

## DESCRIPTION

|                           |                                                                                                                                                                                                                                                                             |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Species Reactivity</b> | Rat                                                                                                                                                                                                                                                                         |
| <b>Specificity</b>        | 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.                                                         |
| <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 rat IL-12<br>p40: Met23-Ser335; p35: Arg23-Ser215<br>Accession # p40: NP_072133; p35: Q9R103                                                                                                        |
| <b>Conjugate</b>          | Alexa Fluor 405<br>Excitation Wavelength: 405 nm<br>Emission Wavelength: 421 nm                                                                                                                                                                                             |
| <b>Formulation</b>        | Supplied 0.2mg/ml in 1X PBS with RDF1 and 0.09% Sodium Azide<br><br>*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.

|                       |                                                                        |
|-----------------------|------------------------------------------------------------------------|
| <b>Neutralization</b> | Optimal dilution of this antibody should be experimentally determined. |
| <b>Western Blot</b>   | Optimal dilution of this antibody should be experimentally determined. |

## PREPARATION AND STORAGE

|                                |                                                                                                                   |
|--------------------------------|-------------------------------------------------------------------------------------------------------------------|
| <b>Shipping</b>                | The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below. |
| <b>Stability &amp; Storage</b> | Protect from light. Do not freeze. 12 months from date of receipt, 2 to 8 °C as supplied                          |

## 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  $\alpha$ -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 R $\beta$ 1) and a 130 kDa signal transducing subunit (IL-12 R $\beta$ 2). IL-12 facilitates hematopoietic stem cell proliferation, induces NK cell proliferation, and potentiates the expansion and late activation of Th1 CD4<sup>+</sup> T cells (1-4).

## PRODUCT SPECIFIC NOTICES

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