

NanOZ-LNP/mRNA(Luc)

(mRNA encoding Firefly Luciferase protein formulated in Lipid Nanoparticle)

Description

Ready-to-use stabilized **NanOZ-LNP/mRNA(Luc)**
Concentration: 0.1 mg/mL RNA in LNPs in PBS with 10 % sucrose

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 (>85%). OZB developed optimized **LNP/mRNA(Luc)** to improved stability and performance. Currently, LNPs hold great potential in diverse pharmaceutical applications including oncology, immunotherapy, regenerative medicine or chronic diseases treatment.

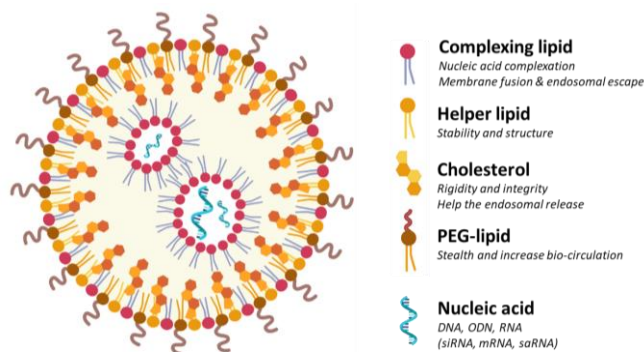


Fig.1. Schematic representation of LNPs/mRNA

Kit contents

LNP11000mRNA12: 1mL (4*250µL) of **LNP/mRNA**, (100µg/mL of 5moU Luc mRNA).

LNP15000mRNA12: 5mL (20*250µL) of **LNP/mRNA**, (100µg/mL of 5moU Luc mRNA).

Storage

NanOZ-LNP/RNA must be stored at -80°C. We recommend to minimize freeze-thaw cycles to preserve LNP integrity.

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/mRNA(Luc): Biodistribution of **LNP/mRNA** and Luc mRNAs expression kinetics in various organs can easily be assessed by measurement of bioluminescent signal. LNPs are suitable delivery systems for the parenteral administration routes.

Luciferase detection

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

NOTE: Refer to D-Luciferin or Luciferase assay kit protocols for more details.

Administration

Recommended volume of injection according to routes of administration. (IM) intramuscular, (SC) subcutaneous, (IV) intravenous or (IP) intraperitoneal (**Table 1**).

Species	IV (ml/kg)	IP (ml/kg)	SC (ml/kg)	IM total vol (ml)
Mice, rats	5-20	5-20	5-20 (2-3 sites)	0.05-0.1 2 sites/day
Guinea pigs hamster	1-5	10-20	5-10 (2-3 sites)	0.1-0.2 2 sites/day
Rabbits	1-10	3-10	2.5-10 (2-3 sites)	0.25-0.5 2 sites/day
Pigs	1-10	1-20	1-3 (2-3 sites)	0.25-0.5 (max 5ml)

Table 1: Recommended dose volumes for common laboratory animals (Adapted from IQ CONSORTIUM, IQ3Rs, 2018, 1, 1-4.).

Note: For IV injection, contact us for an optimized formulation.

Contact Us

Our company has developed a custom service platform for the LNPs (or polymeric nanoparticles (PNPs)) development using a highly performant microfluidic technology to potentiate nucleic acids/APIs activity. Feel free to contact us for all complementary information and remember to visit our website to stay informed on the latest breakthrough technologies and updated on our complete product list. (www.ozbiosciences.com)

Technical questions: tech@ozbiosciences.com

For bulk inquiries: order@ozbiosciences.com

General information: contact@ozbiosciences.com

Purchaser Notification

Limited License

The purchase of the LNP/mRNA grants the purchaser a non-transferable, non-exclusive license to use the included components. This reagent is intended for in-house research only by the buyer. Such use is limited to the transfection of nucleic acids as described in the product manual. In addition, research only use means that this formulation is excluded, without limitation, from resale, repackaging, or use for the making or selling of any commercial product or service without the written approval of OZ Biosciences.

Separate licenses are available from OZ Biosciences for the express purpose of non-research use or applications of the LNP/mRNA. To inquire about such licenses, or to obtain authorization to transfer or use the enclosed material, contact the Director of Business Development at OZ Biosciences.

Buyers may end this License at any time by returning all LNP/mRNA material and documentation to OZ Biosciences, or by destroying LNP/mRNA components. Purchasers are advised to contact OZ Biosciences with the notification that a LNP/mRNA is being returned in order to be reimbursed and/or to definitely terminate a license for internal research use only granted through the purchase of the kit(s).

This document covers entirely the terms of the LNP/mRNA research only license, and does not grant any other express or implied license. The laws of the French Government shall govern the interpretation and enforcement of the terms of this License.

Product Use Limitations

The LNP/mRNA is developed, designed, intended, and sold for research use only. It is not to be used for human diagnostic or included/used in any drug intended for human use. All care and attention should be exercised in the use of the component by following proper research laboratory practices.

OZ Biosciences SAS

163 avenue de Luminy
Case 922, zone entreprise
13288 Marseille cedex 09
FRANCE
Ph: +33 (0) 486 948 516
Fax: +33 (0) 463 74 00 15
contact@ozbiosciences.com
order@ozbiosciences.com

OZ Biosciences INC

7975 Dunbrook Road,
Suite B
San Diego CA 92126
USA
Ph: + 1-858-246-7840
Fax: + 1-855-631-0626
contactUSA@ozbiosciences.com
orderUSA@ozbiosciences.com