SANTA CRUZ BIOTECHNOLOGY, INC.

Lce3a siRNA (m): sc-146681

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The Power to Question

BACKGROUND

The lipid-corneocyte structure of stratum corneum is responsible for barrier activity of skin and internal barrier-forming epithelial linings. Corneocyte stability is dependent upon the outer cornified envelope and is essential for maintenance of barrier function. Within the epidermal differentiation complex on human chromosome 1 and mouse chromosome 3 lies the late cornified envelope (LCE) gene cluster, which contains multiple conserved genes encoding stratum-corneum proteins. Lce3a (late cornified envelope protein 3A), also known as LEP13 (late envelope protein 13), is an 89 amino acid protein and precursor of the cornified envelope of the stratum corneum. Expressed specifically in skin, Lce3a belongs to the LCE family and is encoded by a gene that maps to the LCE gene cluster on human chromosome 1q21.3. Human chromosome 1 spans 260 million base pairs and houses a large number of disease-associated genes, including those that are involved in familial adenomatous polyposis, Stickler syndrome, Parkinson's disease, Gaucher disease, schizophrenia and Usher syndrome.

REFERENCES

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2. Akiyama, M., et al. 1999. Periderm cells form cornified cell envelope in their regression process during human epidermal development. J. Invest. Dermatol. 112: 903-909.
3. Marshall, D., et al. 2001. Differentially expressed late constituents of the epidermal cornified envelope. Proc. Natl. Acad. Sci. USA 98: 13031-13036.
4. Plasilova, M., et al. 2004. Exclusion of an extracolonic disease modifier locus on chromosome 1p33-36 in a large Swiss familial adenomatous polyposis kindred. Eur. J. Hum. Genet. 12: 365-371.
5. Jackson, B., et al. 2005. Late cornified envelope family in differentiating epithelia—response to calcium and ultraviolet irradiation. J. Invest. Dermatol. 124: 1062-1070.
6. Holliday, E.G., et al. 2009. Strong evidence for a novel schizophrenia risk locus on chromosome 1p31.1 in homogeneous pedigrees from Tamil Nadu, India. Am. J. Psychiatry 166: 206-215.
7. Yokoi, T., et al. 2009. Analysis of the vitreous membrane in a case of type 1 Stickler syndrome. Graefes Arch. Clin. Exp. Ophthalmol. 247: 715-718.
8. Bowes, J., et al. 2010. Variants in linkage disequilibrium with the late cornified envelope gene cluster deletion are associated with susceptibility to psoriatic arthritis. Ann. Rheum. Dis. 69: 2199-2203.

CHROMOSOMAL LOCATION

Genetic locus: Lce3a (mouse) mapping to 3 F1.

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.

PRODUCT

Lce3a siRNA (m) is a target-specific 19-25 nt siRNA 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 Lce3a shRNA Plasmid (m): sc-146681-SH and Lce3a shRNA (m) Lentiviral Particles: sc-146681-V as alternate gene silencing 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 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

Lce3a siRNA (m) is recommended for the inhibition of Lce3a 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 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Lce3a gene expression knockdown using RT-PCR Primer: Lce3a (m)-PR: sc-146681-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.