Setting the standard for clinical research.
FGF23 FOR RISK PREDICTION IN CHRONIC RENAL INSUFFICIENCY AND TO DETERMINE CARDIOVASCULAR RISK IN CKD

Association of Fibroblast Growth Factor 23 with Atrial Fibrillation in Chronic Kidney Disease. From the Chronic Renal Insufficiency Cohort Study.
Mehta et al., JAMA Cardiology, 2016; 1(5):548-556.
“Elevated FGF23 is independently associated with prevalent and incident atrial fibrillation in patients with mild to severe CKD.”

Fibroblast growth factor 23 in patients with acute dyspnea: Data from the Akershus Cardiac Examination (ACE) 2 Study.
“Circulating FGF23 concentrations provide incremental prognostic information to established risk indices in patients with acute dyspnea.”

FGF23 and vitamin D metabolism in chronic kidney disease – mineral bone disorder. *
Piec et al., Bone Abstracts, 2016; 5:P469.
“cFGF23 is raised in patients with CKD as a compensatory response to hyperphosphatemia or phosphate overload.”

Renal and Extrarenal Effects of Fibroblast Growth Factor 23.

ENDOSTATIN FOR THE DETECTION OF ADVANCED MI CROVASCULAR KIDNEY DAMAGE AND THE PROGRESSION OF KIDNEY DISEASE

“In patients with T2D, circulating endostatin levels can predict the progression of kidney disease and mortality independently of established kidney disease markers.”

Endostatin in chronic kidney disease: Associations with inflammation, vascular abnormalities, cardiovascular events and survival. *
“Endostatin levels are independently associated with incident CVE in CKD patients.”

Elevated plasma levels of endostatin are associated with chronic kidney disease.
“These data indicate that elevated plasma endostatin is strongly and independently associated with CKD.”

Circulating endostatin and the incidence of heart failure.
Ruge et al., Scand Cardiovasc J, 2018; 52(5):244-249.
“Higher serum endostatin was associated with left ventricular dysfunction and an increased heart failure risk in two community-based cohorts of elderly.”

OSTEOPROTEGERIN (OPG) FOR THE PREDICTION OF CARDIOVASCULAR MORTALITY

Osteoprotegerin concentrations in patients with suspected reversible myocardial ischemia: Observations from the Akershus Cardiac Examination (ACE) 1 Study.
Raysland et al., Cytokine, 2015; 73:122-127.
“In a large cohort of kidney transplant patients […] OPG was independently associated with renal events, CV events and mortality.”

Osteoprotegerin as a predictor of renal and cardiovascular outcomes in renal transplant recipients: follow-up data from the ALERT study. *
“In a large cohort of kidney transplant patients with long-term follow-up, OPG was independently associated with renal events, CV events and mortality.”

Serum osteoprotegerin is a predictor of progression of atherosclerosis and coronary calcification in hemodialysis patients. *
“The plasma level of OPG could serve as a surrogate marker of progression of atherosclerosis and calcification in patients with end-stage renal disease.”

Serum osteoprotegerin and renal function in the general population: the Tromsø Study.
“Our findings imply that the association between OPG and eGFR varies with age and renal function.”

RESISTIN FOR THE DIAGNOSIS OF HIGH BLOOD PRESSURE AND THE PREDICTION OF CARDIOVASCULAR EVENTS IN PATIENTS WITH ACUTE DYSPEPSIA

Resistin levels are higher in patients with type 2 diabetes and left ventricular dysfunction.
“Resistin levels were higher in type 2 diabetes patients with left ventricular dysfunction compared to controls.”

Resistin is a predictor of cardiovascular and renal events in patients with chronic kidney disease.
“Resistin levels were independently associated with cardiovascular and renal events in patients with chronic kidney disease.”

