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

FORM 8-K

Current Report

Pursuant to Section 13 or 15(d) of
the Securities Exchange Act of 1934

Date of Report (Date of earliest event reported): February 10, 2025

RESPIRERX PHARMACEUTICALS INC.

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction
of incorporation)

1-16467
(Commission
File Number)

33-0303583
(I.R.S Employer
Identification No.)

126 Valley Road, Suite C
Glen Rock, New Jersey
(Address of principal executive offices)

07452
(Zip Code)

Registrant's telephone number, including area code: (201) 444-4947

(Former name or former address, if changed since last report.)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:

- Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
- Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
- Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
- Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
N/A	N/A	N/A

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities act of 1933 (§230.405 of this chapter) or Rule 12b-2 of the Securities Exchange Act of 1934 (§240.12b-2 of this chapter).

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 13(a) of the Exchange Act.

Item 7.01 Regulation FD Disclosure.

RespireRx Pharmaceuticals Inc. (the “Company”) issued a press release entitled “RespireRx Pharmaceuticals Inc. CFO and CEO Issue Letter to Stockholders, Stakeholders, Strategic and Potential Strategic Partners and Other Interested Parties.” A copy of the press release is attached as Exhibit 99.1 to this Current Report on Form 8-K and is incorporated herein by reference. In the press release attached as Exhibit 99.1, the Company provided an open letter summarizing the current macro-environment affecting its industry sector, the Company’s challenges, the strategies being considered to meet those challenges, its accomplishments during 2024 as well as its 2024 disappointments and the Company’s 2025 goals and plans.

The description above, of the press release, does not purport to be complete and is qualified in its entirety by reference to the full press release attached as Exhibit 99.1.

The press release attached as Exhibit 99.1 includes certain forward-looking information.

The information in this Item 7.01 and the press release attached as Exhibit 99.1 is being furnished and shall not be deemed “filed” for purposes of Section 18 of the Securities and Exchange Act of 1934, as amended (the “Exchange Act”), nor otherwise subject to the liabilities of that section, nor incorporated by reference in any filing under the Securities Act of 1933, as amended, or the Exchange Act, except as shall be expressly set forth by specific reference in such a filing.

Item 9.01 Financial Statements and Exhibits

(d) Exhibits.

Exhibit

Number	Exhibit Description
99.1*	RespireRx Pharmaceuticals Inc. Press Release
104	Cover Page Interactive Data File (embedded within the Inline XBRL document)

* Furnished herewith.

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

Date: February 10, 2025

RESPIRERX PHARMACEUTICALS INC.
(Registrant)

By: /s/ Jeff E. Margolis

Jeff E. Margolis

SVP, CFO, Secretary and Treasurer



RespireRx Pharmaceuticals Inc. CFO and CEO Issue Letter to Stockholders, Stakeholders, Strategic and Potential Strategic Partners and Other Interested Parties

Glen Rock, N.J., February 10, 2025 /Globe Newswire – RespireRx Pharmaceuticals Inc. (“RespireRx” or the “Company”), a leader in the discovery and development of innovative and revolutionary treatments to combat diseases caused by disruption of neuronal signaling, today provides a progress and status report to its stockholders, stakeholders, strategic partners as well as other interested parties.

Dear Stockholders, Stakeholders, Strategic and Potential Strategic Partners and Other Interested Parties:

As we enter 2025, we would like to provide you with this open letter summarizing the current macro-environment affecting our industry sector, our challenges, the strategies we are considering to meet those challenges, our accomplishments during 2024, our 2024 disappointments and our 2025 goals and plans. Of course, we can provide no assurance that we will achieve these goals (see cautionary note about forward-looking statements near the end of this letter), but we believe that they are based on realistic assumptions and are reasonably achievable. We will certainly work hard on your behalf to try to achieve what we lay out here.

The Take Home Message – a Brief Summary

While we have experienced a number of challenges, which will come as no surprise to our followers, we have had important successes, particularly with our science and preclinical and clinical development. We have published in peer-reviewed journals fourteen times in 2024 but importantly, these papers and those of prior years have been cited frequently by other peer-reviewed authors, which is an indication of their quality and relevance. Two additional papers have published online or in print in 2025, two more have been submitted for review and approximately four are in various stages of drafting. Our collaborator, the Shirley Ryan AbilityLab, a leading spinal injury research and treatment institution, received a \$1.8 million grant for Phase 2A and 2B human clinical trials in spinal cord injured patients with our AMPAkinine CX1739. We have also applied for a sizable SBIR grant related to our GABAkinine program (while we have received high scores from the grant reviewers, no assurance can be provided that the grant will fund). Below you will find details about our challenges, possible strategies to meet those challenges, our accomplishments, our 2024 disappointments and our plans and goals for 2025.

One of the things we started in 2023 and continued in January 2025 is the establishment of subsidiaries that we believe will provide substantial benefits to the Company going forward. In 2023, we established ResolutionRx Ltd as a wholly-owned Australian subsidiary to further the development of our cannabinoid program, particularly dronabinol, with a new proprietary formulation, initially for the treatment of obstructive sleep apnea. In January 2025 we converted our business unit, EndeavourRx into a wholly-owned subsidiary, EndeavourRx LLC, with RespireRx as the sole member. We believe that this strategy will enable or make easier, among other things, the following:

- individual asset valuations or modeling by investors, analysts, the media and potential strategic partners;
- a separation of research and development risks, better protecting individual assets from the risk of the other assets;
- allow for investor and prospective strategic partner selectivity;
- the individual company balance sheets are potentially cleaner;
- each financing round at the subsidiary level would allow for separate market valuations;
- asset values that are recognized at the subsidiary level should be reflected, at least in part, at the RespireRx parent level.

