

Recombinant Human HGF, Tag Free

Information

Accession #	P14210
Alternate Names	DFNB39; EC 3.4.21; EC 3.4.21.7; fibroblast-derived tumor cytotoxic factor; F-TCF; HGF; HGFB; HPTA
Source	Human embryonic kidney cell, HEK293-derived human HGF protein
Protein sequence	Gln32-Ser728
M.Wt	53.7 kDa (alpha chain) + 26 kDa (beta chain)
Appearance	Solution protein
Stability & Storage	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. - 12 months from date of receipt, -20 to -7°C as supplied.
Concentration	0.2 mg/mL
Formulation	Dissolved in sterile PBS buffer.
Reconstitution	We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. This solution can be diluted into other aqueous buffers.
Biological Activity	The EC ₅₀ for this effect is 0.05-0.2 ng/mL. Measured by its ability to induce IL-11 secretion by Saos-2 human osteosarcoma cells.
Shipping Condition	Shipping with dry ice.
Handling	Centrifuge the vial prior to opening.
Usage	For Research Use Only! Not to be used in humans.

Quality Control

Purity	> 95%, determined by SDS-PAGE.
Endotoxin	<0.010 EU per 1 ug of the protein by the LAL method.

Description

Hepatocyte Growth Factor (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 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, HGFR/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 alpha 2 beta 1 in epithelial cells by a selective increase in alpha 2 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-1 alpha 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].

Reference

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