

# PAPSS 2 siRNA (h): sc-61293

## 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. During postnatal growth, PAPSS proteins may play a role in skeletogenesis. Defects in the PAPSS 2 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.
3. 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.
4. Kim, M.S., et al. 2004. Suppression of DHEA sulfotransferase (Sult2A1) during the acute-phase response. *Am. J. Physiol. Endocrinol. Metab.* 287: E731-E738.
5. Saini, S.P., et al. 2004. A novel constitutive androstane receptor-mediated and CYP3A-independent pathway of bile acid detoxification. *Mol. Pharmacol.* 65: 292-300.
6. Genevieve, D., et al. 2005. Exclusion of the dymeclin and PAPSS 2 genes in a novel form of spondyloepimetaphyseal dysplasia and mental retardation. *Eur. J. Hum. Genet.* 13: 541-546.

## CHROMOSOMAL LOCATION

Genetic locus: PAPSS2 (human) mapping to 10q23.2.

## PRODUCT

PAPSS 2 siRNA (h) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see PAPSS 2 shRNA Plasmid (h): sc-61293-SH and PAPSS 2 shRNA (h) Lentiviral Particles: sc-61293-V as alternate gene silencing products.

For independent verification of PAPSS 2 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-61293A, sc-61293B and sc-61293C.

## RESEARCH USE

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

## STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNases and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

PAPSS 2 siRNA (h) is recommended for the inhibition of PAPSS 2 expression in human cells.

## SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10  $\mu$ M in 66  $\mu$ l. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

## GENE EXPRESSION MONITORING

PAPSS 2 (SQ-19): sc-100801 is recommended as a control antibody for monitoring of PAPSS 2 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  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) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor PAPSS 2 gene expression knockdown using RT-PCR Primer: PAPSS 2 (h)-PR: sc-61293-PR (20  $\mu$ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.