



claudin-2 siRNA (m): sc-62125

BACKGROUND

The claudin superfamily consists of structurally related proteins that are important structural and functional components of tight junctions. Claudin-2, also known as CLDN2 or SP82, is a 230 amino acid multi-pass membrane protein that localizes to the cell junctions and belongs to the claudin superfamily. Able to form homopolymers of heteropolymers with other claudin family members, claudin-2 plays an essential role in mediating calcium-independent cell adhesion activity that is necessary for tight junction-specific obliteration of the intercellular space. Overexpression of claudin-2 is associated with a variety of diseases, including lung cancer, colorectal cancer, gastrointestinal carcinomas and inflammatory bowel disease, further affirming the importance of claudin-2 in cell adhesion. The gene encoding claudin-2 maps to human chromosome X, which contains nearly 153 million base pairs and houses over 1,000 genes.

REFERENCES

1. Furuse, M., et al. 1998. Claudin-1 and -2: novel integral membrane proteins localizing at tight junctions with no sequence similarity to Occludin. *J. Cell Biol.* 141: 1539-1550.
2. Morita, K., et al. 1999. Claudin multigene family encoding four-transmembrane domain protein components of tight junction strands. *Proc. Natl. Acad. Sci. USA* 96: 511-516.
3. Heiskala, M., et al. 2001. The roles of claudin superfamily proteins in paracellular transport. *Traffic* 2: 93-98.
4. Sakaguchi, T., et al. 2002. Cloning of the human claudin-2 5'-flanking region revealed a TATA-less promoter with conserved binding sites in mouse and human for caudal-related homeodomain proteins and hepatocyte nuclear factor-1 α . *J. Biol. Chem.* 277: 21361-21370.
5. González-Mariscal, L., et al. 2003. Tight junction proteins. *Prog. Biophys. Mol. Biol.* 81: 1-44.

CHROMOSOMAL LOCATION

Genetic locus: Cldn2 (mouse) mapping to X F1.

PRODUCT

claudin-2 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 claudin-2 shRNA Plasmid (m): sc-62125-SH and claudin-2 shRNA (m) Lentiviral Particles: sc-62125-V as alternate gene silencing products.

For independent verification of claudin-2 (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-62125A, sc-62125B and sc-62125C.

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

claudin-2 siRNA (m) is recommended for the inhibition of claudin-2 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

claudin-2 (3F1): sc-293233 is recommended as a control antibody for monitoring of claudin-2 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 claudin-2 gene expression knockdown using RT-PCR Primer: claudin-2 (m)-PR: sc-62125-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.