

DESCRIPTION

Source *E. coli*-derived
Gln119-Ser270, with an N-terminal Met
Accession # P18430

N-terminal Sequence Analysis Met

Predicted Molecular Mass 17.5 kDa

SPECIFICATIONS

Activity Measured in a cell proliferation assay using D10.G4.1 mouse helper T cells. Symons, J.A. *et al.* (1987) in *Lymphokines and Interferons*, a Practical Approach. Clemens, M.J. *et al.* (eds): IRL Press. 272.
The ED₅₀ for this effect is 10-60 pg/mL.

Endotoxin Level <0.10 EU per 1 μ g 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 μ m filtered solution in PBS and DTT with BSA as a carrier protein. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution Reconstitute at 100 μ g/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

Interleukin 1 (IL-1) is a name that designates two proteins, IL-1 α and IL-1 β , that are the products of distinct genes, but show approximately 25% amino acid sequence identity and recognize the same cell surface receptors. Although IL-1 production is generally considered to be a consequence of inflammation, evidence suggests that IL-1 is also temporarily upregulated during bone formation and the menstrual cycle and can be induced in response to nervous system stimulation. In response to stimuli produced by inflammatory agents, infections, or microbial endotoxins, a dramatic increase in the production of IL-1 by macrophages and various other cells is seen. Cells in particular known to produce IL-1 include osteoblasts, monocytes, macrophages, keratinocytes, Kupffer cells, hepatocytes, thymic and salivary gland epithelium, Schwann cells, fibroblasts and glia (oligodendroglia, astrocytes and microglia).

IL-1 α and IL-1 β are both synthesized as 31 kDa precursors that are subsequently cleaved into proteins with molecular weights of approximately 17,000. Neither precursor contains a typical hydrophobic signal peptide sequence and most of the precursor form of IL-1 α remains in the cytosol of cells, although there is evidence for a membrane-bound form of the precursor form of IL-1 α . The IL-1 α precursor reportedly shows full biological activity in the EL-4 assay. Among various species, the amino acid sequence of mature IL-1 α is conserved 60% to 70% and porcine IL-1 has been found to be biologically active on murine cell lines. Both forms of IL-1 bind to the same receptors, designated as type I and type II. Evidence suggests that only the type I receptor is capable of signal transduction and that the type II receptor may function as a decoy, binding IL-1 and thus preventing the binding of IL-1 to the type I receptor.

References:

1. Dower, S.K. and J.E. Sims, in *Guidebook to Cytokines and their receptors* (1994) N.A. Nicole ed. Oxford University Press NY p. 17.