EndeavourRx LLC

February 7, 2025

Advanced Treatments for Disruption of Neurological Signaling

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AND FORWARD-LOOKING STATEMENT

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Cautionary Note Regarding Forward-Looking Statements

This presentation contains certain forward-looking statements about EndeavourRx LLC, RespireRx Pharmaceuticals Inc. and ResolutionRx Ltd (collectively, the "Company") within the meaning of Section 27A of the Securities Act of 1933, as amended (the "Securities Act") and Section 21E of the US Securities Exchange Act of 1934, as amended (the "Exchange Act"), and other similar laws, rules and regulations of other jurisdictions and the Company intends that such forward-looking statements be subject to the safe harbors 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 presentation.

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 RespireRx Pharmaceutical Inc.'s ("RespireRx") 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"). RespireRx has not yet filed its Annual Report on Form 10-K for the fiscal year ended December 31, 2023, nor its Quarterly Reports on Form 10-Q as of March 31, 2024, June 30, 2024 or September 30, 2024.

NON-SOLICITATION

AND FORWARD-LOOKING STATEMENT

(continued)

You should read these risk factors and the other cautionary statements made in the RespireRx filings and RespireRx's other filings as being applicable to all related forward-looking statements wherever they appear in this presentation. We cannot assure you that the forward-looking statements in this presentation 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 presentation 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 RespireRx's Quarterly Reports on Form 10-Q, in RespireRx's Current Reports on Form 8-K, and other reports that we file with or furnish to the SEC, in other jurisdictions and in this presentation, 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. 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 RespireRx's 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 RespireRx files with or furnish to the SEC including but not limited to RespireRx's most recent Quarterly Report on Form 10-Q as of September 30, 2023 filed with the SEC on November 17, 2023.

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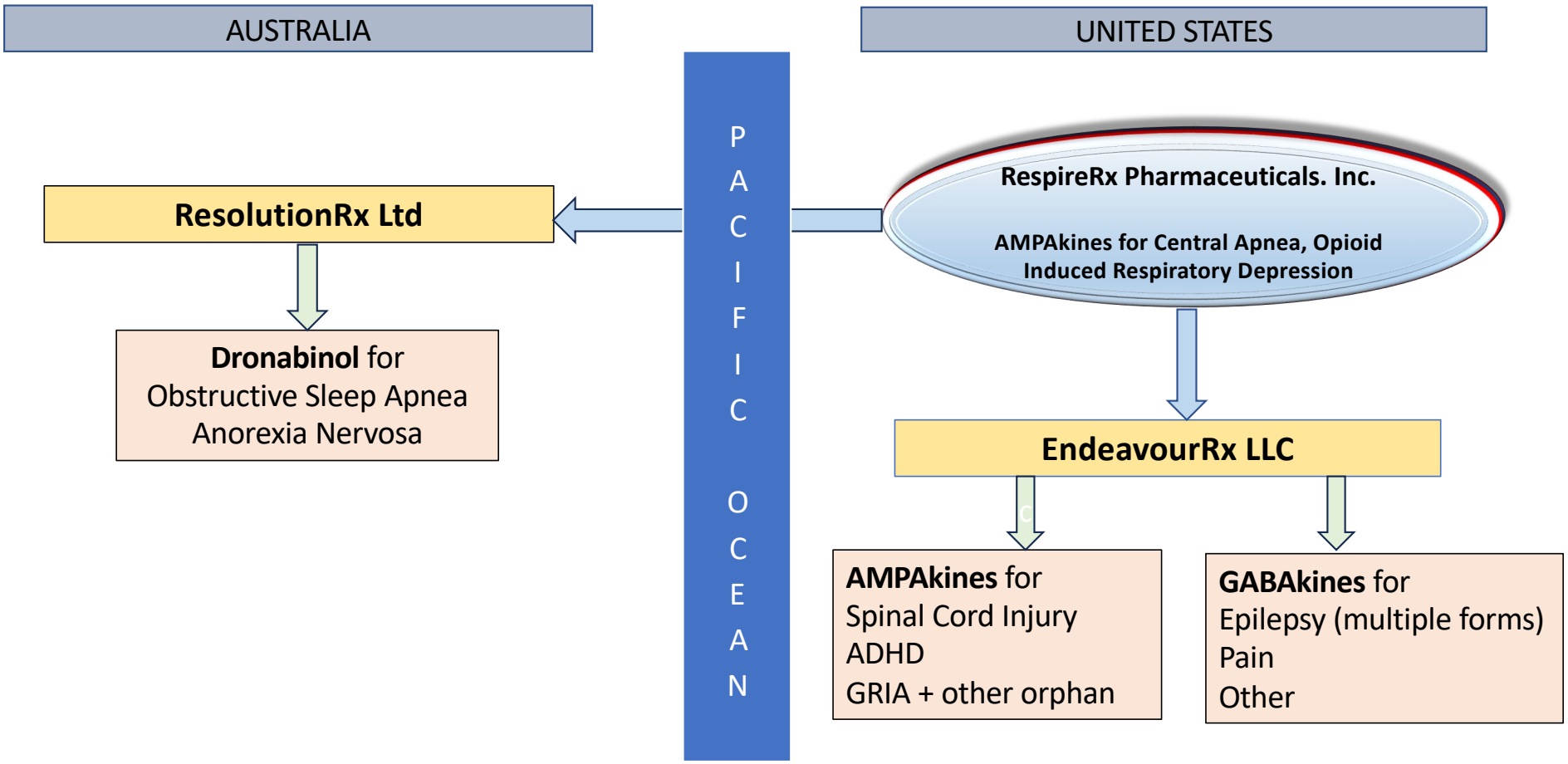
EndeavourRx LLC

