SANTA CRUZ BIOTECHNOLOGY, INC.

PAPST1 (3H5): sc-517131

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The Power to Question

BACKGROUND

Sulfation is an important post-translational modification of proteoglycans, glycolipids and glycoproteins that requires activity of 3'-phosphoadenosine 5'-phosphosulfate (PAPS), the universal sulfate donor. PAPST1 (Adenosine 3'-phospho 5'-phosphosulfate transporter 1), also known as SLC35B2 (solute carrier family 35 member B2) is a 432 amino acid type III transmembrane protein that transports PAPS from the cytosol into the Golgi apparatus. Overexpression of either PAPST1 or PAPST2, both of which are members of the nucleotide-sugar transporter family, leads to increased PAPS transport activity within the colon. In *C. elegans*, neuronal deficits correlate with reduced complexity of heparan sulfate patterns as mediated by PAPST1, suggesting that PAPST1 is required for optimum nervous system development. There are three isoforms of PAPST1 that are produced as a result of alternative splicing events.

REFERENCES

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2. Kamiyama, S., et al. 2006. Molecular cloning and characterization of a novel 3'-phosphoadenosine 5'-phosphosulfate transporter, PAPST2. J. Biol. Chem. 281: 10945-10953.
3. Shimazu, D., et al. 2006. Inhibition of D-serine accumulation in the *Xenopus* oocyte by expression of the rat ortholog of human 3'-phosphoadenosine 5'-phosphosulfate transporter gene isolated from the neocortex as D-serine modulator-1. J. Neurochem. 96: 30-42.
4. Online Mendelian Inheritance in Man, OMIM™. 2007. Johns Hopkins University, Baltimore, MD. MIM Number: 610788. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. Dick, G., et al. 2008. Overexpression of the 3'-phosphoadenosine 5'-phosphosulfate (PAPS) transporter 1 increases sulfation of chondroitin sulfate in the apical pathway of MDCK II cells. Glycobiology 18: 53-65.
6. Clement, A., et al. 2008. Regulation of zebrafish skeletogenesis by ext2/dackel and PAPST1/pinscher. PLoS Genet. 4: e1000136.
7. Bhattacharya, R., et al. 2009. The PAPS transporter PST-1 is required for heparan sulfation and is essential for viability and neural development in *C. elegans*. J. Cell Sci. 122: 4492-4504.
8. Sasaki, N., et al. 2009. The 3'-phosphoadenosine 5'-phosphosulfate transporters, PAPST1 and 2, contribute to the maintenance and differentiation of mouse embryonic stem cells. PLoS ONE 4: e8262.

CHROMOSOMAL LOCATION

Genetic locus: SLC35B2 (human) mapping to 6p21.1.

SOURCE

PAPST1 (3H5) is a mouse monoclonal antibody raised against amino acids 1-100 representing partial length PAPST1 of human origin.

RESEARCH USE

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

PRODUCT

Each vial contains 100 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

PAPST1 (3H5) is recommended for detection of PAPST1 of 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).

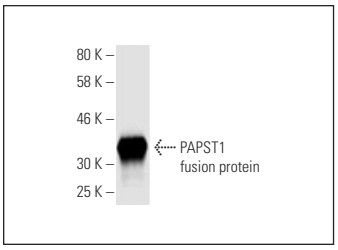
Suitable for use as control antibody for PAPST1 siRNA (h): sc-95582, PAPST1 shRNA Plasmid (h): sc-95582-SH and PAPST1 shRNA (h) Lentiviral Particles: sc-95582-V.

Molecular Weight of PAPST1: 48 kDa.

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



PAPST1 (3H5): sc-517131. Western blot analysis of human recombinant PAPST1 fusion protein.

STORAGE

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

PROTOCOLS

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