

# Wnt-5b siRNA (h): sc-95781

## BACKGROUND

The Wnt gene family of protooncogenes consists of at least 13 known members which encode secreted signaling proteins that are involved in oncogenesis and several other developmental processes, such as regulation of cell fate and embryogenesis. Wnt-5b (wingless-type MMTV integration site family, member 5B) is a 359 amino acid secreted protein that localizes to the extracellular matrix and belongs to the Wnt family. Thought to function as a signaling molecule, Wnt-5b interacts with PORCN and acts as a ligand for members of the frizzled family of transmembrane receptors, possibly affecting the development of discrete tissue regions. Wnt-5b is expressed in a variety of tissues, including fetal brain, kidney, lung, ovary and small intestine, as well as in gastric cancer and teratocarcinoma cell lines, suggesting a role for Wnt-5b in tumorigenesis.

## REFERENCES

1. Gavin, B.J., et al. 1990. Expression of multiple novel Wnt-1/Int-1-related genes during fetal and adult mouse development. *Genes Dev.* 4: 2319-2332.
2. Smolich, B.D., et al. 1993. Wnt family proteins are secreted and associated with the cell surface. *Mol. Biol. Cell* 4: 1267-1275.
3. Tanaka, K., et al. 2000. The evolutionarily conserved porcupine gene family is involved in the processing of the Wnt family. *Eur. J. Biochem.* 267: 4300-4311.
4. Saitoh, T. and Katoh, M. 2001. Molecular cloning and characterization of human Wnt-5b on chromosome 12p13.3 region. *Int. J. Oncol.* 19: 347-351.
5. Saitoh, T. and Katoh, M. 2002. Expression and regulation of Wnt-5a and Wnt-5b in human cancer: up-regulation of Wnt-5a by TNF $\alpha$  in MKN45 cells and upregulation of Wnt-5b by  $\beta$ -estradiol in MCF7 cells. *Int. J. Mol. Med.* 10: 345-349.
6. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 606361. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
7. Kanazawa, A., et al. 2004. Association of the gene encoding wingless-type mammary tumor virus integration-site family member 5B (WNT5B) with type 2 diabetes. *Am. J. Hum. Genet.* 75: 832-843.

## CHROMOSOMAL LOCATION

Genetic locus: WNT5B (human) mapping to 12p13.33.

## PRODUCT

Wnt-5b 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Wnt-5b shRNA Plasmid (h): sc-95781-SH and Wnt-5b shRNA (h) Lentiviral Particles: sc-95781-V as alternate gene silencing products.

For independent verification of Wnt-5b (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-95781A, sc-95781B and sc-95781C.

## 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

Wnt-5b siRNA (h) is recommended for the inhibition of Wnt-5b 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.

## GENE EXPRESSION MONITORING

Wnt-5b (G-4): sc-376249 is recommended as a control antibody for monitoring of Wnt-5b 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 $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  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 $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  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-5b gene expression knockdown using RT-PCR Primer: Wnt-5b (h)-PR: sc-95781-PR (20  $\mu$ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## SELECT PRODUCT CITATIONS

1. Chakravadhanula, M., et al. 2015. Wnt pathway in atypical teratoid rhabdoid tumors. *Neuro Oncol.* 17: 526-535.

## RESEARCH USE

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