

DESCRIPTION

Source *Spodoptera frugiperda*, Sf 21 (baculovirus)-derived
Gln19-Ile144
Accession # P15248

N-terminal Sequence Analysis No results obtained; Gln19 predicted

Predicted Molecular Mass 14.1 kDa

SPECIFICATIONS

SDS-PAGE Multiple bands between 16-25 kDa, reducing conditions

Activity Measured in a cell proliferation assay using M07e human megakaryocytic leukemic cells. Avanzi, G. *et al.* (1988) *Br. J. Haematol.* **69**:359. The ED₅₀ for this effect is typically 0.1–0.6 ng/mL.

Endotoxin Level <1.0 EU per 1 µg of the protein by the LAL method.

Purity >97%, by SDS-PAGE under reducing conditions and visualized by silver stain.

Formulation Lyophilized from a 0.2 µm filtered solution in PBS with BSA as a carrier protein. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution Reconstitute at 100 µg/mL in sterile PBS containing at least 0.1% human or bovine serum albumin.

Shipping The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.

Stability & Storage **Use a manual defrost freezer and avoid repeated freeze-thaw cycles.**

- 12 months from date of receipt, -20 to -70 °C as supplied.
- 1 month, 2 to 8 °C under sterile conditions after reconstitution.
- 3 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

Human IL-9 was originally identified as a cytokine found in the conditioned medium of a human T cell leukemia virus type I (HTLV-I) transformed T cell line that is mitogenic for the factor-dependent human megakaryoblastic leukemic cell line, M07e. The cDNA encoding this cytokine was subsequently isolated by functional expression cloning and found to be similar to the mouse T cell growth factor III/P40. This human cytokine and its murine homologue are now designated as human and mouse IL-9. Besides HTLV-I or -II transformed T cell lines, recombinant human (rh) IL-9 is also produced by activated human PBLs. Human IL-9 was also reported to be expressed by primary and cultured Hodgkin and Reed-Sternberg (H-RS) cells derived from Hodgkin's disease patients, suggesting a possible role for rhIL-9 in the development of the pathophysiology of Hodgkin's disease.

Human and murine IL-9 are also capable of enhancing *in vitro* survival of human T cell lines as well as synergizing with Epo to support erythroid colony formation *in vitro*. However, the mast cell enhancing activity associated with recombinant mouse IL-9 has not yet been demonstrated in the human system and no human IL-9-dependent T cell clones have been identified.

The gene for rhIL-9 has been mapped to human chromosome 5. As in the mouse system, the human IL-9 cDNA encodes a 144 amino acid residue precursor protein with an 18 amino acid signal peptide that is cleaved to form the mature cysteine-rich protein with a predicted molecular mass of 14 kDa. Human IL-9 contains four potential N-linked glycosylation sites and the native rhIL-9 is a highly glycosylated protein. Human and mouse IL-9 share 56% and 67% homology at the amino acid and nucleotide levels, respectively. Although murine IL-9 is active on human cells, human IL-9 is not active on mouse cells.