SANTA CRUZ BIOTECHNOLOGY, INC.

Cardiotrophin-2 siRNA (m): sc-61188

BACKGROUND

Cardiotrophin-1 and -2 possess anti-inflammatory properties and send signals through gp130 receptor complexes. Cardiotrophin-1 displays trophic effects on cardiac myocytes and on a subset of neurons. The presence of the leukemia inhibitory factor (LIF) receptor, as a component of the gp130 receptor complex, is required for signal transduction of Cardiotrophin-1 in motor neurons. Cardiotrophin-2 (CT-2), also designated neuropoietin (NP), is crucial for neuronal precursor development and maturation and has been found to increase platelet counts associated with splenomegaly. Cardiotrophin-2 is a secreted protein expressed solely in embryonic samples. Studies indicate that NP may sustain the *in vitro* survival of embryonic motor neurons and may increase the proliferation of neural precursors when associated to epidermal growth factor and fibroblast growth factor 2.

REFERENCES

1. Cognet, I., et al. 2004. Expression of biologically active mouse ciliary neurotrophic factor (CNTF) and soluble CNTFRα in *Escherichia coli* and characterization of their functional specificities. Eur. Cytokine Netw. 15: 255-262.
2. Derouet, D., et al. 2004. Neuropoietin, a new IL-6-related cytokine signaling through the ciliary neurotrophic factor receptor. Proc. Natl. Acad. Sci. USA 101: 4827-4832.
3. Vlotides, G., et al. 2004. Novel neurotrophin-1/B cell-stimulating factor-3 (NNT-1/BSF-3)/cardiotrophin-like cytokine (CLC)—a novel gp130 cytokine with pleiotropic functions. Cytokine Growth Factor Rev. 15: 325-336.
4. Schroers, A., et al. 2005. Dynamics of the gp130 cytokine complex: a model for assembly on the cellular membrane. Protein Sci. 14: 783-790.
5. Ohno, M., et al. 2006. Neuropoietin induces neuroepithelial cells to differentiate into astrocytes via activation of Stat3. Cytokine 36: 17-22

CHROMOSOMAL LOCATION

Genetic locus: Ctf2 (mouse) mapping to 7 F3.

PRODUCT

Cardiotrophin-2 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 Cardiotrophin-2 shRNA Plasmid (m): sc-61188-SH and Cardiotrophin-2 shRNA (m) Lentiviral Particles: sc-61188-V as alternate gene silencing products.

For independent verification of Cardiotrophin-2 (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-61188A, sc-61188B and sc-61188C.

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

Cardiotrophin-2 siRNA (m) is recommended for the inhibition of Cardiotrophin-2 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 Cardiotrophin-2 gene expression knockdown using RT-PCR Primer: Cardiotrophin-2 (m)-PR: sc-61188-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.