SHP-2 (224-529)/PTPN11. E.coli Active Enzyme

Background

SHP-2, also known as Tyrosine-protein phosphatase, non-receptor type 11 (PTPN11), Protein-tyrosine phosphatase 2C, PTP-2C, PTP-1D, SH-PTP3 and SH-PTP2 is protein tyrosine phosphatase which relays signals from growth factor receptors to Ras and other effectors. Germline PTPN11 mutations underlie ~50% of Noonan Syndrome (NS), a developmental disorder associated with an elevated risk of juvenile myelomonocytic leukemia (JMML). Somatic PTPN11 mutations were recently identified in ~35% of JMML patients; these mutations introduce amino acid substitutions that are distinct from those found in NS. These myeloid leukemias include activating mutations as in the RAS family members, and in the receptor tyrosine kinases KIT and FLT3, loss of function of NF-1 mutants, and gain-of-function mutations in the hematopoietic phosphatase SHP-2. Although these mutations collectively account for as many as 50% of cases of AML, with rare exception, only one of these is mutant in any given patient. This epidemiologic observation suggests that these mutations can be viewed as a complementation group and that any one of these is sufficient to contribute proliferative and survival advantage to a leukemic cell.

Activity

8.0 nmole/min/μg of enzyme; Detemined using pNPP; Reaction conditions: 50 μM pNPP, 20 min incubation at 30ºC, 5 μg enzyme.

Purity

>95% pure as determined by SDS-PAGE

Applications

Ordering Information

Catalog Number
X1663E

Size
20 μg

Customer Storage
Enzyme should be stored at -20ºC. Enzyme should be kept on ice when dispensing

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

Ship Conditions
Ship on gel ice, store at -20ºC immediately upon arrival

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

Concentration
Lot specific, see vial

Source
Recombinant enyzme produced in E. coli

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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
2. Stop solution: 2M K_2CO_3
3. 190 mM pNPP
4. Microtiter plate
5. Microtiter plate reader capable of measurements at 405 nm
6. Water bath or incubator at 30ºC

Procedure

1. Prepare reaction mixture:
a. 73 μl assay buffer
b. 26 μl pNPP (Final concentration of pNPP is 50 mM)
c. 1 μl of SHP-2
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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