2021

FGF Protein: Product Information Sheet

DOCUMENT NUMBER: PROT-DAT-007

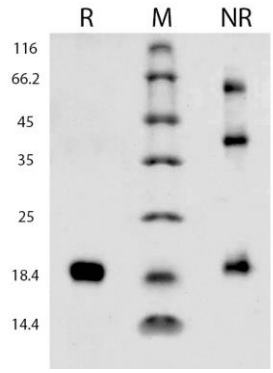
CELLARIA

GENERAL INFORMATION

CATALOG NO: CP-FGF 2 (Basic)

Recombinant human FGF2 is a non-glycosylated protein containing 155 amino acids (Met 134-Ser288), with a molecular weight of approximately 19.547 kDa. It is expanded at the N-terminal with a 21-AA fusion containing His6 tag and a Thrombin cleavage site.

Expression system/Source: Protein, purified, expressed in E.Coli, animal-free product.
Target formulation: Lyophilized from a 0.2 µM filtered solution in 50 mM Sodium Phosphate buffer, 100 mM NaCl, pH 6,0
Sterility: Sterile
Purity: >95%, by SDS-PAGE with Coomassie staining and HPLC
Endotoxin Level: <0.01 EU per 1 µg of the protein by the LAL method.
UniProt Accession #: P09038
Structure / Isoform: Single monomer
Predicted Molecular Mass/ Molecular weight: 19.547 kDa, determined by high-resolution TOF-MS to confirm correct protein sequence.
SDS-PAGE:



18 kDa, reducing condition, 18 kDa, non-reducing conditions.

UniProt Description of FGF:

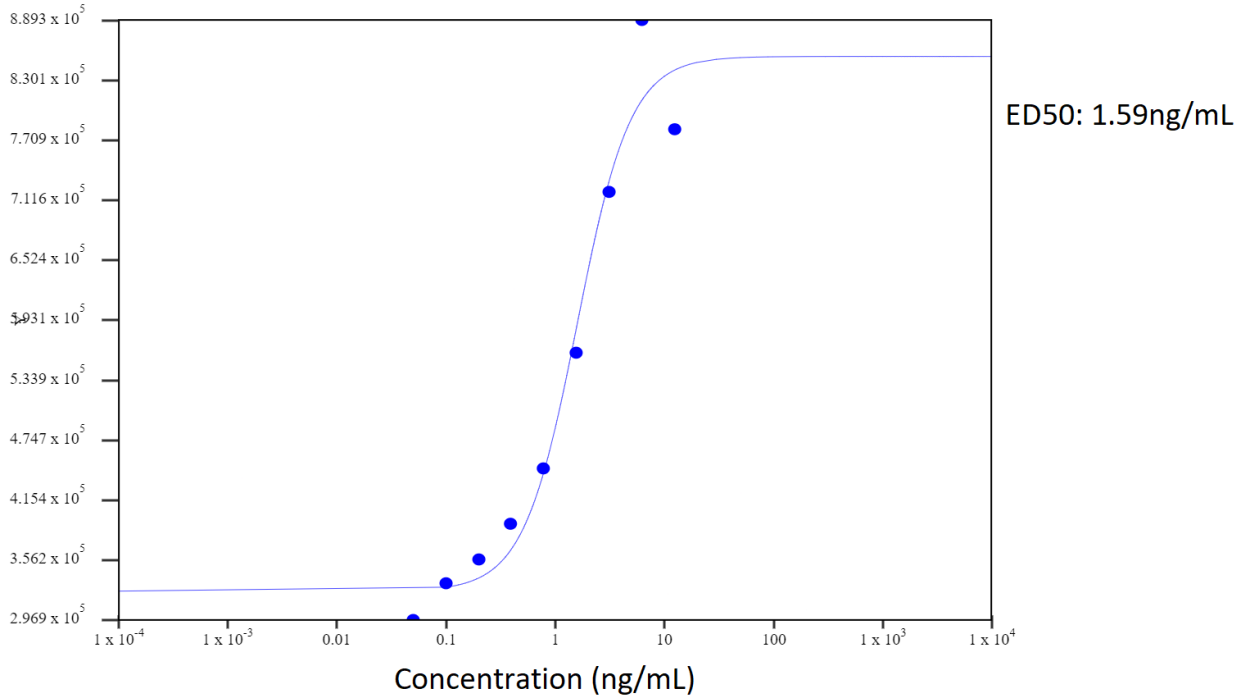
Acts as a ligand for FGFR1, FGFR2, FGFR3 and FGFR4 (PubMed:8663044). Also acts as an integrin ligand which is required for FGF2 signaling (PubMed:28302677). Binds to integrin ITGAV: ITGB3 (PubMed:28302677). Plays an important role in the regulation of cell survival, cell division, cell differentiation and cell migration (PubMed:8663044, PubMed:28302677). Functions as a potent mitogen in vitro (PubMed:1721615, PubMed:3964259, PubMed:3732516). Can induce angiogenesis (PubMed:23469107, PubMed:28302677). Mediates phosphorylation of ERK1/2 and thereby promotes retinal lens fiber differentiation (PubMed:29501879).

