

Klotho (D-4): sc-515940

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

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- Online Mendelian Inheritance in Man, OMIM[™]. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 604824. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
- LocusLink Report (LocusID: 9365). <http://www.ncbi.nlm.nih.gov/LocusLink/>

CHROMOSOMAL LOCATION

Genetic locus: KL (human) mapping to 13q13.1.

SOURCE

Klotho (D-4) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 119-143 within an internal region of Klotho of human origin.

PRODUCT

Each vial contains 200 μ g IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Klotho (D-4) is recommended for detection of Klotho of 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), 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).

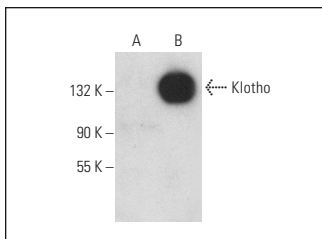
Suitable for use as control antibody for Klotho siRNA (h): sc-43883, Klotho shRNA Plasmid (h): sc-43883-SH and Klotho shRNA (h) Lentiviral Particles: sc-43883-V.

Molecular Weight of Klotho: 130 kDa.

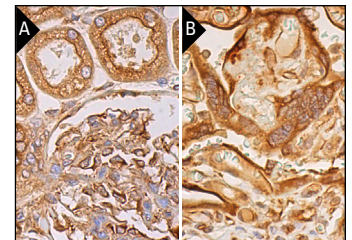
RECOMMENDED SUPPORT REAGENTS

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. 4) Immunohistochemistry: use m-IgG κ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



Western blot analysis of mouse recombinant Klotho (A) and human recombinant Klotho (B). Note lack of reactivity with mouse Klotho in lane A.



Klotho (D-4): sc-515940. Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing membrane and cytoplasmic staining of cells in glomeruli and cells in tubules (A), and of human placenta tissue showing membrane and cytoplasmic staining of trophoblastic cells (B). Blocked with 0.25X UltraCruz[®] Blocking Reagent: sc-516214. Detection reagents used: m-IgG κ BP-B: sc-516142 and ImmunoCruz[®] ABC Kit: sc-516216.

STORAGE

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

RESEARCH USE

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