

Human Interleukin 1 alfa (IL-1 α)

CATALOG NUMBER: IL-1A-010P, 10 μ g

Introduction

Interleukin 1 (IL1) is a name that designates two proteins, IL1 α and IL1 β , which are the products of distinct genes, but which show approximately 25% amino acid sequence identity and which recognize the same cell surface receptors. Although IL 1 production is generally considered to be a consequence of inflammation, recent evidence suggests that IL1 is also temporarily upregulated during bone formation and the menstrual cycle and can be induced in response to nervous system stimulation. In response to classic stimuli produced by inflammatory agents, infections or microbial endotoxins, a dramatic increase in the production of IL1 by macrophages and various other cells is seen. Cells in particular known to produce IL1 include osteoblasts, monocytes, macrophages, keratinocytes, Kupffer cells, hepatocytes, thymic and salivary gland epithelium, Schwann cells, fibroblasts and glia (oligodendroglia, astrocytes and microglia). IL1 α and IL1 β are both synthesized as 31 kDa precursors that are subsequently cleaved into proteins with molecular weights of approximately 18,000 Da. 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 IL1 α . The IL1 α precursor reportedly shows full biological activity in the EL 4 assay. Among various species, the amino acid sequence of mature IL1 α is conserved 60% to 70% and human IL1 has been found to be biologically active on murine cell lines. Both forms of IL1 bind to the same receptors, designated 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 IL1 and thus preventing binding of IL1 to the type I receptor.

Description

Recombinant human IL-1 α produced in *E.coli* is a single, non-glycosylated polypeptide and having a predicted molecular mass of approximately 18 kDa.

Source

E. coli.

Purity

\geq 97% purity (by SDS PAGE and HPLC)

Endotoxin Level

\leq 1 EU/mg, determined by the LAL method

Biological Activity

Measured in a cell proliferation assay using D10.G4.1 cell line; the specific activity shall be not less than 1.6×10^8 IU/mg

Formulation

Sterile lyophilized powder, in PBS containing 0.1% HAS, pH7.4

Reconstitute with double distilled water at a concentration of no less than 10 μ g/ml with 0.1% human serum albumin (A highly purified plant-derived human serum albumin is strongly suggested to be used, Cat# HAS-1r) or bovine serum albumin as a stock.

Storage

Stable for 6-months from the date of shipment when kept at -20 $^{\circ}$ C or -70 $^{\circ}$ C. Upon reconstitution, it can be stored at 4 $^{\circ}$ C for at least one month or -20 $^{\circ}$ C for at least three months. Avoid repeated freeze-thaw cycles.

Usage

This product is produced for LABORATORY RESEARCH USE ONLY.