



RECOMBINANT ANIMAL-FREE HUMAN FIBROBLAST GROWTH FACTOR-BASIC

CATALOG NUMBER:	GF003AF-MG	QUANTITY:	1 mg
LOT NUMBER:		ALTERNATE NAMES:	bFGF, FGF-2
BACKGROUND:	Fibroblast Growth Factor-basic (bFGF; FGF-2) is a heparin binding growth factor which stimulates the proliferation of a wide variety of cells including mesenchymal, neuroectodermal and endothelial cells. bFGF also exerts a potent angiogenic activity <i>in vivo</i> . Human bFGF is a 17.2 kDa protein containing 154 amino acid residues. Xu, <i>et al.</i> demonstrated that bFGF synergizes with the BMP antagonist noggin to sustain undifferentiated proliferation of human embryonic stem (hES) cells under feeder-free conditions. GF003AF was developed without animal-based ingredients and can be used for the culture of hES cells in a feeder-free, animal-free culture system.		
SOURCE:	<i>E. coli</i>		
PURITY:	Greater than 95% by SDS-PAGE. Endotoxin level is less than 1EU/μg (0.1ng/μg) of bFGF		
ACTIVITY:	Human bFGF is fully biologically active when compared to standards. The ED ₅₀ was determined by colorimetric assay using NIH3T3 cells expressing FGF receptors. The ED ₅₀ is defined as the effective concentration of bFGF at which the biological activity is 50% of the maximum response in a cell based assay.		
APPLICATIONS:	For most <i>in vitro</i> applications, bFGF exerts its biological activity in the concentration range of 0.1 to 10.0 ng/mL. Responding cells are (partial list): Endothelial, mesenchymal cells. Human ES cells require concentrations in the range of 4 to 100 ng/mL, depending on the method of culture.		
PRESENTATION:	Lyophilized from a solution of 5mM Tris, pH 7.5 with 150mM NaCl.		
STORAGE/HANDLING:	Maintain the lyophilized material at -20°C until expiration date as stated on the label. General applications: After a quick spin, reconstitute in 0.1M phosphate buffer, pH 6.8, to a concentration of 0.1-1.0 mg/mL. Reconstituted bFGF should be stored in working aliquots at -20 °C for up to six months. Multiple freeze/thaw cycles will result in significant loss of activity. For human ES cell culture: After a quick spin, reconstitute to 10 ug/mL in a filtered solution of 0.5% BSA, 1 mM DTT, and 10% glycerol in Dulbecco's PBS. Aliquot and store at -20 °C for up to six months. This solution can then thawed and diluted to 4 ng/mL for the culture of human ES cells with a feeder layer, or to 8 ng/mL to supplement mouse embryonic fibroblast-conditioned medium (for feeder-free human ES cell culture).		



RELATED REFERENCES: Xu, Ren-He, *et al* (2005). Basic FGF and suppression of BMP signaling sustain undifferentiated proliferation of human ES cells. *Nat Methods* **2**: 185-190.

Important Note: *During shipment, small volumes of product will occasionally become entrapped in the seal of the product vial. For products with volumes of 200 μ L or less, we recommend gently tapping the vial on a hard surface or briefly centrifuging the vial in a tabletop centrifuge to dislodge any liquid in the container's cap.*

For research use only; not for use as a diagnostic.

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