

## DESCRIPTION

<b>Species Reactivity</b>	Human
<b>Specificity</b>	Detects human IL-3 R $\alpha$ /CD123 in direct ELISAs and Western blots.
<b>Source</b>	Monoclonal Mouse IgG <sub>1</sub> Clone # 32703
<b>Purification</b>	Protein A or G purified from hybridoma culture supernatant
<b>Immunogen</b>	<i>S. frugiperda</i> insect ovarian cell line Sf 21-derived recombinant human IL-3 R $\alpha$ /CD123 Lys20-Arg305, predicted Accession # P26951
<b>Endotoxin Level</b>	<0.10 EU per 1 $\mu$ g of the antibody by the LAL method.
<b>Formulation</b>	Lyophilized from a 0.2 $\mu$ m 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 $\mu$ m filtered solution in PBS.

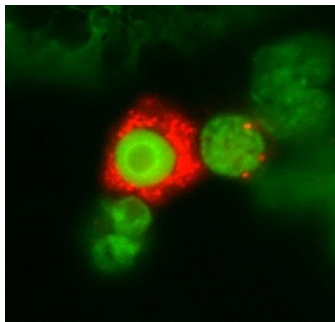
## APPLICATIONS

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
<b>Western Blot</b>	1 $\mu$ g/mL	Recombinant Human IL-3 R $\alpha$ /CD123 (Catalog # 301-R3) under non-reducing conditions only
<b>Flow Cytometry</b>	2.5 $\mu$ g/10 <sup>6</sup> cells	THP-1 human acute monocytic leukemia cell line
<b>Immunocytochemistry</b>	8-25 $\mu$ g/mL	See Below
<b>Immunohistochemistry</b>	8-25 $\mu$ g/mL	See Below
<b>CyTOF-ready</b>		Ready to be labeled using established conjugation methods. No BSA or other carrier proteins that could interfere with conjugation.
<b>Neutralization</b>		Measured by its ability to neutralize IL-3-induced proliferation in the TF-1 human erythroleukemic cell line. Kitamura, T. <i>et al.</i> (1989) J. Cell Physiol. <b>140</b> :323. The Neutralization Dose (ND <sub>50</sub> ) is typically 0.6-1.2 $\mu$ g/mL in the presence of 0.5 ng/mL Recombinant Human IL-3.

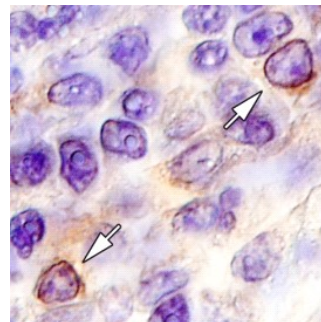
## DATA

### Immunocytochemistry



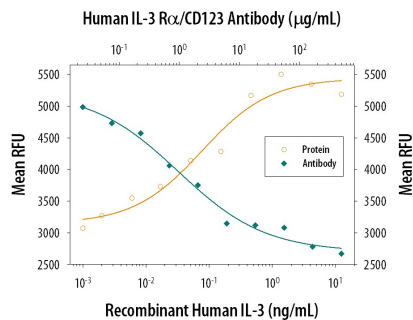
**IL-3 R $\alpha$ /CD123 in Human Peripheral Blood Lymphocytes.** IL-3 R $\alpha$ /CD123 was detected in immersion fixed human peripheral blood lymphocytes using 2  $\mu$ g/mL Mouse Anti-Human IL-3 R $\alpha$ /CD123 Monoclonal Antibody (Catalog # MAB301) for 3 hours at room temperature. Cells were stained (red) and counterstained (green). View our protocol for [Fluorescent ICC Staining of Non-adherent Cells](#).

### Immunohistochemistry



**IL-3 R $\alpha$ /CD123 in Human Tonsil.** IL-3 R $\alpha$ /CD123 was detected in immersion fixed paraffin-embedded sections of human tonsil using 15  $\mu$ g/mL Mouse Anti-Human IL-3 R $\alpha$ /CD123 Monoclonal Antibody (Catalog # MAB301) overnight at 4 °C. Tissue was stained with the Anti-Mouse HRP-DAB Cell & Tissue Staining Kit (brown; Catalog # CTS002) and counterstained with hematoxylin (blue). View our protocol for [Chromogenic IHC Staining of Paraffin-embedded Tissue Sections](#).

### Neutralization



**Cell Proliferation Induced by IL-3 and Neutralization by Human IL-3 R $\alpha$ /CD123 Antibody.** Recombinant Human IL-3 (Catalog # 203-IL) stimulates proliferation in the TF-1 human erythroleukemic cell line in a dose-dependent manner (orange line). Proliferation elicited by Recombinant Human IL-3 (0.5 ng/mL) is neutralized (green line) by increasing concentrations of Mouse Anti-Human IL-3 R $\alpha$ /CD123 Monoclonal Antibody (Catalog # MAB301). The ND<sub>50</sub> is typically 0.6-1.2  $\mu$ g/mL.

## PREPARATION AND STORAGE

<b>Reconstitution</b>	Reconstitute at 0.5 mg/mL in sterile PBS.
<b>Shipping</b>	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
<b>Stability &amp; Storage</b>	<b>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</b> <ul style="list-style-type: none"><li>● 12 months from date of receipt, -20 to -70 °C as supplied.</li><li>● 1 month, 2 to 8 °C under sterile conditions after reconstitution.</li><li>● 6 months, -20 to -70 °C under sterile conditions after reconstitution.</li></ul>

## BACKGROUND

IL-3 is a pleiotropic cytokine that can stimulate proliferation and differentiation of pluripotent hematopoietic stem cells as well as various lineage committed progenitors (1, 2). IL-3 exerts its activity through binding to a specific cell surface receptor known as IL-3 R. IL-3 R is a heterodimeric structure composed of a 70 kDa IL-3 R $\alpha$  subunit (CD123) and a 120-140 kDa IL-3 R $\beta$  subunit (CD131) (3, 4). IL-3 R $\alpha$  binds IL-3 with relatively low affinity. In the presence of IL-3 R $\beta$ , however, IL-3 R $\alpha$  has a much higher affinity for IL-3. It is not clear how signal transduction occurs following IL-3 binding. The IL-3 R $\alpha$  chain has a very short intracellular domain while the IL-3 R $\beta$  chain has a very large cytoplasmic domain. The IL-3 R $\beta$  chain is also shared by the receptors for IL-5 and GM-CSF. Cells known to express IL-3 receptors include hematopoietic progenitors, epithelial cells, double negative T cells, mast cells, basophils and blood monocytes (5).

### References:

1. Moore, M.A.S. *et al.* (1991) *Blood* **72**:944.
2. Warren, D.J. *et al.* (1988) *J. Immunol.* **140**:94.
3. Plant M. *et al.* (1989) *Nature* **339**:150.
4. Budel, L.M. *et al.* (1990) *Blood* **75**:1439.
5. Schrader, J.W. *et al.* (1988) In *Interleukin-3: The Panspecific hemopoietin* (ed. J.W. Schrader), Academic Press, San Diego, CA.