CP-LC-0729

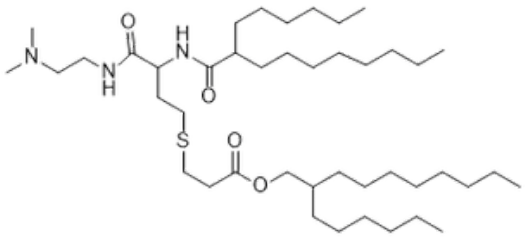
Product number 860799

CP-LC-0729 is manufactured and distributed under license from Certest Biotec S.L. CP-LC-0729 is an ionizable lipid that successfully encapsulates mRNA, saRNA, and circRNA. In vivo studies carried out in mice show that lipid nanoparticle (LNP) formulations using ionizable lipid CP-LC-0729 exhibit increased mRNA expression, similar antibody and Th1 immune responses, and favorable safety profiles compared to industry-leading formulations. Like other industry-leading formulations, LNPs formulated with CP-LC-0729 have shown a primary biodistribution in the liver.

Lyophilized LNPs formulated with CP-LC-0729 stored in refrigerated conditions (4°C) exhibited much improved stability profiles compared to industry-leading liquid formulations stored at 4°C. After twelve months of storage, when comparing antibody response of lyophilized LNPs formulated with CP-LC-0729 stored at 4°C to industry-leading liquid LNP formulations stored at -80°C, the antibody responses were similar.

Key product features include:

- Shows good encapsulation and expression of circRNA and saRNA
- Improved mRNA expression compared to industry-leading formulations
- Improved stability of lyophilized formulations compared to industry-leading formulations
- Hepatic delivery of nucleic acid payloads



Product information

Physical and chemical properties	
CAS number [1]	3040858-60-1
Molecular weight	740.23
Purity and material grade	>99%, Research-Use-Only, not intended for use in humans
Storage temperature	-20 °C
Application	Hepatic delivery of nucleic acid cargos (mRNA, circRNA, saRNA, etc.) via lipid nanopaticle formulations (LNPs)
pKa (measured by TNS fluorescence titration)	6.78

[1]CAS is a registered trademark of the American Chemical Society

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CP-LC-0729

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Figure 1

% Metabolized ionizable lipid (biodegradability)

