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SANTA CRUZ BIOTECHNOLOGY, INC.

LOXL4 siRNA (m): sc-45227

BACKGROUND

Lysyl oxidase (LOX) proteins belong to a family of enzymes that oxidize primary amine substrated to reactive aldehydes. In fibrillar collagens and elastin, LOX catalyzes the lysine-derived cross-links of collagen fibrils and insoluble elastic fibers within the extracellular matrix. It can localize both to the nucleus and the cytoplasm. LOX is involved in tumor suppression, cell motility, cellular senescence and developmental regulation. There are four homologs of LOX, lysyl oxidase-like proteins designated LOX-like (LOXL1-LOXL4) proteins. LOXL4 is an extracellular protein that is widely expressed. Highest expression levels have been detected in testis, pancreas, cartilage and skeletal muscle.

REFERENCES

1. Ito, H., et al. 2001. Molecular cloning and biological activity of a novel LOX-related gene expressed in cartilage. J. Biol. Chem. 276: 24023-24029.
2. Asuncion, L., et al. 2001. A novel human lysyl oxidase-like gene (LOXL4) on chromosome 10q24 has an altered scavenger receptor cysteine-rich domain. Matrix Biol. 20: 487-491.
3. Maki, J.M., et al. 2001. Cloning and characterization of a fifth human LOX isoenzyme: the third member of the LOX-related subfamily with four scavenger receptor cysteine-rich domains. Matrix Biol. 20: 493-496.
4. Kirschmann, D.A., et al. 2002. A molec-ular role for LOX in breast cancer invasion. Cancer Res. 62: 4478-4483.
5. Bronson, N.W., et al. 2005. LOXL null mice demonstrate selective dentate structural changes but maintain dentate granule cell and CA1 pyramidal cell potentiation in the hippocampus. Neurosci. Lett. 390: 118-122.
6. Kim, D.J., et al. 2008. Lysyl oxidase like 4, a novel target gene of TGFβ1 signaling, can negatively regulate TGFβ1-induced cell motility in PLC/PRF/5 hepatoma cells. Biochem. Biophys. Res. Commun. 373: 521-527.
7. Weise, J.B., et al. 2008. LOXL4 is a selectively expressed candidate diagnostic antigen in head and neck cancer. Eur. J. Cancer 44: 1323-1331.

CHROMOSOMAL LOCATION

Genetic locus: Loxl4 (mouse) mapping to 19 D1.

PRODUCT

LOXL4 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 LOXL4 shRNA Plasmid (m): sc-45227-SH and LOXL4 shRNA (m) Lentiviral Particles: sc-45227-V as alternate gene silencing products.

For independent verification of LOXL4 (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-45227A, sc-45227B and sc-45227C.

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

LOXL4 siRNA (m) is recommended for the inhibition of LOXL4 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.

GENE EXPRESSION MONITORING

LOXL4 (B-6): sc-365822 is recommended as a control antibody for monitoring of LOXL4 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 LOXL4 gene expression knockdown using RT-PCR Primer: LOXL4 (m)-PR: sc-45227-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.