

**DESCRIPTION**

**Source** *E. coli*-derived human IL-13 protein  
Gly21-Asn132  
Accession # AAK53823

**N-terminal Sequence Analysis** Gly21

**Predicted Molecular Mass** 12.3 kDa

**SPECIFICATIONS**

**SDS-PAGE** 9 kDa, reducing conditions

**Activity** Measured in a cell proliferation assay using TF-1 human erythroleukemic cells. Kitamura, T. *et al.* (1989) J. Cell Physiol. **140**:323. The ED<sub>50</sub> for this effect is 0.5-2.5 ng/mL.

**Endotoxin Level** <0.01 EU per 1 µg of the protein by the LAL method.

**Purity** >95%, by SDS-PAGE under reducing conditions and visualized by silver stain.

**Formulation** Lyophilized from a 0.2 µm filtered solution in PBS. See Certificate of Analysis for details.

**PREPARATION AND STORAGE**

**Reconstitution** Reconstitute at 100 µg/mL in PBS.

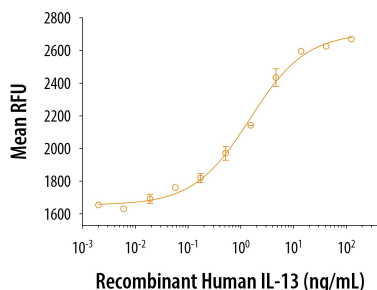
**Shipping** The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.

**Stability & Storage** Use a manual defrost freezer and avoid repeated freeze-thaw cycles.

- 12 months from date of receipt, -20 to -70 °C as supplied.
- 1 month, 2 to 8 °C under sterile conditions after reconstitution.
- 3 months, -20 to -70 °C under sterile conditions after reconstitution.

**DATA**

**Bioactivity**



**Bioactivity of Human IL-13 Protein** Recombinant human IL-13 (Catalog # 213-ILB/CF) stimulates proliferation in the TF-1 human erythroleukemic cell line. The ED<sub>50</sub> for this effect is 0.5-2.5 ng/mL.

**BACKGROUND**

Interleukin-13 (IL-13) is a monomeric 17 kDa immunoregulatory cytokine that plays a key role in the pathogenesis of allergy, cancer, and tissue fibrosis. It is secreted by several helper T cell subsets, NK cells, mast cells, eosinophils, basophils, and visceral smooth muscle cells (1-3). Mature human IL-13 shares approximately 58% amino acid sequence identity with mouse and rat IL-13. Despite the low homology, it exhibits cross-species activity between human, mouse, and rat (4). IL-13 suppresses the production of proinflammatory cytokines and other cytotoxic substances by macrophages, fibroblasts, and endothelial cells. On B cells, it promotes cellular activation, immunoglobulin class switching to IgE, and the up-regulation of CD23/Fcε RII (1, 5). IL-13 binds with low affinity to the transmembrane IL-13 Rα1 which then forms a signaling complex with the transmembrane IL-4 Rα (6-8). This high affinity receptor complex also functions as the type 2 IL-4 receptor (6, 7). IL-13 Rα2 inhibits responses to both IL-13 and IL-4. It binds IL-13 with high affinity (9, 10) and prevents IL-13 from signaling through the IL-13 Rα1/IL-4 Rα complex (11, 12). It also blocks signaling through IL-4-occupied IL-13 Rα1/IL-4 Rα receptor complexes (12, 13). In addition, IL-13-bound IL-13 Rα2 can directly promote tumor cell invasiveness and the development of tissue fibrosis (14-16).

**References:**

1. Saggini, A. *et al.* (2011) *Int. J. Immunopathol. Pharmacol.* **24**:305.
2. Gallo, E. *et al.* (2012) *Eur. J. Immunol.* **42**:2322.
3. Liang, H.E. *et al.* (2012) *Nat. Immunol.* **13**:58.
4. Ruetten, H. and C. Thiemermann (1997) *Shock* **8**:409.
5. McKenzie, A.N. *et al.* (1993) *Proc. Natl. Acad. Sci. USA* **90**:3735.
6. Aman, M.J. *et al.* (1996) *J. Biol. Chem.* **271**:29265.
7. Zurawski, S.M. *et al.* (1995) *J. Biol. Chem.* **270**:13869.
8. Andrews, A.L. *et al.* (2002) *J. Biol. Chem.* **277**:46073.
9. Chen, W. *et al.* (2009) *J. Immunol.* **183**:7870.
10. Daines, M.O. *et al.* (2007) *J. Allergy Clin. Immunol.* **119**:375.
11. Kasaian, M.T. *et al.* (2011) *J. Immunol.* **187**:561.
12. Andrews, A.-L. *et al.* (2006) *J. Allergy Clin. Immunol.* **118**:858.
13. Rahaman, S.O. *et al.* (2002) *Cancer Res.* **62**:1103.
14. Fujisawa, T. *et al.* (2009) *Cancer Res.* **69**:8678.
15. Fujisawa, T. *et al.* (2011) *Int. J. Cancer* **131**:344.
16. Fichtner-Feigl, S. *et al.* (2006) *Nat. Med.* **12**:99.