

General Information

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| Synonyms | Human IL11; IL11; IL-11; Oprelvekin; interleukin 11; interleukin-11; Adipogenesis inhibitory factor |
| Accession # | P20809.1 |
| Source | Human embryonic kidney cell, HEK293-derived human IL-11 protein |
| | Pro22-Leu199 |
| Predicted Molecular weight | 19.1 kDa |

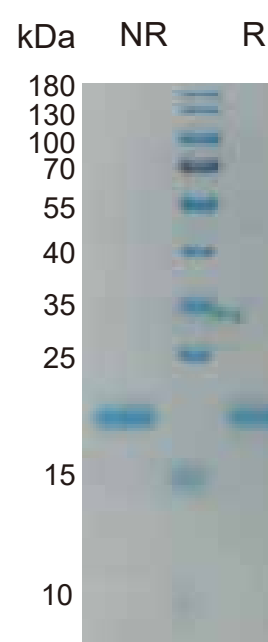
Components and Storage

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|-----------------------|---|
| Formulation | Solution protein. Dissolved in sterile PBS buffer. This solution can then be diluted into other aqueous buffers. Centrifuge the vial prior to opening. |
| Storage and Stability | Avoid repeated freeze-thaw cycles. It is recommended that the protein be aliquoted for optimal storage. 12 months from date of receipt, -20 to -70 ° C as supplied. |
| Shipping | Shipping with dry ice. |

Quality

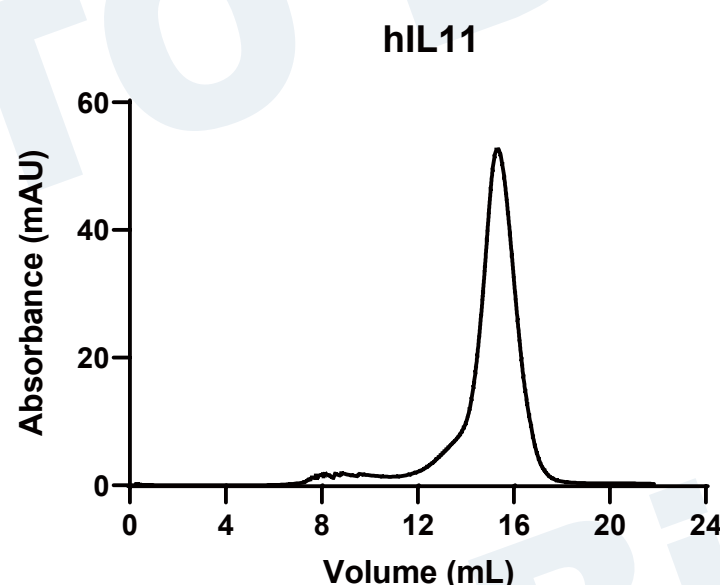
| | |
|-----------------|--|
| Purity | > 95%, determined by SDS-PAGE. |
| Endotoxin Level | <0.010 EU per 1 ug of the protein by the LAL method. |
| Activity | Measured in a cell proliferation assay using T11 mouse plasmacytoma cells. The EC50 for this effect is 0.02-0.10 ng/mL. |

SDS-PAGE



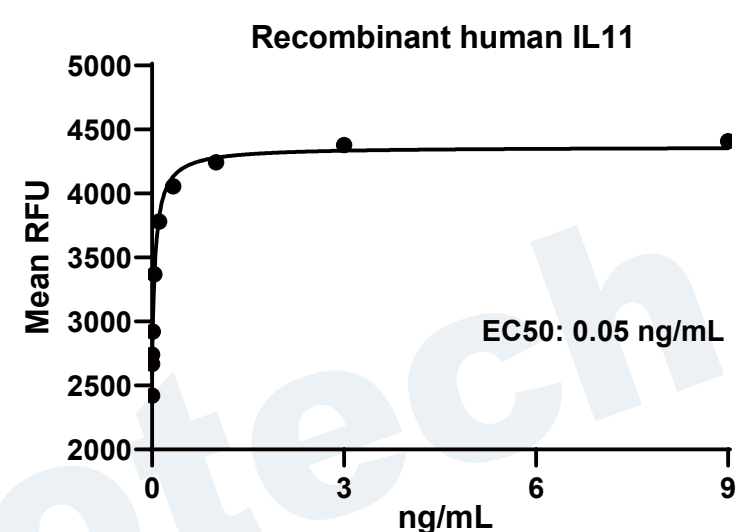
2 ug/lane protein was resolved with SDS-PAGE under non-reducing (NR) and reducing (R) conditions and visualized by Coomassie Blue staining.

Gel filtration



Size-exclusion chromatography of recombinant human IL11 protein (280 nm absorbance)

Bioactivity



Recombinant human IL11 (Catalog # HF-1011) stimulates cell proliferation of the T11 mouse plasmacytoma cells.

Background

Interleukin-11 (IL-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 alpha subunit and two molecules of the ubiquitously expressed cell signaling beta subunit, gp130 (4). A soluble form of IL-11 R alpha can bind IL-11 and either form a signaling complex with gp130 on the cell surface, or inhibit cell surface IL-11 R alpha /gp130 signaling (5-7).

Reference

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