

**DESCRIPTION**

<b>Source</b>	<i>Spodoptera frugiperda</i> , Sf 21 (baculovirus)-derived Gln32-Ser728 Accession # P14210
<b>N-terminal Sequence Analysis</b>	α chain: No results obtained; Gln32 predicted β chain: Val495
<b>Structure / Form</b>	Disulfide-linked heterodimer and unprocessed single chain
<b>Predicted Molecular Mass</b>	79.7 kDa (single chain), 53.7 kDa (α chain), 26 kDa (β chain)

**SPECIFICATIONS**

<b>SDS-PAGE</b>	60-70 kDa, non-reducing conditions 90 kDa, 60 kDa, and 33-34 kDa, reducing conditions
<b>Activity</b>	Measured in a cell proliferation assay using 4MBr-5 rhesus monkey epithelial cells. Rubin, J.S. <i>et al.</i> (1991) Proc. Natl. Acad. Sci. USA <b>88</b> :415. The ED <sub>50</sub> for this effect is typically 20.0–40.0 ng/mL.
<b>Endotoxin Level</b>	<1.0 EU per 1 μg of the protein by the LAL method.
<b>Purity</b>	>95%, by SDS-PAGE under reducing conditions and visualized by silver stain.
<b>Formulation</b>	Lyophilized from a 0.2 μm filtered solution in NaH <sub>2</sub> PO <sub>4</sub> and NaCl with BSA as a carrier protein. See Certificate of Analysis for details.

**PREPARATION AND STORAGE**

<b>Reconstitution</b>	Reconstitute at 50 μg/mL in sterile PBS containing at least 0.1% human or bovine serum albumin.
<b>Shipping</b>	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
<b>Stability &amp; Storage</b>	<b>Use a manual defrost freezer and avoid repeated freeze-thaw cycles.</b> <ul style="list-style-type: none"> <li>● 12 months from date of receipt, -20 to -70 °C as supplied.</li> <li>● 1 month, 2 to 8 °C under sterile conditions after reconstitution.</li> <li>● 3 months, -20 to -70 °C under sterile conditions after reconstitution.</li> </ul>

**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 (1 - 5). 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 α and 30 kDa β 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 (6, 7). HGF-dependent c-MET activation is implicated in the development of many human cancers (8). HGF regulates epithelial morphogenesis by inducing cell scattering and branching tubulogenesis (9, 10). HGF induces the up-regulation of integrin α2β1 in epithelial cells by a selective increase in α2 gene transcription (11). This integrin serves as a collagen I receptor, and its blockade disrupts epithelial cell branching tubulogenesis (11, 12). HGF can also alter epithelium morphology by the induction of nectin-1α ectodomain shedding, an adhesion protein component of adherens junctions (13). In the thyroid, HGF induces the proliferation, motility, and loss of differentiation markers of thyrocytes and inhibits TSH-stimulated iodine uptake (14). HGF promotes the motility of cardiac stem cells in damaged myocardium (15).

**References:**

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