



## RayBiotech, Inc.

3607 Parkway Lane suite 200  
Norcross, GA 30092  
Tel: 770-729-2992, 1-888-494-8555  
Fax: 770-206-2393  
Website: [www.raybiotech.com](http://www.raybiotech.com)  
Email: [info@raybiotech.com](mailto:info@raybiotech.com)

# Certificate of Analysis and Data Sheet Recombinant Mouse Fibroblast Growth Factor 21

**Catalog No.**  
228-10458

**Source**  
*Escherichia Coli.*

## 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 over expression 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.

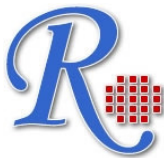
FGF-21 is preferentially expressed in liver, but an exact knowledge of FGF-21 bioactivity and its mode of action have been lacking to date. FGF-21 is a potent activator of glucose uptake on adipocytes, protects animals from diet-induced obesity when over expressed in transgenic mice, and lowers blood glucose and triglyceride levels when therapeutically administered to diabetic rodents.

## Description

Fibroblast Growth Factor -21 Mouse Recombinant produced in E.Coli is a single, non-glycosylated, polypeptide chain containing 183 amino acids including N-terminal Methionin and having a molecular mass of 20.1 kDa. The amino acid sequence of the recombinant mouse FGF21 is 100% homologous to the amino acid sequence of the Mouse FGF21 without signal sequence.

The FGF-21 is purified by proprietary chromatographic techniques.

**The products are furnished for LABORATORY RESEARCH USE ONLY.  
Not for diagnostic or therapeutic use.**



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### Physical Appearance

Sterile Filtered white lyophilized powder.

### Formulation

Filtered (0.4  $\mu$ m) and lyophilized from 0.5 mg/ml in 20mM TRIS, 20mM NaCl, pH 7.5.

### Solubility

It is recommended to reconstitute the lyophilized Fibroblast Growth Factor-21 Mouse Recombinant in sterile 18M $\Omega$ -cm H<sub>2</sub>O not less than 100 $\mu$ g/ml, which can then be further diluted to other aqueous solutions.

### Purity

Greater than 95.0% as determined by:

- (a) Analysis by RP-HPLC.
- (b) Analysis by SDS-PAGE.

### Amino Acid Sequence

MAY PIPDSSPLLQ FGGQVRQRYL YTDDDQDTEA HLEIREDGTV VGAAHRSPES  
LLELKALKPG VIQILGVKAS RFLCQQPDGA LYGSPHFDPE ACSFRELLLE  
DGYNVYQSEA HGLPLRLPQK DSPNQDATSW GPVRFLPMPG LLHEPQDQAG  
FLPPEPPDVG SSDPLSMVEP LQGRSPSYAS.

### Storage

Lyophilized FGF-21 Mouse 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.**

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