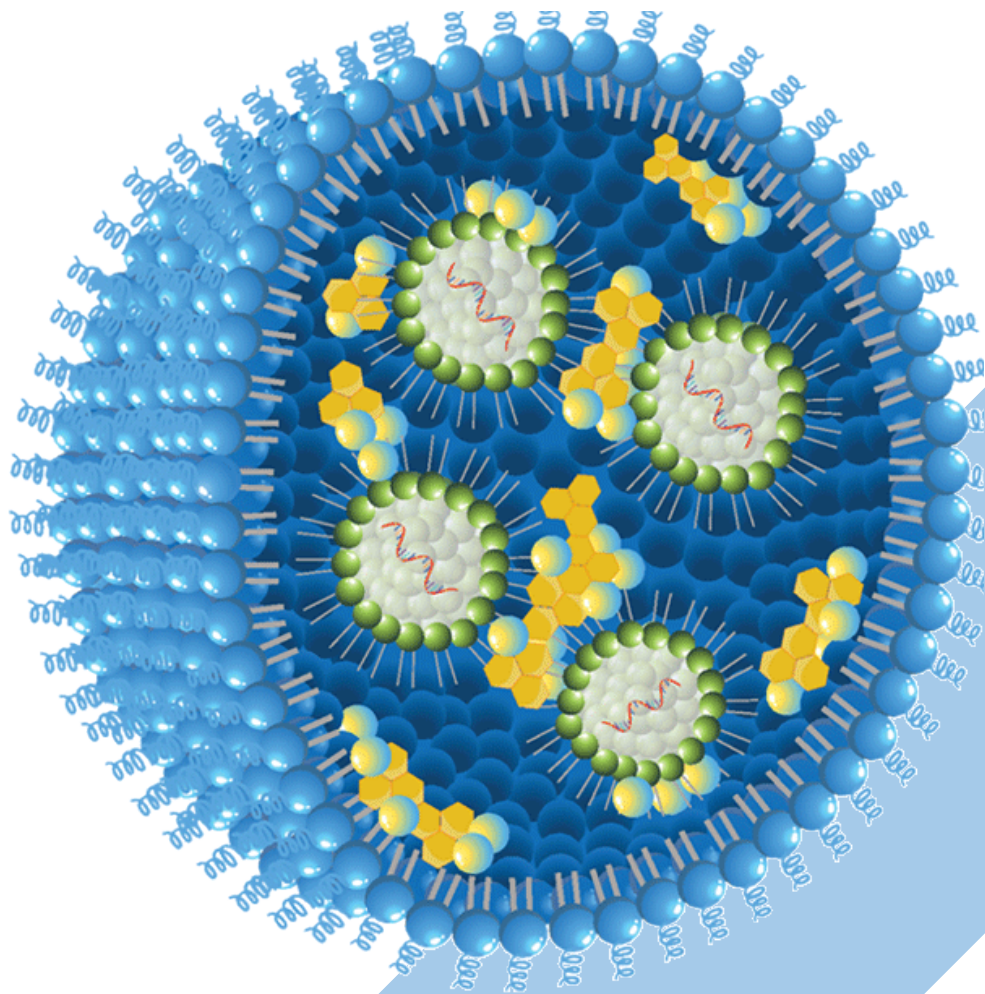


NanOZ-LNP™

Lipid NanoParticles

THE MOST PROMISING NON-VIRAL
DRUG DELIVERY NANOSYSTEMS



NanOZ-LNP™, Lipid NanoParticles

THE MOST PROMISING NON-VIRAL DRUG DELIVERY NANOSYSTEMS



THE NEED OF ADVANCED DELIVERY SYSTEMS

The RNA therapeutics have the potential to revolutionize medicinal fields as they are **safe, easy to reproduce** (e.g. IVT) and offer a great deal of **versatility**.

Naked mRNA therapeutics are generally unstable. They require high doses and show low permeability to cell membranes. **Drug delivery systems** are necessary to deliver mRNA for *in vitro*, pre-clinical and clinical applications. For this purpose, **OZ Biosciences** provides **portfolio & custom lipid nanoparticles (LNP) delivery systems**.

