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# Product Information

**Anti-Interleukin-10 Receptor β**
produced in goat, affinity isolated antibody

Catalog Number **I3032**

**Synonym:** Anti-IL-10 Receptor β

## Product Description

Anti-Interleukin-10 Receptor β is produced in goat using as immunogen a purified recombinant human IL-10 Rβ extracellular domain expressed in mouse NSO cells. Affinity isolated antibody is obtained from goat anti-IL-10 Rβ antiserum by immuno-specific purification which removes essentially all goat serum proteins, including immunoglobulins, which do not specifically bind to the peptide.

Anti-Interleukin-10 Receptor β recognizes recombinant human IL-10 Rβ by various immunochemical techniques including ELISA, immunoblotting, neutralization, and flow cytometry.

Reduced human IL-10 Rβ has a calculated molecular mass of ~51 kDa. As a result of glycosylation, the recombinant protein migrates as a 75-85 kDa protein in SDS-PAGE under reducing conditions. Human and mouse interleukin-10 receptor β share approximately 69% amino acid sequence identity.

Interleukin-10, initially named cytokine synthesis inhibitory factor (CSIF), is a potent immunosuppressant of macrophage functions. IL-10, a pleiotropic cytokine, exerts either immunostimulatory or immunosuppressive effects on a number of cell types, including Thy2 cells, activated fetal thymocytes, macrophages, keratinocytes, and LY-1 ($CD5^+$) and normal B cells. IL-10 stimulates the growth of stem cells, mast cells, and thymocytes[1] and also enhances cytotoxic T cell development,[2] co-stimulates B cell differentiation, and immunoglobulin secretion.[3]

Interleukin-10 binds specifically and with high affinity to cell-surface receptors. Interleukin-10 receptors are members of the class II subgroup of the cytokine receptor superfamily. Mouse and human cDNA clones encoding the ligand binding IL-10 receptor have been isolated.[4, 5] The IL-10 receptor complex contains two distinct type II cytokine receptor subunits, the ligand binding IL-10 Rα and the IL-10 Rβ. The co-expression of both chains is essential for IL-10-induced signal transduction. The β chain serves as an accessory chain essential for the active IL-10 receptor complex and necessary for the initiation of signal transdunction.[6]

Interleukin-10 receptors are expressed in all cell types that are known to respond to IL-10. The human interleukin-10 receptor gene maps to chromosome 11q23.3.[7]

## Reagent

Supplied as 100 μg of antiserum lyophilized from a 0.2 μm filtered solution of PBS with 5% trehalose.

## Preparation Instructions

To one vial of lyophilized powder, add 1 ml of sterile phosphate buffered saline to produce a 0.1 mg/ml stock solution.

## Storage/Stability

Prior to reconstitution, store at –20 °C. Reconstituted product may be stored at 2-8 °C for at least one month. For prolonged storage, freeze in working aliquots at –20 °C. Avoid repeated freezing and thawing, and storage in “frost-free” freezers.

## Product Profile

Anti-Interleukin-10 Receptor β has the ability to block human IL-10 receptor β mediated IL-10 response on lipopolysaccharide (LPS)-activated PBMCs (peripheral blood mononuclear cells). PBMCs are added to a 96 well plate containing various concentrations (0.01-200 μg/ml) of the antibody and incubated for 1 hour at 37 °C. After this pre-incubation, recombinant human IL-10 and LPS (lipopolysaccharide) are added. The assay mixture in a total volume of 200 μl, containing antibody (concentrations of 0.01-200 μg/ml), LPS (0.25 ng/ml), recombinant human IL-10 (0.25 ng/ml), and cells ($1.5 \times 10^6$/ml), is incubated at 37 °C for 24 hours in a humidified $CO_2$ incubator. After the incubation, 25 μL of the supernatant is collected from each well, diluted at 1:4, and assayed for IL-1β levels using an IL-1β ELISA.

The Neutralization Dose$_{50}$ ($ND_{50}$) for Anti-IL-10 Rβ is 2-6 μg/ml in the presence of 0.25 ng/ml of recombinant human IL-10 using human PBMCs.

The $ND_{50}$ is the concentration of antibody required to yield one-half maximal inhibition of the cytokine activity on a responsive cell line, when that cytokine is present at a concentration just high enough to elicit a maximum response.

The exact concentration of antibody required to neutralize human cell surface IL-10 Rβ mediated bioactivity is dependent on the IL-10 concentration, cell type, growth conditions, and the type of activity studied.

Immunoblotting: a working concentration of 0.1-0.2 μg/ml is recommended. The detection limit for recombinant human IL-10 Rβ is ~5 ng/lane and 2 ng/lane under non-reducing and reducing conditions, respectively.

ELISA: a working concentration of 0.5-1.0 μg/ml is recommended. The detection limit for recombinant human IL-10 Rβ is ~0.03 ng/well.

Flow cytometry: 25-50 μg/ml (10 μL/$10^5$ cells) is recommended to detect human IL-10 Rβ.

**Note**: In order to obtain the best results in various techniques and preparations we recommend determining the optimal working dilutions by titration.

Endotoxin level; <20 ng/mg antibody as determined by the LAL (Limulus amebocyte lysate) method.

**References**


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