



Oncorus Announces Publication in Nature Communications Highlighting the Development of its Intravenously Administered Synthetic vRNA/LNP Platform for the Treatment of Cancer

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New preclinical results support self-amplifying vRNA/LNP immunotherapy platform and ongoing IND-enabling studies of ONCR-021

ANDOVER, Mass., Oct. 07, 2022 (GLOBE NEWSWIRE) -- Oncorus, Inc. (Nasdaq: ONCR), a viral immunotherapies company focused on stimulating the immune system to transform outcomes for cancer patients, today announced the publication of preclinical data in *Nature Communications* highlighting the potential of its viral RNA (vRNA)/lipid nanoparticle (LNP) platform as a novel approach to treating cancer by enabling repeat intravenous (IV) administration of viral immunotherapies. Data published today demonstrate vRNA/LNP delivery and selective replication, virus assembly, spread and lysis of tumor cells, leading to potent anti-tumor efficacy even in the presence of virus neutralizing antibodies in the bloodstream.

The article describes the design and development of Oncorus' synthetic RNA viruses for the systemic treatment of cancer. The IV delivery of viral RNA genomes for two picornaviruses, Coxsackievirus A21 (CVA21) and Seneca Valley Virus (SVV), were formulated in LNPs. By encapsulating vRNA in LNPs, Oncorus was able to cause reductions in tumor growth and avoid neutralizing antibodies. The vRNA/LNP constructs were well tolerated and elicited tumor-specific *in situ* production of oncolytic virions, immune cell recruitment and tumor destruction. Efficacy was observed across multiple cancer models, including xenografts, PDX, GEMM and syngeneic models, with survival benefit observed in an orthotopic small cell lung cancer (SCLC) tumor model. Overall, synthetic RNA viruses were well tolerated after a single or multiple IV dose in mice and non-human primates. These results support the potential of this modality to expose all tumor lesions within a patient to a potentially living drug that can both kill tumor cells and stimulate the immune system to fight cancer more effectively.

"Oncorus has made great strides in the development of viral RNA encapsulated within LNPs, and this publication is an important first step in realizing the potential of our platform as we progress this highly innovated approach into the clinic. We are focused on overcoming the neutralizing antibodies seen in previous studies involving the IV-administration of RNA-based oncolytic therapeutics which has likely limited their effectiveness today and believe that our data supports the ability of our self-amplifying vRNA/LNP constructs to overcome these challenges," said Theodore (Ted) Ashburn, M.D., Ph.D., President and Chief Executive Officer of Oncorus. "As demonstrated in animal models outlined here, we've established a way to simultaneously cause direct tumor cell killing in addition to broad immune stimulation in multiple tumors through an IV-administered self-amplifying RNA encapsulated within an LNP. We look forward to progressing our first candidate from this platform, ONCR-021, in patients with non-small cell lung cancer, renal cell carcinoma, melanoma and hepatocellular carcinoma. We plan to submit an IND with the U.S. FDA for this program in mid-2023," said Matthew Kennedy, Ph.D., Vice President of Research at Oncorus and the lead author on this paper.

Oncorus has built a pioneering platform addressing significant unmet needs in cancer immunotherapy treatment. This novel IV-administered approach involves encapsulating the RNA genomes of viruses known to kill cancer cells in an LNP, resulting in a vRNA/LNP immunotherapy. Oncorus' LNP delivery strategy is intended to be less immunogenic than a natural viral capsid and is designed to overcome the challenges caused by neutralizing antibodies. Using its platform, Oncorus has developed two vRNA/LNP immunotherapy programs, ONCR-021 and ONCR-788, which are based on CVA21 and SVV, respectively. The Company plans to submit an investigational new drug (IND) application with the U.S Food and Drug Administration (FDA) for ONCR-021 in mid-2023.

About Oncorus

At Oncorus, we are focused on driving innovation to deliver next-generation viral immunotherapies to stimulate the immune system to outcomes for cancer patients. We are advancing a portfolio of intratumorally (iTU) and intravenously (IV) administered viral immunotherapies for multiple indications with significant unmet need based on our Herpes Simplex Virus (HSV) and self-amplifying viral RNA/LNP Immunotherapy Platforms.

Designed to deliver next-generation viral immunotherapy impact, our HSV Platform improves upon key characteristics of this therapeutic class to enhance systemic activity. Our lead HSV program which currently in the clinic, ONCR-177, is designed to be directly administered into a tumor, resulting in high local concentrations of the therapeutic agent and its five encoded transgenes, as well as low systemic exposure to the therapy, which could limit systemic toxicities. Our pioneering self-amplifying vRNA/LNP Platform, highlighted by our product candidates ONCR-021 and ONCR-788, involves a highly innovative, novel combination of RNA and LNP-based modalities designed to realize the potential of RNA medicines for cancer.

Please visit www.oncorus.com to learn more.

Cautionary Note Regarding Forward-Looking Statements

This press release contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995, as amended, including, without limitation implied and express statements regarding expectations regarding timing for submitting an IND for ONCR-021, as well as the product candidate's therapeutic potential and clinical benefits and the utility and potential of Oncorus' synthetic viral RNA (vRNA)/lipid nanoparticle (LNP) platform. The words "may," "might," "will," "could," "would," "should," "expect," "plan," "anticipate," "intend," "believe," "expect," "estimate," "seek," "predict," "future," "project," "potential," "continue," "target" and similar words or expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words. Any forward-looking statements in this press release are based on management's current expectations and beliefs and are subject to a number of risks, uncertainties and important factors that may cause actual events or results to differ materially from those expressed or implied by any forward-looking statements contained in this press release, including, without limitation, risks associated with: Oncorus' ability to successfully demonstrate the safety, tolerability and efficacy of its product candidates and obtain regulatory approval thereof; the adequacy of Oncorus' existing capital resources and availability of financing on commercially reasonable terms;

Oncorus' ability to obtain the requisite components for its product candidates manufactured in accordance with regulatory requirements; the expansion of Oncorus' in-house manufacturing capabilities; the impact of COVID-19 on Oncorus' operations and the timing and anticipated results of its ongoing and planned clinical trials; the accuracy of the Oncorus' estimates regarding expenses, future revenue, capital requirements and needs for additional financing; and Oncorus' ability to obtain, maintain and protect its intellectual property. These and other risks and uncertainties are described in greater detail in the section entitled "Risk Factors" in Oncorus' Annual Report on Form 10-K for the year ended December 31, 2021, filed with the Securities and Exchange Commission ("SEC") on March 9, 2022, and Oncorus' subsequent Quarterly Reports on Form 10-Q, as well as discussions of potential risks, uncertainties, and other important factors in the other filings that Oncorus makes with the SEC from time to time. These documents are available under the "SEC filings" page of the Investors section of Oncorus' website at <http://investors.oncorus.com>. Any forward-looking statements represent Oncorus' views only as of the date of this press release and should not be relied upon as representing its views as of any subsequent date. Oncorus explicitly disclaims any obligation to update any forward-looking statements, whether as a result of new information, future events or otherwise, except as required by law. No representations or warranties (expressed or implied) are made about the accuracy of any such forward-looking statements.

Investor Contact:

Stern Investor Relations

Julie Seidel

Julie.seidel@sternir.com