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Human Fibroblast Growth Factor acidic (FGF-1) - Purified

Alternate names: FGF1

Catalog No.: PA1013XC

Quantity: 1 mg

Concentration: 1 mg/ml (before lyophilization)

Background: Acidic fibroblast growth factor is a member of the fibroblast growth factor (FGF) family. FGF family members possess broad mitogenic and cell survival activities, and are involved in a variety of biological processes, including embryonic development, cell growth, morphogenesis, tissue repair, tumor growth and invasion. This protein functions as a modifier of endothelial cell migration and proliferation, as well as an angiogenic factor. It acts as a mitogen for a variety of mesoderm- and neuroectoderm-derived cells in vitro, thus is thought to be involved in organogenesis.
Three alternatively spliced variants encoding different isoforms have been described. The heparin-binding growth factors are angiogenic agents in vivo and are potent mitogens for a variety of cell types in vitro. There are differences in the tissue distribution and concentration of these 2 growth factors.

Species: Human

Source: E. coli

Format: **State:** Sterile filtered white lyophilized powder
Purity: >95% Greater than 95.0% as determined by: (a) Analysis by RP-HPLC (b) Analysis by SDS-PAGE
Buffer System: Solution containing 10 mM Tris, pH 7.6 ,and 100 mM NaCl
Reconstitution: It is recommended to reconstitute the lyophilized FGF-acidic in sterile 18MΩ-cm H2O not less than 100 µg/ml, which can then be further diluted to other aqueous solutions.

Description: Recombinant Human Fibroblast Growth Factor-acidic (FGF-1) produced in E.Coli is a single, non-glycosylated, polypeptide chain containing 140 amino acids and having a molecular mass of 15803 Dalton. The acidic FGF is purified by proprietary chromatographic techniques. Protein quantitation was carried out by two independent methods: 1. UV spectroscopy at 280 nm. 2. Analysis by RP-HPLC, using a standard solution of FGF-acidic as a reference standard.
AA Sequence:
`The sequence of the first five N-terminal amino acids was determined and was found to be Met-Phe-Asn-Leu-Pro`
Biological Activity: The ED50 calculated by the dose-dependant proliferation of BAF3 cells expressing FGF receptors (measured by 3H-thymidine uptake) is less then 10 ng/ml.
Specific Activity: 10e5 Units/mg
Molecular weight: 17 kDa

Storage: Lyophilized FGF-acidic although stable at room temperature for 3 weeks, should be stored desiccated below -18°C.
Upon reconstitution FGF-acidic should be stored at 4°C between 2-7 days and for future use below -18°C. Please avoid freeze-thaw cycles. For long term storage it is recommended to add a carrier protein (0.1% HSA or BSA).

General Readings:

1. Effects of a Single Percutaneous Injection of Basic Fibroblast Growth Factor on the Healing of a Closed Femoral Shaft Fracture in the Rat.
Calcif Tissue Int 2007 Jul 19;
2. Fibroblast growth factor-2 mediates transforming growth factor-beta action in prostate cancer reactive stroma.
Oncogene 2007 Jul 16;
3. Relevance of Partially Structured States in the Non-Classical Secretion of Acidic Fibroblast Growth Factor.
Biochemistry 2007 Jul 18;
4. Role of fibroblast growth factor 23 in phosphate homeostasis and pathogenesis of disordered mineral metabolism in chronic kidney disease.
Semin Dial 2007 Jul-Aug;20(4):302-8
5. Basic fibroblast growth factor modulates proliferation and collagen expression in urinary bladder smooth muscle cells.
Am J Physiol Renal Physiol 2007 Jul 18;
6. Human Fibroblast Growth Factor Receptor 1-IIIb Is a Functional Fibroblast Growth Factor Receptor Expressed in the Pancreas and Involved in Proliferation and Movement of Pancreatic Ductal Cells.
Pancreas 2007 Aug;35(2):147-157

Pictures: Precursor- Protein structure and amino acid sequence