Invitrogen
life technologies

Acidic Fibroblast Growth Factor (aFGF), Human, Recombinant

Cat. No.: 13241-013 **Size: 10 µg**
Store at -20°C.

Form: Lyophilized

NOTE: Do not store in dilute aqueous solution. Do not freeze and thaw repeatedly.

Description:
This recombinant preparation of acidic FGF is supplied lyophilized from phosphate buffered saline (PBS). It is suitable for use in receptor binding, transmembrane signaling, and other cell biology research applications. Acidic FGF (Heparin Binding Growth Factor 1, Endothelial Cell Growth Factor) is a 15,500 dalton member of the family of heparin binding growth factors (HBGF's), which also includes basic FGF (HBGF-2) as well as the oncoproteins Int-2 (HBGF-3), HST/K53 (HBGF-4) and HBGF-5 (1). All are potent inducers of DNA synthesis in a variety of normal diploid mammalian cell types from mesoderm and neuroectoderm as well as established cell lines (2). Heparin has been shown to potentiate the biological activity of acidic FGF (3), but does not augment the mitogenic activity of basic FGF (4). HBGF's are found in a variety of tissues. HBGF-1 has been found associated with the cytosol of neurons (5) and the extracellular matrix (6).

Radioreceptor assays for acidic FGF demonstrate the existence of saturable, high-affinity binding sites on a variety of cell types (K_d = 50-500 pM with 0.5-5×10^4 binding sites/cell). Low affinity binding sites have been shown to be cell-associated heparin-like molecules (7). FGF's induce early G_0 to G_1 cell cycle events (8), and like PDGF seem to induce cellular competence (9).

Doc. Rev. 083101

Applications:
1. Studies on angiogenesis (6) (1-100 ng/mm^3)
2. Studies on mitogenesis of fibroblasts (10) (1-1000 pg/ml)
3. Tyrosine phosphorylation studies (10) (100-500 pg/ml)
4. Neurite outgrowth studies in PC-12 cells (11)
5. Receptor binding studies (7) (100-1000 pg/ml)

Directions for Use:
Reconstitute to 100 µg/ml with PBS. Aliquot and store in polypropylene vials at -20°C. Avoid repeated freezing and thawing. To avoid loss due to adsorption, prepare dilute solutions in appropriate buffer containing at least 0.1% BSA just prior to use. Do not store in dilute solution.

As aFGF binds to heparin which may be displayed on cell surfaces, care must be taken to distinguish non-specific aFGF binding to heparin as opposed to specific receptor binding (1,7).

Quality Control:
Purity and Identity: ≥95% pure by SDS-PAGE

Functional Qualification (Biological Activity):
Dose-dependent stimulation of proliferation of BaF3 cells with half-maximal stimulation occuring at ≤10.0 ng/ml.

References:

1. Burgess, W.H. and Maciag, T. (1989) *Ann. Rev. Biochem. 58*, 575.
2. Thomas, K.A. (1988) *Trends Biochem. Sci. 13*, 327.
3. Sudhalter, J., Falkman, J., Svahan, C.M., Bergendal, K., and D'Amore, P.A. (1989) *J. Biol. Chem. 264*, 6892.
4. Thomas, K.A. and Gimenez-Gallego, G. (1986) *Trends Biochem. Sci. 11*, 81.
5. Huang, S.S., Tsai, C.C., Adams, S.A. and Huang, J.S. (1987) *Biochem. Biophys. Res. Comm. 144*, 81.
6. Thompson, J.A., Anderson, K.D., DiPietro, J.M., Zwiebel, J.A., Zametta, M., French Anderson, W. and Maciag, T. (1988) *Science 241*, 1352.
7. Kan, M., DiSorbo, D., Hou, J., Hoshi, H., Mansson, P.E. and McKeehan, W.L. (1988) *J. Biol. Chem. 263*, 11306.
8. Gospodarowicz, D. (1983) *J. Pathol. 141*, 201.
9. Stiles, C.D., Capone, G.T., Scher, C.D., Antoniades, H.N., VanWyk, J.J. and Pledger, W.J. (1979) *Proc. Natl. Acad. Sci. USA 76*, 1279.
10. Friesel, R., Burgess, W.H. and Maciag, T. (1989) *Mol. and Cell Biol. 9*, 1857.
11. Neufeld, G., Gospodarowicz, D., Dodge, L. and Fujii, D.K. (1987) *J. Cell Phys. 131*, 131.