

plakophilin 4 siRNA (h): sc-43184

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 1 mediates increases in desmosomal protein content, desmosome assembly and regulation of cell migration. Plakophilin 2 is important for desmosome assembly and is an essential morphogenic factor and architectural component of the heart. Plakophilin 3 plays a role in both desmosome-dependent adhesion and signaling pathways. Plakophilin 4 is a component of desmosomal adhesion plaques that regulates junctional plaque organization and cadherin function.

REFERENCES

1. Mertens, C., et al. 1999. Desmosomal plakophilin 2 as a differentiation marker in normal and malignant tissues. *Differentiation* 64: 277-290.
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. Hatzfeld, M., et al. 2000. The function of plakophilin 1 in desmosome assembly and Actin filament organization. *J. Cell Biol.* 149: 209-222.
4. Bornslaeger, E.A., et al. 2001. Plakophilin 1 interferes with plakoglobin binding to desmoplakin, yet together with plakoglobin promotes clustering of desmosomal plaque complexes at cell-cell borders. *J. Cell Sci.* 114: 727-738.
5. Mertens, C., et al. 2001. Nuclear particles containing RNA polymerase III complexes associated with the junctional plaque protein plakophilin 2. *Proc. Natl. Acad. Sci. USA* 98: 7795-7800.
6. Chen, X., et al. 2002. Protein binding and functional characterization of plakophilin 2. Evidence for its diverse roles in desmosomes and β -catenin signaling. *J. Biol. Chem.* 277: 10512-10522.
7. Bonne, S., et al. 2003. Defining desmosomal plakophilin-3 interactions. *J. Cell Biol.* 161: 403-416.
8. South, A.P., et al. 2003. Lack of plakophilin 1 increases keratinocyte migration and reduces desmosome stability. *J. Cell Sci.* 116: 3303-3314.

CHROMOSOMAL LOCATION

Genetic locus: PKP4 (human) mapping to 2q24.1.

PRODUCT

plakophilin 4 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see plakophilin 4 shRNA Plasmid (h): sc-43184-SH and plakophilin 4 shRNA (h) Lentiviral Particles: sc-43184-V as alternate gene silencing products.

For independent verification of plakophilin 4 (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-43184A, sc-43184B and sc-43184C.

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

APPLICATIONS

plakophilin 4 siRNA (h) is recommended for the inhibition of plakophilin 4 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 μ M in 66 μ 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor plakophilin 4 gene expression knockdown using RT-PCR Primer: plakophilin 4 (h)-PR: sc-43184-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Zhao, H., et al. 2018. p0071 interacts with E-cadherin in the cytoplasm so as to promote the invasion and metastasis of non-small cell lung cancer. *Mol. Carcinog.* 57: 89-96.

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.