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## Product Data Sheet

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Product Name: FGF 21 Rat  
 Cat. No.: GP20250  
 Batch No.: 1

### Product Data

Purity	>98%	Source	Escherichia Coli.
Physical Appearance	solid	Shipping Condition	Shipped at Room temp.
Synonyms	Fibroblast growth factor 21; FGF-21.		
Amino Acid Sequence	AYPISDSSPL LQFGGQVRQR YLYTDDDQDT EAHLEIREDG TVVGTahrSP ESLLKALK PGVIQILGVK ASRFLCQQPD GTLYGSPHFD PEACSFRELL LKDGYNVYQS EAHGLPLRLP QKDSQDPATR GPVRFPLMPG LPHEPQECPG VLPPEPPDVG SSDPLSMVEP LQGRSPSYAS		
Solubility	It is recommended to reconstitute the lyophilized FGF 21 Rat Recombinant in sterile 18M-cm H <sub>2</sub> O not less than 100µg/ml, which can then be further diluted to other aqueous solutions.		
Formulation	Lyophilized from a 0.2µm filtered concentrated solution in 16 <sup>L</sup> PBS, pH 7.4.		

### 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

**Caution: Product has not been fully validated for medical applications. For research use only.**

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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.

### Biological Activity

The ED50 determined by a cell proliferation assay using murine NIH/3T3 cells is less than 700 ng/ml, corresponding to a specific activity of  $> 1.4 \times 1000$  IU/mg in the presence of 5 $\mu$ g/ml of rMuKlotho-beta.

### Stability

Lyophilized FGF 21 although stable at room temperature for 3 weeks, should be stored desiccated below -18°C . Upon reconstitution FGF 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.

### Background

FGF 21 Rat Recombinant produced in E.Coli is a single, non-glycosylated polypeptide chain containing 180 amino acids and having a molecular mass of 19.7kDa. The FGF 21 is purified by proprietary chromatographic techniques.

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