GMP Human IL-6 Protein

Catalog # GMP-L06H27

Product Details

IL-6 (Interleukin-6) is a multifunctional cytokine involved in immune regulation and hematopoiesis, acting synergistically with IL-3 and SCF to stimulate early hematopoietic progenitor proliferation. In HSC culture, IL-6 promotes progenitor cell expansion and can support the maintenance of stem and progenitor cell activity. During iPSC differentiation toward HSCs, IL-6 aids in the transition from mesoderm to hematopoietic commitment and enhances the functional output of hematopoietic progenitors, especially in synergy with IL-3 and thrombopoietin.

Product Features and Advantages

- **Specific HSC Expansion Driver**: Efficiently supports hematopoietic stem cell expansion and hPSC-derived hematopoietic stem and progenitor cell differentiation, validated in multiple clinical trials and cell manufacturing processes.
- **Reliable Large-Scale Supply**: Ensures batch production capacity, supporting robust and consistent manufacturing scale-up.
- **High Lot-to-Lot Consistency**: Ensures reliable and reproducible performance in every batch, supporting scalable applications.

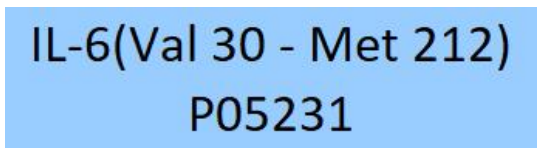
GMP Platform Advantages

- **Quality Assurance**: Global QMS with comprehensive and stringent QC release criteria.
- **End-to-End GMP Compliance**: Full manufacturing and QC under a cGMP system.
- **Comprehensive Control of Adventitious Agents**: Stringent biosafety from cell banks to final release.
- **Comprehensive Regulatory Support**: Includes RSF and DMF to meet global requirements.
- **Resilient Supply Chain**: Intelligent modular facilities ensure a stable global supply.
- **Professional Support**: Extensive manufacturing and application expertise to accelerate development.

Source

GMP Human IL-6 Protein (GMP-L06H27) is expressed from human 293 cells (HEK293). It contains AA Val 30 - Met 212 (Accession # P05231).

Molecular Characterization



This protein carries no "tag".

The protein has a calculated MW of 20.8 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.

N-terminal Sequence Analysis

Val-Pro-Pro-Gly-Glu-Asp-Ser-Lys-Asp-Val-Ala-Ala-Pro-His-Arg
(Routinely tested)

Endotoxin

Less than 10 EU/mg, tested by the LAL method in compliance with USP <85> and Ph. Eur. 2.6.14.

Host Cell Protein

<0.5 ng/μg of protein tested by ELISA.

Host Cell DNA

<0.02 ng/μg of protein tested by qPCR.

Sterility

Sterility testing was performed using the membrane filtration method in compliance with USP <71> and Ph. Eur. 2.6.1.

Mycoplasma

Negative

Purity

>95% as determined by SDS-PAGE.

Formulation

Lyophilized from 0.22 μm filtered solution in PBS, pH7.4 with protectants.

Contact us for customized product form or formulation.

Vial Specification

2R (13 mm neck finish)

Shipping

This product is supplied and shipped with blue ice, please inquire the shipping cost.

Storage

Upon receipt, store it immediately at -20°C or lower for long term storage.

Please avoid repeated freeze-thaw cycles.

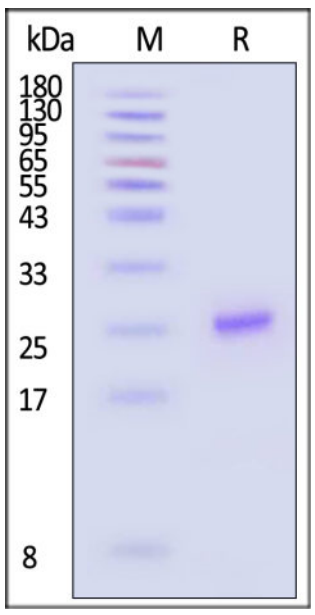
This product is stable after storage at:

- -20°C to -70°C for 5 years in lyophilized state;
- -70°C for 12 months under sterile conditions after reconstitution.

