering and concurrent private placement. The sales and issuances of securities in the transaction were not registered under the Securities Act in reliance upon the exemption from registration provided by Section 4(a)(2) thereof or Regulation D promulgated thereunder. The recipients of the securities in each of these transactions represented their intentions to acquire the securities for investment only and not with a view to or for sale in connection with any distribution thereof, and appropriate legends were placed upon the stock certificates issued in these transactions. All recipients had adequate access, through their relationships with us, to information about us.

On December 7, 2023, we granted (i) an option to purchase 80,000 shares of the Common Stock with an exercise price of \$0.88 per share and (ii) a restricted stock award of 20,000 restricted shares to Dr. Sébastien Hazard, our then-Executive Vice President and Chief Medical Officer, as an “inducement” grant pursuant to Rule 5635(c)(4) of the Nasdaq Listing Rules. On October 7, 2024, we granted: (i) an inducement stock option to purchase 60,000 shares of the Common Stock with an exercise price of \$1.02 per share to one individual hired by the Company during the fourth quarter of 2024 and (ii) an inducement stock option to purchase 50,000 shares of the Common Stock with an exercise price of \$1.02 per share to Susan Eylward, our General Counsel, in each case as an “inducement” grant pursuant to Rule 5635(c)(4) of the Nasdaq Listing Rules. On February 18, 2025, we granted an inducement stock option to purchase 100,000 shares of Common Stock with an exercise price of \$0.862 to Dr. Douglas Faller, our Chief Medical Officer, as an “inducement” grant pursuant to Rule 5635(c)(4) of the Nasdaq Listing Rules. The grants of these awards were exempt from registration under the Securities Act, pursuant to Section 4(a)(2) thereof as a transaction by an issuer not involving a public offering.

On May 12, 2025, the Company entered into an exchange agreement (the “Exchange Agreement”) with the holders (the “Existing Warrant Holders”) of certain warrants of the Company (the “Existing Warrants”) issued on August 1, 2024, which were exercisable for an aggregate of 5,000,000 shares of Common Stock. Pursuant to the terms of the Exchange Agreement, the Company issued to the Existing Warrant Holders an aggregate of 2,921,000 shares of Common Stock (the “Warrant Exchange Shares”), on a one-for-one basis, in exchange for shares issuable under the Existing Warrants (the “Warrant Exchange”). The Warrant Exchange closed on May 13, 2025. The number of Warrant Exchange Shares issued pursuant to the Exchange Agreement represented 19.98% of the shares of Common Stock outstanding as of the date of the Exchange Agreement. The Warrant Exchange was completed, and the Warrant Exchange Shares were issued in reliance on, the exemption from registration provided by Section 3(a)(9) of the Securities Act, on the basis that (a) the Warrant Exchange Shares are being issued in exchange for other outstanding securities of the Company; (b) there will be no additional consideration delivered by the Existing Warrant Holders in connection with the Warrant Exchange; and (c) there were no commissions or other remuneration paid by the Company in connection with the Warrant Exchange.

On May 23, 2025, the Company entered into the Purchase Agreement with certain purchasers for the issuance and sale in a Private Placement of (i) 2,777,779 shares of Common Stock, (ii) Pre-Funded Warrants to purchase up to 4,444,444 shares of Common Stock, at an exercise price of \$0.0001 per share, and (iii) Common Warrants to purchase up to 14,444,446 shares of Common Stock, at an exercise price of \$0.45 per share. The Private Placement was priced at the market at a combined purchase price per share and accompanying Common Warrant of \$0.45 and closed on May 27, 2025. In connection with the Private Placement, the Company issued to designees of H.C. Wainwright & Co., LLC the Placement Agent Warrants to purchase up to an aggregate of 361,111 shares of Common Stock at an exercise price equal to \$0.5625 per share. The issuance of the shares of Common Stock and the Warrants were, and the shares of Common Stock issuable upon the exercise of the Warrants will be, issued in reliance on the exemptions from registration provided by Section 4(a)(2) under the Securities Act and/or Regulation D promulgated thereunder.

