Human IL-11 Protein, His Tag, premium grade

Catalog # IL1-H5243

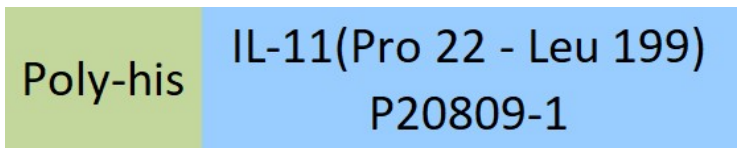
Synonym

IL-11,Interleukin-11,AGIF,Oprelvekin,IL11

Source

Human IL-11 Protein, His Tag, premium grade(IL1-H5243) is expressed from human 293 cells (HEK293). It contains AA Pro 22 - Leu 199 (Accession # P20809-1).
Predicted N-terminus: His
Human IL-11 Protein, His Tag, premium grade (IL1-H5243), designed for preclinical stage, has the same activity and performance with GMP Human IL-11, which enables a seamless transition from preclinical development to clinical phases. Premium Grade product offer a cost efficient alternative of GMP Grade products for the early development phase when safety of raw materials is not top priority. By using Premium Grade products in early development phase, you can transition easily into clinical and commercial phase without need to revalidate the raw materials and modify manufacturing process.

Molecular Characterization



This protein carries a polyhistidine tag at the N-terminus.

The protein has a calculated MW of 21.0 kDa. The protein migrates as 23-29 kDa when calibrated against Star Ribbon Pre-stained Protein Marker under reducing (R) condition (SDS-PAGE) due to glycosylation.

Endotoxin

Less than 0.1 EU per μg by the LAL method.

Sterility

The sterility testing was performed by membrane filtration method.

Purity

>90% as determined by SDS-PAGE.

Formulation

Lyophilized from 0.22 μm filtered solution in Cirtate buffer, pH3.0 with trehalose as protectant.

Contact us for customized product form or formulation.

Reconstitution

Please see Certificate of Analysis for specific instructions.

For best performance, we strongly recommend you to follow the reconstitution protocol provided in the CoA.

Storage

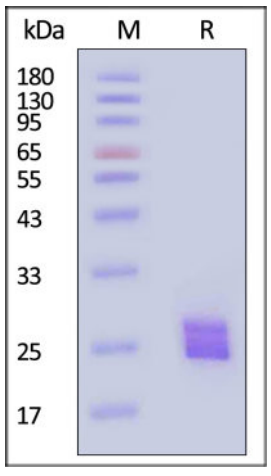
For long term storage, the product should be stored at lyophilized state at -20°C or lower.

Please avoid repeated freeze-thaw cycles.

This product is stable after storage at:

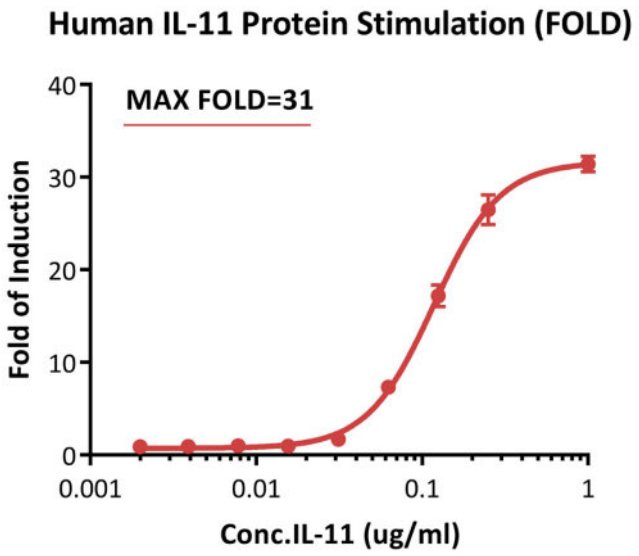
- -20°C to -70°C for 12 months in lyophilized state;
- -70°C for 3 months under sterile conditions after reconstitution.

SDS-PAGE



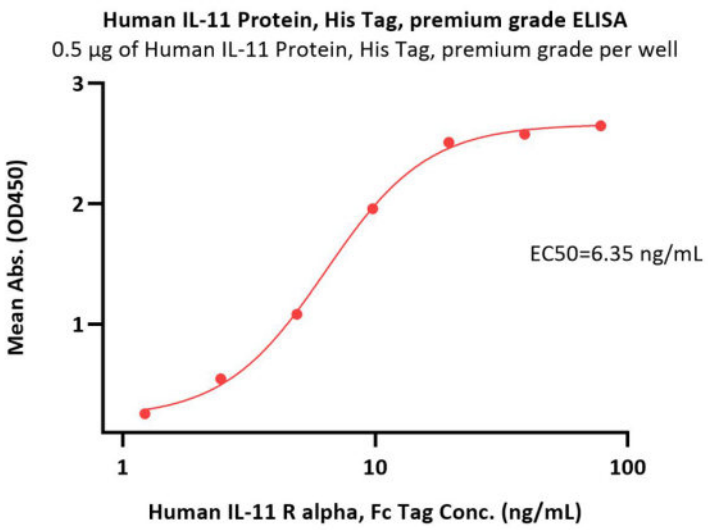
Human IL-11 Protein, His Tag, premium grade on SDS-PAGE under reducing (R) condition. The gel was stained with Coomassie Blue. The purity of the protein is greater than 90% (With Star Ribbon Pre-stained Protein Marker).

Bioactivity-Bioactivity CELL BASE



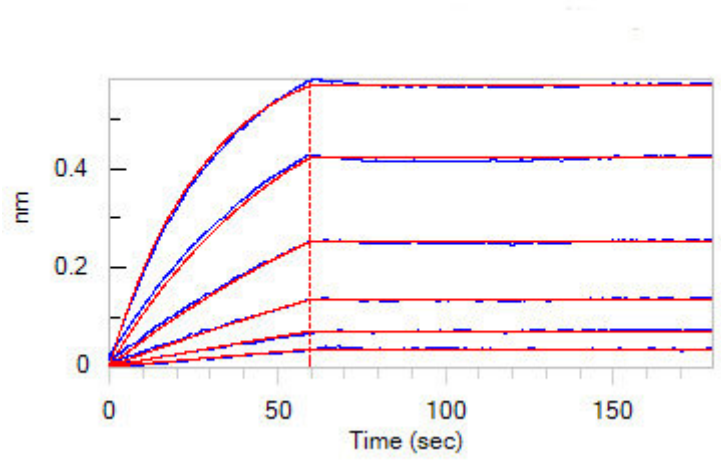
The Human IL-11 R alpha (Luc) HEK293 Reporter Cell was stimulated with serial dilutions of Human IL-11 Protein, His Tag, premium grade (Cat. No. IL1-H5243). The max induction fold was approximately 31.

Bioactivity-ELISA



Immobilized Human IL-11 Protein, His Tag, premium grade (Cat. No. IL1-H5243) at 5 μg/mL (100 μL/well) can bind Human IL-11 R alpha, Fc Tag (Cat. No. ILR-H5256) with a linear range of 1-10 ng/mL (QC tested).

Bioactivity-BLI



Loaded Human IL-11 Protein, His Tag, premium grade (Cat. No. IL1-H5243) on HIS1K Biosensor, can bind Human IL-11 R alpha, Fc Tag (Cat. No. ILR-H5256) with an affinity constant of 0.177 nM as determined in BLI assay (ForteBio Octet Red96e) (Routinely tested).

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 cD 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).

Clinical and Translational Updates

Please contact us via TechSupport@acrobiosystems.com if you have any question on this product.