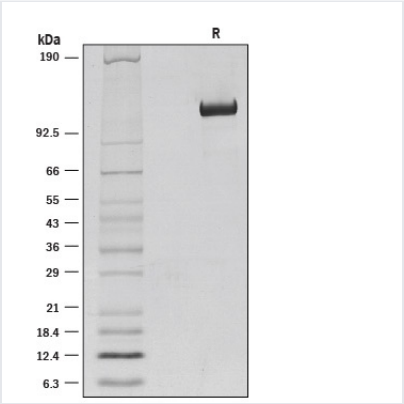
Klotho Beta (KLB) Active Protein

PRODUCT OVERVIEW

Product Name	Klotho beta (KLB), Active Protein
Full Product Name	Klotho beta, Recombinant, Mouse (Beta-klotho, BKL, BetaKlotho, Klotho beta-like Protein)
Product Gene Name	KLB active protein
Form/Format	Supplied as a liquid in PBS, 0.1 mM EDTA, 50% glycerol, pH 6.8.
Purity/Purification	Purified 90%, as determined by SDS-PAGE and visualized by silver stain.
Specificity	Recognizes mouse Klotho beta. species sequence homology: Human 79%, bovine 79%, canine 80% and rat Klotho beta 67%.
Preparation and Storage	May be stored at 4 degree C for short-term only. For long-term storage, aliquot and store at -20 degree C. Aliquots are stable for at least 6 months at -20 degree C. For maximum recovery of product, centrifuge the original vial after thawing and prior to removing the cap. Further dilutions can be made in assay buffer.
Molecular Weight	110.2kD. As a result of glycosylation, the recombinant mouse Klotho Beta migrates as an approximately 140kD protein in SDS-PAGE under reducing conditions.
Chromosome Location	Chromosome: 4; NC_000004.11 (39408473..39453153). Location: 4p14
OMIM	611135
3D Structure	ModBase 3D Structure for Q86Z14
Active Protein Note	Protein activity can be an ambiguous term. Please refer to the data sheet or inquire with Technical Support to determine the definition of activity for this product.
Immunogen	NS0-derived recombinant mouse Klotho.
Biological Activity	Measured by its ability to stimulate proliferation of NIH 3T3 cells. The ED50 for this effect is typically 0.75-3ug/ml in the presence of 2ug/ml of rhFGF-21
Endotoxin Level	1EU/ug of the protein as determined by the LAL method.
Hybridoma	A DNA sequence encoding the extracellular domain of mouse Klotho Beta was fused to a polyhistdine tag at the C-terminus. The protein was expressed in a mouse myeloma cell line, NS0.
Product Categories/Family for KLB active protein	Molecular Biology; MB-Enzymes; Glycosidase
Related Product Information for KLB active protein	Klotho b, a divergent structural member of the glycosidase I superfamily, is expressed primarily in the liver and pancreas, with lower expression in adipose tissue.1 Like Klotho, Klotho b facilitates binding between FGF19 subfamily members and their receptors via formation of a ternary complex.2 The Klotho b mediated interaction of FGF15 (human FGF19) 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-a hydroxylase (Cyp7a1) and sterol 12-a hydroxylase (Cyp8b1).2-4 Klotho b is also a cofactor for the interaction of FGF21 with FGF Receptor 1c in adipocytes, which allows FGF21 to stimulate GLUT1 expression, upregulating adipocyte insulin-dependent glucose uptake.2-3, 5 The 1043 amino acid (aa) type I transmembrane protein is composed of a 51 aa signal sequence, a 943 aa extracellular domain (ECD) containing two glycosidase-like regions, a 21 aa transmembrane domain, and 28 aa intracellular tail. Since Klotho-related proteins lack critical active site Glu residues present in b-glycosidases, it was initially unclear whether they were functional enzymes.1, 6 However, glucuronidase activity has since been demonstrated for Klotho, indicating that physiologically relevant enzymatic activity for Klotho b is also possible.7 The extracellular domain shares 79%, 79%, 80% and 67% identity with human, bovine, canine and rat Klotho b, respectively. The low identity with rat reflects aa discordance within rodent ECD.

Other Notes	Small volumes of KLB active protein vial(s) may occasionally become entrapped in the seal of the product vial during shipment and storage. If necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the container`s cap. Certain products may require to ship with dry ice and additional dry ice fee may apply.
Searchable Terms for KLB purchase	MBS635824 is an active protein targeting KLB. Also known as Klotho beta, Recombinant, Mouse (Beta-klotho, BKL, BetaKlotho, Klotho beta-like Protein).



SDS-Page of KLB active protein
1ug/lane of Recombinant Mouse Klotho beta was resolved with SDS-PAGE under reducing (R) conditions and visualized by silver staining, showing a band at 135kD.

ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for KLB. It may not necessarily be applicable to this product.

NCBI GI #	119613331
NCBI GeneID	152831
NCBI Accession #	EAW92925.1
UniProt Primary Accession #	Q86Z14
UniProt Secondary Accession #	Q2M3K8
UniProt Related Accession #	Q86Z14
NCBI Official Full Name	klotho beta
NCBI Official Synonym Full Names	klotho beta
NCBI Official Symbol	KLB
NCBI Official Synonym Symbols	BKL
UniProt Protein Name	Beta-klotho
UniProt Synonym Protein Names	Klotho beta-like protein
Protein Family	Beta-klotho
UniProt Gene Name	KLB
UniProt Synonym Gene Names	BKL; BetaKlotho
UniProt Entry Name	KLOTB_HUMAN
NCBI Protein Information	beta-klotho; betaKlotho; klotho beta like; klotho beta-like protein

UniProt Comments for KLB	Klotho beta: Contributes to the transcriptional repression of cholesterol 7-alpha-hydroxylase (CYP7A1), the rate-limiting enzyme in bile acid synthesis. Probably inactive as a glycosidase. Increases the ability of FGFR1 and FGFR4 to bind FGF21. Belongs to the glycosyl hydrolase 1 family. Klotho subfamily. Protein type: Membrane protein, integral Chromosomal Location of Human Ortholog: 4p14 Cellular Component: integral to membrane; plasma membrane Molecular Function: protein binding; fibroblast growth factor binding; hydrolase activity, hydrolyzing O-glycosyl compounds; fibroblast growth factor receptor binding Biological Process: epidermal growth factor receptor signaling pathway; phosphoinositide-mediated signaling; fibroblast growth factor receptor signaling pathway; nerve growth factor receptor signaling pathway; positive regulation of cell proliferation; carbohydrate metabolic process; insulin receptor signaling pathway; innate immune response
Research Articles on KLB	**1.** betaKlotho suppresses tumor growth in hepatocellular carcinoma by regulating Akt/GSK-3beta/cyclin D1 signaling pathway.
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