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Catalog IVT mRNA, circRNA, saRNA and LNP products

Ready-to-use mRNA, Empowering Discovery And Innovation.

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GenScript eGFP mRNA (N1-Methylpseudouridine/m1Ψ)

The eGFP mRNA expresses an enhanced green fluorescent protein, with the open reading frame sequence originally from the jellyfish, Aequorea Victoria. EGFP mRNA is a commonly used fluorescence reporter sequence in mRNA therapeutics and delivery system development projects. The expressed protein has an excitation wavelength of 488nm, emission at 507 nm.

This mRNA is capped with Cap1 structure with high capping efficiency. It has 100% substituted with N1-methyl-pseudo Uridine for enhanced expression and reduced immunogenicity. The mRNA has a 100A tail in its sequence, mimics a mature mRNA.

Name	Cat. No	Scale
EGFP mRNA (N1-Methylpseudouridine/m1Ψ)	RP-A00009-0.2	0.2 mg
	RP-A00009-1	1 mg

Concentration: 1 mg/mL

Storage Buffer: 1mM Sodium citrate, pH6.5

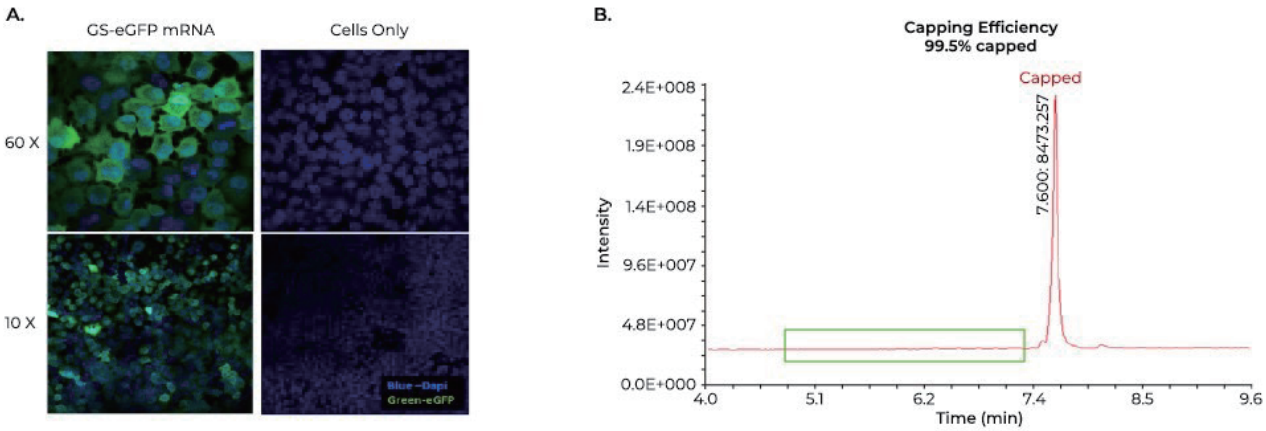
mRNA length: 980 nt

Full mRNA Molecular Weight: 319792

Handling and Storage: Store at -20°C for short term (<3 months), store at -80°C for long term.

Cell Expression result:

Brief method: transfect 0.2 μg of mRNA using 0.5 μL of lipofectamine2000 (or equivalent) for one well of cells in a 96 well plate following manufacture's instruction. Test the result after 16 to 24 hours using a plate reader, or flow cytometry, or fluorescent microscope, or confocal microscope. Suggest using excitation wavelength at 485 nm, emission wavelength at 535 nm for equipment setting.



A. Expression of eGFP mRNA in A549 cells. Confocal microscopy revealed that efficient expression of eGFP mRNA in A549 cells after transfection with lipofectamine 2000. Green-eGFP protein, Blue-Nuclei. B. Capping efficiency test of eGFP mRNA by LC-MS. Capped eGFP mRNA fragment has a M/Z of 8473, uncapped mRNA fragment has a M/Z of 8116. The capped fragment ratio is 99.5%.

EGFP mRNA ORF sequence:

ATGGTGAGCAAGGGCGAGGAGCTGTTCACCGGGGTGGTGCCCATCCTGGTCGAGCTGGACGGCGACGTAAACGGCCACAAGTTCA
GCGTGTCCGGCGAGGGCGAGGGCGATGCCACCTACGGCAAGCTGACCCTGAAGTTCATCTGCACCACCGGCAAGCTGCCCGTGC
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CCACTACCTGAGCACCCAGTCCGCCCTGAGCAAAGACCCCAACGAGAAGCGCGATCACATGGTCCTGCTGGAGTTCGTGACCGCC
GCCGGGATCACTCTCGGCATGGACGAGCTGTACAAGTAA

GenScript eGFP mRNA (5-Methoxyuridine/5-MOU)

The eGFP mRNA expresses an enhanced green fluorescent protein, with the open reading frame sequence originally from the jellyfish, Aequorea Victoria. EGFP mRNA is a commonly used fluorescence reporter sequence in mRNA therapeutics and delivery system development projects. The expressed protein has an excitation wavelength of 488 nm, emission at 507 nm.
This mRNA is capped with Cap1 structure with high capping efficiency. It has 100% substituted with 5'-Methoxyuridine for enhanced expression and reduced immunogenicity. The mRNA has a 100 A tail in its sequence, mimics a mature mRNA.

Name	Cat. No	Scale
EGFP mRNA ((5-Methoxyuridine/5-MOU)	RP-A00008-0.2	0.2 mg
	RP-A00008-1	1 mg

Concentration: 1 mg/mL

Storage Buffer: 1 mM Sodium citrate, pH6.5

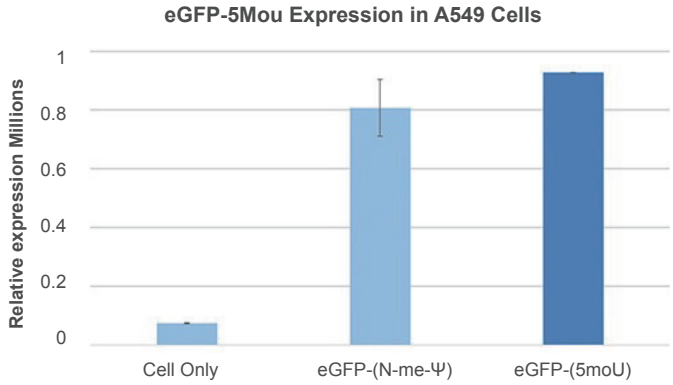
ORF length: 720 nt

Full mRNA Molecular Weight: 324468

Handling and Storage: Store at -20°C for short term (<3 months), store at -80°C for long term.

Cell Expression result:

Brief method: transfect 0.2 μg of mRNA using 0.5 μL of lipofectamine2000 (or equivalent) for one well of cells in a 96 well plate following manufacture's instruction. Test the result after 16 to 24 hours using a plate reader, or flow cytometry, or fluorescent microscope, or confocal microscope. Suggest using excitation wavelength at 485 nm, emission wavelength at 535 nm for equipment setting.



Expression of eGFP mRNA in A549 cells. The eGFP expression was measured 24 hours after transfection of mRNA by lipofectamine by plate reader. N1-methyl-pseudoU modified EGFP mRNA was utilized as a control.

EGFP mRNA ORF sequence:

ATGGTGAGCAAGGGCGAGGAGCTGTTCACCGGGGTGGTGCCCATCCTGGTCGAGCTGGACGGCGACGTAAACGGCCACAAGTTCA
GCGTGTCCGGCGAGGGCGAGGGCGATGCCACCTACGGCAAGCTGACCCTGAAGTTCATCTGCACCACCGGCAAGCTGCCCGTGC
CCTGGCCCACCCTCGTGACCACCCTGACCTACGGCGTGCAGTGCTTCAGCCGCTACCCCGACCACATGAAGCAGCACGACTTCTTC
AAGTCCGCCATGCCCGAAGGCTACGTCCAGGAGCGCACCATCTTCTTCAAGGACGACGGCAACTACAAGACCCGCGCCGAGGTGA
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GCCGGGATCACTCTCGGCATGGACGAGCTGTACAAGTAA

GenScript eSpCas9 mRNA (N1-Methylpseudouridine/m1Ψ)

The eSpCas9 mRNA expresses enhanced-specificity SpCas9 protein, with sequence originally from Slaymaker et al Science. 2015 Dec 1. eSpCas9 is able to reduce off-target effects by over 10-fold, while maintaining robust on-target genome editing efficiency.
This mRNA is capped with Cap1 structure with high capping efficiency. It has 100% substituted with N1-methyl-pseudo Uridine for enhanced expression and reduced immunogenicity. The mRNA has a 100A tail in its sequence, mimics a mature mRNA.

Name	Cat. No	Scale
eSpCas9 mRNA (N1-Methylpseudouridine/m1Ψ)	RP-A00018-0.2	0.2 mg
	RP-A00018-1	1 mg

Concentration: 1 mg/mL

Storage Buffer: 1 mM Sodium citrate, pH6.5

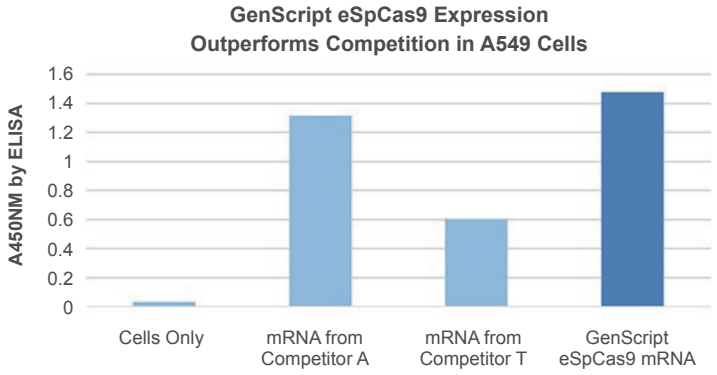
Full mRNA length: 4479

Full mRNA Molecular Weight: 1457890

Handling and Storage: Store at -20°C for short term (<3 months), store at -80 °C for long term.

Cell Expression result:

Brief method: transfect 2.5 μg of mRNA using 5 μL of Lipofectamine™ MessengerMAX™ Transfection Reagent (or equivalent) for one well of cells in a 6 well plate following manufacture's instruction. Test the result after 48 hours using ELISA assay. The result below was from ELISA kit: FastScan Cas9 (S. pyogenes) from Cell Signaling Technology (Cat. 29666C).



Expression of eSpCas9 mRNA in A549 cells. The eSpCas9 expression was measured 48 hours after transfection of by ELISA.T: eSpCas9 mRNA from Company T, A: eSpCas9 mRNA from Company A, GS: eSpCas9 mRNA from GenScript.

EGFP mRNA ORF sequence:

ATGCCAAAGAAGAAGCGGAAGGTCGGTATCCACGGAGTCCCAGCAGCCGACAAGAAGTACAGCATCGGCCTGGACATCGGCACCA
ACTCTGTGGGCTGGGCCGTGATCACCGACGAGTACAAGGTGCCCAGCAAGAAATTCAAGGTGCTGGGCAACACCGACCGGCACAG
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AGTGGATAA

GenScript eSpCas9 mRNA (5-Methoxyuridine/5-MOU)

The eSpCas9 mRNA expresses enhanced-specificity SpCas9 protein, with sequence originally from Slaymaker et al Science. 2015 Dec 1. eSpCas9 is able to reduce off-target effects by over 10-fold, while maintaining robust on-target genome editing efficiency.
This mRNA is capped with Cap1 structure with high capping efficiency. It has 100% substituted with 5-methoxyuridine for enhanced expression and reduced immunogenicity. The mRNA has a 100A tail in its sequence, mimics a mature mRNA.

Name	Cat. No	Scale
eSpCas9 mRNA (5-Methoxyuridine/5-MOU)	RP-A00050-0.2	0.2 mg
	RP-A00050-1	1 mg

Concentration: 1 mg/mL

Storage Buffer: 1 mM Sodium citrate, pH6.5

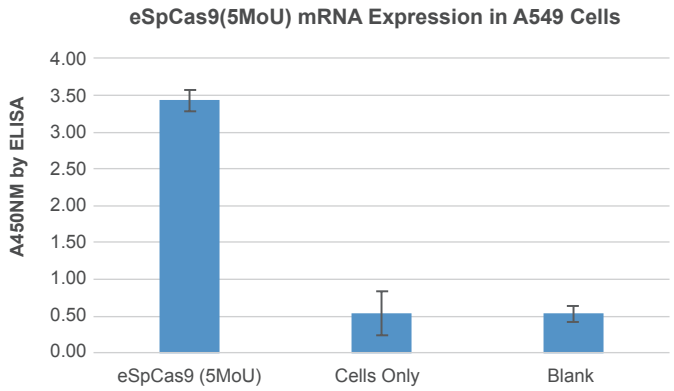
Full mRNA length: 4479 nt

Full mRNA Molecular Weight: 1458548

Handling and Storage: Store at -20°C for short term (<3 months), store at -80°C for long term.

Cell Expression result:

Brief method: transfect 2.5 µg of mRNA using 5 µL of Lipofectamine™ MessengerMAX™ Transfection Reagent (or equivalent) for one well of cells in a 6 well plate following manufacture's instruction. Test the result after 48 hours using ELISA assay. The result below was from ELISA kit: FastScan Cas9 (S. pyogenes) from Cell Signaling Technology (Cat. 29666C).



Expression of eSpCas9 mRNA in A549 cells. The eSpCas9 expression was measured 48 hours after transfection of by ELISA

EGFP mRNA ORF sequence:

ATGCCAAAGAAGAAGCGGAAGGTCGGTATCCACGGAGTCCCAGCAGCCGACAAGAAGTACAGCATCGGCCTGGACATCGGCACCA
ACTCTGTGGGCTGGGCCGTGATCACCGACGAGTACAAGGTGCCCAGCAAGAAATTCAAGGTGCTGGGCAACACCGACCGGCACAG
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CTGGCCGACGACTCCATCGACAACAAGGTGCTGACCAGAAGCGACAAGAACCGGGGCAAGAGCGACAACGTGCCCTCCGAAGAGG
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AGAGAGGCGGCCTGAGCGAACTGGATAAGGCCGGCTTCATCAAGAGACAGCTGGTGGAAACCCGGCAGATCACAAAGCACGTGGCA
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AGGCGACAAAAGGCCGGCGGCCACGAAAAAGGCCGGCCAGGCAAAAAAGAAAAAGGAATTCGGCAGTGGATAA

GenScript F-Luc mRNA (N1-Methylpseudouridine/m1Ψ)

The Firefly-Luciferase (F-Luc) mRNA expresses firefly luciferase protein, which is the enzyme for bioluminescence of fireflies and click beetles. After efficient delivery into cells or animals, F-Luc mRNA can translate into F-Luc and emit bioluminescence in the presence of its substrate, Luciferin.

This mRNA is capped with Cap1 structure with high capping efficiency. It has 100% substituted with N1-methyl-pseudo Uridine for enhanced expression and reduced immunogenicity. The mRNA has a 100A tail in its sequence, mimics a mature mRNA.

Name	Cat. No	Scale
F-Luc mRNA (N1-Methylpseudouridine/m1Ψ)	RP-A00023-0.2	0.2 mg
	RP-A00023-1	1 mg

Concentration: 1 mg/mL

Storage Buffer: 1 mM Sodium citrate, pH6.5

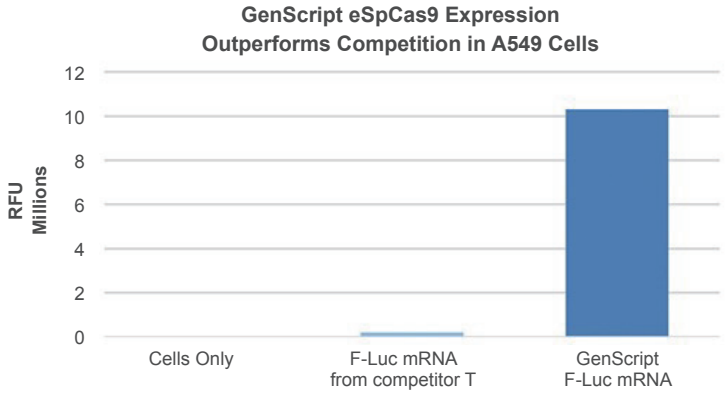
Full mRNA length: 1914 nt

Full mRNA Molecular Weight: 622225

Handling and Storage: Store at -20°C for short term (<3 months), store at -80°C for long term.

Cell Expression result:

Brief method: transfect 0.5 ug of mRNA using 0.5 µL of Lipofectamine™ MessengerMAX™ Transfection Reagent (or equivalent) for one well of cells in a 96 well plate following manufacture's instruction. Test the result after 12 to 16 hours using luciferase assay (Promega, E4030).



Expression of F-Luc mRNA in A549 cells. The expression was measured 16 hours after transfection of by luciferase assay (Promega, E4030).T: F-Luc mRNA from Company T, , GS-F-Luc: F-Luc mRNA from GenScript.

F-Luc mRNA ORF sequence:

ATGGAGGACGCCAAGAACATCAAGAAGGGCCCCGCCCCCTTCTACCCCCTGGAGGACGGCACCGCCGGCGAGCAGCTGCACAAG
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TGAGCGGCTACGTGAACAACCCCGAGGCCACCAACGCCCTGATCGACAAGGACGGCTGGCTGCACAGCGGCGACATCGCCTACTG
GGACGAGGACGAGCACTTCTTCATCGTGGACCGGCTGAAGAGTCTGATCAAGTACAAGGGCTACCAGGTGGCCCCCGCCGAGCTGG
AGAGCATCCTGCTGCAGCACCCCAACATCTTCGACGCCGGCGTGGCCGGCCTGCCCGACGACGACGCCGGCGAGCTGCCCGCCG
CCGTGGTGGTGCTGGAGCACGGCAAGACCATGACCGAGAAGGAGATCGTGGACTACGTGGCCAGCCAGGTGACCACCGCCAAGAA
GCTGCGGGGCGGCGTGGTGTTCGTGGACGAGGTGCCCAAGGGCCTGACCGGCAAGCTGGACGCCCGGAAGATCCGGGAGATCCT
GATCAAGGCCAAGAAGGGCGGCAAGATCGCCGTGTGA

GenScript F-Luc mRNA (5-Methoxyuridine/5-MOU)

The Firefly-Luciferase (F-Luc) mRNA expresses firefly luciferase protein, which is the enzyme for bioluminescence of fireflies and click beetles. After efficient delivery into cells or animals, F-Luc mRNA can translate into F-Luc and emit bioluminescence in the presence of its substrate, Luciferin.
This mRNA is capped with Cap1 structure with high capping efficiency. It has 100% substituted with 5-Methoxyuridine for enhanced expression and reduced immunogenicity. The mRNA has a 100A tail in its sequence, mimics a mature mRNA.

Name	Cat. No	Scale
F-Luc mRNA (5-Methoxyuridine/5-MOU)	RP-A00022-0.2	0.2 mg
	RP-A00022-1	1 mg

Concentration: 1 mg/mL

Storage Buffer: 1 mM Sodium citrate, pH6.5

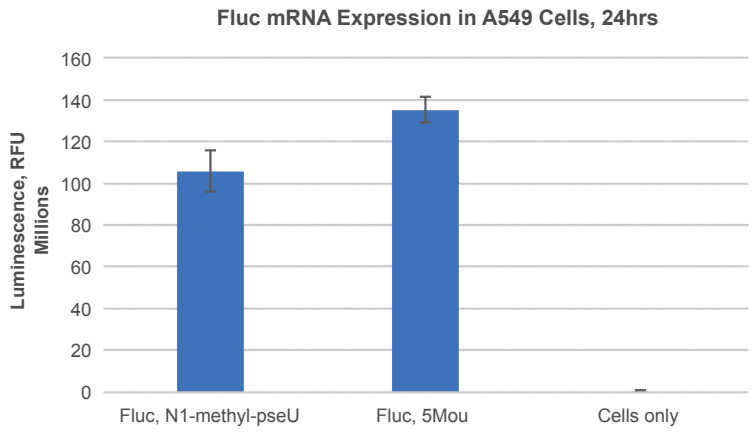
Full mRNA length: 1914 nt

Full mRNA Molecular Weight: 622225

Handling and Storage: Store at -20°C for short term (<3 months), store at -80°C for long term.

Cell Expression result:

Brief method: transfect 0.5 μg of mRNA using 0.5 μL of Lipofectamine™ MessengerMAX™ Transfection Reagent (or equivalent) for one well of cells in a 96 well plate following manufacture's instruction. Test the result after 12 to 16 hours using luciferase assay (Promega, E4030).



Expression of F-Luc mRNA in A549 cells. The expression was measured 16 hours after transfection of by luciferase assay (Promega, E4030).T: F-Luc mRNA from Company T, , GS-F-Luc: F-Luc mRNA from GenScript.

