

GFP mRNA

(mRNA encoding Green Fluorescent Protein)

Description

Ready-to-use stabilized GFP mRNA

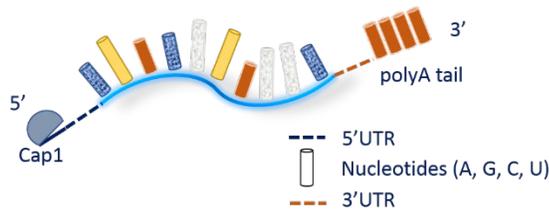
Concentration: 1.0 mg/mL in 1 mM Sodium Citrate, pH 6.4

mRNA length: 918 nt. MW of **MRNA15**= 296893 g/mol; **MRNA11**= 300433 g/mol; **MRNA22** MW= 298663 g/mol; **MRNA15c**= 313549 g/mol; **MRNA11c**= 317089 g/mol.

GFP mRNAs have been designed to produce high expression level of GFP fluorescent 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. GFP mRNA #**MRNA15** does not bear any additional nucleotide modifications while #**MRNA11** is modified with 5-methoxyuridine (5moU), #**MRNA22** is modified with N1-methyl-pseudouridine to reduce innate immune response. #**MRNA15c** and #**MRNA11c** are labelled with Cy5 by replacing 20 % of U or moU by UTP-Cy5.

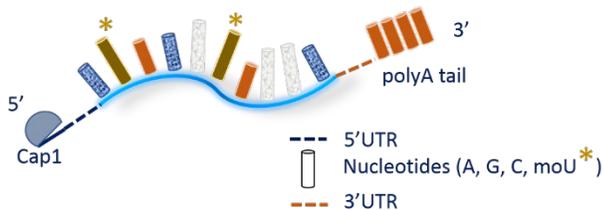
(ref# **MRNA15**):

Mature mRNA (unmodified nucleotides) with cap1 and polyA tail



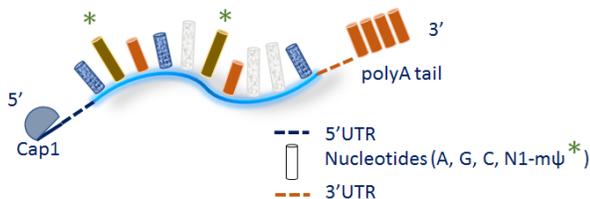
(ref# **MRNA11**):

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



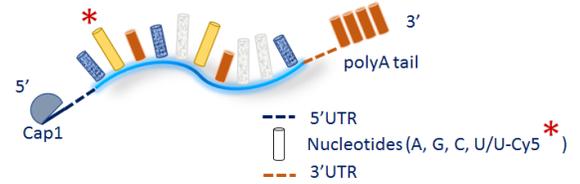
(ref# **MRNA22**):

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



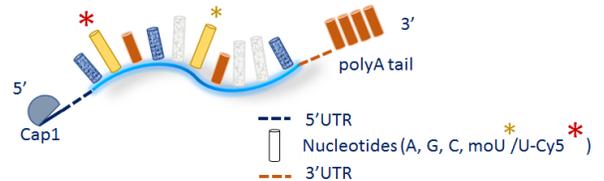
(ref# **MRNA15c**):

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



(ref# **MRNA11c**):

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



Applications

GFP mRNAs can be used as control of transfection efficiency. GFP 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). GFP MRNA ref# **MRNA15c** and ref# **MRNA11c** can be traced thanks to its labelling with the Cy5 (Sulfo-Cyanine5) Far-red-fluorescent Dye.

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GFP detection

For transfections performed with the MRNA11, 11c, 15, 15c or 22, the detection can be achieved by fluorescent or confocal microscopy. The GFP produced has an excitation peak at 470-480 nm and emission peak at 510 nm. GFP expression level can also be monitored by fluorescence-activated cell sorter analysis (FACS), western blot etc... **Ref# MRNA15c and Ref# MRNA11c** are GFP MRNAs modified with Cy5 dye with excitation peak at 649 and emission peak at 666 nm.

Kit contents

GFP mRNAs-20: 20 µg of mRNA unmodified or modified.
GFP mRNAs-100: 100 µg mRNA unmodified or modified.
GFP mRNAs-1000: 1 mg of mRNA unmodified or modified.

Storage

GFP 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

Discover the complete list of mRNA at: www.ozbiosciences.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

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