Rat IL-12 Antibody

Antigen Affinity-purified Polyclonal Goat IgG
Catalog Number: AF1760

DESCRIPTION

Species Reactivity	Rat
Specificity	Detects rat IL-12 in direct ELISAs and Western blots. In direct ELISAs, approximately 50% cross-reactivity with recombinant mouse IL-12 and less than 5% cross-reactivity with recombinant human IL-12 is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	*S. frugiperda* insect ovarian cell line *Sf* 21-derived recombinant rat IL-12 p40: Met23-Ser335; p35: Arg23-Ser215 Accession # p40: NP_072133; p35: Q9R103
Endotoxin Level	<0.30 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.

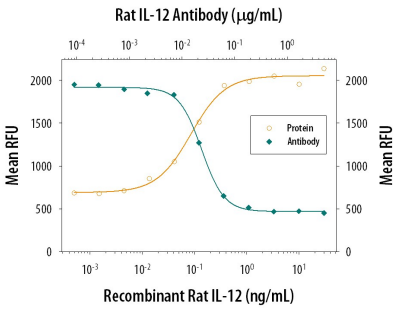
APPLICATIONS

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 Rat IL-12 (Catalog # 1760-RL)
Neutralization	Measured by its ability to neutralize IL-12-induced proliferation in mouse splenocytes. The Neutralization Dose (ND_{50}) is typically 0.05-0.25 µg/mL in the presence of 1 ng/mL Recombinant Rat IL-12. This antibody will also neutralize rrIL-23 activity.	

DATA

Neutralization



Cell Proliferation Induced by IL-12 and Neutralization by Rat IL-12 Antibody. Recombinant Rat IL-12 (Catalog # 1760-RL) stimulates proliferation in mouse splenocytes in a dose-dependent manner (orange line). Proliferation elicited by Recombinant Rat IL-12 (1 ng/mL) is neutralized (green line) by increasing concentrations of Goat Anti-Rat IL-12 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF1760). The ND_{50} is typically 0.05-0.25 µg/mL.

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.** ● 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.

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BACKGROUND

Interleukin 12 (IL-12) is the founding member of the IL-12 family of heterodimeric cytokines, which have important immunological functions. IL-12 is composed of two disulfide-linked subunits of 35 kDa and 40 kDa, respectively. The 35 kDa subunit (p35) is an 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 utilized in IL-23. Mature rat p35 is a 194 amino acids (aa) protein that is secreted as a heterodimer linked to p40. It contains three potential N-linked glycosylation sites and shares 86%, and 58% aa sequence identity with mouse and human p35, respectively. Mature rat p40 contains 313 aa and can exist in multiple forms, including monomer, homodimer, heterodimer linked to p19 (forming IL-23), and heterodimer linked to p35 (forming IL-12). Mature rat p40 shows 92% and 66% aa sequence identity to mouse and human p40, respectively. Cells known to produce IL-12 include macrophages, dendritic cells, monocytes, Langerhans cells, neutrophils, and keratinocytes. The activities of IL-12 are mediated by the receptor complex composed of two type I transmembrane proteins: a 100 kDa ligand-binding subunit (IL-12 Rβ1) and a 130 kDa signal transducing subunit (IL-12 Rβ2). IL-12 facilitates hematopoietic stem cell proliferation, induces NK cell proliferation, and potentiates the expansion and late activation of Th1 $CD4^+$ T cells (1-4).

References:

1. Park, A.Y. and P. Scott (2001) Scand. J. Immunol. **53**:529.
2. Trinchieri, G. *et al*. (2003) Immunity **19**:641.
3. Brombacher, F. *et al*. (2003) Trends Immunol. **24:**207.
4. Lankford, C.S. and D.M. Frucht (2003) J. Leukoc. Biol. **73**:49.

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