Creative Enzymes
Diagnostic Enzymes

Diagnostic T4 Polynucleotide Kinase, Glycerol Free

Product Information

Cat#	TRA-012
Specification	200U
Description	T4 poly(nucleotide) kinase (T4 PNK), a poly(nucleotide) 5'-hydroxyl kinase, catalyzes the transfer and exchange of the γ-phosphate group from ATP to the 5'-hydroxyl group of single-stranded DNA or RNA and to the 5'-hydroxyl group of a mononucleotide bearing a 3'-phosphate group: double-stranded/single-stranded DNA or RNA and the 5'-hydroxyl group of a mononucleotide bearing a 3'-phosphate group: 5'-OH + NTP5' ↔ P + NDP; This enzyme also exhibits 3'-phosphatase activity, hydrolyzing the 3'-phosphate group from the 3'-phosphate terminus of oligonucleotides, deoxy-3'-monophosphate nucleosides, and deoxy-3'-diphosphate nucleosides.
Applications	5'-end phosphorylation of primers or PCR products for ligation reactions; 5'-end phosphorylation of synthetic DNA linkers for ligation reactions; labeling of DNA and RNA 5'-ends for use as oligonucleotide probes.
Activity	10 U/μL
Unit Definition	One unit is defined as the amount of enzyme required to incorporate 1 nmol of [γ-32P] ATP into acid-insoluble precipitate within 30 minutes at 37°C and pH 7.6, using Micrococcal Nuclease-treated calf thymus DNA as substrate.
Storage	-20°C
Notes	1× T4 PNK reaction buffer does not contain ATP; add ATP to a final concentration of 1 mM in the reaction system. Alternatively, use the reaction mixture from T4 DNA ligase. Ammonium ions strongly inhibit T4 PNK activity; therefore, DNA should be dissolved in an ammonium-free solution. DTT oxidation causes enzyme activity decline; replenish DTT when buffer is stale.

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