RespireRx Pharmaceuticals Inc. 126 Valley Road, Suite C, Glen Rock, NJ 07452
www.respirerx.com

The 2025 Macro-Environment

According to Pitchbook Data, Inc. (“Pitchbook”), a Morningstar company, in 2025, the healthcare and life science venture capital industry will engage in fewer but larger deals and will be comprised of fewer and larger funds. This trend toward size implies later stage, de-risked, capital intensive opportunities. Pitchbook also indicates that investors would be looking for scalable technologies and clear paths to exits via licensing or M&A. Of course, there are a lot of things that can change that, such as changes in macroeconomic conditions, the introduction of disruptive technologies or scientific breakthroughs which could cause a shift toward earlier stage opportunities. Pitchbook has also said that there will be a trend toward regional specialization which will be an important factor in collaborations and funding. The average time between funding rounds was 1.6 years in 2021 but extended to 2.2 years in 2024, according to Pitchbook, which implies a more challenging follow-on financing environment. Several sources are indicating a strategic collaboration trend toward mid to late stage opportunities with strong clinical data, making that category appealing to investors as they are considered de-risked and provide for the potential for earlier than historical exits for investors.

Our Challenges

Capital raising has been particularly challenging.

One of the most important reasons is that we are not current with our SEC filings and therefore our stock is not traded on any established stock exchange or market and trades only in the expert market. In that regard, we received a letter on February 6, 2025, dated February 3, 2025 from the Securities and Exchange Commission (“SEC”) indicating that the Company appears not be in compliance with the reporting requirements under Section 13(a) of the Securities Exchange Act of 1934. If we have not filed all required reports within fifteen days from the date of the letter, we may be subject, without further notice to an administrative proceeding to revoke our Exchange Act registration and subject to suspension of trading. The letter further indicates that we may be eligible to terminate our registration by filing a Form 15. We have reached out to the author of the letter on February 7, 2025.

We also have, after giving consideration to convertible debt conversions and options and warrant exercises, an insufficient number of available shares of common stock to raise a substantial amount of finance. Resolving that challenge can be accomplished but is a challenge itself.

Holding a shareholder meeting to increase the number of authorized shares of common stock or do a reverse stock split while leaving authorized shares unchanged is expensive and not practical, at least until we are current with our SEC financial filings.

The Department of Defense grant to Shirley Ryan AbilityLab for a spinal cord injury clinical trial with our CX-1739 compound and our participation has proven difficult to implement and commence. While some hurdles with respect to that opportunity have been crossed, we have recently developed a strategy to overcome the most difficult hurdle.

Capital raising in Australia for our subsidiary ResolutionRx Ltd continues to prove difficult. While we have capital commitments in place, receipt of funding by ResolutionRx Ltd is subject to certain conditions precedent to closing that have not yet been met.

On January 25, 2025, we formed EndeavourRx LLC, a single member Delaware limited liability company with RespireRx as the sole member, and while we are in the process of contributing certain neuromodulator programs into EndeavourRx, that contribution is not yet complete and we have not yet raised finance for this newly formed wholly-owned subsidiary.

Possible Strategies to Meet Our Challenges

Capital Raising

While fund-raising utilizing the issuance of common stock or convertible debt convertible into common stock would not be of significant value, the issuance of non-convertible preferred stock in the US has enabled the raising of some limited capital. In that regard, we took the following actions which is the subject of a Current Report on Form 8-K filed with the SEC on September 6, 2024 and which may be found inclusive of exhibits at <https://www.sec.gov/Archives/edgar/data/849636/000149315224035221/form8-k.htm>. A summary appears below qualified by the contents of the Current Report on Form 8-K inclusive of the Exhibits.

On August 28, 2024, the Company's Board of Directors authorized an amendment to the Company's certificate of incorporation to amend and restate its Certificate of Designation of Series I 8% Redeemable Preferred Stock ("Amended and Restated Series I Certificate of Designation") and authorized an amendment to the Company's certificate of incorporation to amend and restate its Series J 8% Voting, Participating, Redeemable Preferred Stock ("Amended and Restated Series J Certificate of Designation"), both subject to the consent of a majority of the holders prior to effecting such amendments, consenting separately, of the holders of the Series I Preferred Stock and Series J Preferred Stock, respectively, which consents were received on August 28, 2024. On August 30, 2024, the Company filed both the Amended and Restated Series I Certificate of Designation and the Amended and Restated Series J Certificate of Designation with the Secretary of State of the State of Delaware.

The Amended and Restated Series I Certificate of Designation sets forth the preferences, rights and limitations of the Series I Preferred Stock, a summary of which is as follows:

Number of Shares: The number of shares designated as Series I Preferred Stock is 5,500 (which is not subject to increase without the written consent of a majority of the holders (each a "Holder") of the Series I Preferred Stock or as otherwise set forth in the Certificate of Designation). *[This represents an increase of 2,000 shares of Series I Preferred Stock which in turn represents a fund raising opportunity of an additional \$200,000].*

Eligible Payment: The Maximum Appreciated Price (unless a lesser price is agreed by the Corporation and the holder) multiplied by the number of shares of common stock corresponding to the number of Series I Preferred Shares divided by the Base Measurement Price multiplied by the Stated Value.

Eligible Payment Event: In addition to the Fundamental Transactions as defined in the Amended and Restated Certificate of Designation that may cause an Eligible Payment Event, if in any consecutive twelve (12) month period, which may not be a calendar year, any of the following events occur, such events shall cause an Eligible Payment: (i) any license, sublicense, joint venture or similar transaction resulting in one or more payments within any consecutive twelve (12) month period (which need not be a calendar year) which aggregate to a total of at least \$15,000,000.00, or (ii) any milestone payment or series of milestone payments with respect to research and development within any consecutive twelve (12) month period (which need not be a calendar year) which aggregate to a total of at least \$15,000,000.00, or (iii) receipt of royalties in any consecutive twelve month period (which need not be a calendar year) of at least \$15,000,000.00 or (iv) any event or series of events resulting in the Corporation's receipt of an amount deemed by the Corporation's Board of Directors to establish an Eligible Payment Event but shall not include a transaction in which the Corporation is issuing securities primarily for the purpose of raising capital or to an entity whose primary business is investing in securities.