F-Luc mRNA ORF sequence:

ATGGAGGACGCCAAGAACATCAAGAAGGGCCCCGCCCCCTTCTACCCCCTGGAGGACGGCACCGCCGGCGAGCAGCTGCACAAGG
CCATGAAGCGGTACGCCCTGGTGCCCGGCACCATCGCCTTCACCGACGCCCACATCGAGGTGGACATCACCTACGCCGAGTACTTC
GAGATGAGCGTGCGGCTGGCCGAGGCCATGAAGCGGTACGGCCTGAACACCAACCACCGGATCGTGGTGTGCAGCGAGAACAGCC
TGCAGTTCTTCATGCCCGTGCTGGGCGCCCTGTTCATCGGCGTGGCCGTGGCCCCCGCCAACGACATCTACAACGAGCGGGAGCTG
CTGAACAGCATGGGCATCAGCCAGCCCACCGTGGTGTTCGTGAGCAAGAAGGGCCTGCAGAAGATCCTGAACGTGCAGAAGAAGCT
GCCCATCATCCAGAAGATCATCATCATGGACAGCAAGACCGACTACCAGGGCTTCCAGAGCATGTACACCTTCGTGACCAGCCACCTG
CCCCCCGGCTTCAACGAGTACGACTTCGTGCCCGAGAGCTTCGACCGGGACAAGACCATCGCCCTGATCATGAACAGCAGCGGCAG
CACCGGCCTGCCCAAGGGCGTGGCCCTGCCCCACCGGACCGCCTGCGTGCGGTTCAGCCACGCCCGGGACCCCATCTTCGGCAA
CCAGATCATCCCCGACACCGCCATCCTGAGCGTGGTGCCCTTCCACCACGGCTTCGGCATGTTCACCACCCTGGGCTACCTGATCTG
CGGCTTCCGGGTGGTGCTGATGTACCGGTTCGAGGAGGAGCTGTTCCTGCGGAGCCTGCAGGACTACAAGATCCAGAGCGCCCTG

CTGGTGCCCACCCTGTTCAGCTTCTTCGCCAAGAGCACCCTGATCGACAAGTACGACCTGAGCAACCTGCACGAGATCGCCAGCGG
CGGCGCCCCCCTGAGCAAGGAGGTGGGCGAGGCCGTGGCCAAGCGGTTCCACCTGCCCGGCATCCGGCAGGGCTACGGCCTGAC
CGAGACCACCAGCGCCATCCTGATCACCCCCGAGGGCGACGACAAGCCCGGCGCCGTGGGCAAGGTGGTGCCCTTCTTCGAGGCC
AAGGTGGTGGACCTGGACACCGGCAAGACCCTGGGCGTGAACCAGCGGGGCGAGCTGTGCGTGCGGGGCCCCATGATCATGAGC
GGCTACGTGAACAACCCCGAGGCCACCAACGCCCTGATCGACAAGGACGGCTGGCTGCACAGCGGCGACATCGCCTACTGGGACG
AGGACGAGCACTTCTTCATCGTGGACCGGCTGAAGAGTCTGATCAAGTACAAGGGCTACCAGGTGGCCCCCGCCGAGCTGGAGAGC
ATCCTGCTGCAGCACCCCAACATCTTCGACGCCGGCGTGGCCGGCCTGCCCGACGACGACGCCGGCGAGCTGCCCGCCGCCGTG
GTGGTGCTGGAGCACGGCAAGACCATGACCGAGAAGGAGATCGTGGACTACGTGGCCAGCCAGGTGACCACCGCCAAGAAGCTGC
GGGGCGGCGTGGTGTTCGTGGACGAGGTGCCCAAGGGCCTGACCGGCAAGCTGGACGCCCGGAAGATCCGGGAGATCCTGATCA
AGGCCAAGAAGGGCGGCAAGATCGCCGTGTGA

GenScript mCherry mRNA (N1-Methylpseudouridine/m1Ψ)

The mCherry mRNA expresses the fluorescent protein mCherry, which is a DsRed protein found in Discosoma Sp. mCherry protein has a maximum excitation wavelength at 587nm and maximum emission at 610nm. Due to the overlap of excitation and emission, using 560nm as excitation wavelength and 620nm as emission wavelength is recommended for your assay.
This mRNA is capped with Cap1 structure with high capping efficiency. It has 100% substituted with N1-methyl-pseudo Uridine for enhanced expression and reduced immunogenicity. The mRNA has a 100A tail in its sequence, mimics a mature mRNA.

Name	Cat. No	Scale
mCherry mRNA (N1-Methylpseudouridine/m1Ψ)	RP-A00041-0.2	0.2 mg
	RP-A00041-1	1 mg

Concentration: 1 mg/mL

Storage Buffer: 1 mM Sodium citrate, pH6.5

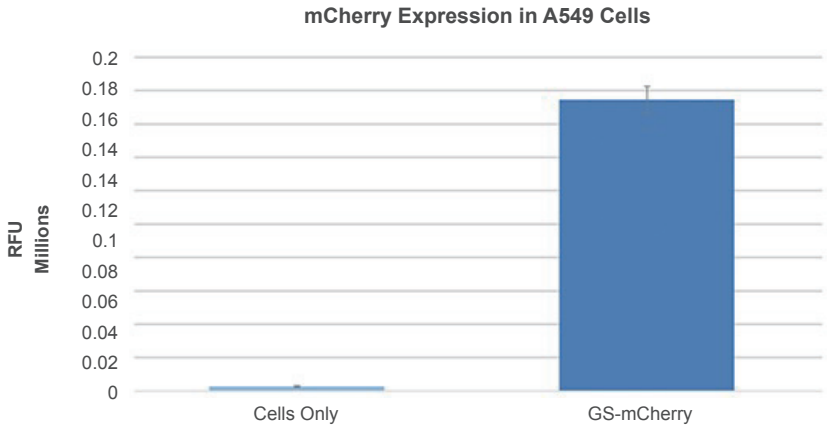
Full mRNA length: 974 nt

Full mRNA Molecular Weight: 318370

Handling and Storage: Store at -20°C for short term (<3 months), store at -80°C for long term.

Cell Expression result:

Brief method: transfect 0.5 μg of mRNA using 0.5 μL of Lipofectamine™ MessengerMAX™ Transfection Reagent (or equivalent) for one well of cells in a 96 well plate following manufacture's instruction. Test the result after 12 to 16 hours using plate reader, or flow cytometry. Suggest using excitation wavelength at 560 nm, emission wavelength at 620 nm for equipment setting.



Expression of F-Luc mRNA in A549 cells. The expression was measured 16 hours after transfection of by luciferase assay (Promega, E4030).T: F-Luc mRNA from Company T, , GS-F-Luc: F-Luc mRNA from GenScript.

mCherry mRNA ORF sequence:

ATGCTGTCTAAGGGCGAGGAAGATAACATGGCCATCATCAAGGAATTCATGAGATTCAAGGTCCACATGGAAGGTTCTGTGAATGGCC
ATGAGTTTGAGATCGAGGGAGAAGGCGAAGGAAGACCTTACGAGGGCACACAGACCGCCAAGCTGAAGGTGACAAAGGGCGGCCC
TCTGCCCTTCGCCTGGGATATCCTGTCCCCTCAGTTCATGTACGGCAGCAAGGCCTATGTGAAGCACCCTGCTGATATCCCCGACTAC
CTGAAGCTGAGCTTCCCAGAGGGCTTCAAGTGGGAAAGAGTGATGAACTTCGAGGACGGCGGCGTGGTGACCGTGACCCAGGACA
GCAGCCTGCAAGATGGAGAATTTATCTACAAGGTGAAACTGCGGGGCACCAACTTCCCTAGCGACGGCCCCGTGATGCAGAAGAAGA
CCATGGGCTGGGAGGCCAGCTCCGAGAGAATGTACCCCGAGGACGGAGCCCTGAAAGGCGAGATTAAGCAGCGGCTGAAGCTCAA
GGACGGCGGACACTACGACGCCGAGGTGAAAACCACCTACAAAGCCAAGAAACCTGTGCAGCTGCCTGGCGCTTACAACGTTAATAT
CAAGCTGGACATCACCAGCCACAACGAGGATTATACAATCGTGGAACAGTACGAGCGGGCCGAAGGCAGACACAGCACAGGCGGCA
TGGACGAGCTGTACAAGTAA

GenScript SB-100 mRNA (N1-Methylpseudouridine/m1Ψ)

The SB-100 (Sleeping Beauty) mRNA expresses the Sleeping Beauty transposase. Sleeping beauty transposon and transposase constitute a DNA plasmid system used for therapeutic human cell genetic engineering. The SB-100 mRNA is hyper sensitive, sequence reference from publication Jin Z, Maiti S, Huls H, et al. Gene Therapy, 18, 849-856 (2011).
This mRNA is capped with Cap1 structure with high capping efficiency. It has 100% substituted with N1-methyl-pseudo Uridine for enhanced expression and reduced immunogenicity. The mRNA has a 100A tail in its sequence, mimics a mature mRNA.

Name	Cat. No	Scale
SB100 (N1-Methylpseudouridine/m1Ψ)	RP-A00048-0.2	0.2 mg

Concentration: 1 mg/mL

Storage Buffer: 1 mM Sodium citrate, pH6.5

Full mRNA length: 1277 nt

Full mRNA Molecular Weight: 417046

Handling and Storage: Store at -20°C for short term (<3 months), store at -80°C for long term.

SB-100 mRNA ORF sequence:

ATGGGAAAATCAAAAGAAATCAGCCAAGACCTCAGAAAAAGAATTGTAGACCTCCACAAGTCTGGTTCATCCTTGGGAGCAATTTCCAA
ACGCCTGGCGGTACCACGTTCATCTGTACAAACAATAGTACGCAAGTATAAACACCATGGGACCACGCAGCCGTCATACCGCTCAGGA
AGGAGACGCGTTCTGTCTCCTAGAGATGAACGTACTTTGGTGCGAAAAGTGCAAATCAATCCCAGAACAACAGCAAAGGACCTTGTGA
AGATGCTGGAGGAAACAGGTACAAAAGTATCTATATCCACAGTAAAACGAGTCCTATATCGACATAACCTGAAAGGCCACTCAGCAAGG
AAGAAGCCACTGCTCCAAAACCGACATAAGAAAGCCAGACTACGGTTTGCAACTGCACATGGGGACAAAGATCGTACTTTTTGGAGAA
ATGTCCTCTGGTCTGATGAAACAAAAATAGAACTGTTTGGCCATAATGACCATCGTTATGTTTGGAGGAAGAAGGGGGAGGCTTGCAA
GCCGAAGAACACCATCCCAACCGTGAAGCACGGGGGTGGCAGCATCATGTTGTGGGGGTGCTTTGCTGCAGGAGGGACTGGTGCA
CTTCACAAAATAGATGGCATCATGGACGCGGTGCAGTATGTGGATATATTGAAGCAACATCTCAAGACATCAGTCAGGAAGTTAAAGCT
TGGTCGCAAATGGGTCTTCCAACACGACAATGACCCCAAGCATACTTCCAAAGTTGTGGCAAAATGGCTTAAGGACAACAAAGTCAAG
GTATTGGAGTGGCCATCACAAAGCCCTGACCTCAATCCTATAGAAAATTTGTGGGCAGAACTGAAAAAGCGTGTGCGAGCAAGGAGG
CCTACAAACCTGACTCAGTTACACCAGCTCTGTCAGGAGGAATGGGCCAAAATTCACCCAAATTATTGTGGGAAGCTTGTGGAAGGCT
ACCCGAAACGTTTGACCCAAGTTAAACAATTTAAAGGCAATGCTACCAAATACTAG

GenScript Ovalbumin (OVA) mRNA (N1-Methylpseudouridine/m1Ψ)

Ovalbumin is the main protein found in egg white. It is a commonly used antigen for stimulating an allergic reaction in test subjects. It is also widely used in studies of serpin structure and function in biochemistry.
This mRNA is capped with Cap1 structure with high capping efficiency. It has 100% substituted with N1-methyl-pseudo Uridine for enhanced expression and reduced immunogenicity. The mRNA has a CD33 secretory peptide build in to help secreting the expressed protein, and a 100A tail in its sequence, mimics a mature mRNA.

Name	Cat. No	Scale
OVA (N1-Methylpseudouridine/m1Ψ)	RP-A00043-0.2	0.2 mg
	RP-A00043-1	1 mg

Concentration: 1 mg/mL

Storage Buffer: 1 mM Sodium citrate, pH6.5

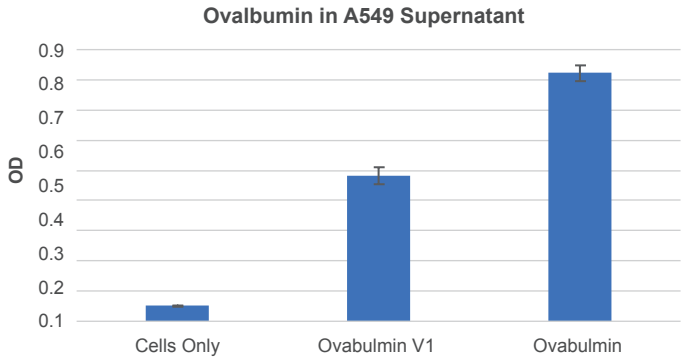
Full mRNA length: 1482 nt

Full mRNA Molecular Weight: 462887.6

Handling and Storage: Store at -20°C for short term (<3 months), store at -80°C for long term.

Cell Expression result:

Brief method: transfect 0.1 μg of mRNA using 0.5 μL of Lipofectamine™ MessengerMAX™ Transfection Reagent (or equivalent) for one well of cells in a 96 well plate following manufacture's instruction. Collect the cell supernatant after 12 to 16 hours, cell supertant was diluted 250x using PBS, and the ovalbumin secretion was measured using ELISA kit Ovalbumin (Sandwich ELISA) ELISA Kit - LS-F9540 from LS Bio.



OVA mRNA ORF sequence:

ATGCCGCTGCTGCTACTGCTGCCCCTGCTGTGGGCAGGGGCCCTGGCTATGGCAGCTATGGGCAGCATCGGCGCTGCCAGCATGGA
ATTCTGTTTTGATGTGTTCAAGGAACTGAAAGTGCACCACGCAAACGAGAACATCTTCTACTGCCCTATCGCCATCATGAGCGCTCTGG
CTATGGTGTACCTGGGCGCCAAGGACAGCACCAGAACCCAGATCAACAAGGTGGTTAGATTCGATAAGCTGCCTGGCTTCGGCGACA
GCATCGAGGCCCAGTGTGGAACATCTGTCAACGTGCACAGCTCTCTTAGAGATATCCTGAACCAGATCACCAAGCCCAACGACGTGTA
CAGCTTCAGCCTGGCCTCAAGACTGTACGCCGAGGAACGGTACCCCATCCTGCCAGAGTACCTGCAGTGCGTGAAGGAGCTGTATA
GAGGCGGACTGGAACCTATTAACTTCCAGACAGCCGCCGACCAGGCCAGAGAACTGATCAACAGCTGGGTGGAATCTCAGACCAAC
GGCATCATCCGGAACGTGCTGCAACCTAGCTCCGTGGACAGCCAGACCGCCATGGTCCTCGTGAATGCCATCGTGTTCAAGGGCCT
GTGGGAGAAGGCCTTCAAAGACGAAGATACCCAGGCCATGCCTTTTCGCGTGACAGAGCAGGAGAGCAAGCCTGTGCAGATGATGTACC
AGATCGGACTGTTTAGGGTGGCCAGCATGGCTAGCGAGAAGATGAAAATCCTGGAACTGCCATTCGCCAGCGGCACCATGAGCATGCTG
GTGCTGCTGCCCGACGAGGTGTCCGGCCTGGAACAGCTGGAGAGCATCATCAATTTCGAGAAGCTGACAGAGTGGACCTCCAGCAACG
TGATGGAAGAGAGAAAGATTAAGGTGTACCTGCCTAGAATGAAGATGGAAGAAAAATACAACCTGACCTCCGTGCTGATGGCCATGGGCAT
CACCGACGTCTTTTCTAGCAGCGCCAATCTGAGCGGCATTTCTTCTGCTGAAAGCCTGAAGATCAGTCAAGCTGTTCATGCCGCTCACGC
CGAGATCAATGAGGCCGGCAGAGAGGTGGTGGGCAGCGCCGAGGCCGGAGTGGACGCCGCTTCCGTGTCCGAGGAGTTCCGGGCCG
ATCACCCCTTCCTGTTCTGCATCAAGCACATCGCCACAAACGCCGTACTCTTCTTCGGCCGGTGCGTGTCCCCTTAG

GenScript Spike mRNA (N1-Methylpseudouridine/m1Ψ)

Spike protein of SARS-COV2 sequence has been identified during the pandemic. This Spike mRNA sequence is a synthetic construct HCV1145 Moderna (mRNA-1273) vaccine sequence.
This mRNA is capped with Cap1 structure with high capping efficiency. It has 100% substituted with N1-methyl-pseudo Uridine for enhanced expression and reduced immunogenicity. The mRNA has a 100A tail in its sequence, mimics a mature mRNA.

Name	Cat. No	Scale
Spike (N1-Methylpseudouridine/m1Ψ)	RP-A00049-0.2	0.2 mg
	RP-A00049-1	1 mg

Concentration: 1 mg/mL

Storage Buffer: 1 mM Sodium citrate, pH6.5

Full mRNA length: 4114 nt

Full mRNA Molecular Weight: 1324142

Handling and Storage: Store at -20°C for short term (<3 months), store at -80°C for long term.

Spike mRNA ORF sequence:

ATGTTCGTGTTCCTGGTGCTGCTGCCCCTGGTGAGCAGCCAGTGCGTGAACCTGACCACCCGGACCCAGCTGCCACCAGCCTACAC
CAACAGCTTCACCCGGGGCGTCTACTACCCCGACAAGGTGTTCCGGAGCAGCGTCCTGCACAGCACCCAGGACCTGTTCCTGCCCT
TCTTCAGCAACGTGACCTGGTTCCACGCCATCCACGTGAGCGGCACCAACGGCACCAAGCGGTTCGACAACCCCGTGCTGCCCTTC
AACGACGGCGTGTACTTCGCCAGCACCGAGAAGAGCAACATCATCCGGGGCTGGATCTTCGGCACCACCCTGGACAGCAAGACCCA
GAGCCTGCTGATCGTGAATAACGCCACCAACGTGGTGATCAAGGTGTGCGAGTTCCAGTTCTGCAACGACCCCTTCCTGGGCGTGTA
CTACCACAAGAACAACAAGAGCTGGATGGAGAGCGAGTTCCGGGTGTACAGCAGCGCCAACAACTGCACCTTCGAGTACGTGAGCC
AGCCCTTCCTGATGGACCTGGAGGGCAAGCAGGGCAACTTCAAGAACCTGCGGGAGTTCGTGTTCAAGAACATCGACGGCTACTTC
AAGATCTACAGCAAGCACACCCCAATCAACCTGGTGCGGGATCTGCCCCAGGGCTTCTCAGCCCTGGAGCCCCTGGTGGACCTGCC
CATCGGCATCAACATCACCCGGTTCCAGACCCTGCTGGCCCTGCACCGGAGCTACCTGACCCCAGGCGACAGCAGCAGCGGGTGG
ACAGCAGGCGCGGCTGCTTACTACGTGGGCTACCTGCAGCCCCGGACCTTCCTGCTGAAGTACAACGAGAACGGCACCATCACCGA
CGCCGTGGACTGCGCCCTGGACCCTCTGAGCGAGACCAAGTGCACCCTGAAGAGCTTCACCGTGGAGAAGGGCATCTACCAGACC
AGCAACTTCCGGGTGCAGCCCACCGAGAGCATCGTGCGGTTCCCCAACATCACCAACCTGTGCCCCTTCGGCGAGGTGTTCAACGC
CACCCGGTTCGCCAGCGTGTACGCCTGGAACCGGAAGCGGATCAGCAACTGCGTGGCCGACTACAGCGTGCTGTACAACAGCGCC
AGCTTCAGCACCTTCAAGTGCTACGGCGTGAGCCCCACCAAGCTGAACGACCTGTGCTTCACCAACGTGTACGCCGACAGCTTCGT
GATCCGTGGCGACGAGGTGCGGCAGATCGCACCCGGCCAGACAGGCAAGATCGCCGACTACAACTACAAGCTGCCCGACGACTTCA
CCGGCTGCGTGATCGCCTGGAACAGCAACAACCTCGACAGCAAGGTGGGCGGCAACTACAACTACCTGTACCGGCTGTTCCGGAAG
AGCAACCTGAAGCCCTTCGAGCGGGACATCAGCACCGAGATCTACCAAGCCGGCTCCACCCCTTGCAACGGCGTGGAGGGCTTCAA
CTGCTACTTCCCTCTGCAGAGCTACGGCTTCCAGCCCACCAACGGCGTGGGCTACCAGCCCTACCGGGTGGTGGTGCTGAGCTTCG
AGCTGCTGCACGCCCCAGCCACCGTGTGTGGCCCCAAGAAGAGCACCAACCTGGTGAAGAACAAGTGCGTGAACTTCAACTTCAAC
GGCCTTACCGGCACCGGCGTGCTGACCGAGAGCAACAAGAAATTCCTGCCCTTTCAGCAGTTCGGCCGGGACATCGCCGACACCAC
CGACGCTGTGCGGGATCCCCAGACCCTGGAGATCCTGGACATCACCCCTTGCAGCTTCGGCGGCGTGAGCGTGATCACCCCAGGC
ACCAACACCAGCAACCAGGTGGCCGTGCTGTACCAGGACGTGAACTGCACCGAGGTGCCCGTGGCCATCCACGCCGACCAGCTGA
CACCCACCTGGCGGGTCTACAGCACCGGCAGCAACGTGTTCCAGACCCGGGCCGGTTGCCTGATCGGCGCCGAGCACGTGAACAA
CAGCTACGAGTGCGACATCCCCATCGGCGCCGGCATCTGTGCCAGCTACCAGACCCAGACCAATTCACCCCGGAGGGCAAGGAGCG
TGGCCAGCCAGAGCATCATCGCCTACACCATGAGCCTGGGCGCCGAGAACAGCGTGGCCTACAGCAACAACAGCATCGCCATCCCC
ACCAACTTCACCATCAGCGTGACCACCGAGATTCTGCCCGTGAGCATGACCAAGACCAGCGTGGACTGCACCATGTACATCTGCGGC
GACAGCACCGAGTGCAGCAACCTGCTGCTGCAGTACGGCAGCTTCTGCACCCAGCTGAACCGGGCCCTGACCGGCATCGCCGTGG
AGCAGGACAAGAACACCCAGGAGGTGTTCGCCCAGGTGAAGCAGATCTACAAGACCCCTCCCATCAAGGACTTCGGCGGCTTCAAC
TTCAGCCAGATCCTGCCCGACCCCAGCAAGCCCAGCAAGCGGAGCTTCATCGAGGACCTGCTGTTCAACAAGGTGACCCTAGCCGA

