ALPHA DIAGNOSTIC INTERNATIONAL

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Product Specification Sheet

Mouse KLOTHO (KL) Protein

Cat. KL15-R Recombinant mouse Klotho protein **SIZE**: 10 ug

Animal models of human aging, which display the characteristic diseases associated with aging, provide insight into the cause of such diseases. Recently a transgenic mouse model, called **Klotho**, with several premature aging phenotypes has been described. They display premature aging phenotypes such as Osteoporosis, age related skin changes, ectopic calcifications, atrophy of genital organs and thymus, emphysema and short life span (1). KL protein associated with the Klotho mutation is a 1014 amino acid long peptide. It has a putative signal sequence at its N-terminus and a single transmembrane domain near its C-terminus, which is postulated to anchor it to the membrane (2). The extracellular domain has two internal repeats, KL-1 and KL-2 which have 20-40% sequence identity to bacterial **β-glucosidase** of plants and animals and mammalian **lactase glycosylceramidase** suggesting a role for Klotho in sphingolipid metabolism (2). *kl* gene expression was observed to be tissue specific. Improvement of systemic aging phenotypes in *kl/kl* mice occurs even when the exogenous expression was limited to some organs, suggesting that KL associated aging is regulated through a humoral signaling pathway. KL has been reported to be localized on the cell surface when expressed on Cho cells (1). Human *kl* cDNA is expected to encode a protein of 1012 amino acids and has 86% homology to mouse *kl*. Alternative splicing produces two isoforms (a full length membrane bound and the secreted form).

Source of Antigen and Antibodies

Mouse Klotho (35-982 aa) was expressed in CHO cell lines as his-tag fusion protein and purified (>90%, ~110 Kda) using proprietary techniques. Endotoxin concn is >1 EU/ug protein. It is supplied in 20 mM MES buffer, 0.1mM EDTA, pH 6.0 and 50% glycerol. It is shipped in dry ice and it must be stored at -20oC or below.

Biological activity was measured in a cell proliferation assay using NIH/3T3 mouse embryonic fibroblasts (ED50 ~ 0.3-2 µg/mL in the presence of 1 µg/mL of rhFGF23 and 10 µg/mL of Heparin.

Storage

Short-term: unopened, undiluted liquid vials at -20oC.

Long-term: at –20C or below in suitable aliquots after reconstitution. Do not freeze and thaw and store working, diluted solutions.

Stability: 6-12 months at –20oC or below.

Shipping: dry ice for solutions.

Recommended Usage

Before Opening the vial, please centrifuge the tube briefly to recover the solution at the bottom due to low volume of the product.

General References:

(1.) Koro-o, M. Et al. (1997) *Nature* **390**, 45-51; Martin, G. M. & Mian, I. S. *Nature* **390**, 18-19; Imura A (2007) Science 316, 1615; Kurosu H (2005) Science 309, 1829

*This product is for *in vitro* research use only.

Related material available from ADI:

Antibodies against ERAB; Per; Clock: AhR; SARP; Death Receptors 3-5; Fas Ligand; Caspases.

KL16-R 90730A

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