- Company Profile
- Neuromodulators
  - AMPAkines
  - GABAkines
- Organization
- Financial Status

RespireRx Group– Key Assets

RespireRx Group



Underlying Science

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Neurotransmission

- Neurons communicate through a process of neurotransmission in which they release chemical neurotransmitters that bind to specific receptors on adjacent neurons.
- RespireRx is developing drugs to modify neurotransmission in those disorders with alterations in neurotransmission

EndeavourRx - Neuromodulators

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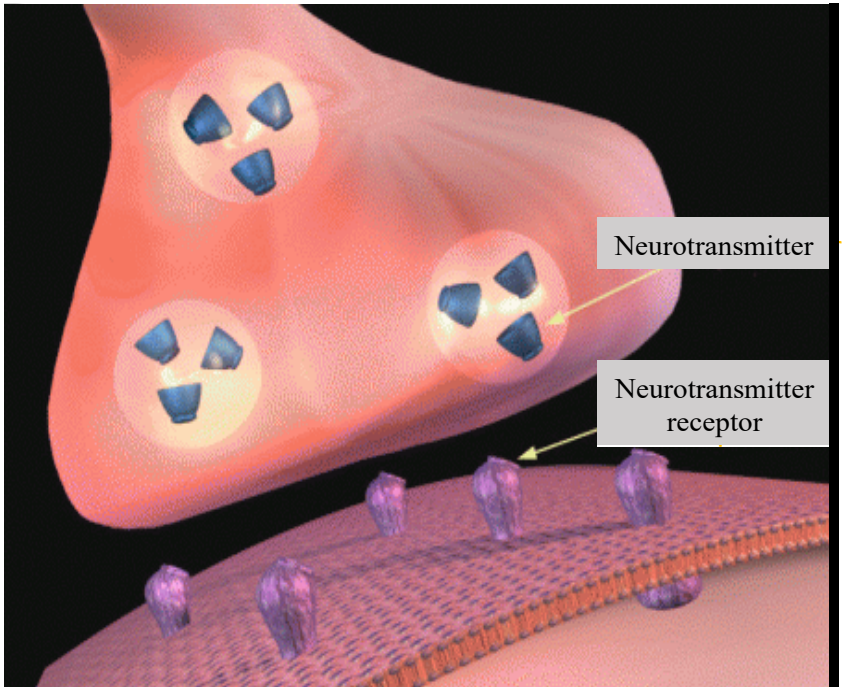
Neuromodulators Can Enhance Synaptic Transmission

- Neurons communicate by releasing chemical neurotransmitters that bind to specific receptors on the adjacent neuron.
- Neuromodulators do not act directly at the neurotransmitter binding site and have no intrinsic activity of their own but instead act at accessory sites that enhance or reduce the actions of neurotransmitters.
- Neuromodulators offer the possibility of developing “kinder and gentler” neuropharmacological drugs with greater pharmacological specificity and reduced side effects



AMPAkines

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- Extensive safety database in Phase 1 and 2
- Significant improvement in cognition/attention in subjects experiencing sleep deprivation
- In three Phase 2 studies, CX717 and CX1739 restored breathing in humans and, in other studies, in animals, after impairment due to opioids without affecting opioid analgesia
- In a Phase 2 study, CX717 successfully produced rapid, statistically significant improvement in adult patients with ADHD
- Extensive preclinical data demonstrating significant improvement in motor function after spinal cord injury. A DOD funded Phase 2 study is about to begin at Shirley Ryan AbilityLab

Ampakines Reduce Opioid-Induced Respiratory Depression (OIRD) in Phase 2A Clinical Trials

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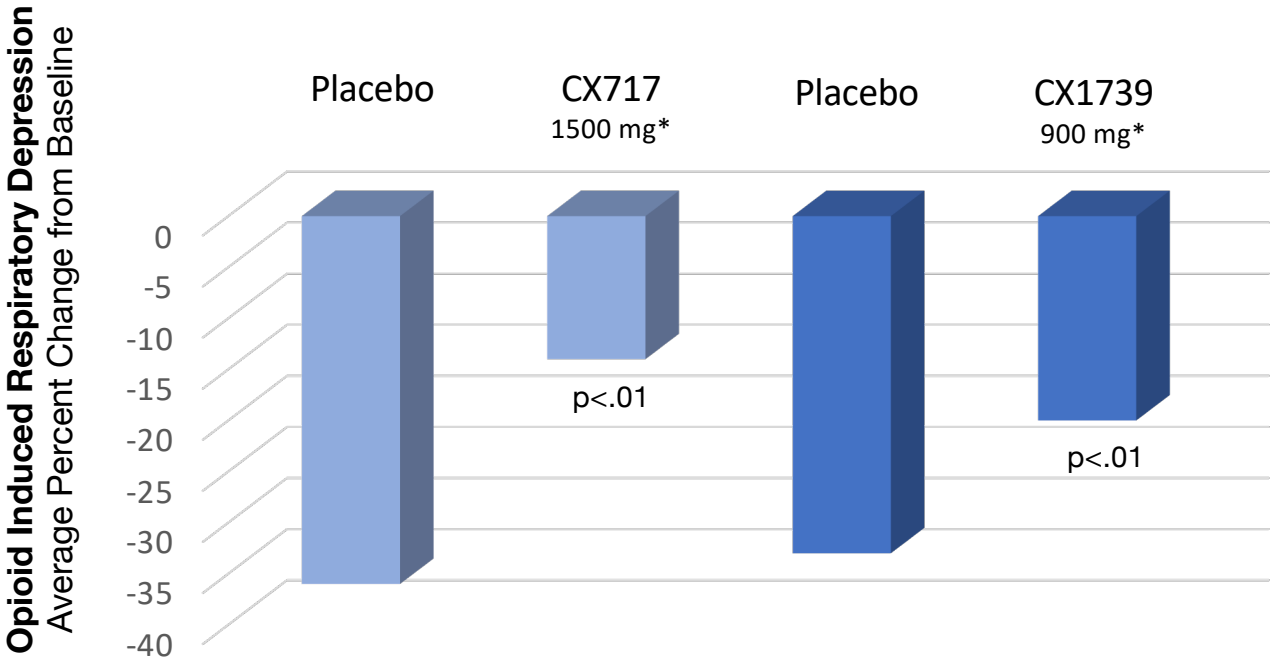

