

## Overview

<b>Synonyms</b>	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)
<b>Description</b>	<p><b>Interleukin-4 (IL-4)</b> 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. 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<sup>[2]</sup>. IL-4 also plays a major role in inflammation response and wound repair via activation of macrophage into M2 cells. IL-4 is stabilized by three disulphide bonds forming a compact globular protein structure. 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.</p> <p><b>Recombinant human IL-4 (rhIL-4)</b> 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>
<b>Species Source</b>	Human CHO
<b>Biological Activity</b>	ED <sub>50</sub> < 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 <sup>6</sup> units/mg
<b>Sequence</b>	<p>HKCDITLQEI IKTLNSLTEQ KTLCTELTIVT DIFAASKNTT            EKETFCAAT VLRQFYSHHE KDTRCLGATA QQFHRHKQLI            RFLKRLDRNL WGLAGLNSCP VKEANQSTLE NFLERLKTIM            REKYSKCSS</p>

## Properties

<b>Measured Molecular Weight</b>	15 kDa, observed by non-reducing SDS-PAGE.
<b>Purity</b>	> 95% as analyzed by SDS-PAGE and HPLC.
<b>Formulation</b>	Lyophilized after extensive dialysis against PBS.
<b>Reconstitution</b>	Reconstituted in ddH <sub>2</sub> O or PBS at 100 µg/ml.
<b>Endotoxin Level</b>	<0.2 EU/µg, determined by LAL method.
<b>Storage</b>	Lyophilized recombinant human Interleukin 4 (IL-4) remains stable up to 6 months at lower than -70°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.

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