CGCCGGCTTCATCAAGCAGTACGGCGACTGCCTCGGCGACATAGCCGCCCGGGACCTGATCTGCGCCCAGAAGTTCAACGGCCTGA
CCGTGCTGCCTCCCCTGCTGACCGACGAGATGATCGCCCAGTACACCAGCGCCCTGTTAGCCGGAACCATCACCAGCGGCTGGACT
TTCGGCGCTGGAGCCGCTCTGCAGATCCCCTTCGCCATGCAGATGGCCTACCGGTTCAACGGCATCGGCGTGACCCAGAACGTGCT
GTACGAGAACCAGAAGCTGATCGCCAACCAGTTCAACAGCGCCATCGGCAAGATCCAGGACAGCCTGAGCAGCACCGCTAGCGCCC
TGGGCAAGCTGCAGGACGTGGTGAACCAGAACGCCCAGGCCCTGAACACCCTGGTGAAGCAGCTGAGCAGCAACTTCGGCGCCAT
CAGCAGCGTGCTGAACGACATCCTGAGCCGGCTGGACCCTCCCGAGGCCGAGGTGCAGATCGACCGGCTGATCACTGGCCGGCTG
CAGAGCCTGCAGACCTACGTGACCCAGCAGCTGATCCGGGCCGCCGAGATTCGGGCCAGCGCCAACCTGGCCGCCACCAAGATGA
GCGAGTGCGTGCTGGGCCAGAGCAAGCGGGTGGACTTCTGCGGCAAGGGCTACCACCTGATGAGCTTTCCCCAGAGCGCACCCCA
CGGAGTGGTGTTCCTGCACGTGACCTACGTGCCCGCCCAGGAGAAGAACTTCACCACCGCCCCAGCCATCTGCCACGACGGCAAGG
CCCACTTTCCCCGGGAGGGCGTGTTCGTGAGCAACGGCACCCACTGGTTCGTGACCCAGCGGAACTTCTACGAGCCCCAGATCATC
ACCACCGACAACACCTTCGTGAGCGGCAACTGCGACGTGGTGATCGGCATCGTGAACAACACCGTGTACGATCCCCTGCAGCCCGA
GCTGGACAGCTTCAAGGAGGAGCTGGACAAGTACTTCAAGAATCACACCAGCCCCGACGTGGACCTGGGCGACATCAGCGGCATCA
ACGCCAGCGTGGTGAACATCCAGAAGGAGATCGATCGGCTGAACGAGGTGGCCAAGAACCTGAACGAGAGCCTGATCGACCTGCAG
GAGCTGGGCAAGTACGAGCAGTACATCAAGTGGCCCTGGTACATCTGGCTGGGCTTCATCGCCGGCCTGATCGCCATCGTGATGGTG
ACCATCATGCTGTGCTGCATGACCAGCTGCTGCAGCTGCCTGAAGGGCTGTTGCAGCTGCGGCAGCTGCTGCAAGTTCGACGAGGA
CGACAGCGAGCCCGTGCTGAAGGGCGTGAAGCTGCACTACACCTGATAA

GenScript mNeptune2.5 mRNA (N1-Methylpseudouridine/m1Ψ)

mNeptune2.5 is a reengineered far red fluorescent protein derived from Entacmaea quadricolor, the mNeptune2.5 sequence was published by Chu J, Haynes RD, et al on Nat Methods. 2014 May; 11(5): pp 572-578. mNeptune2.5 protein can be excited at visible light range, > 600nm.
This mRNA is capped with Cap1 structure with high capping efficiency. It has 100% substituted with N1-methyl-pseudo Uridine for enhanced expression and reduced immunogenicity. The mRNA has a 100A tail in its sequence, mimics a mature mRNA.

Name	Cat. No	Scale
mNeptune2.5 (N1-Methylpseudouridine/m1Ψ)	RP-A00042-0.2	0.2 mg

Concentration: 1 mg/mL

Storage Buffer: 1 mM Sodium citrate, pH6.5

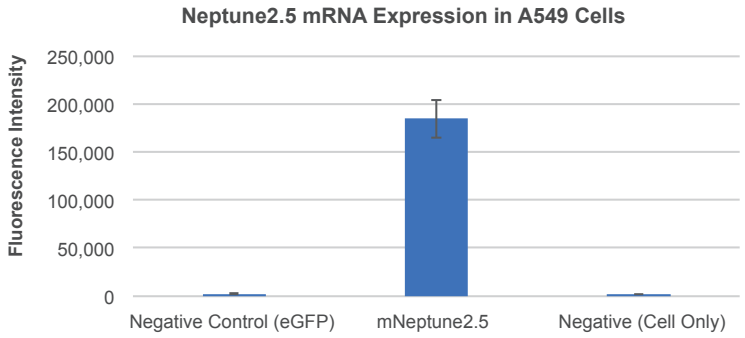
Full mRNA length: 1001 nt

Full mRNA Molecular Weight: 322181

Handling and Storage: Store at -20°C for short term (<3 months), store at -80°C for long term.

Cell Expression result:

Brief method: transfect 0.2 μg of mRNA using 0.5 μL of Lipofectamine™ MessengerMAX™ Transfection Reagent (or equivalent) for one well of cells in a 96 well plate following manufacture's instruction. Test the result after 12 to 16 hours using plate reader, or flow cytometry. Suggest using excitation wavelength at 540 nm, emission



mNeptune2.5 mRNA ORF sequence:

ATGGTGAGCAAGGGCGAGGAGCTGATCAAGGAGAACATGCACACCAAGCTGTACATGGAAGGCACCGTGAACAACCACCACTTCAA
GTGCACCCACGAAGGGGAGGGCAAGCCCTACGAGGGCACCCAGACCAACAGGATTAAGGTGGTGGAGGGAGGCCCCCTGCCGTTC
GCATTCGACATCCTGGCCACCTGCTTTATGTACGGGAGCAAGACCTTCATCAACCACACCCAGGGCATCCCCGATTTCTTTAAGCAGT
CCTTCCCTGAGGGCTTCACATGGGAGAGAGTCACCACATACGAAGACGGGGGCGTGCTTACCGTTACCCAGGACACCAGCCTCCAG
GACGGCTGCTTGATCTACAACGTCAAGCTCAGAGGGGTGAACTTCCCATCCAACGGCCCTGTGATGCAGAAGAAAACACTCGGCTG
GGAGGCCAGTACCGAGACCCTGTACCCCGCTGACGGCGGCCTGGAAGGCAGATGCGACATGGCCCTGAAGCTCGTGGGCGGGGG
CCACCTGCACTGCAACCTGAAGACCACATACAGATCCAAGAAACCCGCTAAGAACCTCAAGATGCCCGGCGTCTACTTTGTGGACCG
CAGACTGGAAAGAATCAAGGAGGCCGACAATGAGACCTACGTCGAGCAGCACGAGGTGGCTGTGGCCAGATACTGCGACCTCCCTA
GCAAACTGGGGCACAAACTTAATGGCATGGACGAGCTGTACAAGTAA

GenScript CPF1/Cas12a mRNA (N1-Methylpseudouridine/m1Ψ)

Cpf1 is a novel class of CRISPR-Cas DNA endonuclease. The LbCpf1/Cas12a allow efficient mutagenesis in zebrafish and Xenopus (Moreno-Mateos, et al. Nat Communication, 2017; 8: 2024). LbCpf1 increases homology-directed genome editing.
This mRNA is capped with Cap1 structure with high capping efficiency. It has 100% substituted with N1-methyl-pseudo Uridine for enhanced expression and reduced immunogenicity. The mRNA has a 100A tail in its sequence, mimics a mature mRNA.

Name	Cat. No	Scale
CPF1 mRNA (N1-Methylpseudouridine/m1Ψ)	RP-A00004-0.2	0.2 mg
	RP-A00004-1	1 mg

Concentration: 1 mg/mL

Storage Buffer: 1 mM Sodium citrate, pH6.5

Full mRNA length: 4047 nt

Full mRNA Molecular Weight: 1,313,929

Handling and Storage: Store at -20°C for short term (<3 months), store at -80°C for long term.

Cpf1/Cas12a mRNA ORF sequence:

ATGGCCCCAAAGAAGAAGCGGAAGGTCGGTATCCACGGAGTCCCAGCAGCCAGCAAGCTGGAGAAGTTTACAAACTGCTACTCCCT
GTCTAAGACCCTGAGGTTCAAGGCCATCCCTGTGGGCAAGACCCAGGAGAACATCGACAATAAGCGGCTGCTGGTGGAGGACGAGA
AGAGAGCCGAGGATTATAAGGGCGTGAAGAAGCTGCTGGATCGCTACTATCTGTCTTTTATCAACGACGTGCTGCACAGCATCAAGCT
GAAGAATCTGAACAATTACATCAGCCTGTTCCGGAAGAAAACCAGAACCGAGAAGGAGAATAAGGAGCTGGAGAACCTGGAGATCAAT
CTGCGGAAGGAGATCGCCAAGGCCTTCAAGGGCAACGAGGGCTACAAGTCCCTGTTTAAGAAGGATATCATCGAGACAATCCTGCCA
GAGTTCCTGGACGATAAGGACGAGATCGCCCTGGTGAACAGCTTCAATGGCTTTACCACAGCCTTCACCGGCTTCTTTGATAACAGAG
AGAATATGTTTTCCGAGGAGGCCAAGAGCACATCCATCGCCTTCAGGTGTATCAACGAGAATCTGACCCGCTACATCTCTAATATGGAC
ATCTTCGAGAAGGTGGACGCCATCTTTGATAAGCACGAGGTGCAGGAGATCAAGGAGAAGATCCTGAACAGCGACTATGATGTGGAG
GATTTCTTTGAGGGCGAGTTCTTTAACTTTGTGCTGACACAGGAGGGCATCGACGTGTATAACGCCATCATCGGCGGCTTCGTGACCG
AGAGCGGCGAGAAGATCAAGGGCCTGAACGAGTACATCAACCTGTATAATCAGAAAACCAAGCAGAAGCTGCCTAAGTTTAAGCCACT
GTATAAGCAGGTGCTGAGCGATCGGGAGTCTCTGAGCTTCTACGGCGAGGGCTATACATCCGATGAGGAGGTGCTGGAGGTGTTTAG
AAACACCCTGAACAAGAACAGCGAGATCTTCAGCTCCATCAAGAAGCTGGAGAAGCTGTTCAAGAATTTTGACGAGTACTCTAGCGCC
GGCATCTTTGTGAAGAACGGCCCCGCCATCAGCACAATCTCCAAGGATATCTTCGGCGAGTGGAACGTGATCCGGGACAAGTGGAAT
GCCGAGTATGACGATATCCACCTGAAGAAGAAGGCCGTGGTGACCGAGAAGTACGAGGACGATCGGAGAAAGTCCTTCAAGAAGATC
GGCTCCTTTTCTCTGGAGCAGCTGCAGGAGTACGCCGACGCCGATCTGTCTGTGGTGGAGAAGCTGAAGGAGATCATCATCCAGAA
GGTGGATGAGATCTACAAGGTGTATGGCTCCTCTGAGAAGCTGTTCGACGCCGATTTTGTGCTGGAGAAGTCTCTGAAGAAGAACGA
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AGGCAAAAAAGAAAAAGTAA

GenScript PE2/PE3 mRNA (N1-Methylpseudouridine/m1Ψ)

Prime editing (PE) systems minimally consist of two components: a programmable DNA nickase fused to an engineered reverse transcriptase and a pegRNA. The PE2/PE3 mRNA sequence was from publication: Nelson, et al. Nat Biotechnology, 2022; 40: 402-410. This mRNA is capped with Cap1 structure with high capping efficiency. It has 100% substituted with N1-methyl-pseudo Uridine for enhanced expression and reduced immunogenicity. The mRNA has a 100A tail in its sequence, mimics a mature mRNA.

Name	Cat. No	Scale
PE2/PE3 mRNA (N1-Methylpseudouridine/m1Ψ)	RP-A00044-0.2	0.2 mg
	RP-A00044-1	1 mg

Concentration: 1 mg/mL

Storage Buffer: 1 mM Sodium citrate, pH6.5

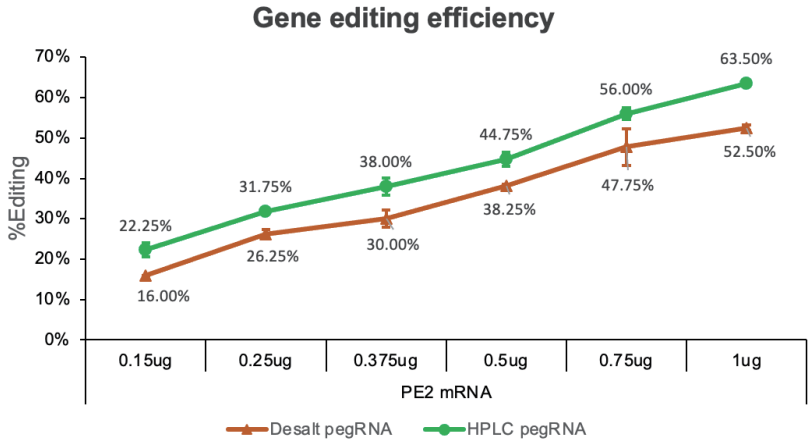
Full mRNA length: 6652 nt

Full mRNA Molecular Weight: 2167186

Handling and Storage: Store at -20°C for short term (<3 months), store at -80°C for long term.

Cell Expression Results:

Brief method: PE2/PE3 mRNA and a 141 nt pegRNA (mG*mG*mC*rCrCrArGrArCrUrGrArGrCrArCrGrUrGrArGrUrUrUrUrArGrArGrCrUrArGrArArArUrArGrCrArArGrUrUrArArArArUrArArGrGrCrUrArGrUrCrCrGrUrUrArUrCrArArCrUrUrGrArArArArArGrUrGrGrCrArCrCrGrArGrUrCrGrGrUrGrCrUrUrUrUrCrCrUrUrCrUrGrCrCrGrUrGrCrUrCrArGrUrCrUrG*mU*mU*mU) were transfected into HEK293T cells using electroporation. The gene editing efficiency was measured by sanger sequencing after 2 days.



PE2/PE3 mRNA ORF sequence:

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CGGCACCAACTCTGTGGGCTGGGCCGTGATCACCGACGAGTACAAGGTGCCCAGCAAGAAATTCAAGGTGCTGGGCAACACCGACC
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AGCACCACCAGGACCTGACCCTGCTGAAAGCTCTCGTGCGGCAGCAGCTGCCTGAGAAGTACAAAGAGATTTTCTTCGACCAGAGC
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GenScript PiggyBac mRNA (N1-Methylpseudouridine/m1Ψ)

PiggyBac is a DNA transposon and a promising alternative to Sleeping Beauty. Piggybac is originally isolated from the cabbage looper moth Trichoplusia ni genome, is distinguished by its ability to excise precisely. (Zheng Zhang, et al, J Comput Biol 2000; 7(1-2):203-14.) This mRNA is capped with Cap1 structure with high capping efficiency. It has 100% substituted with N1-methyl-pseudo Uridine for enhanced expression and reduced immunogenicity. The mRNA has a 100A tail in its sequence, mimics a mature mRNA.

Name	Cat. No	Scale
PiggyBac mRNA (N1-Methylpseudouridine/m1Ψ)	RP-A00046-0.2	0.2 mg

Concentration: 1 mg/mL

Storage Buffer: 1 mM Sodium citrate, pH6.5

Full mRNA length: 2049 nt

Full mRNA Molecular Weight: 669231

Handling and Storage: Store at -20°C for short term (<3 months), store at -80°C for long term.

PiggyBac mRNA ORF sequence :

ATGGGTAGTTCTTTAGACGATGAGCATATCCTCTCTGCTCTGCTGCAAAGCGATGACGAGCTTGTTGGTGAGGATTCTGACAGTGAAATAT
CAGATCACGTAAGTGAAGATGACGTCCAGAGCGATACAGAAGAAGCGTTTATAGATGAGGTACATGAAGTGCAGCCAACGTCAAGCGGTA
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GTAAGAATAAACATTGTTGGTCAACTTCAAAGTCCACGAGGCGTAGCCGAGTCTCTGCACTGAACATTGTCAGATCTCAAAGAGGTCCGAC
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AAAACGTACTTACTGTACTTACTGCCCCTCTAAAATAAGGCGAAAGGCAAATGCATCGTGCAAAAAATGCAAAAAAGTTATTTGTCGAGAGC
ATAATATTGATATGTGCCAAAGTTGTTTCTGA

GenScript Cre mRNA (N1-Methylpseudouridine/m1Ψ)

Cre is a tyrosine recombinase enzyme derived from the P1 bacteriophage. The cre-loxP-mediated recombination system is an integral experimental tool for mammalian genetic and cell biology. This mRNA is capped with Cap1 structure with high capping efficiency. It has 100% substituted with N1-methyl-pseudoUridine for enhanced expression and reduced immunogenicity. The mRNA has a 100A tail in its sequence, mimics a mature mRNA.

Name	Cat. No	Scale
Cre mRNA (N1-Methylpseudouridine/m1Ψ)	RP-A00005-0.2	0.2 mg
	RP-A00005-1	1 mg

Concentration: 1 mg/mL

Storage Buffer: 1 mM Sodium citrate, pH6.5

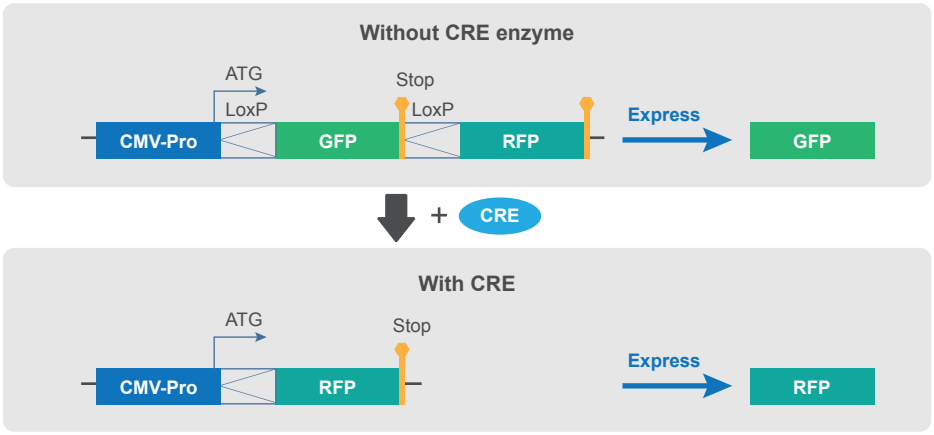
Full mRNA length: 1407 nt

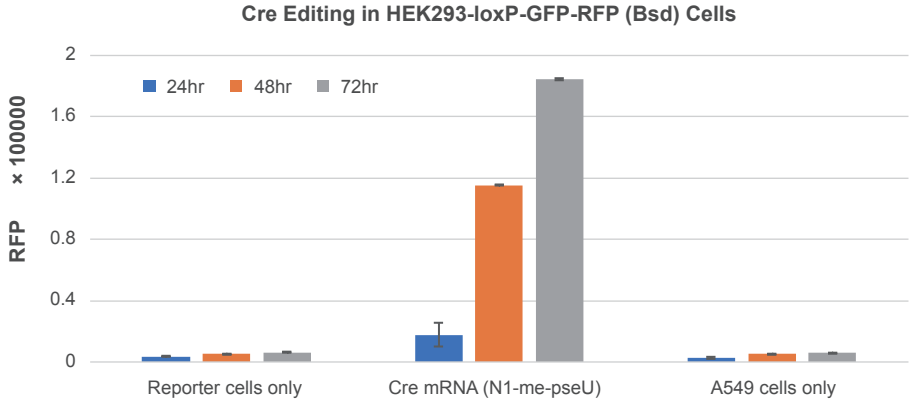
Full mRNA Molecular Weight: 459548.7322

Handling and Storage: Store at -20°C for short term (<3 months), store at -80°C for long term.

