## SANTA CRUZ BIOTECHNOLOGY, INC.

# Dapper2 siRNA (h): sc-95473



#### BACKGROUND

Dapper2, also known as DACT2 (dapper, antagonist of  $\beta$ -catenin, homolog 2), DPR2 or C6orf116, is a 774 amino acid protein that exists as multiple alternatively spliced isoforms and is a mammalian homolog of the *Xenopus laevis* protein dapper. Containing a C-terminal PDZ-binding motif, Dapper2 is thought to promote the lysosomal degradation of nodal receptors, possibly functioning to negatively regulate the nodal signaling pathway. The gene encoding Dapper2 maps to human chromosome 6, which contains 170 million base pairs and comprises nearly 6% of the human genome. Deletion of a portion of the q arm of chromosome 6 is associated with early onset intestinal cancer, suggesting the presence of a cancer susceptibility locus. Additionally, Porphyria cutanea tarda, Parkinson's disease, Stickler syndrome and a susceptibility to bipolar disorder are all associated with genes that map to chromosome 6.

## REFERENCES

- 1. Cheyette, B.N., et al. 2002. Dapper, a dishevelled-associated antagonist of  $\beta$ -catenin and JNK signaling, is required for notochord formation. Dev. Cell 2: 449-461.
- 2. Katoh, M. and Katoh, M. 2003. Identification and characterization of human Dapper1 and Dapper2 genes in silico. Int. J. Oncol. 22: 907-913.
- Waxman, J.S., et al. 2004. Zebrafish Dapper1 and Dapper2 play distinct roles in Wnt-mediated developmental processes. Development 131: 5909-5921.
- Zhang, L., et al. 2004. Zebrafish Dpr2 inhibits mesoderm induction by promoting degradation of nodal receptors. Science 306: 114-117.
- 5. Online Mendelian Inheritance in Man, OMIM™. 2004. Johns Hopkins University, Baltimore, MD. MIM Number: 608966. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
- Fisher, D.A., et al. 2006. Three Dact gene family members are expressed during embryonic development and in the adult brains of mice. Dev. Dyn. 235: 2620-2630.
- 7. Katoh, M. 2007. Networking of WNT, FGF, Notch, BMP, and Hedgehog signaling pathways during carcinogenesis. Stem Cell Rev. 3: 30-38.

### CHROMOSOMAL LOCATION

Genetic locus: DACT2 (human) mapping to 6q27.

#### PRODUCT

Dapper2 siRNA (h) is a pool of 2 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Dapper2 shRNA Plasmid (h): sc-95473-SH and Dapper2 shRNA (h) Lentiviral Particles: sc-95473-V as alternate gene silencing products.

For independent verification of Dapper2 (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-95473A and sc-95473B.

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

### **APPLICATIONS**

Dapper2 siRNA (h) is recommended for the inhibition of Dapper2 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  $\mu$ M in 66  $\mu$ 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 Dapper2 gene expression knockdown using RT-PCR Primer: Dapper2 (h)-PR: sc-95473-PR (20  $\mu$ I). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

### SELECT PRODUCT CITATIONS

1. Wang, S., et al. 2015. DACT2 is a functional tumor suppressor through inhibiting Wnt/ $\beta$ -catenin pathway and associated with poor survival in colon cancer. Oncogene 34: 2575-2585.

#### **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.