PTP1B (1-321)/PTPN1. E.coli Active Enzyme
Protein Tyrosine Phosphatase 1B

Background
Tyrosine-protein phosphatase, non-receptor type 1 (PTP1B) also know as Protein-tyrosine phosphatase 1B, PTPN1 is a PTP (protein tyrosine phosphatase) first isolated from human placenta. The protein is unrelated to other known phosphatases but is similar to common leukocyte antigen (CD45) and to LAR a homolog of the neural adhesion molecule NCAM. PTP1B negatively regulates insulin sensitivity by dephosphorylating the insulin receptor. Akt is a ser/thr kinase effector of insulin signaling that phosphorylates substrates at the consensus motif RXRXXS/T. PTP1B contains the Akt phosphorylation motif (RYRDVS50), and PTP1B (but not mutants with substitutions for Ser50) are phosphorylated by Akt. Insulin stimulation also causes a significant increase in phosphorylation of PTP1B.

Ordering Information
Catalog Number
X1659E

Size
20 μg

Customer Storage
Product should be stored at -80ºC. Aliquot to avoid freeze/thaw cycles

Formulation
25 Mm Tris-HCl, pH 8.0, 75 mM NaCl, 0.05% Tween-20, 50% glycerol, 2 mM EDTA, 1 mM DTT, 10 mM glutathione.

Ship Conditions
Ship on dry ice, freeze upon arrival

Stability
Products are stable for one year from purchase when stored properly

Concentration
Varies from lot to lot, see label

Source
Recombinant enyzme produced in E. coli

Activity
20 nmole/min/μg of enzyme; Detemined using pNPP; Reaction conditions: 50 μM pNPP, 10 min incubation at 30ºC, 0.05 μg enzyme.

Purity
>95%

Applications
Useful for the study of enzyme kinetics, screening inhibitors, and selectivity profiling.

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Assay Methods

Materials

1. Assay Buffer: 50 mM HEPES, pH 7.4, 100 mM NaCl, 2 mM EDTA, 3 mM DTT, 0.1% BSA.
2. Stop solution: 2M K_2CO_3
3. 190 mM pNPP
4. Microtiter plate (Low binding plates recommended)
5. Microtiter plate reader capable of measurements at 405 nm
6. Water bath or incubator at 30ºC

Procedure

1. Dilute enzyme to 0.1 μg/μl in assay buffer
1. Prepare reaction mixture:
a. 63 μl assay buffer
b. 10 μl 1% BSA
c. 26 μl pNPP (Final concentration of pNPP is 50 mM)
d. 1 μl of PTP1B (0.1 μg/μl)
2. Mix well and start reaction at 30ºC in water bath and incubate for 10 min.
3. Add 100 μl per well of 2 M K_2CO_3 to stop the reaction.
4. Read absorbance at 405 nm using a microtiter plate reader.

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Product Specific References

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