Base Measurement Price: means \$0.0015 per share and shall be utilized to calculate the number of shares of common stock that would be issued if the shares of Series I Preferred Stock were to convert into common stock, even though such conversion does not take place, and shall be further used for measurement of the amount of Eligible Payment to be received by the holders of the Series I Preferred Stock in the event of an Eligible Payment Event.

Maximum Appreciated Price: means \$0.02 per share of common stock or its equivalent for measurement purposes, even if not issued, or any lesser amount designated by a holder and agreed by the Corporation.

Additionally, on August 30, 2024, the Company filed the Amended and Restated Series J Certificate of Designation with the Secretary of State of the State of Delaware.

The Series J Certificate of Designation sets forth the preferences, rights and limitations of the Series J Preferred Stock, a summary of which is as follows:

Number of Shares: The number of shares designated as Series J Preferred Stock is 15,000 (which is not subject to increase without the written consent of a majority of the holders (each a "Series J Holder") of the Series J Preferred Stock or as otherwise set forth in the Series J Certificate of Designation). *[This is unchanged].*

Eligible Payment: The Maximum Appreciated Price, (unless a lesser price is agreed by the Corporation and the Holder) multiplied by the number of shares of common stock corresponding to the number of Series J Preferred Shares divided by the Base Measurement Price multiplied by the Stated Value.

Eligible Payment Event: “ In addition to the Fundamental Transactions that may cause an Eligible Payment Event as described in Section 5(b), if in any consecutive twelve (12) month period, which may not be a calendar year, any of the following events occur, such events shall cause an Eligible Payment: (i) any license, sublicense, joint venture or similar transaction resulting in one or more payments within any consecutive twelve (12) month period (which need not be a calendar year) which aggregate to a total of at least \$20,000,000.00, or (ii) any milestone payments with respect to research and development within any consecutive twelve (12) month period (which need not be a calendar year) which aggregate to a total of at least \$20,000,000.00, or (iii) receipt of royalties in any consecutive twelve month period (which need not be a calendar year) of at least \$20,000,000.00 or (iv) any event or series of events resulting in the Corporation’s receipt of an amount deemed by the Corporation’s Board of Directors to establish an Eligible Payment Event but shall not include a transaction in which the Corporation is issuing securities primarily for the purpose of raising capital or to an entity whose primary business is investing in securities.

Base Measurement Price: means \$0.002 per share and shall be utilized to calculate the number of shares of Common Stock that would be issued if the shares of Series J Preferred Stock were to convert into common stock, even though such conversion does not take place, and shall be used to determine the number of votes for the Series J Preferred Stock as well as for measurement of the amount of Eligible Payment to be received by the holders of the Series J Preferred Stock in the event of an Eligible Payment Event. *[This new Base Measurement Price represents a reduction from \$0.006].*

Maximum Appreciated Price: means the lesser of (i) the closing price per share of common stock or its equivalent if the common stock is then listed or admitted to trading on a Nasdaq stock exchange or other stock exchange or over the counter market or other securities market which reports closing sale prices on the trading day on which an Eligible Payment Event is publicly announced prior to the opening of financial markets on such date, or the trading day following the public announcement of the Eligible Payment Event if announced after the opening of the financial markets on the date of the Eligible Payment Event, or (ii) the sum of any upfront payments and milestone amounts, if any associated with an Eligible Payment Event divided by the number of shares of Common Stock outstanding on such date, inclusive of any shares to be issued upon conversion of any convertible debt inclusive of accrued unpaid interest that is the subject of conversion notices received but not yet processed and inclusive of any shares of Common Stock issuable upon conversion of any convertible preferred stock inclusive of accrued dividends in-kind that are the subject of conversion notices received but not yet processed and shares of Common Stock issuable upon exercise of stock options or warrants that are the subject of exercise notices received but not yet processed or any securities convertible or exercisable into Common Stock for which notices of conversion or exercise have been received but not yet processed, or (iii) \$0.03 (3 cents). *[This new Maximum Appreciated Price represents a new cap on appreciation whereas previously there was no cap].*

Grants

On May 29, 2024, we filed a Current Report on Form 8-K (<https://www.sec.gov/Archives/edgar/data/849636/000149315224021733/form8-k.htm>) with Exhibit 99.1 which was an issued a press release the subject matter of which is the Department of Defense grant to Shirley Ryan AbilityLab. This is now part of an ongoing collaboration among scientist teams led Dr. Milap Sandhu, PT, PhD, research scientist at the Shirley Ryan AbilityLab, a rehabilitation research hospital in Chicago, and Dr. Arnold Lippa from RespireRx and Dr. David Fuller from the University of Florida, the Department of Defense has approved a \$1.8 million translational research award to the Shirley Ryan AbilityLab to fund a two stage Phase 2A and 2B clinical trial in order to determine the safety and efficacy of CX1739, its lead clinical AMPAkinone, to improve bladder function and motor activity in patients with spinal cord injury.

The U.S. Army Medical Research Acquisition Activity, in support of the Congressionally Directed Medical Research Program (CDMRP), is the awarding and administering acquisition office and this work will be supported by the Department of Defense, in the amount of \$1,793,411, through the Spinal Cord Injury Research Program under Award No. HT94252410497. Opinions, interpretations, conclusions and recommendations are those of the author and are not necessarily endorsed by the Assistant Secretary of Defense for Health Affairs or the Department of Defense.

As noted above, while some hurdles with respect to that opportunity have been crossed, we have recently developed a strategy to overcome the most difficult hurdle. While some of our costs will be covered by the grant, we are seeking capital to meet certain other obligations not covered by the grant and other AMPAkin research and development efforts.

