

**DESCRIPTION**

**Source** *Spodoptera frugiperda*, Sf 21 (stably transfected)-derived  
Ile20-Ser134  
Accession # P05113

**N-terminal Sequence Analysis** Ile20

**Structure / Form** Disulfide-linked homodimer

**Predicted Molecular Mass** 13 kDa (monomer)

**SPECIFICATIONS**

**SDS-PAGE** 13-15 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 typically 0.04-0.2 ng/mL.

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

**Purity** >97%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.

**Formulation** Lyophilized from a 0.2 µm filtered solution in PBS with BSA as a carrier protein. See Certificate of Analysis for details.

**PREPARATION AND STORAGE**

**Reconstitution** Reconstitute at 50 µg/mL in sterile PBS containing at least 0.1% human or bovine serum albumin.

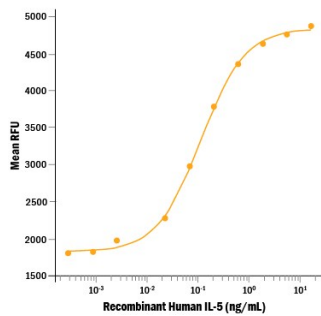
**Shipping** The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.

**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.

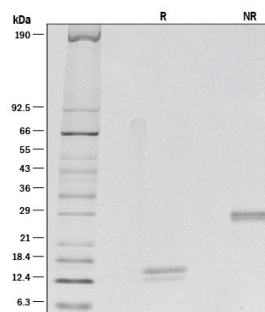
**DATA**

**Bioactivity**



Recombinant Human IL-5 (Catalog # 205-IL) stimulates cell proliferation of the TF-1 human erythroleukemic cell line. The ED<sub>50</sub> for this effect is typically 0.04-0.2 ng/mL.

**SDS-PAGE**



1 µg/lane of Recombinant Human IL-5 was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by silver staining, showing bands at 13-15 kDa and 28-32 kDa, respectively.

**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:**

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