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

Anti-Fibroblast Growth Factor Basic
produced in goat, affinity isolated antibody

Catalog Number **F5180**

Product Description

Anti-Fibroblast Growth Factor Basic (FGF2) is developed in goat using as immunogen purified bovine Fibroblast Growth Factor Basic (GeneID 281161; human GeneID 2247). The antibody is purified using human Fibroblast Growth Factor Basic (146 amino acid) affinity chromatography.

Anti-Fibroblast Growth Factor Basic recognizes bovine and human Fibroblast Growth Factor Basic. Applications include immunoblotting, immunohistochemistry and neutralization. This antibody was selected for its ability to neutralize the biological activity of bovine FGF basic and human FGF basic, but it has no effect on recombinant human or bovine FGF acidic, or rhβ-ECGF.

Fibroblast Growth Factor Basic (also known as bFGF) 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] bFGF and Fibroblast Growth Factor Acidic (aFGF) share a 55% homology in amino acid sequence,[3] and act upon the same cellular receptors with differing 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] bFGF is found in a variety of organs. It acts on a wide range of cell types and has multifunctional actions. bFGF has numerous synonyms, including heparin-binding growth factor (class II or β), eye-derived growth factor I, cartilage derived growth factor, and astroglial growth factor II.[5] Purified bovine and human bFGF differ by only 3 amino acids in sequence[3] and are biologically and immunologically cross-reactive.

Reagent

Supplied lyophilized from a 0.2 µm filtered solution of phosphate buffered saline with 5% trehalose.

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

To one vial of lyophilized powder, add 0.5 mL of 0.2 µm filtered PBS to produce a 0.2 mg/mL stock solution. If aseptic technique is used, no further filtration should be necessary for use in cell culture environments.

Storage/Stability

Prior to reconstitution, store at –20 °C. Reconstituted product may be stored at 2-8 °C for up to one month. For extended storage, freeze in working aliquots at –20 °C. Repeated freezing and thawing, or storage in "frost-free" freezers, is not recommended.

Neutralization

To measure the ability of the antibody to neutralize the bioactivity of bFGF basic on NR6R-3T3 fibroblasts, bovine FGF basic was incubated with various concentrations of the antibody for 1 hour at 37 °C in a 96 well microplate. Following this preincubation period, the antigen-antibody mixture was added to quiescent confluent cultures of NR6R-3T3 cells in DMEM with 2% bovine plasma-derived serum. The assay mixture in a total volume of 100 µL, containing antibody at 0.001-10 µg/mL, bFGF basic at 0.5 ng/mL, was incubated at 37 °C for 20 hours in a humidified CO_2 incubator. ^{3}H thymidine was added during the final 2 hours of incubation. The cells were subsequently detached and harvested onto glass fiber filters and the ^{3}H-thymidine incorporated into DNA was determined.

The Neutralization $Dose_{50}$ (ND_{50}) for this antibody is defined as that concentration of antibody required to yield one-half maximal inhibition of the cytokine activity on a responsive cell line, when that cytokine is present at a concentration just high enough to elicit a maximum response.

Product Profile
Immunoblotting: a working antibody concentration of 0.1-0.2 µg/mL is recommended to detect Fibroblast Growth Factor Basic. The detection limit for Fibroblast Growth Factor Basic is ~5 ng/lane under non-reducing and reducing conditions.

Immunohistochemistry: a working antibody concentration of 5-15 µg/mL is recommended to detect Fibroblast Growth Factor Basic in paraffin-embedded tissue sections.

Note: In order to obtain the best results using various techniques and preparations, we recommend determining the optimal working dilutions by titration.

Endotoxin: <0.1 EU/µg antibody as determined by the LAL method.

References

1. Gospodarowicz, D., *Nature*, **249**, 123 (1974).
2. Gospodarowicz, D., et al., *Endocr. Rev.*, **8**, 95 (1987).
3. Esch, F., et al., *Proc. Natl. Acad. Sci. U.S.A.*, **82**, 6507 (1985).
4. Neufeld, G., and Gospodarowicz, D., *J. Biol. Chem.*, **261**, 5631 (1986).
5. Lobb, R. R., et al., *Anal. Biochem.*, **154**, 1 (1986).

FF,PHC 09/11-1