

DESCRIPTION

Species Reactivity	Rat
Specificity	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.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	<i>E. coli</i> -derived recombinant rat IL-3 Ile27-Cys169 Accession # P97688
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 either lyophilized or as a 0.2 µm filtered solution in PBS.

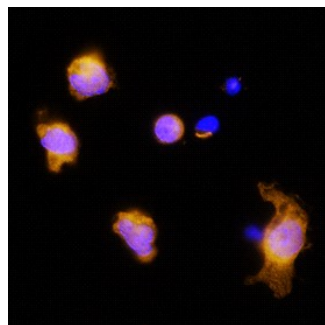
APPLICATIONS

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-3 (Catalog # 2524-RL)
Immunocytochemistry	5-15 µg/mL	See Below
Neutralization	Measured by its ability to neutralize IL-3-induced proliferation in the M-NFS-60 mouse myelogenous leukemia lymphoblast cell line. Holmes, K.L. <i>et al.</i> (1985) <i>Proc. Natl. Acad. Sci. USA</i> 82 :6687. The Neutralization Dose (ND ₅₀) is typically 0.75-3 µg/mL in the presence of 0.5 ng/mL Recombinant Rat IL-3.	

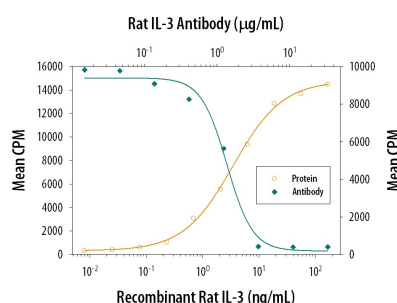
DATA

Immunocytochemistry



IL-3 in Rat Splenocytes. IL-3 was detected in immersion fixed rat splenocytes using Goat Anti-Rat IL-3 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF2524) at 15 µg/mL for 3 hours at room temperature. Cells were stained using the NorthernLights™ 557-conjugated Anti-Goat IgG Secondary Antibody (yellow; Catalog # NL001) and counterstained with DAPI (blue). Specific staining was localized to cytoplasm. View our protocol for [Fluorescent ICC Staining of Non-adherent Cells](#).

Neutralization



Cell Proliferation Induced by IL-3 and Neutralization by Rat IL-3 Antibody. Recombinant Rat IL-3 (Catalog # [2524-RL](#)) stimulates proliferation in the M-NFS-60 mouse myelogenous leukemia lymphoblast cell line in a dose-dependent manner (orange line). Proliferation elicited by Recombinant Rat IL-3 (0.5 ng/mL) is neutralized (green line) by increasing concentrations of Goat Anti-Rat IL-3 Antigen Affinity-purified Polyclonal Antibody (Catalog # AF2524). The ND₅₀ is typically 0.75-3 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. <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

Rat interleukin-3 (IL-3; also multi-CSF) is a 26 kDa, variably glycosylated monomeric polypeptide that belongs to the α -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 β 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 α , and is identical to IL-3 β , 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 α -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 α subunit, (6) which then recruits a 120 kDa, common β -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).

References:

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3. Esandi, M. del C. *et al.* (1998) *Gene* **211**:151.
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