Avanti Research
A CRODA BRAND

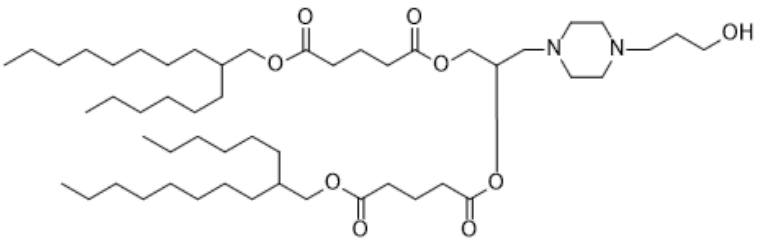
APL-143

Product number A88143

APL-143 is a next-generation ionizable lipid designed for use in LNP (lipid nanoparticle) formulations. Engineered for mRNA and saRNA therapeutics and vaccines, APL-143 delivers excellent transfection efficiency across a diverse range of cell types, including muscle cells, macrophages, and dendritic cell models. Formulations using this lipid demonstrate enhanced transfection in vaccine-relevant models compared to benchmark formulations under the same conditions. Furthermore, its performance is highly tunable through strategic helper-lipid and sterol selection, supporting its versatility as a prime candidate for RNA vaccine development. Ultimately, APL-143 provides an alternative, high-performance solution capable of driving high antigen expression for next-generation therapeutics.

Key product features include:

- Superior transfection and translation across multiple cell types
- Highly tunable immune profiles using different helper lipids or sterols
- Generates robust antigen-specific immune responses in saRNA formulations
- Alternative solution to current commercial benchmarks with higher versatility
- Compatible with standard micofluidic LNP preparation workflows



Product information

Physical and Chemical Properties	
CAS Number	3056013-61-4
Molecular Weight	895.36
Purity and Material Grade	>99%, Research-Use-Only, not intended for use in humans
Storage Temperature	-20 °C, not light sensitive, not hygroscopic
Application	RNA-LNP formulation development; mRNA/saRNA vaccine research

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

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Figure 1
Common Formulation Composition (mol %)

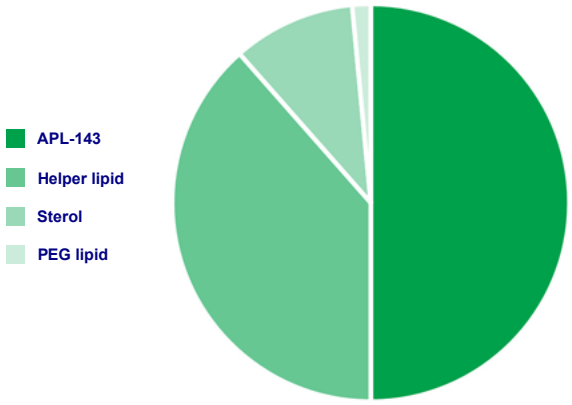

Figure 2
In Vitro Macrophage Transfection Efficiency

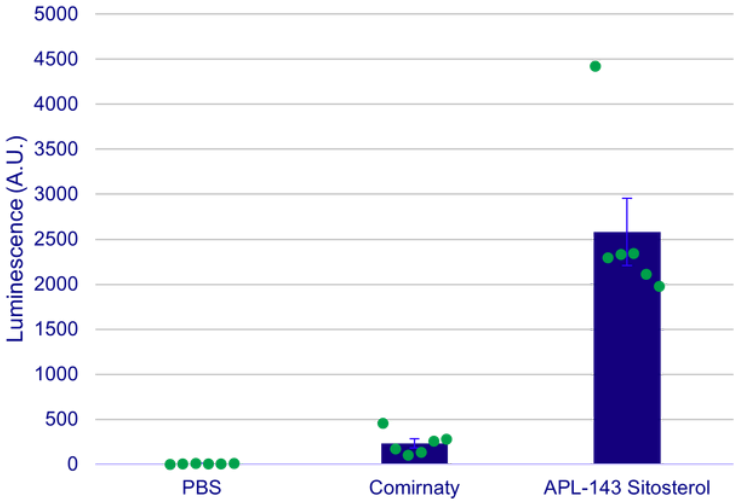

Figure 3
Avian flu saRNA-LNP study of immunogenicity
(hemagglutination inhibition geometric mean)

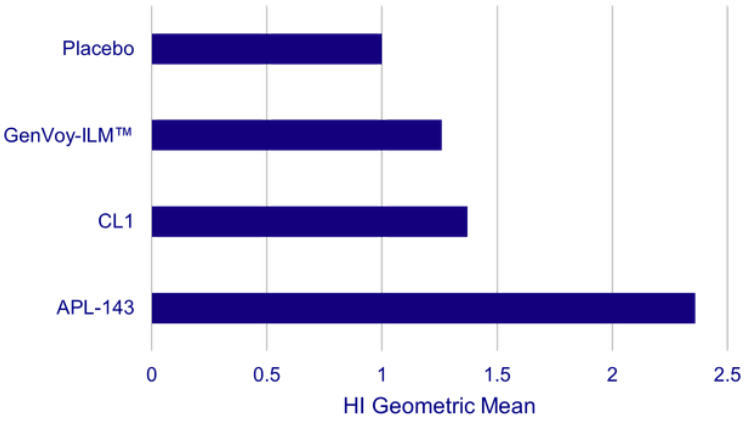

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Figure 4
Transfection Efficiency

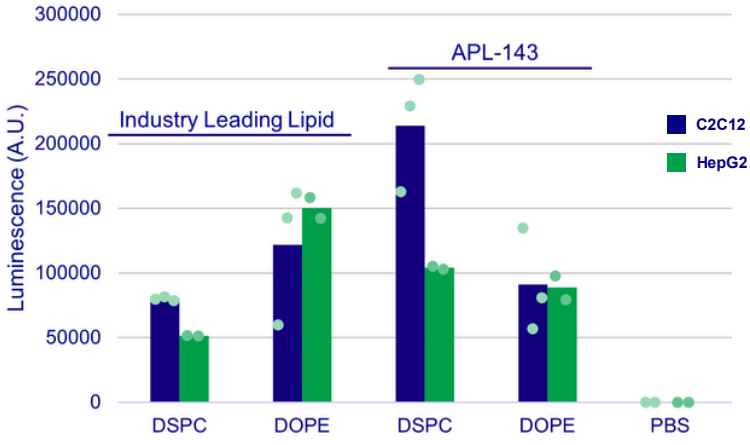

Table 1

Physicochemical Attributes	
Size	~95-100 nm
Polydispersity	< 0.15
Zeta potential	pH 7.5 = -10 pH 5.5 = 24
Encapsulation Efficiency	> 99%

*All formulations prepared with ionizable lipid, DSPC, Cholesterol and DMG-PEG (molar ratio of 50:10:38.5:1.5)

Did you know that Avanti Research also offers formulations services?

Not sure how to formulate with APL-143?

Want to perform feasibility studies without equipment investment?

Our Formulations experts are ready to help you translate your product ideas into reality. We offer support and guidance from initial concept to full-scale production!

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