

# Wnt-7a siRNA (m): sc-41115

## BACKGROUND

The Wnt gene family encodes secreted signaling molecules that bind to frizzled receptors and influence oncogenesis and developmental processes, including regulation of cell fate and patterning during embryogenesis. The Wnt family has two functional classes according to their biological activities; Wnts that signal through a Wnt-1/wingless pathway by stabilizing cytoplasmic  $\beta$ -catenin, and Wnts that stimulate intracellular  $\text{Ca}^{2+}$  release and activate two kinases, CamKII and PKC, in a G protein-dependent manner. Wnt-7a guides the development of the anterior-posterior axis in the female reproductive tract, and influences uterine smooth muscle patterning and maintenance of adult uterine function. The human Wnt-7a gene maps to chromosome 3p25.1. The human Wnt-7b gene maps to chromosome 22q13.31.

## REFERENCES

1. Ikegawa, S., et al. 1996. Isolation, characterization and chromosomal assignment of the human WNT7A gene. *Cytogenet. Cell Genet.* 74: 149-152.
2. Johnson, R.L., et al. 1997. Molecular models for vertebrate limb development. *Cell* 90: 979-990.
3. Kuhl, M., et al. 2000. The Wnt/ $\text{Ca}^{2+}$  pathway: a new vertebrate Wnt signaling pathway takes shape. *Trends Genet.* 16: 279-283.
4. Li, S., et al. 2001. Decreased expression of Wnt7a mRNA is inversely associated with the expression of estrogen receptor- $\alpha$  in human uterine leiomyoma. *J. Clin. Endocr. Metab.* 86: 454-457.

## CHROMOSOMAL LOCATION

Genetic locus: Wnt7a (mouse) mapping to 6 D1.

## PRODUCT

Wnt-7a 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  $\mu\text{M}$  solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Wnt-7a shRNA Plasmid (m): sc-41115-SH and Wnt-7a shRNA (m) Lentiviral Particles: sc-41115-V as alternate gene silencing products.

For independent verification of Wnt-7a (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-41115A, sc-41115B and sc-41115C.

## STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at  $-20^{\circ}\text{C}$  with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at  $-20^{\circ}\text{C}$ , avoid contact with RNases and repeated freeze thaw cycles.

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

## APPLICATIONS

Wnt-7a siRNA (m) is recommended for the inhibition of Wnt-7a 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  $\mu\text{M}$  in 66  $\mu\text{l}$ . 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-7a (E-9): sc-365665 is recommended as a control antibody for monitoring of Wnt-7a 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<sup>TM</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> 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<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Wnt-7a gene expression knockdown using RT-PCR Primer: Wnt-7a (m)-PR: sc-41115-PR (20  $\mu\text{l}$ , 598 bp). Annealing temperature for the primers should be  $55-60^{\circ}\text{C}$  and the extension temperature should be  $68-72^{\circ}\text{C}$ .

## SELECT PRODUCT CITATIONS

1. Cheng, S.L., et al. 2008. Msx2 exerts bone anabolism via canonical Wnt signaling. *J. Biol. Chem.* 283: 20505-20522.
2. Hou, J., et al. 2018. M2 macrophages promote myofibroblast differentiation of LR-MSCs and are associated with pulmonary fibrogenesis. *Cell Commun. Signal.* 16: 89.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.