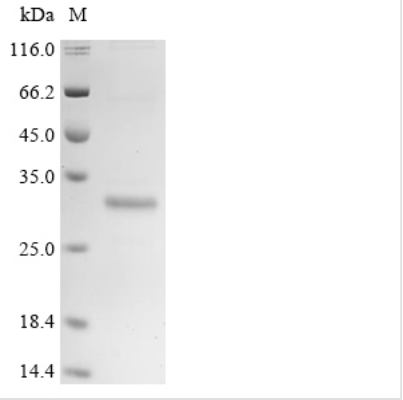
Recombinant Human Fibroblast growth factor 21 (FGF21)

Product Code	CSB-EP008627HU
Abbreviation	Recombinant Human FGF21 protein
Storage	The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.
Uniprot No.	Q9NSA1
Form	Liquid or Lyophilized powder
Storage Buffer	If the delivery form is liquid, the default storage buffer is Tris/PBS-based buffer, 5%-50% glycerol.If the delivery form is lyophilized powder, the buffer before lyophilization is Tris/PBS-based buffer, 6% Trehalose.
Product Type	Recombinant Human Fibroblast growth factor 21(FGF21)
Immunogen Species	Homo sapiens (Human)
Sensitivity	Not Test
Purity	Greater than 85% as determined by SDS-PAGE.
Sequence	HPIPDSSPLLQFGGQVRQRYLYTDDAQQTEAHLEIREDGTVGGAADQSPESLL QLKALKPGVIQILGVKTSRFLCQRPDGALYGSLHFDPEACSFRELLLEDGYNVY QSEAHGLPLHLPGNKSPHRDPAPRGPARFLPLPGLPPALPEPPGILAPQPPDV GSSDPLSMVGPSQGRSPSYAS
Research Area	Signal Transduction
Source	E.coli
Target Names	FGF21
Expression Region	29-209aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	N-terminal 6xHis-tagged
Mol. Weight	23.5 kDa
Protein Length	Full Length of Mature Protein
Image	



(Tris-Glycine gel) Discontinuous SDS-PAGE (reduced) with 5% enrichment gel and 15% separation gel.

Description

The recombinant human FGF21 protein is expressed with the N-terminal 6xHis-tag in E. coli. The gene fragment encoding the 29-209aa of FGF21 protein is cloned into a suitable expression vector. The 6xHis-tag gene is also inserted into the vector. The recombinant vectors are transfected into E. coli cells. Upon IPTG induction, the recombinant FGF21 protein is expressed at high levels and is subsequently purified from the cell lysate using Ni-NTA affinity chromatography. This method takes advantage of the interaction between the 6xHis tag and nickel ions in the resin. Following purification, SDS-PAGE analysis reveals a protein purity exceeding 90%.

Human FGF21 functions primarily as an endocrine hormone, playing a crucial role in the regulation of glucose and lipid metabolism. FGF21 is predominantly expressed in the liver, adipose tissue, skeletal muscle, and other organs, and its secretion is significantly influenced by metabolic states such as fasting and obesity [1][2][3].

FGF21 has garnered attention for its metabolic regulatory functions. It has been shown to enhance glucose uptake in adipocytes and increase insulin sensitivity, making it a potential therapeutic target for metabolic disorders such as type 2 diabetes and obesity [4][5][6]. In experimental models, FGF21 administration has been associated with improved metabolic profiles, including reduced plasma glucose and triglyceride levels, and protection against diet-induced obesity [4][6][7]. The hormone's effects are mediated through its interaction with specific receptors, notably the FGFR1 in conjunction with the co-receptor βKlotho, which is essential for FGF21 signaling [3][8].

Beyond glucose and lipid metabolism, FGF21 has been implicated in the regulation of energy expenditure and thermogenesis, particularly in brown adipose tissue (BAT) [9][10]. FGF21 levels are elevated during fasting, suggesting its role in adapting to energy deficits by promoting fatty acid oxidation and ketogenesis [11][12]. Additionally, FGF21 has been associated with protective effects against oxidative stress and inflammation, which are critical in various metabolic and cardiovascular diseases [13][14].

References:
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Reconstitution	We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Please reconstitute protein in deionized sterile water to a concentration of 0.1-1.0 mg/mL.We recommend to add 5-50% of glycerol (final concentration) and aliquot for long-term storage at -20°C/-80°C. Our default final concentration of glycerol is 50%. Customers could use it as reference.
Shelf Life	The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.