Maximize ARCA-capping and transcript yield with streamlined RNA synthesis

MessageMAX™ T7 ARCA-Capped Message Transcription Kit V2

Product Intro

The MessageMAX™ T7 ARCA-Capped Message Transcription Kit V2 effectively uses T7 RNA polymerase to co-transcriptionally cap *in vitro* transcribed RNA with Anti-Reverse Cap Analog (ARCA). This kit is optimized for maximum transcript capping and yield, resulting in up to 60 µg of ARCA-capped RNA from 1 µg of DNA template in just 30 minutes. The reaction products are 80% correctly capped and 20% uncapped.

Benefits

- **Maximized yield:** Yields up to 60 µg of ARCA-capped RNA from 1 µg of DNA template.
- **Optimized ARCA-capping:** Produce ~80% ARCA-capped RNA using the ARCA/NTP PreMix.
- **Fast workflow:** Complete co-transcriptional capping in just 30 minutes.

Product Description

The MessageMAX™ T7 ARCA-Capped Transcription Kit V2 produces capped RNA via *in vitro* transcription with T7 RNA polymerase and ARCA. In 30 minutes, a 20 µl reaction yields up to 60 µg of ARCA-capped RNA from 1 µg of DNA template. ARCA ensures correct 5′ orientation, resulting in RNA that is more efficiently translated *in vivo* than standard cap analog. (Figure 1) The ARCA/NTP PreMix provides optimal concentrations for maximizing transcript capping (~80%) and yield. MessageMAX™ ARCA-capped RNA can be processed into mRNA for translation in cells using ScriptCap™ 2′-O-Methyltransferase (for conversion to a Cap 1 structure) and A-Plus™ Poly(A) Polymerase Tailing Kit, available separately.

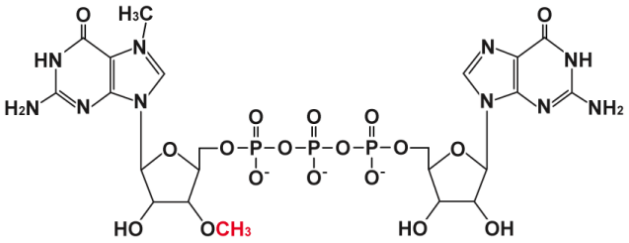

Figure 1. Anti-Reverse Cap Analog (ARCA) contains a 3′-O-methyl group (red) on the m^7G nucleotide. ARCA caps can only be incorporated in the correct orientation at the RNA 5′ end, unlike the standard cap analog.

Product Performance

The MessageMAX™ T7 ARCA-Capped Message Transcription Kit V2 is functionally tested under standard reaction conditions using the T7 Control Template DNA. The kit must produce at least 40 µg of RNA from 1 µg of the T7 Control Template DNA in 30 minutes 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
C-MMA60710	MessageMAX™ T7 ARCA-Capped Message Transcription Kit V2 (10 reactions)

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