

# PAPSS 1/2 (H-200): sc-98993

## 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. Defects in the PAPSS2 gene can cause the Pakistani type of spondyloepimetaphyseal dysplasia (SEMD), an autosomal recessive form of SEMD characterized by short, bowed limbs, enlarged knee joints and mild brachydactyly.

## 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. 2000. Human 3'-phosphoadenosine 5'-phosphosulfate synthetase 1 (PAPSS 1) and PAPSS 2: gene cloning, characterization and chromosomal localization. *Biochem. Biophys. Res. Commun.* 268: 437-444.
5. Xu, Z.H., et al. 2003. Pharmacogenetics of human PAPSS 1: gene resequencing, sequence variation, and functional genomics. *Biochem. Pharmacol.* 65: 1787-1796.
6. Venkatachalam, K.V. 2003. Human PAPSS: biochemistry, molecular biology and genetic deficiency. *IUBMB Life* 55: 1-11.
7. 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, PAPSS2 (human) mapping to 10q23.2; Papss1 (mouse) mapping to 3 G3, Papss2 (mouse) mapping to 19 C1.

## SOURCE

PAPSS 1/2 (H-200) is a rabbit polyclonal antibody raised against amino acids 419-618 mapping near the C-terminus of PAPSS 1 of human origin.

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

PAPSS 1/2 (H-200) is recommended for detection of PAPSS 1 and PAPSS 2 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 1/2 (H-200) is also recommended for detection of PAPSS 1 and PAPSS 2 in additional species, including equine, canine, bovine and avian.

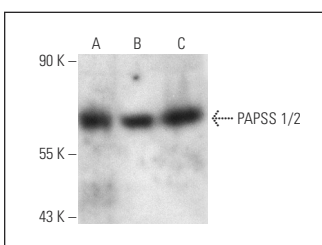
Molecular Weight of PAPSS 1/2: 70 kDa.

Positive Controls: A2058 whole cell lysate: sc-364178, MCF7 whole cell lysate: sc-2206 or ECV304 cell lysate: sc-2269.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## DATA



PAPSS 1/2 (H-200): sc-98993. Western blot analysis of PAPSS 1/2 expression in A2058 (A), MCF7 (B) and ECV304 (C) whole cell lysates.

## 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](http://www.scbt.com) or our catalog for detailed protocols and support products.