Recombinant Human IL-11

Catalog Number: 218-IL/CF

DESCRIPTION

Source	*Spodoptera frugiperda*, *Sf* 21 (baculovirus)-derived human IL-11 protein Pro22-Leu199 Accession # P20809.1
N-terminal Sequence Analysis	Pro22
Predicted Molecular Mass	19 kDa

SPECIFICATIONS

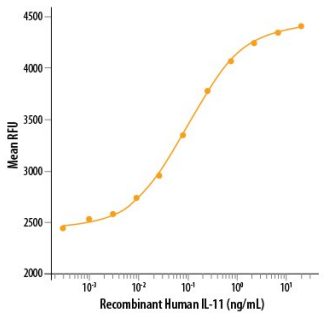
SDS-PAGE	23 kDa, reducing conditions
Activity	Measured in a cell proliferation assay using T11 mouse plasmacytoma cells. Nordan, R.P. *et al.* (1987) J. Immunol. **139**:813. The ED_{50} for this effect is 0.02-0.12 ng/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>97%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
Formulation	Supplied as a 0.2 µm filtered solution in PBS and EDTA. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** • 6 months from date of receipt, 2 to 8 °C as supplied.

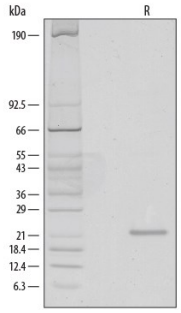
DATA

Bioactivity



Recombinant Human IL-11 Protein Bioactivity Recombinant Human IL-11 (Catalog # 218-IL/CF) stimulates cell proliferation of the T11 mouse plasmacytoma cell line. The ED_{50} for this effect is 0.02-0.12 ng/mL.

SDS-PAGE



Recombinant Human IL-11 Protein SDS-PAGE 1 µg/lane of Recombinant Human IL-11 was resolved with SDS-PAGE under reducing (R) conditions and visualized by silver staining, showing a single band at 23 kDa.

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:

1. Putoczki, T. and M. Ernst (2010) J. Leukoc. Biol. **88**:1109.
2. Paul, S.R. *et al.* (1990) Proc. Natl. Acad. Sci. USA **87**:7512.
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.

Global bio-techne.com info@bio-techne.com techsupport@bio-techne.com TEL +1 612 379 2956
USA TEL 800 343 7475 **Canada** TEL 855 668 8722 **China** TEL +86 (21) 52380373
Europe | Middle East | Africa TEL +44 (0)1235 529449