Cell Expression result:

Brief method: transfect 0.1 μg of mRNA using 0.5 μL of Lipofectamine™ MessengerMAX™ Transfection Reagent (or equivalent) for one well of HEK293-LoxP-GFP-RFP(Bsd) cells in a 96 well plate following manufacture's instruction. Detect the RFP expression on cells using plate reader at the excitation of 560 nm, and emission at 620 nm.





Cre mRNA ORF sequence:

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TGTTGTTGTCTGTGTGTCGCTCCTGGGCTGCCTGGTGCAAACTTAACAACAGGAAGTGGTTCCCTGCAGAGCCTGAGGACGTCAGAG
ACTATCTGCTCTACTTGCAAGCACGAGGACTCGCGGTAAAGACCATCCAGCAGCACCTGGGCCAGCTGAACATGCTGCACAGGAGGT
CTGGGCTGCCCCGACCAAGTGACTCAAATGCTGTGTCTCTGGTCATGAGACGCATCCGCAAGGAGAATGTGGATGCCGGAGAACGA
GCCAAGCAGGCTCTGGCTTTTGAACGGACAGACTTTGATCAGGTGAGATCCCTGATGGAGAACTCAGATAGATGCCAGGACATCCGG
AACCTGGCCTTTCTTGGGATAGCCTACAACACCTTGCTGAGGATAGCAGAAATTGCCAGAATTCGGGTCAAGGACATTAGCAGGACAG
ATGGGGGCAGGATGCTCATCCACATTGGCCGGACTAAAACCCTTGTTTCAACTGCAGGCGTGGAAAAAGCCTTGAGCTTAGGTGTCA
CCAAGCTGGTGGAGAGATGGATCAGCGTCTCCGGAGTTGCAGACGACCCAAATAATTATCTCTTCTGTCGTGTTCGGAAGAACGGAGT
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TGGTGCGATTACTGGAAGATGGCGATTGAAAAAGGCCGGCGGCCACGAAAAAGGCCGGCCAGGCAAAAAAGAAAAAGGAATTCGGC
AGTGGATAA

GenScript PEmax-mRNA (N1-Methylpseudouridine/m1Ψ)

The PEmax mRNA expresses an optimized prime editor enzymatic protein, which further increased editing efficiency in synergy with PE4, PE5 and engineered pegRNAs (Chen P, et al. 2021, Cell 184, 5635-5652). After efficient delivery into cells or animals, PEmax mRNA can translate into protein including a nickase and reverse transcriptase function for gene editing in cells.
This mRNA is capped with Cap1-AG structure with high capping efficiency. It has 100% substituted with N1-methylpseudouridine for enhanced expression and reduced immunogenicity. The mRNA has a ~100A tail in its sequence, mimics a mature mRNA.

Name	Cat. No	Scale
PEmax mRNA (N1methylpseudouridine/m1Ψ)	RP-A00045-0.2	0.2 mg
	RP-A00045-1	1 mg

Concentration: 1 mg/mL

Storage Buffer: 1 mM Sodium citrate, pH6.5

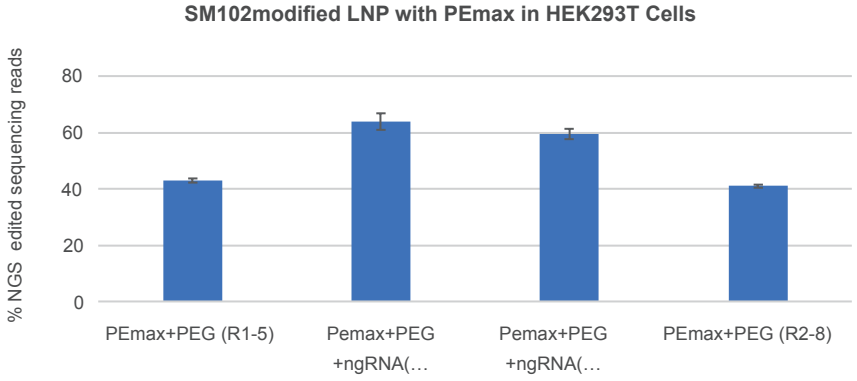
Full mRNA length: 6660 nt

Full mRNA Molecular Weight: 2.15 X 10^6 Da

Handling and Storage: Store at -20°C for short term (<3 months), store at -80°C for long term.

Cell Expression result:

PEmax mRNA + HEK3 pegRNA with or without nicking guide RNA were encapsulated in SM102 modified LNP, LNP loaded with 2 μg of RNA were incubated with 2×10^5 HEK293T cells. 48h after transfection, cells were collected to extract gDNA. Gene editing were verified by NGS.



PEmax mRNA ORF sequence:

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GGCACAAACTCCGTGGGATGGGCCGTGATCACCGACGAATACAAAGTCCCTAGCAAAAAGTTCAAGGTGTTGGGCAATACCGACCGG
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GenScript saCas9-mRNA (N1-Methylpseudouridine/m1Ψ)

The saCas9 mRNA expresses an wild type Staphylococcus aureus cas9 (saCas9) enzymatic protein. After efficient delivery into cells or animals, saCas9 mRNA can translate into protein function for gene editing in cells.
This mRNA is capped with Cap1-AG structure with high capping efficiency. It has 100% substituted with N1-methylpseudouridine for enhanced expression and reduced immunogenicity. The mRNA has a ~100A tail in its sequence, mimics a mature mRNA.

Name	Cat. No	Scale
saCas9 mRNA (N1methylpseudouridine/m1Ψ)	RP-A00047-0.2	0.2 mg
	RP-A00047-1	1 mg

Concentration: 1mg/mL

Storage Buffer: 1mM Sodium citrate, pH6.5

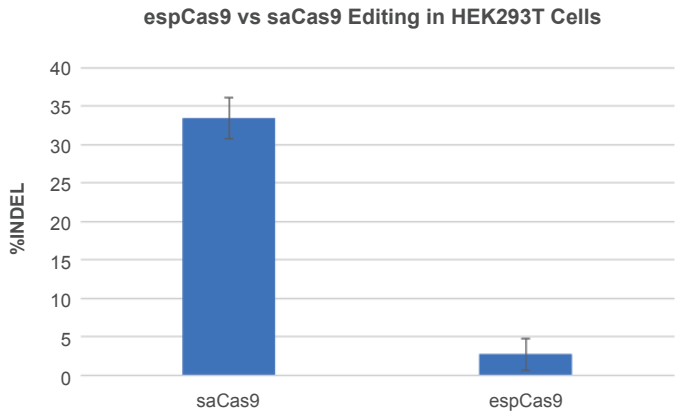
Full mRNA length: 3534 nt

Full mRNA Molecular Weight: 1.14 X 10^6 Da

Handling and Storage: Store at -20°C for short term (<3 months), store at -80°C for long term.

Cell Expression result:

We compared the EMX1 locus knock out efficiency in HEK293T cells with espCas9 mRNA and saCas9 mRNA. The mRNA and sgRNA targeting EMX1 locus were co-transfected into Hek293T cells with lipofectamine MessengerMax, and the INDEL efficiency of the cas9 mRNA system to EMX1 locus were tested by Sanger sequencing.



saCas9 mRNA ORF sequence:

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GenScript CBEmax mRNA (N1-Methylpseudouridine/m1Ψ)

Cytosine base editors (CBEs) system is constructed by fusing an artificially evolved cytosine deaminase to a mutated Cas9 that is a single-strand DNA nickase, can precisely and permanently convert C·G to T·A with the guidance of a target-specific guide RNA (gRNA) without creating a double-strand DNA break and without requiring an exogenous DNA repair donor. This mRNA is human codon optimized CBE4max SpCas9 variant named SpG, with sequence originally from Walton et al Science. 2020 Apr 17;368(6488):290-296, capped with Cap1 structure with high capping efficiency. It has 100% substituted with N1-methyl-pseudoUridine for enhanced expression and reduced immunogenicity. The mRNA has a 100A tail in its sequence, mimics a mature mRNA.

Name	Cat. No	Scale
CBEmax mRNA (N1-Methylpseudouridine/m1Ψ)	RP-A00002-0.2	0.2 mg
	RP-A00002-1	1 mg

Concentration: 1mg/mL

Storage Buffer: 1mM Sodium citrate, pH6.5

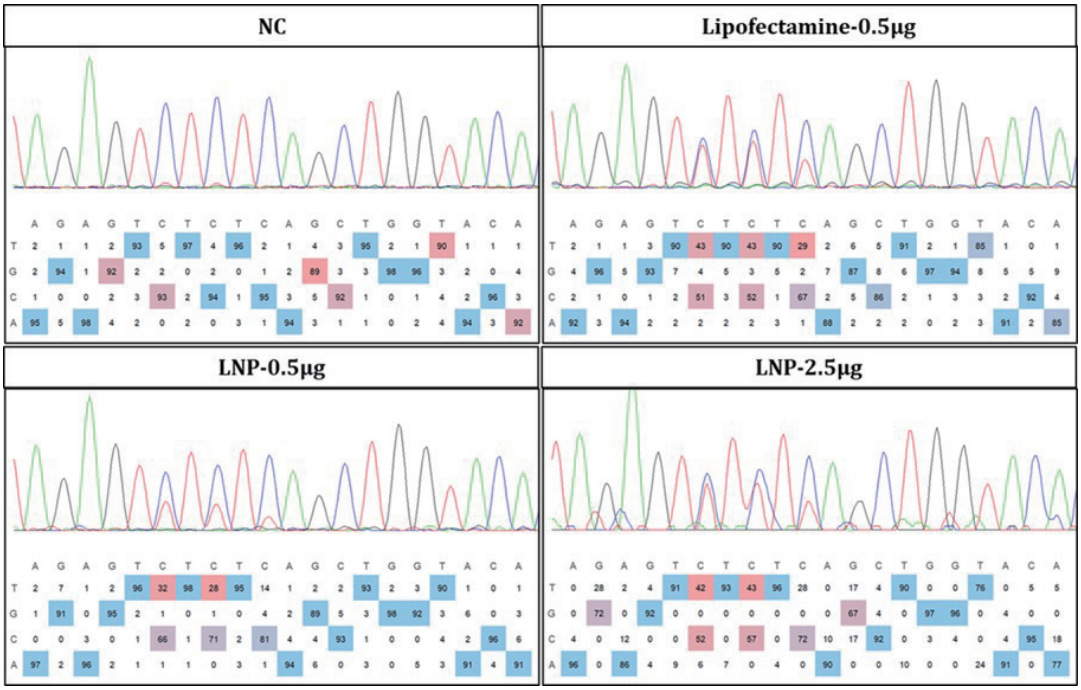
Full mRNA length: 5831 nt

Full mRNA Molecular Weight: 1899231.05

Handling and Storage: Store at -20°C for short term (<3 months), store at -80°C for long term.

Gene Editing Results:

Brief method: CBEmax mRNA and TRAC sgRNA (mA*mG*mA*rGrUrCrUrCrUrCrArGrCrUrGrGrUrArCrArGrUrUrUrUrArGrArGrCrUrArGrArArArUrArGrCrArArGrUrUrArArArArArUrArArArGrGrCrUrArGrUrCrCrGrUrUrArUrCrArArCrUrUrGrArArArArArGrUrGrGrCrArCrCrGrArGrUrCrGrGrUrGrCrU*mU*mU*mU, GenScript SafeEdit sgRNA, 2:1 mass ratio) were transfected into HEK293T cells using lipofectamine or LNP. The gene editing efficiency was measured by sanger sequencing after 2 days.



CBEmax mRNA ORF sequence

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GenScript Erythropoietin (EPO) mRNA (N1-Methylpseudouridine/m1Ψ)

Erythropoietin is a hormone essential for the production of red blood cells and for maintaining oxygen supply to the body. It is a glycoprotein secreted mainly by the kidney and also by the liver. Recombinant human EPO protein has been widely used to treat anemias resulting from kidney diseases and cancer chemotherapy.

This mRNA is capped with Cap1 structure with high capping efficiency. It is 100% substituted with N1-methyl-pseudo uridine for enhanced expression and reduced immunogenicity. The mRNA has a 100A tail in its sequence, which mimics a mature mRNA.

Name	Cat. No	Scale
EPO (N1-Methylpseudouridine/m1Ψ)	RP-A00034-0.2	0.2 mg
	RP-A00034-1	1 mg

Concentration: 1 mg/mL

Storage Buffer: 1 mM Sodium citrate, pH6.5

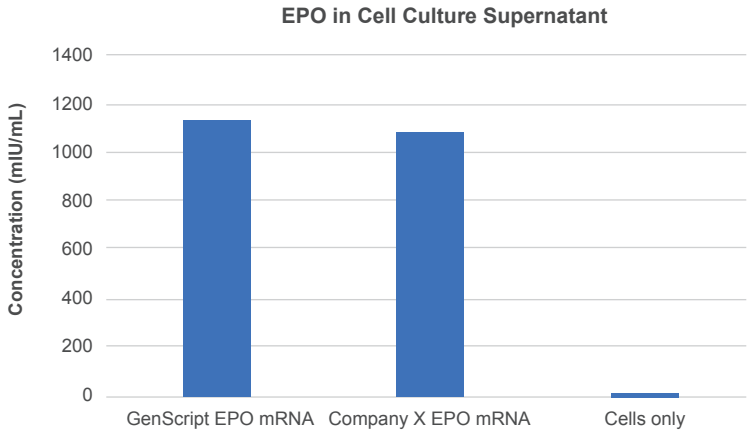
Full mRNA length: 846 nt

Full mRNA Molecular Weight: 273190

Handling and Storage: Store at -20°C for short term (<3 months), store at -80°C for long term.

Cell Expression result:

Brief method: transfect 0.1 μg of mRNA using 0.3 μL of Lipofectamine™ MessengerMAX™ Transfection Reagent (or equivalent) for one well of cells in a 96-well plate following manufacturer's instruction. Collect the cell supernatant after 12 to 16 hours. Cell supernatant was diluted 5x using sample dilution buffer, and EPO secretion was measured using the ELISA kit Human EPO (Sandwich ELISA) ELISA Kit - BMS2035-2 from ThermoFisher.



EPO mRNA ORF sequence:

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CAGCCACAACGTCTATATCATGGCCGACAAGCAGAAGAACGGCATCAAGGTGAACTTCAAGATCCGCCACAACATCGAGGACGGCAGCGT
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GCCCTGAGCAAAGACCCCAACGAGAAGCGCGATCACATGGTCCTGCTGGAGTTCGTGACCGCCGCCGGGATCACTCTCGGCATGGACG
AGCTGTACAAGTAA

GenScript EGFP saRNA (5-methylcytidine/m5C)

The EGFP self-amplifying RNA (saRNA) expresses an enhanced green fluorescent protein, with the open reading frame sequence originally from the jellyfish, Aequorea Victoria. EGFP saRNA is a commonly used fluorescence reporter sequence in mRNA therapeutics and delivery system development projects. The expressed protein has an excitation wavelength of 488nm, emission at 507nm.
This saRNA is capped with Cap1-AU structure with high capping efficiency. It has 100% substituted with 5-methylcytidine for enhanced expression and reduced immunogenicity. The saRNA has a 68A tail in its sequence, mimics a mature mRNA.

Name	Cat. No	Scale
EGFP saRNA (5-methylcytidine/m5C)	RP-A00015-25	0.025 mg

Concentration: 1 mg/mL

Storage Buffer: 1 mM Sodium citrate, pH6.5

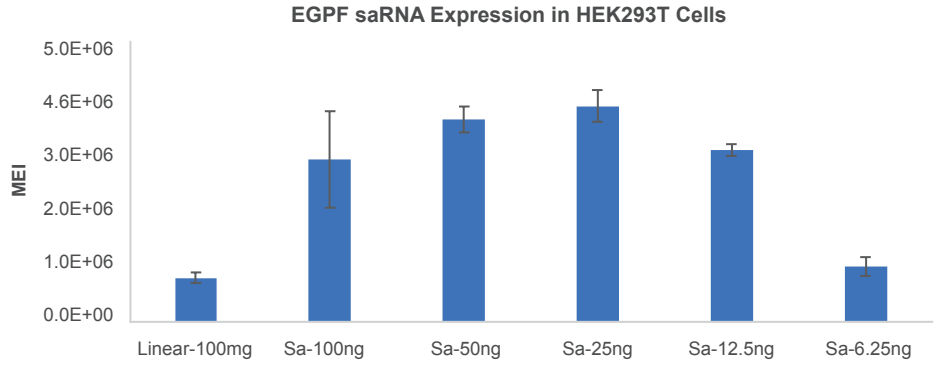
Full saRNA length: 9891 nt

Full mRNA Molecular Weight: 3441479

Handling and Storage: Store at -20°C for short term (<3 months), store at -80°C for long term.

Cell Expression result:

HEK293T cells were transfected with 100ng EGFP normal linear mRNA or different dosage of EGFP saRNA samples using LNPs. SaRNA transfected cells expressed significantly higher levels of EGFP than normal linear mRNA.



EGFP saRNA ORF sequence:

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AGTCCGCCATGCCCGAAGGCTACGTCCAGGAGCGCACCATCTTCTTCAAGGACGACGGCAACTACAAGACCCGCGCCGAGGTGAAG
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GGATCACTCTCGGCATGGACGAGCTGTACAAGTAA

GenScript F-Luc saRNA (5-methylcytidine/m5C)

The Firefly-Luciferase (F-Luc) self-amplifying RNA (saRNA) expresses firefly luciferase protein, which is the enzyme for bioluminescence of fireflies and click beetles. After efficient delivery into cells or animals, F-Luc mRNA can translate into F-Luc and emit bioluminescence in the presence of its substrate, Luciferin.
This saRNA is capped with Cap1-AU structure with high capping efficiency. It has 100% substituted with 5-methylcytidine for enhanced expression and reduced immunogenicity. The saRNA has a ~70A tail in its sequence, mimics a mature mRNA.

Name	Cat. No	Scale
F-Luc saRNA (5-methylcytidine/m5C)	RP-A00032-25	0.025 mg

Concentration: 1 mg/mL

Storage Buffer: 1 mM Sodium citrate, pH6.5

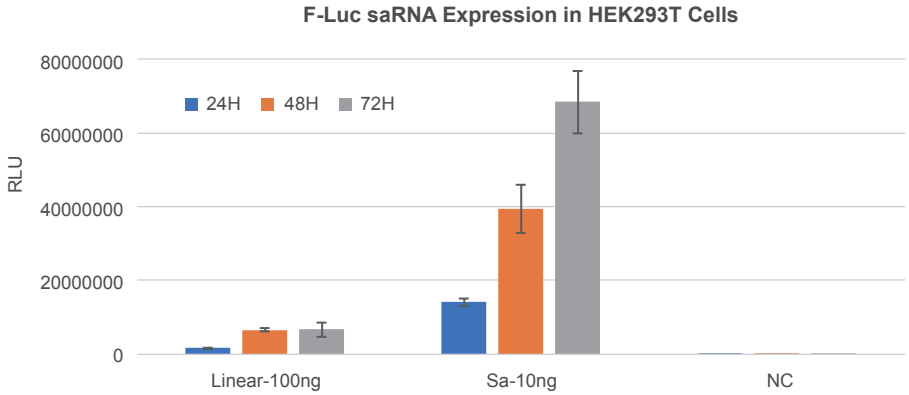
Full saRNA length: 10824 nt

Full mRNA Molecular Weight: 3760097

Handling and Storage: Store at -20°C for short term (<3 months), store at -80°C for long term.

Cell Expression result:

HEK293T cells were transfected with 100ng F-Luc normal linear mRNA or 10ng F-Luc saRNA samples using LNPs. SaRNA transfected cells expressed significantly higher levels of F-Luc than normal linear mRNA even at 1/10 dose.



