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KLOTHO Antibody

Catalog # ASC11255

Product Information

Application	WB, IF, E, IHC-P
Primary Accession	Q9UEF7
Other Accession	NP_004786, 24497614
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	116181
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	KLOTHO antibody can be used for detection of KLOTHO by Western blot at 1 - 2 g/mL. Antibody can also be used for immunohistochemistry starting at 2.5 g/mL. For immunofluorescence start at 20 g/mL.

Additional Information

Gene ID	9365
Other Names	Klotho, 3.2.1.31, Klotho peptide, KL
Target/Specificity	KL; Three isoforms of KLOTHO are known to exist.
Reconstitution & Storage	KLOTHO antibody can be stored at 4℃ for three months and -20℃, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.
Precautions	KLOTHO Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	KL
Function	May have weak glycosidase activity towards glucuronylated steroids. However, it lacks essential active site Glu residues at positions 239 and 872, suggesting it may be inactive as a glycosidase in vivo. May be involved in the regulation of calcium and phosphorus homeostasis by inhibiting the synthesis of active vitamin D (By similarity). Essential factor for the specific interaction between FGF23 and FGFR1 (By similarity).
Cellular Location	[Isoform 1]: Cell membrane; Single-pass type I membrane protein. Apical cell membrane {ECO:0000250|UniProtKB:O35082}; Single-pass type I membrane protein {ECO:0000250|UniProtKB:O35082}. Note=Isoform 1 shedding leads to

	a soluble peptide. {ECO:0000250|UniProtKB:O35082} [Klotho peptide]: Secreted {ECO:0000250|UniProtKB:O35082}
Tissue Location	Present in cortical renal tubules (at protein level). Soluble peptide is present in serum and cerebrospinal fluid Expressed in kidney, placenta, small intestine and prostate. Down- regulated in renal cell carcinomas, hepatocellular carcinomas, and in chronic renal failure kidney.

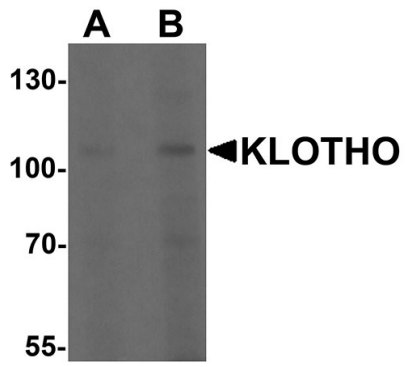
Background

KLOTHO Antibody: KLOTHO is the systemic anti-aging hormone within the glycosidase1 superfamily. It encodes a type I membrane protein that is abundant in the kidney and brain. In mice, a deficiency in KLOTHO expression leads to various systemic phenotypes resembling human aging such as arteriosclerosis, osteoporosis, and skin atrophy together with growth retardation, short life-span and infertility. Transgenic mice overexpressing KLOTHO have an extended life span by inhibiting insulin/IGF1 signaling. KLOTHO is involved in the regulation of calcium/phosphorus homeostasis by inhibiting the synthesis of active vitamin D and identified as a potential tumor suppressor.

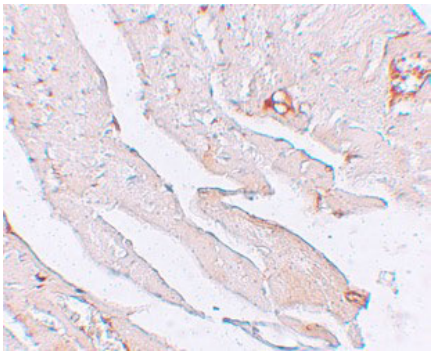
References

Kuro-o M, Matsumura Y, and Aizawa H. Mutation of the mouse klotho gene leads to a syndrome resembling ageing. Nature1997; 390:45-51.
Kurosu H, Yamamoto M, Clark JD, et al. Suppression of aging in mice by the hormone Klotho. Science2005; 309:1829-33.
Liu H, Fergusson MM, Castilho RM, et al. Augmented Wnt signaling in a mammalian model of accelerated aging. Science 2007; 317:803-6.
Wolf I, Levanon-Cohen S, Bose S, et al. Klotho: a tumor suppressor and a modulator of the IGF-1 and FGF pathways in human breast cancer. Oncogene2008; 27:7094-105.

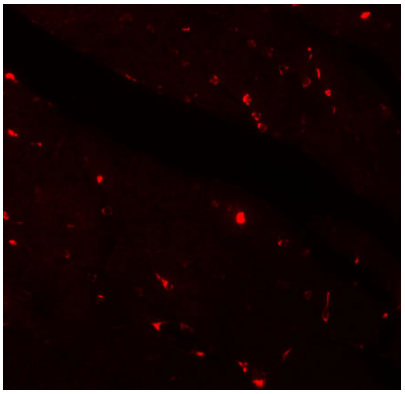
Images



Western blot analysis of KLOTHO in HepG2 cell lysate with KLOTHO antibody at (A) 1 and (B) 2 µg/mL.



Immunohistochemistry of KLOTHO in mouse heart tissue with KLOTHO antibody at 2.5 µg/mL.



Immunofluorescence of KLOTHO in mouse heart tissue with KLOTHO antibody at 20 µg/mL.