



EMPOWERING INNOVATIONS

***IVT RNA
Raw Materials***

**FOR CUTTING-EDGE RESEARCH
AND ADVANCEMENTS**

The first successful report of the use of in vitro transcribed (IVT) mRNA in animals was published in 1990 after reporter gene mRNAs were injected into mice. Scientists have been using the in vitro transcribed (IVT) RNA approach to create therapies and vaccines for decades due to its short development time, high safety, high specificity, and simple manufacturing.

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The Application of IVT RNA Technology



Therapeutics



Vaccine



Drug Discovery



Basic Research



CRISPR/ Cas Gene Editing



In Vivo Production of Secretable Protein/ Antibody



Reprogramming Cells

The Workflow of IVT RNA Preparation



Target Design and DNA Template Generation



Plasmid Production, Purification, and Linearization



RNA Synthesis



RNA Purification



Analytics

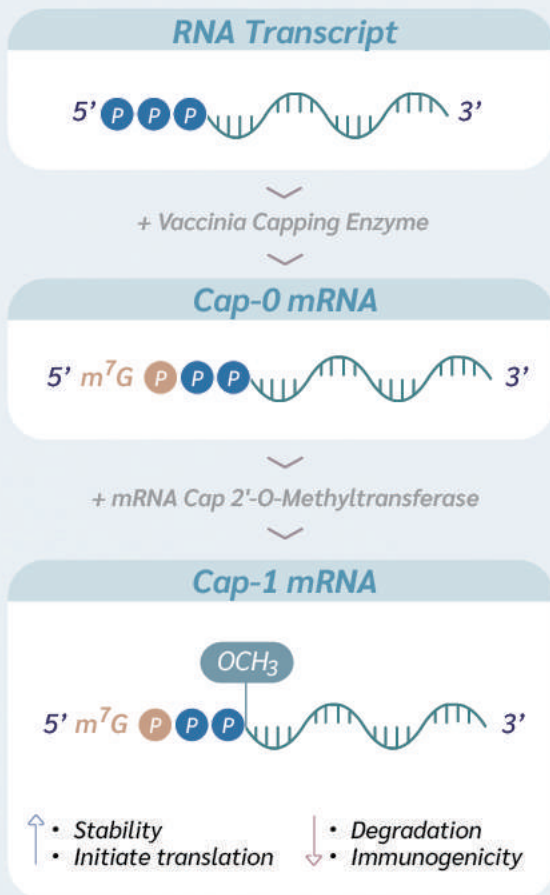


Formulation



*Lab Use/
Industrial Manufacturing*

A. mRNA capping

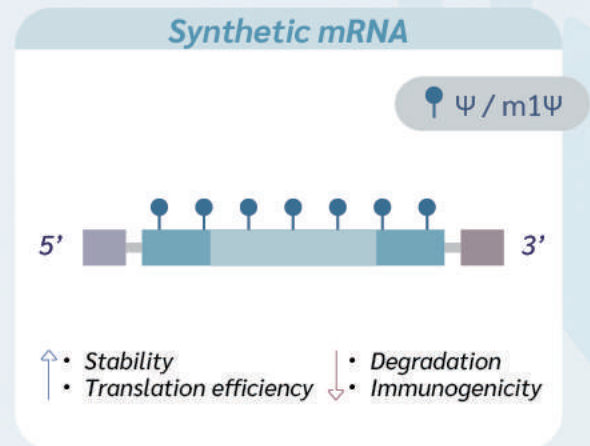


Cat#	Product	Package
C15037-500U	Vaccine Capping Enzyme	500 U
C15038-2000U	mRNA Cap 2'-O-Methyltransferase	2,000 U
C15050-K01	Vaccinia Capping Kit	set
C15051-K01	S-adenosylmethionine (SAM)	50 µL*10

Key Elements for Improving the Performance of mRNA

B. Modified nucleotide

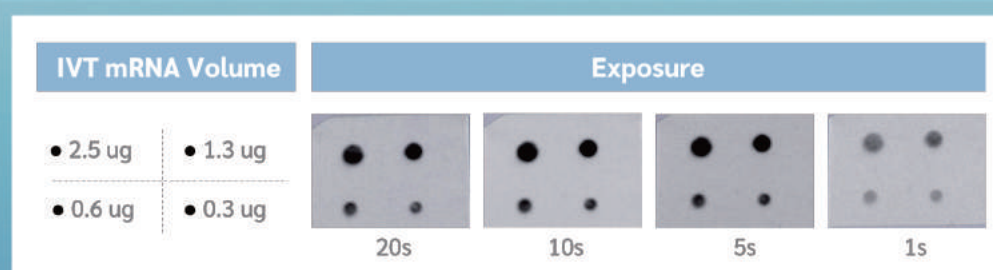
Pseudouridine (Ψ) and N1-Me-pUTP (m1Ψ) can be used to replace uridine in the IVT mRNA. It is demonstrated that the modified UTP can enhance RNA stability and decrease anti-RNA immune response.



