

# Improve translation and reduce immune responses with efficient ARCA-capped RNA synthesis

## INCOGNITO™ T7 ARCA 5mC- & Ψ-RNA Transcription Kit

### Product Intro

The INCOGNITO™ T7 ARCA 5mC- & Ψ-RNA Transcription Kit is optimized for co-transcriptional capping of 5-methyl-cytidine- pseudouridine-containing, *in vitro* transcribed RNA with Anti-Reverse Cap Analog (ARCA). In three hours, a reaction produces up to 40 µg of ARCA-capped 5mCΨ-RNA from 1 µg of DNA template. Achieve reduced immune responses and increased protein translation in mammalian cells using 5mCΨ-mRNAs compared to unmodified mRNAs.

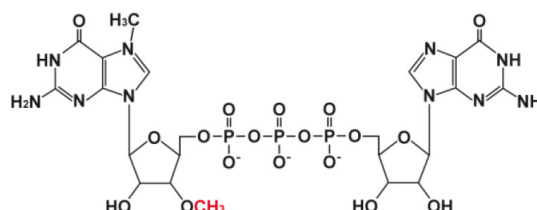
### Benefits

- **Efficient RNA synthesis:** Optimized for maximum transcript capping and yield.
- **Reduced immune response:** Synthesized transcripts include 5mCTP and ΨTP for lower immunogenicity.
- **Scalable:** The standard reaction can be scaled up to produce milligram amounts of ARCA-5mCΨ-RNA.

### Product Description

The [INCOGNITO™ T7 ARCA 5mC- & Ψ-RNA Transcription Kit](#) is designed for high-yield synthesis of ARCA-capped 5mCΨ-RNA. A three hour, 20 µl reaction yields up to 40 µg of RNA from 1 µg of DNA template. ARCA ensures correct 5' end incorporation, resulting in RNA that translates more efficiently *in vivo* than standard cap analogs. (Figure 1) The ARCA / GAΨ5mC PreMix contains all four ribonucleotides and ARCA, ensuring an optimal 4:1 ARCA to GTP ratio for ~80% capping and high yield. INCOGNITO™ ARCA-5mCΨ-RNA can be further processed into mRNA for expression in cells using [ScriptCap™ 2'-O-Methyltransferase](#) (for conversion to a Cap 1 structure) and [A-Plus™ Poly\(A\) Polymerase Tailing Kit](#), available separately.

**Figure 1.** Anti-Reverse Cap Analog (ARCA) contains a 3'-O-methyl group (red) on the m<sup>7</sup>G nucleotide. ARCA caps can only be incorporated in the correct orientation at the RNA 5' end, unlike the standard cap analog.



### Product Performance

The INCOGNITO™ T7 ARCA 5mC- & Ψ-RNA Transcription Kit is functionally tested under standard reaction conditions using the T7 Control Template DNA. The kit must produce at least 35 µg of RNA from 1 µg of the T7 Control Template DNA in three hours at 37°C.

Synthesis of transcripts ≥5 kb may require the addition of 1-2 µl of 20 mM GTP to the standard protocol. While this may decrease the percentage of capped transcript to 50-60%, it will increase the yield of full-length transcripts. Synthesis of transcripts <500 b requires reaction times of four hours to maximize yields.

### Ordering information

Catalog Number	Description
150370	INCOGNITO™ T7 ARCA 5mC- & Ψ-RNA Transcription Kit (10 reactions)

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