

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 ED₅₀ for this effect is typically 0.04-0.2 ng/mL.

Endotoxin Level <1.0 EU per 1 µg of the protein by the LAL method.

Purity >97%, by SDS-PAGE under reducing conditions and visualized by silver stain.

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.

BACKGROUND

Interleukin-5 (IL-5) is a secreted glycoprotein that belongs to the α-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⁺ 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⁺ 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 Rα) and a shared signal-transducing subunit, βc (3, 6, 11). IL-5 Rα first binds IL-5 at low affinity, then associates with preformed βc dimers, forming a high-affinity receptor (12). IL-5 also binds proteoglycans, potentially enhancing its activity (13). Soluble forms of IL-5 Rα 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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