

**DESCRIPTION**

**Source** Mouse myeloma cell line, NS0-derived canine IL-5 protein  
Phe20-Ser134, with a C-terminal 6-His tag  
Accession # Q95J76

**N-terminal Sequence Analysis** Phe20

**Structure / Form** Disulfide-linked homodimer

**Predicted Molecular Mass** 14.1 kDa (monomer)

**SPECIFICATIONS**

**SDS-PAGE** 19-21 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 2-8 ng/mL.

**Endotoxin Level** <0.10 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 sterile PBS.

**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). Canine IL-5 is synthesized as a 134 amino acid (aa) precursor that contains a 21 aa signal sequence and a 113 aa mature segment. Mature canine IL-5 shares 62%, 58%, 56%, 83%, 84% and 85%, aa sequence identity with human, mouse, rat, equine, feline and porcine IL-5, respectively. 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 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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