

# plakophilin 3 siRNA (h): sc-62826

## BACKGROUND

Plakophilins 1, 2, 3 and 4 (PKP1-4) influence development and participate in linking cadherins to cytoskeletal intermediate filaments. Plakophilins 1-4 contain arm-repeat (armadillo) domains and localize to nuclei and cell desmosomes (cell-cell junctions found in suprabasal layers of stratifying epithelia that undergo mechanical stress). Plakophilin 3 (PKP3) is a 797 amino acid protein that contains 8 arm-repeats and belongs to the  $\beta$ -catenin family. Encoded by a gene that maps to human chromosome 11p15.5, plakophilin 3 localizes to desmosomes of most simple and nearly all stratified epithelia, as well as cell lines derived therefrom, with the exception of hepatocytes and hepatocellular carcinoma cells. Plakophilin 3 plays a role in both desmosome-dependent adhesion and signaling pathways, and may play a role in junctional plaques. Up-regulation of plakophilin 3 is a frequent and important feature of lung carcinogenesis, implicating plakophilin 3 as a candidate prognostic marker and therapeutic target for lung cancer.

## REFERENCES

- Schmidt, A., et al. 1999. Plakophilin 3—a novel cell-type-specific desmosomal plaque protein. *Differentiation* 64: 291-306.
- Bonne, S., et al. 1999. Plakophilin-3, a novel armadillo-like protein present in nuclei and desmosomes of epithelial cells. *J. Cell Sci.* 112: 2265-2276.
- Bormann, C.M., et al. 2000. Molecular diversity of plaques of epithelial-adhering junctions. *Ann. N.Y. Acad. Sci.* 915: 144-150.
- Bonne, S., et al. 2003. Defining desmosomal plakophilin-3 interactions. *J. Cell Biol.* 161: 403-416.

## CHROMOSOMAL LOCATION

Genetic locus: PKP3 (human) mapping to 11p15.5.

## PRODUCT

plakophilin 3 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 plakophilin 3 shRNA Plasmid (h): sc-62826-SH and plakophilin 3 shRNA (h) Lentiviral Particles: sc-62826-V as alternate gene silencing products.

For independent verification of plakophilin 3 (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-62826A, sc-62826B and sc-62826C.

## 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

plakophilin 3 siRNA (h) is recommended for the inhibition of plakophilin 3 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

plakophilin 3 (E-10): sc-166655 is recommended as a control antibody for monitoring of plakophilin 3 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 plakophilin 3 gene expression knockdown using RT-PCR Primer: plakophilin 3 (h)-PR: sc-62826-PR (20  $\mu$ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## SELECT PRODUCT CITATIONS

- Cirillo, N. and Prime, S.S. 2009. Desmosomal interactome in keratinocytes: a systems biology approach leading to an understanding of the pathogenesis of skin disease. *Cell. Mol. Life Sci.* 66: 3517-3533.

## 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) for detailed protocols and support products.