LNP D-Lin-MC3-DMA
(Lipid Nanoparticles with D-Lin-MC3-DMA ionizable lipid available with siRNA targeting GFP, GAPDH or NT-Cy5)

Description

Ready-to-use stabilized **LNP D-Lin-MC3-DMA**
Concentration: 400 nM siRNA in LNPs
Buffer: PBS, 10 % sucrose
siRNA: GFP (#siRNA1); GAPDH (#siRNA2); NT-Cy5 (#siRNA3).

Lipid Nanoparticles (LNPs) represent the most effective and safe delivery systems for the translational success of nucleic acid drugs. **LNP/siRNA** are 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/siRNA** 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 **LNP/siRNA** with narrow size distribution and high encapsulation efficiency (>80%). **LNP MC3** are produced with the same ionizable lipid as the Onpattro (Patisiran) siRNA treatment against hereditary transthyretin amyloidosis. Currently, LNPs hold great potential in diverse pharmaceutical applications including oncology, immunotherapy, regenerative medicine or chronic diseases treatment.

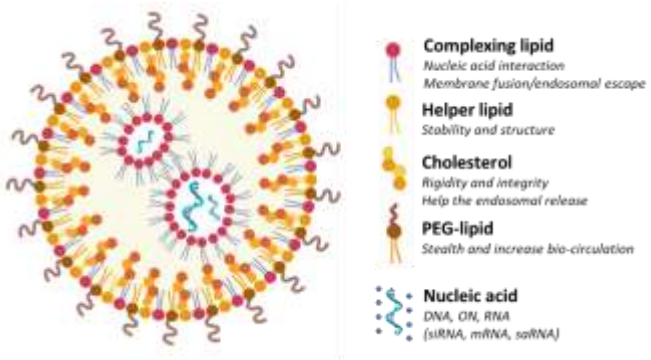

Fig.1. Schematic representation of LNP-siRNA

Applications

siRNAs: siRNA targeting GFP and GAPDH have been designed to specifically knock down the expression of green fluorescent protein. These siRNAs induce RNA interference (RNAi), leading to the sequence-specific degradation of GFP or GAPDH mRNA, making them powerful tools to assess gene silencing efficiency and optimize delivery systems. siRNA-mediated knockdown is transient, non-integrative, and acts post-transcriptionally, minimizing the risk of genomic alterations—advantageous for applications in stem cell research, functional genomics, and therapeutic development. Non-Targeting Cy5 (NT-Cy5) siRNA can be used as a control to assess siRNA delivery and/or biodistribution thanks to its fluorescent reporter (647 nm).

LNP MC3: *in vivo* and *in vitro* delivery of **LNP/siRNA** and mRNA expression kinetics can easily be assessed by measurement of the bioluminescent or fluorescent signal. Additional information and results can be found in our LNP White Paper on our website as well as comparison with our proprietary LNP formulations: https://ozbiosciences.com/blog/white-paper-lnp-formulations-for-mrna-delivery-n124

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

LNP30500siRNA1: 0.25 mL (250 µL) of **LNP/siRNA GFP**, (400 nM of GFP siRNA)
LNP31000siRNA1: 0.5 mL (2*250 µL) of **LNP/siRNA GFP**, (400 nM of GFP siRNA)
LNP35000siRNA1: 1 mL (4*250 µL) of **LNP/siRNA GFP**, (400 nM of GFP siRNA)
LNP30500siRNA2: 0.25 mL (250 µL) of **LNP/siRNA GAPDH**, (400 nM of GAPDH siRNA)
LNP31000siRNA2: 0.5 mL (2*250 µL) of **LNP/siRNA GAPDH**, (400 nM of GAPDH siRNA)
LNP35000siRNA2: 1 mL (4*250 µL) of **LNP/siRNA GAPDH**, (400 nM of GAPDH siRNA)
LNP30500siRNA3: 0.25 mL (250 µL) of **LNP/siRNA NT-Cy5**, (400 nM of NT-Cy5 siRNA)
LNP31000siRNA3: 0.5 mL (2*250 µL) of **LNP/siRNA NT-Cy5**, (400nM of NT-Cy5 siRNA)
LNP35000siRNA3: 1 mL (4*250 µL) of **LNP/siRNA NT-Cy5**, (400 nM of NT-Cy5 siRNA)

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LNPs have a composition as described in table below:

Lipid mix components	Molecular weight	Molar ratio
D-Lin-MC3-DMA	642.1	50.0
DSPC	790.2	10.0
Cholesterol	386.7	38.5
DMG-PEG 2000	2509.2	1.5

Related Products

Ref	Description
#**LNP10500SIRNA1**	LNP-siRNA GFP
# **LNP10250SIRNA2**	LNP-siRNA GAPDH
#**LNP10500SIRNA3**	LNP-siRNA scrambled Cy5 labelled.

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.