

R-Spondin2 siRNA (h): sc-76307

BACKGROUND

Roof plate-specific Spondins (R-Spondins) are secreted proteins that possess a furin-like cysteine-rich domain and are involved in regulating β -catenin function. R-Spondin2, also known as RSPO2 or CRISTIN2, is a 243 amino acid secreted protein that contains one FU repeat and one TSP type-1 domain. Existing as multiple alternatively spliced isoforms, R-Spondin2 interacts with Wnt-1 and functions to activate the β -catenin signaling cascade, ultimately leading to TCF-dependent gene activation. Additionally, R-Spondin2 is thought to act as a ligand for LRP and frizzled receptors. The gene encoding R-Spondin2 maps to human chromosome 8q23.1, which encodes over 800 genes and is associated with a variety of diseases and malignancies. Schizophrenia, bipolar disorder, trisomy 8, Pfeiffer syndrome, congenital hypothyroidism, Waardenburg syndrome and some leukemias and lymphomas are thought to occur as a result of defects in specific genes that maps to chromosome 8.

REFERENCES

1. Kazanskaya, O., et al. 2004. R-Spondin2 is a secreted activator of Wnt/ β -catenin signaling and is required for *Xenopus* myogenesis. *Dev. Cell* 7: 525-534.
2. Kim, K.A., et al. 2006. R-Spondin proteins: a novel link to β -catenin activation. *Cell Cycle* 5: 23-26.
3. Nam, J.S., et al. 2006. Mouse cristin/R-Spondin family proteins are novel ligands for the Frizzled 8 and LRP6 receptors and activate β -catenin-dependent gene expression. *J. Biol. Chem.* 281: 13247-13257.
4. Kim, K.A., et al. 2008. R-Spondin family members regulate the Wnt pathway by a common mechanism. *Mol. Biol. Cell* 19: 2588-2596.
5. Li, S.J., et al. 2009. Loss-of-function point mutations and two-furin domain derivatives provide insights about R-Spondin2 structure and function. *Cell. Signal.* 21: 916-925.
6. Friedman, M.S., et al. 2009. Wnt11 promotes osteoblast maturation and mineralization through R-Spondin2. *J. Biol. Chem.* 284: 14117-14125.

CHROMOSOMAL LOCATION

Genetic locus: RSPO2 (human) mapping to 8q23.1.

PRODUCT

R-Spondin2 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see R-Spondin2 shRNA Plasmid (h): sc-76307-SH and R-Spondin2 shRNA (h) Lentiviral Particles: sc-76307-V as alternate gene silencing products.

For independent verification of R-Spondin2 (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-76307A, sc-76307B and sc-76307C.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

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

R-Spondin2 siRNA (h) is recommended for the inhibition of R-Spondin2 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 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor R-Spondin2 gene expression knockdown using RT-PCR Primer: R-Spondin2 (h)-PR: sc-76307-PR (20 μ l). 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.