Human/Mouse IL-12 Rβ2 Antibody

Monoclonal Mouse IgG_1 Clone # 305719

Catalog Number: MAB1959

DESCRIPTION

Species Reactivity	Human/Mouse
Specificity	Detects human and mouse IL-12 Rβ2 in direct ELISAs. In direct ELISAs, no cross-reactivity with recombinant human IL-12 Rβ1 is observed.
Source	Monoclonal Mouse IgG_1 Clone # 305719
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant human IL-12 Rβ2 Cys28-Asn622 Accession # Q99665
Formulation	Lyophilized from a 0.2 μm filtered solution in PBS with Trehalose. See Certificate of Analysis for details.

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.*

	Recommended Concentration	Sample
Flow Cytometry	2.5 µg/10^6 cells	Human peripheral blood mononuclear cells treated with rhIL-12 (5 ng/mL, Catalog # 219-IL) and anti-human IL-4 (10 µg/mL, Catalog # AB-204-NA) for 3 days to induce TH1 development.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 6 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

Interleukin 12 (IL-12), the founding member of the IL-12 family of heterodimeric cytokines, is composed of two disulfide-linked 35 kDa and 40 kDa subunits. The 35 kDa subunit (p35) is a α-helical protein homologous to IL-6 and G-CSF. The 40 kDa subunit (p40) contains one fibronectin type III and one Ig C2-like domain, and has a high degree of structural homology to type I cytokine receptors. Whereas p35 subunit is unique to IL-12, the p40 subunit is also a subunit of IL-23. IL-12 is an essential mediator of cellular-immunity that induces T cells and natural-killer cells to produce IFN-γ. It is also required for the expansion and activation Th1 cells (1, 2).

The biological activities of IL-12 are mediated through the high-affinity receptor complex composed of the IL-12 Receptor β1 (IL-12 Rβ1) and IL-12 Receptor β2 (IL-12 Rβ2) subunits. IL-12 Rβ1 is a 100 kDa protein that is also a subunit of the IL-23 receptor complex. It binds IL-12/IL-23 p40 and is associated with Tyk2. IL-12 Rβ2 is a 130 kDa protein that interacts with p35 and is associated with Jak2. Both receptor subunits are type I membrane proteins that share similarities with the gp130/G-CSF R subgroup in the cytokine receptor superfamily. IL-12 Rβ2 cDNA encodes a 862 amino acid (aa) protein with a putative 27 aa signal peptide that is cleaved to generate the mature protein with a 595 aa extracellular domain, a 24 aa transmembrane domain and a 216 aa cytoplasmic region. Human and mouse IL-12 Rβ2 share 68% amino acid sequence identity. Whereas IL-12 Rβ1 expression has been detected in activated T cells, NK cells and B cells, the expression of IL-12 Rβ2 is more restricted. Among T cells, IL-12 Rβ2 is absent on naive T cells. Activation of T cells via TCR up-regulates IL-12 Rβ2 expression on human Th1 but not Th2 cells (1-4).

References:

1. Trinchieri, G. *et al.* (2003) Immunity **19**:641.
2. Brombacher, F. *et al.* (2003) Trends in Immunol. **23**:207.
3. Trinchieri, G. (2003) Nature Reviews Immunol. **3**:133.
4. Rogge, L. *et al.* (1997) J. Exp. Med. **185**:825.