Human/Mouse IL-12 Rβ2 PerCP-conjugated Antibody

Monoclonal Mouse IgG_1 Clone # 305719

Catalog Number: FAB1959C
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	PerCP (Peridinin-chlorophyll Protein Complex) Excitation Wavelength: 482 and 564 nm Emission Wavelength: 675 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.

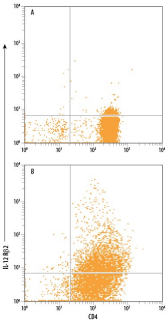
APPLICATIONS

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

Flow Cytometry



Detection of IL-12 Rβ2 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 CD3ε Monoclonal Antibody (Catalog # MAB100), 10 ng/mL Recombinant Human IL-12 (Catalog # 219-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 Fluorescein-conjugated Monoclonal Antibody (Catalog # FAB3791F) and Mouse Anti-Human/Mouse IL-12 Rβ2 PerCP-conjugated Monoclonal Antibody (Catalog # FAB1959C). Quadrant markers were set based on control antibody staining using Mouse IgG_1 PerCP Isotype Control (Catalog # IC002C). 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.

bio-techne
bio-techne.com
Global info@bio-techne.com techsupport@bio-techne.com
North America TEL 800 343 7475 Europe | Middle East | Africa TEL +44 (0)1235 529449
China info.cn@bio-techne.com TEL +86 (21) 52380373
Rest of World bio-techne.com/find-us/distributors TEL +1 612 379 2956

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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.

bio-techne
bio-techne.com
Global info@bio-techne.com techsupport@bio-techne.com
North America TEL 800 343 7475 Europe | Middle East | Africa TEL +44 (0)1235 529449
China info.cn@bio-techne.com TEL +86 (21) 52380373
Rest of World bio-techne.com/find-us/distributors TEL +1 612 379 2956