July 15, 2025

Acuitas Therapeutics Presents New Method for mRNA-LNP Production Using Preformed Vesicles at CRS 2025

Vancouver, B.C. – Acuitas Therapeutics today announced a poster presentation at the 2025 Control Release Society (CRS) Annual Meeting and Exposition, highlighting an alternative process by which to manufacture RNA lipid nanoparticles (LNP). This novel approach, detailed in the presentation titled “An alternative method to RNA lipid nanoparticle production," focuses on simplifying and accelerating the manufacturing of high-quality mRNA-LNP formulations.

The presented production method involves efficient loading of empty, preformed LNP vesicles with RNA, without requiring the use of solvents or heating to encapsulate the RNA payload, yielding RNA-LNP that are physically identical, and which mediate equivalent biological activity to those produced by conventional methods. Additional findings include:

- Unloaded LNP stored at optimized pH retained colloidal stability for at least one year at 2 to 8°C, eliminating the need for frozen storage for RNA-LNP medicines.
- Optimal particle size, PDI and RNA loading efficiencies were achieved when the buffer pH was maintained within 1 pH unit of the ionizable lipid's apparent pKa
- Mice vaccinated intramuscularly with mRNA-LNP produced with preformed vesicles demonstrated comparable *in vivo* immunogenicity to conventionally prepared RNA-LNP

CRS 2025 Poster Presentation Details

Title: An alternative method to RNA lipid nanoparticle production

- Session Date and Time: July 15th- 17th
- Location: Hall E, Poster #186
- Lead Author: Mitchell B. Beattie

More information about the conference can be found on CRS’ website.

A copy of the poster is available in the “News & Insights” section of Acuitas’s website.

About Acuitas Therapeutics

Acuitas Therapeutics is a global leader in lipid nanoparticle (LNP) technology and partners with pharmaceutical and biotechnology companies, as well as non-governmental organizations and academic institutions, to advance nucleic acid therapeutics into clinical development and

commercialization. Acuitas' clinically validated LNP technology has enabled COMIRNATY® (Pfizer-BioNTech), the first approved mRNA vaccine, which has been deployed globally, and ONPATTRO® (Alnylam), the first approved RNAi therapeutic. Acuitas has also enabled k-abe, the first LNP enabled personalized CRISPR gene editing therapy, in addition to the first in-human genome base editing trial.

Current efforts focus on enhancing LNP to advance novel gene therapies, in addition to the identification of potent new lipids to enable partners to develop vaccines for infectious diseases, multivalent vaccines, and novel therapeutic vaccines against cancer, including personalized cancer vaccines.

For more information, visit www.acuitastx.com.

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