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PDZK1 siRNA (m): sc-152145

BACKGROUND

Proteins containing PDZ domains play a role in a wide array of biological functions including protein scaffolding, organization of ion channels and signal transduction. The PDZ domain containing protein PDZK1 interacts with multiple targets, including MAP17 and cMOAT and also NaPi-IIa, which implicates PDZK1 in ion channel formation. PDZK1 localizes to the plasma membrane of epithelial cells, where it is able to interact simultaneously with more than one type of channel, by utilizing its 4 PDZ domains, and thus acts as an adaptor between different cell surface receptors. Furthermore, PDZK1 is markedly upregulated in human carcinomas of epithelial origin, and the cluster formed by its association with cMOAT and MAP17 may potentially play role in multidrug resistance. Therefore, PDZK1 may be a new target for cancers cells resistance to chemotherapeutic agents.

REFERENCES

1. Kocher, O., et al. 1999. PDZK1, a novel PDZ domain-containing protein upregulated in carcinomas and mapped to chromosome 1q21, interacts with cMOAT (MRP2), the multidrug resistance-associated protein. *Lab. Invest.* 79: 1161-1170.
2. Kocher, O., et al. 2003. Targeted disruption of the PDZK1 gene by homologous recombination. *Mol. Cell. Biol.* 23: 1175-1180.
3. Gislis, S.M., et al. 2003. PDZK1: I. A major scaffold in brush borders of proximal tubular cells. *Kidney Int.* 64: 1733-1745.
4. Gentzsch, M., et al. 2003. The PDZ-binding chloride channel CIC-3B localizes to the Golgi and associates with cystic fibrosis transmembrane conductance regulator-interacting PDZ proteins. *J. Biol. Chem.* 278: 6440-6449.

CHROMOSOMAL LOCATION

Genetic locus: Pdzk1 (mouse) mapping to 3 F2.1.

PRODUCT

PDZK1 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see PDZK1 shRNA Plasmid (m): sc-152145-SH and PDZK1 shRNA (m) Lentiviral Particles: sc-152145-V as alternate gene silencing products.

For independent verification of PDZK1 (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-152145A, sc-152145B and sc-152145C.

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

PDZK1 siRNA (m) is recommended for the inhibition of PDZK1 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 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.

GENE EXPRESSION MONITORING

PDZK1 (E-9): sc-390964 is recommended as a control antibody for monitoring of PDZK1 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 (secondary) reagents are recommended: 1) Western Blotting: use goat anti-mouse IgG-HRP: sc-2005 (dilution range: 1:2000-1:32,000) or Cruz Marker™ compatible goat anti-mouse IgG-HRP: sc-2031 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use goat anti-mouse IgG-FITC: sc-2010 (dilution range: 1:100-1:400) or goat anti-mouse IgG-TR: sc-2781 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor PDZK1 gene expression knockdown using RT-PCR Primer: PDZK1 (m)-PR: sc-152145-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.