F-Luc saRNA ORF sequence:

ATGGAGGACGCCAAGAACATCAAGAAGGGCCCCGCCCCCTTCTACCCCCTGGAGGACGGCACCGCCGGCGAGCAGCTGCACAAGGC
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CACCGCCATCCTGAGCGTGGTGCCCTTCCACCACGGCTTCGGCATGTTCACCACCCTGGGCTACCTGATCTGCGGCTTCCGGGTGGTG
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GCTTCTTCGCCAAGAGCACCCTGATCGACAAGTACGACCTGAGCAACCTGCACGAGATCGCCAGCGGCGGCGCCCCCCTGAGCAAGG
AGGTGGGCGAGGCCGTGGCCAAGCGGTTCCACCTGCCCGGCATCCGGCAGGGCTACGGCCTGACCGAGACCACCAGCGCCATCCTG
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CAAGGGCCTGACCGGCAAGCTGGACGCCCGGAAGATCCGGGAGATCCTGATCAAGGCCAAGAAGGGCGGCAAGATCGCCGTGTGA

GenLNP-S01- EGPF mRNA (m1Ψ)

The LNP formulation loaded with eGFP mRNA (m1Ψ) is prepared using generic LNP formulation with main ionizable lipid of SM102. The payload EGFP mRNA (m1Ψ) has all the U bases 100% modified with N1-methyl-pseudo-Uridine. It expresses an enhanced green fluorescent protein, with the open reading frame sequence originally from the jellyfish, Aequorea Victoria. EGFP mRNA is a commonly used fluorescence reporter sequence in mRNA therapeutics and delivery system development projects. The expressed protein has an excitation wavelength of 488nm, emission at 507 nm.

This formulation is a good control for testing if SM102 LNP formulation is a good potential formulation for your mRNA product under research in your in vitro and in vivo experiment model.

Name	Cat. No	Scale
EGFP mRNA (m1Ψ) - SM102 LNP	RP-A00016	0.05 mg

Concentration: 0.15 mg/mL

Storage Buffer: Tris-HCl/Sucrose

Full mRNA length: 980 nt

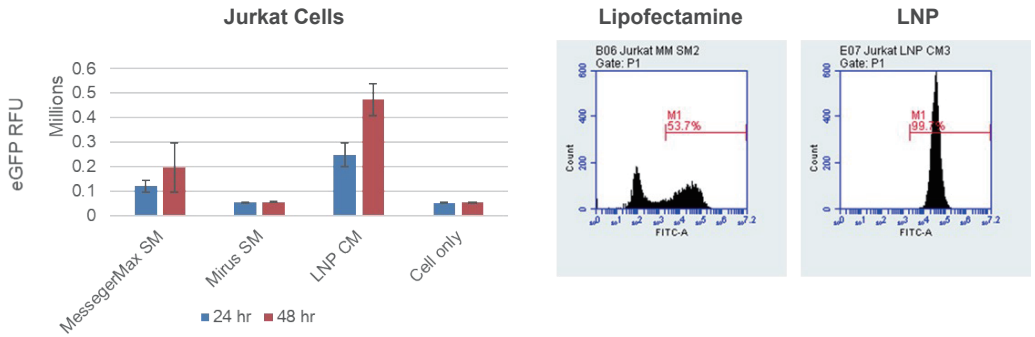
Full mRNA Molecular Weight: 319792

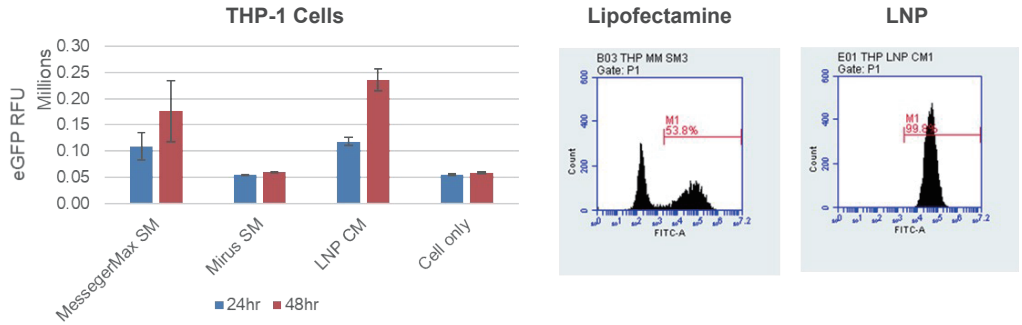
Handling and Storage: Store at -80°C for long term. Avoid freeze thaw, only thaw once before use.

Cell Expression result:

We compared the transfection efficiency of GenScript LNP-SM102, lipofectamine MessengerMax, or Mirus TransIT-Jurkat Transfection Reagent for delivering eGFP mRNA into A549 cells, Hela cells or Jurkat Cells. 100 ng or 200 ng of mRNA were transfected to each well of cells in 24 well plate, Starvation medium (OptiMEM) was used for lipofectamine and TransIT per manufacture's instruction, and complete medium was used for LNP. The expression of eGFP was measured by flowcytometry after 48 hours.

LNP has higher transfection efficiency to immune cells in vitro comparing to other transfection kit.





EGFP mRNA ORF sequence:

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GATCACTCTCGGCATGGACGAGCTGTACAAGTAA

GenLNP-S01-EGFP mRNA (5MOU)

The LNP formulation loaded with eGFP mRNA (5MOU) is prepared using generic LNP formulation with main ionizable lipid of SM102. The payload EGFP mRNA (5MOU) has all the U bases 100% modified with 5-methoxy Uridine. It expresses an enhanced green fluorescent protein, with the open reading frame sequence originally from the jellyfish, Aequorea Victoria. EGFP mRNA is a commonly used fluorescence reporter sequence in mRNA therapeutics and delivery system development projects. The expressed protein has an excitation wavelength of 488nm, emission at 507nm.

This formulation is a good control for testing if SM102 LNP formulation is a good potential formulation for your mRNA product under research in your in vitro and in vivo experiment model.

Name	Cat. No	Scale
EGFP mRNA (5MOU) - SM102 LNP	RP-A00007	0.05 mg

Concentration: 0.15 mg/mL

Storage Buffer: Tris-HCl/Sucrose

Full mRNA length: 980nt

Full mRNA Molecular Weight: 319792

Handling and Storage: Store at -80°C for long term. Avoid freeze thaw, only thaw once before use.

EGFP mRNA ORF sequence:

ATGGTGAGCAAGGGCGAGGAGCTGTTCACCGGGGTGGTGCCCATCCTGGTCGAGCTGGACGGCGACGTAAACGGCCACAAGTTCA
GCGTGTCCGGCGAGGGCGAGGGCGATGCCACCTACGGCAAGCTGACCCTGAAGTTCATCTGCACCACCGGCAAGCTGCCCGTGCC
CTGGCCCACCCTCGTGACCACCCTGACCTACGGCGTGCAGTGCTTCAGCCGCTACCCCGACCACATGAAGCAGCACGACTTCTTCA
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CGAGGACGGCAGCGTGCAGCTCGCCGACCACTACCAGCAGAACACCCCCATCGGCGACGGCCCCGTGCTGCTGCCCGACAACCAC
TACCTGAGCACCCAGTCCGCCCTGAGCAAAGACCCCAACGAGAAGCGCGATCACATGGTCCTGCTGGAGTTCGTGACCGCCGCCGG
GATCACTCTCGGCATGGACGAGCTGTACAAGTAA

GenLNP-L01- EGFP mRNA (m1Ψ)

The LNP formulation loaded with eGFP mRNA (m1Ψ) is prepared using generic LNP formulation with main ionizable lipid of LP01. The payload EGFP mRNA (m1Ψ) has all the U bases 100% modified with N1-methyl-pseudoUridine. It expresses an enhanced green fluorescent protein, with the open reading frame sequence originally from the jellyfish, Aequorea Victoria. EGFP mRNA is a commonly used fluorescence reporter sequence in mRNA therapeutics and delivery system development projects. The expressed protein has an excitation wavelength of 488nm, emission at 507nm.

This formulation is a good control for testing if LP01 LNP formulation is a good potential formulation for your mRNA product under research in your in vitro and in vivo experiment model.

Name	Cat. No	Scale
EGFP mRNA (m1Ψ) – LP01 LNP	RP-A00013	0.05 mg

Concentration: 0.15 mg/mL

Storage Buffer: Tris-HCl/Sucrose

Full mRNA length: 980 nt

Full mRNA Molecular Weight: 319792

Handling and Storage: Store at -80°C for long term. Avoid freeze thaw, only thaw once before use.

EGFP mRNA ORF sequence:

ATGGTGAGCAAGGGCGAGGAGCTGTTCACCGGGGTGGTGCCCATCCTGGTCGAGCTGGACGGCGACGTAAACGGCCACAAGTTCA
GCGTGTCCGGCGAGGGCGAGGGCGATGCCACCTACGGCAAGCTGACCCTGAAGTTCATCTGCACCACCGGCAAGCTGCCCGTGCC
CTGGCCCACCCTCGTGACCACCCTGACCTACGGCGTGCAGTGCTTCAGCCGCTACCCCGACCACATGAAGCAGCACGACTTCTTCA
AGTCCGCCATGCCCGAAGGCTACGTCCAGGAGCGCACCATCTTCTTCAAGGACGACGGCAACTACAAGACCCGCGCCGAGGTGAAG
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CGAGGACGGCAGCGTGCAGCTCGCCGACCACTACCAGCAGAACACCCCCATCGGCGACGGCCCCGTGCTGCTGCCCGACAACCAC
TACCTGAGCACCCAGTCCGCCCTGAGCAAAGACCCCAACGAGAAGCGCGATCACATGGTCCTGCTGGAGTTCGTGACCGCCGCCGG
GATCACTCTCGGCATGGACGAGCTGTACAAGTAA

GenLNP-A01- EGFP mRNA (m1Ψ)

The LNP formulation loaded with eGFP mRNA (m1Ψ) is prepared using generic LNP formulation with main ionizable lipid of ALC0315. The payload EGFP mRNA (m1Ψ) has all the U bases 100% modified with N1-methyl-pseudoUridine. It expresses an enhanced green fluorescent protein, with the open reading frame sequence originally from the jellyfish, Aequorea Victoria. EGFP mRNA is a commonly used fluorescence reporter sequence in mRNA therapeutics and delivery system development projects. The expressed protein has an excitation wavelength of 488nm, emission at 507nm.

This formulation is a good control for testing if ALC0315 LNP formulation is a good potential formulation for your mRNA product under research in your in vitro and in vivo experiment model.

Name	Cat. No	Scale
GenLNP-A01- EGFP mRNA (m1Ψ)	RP-A00010	0.05 mg

Concentration: 0.15mg/mL

Storage Buffer: Tris-HCl/Sucrose

Full mRNA length: 980 nt

Full mRNA Molecular Weight: 319792

Handling and Storage: Store at -80°C for long term. Avoid freeze thaw, only thaw once before use.

EGFP mRNA ORF sequence:

ATGGTGAGCAAGGGCGAGGAGCTGTTCACCGGGGTGGTGCCCATCCTGGTCGAGCTGGACGGCGACGTAAACGGCCACAAGTTCA
GCGTGTCCGGCGAGGGCGAGGGCGATGCCACCTACGGCAAGCTGACCCTGAAGTTCATCTGCACCACCGGCAAGCTGCCCGTGCC
CTGGCCCACCCTCGTGACCACCCTGACCTACGGCGTGCAGTGCTTCAGCCGCTACCCCGACCACATGAAGCAGCACGACTTCTTCA
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TTCGAGGGCGACACCCTGGTGAACCGCATCGAGCTGAAGGGCATCGACTTCAAGGAGGACGGCAACATCCTGGGGCACAAGCTGG
AGTACAACTACAACAGCCACAACGTCTATATCATGGCCGACAAGCAGAAGAACGGCATCAAGGTGAACTTCAAGATCCGCCACAACAT
CGAGGACGGCAGCGTGCAGCTCGCCGACCACTACCAGCAGAACACCCCCATCGGCGACGGCCCCGTGCTGCTGCCCGACAACCAC
TACCTGAGCACCCAGTCCGCCCTGAGCAAAGACCCCAACGAGAAGCGCGATCACATGGTCCTGCTGGAGTTCGTGACCGCCGCCGG
GATCACTCTCGGCATGGACGAGCTGTACAAGTAA

GenLNP-S01-FLuc mRNA (m1Ψ)

The GenLNP-S01-FLuc mRNA (m1Ψ) is a LNP formulation loaded with firefly luciferase mRNA (m1Ψ) prepared using generic LNP formulation with main ionizable lipid of SM102. The payload Fluc mRNA (m1Ψ) has all the U bases 100% modified with N1-methyl-pseudo-Uridine. F-Luc mRNA can translate into F-Luc and emit bioluminescence in the presence of its substrate, Luciferin. Fluc mRNA is a commonly used fluorescence reporter sequence in mRNA therapeutics and delivery system development projects.

This formulation is a good control for testing if SM102 LNP formulation is a good potential formulation for your mRNA product under research in your in vitro and in vivo experiment model.

Name	Cat. No	Scale
FLuc mRNA (m1Ψ) - SM102 LNP	RP-A00025	0.05 mg

Concentration: 0.15 mg/mL

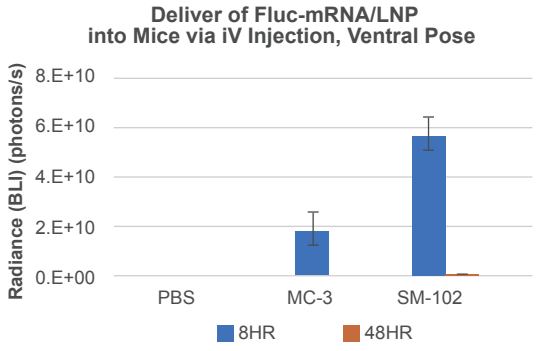
Storage Buffer: Tris-HCl/Sucrose

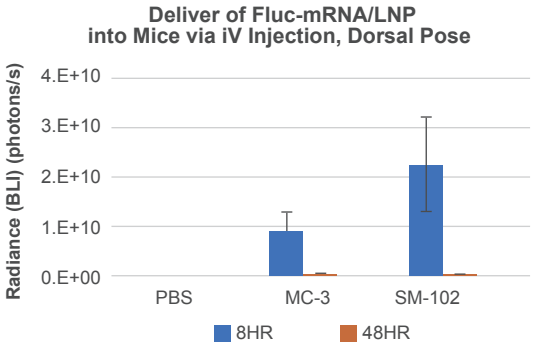
Full mRNA length: 1909 nt

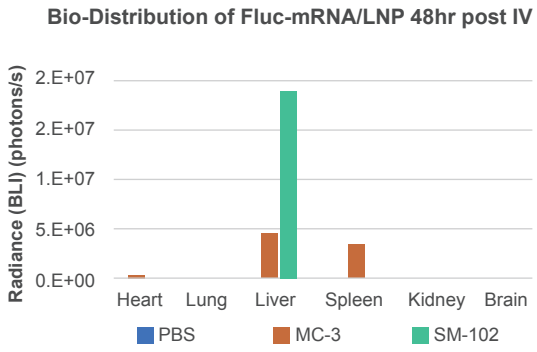
Full mRNA Molecular Weight: 622225

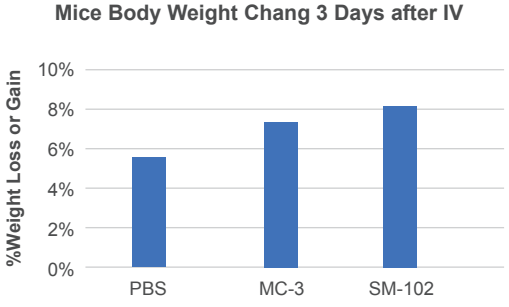
Handling and Storage: Store at -80°C for long term. Avoid freeze thaw, only thaw once before use.

Animal Experiment result: we compared the delivery efficiency of two kinds LNP formulation to deliver Fluc mRNA (100% N1-methyl-pseU modified, GenScript) to Balb-C mice through IV injection at the dose of 0.3mg/kg, the expression of fluc mRNA was measured by whole-body bioluminescence imaging. Fluc-mRNA delivered by SM102-LNP showed higher expression efficiency than MC3 after 8 and 48 hours by imaging at both Dorsal and Ventral pose of mice. To evaluate the biodistribution profile of different formulations, heart, liver, lung, spleen, kidney and brain of the mice were collected and imaged after 48 hours, SM102 -LNP showed stronger liver accumulation comparing to MC3-LNP after 48 hours. MC3 LNP showed stronger spleen accumulation after 48 hrs.









F-Luc mRNA ORF sequence:

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CTGCCCATCATCCAGAAGATCATCATCATGGACAGCAAGACCGACTACCAGGGCTTCCAGAGCATGTACACCTTCGTGACCAGCCAC
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CTGCGGGGCGGCGTGGTGTTCGTGGACGAGGTGCCCAAGGGCCTGACCGGCAAGCTGGACGCCCGGAAGATCCGGGAGATCCTG
ATCAAGGCCAAGAAGGGCGGCAAGATCGCCGTGTGA

GenLNP-A01-FLuc mRNA (m1Ψ)

The GenLNP-A01-FLuc mRNA (m1Ψ) is a LNP formulation loaded with firefly luciferase mRNA (m1Ψ) prepared using generic LNP formulation with main ionizable lipid of ALC0315. The payload Fluc mRNA (m1Ψ) has all the U bases 100% modified with N1-methyl-pseudo-Uridine. F-Luc mRNA can translate into F-Luc and emit bioluminescence in the presence of its substrate, Luciferin. Fluc mRNA is a commonly used fluorescence reporter sequence in mRNA therapeutics and delivery system development projects.

This formulation is a good control for testing if ALC0315 LNP formulation is a good potential formulation for your mRNA product under research in your in vitro and in vivo experiment model.

Name	Cat. No	Scale
FLuc mRNA (m1Ψ) – ALC0315 LNP	RP-A00024	0.05 mg

Concentration: 0.15mg/mL

Storage Buffer: Tris-HCl/Sucrose

Full mRNA length: 1909 nt

Full mRNA Molecular Weight: 622225

Handling and Storage: Store at -80°C for long term. Avoid freeze thaw, only thaw once before use.

F-Luc mRNA ORF sequence:

ATGGAGGACGCCAAGAACATCAAGAAGGGCCCCGCCCCCTTCTACCCCCTGGAGGACGGCACCGCCGGCGAGCAGCTGCACAAGG
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TGACCGAGACCACCAGCGCCATCCTGATCACCCCCGAGGGCGACGACAAGCCCGGCGCCGTGGGCAAGGTGGTGCCCTTCTTCGA
GGCCAAGGTGGTGGACCTGGACACCGGCAAGACCCTGGGCGTGAACCAGCGGGGCGAGCTGTGCGTGCGGGGCCCCATGATCAT
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CGTGGTGGTGCTGGAGCACGGCAAGACCATGACCGAGAAGGAGATCGTGGACTACGTGGCCAGCCAGGTGACCACCGCCAAGAAG
CTGCGGGGCGGCGTGGTGTTCGTGGACGAGGTGCCCAAGGGCCTGACCGGCAAGCTGGACGCCCGGAAGATCCGGGAGATCCTG
ATCAAGGCCAAGAAGGGCGGCAAGATCGCCGTGTGA

GenLNP-L01- Fluc mRNA (m1Ψ)

The LNP formulation loaded with firefly luciferase mRNA (m1Ψ) is prepared using generic LNP formulation with main ionizable lipid of LP01. The payload Fluc mRNA (m1Ψ) has all the U bases 100% modified with N1-methyl-pseudo-Uridine. F-Luc mRNA can translate into F-Luc and emit bioluminescence in the presence of its substrate, Luciferin. Fluc mRNA is a commonly used fluorescence reporter sequence in mRNA therapeutics and delivery system development projects.

This formulation is a good control for testing if LP01 LNP formulation is a good potential formulation for your mRNA product under research in your in vitro and in vivo experiment model.

Name	Cat. No	Scale
GenLNP-L01- Fluc mRNA (m1Ψ)	RP-A00029	0.05 mg

Concentration: 0.15 mg/mL

Storage Buffer: Tris-HCl/Sucrose

Full mRNA length: 980 nt

Full mRNA Molecular Weight: 319792

Handling and Storage: Store at -80°C for long term. Avoid freeze thaw, only thaw once before use.

F-Luc mRNA ORF sequence:

ATGGAGGACGCCAAGAACATCAAGAAGGGCCCCGCCCCCTTCTACCCCCTGGAGGACGGCACCGCCGGCGAGCAGCTGCACAAGG
CCATGAAGCGGTACGCCCTGGTGCCCGGCACCATCGCCTTCACCGACGCCCACATCGAGGTGGACATCACCTACGCCGAGTACTTC
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ATCAAGGCCAAGAAGGGCGGCAAGATCGCCGTGTGA

GenLNP-A01-eSpCas9 mRNA(m1Ψ)-TRAC sgRNA

The LNP formulation loaded with eSpCas9 mRNA (m1Ψ) and TRAC sgRNA is prepared using generic LNP formulation with main ionizable lipid of ALC0315. The payload eSpCas9 mRNA (m1Ψ) has all the U bases 100% modified with N1-methyl-pseudo-Uridine. HPLC purified SafeEdit sgRNA with modifications targeting the first exon of the constant chain of the TCRα gene (TRAC), which enhances CAR-T cell potency and persistence by utilizing the endogenous transcriptional control of TCR gene. The eSpCas9 mRNA and TRAC sgRNA are loaded at a molar ratio of 1:10 in this LNP formulation.

