**DESCRIPTION**

**Source**
E. coli-derived mouse IL-4 protein
His23-Ser140, with an N-terminal Met
Accession # P07750

**N-terminal Sequence Analysis**
His23

**Predicted Molecular Mass**
14 kDa

**SPECIFICATIONS**

**Activity**
Measured in a cell proliferation assay using HT-2 mouse T cells. The ED$_{50}$ for this effect is 0.3-1.5 ng/mL.

**Endotoxin Level**
<0.10 EU per 1 μg of the protein by the LAL method.

**Purity**
>97%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.

**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 ºC as supplied.
- 1 month, 2 to 8 ºC under sterile conditions after reconstitution.
- 3 months, -20 to -70 ºC under sterile conditions after reconstitution.

**DATA**

**Bioactivity**
Recombinant Mouse IL-4 Protein Bioactivity
Recombinant Mouse IL-4 (Catalog # 404-ML) stimulates cell proliferation of the HT-2 mouse T cell line. The ED$_{50}$ for this effect is 0.3-1.5 ng/mL.

**SDS-PAGE**
Recombinant Mouse IL-4 Protein SDS-PAGE
1 μg/lane of Recombinant Mouse IL-4 was resolved with SDS-PAGE under reducing (R) conditions and visualized by silver staining, showing a single band at 12 kDa.
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 (1-4). It is a glycosylated polypeptide that contains three intrachain disulfide bridges and adopts a bundled four α-helix structure (5). Mouse IL-4 is synthesized with a 24 aa signal sequence. Mature mouse IL-4 shares 39%, 39%, and 59% aa sequence identity with bovine, human, and rat IL-4, respectively. Human, mouse, and rat IL-4 are species-specific in their activities (6-8). IL-4 exerts its effects through two receptor complexes (9, 10). 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 IgG1 and IgE in mouse 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 (11 - 14). IL-4 plays a dominant role in the development of allergic inflammation and asthma (13, 15).

References: