

Human/Mouse IL-12 Rβ2 PE-conjugated Antibody

Monoclonal Mouse IgG₁ Clone # 305719

Catalog Number: FAB1959P 100 TESTS, 25 TESTS

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-1 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		
Conjugate	Phycoerythrin Excitation Wavelength: 488 nm Emission Wavelength: 565-605 nm		
Formulation	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.		

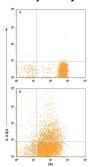
APPLICATIONS

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
Flow Cytometry	10 μL/10 ⁶ cells	See Below

DATA





Detection of IL-12 R β 2 in Human TH1 cells by Flow Cytometry. Human CD4+ peripheral blood mononuclear cells (PBMCs) either (A) untreated or (B) treated with 1 ug/mL plate-bound Mouse Anti-Human CD3c Monoclonal Antibody (Catalog # MAB100), 10 ng/mL Recombinant Human IL-12 (Catalog # 202-IL), and 10 ng/mL Recombinant Human IL-2 (Catalog # 202-IL) for 5 days to induce Th1 cell development, followed by restimulation with 50 ng/mL PMA and 200 ng/mL Calcium Ionomycin for 2 to 3 hours, were stained with Mouse Anti-Human CD4 APC-conjugated Monoclonal Antibody (Catalog # FAB3791A) and Mouse Anti-Human/Mouse IL-12 R β 2 PE-conjugated Monoclonal Antibody (Catalog # FAB1959P). Quadrant markers were set based on staining using Mouse IgG $_{\rm I}$ Phycoerythrin Isotype Control (Catalog # IC002P). View our protocol for Staining Membrane-associated Proteins.

PREPARATION AND STORAGE

Shipping The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.

Stability & Storage

Protect from light. Do not freeze.

• 12 months from date of receipt, 2 to 8 °C as supplied.

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

Rev. 10/7/2014 Page 1 of 1

