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SANTA CRUZ BIOTECHNOLOGY, INC.

LOXHD1 siRNA (m): sc-149017

BACKGROUND

Lipoxygenases are a family of enzymes which dioxygenate unsaturated fatty acids, thus initiating lipoperoxidation of membranes, the synthesis of signaling molecules, as well as inducing structural and metabolic changes in the cell. The Lox enzymes in mammals include 12-LO and 15-LO, which are classified with respect to their positional specificity of the deoxygenation of their most common substrate, arachidonic acid. The 12-LO pathway is a regulator of cell survival and apoptosis and also affects the expression and localization of the Integrin α_V/β_5 and actin microfilaments in rat Walker 256 carcinosarcoma cells. 15-LO acts in physiological membrane remodeling and the pathogenesis of atherosclerosis, inflammation, and carcinogenesis. Related to the LOX enzymes, LOXHD1 (lipoxygenase homology domain-containing protein 1) is a 1947 amino acid protein that contains 14 PLAT domains. There are five isoforms of LOXHD1 that are produced as a result of alternative splicing events.

REFERENCES

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2. Kelavkar, U.P., et al. 2004. 15-lipoxygenase-1 expression upregulates and activates Insulin-like growth factor-1 receptor in prostate cancer cells. Neoplasia 6:41-52.
3. Fletcher-Cieutat, M., et al. 1985. Aspirin enhances the sensitivity of human platelet 12-lipoxygenase to inhibition by 15-HETE, an endogenous regulator. Prostaglandins Leukot. Med. 18: 255-259.
4. Raso, E., et al. 2004. Molecular identification, localization and function of platelet-type 12-lipoxygenase in human melanoma progression, under experimental and clinical conditions. Melanoma Res. 14: 245-250.
5. Pidgeon, G.P., et al. 2003. Overexpression of platelet-type 12-lipoxygenase promotes tumor cell survival by enhancing $\alpha_V\beta_3$ and $\alpha_V\beta_5$ integrin expression. Cancer Res. 63: 4258-4267.
6. Jankun, J., et al. 2008. Do human lipoxygenases have a PDZ regulatory domain? Curr. Mol. Med. 8: 768-773.
7. Zuo, X., et al. 2008. 15-Lipoxygenase-1 transcriptional silencing by DNA methyltransferase-1 independently of DNA methylation. FASEB J. 22: 1981-1992.

CHROMOSOMAL LOCATION

Genetic locus: Loxhd1 (mouse) mapping to 18 E3.

PRODUCT

LOXHD1 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 LOXHD1 shRNA Plasmid (m): sc-149017-SH and LOXHD1 shRNA (m) Lentiviral Particles: sc-149017-V as alternate gene silencing products.

For independent verification of LOXHD1 (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-149017A, sc-149017B and sc-149017C.

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

LOXHD1 siRNA (m) is recommended for the inhibition of LOXHD1 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 LOXHD1 gene expression knockdown using RT-PCR Primer: LOXHD1 (m)-PR: sc-149017-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.