SCLEROSTIN FOR THE DETECTION OF ADVANCED MI CROVASCULAR KIDNEY DAMAGE AND THE PROGRESSION OF KIDNEY DISEASE

Increased circulating sclerostin levels seem to reflect slower bone turnover in HD patients. Low levels of sclerostin are associated with vitamin D deficiency and good phosphates alignment.*

Circulating levels of sclerostin but not DKK1 associate with laboratory parameters of CKD-MBD. *
Behets et al., PLOS ONE, 2017; 12(5)
“Sclerostin, as opposed to DKK1, may qualify as a biomarker of CKD-MBD, particularly in dialysis patients.”

Sclerostin serum levels correlate positively with bone mineral density and microarchitecture in haemodialysis patients.
“Dialysis patients had significantly higher sclerostin levels than controls.”

Serum Sclerostin and adverse outcomes in nondialyzed chronic kidney disease patients. *
“Serum sclerostin values are associated, even after multiple adjustments, with fatal and nonfatal cardiovascular events in a nondialyzed CKD population.”

Relationship between plasma levels of sclerostin, calcium- phosphate disturbances, established markers of bone turnover, and inflammation in haemodialysis patients.
Pietrzyk et al., Int Urol Nephrol, 2019; 51(3):519-526.
“Increased circulating sclerostin levels seem to reflect slower bone turnover in HD patients. Low levels of sclerostin are associated with vitamin D deficiency and good phosphates alignment.”

* measured with Biomedica ELISA
VANIN-1 · ANGIOPOIETIN-2

A MARKER FOR DRUG-INDUCED & SPONTANEOUS ACUTE KIDNEY INJURY AND OBSTRUCTIVE & DIABETIC NEPHROPATHY

Vanin-1, for Obstructive Nephropathy: A Prospective Cohort Pilot Study.
"Urinary Vanin-1 is a useful biomarker to detect and monitor the clinical course of obstructive nephropathy."

Vanin-1 as a Novel Biomarker for Early Detection of Drug-Induced Acute Kidney Injury.
"... compared with urinary Kim-1 and NGAL, urinary vanin-1 is an earlier and equally sensitive biomarker for drug-induced AKI."

Vanin-1: A Potential Biomarker for Nephrotoxicant-Induced Renal Injury.
"These results suggest that vanin-1 is a useful and rapid biomarker for renal tubular injury induced by organic solvents."

Early Detection of Renal Injury Using Urinary Vanin-1 in Rats with Experimental Colitis.
"Compared with Kim-1 and MCP-1, vanin-1 might be an earlier biomarker for the detection of renal injury in rats with experimental colitis."

ANGIOPOIETIN-2

FOR THE PREDICTION OF ALL-CAUSE MORTALITY IN KIDNEY TRANSPLANT RECIPIENTS AND PREDICTING ADVERSE CLINICAL OUTCOMES IN DIAGNOSIS OF DIABETIC NEPHROPATHY

Angiopoietin-2, Renal Deterioration, Major Adverse Cardiovascular Events and All-Cause Mortality in Patients with Diabetic Nephropathy.
"Angpt2 is an independent predictor of adverse clinical outcomes in diabetic patients."

Circulating Angiopoietin-2 levels predict mortality in kidney transplant recipients: A 4-year prospective case-cohort study.
Molnar et al., Transpl Int, 2014; 27(6):541–552.
"... circulating Angt2 was an independent predictor of all-cause mortality in stable, prevalent kidney transplant recipients."

Circulating angiopoietin-2 levels increase with progress of chronic kidney disease.
"Circulating Ang-2, a putative marker and potential mediator of accelerated atherosclerosis, is inversely related to GFR and increases with advanced CKD."

The interaction between fluid status and angiopoietin-2 in adverse renal outcomes of chronic kidney disease.
"Fluid overload and Angpt2 might have a synergistic effect on adverse renal outcomes in CKD patients."

BIG ENDOTHELIN

FOR IMPROVED RISK STRATIFICATION IN PATIENTS REFERRED FOR CORONARY ANGIOGRAPHY, CARDIOVASCULAR AND CHRONIC HEART FAILURE

Renal function, N-terminal Pro-B-Type natriuretic peptide, propeptide big-endothelin and patients with heart failure and preserved ejection fraction. *
Gergel et al., Peptides, 2019; 111:112–117.
"In general, NT-proBNP is a good indicator of suspected heart failure. While for NT-proBNP different cut-off points have to be considered in the diagnosis of HFpEF, a single cut-off point of Big-ET-1 was appropriate in the diagnosis of HFpEF, regardless of the presence or absence of CKD. An additional measurement of Big-ET-1 improves the diagnosis of HFpEF in patients with chronic kidney disease."

