RespireRx Pharmaceuticals Inc. and ResolutionRx Ltd Enter into Bilateral Agreements to Establish ResolutionRx Ltd as an Operating Company

Glen Rock, N.J., August 9, 2023/Globe Newswire – RespireRx Pharmaceuticals Inc. (OTC. Pink Market: RSPI) ("RespireRx"), focused on the discovery and development of innovative and revolutionary treatments to combat diseases caused by disruption of neuronal signaling, and ResolutionRx Ltd ("ResolutionRx"), an unlisted public Australian company, (Australian Company Number or ACN: 664 925 651) and a subsidiary of RespireRx (collectively referred to as the "Companies") are pleased to jointly announce that on August 3, 2023, the Companies have entered into a series of bilateral agreements intended to transfer the RespireRx pharmaceutical cannabinoid program to ResolutionRx and establish it as an operating company.

License Agreement. The Companies entered into a License Agreement (the "License Agreement") in which RespireRx licensed to ResolutionRx the Intellectual Property ("Licensed IP" as defined in the License Agreement) including Patent Rights as defined in the License Agreement. The License Agreement is an exclusive, worldwide and royalty-free license to use and exploit the Licensed IP associated with new dronabinol formulations initially to be developed for the treatment of obstructive sleep apnea and in connection with ResolutionRx's business and operations, including commercial and non-commercial purposes, with the exception that RespireRx shall have the exclusive right to use the technology described in the Licensed IP for non-cannabinoid products.

Sublicense Agreement. The Companies entered into a Sublicense Agreement (the "Sublicense Agreement") in which RespireRx, as sublicensor, sublicensed the rights to its Exclusive License Agreement with The Board of Trustees of the University of Illinois, a body corporate and politic of the State of Illinois ("University" or "Overlicensor"), effective June 27, 2014 (the "Original License") as amended via a certain letter amendment, effective August 2, 2017 (the "Letter Amendment") and a certain Second Amendment to RespireRx-University of Illinois Exclusive License Agreement, effective December 15, 2022 (the "Second Amendment," and collectively with the Original License and Letter Amendment, the "Exclusive License"), pursuant to which University has granted to RespireRx certain rights and licenses. The Exclusive License permits the sublicensor to grant written sublicenses of its rights under the Exclusive License. The Sublicense is essentially a direct pass-through of all of the rights and obligations associated with the Exclusive License to ResolutionRx as sublicensee from RespireRx as sublicensor.

Stock Transfer Agreement. In consideration for the License and Sublicense, ResolutionRx issued 25,000,000 Ordinary Shares of ResolutionRx to RespireRx pursuant to a stock transfer agreement plus the payment of US$1 to RespireRx.

Master Intercompany Services Agreement. The Companies have entered into a Master Intercompany Services Agreement ("MISA") in which RespireRx agrees to perform certain support activities in the form of both general and administrative and research and development support in the execution of the business operations of ResolutionRx. RespireRx will provide the Services as set forth in the MISA on an ongoing basis as well as such further services as ResolutionRx and RespireRx may specifically agree upon from time to time. The initial term of the MISA is from August 3, 2023 for two years. The MISA automatically renews for successive one-year periods unless ResolutionRx gives written notice to RespireRx of its intent not to renew at least ninety days prior the end of the initial term or any renewal term. RespireRx will invoice ResolutionRx for the services to be performed on a quarterly basis (based on the fiscal year of ResolutionRx) with such invoices to be issued, in advance, for services to be rendered in the quarter following the date of each such invoice.

Pricing of Securities Offering of Series A Preference Shares by ResolutionRx. As previously described in several filings with the Securities and Exchange Commission, ResolutionRx entered into a Letter of Intent ("LOI") with Cantheon Capital ("Cantheon") on May 18, 2023 that describes an intended investment of US$3,125,000 in Series A Preference Shares to be issued by ResolutionRx. According to the LOI, the issuance price was designated to be US$0.90 per Series A Share, which assumes 90% of a US$25 million maximum value

