Human IL-3R alpha/CD123 Antibody

Monoclonal Mouse IgG_1 Clone # 32703

Catalog Number: MAB301

DESCRIPTION

Species Reactivity	Human
Specificity	Detects human IL-3 Rα/CD123 in direct ELISAs and Western blots.
Source	Monoclonal Mouse IgG_1 Clone # 32703
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	*S. frugiperda* insect ovarian cell line *Sf* 21-derived recombinant human IL-3 Rα/CD123 Lys20-Arg305, predicted Accession # P26951
Formulation	Lyophilized from a 0.2 μm filtered solution in PBS with Trehalose.

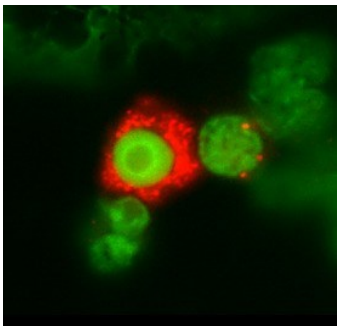
APPLICATIONS

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	1 µg/mL	Recombinant Human IL-3 Rα/CD123 (Catalog # 301-R3) under non-reducing conditions only
Flow Cytometry	0.25 µg/10^6 cells	THP-1 human acute monocytic leukemia cell line
Immunocytochemistry	8-25 µg/mL	See Below
Immunohistochemistry	8-25 µg/mL	See Below
CyTOF-ready	Ready to be labeled using established conjugation methods. No BSA or other carrier proteins that could interfere with conjugation.	
Neutralization	Measured by its ability to neutralize IL-3-induced proliferation in the TF-1 human erythroleukemic cell line. Kitamura, T. *et al.* (1989) J. Cell Physiol. **140**:323. The Neutralization Dose (ND_{50}) is typically 0.6-1.2 µg/mL in the presence of 0.5 ng/mL Recombinant Human IL-3.	

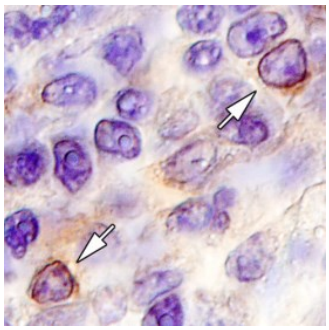
DATA

Immunocytochemistry



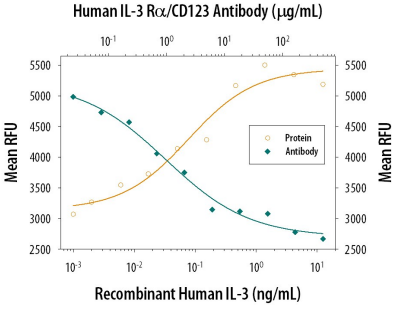
IL-3 Rα/CD123 in Human Peripheral Blood Lymphocytes. IL-3 Rα/CD123 was detect-ed in immersion fixed human peripheral blood lymphocytes using 2 µg/mL Mouse Anti-Human IL-3 Rα/CD123 Monoclonal Antibody (Catalog # MAB301) for 3 hours at room temperature. Cells were stained (red) and counter-stained (green). View our protocol for Fluorescent ICC Staining of Non-adherent Cells.

Immunohistochemistry



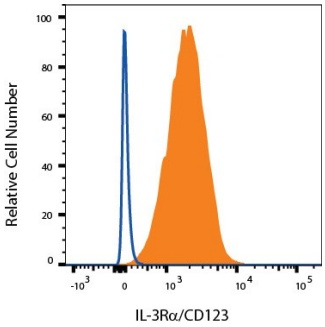
IL-3 Rα/CD123 in Human Tonsil. IL-3 Rα/CD123 was detected in immersion fixed paraffin-embedded sections of human tonsil using 15 µg/mL Mouse Anti-Human IL-3 Rα/CD123 Monoclonal Antibody (Catalog # MAB301) overnight at 4 °C. Tissue was stained with the Anti-Mouse HRP-DAB Cell & Tissue Staining Kit (brown; Catalog # CTS002) and counter-stained 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 Rα/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 Rα/CD123 Monoclonal Antibody (Catalog # MAB301). The ND_{50} is typically 0.6-1.2 µg/mL.

Flow Cytometry



Detection of IL-3R alpha/CD123 in THP-1 cells by Flow Cytometry. THP-1 cells were stained with Mouse Anti-Human IL-3R alpha/CD123 Monoclonal Antibody (Catalog # MAB301, filled histogram) or isotype control antibody (Catalog # MAB002, open histogram), followed by PE-conjugated Anti-Mouse IgG Secondary Antibody (Catalog # F0102B). View our protocol for Staining Membrane-associated Proteins.

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Global | bio-techne.com info@bio-techne.com techsupport@bio-techne.com TEL: 1.612.379.2956
USA | TEL: 800.343.7475 Canada | TEL: 855.668.8722 Europe | Middle East | Africa TEL: +44.0.1235.529449
China | info.cn@bio-techne.com TEL: 400.821.3475

Human IL-3R alpha/CD123 Antibody

Monoclonal Mouse IgG_1 Clone # 32703

Catalog Number: MAB301

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.5 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
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.

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 Rα subunit (CD123) and a 120-140 kDa IL-3 Rβ subunit (CD131) (3, 4). IL-3 Rα binds IL-3 with relatively low affinity. In the presence of IL-3 Rβ, however, IL-3 Rα has a much higher affinity for IL-3. It is not clear how signal transduction occurs following IL-3 binding. The IL-3 Rα chain has a very short intracellular domain while the IL-3 Rβ chain has a very large cytoplasmic domain. The IL-3 Rβ 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.

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