SANTA CRUZ BIOTECHNOLOGY, INC.

ECM1 siRNA (h): sc-62255

BACKGROUND

ECM1 (extracellular matrix protein 1), also known as secretory component p85, is a secreted glycoprotein that is essential for the proper structure and function of the skin. It is widely expressed and localizes to the extracellular matrix. ECM1 binds to a variety of extracellular matrix components, including Perlecan, Fibulin and matrix metalloproteinase-9 (MMP-9), and participates in the structural organization of the dermis. In addition, ECM1 enhances the association of Collagen Type IV with Laminin 332 suggesting that it is a key player in interstitial dermis and the dermal-epidermal junction. Mutations in the gene encoding ECM1 result in the autosomal recessive disorder lipoid proteinosis (LiP). LiP is characterized by hyalinization of the dermis and reduplication of the basement membrane of the skin. LiP patients exhibit thickening of the skin and mucosae. Four splice variants (known as ECM1a-ECM1d) exist for ECM1.

REFERENCES

1. Horev, L., et al. 2005. A novel splice-site mutation in ECM-1 gene in a consanguineous family with lipoid proteinosis. Exp. Dermatol. 14: 891-897.
2. Lupo, I., et al. 2005. A novel mutation of the extracellular matrix protein 1 gene (ECM1) in a patient with lipoid proteinosis (Urbach-Wiethe disease) from Sicily. Br. J. Dermatol. 153: 1019-1022.
3. Fujimoto, N., et al. 2005. Extracellular matrix protein 1 interacts with the domain III of fibulin-1C and 1D variants through its central tandem repeat 2. Biochem. Biophys. Res. Commun. 333: 1327-1333.
4. Kebebew, E., et al. 2005. ECM1 and TMPRSS4 are diagnostic markers of malignant thyroid neoplasms and improve the accuracy of fine needle aspiration biopsy. Ann. Surg. 242: 353-361.
5. Fujimoto, N., et al. 2006. Extracellular matrix protein 1 inhibits the activity of matrix metalloproteinase 9 through high-affinity protein/protein interactions. Exp. Dermatol. 15: 300-307.
6. Sander, C.S., et al. 2006. Expression of extracellular matrix protein 1 (ECM1) in human skin is decreased by age and increased upon ultraviolet exposure. Br. J. Dermatol. 154: 218-224.
7. Chan, I., et al. 2007. The molecular basis of lipoid proteinosis: mutations in extracellular matrix protein 1. Exp. Dermatol. 16: 881-890.

CHROMOSOMAL LOCATION

Genetic locus: ECM1 (human) mapping to 1q21.3.

PRODUCT

ECM1 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 ECM1 shRNA Plasmid (h): sc-62255-SH and ECM1 shRNA (h) Lentiviral Particles: sc-62255-V as alternate gene silencing products.

For independent verification of ECM1 (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-62255A, sc-62255B and sc-62255C.

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

ECM1 siRNA (h) is recommended for the inhibition of ECM1 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

ECM1 (C-12): sc-365946 is recommended as a control antibody for monitoring of ECM1 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 ECM1 gene expression knockdown using RT-PCR Primer: ECM1 (h)-PR: sc-62255-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.