

DESCRIPTION

Species Reactivity	Mouse
Specificity	Detects mouse IL-12 R β 2 in direct ELISAs.
Source	Monoclonal Rat IgG _{2B} Clone # 918102
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant mouse IL-12 R β 2 Met1-Asn637 Accession # P97378
Conjugate	Alexa Fluor 647 Excitation Wavelength: 650 nm Emission Wavelength: 668 nm
Formulation	Supplied 0.2mg/ml in 1X PBS with RDF1 and 0.09% Sodium Azide *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.

Blockade of Receptor-ligand Interaction Optimal dilution of this antibody should be experimentally determined.

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

The high-affinity IL-12 receptor complex includes the 100 kDa IL-12 receptor β 1 (IL-12 R β 1) and the 130 kDa IL-12 Receptor β 2 (IL-12 R β 2) subunits, both of which are type I transmembrane proteins that belong to the cytokine receptor superfamily (1, 2). The complex's ligand, IL-12, is a disulfide-linked heterodimer composed of 35 kDa (IL-12 α p35) and 40 kDa (IL-12 β p40) subunits. IL-12 R β 2 binds IL-12 α and signals through Jak2, while IL-12 R β 1 binds IL-12 β and signals through Tyk2 (3). IL-12 R β 1 is also a subunit of the IL-23 receptor complex (3). The 874 amino acid (aa) mouse IL-12 R β 2 precursor includes a 23 aa signal peptide, a 614 aa extracellular domain (ECD), a 21 aa transmembrane segment and a 216 aa cytoplasmic region. The ECD possesses one C2-type Ig-like domain, five fibronectin type III (Fn III) repeats, 14 potential N-glycosylation sites, and a WSXWS motif, while the cytoplasmic region contains a Box 1 motif and three tyrosine phosphorylation sites that presumably mediate intracellular signaling (3). The mouse IL-12 R β 2 ECD shares 91% aa sequence identity with rat IL-12 R β 2, and 68% with human, porcine and bovine IL-12 R β 2. Human and mouse IL-12 R β 2 do not bind cross-species IL-12 (2). A 734 aa mouse isoform that lacks aa 363-503 within the Fn III domains is reported (4). Unlike IL-12 R β 1, which is constitutively expressed on T cells, NK cells and B cells, IL-12 R β 2 expression is more restricted (2). On naïve T cells, IL-12 R β 2 is expressed following STAT1 activation by IFN- γ , IL-27 and/or T cell receptor ligation. This up-regulation allows IL-12 to promote Th1, but not Th2, differentiation (5-7). Among B cells, surface expression is limited to naïve germinal center and memory B cells, and myeloma cells (2). Deletion of IL-12 R β 2 causes systemic overexpression of IL-6, accelerated maturation of thymocytes, deficient regulatory T cell maturation and function, and reduced splenic T cell apoptosis (2, 8-10). These mice are susceptible to autoimmune diseases such as experimental autoimmune encephalitis and spontaneous B cell malignancies (2, 8-10). In humans, polymorphism of the IL-12 R β 2 gene is associated with systemic sclerosis (11).

PRODUCT SPECIFIC NOTICES

This product is provided under an agreement between Life Technologies Corporation and R&D Systems, Inc., and the manufacture, use, sale or import of this product is subject to one or more US patents and corresponding non-US equivalents, owned by Life Technologies Corporation and its affiliates. The purchase of this product conveys to the buyer the non-transferable right to use the purchased amount of the product and components of the product only in research conducted by the buyer (whether the buyer is an academic or for-profit entity). The sale of this product is expressly conditioned on the buyer not using the product or its components (1) in manufacturing; (2) to provide a service, information, or data to an unaffiliated third party for payment; (3) for therapeutic, diagnostic or prophylactic purposes; (4) to resell, sell, or otherwise transfer this product or its components to any third party, or for any other commercial purpose. Life Technologies Corporation will not assert a claim against the buyer of the infringement of the above patents based on the manufacture, use or sale of a commercial product developed in research by the buyer in which this product or its components was employed, provided that neither this product nor any of its components was used in the manufacture of such product. For information on purchasing a license to this product for purposes other than research, contact Life Technologies Corporation, Cell Analysis Business Unit, Business Development, 29851 Willow Creek Road, Eugene, OR 97402, Tel: (541) 465-8300. Fax: (541) 335-0354.