

Lambda protein phosphatase

Catalog number: RPT0016LQ

specifications: 20,000U/100,000U

concentration: 400U/μL

Background

Lambda protein phosphatase is a phosphatase originating from lambda bacteriophage, used for the dephosphorylation of proteins. Lambda protein phosphatase is a manganese-dependent dual-specificity phosphatase that can dephosphorylate phosphorylated residues of serine, threonine, tyrosine, and histidine.

Description

Lambda protein phosphatase is produced by E.coli cells expression. The target protein is expressed with sequence of system Escherichia phage lambda (Bacteriophage lambda) fused with a His tag at the terminus.

Activity definition

One activity unit (U) refers to the amount of enzyme that can hydrolyze 1 nmol of pNPP in a 50μL system at 30°C in 1 minute.

Reaction conditions

React at 30°C.

Composition of buffer

10× MnCl₂ : 10mM MnCl₂,

10× Reaction buffer : 0.5M Hepes, 1M NaCl, 20mM DTT, 0.1% Brij35 pH 7.5 @ 25°C.

Storage

This product is stable at -20° for up to 12 months.

Enzyme storage buffer

50 mM HEPES, 100 mM NaCl, 2 mM DTT, 0.01% Brij 35, 0.1 mM EGTA, 0.1 mM MnCl₂, 50% Glycerol, pH 7.5 @ 25°C

ProteinWeight

25 kD

Product composition

lambda protein phosphatase (400 U/μL)	RM02962/ RM02963	50 μL/250 μL
10 × Reaction buffer	RM02964	1mL/5 mL
10× MnCl ₂	RM02965	1mL/5 mL

method of application

Removing protein phosphorylation at 50 μL system:

component	Addition amount (50μL)
Substrate protein	~0.5 nmol*
ddH ₂ O	To 40 μL
10 × Reaction buffer	5 μL
10× MnCl ₂	5 μL
lambda protein phosphatase (100U/μL)	1 μL
30°C reaction 30min*	

*100U lambda protein phosphatase in 50μL system, 30°C, 30min Can remove phosphorylated myelin basic protein (18.5kDa) More than 95% phosphate (~0.5nmol).

*The reaction time should be adjusted appropriately based on the concentration of the substrate sample.

note

1. This product is only for scientific research purposes.
2. Different proteins, phosphorylation types, and sites can all affect the rate of dephosphorylation, and the optimal reaction temperature is 30 °C.
3. 10mM vanadium ions and 50mM EDTA can inhibit the activity of Lambda Protein Phosphatase by more than 90%.
4. Concentrations below 1% Triton X-100, 0.4% Nonidet P-40, 0.025% Tween 20, 0.5M NaCl, 0.1mM ATP, 10 μg/ml pepstatin A, 10 μg/ml LEUPEPTIN, 10 μg/ml aprotinin, 0.5mM PMSF, 1mM benzamidin for λ Protein phosphatase activity was not affected.
5. Any concentration of SDS will affect the activity of Lambda protein phosphatase.
6. Store the protein at -80°C for long term, avoid repeated freeze-thaw cycles.
7. The experimental system can be scaled up proportionally according to requirements.