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Products	Human HGF, research grade. Recombinant human hepatocyte growth factor.								
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Biological activity	The ED ₅₀ is ≤5 ng/mL corresponding to an activity of ≥2×10 ⁵ U/mg. ▲ Note: The ED ₅₀ is determined by assessing the scattering activity in the MDCK cell assay.								
Primary structure	Disulfide-linked glycosylated heterodimer without N-terminal methionine (692 amino acid residues).								
Molecular mass	78.0 kDa (dimer).								
Source	Produced in Insect cells.								
Product format	Lyophilized from a filtered (0.2 µm) buffer solution.								
Stabilizer	None.								
Purity	>95% as determined by SDS-PAGE analysis.								
Endotoxin level	Low endotoxin (<1.0 EU/µg cytokine) as determined by Limulus Amebocyte Lysate (LAL) assay.								
Storage	Lyophilized Human HGF, research grade should be stored at -20 °C. The expiration date is indicated on the vial label. Upon reconstitution aliquots should be stored at -20 °C or below. Avoid repeated freeze-thaw cycles.								
Reconstitution	It is recommended to reconstitute lyophilized Human HGF, research grade with deionized sterile-filtered water to a final concentration of 0.1–1.0 mg/mL in a minimal volume of 100 µL. Further dilutions should be prepared with 0.1% bovine serum albumin (BSA) or human serum albumin (HSA) in phosphate-buffered saline.								

1.1 Background information

Hepatocyte growth factor (HGF) is a multifunctional polypeptide secreted by mesenchymal cells, in the liver and in the epithelium of several tissues. During tissue damage, the biological inactive single

chain precursor is cleaved by specific extracellular serine proteases, into a fully active disulfide-linked heterodimer. Activation of the HGF signalling pathway induces proliferation, migration and morphogenesis of different cell types during several processes of tissue growth and differentiation. These processes include hepatic growth and endothelial proliferation, but also embryonic development, angiogenesis, tumorigenesis and metastatization. In presence of inflammatory stimulation, such as IL-6 and TNF-α, HGF acts as growth factor for hepatocytes, and mediates an anti-inflammatory response. HGF is also involved in hematopoiesis in combination with IL-3 and GM-CSF. Because of its key role as mitogen and regulator of tissue development, recombinant HGF is under investigation for clinical applications in the cure of liver and vascular diseases. HGFs of different species share very similar functions and high homologies. Recombinant Human HGF corresponds to the fully active disulfide-linked heterodimer.

1.2 Applications

Human HGF can be used for a variety of applications, including:

- *In vitro* culture and expansion of hepatocytes.
- Proliferation and migration of epithelial cells.
- Tissue development, regeneration and organogenesis.
- Angiogenesis and tumor cell culture.
- Colony formation of hematopoietic progenitors.

Optimal concentration for a specific application should be determined by a dose-response experiment.

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