3050 Spruce Street, St. Louis, MO 63103 USA
Tel: (800) 521-8956 (314) 771-5765 Fax: (800) 325-5052 (314) 771-5757
email: techservice@sial.com sigma-aldrich.com

Product Information

Fibroblast Growth Factor-Acidic, human recombinant, expressed in *E. coli*

Catalog Number **F5542**
Storage Temperature –20 °C

Synonyms: aFGF; FGF-1, retina-derived growth factor, heparin-binding growth factor (class I or alpha), astroglial growth factor I

Product Description

Fibroblast Growth Factor-Acidic (aFGF) is a potent mitogenic agent for a wide variety of mesoderm-derived cells including BALB/c 3T3 fibroblasts, capillary and endocardial endothelial cells, myoblasts, vascular smooth muscle cells, mesothelial cells, glial and astroglial cells, and adrenal cortex cells.[1,2] In cells not growth inhibited by heparin (such as baby hamster kidney cells), heparin potentiates the actions of aFGF, but in cells inhibited by heparin (such as bovine brain-derived capillary endothelial cells), no such potentiation is observed.[3] The closely related protein Fibroblast Growth Factor-Basic (bFGF) acts upon the same cellular receptors as aFGF, but with different specific activities, depending on the cell type.[4] These two mitogens may play important roles *in vivo* in cell proliferation and differentiation associated with embryogenesis, tissue regeneration, CNS development, wound healing, angiogenesis, and tumor progression.[2] Although bFGF has been found in a variety of organs, aFGF has been found only in brain, hypothalamus, and retina.

Human recombinant aFGF is a 15.5 kDa protein of 141 amino acids expressed by *E. coli*. The sequence of this recombinant protein is identical to natural aFGF, except it contains a methionine residue attached to the N-terminus.[6] Human recombinant aFGF differs from the reported sequence of bovine aFGF by 11 amino acids.

The product is lyophilized from a 0.2 μm filtered solution of 20 mM Tris, 1 M NaCl, 5 mM DTT containing 50 μg of bovine serum albumin per 1 μg of cytokine. It is aseptically filled.

Endotoxin: ≤1.0 EU/μg of protein
(limulus amebocyte lysate [LAL] method)

Purity: ≥97% (SDS-PAGE)

The biological activity of human recombinant aFGF was determined in a mitogenic assay by measuring the aFGF dependent ^{3}H-thymidine incorporation by NR6-3T3 fibroblasts.[7] The EC_{50} is defined as the effective concentration of growth factor that elicits a 50% increase in cell growth in a cell based bioassay.

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Preparation Instructions

Reconstitute the product using 0.2 μm filtered PBS containing 0.1% BSA or HSA to prepare a working stock solution (10 μg/ml). Additional filtration of the stock solution is not recommended and may result in loss due to adsorption onto the filter membrane.

Storage/Stability

Store the lyophilized product at –20 °C. After reconstitution, store the stock solution (10 μg/ml) at 2–8 °C for a maximum of 3 months. For extended storage, freeze in working aliquots at –20 °C. Prolonged storage of product or repeated freezing and thawing is not recommended.

References

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7. Rizzino, A. *et al*., Cancer Res., **48**, 4266 (1988).

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