On September 5, 2024, we submitted an SBIR (Small Business Innovation Research) grant application with the National Institute of Neurological Disorders and Stroke (NINDS) and Institute of the National Institutes of Health (NIH). The proposal to advance the lead GABAkine (KRM-II-81) towards clinical development for epilepsy is focused on Investigational New Drug Application (IND) enablement of KRM-II-81, has received high review scores. We can provide no assurance that the requested funds will be awarded. Recent developments of the current administration, the January 25, 2025 broad pause of funding and the January 27, 2025 reversal of such pause has inserted an additional degree of uncertainty into the process.

In addition, we anticipate making another SBIR grant application with the NIH for our AMPAkin program within in 2025.

Strategic Deal Making

We are currently involved in several discussions in various stages of maturity with third-parties that are intended to result in any one of the following: (i) research collaborations, (ii) joint ventures, (iii) licenses or sublicenses and (iv) selective asset sales. If successful, of which no assurance can be provided, any of these may provide general and/or specific project funding, risk and reward sharing opportunities, in-kind support, infrastructure support, access to special skill sets and other benefits.

On January 25, 2025 we formed a single member, Delaware LLC that is a wholly-owned subsidiary named EndeavourRx LLC. We intend in the near future to via license, sublicense or otherwise, our neuromodulator program, in part or in its entirety. We believe that among other benefits, this creates a new viable financing vehicle. This would include the AMPAkin program and the GABAkin program in part or in whole.

In addition, we have recently signed a confidentiality agreement with an international pharmaceutical company about the possibility of in-licensing two compounds that would be synergistic with one of our programs.

Our 2024 Accomplishments

Scientific/development advances

Publications

The Company's scientists published about our compounds in peer-reviewed journals 14 times in 2024. Below are the links to each of the publications and below that are the full citations.

<https://doi.org/10.3389/fnins.2024.1446076>

<https://doi.org/10.3390/futurepharmacol4010012>

<https://doi.org/10.3390/futurepharmacol4030028>

<https://doi.org/10.1080/17568919.2024.2401312>

<https://doi.org/10.3390/neuroglia5030023>

<https://doi.org/10.1002/cpdd.1475>

<https://doi.org/10.1002/syn.22310>

<https://doi.org/10.1016/j.pharmthera.2024.108744>

<https://doi.org/10.1021/acscemneuro.3c00555>

<https://doi.org/10.1016/j.heliyon.2023.e23752>

<https://doi.org/10.1038/s41386-023-01651-y>

<https://doi.org/10.1016/j.pharmthera.2024.108609>

<https://doi.org/10.1016/j.bcp.2024.116302>

<https://doi.org/10.1016/j.pbb.2024.173895>

2024 Publications by RespireRx (full citations)

(1) Lipsky, R. H.; Witkin, J.; Shafique, H.; Smith, J. L.; Cerne, R.; Marini, A. M. Traumatic Brain Injury: Molecular Biomarkers, Genetics, Secondary Consequences, and Medical Management. *Front. Neurosci.* **2024**, *18*. <https://doi.org/10.3389/fnins.2024.1446076>.

(2) Radin, D. P.; Zhong, S.; Cerne, R.; Shoaib, M.; Witkin, J. M.; Lippa, A. Low-Impact Ampakine CX1739 Exerts Pro-Cognitive Effects and Reverses Opiate-Induced Respiratory Depression in Rodents. *Future Pharmacology* **2024**, *4* (1), 173–187. <https://doi.org/10.3390/futurepharmacol4010012>.

(3) Radin, D. P.; Zhong, S.; Cerne, R.; Smith, J. L.; Witkin, J. M.; Lippa, A. Preclinical Pharmacology of the Low-Impact Ampakine CX717. *Future Pharmacology* **2024**, *4* (3), 494–509. <https://doi.org/10.3390/futurepharmacol4030028>.

(4) Radin, D. P.; Zhong, S.; Cerne, R.; Shoaib, M.; Witkin, J. M.; Lippa, A. Preclinical Characterization of a Water-Soluble Low-Impact Ampakine Prodrug, CX1942 and Its Active Moiety, CX1763. *Future Med Chem* **2024**, *16*(22), 2325–2336. <https://doi.org/10.1080/17568919.2024.2401312>.

(5) Radin, D. P.; Cerne, R.; Witkin, J.; Lippa, A. High-Impact AMPAkinases Elevate Calcium Levels in Cortical Astrocytes by Mobilizing Endoplasmic Reticular Calcium Stores. *Neuroglia* **2024**, *5* (3), 344–355. <https://doi.org/10.3390/neuroglia5030023>.

(6) Radin, D. P.; Cerne, R.; Witkin, J. M.; Lippa, A. Safety, Tolerability, and Pharmacokinetic Profile of the Low-Impact Ampakine CX1739 in Young Healthy Volunteers. *Clinical Pharmacology in Drug Development* **2024**, *n/a*(*n/a*). <https://doi.org/10.1002/cpdd.1475>.

(7) Radin, D. P.; Zhong, S.; Cerne, R.; Witkin, J.; Lippa, A. High Impact AMPAkinases Induce a Gq-Protein Coupled Endoplasmic Calcium Release in Cortical Neurons: A Possible Mechanism for Explaining the Toxicity of High Impact AMPAkinases. *Synapse* **2024**, *78* (5), e22310. <https://doi.org/10.1002/syn.22310>.

(8) Rana, S.; Fusco, A. F.; Witkin, J. M.; Radin, D. P.; Cerne, R.; Lippa, A.; Fuller, D. D. Pharmacological Modulation of Respiratory Control: Ampakines as a Therapeutic Strategy. *Pharmacology & Therapeutics* **2024**, 108744. <https://doi.org/10.1016/j.pharmthera.2024.108744>.

