SANTA CRUZ BIOTECHNOLOGY, INC.

PAPSS 1/2 (A-10): sc-271429

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 synthetase. 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 (PAPSS1) and PAPSS2: gene cloning, characterization and chromosomal localization. Biochem. Biophys. Res. Commun. 268: 437-444.

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 (A-10) is a mouse monoclonal 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_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

PAPSS 1/2 (A-10) is available conjugated to agarose (sc-271429 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-271429 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271429 PE), fluorescein (sc-271429 FITC), Alexa Fluor® 488 (sc-271429 AF488), Alexa Fluor® 546 (sc-271429 AF546), Alexa Fluor® 594 (sc-271429 AF594) or Alexa Fluor® 647 (sc-271429 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-271429 AF680) or Alexa Fluor® 790 (sc-271429 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

PAPSS 1/2 (A-10) is recommended for detection of PAPSS 1 and PAPSS 2 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).

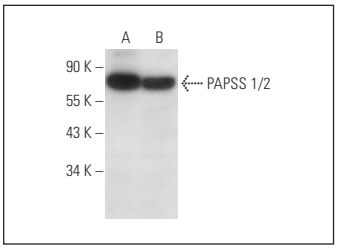
Molecular Weight of PAPSS 1/2: 70 kDa.

Positive Controls: Ramos whole cell lyate: sc-2216, A2058 whole cell lysate: sc-364178 or MDA-MB-231 whole cell lysate: sc-2232.

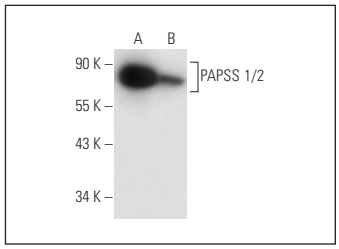
RECOMMENDED SUPPORT REAGENTS

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 1/2 (A-10): sc-271429. Western blot analysis of PAPSS 1/2 expression in Ramos (**A**) and A2058 (**B**) whole cell lysates.



PAPSS 1/2 (A-10): sc-271429. Western blot analysis of PAPSS 1/2 expression in Ramos (**A**) and MDA-MB-231 (**B**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Ahat, E., et al. 2022. GRASP depletion-mediated Golgi fragmentation impairs glycosaminoglycan synthesis, sulfation, and secretion. Cell. Mol. Life Sci. 79: 199.

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 for detailed protocols and support products.