

T7 RNA Polymerase

Product Code: T7100 and T750

T7 RNA Polymerase is a DNA-dependent RNA polymerase with strict specificity for the T7 promoter sequence. The enzyme catalyses the 5'-3' synthesis of RNA from a double-stranded DNA template and is commonly used for in vitro transcription (IVT) applications. This enzyme requires Mg^{2+} as a cofactor and produces full-length RNA transcripts, making it an essential tool for RNA synthesis, research, and various biotechnological processes.

Related products from Fluorobiot**tech**

- ▶ Inorganic Pyrophosphatase

PROPERTIES

Source	Recombinantly produced in <i>E. coli</i>
Amount (Units)	100 000 U/mL and 50 000 U/mL
Purity (SDS-PAGE)	>95%
Tag	His tag
Form	Clear liquid
Molecular weight	~99 kDa
Inactivation / Inhibition	The enzyme is inhibited by NaCl and KCl above 150 mM and metal chelators. Enzyme can be inactivated by heating at 70°C for 15 min or addition of EDTA
Recommended Reaction Buffer	40 mM Tris (pH 7.9), 10 mM DTT, 2 mM spermidine, 16.5 mM Mg acetate
Applications	<i>In Vitro</i> Transcription (IVT), RNA Labelling, RNA Studies and Synthetic Biology
DNase Activity	Below quantification limit by fluorimetric assay (LOQ: 2.04 ng/mL)
RNase Activity	Below quantification limit by fluorimetric assay (LOQ: 0.06 ng/mL)
Endotoxins	<5 EU/mL, measured using a recombinant Factor C assay
Species	Bacteriophage T7
Storage and stability	Stable for 12 months if stored at -20°C. Avoid freeze/thaw cycles.
Shipping	Frozen gel ice packs
Animal origin free	Yes

SUGGESTED STARTING REACTION CONDITIONS

COMPONENTS	AMOUNT REQUIRED FOR 50 µL	FINAL CONCENTRATION IN REACTION
10× IVT reaction buffer	5 µL	1× from 10× stock
Linear Template DNA, 125 ng/µL	10 µL	25 ng/µL
NTPs	1.25 µL each	5 mM each ATP, GTP, CTP and UTP
Pyrophosphatase (0.1U/uL)	1.00 µL	0.004 U/µL
RNase inhibitor stock (40U/uL)	0.75 µL	1.2 U/µL
Nuclease-free water	As required	Adjusted as required
T7 RNA Polymerase	8 U/uL	200 U (8 U/uL)
TOTAL	25.00 µL	

Precautions and Disclaimer

This product is for laboratory research use only. It is not suitable for human therapeutic or diagnostic use. Please consult the Material Safety Data Sheet for handling recommendations before working with this material.