Cat#	Product	Package
C15040-100UL	Pseudo UTP Sodium Solution	100 µL
C15041-100UL	N1-Me-pUTP Sodium Solution	100 µL

The Critical Quality Management of mRNA Purity - dsRNA Detection Assay

Cat#	Product	Package
C15039-200UG	Anti-dsRNA antibody [clone J2]	200 µg



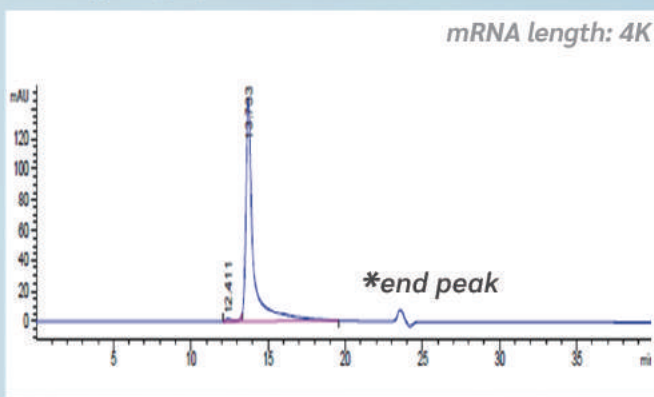
When developing IVT mRNA-based therapies or vaccines, high-quality and purity in vitro transcribed mRNA is of the utmost importance. Double-stranded RNA (dsRNA) impurities are one of the extremely concerning byproducts because they would inhibit the synthesis of the antigen protein and trigger an unfavorable immunological response.

Features

- High Sensitivity
- High Specificity
- Cost-effective

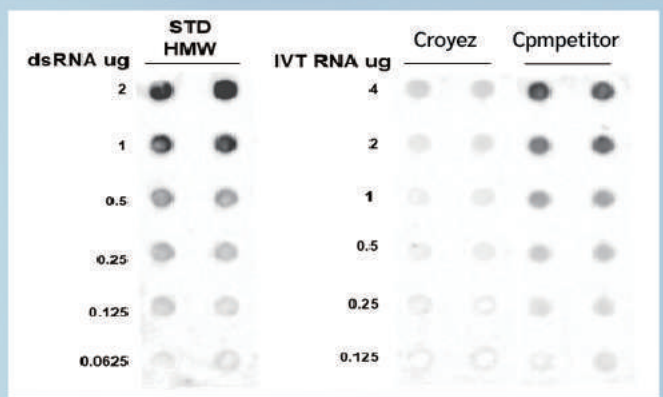
High Quality Final mRNA Products by Using Croyez's Raw Materials

mRNA purity by SEC-HPLC



Croyez's final mRNA product has a extremely high purity.

dsRNA Analysis



Croyez's final mRNA product has a significantly lower concentration of dsRNA byproducts compared to the competitor's product.

Comprehensive Solutions for IVT RNA Production

- Generate high quality and high purity IVT mRNA
- Flexible formulation buffers to assist you find the optimal condition

Cat#	Product	Package
C15009-K01	NTP Set, 100 mM Solutions	1 mL*4
C15010H-25000U	T7 RNA Polymerase (200 U/ μ L)	25,000 U
C15027-K01	T7 RNA Polymerase Transcription Buffer Set	10,000 U
C15027-K02	*Include buffer A~I (200 U/ μ L)	25,000 U
C15010HA-25000U	T7 RNA Polymerase with buffer A(200 U/ μ L)	25,000 U
C15010HB-25000U	T7 RNA Polymerase with buffer B (200 U/ μ L)	
C15010HC-25000U	T7 RNA Polymerase with buffer C (200 U/ μ L)	
C15010HD-25000U	T7 RNA Polymerase with buffer D (200 U/ μ L)	
C15010HE-25000U	T7 RNA Polymerase with buffer E (200 U/ μ L)	
C15010HF-25000U	T7 RNA Polymerase with buffer F (200 U/ μ L)	
C15010HG-25000U	T7 RNA Polymerase with buffer G (200 U/ μ L)	
C15010HH-25000U	T7 RNA Polymerase with buffer H (200 U/ μ L)	
C15010HI-25000U	T7 RNA Polymerase with buffer I (200 U/ μ L)	
C15022-1ML	ATP Solution (100 mM)	1 mL
C15023-1ML	UTP Solution (100 mM)	1 mL
C15024-1ML	CTP Solution (100 mM)	1 mL
C15025-1ML	GTP Solution (100 mM)	1 mL
C15026-10U	Inorganic Pyrophosphatase (Yeast)	10 U
C15026-50		50 U
C15049-4KU	Murine RNase Inhibitor	4 KU
C15049-20KU		20 KU

