

Cytokines

Mouse Recombinant FGF-21



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Fibroblast growth factor 21

Catalog # 78108 10 µg
78108.1 50 µg

Product Description

Fibroblast growth factor 21 (FGF-21) is a member of the FGF family. Using β -Klotho as a cofactor, FGF-21 signals through FGF receptor 1c and 4 to activate PI3K and MAPK pathways (Mattila & Härkönen; Kharitonov et al.). FGF-21 expression is regulated by tissue-specific peroxisome proliferator-activated receptors (PPARs). Upon PPAR- α stimulation FGF-21 is produced in the liver, and activation of PPAR- γ leads to FGF-21 production in adipose tissue. FGF-21 promotes insulin-independent glucose uptake and lipid accumulation in primary human adipocytes and in mouse 3T3-L1 cells. In pancreatic islets and INS-1 cells it inhibits glucose-mediated glucagon release and stimulates insulin production. FGF-21 does not induce proliferation in immortalized cell lines, unlike other FGFs (Kharitonov & Shanafelt). FGF-21 regulates thermogenesis in white and brown adipose tissue, and metabolic processes in cells of pancreatic origin (Kharitonov et al.).

Product Information

Alternative Names: Fibroblast growth factor 21
Accession Number: Q9JJN1
Amino Acid Sequence: AYPIDSSPL LQFGGQVRQR YLYTDDDQDT EAHLEIREDG TVVGAHRSP ESLLKALK PGVIQILGVK ASRFLCQQPD GALYGSPHFD PEACSFRELL LEDGYNVYQS EAHGLPLRLP QKDSPNQDAT SWGPVRFPLM PGLLHEPQDQ AGFLPPEPPD VGSSDPLSMV EPLQGRSPSY AS
Predicted Molecular Mass: 19.9 kDa
Species: Mouse
Cross Reactivity: Not determined
Formulation: Lyophilized after dialysis against phosphate-buffered saline.
Source: E. coli

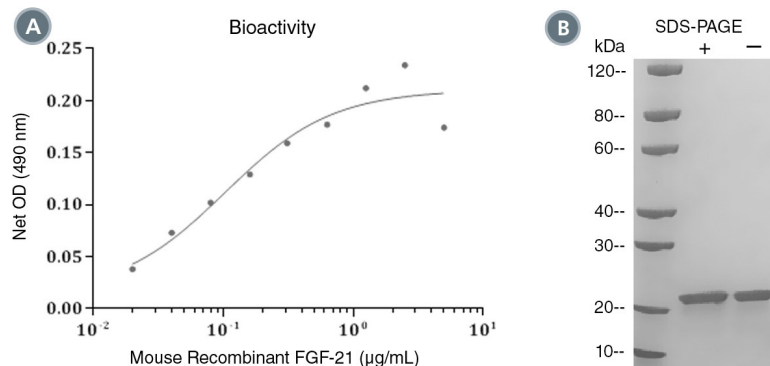
Specifications

Activity: The specific activity is $\geq 2.0 \times 10^3$ units/mg ($EC_{50} \leq 0.5$ µg/mL) as determined by a cell proliferation assay of NIH-3T3 cells in the presence of 1.25 µg/mL mouse Klotho and 10 µg/mL heparin.
Purity: $\geq 97\%$
Endotoxin Level: Measured by kinetic Limulus amebocyte lysate (LAL) analysis and is ≤ 0.2 EU/µg protein.

Preparation and Storage

Storage: Store at -80°C.
Stability: Stable as supplied for 12 months from date of receipt.
Preparation: Centrifuge vial before opening. Resuspend the product in sterile water or phosphate-buffered saline containing 0.1% bovine serum albumin (BSA) to at least 0.1 mg/mL by pipetting the solution down the sides of the vial. Do not vortex. Store at 2 - 8°C for up to 1 week or at -20°C to -80°C for up to 3 months. Avoid repeated freeze-thaw cycles.
NOTE: If reconstituted product will be used immediately BSA is not required.

Data



(A) The biological activity of Mouse Recombinant FGF-21 was tested by its ability to promote the proliferation of NIH-3T3 cells in the presence of 1.25 μg/mL mouse Klotho and 10 μg/mL heparin. Cell proliferation was measured using a fluorometric assay method. The EC50 is defined as the effective concentration of the growth factor at which cell proliferation is at 50% of maximum. The EC50 in the above example is less than 0.5 μg/mL.

(B) 2 μg of Mouse Recombinant FGF-21 was resolved with SDS-PAGE under reducing (+) and non-reducing (-) conditions and visualized by Coomassie Blue staining.

Related Products

For a complete list of cytokines, as well as related products available from STEMCELL Technologies, please visit our website at www.stemcell.com/cytokines or contact us at techsupport@stemcell.com.

References

- Kharitononkov A. & Shanafelt AB. (2009) FGF21: A novel prospect for the treatment of metabolic diseases. *Curr Opin Investig Drugs* 10(4): 359–64.
- Kharitononkov A et al. (2008) FGF-21/FGF-21 receptor interaction and activation is determined by betaKlotho. *J Cell Physiol* 215(1): 1–7.
- Mattila MM & Härkönen PL. (2007) Role of fibroblast growth factor 8 in growth and progression of hormonal cancer. *Cytokine Growth Factor Rev* 18(3–4): 257–66.

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