

Recombinant FGF-21 (Mouse)

Type:	Recombinant	Cat. No.:	42189
Tag:	None (his-tag removed)	Size:	100 µg
Source:	E.Coli	Purity :	>95%
Other names:	FGF21	Species:	Mouse

Introduction to the Molecule

FGF-21, a polypeptide with 210 amino acid residues produced mostly from the liver tissue.[1] Mouse FGF-21 shares 75% identity as human FGF-21. Recent animal studies indicate it possesses potent beneficial effects on glucose and lipid metabolism and insulin sensitivity.[2] Increasing data shows FGF-21 can significantly stimulate glucose uptake in mature adipocytes. And The lowered LDL-cholesterol and increased HDL-cholesterol can also be observed.[2,3] FGF-21 exerts its bioactivity through interaction with membrane bound FGF receptors (FGFRs) which requires β -Klotho as a co-factor to bind and activate FGFR signaling.[4,5]The activation of FGF-21 can induce the stimulation of diverse downstream pathways mediated by MAPK,FRS-2, SHP-2, PI3K, raf, stat and other signaling molecules.[6-9] In sum, FGF-21 induces a variety of significant beneficial metabolic changes without apparent adverse effects which makes this factor a hot candidate to treat some metabolic diseases.[10]

Description

Total 184 AA Mw: 20kDa (calculated). N-terminal His-tag removed, 2 extra AA left (highlighted).

Amino Acid Sequence

GA	AY	PIPDSSPLLQ	FGGQVRQRYL	YTDDDQDTEA	HLEIREDGTV
VGAAHRSPES	LLELKALKPG	VIQILGVKAS	RFLCQQPDGA	LYGSPHFDPE	
ACSFRELLLE	DGYNVYQSEA	HGLPLRLPQK	DSPNQDATSW	GPVRFLLPMPG	
LLHEPQDQAG	FLPPEPPDVG	SSDPLSMVEP	LQGRSPSYAS		

For mutation

Lyophilized in 1 mg/mL in PBS.

Endotoxin Level

<0.2 EU/ug.

Reconstitution

Add sterile deionized water to prepare a working stock solution of approximately 1 mg/mL and let the lyophilized pellet dissolve completely.

Storage

Store lyophilized protein at -20°C. Aliquot reconstituted protein and store at -80°C. Avoid repeated freezing /thawing cycles.

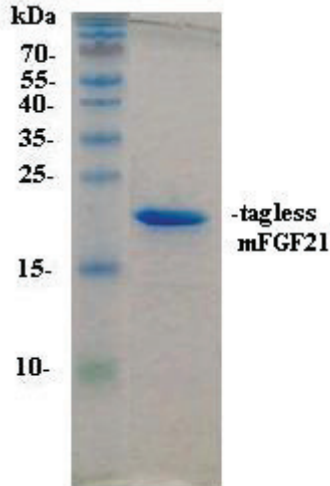
Quality Control Test

BCA to determine quantity of the protein.
SDS PAGE to determine purity of the protein.

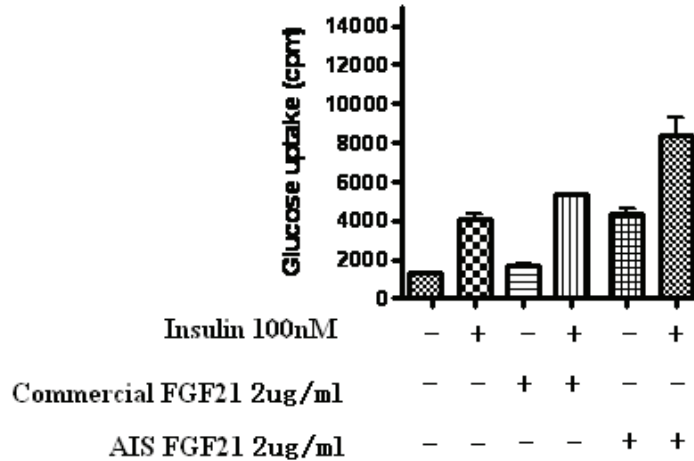
Applications

Cell culture, animal studies, ELISA and Western blotting.

SDS - PAGE gel



Glucose uptake assay



Reference:

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- [3] Alexei Kharitononkov et al. The Metabolic State of Diabetic Monkeys Is Regulated by Fibroblast Growth Factor-21. *Endocrinology* .148(2):774–781. 2007
- [4] Hiroshi Kurosu et al. Tissue-specific Expression of β Klotho and Fibroblast Growth Factor (FGF) Receptor Isoforms Determines Metabolic Activity of FGF19 and FGF21. *J Biol Chem*. 282(37): 26687–26695. 2007
- [5] Ogawas Y et al. BetaKlotho is required for metabolic activity of fibroblast growth factor 21 *Proc Natl Acad Sci USA* 104: 7432-7437, 2007.
- [6] Steven L. PELECH et al. Fibroblast growth factor treatment of Swiss 3T3 cells activates a subunit S6 kinase that phosphorylates a synthetic peptide substrate. *Proc. Natl. Acad. Sci. USA* Vol. 83, pp. 5968-5972, August 1986
- [7] Rosa Carballada et al. Phosphatidylinositol-3 kinase acts in parallel to the ERK MAP kinase in the FGF pathway during *Xenopus* mesoderm induction. *Development* 128, 35-44 (2001)
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- [9] Maria I. Kontaridis et al. Role of SHP-2 in Fibroblast Growth Factor Receptor-Mediated Suppression of Myogenesis in C2C12 Myoblasts. *Molecular and cellular biology*, Vol. 22, No. 11, p. 3875–3891. 2002
- [10] Dostálová I, Haluzíková D, Haluzík M. Fibroblast Growth Factor 21: A Novel Metabolic Regulator With Potential Therapeutic Properties in Obesity/Type 2 Diabetes Mellitus. *Physiol. Res*. 58: 1-7, 2009