RespireRx Pharmaceuticals Inc. Announces NIH/NINDS Grant Award and Amended and Restated Patent License Agreement

Glen Rock, N.J., November 19, 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, is pleased to announce the receipt of a Notice of Award of a grant from the NIH/NINDS and entry into an Amended and Restated Patent License Agreement with the University of Wisconsin Research Foundation.

Summary of the NIH/NINDS GABAkines Grant

On September 23, 2025, RespireRx received a Notice of Award from the National Institutes of Health (NIH), National Institute of Neurological Disorders and Stroke (NINDS), award number 1R44NS143576, under the Small Business Innovation Research (SBIR) program which was created by the U.S. Congress to strengthen the role of small innovative companies in federally supported research and development. The amount of the award is $1,499,869 for the budget period September 23, 2025 through August 31, 2026. The project start date is September 23, 2025 and end date is August 31, 2027, a two-year period. The total amount requested in the application was $2,999,738 over the two-year period. The purpose of the project is to complete the required preclinical toxicology and other related efforts to support the filing of an investigational new drug application (IND) to study in clinical trials, our lead GABAkine, KRM-II-81 for the treatment of epilepsy. This content is solely the responsibility of the Company, and any writings, publications, presentation or similar disclosures are solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health.

Under an Amended and Restated Patent License Agreement entered into as of October 27, 2025 with the University of Wisconsin-Milwaukee (UWM) Research Foundation, Inc. and on behalf of its EndeavourRx LLC subsidiary, RespireRx has in-licensed rights to certain selectively acting GABAkines developed in the laboratory of Dr. James Cook, UWM Distinguished Professor Emeritus, 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-seizure activity in a broad range of preclinical studies, including in treatment resistant and pharmaco-resistant animal and other models (34 models). 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 because 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). We have also licensed and characterized the anti-seizure properties of a host of structural analogs of KRM-II-81 that will facilitate the overall development of this program.

In addition, KRM-II-81 has displayed remarkable analgesic activity in a broad range of preclinical studies (7 studies and other GABAkines in our portfolio in 3 additional studies). KRM-II-81 is currently being profiled for its analgesic and side-effect profile by the Division of Translational Research, at the NINDS. 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 analgesics that are at the heart of the opioid epidemic.

Summary of Amended and Restated Patent License Agreement

The UWM Research Foundation (UWMRF) and RespireRx Pharmaceuticals have amended and restated their patent license agreement to better align with current commercialization strategies. Key updates include updates on regulatory milestone-based payments, revising royalty structures, and adjustment of amounts and timing of patent cost reimbursements. The agreement also eliminates prior UWMRF equity provisions in favor of a fixed exit fee tied to certain liquidity events, while clarifying intellectual property definitions and streamlining diligence and reporting obligations. These changes reflect a shared commitment to flexibility and long-term success in advancing innovative neuromodulator programs.

About RespireRx Group

RespireRx Pharmaceuticals Inc. and its subsidiaries, EndeavourRx LLC and ResolutionRx Ltd, collectively, the RespireRx Group is 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 spinal cord injury (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 GABAkines and AMPAkines, proprietary chemical entities that positively modulate (positive allosteric modulators or "PAMs") $GABA_A$ receptors and AMPA-type glutamate receptors, respectively that make up EndeavourRx LLC, and (ii) pharmaceutical cannabinoids, which include dronabinol, a synthetic compound that acts upon the nervous system's endogenous cannabinoid receptors that make up ResolutionRx Ltd. Certain therapeutic opportunities have been retained at RespireRx.

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 Straterra® (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 provided a notice of award to our collaborator, the Shirley Ryan AbilityLab, of $1.8 million 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.

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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 an anticipated pharmacokinetic and pharmacodynamic study of the lead new formulation to be followed by 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. Similar rapid approval strategies are also available in the European Union.

The currently available commercial formulation of dronabinol which is available both as a branded and generic product is not ideal for indications requiring drug to be available for six or more hours. The RespireRx Group's new

formulations, of which one has been designated as the lead formulation for the dronabinol program is believed to overcome a number of the limitations and shortcomings of the current commercial formulation, including but not limited to the possibility of doses lower than those currently in the market (lower than 2.5mg, 5mg or 10mg, the currently available doses).

Additional information about RespireRx and the matters discussed herein can be obtained on the RespireRx website at www.RespireRx.com. 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.

About UWM Research Foundation, Inc.

The UWM Research Foundation (UWMRF) serves and supports UW-Milwaukee faculty, students, and staff through fostering corporate research partnerships; igniting UWM-founded startups through programs, funding, and education; and leveraging intellectual property expertise to further support innovation and partnering in the community and world.

Since its inception in 2006, the nonprofit has funded more than $6.8 million in cumulative research grants to UWM researchers and entrepreneurs, received 211 patents with 96 patents pending, and helped create startup companies based on UWM technologies. In 2025, for a fourth consecutive time, UWM earned the R1 highest research activity range from the Carnegie Classification of Institutions of Higher Education, one of only 187 of the nearly 4,000 similar institutions. For more information, call 414-906-4654. Sign up for the UWMRF newsletter at https://uwmrf.org/ or follow UWMRF on LinkedIn.

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 filed our Annual Report on Form 10-K for the year ended December 31, 2023 or for the year ended December 31, 2024, nor have we filed our quarterly Current Reports

on Form 10-Q as of March 31, 2024, June 30, 2024, September 30, 2024, March 31, 2025, June 30, 2025 or September 30, 2025.

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 or for the year ended December 31, 2024, nor have we filed our quarterly reports on Form 10-Q as of March 31, 2024, June 30, 2024, September 30, 2024, March 31, 2025, June 30, 2025 or September 30, 2025.

Company Contact:

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