

## DESCRIPTION

|                                                                                                                                                                                                         |                                                                                                                                                                                                                                   |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Species Reactivity</b>                                                                                                                                                                               | Rat                                                                                                                                                                                                                               |
| <b>Specificity</b>                                                                                                                                                                                      | Detects rat IL-3 in direct ELISAs and Western blots. In direct ELISAs and Western blots, approximately 5% cross-reactivity with recombinant mouse IL-3 and less than 1% cross-reactivity with recombinant human IL-3 is observed. |
| <b>Source</b>                                                                                                                                                                                           | Polyclonal Goat IgG                                                                                                                                                                                                               |
| <b>Purification</b>                                                                                                                                                                                     | Antigen Affinity-purified                                                                                                                                                                                                         |
| <b>Immunogen</b>                                                                                                                                                                                        | <i>E. coli</i> -derived recombinant rat IL-3<br>Ile27-Cys169<br>Accession # P97688                                                                                                                                                |
| <b>Conjugate</b>                                                                                                                                                                                        | Alexa Fluor 750<br>Excitation Wavelength: 749 nm<br>Emission Wavelength: 775 nm                                                                                                                                                   |
| <b>Formulation</b>                                                                                                                                                                                      | 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.

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

## PREPARATION AND STORAGE

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|--------------------------------|-------------------------------------------------------------------------------------------------------------------|
| <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

Rat interleukin-3 (IL-3; also multi-CSF) is a 26 kDa, variably glycosylated monomeric polypeptide that belongs to the  $\alpha$ -helix family of hematopoietic cytokines (1, 2). IL-3 has pleiotrophic activities on a number of hematopoietic-related cells (1, 3). The rat molecule has two alternate splice forms. The first is termed IL-3 $\beta$  and is synthesized as a 169 amino acid (aa) precursor that contains a 27 aa signal sequence and a 142 aa mature segment (1, 2). The second is called IL-3 $\alpha$ , and is identical to IL-3 $\beta$ , save for a three amino acid (Tyr-Pro-Gln) deletion at positions 56-58 (1). The beta form is considered the most common form. Each form has an  $\alpha$ -helical structure with two intrachain disulfide bonds and two potential N-linked glycosylation sites. Rat IL-3 is generally considered to be species-specific in its activity. In the mature region, rat IL-3 shares 55%, 30%, and 24% aa sequence identity with mouse, human, and bovine IL-3, respectively. Cells known to express IL-3 include connective tissue mast cells, astrocytes, microglia, megakaryocytes, eosinophils, T cells, keratinocytes and thymic epithelium.

IL-3 exerts its biological activities by binding to a 70 kDa, low affinity, ligand-binding IL-3 R $\alpha$  subunit, (6) which then recruits a 120 kDa, common  $\beta$ -chain, signal transducing subunit (7) to form a functional IL-3 receptor (1, 6, 7). Receptors for IL-3 are present on bone marrow progenitors, macrophages, mast cells, eosinophils, megakaryocytes, basophils, and various myeloid leukemic cells. IL-3 can stimulate the proliferation and differentiation of pluripotent hematopoietic stem cells as well as various lineage committed progenitors including those for neutrophils, macrophages, megakaryocytes, and erythroid cells. IL-3 can stimulate the growth of early B cells and mature macrophages, mast cells, eosinophils, basophils, and megakaryocytes. IL-3 augments the function activity of basophils, mast cells, eosinophils, and macrophages (1, 8). In combination with other molecules such as CD40L and/or IL-4, IL-3 can stimulate production of dendritic cells (1, 2, 9, 10).

## PRODUCT SPECIFIC NOTICES

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