

DESCRIPTION

Source Mouse myeloma cell line, NS0-derived cynomolgus monkey Klotho beta protein
Phe53-Leu997, with a C-terminal 6-His tag
Accession # EHH53620.1

N-terminal Sequence Analysis Phe53

Predicted Molecular Mass 110 kDa

SPECIFICATIONS

SDS-PAGE 110-130 kDa, under reducing conditions

Activity Measured by its binding ability in a functional ELISA.
When Recombinant Human FGF-21 (Catalog # 2539-FG) is immobilized at 1 μ g/mL (100 μ L/well), Recombinant Cynomolgus Monkey Klotho β His-tag (Catalog # 10428-KB) binds with an ED₅₀ of 0.05-0.4 μ g/mL.

Endotoxin Level <0.10 EU per 1 μ g of the protein by the LAL method.

Purity >90%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.

Formulation Supplied as a 0.2 μ m filtered solution in PBS, Glycerol and EDTA. See Certificate of Analysis for details.

PREPARATION AND STORAGE

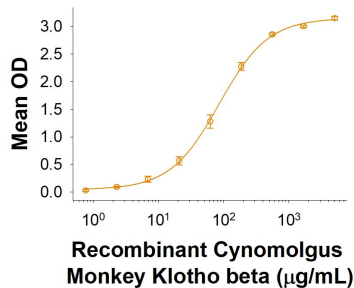
Shipping The product is shipped with dry ice or equivalent. Upon receipt, store it immediately at the temperature recommended below.

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

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

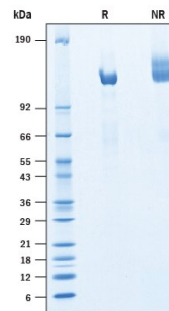
DATA

Binding Activity



When Recombinant Human FGF-21 (Catalog # 2539-FG) is immobilized at 1 μ g/mL (100 μ L/well), Recombinant Cynomolgus Monkey Klotho beta His-tag (Catalog # 10428-KB) binds with an ED₅₀ of 0.05-0.4 μ g/mL.

SDS-PAGE



2 μ g/lane of Recombinant Cynomolgus Monkey Klotho beta His-tag (Catalog # 10428-KB) was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 110-130 kDa.

BACKGROUND

Klotho β (KLB), a divergent structural member of the glycosidase I superfamily, is a type I transmembrane protein expressed primarily in the liver and pancreas, with lower expression in adipose tissue (1). Klotho β , along with the closely related Klotho, consists of a large extracellular domain (ECD) containing two glycosidase-like regions, a transmembrane domain, and a short intracellular tail. The two glycosidase-like regions of Klotho β share high homology to the one β -glycosidase family yet lack the critical active site Glu residues present in β -glycosidases necessary for catalytic activity, though physiologically relevant enzymatic activity for Klotho β has been suggested (2, 3). The ECD of mature cynomolgus Klotho β shares 97% and 80% amino acid sequence identity with the ECD of human and mouse Klotho β , respectively. Similar to Klotho, Klotho β helps to regulate multiple metabolic processes in mammals by acting as a co-receptor that facilitates binding between FGF19 subfamily members and their receptors (4). The Klotho β mediated interaction of FGF19 (FGF15 in mouse) with FGF Receptor 4 in the liver negatively regulates bile acid synthesis by controlling the secretion of two key bile acid synthase genes, cholesterol 7- α hydroxylase (Cyp7a1) and sterol 12- α hydroxylase (Cyp8b1) (5-7). Klotho β is also a cofactor for the interaction of FGF21 with FGF Receptor 1c in adipocytes, which allows FGF21 to stimulate GLUT1 expression, up-regulating adipocyte insulin-dependent glucose uptake (5 - 8). Regulation of Klotho β function has been suggested as a therapy for several cardiometabolic diseases (9).

References:

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2. Ito, S. *et al.* (2000) *Mech Dev.* **98**:115
3. Goetz, R. *et al.* (2007) *Mol. Cell. Biol.* **27**:3417.
4. Kuro-O, M. (2019) *Nat Rev Nephrol.* **15**:27.
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8. Ogawa, Y. *et al.* (2007) *Proc. Natl. Acad. Sci USA* **104**:7432.
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