ACRO Quality Management System

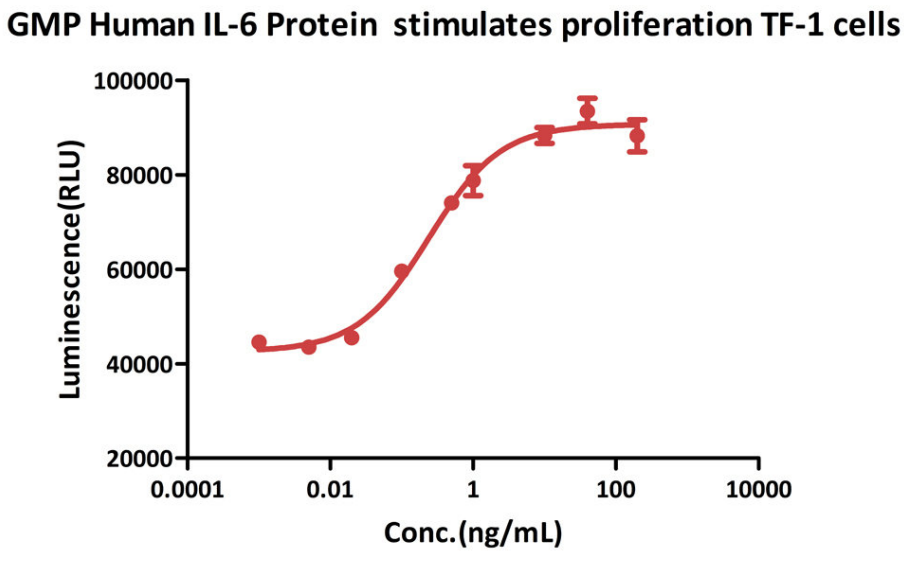
- QMS(ISO, GMP)
- Quality Advantages
- Quality Control Process

SDS-PAGE

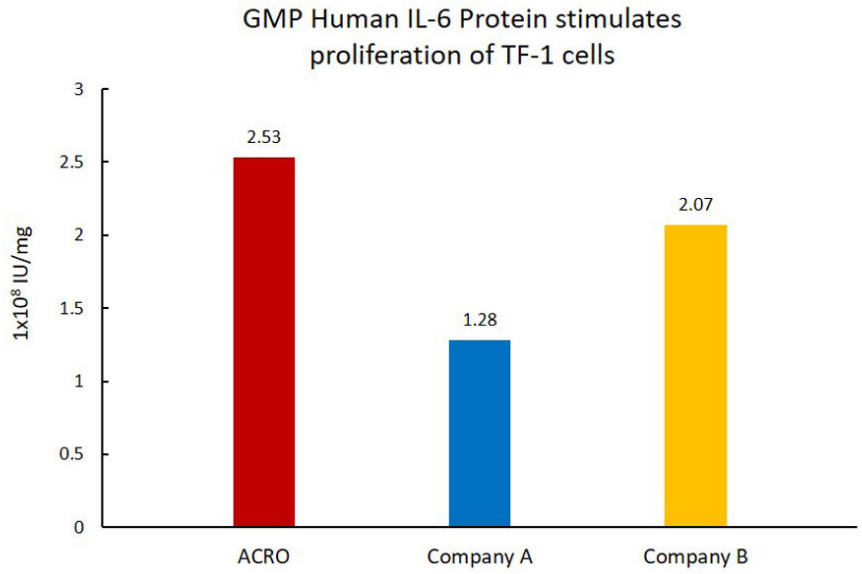


GMP Human IL-6 Protein on SDS-PAGE under reducing (R) condition. The gel was stained with Coomassie Blue. The purity of the protein is greater than 95% (With Star Ribbon Pre-stained Protein Marker).

