



August 1, 2023

NANO MRNA Co., Ltd.
Shiro Akinaga, President & CEO
(C o d e N o . 4 5 7 1)

Notice of Appointment to Chairman of US Subsidiary

We are pleased to announce that the appointment of Dr. Michael Houston as Chairman of our U.S. subsidiary. Dr. Houston will start his activities in our business on August 1.

Dr. Houston was the Chief Scientific Officer at TriLink Biotechnologies (2017-2023), one of the world's leading mRNA CDMO (Contract Development and Manufacturing Organization). During that period, he was a driving force behind the growth of TriLink focusing on the development of new processes and methods for mRNA production as well as the development of CleanCap®, which is also used for Pfizer-BioNTech's COVID-19 vaccine. CleanCap® is the most important element that led to the development of COVID-19 vaccine in the fastest time to commercialization and is used worldwide as an essential technology for current mRNA drug discovery. These contributions to mRNA therapeutics, such as CleanCap®, have connected him with mRNA-related companies around the world and brought the latest mRNA technologies under his wing.

We will strongly and rapidly expand our mRNA drug discovery IP Generator business, leveraging its significantly enhanced presence by welcoming a global key player in mRNA therapeutics.

Dr. Michael Houston Brief Biography

1987 - 1992	University of Waterloo	Ph.D., Chemistry
1993 - 1997	University of Alberta	Post-Doctoral Fellow Protein Engineering
1998.06-2004.01	Cytovax Biotechnology	Senior Scientist/Director of Chemistry
2004.02-2007.07	Nastech Pharmaceutica	Manager/Director of Chemistry
2007.07-2008.06		Senior Director, Chemistry
2008.06-2009.06	MDRNA Inc.	Vice President Chemistry and Formulations
2009.05-2009.10	Ascent Therapeutics	Vice President of Preclinical Chemistry and CMC
2009.11-2012.07	Marina Biotech, Inc.	Vice President Chemistry and Formulations
2012.08-2013.12	Solid-Phase Consulting	Principal
2014.01-2015.12	PhaseRx	Vice President, Therapeutic Development
2016.01-2017.10		Chief Scientific Officer
2017.11-2023.01	TriLink BioTechnologies	Chief Scientific Officer



TriLink Biotechnologies Inc.

TriLink BioTechnologies is part of Maravai LifeSciences (NASDAQ: MRVI), an industry leader for over 25 years since its founding in 1996 as a pioneering CDMO for nucleic acid synthesis and production. The company not only supplies nucleic acids, NTPs and capping analogues for the production of mRNA drugs, but also has scale-up expertise and unique mRNA and other manufacturing capabilities for companies looking to make breakthroughs. It has also grown dramatically with the rapid development of mRNA therapeutics through the COVID-19 vaccine, with the annual sales of around \$70M (2019) to around \$800M (2022), a tenfold increase.

<https://www.trilinkbiotech.com/>

What is CleanCap®?

A 5' end of eukaryotic mRNA is capped with a modified guanine base. This cap structure is important for translation of mRNA into protein and for preventing its degradation. mRNA needs to be capped for production by in vitro transcription reaction (IVT), but addition of a cap has problems in efficiency and reaction process. CleanCap® is a breakthrough technology that solves these capping problems in a single step with a high efficiency of over 95%, as proven by its use in commercial manufacturing programs worldwide, including the COVID-19 vaccine.