

## 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>Conjugate</b>	Alexa Fluor 594 Excitation Wavelength: 590 nm Emission Wavelength: 617 nm
<b>Formulation</b>	Supplied 0.2 mg/mL in a saline solution containing BSA and Sodium Azide. See Certificate of Analysis for details.  *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.

	Recommended Concentration	Sample
<b>Intracellular Staining by Flow Cytometry</b>	0.25-1 µg/10 <sup>6</sup> cells	PMA and Ca <sup>2+</sup> ionomycin-treated human PBMCs, fixed with paraformaldehyde, and permeabilized with saponin

## PREPARATION AND STORAGE

<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>	<b>Protect from light. Do not freeze.</b> <ul style="list-style-type: none"> <li>12 months from date of receipt, 2 to 8 °C as supplied.</li> </ul>

## BACKGROUND

Interleukin-5 (IL-5) is a secreted glycoprotein that belongs to the α-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+ 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+ 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 Rα) and a shared signal-transducing subunit, βc (3, 6, 11). IL-5 Rα first binds IL-5 at low affinity, then associates with preformed βc dimers, forming a high-affinity receptor (12). IL-5 also binds proteoglycans, potentially enhancing its activity (13). Soluble forms of IL-5 Rα 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:

- Rosenberg, H. F. *et al.* (2007) *J. Allergy Clin. Immunol.* **119**:1303.
- Elsas, P.X. and M. I. G. Elsas (2007) *Curr. Med. Chem.* **14**:1925.
- Martinez-Moczygomba, M. and D. P. Huston (2003) *J. Allergy Clin. Immunol.* **112**:653.
- Minamitake, Y. *et al.* (1990) *J. Biochem.* **107**:292.
- McKenzie, A. N. *et al.* (1991) *Mol. Immunol.* **28**:155.
- Shakoory, B. *et al.* (2004) *J. Interferon Cytokine Res.* **24**:271.
- Lalani, T. *et al.* (1999) *Ann. Allergy Asthma Immunol.* **82**:317.
- Sakuishi, K. *et al.* (2007) *J. Immunol.* **179**:3452.
- Clutterbuck, E. J. *et al.* (1989) *Blood* **73**:1504.
- Cameron, L. *et al.* (2000) *J. Immunol.* **164**:1538.
- Tavernier, J. *et al.* (1991) *Cell* **66**:1175.
- Zaks-Zilberman, M. *et al.* (2008) *J. Biol. Chem.* **283**:13398.
- Lipscombe, R. *et al.* (1998) *J. Leukocyte Biol.* **63**:342.
- Tavernier, J. *et al.* (2000) *Blood* **95**:1600.
- Kopf, M. *et al.* (1996) *Immunity* **4**:15.
- Horikawa, K. and K. Takatsu (2006) *Immunology* **118**:497.
- Denburg, J. A. *et al.* (1991) *Blood* **77**:1462.

**PRODUCT SPECIFIC NOTICES**

This product is provided under an agreement between Life Technologies Corporation and R&D Systems, Inc, and the manufacture, use, sale or import of this product is subject to one or more US patents and corresponding non-US equivalents, owned by Life Technologies Corporation and its affiliates. The purchase of this product conveys to the buyer the non-transferable right to use the purchased amount of the product and components of the product only in research conducted by the buyer (whether the buyer is an academic or for-profit entity). The sale of this product is expressly conditioned on the buyer not using the product or its components (1) in manufacturing; (2) to provide a service, information, or data to an unaffiliated third party for payment; (3) for therapeutic, diagnostic or prophylactic purposes; (4) to resell, sell, or otherwise transfer this product or its components to any third party, or for any other commercial purpose. Life Technologies Corporation will not assert a claim against the buyer of the infringement of the above patents based on the manufacture, use or sale of a commercial product developed in research by the buyer in which this product or its components was employed, provided that neither this product nor any of its components was used in the manufacture of such product. For information on purchasing a license to this product for purposes other than research, contact Life Technologies Corporation, Cell Analysis Business Unit, Business Development, 29851 Willow Creek Road, Eugene, OR 97402, Tel: (541) 465-8300. Fax: (541) 335-0354.