



R-Spondin siRNA (m): sc-155955

BACKGROUND

The thrombospondin proteins compose a family of glycoproteins that are involved in cell-to-cell and cell-to-matrix signaling. Roof plate-specific spondin (R-Spondin) possesses a furin-like cysteine-rich domains and a thrombospondin repeat. This 265-amino acid member of the thrombospondin family is expressed in enteroendocrine and epithelial cells in various tissues and localizes in the boundary between the roof plate and neuroepithelium. R-Spondin may contribute to the development of dorsal neural tube under the regulation of the Wnt/ β -catenin signaling pathway which leads to T-cell factor-dependent gene activation. R-Spondin exhibits a positive modulatory activity on Wnt ligands, possibly through a direct interaction. R-Spondin induces a rapid onset of crypt cell proliferation involving β -catenin stabilization, and it acts as a mitogen in human gastrointestinal epithelium.

REFERENCES

1. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 609595. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
2. Gonçalves-Mendes, N., et al. 2003. Mouse expressed in the brain. *Gene* 312: 263-270.
3. Kamata, T., et al. 2004. R-Spondin, a novel gene with thrombospondin type 1 domain, was expressed in the dorsal neural tube and affected in Wnts mutants. *Biochim. Biophys. Acta* 1676: 51-62.
4. Kim, K.A., et al. 2005. Mitogenic influence of human R-Spondin1 on the intestinal epithelium. *Science* 309: 1256-1259.
5. 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.
6. Aoki, M., et al. 2006. R-Spondin3 is required for mouse placental development. *Dev. Biol.* 301: 218-226.

CHROMOSOMAL LOCATION

Genetic locus: Rspo1 (mouse) mapping to 4 D2.2.

PRODUCT

R-Spondin siRNA (m) is a pool of 2 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-Spondin shRNA Plasmid (m): sc-155955-SH and R-Spondin shRNA (m) Lentiviral Particles: sc-155955-V as alternate gene silencing products.

For independent verification of R-Spondin (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-155955A and sc-155955B.

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-Spondin siRNA (m) is recommended for the inhibition of R-Spondin 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor R-Spondin gene expression knockdown using RT-PCR Primer: R-Spondin (m)-PR: sc-155955-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.