* Approximately 15 and 10 mg/kg on a weight basis, respectively; comparable to animal doses

Validation of Doses for Target Engagement

Prophylactic for Chronic Pain Patients Taking Opioids

CX717 Maintains the Analgesic Properties of Opioids While Antagonizing Respiratory Depression

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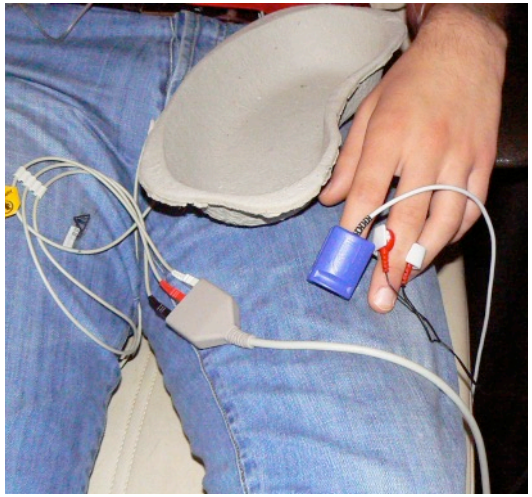
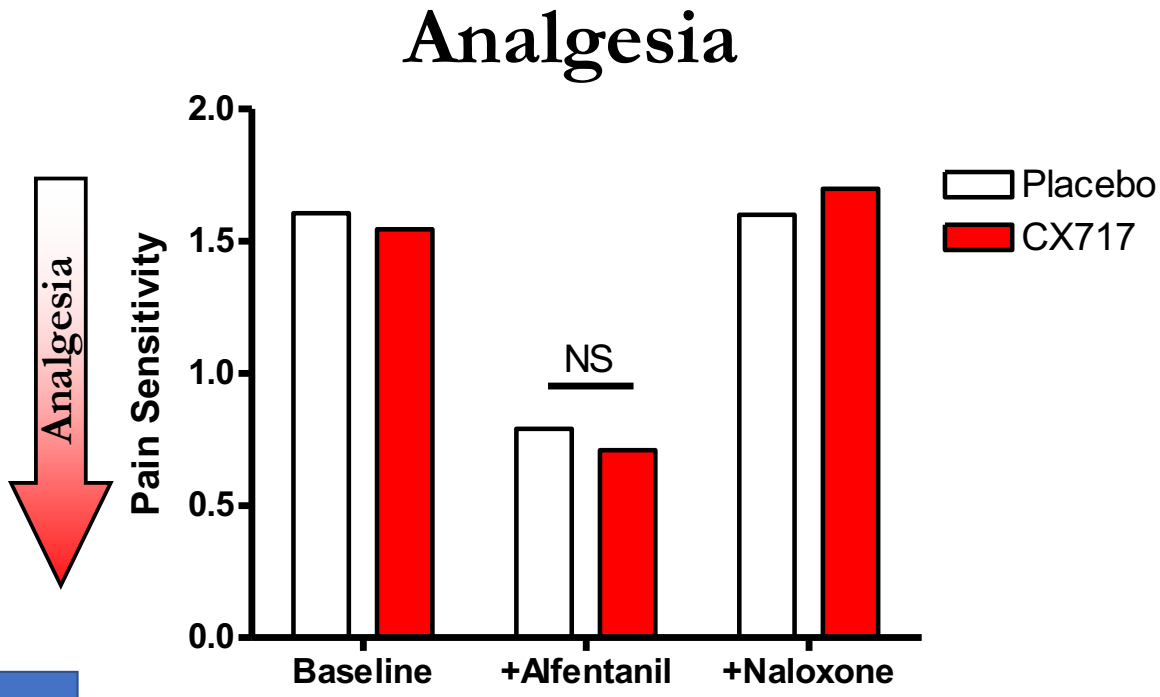


Delivery of a electrical stimulation to finger



Data are expressed as the pain sensitivity, normalized to the Baseline measurement.

N = 15 and 16 per group. CX717 dose is 1200mg.

- Alfentanil reduced the pain sensitivity (produced analgesia)
- Analgesia was unaffected by CX717