Item 16. Exhibits and Financial Statement Schedules

(a) The exhibits set forth below have been or are being filed herewith and are numbered in accordance with Item 601 of Regulation S-K.

(b) Financial statement schedules have been omitted, as the information required to be set forth therein is included in the consolidated financial statements or notes thereto incorporated by reference into the prospectus forming part of this registration statement.

EXHIBIT NO.	DESCRIPTION
2.1*	<u>Asset Purchase Agreement dated as of June 6, 2014, by and between Imunon, Inc. and EGEN, Inc., incorporated herein by reference to Exhibit 2.1 to the Quarterly Report on Form 10-Q of the Company for the quarter ended June 30, 2014 (SEC File No. 001-15911).</u>
2.2	<u>Amendment to Asset Purchase Agreement between Celsion Corporation and EGWU, Inc., dated March 28, 2019 incorporated herein by reference to Exhibit 10.1 to the Current Report on Form 8-K of the Company filed on April 1, 2019 (SEC File No. 001-15911).</u>
3.1	<u>Amended and Restated Certificate of Incorporation of Imunon, dated March 24, 2023, incorporated herein by reference to Exhibit 3.1 to the Current Report on Form 8-K of the Company filed on March 24, 2023 (SEC File No. 001-15911).</u>
3.2	<u>Amended and Restated Bylaws of the Company, effective on March 15, 2024, incorporated by reference to Exhibit 3.1 to the Current Report on Form 8-K of the Company, filed on March 18, 2024 (SEC File No. 001-15911).</u>
4.1	<u>Form of Representative's Common Stock Purchase Warrant, incorporated herein by reference to Exhibit 4.2 to the Current Report on Form 8-K of the Company, filed on October 31, 2017 (SEC File No. 001-15911).</u>
4.2	<u>Form of Placement Agent Common Stock Purchase Warrant incorporated herein by reference to Exhibit 4.4 to the Current Report on Form 8-K of the Company, filed on July 11, 2017 (SEC File No. 001-15911).</u>
4.3	<u>Form of Amended and Restated Warrant (issued under First Amendment of Venture Loan and Security Agreement, dated as of August 1, 2020, by and among Imunon, Inc., Horizon Funding I, LLC, Horizon Funding Trust 2019-1, and Horizon Technology Finance Corporation, as Collateral Agent), incorporated herein by reference to Exhibit 4.1 to the Current Report on Form 8-K of the Company, filed on September 4, 2020 (SEC File No. 001-15911).</u>

