

PDZK7 siRNA (h): sc-90504

BACKGROUND

PDZK7, also known as PDZD7 (PDZ domain containing 7), is a 517 amino acid protein that contains two PDZ (DHR) domains. Encoded by a gene that maps to human chromosome 10q24.31, PDZK7 is conserved in canine, mouse and rat, and exists as three alternatively spliced isoforms. PDZK7 is known to interact with Harmonin, MASS1, USH1G and Usherin. Localizing to nucleus, PDZK7 is expressed in retinal pigment epithelium and inner ear. Biallelic inactivation of PDZK7 can cause non-syndromic hearing impairment and chromosomal aberrations, which are linked to non-syndromic sensorineural deafness. PDZK7 mutations are also linked to Usher syndrome, which is characterized by retinitis pigmentosa and sensorineural deafness, and Alzheimer disease. The gene that encodes PDZK7 maps to human chromosome 10q24.31.

REFERENCES

- Swan, L.E., Schmidt, M., Schwarz, T., Ponimaskin, E., Prange, U., Boeckers, T., Thomas, U. and Sigrist, S.J. 2006. Complex interaction of *Drosophila* GRIP PDZ domains and echinoid during muscle morphogenesis. *EMBO J.* 25: 3640-3651.
- Sela, N., Mersch, B., Gal-Mark, N., Lev-Maor, G., Hotz-Wagenblatt, A. and Ast, G. 2007. Comparative analysis of transposed element insertion within human and mouse genomes reveals Alu's unique role in shaping the human transcriptome. *Genome Biol.* 8: R127.
- Hofmann, S.M., Zhou, L., Perez-Tilve, D., Greer, T., Grant, E., Wancata, L., Thomas, A., Pfluger, P.T., Basford, J.E., Gilham, D., Herz, J., Tschöp, M.H. and Hui, D.Y. 2007. Adipocyte LDL receptor-related protein-1 expression modulates postprandial lipid transport and glucose homeostasis in mice. *J. Clin. Invest.* 117: 3271-3282.
- Schneider, E., Märker, T., Daser, A., Frey-Mahn, G., Beyer, V., Farcas, R., Schneider-Rätzke, B., Kohlschmidt, N., Grossmann, B., Bauss, K., Napióntek, U., Keilmann, A., Bartsch, O., Zechner, U., Wolfrum, U. and Haaf, T. 2009. Homozygous disruption of PDZD7 by reciprocal translocation in a consanguineous family: a new member of the Usher syndrome protein interactome causing congenital hearing impairment. *Hum. Mol. Genet.* 18: 655-666.
- Liang, X., Slifer, M., Martin, E.R., Schnetz-Boutaud, N., Bartlett, J., Anderson, B., Züchner, S., Gwirtsman, H., Gilbert, J.R., Pericak-Vance, M.A. and Haines, J.L. 2009. Genomic convergence to identify candidate genes for Alzheimer disease on chromosome 10. *Hum. Mutat.* 30: 463-471.
- Sullivan, C., Charette, J., Catchen, J., Lage, C.R., Giasson, G., Postlethwait, J.H., Millard, P.J. and Kim, C.H. 2009. The gene history of zebrafish tlr4a and tlr4b is predictive of their divergent functions. *J. Immunol.* 183: 5896-5908.
- Ebermann, I., Phillips, J.B., Liebau, M.C., Koenekeop, R.K., Schermer, B., Lopez, I., Schäfer, E., Roux, A.F., Dafinger, C., Bernd, A., Zrenner, E., Claustres, M., Blanco, B., Nürnberg, G., Nürnberg, P., Ruland, R., et al. 2010. PDZD7 is a modifier of retinal disease and a contributor to digenic Usher syndrome. *J. Clin. Invest.* 120: 1812-1823.

PROTOCOLS

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

CHROMOSOMAL LOCATION

Genetic locus: PDZD7 (human) mapping to 10q24.31.

PRODUCT

PDZK7 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 PDZK7 shRNA Plasmid (h): sc-90504-SH and PDZK7 shRNA (h) Lentiviral Particles: sc-90504-V as alternate gene silencing products.

For independent verification of PDZK7 (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-90504A, sc-90504B and sc-90504C.

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

PDZK7 siRNA (h) is recommended for the inhibition of PDZK7 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 PDZK7 gene expression knockdown using RT-PCR Primer: PDZK7 (h)-PR: sc-90504-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.