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DSC1 siRNA (m): sc-43108

BACKGROUND

The desmosomal cadherin desmocollin DSC1 is expressed in upper epidermis where strong adhesion is required. DSC1 is a type I membrane protein required for strong adhesion and barrier maintenance in epidermis and contributes to epidermal differentiation. DSC3 is also a type I membrane protein and is expressed in all living epidermal layers as well as in glandular ducts and in basal matrix cells and the outer root sheath of hair follicles. DSC3, but not DSC1, is also present in desmosomes of the basal and suprabasal cell layers of other stratified epithelia such as cervix, tongue and esophagus as well as in cells of the basal layer of bladder urothelium and the complex epithelium of trachea. The DSC1 gene comprises 17 exons spanning approximately 33 kb on 18q12.1, and the DSC3 gene comprises 17 exons spanning approximately 49 kb on 18q12.1. Alternative splicing gives rise to two DSC1 and DSC3 isoforms, designated 1A and 1B, and 3A and 3B, respectively, which differ in their carboxy-termini. DSC1 and DSC3 may contribute to epidermal cell positioning by mediating differential adhesiveness between cells that express different isoforms.

REFERENCES

1. Nuber, U.A., Schafer, S., Stehr, S., Rackwitz, H.R. and Franke, W.W. 1996. Patterns of desmocollin synthesis in human epithelia: immunolocalization of desmocollins 1 and 3 in special epithelia and in cultured cells. *Eur. J. Cell Biol.* 71: 1-13.
2. Whittock, N.V., Hunt, D.M., Rickman, L., Malhi, S., Vogazianou, A.P., Dawson, L.F., Eady, R.A., Buxton, R.S. and McGrath, J.A. 2000. Genomic organization and amplification of the human desmosomal cadherin genes DSC1 and DSC3, encoding desmocollin types 1 and 3. *Biochem. Biophys. Res. Commun.* 276: 454-460.
3. Chidgey, M., Brakebusch, C., Gustafsson, E., Cruchley, A., Hail, C., Kirk, S., Merritt, A., North, A., Tselepis, C., Hewitt, J., Byrne, C., Fassler, R. and Garrod, D. 2001. Mice lacking desmocollin 1 show epidermal fragility accompanied by barrier defects and abnormal differentiation. *J. Cell Biol.* 155: 821-832.
4. SWISS-PROT/TrEMBL (GI: 2493423). World Wide Web URL: <http://www.expasy.ch/sprot/sprot-top.html>

CHROMOSOMAL LOCATION

Genetic locus: Dsc1 (mouse) mapping to 18 A2.

PRODUCT

DSC1 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 DSC1 shRNA Plasmid (m): sc-43108-SH and DSC1 shRNA (m) Lentiviral Particles: sc-43108-V as alternate gene silencing products.

For independent verification of DSC1 (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-43108A, sc-43108B and sc-43108C.

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

DSC1 siRNA (m) is recommended for the inhibition of DSC1 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

DSC1 (A-4): sc-398590 is recommended as a control antibody for monitoring of DSC1 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 DSC1 gene expression knockdown using RT-PCR Primer: DSC1 (m)-PR: sc-43108-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.

PROTOCOLS

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