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FGF 21 Human

Fibroblast Growth Factor-21 Human Recombinant
GRF0071

Product Overview

Name	FGF 21 Human
Description	
Fibroblast Growth Factor-21 Human Recombinant	
Accession (Primary)	Q9NSA1
Synonyms	
Fibroblast growth factor 21, FGF-21.	
Introduction	
The FGFs are a family of more than 20 small (~17–26 kDa) secreted peptides. The initial characterization of these proteins focused on their ability to stimulate fibroblast proliferation. This mitogenic activity was mediated through FGF receptors (FGFRs) 1, 2, or 3. A fourth closely related tyrosine kinase receptor (FGFR4) was able to bind the FGFs but did not lead to a mitogenic response. FGFs modulate cellular activity via at least 5 distinct subfamilies of high-affinity FGF receptors (FGFRs): FGFR-1, -2, -3, and -4, all with intrinsic tyrosine kinase activity and, except for FGFR-4, multiple splice isoforms, and FGFR-5, which lacks an intracellular kinase domain. There is growing evidence that FGFRs can be important for regulation of glucose and lipid homeostasis. The overexpression of a dominant negative form of FGFR-1 in cells leads to diabetes in mice, which thus implies that proper FGF signaling is required for normal cell function and glycemia maintenance. FGFR-2 appears to be a key molecule during pancreatic development. Moreover, FGFR-4 has been implicated in cholesterol metabolism and bile acid synthesis. FGF-19, has been shown to cause resistance to diet-induced obesity and desensitization and to improve glucose and lipid profiles in diabetic rodents. Since these effects, at least in part, are mediated through the observed changes in metabolic rates, FGF-19 can be considered as a regulator of energy expenditure. FGF-21 is preferentially expressed in liver, but an exact knowledge of FGF-21 bioactivity and its mode of action have been lacking to date. FGF-21 is a potent activator of glucose uptake on adipocytes, protects animals from diet-induced obesity when overexpressed in transgenic mice, and lowers blood glucose and triglyceride levels when therapeutically administered to diabetic rodents.	
Source	
Escherichia Coli.	
Physical Appearance	
Sterile Filtered white lyophilized powder.	
Formulation	

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Lyophilized from PBS, pH 7.4.

Stability

Lyophilized FGF-21 Human Recombinant although stable at room temperature for 3 weeks, should be stored desiccated below -18°C. Upon reconstitution Fibroblast Growth Factor 21 should be stored at 4°C between 2-7 days and for future use below -18°C. For long term storage it is recommended to add a carrier protein (0.1% HSA or BSA). Please prevent freeze-thaw cycles.

Purity

Greater than 96.0% as determined by: (a) Analysis by RP-HPLC. (b) Analysis by SDS-PAGE.

Amino acid sequence

HPIPDS SPLLQFGGQV RQRYLYTDDA QQTEAHLEIR EDGTVGGAAD QSPESLLQLK ALKPGVIQIL GVKTSRFLCQ RPDGALYGSL HFDPEACSFR ELLLEDGYNV YQSEAHGLPL HLPGNKSPHR DPAPRGPARF LPLPGLPPAP PEPPGILAPQ PPDVGSSDPL SMVGPSQGRS PSYAS.

Biological Activity

The ED 50 as determined by thymidine uptake assay using FGF-receptors transfected BaF3 cells is less than 0.5 µg/ml, corresponding to a specific activity of > 2.0 × 10 3 IU/mg in the presence of 5 µg/ml of rMuKlotho-β and 10 µg/ml of heparin.

Solubility

It is recommended to reconstitute the lyophilized Fibroblast Growth Factor-21 Human Recombinant sterile 18MΩ-cm H2O not less than 100 µg/ml, which can then be further diluted to other aqueous solutions.

References

Title: Fibroblast Growth Factor 21 Action in the Brain Increases Energy Expenditure and Sensitivity in Obese Rats Publication: Diabetes 59.7 (2010): 1817-1824. Link: FGF 21 prospec publication

Precautions

FGF 21 Human is for research use only and not for use in diagnostic or therapeutic procedures.

Target Information: (Q9NSA1)