

# PTP-PEST (AG25): sc-65229

## BACKGROUND

Protein tyrosine phosphatases (PTPs) and protein tyrosine kinases (PTKs) play an ubiquitous role in the regulation of tyrosine phosphorylation-mediated signaling pathways. Tyrosine-phosphorylated proteins can be dephosphorylated through the action of PTPs, which are likely to play a regulatory role in the control of cellular growth and differentiation. The gene encoding human PTP-PEST maps to chromosome 7q11.23 and encodes a 780 amino acid cytosolic nonreceptor protein. PTP-PEST is expressed abundantly in a wide variety of hemopoietic cell types, including B cells and T cells. PTP-PEST may constitutively associate with several signalling molecules, including Shc, paxillin, Csk and Cas. In addition, PTP-PEST can induce dephosphorylation of Shc, Pyk2, Fak and Cas, and inactivate the Ras pathway. Dephosphorylation of c-Abl by PTP-PEST represents a novel mechanism by which c-Abl activity is regulated. PTP-PEST can also influence cytoskeletal organization by promoting the turnover of focal adhesions required for cell migration, and through regulation of the proline, serine, threonine phosphatase interacting protein (PSTPIP)-mediated cleavage furrow formation or disassembly during normal cell division.

## REFERENCES

1. Takekawa, M., et al. 1992. Cloning and characterization of a human cDNA encoding a novel putative cytoplasmic protein-tyrosine-phosphatase. *Biochem. Biophys. Res. Commun.* 189: 1223-1230.
2. Yang, Q., et al. 1993. Cloning and expression of PTP-PEST. A novel, human, nontransmembrane protein tyrosine phosphatase. *J. Biol. Chem.* 268: 6622-6628.
3. Takekawa, M., et al. 1994. Chromosomal localization of the protein tyrosine phosphatase G<sub>1</sub> gene and characterization of the aberrant transcripts in human colon cancer cells. *FEBS Lett.* 339: 222-228.
4. Angers-Loustau, A., et al. 1999. Protein tyrosine phosphatase-PEST regulates focal adhesion disassembly, migration, and cytokinesis in fibroblasts. *J. Cell Biol.* 144: 1019-1031.
5. Cong, F., et al. 2000. Cytoskeletal protein PSTPIP1 directs the PEST-type protein tyrosine phosphatase to the c-Abl kinase to mediate Abl dephosphorylation. *Mol. Cell* 6: 1413-1423.
6. Davidson, D. and Veillette, A. 2001. PTP-PEST, a scaffold protein tyrosine phosphatase, negatively regulates lymphocyte activation by targeting a unique set of substrates. *EMBO J.* 20: 3414-3426.

## CHROMOSOMAL LOCATION

Genetic locus: PTPN12 (human) mapping to 7q11.23; Ptpn12 (mouse) mapping to 5 A3.

## SOURCE

PTP-PEST (AG25) is a mouse monoclonal antibody raised against purified full length PTP-PEST.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

PTP-PEST (AG25) is recommended for detection of PTP-PEST of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for PTP-PEST siRNA (h): sc-39207, PTP-PEST siRNA (m): sc-39208, PTP-PEST shRNA Plasmid (h): sc-39207-SH, PTP-PEST shRNA Plasmid (m): sc-39208-SH, PTP-PEST shRNA (h) Lentiviral Particles: sc-39207-V and PTP-PEST shRNA (m) Lentiviral Particles: sc-39208-V.

Molecular Weight of mouse PTP-PEST: 120 kDa.

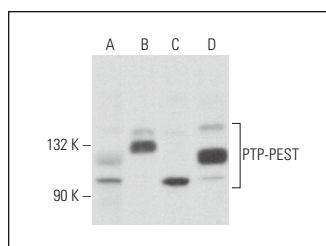
Molecular Weight of human PTP-PEST: 100 kDa.

Positive Controls: SK-N-SH cell lysate: sc-2410, A-673 cell lysate: sc-2414 or SK-BR-3 cell lysate: sc-2218.

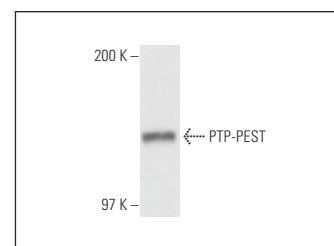
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

## DATA



PTP-PEST (AG25): sc-65229. Western blot analysis of PTP-PEST expression in SK-BR-3 (A), AMJ2-CB (B), P19 (C) and A-673 (D) whole cell lysates.



PTP-PEST (AG25): sc-65229. Western blot analysis of PTP-PEST expression in SK-N-SH whole cell lysate.

## SELECT PRODUCT CITATIONS

1. Wei, B., et al. 2021. GABAB1e promotes the malignancy of human cancer cells by targeting the tyrosine phosphatase PTPN12. *iScience* 24: 103311.

## STORAGE

Store at 4° C, \*\*DO NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.