CX717 Significantly Improves ADHD

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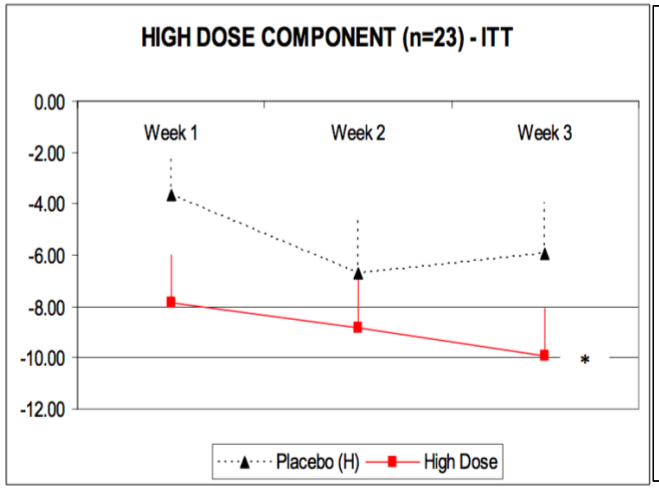
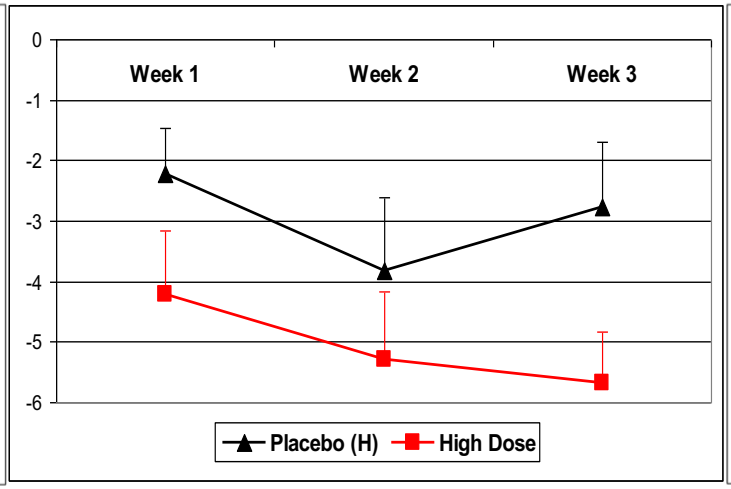
OVERALL ADHD-RS



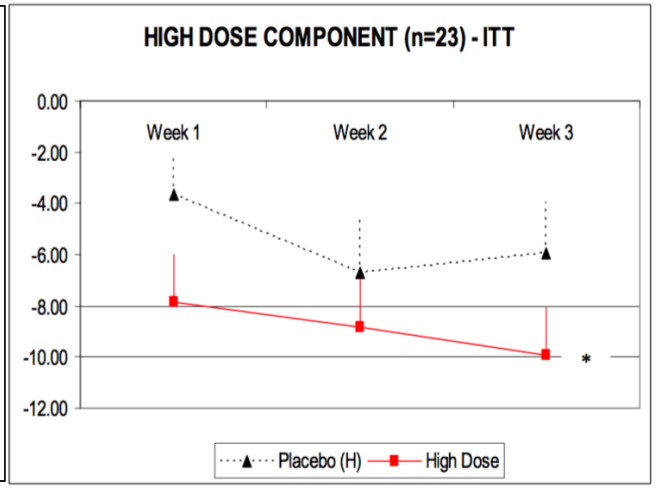
Mean Change from baseline
* Repeated measures analysis , p=0.002

HYPERACTIVITY



Mean Change from baseline
* Repeated measures analysis , p<0.05

INATTENTIVENESS



Mean Change from baseline
* Repeated measures analysis , p<0.04

Phase 2 Study of CX717 in Adult ADHD: Randomized, double-blind, multi-center, 2-period crossover study that compared 2 doses of CX717 (200 or 800 mg BID) with placebo. Statistically significant effects were observed with 800 mg as early as week 1.

Ampakines – Spinal Injury – Bladder Function

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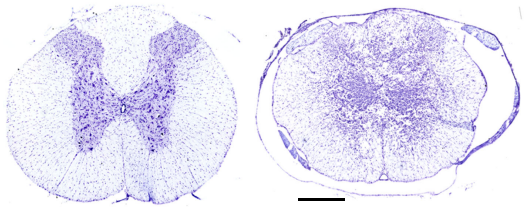

