T7 RNA Polymerase

Cat. No. E041

Store at -20°C.

Description

T7 RNA Polymerase is a DNA dependent RNA polymerase that catalyzes the synthesis of RNA in the 5´→ 3´ direction only in the presence of its cognate T7 phage promoter sequence. T7 RNA polymerase has high specificity for the T7 phage promoter and will not recognize SP6 or T3 RNA Polymerase promoter sequences.

Product Component	Quantity	Part No.
T7 RNA Polymerase (50 U/µl)	100 µl (5000 U)	E041-1
10X T7 RNA Polymerase Reaction Buffer	1.0 ml	E041-2

Protocol

Product Applications

- Synthesis of RNA transcripts for hybridization probes
- Synthesis of RNA for in vitro translation
- Synthesis of biologically active mRNA
- Generate large amounts of labelled or non-labelled RNA

Reaction Conditions

Use 1X T7 RNA Polymerase Reaction Buffer and incubate at 37°C.

Enzyme Unit Definition

One unit is defined as the amount of T7 RNA Polymerase that is required to incorporate 1 nmol ATP into acid-insoluble material in a 50 µl reaction volume in 1 hour at 37°C in 1X T7 RNA Polymerase Reaction Buffer.

General Notes

- T7 RNA Polymerase activity requires dithiothreitol (DTT). If a decrease in activity is observed over time, it may be due to the breakdown of DTT in the reaction buffer even if stored at -20°C. If a decrease in activity is observed, supplement the reaction with a final concentration of 10 mM of fresh DTT.
- T7 RNA Polymerase activity is inhibited by high salt, therefore maintaining a salt concentration of no higher than 50 mM is required.
- To obtain higher yields of RNA, the levels of NTP can be increased up to 4 mM each (normally recommended at 1.5 mM each). The magnesium concentration should also be increased to 4 mM above the total concentration of NTP.

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