

DESCRIPTION

Source *E. coli*-derived
Leu27-Val172, with an N-terminal Met
Accession # Q198B4

N-terminal Sequence Analysis Met

Predicted Molecular Mass 16.7 kDa

SPECIFICATIONS

Activity Measured by its ability to induce IL-10 secretion in COLO 205 human colorectal adenocarcinoma cells. Nagalakshmi, M.L. *et al.* (2004) International Immunopharmacology **4**:679.
The ED₅₀ for this effect is 150-750 pg/mL.

Endotoxin Level <0.10 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.

- 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-22 (IL-22), also known as IL-10-related T cell-derived inducible factor (IL-TIF), was initially identified as a gene induced by IL-9 in mouse T cells and mast cells. It belongs to the IL-10-related cytokine family that consists of six members (IL-10, IL-19, IL-20, IL-22, IL-24/MDA-7, and IL-26/AK155). These proteins share structural homology and some degree of amino acid sequence homology to IL-10. Receptors for these proteins are members of the class II cytokine receptor family (1). The rat IL-22 coding region corresponding to amino acids 48 - 179 was deduced from a rat genomic clone (Genbank accession number AC111483). The N-terminal portion was cloned from rat adipocyte first strands using degenerate forward primers based on the human and mouse IL-22 amino acid sequences in two independent PCR reactions (2). Rat IL-22 cDNA predicts a 179 amino acid (aa) residue precursor protein with a putative 33 aa signal peptide that is cleaved to generate a 147 aa mature protein, which shares approximately 92% and 79% aa sequence identity with mouse and human IL-22, respectively. IL-22 signals through a heterodimeric receptor complex composed of the IL-22R (CRF2-9) subunit and the (chain of IL-10R (CRF2-4). In addition, IL-22 also binds to a secreted member of the class II cytokine receptor family called IL-22BP that acts as a natural IL-22 antagonist. IL-22 upregulates acute-phase reactants in the liver and hepatoma cells. In a rat hepatoma cell line, IL-22 has been shown to activate the Jak/STAT and MAPK signaling pathways (3).

References:

1. Kotenko, S.V. (2002) Cytokine and Growth Factor Reviews **13**:223.
2. Kettlewell, J. (2002) R&D Systems, unpublished results.
3. Lejeune, D. *et al.* (2002) J. Biol. Chem. **277**:33673.