Mouse Klotho Biotinylated Antibody

Antigen Affinity-purified Polyclonal Goat IgG
Catalog Number: BAF1819

DESCRIPTION

Species Reactivity	Mouse
Specificity	Detects mouse Klotho in Western blots. In this format, approximately 10% cross-reactivity with recombinant mouse β Klotho is observed.
Source	Polyclonal Goat IgG
Purification	Antigen Affinity-purified
Immunogen	Mouse myeloma cell line NS0-derived recombinant mouse Klotho Arg31-His550 Accession # BAA25307
Formulation	Lyophilized from a 0.2 μm filtered solution in PBS with BSA as a carrier protein. See Certificate of Analysis for details.

APPLICATIONS

Please Note: *Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.*

	Recommended Concentration	Sample
Western Blot	0.1 µg/mL	Recombinant Mouse Klotho (Catalog # 1819-KL)

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 0.2 mg/mL in sterile PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 6 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

Klotho, also called Klotho-α, is the founding member of the Klotho family within the glycosidase-1 superfamily (1, 2). Klotho is expressed in areas concerned with calcium regulation, predominantly in the kidney distal convoluted tubules, but also in the brain choroid plexus (which produces cerebrospinal fluid) and the parathyroid (1). The 1014 amino acid (aa) type I transmembrane protein contains a 34 aa signal sequence, a 948 aa extracellular domain (ECD) containing two extracellular glycosidase-like domains, a 21 aa transmembrane domain and an 11 aa intracellular domain. Within the ECD, mouse Klotho shares 95%, 87% and 87% aa identity with rat, human and equine Klotho, respectively. Although a truncated 554 aa isoform predicts a soluble 70 kDa form, the soluble form found in plasma and cerebrospinal fluid is a 130 kDa form produced by proteolytic cleavage of the glycosylated 135 kDa full-length Klotho (3, 4). A prominent intracellular 120 kDa form of Klotho is localized to endoplasmic reticulum and Golgi membranes (4). Klotho is named for the Greek goddess who spins the thread of life. The phenotype of Klotho-deficient mice resembles premature aging, including arteriosclerosis, osteoporosis, skin atrophy, infertility, emphysema and premature death (2). Conversely, excess Klotho extends lifespan (5). Klotho acts as a cofactor for interaction of FGF23 with FGF R1 (6). This interaction negatively regulates 1α-hydroxylase, the rate-limiting enzyme in the synthesis of $1,25(OH)_2D_3$ (vitamin D) (7). Klotho-deficient mice show severe hyperphosphatemia and ectopic calcification of soft tissues due to excess vitamin D (2, 7). Both Klotho and Klotho-β are cofactors for FGF19 binding (8). Klotho also shows glucuronidase activity which activates the renal ion channel TRPV5 to reabsorb urinary calcium (9). Klotho has been reported to downregulate insulin or IGF-1 signaling in adipocytes, to bind and antagonize Wnt molecules, and to facilitate release of parathyroid hormone (10 - 12).

References:

1. Nabeshima, Y. (2006) Sci. Aging Knowl. Environ. **8**:pe11.
2. Kuro-o, M. *et al.* (1997) Nature **390**:45.
3. Shiraki-Iida, T. *et al.* (1998) FEBS Lett. **424**:6.
4. Imura, A. *et al.* (2004) FEBS Lett. **565**:143.
5. Kurosu, H. *et al.* (2005) Science **309**:1829.
6. Kurosu, H. *et al.* (2006) J. Biol. Chem. **281**:6120.
7. Tsujikawa, H. *et al.* (2003) Mol. Endocrinol. **17**:2393.
8. Wu, X. *et al.* (2007) J. Biol. Chem. **282**:29069.
9. Chang, Q. *et al.* (2005) Science **310**:490.
10. Yamamoto, M. *et al.* (2005) J. Biol. Chem. **280**:38029.
11. Liu, H. *et al.* (2007) Science **317**:803.
12. Imura, A. *et al.* (2007) Science **316**:1615.

bio-techne®
Global bio-techne.com info@bio-techne.com techsupport@bio-techne.com TEL +1 612 379 2956
USA TEL 800 343 7475 Canada TEL 855 668 8722 China TEL +86 (21) 52380373
Europe | Middle East | Africa TEL +44 (0)1235 529449