

COVID-19 RBD mRNA-LNP

Ready-to-use lipid nanoparticles

Order Information

Catalog#	Size	GenPept No.
PM-LNP-0014	200uL	

Description

The spike protein of COVID-19 is a glycoprotein that helps the virus attach to various surfaces in the built environment, increasing the potential for virus transmission. The best-known vaccines we use are the spike protein vaccines delivered via mRNA. While the role of vaccination in controlling outbreaks is undeniable, the recurring emergence of new variants of Covid-19, such as the Delta and Omicron variants, poses new challenges, particularly their rapid global spread. Within the spike protein, there is a receptor-binding domain (RBD), considered a key viral element that allows the coronavirus to dock with target cells. Mutations in the RBD appear in new variants, such as the Delta variant with 2 mutations and the Omicron variant with 15 mutations, posing challenges for pandemic vaccination. This

Composition

mRNA-LNPs suspended in PBS (-Ca, -Mg) (pH: 7.0-7.4).

Translated Protein sequence

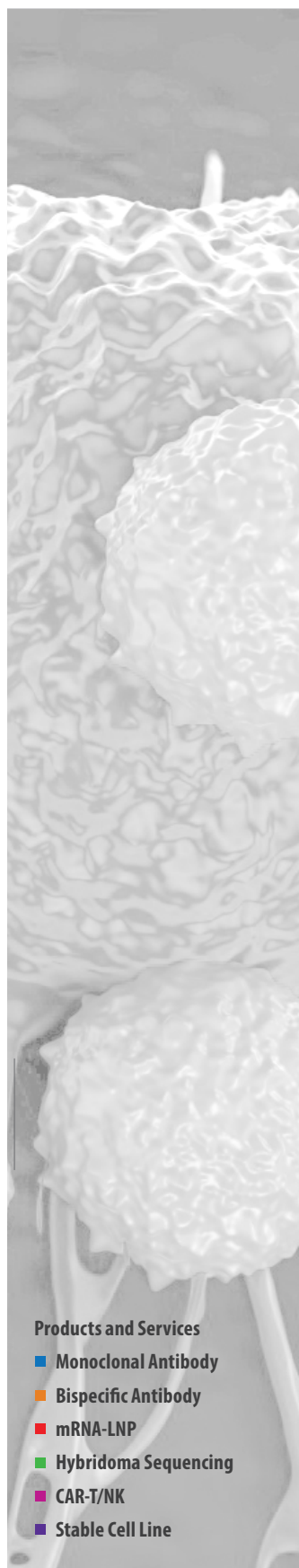
Available up request

Products and Services

- Monoclonal Antibody
- Bispecific Antibody
- mRNA-LNP
- Hybridoma Sequencing
- CAR-T/NK
- Stable Cell Line

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Storage

Product is delivered on blue ice. Store at 4°C for up to 3 months.

Application & Handling

Upon receiving product, briefly pulse spin before opening to ensure product is at bottom of container. It is important not to spin for too long as this may rupture mRNA-LNPs. Do not vortex. Work with mRNA-LNPs on ice and minimize the time that the product spends at room temperature. After handling the product during experiments, return immediately to ice. mRNA-LNP products should only be handled with certified RNase-free reagents and consumables. Use of filtered pipette tips is highly recommended.

Safety & Research Disclosure

All ProMab mRNA lipid nanoparticle products are for in vitro research use only. Products are not FDA approved for human use.

General Protocol

1. Prior to transfection: Plate 1ml of cells at a density of [1.0E6 cells/ml] in a single well of a 12-well culture plate. Ensure the cells you are using are viable and healthy. Try not to let your cells sit for longer than 5 minutes prior to transfection. Cell clumping at the time of transfection may reduce transfection efficiency. *Note: If cell clumping occurs, gently pipette your culture up & down to ensure you have a single cell suspension before transfecting.
2. Briefly pipette mRNA-LNP mix up & down to resuspend. Add 20-40ul of the mRNA-LNP product dropwise directly to your 1ml culture. Gently tilt plate back and forth to mix (not necessary if you are using cells which will be immediately placed back into a shaker). Place your transfected cells back into their original culture conditions.
3. Check cell expression by FACS or by using other detection methods at 24hr intervals after transfection. *Note: This is a generalized protocol for transfection using mammalian suspension culture cells. Transfection volume may be scaled up or down proportionately using the volumes given. HEK-293s cells were grown and transfected in FreeStyle™ F17 Expression Medium (Gibco, Cat#: A1383501), supplemented with GlutaMAX™ (Gibco, Cat#: 35050061), and Poloxamer 188 Non-ionic Surfactant (Gibco, Cat#: 24040032). T-cells were grown and transfected in a culture medium supplemented with 10% FBS (Omega Scientific, Cat#: FB-02). When transfecting cells using mRNA-LNPs, it is typically necessary for the cell culture medium to be supplemented with 10% FBS at the time of transfection. Without this supplement, transfection efficiency will drop significantly. For mRNA-LNP transfection of cells which cannot use FBS in the culture medium, please contact us at (510) 860-4615. Alternative transfection methods are available.

COVID-19 RBD Protein Expression in HEK293s Cells Transfected with PM-LNP-0014

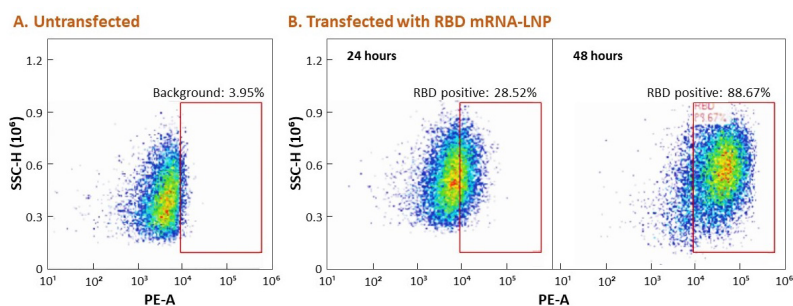


Figure 1. Flow Cytometry. PM-LNP-0014 nanoparticle-treated HEK293S cells express the COVID-19 receptor binding domain, detected with a labeled anti-RBD antibody (R&D Systems).

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