

**AMPAkines®** - EndeavourRx is developing a class of proprietary CNS-acting compounds known as AMPAkines, which are allosteric modulators of the AMPA glutamate receptor. AMPAkines enhance the excitatory actions of glutamate, the major excitatory neurotransmitter, at the AMPA receptor complex, which mediates most excitatory transmission in the CNS. Through an extensive translational research effort from the neuronal level through Phase 2 clinical trials, the company has developed a family of “Low Impact” AMPAkines, including CX717, CX1739 and CX1942 that do not have the seizure potential produced by the “High Impact” AMPAkines that were the focus of other companies. These Low Impact AMPAkines have clinical application in the treatment of CNS-driven respiratory disorders, behavioral disorders, spinal cord injury, neurological diseases, and orphan indications.

**Central Respiratory Disorders** - Breathing is driven by specialized cells in the brainstem that contain AMPA receptors and when these cells are impaired, activation of the AMPA receptors can restore function. In three Phase 2a clinical trials, both CX717 and CX1739 have antagonized the respiratory depression caused by fentanyl, a very potent opioid, without blocking its analgesic effects. In an additional, early Phase 2 study, CX1739 improved breathing in patients with central sleep apnea. These study results confirm target engagement of AMPA receptors and provide proof-of-concept clinical data to support the development of CX1739 for the treatment of various manifestations of CNS-driven respiratory disorders, including opioid over-dose, central sleep apnea (CSA) and certain orphan disorders such as Pompe. With an estimated prevalence of 5 – 6 million CSA patients and no approved drugs or devices to treat opioid induced CSA, this market is attractive for the continued development of CX1739.

**Spinal Cord Injury (SCI)** - Both CX717 and CX1739 have been shown to improve breathing and promote motor function in rodent models of SCI, for which there is significant need for additional treatments to improve respiratory & motor function. An estimated 17,000 new cases of SCI occur each year in the United States, most a result of automobile accidents. Currently, there are roughly 282,000 people living with spinal cord injuries, which often produce impaired motor function. Studies in patients with SCI have demonstrated that neural plasticity can be induced to improve motor function. This is based on the ability of spinal circuitry to learn how to adjust spinal and brainstem synaptic strength following repeated hypoxic bouts. Animal studies have demonstrated the ability of AMPAkines to dramatically enhance the effects of AIH on motor neuron activity after SCI. Because AMPAkines are known to enhance synaptic plasticity, the potential exists to harness repetitive AIH in combination with AMPAkines as a means of inducing functional recovery of motor function following SCI.

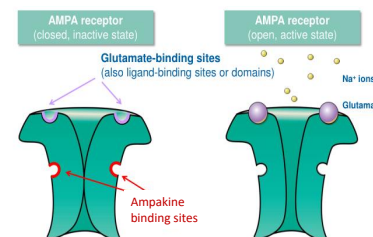
**Attention Deficit Hyperactive Disorder (ADHD)** - Based on promising animal data, RespireRx has conducted and successfully completed a randomized, double-blind, placebo controlled Phase 2 clinical trial with CX717 in patients with ADHD. Statistically significant reductions were seen on the ADHD Rating Scale (ADHD-RS), the primary outcome measure, as early as week one of treatment and continued throughout the remainder of the study. Results from both the ADHD-RS hyperactivity and inattentiveness subscales, which were secondary efficacy variables, generally paralleled the results of the total score. CX717 was considered safe and well tolerated. Based on these clinical results, we believe that AMPAkines such as CX717 or CX1739 might represent a breakthrough opportunity to develop a non-stimulating therapeutic for ADHD with the rapidity of onset normally seen with stimulants.

**Orphan Opportunities** - Certain childhood mutation disorders, such as Pompe, Rett, Fragile X, and CACNG2, have been described in which central respiratory disorders are observed concurrently with cognitive decline, neuromuscular impairment and social/behavioral disturbances. Administration of AMPAkines to animals expressing these mutations, not only improves breathing but the cognitive, neuromuscular and social/behavioral disturbances, as well. We are assembling a network of foundations, experts and noted centers of excellence for the treatment of these rare disorders in order to bring new therapies to the clinic.

#### **TASKS TO BE COMPLETED**

- QC clinical material
- Bring IND up to date
- Identify sites and prepare protocols
- Schedule FDA meeting

**EndeavourRx** is a stand-alone business unit of RespireRx, developing AMPAkines and GABAkines and that act as positive allosteric modulators (PAMs) at AMPA-glutamate and GABA<sub>A</sub> receptors, respectively.



The AMPA receptor is made up of four heterogeneous, transmembrane proteins that form a pore allowing cations, such as sodium and calcium, to enter and excite the cell. The unique AMPAkinase subtypes being developed by EndeavourRx offer the possibility of developing “kinder and gentler” drugs with greater pharmacological specificity and reduced side effects compared to present drugs, especially in disorders for which there is a significant unmet or poorly met clinical needs.

#### **SUMMARY**

- Central repository with sufficient API and capsules to conduct Phase 2
- Open IND for CX1739
- Extensive safety database in Phase 1 and 2
- Improvement in cognition/attention in subjects experiencing sleep deprivation
- Rapid, statistically significant improvement in adult patients with ADHD
- Restores breathing in humans and animals after impairment of CNS respiratory neurons – proof of target engagement
- Extensive preclinical data demonstrating clinically significant improvement in motor function after spinal cord injury

#### **MANAGEMENT TEAM**

Arnold Lippa, PhD, Interim CEO, Interim President, CSO Exec Chairman  
 Jeff Margolis, CFO, Senior VP Finance  
 Jeffrey Witkin, PhD, Senior Research Fellow

#### **OFFICE LOCATION**

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#### **MARKET**

OTC: RSP1

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## **Not a Securities Offering**

*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 document 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, 2021, as filed with the SEC on April 15, 2022 (the “2021 Form 10-K”) and other reports that we file with or furnish to the SEC.*

*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 document. We cannot assure you that the forward-looking statements in this document 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 document 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 2021 Form 10-K and other reports that we file with or furnish to the SEC 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 2021 Form 10-K and in this document. 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 2021 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.*