

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 594 Excitation Wavelength: 590 nm Emission Wavelength: 617 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

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