Bioactivity-CELL BASE

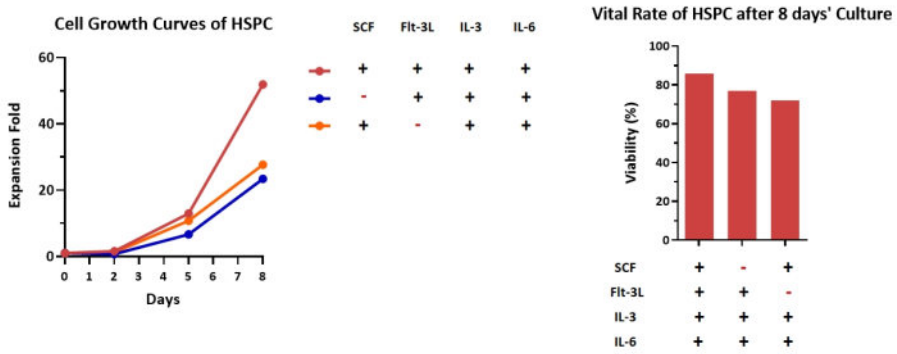


GMP Human IL-6 Protein (Cat. No. GMP-L06H27) stimulates proliferation of TF-1 human erythroleukemic cell line. The specific activity of GMP Human IL-6 Protein is > 1.00×10^8 IU/mg, which is calibrated against human IL-6 WHO International Standard (NIBSC code: 21/308) (QC tested).

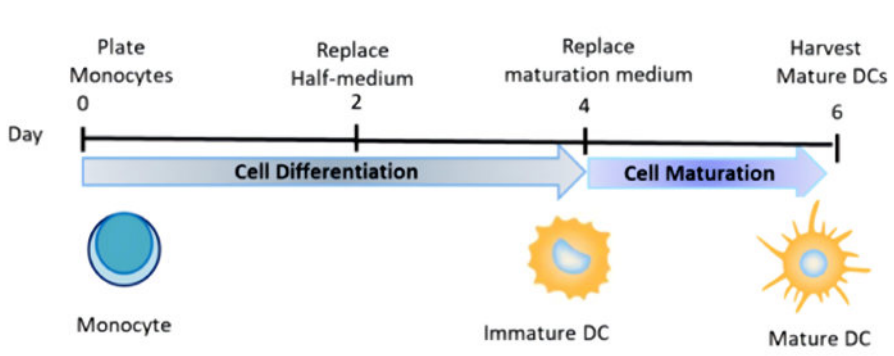


GMP Human IL-6 Protein (Cat. No. GMP-L06H27) exhibits superior activity compared to commercially available products.

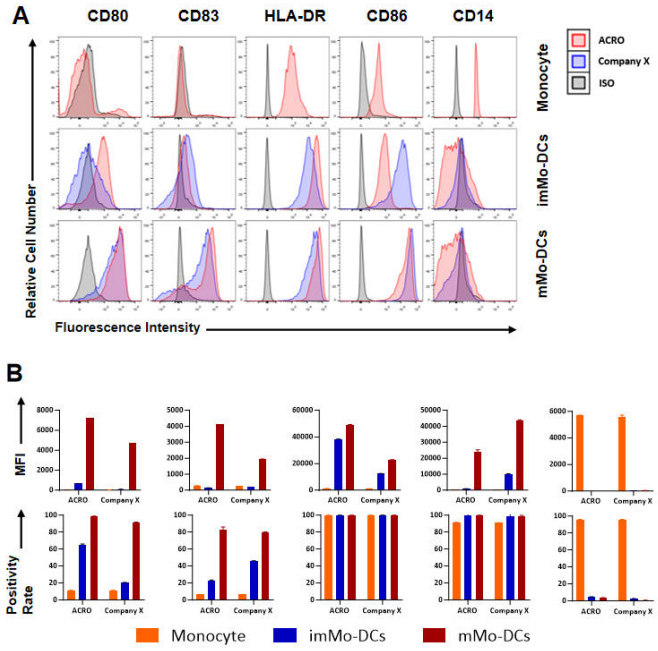
Application Data



GMP Human SCF Protein (Cat. No. GMP-SCFH25), Human Flt-3 Ligand Protein (Cat. No. GMP-FLLH28), GMP Human IL-3 Protein (Cat. No. GMP-L03H18) and GMP Human IL-6 Protein (Cat. No. GMP-L06H27) could support the rapid cell expansion and good cell viability of CD34+ hematopoietic stem cells.