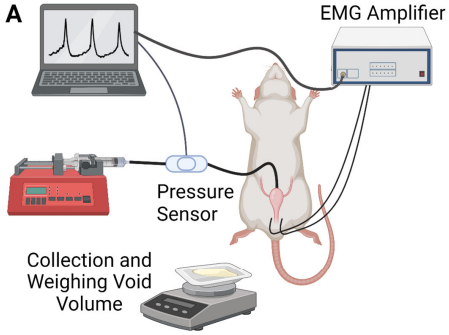

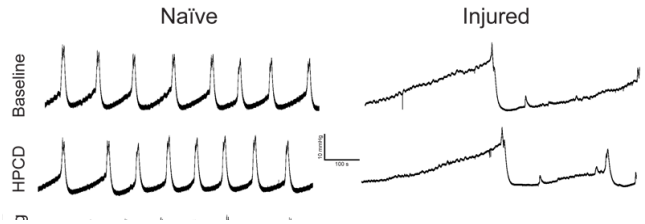

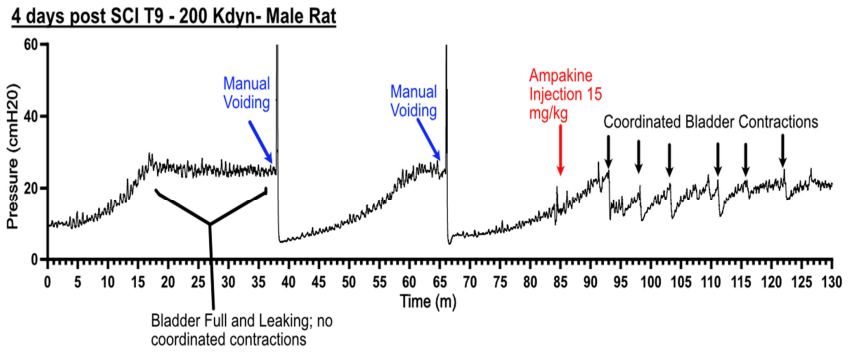

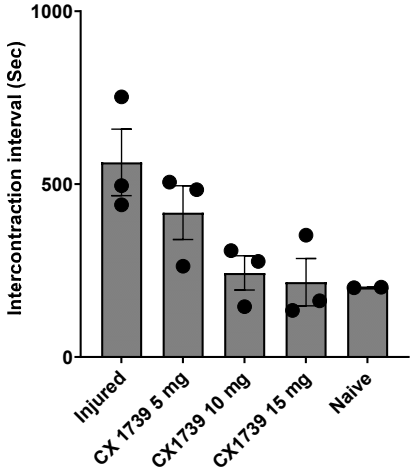

AMPAkine + Acute Intermittent Hypoxia (AIH) Vastly Improve Motor Neuron Firing

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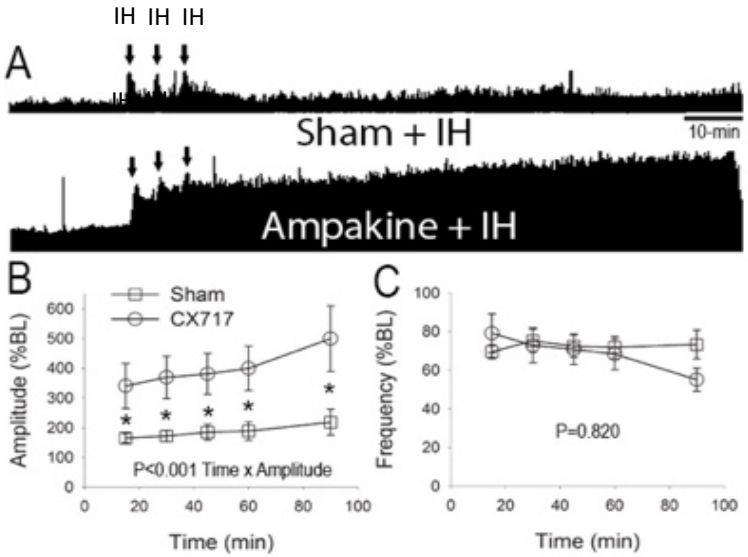
1. AIH is used in SCI patients as an adjunct therapeutic treatment to improve motor functions, including respiration and walking due to its rapid triggering of neuroplasticity

1. AMPAkines have been shown to enhance neuroplasticity and increase neurotrophic growth factor (NGF)



8 weeks following surgery, AMPAkine (15 mg/kg) increases amplitude in electrical recordings taken from rat phrenic nerves

Next Step: Phase 2 Clinical Trial-CX1739 in the Treatment of SCI Funded by $1.8 million Dept of Defense Grant to SRAL

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Blinded, Placebo-controlled, Escalating-dose Study Evaluating CX1739 in Patients with Spinal Cord Injury

Primary Objectives

1. Evaluate the safety of acute and multiple daily doses of CX1739 in patients with SCI
2. Evaluate the efficacy of CX1739 in improving bladder function and respiration

Secondary Objectives

1. Evaluate the effect of acute and multiple BID doses of CX1739 on motor function and recovery, with and without AIH in patients with SCI
2. Assess the impact of CX1739 on SCI EDGE outcomes measures as appropriate

RespireRx and now EndeavourRX are working with academic collaborators including the University of Florida and The Shirley Ryan AbilityLab to advance the development of CX1739 for the treatment of spinal cord injury. Above clinical trial funded by a $1.8 million grant from the Department of Defense

Animal Models

- Epilepsy – in thirty-three animal models, KRM-II-81 was superior or equivalent to standard treatment
- KRM-II-81 (three studies) dramatically reduced epileptic activity in brain tissue removed from patients with untreatable epilepsy
- Pain – in twelve animal models of our GABAkines, seven of which were with KRM-II-81, the GABAkines were superior or equivalent to standard treatment
- KRM-II-81 does not produce side effects associated with standard drugs, such as sedation, tolerance, dependence, withdrawal, etc.
- Also active in animal models of anxiety and depression

Superior Anti-convulsant Efficacy of KRM-II-81 over Standard of Care

RespireRx Pharmaceuticals Inc

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Model System	Species	Efficacy	Reference
CHEMICAL SEIZURE PROVOCATION MODELS			
Pentylenetetrazol – clonic seizures	Rat	= Diazepam	Witkin et al., 2018
Pentylenetetrazol – clonic seizures	Mouse	= Diazepam	Knutson et al., 2020
Pentylenetetrazol – tonic seizures	Mouse	= Diazepam	Knutson et al., 2020
Pentylenetetrazol – lethality	Mouse	= Diazepam	Knutson et al., 2020
Pentylenetetrazol – seizure threshold	Rat	> Diazepam	Witkin et al., 2018
Cocaine – clonic seizures	Mouse	> Diazepam	Knutson et al., 2020
4-Aminopyridine – clonic seizures	Mouse	> Diazepam	Knutson et al., 2020
4-Aminopyridine – tonic seizures	Mouse	> Diazepam	Knutson et al., 2020
4-Aminopyridine – lethality	Mouse	= Diazepam	Knutson et al., 2020
NMDA – clonic seizures	Mouse	> Diazepam	Knutson et al., 2020
NMDA – lethality	Mouse	> Diazepam	Knutson et al., 2020
Picrotoxin – clonic seizures	Mouse	= Diazepam	Knutson et al., 2020
Picrotoxin – tonic seizures	Mouse	> Diazepam	Knutson et al., 2020
Picrotoxin – lethality	Mouse	> Diazepam	Knutson et al., 2020
Strychnine – clonic seizures	Mouse	> Diazepam	Knutson et al., 2020
Strychnine – tonic seizures	Mouse	> Diazepam	Knutson et al., 2020
Strychnine – lethality	Mouse	> Diazepam	Knutson et al., 2020
Pilocarpine – clonic seizures	Mouse	= Diazepam	Knutson et al., 2020
Pilocarpine – lethality	Mouse	= Diazepam	Knutson et al., 2020
ELECTRICAL SEIZURE PROVOCATION MODELS			
6Hz stimulation – 44mA	Mouse	ND	Witkin et al., 2018
Electroconvulsive Shock	Mouse	= Diazepam	Witkin et al., 2018