To date, formulation in LNP represents the most advanced non-viral delivery platform for nucleic acid therapy and promising candidates to treat manifold diseases.

LNPs represent an efficient approach to deliver:



-  **Nucleic Acid Payloads (DNA & RNA)**
-  **Active Pharmaceutical Ingredients (APIs)**

LNPs are FDA approved for the treatment of amyloidosis disease by delivery of **siRNA** (e.g. Patisiran), and more recently for the widely distributed SARS-CoV-2 vaccines (e.g. BNT162b2 & mRNA-1273), based on **mRNA-LNPs**.

NanOZ-LNP™ OFFER A POTENT CANDIDATE FOR NUCLEIC ACIDS/APIs MEDICINES

About NanOZ-LNP™

LNPs are liposome-like structures, engineered for encapsulating a broad variety of nucleic acids (RNA, mRNA, siRNA, gRNA, cRNA and DNA) and APIs; LNP consists in inner **core surrounded by a lipidic shell** based on a combination of four families of chemicals, each having distinct functions (Fig.1).

-  **Complexing Lipid**
Nucleic acid complexation
Membrane fusion & endosomal escape
-  **Cholesterol**
Rigidity and integrity
Help the endosomal release
-  **PEG-lipid**
Stealth & increase bio-circulation
-  **Nucleic acid**
DNA, RNA (siRNA, mRNA, saRNA)
Small molecules
-  **Helper Lipid**
Stability & structure

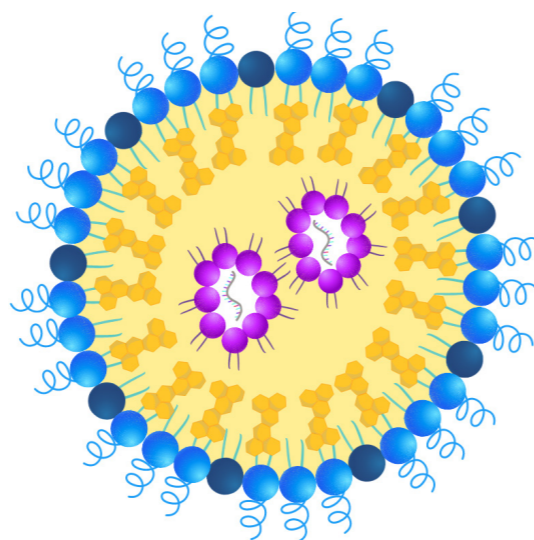









Figure 1. Schematic representation of lipid nanoparticles (LNPs) composed by a mixture of four lipidic family, usually: complexing lipid, helper phospholipid, cholesterol and stealth-lipid at defined ratio to potentiate nucleic acid activity.

In the last 20 years, **OZ Biosciences** has developed **strong expertise in aminated lipids**, which allowed the screening of several tens formulations in order to develop optimized OZ Biosciences LNPs referred as **NanOZ-LNP™**.

NanOZ-LNP™ have been designed as safe and advanced nanomaterials to potentiate nucleic acids/APIs activity through their effective encapsulation and delivery of payload to specific cell types and tissues.

OZ BIOSCIENCES LNPs CUSTOM SERVICE

Advantage of Using LNPs

-  High nucleic acids encapsulation efficiency (typically $\geq 90\%$) and potent transfection.
-  Suitable for both hydrophilic and hydrophobic drugs encapsulation.
-  Concentration & protection of the payload.
-  Ease to functionalize onto the surface (e.g. fluorophore, stealth compound, targeting agent...).
-  Improved penetration into tissues to deliver therapeutics.
-  Low cytotoxicity & immunogenicity.
-  Scalable & reproducible processes for manufacturing.

What is included?

OZ Biosciences has developed a **Microfluidics Platform** for the reproducible development of **safe & potent** drug delivery vehicles for pharmaceutical applications.

OZ Biosciences can support every stage of your mRNA-LNP production, from mRNA synthesis to LNP formulation development, manufacturing and fill & finish.

For any of RNA, DNA or APIs encapsulation, you can provide us with your molecule of interest and we will formulate it into LNPs.