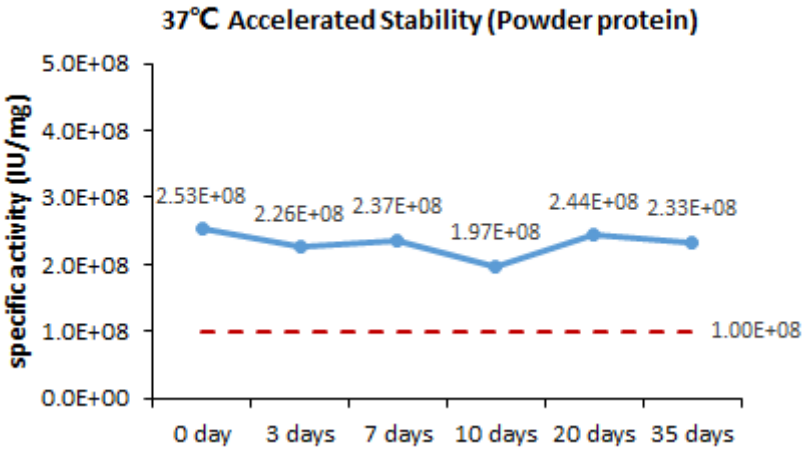


Schematic diagram of monocyte differentiation into dendritic cells.

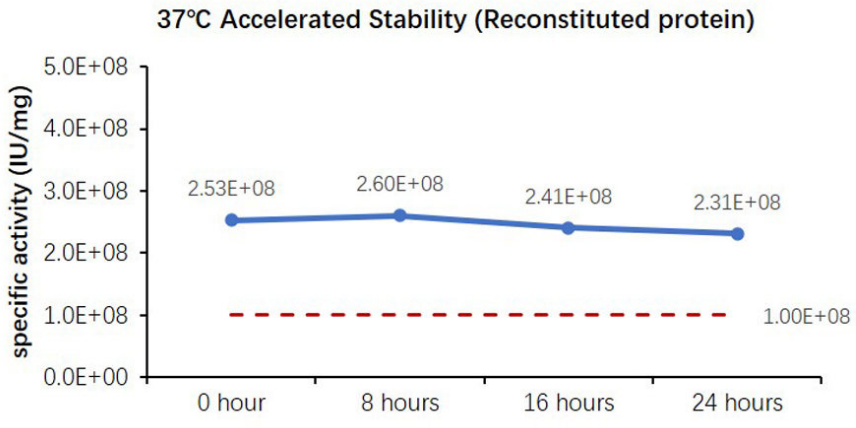


Detection of differentiation markers during monocyte-to-DC differentiation.
Representative histograms showing surface expression of CD14, CD83, HLA-DR, CD80, and CD86 on monocytes, immature monocyte-derived DCs (imMo-DCs), and mature Mo-DCs (mMo-DCs) cultured in either ACRO medium or Company X medium. Both media effectively induced differentiation of monocytes into DCs, as evidenced by marked upregulation of CD83, HLA-DR, CD80, and CD86 and downregulation of CD14. Compared with imMo-DCs, mMo-DCs showed further increases in the expression of CD80, CD83, and CD86. Marker-specific staining is shown in red (ACRO) or blue (Company X), and isotype controls are shown in gray. Histograms are from one representative experiment (A). Corresponding mean fluorescence intensity (MFI) values for each marker from three technical replicates. Data are presented as mean ± SD (B).