781-257-2679 | Wakefield, MA 01880 | support@cellariainc.com

Sequence:

MGSSHHHHHH SSGLVPRGSH MMAAGSITTL PALPEDGGSG AFPPGHFKDP KRLYCKNGGF FLRIHPDGRV DGVREKSDPH IKLQLQAEER GVVSIKGVCA NRYLAMKEDG RLLASKCVTD ECFFFERLES NNYNTYRSRK YTSWYVALKR TGQYKLGSKT GPGQKAILFL PMSAKS

ED50 ANALYSIS



BIOACTIVITY ASSAY SUMMARY PROTOCOL

The bioactivity (ED50) of FGF2 is determined in a 48-hour proliferation assay in serum free media using BALB/3T3 fibroblasts (ATCC CRL-163) and CellTiter-Glo® Luminescent Cell Viability Assay (Promega G7570).

1. A 250 µg/mL stock solution is prepared with sterile DPBS, and the concentration is confirmed using a NanoDrop spectrophotometer or equivalent piece of equipment.
2. BALB/3T3 fibroblasts are seeded at 10,000 cells per well in a 96 well plate in full growth media (DMEM with 10% Fetal Bovine Serum) on **Day 0** and incubated overnight in a 37^0C 5% CO_2 incubator.
3. On **Day 1**, full growth media is aspirated, and the wells are washed with serum free DMEM.
4. Titrations of FGF2 are prepared in serum free DMEM by serial dilution, added to the plate on **Day 1** and incubated overnight in a 37^0C 5% CO_2 incubator.
5. On **Day 2**, fresh titrations of FGF2 are prepared in serum free DMEM by serial dilution and added to the aspirated plate.
6. On **Day 3,** CellTiter-Glo® is added to the plate and luminescence is measured on a plate reader.
7. ED50 analysis is performed and recorded.

781-257-2679 | Wakefield, MA 01880 | support@cellariainc.com

PREPARATION AND STORAGE

1. Reconstitute at 1 mg/mL in distilled water (final buffer composition 50 mM Sodium Phosphate buffer, 100 mM NaCl, pH 6,0)
2. The product is shipped with cold packs. Upon receipt, store it immediately at the temperature recommended below.
3. Avoid repeated freeze-thaw cycles. A minimum of 6 months when stored at ≤ -20 °C as supplied. Refer to lot specific COA for the Use by Date. 1 month, 2 to 8 °C under sterile conditions after reconstitution. 3 months, ≤ -20 °C under sterile conditions after reconstitution.

GRADE:	STORAGE CONDITIONS:	SAFETY PRECAUTIONS:
☐ USP	☐ Ambient	☐ Corrosive
☐ NF	☒ 2°C to 8°C	☐ Flammable
☐ EP	☒ -25°C to -15°C	☒ Carcinogen
☐ JP	☐ ≤-70°C	☒ Avoid Inhalation
☐ multi-compendial	☐ Store desiccated	☒ Avoid Contact with Skin
☒ Other: RUO	☐ Store protected from light	☒ Avoid Contact with Eyes
☐ N/A	☐ Other: _____	☐ Other: _____
		☐ N/A

REFERENCES

1. Gautschi, P., Fràter-Schröder, M., & Böhlen, P. (1986). Partial molecular characterization of endothelial cell mitogens from human brain: acidic and basic fibroblast growth factors. FEBS letters, 204(2), 203-7.
2. Gimenez-Gallego, G., Conn, G., Hatcher, V.B., & Thomas, K.A. (1986). Human brain-derived acidic and basic fibroblast growth factors: amino terminal sequences and specific mitogenic activities. Biochemical and biophysical research communications, 135(2), 541-8.
3. Mori, S., Hatori, N., Kawaguchi, N., Hamada, Y., Shih, T.C., Wu, C.Y., ... & Takada, Y. (2017). The integrin-binding defective FGF2 mutants potently suppress FGF2 signalling and angiogenesis. Bioscience reports, 37(2), BSR20170173.
4. Mori, S., Tran, V., Nishikawa, K., Kaneda, T., Hamada, Y., Kawaguchi, N., ... & Takada, Y. (2013). A dominant-negative FGF1 mutant (the R50E mutant) suppresses tumorigenesis and angiogenesis. PloS one, 8(2), e57927.
5. Ornitz, D.M., Xu, J., Colvin, J.S., McEwen, D.G., MacArthur, C.A., Coulier, F., ... & Goldfarb, M. (1996). Receptor specificity of the fibroblast growth factor family. The Journal of biological chemistry, 271(25), 15292-7.
6. Shimoyama, Y., Gotoh, M., Ino, Y., Sakamoto, M., Kato, K., & Hirohashi, S. (1991). Characterization of high-molecular-mass forms of basic fibroblast growth factor produced by hepatocellular carcinoma cells: possible involvement of basic fibroblast growth factor in hepatocarcinogenesis. Japanese journal of cancer research: Gann, 82(11), 1263-70.
7. Zhao, G., Bailey, C.G., Feng, Y., Rasko, J., & Lovicu, F.J. (2018). Negative regulation of lens fiber cell differentiation by RTK antagonists Spry and Spred. Experimental eye research, 170, 148-59.