

DESCRIPTION

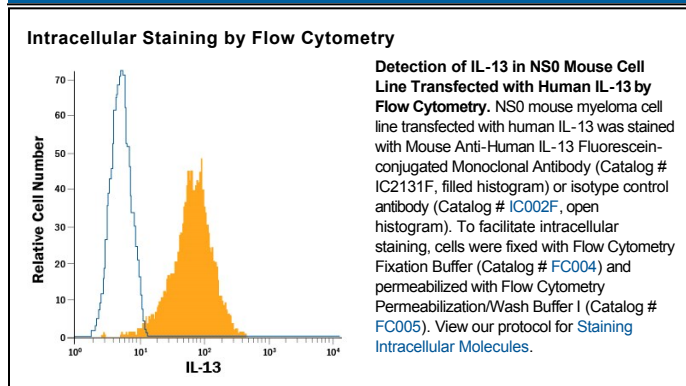
Species Reactivity	Human
Specificity	Detects human IL-13 in flow cytometry.
Source	Monoclonal Mouse IgG ₁ Clone # 32007
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	<i>E. coli</i> -derived recombinant human IL-13 Gly35-Asn146 Accession # P35225
Conjugate	Fluorescein Excitation Wavelength: 488 nm Emission Wavelength: 515-545 nm (FITC)
Formulation	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 μ L/10 ⁶ cells	See Below

DATA



PREPARATION AND STORAGE

Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	Protect from light. Do not freeze. <ul style="list-style-type: none"> 12 months from date of receipt, 2 to 8 °C as supplied.

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⁺ 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 macaque 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 pro-inflammatory 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 R α 1, triggering IL-13 R α 1 association with IL-4 R α . 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 R α 2 which is expressed intracellularly, on the cell surface, and as a soluble molecule (11-14). IL-13 R α 2 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 R α 2 (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.* **277**: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.