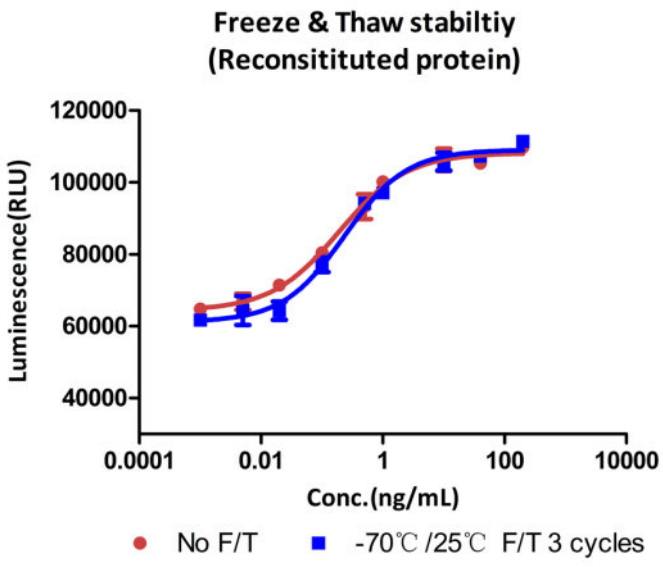
Bioactivity-Stability



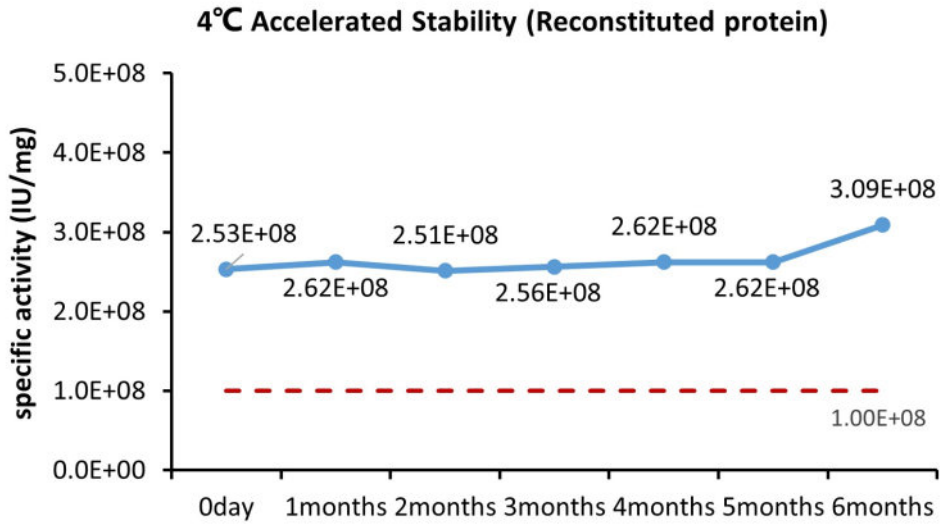
Cell-based assay demonstrates that the lyophilized GMP Human IL-6 Protein (Cat. No. GMP-L06H27) is stable at 37°C for 35 days.



