SANTA CRUZ BIOTECHNOLOGY, INC.

ALOXE3 siRNA (m): sc-141028

BACKGROUND

ALOXE3 (arachidonate lipoxygenase 3), also known as E-LOX or eLOX3, is a 711 amino acid protein that is involved in lipid metabolism and contains one lipoxygenase domain and one PLAT domain. Expressed predominately in skin, ALOXE3 uses iron as a cofactor to introduce oxygen into polyunsaturated fatty acids and is thought to play an important role in the catabolism of leukotrienes (arachidonic acid-derived compounds which participate in inflammation and hypersensitivity). Defects in the gene encoding ALOXE3 are the cause of non-bullous congenital ichthyosiform erythroderma (NCIE), a skin disorder characterized by an abnormal cornification of the epidermis, with symptoms including scaling and red skin, as well as painful fissures resulting from palmoplantar keratoderma.

REFERENCES

1. Krieg, P., et al. 2001. A gene cluster encoding human epidermis-type lipoxygenases at chromosome 17p13.1: cloning, physical mapping, and expression. Genomics 73: 323-330.
2. Jobard, F., et al. 2002. Lipoxygenase-3 (ALOXE3) and 12(R)-lipoxygenase (ALOX12B) are mutated in non-bullous congenital ichthyosiform erythroderma (NCIE) linked to chromosome 17p13.1. Hum. Mol. Genet. 11: 107-113.
3. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 607206. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
4. Yu, Z., et al. 2005. Mutations associated with a congenital form of ichthyosis (NCIE) inactivate the epidermal lipoxygenases 12R-LOX and eLOX3. Biochim. Biophys. Acta 16863: 238-247.
5. Eckl, K.M., et al. 2005. Mutation spectrum and functional analysis of epidermis-type lipoxygenases in patients with autosomal recessive congenital ichthyosis. Hum. Mutat. 26: 351-361.
6. Yu, Z., et al. 2006. Human and mouse eLOX3 have distinct substrate specificities: implications for their linkage with lipoxygenases in skin. Arch. Biochem. Biophys. 455: 188-196.
7. Fürstenberger, G., et al. 2007. Role of epidermis-type lipoxygenases for skin barrier function and adipocyte differentiation. Prostaglandins Other Lipid Mediat. 82: 128-134.

CHROMOSOMAL LOCATION

Genetic locus: Aloxe3 (mouse) mapping to 11 B3.

PRODUCT

ALOXE3 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see ALOXE3 shRNA Plasmid (m): sc-141028-SH and ALOXE3 shRNA (m) Lentiviral Particles: sc-141028-V as alternate gene silencing products.

For independent verification of ALOXE3 (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-141028A, sc-141028B and sc-141028C.

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

ALOXE3 siRNA (m) is recommended for the inhibition of ALOXE3 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 ALOXE3 gene expression knockdown using RT-PCR Primer: ALOXE3 (m)-PR: sc-141028-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.