



## **Fannin Innovation Studio Awarded \$2,000,000 NIH Grant for Development of a Novel Antivenom Therapeutic Based on Next-Generation Aptamers**

**Houston, TX (August 4, 2021)** – Fannin Innovation Studio announces it has been awarded a \$2,000,000 Small Business Innovation Research (SBIR) Phase II grant from the Office of Research Infrastructure Programs, National Institutes of Health (NIH) for development of a novel Raptamer™-based antivenom, in partnership with Texas A&M University-Kingsville.

Snake bite envenomation is a significant problem in the United States (U.S.) and worldwide that can result in substantial morbidity and even death. Each year, approximately 8,000 people in the U.S. are bitten by venomous snakes. Snake venom contains a complex mixture of toxins that can produce hemorrhage or cause tissue damage resulting in permanent disability, limb amputation or death. Current antivenom products, which consist of serum-based antibody fragments raised in horses or sheep, are generally effective at stabilizing envenomation patients, but they come with several limitations. They are not effective in mitigating tissue damage from all venomous snakes in the U.S., and they often lead to adverse effects such as serum sickness, hypersensitivity, and recurrent coagulopathy.

“We are delighted to have received this award to develop a new antivenom therapeutic. Our Raptamer-based antivenom is expected to have several advantages over the traditional antivenoms on the market. In addition, a Raptamer therapeutic ‘cocktail’ would have an enhanced safety profile, a longer shelf-life, and faster production,” said Dr. Atul Varadhachary, Principal Investigator on the grant and Managing Partner at Fannin Innovation Studio.

Fannin will develop its novel antivenom therapeutic using Raptamers™, Fannin’s proprietary next-generation DNA aptamers. Raptamers incorporate specialized protein-like modifications within the DNA aptamer strand, providing for higher affinity and more specific target binding. The proprietary Raptamer™ platform was developed by Raptamer Discovery Group (formerly AM Biotechnologies), which Fannin acquired in 2019. The Raptamer-based antivenom formulation will be designed to neutralize the major toxin classes of venomous snakes found in the U.S., which would provide a safe and consistent emergency treatment for venomous snake bites. Fannin will collaborate on this project with Dr. Elda E. Sánchez, Director of the National Natural Toxins Research Center at Texas A&M University-Kingsville, and President of the North American Society of Toxinology.

“Having a Raptamer-based antivenom, as proposed in our project, would be of enormous benefit,” said Dr. Sánchez. “With support from DARPA, we successfully developed a Raptamer that provided in-vivo protection against a small molecular weight toxin from rattlesnake venom, crotamine (myotoxin). This is significant since conventional antivenoms have difficulty in neutralizing this specific toxin due to its non-immunogenicity characteristic. I look forward to expanding this work to develop a Raptamer cocktail to simultaneously target multiple toxins from various snake species. Such a formulation would help reduce the morbidity associated with snake envenomation and address the limitations of current treatment methods,” she said.

Funding from this NIH SBIR Phase II grant will enable Fannin to develop a Raptamer-based antivenom cocktail that it plans to advance into clinical trials. “The goal of this project is to address an unmet medical need in the treatment of snake envenomation in the U.S. with planned expansion into other major markets in regions with high incidences of snake envenomation such as South America, Southeast Asia and Australia,” said Leo Linbeck III, Founder and Chairman of Fannin Innovation Studio. “The aptamer-antivenom can also be tailored to meet the needs of individual regions with different populations of venomous snakes.”

#### **About Fannin Innovation Studio**

*Houston-based Fannin Innovation Studio is an early-stage life sciences development group focused exclusively on commercializing biotech and medtech technologies. Fannin creates and manages startups to develop internal and in-licensed programs. To further bridge the commercialization gap, Fannin’s fellowship and internship programs provide aspiring entrepreneurs with hands-on development experience with its portfolio companies. Fannin was a recipient of the Tibbetts award in 2016 and is a three-time SBA Growth Accelerator Award winner. For more information, visit [www.fannininnovation.com](http://www.fannininnovation.com).*

#### **About Raptamer Discovery Group (RDG)**

*Houston-based RDG is a company that specializes in the discovery and development of next-generation DNA molecules called Raptamers™. Raptamers can be developed to target small molecules, proteins, and whole cells, and can be used as therapeutic, diagnostic, or research agents. RDG has developed Raptamers for more than 60 global customers, and the company has received over \$6 million in investment and \$7.5 million of non-dilutive funding from agencies including the National Aeronautics and Space Agency (NASA), National Institutes of Health (NIH), and the Defense Advanced Research Projects Agency (DARPA). RDG was formerly known as AM Biotechnologies, which was acquired by Fannin Innovation Studio in 2019. For more information, visit [www.raptamer.com](http://www.raptamer.com).*

#### **About the National Natural Toxins Research Center at Texas A&M-Kingsville**

*The National Natural Toxins Research Center (NNTRC) at Texas A&M-Kingsville is an internationally renowned research center that provides numerous resources and training for scientists, graduate and undergraduate students and performs global research for the advancement of snake-venom related biomedical research. The NNTRC is largely funded by the*

*NIH through the Office of Research Infrastructure Programs. The goal of the NNTRC is to provide native venoms, purified venom components, cDNA clones, and recombinant venom proteins from various venomous snakes and perform specialized research services of the highest quality to support biomedical research in the U.S. and abroad. For more information, visit [www.tamuk.edu/artsci/departments/nntrc/index.html](http://www.tamuk.edu/artsci/departments/nntrc/index.html).*

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