(9) Sharmin, D.; Divović, B.; Ping, X.; Cerne, R.; Smith, J. L.; Rezvanian, S.; Mondal, P.; Meyer, M. J.; Kiley, M. E.; Arnold, L. A.; Mian, M. Y.; Pandey, K. P.; Jin, X.; Mitrović, J. R.; Djorović, D.; Lippa, A.; Cook, J. M.; Golani, L. K.; Scholze, P.; Savić, M. M.; Witkin, J. M. New Imidazodiazepine Analogue, 5-(8-Bromo-6-(Pyridin-2-Yl)-4H-Benzo[f]Imidazo[1,5-a][1,4]Diazepin-3-Yl)Oxazole, Provides a Simplified Synthetic Scheme, High Oral Plasma and Brain Exposures, and Produces Antiseizure Efficacy in Mice, and Antiepileptogenic Activity in Neural Networks in Brain Slices from a Patient with Mesial Temporal Lobe Epilepsy. *ACS Chem Neurosci* **2024**, *15* (3), 517–526. <https://doi.org/10.1021/acchemneuro.3c00555>.

(10) Smith, J. L.; Wertz, J.; Lippa, A.; Ping, X.; Jin, X.; Cook, J. M.; Witkin, J. M.; Cerne, R. KRM-II-81 Suppresses Epileptiform Activity across the Neural Network of Cortical Tissue from a Patient with Pharmacoresistant Epilepsy. *Heliyon* **2024**, *10* (1), e23752. <https://doi.org/10.1016/j.heliyon.2023.e23752>.

(11) Witkin, J. M.; Lippa, A. Potentiation of AMPA Receptors for Rapid Therapeutic Gain in Psychiatry Has Reached a New Level of Excitement. *Neuropsychopharmacology* **2024**, *49* (1), 339–340. <https://doi.org/10.1038/s41386-023-01651-y>.

(12) Witkin, J. M.; Shafique, H.; Cerne, R.; Smith, J. L.; Marini, A. M.; Lipsky, R. H.; Delery, E. Mechanistic and Therapeutic Relationships of Traumatic Brain Injury and γ -Amino-Butyric Acid (GABA). *Pharmacol Ther* **2024**, 108609. <https://doi.org/10.1016/j.pharmthera.2024.108609>.

(13) Witkin, J. M.; Radin, D. P.; Rana, S.; Fuller, D. D.; Fusco, A. F.; Demers, J. C.; Pradeep Thakre, P.; Smith, J. L.; Lippa, A.; Cerne, R. AMPA Receptors Play an Important Role in the Biological Consequences of Spinal Cord Injury: Implications for AMPA Receptor Modulators for Therapeutic Benefit. *Biochemical Pharmacology* **2024**, 116302. <https://doi.org/10.1016/j.bcp.2024.116302>.

(14) Cerne, R.; Smith, J. L.; Chrzanowska, A.; Lippa, A. Nonsedating Anxiolytics. *Pharmacol Biochem Behav* **2024**, *245*, 173895. <https://doi.org/10.1016/j.pbb.2024.173895>.

In addition, our collaborator, David Fuller and his colleagues at the University of Florida (etc) published about our compounds, two times in peer-reviewed journals. Below are the links and full citations to Dr. Fuller's publications relating to our compounds.

<https://doi.org/10.1016/j.expneurol.2024.114769>

<https://doi.org/10.7554/eLife.89767>

Rana S, Thakre PP, Fuller DD. Ampakines increase diaphragm activation following mid-cervical contusion injury in rats. *Exp Neurol*. 2024 Jun;376:114769. doi: 10.1016/j.expneurol.2024.114769. Epub 2024 Apr 4. PMID: 38582278.

Rana S, Alom F, Martinez RC, Fuller DD, Mickle AD. Acute ampakines increase voiding function and coordination in a rat model of SCI. *Elife*. 2024 Mar 7;12:RP89767. doi: 10.7554/eLife.89767. PMID: 38451184; PMCID: PMC10962400.

Two papers detailed below, were published in 2025 with the links to each paper respectively.

Radin, D. P., Lippa, A., Rana, S., Fuller, D. D., Smith, J. L., Cerne, R., & Witkin, J. M. (2025). Amplification of the therapeutic potential of AMPA receptor potentiators from the nootropic era to today. *Pharmacol Biochem Behav*, 173967.

Radin, D. P., Cerne, R., Smith, J. L., Witkin, J. M., & Lippa, A. (2025). Safety, Tolerability and Pharmacokinetic Profile of the Low-Impact Ampakine CX717 in Young Healthy Male Subjects and Elderly Healthy Male and Female Subjects. *Eur J Pharmacol*, 177317.

<https://www.sciencedirect.com/science/article/abs/pii/S0091305725000140>

<https://www.sciencedirect.com/science/article/abs/pii/S0014299925000706>

The two links above are links to the full papers that were published by Pharmacology, Biochemistry and Behavior and the European Journal of Pharmacology, the abstracts to which are available on PubMed.

Two additional peer-reviewed papers accepted in 2025 for publication in 2025.

Four papers are in various stages of drafting.

Grant application

As described above, on September 5, 2024, we submitted a grant application for an SBIR grant from the NIH for our GABAkines program.

Presentations and Memberships

Effective February 1, 2025, EndeavourRx LLC became a member of BIO, the Biotechnology Innovation Organization. EndeavourRx will be attending and presenting at the BIO CEO & Investor Conference in New York City on February 10-11, 2025, the presentation currently scheduled at 1:30pm EST on February 11th. BIO is essentially an advocacy group for our industry, the companies and people and patients who benefit from the work we do. You may learn more about BIO at <https://www.bio.org> and about the conference at <https://bcic.bio.org/>.

On January 9, 2025, Arnold Lippa, our CEO, President and Chief Scientific Officer presented at the MicroCap Conference in Atlantic City, New Jersey. The MicroCap Conference is organized by DealFlow Events. You may learn more about the event and the organizer at <https://dealflowevents.com>.