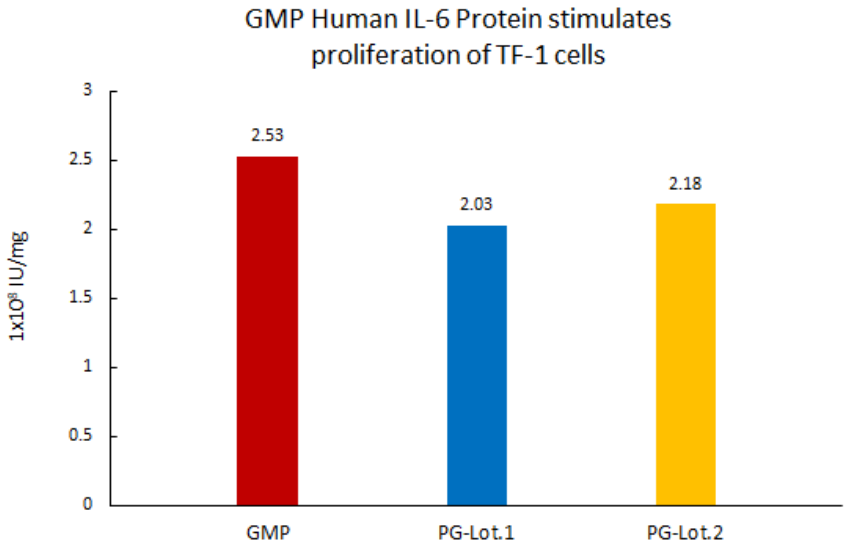
Cell-based assay demonstrates that the reconstituted GMP Human IL-6 Protein (Cat. No. GMP-L06H27) is stable at 37 ℃ for 24 hours.



Cell-based assay demonstrates that the reconstituted GMP Human IL-6 Protein (Cat. No. GMP-L06H27) is stable after 3 freeze-thaw cycles.



Cell-based assay demonstrates that the reconstituted GMP Human IL-6 Protein (Cat. No. GMP-L06H27) is stable at 4℃ for 6 months.



Cell-based assay demonstrates batch-to-batch consistency between Acro's GMP and PG IL-6.

Background

Interleukin 6 (IL-6) is also known as HGF, BSF2,HSF, IFNB2 and IL-6, originally identified as a B cell differentiation factor, is a multifunctional cytokine that regulates immune responses, hematopoiesis, acute phase responses, and inflammatory reactions.It is secreted by T cells, macrophages , monocytes, fibroblasts,endothelial cells,et.al. to stimulate immune response to trauma, especially burns or other tissue damage leading to inflammation. Interleukin 6 has been shown to interact with interleukin-6 receptor and glycoprotein. IL-6 is relevant to many disease processes such as diabetes,atherosclerosis, depression,Alzheimer's

Disease,systemic,lupus erythematosus,prostate cancer and rheumatoid arthritis. Advanced/metastatic cancer patients have higher levels of IL-6 in their blood.Hence there is an interest in developing anti-IL-6 agents as therapy against many of these diseases.

MANUFACTURING SPECIFICATIONS

ACROBiosystems GMP grade products are produced under a quality management system and in compliance with relevant guidelines: Ph. Eur General Chapter 5.2.12 Raw materials of biological origin for the production of cell-based and gene therapy medicinal products; USP<92>Growth Factors and Cytokines Used in Cell Therapy Manufacturing; USP<1043>Ancillary Materials for Cell, Gene, and Tissue-Engineered Products; ISO/TS 20399-1:2018, Biotechnology - Ancillary Materials Present During the Production of Cellular Therapeutic Products.

ACROBiosystems Quality Management System Contents：

- GMP-certified facility (compliance with FDA cGMP, EMA GMP, ICH, ISO9001/13485/MDSAP, and certified by third-party SGS, UL, and RX360)
- Animal origin-free materials, equipments, and facilities
- Materials sourced only from approved suppliers
- ISO 5 cleanrooms and automatic filling equipment
- Professional quality personnel and training programs
- Validated analytical testing methods in accordance with the ICH guidelines
- Safety Testing (Sterility, Mycoplasma, etc): compliant with USP, EP, etc
- In-depth stability studies
- Fully batch production and control records
- Equipment maintenance and calibration

ACROBiosystems provide rigorous quality control tests (fully validated equipment, processes and test methods) on our GMP grade products to ensure that they meet stringent standards in terms of purity, safety, activity and inter-batch stability, and each bulk QC lot mainly contains the following specific information:

- SDS-PAGE
- Protein content
- Endotoxin level
- Residual Host Cell DNA content
- Residual Host Cell Protein content
- Biological activity analysis
- Microbial testing
- Mycoplasma testing
- In vitro virus assay
- Residual moisture
- Batch-to-batch consistency

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