

## T4 Polynucleotide Kinase

### Product Information

Product Name	Cat#	Size
	12902ES76	500 U
T4 Polynucleotide kinase	12902ES86	2500 U
	12902ES92	10000 U

### Product Description

T4 Polynucleotide Kinase (T4 PNK) is a polynucleotide 5'-hydroxyl kinase that catalyzes the transfer of the  $\gamma$ -phosphate from ATP to the 5'-OH group of oligonucleotide chains (double- or single-stranded DNAs or RNAs) and nucleoside 3'-monophosphates, and the reaction is reversible. Has 3'-phosphatase activity, hydrolyzes the 3'-phosphate group from the 3'-phosphate end of oligonucleotides, deoxy3'-monophosphate nucleosides and deoxy3'-diphosphate nucleosides. In the presence of ADP, T4 PNK has 5'-phosphatase activity, catalyzing the exchange of 5'-P-oligo/polynucleotide and ATP terminal 5'-phosphate groups. It is suitable for DNA library construction and probes end labeling.

### Product Components

Component	Size		
	12902ES76	12902ES86	12902ES92
12902-A T4 Polynucleotide Kinase (10 U/ $\mu$ L)	50 $\mu$ L	250 $\mu$ L	1 mL
12902-B 10 $\times$ T4 PNK Buffer	500 $\mu$ L	1 mL	2 $\times$ 1 mL

[Note]: 10 $\times$  T4 PNK Buffer does not contain ATP, customers need to add it by themselves, refer to the final concentration of 1 mM, or use T4 DNA ligase buffer.

### Shipping and Storage

All the components are shipped with dry ice and can be stored at -20°C for one year.

### Cautions

1. For your safety and health, please wear lab coat and disposable gloves for operation.
2. This product is for research use ONLY !

### Applications

Phosphorylation of DNA or RNA 5'-end for ligation;

End-labeling of DNA or RNA for use as probes and DNA sequencing;

5'-phosphorylation of oligonucleotides that has been phosphorylated at the 3'-end to prepare a pNp substrate for addition to the 3' end of DNA or RNA;

Labeling 5'-termini of oligonucleotides with a 3'-phosphate group.

### Unit Definition

The required amount of T4 Polynucleotide Kinase to catalyze the recombination reaction of 1 nmol [ $\gamma$ -<sup>32</sup>P]-ATP in 30 min at 37 °C.