- 4.4 [Form of Exchange Warrant, incorporated herein by reference to Exhibit 4.1 to the Current Report on Form 8-K of the Company, filed on March 13, 2020 \(SEC File No. 001-15911\).](#)
- 4.5 [Warrant to purchase Shares of Common Stock of Celsion Corporation between Celsion Corporation and EGWU, Inc., dated March 28, 2019, incorporated herein by reference to Exhibit 4.1 to the Quarterly Report on Form 10-Q of the Company for the quarter ended March 31, 2019 \(SEC File No. 001-15911\).](#)
- 4.6 [Form of Warrant, incorporated by reference to Exhibit 4.1 to the Current Report on Form 8-K of the Company filed on July 31, 2024 \(SEC File No. 001-15911\).](#)
- 4.7 [Description of Securities of the Company, incorporated by reference to Exhibit 4.7 to the Annual Report on Form 10-K of the Company for the year ended December 31, 2024 \(SEC File No. 001-15911\).](#)
- 4.8 [Form of Pre-Funded Warrant, dated May 27, 2025, incorporated by reference to Exhibit 4.1 to the Current Report on Form 8-K of the Company filed on May 27, 2025 \(SEC File No. 001-15911\).](#)
- 4.9 [Form of Common Warrant, dated May 27, 2025, incorporated by reference to Exhibit 4.2 to the Current Report on Form 8-K of the Company filed on May 27, 2025 \(SEC File No. 001-15911\).](#)
- 4.10 [Form of Placement Agent Warrant, dated May 27, 2025, incorporated by reference to Exhibit 4.3 to the Current Report on Form 8-K of the Company filed on May 27, 2025 \(SEC File No. 001-15911\).](#)
- 5.1+ [Opinion of Thompson Hine LLP.](#)
- 10.1** [Imunon, Inc. 2007 Stock Incentive Plan, as amended, incorporated herein by reference to Exhibit 10.1 to the Current Report on Form 8-K of the Company, filed on May 16, 2017 \(SEC File No. 001-15911\).](#)
- 10.2 [Form Inducement Offer to Exercise Common Stock Purchase Warrants, incorporated herein by reference to Exhibit 10.3 to the Quarterly Report on Form 10-Q of the Company for the quarter ended September 30, 2017 \(SEC File No. 001-15911\).](#)
- 10.3** [Imunon, Inc. 2018 Stock Incentive Plan, incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K of the Company filed May 15, 2018 \(SEC File No. 001-15911\).](#)
- 10.4** [First Amendment to the Imunon, Inc. 2018 Stock Incentive Plan, incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K of the Company, filed on May 15, 2019 \(SEC File No. 001-15911\).](#)
- 10.5** [Second Amendment to the Imunon, Inc. 2018 Stock Incentive Plan, incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K of the Company, filed on June 16, 2020 \(SEC File No. 001-15911\).](#)
- 10.6** [Third Amendment to the Celsion Corporation 2018 Stock Incentive Plan, incorporated herein by reference to Exhibit 10.1 to the Current Report on Form 8-K of the Company, filed with the Commission on June 10, 2021 \(SEC File No. 001-15911\).](#)

- 10.7** [Imunon, Inc. 2018 Stock Incentive Plan, as amended as of June 14, 2023, incorporated herein by reference to Exhibit 10.1 to the Current Report on Form 8-K of the Company, filed with the Commission on June 15, 2023 \(SEC File No. 001-15911\).](#)
- 10.8** [Form of Incentive Stock Option Grant Agreement under the 2018 Stock Incentive Plan, incorporated herein by reference to Exhibit 10.1 to the Quarterly Report on Form 10-Q of the Company for the quarter ended March 31, 2024 \(SEC File No. 001-15911\).](#)
- 10.9** [Form of Restricted Stock Agreement under the 2018 Stock Incentive Plan, incorporated herein by reference to Exhibit 10.2 to the Quarterly Report on Form 10-Q of the Company for the quarter ended March 31, 2024 \(SEC File No. 001-15911\).](#)
- 10.10** [Form of Nonqualified Stock Option and Restricted Stock Grant Agreement for employment inducement awards, incorporated by reference to Exhibit 99.1 to the Company's Registration Statement on Form S-8 filed on August 29, 2024 \(No. 333-281833\).](#)
- 10.11** [Employment Offer Letter, entered into on June 15, 2010, between the Company and Jeffrey W. Church, incorporated herein by reference to Exhibit 10.1 to the Current Report on Form 8-K of the Company filed on June 18, 2010 \(SEC File No. 001-15911\).](#)
- 10.12** [Employment Offer Letter effective as of June 2, 2014, between the Company and Khursheed Anwer incorporated herein by reference to Exhibit 10.27 to the Annual Report of the Company for the year ended December 31, 2014 \(SEC File No. 001-15911\).](#)
- 10.13** [Employment Agreement between the Company and Michael H. Tardugno, effective as of July 18, 2022, incorporated herein by reference to Exhibit 10.2 to the Current Report on Form 8-K of the Company filed with the Commission on July 19, 2022 \(SEC File No. 001-15911\).](#)
- 10.14** [Employment Agreement between the Company Corporation and Corinne Le Goff, effective as of July 18, 2022 incorporated herein by reference to Exhibit 10.1 to the Current Report on Form 8-K of the Company filed with the Commission on July 19, 2022 \(SEC File No. 001-15911\).](#)
- 10.15** [Amended and Restated Change in Control Agreement dated as of September 6, 2016, by and between the Company and Michael H. Tardugno, incorporated herein by reference to Exhibit 10.1 to the Quarterly Report on Form 10-Q of the Company for the quarter ended September 30, 2016 \(SEC File No. 001-15911\).](#)
- 10.16** [Employment Agreement, dated as of May 3, 2024, between the Company and Stacy Lindborg, Ph.D., incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K of the Company filed on May 8, 2024 \(SEC File No. 001-15911\).](#)
- 10.17** [Retirement and Consulting Agreement, dated May 17, 2024, between Imunon, Inc. and Jeffrey Church, incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K of the Company filed on May 20, 2024 \(SEC File No. 001-15911\).](#)
- 10.18** [Consulting Agreement, dated April 15, 2024, by and between Imunon, Inc. and Monomoy Advisors, LLC incorporated by reference to Exhibit 10.2 to the Current Report on Form 8-K of the Company filed on May 20, 2024 \(SEC File No. 001-15911\).](#)
- 10.19** [Offer Letter of Employment, dated October 2, 2024, between Imunon, Inc. and Susan Eylward, incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K of the Company filed on October 7, 2024 \(SEC File No. 001-15911\).](#)

