

Synthesize high yield Ψ -mRNA with an all-in-one system

INCOGNITO™ T7 mScript™ Ψ -mRNA Production System

The all-in-one INCOGNITO™ T7 mScript™ Ψ -mRNA Production System provides all enzymes and reagents to produce pseudouridine-containing mRNA (Ψ -mRNA). This kit combines high-yield transcription with post-transcriptional 5' capping and 3' poly(A) tailing, resulting in large amounts of Ψ -mRNA with nearly 100% transcript capping. The Ψ -mRNAs are suitable in transfection and microinjection experiments as well as *in vitro* translation systems due to the reduced innate immune response.

Benefits

- **All-in-one kit:** Combine transcription, 5' capping, and 3' poly(A) tailing in one system.
- **Reduced immune response:** Synthesize transcripts with Ψ TP for lower immunogenicity.
- **High efficiency capping:** Achieve ~100% 5' capping efficiency.
- **Customizable poly(A) tailing:** Create variable 3' poly(A) tail lengths, from 50 to >300 bases long.

Product Description

The [INCOGNITO™ T7 mScript™ \$\Psi\$ -mRNA Production System](#) provides all enzymes and enzyme-related reagents for making 5'-capped, 3'-polyadenylated, pseudouridine-containing mRNA. It includes reagents for four workflow modules, (1) RNA transcription, (2) 5' capping, (3) 3' poly(A) tailing and (4) RNA/mRNA purification:

1. **Transcription:** *In vitro* transcription of linear double-stranded DNA templates using the T7 mScript™ Enzyme Solution with supplied nucleotides Ψ TP, ATP, CTP and GTP.
2. **5' Capping:** Enzymatic capping of the RNA using [ScriptCap™ Cap 1 Capping System](#) (for making mRNA with a Cap 0 cap structure, or optionally making mRNA with a Cap 1 cap structure) (Figure 1).
3. **3' Poly(A) Tailing:** [A-Plus™ Poly\(A\) Polymerase](#) for generating 3' poly(A) tails of 150-200 bases or, using a modified protocol, tail lengths of >300 bases are possible.
4. **Purification:** 5M NH_4OAc is included as a convenient RNA and mRNA purification method.

Figure 1A: Cap 0-mRNA

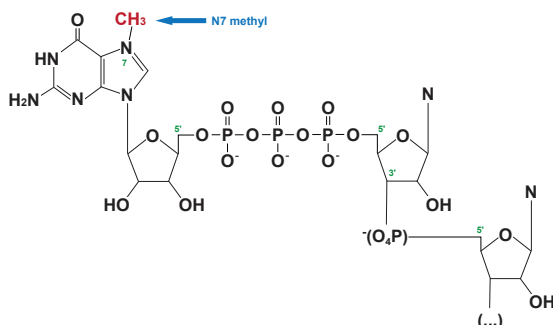


Figure 1B: Cap 1-mRNA

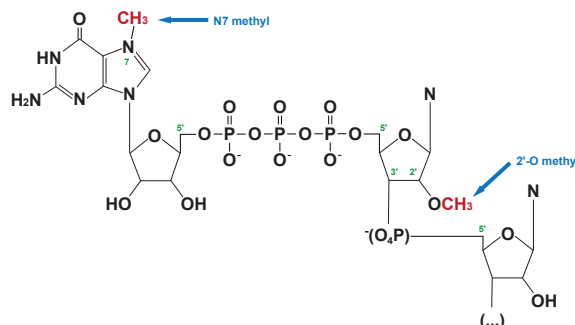


Figure 1: Cap 0-RNA and Cap 1-RNA. Cap 0 is added using ScriptCap™ Capping Enzyme and converted to Cap 1 using 2'-O-Methyltransferase.

For research use only

Post-transfection, capped and tailed mRNA has increased stability and translation efficiency in most eukaryotic cell lines. The mScript™ System improves upon existing capping methods by ensuring virtually 100% transcript capping, all caps in the proper orientation and the ability to produce large amounts of capped RNA at a reasonable cost. Additionally, the A-Plus™ Poly(A) Polymerase protocol provides a wide range of poly(A) tail lengths from 150–300+ bases. INCOGNITO™ Ψ-mRNAs increase translation and decrease innate immune responses from mammalian cells that express various RNA sensors.

Product Performance

The INCOGNITO™ T7 mScript Ψ-mRNA Production System is functionally tested under standard reaction conditions using the T7 Control Template DNA. The *in vitro* transcription module must produce at least 50 µg of RNA from 1 µg of the T7 Control Template DNA in 20 minutes at 37°C. A-Plus™ Poly(A) Polymerase is functionally tested in 1X A-Plus™ Poly(A) Tailing Buffer with 1 mM ATP and a 1.4 kb transcript. The capping module enzymes are tested independently using non-T7 control transcript RNA to assay for completeness of reaction.

Ordering information

Catalog Number	Description
IMY240525	INCOGNITO™ T7 mScript™ Ψ-mRNA Production System (25 reactions)

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