Fibroblast Growth Factor 21 Human E. coli

Product Data Sheet

Type: Recombinant
Source: E. coli
Species: Human
Other names: FGF-21, UNQ3115/PRO10196

Cat. No.:
RD172108100 (0.1 mg)

Description

Total 195 AA. Mw: 20.1 kDa (calculated). UniProtKB acc.no. Q9NSA1. N-Terminal His-tag, 14 extra AA (highlighted).

Introduction to the Molecule

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 beta cells leads to diabetes in mice, which thus implies that proper FGF signaling is required for normal beta 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 insulin desensitization and to improve insulin, 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.

Research topic

Diabetology - Other Relevant Products, Energy metabolism and body weight regulation

Amino Acid Sequence

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

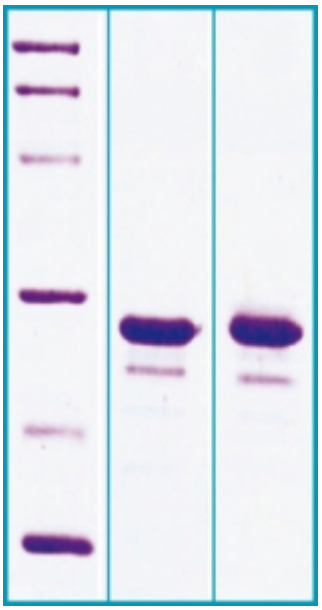
Source

E. coli

Purity

>95%

SDS-PAGE gel



12% SDS-PAGE separation of Human FGF21
1. M.W. marker - 14, 21, 31, 45, 66, 97 kDa
2. reduced and heated sample, 5µg/lane
3. non-reduced and non-heated sample, 5µg/lane

Endotoxin

< 1.0 EU/ug

Formulation

Filtered (0,4 µm) and lyophilized in 0.5 mg/mL in 20mM TRIS, 20mM NaCl, pH 7.5

Reconstitution

Add deionized water to prepare a working stock solution of approximately 0.5 mg/mL and let the lyophilized pellet dissolve completely. Filter sterilize your culture media/working solutions containing this non-sterile product before using in cell culture. Add DTT (0.2 mM) and NaCl (0.1-0.15 M) before freezing to prevent potential aggregation.

Shipping

At ambient temperature. Upon receipt, store the product at the temperature recommended below.

Storage, Stability/Shelf Life

Store lyophilized protein at -80°C. Lyophilized protein remains stable until the expiry date when stored at -80°C. Aliquot reconstituted protein to avoid repeated freezing/thawing cycles and store at -80°C for long term storage. Reconstituted protein can be stored at 4°C for a limited period of time; it does not show any change after one week at 4°C.

Quality Control Test

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

Applications

ELISA, Western blotting

Note

This product is intended for research use only.

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