SANTA CRUZ BIOTECHNOLOGY, INC.

SCF siRNA (m): sc-39735

BACKGROUND

Stem cell factor (SCF) is the ligand for the transmembrane tyrosine kinase receptor proto-oncogene c-Kit. SCF, also designated KL, MGF and SLF, is a pleiotropic cytokine that has two alternatively spliced forms, 248 and 220 amino acids in length in human and mouse systems, respectively. Both the larger form and the smaller form are cleaved to produce soluble forms. The smaller splice variant lacks the proteolytic cleavage site, between amino acids 149 and 177 of the larger SCF form. The larger form of SCF is expressed in fibroblasts, brain and thymus, while the smaller form is found in spleen, testis, placenta and cerebellum. The SCF ligand is essential for the development of germ cells, hematopoietic progenitor cells and melanocyte precursors. SCF can stimulate the proliferation of mature mast cells as well as the maturation and proliferation of immature mast cells.

REFERENCES

1. Copeland, N.G., et al. 1990. Mast cell growth factor maps near the steel locus on mouse chromosome 10 and is deleted in a number of steel alleles. Cell 63: 175-183.
2. Martin, F.H., et al. 1990. Primary structure and functional expression of rat and human stem cell factor DNAs. Cell 63: 203-211.
3. Huang, E.J., et al. 1992. Differential expression and processing of two cell associated forms of the kit-ligand: KL-1 and KL-2. Mol. Biol. Cell 3: 349-362.
4. Pandiella, A., et al. 1992. Cleavage of membrane-anchored growth factors involves distinct protease activities regulated through common mechanisms. J. Biol. Chem. 267: 24028-24033.
5. Toksoz, D., et al. 1992. Support of human hematopoiesis in long-term bone marrow cultures by murine stromal cells selectively expressing the membrane-bound and secreted forms of the human homolog of the steel gene product, stem cell factor. Proc. Natl. Acad. Sci. USA 89: 7350-7354.
6. Agis, H., et al. 1993. Monocytes do not make mast cells when cultured in the presence of SCF. Characterization of the circulating mast cell progenitor as a c-Kit^{+}, CD34^{+}, Ly^{-}, CD14^{-}, CD17^{-}, colony-forming cell. J. Immunol. 151: 4221-4227.

CHROMOSOMAL LOCATION

Genetic locus: Kitl (mouse) mapping to 10 D1.

PRODUCT

SCF siRNA (m) is a target-specific 19-25 nt siRNA 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 SCF shRNA Plasmid (m): sc-39735-SH and SCF shRNA (m) Lentiviral Particles: sc-39735-V as alternate gene silencing products.

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

SCF siRNA (m) is recommended for the inhibition of SCF 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

SCF (G-3): sc-13126 is recommended as a control antibody for monitoring of SCF 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 SCF gene expression knockdown using RT-PCR Primer: SCF (m)-PR: sc-39735-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Barroeta Seijas, A.B., et al. 2017. GM-CSF inhibits c-Kit and SCF expression by bone marrow-derived dendritic cells. Front. Immunol. 8: 147.

RESEARCH USE

For research use only, not for use in diagnostic procedures.