

IL-9 (mBA-127): sc-4888

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 14 kDa 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., Goethals, A., Renauld, J.C., van Roost, E., Uyttenhove, C., Rubira, M.R., Moritz, R.L., and Simpson, R.J. 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., Goethals, A., Houssiau, F., van Roost, E., and van Snick, J. 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., Blum, H., and Rollinghoff, M. 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., Schandene, L., Stevens, M., Cambiaso, C., Goldman, M., van Snick, J., and Renauld, J.C. 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., Kermouni, A., van Snick, J., and Renauld, J.C. 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., Takeshita, T., Kondo, M., Ishii, N., Nakamura, M., van Snick, J., and Sugamura, K. 1995. Sharing of the IL-2 receptor gamma chain with the functional IL-9 receptor complex. *Int. Immunol.* 7: 115-120.

SOURCE

IL-9 (mBA-127) is produced in *E. coli* as 14.3 kDa biologically active protein corresponding to 127 amino acids of IL-9 of mouse origin.

PRODUCT

IL-9 (mBA-127) is purified from bacterial lysates (>98%); supplied as 10 μ g purified protein.

BIOLOGICAL ACTIVITY

IL-9 (mBA-127) is biologically active as determined by the dose-dependent proliferation of TS1.C3 cell line is < 0.1 ng/ml.

Specific Activity: > 1 x 10⁷ units/mg.

RECONSTITUTION

In order to avoid freeze/thaw damaging of the active protein, dilute protein when first used to desired working concentration. Either a sterile filtered standard buffer (such as 50mM TRIS or 1X PBS) or water can be used for the dilution. Store any thawed aliquot in refrigeration at 2° C to 8° C for up to four weeks, and any frozen aliquot at -20° C to -80° C for up to one year. It is recommended that frozen aliquots be given an amount of standard cryopreservative (such as Ethylene Glycol or Glycerol 5-20% v/v), and refrigerated samples be given an amount of carrier protein (such as heat inactivated FBS or BSA to 0.1% v/v) or non-ionic detergent (such as Triton X-100 or Tween 20 to 0.005% v/v), to aid stability during storage.

STORAGE

Store desiccated at -20° C; stable for one year from the date of shipment.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.