7th Annual CB1, CB2 & Cannabinoid Drug Development Summit – Arnold Lippa and Jeff Margolis presented separately on November 19, 2024. This was an industry driven summit and generated a degree of interest and a commercial proposal from a U.S. entity that is being considered.

Keiretsu Southern California and Keiretsu Singapore – the Keiretsu Angel Group is comprised of numerous chapters around the world. We presented only the ResolutionRx cannabinoid program to the Southern California chapter as a 4 minute preview on August 22, 2024, which generated limited interest. That was followed by a lengthier presentation on September 19, 2024. This also resulted in very limited interest. We presented to Keiretsu Singapore on September 13, 2024 which unfortunately did not generate interest. However we did receive valuable feedback for future presentations. Having presented, we are now able to present updates to those groups which will hopefully prove to be more successful.

We intend to continue to attend and present at selected, relevant conferences throughout 2025.

Preferred Stock

As noted above, we amended our Series I and Series J certificates of designation to increase size of available Series I and make it more attractive for investment.

AMPAkine CX-1739 with the ShirleyRyan AbilityLab

Also, as described above, we announced our collaborative arrangement with Shirley Ryan AbilityLab resulting in SRAL receiving a \$1.8 million grant from the DOD to conduct a spinal cord injury study using a RespireRx AMPAkine.

Demand Promissory Note and Warrants

In April 2024, we raised \$100,000 from a director in the form of a demand promissory note with warrants. For more information, please see our Current Report on Form 8-K with exhibits filed on April 16, 2024 at: <https://www.sec.gov/Archives/edgar/data/849636/000149315224014816/form8-k.htm>.

Debt Settlement Agreements and Related Amended and Restated Notes

In January 2024, we entered in several debt settlement agreements resulting in the assignment of three notes held by a former CEO and President totaling \$242,628 to an institutional investor resulting in the establishment of new convertible notes totaling \$180,000 that were then converted in their entirety into Common Stock. This reduced the original liability to zero. For more details, see our Current Report on Form 8-K with exhibits filled on February 2, 2024 at: <https://www.sec.gov/Archives/edgar/data/849636/000149315224014816/form8-k.htm>.

Appointment of New Director

On January 18, 2024, the Board of Directors appointed Dariusz Nasiek, MD, MBA to the Board of Directors. For more information, see our Current Report on Form 8-K filed on January 22, 2024 including the exhibit at: <https://www.sec.gov/Archives/edgar/data/849636/000149315224003131/form8-k.htm>.

Service Agreements with Alien Technology Transfer India Private Limited and Alien Technology Transfer USA Inc.

As described above, early in July 2024 and then later in July 2024, we entered into and then amended NIH service agreements with Alien Technology Transfer India Private Limited and Alien Technology Transfer USA Inc. resulting in the filing of an SBIR grant application with the NIH for GABAKines. For more information, see our Current Reports on Form 8-K filed on July 8th and August 2nd 2024 including the exhibit at: <https://www.sec.gov/Archives/edgar/data/849636/000149315224026467/form8-k.htm> and <https://www.sec.gov/Archives/edgar/data/849636/000149315224029979/form8-k.htm> respectively.

Strategic Deal Making

As discussed above, potential strategic deal making discussions that commenced in 2024, continue into 2025.

Our 2024 Disappointments

Below is a succinct list of our 2024 disappointments, most of which have been described above.

- We did not get our SEC financial filings current.
- We did not raise significant capital.
 - o Our current experience with the Keiretsu Angel group has not been effective, but we continue to believe that angel groups and small family offices represent a potential interested target audience.
- Our Senior VP of Business Development resigned effective December 4, 2024 and while his duties until then were shared with Jeff Margolis, our SVP, CFO, Treasurer and Secretary, primary responsibilities for business development/strategic deal making currently reside with Mr. Margolis.

Our 2025 Goals and Plans

Below is a succinct list of our 2025 goals and plans. There can be no assurance that such goals and plans will be achieved. Additional goals and plans may arise during 2025.

We will seek to overcome the hurdles and commence the planned spinal cord injury clinical study that is the subject of the DOD grant.

We intend to raise sufficient capital to become current and stay current with our SEC financial filings and have sufficient capital to operate both administratively and to conduct research and development.

We will seek to bring into RespireRx, one additional asset for development (or leave one at the RespireRx level at the time other assets are contributed to EndeavourRx LLC). In doing so, we will be cognizant of what it will take to avoid becoming a business development corporation (BDC).

We have taken the initial steps necessary of making EndeavourRx a wholly-owned subsidiary of RespireRx to conduct the research and development of certain aspects of the AMPAkinases and GABAkinases programs.

We are in the process of applying for a new grant and will seek to apply for additional grants.

We are hopeful that we will receive at least one new grant to support a substantial research and development program.

We intend to enter into at least one strategic transaction.

We would like to acknowledge and thank our colleagues, Jeffrey Witkin PhD and Rok Cerne PhD, MD, our two Senior Research Fellows, Dan Radin, PhD (and soon MD), our Research Fellow, Richard Purcell, our Senior VP of Research and Development, Marc Radin, our Controller and our Board of Directors, our scientific consultants, our patent counsel and all of our collaborators for all of their energy in advancing the Company and its promising drug candidates. And, to our investors, other stakeholders and our public accountants, we thank you and look forward to and rely upon your continued support. We remain optimistic about our future and believe our strategic initiatives, operational focus, and commitment to scientific excellence will enable us to achieve notable milestones in 2025.

Together, we can advance life-changing therapies, create value for our investors, and positively impact the lives of patients worldwide.

