PRODUCT INFORMATION

FGF19 (human, recombinant)

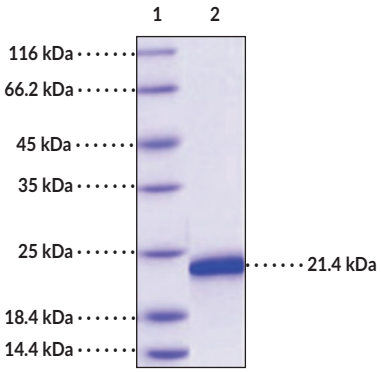
Item No. 32064

Overview and Properties

Synonym:	Fibroblast Growth Factor 19
Source:	Recombinant human FGF19 expressed in *E. coli*
Amino Acids:	27-216
Uniprot No.:	O95750
Molecular Weight:	21.4 kDa
Storage:	-80°C (as supplied)
Stability:	≥1 year
Purity:	≥95% estimated by SDS-PAGE
Supplied in:	Lyophilized from sterile 50 mM Tris, 300 mM sodium chloride, pH 8.5, with 5% trehalose, 5% mannitol, and 0.01% Tween 80

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Image



Lane 1: MW Markers
Lane 2: FGF19

SDS-PAGE Analysis of FGF19.

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Description

Fibroblast growth factor 19 (FGF19) is a hepatokine and member of the endocrine subfamily of FGFs with roles in bile acid synthesis, gallbladder filling, glycogen synthesis, and gluconeogenesis.[1] Mature FGF19 is a secreted 190-amino acid peptide composed of an N-terminal FGFR binding site, a conserved 120-amino acid core, and a C-terminal sequence that facilitates binding to the klotho beta (KLB) co-receptors.[1,2] It is derived from a 216-amino acid protein that contains an additional 26-amino acid signaling peptide, which drives constitutive secretion. FGF19 is primarily expressed in the fetal brain and adult gallbladder but is also expressed in various other tissues. Unlike other FGFs, FGF19 has low affinity for heparin and binds to KLB to induce intracellular signaling through FGFR4.[2] Knockout of *Fgf15*, the murine ortholog of *FGF19*, reduces hepatic glycogen levels and induces glucose intolerance in mice, effects that can be reversed by exogenous administration of FGF19.[3] *Fgf15*$^{-/-}$ mice also exhibit dysregulated bile acid metabolism. Intracerebroventricular infusion of FGF19 potentiates peripheral insulin signaling in a mouse model of insulin resistance. Serum levels of FGF19 are increased in patients with extrahepatic cholestasis and are reduced in patients with inflammatory bowel disease, primary bile acid malabsorption, type-2 diabetes, and non-alcoholic fatty liver disease (NAFLD). Upregulated *FGF19* expression is associated with tumor progression and poor prognosis in patients with hepatocellular carcinoma. Cayman's FGF19 (human, recombinant) consists of 191 amino acids and has a calculated molecular weight of 21.4 kDa.

References

1. Raja, A., Park, I., Haq, F., *et al.* FGF19-*FGFR4* signaling in hepatocellular carcinoma. *Cells* **8(6)**, 536 (2019).
2. Harmer, N.J., Pellegrini, L., Chirgadze, D., *et al.* The crystal structure of fibroblast growth factor (FGF) 19 reveals novel features of the FGF family and offers a structural basis for its unusual receptor affinity. *Biochemistry* **43(3)**, 629-640 (2004).
3. Degirolamo, C., Sabbà, C., and Moschetta, A. Therapeutic potential of the endocrine fibroblast growth factors FGF19, FGF21 and FGF23. *Nat. Rev. Drug Discov.* **15(1)**, 51-69 (2016).

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