

General Information

Synonyms	basic fibroblast growth factor bFGF; Basic fibroblast growth factor; bFGF; FGF basic; FGF2; FGF-2
Accession #	P09038
Source	Human embryonic kidney cell, HEK293-derived human FGF basic/FGF2/bFGF protein Met134-Ser288
Predicted Molecular weight	16.5 kDa

Components and Storage

Formulation	Solution protein. Dissolved in sterile PBS buffer. This solution can be diluted into other aqueous buffers. Centrifuge the vial prior to opening.
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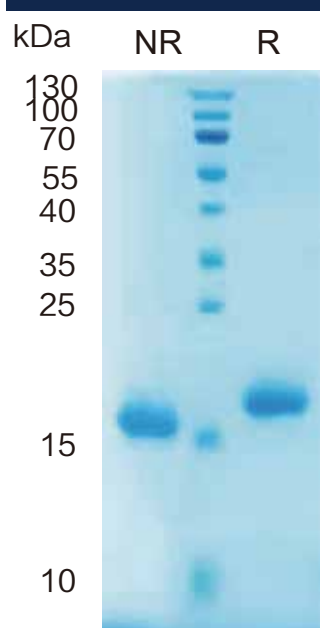
Storage and Stability	Avoid repeated freeze-thaw cycles. It is recommended that the protein be aliquoted for optimal storage. 12 months from date of receipt, -20 to -70 °C as supplied.
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Shipping	Shipping with dry ice.
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Quality

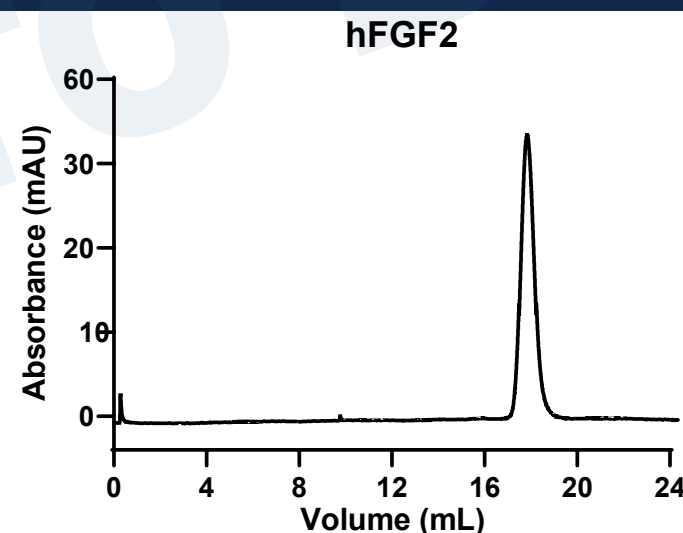
Purity	> 95%, determined by SDS-PAGE.
Endotoxin Level	<0.010 EU per 1 ug of the protein by the LAL method.
Activity	Measured in a cell proliferation assay using NR6R-3T3 mouse fibroblast cells. The EC50 for this effect is 0.01-0.1 ng/mL.

SDS-PAGE



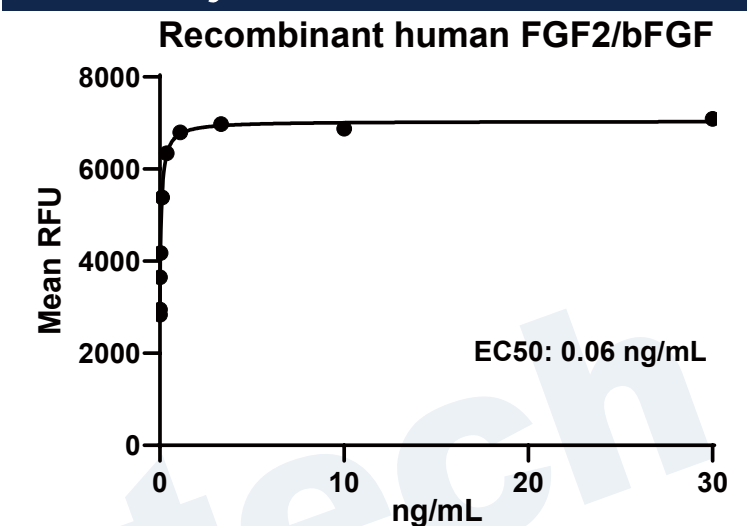
2 ug/lane protein was resolved with SDS-PAGE under non-reducing (NR) and reducing (R) conditions and visualized by Coomassie Blue staining.

Gel filtration



Size-exclusion chromatography of recombinant human FGF basic/FGF2 protein (280 nm absorbance)

Bioactivity



Recombinant human FGF basic/FGF2(Catalog # HF-2018) stimulates cell proliferation of the NRR-3T3 human erythroleukemic cells.

Background

FGF basic (FGF-2) is a member of the FGF superfamily of mitogenic proteins which show 35-60% amino acid conservation. FGF acidic and basic are unique from other members of the family in that they lack classical secretory signal peptides. However, they are both readily secreted from cells by an alternative secretory pathway involving direct translocation and aided by several chaperones. FGF acidic (FGF-1) and FGF basic (FGF-2) were the first two identified FGFs, and the designations acidic and basic refer to their relative isoelectric points. The full length human FGF basic protein is 288 amino acids, but there are multiple start sites which produce various shorter forms. Further adding to the complexity, a variety of forms of FGF basic are produced as a result of N-terminal extensions. These extensions affect localization of FGF basic in cellular compartments but do not affect biological activity. FGF basic has been isolated from a number of sources, including neural tissue, adrenal cortex, pituitary gland, corpus luteum, and placenta. Binding of FGF to heparin or cell surface heparan sulfate proteoglycans is required for FGF binding with high affinity to FGF receptors. FGF basic stimulates proliferation of all cells of mesodermal origin as well as many cells of neuroectodermal, ectodermal, and endodermal origin. FGF basic also induces neuronal differentiation, survival, and regeneration, and modulates embryonic development and differentiation. These observed in vitro functions suggest FGF basic may play a role in vivo in the modulation of such normal processes as angiogenesis, wound healing and tissue repair, embryonic development and differentiation, and neuronal function and neural degeneration. Additionally, FGF basic may also participate in the development of several pathological conditions resulting from excessive cell proliferation and/or angiogenesis.

Reference

1. Coulier, F. et al. (1997) J. Mol. Evol. 44:43.
2. Chen, C.H. et al. (2004) Curr. Vasc. Pharmacol. 2:33.
3. Mohammadi, M. et al. (2005) Curr. Opin. Struct. Biol. 15:506.
4. Fernig, D. et al. (1994) Prog. Growth Factor Res. 5:353.

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