

PAPSS 1 (K-14): sc-47305

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 (K-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of PAPSS 1 of mouse 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-47305 P, (100 µg 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

PAPSS 1 (K-14) is recommended for detection of PAPSS 1 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).

PAPSS 1 (K-14) is also recommended for detection of PAPSS 1 in additional species, including equine, canine and bovine.

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.

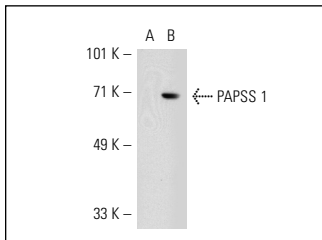
Molecular Weight of PAPSS 1: 70 kDa.

Positive Controls: rat brain extract: sc-2392, mouse brain extract: sc-2253 or PAPSS 1 (h): 293 Lysate: sc-111127.

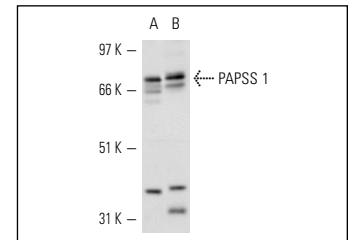
RECOMMENDED SECONDARY REAGENTS

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



PAPSS 1 (K-14): sc-47305. Western blot analysis of PAPSS 1 expression in non-transfected: sc-110760 (A) and human PAPSS 1 transfected: sc-111127 (B) 293 whole cell lysates.



PAPSS 1 (K-14): sc-47305. Western blot analysis of PAPSS 1 expression in rat brain (A) and mouse brain tissue extracts (B).

SELECT PRODUCT CITATIONS

1. Xu, Y., et al. 2012. Effect of estrogen sulfation by SULT1E1 and PAPSS on the development of estrogen-dependent cancers. *Cancer Sci.* 103: 1000-1009.

PROTOCOLS

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