

Recombinant Human HGF Protein

Catalog Number: GMP-TL765

Product Name

Generic Name	Recombinant Human HGF Protein
Synonym	Hepatocyte growth factor; DFNB39 Protein, Human; F-TCF Protein, Human; F-TCFB Protein, Human; HGFB Protein, Human; HPTA Protein, Human; SF Protein, Human.

Product Information

Construction	DNA sequence encoding human HGF (P14210) expressed with His tag at the C-terminus.
Expression Host	HEK293 cells
QC Testing Purity	> 90 % as determined by SDS-PAGE
Activity	Determined by the level of IL-11 secreted from human osteosarcoma cells (Saos-2). The expected ED ₅₀ for this effect is ≤ 5 ng/ml.
Endotoxin	< 0.1 EU per 1µg of the protein as determined by the LAL method.
Molecular Mass	The recombinant human HGF protein contains 742 amino acids with a predicted molecular weight of 84.8 kD.
Formulation	Lyophilized from sterile PBS, pH 7.4. Normally 6 % mannitol are added as protectants before lyophilization. 24 months at 2 °C to 8 °C in lyophilized state. 6 months at -20 °C under sterile conditions after reconstitution.
Stability & Storage	12 months at -80 °C under sterile conditions after reconstitution. Recommend to aliquot the protein into smaller quantities after reconstituting with water for injection, normal saline or PBS, and keep the diluted concentration above 100 µg/mL. Avoid repeated freeze-thaw cycles.

Background

HGF is a heterodimer molecule composed of 69-kD alpha-subunit and 34-beta-subunit. HGF is a potent mitogen for mature parenchymal hepatocyte cells, seems to be a hepatotrophic factor, and acts as a growth factor for a broad spectrum of tissues and cell types. Activating ligand for the receptor tyrosine kinase MET by binding to it and promoting its dimerization. HGF mRNA and HGF activity increase markedly in the liver of rats after various liver injuries such as hepatitis, ischemia, physical crush, and partial hepatectomy. Production of HGF in the liver occurs in Kupffer cells and sinusoidal endothelial cells, but not in parenchymal hepatocytes. HGF mRNA is also markedly increased even in the intact lung, kidney, and spleen after injuries of the liver. Therefore, HGF may act as a trigger for liver regeneration through two mechanisms: a paracrine mechanism and an endocrine mechanism. Moreover, HGF mRNA increases markedly in the kidney after various renal injuries, thus it suggests that HGF may act not only as a hepatotrophic factor but also as a renotropic factor. HGF stimulates growth of various epithelial cells, including renal tubular cells (Mitogen). It is worth noting that HGF strongly enhances motility of epithelial cells

(Motogen) and induces epithelial tubule formation (Morphogen), while it strongly inhibits growth of several tumor cells. All these findings indicate that HGF may have important roles in organogenesis, morphogenesis, carcinogenesis, as well as in organ regeneration.

References

1. Stamos J., Lazarus R.A., Yao X, et al. Crystal structure of the HGF beta-chain in complex with the Sema domain of the Met receptor[J]. EMBO J., 23(12): 2325-2335.
2. Tolbert W.D., Daugherty-Holtrop J., Gherardi E., et al. Structural basis for agonism and antagonism of hepatocyte growth factor[J]. Proc. Natl. Acad. Sci. U.S.A., 107(30): 13264-13269.