

**DESCRIPTION**

<b>Source</b>	Human embryonic kidney cell, HEK293-derived		
	Human IL-4 R $\alpha$ (Gly24-His232) Accession # P24394	IEGRMD	Human IgG <sub>1</sub> (Pro100-Lys330)
	N-terminus		C-terminus
<b>N-terminal Sequence Analysis</b>	Gly24		
<b>Structure / Form</b>	Disulfide-linked homodimer		
<b>Predicted Molecular Mass</b>	51 kDa (monomer)		

**SPECIFICATIONS**

<b>SDS-PAGE</b>	65-90 kDa, reducing conditions
<b>Activity</b>	Measured by its ability to inhibit IL-4-dependent proliferation of TF-1 human erythroleukemic cells. Kitamura, T. <i>et al.</i> (1989) J. Cell Physiol. <b>140</b> :323. The ED <sub>50</sub> for this effect is 4-20 ng/mL in the presence of 0.2 ng/mL of Recombinant Human IL-4 (Catalog # 204-IL).
<b>Endotoxin Level</b>	<0.10 EU per 1 $\mu$ g of the protein by the LAL method.
<b>Purity</b>	>95%, by SDS-PAGE with silver staining.
<b>Formulation</b>	Lyophilized from a 0.2 $\mu$ m filtered solution in PBS. See Certificate of Analysis for details.

**PREPARATION AND STORAGE**

<b>Reconstitution</b>	Reconstitute at 250 $\mu$ g/mL in PBS.
<b>Shipping</b>	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
<b>Stability &amp; Storage</b>	<b>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</b> <ul style="list-style-type: none"> <li>● 12 months from date of receipt, -20 to -70 °C as supplied.</li> <li>● 1 month, 2 to 8 °C under sterile conditions after reconstitution.</li> <li>● 3 months, -20 to -70 °C under sterile conditions after reconstitution.</li> </ul>

**BACKGROUND**

Interleukin 4 Receptor alpha (IL-4 R $\alpha$ ), also known as CD124 and BSF receptor, is a widely expressed 140 kDa transmembrane glycoprotein in the class I cytokine receptor family. IL-4 R $\alpha$  plays an important role in Th2-biased immune responses, alternative macrophage activation, mucosal immunity, allergic inflammation, tumor progression, and atherogenesis (1-5). Mature human IL-4 R $\alpha$  consists of a 207 amino acid (aa) extracellular domain (ECD) that contains a cytokine binding region and one fibronectin type III domain, a 24 aa transmembrane segment, and a 569 aa cytoplasmic domain that contains one Box 1 motif and one ITIM motif (6, 7). Within the ECD, human IL-4 R $\alpha$  shares 51% aa sequence identity with mouse and rat IL-4 R $\alpha$ . Soluble forms of IL-4 R $\alpha$ , generated by alternate splicing or proteolysis, retain ligand binding properties and inhibit IL-4 bioactivity (8-11). IL-4 R $\alpha$  is a component of two distinct receptor complexes and shows species selectivity between human and mouse (6). It can associate with the common gamma chain ( $\gamma$ c) to form the IL-4 responsive type I receptor in which  $\gamma$ c increases the affinity for IL-4 and enables signaling (12, 13). It can alternatively associate with IL-13 R $\alpha$ 1 to form the type II receptor which is responsive to both IL-4 and IL-13 (14, 15). The use of shared receptor components contributes to the overlapping biological effects of IL-4 and IL-13 as well as other cytokines that utilize  $\gamma$ c (i.e. IL-2, IL-7, IL-9, IL-15, and IL-21) (16, 17).

**References:**

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