

DESCRIPTION

Source	<i>E. coli</i> -derived Ser19-Asn175 Accession # Q29055
N-terminal Sequence Analysis	Ser19
Structure / Form	Noncovalently-linked homodimer
Predicted Molecular Mass	18 kDa

SPECIFICATIONS

Activity	Measured in a cell proliferation assay using MC/9-2 mouse mast cells. Thompson-Snipes, L. <i>et al.</i> (1991) <i>J. Exp. Med.</i> 173 :507. The ED ₅₀ for this effect is 1.2-6 ng/mL.
Endotoxin Level	<0.01 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. 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. <ul style="list-style-type: none"> ● 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

IL-10, initially designated cytokine synthesis inhibitory factor (CSIF), was originally identified as a product of murine T helper 2 (Th2) clones that inhibited the cytokine production by Th1 clones which are dependent upon stimulation with antigen in the presence of antigen presenting cells (APC). The human homologue of murine IL-10 was subsequently cloned by cross-hybridization. Human and murine IL-10 are 81% and 73% homologous at the nucleotide and amino acid level, respectively. Both murine and human IL-10 are also highly homologous with a previously uncharacterized open reading frame in the Epstein-Bar virus (EBV) genome, BCRF1. The BCRF1 gene product is now designated viral IL-10. Murine IL-10 is produced by Th2 cells, activated fetal thymocytes, macrophages, keratinocytes, and LY-1⁺ (CD5⁺) and normal B cells. Human IL-10 has cross-species activities and is active on mouse cells. Murine IL-10 is species-specific and does not act on human cells. Porcine IL-10 is 71% and 78% homologous with mouse and human IL-10, respectively.

IL-10 is a pleiotropic cytokine that can exert either immunostimulatory or immunosuppressive effects on a variety of cell types. It is a potent immunosuppressant of macrophage functions. *In vitro*, IL-10 can inhibit the accessory function and antigen-presenting capacity of monocytes by, among other effects, downregulating class II MHC expression. Thus, IL-10 can inhibit monocyte/macrophage-dependent, antigen stimulated cytokine synthesis (especially IFN-γ) by human PBMNC and NK, and mouse Th1 cells. Additionally, IL-10 is a potent inhibitor of monocyte/macrophage activation and its resultant cytotoxic effects. As an immunostimulatory cytokine, IL-10 can act on B cells to enhance their viability, cell proliferation, Ig secretion, and class II MHC expression. Aside from B lymphocytes, IL-10 is also a growth co-stimulator for thymocytes and mast cells, as well as an enhancer of cytotoxic T cell development.

References:

1. Moore, K.W. *et al.* (1993) *Annu. Rev. Immunol.* **11**:165.