This formulation is a good control for testing if ALC0315 LNP formulation is a good potential formulation for your CRISPR gene know out product under research in your in vitro and in vivo experiment model.

Name	Cat. No	Scale
GenLNP-A01-eSpCas9 mRNA(m1Ψ)-TRAC sgRNA	RP-A00019	0.05 mg

Concentration: 0.15mg/mL

Storage Buffer: Tris-HCl/Sucrose

eSpCas9 mRNA length: 4471nt

Full mRNA Molecular Weight: 1457890

Handling and Storage: Store at -80°C for long term. Avoid freeze thaw, only thaw once before use.

Cell Expression result:

Brief method: 2.4 μg of RNA/LNP formulation were incubated with HEK293T cells, cells were lysed at day 3 and day5 for PCR and sanger sequencing. The gene editing efficiency data were analyzed by ICE Analysis Tool and GenScript data analysis software.

eSpcas9 mRNA/sgRNA targeting TARC (GenScript) were formulated in LP01-LNP formulation at 1:1 mass ratio achieved 97% editing efficiency, comparing to 61% by lipofectamine.

eSpCas9 mRNA ORF sequence:

ATGCCAAAGAAGAAGCGGAAGGTCGGTATCCACGGAGTCCCAGCAGCCGACAAGAAGTACAGCATCGGCCTGGACATCGGCACCAA
CTCTGTGGGCTGGGCCGTGATCACCGACGAGTACAAGGTGCCCAGCAAGAAATTCAAGGTGCTGGGCAACACCGACCGGCACAGC
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GACTGGAAGAGTCCTTCCTGGTGGAAGAGGATAAGAAGCACGAGCGGCACCCCATCTTCGGCAACATCGTGGACGAGGTGGCCTAC
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TRAC sgRNA Sequence: mA*mG*mA*GUCUCUCAGCUGGUACAGUUUUAGAGCUAGAAAUAGCAAGUUAAAA
UAAGGCUAGUCCGUUAUCAACUUGAAAAAGUGGCACCGAGUCGGUGCU*mU*mU*mU
(m = 2'O-Methyl RNA; * = Phosphorothioate)

GenLNP-S01-eSpCas9 mRNA(m1Ψ)-TRAC sgRNA

The LNP formulation loaded with eSpCas9 mRNA (m1Ψ) and TRAC sgRNA is prepared using generic LNP formulation with main ionizable lipid of SM102. The payload eSpCas9 mRNA (m1Ψ) has all the U bases 100% modified with N1-methyl-pseudo-Uridine. HPLC purified SafeEdit sgRNA with modifications targeting the first exon of the constant chain of the TCRα gene (TRAC), which enhances CAR-T cell potency and persistence by utilizing the endogenous transcriptional control of TCR gene. The eSpCas9 mRNA and TRAC sgRNA are loaded at a molar ratio of 1:10 in this LNP formulation.

This formulation is a good control for testing if SM102 LNP formulation is a good potential formulation for your CRISPR gene know out product under research in your in vitro and in vivo experiment model.

Name	Cat. No	Scale
GenLNP-A01-eSpCas9 mRNA(m1Ψ)-TRAC sgRNA	RP-A00020	0.05 mg

Concentration: 0.15 mg/mL

Storage Buffer: Tris-HCl/Sucrose

eSpCas9 mRNA length: 4471nt

Full mRNA Molecular Weight: 1457890

Handling and Storage: Store at -80°C for long term. Avoid freeze thaw, only thaw once before use.

Cell Expression result:

Brief method: 2.4 ug of RNA/LNP formulation were incubated with HEK293T cells, cells were lysed at day 3 and day5 for PCR and sanger sequencing. The gene editing efficiency data were analyzed by ICE Analysis Tool and GenScript data analysis software.

eSpcas9 mRNA/sgRNA targeting TARC (GenScript) were formulated in LP01-LNP formulation at 1:1 mass ratio achieved 97% editing efficiency, comparing to 61% by lipofectamine.

eSpCas9 mRNA ORF sequence:

ATGCCAAAGAAGAAGCGGAAGGTCGGTATCCACGGAGTCCCAGCAGCCGACAAGAAGTACAGCATCGGCCTGGACATCGGCACCAA
CTCTGTGGGCTGGGCCGTGATCACCGACGAGTACAAGGTGCCCAGCAAGAAATTCAAGGTGCTGGGCAACACCGACCGGCACAGC
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TRAC sgRNA Sequence: mA*mG*mA*GUCUCUCAGCUGGUACAGUUUUAGAGCUAGAAAUAGCAAGUUAAAA
UAAGGCUAGUCCGUUAUCAACUUGAAAAAGUGGCACCGAGUCGGUGCU*mU*mU*mU
(m = 2'O-Methyl RNA; * = Phosphorothioate)

GenLNP-S02-EGFP mRNA (m1Ψ) - Liver Targeted

The GenLNP-S02-EGFP mRNA (m1Ψ) is a TriGalNac ligand decorated LNP formulation with main ionizable lipid of SM102. The payload eGFP mRNA (m1Ψ) has all the U bases 100% modified with N1-methyl-pseudo-Uridine. This LNP formulation showed enhanced delivery of eGFP mRNA to hepatocyte after IV injection into mice.

Name	Cat. No	Scale
GenLNP-S02-EGFP mRNA (m1Ψ) - Liver Targeted	RP-A00014	0.05 mg

Concentration: 0.15 mg/mL

Storage Buffer: PBS/Sucrose

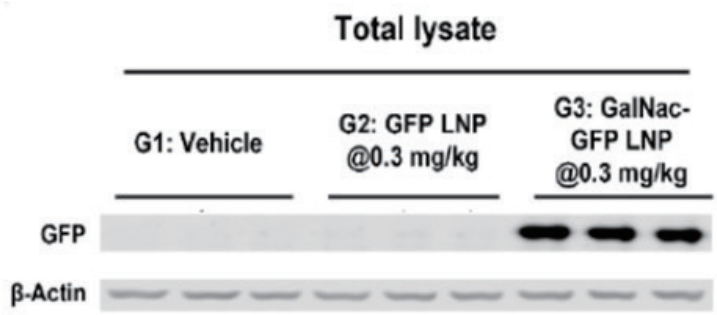
Full mRNA length: 980 nt

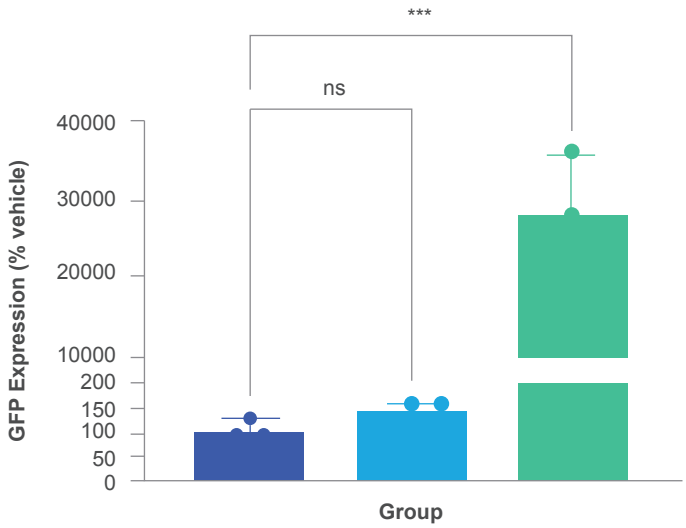
Full mRNA Molecular Weight: 319792

Handling and Storage: Store at -80°C for long term. Avoid freeze thaw, only thaw once before use.

In Vivo Expression result:

Brief method: EGFP mRNA/LNP formulation were injected into mice by tail vein at dosage of 0.3mg/kg. 3 mice per group in this experiment. Mice were euthanized after 24 hrs. Liver organs were lysed and the total lysate were tested for its eGFP protein expression using western blot method, where b-actin was used as control. Data was analysed by T. test method, * p<0.05, *p<0.01 compared with vehicle only (PBS treated group).





EGFP mRNA ORF sequence:

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GGGATCACTCTCGGCATGGACGAGCTGTACAAGTAA

GenLNP-S03-EGFP mRNA (m1Ψ)- T cells Targeted

The GenLNP-S03-EGFP mRNA (m1Ψ) is a CD3 antibody decorated LNP loaded with eGFP mRNA (m1Ψ) displays anti-human CD3 antibody (OKT3) mAb, Mouse (GenScript, Cat: A02199) to enhance its targeting efficiency to CD3 positive cells. The antibody is covalently conjugated to lipid molecule for achieving targeting effect.

The LNP is formulated with main ionizable lipid of SM102. The payload eGFP mRNA (m1Ψ) has all the U bases 100% modified with N1-methyl-pseudo-Uridine. This LNP formulation showed enhanced delivery of eGFP mRNA to CD3+ T cells.

Name	Cat. No	Scale
GenLNP-S03-EGFP mRNA (m1Ψ) – T cells targeted	RP-A00011	0.05 mg

Concentration: 0.15 mg/mL

Storage Buffer: PBS/Sucrose

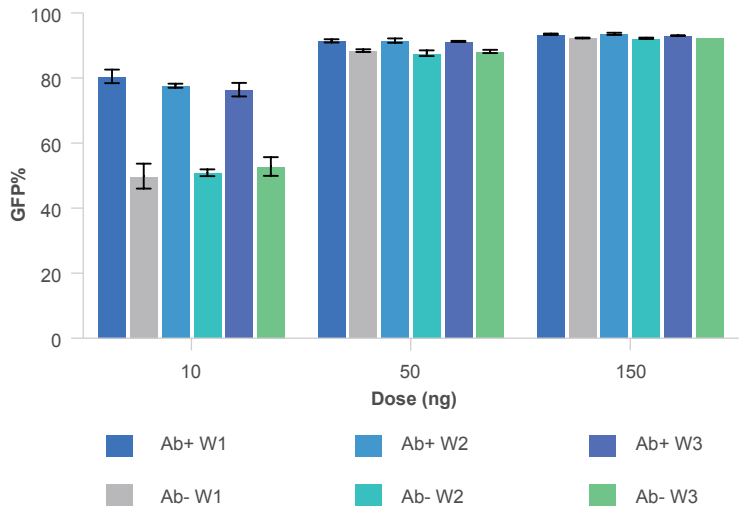
Full mRNA length: 980 nt

Full mRNA Molecular Weight: 319792

Handling and Storage: Store at -80°C for long term. Avoid freeze thaw, only thaw once before use.

In Vitro Expression result:

10-150ng of mRNA encapsulated in LNP were incubated with primary T cells for 24 hrs, the expression of eGFP was detected using flow cytometry. W1, W2 and W3 indicate the different wash conditions for the flow cytometry assay cell preparation. CD3 antibody decorated LNP enhanced delivery of eGFP mRNA to primary T cells at low dose concentration comparing to SM102 LNP loaded with eGFP mRNA.



EGFP mRNA ORF sequence:

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CGAGGACGGCAGCGTGCAGCTCGCCGACCACTACCAGCAGAACACCCCCATCGGCGACGGCCCCGTGCTGCTGCCCGACAACCA
CTACCTGAGCACCCAGTCCGCCCTGAGCAAAGACCCCAACGAGAAGCGCGATCACATGGTCCTGCTGGAGTTCGTGACCGCCGCC
GGGATCACTCTCGGCATGGACGAGCTGTACAAGTAA

GenLNP-S04-EGFP mRNA (m1Ψ) - CD34+ Cells Targeted

The GenLNP-S04-EGFP mRNA (m1Ψ) is a CD34 antibody decorated LNP loaded with eGFP mRNA (m1Ψ). It displays anti-human CD34 antibody mAb, Mouse (GenScript, Cat: CP0001) to enhance its targeting efficiency to CD34 positive cells. The antibody is covalently conjugated to lipid molecule for achieving targeting effect.
The LNP is formulated with main ionizable lipid of SM102. The payload eGFP mRNA (m1Ψ) has all the U bases 100% modified with N1-methyl-pseudo-Uridine. This LNP formulation showed enhanced delivery of eGFP mRNA to CD34+ stem cells.

Name	Cat. No	Scale
GenLNP-S04-EGFP mRNA (m1Ψ) - CD34+ Cells Targeted	RP-A00012	0.05 mg

Concentration: 0.15mg/mL

Storage Buffer: PBS/Sucrose

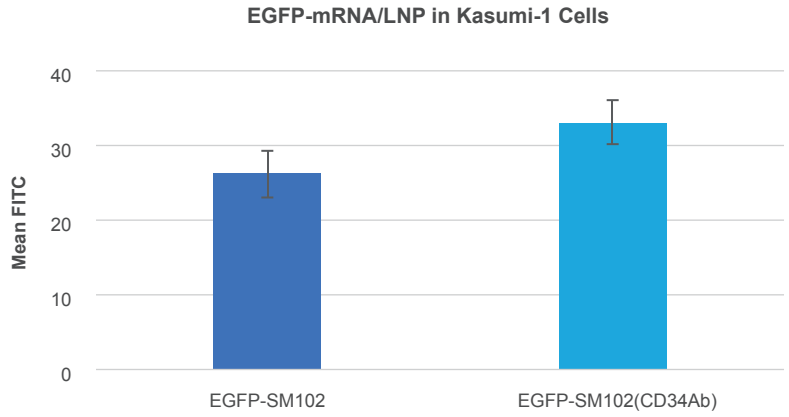
Full mRNA length: 980nt

Full mRNA Molecular Weight: 319792

Handling and Storage: Store at -80°C for long term. Avoid freeze thaw, only thaw once before use.

In Vitro Expression result:

EGFP mRNA(N1-methyl-pseU) was encapsulated with SM102-LNP or SM102-LNP decorated with anti-Human CD34 Antibody (Purified anti-human CD34 antibody(Anti-Human CD34 Antibody, mAb, Mouse, GenScript, CP0001) 100ng of mRNA encapsulated in LNP were incubated with Kasumi-1 cells for 24 hrs. The expression of eGFP was detected using flow cytometry.



EGFP mRNA ORF sequence:

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GGGATCACTCTCGGCATGGACGAGCTGTACAAGTAA

GenLNP-S05-FLuc mRNA (m1Ψ) - Liver Targeted

The GenLNP-S05-FLuc mRNA (m1Ψ) is a 5 component LNP loaded with Fluc mRNA (m1Ψ) has liver specific targeting effect after systemic administration. The LNP is formulated with main ionizable lipid of SM102 and Cationic lipid DODAP. The payload Fluc mRNA (m1Ψ) has all the U bases 100% modified with N1-methyl-pseudo-Uridine. This LNP formulation showed enhanced delivery of liver tissue in vivo.

Name	Cat. No	Scale
GenLNP-S05-FLuc mRNA (m1Ψ) - Liver Targeted	RP-A00026	0.05 mg

Concentration: 0.15mg/mL

Storage Buffer: PBS/Sucrose

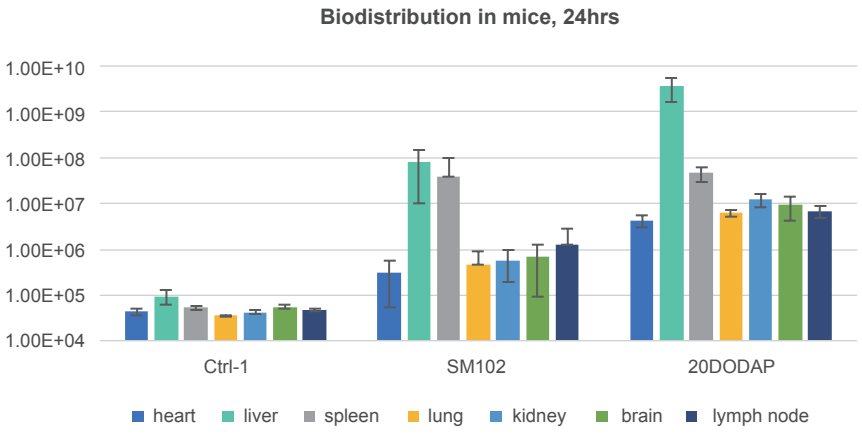
Full mRNA length: 980nt

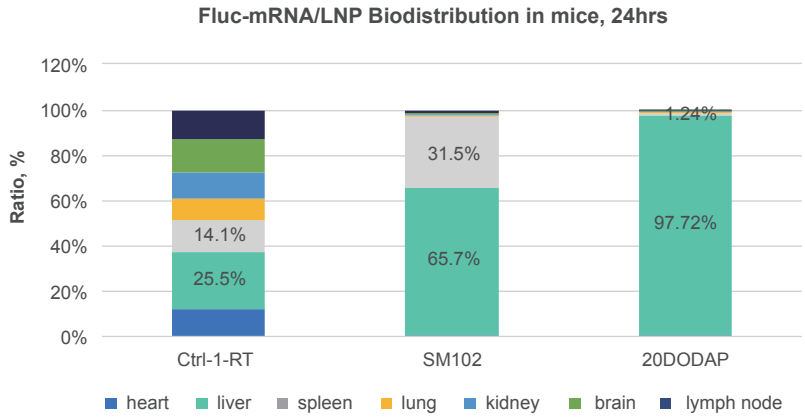
Full mRNA Molecular Weight: 319792

Handling and Storage: Store at -80°C for long term. Avoid freeze thaw, only thaw once before use.

In Vivo Expression result:

Fluc mRNA(N1-methyl-pseU) was encapsulated with 20DODAP LNP, 0.3mg/kg of mRNA encapsulated in LNP were injection through tail vein into mice, after 24 hrs, mice were sacrificed, and the expression of Fluc mRNA was measured with whole body imaging with different organs.





F-Luc mRNA ORF sequence:

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CTGCCCCCCGGCTTCAACGAGTACGACTTCGTGCCCGAGAGCTTCGACCGGGACAAGACCATCGCCCTGATCATGAACAGCAGCGG
CAGCACCGGCCTGCCCAAGGGCGTGGCCCTGCCCCACCGGACCGCCTGCGTGCGGTTCAGCCACGCCCGGGACCCCATCTTCGG
CAACCAGATCATCCCCGACACCGCCATCCTGAGCGTGGTGCCCTTCCACCACGGCTTCGGCATGTTCACCACCCTGGGCTACCTGAT
CTGCGGCTTCCGGGTGGTGCTGATGTACCGGTTCGAGGAGGAGCTGTTCCTGCGGAGCCTGCAGGACTACAAGATCCAGAGCGCC
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CGGCGGCGCCCCCCTGAGCAAGGAGGTGGGCGAGGCCGTGGCCAAGCGGTTCCACCTGCCCGGCATCCGGCAGGGCTACGGCC
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GGCCAAGGTGGTGGACCTGGACACCGGCAAGACCCTGGGCGTGAACCAGCGGGGCGAGCTGTGCGTGCGGGGCCCCATGATCAT
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ATCAAGGCCAAGAAGGGCGGCAAGATCGCCGTGTGA

GenLNP-S06-FLuc mRNA (m1Ψ) – Spleen Targeted

The GenLNP-S06-FLuc mRNA (m1Ψ) is a LNP loaded with Fluc mRNA (m1Ψ) has spleen specific targeting effect after systemic administration. The LNP is formulated with main ionizable lipid of SM102 and cationic lipid 18PA. The payload Fluc mRNA (m1Ψ) has all the U bases 100% modified with N1-methyl-pseudo-Uridine. This LNP formulation showed enhanced delivery of spleen organ after in vivo delivery.

