

DESCRIPTION

Source *Spodoptera frugiperda*, Sf 21 (baculovirus)-derived
Pro22-Leu199
Accession # P20809.1

N-terminal Sequence Analysis Pro22

Predicted Molecular Mass 19 kDa

SPECIFICATIONS

SDS-PAGE 23 kDa, reducing conditions

Activity Measured in a cell proliferation assay using T11 mouse plasmacytoma cells. Nordan, R.P. *et al.* (1987) J. Immunol. **139**:813. The ED₅₀ for this effect is typically 0.02-0.12 ng/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 and EDTA 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.
- 1 month, 2 to 8 °C under sterile conditions after reconstitution.
- 3 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

IL-11 (Interleukin 11) is a pleiotropic cytokine in the IL-6 family, which also includes LIF, CNTF, Oncostatin M, Cardiotrophin-1, IL-27 and IL-31 (1-3). In humans, IL-11 was also independently discovered as an adipogenesis inhibitory factor (AGIF) (3). The human IL-11 cDNA encodes a 199 amino acid (aa) precursor, which generates a 178 aa, 19 kDa mature unglycosylated protein. Mature human IL-11 shares 88%, 88%, and 96% aa sequence identity with mouse, rat and canine IL-11, respectively. IL-11 is secreted by osteoblasts, synoviocytes, fibroblasts, chondrocytes, intestinal myofibroblasts, and trophoblasts, among other cell types (1). It is found in the plasma mainly during inflammation, such as that associated with viral infection, cancer, or inflammatory arthritis, and is considered to be primarily anti-inflammatory (1). It stimulates hematopoiesis and thrombopoiesis, regulates macrophage differentiation, and confers mucosal protection in the intestine (1). It has also been found to enhance T cell polarization toward Th2, promote B cell IgG production, increase osteoclast bone absorption, protect endothelial cells from oxidative stress, and regulate epithelial proliferation and apoptosis (1). IL-11 synergizes with several other cytokines to produce these effects, and its effects overlap with those of IL-6 (1). IL-11 receptor activation requires formation of a complex of two IL-11 molecules with two molecules of the ligand-binding IL-11 R α subunit and two molecules of the ubiquitously expressed cell signaling β subunit, gp130 (4). A soluble form of IL-11 R α can bind IL-11 and either form a signaling complex with gp130 on the cell surface, or inhibit cell surface IL-11 R α/gp130 signaling (5-7).

References:

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3. Kawashima, I. *et al.* (1991) FEBS Lett. **283**:199.
4. Barton, V.A. *et al.* (2000) J. Biol. Chem. **275**:36197.
5. Curtis, D.J. *et al.* (1997) Blood **90**:4403.
6. Baumann, H. *et al.* (1996) J. Immunol. **157**:284.
7. Karow, J. *et al.* (1996) Biochem. J. **318**:489.