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Beyond "One Bug, One Drug" - Tonix Pharmaceuticals Secures Up To \$34 Million In Funding From The U.S. Department Of Defense To Develop a Broad-Spectrum Antiviral

CHATHAM, NJ / ACCESSWIRE / July 24, 2024 From anthrax to the plague, biological warfare is a real threat to U.S. forces and civilians, so much so the Pentagon budgeted about [\\$2 billion for the country's biological defense](#) for the coming fiscal year. It's also why the U.S. Department of Defense is seeking broad-spectrum antiviral drugs and teaming up with the biotech companies developing them.



That's the case with **Tonix Pharmaceuticals Holding Corp.** (NASDAQ:TNXP), a fully integrated biopharmaceutical company. The DoD's [Defense Threat Reduction Agency](#)

(DTRA) [recently inked a five-year deal](#) with [Tonix Pharmaceuticals](#) to develop small molecule broad-spectrum antiviral agents for the prevention or treatment of infections to improve the medical readiness of military personnel in biological threat environments. Through the Other Transaction Agreement (OTA) contracting vehicle, Tonix could get as much as \$34 million in funding over five years.

"Through our agreement with DTRA, our broad-spectrum antiviral research program will address the DoD's goal of protecting U.S. forces in the event biological weapons are introduced onto the battlefield," said Seth Lederman, M.D., President and Chief Executive Officer of Tonix. "This funding provides important validation for our ongoing research and current in-house capabilities and will enable Tonix to advance its antiviral discovery program."

Stop Viruses In Their Tracks

Antiviral drugs are designed to stop a virus in its tracks by either attacking it or preventing it from spreading. In the case of Tonix's program, the goal is to fortify the immune system so that it can protect against a range of viruses. Demand for antiviral drugs is rising along with the concerns about viruses on the battlefield. Viruses are changing, jumping back and forth between humans and animals and there's the new risk that synthetic biology can be used maliciously, to make new viruses or to make existing viruses more virulent in what's called "gain of function". On the battlefield, the DoD is looking for antiviral drugs that can protect soldiers regardless of the agent. It is pouring money into different initiatives designed to react in the event of a biological attack.

Take DTRA's Chemical and Biological Technologies Department which is sponsoring Tonix's research. The department, which is funded out of DTRA's approximately \$1.9 billion budget for fiscal 2024, invests in medical countermeasure projects to fulfill its mission to anticipate future threats and equip the warfighter to survive, fight and win in chemical and biological contested environments.

Across the U.S. government, chemical and biological countermeasures programs have approximately \$1.26 billion budgeted for fiscal 2024 and includes programs to reduce the risks to both U.S. troops and the global community from bacteria or viruses. The need to slow the spread of viruses and protect troops from biowarfare is just part of an over-all antiviral market estimated to reach [\\$74.75 billion by 2028](#), growing at a CAGR of 6.19%.

Attacking The CD45 Protein

Tonix Pharmaceuticals' program will focus on optimizing and developing [TNX-4200, the company's oral CD45 antagonist program](#), which is designed to have broad-spectrum efficacy against a range of viral pathogens. This broad-spectrum capability is a move beyond the previous "one bug, one drug" approach and seeks to target a broad range of deadly agents through just a single drug. Reduction of CD45 activity, a protein tyrosine phosphatase, protects animals against many viruses, including the Ebola virus. Through this funding, Tonix expects to establish the treatment's biological activity and safety in animals and then submit an Investigational New Drug application (IND) to conduct a first-in-human phase 1 clinical study.

Tonix said it plans to leverage previous research on phosphatase inhibitors - specifically

compounds that target CD45 - to optimize compounds for therapeutic intervention of biothreat agents and provide the government with a broad-spectrum medical countermeasure. The idea behind Tonix's compound is that partial inhibition of CD45 will provide optimal antiviral protection with an acceptable safety profile. The \$34 million, five-year contract will help bankroll and accelerate the development of Tonix's host-directed antivirals which have the potential to reduce viral load and allow the adaptive immune system to alert the other arms of the immune system to mount a protective response, reports the company.

Leveraging R&D Capabilities

To develop its program, Tonix plans to rely on what it says are state-of-the-art research laboratory capabilities, including a Biosafety Level 3 (BSL-3) lab and an Animal Biosafety Level 3 (ABSL-3) facility at its research and development center in Frederick, Maryland. The research center is located in Maryland's I-270 biotech corridor and is close to the center of the U.S. biodefense research community. The research facilities will help to accelerate the development of vaccines and antiviral drugs against infectious diseases.

The threat of viruses, pandemics and biochemical attacks is increasing, driving demand for antivirals that can stop pathogens in their tracks. Tonix is betting it can deliver a single remedy to cover several viruses - and has up to \$34 million to prove it.

Featured photo by api.army.mil.

Click here for more information on Tonix Pharmaceuticals: <https://redingtonvirtual.com/tnxp-aw-24072/>

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SOURCE: Tonix Pharmaceuticals Holding Corp.

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