SANTA CRUZ BIOTECHNOLOGY, INC.

IL-9 siRNA (h): sc-39632

BACKGROUND

Interleukin-9, or IL-9, is a TH2 cytokine that has been shown to promote the antigen-independent growth of some T helper clones. IL-9 is a pleiotropic cytokine with multiple functions on cells of lymphoid, myeloid and mast cell lineages. Both mouse and human cDNAs encode 144 amino acid precursors with 18 amino acid residue signal peptides that are cleaved to form the mature biologically active glycoprotein. Although IL-9 is constitutively expressed *in vitro* by several transformed T cell lines, IL-9 expression can be induced in human peripheral blood T lymphocytes by T cell activators such as phorbol esters (PHA) and anti-CD3 antibodies. IL-9 exerts its biological effects through the interleukin-9 receptor, IL-9R. IL-9R is composed of at least two subunits: the IL-2 receptor γ chain, which is common to the IL-2, IL-4, IL-7 and IL-15 receptors, and one specific to the IL-9 receptor.

REFERENCES

1. Van Snick, J., et al. 1989. Cloning and characterization of a cDNA for a new mouse T cell growth factor (P40). J. Exp. Med. 169: 363-368.
2. Renauld, J.C., et al. 1990. Cloning and expression of a cDNA for the human homolog of mouse T cell and mast cell growth factor P40. Cytokine 2: 9-12.
3. Gessner, A., et al. 1993. Differential regulation of IL-9-expression after infection with Leishmania major in susceptible and resistant mice. Immunobiology 189: 419-435.
4. Houssiau, F.A., et al. 1995. A cascade of cytokines is responsible for IL-9 expression in human T cells. Involvement of IL-2, IL-4 and IL-10. J. Immunol. 154: 2624-2630.
5. Louahed, J., et al. 1995. IL-9 induces expression of granzymes and high-affinity IgE receptor in murine T helper clones. J. Immunol. 154: 5061-5070.
6. Kimura, Y., et al. 1995. Sharing of the IL-2 receptor γ chain with the functional IL-9 receptor complex. Int. Immunol. 7: 115-120.
7. Tsicopoulos, A., et al. 2004. Involvement of IL-9 in the bronchial phenotype of patients with nasal polyposis. J. Allergy Clin. Immunol. 113: 462-469.
8. Nagato, T., et al. 2005. Expression of interleukin-9 in nasal natural killer/T-cell lymphoma cell lines and patients. Clin. Cancer Res. 11: 8250-8257.

CHROMOSOMAL LOCATION

Genetic locus: IL9 (human) mapping to 5q31.1.

PRODUCT

IL-9 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 IL-9 shRNA Plasmid (h): sc-39632-SH and IL-9 shRNA (h) Lentiviral Particles: sc-39632-V as alternate gene silencing products.

For independent verification of IL-9 (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-39632A, sc-39632B and sc-39632C.

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

IL-9 siRNA (h) is recommended for the inhibition of IL-9 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

IL-9 (H-7): sc-46654 is recommended as a control antibody for monitoring of IL-9 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 IL-9 gene expression knockdown using RT-PCR Primer: IL-9 (h)-PR: sc-39632-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.