- LIPID NANOPARTICLES PLATFORM -

-  Design & formulation of LNPs using microfluidics technology for highly monodisperse nanoparticles & reproducible method.
-  Downstream processing & quality control; all our LNPs are checked for their quality.
-  Complete physico-chemical characterizations : size distribution, polydispersity index, zeta potential, nucleic acid encapsulation efficiency (RNA kit assay), concentration & sterility. Other specifications can be provided upon request (e.g. CryoTEM, negative stain EM, HPLC, LC-MS).
-  Competitive & affordable prices.

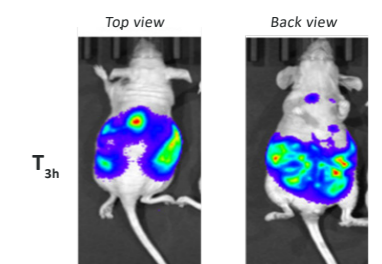
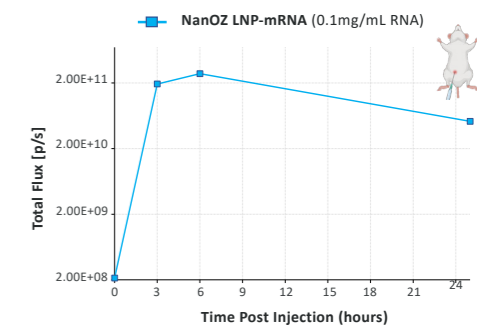


Figure 2. Kinetics of bioluminescence signal over 48h after i.p. administration of NanOZ-LNP/mRNA(Luc) (dose equivalent to 10µg RNA) in nude mice.

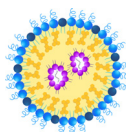
OUR CUSTOM SERVICES

● mRNA Synthesis



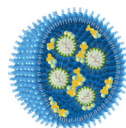
- Gene synthesis, Cloning & DNA template production.
- *In vitro* Transcription.
- Purification & Quality control.

● NanOZ-LNP™ Design Platform



- Lipid Chemistry & Functionalization.
- Formulation Design & Manufacturing.
- NanOZ-LNPs™ Custom.

● Customer DNA, RNA, API



- Provide us with your molecule of interest and we will formulate it into LNPs

BIOMEDICAL APPLICATIONS

Cancer Immunotherapy



Cell Programming



Vaccine



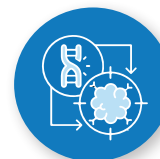
Gene Editing



Gene Therapy



Gene Silencing



READY-TO-USE PRODUCTS

Product Name	Size	Catalog #
NanOZ empty-LNP	0,5mL (2*250µL) of empty LNP	LNP10500
	1mL (4*250µL) of empty LNP	LNP11000
	5mL (10*500µL) of empty LNP	LNP15000
NanOZ LNP-mRNA(GFP)	0,5mL (2*250µL) of LNP-mRNA, (100µg/mL of 5moU GFP mRNA)	LNP10500MRNA11
	1mL (4*250µL) of LNP-mRNA, (100µg/mL of 5moU GFP mRNA)	LNP11000MRNA11
	5mL (10*500µL) of LNP-mRNA, (100µg/mL of 5moU GFP mRNA)	LNP15000MRNA11
NanOZ LNP-mRNA(LUC)	0,5mL (2*250µL) of LNP-mRNA, (100µg/mL of 5moU LUC mRNA)	LNP10500MRNA12
	1mL (4*250µL) of LNP-mRNA, (100µg/mL of 5moU LUC mRNA)	LNP11000MRNA12
	5mL (10*500µL) of LNP-mRNA, (100µg/mL of 5moU LUC mRNA)	LNP15000MRNA12

USA & CANADA

OZ Biosciences USA Inc.
4901 Morena Boulevard
Suite 901
San Diego, CA 92117
USA

Ph: +1 858 246 7840

Fax: +1 855 631 0626

orderusa@ozbiosciences.com



OZ BIOSCIENCES
The art of delivery systems

FRANCE & EUROPE

OZ Biosciences SAS
Parc Scientifique de Luminy
zone entreprise, case 922
13288 Marseille Cedex 09
FRANCE

Ph: +33 486 94 85 16

Fax: +33 486 94 85 15

order@ozbiosciences.com