Superior Anti-convulsant Efficacy of KRM-II-81 over Standard of Care

RespireRx Pharmaceuticals Inc

EndeavourRx LLC

Model System	Species	Efficacy	Reference
SEIZURE SENSITIZATION			
Corneal kindling	Mouse	>Tpm	Witkin et al., 2020
Amygdala kindling-ADT	Rat	> Diazepam	Witkin et al., 2018
Amygdala kindling-ADD	Rat	= Diazepam	Witkin et al., 2018
Amygdala kindling-Seizure Severity	Rat	= Diazepam	Witkin et al., 2018
Pentylenetetrazol kindling – Fully kindled	Mouse	= Diazepam	Knutson et al., 2020
Pentylenetetrazol kindling - Expression	Mouse	= Diazepam	Knutson et al., 2020
Pentylenetetrazol kindling - Development	Mouse	> Diazepam	Knutson et al., 2020
Cocaine kindling-– Fully kindled	Mouse	> Diazepam	Knutson et al., 2020
Cocaine kindling- Expression	Mouse	> Diazepam	Knutson et al., 2020
Cocaine kindling- Development	Mouse	> Diazepam	Knutson et al., 2020
PHARMACORESISTANT MODELS			
Mesial temporal lobe epilepsy	Mouse	>Ltg, Val	Witkin et al., 2020
Ltg-insensitive kindling	Rat	>Ltg, Tpm	Witkin et al., 2020
Kainate-induced chronic epilepsy	Rat	>Ltg, Lev	Witkin et al., 2020
HUMAN EPILEPTIC TISSUE			
Picrotoxin stimulation	Human	Active	Witkin et al., 2018
4-Aminopyridine stimulation	Human	Active	Witkin et al., 2018
4-Aminopyridine stimulation	Human	Active	Unpublished

Translational Results Predict Human Efficacy

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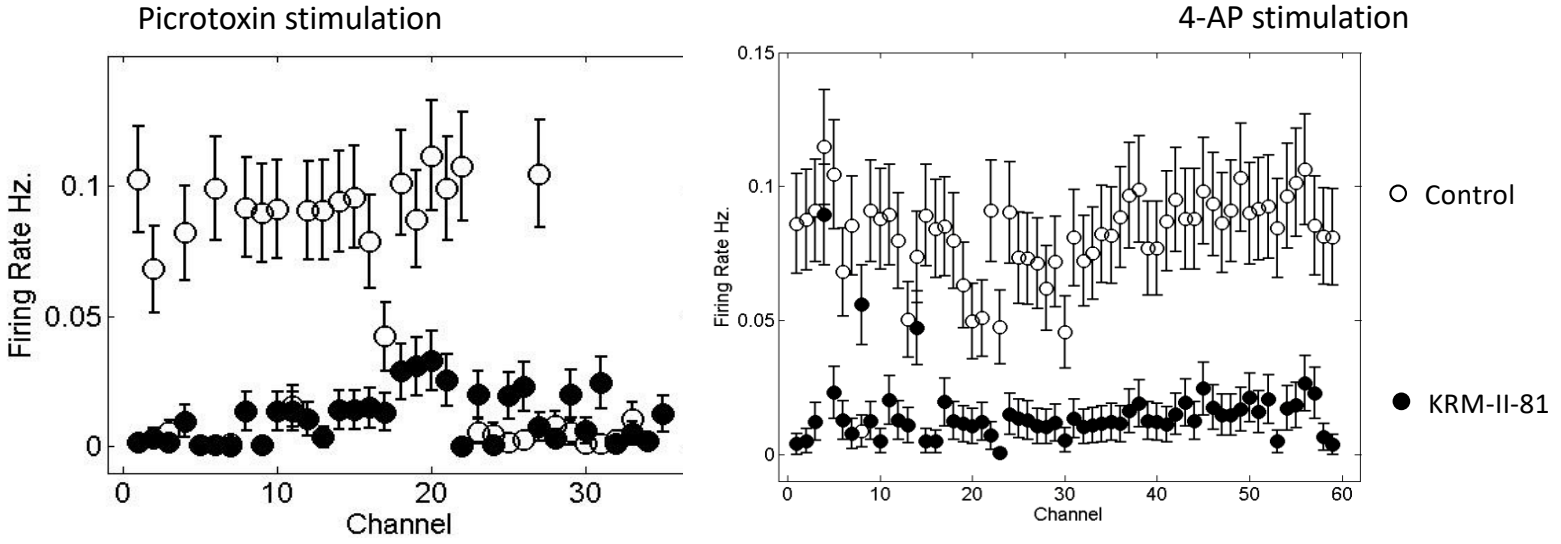
KRM-II-81 Reduces Epileptiform Activity in Cortical Slices from Juvenile Epileptic Patients



Electrical recordings were made from epileptic brain tissues removed from juvenile patients with pharmaco-resistant epilepsy. Data presented with the approval of the parents