Association of Big Endothelin-1 with Coronary Artery Calcification. *
"The data firstly demonstrated that the plasma big ET-1 level was a valuable independent predictor for CAC in our study."

Propeptide Big-Endothelin, N-Terminal-pro Brain Natriuretic Peptide and Mortality. The Ludwigshafen Risk and Cardiovascular Health (LURIC) Study. *
"Big-ET-1 improves risk stratification in patients referred for coronary angiography."

PERIOSTIN

A BIOMARKER FOR SEVERITY, PROGRESSION AND RESPONSE TO THERAPY IN HUMAN KIDNEY DISEASE ASSOCIATED TO HYPERTENSION

Identification of peristin as a critical marker of progression/ reversal of hypertensive nephropathy.
... the results identify Peristin as a previously unrecognized marker associated with hypertensive nephropathy."

Peristin induces Kidney Fibrosis after Acute Kidney Injury via the p38 MAPK Pathway.
"Peristin promotes kidney fibrosis via the p38 MAPK pathway following acute kidney injury triggered by a hypoxic or ischemic insult. Peristin ablation may protect against chronic kidney disease progression."

Peristin as a tissue and urinary biomarker of renal injury in type 2 diabetes mellitus.
"Urinary peristin is an associated renal derangement in patients with established diabetic nephropathy and it may be used as an early marker of diabetic renal injury."

Urinary Peristin Excretion Predicts Renal Outcome in IgA Nephropathy.
"POSTN/Cr value at initial diagnosis correlated with renal fibrosis and predicted the renal outcomes in patients with IgAN. It could be a promising urinary biomarker for renal fibrosis."

* measured with Biomedica ELISA
Plasma levels of N-terminal proatrial natriuretic peptide in children are dependent on renal function and age. Holmström et al., Scan J Clin Lab Invest, 2000; 60(2):149-159.

"...plasma levels of NT-proANP are age-dependent. Moderately elevated values were registered in children with severe renal impairment. Heart failure is regularly associated with excessive elevation of NT-proANP in plasma. Our findings suggest that the influence of heart failure on levels of this peptide in children greatly exceeds the influence of renal dysfunction."


"...NT-proBNP mirrors the harmful effect of high BP on TOD. NT-proBNP could be used as an integrative tool for risk stratification in hypertension."


"Increases in GDF-15, NT-proBNP, and hsTnT are associated with greater risk for CKD progression. These biomarkers may inform mechanisms underlying kidney injury."
FGF23 intact ELISA (Cat.No. BI-20700)
Method: Sandwich ELISA, 12x8 tests
Sample matrix: Plasma (EDTA, heparin, citrate), serum, urine, cell culture supernatent
Sample size: 50 μl / well
Standard points: 0/50/100/200/400/800/1600 pg/ml
Incubation time: 3 h / 30 min

FGF23 (C-terminal) ELISA (Cat.No. BI-20702)
Method: Sandwich ELISA, 12x8 tests
Sample matrix: Serum, plasma (EDTA, heparin, citrate)
Sample size: 50 μl / well
Standard points: 0/0.2/0.6/1.8/5/10/20 pmol/l
Incubation time: 20-24 h / 1 h / 30 min

Endostatin ELISA (Cat.No. BI-20742)
Method: Sandwich ELISA, 12x8 tests
Sample matrix: Plasma (citrate, EDTA, heparin), serum, urine
Sample size: 10 μl / sample
Standard points: 0/25/50/100/200/400 pmol/l
Incubation time: 3 h / 1 h / 30 min

