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Products	Human FGF-1, research grade. Recombinant human fibroblast growth factor 1.						
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10	130-093-835						
25	130-095-789						
Biological activity	The ED ₅₀ is ≤2 ng/mL corresponding to an activity of ≥5×10 ⁵ U/mg. Note: The ED ₅₀ is determined by proliferation assay in the presence of sodium heparin using mouse 3T3 cells.						
Primary structure	Single non-glycosylated polypeptide chain (141 amino acid residues including an N-terminal methionine).						
Molecular mass	16.0 kDa.						
Source	Produced in <i>E. coli</i> .						
Product format	Lyophilized from a filtered (0.2 µm) buffer solution.						
Stabilizer	Mannitol and trehalose.						
Purity	>97% 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 FGF-1, 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 FGF-1, 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

Fibroblast growth factor 1 (FGF-1), also termed acidic fibroblast growth factor (aFGF), belongs to the family of heparin-binding proteins. It acts as mitogen for a broad range of cells, including most cells of mesodermal and ectodermal origin. The adult brain is one

of the most abundant sources of FGF-1. As a potent neurotrophic factor, FGF-1 affects survival and differentiation of neuronal cells both *in vitro* and *in vivo*. In addition, FGF-1 has angiogenic activity and promotes endothelial cell proliferation *in vitro* and blood vessel growth and vascular repair *in vivo*. The involvement in angiogenesis is also of critical importance in tumor growth and progression.

1.2 Applications

Human FGF-1 can be used for a variety of applications, including:

- Differentiation of embryonic and adult stem cells, e.g. into hepatocyte-like cells or pulmonary progenitors.
- *In vitro* proliferation of different cell types, including endothelial cells, cardiomyocytes, and skeletal muscle satellite cells.
- Differentiation or transdifferentiation of mesenchymal stromal cells.
- Investigation of FGF-1 mediated signaling pathways, e.g. regulation of apoE-HDL production in astrocytes.

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

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