Recombinant Rhesus Macaque IL-4

Catalog Number: 1577-IL

DESCRIPTION

Source	*E. coli*-derived His25-Ser153, with an N-terminal Met Accession # P51492
N-terminal Sequence Analysis	Met
Predicted Molecular Mass	15.1 kDa

SPECIFICATIONS

Activity	Measured in a cell proliferation assay using TF-1 human erythroleukemic cells. Kitamura, T. *et al.* (1989) J. Cell Physiol. **140**:323. The ED_{50} for this effect is typically 0.25-1 ng/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>95%, 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 10 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

Interleukin-4 (IL-4), also known as B cell-stimulatory factor-1, is a monomeric, approximately 13 kDa - 18 kDa Th2 cytokine that shows pleiotropic effects during immune responses (1 - 3). It is a glycosylated polypeptide that contains three intrachain disulfide bridges and adopts a bundled four α-helix structure (4). Rhesus IL-4 is synthesized with a 24 amino acid (aa) signal sequence. Mature rhesus IL-4 shares 97%, 93%, and 93% aa sequence identity with baboon, chimpanzee, and human IL-4, respectively, and 39% - 50% aa sequence identity with bovine, mouse, and rat IL-4. IL-4 exerts its effects through two receptor complexes (5, 6). The type I receptor, which is expressed on hematopoietic cells, is a heterodimer of the ligand binding IL-4 Rα and the common γ chain (a shared subunit of the receptors for IL-2, -7, -9, -15, and -21). The type II receptor on nonhematopoietic cells consists of IL-4 Rα and IL-13 Rα1. The type II receptor also transduces IL-13 mediated signals. IL-4 is primarily expressed by Th2-biased $CD4^+$ T cells, mast cells, basophils, and eosinophils (1, 2). It promotes cell proliferation, survival, and immunoglobulin class switch to IgE in B cells, acquisition of the Th2 phenotype by naïve $CD4^+$ T cells, priming and chemotaxis of mast cells, eosinophils, and basophils, and the proliferation and activation of epithelial cells (7 - 10). IL-4 plays a dominant role in the development of allergic inflammation and asthma (9, 11).

References:

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