for the net assets provided by RespireRx to ResolutionRx and is subject to adjustment downward, but not upward, based upon the result of the independent valuation. Similarly, on May 22, 2023, ResolutionRx entered into a non-exclusive mandate agreement with PrimaryMarkets, an Australian financial advisor engaged to undertake a fund raising for ResolutionRx in Australia on substantially the same terms (except in Australian dollars) as the LOI with Cantheon, with final pricing determined after receipt of an independent valuation. Effective May 22, 2023, RespireRx entered into an engagement agreement for an independent valuation. RespireRx received the independent valuation analysis on August 7, 2023 and is now able to establish the initial price for the Cantheon LOI and for the PrimaryMarkets offering and that price is now established to be a per Series A Preference Share equivalent of 90% of a US$25 million value as described above, or US$22.5 million, which is the maximum price permitted pursuant to the Cantheon LOI and the PrimaryMarkets term sheet.

"Since the incorporation of ResolutionRx at the beginning of this year, it has been our intention to restructure RespireRx by creating a fully operational, cannabinoid drug research and development entity in Australia that will have adequate capital to conduct its strategic and operational plans," said Jeff Margolis, Co-Chief Executive Officer and Senior Financial Officer, ResolutionRx and Chief Financial Officer of RespireRx. Arnold Lippa, Co-CEO and Chief Scientific Officer ("CSO") of ResolutionRx and CEO, President and CSO of RespireRx added, "Our established relationships with our Australian based law firm, our commercial bank, our Australian based accountants and financial advisory firm as well as the previously announced term sheet and letter of intent for a debt facility to be provided by Radium Capital to finance 80% of ResolutionRx's anticipated 43.5% of the Australian research and development tax incentive, and the previously disclosed letter of intent with Cantheon Capital have guided us to a pathway. Our service agreements with RespireRx and iNGENu will provide the needed infrastructure for operations that have recently begun. Finally, the receipt of an independent valuation analysis has enabled us to establish the price for the Cantheon letter of intent and for the PrimaryMarkets offering at US$0.90 per Series A Share, equivalent to 90% of a US$25 million maximum negotiated value. We believe that these developments confirm our restructuring strategy to realize the intrinsic worth of our assets and, in turn, increase shareholder value. We look forward to beginning this new path."

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.

About RespireRx Group

RespireRx Pharmaceuticals Inc. and its subsidiaries and business units ("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 obstructive sleep apnea ("OSA"), attention deficit hyperactivity disorder ("ADHD"), epilepsy, pain, recovery from spinal cord injury ("SCI"), and certain neurological orphan diseases . The RespireRx Group is developing a pipeline of new and repurposed drug products based on our broad patent portfolios for two drug platforms: (i) pharmaceutical cannabinoids, which include dronabinol, a synthetic form of Δ9-tetrahydrocannabinol ("Δ9-THC") that acts upon the nervous system's endogenous cannabinoid receptors and (ii) neuromodulators, which include AMPAkines and GABAkines, proprietary chemical entities that positively modulate (positive allosteric modulators or "PAMs") AMPA-type glutamate receptors and $GABA_A$ receptors, respectively.

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.

***ResolutionRx: Pharmaceutical Cannabinoids*.**

ResolutionRx Ltd (Australian Company Number a/k/a ACN 664 925 651) was formed in Australia on 11th January 2023 by RespireRx as an unlisted public company. RespireRx has contributed by sublicense and license with ResolutionRx, its cannabinoid drug development program subject to certain liabilities. ResolutionRx will now engage 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 obstructive sleep apnea ("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 ("RDTI"). Dronabinol, a synthetic version of Δ-9-THC, a naturally occurring substance in

the cannabis plant, 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 29.4 million people in the United States 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.

EndeavourRx: Neuromodulators

GABAkines. Under a License Agreement with the University of Wisconsin-Milwaukee Research Foundation, Inc. ("UWMRF") and on behalf of its EndeavourRx business unit, RespireRx has 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 currently is focusing 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 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 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 undergoing surgery.

In addition, KRM-II-81 has displayed a high degree of analgesic activity in a broad range of preclinical 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.

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, spinal cord injury, 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 spinal cord injury (SCI).

Additional information about RespireRx and the matters discussed herein can be obtained on the RespireRx web-site 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.

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").

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 prospective investors, as well as potential collaborators and other 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 investors, as well as potential collaborators and other 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 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 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 investors, as well as potential collaborators and other 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 March 31, 2023 filed with the SEC on May 22, 2023.

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