- 10.20** [Separation Agreement, dated August 9, 2024 by and between the Company and Sébastien Hazard, M.D., incorporated by reference to Exhibit 10.5 to the Quarterly Report on Form 10-Q of the Company for the quarter ended September 30, 2024 \(SEC file No. 001-15911\).](#)
- 10.21 [Lease Agreement, executed July 21, 2011, by and between Imunon, Inc. and Brandywine Operating Partnership, L.P., incorporated herein by reference to Exhibit 10.1 to the Current Report on Form 8-K of the Company filed on July 25, 2011 \(SEC File No. 001-15911\).](#)
- 10.22 [First Amendment to Lease Agreement, executed April 20, 2017, by and between Imunon, Inc. and Lenox Drive Office Park, LLC, incorporated herein by reference to Exhibit 10.1 to the Current Report on Form 10-Q of the Company filed on November 14, 2017 \(SEC File No. 001-15911\).](#)
- 10.23 [Second Amendment to Lease Agreement, dated January 9, 2019, by and between Celsion Corporation and Lenox Drive Office Park, LLC, successor in interest to Brandywine Operating Partnership, L.P., incorporated herein by reference to Exhibit 10-Q to the Current Report on Form 10-Q of the Company for the quarter ended March 31, 2019 \(SEC File No. 001-15911\).](#)
- 10.24 [Lease Agreement dated January 15, 2018, by and between Imunon, Inc. and HudsonAlpha Institute of Biotechnology for office and lab space located in Huntsville, Alabama incorporated herein by reference to Exhibit 10.1 to the Quarterly Report on Form 10-Q of the Company for the quarter ended March 31, 2018 \(SEC File No. 001-15911\).](#)
- 10.25 [Settlement Agreement and Release, by and between the plaintiff to the shareholder action captioned O'Connor v. Braun, et al., N.J. Super., Dkt. No. MERC-00068-19, William J. O'Connor, derivatively on behalf of Imunon, Inc. and individually on behalf of himself and all other similarly situated stockholders of Imunon, Inc. and defendants, incorporated herein by reference to Exhibit 10.2 to the Current Report on Form 8-K of the Company, filed on June 16, 2020 \(SEC File No. 001-15911\).](#)
- 10.26 [Form of Exercise Agreement, incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K of the Company, filed on March 13, 2020 \(SEC File No. 001-15911\).](#)
- 10.27 [At the Market Offering Agreement, dated May 25, 2022 by and between Celsion Corporation and H.C. Wainwright & Co. LLC, incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K of the Company, filed on May 25, 2022, \(SEC File No. 001-15911\).](#)
- 10.28 [Amendment No. 1, dated May 15, 2024, to At the Market Offering Agreement, by and between Imunon, Inc. and H.C. Wainwright & Co. LLC, incorporated by reference to Exhibit 1.3 to the Company's Registration Statement on Form S-3 \(SEC No. 333-279425\) filed on May 15, 2024.](#)
- 10.29 [Form of Securities Purchase Agreement, dated as of July 30, 2024, by and among the Company and each purchaser party thereto, incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K of the Company, filed on July 31, 2024 \(SEC File No. 001-15911\).](#)
- 10.30 [Form of Exchange Agreement, dated May 12, 2025, incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K of the Company, filed on May 13, 2025 \(SEC File No. 001-15911\).](#)
- 10.31 [Form of Securities Purchase Agreement, dated May 23, 2025, incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K of the Company filed on May 27, 2025 \(SEC File No. 001-15911\).](#)

