

Recombinant Human Hepatocyte Growth Factor, Insect Cells Derived

#R00146

Size: 10 µg/100 µg/500 µg

Stability & Storage

Use a manual defrost freezer and avoid repeated freeze-thaw cycles.

- A minimum of 12 months from date of receipt, when stored at $\leq -20^{\circ}\text{C}$ as supplied.
- 1 month, 2 to 8°C under sterile conditions after reconstitution.
- 3 months, -20 to -70°C under sterile conditions after reconstitution.



Warning: This product is intended for scientific research only. It is not to be used for medical or diagnostic procedures in humans or animals, nor as a food, cosmetic, or household product.

Background

HGF, also known as scatter factor and hepatopoietin A, is a pleiotropic protein in the plasminogen subfamily of S1 peptidases. It is a multidomain molecule that includes an N-terminal PAN/APPLE-like domain, four Kringle domains, and a serine proteinase-like domain that has no detectable protease activity. Human HGF is secreted as an inactive 728 amino acid (aa) single chain propeptide. It is cleaved after the fourth Kringle domain by a serine protease to form bioactive disulfide-linked HGF with a 60 kDa alpha and 30 kDa beta chain. Alternate splicing generates human HGF isoforms that lack the proteinase-like domain and different numbers of the Kringle domains. Human HGF shares 91%-94% aa sequence identity with bovine, canine, feline, mouse, and rat HGF. HGF binds heparan-sulfate proteoglycans and the widely expressed receptor tyrosine kinase, HGF R/c-MET. HGF-dependent c-MET activation is implicated in the

development of many human cancers. HGF regulates epithelial morphogenesis by inducing cell scattering and branching tubulogenesis. HGF induces the up-regulation of integrin alpha 2 beta 1 in epithelial cells by a selective increase in alpha 2 gene transcription. This integrin serves as a collagen I receptor, and its blockade disrupts epithelial cell branching tubulogenesis. HGF can also alter epithelium morphology by the induction of nectin-1 alpha ectodomain shedding, an adhesion protein component of adherens junctions. In the thyroid, HGF induces the proliferation, motility, and loss of differentiation markers of thyrocytes and inhibits TSH-stimulated iodine uptake. HGF promotes the motility of cardiac stem cells in damaged myocardium.

AA Sequence

QRKRRNTIHEFKKSAKTTLIKIDPALKIKTKKVNTADQC
ANRCTRNGKLPFTCKAFVFDKARKQCLWFPFNSMSS
GVKKEFGHEFDLYENKDYIRNCIIGKGRSYKGTVSITK

SGIKCQPWSSMIPHEHSFLPSSYRGKDLQENYCRNP
RGEEGGPWCFTSNPEVRYEVCIPQCSEVECMTCN
GESYRGLMDHTESGKICQRWDHQTPHRHKFLPERY
PDKGFDDNYCRNPDGQPRPWCYTLDPHTRWEYCAI
KTCADNTMNDTDVPLETTECIQGQGEGYRGTVNTIW
NGIPCQRWDSQYPHEHDMTPENFKCKDLRENYCRN
PDGSESPWCFTTDPNIRVGYCSQIPNCDMSHGQDC
YRGNGKNYMGNLSQTRSGLTCSMWDKNMEDLHRHI
FWEPDASKLNENYCRNPDDDAHGPWCYTGNPLIPW
DYCPISRCEGDTTPTIVNLDHPVISCAKTKQLRVVNGI
PTRTNIGWMVSLRYRNKHICGGLIKESWVLTARQCF
PSRDLKDYEAWLGIHDVHGRGDEKCKQVLNVSQLVY
GPEGSDLVLMKLARPAVLDDFVSTIDLPNYGCTIPEKT
SCSVYGWGYTGLINYDGLLRVAHLYIMGNEKCSQHH
RGKVTLNESEICAGAEKIGSGPCEGDYGGPLVCEQH
KMRMVLGVI VPGRGCAIPNRPGIFVRVAYYAKWIHKIIL
TYKVPQS

Reconstitution

Prior to opening, it is recommended to centrifuge the

vial briefly to bring the contents down the bottom. Reconstitute in PBS to a concentration of 0.1-0.33 mg/mL. If animal-origin-free condition is expected in your product, then sterile distilled water is recommended. Stock solutions should be apportioned into working aliquots and stored at $\leq -20\text{ }^{\circ}\text{C}$. Further dilutions should be made in appropriate buffered solutions.

Product Specification	
Species	Human
Source	Insect Cells
Molecular Weight	Approximately 79.6 kDa on SDS-PAGE under reducing conditions, containing 697 amino acids.
Purity	> 95% by SDS-PAGE analyses.
Biological Activity	Measured by its ability to induce IL-11 secretion by Saos 2 human osteosarcoma cells. The ED ₅₀ for this effect is equal to or less than 4.00 ng/mL.
Physical Appearance	Sterile Filtered White lyophilized (freeze-dried) powder.
Formulation	Lyophilized from a 0.2 μm filtered solution in PBS, 5% Trehalose, 0.02% Tween-20, pH 7.0.

Endotoxin	Less than 0.1 EU/ μg of rHuHGF, Insect Cell is as determined by LAL method.
Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.