

# PRODUCT INFORMATION



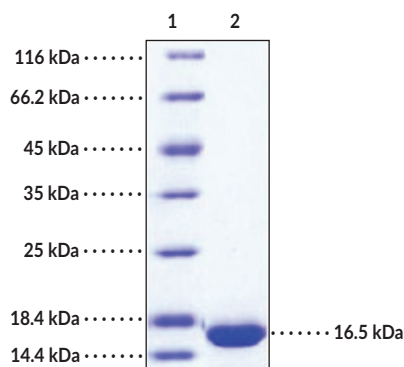
## FGF2 (human, recombinant)

Item No. 32043

### Overview and Properties

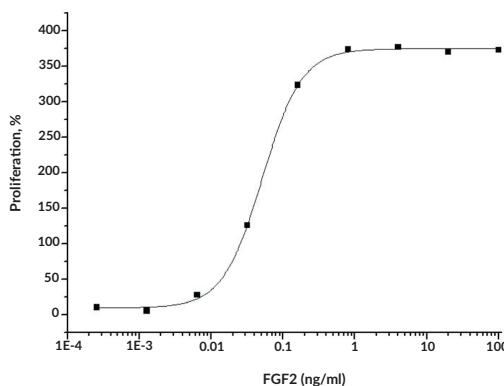
**Synonyms:** Basic Fibroblast Growth Factor, BFGF, FGFB, Fibroblast Growth Factor 2, HBFG2, Heparin-binding Growth Factor 2  
**Source:** Active recombinant human FGF2 expressed in *E. coli*  
**Amino Acids:** 143-288  
**Uniprot No.:** P09038  
**Molecular Weight:** 16.5 kDa  
**Storage:** -80°C (as supplied)  
**Stability:** ≥1 year  
**Purity:** ≥95% estimated by SDS-PAGE  
**Supplied in:** Lyophilized from sterile PBS, pH 7.4  
**Endotoxin Testing:** <1.0 EU/μg, determined by the LAL endotoxin assay  
**Bioactivity:** See figures for details  
*Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.*

### Images



Lane 1: MW Markers  
Lane 2: FGF2

**SDS-PAGE Analysis of FGF2.** This protein has a calculated molecular weight of 16.5 kDa.



**FGF2 activity in proliferation assay.** FGF2 activity is measured in a cell proliferation assay using BALB/c 3T3 mouse embryonic fibroblasts. The ED<sub>50</sub> value for this effect is typically 0.02-0.1 ng/ml.

**WARNING**  
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

**SAFETY DATA**  
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

**WARRANTY AND LIMITATION OF REMEDY**  
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 10/09/2023

**CAYMAN CHEMICAL**  
1180 EAST ELLSWORTH RD  
ANN ARBOR, MI 48108 · USA  
PHONE: [800] 364-9897  
[734] 971-3335  
FAX: [734] 971-3640  
CUSTSERV@CAYMANCHEM.COM  
WWW.CAYMANCHEM.COM

# PRODUCT INFORMATION



## Description

---

Fibroblast growth factor 2 (FGF2), also known as basic FGF (BFGF), is a signaling polypeptide and member of the FGF family that has roles in cell growth and differentiation.<sup>1,2</sup> Alternative translation produces multiple isoforms of FGF2: one 18 kDa low molecular weight isoform that is translated from a conventional AUG start codon and represents the core sequence common to all FGF2 isoforms, and several high molecular weight isoforms containing amino terminal extensions of the 18 kDa isoform that use CUG codons as alternative translational start sites.<sup>1</sup> The 18 kDa isoform of FGF2 is found in the nucleus and cytoplasm and can be secreted by target cells. It forms a ternary complex with heparan sulfate proteoglycans and an FGF receptor (FGFR) at the cell surface resulting in activation of various signaling pathways, including Ras, Raf, MAPK, and ERK. High molecular weight isoforms are localized to the nucleus and induce signaling independent of FGFRs. FGF2 expression is spatially and temporally regulated during development and is concurrent with neurogenesis.<sup>3</sup> Exogenous administration of FGF2 enhances neurogenesis in the subventricular zone and subgranular zone in an adult rat model of traumatic brain injury. It also reduces infarct size and increases myocardial capillary density in a canine model of myocardial infarction induced by permanent coronary artery occlusion.<sup>2</sup> Lung and kidney expression of FGF2 is increased in a common marmoset model of Middle East respiratory syndrome coronavirus (MERS-CoV) infection.<sup>4</sup> Cayman's FGF2 (human, recombinant) protein can be used for cell-based assay applications. The protein consists of 147 amino acids and has a calculated molecular weight of 16.5 kDa.

## References

---

1. Akl, M.R., Nagpal, P., Ayoub, N.M., *et al.* Molecular and clinical significance of fibroblast growth factor 2 (FGF2 /bFGF) in malignancies of solid and hematological cancers for personalized therapies. *Oncotarget* **7(28)**, 44735-44762 (2016).
2. Liao, S., Bodmer, J., Pietras, D., *et al.* Biological functions of the low and high molecular weight protein isoforms of fibroblast growth factor-2 in cardiovascular development and disease. *Dev. Dyn.* **238(2)**, 249-264 (2009).
3. Woodbury, M.E. and Ikezu, T. Fibroblast growth factor-2 signaling in neurogenesis and neurodegeneration. *J. Neuroimmune Pharmacol.* **9(2)**, 92-101 (2014).
4. Yeung, M.-L., Yao, Y., Jia, L., *et al.* MERS coronavirus induces apoptosis in kidney and lung by upregulating Smad7 and FGF2. *Nat. Microbiol.* **1(3)**, 16004 (2016).

CAYMAN CHEMICAL  
1180 EAST ELLSWORTH RD  
ANN ARBOR, MI 48108 · USA  
PHONE: [800] 364-9897  
[734] 971-3335  
FAX: [734] 971-3640  
CUSTSERV@CAYMANCHEM.COM  
WWW.CAYMANCHEM.COM