

**DESCRIPTION**

<b>Species Reactivity</b>	Human
<b>Specificity</b>	Detects human IL-10 R $\beta$ in direct ELISAs and Western blots. In direct ELISAs, no cross-reactivity with recombinant human (rh) IL-10 R $\alpha$ , rhIFN- $\gamma$ RI, and rhIFN- $\gamma$ R2 is observed.
<b>Source</b>	Monoclonal Mouse IgG <sub>1</sub> Clone # 90220
<b>Purification</b>	Protein A or G purified from hybridoma culture supernatant
<b>Immunogen</b>	Mouse myeloma cell line NS0-derived recombinant human IL-10 R $\beta$ Met20-Ser220 Accession # Q08334
<b>Endotoxin Level</b>	<0.10 EU per 1 $\mu$ g of the antibody by the LAL method.
<b>Formulation</b>	Lyophilized from a 0.2 $\mu$ m filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied either lyophilized or as a 0.2 $\mu$ m filtered solution in PBS.

**APPLICATIONS**

**Please Note:** Optimal dilutions should be determined by each laboratory for each application. *General Protocols* are available in the *Technical Information* section on our website.

	<b>Recommended Concentration</b>	<b>Sample</b>
<b>Western Blot</b>	1 $\mu$ g/mL	Recombinant Human IL-10 R $\beta$ Fc Chimera (Catalog # 874-RB)
<b>Flow Cytometry</b>	0.25 $\mu$ g/10 <sup>6</sup> cells	See Below
<b>CyTOF-ready</b>	Ready to be labeled using established conjugation methods. No BSA or other carrier proteins that could interfere with conjugation.	
<b>Neutralization</b>	Measured by its ability to neutralize IL-10 R $\beta$ -mediated IL-10 response in LPS-activated human peripheral blood mononuclear cells (PBMC). Ralph, P. <i>et al.</i> (1991) <i>J. Immunology</i> <b>148</b> :808. The Neutralization Dose (ND <sub>50</sub> ) is typically 0.5-2 $\mu$ g/mL in the presence of 0.25 ng/mL Recombinant Human IL-10 and 0.25 ng/mL LPS.	

**DATA**

**Neutralization**

**IL-10 Inhibition of IL-1 $\beta$  secretion and Neutralization by Human IL-10 R $\beta$  Antibody.** Recombinant Human IL-10 (Catalog # 217-IL) inhibits IL-1 $\beta$  secretion in LPS-activated human peripheral blood mononuclear cells (PBMC) in a dose-dependent manner (orange line), as measured by the Human IL-1 $\beta$ /L-1F2 Quantikine ELISA Kit (Catalog # DLB50). IL-1 $\beta$  secretion inhibited by Recombinant Human IL-10 (0.25 ng/mL) is neutralized (green line) by increasing concentrations of Mouse Anti-Human IL-10 R $\beta$  Monoclonal Antibody (Catalog # MAB874). The ND<sub>50</sub> is typically 0.5-2  $\mu$ g/mL in the presence of LPS (0.25 ng/mL).

**Flow Cytometry**

**Detection of IL-10 R beta in Human PBMC Monocytes by Flow Cytometry** Human PBMC monocytes were stained with Mouse Anti-Human IL-10 R beta Monoclonal Antibody (Catalog # MAB874, filled histogram) or isotype control antibody (Catalog # MAB002, open histogram) followed by PE-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # F0102B). View our protocol for [Staining Membrane-associated Proteins](#).

**PREPARATION AND STORAGE**

<b>Reconstitution</b>	Reconstitute at 0.5 mg/mL in sterile PBS.
<b>Shipping</b>	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C
<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>● 6 months, -20 to -70 °C under sterile conditions after reconstitution.</li> </ul>

**BACKGROUND**

IL-10 R $\beta$ , also known as IL-10 R2, mediates its biological activities *via* binding to a heteromeric receptor complex consisting of two distinct type II cytokine receptor subunits, the ligand binding IL-10 R $\alpha$  and the IL-10 R $\beta$  which does not bind IL-10 by itself but is required for signal transduction. The cDNA for human IL-10 R $\beta$  encodes a 325 amino acid (aa) type I transmembrane precursor protein with a 20 aa signal sequence, a 200 aa extracellular region, a 29 aa transmembrane segment and a 76 aa cytoplasmic domain. Within the extracellular region, there are two 100 aa subdomains that resemble the constant region of immunoglobulins. This structural motif is responsible for the alternative designation of IL-10 R $\beta$  as CRF2-4 (the 4<sup>th</sup> member of the cytokine receptor family class II/2). Human and mouse IL-10 R $\beta$  share approximately 69% aa sequence identity. Binding of the non-covalent IL-10 dimer to two IL-10 R $\alpha$  chains recruits two IL-10 R $\beta$  chains resulting in the activation and phosphorylation of the signaling cascade involving JAK1, TYK2, and STAT3. IL-10 R $\beta$  is expressed ubiquitously. IL-10 R $\beta$  is also a component of the IL-22 receptor complex consisting of the IL-10 R $\beta$  chain and IL-22 R, another type II cytokine receptor family member.

**References:**

1. Donnelly, R.P. *et al.* (2004) *J. Leukoc. Biol.* **76**:314.
2. Donnelly, R.P. *et al.* (1999) *J. Interferon Cytokine Res.* **19**:563.
3. Kotenko, S.V. *et al.* (2000) *J. Biol. Chem.* **276**:2725.
4. Liu, Y. *et al.* (1994) *J. Immunol.* **152**:1821.
5. Lutfalla, G. *et al.* (1993) *Genomics* **16**:366.
6. Kotenko, S.V. *et al.* (1997) *EMBO J.* **16**:5894.