

# Proprietary Ionizable Lipids

## Ideal for Prophylactic or Cancer Vaccines

### PRODUCT FEATURES

No patent restrictions

High delivery efficiency

High safety

### Ionizable Lipids 007 and 009

With independent intellectual property rights, Ionizable Lipid 007 and Ionizable Lipid 009 are ideal for use in prophylactic and cancer vaccines. These two lipids have undergone comprehensive validation processes, including:

- CMC (Chemistry, Manufacturing, and Controls) process validation
- Stability assessments
- Efficacy and safety evaluations

The results demonstrate that these ionizable lipids offer superior transfection efficiency compared to benchmark lipids across various tested applications, including gene therapy and vaccine development.

### CASE PRESENTATION

To assess the stability of ionizable lipids in LNP formulations, we evaluated the size, polydispersity index (PDI), mRNA encapsulation efficiency, and integrity of Ionizable Lipid 007 and Ionizable Lipid 009. The results indicate that both Ionizable Lipid 007 and Ionizable Lipid 009 demonstrate excellent colloidal and RNA stability profiles when stored at 2-8°C.

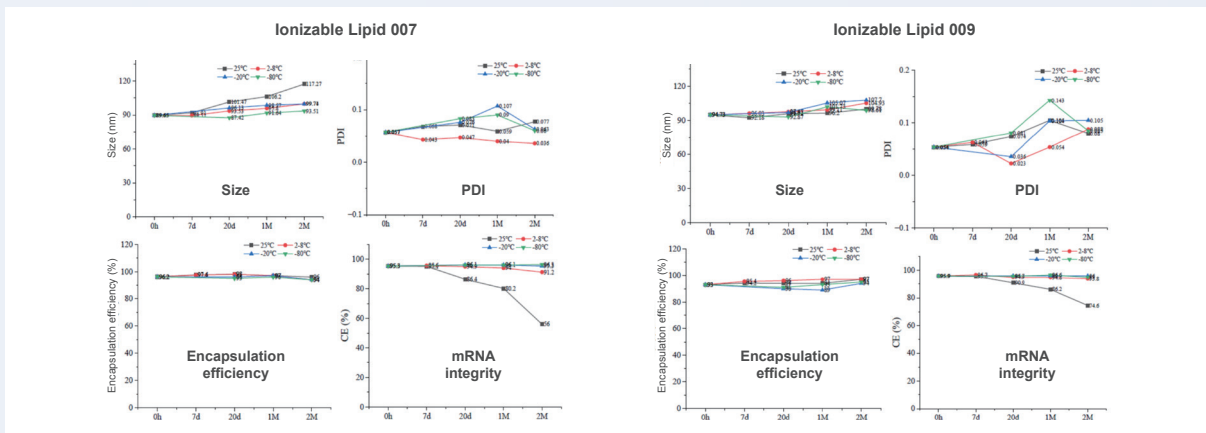


Fig 1 Stability assessment of Ionizable Lipid 007 and Ionizable Lipid 009 in LNP formulations.

To further assess the effectiveness of Ionizable Lipids in LNP formulations, we developed LNP formulations using Ionizable Lipid 007 and Ionizable Lipid 009 and evaluated their efficacy in the RSV mRNA vaccine. The results showed that Ionizable Lipid 007 in the LNP elicited a 4-fold increase in RSV neutralizing antibody potency compared to a commercially available LNP positive control. Additionally, both Ionizable Lipid 007 and Ionizable Lipid 009 demonstrated comparable levels of anti-PreF fusion protein antibodies to those of the commercially available LNP positive control.

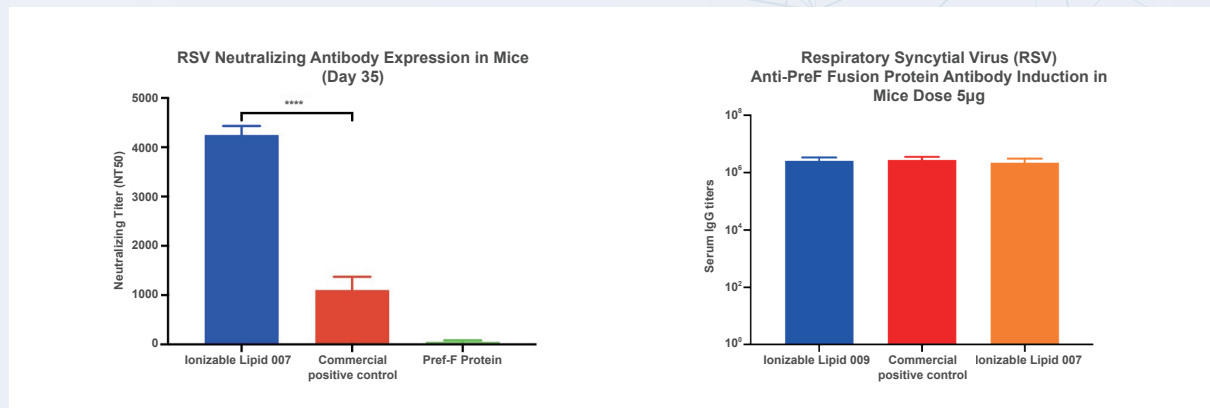


Fig 2 Ionizable Lipid 007 in LNP formulations induced higher RSV neutralizing antibody titers and comparable RSV Anti-PreF protein antibody titers compared to marketed benchmarks.

**Table 1 List of Proprietary Ionizable Lipids for Prophylactic and Cancer Vaccines**

Product Name	Cat. No.	Assay Purity	Grade	Size
ionizable Lipid 007	LNP007-0.1	>95%	Research Grade	0.1g
ionizable Lipid 007	LNP007-1			1g
ionizable Lipid 007	LNP007-5			5g
ionizable Lipid 009	LNP009-0.1	>95%	Research Grade	0.1g
ionizable Lipid 009	LNP009-1			1g
ionizable Lipid 009	LNP009-5			5g