

#### DESCRIPTION

**Source** *E. coli*-derived  
Ala21-Gln169, with and without an N-terminal Met  
Accession # P04351

**N-terminal Sequence Analysis** Ala21 & Met

**Predicted Molecular Mass** 17.2 kDa

#### SPECIFICATIONS

**Activity** Measured in a cell proliferation assay using CTLL-2 mouse cytotoxic T cells. Gearing, A.J.H. and C.B. Bird (1987) in *Lymphokines and Interferons, A Practical Approach*. Clemens, M.J. *et al.* (eds): IRL Press. 295.  
The ED<sub>50</sub> for this effect is typically 0.1-0.4 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 Ammonium Acetate and DTT with BSA as a carrier protein. See Certificate of Analysis for details.

#### PREPARATION AND STORAGE

**Reconstitution** Reconstitute at 100 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-2 (IL-2) is a O-glycosylated four  $\alpha$ -helix bundle cytokine that has potent stimulatory activity for antigen-activated T cells. It is expressed by CD4<sup>+</sup> and CD8<sup>+</sup> T cells,  $\gamma\delta$  T cells, B cells, dendritic cells, and eosinophils (1 - 3). Mature mouse IL-2 shares 56% and 73% aa sequence identity with human and rat IL-2, respectively. It shows strain-specific heterogeneity in an N-terminal region that contains a poly-glutamine stretch (4). Mouse and human IL-2 exhibit cross-species activity (5). The receptor for IL-2 consists of three subunits that are present on the cell surface in varying preformed complexes (6 - 8). The 55 kDa IL-2 R $\alpha$  is specific for IL-2 and binds with low affinity. The 75 kDa IL-2 R $\beta$ , which is also a component of the IL-15 receptor, binds IL-2 with intermediate affinity. The 64 kDa common gamma chain  $\gamma$ /IL-2 R $\gamma$ , which is shared with the receptors for IL-4, -7, -9, -15, and -21, does not independently interact with IL-2. Upon ligand binding, signal transduction is performed by both IL-2 R $\beta$  and  $\gamma$ . IL-2 is best known for its autocrine and paracrine activity on T cells. It drives resting T cells to proliferate and induces IL-2 and IL-2 R $\alpha$  synthesis (1, 2). It contributes to T cell homeostasis by promoting the Fas-induced death of naïve CD4<sup>+</sup> T cells but not activated CD4<sup>+</sup> memory lymphocytes (9). IL-2 plays a central role in the expansion and maintenance of regulatory T cells, although it inhibits the development of Th17 polarized cells (10 - 12). Thus, IL-2 may be a key cytokine in the natural suppression of autoimmunity (13, 14).

#### References:

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