



Moderna Launches Onkaido Therapeutics to Focus on the Development of mRNA Therapeutics™ in Oncology with \$20 Million Capital Commitment

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CAMBRIDGE, Mass., Jan. 14, 2014—[Moderna Therapeutics](#), the pioneer in developing messenger RNA (mRNA) Therapeutics™, a revolutionary treatment modality to enable the *in vivo* production of therapeutic proteins, announced today the creation of Onkaido Therapeutics, a new venture focused exclusively on developing mRNA-based oncology treatments. Onkaido Therapeutics will launch with \$20 million in committed capital from Moderna. The new company will focus initially on 15 pre-clinical drug candidates in the areas of apoptosis, central regulatory nodes and immunotherapy. Several of these candidates are already under evaluation in *in vivo* disease models. By establishing Onkaido as a standalone unit, Moderna intends to accelerate the development of mRNA Therapeutics™ for oncology and deliver the potential of these new cancer treatments to patients.

Stephen Hoge, M.D., senior vice president, corporate development and new drug concepts at Moderna will take on the added role of founding chief executive officer for Onkaido, and Peter F. Smith, Ph. D., former head of non-clinical discovery and development at Millennium Pharmaceuticals, will serve as founding chief scientific officer.

"The vast potential for messenger RNA Therapeutics will only be tapped by simultaneously industrializing our platform and developing our key programs in the clinic as quickly and safely as possible," said Stéphane Bancel, president and founding CEO, Moderna Therapeutics. "Moderna's novel technology holds great therapeutic promise in oncology. We will benefit by enabling Stephen, Peter and the scientific team to focus intensely on the best, most rapid path toward turning our discoveries into cancer therapies that make a difference for patients."

mRNA Therapeutics™ are designed to elude the body's innate immune response and work with its natural processes, enabling the *in vivo* production of both intracellular proteins, which remain within the cells, and secreted proteins, which are released into the bloodstream and act to restore function elsewhere in the body. As a result, the mRNA Therapeutics™ platform will enable Onkaido to reach known anti-cancer targets that are not addressable through current approaches.

"Basic research in the past decade has uncovered innumerable targets in cancer, but our ability to reach them therapeutically remains limited," said Dr. Stephen Hoge, founding CEO, Onkaido Therapeutics. "We are thrilled and humbled by the opportunity to use this new modality to do things that have never been done before in the fight against cancer."

The new oncology company will be led by proven industry leaders with combined decades of experience in biotech strategy and clinical development, as well as expertise in oncology:

Stephen Hoge, M.D. is Moderna's senior vice president, corporate development and new drug concepts, and founded Moderna's internal efforts in oncology upon joining Moderna. Prior to Moderna, Dr. Hoge was a partner at McKinsey & Company and a leader in the firm's global Healthcare and Corporate Finance practices advising senior management teams of leading biotech and pharmaceutical companies on a wide range of strategic, financial and operational issues. Before that, he was a physician in New York City.

Peter F. Smith, Ph.D. has 30 years of pharmaceutical leadership experience with previous roles held at Millennium Pharmaceuticals, Searle/Monsanto, Merck Research Laboratories and SmithKline. At Millennium, Dr. Smith served as senior vice president responsible for all non-clinical discovery and development efforts and helped lead all research and development. Over the course of his career, Dr. Smith has also driven the non-clinical development of several major, marketed drugs including Celebrex, Inspira and Velcade. Dr. Smith holds a doctorate in pharmacology and toxicology from the University of Arizona and is a sought after industry expert with more than 50 academic publications to-date.

About Onkaido Therapeutics

Onkaido Therapeutics, a venture company formed, funded and wholly-owned by Moderna, is focused exclusively on the advancement of oncology products for previously undruggable targets and as a superior alternative to existing drug modalities. Leveraging Moderna's messenger RNA Therapeutics™ platform, an entirely new *in vivo* drug modality that produces human proteins or antibodies inside patient cells, Onkaido plans to rapidly turn scientific innovation into cancer therapies that can make a real difference for patients. onkaido.com

About Moderna Therapeutics

Moderna is pioneering [messenger RNA Therapeutics™](#), an entirely new *in vivo* drug modality that produces human proteins or antibodies inside patient cells, which are in turn secreted or active intracellularly. This breakthrough platform addresses currently undruggable targets and offers a superior alternative to existing drug modalities for a wide range of disease conditions. Moderna has developed a broad intellectual property estate, including more than 250 patent applications covering novel nucleotide chemistries and drug compositions. The company plans to develop and commercialize its innovative mRNA drugs through a combination of strategic relationships as well as newly formed ventures. Founded in late 2010 by [Flagship Venture Labs](#), Cambridgebased Moderna is privately held and currently has strategic agreements with [AstraZeneca](#) and [Alexion Pharmaceuticals](#). To learn more, visit www.modernatx.com.