

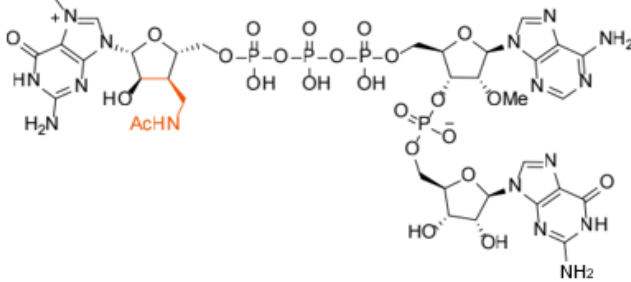
LZCap™AG(3'Acm) GMP-grade (100 mM)

Product description

LZCap™AG(3'Acm) is a Cap1 analog, can be used as the capping agent for producing mRNAs in an “one-pot” process. Under the action of T7 polymerase, mRNA with 5' end Cap 1 structure was generated by co-transcription using LZCap™AG(3'Acm), NTPs, and template DNA. The capped mRNA could be directly translated and expressed in cells and in vivo. It is widely used in the fields of in vitro transcription, gene editing, vaccine development, tumor CART therapy, protein substitution therapy and regenerative medicine.

LZCap™AG(3'Acm) requires the T7 promoter with AG as the starting sequence. LZCap™AG(3'Acm) can provide >97% capped mRNA, and up to 100-200 µg capped mRNA can be generated with 1 µg DNA template per standard reaction.

Specifications

Cat.No.	10684ES60 / 10684ES80
Size	100 µL / 1 mL
Molecular Formula	C ₃₅ H ₄₈ N ₁₆ O ₂₄ P ₄ (Free acid)
Molecular Weight	1200.75 (Free acid)
Concentration	100 mM
Purity	≥95%
Salt type	NH ₄ ⁺
Structure	

Components

Name	10684ES60	10684ES80
LZCap™AG(3'Acm) GMP-grade (100 mM)	100 µL	1 mL

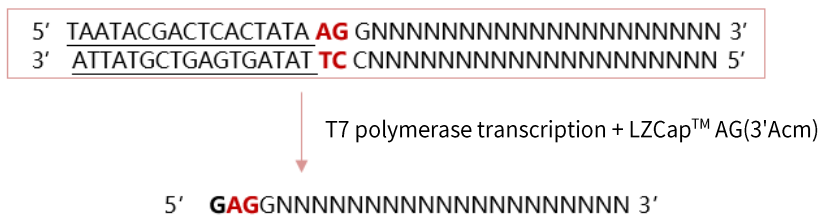
Storage

This product should be stored at -25~-15°C for 2 years.

Instructions

LZCap™ DNA Template Design

LZCap™AG(3'Acm) is suitable for AG-initiated sequences. As shown in the figure below, the T7 promoter (underlined) followed by the AG sequence can effectively initiate transcription.



1. Thaw components required for the experiment on ice.
2. Refer to the following reaction system to configure the transcription system at room temperature.

Component	Volume (μL)	Final concentration
ATP (100mM)	1	5 mM
UTP (100mM)*	1	5 mM
CTP (100mM)	1	5 mM
GTP (100mM)	1	5 mM
LZCap™AG(3'Acm) (100mM)	0.8	4 mM
10 × Transcription Buffer	2	1 ×
Recombinant RNase Inhibitor (40 U/ μL)	0.5	1 U/ μL
Pyrophosphatase (0.1 U/μL)	0.4	0.002 U/ μL
T7 RNA polymerase (250 U/μL)	0.64	8 U/ μL
Linear DNA+RNase Free Water	11.66	1 μg
Final volume	20μL	

*Modified N¹-Me-pUTP can be used in place of wild-type UTP. The modified N¹-Me-pUTP reduces the immunogenicity of mRNA.

3. Mix the prepared reaction solution, centrifuge briefly, and incubate at 37°C for 2-3 hours. If the transcript length is less than 100nt, increase the reaction time to 4-8 h.

Notes

1. LZCap™AG(3'Acm) is suitable for T7 promoter transcription vector with 5 'AG 3' initiated sequences, which needs to be considered when constructing the vector.
2. The reagents, consumables and containers used in the experiment are free of RNase contamination.
3. It is recommended to use a linearized DNA template for transcription.
4. When modified nucleotides were used in place of wild-type nucleotides, the final concentration of the reaction was unchanged.
5. If the PCR product is used as the transcription initiation DNA template, the amount of DNA template can be reduced by half.
6. This product is for research use only.
7. Please operate with lab coats and disposable gloves, for your safety.