



soluble α -Klotho Assay Kit (96Well)

Aging Regulator – Human soluble α -Klotho

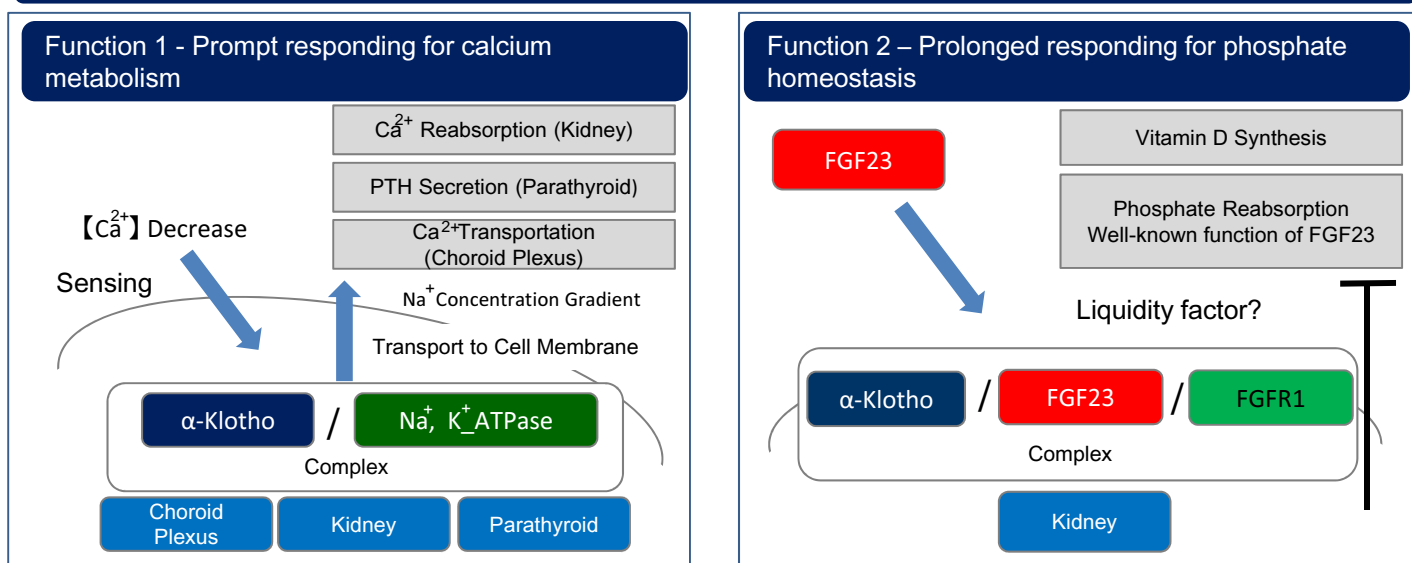
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Product No.	Product name	Measurement range (pg/mL)	Measuring samples
27998	Human soluble α -Klotho Assay Kit - IBL	93.75 – 6,000	Human serum, Plasma or Urine

α -klotho was identified as an extremely down-regulated gene in the genetic mutation mouse (Klotho mouse) of which phenotype is very similar to various symptoms of human aging. Then, the sequences of α -Klotho genes have been identified in various species including human based on the one of mouse. α -Klotho protein is a 130kDa, one-transmembrane protein and its expression is confirmed in the kidneys and the parathyroid glands. In recent years, it has become clear that α -Klotho is an important molecule within a living organism regulating the metabolism of mineral such as calcium and phosphorus. Therefore, it is considered that, in Klotho mouse, early aging-like symptoms are induced by impaired mineral homeostasis caused by decreased expression of α -Klotho. Meanwhile, it is reported that the long N-terminal extracellular domain which comprises the major portion of sequence of α -Klotho protein is released free into blood by shedding. However, there are may unclear points about functions and changes in concentration of free (soluble) α -Klotho protein, so it has been required to develop the measurement system of α -Klotho. Human soluble α -Klotho protein in human blood and urine can be measured by this assay kit.

