SANTA CRUZ BIOTECHNOLOGY, INC.

# Epidermis-type 12-LO siRNA (h): sc-105333

## BACKGROUND

Epidermis-type 12-LO, also known as arachidonate 12-lipoxygenase or 12R-lipoxygenase, belongs to the lipoxygenase family. Lipoxygenases are enzymes which dioxygenate unsaturated fatty acids, thus initiating lipoperoxidation of membranes, the synthesis of signaling molecules, and inducing structural and metabolic changes in the cell. The LOX enzymes in mammals, 12-LO and 15-LO, are classified with respect to their positional specificity of the deoxygenation of their most common substrate, arachidonic acid. The metabolism of arachidonic acid leads to the generation of biologically active metabolites that have been implicated in cell growth and proliferation, as well as survival and apoptosis. Epidermis-type 12-LO converts arachidonic acid to 12R-hydroxyeicosatetraenoic acid. This pathway is a regulator of cell survival and apoptosis and affects the expression and localization of the Integrin $\alpha V/\beta 5$ and Actin microfilaments in carcinoma cells.

## REFERENCES


1. Boeglin, W.E., et al. 1998. A 12R-lipoxygenase in human skin: mechanistic evidence, molecular cloning, and expression. Proc. Natl. Acad. Sci. USA 95: 6744-6749.
2. Sun, D., et al. 1999. Human 12R-lipoxygenase and the mouse ortholog. Molecular cloning, expression, and gene chromosomal assignment. J. Biol. Chem. 273: 33540-33547.
3. Tang, K., et al. 2000. Identification of 12-lipoxygenase interaction with cellular proteins by yeast two-hybrid screening. Biochemistry 39: 3185-3191.
4. Schneider, C., et al. 2001. Detection and cellular localization of 12R-lipoxygenase in human tonsils. Arch. Biochem. Biophys. 386: 268-274.
5. 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.


## CHROMOSOMAL LOCATION

Genetic locus: ALOX12B (human) mapping to 17p13.1.

## PRODUCT

Epidermis-type 12-LO 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 Epidermis-type 12-LO shRNA Plasmid (h): sc-105333-SH and Epidermis-type 12-LO shRNA (h) Lentiviral Particles: sc-105333-V as alternate gene silencing products.

For independent verification of Epidermis-type 12-LO (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-105333A, sc-105333B and sc-105333C.

## PROTOCOLS

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

Epidermis-type 12-LO siRNA (h) is recommended for the inhibition of Epidermis-type 12-LO 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.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Epidermis-type 12-LO gene expression knockdown using RT-PCR Primer: Epidermis-type 12-LO (h)-PR: sc-105333-PR (20 µl, 416 bp). 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.