Sincerely,

Jeff Eliot Margolis
Senior Vice President, Chief Financial Officer, Secretary and Treasurer

Arnold S. Lipka, PhD
Chief Executive Officer, President, Chief Scientific Officer and Chairman of the Board of Directors

About RespireRx Group

RespireRx Pharmaceuticals Inc. and its subsidiaries (RespireRx Group) are discovering and developing medicines for the treatment of psychiatric and neurological disorders, with a focus on treatments that address conditions affecting millions of people, but for which there are few or poor treatment options, including epilepsy, pain, attention deficit hyperactivity disorder (ADHD), recovery from SCI, certain neurological orphan diseases and obstructive sleep apnea (OSA). The RespireRx Group is developing a pipeline of new and repurposed drug products based on our broad patent portfolios for two drug platforms: (i) neuromodulators, which include GABAkinases and AMPAkinases, proprietary chemical entities that positively modulate (positive allosteric modulators or “PAMs”) GABA_A receptors and AMPA-type glutamate receptors, respectively, and (ii) pharmaceutical cannabinoids, which include dronabinol, a synthetic compound that acts upon the nervous system’s endogenous cannabinoid receptors.

The RespireRx Group holds exclusive licenses and owns patents and patent applications or rights thereto for certain families of chemical compounds that claim the chemical structures and their uses in the treatment of a variety of disorders, as well as claims for novel uses of known drugs.

EndeavourRx LLC: Neuromodulators

AMPAkines. Through an extensive translational research effort from the cellular level through Phase 2 clinical trials, RespireRx has developed a family of novel, low impact AMPAkines, including CX717, CX1739 and CX1942 that may have clinical application in the treatment of CNS-driven neurobehavioral and cognitive disorders, SCI, neurological diseases, and certain orphan indications. Our lead clinical compounds, CX717 and CX1739, have successfully completed multiple Phase 1 safety trials. Both compounds have also completed Phase 2 proof of concept trials demonstrating target engagement, by antagonizing the ability of opioids to induce respiratory depression.

AMPAkines have demonstrated positive activity in animal models of ADHD, results that have been extended translationally into statistically significant improvement of symptoms observed in a Phase 2 human clinical trial of CX717 in adult patients with ADHD. Statistically significant therapeutic effects were observed within one week. We believe AMPAkines may represent a novel, non-stimulant treatment for ADHD with a more rapid onset of action than alternative non-stimulants, such as Strattera[®] (atomoxetine), and without the drawbacks of amphetamine-type stimulants. In a series of important studies funded by grants from the National Institutes of Health and published in a number of peer reviewed articles, Dr. David Fuller (University of Florida), a long-time RespireRx collaborator, has demonstrated the ability of CX1739 and CX717, RespireRx's lead AMPAkines, to improve motor nerve activity and muscle function in a number of animal models of SCI. The DOD has recently approved a \$1.8 million grant to fund a Phase 2A/2B clinical study of CX1739 in individuals with SCI.

EndeavourRx LLC will continue RespireRx's focus on its AMPAkines programs.

GABAkines. Under a License Agreement with the University of Wisconsin-Milwaukee Research Foundation, Inc. and on behalf of its EndeavourRx LLC subsidiary, RespireRx has in-licensed rights to certain selectively acting GABAkines because of their ability to selectively amplify inhibitory neurotransmission at a highly specific, subset of GABA_A receptors, thus producing a unique efficacy profile with reduced side effects. Preclinical studies have documented their efficacy in a broad array of animal models of interrelated neurological and psychiatric disorders including epilepsy, pain, anxiety, and depression in the absence of or with greatly reduced propensity to produce sedation, motor-impairment, tolerance, dependence and abuse. EndeavourRx LLC will continue RespireRx's focus on developing KRM-II-81 for the treatment of epilepsy and pain.

KRM-II-81 has displayed a high degree of anti-convulsant activity in a broad range of preclinical studies, including in treatment resistant and pharmaco-resistant animal models (33 animal studies). Not only was KRM-II-81 highly effective in these models, but pharmaco-resistance or tolerance did not develop to its anti-convulsant properties. These latter results are particularly important because pharmaco-resistance occurs when medications that once controlled seizures lose efficacy as a result of chronic use and it is a principal reason some epileptic patients require brain surgery to control their seizures. In support of its potential clinical efficacy, translational studies have demonstrated the ability of KRM- II-81 to dramatically reduce epileptiform electrical activity when administered in situ to brain slices excised from treatment-resistant epileptic patients who underwent surgery (3 studies).

In addition, KRM-II-81 has displayed a high degree of analgesic activity in a broad range of preclinical studies (7 studies and other GABAkines in our portfolio in 3 additional studies). In intact animal models of pain, the analgesic efficacy of KRM-II-81 was comparable to or greater than commonly used analgesics. At the same time, KRM-II-81 did not display side effects such as sedation and motor impairment, but even more importantly, it did not produce tolerance, dependence, respiratory depression or behavioral changes indicative of abuse liability, which are produced by opioid narcotics and are at the heart of the opioid epidemic.

ResolutionRx Ltd: Pharmaceutical Cannabinoids.

ResolutionRx Ltd (Australian Company Number a/k/a ACN 664 925 651) was formed in Australia on January 11, 2023 by RespireRx as an unlisted public company. RespireRx has contributed by sublicense and license with ResolutionRx, its obstructive sleep apnea drug development program subject to certain liabilities. ResolutionRx now engages in the research and development (R&D) associated with that program, initially for the development of a new formulation of dronabinol for use in a Phase 3 clinical trial and the filing of regulatory approval for the treatment of OSA. The current total budget for that program over the next several years is approximately US\$16.5 million, most, but not all of which is expected to be eligible for the Australian R&D Tax Incentive (R&DTI). The R&DTI in the case of ResolutionRx is anticipated to be approximately 43.5% of qualified R&D expenditures. Dronabinol, an endocannabinoid receptor agonist, has already demonstrated significant improvement in the symptoms of OSA in two Phase 2 clinical trials. OSA is a serious respiratory disorder that impacts an estimated 90 million people in the United States, Australia, the United Kingdom and Germany and that has been linked to increased risk for hypertension, heart failure, depression, and diabetes. There are no approved drug treatments for OSA.