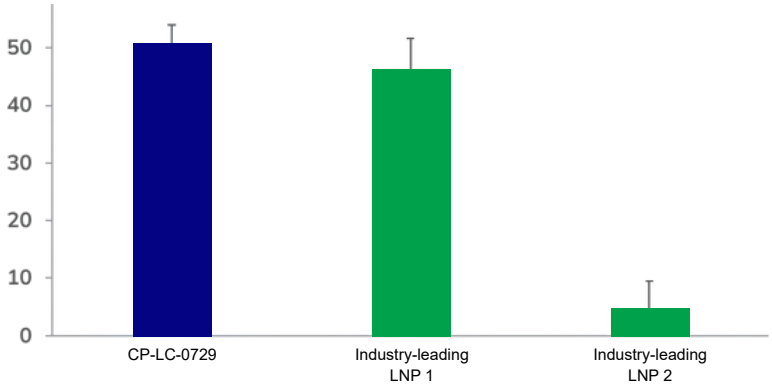

Figure 2

Relative Luc expression vs industry-leading LNP formulations

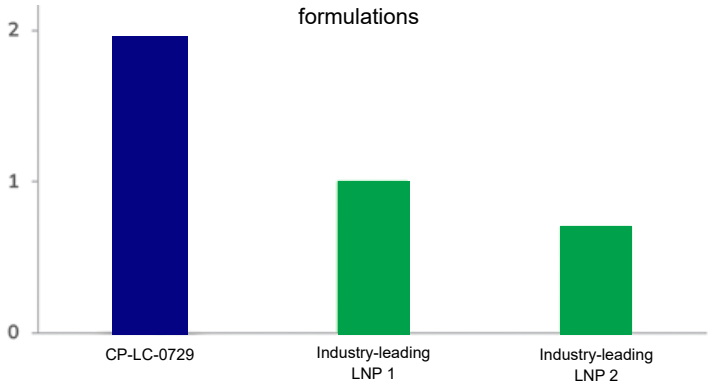

Figure 3

Expression of circ-RNA

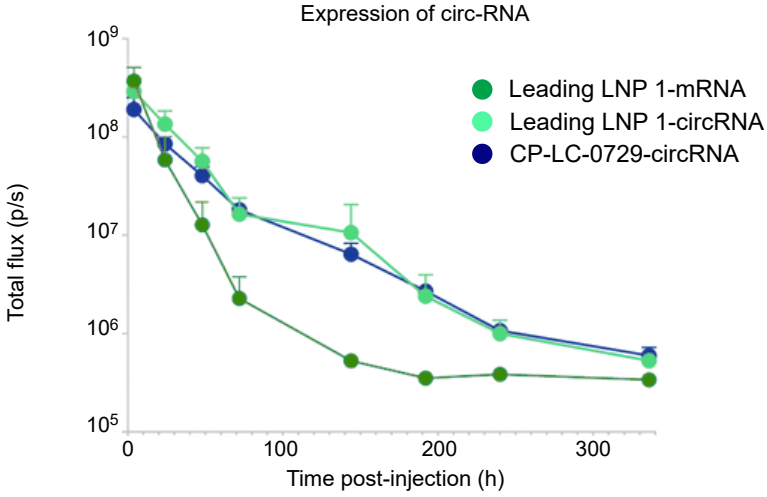

Figure 4

Expression of saRNA

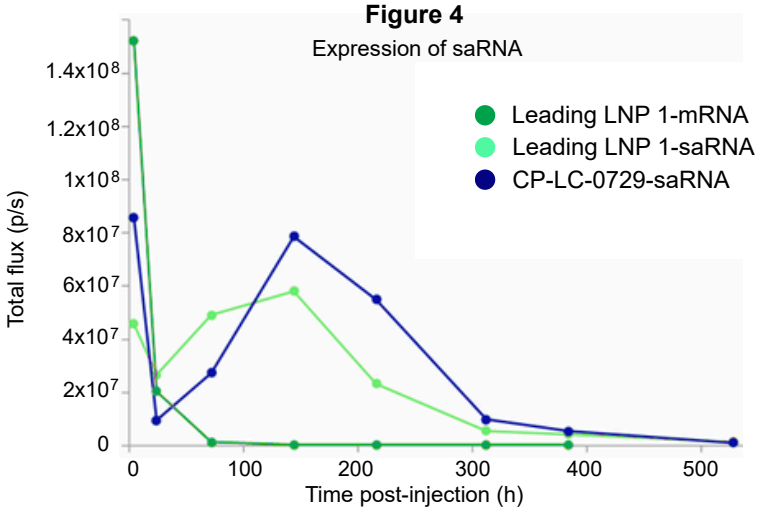

Table 1

Lipid nanoparticles formulated with 50 mol% CP-LC-0729, 10 mol% DOPE, 38.5 mol% cholesterol, and 1.5 mol% DMG-PEG2000 with an N/P 6 exhibit the following physicochymical attributes.

Physicochemical attributes	
Size	**70-110[1]nm**
Polydispersity	**< 0.2**
Zeta potential	**Near neutral**
Encapsulation efficiency	**> 85%**

1 dependent on payload size and fluid flow processing paramaters

Did you know that Avanti Research™ offers formulations services?

Not sure how to formulate with CP-LC-0729?

Want to perform feasibility studies without equipment investment?

Avanti Research formulations experts are ready to help you turn your product ideas into reality. We provide support and guidance from initial concept through to full-scale production!

CPDS051v1 EN 05/25