

## DESCRIPTION

**Source** *E. coli*-derived  
Ser19-Asn178  
Accession # P29456.1

**N-terminal Sequence Analysis** Ser19

**Predicted Molecular Mass** 19 kDa (monomer)

## SPECIFICATIONS

**Activity** Measured in a cell proliferation assay using MC/9-2 mouse mast cells. Thompson-Snipes, L. *et al.* (1991) J. Exp. Med. **173**:507. The ED<sub>50</sub> for this effect is typically 0.4-2.4 ng/mL.

**Endotoxin Level** <0.10 EU per 1 µg of the protein by the LAL method.

**Purity** >95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.

**Formulation** Lyophilized from a 0.2 µm filtered solution in NaH<sub>2</sub>PO<sub>4</sub> and NaCl 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.
- 3 months, 2 to 8 °C under sterile conditions after reconstitution.

## BACKGROUND

Interleukin 10, also known as cytokine synthesis inhibitory factor (CSIF), is the charter member of the IL-10 family of α-helical cytokines that also includes IL-19, IL-20, IL-22, and IL-24 (1, 2). IL-10 is secreted by many activated hematopoietic cell types as well as hepatic stellate cells, keratinocytes, and placental cytotrophoblasts (2-5). Mature rat IL-10 shares 85% amino acid sequence identity with mouse and 71%-79% amino acid sequence identity with bovine, canine, equine, feline, human, ovine, and porcine IL-10. Whereas human IL-10 is active on mouse cells, mouse IL-10 does not act on human cells (6, 7). IL-10 is a 178 amino acid molecule that contains two intrachain disulfide bridges and is expressed as a 36 kDa noncovalently associated homodimer (8-10). The IL-10 dimer binds to two IL-10 Rα/IL-10 R1 chains, resulting in recruitment of two IL-10 Rβ/IL-10R2 chains and activation of a signaling cascade involving JAK1, TYK2, and STAT3 (11). IL-10 Rβ does not bind IL-10 by itself but is required for signal transduction (1). IL-10 Rβ also associates with IL-20 Rα, IL-22 Rα, or IL-28 Rα to form the receptor complexes for IL-22, IL-26, IL-28, and IL-29 (12-14). IL-10 is a critical molecule in the control of viral infections and allergic and autoimmune inflammation (15-17). It promotes phagocytic uptake and Th2 responses but suppresses antigen presentation and Th1 proinflammatory responses (2).

## References:

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