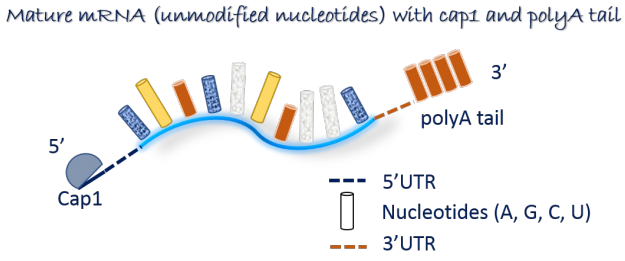
F-Luc mRNA
(mRNA encoding Firefly Luciferase protein)

Description

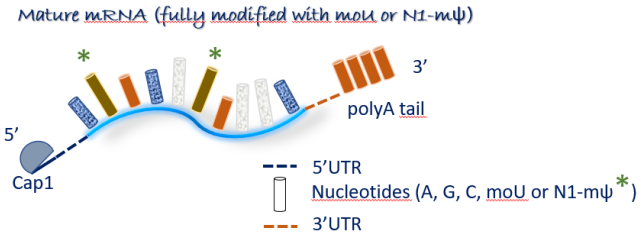
Ready-to-use stabilized F-Luc mRNA
Concentration: 1.0 mg/mL in 1 mM Sodium Citrate, pH 6.4.
mRNA length: 1872 nt.
Molecular weights:
MRNA16 : 603550 g/mol; **MRNA16C:** 630616 g/mol; **MRNA16B:** 660802 g/mol; **MRNA16A:** 694200 g/mol.
MRNA12 :611290 g/mol; **MRNA12c**: 636796 g/mol; **MRNA12B**: 644151 g/mol; **MRNA12A**: 669033 g/mol.
MRNA24: 607420 g/mol; **MRNA24C**: 637413 g/mol; **MRNA24B**: 640741 g/mol; **MRNA24A**: 643953 g/mol.

F-Luc mRNAs have been designed to produce high expression level of Firefly Luciferase protein. OZB mRNAs are produced by *in vitro* transcription. mRNAs are stabilized at the 5' end by modified nucleotides capping (Cap1) and contain a poly(A) tail at the 3' end. Sequences have been optimized to yield improved stability and performance. F-Luc mRNA #**MRNA16** does not bear any additional nucleotide modifications while #**MRNA12** is modified with 5-methoxyuridine (5moU), #**MRNA24** is modified with N1-methyl-pseudouridine (N1-mψ) to reduce innate immune response. #**MRNA16C or 12C or 24C** are labelled with Cy5 by replacing 15 % of UTP by UTP-Cy5. #**MRNA16B or12B or 24B** are labelled with Cy3 by replacing 15 % of UTP by UTP-Cy3 and #**MRNA16A or12A or 24A** are labelled with AlexaFluor488 by replacing 15 % of UTP by UTP-AF488.

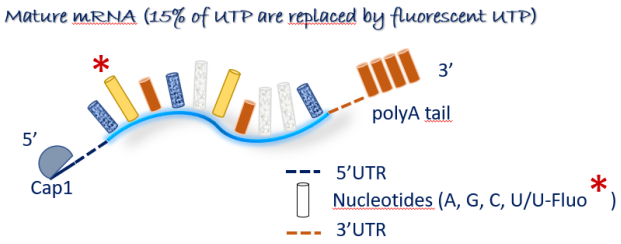
(ref# **MRNA16**):



(ref# **MRNA12 and 24**):



(ref# **MRNA12 A; B or C, 16 A; B or C and 24 A; B or C**):



Applications

F-Luc mRNAs can be used as control of transfection efficiency. F-Luc 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 purpose. 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 RmesFect™ (#RM21000) and RmesFect™ Stem (#RS31000).
Fluorescent F-Luc MRNAs can be traced thanks to their labelling with either the Cy5 (Sulfo-Cyanine5) Far-red-fluorescent Dye, the Cyanine3 (Cy3) orange fluorescent dye or AlexaFluor488 (AF488) green fluorescent dye.

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) 486 948 515
contact@ozbiosciences.com
order@ozbiosciences.com

OZ Biosciences USA 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

Rev 02/24 EB

Luciferase detection

For transfections performed with F-Luc MRNAs, the detection of Firefly Luciferase can be monitored using D-Luciferin Na+ and K+ salts (#LN10000 and # LK10000). The produced light is detected with the help of a luminometer for in vitro test or by in vivo imaging system for preclinical research.
NOTE: refer to D-Luciferin and Luciferase assay kit protocols for more details.

Ref# MRNA12C, B or A and Ref# MRNA16C, B or A MRNA24C, B or A F-Luc MRNAs modified with cyanine fluorescent dye with excitation peak at 649 and emission peak at 666 nm (Cy5) or with excitation peak at 554 and emission peak at 566 nm (Cy3) or with excitation peak at 494 and emission peak at 5517 nm (AF488).

Kit contents

F-Luc mRNAs-20: 20 µg of mRNA.
F-Luc mRNAs-100: 100 µg of mRNA.
F-Luc mRNAs-1000: 1 mg of mRNA.

Storage

F-Luc mRNAs must be stored at -80°C.
We recommend to aliquot the mRNA solution for a better storage.

Related Products

Ref	Description
RM21000	RmesFect™ transfection reagent 1mL
RS31000	RmesFect™ Stem transfection reagent 1mL
MRNA20	MRNA R-Luc unmodified
MRNA21	MRNA R-Luc moU
LUC1000	The luciferase assay kit
LK10000	Luciferin Potassium Salt
LN10000	Luciferin Sodium Salt

Discover the complete list of mRNA at: www.ozbiosiences.com
Custom mRNAs are also available now!

Contact Us

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). For bulk, please contact us: order@ozbiosciences.com

Technical questions: tech@ozbiosciences.com
Order: order@ozbiosciences.com
General Information: contact@ozbiosciences.com

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) 486 948 515
contact@ozbiosciences.com
order@ozbiosciences.com

OZ Biosciences USA 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