

## **Recombinant Human Interleukin 4**

**Catalog Number:** SJB02  
**Strength:** 10µg, 30µg, 100µg

### **Specifications and Use**

<b>Source</b>	<ul style="list-style-type: none"><li>● Yeast.</li></ul>
<b>Molecular Mass</b>	<ul style="list-style-type: none"><li>● Approximately 30.0kD glycosylated protein.</li></ul>
<b>Purity</b>	<ul style="list-style-type: none"><li>● ≥97%.</li></ul>
<b>Endotoxin Level</b>	<ul style="list-style-type: none"><li>● &lt;1EU/µg, determined by the LAL method.</li></ul>
<b>Biological Activity</b>	<ul style="list-style-type: none"><li>● Measured in a cell proliferation assay using a human factor-dependent cell line, TF-1. The specific activity shall be not less than 1×10<sup>7</sup>IU/mg.</li></ul>
<b>Formulation</b>	<ul style="list-style-type: none"><li>● Sterile lyophilized powder, in PBS, pH7.4.</li></ul>
<b>Reconstitution</b>	<ul style="list-style-type: none"><li>● It is recommended to reconstitute the lyophilized rHuIL-4 in 0.2ml sterile water.</li></ul>
<b>Storage</b>	<ul style="list-style-type: none"><li>● Lyophilized samples are stable for 36 months from date of manufacture at -20°C to -70°C.</li><li>● Upon reconstitution, this cytokine can be stored under sterile conditions at 2- 8°C for one month or at -20°C to -70°C <b>in a manual defrost freezer</b> for three months without detectable loss of activity.</li><li>● <b>Avoid repeated freeze-thaw cycles.</b></li></ul>

Interleukin4 (IL-4), also known as B cell-stimulatory factor-1, is a cytokine that shows pleiotropic effects during immune responses. It is a glycosylated polypeptide that contains three intrachain disulfide bridges and adopts a bundled four  $\alpha$  helix structure. Human IL-4 is synthesized with a 24 aa signal sequence. Alternate splicing generates an isoform with a 16 aa internal deletion. Mature human IL-4 shares 55%, 39% and 43% aa sequence identity with bovine, mouse, and rat IL-4, respectively. Human, mouse, and rat IL-4 are species specific in their activities. IL-4 exerts its effects through two receptor complexes. The type I receptor, which is expressed on hematopoietic cells, is a heterodimer of the ligand binding IL-4 R $\alpha$  and the common  $\gamma$  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 R $\alpha$  and IL13 R $\alpha$ 1. 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. It promotes cell proliferation, survival, and immunoglobulin class switch to IgG4 and IgE in human 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. IL-4 plays a dominant role in the development of allergic inflammation and asthma.

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