*Reference - Witkin et al, Brain Res. 1722 (2019) 146356

Chronic Pain – Neuropathic and Inflammatory

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Compound	Pain model	Species	Comparators	References
KRM-II-81	Acetic and lactic-acid-induced writhing, nesting and locomotion	ICR mice	Morphine	Lewter et al. (2017)
KRM-II-18B	Acetic and lactic-acid-induced writhing, nesting and locomotion	ICR mice	Morphine	Lewter et al. (2017)
KRM-II-81	Lactic-acid and ICSS behavior	Sprague Dawley rats	Ketorolac and diazepam	Moerke et al. (2019)
MP-III-024	Zymosin A-induced mechanical hyperalgesia	C57BL/6 mice	Gabapentin	Fischer et al., 2017
KRM-II-81	Formalin-induced tactile hyperalgesia	Sprague-Dawley rats	Tramadol and diazepam	(Witkin et al. (2019)
KRM-II-81	L5/6 nerve ligation – induced tactile hyperalgesia	Sprague-Dawley rats	Gabapentin	(Witkin et al. (2019)
KRM-II-81	L5/6 nerve ligation – senitization training - induced tactile hyperalgesia	Sprague-Dawley rats	Gabapentin	(Witkin et al. (2019)
KRM-II-81	Chemotherapy-induced thermal hyperalgesia	C57BL/6 mice	Gabapentin	Biggerstaff et al. (2020)
KRM-II-81	Chemotherapy-induced tactile hyperalgesia	C57BL/6 mice	Gabapentin	Biggerstaff et al. (2020)
HZ-166	Zymosin A-induced mechanical hyperalgesia	C57BL/6 mice	Gabapentin	Di Lio et al. (2011)
HZ-166	Chronic constriction injury	C57BL/6 mice	Gabapentin	Di Lio et al. (2011)
HZ-166	Inflammotory bladder pain	Neonatal Sprague-Dawley rats	No	Kannampalli et al. (2017)

Portfolio Development Status

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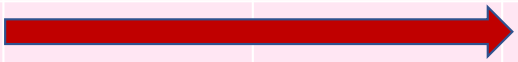
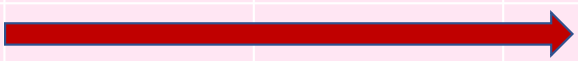
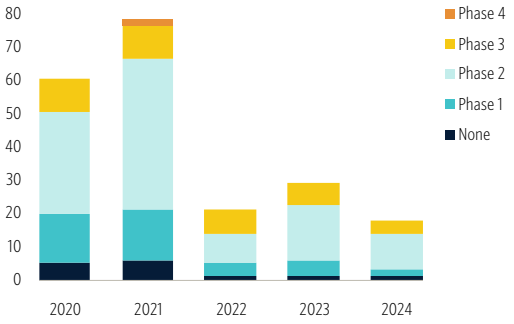
	Preclinical	Phase 1	Phase 2	Phase 3
Neuromodulators				
AMPAkines				
CX717/1739 - ADHD				
CX1739 - Spinal Cord Injury				
CX1739 – Central Sleep Apnea and OIRD (possibly RespireRx)				
CX1942 – soluble follow-up compound				
GABAkines				
KRM-II-81 – Preclinical Toxicology				

Biopharma VC Deals

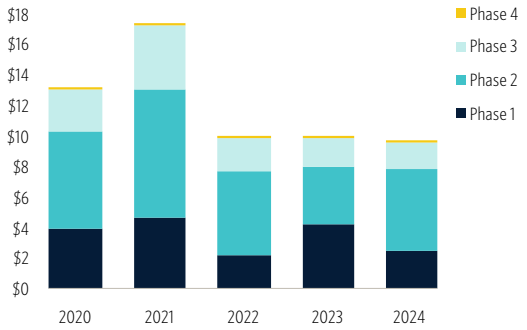
EndeavourRx LLC

Biopharma VC IPO count by highest phase



Source: PitchBook • Geography: Global • As of September 30, 2024
Note: Determined as the highest phase of a trial that started prior to the round closing. Data combines trials between phases to the highest phase.

