Animal-Free™ Recombinant Zebrafish FGF basic/FGF2/bFGF

Catalog Number: Qk002

DESCRIPTION

Source	*E. coli*-derived zebrafish FGF basic/FGF2/bFGF protein Accession # AAI62367.1
Predicted Molecular Mass	17 kDa

SPECIFICATIONS

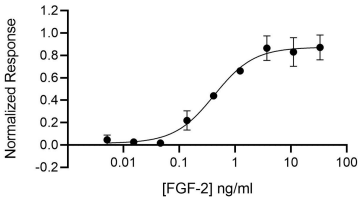
SDS-PAGE	Monomeric zebrafish FGF-2 (bFGF) protein only
Activity	No significant difference between EC_{50} of reference and test lots
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Mass Spectrometry	Single species with expected mass
Mycoplasma	Negative when tested in both ribosomal RNA hybridization and luminescence assays
Formulation	Lyophilized from Tris/NaCl/CyS/mannitol See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Resuspend in water at >100 µg/ml, prepare single use aliquots, add carrier protein if desired.
Shipping	The product is shipped lyophilized at ambient temperture, on ice blocks or dry ice. Shipping at ambient temperture does not affect the bioactivity or stability of the protein. Upon reciept, store immediately at the conditions stated below.
Stability & Storage	BulkLotPrefix assignment required for Storage Info

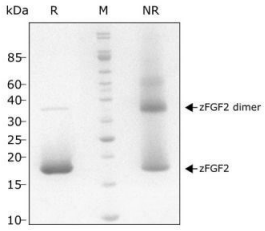
DATA

Bioactivity



Recombinant Zebrafish FGF-2 (bFGF), Animal-Free Protein Bioactivity Zebrafish FGF2 activity is determined using the Promega serum response element luciferase reporter assay (*) in transfected HEK293T cells. Cells are treated in triplicate with a serial dilution of FGF2 for 6 hours. Firefly luciferase activity is measured and normalized to the control Renilla luciferase activity. EC_{50} = 0.42 ng/ml (24.7 pM). *Promega pGL4.33[luc2P/SRE/Hygro] #E1340

SDS-PAGE



Recombinant Zebrafish FGF-2 (bFGF), Animal-Free Protein SDS-PAGE FGF2 migrates as major band at 17 kDa in non-reducing (-βME) conditions and upon reduction (+βME). The higher molecular mass band at 35 kDa is a dimer that we always see in our highly purified zebrafish FGF2 protein, the presence of this does not affect biological activity. Purified recombinant protein (7 µg) was resolved using 15% w/v SDS-PAGE in reduced (+β-mercaptoethanol, R) and non-reduced conditions (NR) and stained with Coomassie Brilliant Blue R250.

bio-techne®
Global bio-techne.com info@bio-techne.com techsupport@bio-techne.com TEL +1 612 379 2956
USA TEL 800 343 7475 Canada TEL 855 668 8722 China TEL +86 (21) 52380373
Europe | Middle East | Africa TEL +44 (0)1235 529449

Animal-Free™ Recombinant Zebrafish FGF basic/FGF2/bFGF

Catalog Number: Qk002

BACKGROUND

FGF basic (also known as FGF-2 and HBGF-2) is an 18-34 kDa, heparin-binding member of the FGF superfamily of molecules (1-3). Superfamily members are characterized by the presence of a centrally placed β-trefoil structure. 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. Human FGF basic is 288 amino acids (aa) in length. There are multiple start sites, four of which utilize atypical CUG codons, and one that initiates at an AUG start site (4-6). The four CUG start sites generate high molecular weight (HMW) FGF basic. There is a 34 kDa, 288 aa form, a 24 kDa, 210 aa form, a 22.5 kDa, 201 aa form, and a 22 kDa, 196 aa form. All are retained intracellularly, undergo extensive methylation, and possess one or more nuclear localization signals (NLS) (7-9). The AUG initiating form is 18 kDa and 155 aa in length. There is no signal sequence (ss). It is, however, secreted directly through the plasma membrane via a mechanism that appears to be dependent upon tertiary structure (10). In place of a ss, there is purportedly a 9 aa N-terminal prosegment that precedes a 146 aa mature segment (11). Early isolations of 18 kDa bovine FGF basic yielded 146 aa molecules, an effect attributed to the presence of acid proteases (12). The molecule contains a heparin-binding site (aa residues 128-144), and undergoes phosphorylation at Ser117 (13). There is also an ill-defined C-terminal NLS that may be more “functional” (or 3-dimensional) than structural (7). Human 146 aa FGF basic is 97% aa identical to mouse FGF basic (14).

References:

1. Sorenson, V. *et al.* (2006) BioEssays **28**:504.
2. Kardami, E. *et al.* (2004) Cardiovasc. Res. **63**:458.
3. Nugent, M.A. and R.V. Lozzo (2000) Int. J. Biochem. Cell Biol. **32**:115.
4. Abraham, J.A. *et al.* (1986) EMBO J. **5**:2523.
5. Prats, H. *et al.* (1989) Proc. Natl. Acad. Sci. USA **86**:1836.
6. Arnaud, E. *et al.* (1999) Mol. Cell. Biol. **19**:505.
7. Foletti, A. *et al.* (2003) Cell. Mol. Life Sci. **60**:2254.
8. Arese, M. *et al.* (1999) Mol. Biol. Cell **10**:1429.
9. Pintucci, G. *et al.* (1996) Mol. Biol. Cell **7**:1249.
10. Nickel, W. (2005) Traffic **6**:607.
11. SwissProt # P09038.
12. Klagsbrun, M. *et al.* (1987) Proc. Natl. Acad. Sci. USA **84**:1839.
13. Bailly, K. *et al.* (2000) FASEB J. **14**:333.
14. Hebert, J.M. *et al.* (1990) Dev. Biol. **138**:454.

PRODUCT SPECIFIC NOTICES

The above product was manufactured, tested and released by R&D System's contract manufacturer, Qkine Ltd, at 1 Murdoch House, Cambridge, UK, CB5 8HW. The product is for research use only and not for the diagnostic or theraputic use.

bio-techne®
Global bio-techne.com info@bio-techne.com techsupport@bio-techne.com TEL +1 612 379 2956
USA TEL 800 343 7475 **Canada** TEL 855 668 8722 **China** TEL +86 (21) 52380373
Europe | Middle East | Africa TEL +44 (0)1235 529449