

**DESCRIPTION**

**Source** Mouse myeloma cell line, NS0-derived  
Tyr30-Ser210  
Accession # Q9JJN1

**N-terminal Sequence Analysis** Tyr30 & Tyr49

**Predicted Molecular Mass** 20 kDa

**SPECIFICATIONS**

**SDS-PAGE** 22-25 kDa, reducing conditions

**Activity** Measured in a cell proliferation assay using NIH-3T3 mouse embryonic fibroblast cells.  
The ED<sub>50</sub> for this effect is typically 0.4-2 µg/mL in the presence of Recombinant Mouse Klotho β (Catalog # 2619-KB).

**Endotoxin Level** <0.10 EU per 1 µg of the protein by the LAL method.

**Purity** >95%, by SDS-PAGE with silver staining.

**Formulation** Lyophilized from a 0.2 µm filtered solution in MOPS, Na<sub>2</sub>SO<sub>4</sub> and EDTA with BSA as a carrier protein. See Certificate of Analysis for details.

**PREPARATION AND STORAGE**

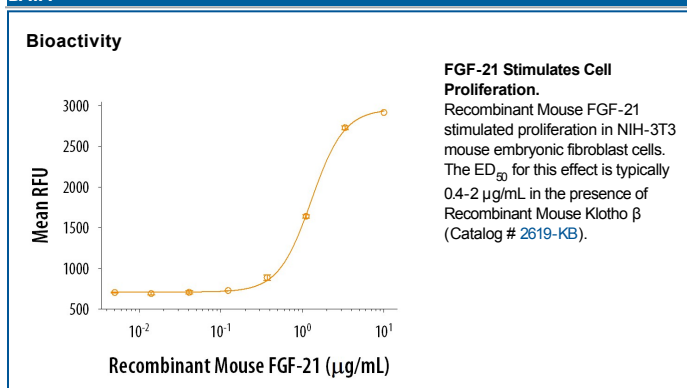
**Reconstitution** Reconstitute at 100 µg/mL in PBS containing at least 0.1% human or bovine serum albumin.

**Shipping** The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.

**Stability & Storage** Use a manual defrost freezer and avoid repeated freeze-thaw cycles.

- 12 months from date of receipt, -20 to -70 °C as supplied.
- 1 month, 2 to 8 °C under sterile conditions after reconstitution.
- 3 months, -20 to -70 °C under sterile conditions after reconstitution.

**DATA**



## BACKGROUND

Fibroblast growth factor 21 (FGF-21) is a member of the FGF gene family. Based on its structure, FGF-21 is further classified into a subfamily of FGFs along with FGF-19 and -23 (1). Mouse FGF-21 is a 210 amino acid (aa) polypeptide that contains a 120 aa core FGF domain and a hydrophobic N-terminus signal sequence. The signal sequence is cleaved to release the soluble 180 aa mature FGF-21 protein (2). At the amino acid sequence level, mature mouse FGF-21 is 81% and 92% identical to mature human and rat FGF-21, respectively. In comparison to other FGF subfamilies, a heparin-binding domain is uniquely absent in FGF-19 subfamily members. Lack of this domain confers endocrine function to FGF-19 members and enables them to freely diffuse within tissues and accumulate in the circulatory system (3, 4). The biological activity of FGF-21 requires binding to Klotho  $\beta$ , a co-receptor that is in complex with cell surface FGF receptors (FGF R) (5, 6). Binding of FGF-21 to Klotho  $\beta$  facilitates FGF R activation and autophosphorylation resulting in the initiation of multiple downstream signaling cascades (7, 8). FGF-21 cannot independently bind to FGF Rs, thus its effects are restricted to target tissues that express Klotho  $\beta$ . FGF-21 functions as a physiological regulator of cellular metabolism, including glucose uptake in adipocytes and cellular sensitivity to insulin. FGF-21 is basally expressed in the pancreas, thymus, and liver, as well as in adipose tissue (3, 9). Local and systemic metabolic stress has been shown to induce expression of FGF-21 in the liver, muscles, and fat (10-12). Modulation of FGF-21 expression is associated with a number of metabolic disorders, including obesity and diabetes (7, 13). FGF-21 is also involved in promoting cell survival and proliferation, modulating mesenchymal stem cell differentiation, regulating circadian rhythm, and controlling reproductive capacity during nutrient deprivation (14-18).

## References:

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