SANTA CRUZ BIOTECHNOLOGY, INC.

Lefty-1 siRNA (m): sc-39791

BACKGROUND

The TGFβ superfamily is composed of numerous growth and differentiation factors, including transforming growth factor (TGF) 1, 2 and 3; growth/differentiation factor (GDF) 1 through 9; Mullerian inhibiting substance (MIS); bone morphogenic protein (BMP) 2 through 8; glial cell line-derived neurotrophic factor (GDNF); inhibins α, β-A, β-B and β-C; Lefty and Nodal. Members of the TGF superfamily are involved in embryonic development and adult tissue homeostasis. Lefty-A and Lefty-B are homologues of murine Lefty-1 and Lefty-2. Lefty-1 is required for left-right axis determination as a regulator of Lefty-2 and Nodal. It is a secreted protein expressed on the left side of developing emryos. The expression of Lefty-1 is mostly in the prospective floor plate PFP) although weak expression can be seen in the lateral-plate mesoderm (LPM). It is involved in establishing left-right asymmetry of the organ systems of mammals. Lefty-A plays a role in endometrial bleeding. Mutations in this gene have been associated with left-right axis malformations, particularly in the heart and lungs. Some types of infertility have been associated with dysregulated expression of this gene in the endometrium.

REFERENCES

1. Massague, J., et al. 1987. Multiple type-β transforming growth factors and their receptors. J. Cell. Physiol. Suppl. 5: 43-47.
2. Massague, J. 1990. The transforming growth factor-β family. Annu. Rev. Cell Biol. 6: 597-641.
3. Meno, C., et al. 1996. Left-right asymmetric expression of the TGFβ-family member lefty in mouse embryos. Nature 381: 151-155.
4. Kothapalli, R., et al. 1997. Detection of ebaf, a novel human gene of the transforming growth factor β superfamily association of gene expression with endometrial bleeding. J. Clin. Invest. 99: 2342-2350.
5. McPherron, A.C., et al. 1997. Regulation of skeletal muscle mass in mice by a new TGF-β superfamily member. Nature 387: 83-90.
6. Meno, C., et al. 1998. Lefty-1 is required for left-right determination as a regulator of Lefty-2 and Nodal. Cell 94: 287-297

PRODUCT

Lefty-1 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 Lefty-1 shRNA Plasmid (m): sc-39791-SH and Lefty-1 shRNA (m) Lentiviral Particles: sc-39791-V as alternate gene silencing products.

For independent verification of Lefty-1 (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-39791A, sc-39791B and sc-39791C.

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

Lefty-1 siRNA (m) is recommended for the inhibition of Lefty-1 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 Lefty-1 gene expression knockdown using RT-PCR Primer: Lefty-1 (m)-PR: sc-39791-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.