SANTA CRUZ BIOTECHNOLOGY, INC.

Dvl-1 siRNA (m): sc-35229

BACKGROUND

Mammalian homologs of the *Drosophila* dishevelled (Dsh) gene have been identified, including Dvl-1, Dvl-2 and Dvl-3. The mammalian dishevelled proteins contain three homologous domains, two of which are unrelated to any other known protein. The third region is homologous to the discs-large homology domain of *Drosophila* discs-large-1, a tumor suppressor protein. Like their *Drosophila* counterpart, the dishevelled proteins are thought to be involved in embryogenesis. Overexpression of Dvl-1 has been shown to inhibit the phosphorylation of Tau by GSK-3β. This finding may prove to be important in Alzheimer's studies, which have shown that Tau is hyperphosphorylated. In *Drosophila,* Dsh is a component of the frizzled signaling pathway. Both mammalian dishevelled and frizzled proteins are components of the Wnt signalling pathway.

REFERENCES

1. Sussman, D.J., et al. 1994. Isolation and characterization of a mouse homolog of the *Drosophila* segment polarity gene dishevelled. Dev. Biol. 166: 73-86.
2. Krasnow, R.E., et al. 1995. Dishevelled is a component of the frizzled signaling pathway in *Drosophila*. Development 121: 4095-4102.
3. Yang-Snyder, J., et al. 1996. A frizzled homolog functions in a vertebrate Wnt signaling pathway. Curr. Biol. 6: 1302-1306.
4. Pizzuti, A., et al. 1996. Human homologue sequences to the *Drosophila* dishevelled segment-polarity are deleted in the DiGeorge syndrome. Am. J. Hum. Genet. 58: 722-729.
5. Tsang, M., et al. 1996. Isolation and characterization of mouse dishevelled-3. Dev. Dyn. 207: 253-262.
6. Pizzuti, A., et al. 1996. cDNA characterization and chromosomal mapping of two human homologues of the *Drosophila* dishevelled polarity gene. Hum. Mol. Genet. 5: 953-958.
7. Wagner, U., et al. 1997. Overexpression of the mouse dishevelled-1 protein inhibits GSK-3b-mediated phosphorylation of tau in transfected mammalian cells. FEBS Letts. 411: 369-372.
8. Semenov, M.V. and Snyder, M. 1997. Human dishevelled genes constitute a DHR-containing multigene family. Genomics 42: 302-310.

CHROMOSOMAL LOCATION

Genetic locus: Dvl1 (mouse) mapping to 4 E2.

PRODUCT

Dvl-1 siRNA (m) 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Dvl-1 shRNA Plasmid (m): sc-35229-SH and Dvl-1 shRNA (m) Lentiviral Particles: sc-35229-V as alternate gene silencing products.

For independent verification of Dvl-1 (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-35229A and sc-35229B.

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

Dvl-1 siRNA (m) is recommended for the inhibition of Dvl-1 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.

GENE EXPRESSION MONITORING

Dvl-1 (3F12): sc-8025 is recommended as a control antibody for monitoring of Dvl-1 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 reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Dvl-1 gene expression knockdown using RT-PCR Primer: Dvl-1 (h)-PR: sc-35228-PR (20 µl, 455 bp). 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 for detailed protocols and support products.