

PHPT1 (C-13): sc-163229

BACKGROUND

PHPT1 (phosphohistidine phosphatase 1), also known as 14 kDa phosphohistidine phosphatase, is a 125 amino acid enzyme belonging to the Janus protein family. Existing as a monomer in the cytoplasm, PHPT1 is an EDTA-insensitive phosphohistidine phosphatase. First identified in human adrenal gland, PHPT1 is highly expressed in skeletal muscle and heart, with lower expression in liver, pancreas and kidney. Overexpression of PHPT1 leads to specific phosphohistidine phosphatase activity towards phosphopeptide I, with no activity detected towards phosphotyrosine, phosphothreonine and phosphoserine peptides. PHPT1 is highly conserved among species, suggesting that it serves an essential functional role.

REFERENCES

- Zhang, Q.H., et al. 2000. Cloning and functional analysis of cDNAs with open reading frames for 300 previously undefined genes expressed in CD34⁺ hematopoietic stem/progenitor cells. *Genome Res.* 10: 1546-1560.
- Lai, C.H., et al. 2001. Identification of the human crooked neck gene by comparative gene identification. *Biochim. Biophys. Acta* 1517: 449-454.
- Ek, P., et al. 2002. Identification and characterization of a mammalian 14 kDa phosphohistidine phosphatase. *Eur. J. Biochem.* 269: 5016-5023.
- Klumpp, S., et al. 2002. Protein histidine phosphatase: a novel enzyme with potency for neuronal signaling. *J. Cereb. Blood Flow Metab.* 22: 1420-1424.
- Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 610167. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
- Klumpp, S., et al. 2003. ATP-citrate lyase as a substrate of protein histidine phosphatase in vertebrates. *Biochem. Biophys. Res. Commun.* 306: 110-115.
- Ma, R., et al. 2005. Mutational study of human phosphohistidine phosphatase: effect on enzymatic activity. *Biochem. Biophys. Res. Commun.* 337: 887-891.
- Bäumer, N., et al. 2007. Expression of protein histidine phosphatase in *Escherichia coli*, purification, and determination of enzyme activity. *Methods Mol. Biol.* 365: 247-260.

CHROMOSOMAL LOCATION

Genetic locus: PHPT1 (human) mapping to 9q34.3; Phpt1 (mouse) mapping to 2 A3.

SOURCE

PHPT1 (C-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of PHPT1 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-163229 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

PHPT1 (C-13) is recommended for detection of PHPT1 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)], 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).

PHPT1 (C-13) is also recommended for detection of PHPT1 in additional species, including canine.

Suitable for use as control antibody for PHPT1 siRNA (h): sc-92729, PHPT1 siRNA (m): sc-152235, PHPT1 shRNA Plasmid (h): sc-92729-SH, PHPT1 shRNA Plasmid (m): sc-152235-SH, PHPT1 shRNA (h) Lentiviral Particles: sc-92729-V and PHPT1 shRNA (m) Lentiviral Particles: sc-152235-V.

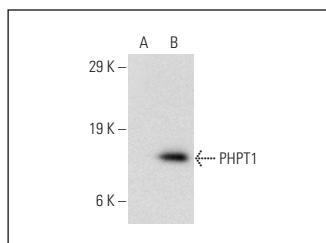
Molecular Weight of PHPT1: 14 kDa.

Positive Controls: PHPT1 (h): 293 Lysate: sc-113869, MCF7 whole cell lysate: sc-2206 or human kidney extract: sc-363764.

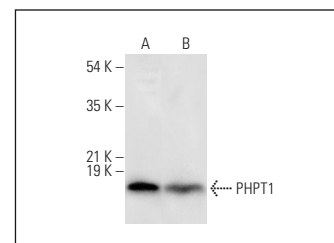
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



PHPT1 (C-13): sc-163229. Western blot analysis of PHPT1 expression in non-transfected: sc-110760 (A) and human PHPT1 transfected: sc-113869 (B) 293 whole cell lysates.



PHPT1 (C-13): sc-163229. Western blot analysis of PHPT1 expression in MCF7 whole cell lysate (A) and human kidney tissue extract (B).

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.