Name	Cat. No	Scale
GenLNP-S06-FLuc mRNA (m1Ψ) – Spleen Targeted	RP-A00031	0.05 mg

Concentration: 0.15 mg/mL

Storage Buffer: PBS/Sucrose

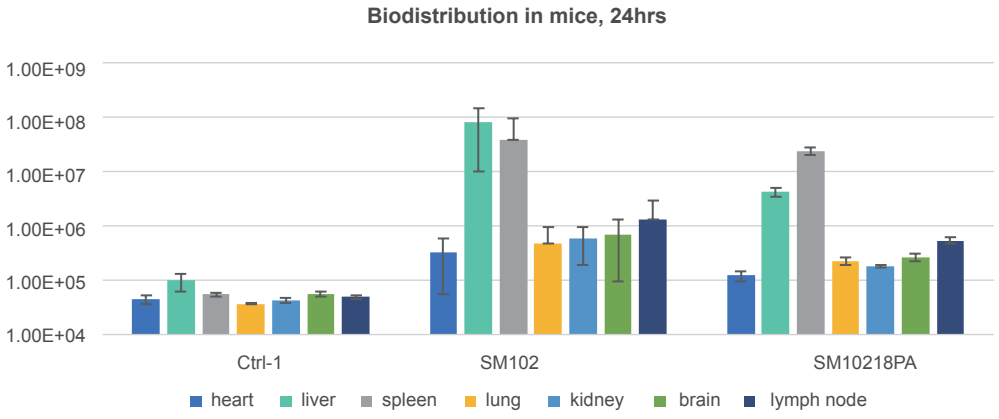
Full mRNA length: 980 nt

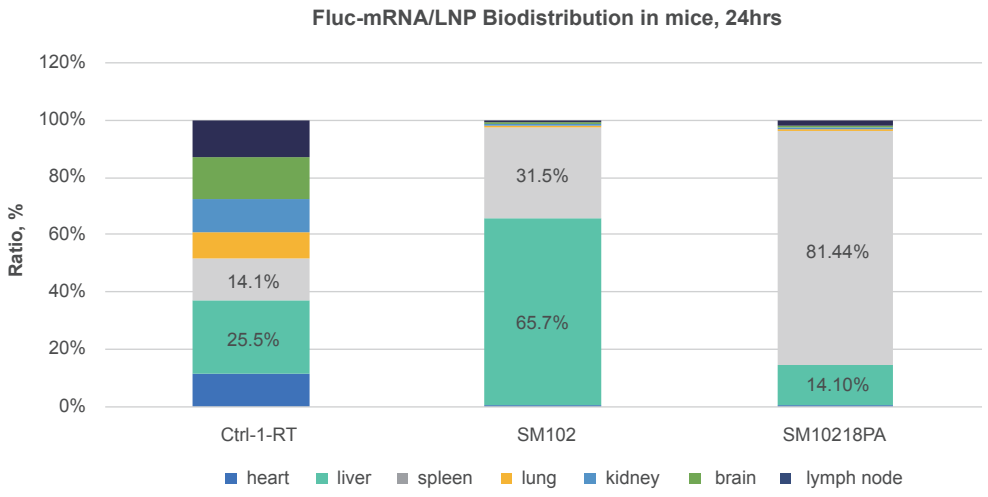
Full mRNA Molecular Weight: 319792

Handling and Storage: Store at -80°C for long term. Avoid freeze thaw, only thaw once before use.

In Vivo Expression result:

Fluc mRNA(N1-methyl-pseU) was encapsulated with LNP , 0.3mg/kg of mRNA encapsulated in LNP were injection through tail vein into mice, after 24 hrs, mice were sacrificed, and the expression of Fluc mRNA was measured with whole body imaging with different organs.





F-Luc mRNA ORF sequence:

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TGCAGTTCTTCATGCCCGTGCTGGGCGCCCTGTTCATCGGCGTGGCCGTGGCCCCCGCCAACGACATCTACAACGAGCGGGAGCT
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ATCAAGGCCAAGAAGGGCGGCAAGATCGCCGTGTGA

GenLNP-S07-Fluc mRNA (m1Ψ) - Lung Targeted

The GenLNP-S07-FLuc mRNA (m1Ψ) is a LNP loaded with Fluc mRNA (m1Ψ) has lung specific targeting effect after systemic administration. The LNP is formulated with main ionizable lipid of SM102 and cationic lipid DOTAP. The payload Fluc mRNA (m1Ψ) has all the U bases 100% modified with N1-methyl-pseudo-Uridine. This LNP formulation showed enhanced delivery of lung organ after in vivo delivery.

Name	Cat. No	Scale
GenLNP-S07-FLuc mRNA (m1Ψ) - Lung Targeted	RP-A00027	0.05 mg

Concentration: 0.15 mg/mL

Storage Buffer: PBS/Sucrose

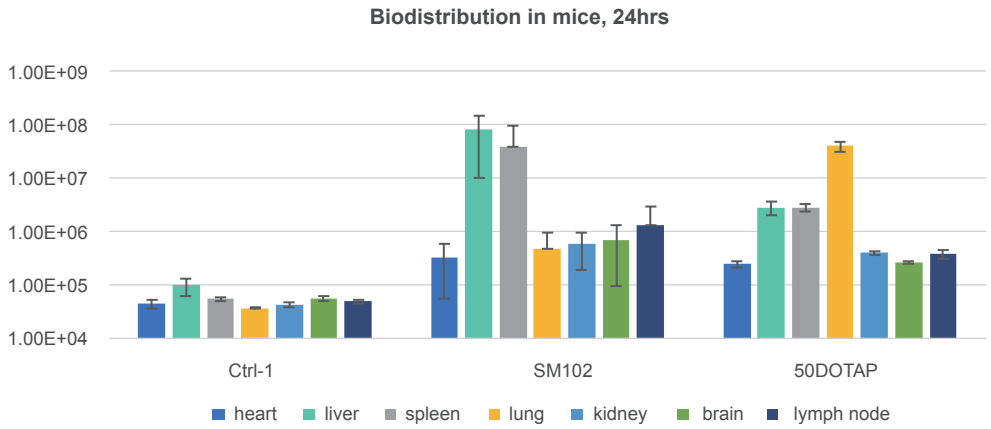
Full mRNA length: 980 nt

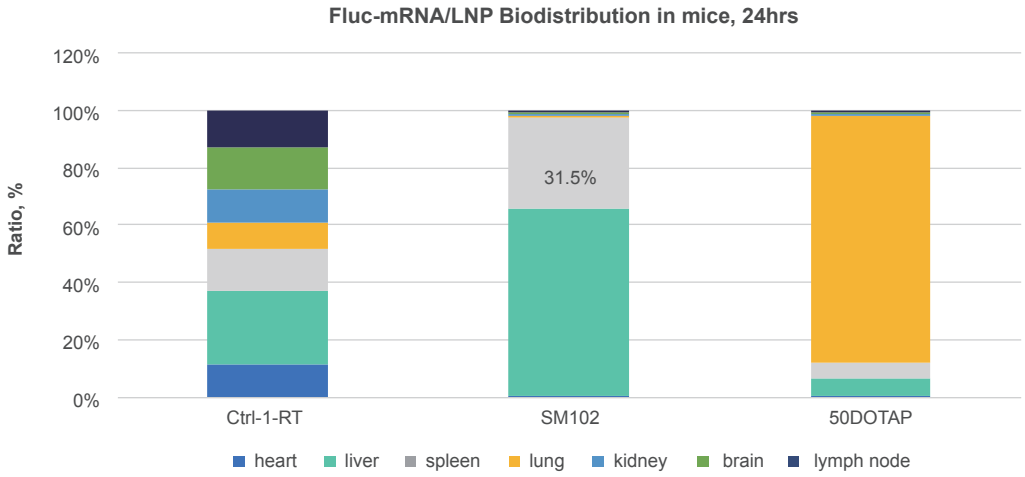
Full mRNA Molecular Weight: 319792

Handling and Storage: Store at -80°C for long term. Avoid freeze thaw, only thaw once before use.

In Vivo Expression result:

Fluc mRNA(N1-methyl-pseU) was encapsulated with LNP , 0.3mg/kg of mRNA encapsulated in LNP were injection through tail vein into mice, after 24 hrs, mice were sacrificed, and the expression of Fluc mRNA was measured with whole body imaging with different organs.





F-Luc mRNA ORF sequence:

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ATCAAGGCCAAGAAGGGCGGCAAGATCGCCGTGTGA

GenLNP-S08-Fluc mRNA (m1Ψ) - Lung Targeted

The GenLNP-S08-Fluc mRNA (m1Ψ) is a 3-component LNP loaded with Fluc mRNA (m1Ψ) has lung specific targeting effect after systemic administration. The LNP is formulated with 3 lipid components and the main ionizable lipid is SM102. The payload Fluc mRNA (m1Ψ) has all the U bases 100% modified with N1-methyl-pseudo-Uridine. This LNP formulation showed enhanced delivery of lung tissue after in vivo delivery.

Name	Cat. No	Scale
GenLNP-S08-Fluc mRNA (m1Ψ) - Lung Targeted	RP-A00030	0.05 mg

Concentration: 0.15 mg/mL

Storage Buffer: Tris-HCl/Sucrose

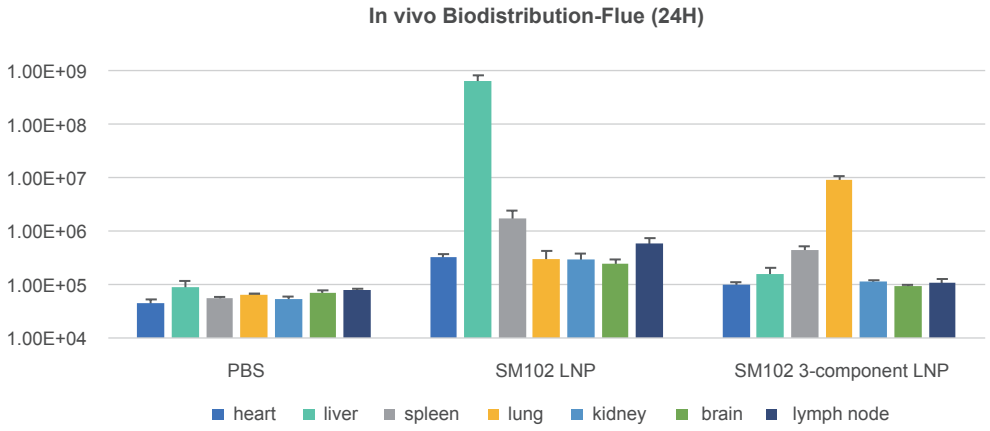
Full mRNA length: 1919 nt

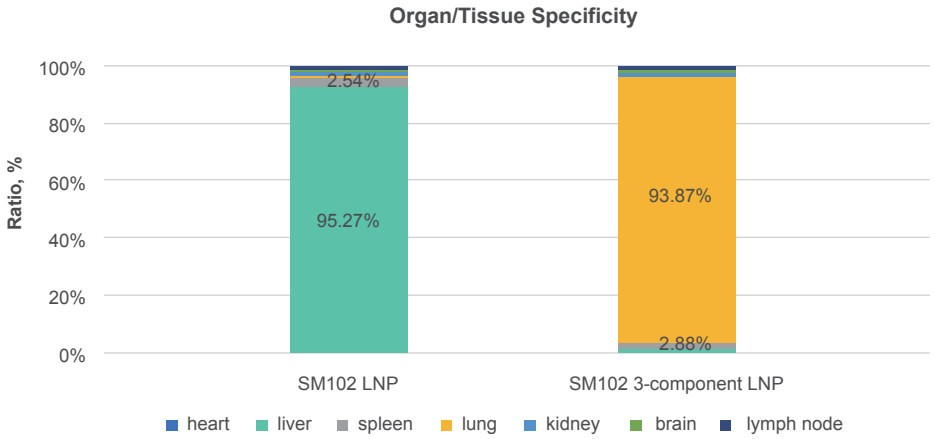
Full mRNA Molecular Weight: 615,199

Handling and Storage: Store at -80°C for long term. Avoid freeze thaw, only thaw once before use.

In Vivo Expression result:

Fluc mRNA(N1-methyl-pseU) was encapsulated with LNP, 5 μg of mRNA encapsulated in LNP were injection through tail vein into mice, after 24 hrs, mice were sacrificed, and the expression of Fluc mRNA was measured with whole body imaging with different organs.





F-Luc mRNA ORF sequence:

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ATCCTGATCAAGGCCAAGAAGGGCGGCAAGATCGCCGTGTGA

GenLNP-A02-Fluc mRNA (m1Ψ) - Lung Targeted

The GenLNP-A02-Fluc mRNA (m1Ψ) is a 3-component LNP loaded with Fluc mRNA (m1Ψ) has lung specific targeting effect after systemic administration. The LNP is formulated with 3 lipid components and the main ionizable lipid is ALC0315. The payload Fluc mRNA (m1Ψ) has all the U bases 100% modified with N1-methyl-pseudo-Uridine. This LNP formulation showed enhanced delivery of lung tissue after in vivo delivery.

Name	Cat. No	Scale
GenLNP-A02-Fluc mRNA (m1Ψ) - Lung Targeted	RP-A00028	0.05 mg

Concentration: 0.15mg/mL

Storage Buffer: Tris-HCl/Sucrose

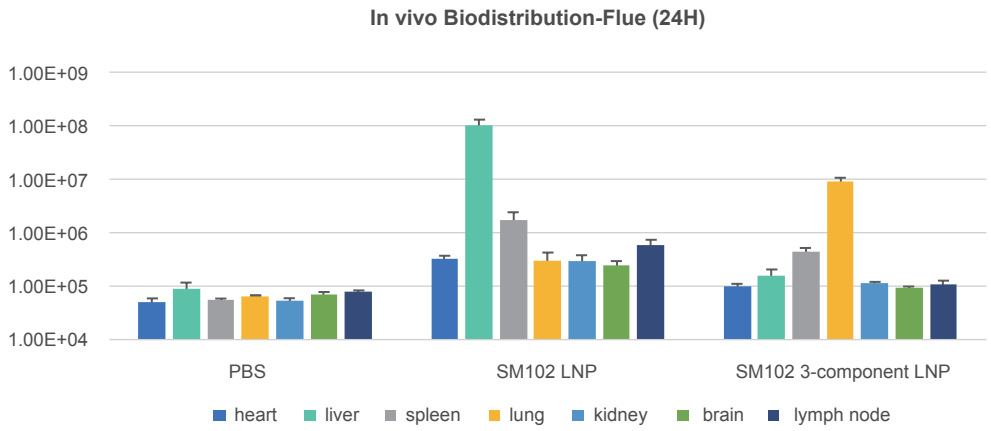
Full mRNA length: 1919nt

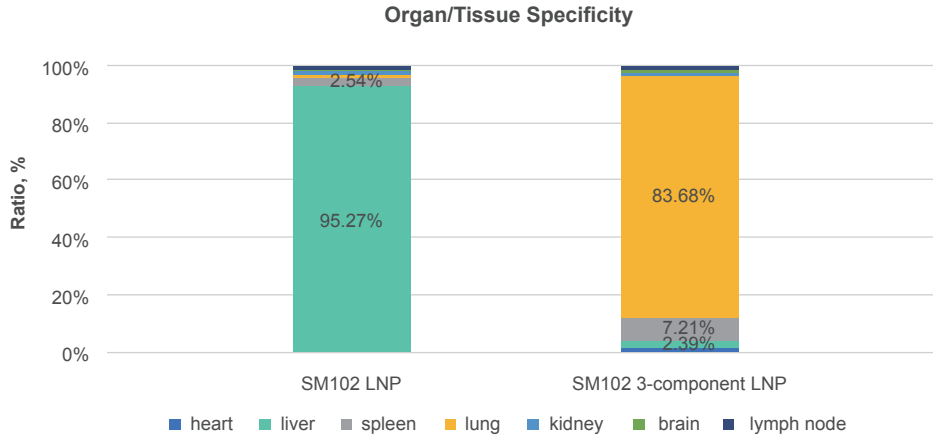
Full mRNA Molecular Weight: 615,199

Handling and Storage: Store at -80oC for long term. Avoid freeze thaw, only thaw once before use.

In Vivo Expression result:

Fluc mRNA(N1-methyl-pseU) was encapsulated with LNP, 5μg of mRNA encapsulated in LNP were injection through tail vein into mice, after 24 hrs, mice were sacrificed, and the expression of Fluc mRNA was measured with whole body imaging with different organs.





F-Luc mRNA ORF sequence:

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ATCAAGGCCAAGAAGGGCGGCAAGATCGCCGTGTGA

GenScript F-Luc Circular RNA (CVB3)

The Firefly-Luciferase (F-Luc) circRNA expresses firefly luciferase protein, which is the enzyme for bioluminescence of fireflies and click beetles. After efficient delivery into cells or animals, F-Luc circRNA can translate into F-Luc and emit bioluminescence in the presence of its substrate, Luciferin.

Name	Cat. No	Scale
F-Luc Circular RNA	RP-A00021-25	0.025 mg
	RP-A00021-5	0.05 mg
	RP-A00021-0.2	0.2 mg

Concentration: 1 mg/mL

Storage Buffer: 1 mM Sodium citrate, pH6.5

Full circRNA length: 2570 nt

Full circRNA Molecular Weight: 828321

Handling and Storage: Store at -20°C for short term (<3 months), store at – 80 oC for long term.

Cell expression result: Equal molar of circular Fluc RNA or linear FLuc mRNA (N1-methyl-pseU) were transferred into A549 cells using lipofectamine messengerMax, and the protein expression of firefly luciferase was detected by luciferase assay, after 24 hours. Circular RNA observed ~2 folds higher expression per well than mRNA after 1 day.

Fluc Circular sequence:

AAAATCCGTTGACCTTAAACGGTCGTGTGGGTTCAAGTCCCTCCACCCCCACGCCGGAAACGCAATAGCCGAAAAAC
AAAAAACAAAAAAAAACAAAAAAAAAACCAAAAAAACAAAACACATTAAAACAGCCTGTGGGTTGATCCCACCCACAGGC
CCATTGGGCGCTAGCACTCTGGTATCACGGTACCTTTGTGCGCCTGTTTTATACCCCCTCCCCCAACTGTAACTTAGAA
GTAACACACACCGATCAACAGTCAGCGTGGCACACCAGCCACGTTTTGATCAAGCACTTCTGTTACCCCGGACTGAGT
ATCAATAGACTGCTCACGCGGTTGAAGGAGAAAGCGTTCGTTATCCGGCCAACTACTTCGAAAAACCTAGTAACACCG
TGGAAGTTGCAGAGTGTTTCGCTCAGCACTACCCCAGTGTAGATCAGGTCGATGAGTCACCGCATTCCCCACGGGCGACCGTGGCG
GTGGCTGCGTTGGCGGCCTGCCCATGGGGAAACCCATGGGACGCTCTAATACAGACATGGTGCGAAG
AGTCTATTGAGCTAGTTGGTAGTCCTCCGGCCCCTGAATGCGGCTAATCCTAACTGCGGAGCACACACCCTCAAGCCAGAGGGCAGT
GTGTCGTAACGGGCAACTCTGCAGCGGAACCGACTACTTTGGGTGTCCGTGTTTCATTTTATTCCTATA
CTGGCTGCTTATGGTGACAATTGAGAGATCGTTACCATATAGCTATTGGATTGGCCATCCGGTGACTAATAGAGCTATTATATATCCCTTT

GTTGGGTTTATACCACTTAGCTTGAAAGAGGTTAAAACATTACAATTCATTGTTAAGTTGAATACAGCAAAA
TGGAGGACGCCAAGAACATCAAGAAGGGCCCCGCCCCCTTCTACCCCCTGGAGGACGGCACCGCCGGCGAGCAGC
TGCACAAGGCCATGAAGCGGTACGCCCTGGTGCCCGGCACCATCGCCTTCACCGACGCCCACATCGAGGTGGACAT
CACCTACGCCGAGTACTTCGAGATGAGCGTGCGGCTGGCCGAGGCCATGAAGCGGTACGGCCTGAACACCAACCAC
CGGATCGTGGTGTGCAGCGAGAACAGCCTGCAGTTCTTCATGCCCGTGCTGGGCGCCCTGTTCATCGGCGTGGCCG
TGGCCCCCGCCAACGACATCTACAACGAGCGGGAGCTGCTGAACAGCATGGGCATCAGCCAGCCCACCGTGGTGTT
CGTGAGCAAGAAGGGCCTGCAGAAGATCCTGAACGTGCAGAAGAAGCTGCCCATCATCCAGAAGATCATCATCATGG
ACAGCAAGACCGACTACCAGGGCTTCCAGAGCATGTACACCTTCGTGACCAGCCACCTGCCCCCCGGCTTCAACGAG
TACGACTTCGTGCCCGAGAGCTTCGACCGGGACAAGACCATCGCCCTGATCATGAACAGCAGCGGCAGCACCGGCC
TGCCCAAGGGCGTGGCCCTGCCCCACCGGACCGCCTGCGTGCGGTTCAGCCACGCCCGGGACCCCATCTTCGGCA
ACCAGATCATCCCCGACACCGCCATCCTGAGCGTGGTGCCCTTCCACCACGGCTTCGGCATGTTCACCACCCTGGGC
TACCTGATCTGCGGCTTCCGGGTGGTGCTGATGTACCGGTTCGAGGAGGAGCTGTTCCTGCGGAGCCTGCAGGACTA
CAAGATCCAGAGCGCCCTGCTGGTGCCCACCCTGTTCAGCTTCTTCGCCAAGAGCACCCTGATCGACAAGTACGACC
TGAGCAACCTGCACGAGATCGCCAGCGGCGGCGCCCCCCTGAGCAAGGAGGTGGGCGAGGCCGTGGCCAAGCGG
TTCCACCTGCCCGGCATCCGGCAGGGCTACGGCCTGACCGAGACCACCAGCGCCATCCTGATCACCCCCGAGGGCG
ACGACAAGCCCGGCGCCGTGGGCAAGGTGGTGCCCTTCTTCGAGGCCAAGGTGGTGGACCTGGACACCGGCAAGA
CCCTGGGCGTGAACCAGCGGGGCGAGCTGTGCGTGCGGGGCCCCATGATCATGAGCGGCTACGTGAACAACCCCG
AGGCCACCAACGCCCTGATCGACAAGGACGGCTGGCTGCACAGCGGCGACATCGCCTACTGGGACGAGGACGAGC
ACTTCTTCATCGTGGACCGGCTGAAGAGtCTGATCAAGTACAAGGGCTACCAGGTGGCCCCCGCCGAGCTGGAGAGC
ATCCTGCTGCAGCACCCCAACATCTTCGACGCCGGCGTGGCCGGCCTGCCCGACGACGACGCCGGCGAGCTGCCC
GCCGCCGTGGTGGTGCTGGAGCACGGCAAGACCATGACCGAGAAGGAGATCGTGGACTACGTGGCCAGCCAGGTG
ACCACCGCCAAGAAGCTGCGGGGCGGCGTGGTGTTCGTGGACGAGGTGCCCAAGGGCCTGACCGGCAAGCTGGAC
GCCCGGAAGATCCGGGAGATCCTGATCAAGGCCAAGAAGGGCGGCAAGATCGCCGTGTGAAAAAAACAAAAAACAAA
ACGGCTATTATGCGTTACCGGCGAGACGCTACGGACTT

GenScript eGFP Circular RNA (CVB3)

The eGFP circular RNA (circRNA) expresses an enhanced green fluorescent protein, with the open reading frame sequence originally from the jellyfish, Aequorea Victoria. EGFP circRNA can be used as fluorescence reporter sequence in RNA therapeutics and delivery system development projects. The expressed protein has an excitation wavelength of 488nm, emission at 507nm.

