

# PSPH (N-18): sc-74829

## 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.
- Jaeken, J., et al. 1997. Phosphoserine phosphatase deficiency in a patient with Williams syndrome. *J. Med. Genet.* 34: 594-596.
- Collet, J.F., et al. 1999. Mechanistic studies of phosphoserine phosphatase, an enzyme related to P-type ATPases. *J. Biol. Chem.* 274: 33985-33990.
- Peeraer, Y., et al. 2004. How calcium inhibits the magnesium-dependent enzyme human phosphoserine phosphatase. *Eur. J. Biochem.* 271: 3421-3427.

## CHROMOSOMAL LOCATION

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

## SOURCE

PSPH (N-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of PSPH of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-74829 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## 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.

## APPLICATIONS

PSPH (N-18) is recommended for detection of PSPH of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ 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).

PSPH (N-18) is also recommended for detection of PSPH in additional species, including canine, bovine and porcine.

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.

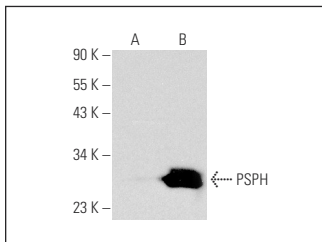
Molecular Weight of PSPH: 25 kDa.

Positive Controls: PSPH (h): 293T Lysate: sc-116691, PSPH (m): 293T Lysate: sc-122827 or Hep G2 cell lysate: sc-2227.

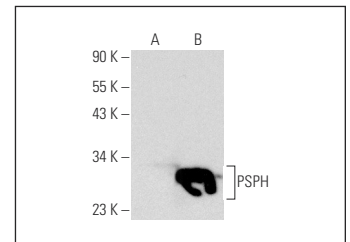
## RECOMMENDED SECONDARY REAGENTS

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



PSPH (N-18): sc-74829. Western blot analysis of PSPH expression in non-transfected: sc-117752 (A) and human PSPH transfected: sc-116691 (B) 293T whole cell lysates.



PSPH (N-18): sc-74829. Western blot analysis of PSPH expression in non-transfected: sc-117752 (A) and mouse PSPH transfected: sc-122827 (B) 293T whole cell lysates.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.