SANTA CRUZ BIOTECHNOLOGY, INC.

LT-β siRNA (h): sc-39828

BACKGROUND

Tumor necrosis factor (TNF) and lymphotoxin-α (LT-α, also known as TNFα) are members of a family of secreted and cell surface cytokines that participate in the regulation of immune and inflammatory responses. LT-β (lymphotoxin-β or TNFC) is a type II membrane protein with significant homology to TNF, LT-α and the ligand for the CD40 receptor. LT-α is present on the surface of activated T, B and LAK cells as a complex with LT-β. LT-β, also expressed by active lymphocytes, forms a heterotrimer with LT-α on the cell surface and anchors LT-α to the cell surface. A TNF receptor-related protein, the LT-β receptor (also known as TNFC receptor), is the human receptor for the LT-α/LT-β heterotrimer. There are two LT-β isoforms expressed in human lymphoid cell lines and non-Hodgkin's lymphomas. The gene which encodes LT-β maps to the major histocompatibility complex region on human chromosome 6p21.33.

REFERENCES

1. Browning, J.L., et al. 1993. Lymphotoxin-β, a novel member of the TNF family that forms a heteromeric complex with lymphotoxin on the cell surface. Cell 72: 847-856.
2. Crowe, P.D., et al. 1994. A lymphotoxin-β-specific receptor. Science 264: 707-710.
3. Nakamura, T., et al. 1995. The murine lymphotoxin-β receptor cDNA: isolation by the signal sequence trap and chromosomal mapping. Genomics 30: 312-319.
4. Nalabolu, S.R., et al. 1996. Genes in a 220-kb region spanning the TNF cluster in human MHC. Genomics 31: 215-222.
5. Warzocha, K., et al. 1997. Identification of two lymphotoxin-β isoforms expressed in human lymphoid cell lines and non-Hodgkin's lymphomas. Biochem. Biophys. Res. Commun. 238: 273-276.
6. Junt, T., et al. 2006. Expression of lymphotoxin-β governs immunity at two distinct levels. Eur. J. Immunol. 36: 2061-2075.
7. Cui, C.Y., et al. 2006. Ectodysplasin regulates the lymphotoxin-β pathway for hair differentiation. Proc. Natl. Acad. Sci. USA 103: 9142-9147.
8. O'Rourke, K.P., et al. 2008. High levels of lymphotoxin-β (LT-β) gene expression in rheumatoid arthritis synovium: clinical and cytokine correlations. Rheumatol. Int. 28: 979-986.

CHROMOSOMAL LOCATION

Genetic locus: LTB (human) mapping to 6p21.33.

PRODUCT

LT-β 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 LT-β shRNA Plasmid (h): sc-39828-SH and LT-β shRNA (h) Lentiviral Particles: sc-39828-V as alternate gene silencing products.

For independent verification of LT-β (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-39828A, sc-39828B and sc-39828C.

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

LT-β siRNA (h) is recommended for the inhibition of LT-β 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.

GENE EXPRESSION MONITORING

LT-β (399CT9.3.4): sc-517341 is recommended as a control antibody for monitoring of LT-β 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).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor LT-β gene expression knockdown using RT-PCR Primer: LT-β (h)-PR: sc-39828-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.