Because dronabinol is already FDA approved for the treatment of AIDS related anorexia and chemotherapy induced nausea and vomiting, RespireRx and ResolutionRx further believe that its repurposing strategy would only require, in the United States, approval by the FDA of a 505(b)(2) new drug application (NDA), an efficient regulatory pathway that allows the use of publicly available data.

Additional information about RespireRx and the matters discussed herein can be obtained on the RespireRx website at www.RespireRx.com or RespireRx's filings with the U.S. Securities and Exchange Commission (the SEC) at www.sec.gov. Additional information about ResolutionRx and the matters discussed herein can be obtained on the ResolutionRx website at <https://www.resolutionrx.com.au>. Additional information about EndeavourRx LLC and the matters discussed herein can be obtained on the EndeavourRx website at <https://endeavourrx.com>.

Not a Securities Offering or Solicitation

This communication shall not constitute an offer to sell or the solicitation of an offer to buy any securities, nor shall there be any sales of securities in any jurisdiction in which such offer, solicitation or sale of securities would be unlawful before registration or qualification under the laws of such jurisdiction.

Cautionary Note Regarding Forward-Looking Statements

This press release contains certain forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended (the "Securities Act") and Section 21E of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), and the Company intends that such forward-looking statements be subject to the safe harbor created thereby. These might include statements regarding the Company's future plans, targets, estimates, assumptions, financial position, business strategy and other plans and objectives for future operations, and assumptions and predictions about research and development efforts, including, but not limited to, preclinical and clinical research design, execution, timing, costs and results, future product demand, supply, manufacturing, costs, marketing and pricing factors.

In some cases, forward-looking statements may be identified by words including "assumes," "could," "ongoing," "potential," "predicts," "projects," "should," "will," "would," "anticipates," "believes," "intends," "estimates," "expects," "plans," "contemplates," "targets," "continues," "budgets," "may," or the negative of these terms or other comparable terminology, although not all forward-looking statements contain these words, and such statements may include, but are not limited to, statements regarding (i) future research plans, expenditures and results, (ii) potential collaborative arrangements, (iii) the potential utility of the Company's product candidates, (iv) reorganization plans, and (v) the need for, and availability of, additional financing. Forward-looking statements are based on information available at the time the statements are made and involve known and unknown risks, uncertainties and other factors that may cause our results, levels of activity, performance or achievements to be materially different from the information expressed or implied by the forward-looking statements in this press release.

These factors include but are not limited to, regulatory policies or changes thereto, available cash, research and development results, issuance of patents, competition from other similar businesses, interest of third parties in collaborations with us, and market and general economic factors, and other risk factors disclosed in "Item 1A. Risk Factors" in the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2022, as filed with the SEC on April 17, 2023 (the 2022 Form 10-K). We have not yet filed our Annual Report on Form 10-K for the year ended December 31, 2023, nor have we filed our quarterly Current Reports on Form 10-Q as of March 31, 2024, June 30, 2024 and September 30, 2024.

You should read these risk factors and the other cautionary statements made in the Company's filings as being applicable to all related forward-looking statements wherever they appear in this press release. We cannot assure you that the forward-looking statements in this press release will prove to be accurate and therefore current and prospective investors, as well as current and potential collaborators and other current and potential stakeholders, are encouraged not to place undue reliance on forward-looking statements. You should read this press release completely. Other than as required by law, we undertake no obligation to update or revise these forward-looking statements, even though our situation may change in the future.

We caution current and prospective investors, as well as current and potential collaborators and other current and potential stakeholders, not to place undue reliance on any forward-looking statement that speaks only as of the date made and to recognize that forward-looking statements are predictions of future results, which may not occur as anticipated. Actual results could differ materially from those anticipated in the forward-looking statements and from historical results, due to the risks and uncertainties described in the 2022 Form 10-K, in our quarterly reports on Form 10-Q, in our Current Reports on Form 8-K, and other reports that we file with or furnish to the SEC and in this press release, as well as others that we may consider immaterial or do not anticipate at this time. These forward-looking statements are based on assumptions regarding the Company's business and technology, which involve judgments with respect to, among other things, future scientific, economic, regulatory and competitive conditions, collaborations with third parties, and future business decisions, all of which are difficult or impossible to predict accurately and many of which are beyond the Company's control. Although we believe that the expectations reflected in our forward-looking statements are reasonable, we do not know whether our expectations will prove correct. Our expectations reflected in our forward-looking statements can be affected by inaccurate assumptions that we might make or by known or unknown risks and uncertainties, including those described in the 2022 Form 10-K, in our quarterly reports on Form 10-Q, in our Current Reports on Form 8-K, and other reports that we file with or furnish to the SEC and in this press release. These risks and uncertainties are not exclusive and further information concerning us and our business, including factors that potentially could materially affect our financial results or condition, may emerge from time to time. For more information about the risks and uncertainties the Company faces, see "Item 1A. Risk Factors" in our 2022 Form 10-K. Forward-looking statements speak only as of the date they are made. The Company does not undertake and specifically declines any obligation to update any forward-looking statements or to publicly announce the results of any revisions to any statements to reflect new information or future events or developments. We advise current and prospective investors, as well as current and potential collaborators and other current and potential stakeholders, to consult any further disclosures we may make on related subjects in our annual reports on Form 10-K and other reports that we file with or furnish to the SEC including but not limited to our most recent Form 10-Q as of September 30, 2023 filed with the SEC on November 17, 2023. As noted above, we have not yet filed our Annual Report on Form 10-K for the year ended December 31, 2023, nor have we filed our quarterly reports on Form 10-Q as of March 31, 2024, June 30, 2024 and September 30, 2024.

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