

Background

Hepatocyte growth factor/scatter factor (HGF/SF) is a paracrine cellular growth, motility and morphogenic factor. It is secreted by mesenchymal cells and targets and acts primarily upon epithelial cells and endothelial cells, but also acts on haemopoietic progenitor cells. It has been shown to have a major role in embryonic organ development, in adult organ regeneration and in wound healing. HGF regulates cell growth, cell motility and morphogenesis by activating a tyrosine kinase signaling cascade after binding to the proto-oncogenic c-Met receptor (1). HGF is secreted by mesenchymal cell and acts as a multifunctional cytokine on cells of mainly epithelial origin. Its ability to stimulate mitogenesis, cell motility, and matrix invasion gives it a central role in angiogenesis, tumorigenesis, and tissue regeneration.

It is secreted as a single inactive polypeptide and is cleaved by serine protease into a 69-kDa alpha-chain and 34-kDa beta-chain. A disulfide bond between the alpha and beta chains produces the active, heterodimeric molecule. The protein belongs to the plasminogen subfamily of S1 peptidases but has no detectable protease activity (2). Human HGF plasmid DNA therapy of cardiomyocytes is being examined as a potential treatment for coronary artery disease as well as treatment for the damage that occurs to the heart after myocardial infarction (3, 4). HGF may further play a role as an indicator for prognosis of chronicity for Chikungunya virus induced arthralgia. High HGF levels correlate with high rate of recovery (5).

Reference

1. DP Bottaro et al. (1991) *Science* 251 (4995) : 802.
2. T Nakamura et al. (1989) *Nature* 342 : 440.
3. ZJ Yang et al. (2008) *Molecular Biology Reports* 36(6) : 1323.
4. W Hahn et al. (2011) *The Journal of Gene Medicine* 13 (10) : 549.
5. A Chow et al. (2011) *J Infect. Dis.* 203(2) : 149.



Recombinant Porcine HGF Protein

Catalog Number: GR104230

Description

Source: Chinese Hamster Ovary cell derived

Components: Val31 –Lys724

Accession # NP_001033097

Predicted Molecular Mass: 77 kDa (monomer)

Specifications

Activity Measured by its ability to induce IL-11 secretion by Saso-2 human osteosarcoma cells. Hjertner O et al. (1999) Blood, 94:3883. The ED50 for this effect is typically 0.2-0.6 ng/mL.

Endotoxin Level: <1.0 EU per 1 µg of the protein by the LAL method.

Purity: >96%, by SDS-PAGE under reducing conditions and visualized by silver stain.

Formulation: Lyophilized from a 0.2 µm filtered solution in 20 mM NaH₂PO₄ and 0.5 M NaCl with 50 µg BSA per µg as a carrier protein.

Preparation and Storage

Reconstitution: Reconstitute at 50 µg/mL in sterile PBS containing 1 mg/ml of human or serum albumin.

Shipping The product is shipped at ambient temperature or with wet ice. Upon receipt, store it immediately at the temperature recommended below.

Stability & Storage: Use a manual defrost freezer and avoid repeated freeze thaw cycles.

- 6 months, -20 °C as supplied.
- 3 months, -20 to -70°C under sterile conditions after reconstitution.

DECLARATION

THIS REAGENT IS FOR IN VITRO LABORATORY TESTING AND RESEARCH USE ONLY. DO NOT USE IT FOR CLINICAL DIAGNOSTICS. DO NOT USE OR INJECT IT IN HUMANS AND ANIMALS.

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NOT FOR USE IN HUMANS AND ANIMALS**