

Human Interleukin 3 (IL-3)

CATALOG NUMBER: IL-03-010P, 10 µg

Introduction

Interleukin 3 is a pleiotropic factor produced primarily by activated T cells that can stimulate the proliferation and differentiation of pluripotent hematopoietic stem cells as well as various lineage committed progenitors. In addition, IL-3 also affects the functional activity of mature mast cells, basophils, eosinophils and macrophages. Because of its multiple functions and targets, it was originally studied under different names, including mast cell growth factor P-cell stimulating factor, burst promoting activity, multi-colony stimulating factor, thy-1 inducing factor and WEHI-3 growth factor. In addition to activated T cells, other cell types such as human thymic epithelial cells, activated mouse mast cells, mouse keratinocytes and neurons/astrocytes can also produce IL-3. At the amino acid sequence level, mature human and mouse IL-3 share only 29% sequence identity. Consistent with this lack of homology, IL-3 activity is highly species-specific and human IL-3 does not show activity on mouse cells. IL-3 exerts its biological activities through binding to specific cell surface receptors. The high affinity receptor responsible for IL-3 signaling is composed of alpha and beta subunits. The IL-3 R alpha is a member of the cytokine receptor super family and binds IL-3 with low affinity. Two distinct beta subunits, AIC2A (beta) and AIC2B (beta_c) are present in mouse cells. Beta_{IL-3} also binds IL-3 with low affinity and forms a high affinity receptor with the alpha subunit. The beta_c subunit does not bind any cytokine but forms functional high affinity receptors with the alpha subunit of the IL-3, IL-5 and GM-CSF receptors. Receptors for IL-3 are present on bone marrow progenitors, macrophages, mast cells, eosinophils, megakaryocytes, basophils and various myeloid leukemic cells.

Description

Recombinant human IL-3 produced in Yeast is a glycosylated 15-25 kDa protein

Source

Yeast

Purity

≥ 97% purity (by SDS PAGE and HPLC)

Endotoxin Level

≤1 EU/mg, determined by the LAL method

Biological Activity

Measured in a cell proliferation assay using TF-1 cells. The specific activity shall be not less than 3x10⁷IU/mg.

Formulation

Lyophilized from a 0.2µm filtered solution in PBS. pH7.4

Reconstitute with double distilled water at a concentration of no less than 100 µg/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 °C or -70 °C. Upon reconstitution, it can be stored at 4 °C for at least one month or -20 °C for at least three months. Avoid repeated freeze-thaw cycles.

Usage

This product is produced for LABORATORY RESEARCH USE ONLY.