Creative Enzymes
Diagnostic Enzymes

rTth DNA Polymerase

Product Information

Cat#	POL-019
Notes	Cloning of PCR Products PCR products obtained using this enzyme can be cloned via TA cloning, similar to Taq DNA polymerase. Due to its proofreading activity, the fidelity during PCR under Mg^{2+}-containing conditions is comparable to that of Taq DNA polymerase. Setting PCR Conditions Reaction conditions are fundamentally the same as those for Taq DNA polymerase. If amplification fails, setting a gradient of 1 sec/1°C during the denaturation to annealing process may sometimes yield better results. RT-PCR Reactions Although this enzyme can perform both reverse transcription and PCR in the presence of Mn^{2+} using a single enzyme, fidelity decreases. Therefore, it is not suitable for RT-PCR products intended for sequencing or cloning experiments.
Storage	Store at -20 °C.
Features	High Efficiency: Compared to Taq DNA polymerase, this enzyme demonstrates superior amplification efficiency for GC-rich target fragments and crude samples. Single-Enzyme RT-PCR Capability: This enzyme exhibits reverse transcriptase activity in the presence of Mn^{2+}, enabling completion of RT-PCR using only this enzyme. Furthermore, it performs reverse transcription at 60°C, making it suitable for amplifying GC-rich target fragments and those prone to higher-order structure formation.
Component	10 mM Tris-HCl (pH7.5), 300 mM KCl, 0.1 mM EDTA, 1 mM DTT, 1% Triton X-100, 500 μg/mL BSA, 50% Glycerol
Description	This enzyme is a heat-resistant DNA polymerase derived from the hyperthermophilic bacterium Thermus thermophilus HB8, expressed in Escherichia coli to produce a recombinant form. It possesses reverse transcriptase activity, which is enhanced in the presence of Mn^{2+}. Leveraging this property, both reverse transcription and PCR

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	reactions can be performed with the same enzyme in a single tube. Additionally, this enzyme exhibits higher thermal stability than Taq DNA polymerase and demonstrates superior amplification efficiency for GC-rich target fragments.
Applications	PCR; RT-PCR
Specification	250 U
Expression System	E.coli
10× Reaction Buffer	100 mM Tris-HCl (pH 8.9), 800 mM KCl, 15 mM $MgCl_2$, 1% Triton X-100, 1% Sodium Cholic Acid, 5 mg/mL BSA
Activity Definitions	Under the 75°C activity assay conditions, the enzyme activity required to convert 10 nmoles of total nucleotides into acid-insoluble products within 30 minutes is defined as 1 U.

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