

Wnt-1 siRNA (m): sc-36840

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 suppressor 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. 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.
5. Burrus, L.W., et al. 1995. Biochemical analysis of murine Wnt proteins reveals both shared and distinct properties. *Exp. Cell Res.* 220: 363-373.

CHROMOSOMAL LOCATION

Genetic locus: Wnt1 (mouse) mapping to 15 F1.

PRODUCT

Wnt-1 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Wnt-1 shRNA Plasmid (m): sc-36840-SH and Wnt-1 shRNA (m) Lentiviral Particles: sc-36840-V as alternate gene silencing products.

For independent verification of Wnt-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-36840A, sc-36840B and sc-36840C.

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

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

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).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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 Wnt-1 gene expression knockdown using RT-PCR Primer: Wnt-1 (m)-PR: sc-36840-PR (20 μ l, 581 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Cheng, S.L., et al. 2008. Msx-2 exerts bone anabolism via canonical Wnt signaling. *J. Biol. Chem.* 283: 20505-20522.
2. Ahluwalia, A., et al. 2020. Mechanisms by which membrane and nuclear ER α inhibit adipogenesis in cells isolated from female mice. *Endocrinology* 161: bqaa175.

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.