GMP Human HGF Protein

Catalog # GMP-HGFH28

Product Details

HGF (Hepatocyte Growth Factor) is a pleiotropic cytokine primarily produced by mesenchymal stromal cells (MSCs) and known for its mitogenic, morphogenic, and anti-fibrotic effects on epithelial and endothelial cells. In MSC culture, HGF enhances cell proliferation, migration, and survival while promoting the immunomodulatory and regenerative functions of MSCs, making it a key supplement in therapeutic MSC expansion protocols. In liver differentiation systems, HGF acts as a critical morphogen that drives the specification of hepatoblast-like cells from definitive endoderm and supports their further maturation into functional hepatocyte-like cells.

Product Features and Advantages

- **Specific Hepatic & MSC Conditioning Driver**: Efficiently supports hPSC-derived hepatocyte differentiation and functional pre-treatment of MSCs.
- **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 HGF Protein (GMP-HGFH28) is expressed from human 293 cells (HEK293). It contains AA Gln 32 - Ser 728 (Accession # P14210-1).

Predicted N-terminus: Gln 32

Molecular Characterization

HGF(Gln 32 - Ser 728)
P14210-1

This protein carries no "tag".

The protein has a calculated MW of 79.7 kDa. The protein migrates as 83 kDa±3 kDa when calibrated against Star Ribbon Pre-stained Protein Marker under non-reducing (NR) condition (SDS-PAGE) due to glycosylation.

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.

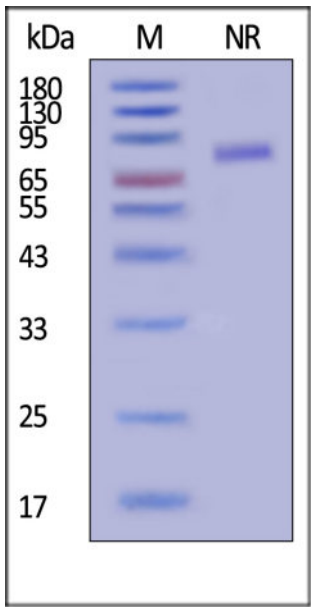
This product is stable after storage at:

- -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

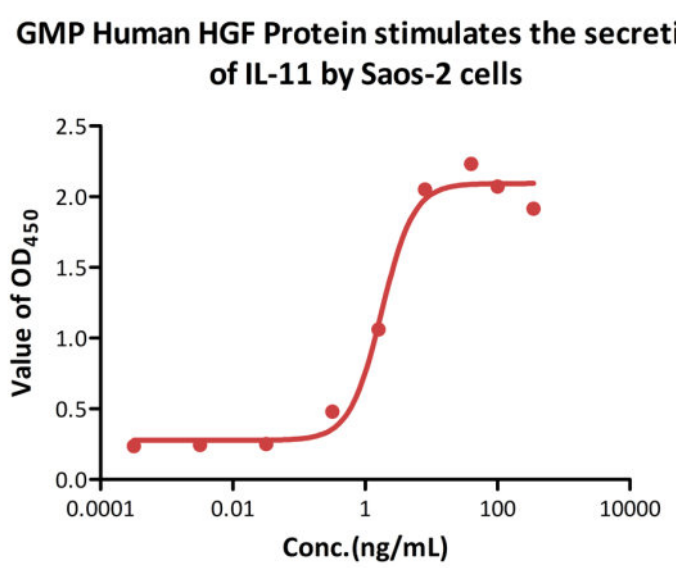
- QMS(ISO, GMP)
- Quality Advantages
- Quality Control Process

SDS-PAGE

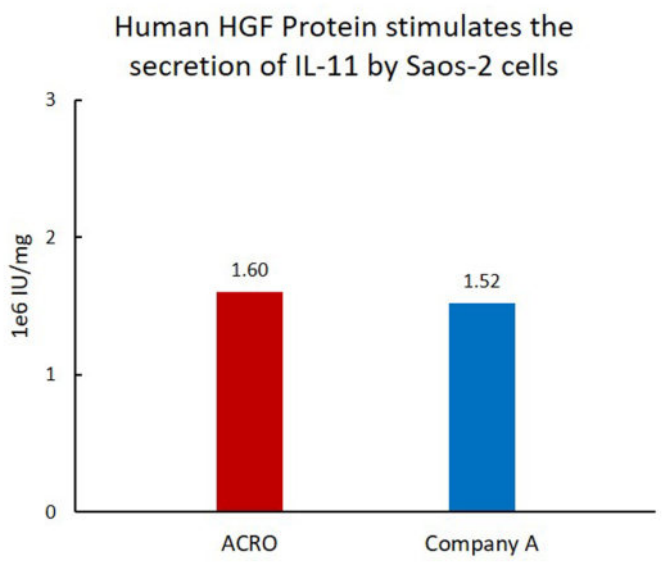


GMP Human HGF Protein on SDS-PAGE under non-reducing (NR) condition. The gel was stained with Coomassie Blue. The purity of the protein is greater than 95% (With Star Ribbon Pre-stained Protein Marker).

