SANTA CRUZ BIOTECHNOLOGY, INC.

HePTP (E-5): sc-271245

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The Power to Question

BACKGROUND

Hematopoietic protein tyrosine phosphatase (HePTP) belongs to a subgroup of PTPases with two other members, STEP and PCPTP1, all of which consist of a single C-terminal PTPase domain that is preceded by a noncatalytic N-terminal domain. Unlike STEP and PCPTP1, which are expressed primarily in the central nervous system, HePTP is expressed in thymus, spleen and in leukemic cell lines, including Jurkat T leukemia cells. The gene encoding HePTP was originally cloned from human T lymphocytes, and it maps to chromosome 1q32.1, a site frequently mutated in preleukemic myeloproliferative disease. The locus of the gene suggests a role for HePTP in cell proliferation and differentiation. The HePTP gene is transcriptionally activated in T cells treated with Interleukin 6. HePTP mRNA levels increase several-fold in normal mouse lymphocytes upon stimulation with phytohemagglutinin, lipopolysaccharide, concanavalin A and anti-CD3. Overexpression of HePTP reduces T cell receptor (TCR)-induced activation of ERK 2, and interferes with PMA and growth factor-induced MAPK activation in myeloid cells.

REFERENCES

1. Zanke, B., et al. 1992. Cloning and expression of an inducible lymphoid-specific, protein tyrosine phosphatase (HePTPase). Eur. J. Immunol. 22: 235-239.
2. Zanke, B., et al. 1994. A hematopoietic protein tyrosine phosphatase (HePTP) gene that is amplified and overexpressed in myeloid malignancies maps to chromosome 1q32.1. Leukemia 8: 236-244.
3. Adachi, M., et al. 1994. Induction of protein tyrosine phosphatase LC-PTP by IL-2 in human T cells. LC-PTP is an early response gene. FEBS Lett. 338: 47-52.
4. Saxena, M., et al. 1998. Negative regulation of T cell antigen receptor signal transduction by hematopoietic tyrosine phosphatase (HePTP). J. Biol. Chem. 273: 15340-15344.

CHROMOSOMAL LOCATION

Genetic locus: PTPN7 (human) mapping to 1q32.1.

SOURCE

HePTP (E-5) is a mouse monoclonal antibody raised against amino acids 46-125 mapping near the N-terminus of HePTP of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

HePTP (E-5) is available conjugated to agarose (sc-271245 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-271245 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271245 PE), fluorescein (sc-271245 FITC), Alexa Fluor® 488 (sc-271245 AF488), Alexa Fluor® 546 (sc-271245 AF546), Alexa Fluor® 594 (sc-271245 AF594) or Alexa Fluor® 647 (sc-271245 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-271245 AF680) or Alexa Fluor® 790 (sc-271245 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

HePTP (E-5) is recommended for detection of HePTP of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for HePTP siRNA (h): sc-43830, HePTP shRNA Plasmid (h): sc-43830-SH and HePTP shRNA (h) Lentiviral Particles: sc-43830-V.

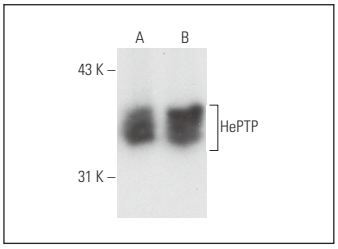
Molecular Weight of HePTP: 38 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, Ramos cell lysate: sc-2216 or Jurkat + IL-2 cell lysate: sc-2278.

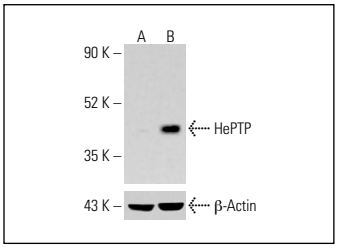
RECOMMENDED SUPPORT REAGENTS

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). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



HePTP (E-5): sc-271245. Western blot analysis of HePTP expression in IL-2-treated Jurkat (**A**) and Ramos (**B**) whole cell lysates.



HePTP (E-5): sc-271245. Western blot analysis of HePTP expression in untreated (**A**) and chemically-treated (**B**) K-562 whole cell lysates. β-Actin (C4): sc-47778 used as loading control. Detection reagent used: m-IgG Fc BP-HRP: sc-525409.

SELECT PRODUCT CITATIONS

1. Chen, X., et al. 2019. Comprehensive gene expression analysis in NMIBC using RNA-seq reveals new therapy strategies. Front. Oncol. 9: 523.

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.