Endostatin Mouse/Rat ELISA (Cat.No. BI-20742MR)
Method: Sandwich ELISA, 12x8 tests
Sample matrix: Serum, plasma
Sample size: 5 μl / sample
Standard points: 0/1/2/4/8/16/32 pmol/l
Incubation time: 2 h / 30 min

Osteoprotegerin ELISA (Cat.No. BI-20403)
Method: Sandwich ELISA, 12x8 tests
Sample matrix: Serum, plasma (citrate, EDTA, heparin)
Sample size: 20 µl / well
Standard points: 0/1.25/2.5/5/10/20 pmol/l
Incubation time: 4 h / 1 h / 30 min

Big Endothelin ELISA (Cat.No. BI-20082H)
Method: Sandwich ELISA, 12x8 tests
Sample matrix: Serum, plasma (EDTA, citrate)
Sample size: 20 μl / well
Standard points: 0/10/20/40/80/160/320 pmol/l
Incubation time: 2 h / 30 min

Sclerostin ELISA (Cat.No. BI-20492)
Method: Sandwich ELISA, 12x8 tests
Sample matrix: Serum, plasma (EDTA, heparin)
Sample size: 20 µl / well
Standard points: 0/0.1/0.2/0.4/1/3 pmol/l
Incubation time: 2 h / 30 min

Bioactive Sclerostin ELISA (Cat.No. BI-20472)
Method: Sandwich ELISA, 12x8 tests
Sample matrix: Serum, plasma (EDTA, citrate)
Sample size: 20 μl / well
Standard points: 0/10/20/40/80/160/320 pmol/l
Incubation time: 2 h / 30 min

Vanin-1 (Urine) ELISA (Cat.No. BI-VAN1U)
Method: Sandwich ELISA, 12x8 tests
Sample matrix: Urine
Sample size: 10 μl / well
Standard points: 0/37.5/75/150/300/600/1200 pmol/l
Incubation time: 4 h / 30 min

Vanin-1 Mouse/Rat ELISA (Cat.No. BI-VAN1MR)
Method: Sandwich ELISA, 12x8 tests
Sample matrix: Serum, plasma and urine
Sample size: 5 μl / sample
Standard points: 0/6.25/12.5/25/50/100/200 pmol/l
Incubation time: 4 h / 30 min

Angiopoietin-2 ELISA (Cat.No. BI-ANG2)
Method: Sandwich ELISA, 12x8 tests
Sample matrix: Serum, plasma (EDTA, heparin)
Sample size: 20 μl / sample
Standard points: 0/12.5/25/50/100/200/400 pmol/l
Incubation time: 2 h / 1h / 30 min

Angiopoietin-2 Mouse/Rat ELISA (Cat.No. BI-ANG2MR)
Method: Sandwich ELISA, 12x8 tests
Sample matrix: Serum, plasma (EDTA, heparin)
Sample size: 5 μl / well
Standard points: 0/43.75/87.5/175/350/700/1400 pmol/l
Incubation time: 2 h / 2h / 1h / 30 min

NT-proANP ELISA (Cat.No. BI-20892)
Method: Sandwich ELISA, 12x8 tests
Sample matrix: Serum, plasma (EDTA, heparin), cell culture supernatent, urine
Sample size: 10 μl / well
Standard points: 0/0.63/1.25/2.5/5/10 nmol/l
Incubation time: 3h / 30 min

NT-proBNP ELISA (Cat.No. SK-1204)
Method: Sandwich ELISA, 12x8 tests
Sample matrix: Serum, plasma (EDTA)
Sample size: 50 μl / well
Standard points: 0/10/20/40/60/100/180/320 pmol/l
Incubation time: 3h / 30 min

FluoBolt™ KLOTHO (Cat.No. FY-FIA1704)
Method: Sandwich Fluorescence IA, 12x8 tests
Sample matrix: Serum, plasma
Sample size: 10 μl / well
Standard points: 0/25/50/100/200/400 pmol/l
Incubation time: single step, overnight

Anti C4d Antibody (Cat. No. BI-RC4D)
Method: Immunohistochemistry, indirect immunofluorescence
Sample type: Paraffin embedded tissue sections, frozen sections