

Natsar Pharmaceuticals Awarded \$2.25 Million NIH SBIR Direct-to-Phase II Grant to Advance RK-33, a First-in-Class RNA Helicase Inhibitor, in Solid Tumors

September 22, 2025 – Ellicott City, MD – Natsar Pharmaceuticals, Inc. today announced it has been awarded a \$2.25 million Small Business Innovation Research (SBIR) Direct-to-Phase II (D2P2) grant from the **National Cancer Institute (NCI)**, part of the **U.S. National Institutes of Health (NIH)**.

This highly competitive, non-dilutive funding will support the continued development of Natsar's lead program, RK-33, a first-in-class small molecule inhibitor of the RNA helicase DDX3 and will accelerate the company's path toward filing an Investigational New Drug (IND) application and initiating first-in-human clinical trials.

"We are grateful for the NCI's support and recognition of our RNA helicase inhibitor program," said Venu Raman, PhD, Founder and Chief Scientific Officer of Natsar Pharmaceuticals. "This award represents important validation of our science and brings us one step closer to delivering a potentially transformative therapy for patients with aggressive solid tumors who urgently need better treatment options."

The grant, provided under NCI Award Number (1R44CA295155-01A1), will fund critical late preclinical and regulatory activities designed to position RK-33 for clinical development.

About RK-33

RK-33 is a first-in-class inhibitor of DDX3, an RNA helicase that plays a key role in tumor cell survival and proliferation. DDX3 is overexpressed in many aggressive cancers, where it supports essential processes such as DNA repair, signaling, motility, and energy regulation. By inhibiting DDX3, RK-33 disrupts multiple oncogenic pathways simultaneously, leading to selective tumor cell death while sparing normal cells.

In preclinical studies, RK-33 has demonstrated broad anti-tumor activity across multiple models, including sarcoma, brain tumors, pancreatic cancer, lung cancer, and breast cancer bone metastasis. Importantly, RK-33 also acts as a potent radiosensitizer, enhancing the effectiveness of radiation therapy and creating opportunities for use in combination with standard-of-care regimens.

About Natsar Pharmaceuticals, Inc.

Natsar Pharmaceuticals is a privately held U.S.-based pharmaceutical company dedicated to developing innovative therapies for cancer and other serious diseases. The company's lead program, RK-33, is a novel small molecule targeting DDX3, an RNA helicase implicated in multiple aggressive and metastatic cancers. With strong preclinical evidence of efficacy and a differentiated mechanism of action, Natsar is preparing to advance RK-33 into Phase 1 clinical trials.

This research is supported by the **National Cancer Institute of the National Institutes of Health** under Award Number (1R44CA295155-01A1). The content of this release is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health.