- 10.32 [Form of Registration Rights Agreement, dated May 23, 2025, incorporated by reference to Exhibit 10.2 to the Current Report on Form 8-K of the Company filed on May 27, 2025 \(SEC File No. 001-15911\).](#)
- 21.1 [Subsidiaries of Imunon, Inc., incorporated by reference to Exhibit 21.1 to the Annual Report on Form 10-K of the Company for the year ended December 31, 2024 \(SEC File No. 001-15911\).](#)
- 23.1+ [Consent of WithumSmith+Brown, PC, independent registered public accounting firm for the Company.](#)
- 23.2+ [Consent of Thompson Hine LLP \(included in Exhibit 5.1\).](#)
- 24.1+ [Power of Attorney \(included on signature page\).](#)
- 107+ [Filing Fee Table.](#)

* Portions of this exhibit have been omitted pursuant to a request for confidential treatment under Rule 24b-2 of the Securities Exchange Act of 1934, amended, and the omitted material has been separately filed with the Securities and Exchange Commission.

** Management contract or compensatory plan or arrangement.

+ Filed herewith.

Item 17. Undertakings

(a) The undersigned registrant hereby undertakes:

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

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

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

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

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

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

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

(4) That, for the purpose of determining liability under the Securities Act of 1933 to any purchaser:

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

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

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

(8) The undersigned registrant hereby undertakes that:

(i) For purposes of determining any liability under the Securities Act of 1933, the information omitted from the form of prospectus filed as part of this registration statement in reliance upon Rule 430A and contained in a 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 part of this registration statement as of the time it was declared effective.

(ii) For the purpose of determining any liability under the Securities Act of 1933, 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.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Lawrenceville, State of New Jersey, on May 30, 2025.

IMUNON, INC.

By: /s/ Stacy R. Lindborg
Stacy R. Lindborg, Ph.D.
President and Chief Executive Officer

POWER OF ATTORNEY

KNOW ALL BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Stacy Lindborg, David Gaiero, and Susan Eylward and each of them, as his or her true and lawful attorneys-in-fact and agents, each with the full power of substitution and resubstitution, for him or her and in his or her name, place or stead, in any and all capacities, to (i) act on, sign and file with the Securities and Exchange Commission any and all amendments (including post-effective amendments) to this registration statement together with all schedules and exhibits thereto and any subsequent registration statement filed pursuant to Rule 462(b) under the Securities Act, together with all schedules and exhibits thereto, (ii) act on, sign and file such certificates, instruments, agreements and other documents as may be necessary or appropriate in connection therewith, (iii) act on and file any supplement to any prospectus included in this registration statement or any such amendment or any subsequent registration statement filed pursuant to Rule 462(b) under the Securities Act, and (iv) take any and all actions which may be necessary or appropriate to be done, as fully for all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that said attorney-in-fact and agent, or his substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act, this registration statement has been signed by the following persons in the capacities and on the dates indicated.

