

### DESCRIPTION

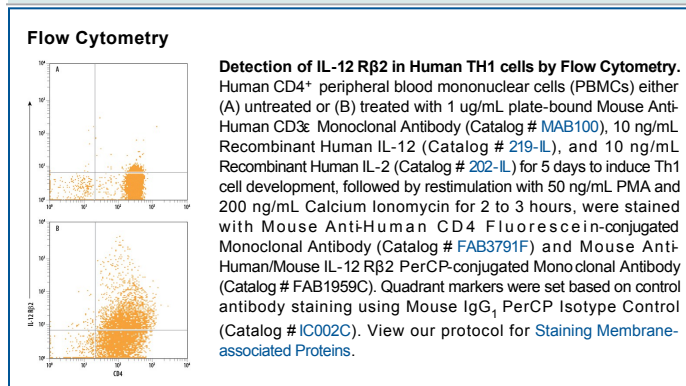
<b>Species Reactivity</b>	Human/Mouse
<b>Specificity</b>	Detects human and mouse IL-12 R $\beta$ 2 in direct ELISAs. In direct ELISAs, no cross-reactivity with recombinant human IL-1 R $\beta$ 1 is observed.
<b>Source</b>	Monoclonal Mouse IgG <sub>1</sub> Clone # 305719
<b>Purification</b>	Protein A or G purified from hybridoma culture supernatant
<b>Immunogen</b>	Mouse myeloma cell line NS0-derived recombinant human IL-12 R $\beta$ 2 Cys28-Asn622 Accession # Q99665
<b>Conjugate</b>	PerCP (Peridinin-chlorophyll Protein Complex) Excitation Wavelength: 482 and 564 nm Emission Wavelength: 675 nm
<b>Formulation</b>	Supplied in a saline solution containing BSA and Sodium Azide. See Certificate of Analysis for details.  *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions.

### 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
<b>Flow Cytometry</b>	10 $\mu$ L/10 <sup>6</sup> cells	See Below

### DATA



### PREPARATION AND STORAGE

<b>Shipping</b>	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
<b>Stability &amp; Storage</b>	<b>Protect from light. Do not freeze.</b> <ul style="list-style-type: none"> <li>12 months from date of receipt, 2 to 8 °C as supplied.</li> </ul>

### 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  $\alpha$ -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- $\gamma$ . 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  $\beta$ 1 (IL-12 R $\beta$ 1) and IL-12 Receptor  $\beta$ 2 (IL-12 R $\beta$ 2) subunits. IL-12 R $\beta$ 1 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 R $\beta$ 2 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 R $\beta$ 2 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 R $\beta$ 2 share 68% amino acid sequence identity. Whereas IL-12 R $\beta$ 1 expression has been detected in activated T cells, NK cells and B cells, the expression of IL-12 R $\beta$ 2 is more restricted. Among T cells, IL-12 R $\beta$ 2 is absent on naive T cells. Activation of T cells via TCR up-regulates IL-12 R $\beta$ 2 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.