

Human Recombinant Interleukin-4

Cell Culture Tested

Product Code: CF047

Product Description:

Source: *E.coli*

Molecular Weight: ~15 kDa

Synonyms: IL-4, BCGF, BCDF, B cell stimulating factor (BSF-1)

Interleukin-4 (IL-4) is a pleiotropic cytokine produced by T cells, activated basophils, eosinophils, mast cells, and bone marrow stromal cells. IL-4 binds to a heterodimeric receptor and activates JAK /STAT signalling pathways and thus regulates cell proliferation, survival and gene expression. IL-4 regulates the differentiation of naive CD4⁺ T cells into helper Th2 cells to produce various other cytokines including IL-4, IL-5, IL-6, IL-10, and IL-13 and aids humoral immunity. It also promotes class switching of immunoglobulin in B cells to IgE, and IgG1 isotypes. Excessive IL-4 production by Th2 cells has been associated with elevated IgE production and allergy. Human IL-4 does not cross-react with mouse cells. Native human Interleukin-4 is generated by the proteolytic removal of the signal peptide and propeptide. Recombinant Interleukin-4 is a monomeric protein with ~15 kDa mol wt and is consist of 130 amino acid residue subunits.

CF047 is Human Recombinant Interleukin-3 expressed in *E. coli*, filtered through 0.2 micron filter and lyophilized from n. 5% Glycine, 0.5% Sucrose, 0.01% Tween80, mM Glutamic acid, pH.5.

Directions:

1. Centrifuge the vial prior to opening.
Note: Protein pellet may not be visible in the vial because protein is lyophilized without any carrier protein. As a result, small amount protein may get deposited on the inner walls of the vial during lyophilization in form of a thin and invisible film. aentrifugation causes deposition of any protein sticking to the cap or sides to settle at the vial bottom.
2. Surface sterilize using 70% isopropyl alcohol and take it into laminar air flow cabinet.
3. Aseptically reconstitute the lyophilized powder in sterile cell culture grade water to NLT 0.1 mg/ml concentration.
Note: Do not vortex.
4. Upon reconstitution, it can be stored in a buffer containing a carrier protein and store in working aliquots. Refers the Storage and Shelf Life section for details. Avoid repeated freeze-thaw cycles.

Quality Control:

Appearance

Lyophilized powder

Solubility

Soluble in cell culture grade water to NMT 1.0 mg/ml

Purity (by SDS-PAGE and HPLC analysis)

NLT 98%

Endotoxin Content

NMT 1EU/μg

Biological Activity (Determined by dose-dependent proliferation of Human TF-1 cells)

ED50: NMT 0.2 ng/ ml.

Specific activity: NLT 5x10⁶ units/mg

Storage and Shelf Life:

Shelf life of Human Recombinant Interleukin-4 depends on the storage temperature and the form in which it is stored. Refer the table given below for recommended storage time of different forms of Human Recombinant Interleukin-4 at different storage temperatures.

Product form	Temperature	Storage time
Lyophilized	-30 to -10°C	2 years
Reconstituted (with carrier protein)	2°C to 8°C	1 months
	-30 to -10°C	6 months

Once reconstituted, aliquot the solution into the smaller volumes and freeze for future use. Repeated freezing and thawing of the reconstituted frozen solution should be avoided as it causes denaturation of protein to some extent.

Disclaimer:

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