

## **Redpin Therapeutics secures initial closing of \$15.5 million in Series A financing**

***4BIO Capital and Arkin Bio Ventures lead first close joined by Takeda Ventures and existing investors***

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NEW YORK--(BUSINESS WIRE)--Redpin Therapeutics, Inc., a pioneering chemogenetics company developing uniquely controllable gene therapies to address intractable diseases of the nervous system, today announced it has secured \$15.5 million in the initial closing of its Series A financing round.

The round was led by 4BIO Capital, an international venture capital firm focused solely on the advanced therapies sector, and Arkin Bio Ventures, the investment arm of Arkin Holdings, which specializes in pharmaceutical and biotechnology innovations that have imminent breakthrough potential, and joined by new investor Takeda Ventures Inc., the corporate venture arm of Takeda Pharmaceutical Company, Ltd., and existing investors from the seed round, New York Ventures and Alexandria Venture Investments.

The proceeds will enable Redpin to further progress the development of its groundbreaking ultra-potent ion channel based chemogenetics platform to address disorders associated with neural circuit dysfunction including epilepsy, neuropathic pain and Parkinson's disease.

Current treatment of these diseases and disorders typically involve the use of systemic drugs to address local neuron dysfunction and can have limited efficacy due to adverse, off-target side effects. Redpin's validated approach leverages ion channels as neuromodulation tools to selectively either activate or silence disease-causing neurons to regulate only dysfunctional neurons, while leaving normal functioning cells alone. Redpin's approach is designed to only be activated in the presence of varenicline (CHANTIX®) the FDA approved anti-smoking agent. This novel therapy approach could allow for highly targeted treatments without the side effects associated with current therapies. The approach has received a significant amount of attention in the research community and has been validated by two publications in *Science*.

The platform is derived from many years of research pioneered by Redpin's founders who include world-leading scientists Dr Scott Stenson (Howard Hughes Medical Institute) and Professor Jeffrey M. Friedman MD PhD (Rockefeller University), a recipient of the prestigious Lasker and Breakthrough awards. Product development is being led by an experienced management team including the founding CEO, Elma Hawkins PhD MBA, and David Bleakman PhD, both veterans of the biopharmaceutical industry.

Dmitry 'Dima' Kuzmin, Managing Partner at 4BIO Capital will join Redpin's Board of Directors as a Non-Executive Director.

Commenting on the successful fundraiser, **Elma Hawkins, PhD MBA, President and CEO of Redpin and a co-founder of the company said:** "These new funds combined with the support and expertise of our new and existing investors will allow Redpin to swiftly progress to the next phase of its development in bringing highly targeted treatments to patients with neurological and psychiatric disorders."

**Dmitry Kuzmin, Managing Partner at 4BIO Capital, said:** "Our goal is to support and grow advanced therapy companies with the potential to cure chronic disease. Redpin has a highly compelling, validated chemogenetics approach that could have significant potential in the targeted treatment of neuropathic disorders. The strength of Redpin's science alongside the world-class

knowledge and expertise of the Company's founders and management team make us fully confident in the future success of the Company towards this goal."

**Michael Martin, Head of Takeda Venture Investments, said:** "Investing in early-stage companies like Redpin, who are advancing novel technologies with the potential to provide transformational benefits to patients, is a key component of Takeda's partnering strategy. Redpin's chemogenetic platform could one day deliver targeted treatments for neurological diseases, an area closely aligned with Takeda's research and development expertise."

### **About Redpin**

Based in New York City, Redpin Therapeutics is a privately-held, preclinical stage gene therapy company developing a proprietary chemogenetics platform for targeted cell therapies to address currently intractable diseases of the central nervous system. Using a powerful and innovative technology that inverts traditional drug development by using gene therapy to target an engineered receptor to any cell type responsible for disease and modulating its function with an already-approved drug. This has the potential to deliver effective treatments for a wide range of currently intractable neurological and psychiatric diseases and disorders. Redpin has a worldwide exclusive license from the Howard Hughes Medical Institute for the therapeutic use of this technology, and the company is working with urgency to apply it to advance important medicines for patients in desperate need of effective therapies. For more information please visit: [www.redpinrx.com](http://www.redpinrx.com)

### **About Chemogenetics**

Chemogenetics is a ground-breaking approach to selectively control cell function by installing an engineered receptor that renders any targeted cell population sensitive to modulation by an agonist designed to target that receptor. Redpin is building an innovative ion channel-based chemogenetics platform that introduces a new paradigm for tunable, targeted cell therapies. Ion channels are proteins that are responsible for electrical activity in cells. We are leveraging ion channels as neuromodulation tools to either stimulate under-active neurons or inhibit over-active ones.

Using our synthetic biology platform, we have designed proprietary chimeric ligand-gated ion channels as targeted cell therapies to selectively stimulate or inhibit dysfunctional neuronal circuits implicated in a given disease. Our ion channel receptors are designed to only modulate neuron activity in the presence of the orally delivered small molecule drug varenicline. Varenicline (CHANTIX®) is approved by the U.S. Food & Drug Administration (FDA) as an anti-smoking agent. We believe varenicline is particularly attractive for chemogenetic applications in the central nervous system because it is well tolerated by patients at low doses and has excellent brain penetration.

### **About 4BIO Capital**

4BIO Capital is an international venture capital firm focused solely on the advanced therapies sector.

4BIO's objective is to invest in, support, and grow early stage companies developing treatments in areas of high unmet medical need, with the ultimate goal of ensuring access to these potentially curative therapies for all patients. Specifically, it looks for viable, high-quality opportunities in cell and gene therapy, RNA-based therapy, targeted therapies, and the microbiome.

The 4BIO team comprises leading advanced therapy scientists and experienced life science investors who have collectively published over 250 scientific articles in prestigious academic journals including *Nature*, *The Lancet*, *Cell*, and the *New England Journal of Medicine*. 4BIO has both an unrivalled network within the advanced therapy sector and a unique understanding of the criteria that define a successful investment opportunity in this space.

For more information, please visit [www.4biocapital.com](http://www.4biocapital.com)

### **About Arkin Bio Ventures**

Arkin Bio Ventures is a pharma and biotech specialized strategic partnership established by Arkin Holdings, leading Israel-based life sciences investor, and Phoenix Group in 2016.

Arkin Bio Ventures invests globally in promising innovative pharmaceuticals in pre-clinical and early clinical stages and offers a distinctive combination of practical pharmaceutical knowledge, wide acquaintance with the market along with significant financial capabilities.

For more information, please visit [www.arkinholdings.com](http://www.arkinholdings.com)

### **About Takeda Ventures**

Takeda Ventures, Inc. (TVI) is the corporate venture arm of Takeda Pharmaceutical Company Limited, a global, values-based, R&D driven biopharmaceutical leader headquartered in Japan. TVI's mission is to identify, help create and support the development of therapeutic innovation in alignment with Takeda's own strategic imperatives. We do this by investing in technology and product concepts, and highly effective teams that can turn ideas into reality. Our primary focus is on medium to longer term returns in the form of product and technology successes for our portfolio companies and capital gains for the financial institutions we work with.

### **About New York Ventures**

New York Ventures is the venture capital investment arm of Empire State Development, New York State's chief economic development agency. New York Ventures meets the critical capital needs of the state's innovation economy by providing funding to high-growth startups as they move from concept to commercialization, through early growth and expansion. More information is available [here](#).

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