

## IL-4 Protein, Human, Recombinant (His)

### General Information

Synonyms:	Pitrakinra; Binetrakin; B-Cell Stimulatory Factor 1; IL4; Interleukin-4; IL-4; BSF-1; Lymphocyte Stimulatory Factor 1
Protein Construction:	His25-Ser153
Species:	Human
Expression Host:	HEK293 Cells
Accession:	P05112
Molecular Weight:	18 KDa (reducing condition)
AA Sequence:	His25-Ser153

### QC Testing

Biological Activity:	1. Loaded Cynomolgus IL-4RA-Fc on Protein A Biosensor, can bind Human IL-4-His with an affinity constant of 0.33 nM as determined in BLI assay. (Regularly tested). 2. Measured in a cell proliferation assay using TF-1 human erythroleukemic cells. The ED50 for this effect is 0.05-0.5 ng/ml. (QC verified);
Purity:	Greater than 95% as determined by reducing SDS-PAGE. Greater than 95% as determined by SEC-HPLC.
Endotoxin:	< 0.1 ng/μg (1 EU/μg) as determined by LAL test.
Formulation:	Lyophilized from a solution filtered through a 0.22 μm filter, containing PBS, pH 7.4.

### Preparation and Storage

#### Reconstitution:

Reconstitute the lyophilized protein in distilled water. The product concentration should not be less than 100 μg/ml. Before opening, centrifuge the tube to collect powder at the bottom. After adding the reconstitution buffer, avoid vortexing or pipetting for mixing.

#### Stability & Storage:

Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

#### Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

### Protein Background

Interleukin-4 (IL-4) is a pleiotropic cytokine that regulates diverse T and B cell responses including cell proliferation, survival and gene expression. IL-4 is produced by mast cells, T cells, and bone marrow stromal cells.

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IL-4 regulates the differentiation of naive CD4+ T cells into helper Th2 cells, characterized by their cytokine-secretion profile that includes secretion of IL-4, IL-5, IL-6, IL-10, and IL-13, which favor a humoral immune response. Another dominant function of IL-4 is the regulation of immunoglobulin class switching to the IgG1 and IgE isotypes. Excessive IL-4 production by Th2 cells has been associated with elevated IgE production and allergic response.

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