

PAPSS 1 (A-8): sc-376306

BACKGROUND

Bifunctional 3'-phosphoadenosine 5'-phosphosulfate synthetases (PAPS synthetase or PAPSS), also designated sulfurylase kinase (SK), are important for sulfate assimilation in the sulfur metabolism pathway. PAPSS proteins are bifunctional enzymes with APS kinase and ATP sulfurylase activity, which mediate two steps in the sulfate activation pathway. The PAPSS proteins belong to the APS kinase family and to the sulfate adenylyltransferase family of proteins. In mammals, PAPSS proteins are the sole source of sulfate. PAPSS 1, which is involved in biosynthesis of sulfated L-Selectin ligands in endothelial cells, is regulated by chlorate inhibition. It is expressed primarily in pancreas, liver, testis, thymus, kidney, prostate, ovary and small intestine.

REFERENCES

1. Yanagisawa, K., et al. 1998. cDNA cloning, expression, and characterization of the human bifunctional ATP sulfurylase/adenosine 5'-phosphosulfate kinase enzyme. *Biosci. Biotechnol. Biochem.* 62: 1037-1040.
2. Girard, J.P., et al. 1998. Sulfation in high endothelial venules: cloning and expression of the human PAPSS. *FASEB J.* 12: 603-612.
3. Venkatachalam, K.V., et al. 1999. Site-selected mutagenesis of a conserved nucleotide binding HXGH motif located in the ATP sulfurylase domain of human bifunctional PAPSS. *J. Biol. Chem.* 274: 2601-2604.
4. Xu, Z.H., et al. 2003. Pharmacogenetics of human PAPSS 1: gene resequencing, sequence variation, and functional genomics. *Biochem. Pharmacol.* 65: 1787-1796.
5. Venkatachalam, K.V. 2003. Human PAPSS: biochemistry, molecular biology and genetic deficiency. *IUBMB Life* 55: 1-11.
6. Harjes, S., et al. 2005. The crystal structure of human PAPSS 1 reveals asymmetry in substrate binding. *J. Mol. Biol.* 347: 623-635.

CHROMOSOMAL LOCATION

Genetic locus: PAPSS1 (human) mapping to 4q25; Paps1 (mouse) mapping to 3 G3.

SOURCE

PAPSS 1 (A-8) is a mouse monoclonal antibody raised against amino acids 288-329 mapping within an internal region of PAPSS 1 of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

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.

APPLICATIONS

PAPSS 1 (A-8) is recommended for detection of PAPSS 1 of mouse, rat and 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).

PAPSS 1 (A-8) is also recommended for detection of PAPSS 1 in additional species, including equine.

Suitable for use as control antibody for PAPSS 1 siRNA (h): sc-61291, PAPSS 1 siRNA (m): sc-61292, PAPSS 1 shRNA Plasmid (h): sc-61291-SH, PAPSS 1 shRNA Plasmid (m): sc-61292-SH, PAPSS 1 shRNA (h) Lentiviral Particles: sc-61291-V and PAPSS 1 shRNA (m) Lentiviral Particles: sc-61292-V.

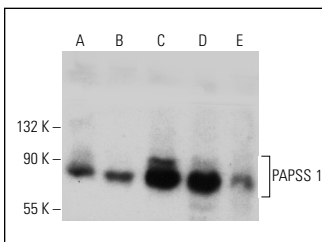
Molecular Weight of PAPSS 1: 70 kDa.

Positive Controls: HeLa nuclear extract: sc-2120, Ramos cell lysate: sc-2216 or Hep G2 nuclear extract: sc-364819.

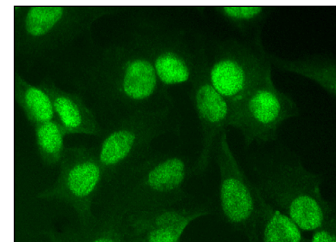
RECOMMENDED SUPPORT REAGENTS

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



PAPSS 1 (A-8): sc-376306. Western blot analysis of PAPSS 1 expression in HeLa (A) and Hep G2 (B) nuclear extracts, Ramos (C) and A2058 (D) whole cell lysates and human pancreas tissue extract (E).



PAPSS 1 (A-8): sc-376306. Immunofluorescence staining of formalin-fixed Hep G2 cells showing nuclear localization.

RESEARCH USE

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