T7 RNA Polymerase 3.0 GMP-grade (low dsRNA)

Product Description

During the in vitro transcription reaction, the by-product dsRNA generated can strongly stimulate intracellular RNA receptors and trigger innate immune signals. T7 RNA polymerase 3.0 GMP-grade(low dsRNA), independently developed and multi-step purified by Biori Biotech to GMP standards, has high transcriptional catalytic activity for different templates and nucleic acid types. Compared with the common T7 RNA polymerase, the T7 RNA polymerase 3.0 (low dsRNA) significantly reduces the content of by-product dsRNA produced during transcription. The T7 RNA polymerase 3.0 (low dsRNA) can precisely recognize the T7 promoter region (5'-TAATACGACTCACTATAG-3') and start transcribing the subsequent DNA sequence into single-stranded RNA from the G in this region. Using natural or modified nucleotides as substrates, a single 20 μL in vitro transcription reaction can generate a large amount of RNA.

Components

Components	Cat. No.	Quantity	Volume
T7 RNA Polymerase 3.0 GMP-grade (low dsRNA)	GMP-BP-E11-5K	5 KU	100 μL
	GMP-BP-E11-50K	50 KU	1 mL
	GMP-BP-E11-500K	500 KU	10 mL

Storage

Store at -20±5℃.

Product Information

Product Name	T7 RNA Polymerase 3.0 GMP-grade(low dsRNA)
Source	Recombinant *E.coli*
Activity	50 U/μL
Unit Definition	One unit (U) is defined as the amount of enzyme required to incorporate 1 nmol of NTP into RNA in 1 hour at 37℃, pH 8.0.
Storage Buffer	50 mM Tris-HCl, 1 mM EDTA, 10 mM DTT, 100 mM NaCl, 0.1%(v/v)TritonX-100, 50%(v/v) glycerol, pH7.9 at 25℃.

Quality control

1. Solution appearance: clear and transparent, free of visible particulate matter.
2. Activity>50 U/μL.
3. Protein purity≥95%.
4. Free of exogenous DNase, RNase, exonuclease, and endonuclease activity.
5. Residual host-cell DNA: ≤100 pg/mg.
6. Residual host-cell protein: <50 ppm.
7. Heavy metals<10 ppm.
8. HBV, HCV, HIV, and mycoplasma: not detected.
9. Bacterial endotoxin: <5 EU/mL.
10. pH 7.0-8.0.

Recommended Transcription System

Components	Volume
RNase free ddH_2O	To 20 μL
ATP Solution(100 mM)	2 μL
CTP Solution(100 mM)	2 μL
GTP Solution(100 mM)	2 μL
UTP Solution(100 mM)	2 μL
10×Transcription Buffer	2 μL
RNase Inhibitor GMP-grade (40 U/μL)	1 μL
Inorganic Pyrophosphatase GMP-grade (0.1 U/μL)	1 μL
T7 RNA Polymerase 3.0 GMP-grade(low dsRNA)(50 U/μL)	2 μL
Template DNA	1 μg

Zhuhai Biori Biotechnology Co.,Ltd
Tel: +86-0756-8699969 Web: www.biori-en.com Email: marketing@biori-en.com
Addr:No. 88, Shui' an 1st Road, Xiangzhou District, Zhuhai, Guangdong 519060, China

*Incubate at 37℃ for 2 hours.

Notes

1. In vitro transcription reactions are highly sensitive to RNase. Strictly avoid introducing RNase into the reaction system. All laboratory consumables, including pipette tips and microcentrifuge tubes, must be RNase-free.
2. Equilibrate the 10×Transcription Buffer to room temperature before use. At low temperatures, DNA may co-precipitate with spermidine, reducing transcription yield; the DNA template should therefore always be added last. Recommended addition order: nuclease-free water → NTPs → 10×Transcription Buffer → RNase Inhibitor → Pyrophosphatase, Inorganic → T7 RNA Polymerase 3.0(low dsRNA) → Template DNA.
3. Wear gloves throughout the experimental procedure.
4. Mix thoroughly before use. Avoid repeated freeze-thaw cycles.