Bioactivity-CELL BASE

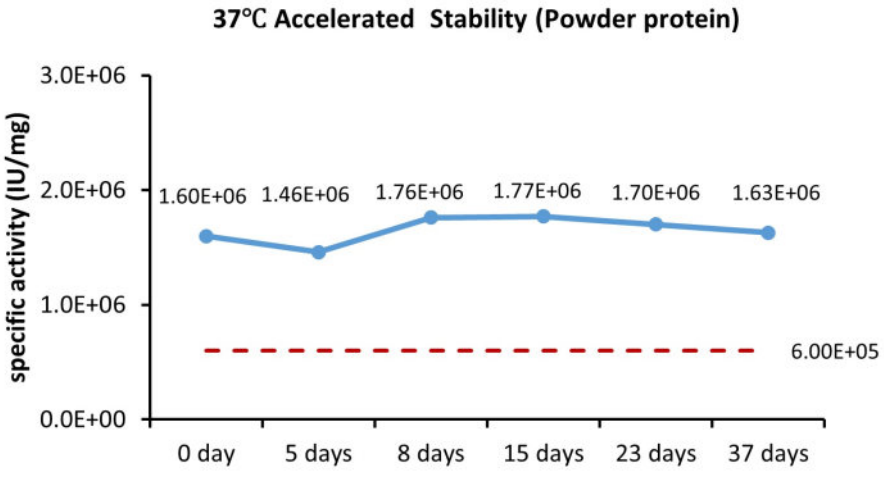


GMP Human HGF Protein (Cat. No. GMP-HGFH28) stimulates the secretion of IL-11 by Saos-2 cells. The specific activity of GMP Human HGF Protein is > 6.00 x 10^5 IU/mg, which is calibrated against WHO Hepatocyte Growth Factor (NIBSC code: 96/556) (QC tested).

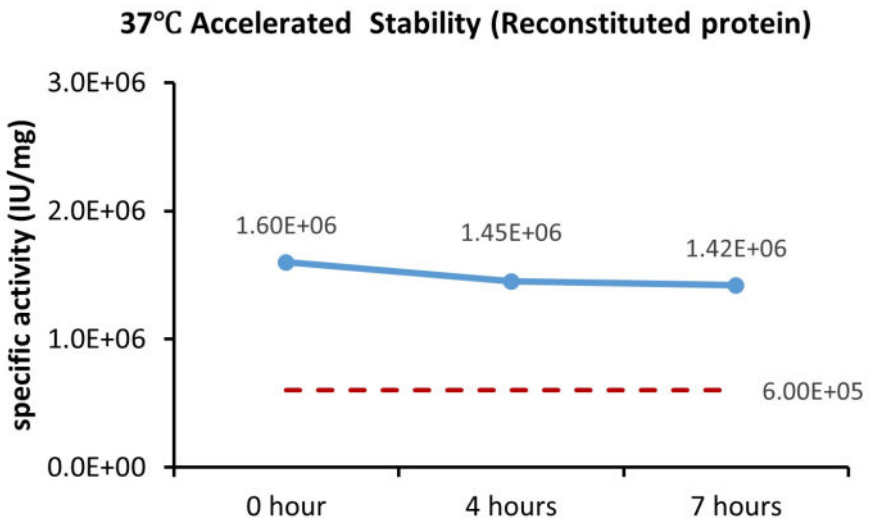


GMP Human HGF Protein (Cat. No. GMP-HGFH28) demonstrates activity comparable to commercially available product.

