SANTA CRUZ BIOTECHNOLOGY, INC.

Wnt-1 siRNA (h): sc-36839

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Products of the highly conserved Wnt gene family play key roles in regulating cellular growth and differentiation. The prototype member of the Wnt gene family, Wnt-1, is a cysteine-rich secreted glycoprotein that associates with cell membranes and likely functions as a key regulator of cellular adhesion. β-catenin, a cadherin-binding cellular adhesion protein which also binds the tumor supressor gene APC, has been identified as a downstream target of a signal transduction pathway mediated by Wnt-1. Wnt-1 is essential for normal development of the embryonic nervous system and its expression is normally limited to the embryonic neural tube and adult spermatids. When improperly expressed in mammary tissue, Wnt-1 contributes to hyperplasia and tumorigenic progression. Wnt family members have been shown to interact with Sonic hedgehog (Shh) *in vivo* to induce myogenesis in somitic tissue.

REFERENCES

1. Nusse, R., et al. 1992. Wnt genes. Cell 69: 1073-1087.
2. Hinck, L., et al. 1994. β-catenin: a common target for the regulation of cell adhesion by Wnt-1 and Src in signaling pathways. Trends Biochem. Sci. 19: 538-542.
3. Wong, G.T., et al. 1994. Differential transformation of mammary epithelial cells by Wnt genes. Mol. Cell. Biol. 14: 6278-6286.
4. Burrus, L.W., et al. 1995. Biochemical analysis of murine Wnt proteins reveals both shared and distinct properties. Exp. Cell Res. 220: 363-373.
5. Munsterberg, A.E., et al. 1995. Combinatorial signaling by Sonic hedgehog and Wnt family members induces myogenic bHLH gene expression in the somite. Genes Dev. 9: 2911-2922.

CHROMOSOMAL LOCATION

Genetic locus: WNT1 (human) mapping to 12q13.12.

PRODUCT

Wnt-1 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Wnt-1 shRNA Plasmid (h): sc-36839-SH and Wnt-1 shRNA (h) Lentiviral Particles: sc-36839-V as alternate gene silencing products.

For independent verification of Wnt-1 (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-36839A, sc-36839B and sc-36839C.

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

Wnt-1 siRNA (h) is recommended for the inhibition of Wnt-1 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 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

Wnt-1 (E-10): sc-514531 is recommended as a control antibody for monitoring of Wnt-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).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Wnt-1 gene expression knockdown using RT-PCR Primer: Wnt-1 (h)-PR: sc-36839-PR (20 µl, 497 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Fukutomi, T., et al. 2005. Hepatitis C virus core protein stimulates hepatocyte growth: correlation with upregulation of Wnt-1 expression. Hepatology 41: 1096-1105.
2. Yan, H., et al. 2014. Inhibitions of epithelial to mesenchymal transition and cancer stem cells-like properties are involved in miR-148a-mediated anti-metastasis of hepatocellular carcinoma. Mol. Carcinog. 53: 960-969.
3. Cao, J., et al. 2015. Agonists of epoxyeicosatrienoic acids reduce infarct size and ameliorate cardiac dysfunction via activation of HO-1 and Wnt-1 canonical pathway. Prostaglandins Other Lipid Mediat. 116-117: 76-86.
4. Wu, L., et al. 2018. MiR-329 inhibits papillary thyroid cancer progression via direct targeting Wnt-1. Oncol. Lett. 16: 3561-3568.
5. Huang, C., et al. 2019. Wnt-1 silencing enhances neurotoxicity induced by paraquat and maneb in SH-SY5Y cells. Exp. Ther. Med. 18: 3643-3649.
6. Sakunrangsit, N., et al. 2019. Plumbagin inhibits cancer stem-like cells, angiogenesis and suppresses cell proliferation and invasion by targeting Wnt/β-catenin pathway in endocrine resistant breast cancer. Pharmacol. Res. 150: 104517.

RESEARCH USE

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