

Klotho (27Y-1): sc-74205

BACKGROUND

In Greek mythology the fate known as Klotho is a goddess who spins the thread of life. In mice, a deficiency in Klotho (KI) 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 13q12 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

1. Mori, K., et al. 2000. Disruption of Klotho gene causes an abnormal energy homeostasis in mice. *Biochem. Biophys. Res. Commun.* 278: 665-670.
2. Koh, N., et al. 2001. Severely reduced production of Klotho in human chronic renal failure kidney. *Biochem. Biophys. Res. Commun.* 280: 1015-1020.

CHROMOSOMAL LOCATION

Genetic locus: Kl (mouse) mapping to 5 G3.

SOURCE

Klotho (27Y-1) is a rat monoclonal antibody raised against full length recombinant Klotho of mouse origin.

PRODUCT

Each vial contains 100 μ g IgG_{2a} in 1.0 ml of PBS with < 0.1% sodium azide and protein stabilizer.

APPLICATIONS

Klotho (27Y-1) is recommended for detection of Klotho of mouse origin by Western Blotting (starting dilution 1:200, 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), immunohistochemistry (including paraffin-embedded sections) (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 (m): sc-77344, Klotho shRNA Plasmid (m): sc-77344-SH and Klotho shRNA (m) Lentiviral Particles: sc-77344-V.

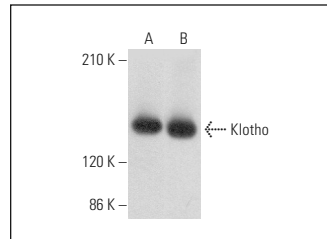
Molecular Weight of Klotho: 130 kDa.

Positive Controls: mouse liver extract: sc-2256 or mouse small intestine extract: sc-364252.

STORAGE

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

DATA



Klotho (27Y-1): sc-74205. Western blot analysis of Klotho expression in mouse liver (A) and mouse small intestine (B) tissue extracts.

SELECT PRODUCT CITATIONS

1. Yu, J., et al. 2010. Decreased expression of klotho gene in uremic atherosclerosis in apolipoprotein E-deficient mice. *Biochem. Biophys. Res. Commun.* 391: 261-266.
2. Du, E., et al. 2016. FGFR inhibitor ameliorates hypophosphatemia and impaired engrailed-1/wnt signaling in FGF2 high molecular weight isoform transgenic mice. *J. Cell. Biochem.* 117: 1991-2000.
3. Du, E., et al. 2017. FGF23 Neutralizing antibody ameliorates hypophosphatemia and impaired FGF receptor signaling in kidneys of HMWFGF2 transgenic mice. *J. Cell. Physiol.* 232: 610-616.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.