

F-Luc mRNA (mRNA encoding Firefly Luciferase protein)

Description

Ready-to-use stabilized F-Luc mRNA

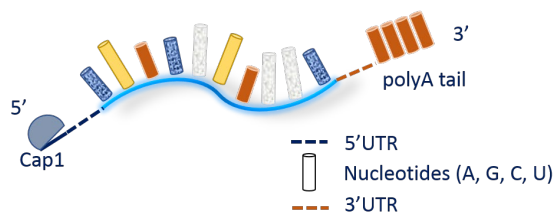
Concentration: 1.0 mg/mL in 1 mM Sodium Citrate, pH 6.4.

mRNA length: 1879 nt. MW **MRNA16**= 603550 g/mol; **MRNA12**= 611290 g/mol; **MRNA24**=607420 g/mol; **MRNA16c**=639638 g/mol; **MRNA12c**=645298 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 to reduce innate immune response. #**MRNA12c** and #**MRNA16c** are labelled with Cy5 by replacing 20 % of U or moU by UTP-Cy5.

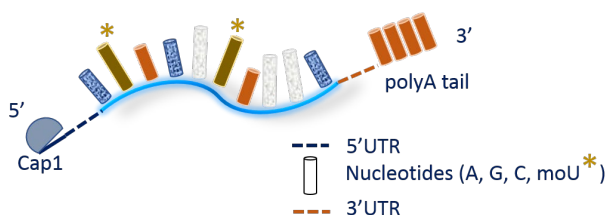
(ref# **MRNA16**):

Mature mRNA (unmodified nucleotides) with cap1 and polyA tail



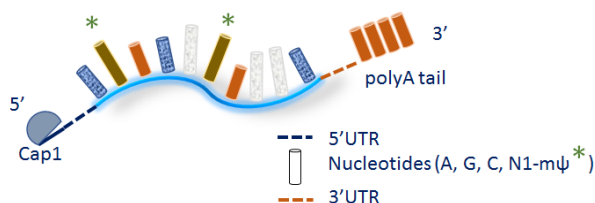
(ref# **MRNA12**):

Mature mRNA (fully modified moU) with cap1 and polyA tail



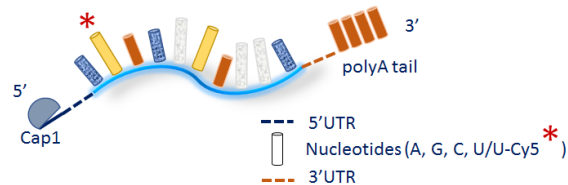
(ref# **MRNA24**):

Mature mRNA (fully modified N1-mψ) with cap1 and polyA tail



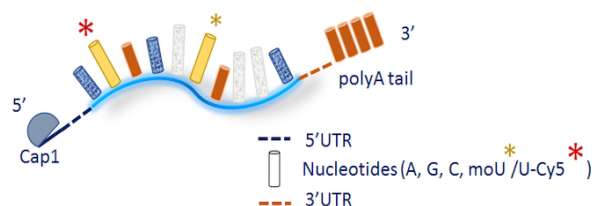
(ref# **MRNA16c**):

Mature mRNA (20% of U are labelled with Cy5) with cap1 and polyA tail



(ref# **MRNA12c**):

Mature mRNA (80% moU, 20% of U-Cy5) with cap1 and polyA tail



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).

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Luciferase detection

For transfections performed with MRNA12 or 16, the detection of Firefly Luciferase can be monitored using D-Luciferin Na+ and K+ salts (#LN10000 and # LK10000).
NOTE: refer to D-Luciferin and Luciferase assay kit protocols for more details.

Kit contents

F-Luc mRNAs-20: 20 µg of mRNA unmodified or modified.

F-Luc mRNAs-100: 100 µg of mRNA unmodified or modified.

F-Luc mRNAs-1000: 1 mg of mRNA unmodified or modified.

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.ozbiosciences.com

Custom mRNAs are also available now!

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