SANTA CRUZ BIOTECHNOLOGY, INC.

Dapper1 siRNA (m): sc-77096

BACKGROUND

Dapper1, also known as DACT1 (Dapper, antagonist of β-catenin, homolog 1), DPR1, HNG3 or FRODO, is an 836 amino acid protein that localizes to both the nucleus and the cytoplasm and contains a C-terminal PDZ-binding motif that is thought to mediate protein-protein interactions. Interacting with Dvl-2, Dapper1 functions to positively regulate Dvl-2-mediated developmental signaling pathways, specifically by preventing the degradation of β-catenin, thereby enhancing the transcriptional activation of select genes in the Wnt pathway. Dapper1 is downregulated in hepatocellular carcinoma, suggesting an additional role in tumor suppression. The gene encoding Dapper1 maps to human chromosome 14q23.1, which houses over 700 genes and comprises nearly 3.5% of the human genome. Chromosome 14 encodes the Presinilin 1 (PSEN1) gene, which is one of the three key genes associated with the development of Alzheimer's disease (AD). The SERPINA1 gene is also located on chromosome 14 and, when defective, leads to the genetic disorder α1-antitrypsin deficiency, which is characterized by severe lung complications and liver dysfunction.

REFERENCES

1. Cheyette, B.N., et al. 2002. Dapper, a Dishevelled-associated antagonist of β-catenin and JNK signaling, is required for notochord formation. Dev. Cell 2: 449-461.
2. Katoh, M., et al. 2003. Identification and characterization of human Dapper1 and Dapper2 genes in silico. Int. J. Oncol. 22: 907-913.
3. Yau, T.O., et al. 2005. HDPR1, a novel inhibitor of the WNT/β-catenin signaling, is frequently downregulated in hepatocellular carcinoma: involvement of methylation-mediated gene silencing. Oncogene 24: 1607-1614.
4. Zhang, L., et al. 2006. Dapper1 antagonizes Wnt signaling by promoting dishevelled degradation. J. Biol. Chem. 281: 8607-8612.
5. Online Mendelian Inheritance in Man, OMIM™. 2007. Johns Hopkins University, Baltimore, MD. MIM Number: 6078617. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/

CHROMOSOMAL LOCATION

Genetic locus: Dact1 (mouse) mapping to 12 C3.

PRODUCT

Dapper1 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 Dapper1 shRNA Plasmid (m): sc-77096-SH and Dapper1 shRNA (m) Lentiviral Particles: sc-77096-V as alternate gene silencing products.

For independent verification of Dapper1 (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-77096A, sc-77096B and sc-77096C.

PROTOCOLS

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

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

Dapper1 siRNA (m) is recommended for the inhibition of Dapper1 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Dapper1 gene expression knockdown using RT-PCR Primer: Dapper1 (m)-PR: sc-77096-PR (20 µl). 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.