

## DESCRIPTION

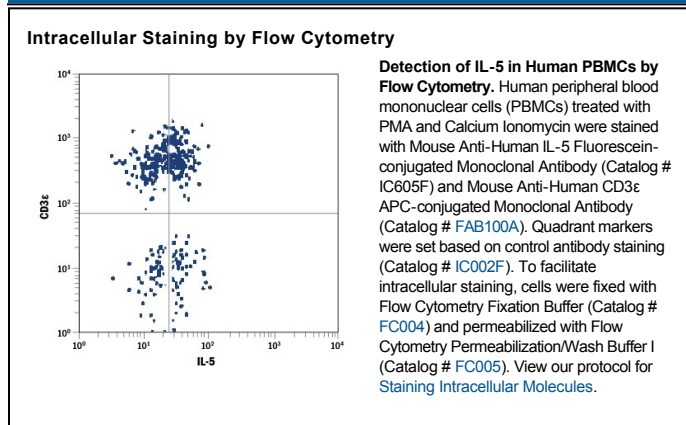
<b>Species Reactivity</b>	Human
<b>Specificity</b>	Detects human IL-5 in direct ELISAs and Western blots. In direct ELISAs and Western blots, no cross-reactivity with recombinant mouse IL-5 is observed.
<b>Source</b>	Monoclonal Mouse IgG <sub>1</sub> Clone # 9906
<b>Purification</b>	Protein A or G purified 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>	Fluorescein Excitation Wavelength: 488 nm Emission Wavelength: 515-545 nm (FITC)
<b>Formulation</b>	Supplied 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
Intracellular Staining by Flow Cytometry	10 $\mu$ L/10 <sup>6</sup> cells	See Below

## DATA



## 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  $\alpha$ -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:**

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