SANTA CRUZ BIOTECHNOLOGY, INC.

M-cadherin siRNA (h): sc-37041

BACKGROUND

Cadherins are a multigene family of Ca^{2+}-dependent cell adhesion molecules. They are transmembrane glycoproteins consisting of an extracellular domain, which mediates Ca^{2+}-dependent intercellular adhesion by homophilic interactions, a transmembrane region and a cytoplasmic domain. The extracellular domain is divided into a series of subdomains designated EC1-EC5. Homologies between different members of the cadherin family are most prominent in the cytoplasmic domain and in EC1 and EC2 and much less so in EC5 of the extracellular domain and in the transmembrane region. The binding properties and specificities of the adhesive function are located in the N-terminal part of the molecules. Four members of the cadherin family have been identified and molecularly cloned from mammalian cells. These include the neuronal (N), epithelial (E), placental (P) and muscle (M) cadherins. M-cadherin is not found in fibroblasts but is expressed at low level in myoblasts and is upregulated following induction of myotube formation, suggesting a specific function in skeletal muscle cell differentiation.

REFERENCES

1. Ringwald, M., et al. 1987. The structure of cell adhesion molecule uvomorulin: insights into the molecular mechanism of Ca^{2+}-dependent cell adhesion. EMBO J. 6: 3647-3653.
2. Nose, A., et al. 1987. Isolation of placental cadherin cDNA: identification of a novel gene family of cell-cell adhesion molecules. EMBO J. 6: 3655-3661.
3. Hatta, K., et al. 1988. Cloning and expression of cDNA encoding a neural calcium-dependent cell adhesion molecule: its identity in the cadherin gene family. J. Cell Biol. 106: 873-881.
4. Takeichi, M. 1988. The cadherins: cell-cell adhesion molecules controlling animal morphogenesis. Development 102: 639-655.
5. Miyatani, S., et al. 1989. Neural cadherin: role in selective cell-cell adhesion. Science 245: 631-635.
6. Nose, A., et al. 1990. Localization of specificity determining sites in cadherin cell adhesion molecules. Cell 61: 147-155.
7. Ozawa, M., et al. 1990. Single amino acid substitutions in one Ca^{2+} binding site of uvomorulin abolish the adhesive function. Cell 63: 1033-1038.

CHROMOSOMAL LOCATION

Genetic locus: CDH15 (human) mapping to 16q24.3.

PRODUCT

M-cadherin 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see M-cadherin shRNA Plasmid (h): sc-37041-SH and M-cadherin shRNA (h) Lentiviral Particles: sc-37041-V as alternate gene silencing products.

For independent verification of M-cadherin (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-37041A, sc-37041B and sc-37041C.

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 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

M-cadherin siRNA (h) is recommended for the inhibition of M-cadherin 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 µM in 66 µl. 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

M-cadherin (C-8): sc-398107 is recommended as a control antibody for monitoring of M-cadherin 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-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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 M-cadherin gene expression knockdown using RT-PCR Primer: M-cadherin (h)-PR: sc-37041-PR (20 µl). 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.

PROTOCOLS

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