Biopharma VC deal value ($B) by highest phase

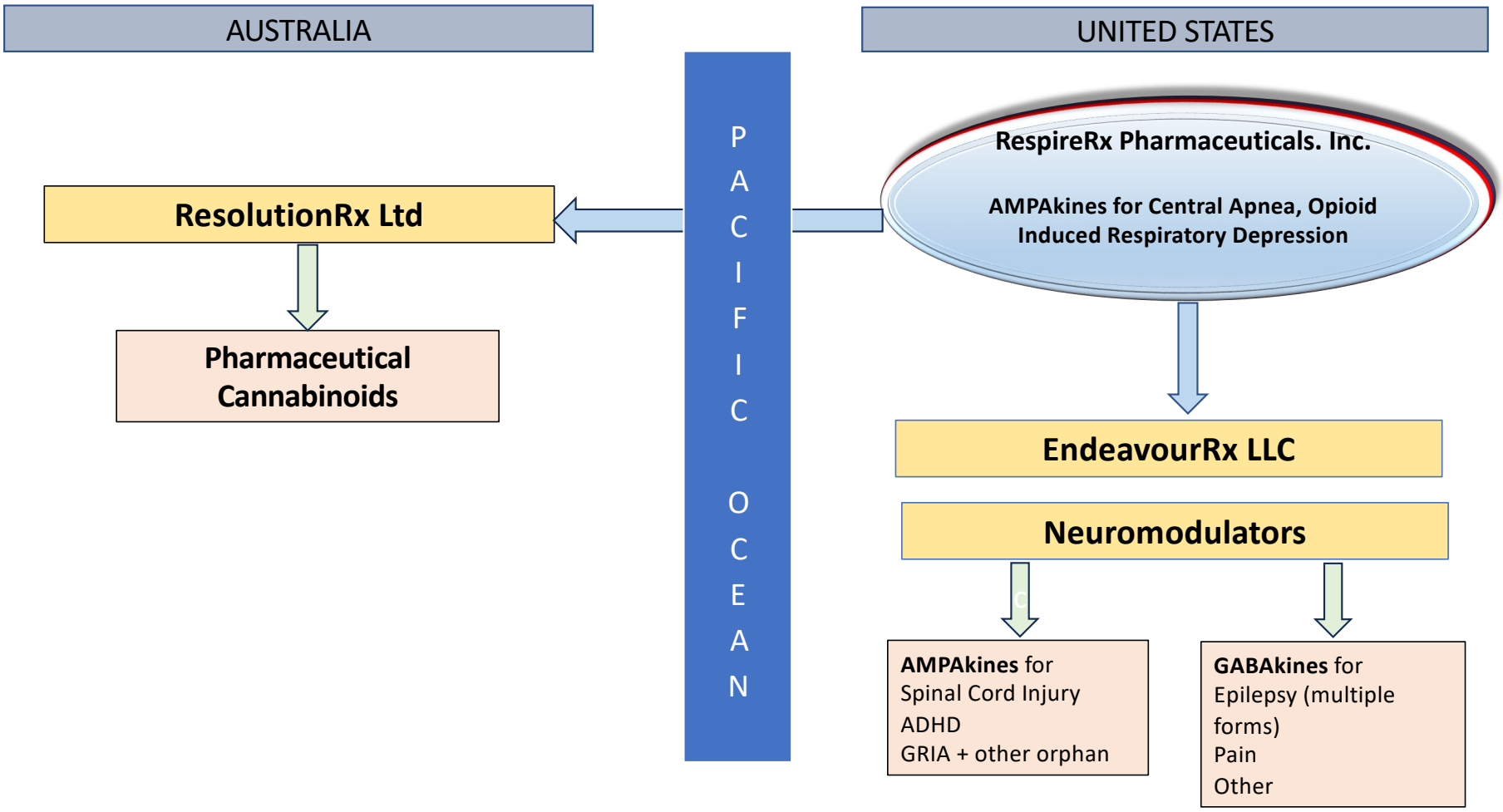


Source: PitchBook • Geography: Global • As of September 30, 2024
Note: Determined as the highest phase of a trial that started prior to the round closing. Data combines trials between phases to the highest phase.

- From 2022 to 2024, Phase 2 companies consistently captured the most deals and the highest deal sizes.
- Phase 3 assets saw declining investments levels dropping from $4.2 billion in 2021 to $1.7 billion in 2024
- Companies advancing through mid-stage trials are better positioned to secure licensing deals or acquisitions
- In 2025, VCs are expected to prioritize companies advancing to Phase 2 and beyond

WHAT TO DO? RE-STRUCTURE ASSETS

RespireRx Group



WHY IS RESPIRERX FORMING SUBSIDIARIES?

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Difficulties with Fund Raising

- RespireRx assets not well recognized due to weak balance sheet – liabilities >> assets
- RespireRx not current with its SEC financial filings
- Reliance on government grants
- On a macro-level average time between funding rounds increased 50% from 1.6 years in 2021 to 2.2 years in 2024**
- Phase 3 failures such as Alzheimer drugs produced overall decline in biopharma investments**

Subsidiary visibility and more

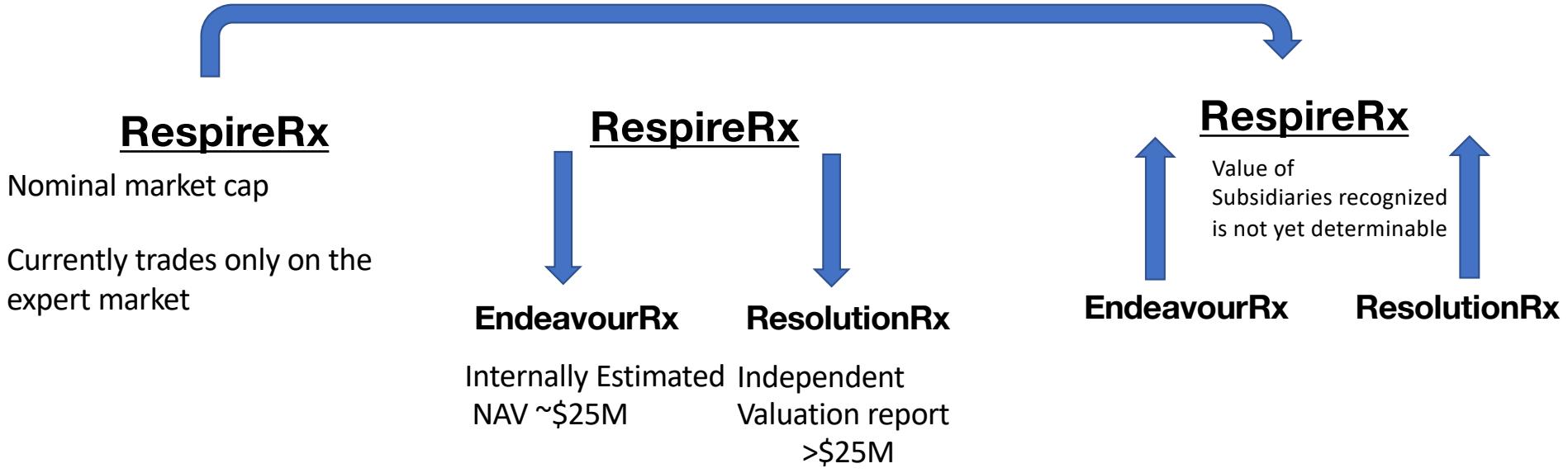
- Individual asset valuations/modeling
- Separation of research and development risks across entities
- Cleaner balance sheets
- Allows for investor selectivity
- Each financing round allows for separate capital market valuations

** Source: PitchBook • Geography: Global • As of September 30, 2024

WILL IT WORK?

RespireRx Group

Individual and Group Value Proposition



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