<u>Name</u>	<u>Position</u>	<u>Date</u>
<u>/s/ Stacy R. Lindborg</u> Stacy R. Lindborg, Ph.D.	President, Chief Executive Officer and Director (Principal Executive Officer)	May 30, 2025
<u>/s/ David Gaiero</u> David Gaiero	Chief Financial Officer (Principal Financial and Accounting Officer)	May 30, 2025
<u>/s/ Michael H. Tardugno</u> Michael H. Tardugno	Executive Chairman and Director	May 30, 2025
<u>/s/ Frederick J. Fritz</u> Frederick J. Fritz	Director	May 30, 2025
<u>/s/ James E. Dentzer</u> James E. Dentzer	Director	May 30, 2025
<u>/s/ Donald Braun</u> Donald Braun, Ph.D.	Director	May 30, 2025
<u>/s/ Christine Pellizzari</u> Christine Pellizzari, J.D.	Director	May 30, 2025



May 30, 2025

Imunon, Inc.
997 Lenox Drive, Suite 100
Lawrenceville, New Jersey 08648

Re: Registration Statement on Form S-1

Ladies and Gentlemen:

We have acted as counsel to Imunon, Inc., a Delaware corporation (the "Company"), in connection with the preparation and filing by the Company of a Registration Statement on Form S-1 (the "Registration Statement"), with the U.S. Securities and Exchange Commission (the "Commission") pursuant to the Securities Act of 1933, as amended (the "Securities Act"), relating to the proposed resale of up to 22,027,780 shares (the "Selling Holder Shares") of common stock, par value \$0.01 per share (the "Common Stock"), consisting of (i) 2,777,779 shares of Common Stock (the "Shares"), (ii) up to 4,444,444 shares of Common Stock (the "Pre-Funded Warrant Shares") reserved for issuance upon the exercise of outstanding pre-funded warrants (the "Pre-Funded Warrants"), (iii) up to 14,444,446 shares of Common Stock (the "Common Warrant Shares") reserved for issuance upon the exercise of outstanding common warrants (the "Common Warrants"), and (iv) up to 361,111 shares of Common Stock (the "Placement Agent Warrant Shares" and, collectively with the Pre-Funded Warrant Shares and the Common Warrant Shares, the "Warrant Shares") reserved for issuance upon the exercise of outstanding placement agent warrants (the "Placement Agent Warrants" and, collectively with the Pre-Funded Warrants and the Common Warrants, the "Warrants"), by the selling securityholders listed in the Registration Statement, all of which Selling Holder Shares may be sold from time to time and on a delayed or continuous basis, as described in the prospectus that forms a part of the Registration Statement (the "Prospectus").

In connection with this opinion, we have examined originals or copies (certified or otherwise identified to our satisfaction) of (i) the Company's Amended and Restated Certificate of Incorporation, (ii) the Company's Amended and Restated Bylaws, (iii) the Registration Statement and the Prospectus, (iv) the Warrants, and (v) such corporate records, agreements, documents, and other instruments, and such certificates or comparable documents of public officials or of officers and representatives of the Company, as we have deemed relevant and necessary as a basis for the opinion hereinafter set forth. In such examination, we have assumed the genuineness of all signatures, the legal capacity of all natural persons, the authenticity of all documents submitted to us as originals, the conformity to original documents of all documents submitted to us as certified, conformed or photostatic copies, and the authenticity of the originals of such latter documents. As to certain questions of fact material to this opinion, we have relied upon certificates or comparable documents of public officials and officers and representatives of the Company and have not sought to independently verify such facts.

On the basis of the foregoing, and in reliance thereon, we are of the opinion that:

1. The Shares are validly issued, fully paid and non-assessable.
2. The Warrant Shares, when and if issued upon exercise of the Warrants in accordance with the terms of the Warrants, will be validly issued, fully paid and non-assessable.

THOMPSON HINE LLP
ATTORNEYS AT LAW

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127 Public Square
Cleveland, Ohio 44114-1291