α -Klotho is a key player that integrates a multi-step regulatory system of calcium metabolism and phosphate homeostasis.

Mechanism for Two Functions of α -Klotho



References

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4. Nabeshima Y. Discovery of α -Klotho unveiled new insights into calcium and phosphate homeostasis. Proc Jpn Acad Ser B Phys Biol Sci. 2009;85(3):125-41.

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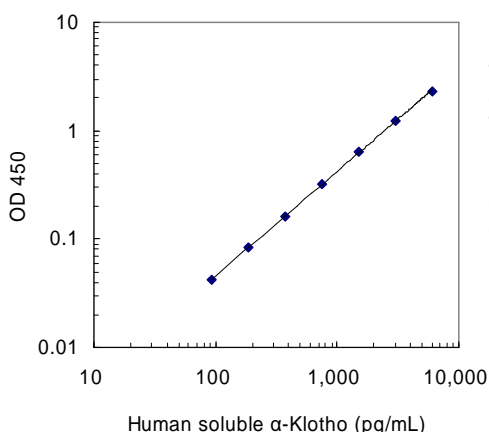


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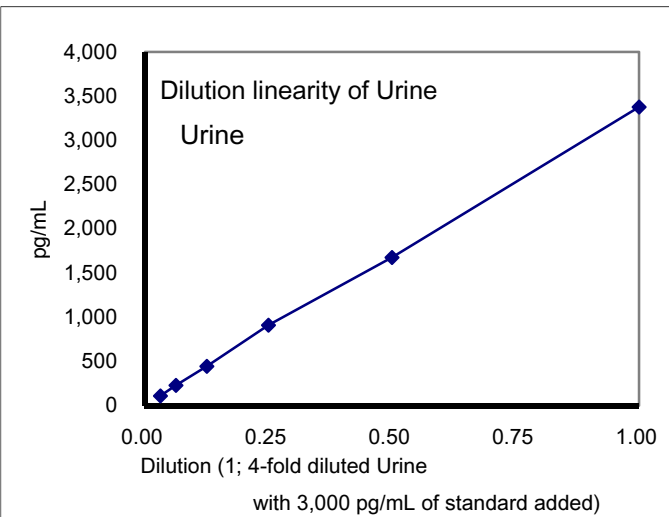
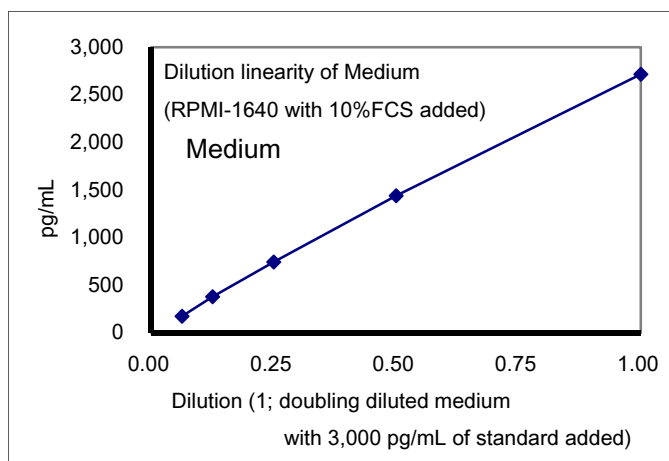
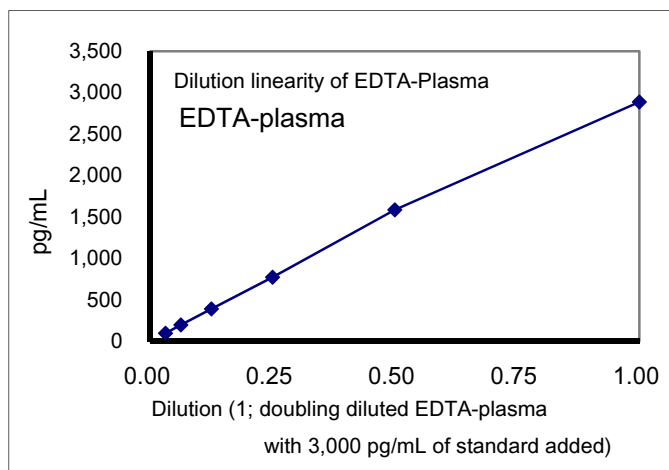
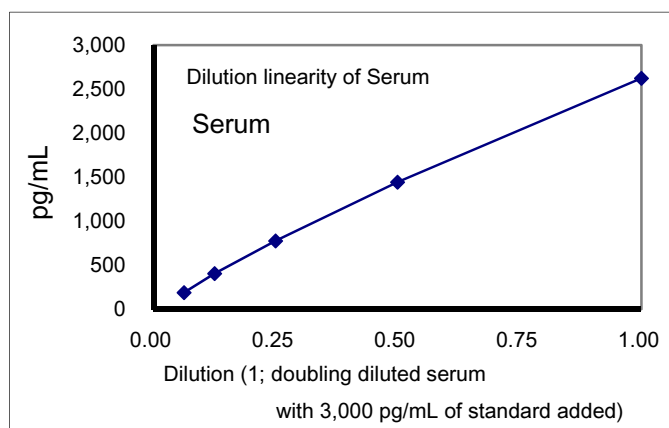
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Performance and characteristics of #27998 Human soluble α -Klotho Assay Kit – IBL

