SANTA CRUZ BIOTECHNOLOGY, INC.

PAPSS 2 (SQ-19): sc-100801

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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. PAPPS 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. During postnatal growth, PAPSS proteins may play a role in skeletogenesis. 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. Li, H., et al. 1995. The isolation and characterization of cDNA encoding the mouse bifunctional ATP sulfurylase-adenosine 5'-phosphosulfate kinase. J. Biol. Chem. 270: 29453-29459.
2. Kurima, K., et al. 1999. Genomic organization of the mouse and human genes encoding the ATP sulfurylase/adenosine 5'-phosphosulfate kinase isoform SK2. J. Biol. Chem. 274: 33306-33312.

CHROMOSOMAL LOCATION

Genetic locus: PAPSS2 (human) mapping to 10q23.2; Papss2 (mouse) mapping to 19 C1.

SOURCE

PAPSS 2 (SQ-19) is a mouse monoclonal antibody raised against recombinant PAPSS 2 of human origin.

PRODUCT

Each vial contains 100 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

PAPSS 2 (SQ-19) is recommended for detection of 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for PAPSS 2 siRNA (h): sc-61293, PAPSS 2 siRNA (m): sc-61294, PAPSS 2 shRNA Plasmid (h): sc-61293-SH, PAPSS 2 shRNA Plasmid (m): sc-61294-SH, PAPSS 2 shRNA (h) Lentiviral Particles: sc-61293-V and PAPSS 2 shRNA (m) Lentiviral Particles: sc-61294-V.

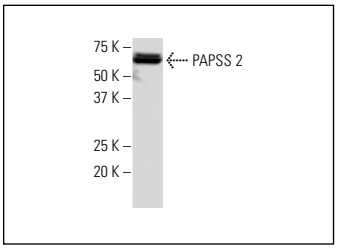
Molecular Weight of PAPSS 2: 70 kDa.

Positive Controls: A-431 whole cell lysate: sc-2201.

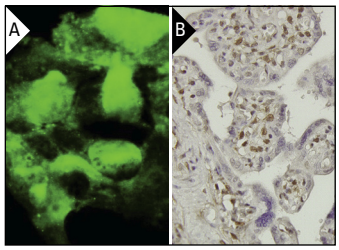
RECOMMENDED SUPPORT REAGENTS

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. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



PAPSS 2 (SQ-19): sc-100801. Western blot analysis of PAPSS 2 expression in A-431 whole cell lysate.



PAPSS 2 (SQ-19): sc-100801. Immunofluorescence staining of paraformaldehyde-fixed A-431 cells (**A**) and immunoperoxidase staining of formalin-fixed, paraffin-embedded human placenta tissue (**B**) showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Zhang, Y., et al. 2019. Enhanced PAPSS 2/VCAN sulfation axis is essential for Snail-mediated breast cancer cell migration and metastasis. Cell Death Differ. 26: 565-579.
2. Kang, D., et al. 2020. Sulfated syndecan 1 is critical to preventing cellular senescence by modulating fibroblast growth factor receptor endocytosis. FASEB J. 34: 10316-10328.
3. Xu, P., et al. 2021. Intestinal sulfation is essential to protect against colitis and colonic carcinogenesis. Gastroenterology 161: 271-286.e11.
4. Suzuki, T., et al. 2022. Genome-wide CRISPR screen for HSV-1 host factors reveals PAPSS 1 contributes to heparan sulfate synthesis. Commun. Biol. 5: 694.

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.