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The opinion expressed herein is limited to the General Corporation Law of the State of Delaware and, with respect to the enforceability of the Warrants, the laws of the State of New York, and we express no opinion as to the effect on the matters covered by this opinion of the laws of any other jurisdiction. We express no opinion as to (a) any provision for liquidated damages, default interest, late charges, monetary penalties, make-whole premiums or other economic remedies to the extent such provisions are deemed to constitute a penalty, (b) consents to, or restrictions upon, governing law, jurisdiction, venue, arbitration, remedies or judicial relief, (c) waivers of rights or defenses, (d) any provision requiring the payment of attorneys' fees, where such payment is contrary to law or public policy, (e) the creation, validity, attachment, perfection or priority of any lien or security interest, (f) advance waivers of claims, defenses, rights granted by law or notice, opportunity for hearing, evidentiary requirements, statutes of limitation, trial by jury or at law or other procedural rights, (g) waivers of broadly or vaguely stated rights, (h) provisions for exclusivity, election or cumulation of rights or remedies, (i) provisions authorizing or validating conclusive or discretionary determinations, (j) grants of setoff rights, (k) proxies, powers and trusts, (l) provisions prohibiting, restricting or requiring consent to assignment or transfer of any right or property and (m) the severability, if invalid, of provisions to the foregoing effect. Our opinions set forth above are subject to bankruptcy, insolvency, fraudulent transfer, reorganization, moratorium and other similar laws of general application affecting the rights and remedies of creditors and to general principles of equity.

This opinion letter 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, the Selling Holder Shares, the Registration Statement or the Prospectus.

We hereby consent to being named in the Registration Statement and in the Prospectus under the caption "Legal Matters" and to the use of this opinion for filing with said Registration Statement as Exhibit 5.1 thereto. In giving this consent, we do not hereby admit that we are within the category of persons whose consent is required under Section 7 of the Securities Act of 1933, as amended, or the rules and regulations of the Commission promulgated thereunder.

Very truly yours,

/s/ Thompson Hine LLP

Thompson Hine LLP

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in the Prospectus constituting a part of this Registration Statement to Form S-1 of our report dated February 26, 2025 (which includes explanatory paragraphs relating to the Company's ability to continue as a going concern), relating to the consolidated financial statements of Imunon, Inc. as of December 31, 2024 and 2023 appearing in the entity's Annual Report on Form 10-K for the year ended December 31, 2024. We also consent to the reference to us under the caption "Experts" in the Prospectus.

/s/ WithumSmith+Brown, PC

East Brunswick, New Jersey
May 30, 2025

Calculation of Filing Fee Tables

Form S-1
(Form Type)

Imunon, Inc.
(Exact Name of Registrant as Specified in its Charter)

Table 1: Newly Registered Securities

	<u>Security Type</u>	<u>Security Class Title</u>	<u>Fee Calculation Rule</u>	<u>Amount Registered⁽¹⁾</u>	<u>Proposed Maximum Offering Price Per Unit⁽²⁾</u>	<u>Maximum Aggregate Offering Price</u>	<u>Fee Rate</u>	<u>Amount of Registration Fee</u>
Fees to be Paid	Equity	Common stock, par value \$0.01 per share ("Common Stock")	Other ⁽²⁾	22,027,780	\$ 0.48	\$ 10,573,334.40	0.00015310	\$ 1,618.78
				Total Offering Amount		\$ 10,573,334.40		\$ 1,618.78
				Total Fees Previously Paid				—
				Total Fee Offsets				—
				Net Fee Due				\$ 1,618.78

(1) Represents an aggregate of 22,027,780 shares of Common Stock, which includes 19,250,001 shares of Common Stock that may be issued upon the exercise of warrants, held by the selling securityholders named in the prospectus that forms a part of this registration statement (this "Registration Statement"). Pursuant to Rule 416 under the Securities Act of 1933, as amended (the "Securities Act"), this Registration Statement also covers (i) such additional number of shares of Common Stock issuable upon stock splits, stock dividends, reclassifications, recapitalizations, combinations or similar events or (ii) such reduced number of shares of Common Stock in respect of any reverse stock splits, stock dividends, reclassifications, recapitalizations, combinations or similar events, in each case with respect to the shares of Common Stock being registered pursuant to this Registration Statement.

(2) Estimated solely for the purpose of calculating the registration fee pursuant to Rule 457(c) under the Securities Act and calculated based upon the average of the high and low prices of the Common Stock on The Nasdaq Stock Market LLC on May 22, 2025, which date is within five business days prior to the filing of this Registration Statement.