

DESCRIPTION

Species Reactivity	Mouse
Specificity	Detects mouse IL-12 Rβ1 in direct ELISAs and Western blots. In these formats, approximately 20% cross-reactivity with recombinant human IL-12 Rβ1 is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	<i>S. frugiperda</i> insect ovarian cell line Sf 21-derived recombinant mouse IL-12 Rβ1 Val32-Glu561 Accession # Q60837
Endotoxin Level	<0.10 EU per 1 µg of the antibody by the LAL method.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied as a 0.2 µm filtered solution in PBS.

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
Western Blot	0.1 µg/mL	Recombinant Mouse IL-12 Rβ1 (Catalog # 1998-B1)

PREPARATION AND STORAGE

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

BACKGROUND

IL-12 Rβ1 is a 100 kDa type I transmembrane protein that belongs to the gp130/G-CSF R family of cytokine receptors. IL-12 Rβ1 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 Rβ1 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 Rβ1 shares 85% and 52% aa sequence identity with rat and human IL-12 Rβ1, 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 Rβ1 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 Rβ1 with either IL-12 Rβ2 or IL-23 R (4 - 6). IL-12 Rβ2 and IL-23 R are the signal transducing components of these receptor complexes (4, 7). IL-12 Rβ1 is expressed on activated T cells, NK cells, B cells, macrophages, and microglia (8 - 10). IL-12 induced signaling promotes the development of naïve T cells into IFN-β 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 Rβ2 (13, 14).

References:

1. Becker, C. *et al.* (2005) *Inflamm. Bowel Dis.* **11**:755.
2. Hunter, C.A. (2005) *Nat. Rev. Immunol.* **5**:521.
3. Chua, A.O. *et al.* (1995) *J. Immunol.* **155**:4286.
4. Parham, C. *et al.* (2002) *J. Immunol.* **168**:5699.
5. Wu, C. *et al.* (1997) *J. Immunol.* **159**:1658.
6. Zou, J. *et al.* (1997) *J. Biol. Chem.* **272**:6073.
7. Presky, D.H. *et al.* (1996) *Proc. Natl. Acad. Sci.* **93**:14002.
8. Wu, C. *et al.* (1997) *Eur. J. Immunol.* **27**:147.
9. Airoidi, I. *et al.* (2000) *J. Immunol.* **165**:6880.
10. Li, J. *et al.* (2003) *J. Neurol. Sci.* **215**:95.
11. Schmitt, E. *et al.* (1994) *Eur. J. Immunol.* **24**:793.
12. Yen, D. *et al.* (2006) *J. Clin. Invest.* **116**:1310.
13. Shimozato, O. *et al.* (2006) *Immunology* **117**:22.
14. Russell, T.D. *et al.* (2003) *J. Immunol.* **171**:6866.