SANTA CRUZ BIOTECHNOLOGY, INC.

plakophilin 3 siRNA (m): sc-62827

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 β-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

1. Schmidt, A., et al. 1999. Plakophilin 3—a novel cell-type-specific desmosomal plaque protein. Differentiation 64: 291-306.
2. 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.
3. Borrmann, C.M., et al. 2000. Molecular diversity of plaques of epithelial-adhering junctions. Ann. N.Y. Acad. Sci. 915: 144-150.
4. Bonne, S., et al. 2003. Defining desmosomal plakophilin-3 interactions. J. Cell Biol. 161: 403-416.
5. Furukawa, C., et al. 2005. Plakophilin 3 oncogene as prognostic marker and therapeutic target for lung cancer. Cancer Res. 65: 7102-7110.
6. Hofmann, I., et al. 2006. Identification of the junctional plaque protein plakophilin 3 in cytoplasmic particles containing RNA-binding proteins and the recruitment of plakophilins 1 and 3 to stress granules. Mol. Biol. Cell 17: 1388-1398.

CHROMOSOMAL LOCATION

Genetic locus: Pkp3 (mouse) mapping to 7 F5.

PRODUCT

plakophilin 3 siRNA (m) 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see plakophilin 3 shRNA Plasmid (m): sc-62827-SH and plakophilin 3 shRNA (m) Lentiviral Particles: sc-62827-V as alternate gene silencing products.

For independent verification of plakophilin 3 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-62827A, sc-62827B and sc-62827C.

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 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

plakophilin 3 siRNA (m) is recommended for the inhibition of plakophilin 3 expression in mouse 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 µM in 66 µl. 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-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) 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor plakophilin 3 gene expression knockdown using RT-PCR Primer: plakophilin 3 (m)-PR: sc-62827-PR (20 µl). 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 for detailed protocols and support products.