

Spike SARS CoV-2 (E484K; N501Y) mRNA

(mRNA encoding spike protein of SARS-CoV-2 virus)

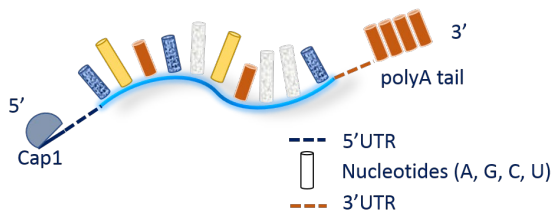
Description

Ready-to-use stabilized Spike SARS CoV-2 (E484K; N501Y) mRNA
Concentration: 1.0 mg/mL in 1 mM Sodium Citrate, pH 6.4.
mRNA length: 4036 nt. MW **MRNA34**= 1300650 g/mol; **MRNA35**= 1320720 g/mol; **MRNA43**=1310685 g/mol.

Spike SARS CoV-2 (E484K; N501Y) mRNAs have been designed to produce high expression level of spike protein of SARS-CoV-2 virus. 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. Spike protein of SARS-CoV-2 virus mRNA #**MRNA34** does not bear any additional nucleotide modifications while #**MRNA35** is modified with 5-methoxyuridine (5moU), #**MRNA43** is modified with N1-methyl-pseudouridine (N1-m ψ) to reduce innate immune response.

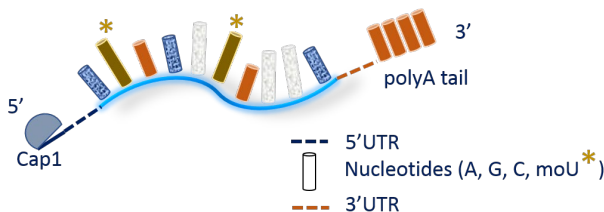
(ref# **MRNA34**):

Mature mRNA (unmodified nucleotides) with cap1 and polyA tail



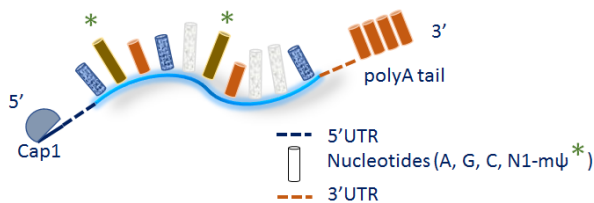
(ref# **MRNA35**):

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



(ref# **MRNA43**):

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



Applications

For the COVID-19 vaccines, scientists developed synthetic mRNA in a lab that instructs cells to produce the distinctive spike protein from the SARS-CoV-2 virus. The immune system then targets and destroys these foreign spike proteins. If the body encounters the real virus at a later time, the body's immune system will already be prepared to fend it off again. This mRNA encodes for the Spike protein of the SARS-CoV-2 virus and bears two mutations (E484K and N501Y). Spike protein is used as antigen for immunization and biochemical studies. **For Research Use Only. Not for use in humans. Not for use in diagnostic or therapeutic purposes.**

Spike 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 of 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).

Kit contents

Spike SARS CoV-2 (E484K; N501Y) mRNAs-20: 20 μ g of mRNA unmodified or modified.

Spike SARS CoV-2 (E484K; N501Y) mRNAs-100: 100 μ g of mRNA unmodified or modified.

Spike SARS CoV-2 (E484K; N501Y) mRNAs-1000: 1 mg of mRNA unmodified or modified.

Storage

Spike SARS CoV-2 (E484K; N501Y) mRNAs must be stored at -80°C. We recommend to aliquot the mRNA solution for a better storage.

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Related Products

Ref	Description
MRNA36	mRNA Spike Delta SARS-CoV-2
MRNA37	mRNA Spike Delta SARS-CoV-2 (5moU)
MRNA38	mRNA Spike Omicron SARS-CoV-2
MRNA39	mRNA Spike Omicron SARS-CoV-2 (5moU)
RM21000	RmesFect™ transfection reagent 1mL
RS31000	RmesFect™ Stem transfection reagent 1mL
MRNA42	mRNA OVA
MRNA41	mRNA OVA (moU)

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

Custom mRNAs are also available now!

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