NanOZ-LNP Liver/mRNA(Luc)
(mRNA encoding Firefly Luciferase formulated in Lipid Nanoparticles designed for Liver delivery)

Description

Ready-to-use stabilized **NanOZ-LNP Liver/mRNA(Luc).**
Concentration: 0.1 mg/mL mRNA in LNPs
Buffer: PBS, 10 % sucrose
mRNA Cat. number 5 moU Luc 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-LNP Liver/mRNA(Luc)** to improve stability and performance, specifically for nucleic acid delivery in the liver through intravenous injection. Currently, LNPs hold great potential in diverse pharmaceutical applications including oncology, immunotherapy, regenerative medicine or chronic diseases treatment.

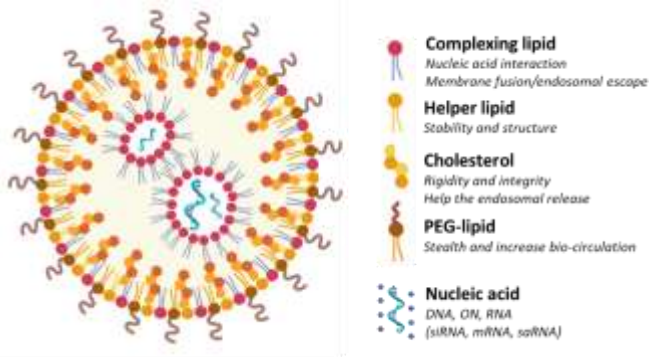

Fig.1. Schematic representation of LNPs-mRNA

Applications

Luc mRNAs: Luc mRNAs have been designed to drive high expression level of Firefly Luciferase protein. Luc mRNAs can be used as control of transfection efficiency. Luc mRNAs resemble fully matured mRNAs with 5' Cap1 structure and 3' polyA tail, therefore ready to be translated by the ribosome. 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 mRNA is promoter-independent and faster than with DNA.

NanOZ-LNP Liver/mRNA(Luc): Biodistribution of **LNP/mRNA** and Luc mRNAs expression kinetics can easily be assessed by measurement of the bioluminescent signal. LNPs are suitable delivery systems for the intravenous administration route. Additional information and results can be found in our LNP White Paper on our website: https://ozbiosciences.com/blog/white-paper-lnp-formulations-for-mrna-delivery-n124

Luciferase detection

The detection of Firefly Luciferase can be performed using D-Luciferin Na+ and K+ salts (#LN10000 and #LK10000).

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°C
We recommend minimizing freeze-thaw cycles to preserve LNPs integrity.

Kit contents

LNPL0500: 0.5 mL (2*250 µL) of **LNP/mRNA**, (100 µg/mL of 5 moU Luc mRNA)
LNPL1000: 1 mL (4*250 µL) of **LNP/mRNA**, (100 µg/mL of 5 moU Luc mRNA)
LNPL5000: 5 mL (20*250 µL) of **LNP/mRNA**, (100 µg/mL of 5 moU Luc mRNA)

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Related Products

Ref	Description
#**LNPS**	NanOZ-LNP Spleen/mRNA (Luc)
#**LNPM**	NanOZ-LNP Multi-Organ/mRNA (Luc)
#**LNP10500mRNA41**	NanOZ-LNP Immunisation/mRNA (OVA)

Custom LNPs & mRNAs are also available!

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.