Lambda Protein Phosphatase

L747583

Introduction:

Lambda Protein Phosphatase is a Mn^{2+} dependent protein phosphatase with activity towards phosphorylated serine, threonine, tyrosine and histidine residues. It can be used to dephosphorylate proteins to study the relationship between protein phosphorylation and its activity and structure, and to verify the specificity of antibodies to protein phosphorylation sites. This product is a recombinant lambda phosphatase with 6×His tag expressed in E. coli. It is the 221 amino-acid products of the ORF221 open reading frame on bacteriophage lambda.

Component:

Component	20KU	5*20KU	Storage
Lambda Protein Phosphatase (70U/μl)	300μl	5*300μl	-20℃.Avoid freeze/thaw cycle
10×Lambda Protein Phosphatase Buffer	1ml	5*1ml	-20℃.Avoid freeze/thaw cycle
10×$MnCl_2$ (10mM $MnCl_2$)	1ml	5*1ml	-20℃.Avoid freeze/thaw cycle

Usage method:

1. The activity of Lambda Protein Phosphatase varies for different proteins. Empirically, optimal enzyme concentrations and incubation times should be determined for each particular protein substrate. Beside the 1X Lambda Protein Phosphatase Buffer, $MnCl_2$ should be supplemented in the reaction mix to a final concentration of 1mM.
2. Take a general dephosphorylation reaction as an example: in a 50μl reaction mix, 100U Lambda Protein Phosphatase can remove about 100% of phosphate groups from 5μM mono-phosphorylated proteins within 30 minutes.

Precautions:

1. Repeated freeze-thaws will reduce the enzyme activity of Lambda Protein Phosphatase. When stored at -80℃, it should be aliquoted.

2. Vanadate ions at 10mM can inhibit Lambda Protein Phosphatase activity by about 90%, and 50mM EDTA can inhibit Lambda Protein Phosphatase activity by about 95%. The enzyme activity of Lambda Protein Phosphatase is not affected by 1% Triton X-100, 0.4% Nonidet P-40, 0.025% Tween 20, 0.5 M NaCl, 0.1mM ATP, 10μg/ml pepstatin A, 10μg/ml leupeptin, 10μg/ml aprotinin, 0.5mM PMSF, or 1mM benzamidine.

3. This product has an optimal reaction temperature of 30℃, and its dephosphorylation rate varies for different proteins. When treating the crude extracts of some samples with this enzyme, the duration time for the treatment should be as short as possible and appropriate amount of protease inhibitors (P1005, P1010, ST505 or ST506) should be also added to minimize the degradation of target proteins.

4. This product is for R&D only. Not for drug, household, or other uses.

5. For your safety and health, please wear a lab coat and disposable gloves during the operation.