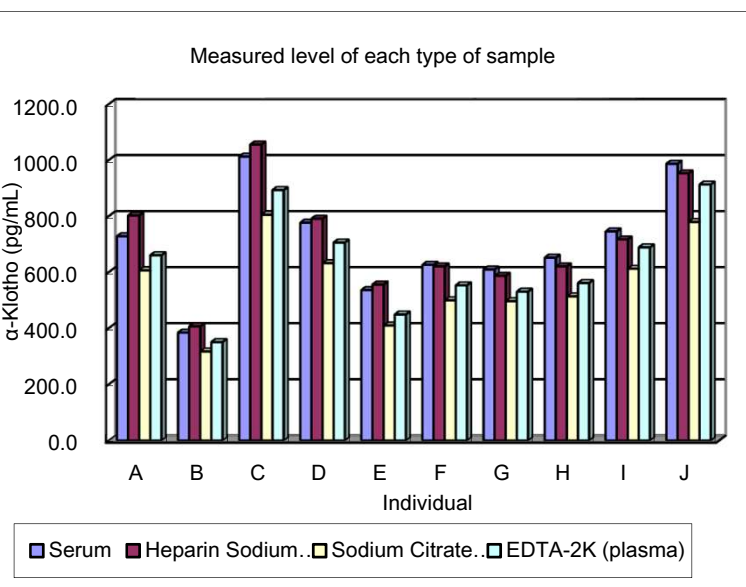
Typical Standard Curve



Dilution Linearity



Comparison measured figure of various type of human blood samples.



The chart shows comparison data of human serum and 3 different types of plasma samples which were collected by various types of anticoagulant.

Repeatability on a sample plate

Measured value (pg/mL)	SD (pg/mL)	CV (%)	n
2968.78	92.26	3.1	24
757.34	20.65	2.7	24
186.64	6.62	3.5	24

Repeatability data on a sample plate using high, medium and low concentrated Klotho samples prepared based on human serum.

Repeatability among 5 times of individual assay

Measured value (pg/mL)	SD (pg/mL)	CV (%)	n
2903.01	85.44	2.9	5
706.32	45.72	6.5	5
165.47	18.82	11.4	5

Repeatability data among 5 times of individual assay using high, medium and low concentrated Klotho samples prepared based on human serum.

Specificity

Measured substances	Cross reactivity (%)
Human α -Klotho	100
Human Osteopontin	< 0.1
Human VEGF (165)	< 0.1
Human PDGF	< 0.1

Several standard proteins which are used in IBL kit other than human Klotho were measured by this kit and confirmed there were no cross-reaction found with these proteins.

The charts show linearity data of high concentration Klotho samples prepared with standard solution added to each specimen and then diluted by EIA buffer.