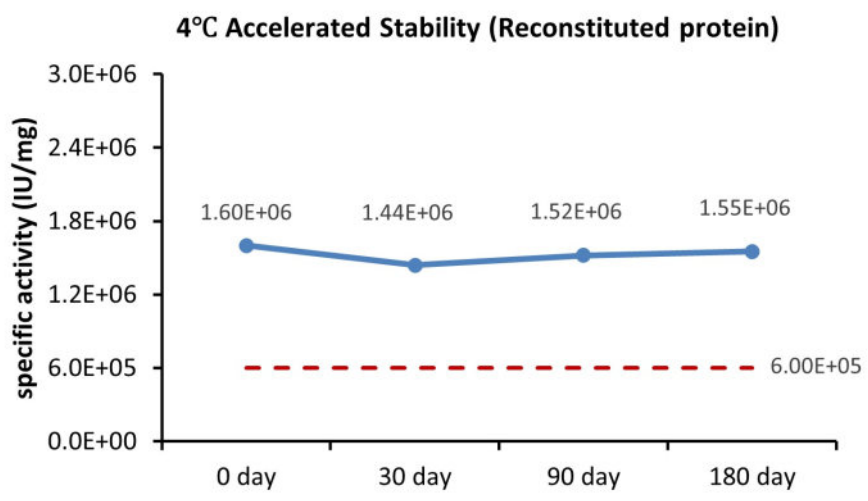
Bioactivity-Stability



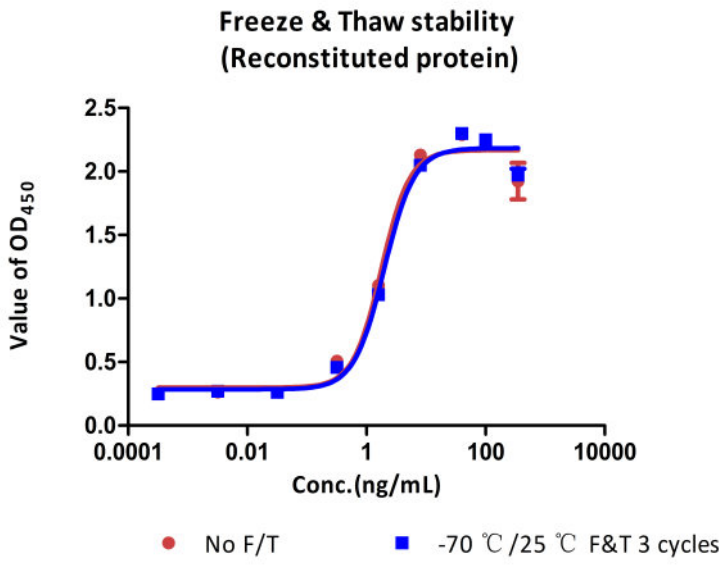
Cell-based assay demonstrates that the lyophilized GMP Human HGF Protein (Cat. No. GMP-HGFH28) is stable at 37°C for 37 days.



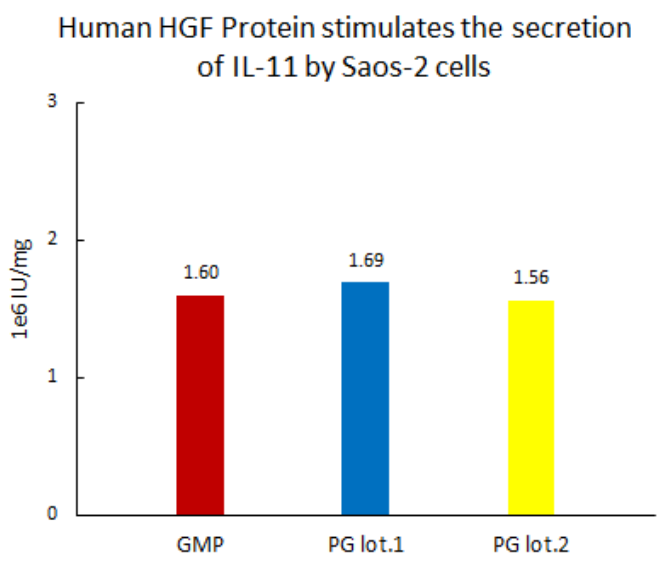
Cell-based assay demonstrates that the reconstituted GMP Human HGF Protein (Cat. No. GMP-HGFH28) is stable at 37°C for 7 hours.



Cell-based assay demonstrates that the reconstituted GMP Human HGF Protein (Cat. No. GMP-HGFH28) is stable at 4°C for 180 days.



Cell-based assay demonstrates that the reconstituted GMP Human HGF Protein (Cat. No. GMP-HGFH28) is stable after 3 freeze-thaw cycles.



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

Background

HGF, also known as scatter factor and hepatopoietin A, is a pleiotropic protein in the plasminogen subfamily of S1 peptidases , and acts as a growth factor for a broad spectrum of tissues and cell types. HGF signals through a transmembrane tyrosine kinase receptor known as MET. Activities of HGF include the induction of cell proliferation, motility, morphogenesis, inhibition of cell growth, and enhancement of neuron survival. HGF is a crucial mitogen for liver regeneration processes, HGF promotes the motility of cardiac stem cells in damaged myocardium.

Human and murine HGF are cross-reactive. Human HGF is expressed as a linear, polypeptide-precursor glycoprotein residues. Proteolytic processing of this precursor generates the biologically active heterodimeric form of HGF, which consists of two polypeptide chains (α-chain and β-chain) held together by a single disulfide bond resulting in formation of a biologically active heterodimer.

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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(d) Conducting all necessary quality control, safety, efficacy, and validation testing of Products within Purchaser's process or final product.
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