Name	Cat. No	Scale
EGFP Circular RNA	RP-A00006-25	0.025 mg
	RP-A00006-5	0.05 mg
	RP-A00006-0.2	0.2 mg

Concentration: 1 mg/mL

Storage Buffer: 1 mM Sodium citrate, pH6.5

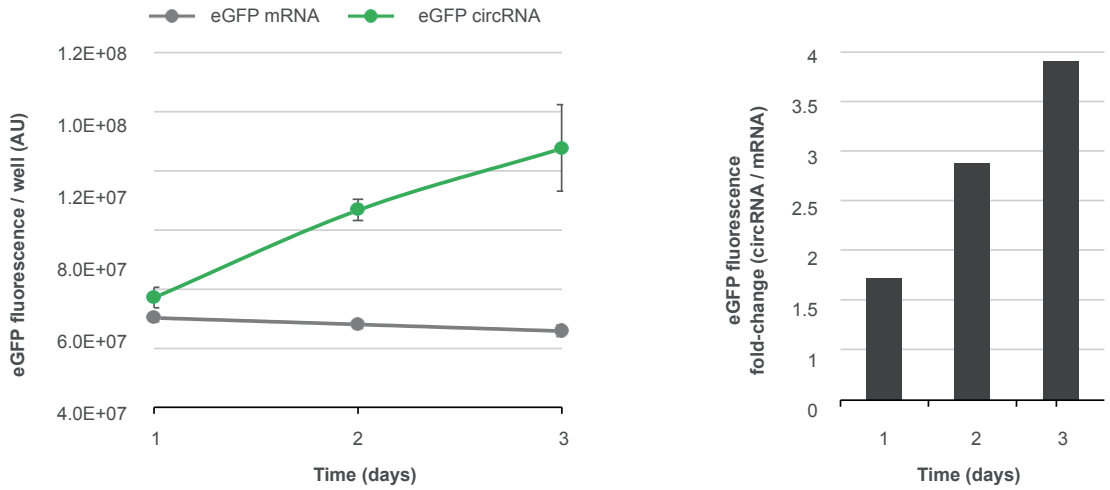
Full circRNA length: 1637 nt

Full circRNA Molecular Weight: 526844

Handling and Storage: Store at -20°C for short term (<3 months), store at -80°C for long term.

Cell Expression result:

Brief method: transfect 0.2 μg of mRNA using 0.5μL of lipofectamine2000 (or equivalent) for one well of cells in a 96 well plate following manufacture's instruction. Test the result after 16 to 24 hours using a plate reader, or flow cytometry, or fluorescent microscope, or confocal microscope. Suggest using excitation wavelength at 485nm, emission wavelength at 535nm for equipment setting.



Equal molar of circular EGFP RNA or linear eGFP mRNA (N1-methyl-pseU) were transferred into A549 cells using lipofectamine messengerMax, and the protein expression of eGFP was detected by flow cytometry, linear mRNA has constant protein expression level over 3 days, but circular RNA observed ~3.5 folds higher expression per well than mRNA after 3 days.

EGFP Circular sequence:

AAAATCCGTTGACCTTAAACGGTCGTGTGGGTTCAAGTCCCTCCACCCCCACGCCGGAAACGCAATAGCCGAAAAAC
AAAAAACAAAAAAAACAAAAAAAAAACCAAAAAAACAAAACACATTAAAACAGCCTGTGGGTTGATCCCACCCACAGGC
CCATTGGGCGCTAGCACTCTGGTATCACGGTACCTTTGTGCGCCTGTTTTATACCCCCTCCCCCAACTGTAACTTAGAA
GTAACACACACCGATCAACAGTCAGCGTGGCACACCAGCCACGTTTTGATCAAGCACTTCTGTTACCCCGGACTGAGT
ATCAATAGACTGCTCACGCGGTTGAAGGAGAAAGCGTTCGTTATCCGGCCAACTACTTCGAAAAACCTAGTAACACCG
TGGAAGTTGCAGAGTGTTTCGCTCAGCACTACCCCAGTGTAGATCAGGTCGATGAGTCACCGCATTCCCCACGGGCG

ACCGTGGCGGTGGCTGCGTTGGCGGCCTGCCCATGGGGAAACCCATGGGACGCTCTAATACAGACATGGTGCGAAG
AGTCTATTGAGCTAGTTGGTAGTCCTCCGGCCCCTGAATGCGGCTAATCCTAACTGCGGAGCACACACCCTCAAGCCA
GAGGGCAGTGTGTCGTAACGGGCAACTCTGCAGCGGAACCGACTACTTTGGGTGTCCGTGTTTCATTTTATTCCTATA
CTGGCTGCTTATGGTGACAATTGAGAGATCGTTACCATATAGCTATTGGATTGGCCATCCGGTGACTAATAGAGCTATTAT
ATATCCCTTTGTTGGGTTTATACCACTTAGCTTGAAAGAGGTTAAAACATTACAATTCATTGTTAAGTTGAATACAGCAAAA
TGGTGAGCAAGGGCGAGGAGCTGTTCACCGGGGTGGTGCCCATCCTGGTCGAGCTGGACGGCGACGTAAACGGCC
ACAAGTTCAGCGTGTCTGGCGAGGGCGAGGGCGATGCCACCTACGGCAAGCTGACCCTGAAGTTCATCTGCACCAC
CGGCAAGCTGCCCGTGCCCTGGCCCACCCTCGTGACCACCCTGACCTACGGCGTGCAGTGCTTCAGCCGCTACCCC
GACCACATGAAGCAGCACGACTTCTTCAAGTCCGCCATGCCCGAAGGCTACGTCCAGGAGCGCACCATCTTCTTCAA
GGACGACGGCAACTACAAGACCCGCGCCGAGGTGAAGTTCGAGGGCGACACCCTGGTGAACCGCATCGAGCTGAA
GGGCATCGACTTCAAGGAGGACGGCAACATCCTGGGGCACAAGCTGGAGTACAACTACAACAGCCACAACGTCTATA
TCATGGCCGACAAGCAGAAGAACGGCATCAAGGCGAACTTCAAGATCCGCCACAACATCGAGGACGGCAGCGTGCA
GCTCGCCGACCACTACCAGCAGAACACCCCCATCGGCGACGGCCCCGTGCTGCTGCCCGACAACCACTACCTGAGC
ACCCAGTCCGCCCTGAGCAAAGACCCCAACGAGAAGCGCGATCACATGGTCCTGCTGGAGTTCGTGACCGCCGCCG
GGATCACTCTCGGCATGGACGAGCTGTACAAGTAAAAAAAACAAAAAACAAAACGGCTATTATGCGTTACCGGCGAGA
CGCTACGGACTT

GenScript Scarless EGFP circRNA (CVB3)

The scarless eGFP circular RNA (circRNA) expresses an enhanced green fluorescent protein, with the open reading frame sequence originally from the jellyfish, Aequorea Victoria. EGFP circRNA can be used as fluorescence reporter sequence in RNA therapeutics and delivery system development projects. The expressed protein has an excitation wavelength of 488nm, emission at 507nm.
It also uses CVB3 IRES, differed from scar version of circular EGFP, it does not have scar sequences which are the intro and spacer left over from self-splicing circularization reaction.

Name	Cat. No	Scale
Scarless EGFP circRNA	RP-A00051-0.05	0.05 mg

Concentration: 1 mg/mL

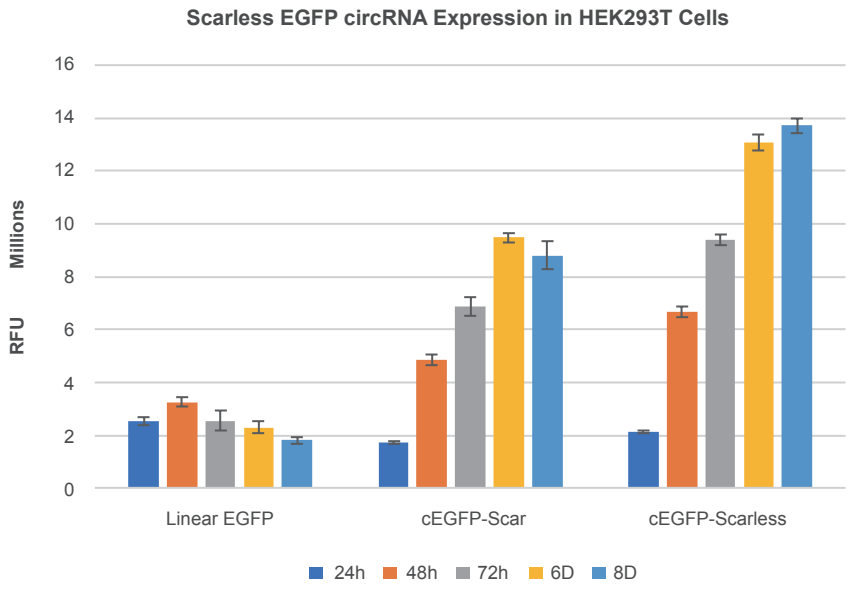
Storage Buffer: 1 mM Sodium citrate, pH6.5

Full circRNA length: 1461 nt

Full circRNA Molecular Weight: 470035

Handling and Storage: Store at -20°C for short term (<3 months), store at -80°C for long term.

Cell Expression result:



Equal amounts of EGFP circRNA, scarless EGFP circRNA, and linear EGFP mRNA (N1-methyl-pseU) were transfected into HEK293T cells using Lipofectamine MessengerMax. EGFP expression was detected and analyzed using a fluorescence microscope and ImageJ software.

Scarless EGFP CircRNA:

UAAUUAAAACAGCCUGUGGGUUGAUCCCACCCACAGGCCCAUUGGGCGCUAGCACUCUGGUAUCACGGUACCUUUGUGCGCCU
GUUUUAUACCCCCUCCCCCAACUGUAACUUAGAAGUAACACACACCGAUCAACAGUCAGCGUGGCACACCAGCCACGUUUUGAU
CAAGCACUUCUGUUACCCCGGACUGAGUAUCAAUAGACUGCUCACGCGGUUGAAGGAGAAAGCGUUCGUUAUCCGGCCAACUAC
UUCGAAAAACCUAGUAACACCGUGGAAGUUGCAGAGUGUUUCGCUCAGCACUACCCCAGUGUAGAUCAGGUCGAUGAGUCACCG
CAUUCCCCACGGGCGACCGUGGCGGUGGCUGCGUUGGCGGCCUGCCCAUGGGGAAACCCAUGGGACGCUCUAAUACAGACAUG
GUGCGAAGAGUCUAUUGAGCUAGUUGGUAGUCCUCCGGCCCCUGAAUGCGGCUAAUCCUAACUGCGGAGCACACACCCUCAAG
CCAGAGGGCAGUGUGUCGUAACGGGCAACUCUGCAGCGGAACCGACUACUUUGGGUGUCCGUGUUUCAUUUUAUUCCUAUACU
GGCUGCUUAUGGUGACAAUUGAGAGAUCGUUACCAUAUAGCUAUUGGAUUGGCCAUCCGGUGACUAAUAGAGCUAUUAUAUAUC
CCUUUGUUGGGUUUAUACCACUUAGCUUGAAAGAGGUUAAAACAUUACAAUUCAUUGUUAAGUUGAAUACAGCAAAAUGGUGAG
CAAGGGCGAGGAGCUGUUCACCGGGGUGGUGCCCAUCCUGGUCGAGCUGGACGGCGACGUAAACGGCCACAAGUUCAGCGUG
UCCGGCGAGGGCGAGGGCGAUGCCACCUACGGCAAGCUGACCCUGAAGUUCAUCUGCACCACCGGCAAGCUGCCCGUGCCCUG
GCCCACCCUCGUGACCACCCUGACCUACGGCGUGCAGUGCUUCAGCCGCUACCCCGACCACAUGAAGCAGCACGACUUCUUCAA
GUCCGCCAUGCCCGAAGGCUACGUCCAGGAGCGCACCAUCUUCUUCAAGGACGACGGCAACUACAAGACCCGCGCCGAGGUGA
AGUUCGAGGGCGACACCCUGGUGAACCGCAUCGAGCUGAAGGGCAUCGACUUCAAGGAGGACGGCAACAUCCUGGGGCACAAG
CUGGAGUACAACUACAACAGCCACAACGUCUAUAUCAUGGCCGACAAGCAGAAGAACGGCAUCAAGGUGAACUUCAAGAUCCGCC
ACAACAUCGAGGACGGCAGCGUGCAGCUCGCCGACCACUACCAGCAGAACACCCCCAUCGGCGACGGCCCCGUGCUGCUGCCC
GACAACCACUACCUGAGCACCCAGUCCGCCCUGAGCAAAGACCCCAACGAGAAGCGCGAUCACAUGGUCCUGCUGGAGUUCGUG
ACCGCCGCCGGGAUCACUCUCGGCAUGGACGAGCUGUACAAG

GenScript circular RNA Ladder (0.5-5KB)

The circular RNA ladder is composed of 7 circular RNAs at the length of 250nt, 500nt, 1000nt, 2000nt, 3000nt, 4000nt and 5000nt in length without chemical modification. This circular RNA ladder can be used as a standard size reference for your circular RNA research use. The circular RNA ladder is finished at 0.32mg/mL in concentration, suggest to load 1μL in a typical agarose gel electrophoresis analysis when image with sybrgreen.

Name	Cat. No	Scale
Circular RNA Ladder	RP-A00003-50	50μL

Concentration: 0.32mg/mL

Volume: 50 μL/Vial

Storage Buffer: 1mM Sodium citrate, pH6.5

circRNA length: 250 ~ 5000 nt

Handling and Storage: Suggest to aliquot for single use volume per tube to ensure the best performance. Store at -80°C for long term.

Gel Electrophoresis result:

1 μL of circular RNA ladder was loaded with 50% formamide into 2% EX-Egel. Image was taken with SYBRTMGold channel using G-Box gel imager.

GenScript mRNA Ladder (0.2-6 KB)

The RNA ladders are composed of a set of 8 RNA molecules with or without base modification. The 200-6000nt RNA ladder has a size of: 200nt, 500nt, 1000nt, 1500nt, 2000nt, 3000nt, 4000nt, 6000nt. This RNA ladder is suitable for use as a single strand RNA size standard on denaturing or native agarose gels, or to be used with Agilent Fragment analyzer 5200.The RNA ladder is finished at 0.5μg/μl in concentration, suggesting loading 1μL in a typical agarose gel electrophoresis analysis when image with SYBR green.

Name	Cat. No	Modification	Scale
200-6000nt RNA Ladder (WT)	RP-A00039	No	50 μL
200-6000nt RNA Ladder (m1ψ)	RP-A00037	m1ψ	50 μL
200-6000nt RNA Ladder (5moU)	RP-A00035	5moU	50 μL

Concentration: 0.5 μg/μl

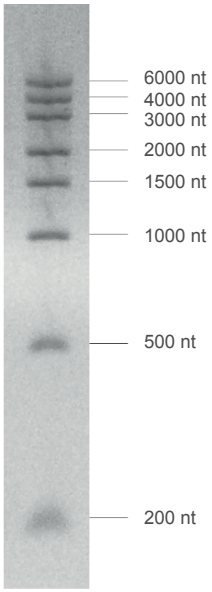
Volume: 50 μL/Vial

Storage Buffer: 1mM Sodium citrate, pH6.5

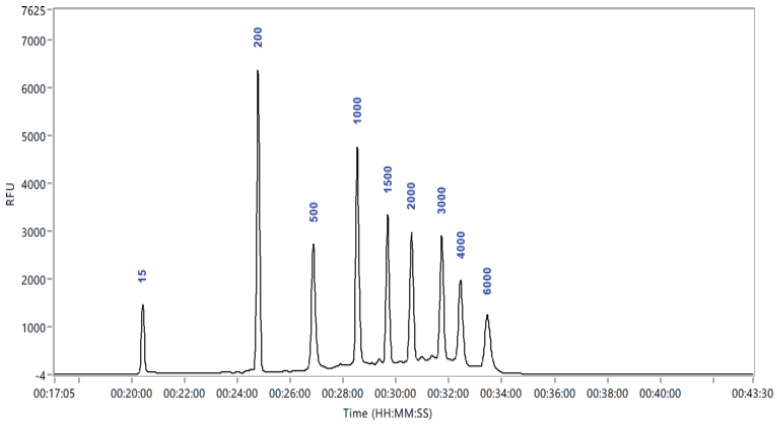
Handling and Storage: Suggest to aliquot for single use volume per tube to ensure the best performance. Store at -80°C for long term.

Gel Electrophoresis result:

500ng of RNA ladder was loaded with 50% formamide into 2% EX-Egel. Image was taken with E-Gel™ Power Snap Camera.



500 ng RNA ladder, 16min by 2% E-Gel



500 ng RNA ladder, by Agilent 5200 Fragment Analyzer

GenScript mRNA Ladder (0.5-9 KB)

The RNA ladders are composed of a set of 8 RNA molecules with or without base modification. The 500-9000nt RNA ladder has a size of: 500nt, 1000nt, 1500nt, 2000nt, 3000nt, 5000nt, 7000nt and 9000nt. This RNA ladder is suitable for use as a single strand RNA size standard on denaturing or native agarose gels, or to be used with Agilent Fragment analyzer 5200.
The RNA ladder is finished at 0.5μg/μl in concentration, suggesting loading 1μL in a typical agarose gel electrophoresis analysis when image with SYBR green.

Name	Cat. No	Modification	Scale
500-9000 nt RNA Ladder (WT)	RP-A00040	No	50 μL
500-9000 nt RNA Ladder (m1ψ)	RP-A00038	m1ψ	50 μL
500-9000 nt RNA Ladder (5moU)	RP-A00036	5moU	50 μL

Concentration: 0.5 μg/μl

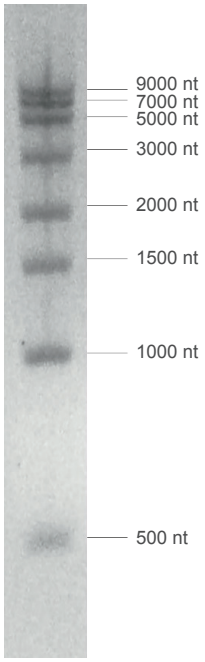
Volume: 50 μL/Vial

Storage Buffer: 1mM Sodium citrate, pH6.5

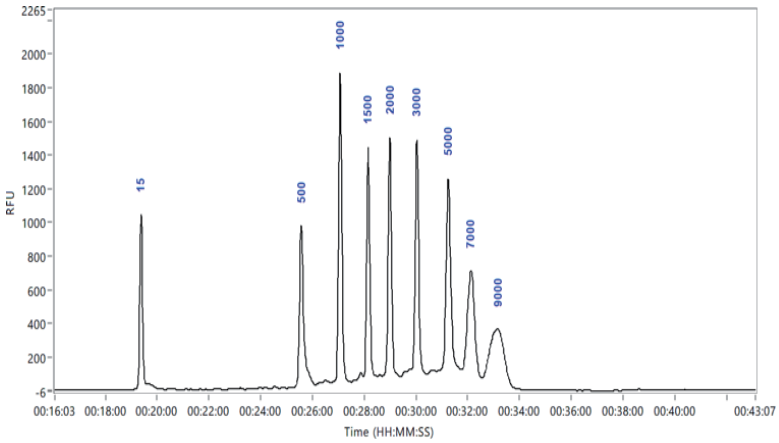
Handling and Storage: Suggest to aliquot for single use volume per tube to ensure the best performance. Store at -80°C for long term.

Gel Electrophoresis result:

500 ng of RNA ladder was loaded with 50% formamide into 2% EX-Egel. Image was taken with E-Gel™ Power Snap Camera.



500 ng RNA ladder, 16min by 2% E-Gel



500 ng RNA ladder, by Agilent 5200 Fragment Analyzer

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