

Klotho (A-9): sc-515942

BACKGROUND

In Greek mythology the fate known as Klotho is a goddess who spins the thread of life. In mice, a deficiency in Klotho (kl) gene expression leads to various systemic phenotypes resembling human aging. Characteristics of the Klotho deficient mouse include arteriosclerosis, osteoporosis, ectopic calcification, and skin atrophy together with growth retardation, short life-span and infertility. Mice deficient in Klotho show barely detectable amounts of white adipose tissue yet their brown adipose tissue (BAT) is comparably the same as in a normal genotype, suggesting that Klotho influences adipose differentiation. Mouse and human Klotho gene products are both characteristic type I transmembrane proteins that are approximately 80% homologous. The amino terminal extracellular domain has two internal repeats, known as KL-1 and KL-2, which have partial sequence homology to β -glucosidases and lactase glycosylceramidase, suggesting a role for Klotho in sphingolipid metabolism. The human Klotho gene maps to chromosome 13q13.1 and encodes a 1,012 amino acid protein that is abundant in the kidney and brain. Chronic renal failure (CRF) patients express lower levels of Klotho mRNA and protein in the kidneys.

REFERENCES

- Mori, K., et al. 2000. Disruption of Klotho gene causes an abnormal energy homeostasis in mice. *Biochem. Biophys. Res. Commun.* 278: 665-670.
- Mizuno, I., et al. 2001. Upregulation of the Klotho gene expression by thyroid hormone and during adipose differentiation in 3T3-L1 adipocytes. *Life Sci.* 68: 2917-2923.

CHROMOSOMAL LOCATION

Genetic locus: KL (human) mapping to 13q13.1; Kl (mouse) mapping to 5 G3.

SOURCE

Klotho (A-9) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 507-535 within an internal region of Klotho of human origin.

PRODUCT

Each vial contains 200 μ g IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Klotho (A-9) is available conjugated to agarose (sc-515942 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to either phycoerythrin (sc-515942 PE), fluorescein (sc-515942 FITC), Alexa Fluor[®] 488 (sc-515942 AF488), Alexa Fluor[®] 546 (sc-515942 AF546), Alexa Fluor[®] 594 (sc-515942 AF594) or Alexa Fluor[®] 647 (sc-515942 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-515942 AF680) or Alexa Fluor[®] 790 (sc-515942 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor[®] is a trademark of Molecular Probes, Inc., Oregon, USA

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

Klotho (A-9) is recommended for detection of Klotho of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

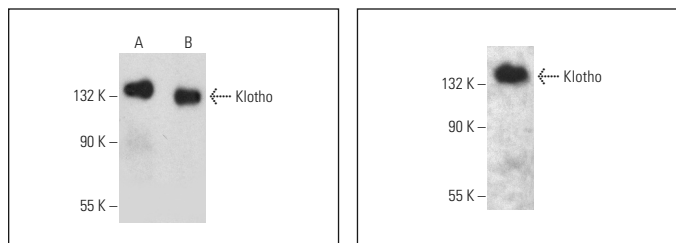
Suitable for use as control antibody for Klotho siRNA (h): sc-43883, Klotho siRNA (m): sc-77344, Klotho shRNA Plasmid (h): sc-43883-SH, Klotho shRNA Plasmid (m): sc-77344-SH, Klotho shRNA (h) Lentiviral Particles: sc-43883-V and Klotho shRNA (m) Lentiviral Particles: sc-77344-V.

Molecular Weight of Klotho: 130 kDa.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker[™] Molecular Weight Standards: sc-2035, UltraCruz[®] Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz[®] Mounting Medium: sc-24941 or UltraCruz[®] Hard-set Mounting Medium: sc-359850.

DATA



Western blot analysis of mouse recombinant Klotho (A) and human recombinant Klotho (B). Klotho (A-9): sc-515942. Western blot analysis of human recombinant Klotho.

SELECT PRODUCT CITATIONS

- Li, S., et al. 2022. Abnormally decreased renal Klotho is linked to endoplasmic reticulum-associated degradation in mice. *Int. J. Med. Sci.* 19: 321-330.
- Liu, Q., et al. 2022. CCL5 suppresses Klotho expression via p-Stat3/DNA methyltransferase1-mediated promoter hypermethylation. *Front. Physiol.* 13: 856088.
- Zhang, C., et al. 2022. Histone methyltransferase MLL1 drives renal tubular cell apoptosis by p53-dependent repression of E-cadherin during cisplatin-induced acute kidney injury. *Cell Death Dis.* 13: 770.

RESEARCH USE

For research use only, not for use in diagnostic procedures.