T4 Polynucleotide Kinase（T4 PNK）

Instruction for Use

Cat. No./Spec.: K013-A/500U; K013-B/2500U; K013-C/10000U

Concentration: 10 U/μL

Product Description

T4 Polynucleotide Kinase (T4 PNK) catalyzes the transfer and exchange of Pi from the γ position of ATP to the 5'-hydroxyl terminus of polynucleotides (double-stranded and single-stranded DNA and RNA) and nucleoside 3'-monophosphate. T4 polynucleotide kinase also catalyzes the removal of 3′ -phosphoryl groups from 3′ -phosphate-based polynucleotides, deoxynucleoside 3′ -monophosphate, and deoxynucleoside 3′ -diphosphate. When ADP is present, T4 PNK has 5'-end phosphatase activity, catalyzing the exchange of 5'-P-oligomeric/polymeric nucleotides and ATP terminal 5'-phosphate groups. It is suitable for constructing DNA libraries and producing probes with terminal labeling.

Components

Component	K013-A (500 U)	K013-B (2,500 U)	K013-C (10,000 U)
T4 Polynucleotide Kinase (10 U/μL)	50 μL	250 μL	1 mL
10X T4 PNK Buffer *	50 μL	1 mL	1 mL × 2

* 10 × T4 PNK Buffer does not contain ATP, and customers need to add it themselves, with a final concentration of 1 mM, or use T4 DNA ligase buffer.

Storage Condition & Shelf Life

All reagents should be stored at -20°C. The product is valid for 12 months.

Unit Definition

One Richardson unit is defined as the amount of enzyme catalyzing the recombination of 1 nmol of [γ-^{32}P] ATP.

Scope of Application

1. End labeling DNA or RNA for probes and DNA sequencing;
2. 5' phosphorylation of DNA/RNA for subsequent ligation;
3. Phosphorylate the 5′ end of the 3′ phosphorylated mononucleotide to prepare the pNp substrate for addition to the 3′ end of DNA or RNA;
4. Label the 5′ end of oligonucleotides with a phosphate group at the 3′ end.

Heat Inactivation

65°C for 20 minutes

Notes

1. The enzyme should be placed on ice when using, and it should be put back to -20 °C immediately after use.

This product is for research use only.