NanOZ-LNP Immunization
(mRNA encoding Ovalbumin protein formulated in Lipid Nanoparticle)

Description

Ready-to-use stabilized **NanOZ-LNP/mRNA(OVA).**
Concentration: 0.1 mg/mL RNA in LNPs
Buffer: PBS, 10 % sucrose
mRNA Cat. number 5 moU OVA mRNA

Lipid Nanoparticles (LNPs) represent the most effective and safe delivery systems for the translational success of nucleic acid drugs. **NanOZ-LNP/RNA** is designed to not only protect RNA from degradation but also facilitate intracellular uptake and thus potentiate its efficacy. LNPs are lipidic spherical vesicles formed by a combination of four main compounds: ionizable cationic lipid, helper phospholipid, cholesterol & pegylated lipid, each having distinct functions (**Fig.1**). **LNP/RNA** systems self-assemble *via* electrostatic interactions between negatively charged RNA and ionizable cationic lipids. Our delivery systems are produced through microfluidic technology resulting in monodisperse **NanOZ-LNP/RNA** with narrow size distribution and high encapsulation efficiency (>80%). OZB developed optimized **NanOZ-LNPs/RNA(OVA)** to improve stability and performance. Currently, LNPs hold great potential in diverse pharmaceutical applications including oncology, immunotherapy, regenerative medicine or chronic diseases treatment.

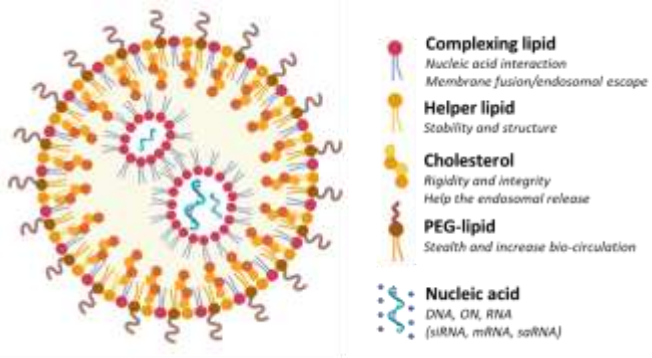


Fig.1. Schematic representation of LNPs-mRNA

Applications

OVA mRNAs resemble fully matured mRNAs with 5'cap1 structure and 3' polyA tail, therefore ready to be translated by the ribosome. mRNA transfection provides several advantages over plasmid DNA (pDNA) delivery. It does not require nuclear uptake for being expressed since translation of mRNA occurs directly into cytoplasm. Indeed, nuclear delivery (transport through nuclear membrane) is one the principal barriers for transfecting slow or non-dividing cells and consequently, mRNA transfection is particularly attractive for such purposes. This approach presents also the advantage of being non-integrative which is particularly appealing for stem cells, regenerative medicine or vaccine fields.

Contrary to pDNA, mRNA cannot lead to genetic insertion causing mutations. Moreover, the protein expression from the mRNA is promoter-independent and faster than with DNA. For transfection we recommend our **NanOZ-LNP/mRNA(OVA).**

NanOZ-LNP/mRNA(OVA): LNP-mRNAs (OVA) have been designed to produce high expression level of Ovalbumin protein which is commonly used antigen for immunization and biochemical studies and an established model allergen for airway hyper-responsiveness. LNPs are suitable delivery systems for the parenteral administration routes.

Quality Controls

Items	Specification	Standard QC	Superior Grade QC*
Identity	Size	✓	✓
	Charge	✓	✓
Content	Encapsulation efficiency	✓	✓
	RNA concentration	✓	✓
Safety	Sterility	✓	✓
	Endotoxin		✓
	Mycoplasma detection		✓
Characterization	Lipid content		✓

* Contact us to get a quote.

Certificate of analysis on demand.

Use, handling and storage

For Research Use Only. Not for use in humans. Not for use in diagnostic or therapeutic purposes.

Long term storage (6 months): -80°C.
Short term storage (2 months): +4°
We recommend minimizing freeze-thaw cycles to preserve LNPs integrity.

Kit contents

LNP10500mRNA41: 0.5 mL (2*250 µL) of **LNP/mRNA**, (100 µg/mL of 5 moU OVA mRNA)
LNP11000mRNA41: 1 mL (4*250 µL) of **LNP/mRNA**, (100 µg/mL of 5 moU OVA mRNA)
LNP15000mRNA41: 5 mL (20*250 µL) of **LNP/mRNA**, (100 µg/mL of 5 moU OVA mRNA).

LNPs have a composition as described in table below:

Lipid mix components	Molecular weight	Molar ratio
FP105	731.2	50.0
DSPC	790.2	10.0
Cholesterol	386.7	38.5
DMG-PEG 2000	2509.2	1.5
Total		100.0

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OZ Biosciences SAS | Ph: +33 (0) 486 948 516 | contact@ozbiosciences.com | **www.ozbiosciences.com**
OZ Biosciences USA Inc. | Ph: + 1-858-246-7840 | contactUSA@ozbiosciences.com

Related Products

Ref	Description
#**LNP10500**	Empty LNP
#**LNP10500mRNA11**	NanOZ-LNP/mRNA (GFP)
#**LNP10500mRNA12**	NanOZ-LNP/mRNA (Luc)

Custom LNPs & mRNAs are also available now!

Purchaser Notification | Conditions of Sale

This product is sold in accordance with our general conditions of sale that you can find on our website: https://ozbiosciences.com/content/3-terms-and-conditions.