

Product Information

Anti-Fibroblast Growth Factor-Basic antibody, Mouse monoclonal

clone FB-8, purified from hybridoma cell culture

Product Number **F6162**

Product Description

Anti-Fibroblast Growth Factor-Basic antibody, Mouse monoclonal (mouse IgG1 isotype) is derived from the FB-8 hybridoma produced by the fusion of mouse myeloma cells and splenocytes from an immunized mouse. Recombinant human bFGF was used as the immunogen. The isotype is determined by a double diffusion immunoassay using Mouse Monoclonal Antibody Isotyping Reagents, Product Number ISO2.

Anti-Fibroblast Growth Factor-Basic antibody, Mouse monoclonal reacts specifically with human fibroblast growth factor - basic (bFGF) of both natural and recombinant origin. The antibody does not cross-react with human fibroblast growth factor - acidic (aFGF). Cross-reactivity has been observed with bovine bFGF. Applying the immunoblotting technique, the product stains the bFGF band (18 kDa). The antibody may be used in ELISA, dot blot, RIA, and for neutralization of the biological activity of bFGF in cell culture.

Anti-Fibroblast Growth Factor-Basic antibody, Mouse monoclonal may be used for the localization of bFGF using various immunochemical assays including ELISA, immunoblot, dot blot, RIA, and neutralization bioassays.

Fibroblast growth factors (FGFs) are members of a family of polypeptides that are potent regulators of cell proliferation, differentiation and function.¹⁻³ The FGF family consists of seven members with 30-50% sequence identity at the amino acid level and with conservation of the positions of two cysteine residues. The factors are designated FGF-1 through FGF-7; the names FGF acidic and basic are used for FGF-1 and FGF-2, respectively. Acidic and basic fibroblast growth factor (aFGF and bFGF, respectively) are members of a small family of heparin binding growth factors (HBGF).

Comparisons of the primary structure have shown that aFGF and bFGF are closely related mitogens with 55% homology. When isolated from natural sources, bFGF usually has an apparent mass of about 18 kDa, but a variety of larger forms, up to 24 kDa, can exist.

Natural bFGF exists in three forms, the 154 amino-acid form and two truncated versions of 146 and 131 amino acids lacking the N-terminal 9 and 24 residues, respectively.

Depending on the organ from which it is purified, either the complete or truncated forms of bFGF may be present. In pituitary and brain the complete form predominates, in kidney and corpus luteum only the truncated form can be detected, and in adrenal glands, both forms coexist. Human and bovine bFGF are nearly identical in sequence, differing at only two positions. The largest (154 aa) form of both human and bovine aFGF share all but 12 amino acids. FGFs play crucial roles in normal development, in the maintenance of tissues, and in wound healing and repair. They have been implicated in a wide range of pathological conditions, including tumorigenesis and metastasis. Both aFGF and bFGF exert their mitogenic influence via saturable high-affinity receptors on a variety of cells of mesodermal and neuroectodermal origin, including endothelial cells, smooth muscle cells, fibroblasts, gliomas, chondrocytes, hepatocytes, epithelial cells, and myoblasts. As expected from the sequence homology between the acidic and basic forms of FGF and from their ability to support the proliferation *in vitro* of the same spectrum of target cells, both aFGF and bFGF interact with the same cell-surface receptor. Because these molecules play major roles in biological responses and can contribute to pathological states, an *in vitro* assay for their detection and quantification is desirable. Monoclonal antibody⁴ reacting specifically with bFGF, is a useful tool for the determination and quantification of the growth factor in many *in vitro* systems and *in vivo* animal or human models.

Reagents

Supplied as a 0.2 µm-filtered solution in 0.01 M phosphate buffered saline, pH 7.4.

Precautions and Disclaimer

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

Storage

For continuous use, store at 2-8 °C for up to one month. For extended storage, the solution may be frozen in working aliquots. If aseptic technique is used additional filtration should not be required. Repeated freezing and thawing or storage in "frost-free" freezers, is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use.

Product Profile

The minimum titer of 5 µg/ml was determined by neutralization bioassay using recombinant human bFGF. Used at the recommended concentration, the antibody will neutralize the biological activity of 1 unit of bFGF on mouse fibroblast 3T3 cells.

References

1. Baird, A., et al., *Recent Prog. Horm. Res.*, **42**, 143 (1986).
2. Gospodarowicz, D., *Meth. Enzymol.*, **147**, 106 (1987).
3. Burgess, W., and Maciag, T., *Ann. Rev. Biochem.*, **58**, 575 (1989).
4. Seno, M., et al., *Hybridoma*, **8**, 209 (1989).

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