Mouse Klotho Alexa Fluor® 405-conjugated Antibody

Monoclonal Rat IgG_{2A} Clone # 236214

Catalog Number: FAB1819V

100 µg

DESCRIPTION

Species Reactivity	Mouse
Specificity	Detects mouse Klotho (aa 23-550 and aa 35-982) in direct ELISAs and Western blots. Does not cross-react with recombinant human Klotho or recombinant mouse Klotho B.
Source	Monoclonal Rat IgG_{2A} Clone # 236214
Purification	Protein A or G purified from hybridoma culture supernatant
Immunogen	Mouse myeloma cell line NS0-derived recombinant mouse Klotho
Conjugate	Alexa Fluor 405 Excitation Wavelength: 405 nm Emission Wavelength: 421 nm
Formulation	Supplied 0.2mg/ml in 1X PBS with RDF1 and 0.09% Sodium Azide *Contains <0.1% Sodium Azide, which is not hazardous at this concentration according to GHS classifications. Refer to the Safety Data Sheet (SDS) for additional information and handling instructions.

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.*

ELISA	Optimal dilution of this antibody should be experimentally determined.
Immunohistochemistry	Optimal dilution of this antibody should be experimentally determined.

PREPARATION AND STORAGE

Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	Protect from light. Do not freeze. 12 months from date of receipt, 2 to 8 °C as supplied

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 FGF-23 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 co-factors for FGF-19 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-I signaling in adipocytes, to bind and antagonize Wnt molecules, and to facilitate release of parathyroid hormone (10-12).

PRODUCT SPECIFIC NOTICES

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