FIANOSTICS
Light Up Your Results

Super Sensitive and Easy

FluoBolt™ -KLOTHO

High Sensitivity, Single Step Immunoassay
for α-KLOTHO in Human Serum and Plasma

Signal Enhanced Fluorescence Immunoassay
on Plasmonic Substrates

- High Sensitivity
- Single Step Assay
- No Wash
- No Enzyme Substrate
- Stable Signal over Time

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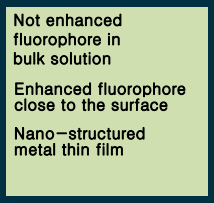
FluoBolt™-KLOTHO

About FluoBolt™-Technology:



Principle of FluoBolt™-Technology

For more information about FluoBolt™-Technology, please visit: www.fianostics.at/en/technology

FluoBolt™-Technology is based on a physical effect called "Metal Enhanced Fluorescence" which is generated by metal nanostructures on the bottom of our micro plates. Those structures create a very strong local electromagnetic field ("localized surface plasmon"), that greatly enhances the fluorescence of surface bound fluorophores. The unique features of FluoBolt™-Technology enable us to develop direct fluorescence immunoassays with the following benefits:

- High Sensitivity
- Single Step Procedure
- No Washing Steps
- No Enzyme Substrate required
- Long Term Stable Signal

About FluoBolt™-KLOTHO (Cat. Nr. 1704):

α-KLOTHO is a protein belonging to the glycosyl hydrolase 1 family. It can be found either as a membrane bound or a secreted form, which is the more abundant form. α-KLOTHO is expressed in kidney, small intestine, placenta and prostate. The soluble peptide can be found in serum and cerebrospinal fluid. KLOTHO is a co-receptor of fibroblast growth factor 23 (FGF-23) and it plays an important role in the calcium/ phosphorus homeostasis regulation by e.g. inhibiting active vitamin D synthesis. Further, it is also known as an anti-aging-hormone by extending life span by inhibiting insulin/ IGF1 signalling pathway, as experiments in mice showed. Although there are some assay systems for measuring α-KLOTHO available, current existing clinical data are noncoherent

Therefore, we decided to use our FluoBolt™-Technology to provide a high sensitivity α-KLOTHO assay for clinical research, that may improve data consistency. Determination of serum α-KLOTHO has been used for studying the following topics:

- Chronic Kidney Disease (CKD)
- Renal - and Hepatocellular Carcinomas
- Osteoporosis
- Cardiovascular diseases

- Serum periostin during omalizumab therapy in asthma: A tool for patient selection and treatment evaluation. Caminati M. et al., Ann Allergy Asthma Immunol. 2017; 119(5): 460-462.
- Periostin: A Matricellular Protein With Multiple Functions in Cancer Development and Progression. González-González L. Alonso J., Front Oncol. 2018; 12: 8-225.
- Epithelial periostin expression is correlated with poor survival in patients with invasive breast carcinoma. Kim G.E., PLoS One. 2017; 12(11).
- Influence of Periostin on Synoviocytes in Knee Osteoarthritis. Tajika Y. et al., In Vivo. 2017; 31(1): 69-77.
- Serum periostin levels following small bone fractures, long bone fractures and joint replacements: an observational study. Varughese R. et al., Allergy Asthma Clin Immunol. 2018; 14: 30.

Assay Characteristics

Method	Metal Enhanced Direct Sandwich Fluorescence Immunoassay in 96-well plate format
Sample type	Serum, Plasma
Standard range	0 to 400 pmol/l (6 standards and 2 controls in a serum based matrix)
Conversion factor	1 ng/ml = 16pmol/l (MW: 62.1kD)
Sample volume	10 µl (undiluted sample) / well
Incubation steps/time/temperature	Single step assay, over night at room temperature
Sensitivity	LOD (0pmol/l+3SD): 2,5pmol/l; LLOQ: 25pmol/l
Specificity	This assay detects only α-KLOTHO and does not crossreact with β-KLOTHO . No interference of recombinant FGF-23 with the assay`s signal up to a 100 fold molar excess was monitored. Human KLOTHO shares around 98-97% aa sequence with higher apes, 95-91% bovines, 91-89% pinnipeds and 87% mice. Cross-reactivity of this assay with other species than human has not been tested.