Recombinant Human Fibroblast Growth Factor-2 (basic)

20210927BB

FOR RESEARCH ONLY! NOT FOR HUMAN USE!

Cat.-no:	**300-001**
Size:	10 µg
Lot. No.:	According to product label
Country of origin:	Germany

Scientific Background

Gene:	fgf2
Synonyms:	basic Fibroblast growth factor (bFGF), Heparin binding growth factor-2 (HBGF-2)

FGF basic (FGF2, HBGF2) is one of at least 23 mitogenic proteins of the FGF family, which show 35-60% amino acid conservation. Unlike other FGFs, FGF acidic and basic lack signal peptides and are secreted by an alternate pathway. Storage pools within the cell or on cell surface heparan sulfate proteoglycans (HSPG) are likely. The predicted 17 kDa FGF basic isoform can be located in both the cytoplasm and the nucleus and is presumed to be the form secreted. Transcription from alternate start sites produces 21-24 kDa forms found only in the nucleus. High and low molecular weight human FGF basic targets the expression of different genes when expressed in NIH3T3 cells. The 17 kDa mouse sequence has 98% aa identity with rat, and 95% identity with human, bovine and sheep FGF basic. Autocrine, intracrine and paracrine actions of FGF basic have been identified. Binding of FGF to heparin or cell surface HSPG is necessary for binding, dimerization and activation of tyrosine kinase FGF receptors. FGF basic binds other proteins, polysaccharides and lipids with lower affinity. Expression of FGF basic is nearly ubiquitous but disruption of the mouse FGF basic gene gives a relatively mild phenotype, suggesting compensation by other FGF family members. FGF basic modulates such normal processes as angiogenesis, wound healing and tissue repair, embryonic development and differentiation, neuronal function and neural degeneration. Transgenic overexpression of FGF basic results in excessive proliferation and angiogenesis reminiscent of a variety of pathological conditions.

References

Quarto N et al, Gene 356:49, (2005); Tsuneto M et al, Biochem Biophys Res Comm 335:1239 (2005); Presta M et al, Cytokine Growth Factor Rev 16:159, (2005); Claus P et al, J Biol Chem 278:479, (2003); Coulier F et al, J Mol Evol 44:43, (1997)

Sequence

```
AGSITTLPALPEDGGSGAFPPGHFKDPKRLYCKNGGFFLRIHPDGRVDGVRE
KSDPHIKLQLQAEERGVVSIKGVCANRYLAMKEDGRLLASKCVTDECFFFER
LESNNYNTYRSRKYTSWYVALKRTGQYKLGSKTGPGQKAILFLPMSAKS
```

Database References

Protein RefSeq:	NP_001997.5
Uniprot ID:	P09038
mRNA RefSeq:	NM_002006.4

Product Specifications

Expressed in	E.coli
Purity	> 98% by SDS-PAGE
Endotoxin	< 0.1ng per µg of human FGF-2
Buffer	PBS
Stabilizer	None
Formulation	lyophilized
Length (aa):	153
MW:	16.5 kDa
Result by N-terminal sequencing	AGSITTL

Stability: Lyophilized samples are stable for greater than six months at -20°C to -70°C.

Reconstitution: The lyophilized FGF-2 (basic) should be reconstituted in water to a concentration not lower than 50 µg/ml. For long term storage we would recommend to add at least 0.1% human or bovine serum albumin.

AVOID REPEATED FREEZE AND THAW CYCLES!

Biological Activity: The ED_{50} for stimulation of cell proliferation in human umbilical vein endothelial cells by human FGF-2 (basic) has been determined to be in the range of 0.1-2 ng/ml. The WHO standard #90/712 was used as control.

ReliaTech GmbH
Phone: +49 (0)5331 8586 987 • Fax: +49 (0)5331 8586 989 • E-mail: orders@reliatech.de • web: www.reliatech.de
Location: Lindener Str. 15, 38300 Wolfenbüttel, Germany

Recombinant Human Fibroblast Growth Factor-2 (basic)

Handling/Application

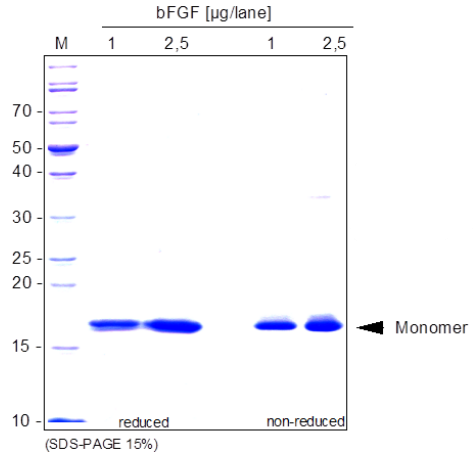

Fig. 1: SDS-PAGE analysis of recombinant human FGF-2 (basic). Samples were loaded in 15% SDS-polyacrylamide gel under reducing and non-reducing condition and stained with Coomassie blue.

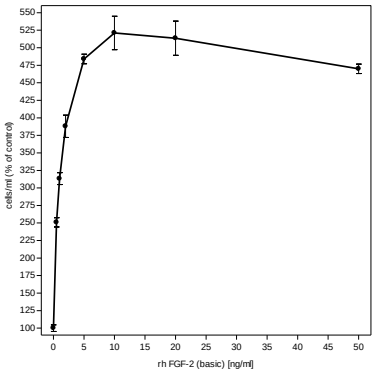

Fig. 2: FGF2-induced proliferation of primary normal human dermal fibroblasts. NHDF cells were stimulated with increasing amounts of human FGF-2 (basic).

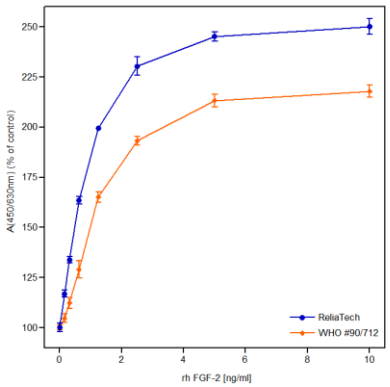

Fig. 3: Proliferation assay with HUVECs. The cells were stimulated using recombinant human FGF-2 and the WHO standard 90/712. Values are the means (±SD) of triplicate determinations and expressed as percentage of control.

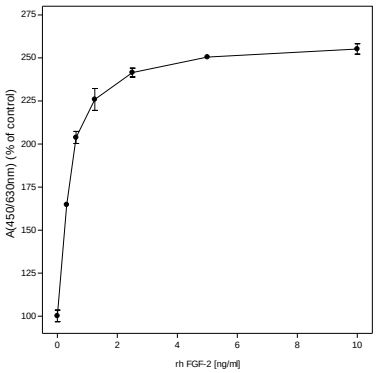

Fig. 4: FGF2-induced proliferation of primary human dermal lymphatic endothelial cells. HDLECs were stimulated with increasing amounts of human FGF-2 (basic).

ReliaTech GmbH
Phone: +49 (0)5331 8586 987 • Fax: +49 (0)5331 8586 989 • E-mail: orders@reliatech.de • web: www.reliatech.de
Location: Lindener Str. 15, 38300 Wolfenbüttel, Germany