



PTPbeta (1675-1996) N Terminal GST Tag. E.coli Active Enzyme

**BACKGROUND**

PTP beta, also known as Receptor-type tyrosine-protein phosphatase beta [Precursor], Protein-tyrosine phosphatase beta, R-PTP-beta, PTPRB or PTPB is a protein tyrosine phosphatase and is overexpressed in glioblastoma tumors. PTP beta plays an important functional role in tumor cell migration and adhesion. Glioblastomas express at least three splice variants of PTPbeta, including long and short receptor forms. The short form of PTPbeta lacks exon 12, which encodes 860 amino acids located in the extracellular domain. In normal brain tissue and graded astrocytomas the long and short PTPbeta forms have an overlapping expression pattern. U87 stable cell lines overexpressing long or short PTPbeta migrate faster and adhere more robustly than parental U87 cells. The involvement of long and short PTPbeta in glioma tumor cell biology also contributes to the value of PTPbeta as a cancer target.

**ACTIVITY**

45 nmole/min/ $\mu$ g of enzyme; Determined using pNPP; Reaction conditions: 50  $\mu$ M pNPP, 10 min incubation at 30°C, 20 ng enzyme.

**PURITY**

>95% pure as determined by SDS-PAGE

**APPLICATIONS**

**ORDERING INFORMATION**

**CATALOG NUMBER**

X1665E

**SIZE**

20  $\mu$ g

**CUSTOMER STORAGE**

Enzyme should be stored at -20°C.  
Enzyme should be kept on ice when dispensing

**FORMULATION**

Provided in 25 mM Tris-HCl, 75 mM NaCl, pH 8.0, 0.05% Tween, 5 mM DTT and 50% glycerol

**SHIP CONDITIONS**

Ship on gel ice, store at -20°C immediately upon arrival

**STABILITY**

Products are stable for one year from purchase when stored properly

**CONCENTRATION**

See vial for concentration

**SOURCE**

Recombinant enzyme produced in E. coli

## **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<sub>2</sub>CO<sub>3</sub>
3. 190 mM pNPP
4. Microtiter plate
5. Microtiter plate reader capable of measurements at 405 nm
6. Water bath or incubator at 30°C

### **PROCEDURE**

1. Prepare reaction mixture:
  - a. 73  $\mu$ l assay buffer
  - b. 26  $\mu$ l pNPP (Final concentration of pNPP is 50 mM)
  - c. 1  $\mu$ l of PTP-beta
2. Mix well and start reaction at 30°C in water bath and incubate for 10 min.
3. Add 100  $\mu$ l per well of 2 M K<sub>2</sub>CO<sub>3</sub> to stop the reaction.
4. Read absorbance at 405 nm using a microtiter plate reader.

### **REFERENCES**

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- [3] Cheburkin IuV, Kniazeva TG, Peter S, Kniazev IuP, Karelin MI, Shkol'nik MI, Evtushenko VI, Hanson KP, Ullrich A, Kniazev PG. [Molecular portrait of human kidney carcinomas: the gene expression profiling of protein-tyrosine kinases and tyrosine phosphatases which controlled regulatory signals in the cells] Mol Biol (Mosk). 2002 May-Jun;36(3):480-90. Russian.
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- [5] Lorente G, Nelson A, Mueller S, Kuo J, Urfer R, Nikolich K, Foehr ED. Functional comparison of long and short splice forms of RPTPbeta: Implications for glioblastoma treatment. Neuro-oncol. 2005 Apr;7(2):154-63.

### **PRODUCT SPECIFIC REFERENCES**

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