

PSPH (H-11): sc-365183

BACKGROUND

Serine is an amino acid required for protein and nucleotide synthesis that may also be involved in cell to cell signaling. PSPH, also known as phosphoserine phosphatase or PSP, is a 225 amino acid Mg^{2+} -dependent enzyme that catalyzes the last and irreversible step in the biosynthesis of serine from carbohydrates, which is the hydrolysis of O-phosphoserine. In the embryonic brain, PSPH is highly expressed in periventricular neural progenitors where it may have a role in neural stem cell proliferation. A lack of PSPH in humans has been shown to cause pre- and postnatal growth retardation as well as moderate psychomotor retardation.

REFERENCES

- Koch, G.A., et al. 1983. Assignment of the human phosphoserine phosphatase gene (PSP) to the pter leads to q22 region of chromosome 7. *Cytogenet. Cell Genet.* 35: 67-69.
- Sparkes, R.S., et al. 1983. The human phosphoserine phosphatase gene (PSP) is mapped to chromosome 7 by somatic cell genetic analysis. *Cytogenet. Cell Genet.* 35: 70-71.
- Collet, J.F., et al. 1997. Human L-3-phosphoserine phosphatase: sequence, expression and evidence for a phosphoenzyme intermediate. *FEBS Lett.* 408: 281-284.

CHROMOSOMAL LOCATION

Genetic locus: PSPH (human) mapping to 7p11.2; PspH (mouse) mapping to 5 G1.3.

SOURCE

PSPH (H-11) is a mouse monoclonal antibody raised against amino acids 1-225 representing full length PSPH of human origin.

PRODUCT

Each vial contains 200 μ g IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

PSPH (H-11) is recommended for detection of PSPH of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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 PSPH siRNA (h): sc-76125, PSPH siRNA (m): sc-76126, PSPH shRNA Plasmid (h): sc-76125-SH, PSPH shRNA Plasmid (m): sc-76126-SH, PSPH shRNA (h) Lentiviral Particles: sc-76125-V and PSPH shRNA (m) Lentiviral Particles: sc-76126-V.

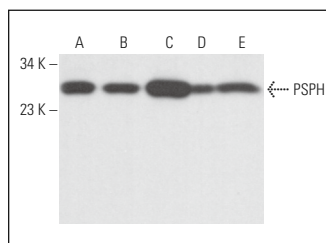
Molecular Weight of PSPH: 25 kDa.

Positive Controls: SK-N-SH cell lysate: sc-2410, KNRK whole cell lysate: sc-2214 or A-10 cell lysate: sc-3806.

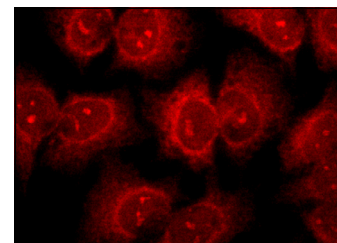
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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



PSPH (H-11): sc-365183. Western blot analysis of PSPH expression in SK-N-SH (A), EOC 20 (B), F9 (C), A-10 (D) and KNRK (E) whole cell lysates.



PSPH (H-11): sc-365183. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

- Humpton, T.J., et al. 2018. p53-mediated adaptation to serine starvation is retained by a common tumour-derived mutant. *Cancer Metab.* 6: 18.
- Choi, B.H., et al. 2022. Lineage-specific silencing of PSAT1 induces serine auxotrophy and sensitivity to dietary serine starvation in luminal breast tumors. *Cell Rep.* 38: 110278.
- Conger, K.O., et al. 2024. ASCT2 is a major contributor to serine uptake in cancer cells. *Cell Rep.* 43: 114552.

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.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.