Lambda Protein Phosphatase (RNase-free)

Product description

Lambda Protein Phosphatase (Lambda PP) is an $Mn2^{+}$-dependent protein phosphatase that treats phosphorylated serine Threonine and tyrosine residues have dephosphate activity. It is a product containing 221 amino acid residues encoded in the open reading box ORF221 on the lambda phage. Lambda PP can be used for dephosphorylation of proteins, which in turn can be used to study the relationship between protein phosphorylation and its activity and structure, and to verify the specificity of antibodies at protein phosphorylation sites.

Composition and storage conditions

Components \ Size	20 KU	100 KU	200 KU
Lambda PP (RNase-free)	0.2 ml	1 ml	2 ml
10X Lambda PP Reaction Buffer	1 ml	1 ml x5	1ml x10
10× $MnCl_2$ (10mM $MnCl_2$)	1 ml	1 ml x5	1ml x10
Store the components at -20 °C.			

Usage

The optimal incubation time and enzyme concentration must be determined empirically for each specific substrate. For example, 100U of Lambda PP can remove phosphorylated myelin alkaline proteins (phospho-MyBP, 18.5 kDa) within 30 minutes of a 50µl reaction) is about 100% phosphate (0.25 nmol).

1. Refer to the following table to set up the reaction system in the ice bath:

Reagent	Volume	Final Concentration
Protein	X µl	5 µM
10X Lambda PP Reaction Buffer	5 µl	1X
10× $MnCl_2$	5 µl	1 mM
Lambda PP	1 µl	-
Nuclease-free Water	to 50 µl	

2. Mix the reaction and incubate at 30 °C for 30 min.

The nature of the product

1. Definition of Enzyme Active Units: In a 30 °C, 50 µl reaction system, the enzyme amount of 1 nmol p-nitrophenyl phosphate (50 mM) is hydrolyzed within 1 min.

2. Liquid components in Lambda PP solution: 50 mM HEPES (pH 7.5 25°C), 100 mM NaCl, 2 mM DTT, 0.01% Brij 35，0.1mM EGTA, 0.1 mM MnCl2, 50% Glycerol。
3. Buffer components in the 10X Lambda PP Reaction Buffer: 500 mM HEPES(pH 7.5 25°C), 1 M NaCl, 20 mM DTT, 0.1% Brij 35。.
4. Quality assurance:
    - Protein purity > 95%.
    - No RNase contamination, no protease, nuclease enzyme and exonuclease contamination.