

## DESCRIPTION

<b>Species Reactivity</b>	Human
<b>Specificity</b>	Detects human IL-13 in direct ELISAs.
<b>Source</b>	Monoclonal Mouse IgG <sub>1</sub> Clone # 32116
<b>Purification</b>	Protein A or G purified from hybridoma culture supernatant
<b>Immunogen</b>	<i>E. coli</i> -derived recombinant human IL-13 Gly35-Asn146 Accession # P35225
<b>Conjugate</b>	Alexa Fluor 647 Excitation Wavelength: 650 nm Emission Wavelength: 668 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>Flow Cytometry</b>	0.25-1 µg/10 <sup>6</sup> cells	Human peripheral blood mononuclear cells (PBMCs) treated with Recombinant Human IL-4 (Catalog # 204-IL) and Goat Anti-Human IFN-γ Antigen Affinity-purified Polyclonal Antibody (Catalog # AF-285-NA)

## 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

IL-13 is a 17 kDa immunoregulatory cytokine that plays a key role in the pathogenesis of allergic asthma and atopy. It is secreted by Th1 and Th2 CD4<sup>+</sup> T cells, NK cells, visceral smooth muscle cells, eosinophils, mast cells, and basophils (1-3). IL-13 circulates as a monomer with two internal disulfide bonds that contribute to a bundled four α-helix configuration (4, 5). Mature human IL-13 shares 57%, 59%, and 94% amino acid sequence identity with mouse, rat, and rhesus IL-13, respectively. Despite the low homology, it exhibits cross-species activity between human, mouse, and rat (6, 7). IL-13 has diverse activities on numerous cell types (8). On macrophages, IL-13 suppresses the production of proinflammatory cytokines and other cytotoxic substances. On B cells, IL-13 induces immunoglobulin class switching to IgE, upregulates the expression of MHC class II, CD71, CD72, and CD23, and costimulates proliferation. IL-13 upregulates IL-6 while downregulating IL-1 and TNF-α production by fibroblasts and endothelial cells. IL-13 binds with low affinity to IL-13 Rα1, triggering IL-13 Rα1 association with IL-4 Rα. This high affinity receptor complex also functions as the type 2 IL-4 receptor complex (9, 10). Additionally, IL-13 binds with high affinity to IL-13 Rα2 which is expressed intracellularly, on the cell surface, and as a soluble molecule (11-14). IL-13 Rα2 regulates the bioavailability of both IL-13 and IL-4 and is over-expressed in glioma and several bronchial pathologies (10, 15, 16). Compared to wild type IL-13, the atopy-associated R110Q variant of IL-13 elicits increased responsiveness from eosinophils that express low levels of IL-13 Rα2 (17).

## References:

1. Wills-Karp, M. (2004) *Immunol. Rev.* **202**:175.
2. Nakajima H. and K. Takatsu (2007) *Int. Arch. Allergy Immunol.* **142**:265.
3. McKenzie, A.N. *et al.* (1993) *Proc. Natl. Acad. Sci. USA* **90**:3735.
4. Moy, F.J. *et al.* (2001) *J. Mol. Biol.* **310**:219.
5. Eisenmesser, E.Z. *et al.* (2001) *J. Mol. Biol.* **310**:231.
6. Ruetten, H. and C. Thiemermann (1997) *Shock* **8**:409.
7. Lakkis, F.G. *et al.* (1997) *Biochem. Biophys. Res. Commun.* **235**:529.
8. Wynn, T.A. (2003) *Annu. Rev. Immunol.* **21**:425.
9. Andrews, A.L. *et al.* (2002) *J. Biol. Chem.* **277**:46073.
10. Tabata, Y. *et al.* (2007) *Curr. Allergy Asthma Rep.* **7**:338.
11. Chiaramonte, M.G. *et al.* (2003) *J. Exp. Med.* **197**:687.
12. Daines, M.O. and G.K. Hershey (2002) *J. Biol. Chem.* **227**:10387.
13. Matsumura, M. *et al.* (2007) *Biochem. Biophys. Res. Commun.* **360**:464.
14. Tabata, Y. *et al.* (2007) *J. Immunol.* **177**:7905.
15. Andrews, A.L. *et al.* (2006) *J. Allergy Clin. Immunol.* **118**:858.
16. Joshi, B.H. *et al.* (2006) *Vitam. Horm.* **74**:479.
17. Andrews, A.L. *et al.* (2007) *J. Allergy Clin. Immunol.* **120**:91.

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