

**DESCRIPTION**

<b>Species Reactivity</b>	Human
<b>Specificity</b>	Detects human IL-5 in direct ELISAs and Western blots. In direct ELISAs and Western blots, no cross-reactivity with recombinant mouse IL-5 is observed.
<b>Source</b>	Monoclonal Mouse IgG <sub>1</sub> Clone # 9906
<b>Purification</b>	Protein A or G purified from ascites
<b>Immunogen</b>	<i>S. frugiperda</i> insect ovarian cell line Sf 21-derived recombinant human IL-5 Ile20-Ser134 Accession # P05113
<b>Formulation</b>	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.

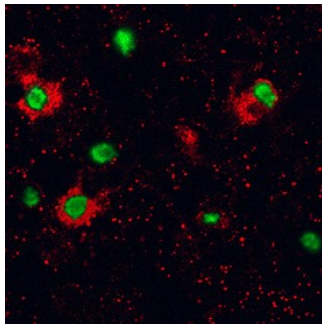
**APPLICATIONS**

**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.

	<b>Recommended Concentration</b>	<b>Sample</b>
<b>Western Blot</b>	1 µg/mL	Recombinant Human IL-5 (Catalog # 205-IL)
<b>Immunocytochemistry</b>	8-25 µg/mL	See Below
<b>Intracellular Staining by Flow Cytometry</b>	2.5 µg/10 <sup>6</sup> cells	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.	

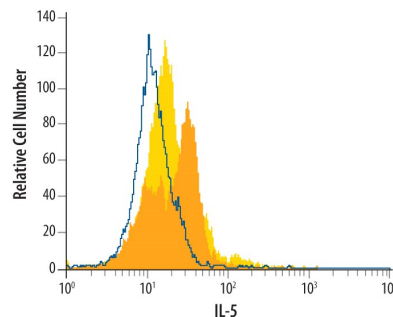
**DATA**

**Immunocytochemistry**



**IL-5 in Human Peripheral Blood Lymphocytes.** IL-5 was detected in immersion fixed human peripheral blood lymphocytes using Mouse Anti-Human IL-5 Monoclonal Antibody (Catalog # MAB605) at 5 µg/mL for 3 hours at room temperature. Cells were stained (red) and counterstained (green). Specific labeling was localized to the cytoplasm of PBMCs. View our protocol for [Fluorescent ICC Staining of Non-adherent Cells](#).

**Intracellular Staining by Flow Cytometry**



**Detection of IL-5 in PMA and Ca<sup>2+</sup> ionomycin-treated Human PBMCs by Flow Cytometry.** Human PBMCs, untreated (light orange filled histogram) or activated with 50 ng/mL PMA and 500 ng/mL Ca<sup>2+</sup> ionomycin for 5 hours (dark orange filled histogram), were stained with Human IL-5 Monoclonal Antibody (Catalog # MAB605) or isotype control antibody (Catalog # MAB002, open histogram), followed by Fluorescein-conjugated Anti-Mouse IgG F(ab')<sub>2</sub> Secondary Antibody (Catalog # F0103B). To facilitate intracellular staining, cells were fixed with paraformaldehyde and permeabilized with saponin.

**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**

Interleukin-5 (IL-5) is a secreted glycoprotein that belongs to the  $\alpha$ -helical group of cytokines (1 - 3). Unlike other family members, it is present as a covalently linked antiparallel dimer (4, 5). The cDNA for human IL-5 encodes a signal peptide and a 115 amino acid (aa) mature protein. Mature human IL-5 shares 70%, 70%, 62%, 71%, 70% and 66%, aa sequence identity with mouse, rat, canine, equine, feline and porcine IL-5, respectively and shows cross-reactivity with mouse IL-5. IL-5 is primarily produced by CD4<sup>+</sup> Th2 cells, but also by activated eosinophils, mast cells, EBV-transformed B cells, Reed-Sternberg cells in Hodgkin's disease, and IL-2-stimulated invariant natural killer T cells (iNKT) (1 - 3, 6 - 8). IL-5 increases production and mobilization of eosinophils and CD34<sup>+</sup> progenitors from the bone marrow and causes maturation of eosinophil precursors outside the bone marrow (1, 6, 9, 10). The receptor for human IL-5, mainly expressed by eosinophils, but also found on basophils and mast cells, consists of a unique ligand-binding subunit (IL-5 R $\alpha$ ) and a shared signal-transducing subunit,  $\beta$ c (3, 6, 11). IL-5 R $\alpha$  first binds IL-5 at low affinity, then associates with preformed  $\beta$ c dimers, forming a high-affinity receptor (12). IL-5 also binds proteoglycans, potentially enhancing its activity (13). Soluble forms of IL-5 R $\alpha$  antagonize IL-5 and can be found in vivo (10, 14). In humans, IL-5 primarily affects cells of the eosinophilic lineage, and promotes their differentiation, maturation, activation, migration and survival, while in mice IL-5 also enhances Ig class switching and release from B1 cells (1 - 3, 9, 10, 15, 16). IL-5 also promotes differentiation of basophils and primes them for histamine and leukotriene release (17).

**References:**

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