

## DESCRIPTION

<b>Species Reactivity</b>	Mouse
<b>Specificity</b>	Detects mouse IL-12 R $\beta$ 1 in Western blots. In Western blots, approximately 25% cross-reactivity with recombinant human IL-12 R $\beta$ 1 is observed.
<b>Source</b>	Polyclonal Goat IgG
<b>Purification</b>	Antigen Affinity-purified
<b>Immunogen</b>	<i>S. frugiperda</i> insect ovarian cell line Sf 21-derived recombinant mouse IL-12 R $\beta$ 1 Val32-Glu561 Accession # Q60837
<b>Formulation</b>	Lyophilized from a 0.2 $\mu$ m filtered solution in PBS with BSA as a carrier protein. See Certificate of Analysis for details.

## 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>Western Blot</b>	0.1 $\mu$ g/mL	Recombinant Mouse IL-12 R $\beta$ 1 (Catalog # 1998-B1)

## PREPARATION AND STORAGE

<b>Reconstitution</b>	Reconstitute at 0.2 mg/mL in sterile PBS.
<b>Shipping</b>	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
<b>Stability &amp; Storage</b>	<p><b>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</b></p> <ul style="list-style-type: none"> <li>• 12 months from date of receipt, -20 to -70 °C as supplied.</li> <li>• 1 month, 2 to 8 °C under sterile conditions after reconstitution.</li> <li>• 6 months, -20 to -70 °C under sterile conditions after reconstitution.</li> </ul>

## BACKGROUND

IL-12 R $\beta$ 1 is a 100 kDa type I transmembrane protein that belongs to the gp130/G-CSF R family of cytokine receptors. IL-12 R $\beta$ 1 is a common subunit of both the IL-12 and IL-23 receptor complexes which play distinct but related roles in T cell mediated inflammatory reactions (1, 2). Mature mouse IL-12 R $\beta$ 1 contains a 546 amino acid (aa) extracellular domain (ECD) with five fibronectin type III repeats, and a 147 aa cytoplasmic domain (3). Within the ECD, mouse IL-12 R $\beta$ 1 shares 85% and 52% aa sequence identity with rat and human IL-12 R $\beta$ 1, respectively. It shares 16%-21% aa sequence identity with the ECDs of mouse gp130, LIF R, G-CSF R, and IL-23 R. IL-12 and IL-23 are disulfide linked heterodimeric cytokines that share a common p40 subunit (1, 2). IL-12 R $\beta$ 1 interacts with p40 at low affinity but does not transmit signals (3). Increased ligand binding affinity and signaling capacity are gained by association of IL-12 R $\beta$ 1 with either IL-12 R $\beta$ 2 or IL-23 R (4-6). IL-12 R $\beta$ 2 and IL-23 R are the signal transducing components of these receptor complexes (4, 7). IL-12 R $\beta$ 1 is expressed on activated T cells, NK cells, B cells, macrophages, and microglia (8-10). IL-12 induced signaling promotes the development of naive T cells into IFN- $\beta$  producing Th1 cells (11). IL-23 contributes to chronic inflammation by inducing the production of IL-17 by memory T cells (12). Naturally occurring homodimers of p40 can function as antagonists of IL-12 and IL-23 and can also induce macrophage chemotaxis in the absence of IL-12 R $\beta$ 2 (13, 14).

## References:

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