

Protein	Interleukin-4 (IL-4), Human
Synonyms	IL-4, B cell growth factor-1 (BCGF-1), B cell stimulatory factor-1 (BSF-1), B cell differentiation factor (BCDF), T cell growth factor-2 (TCGF-2), Mast-cell growth factor-2 (MCGF-2)
Species	Human
Purity	> 95% as analyzed by SDS-PAGE and HPLC.
Endotoxin Level	<0.2 EU/μg, determined by LAL method.
Biological Activity	ED ₅₀ < 0.25 ng/ml, measured in a cell proliferation assay using TF-1 human erythroleukemic cells, corresponding to a specific activity of >4 x 10 ⁶ units/mg
Source	CHO
Amino Acid Sequence	HKCDITLQEI IKTLSLSTEQ KTLCTELTVT DIFAASKNTT EKETFCRAAT VLRQFYSHHE KDTRCLGATA QQFHRHKQLI RFLKRLDRNL WGLAGLNSCP VKEANQSTLE NFLERLKTIM REKYSKCSS
Molecular Weight	15 kDa, observed by non-reducing SDS-PAGE.
Description	<p>Interleukin-4 (IL-4) is a pleiotropic cytokine regulates diverse T and B cell responses including cell proliferation, survival, and gene expression. It has important effects on the growth and differentiation of different immunologically competent cells. Interleukin-4 is produced by mast cells, T cells, and bone marrow stromal cells^[1]. IL-4 regulates the differentiation of native CD4⁺ T cells (Th0 cells) into helper Th2 cells, and regulates the immunoglobulin class switching to the IgG1 and IgE isotypes. IL-4 has numerous important biological functions including stimulating B-cells activation, T-cell proliferation and CD4⁺ T-cells differentiation to Th2 cells. It is a key regulator in hormone control and adaptive immunity^[2]. IL-4 also plays a major role in inflammation response and wound repair via activation of macrophage into M2 cells^[3]. IL-4 is stabilized by three disulphide bonds forming a compact globular protein structure^[4]. Four alpha-helix bundle with left-handed twist is dominated half of the protein structure with 2 overhand connections and fall into a 2-stranded anti-parallel beta sheet^[5].</p> <p>Recombinant human IL-4 (rhIL-4) is a 129 amino acid protein expressed in mammalian CHO system. The approximate molecular weight is 15 kDa analyzed by non-reducing SDS-PAGE.</p>
Formulation	Lyophilized after extensive dialysis against PBS.
Reconstitution	Reconstituted in ddH ₂ O or PBS at 100 μg/ml.
Storage	Lyophilized recombinant human Interleukin 4 (IL-4) remains stable up to 6 months at -80°C from date of receipt. Upon reconstitution, rhIL-4 should be stable up to 1 week at 4°C or up to 2 months at -20°C.
Citation	Nguyen TH, et al Immune modulation for treatment of allergic disease. <i>Immunol Rev.</i> 2011;242:258–271.

Figures

