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Pharmaceutical Value Creator

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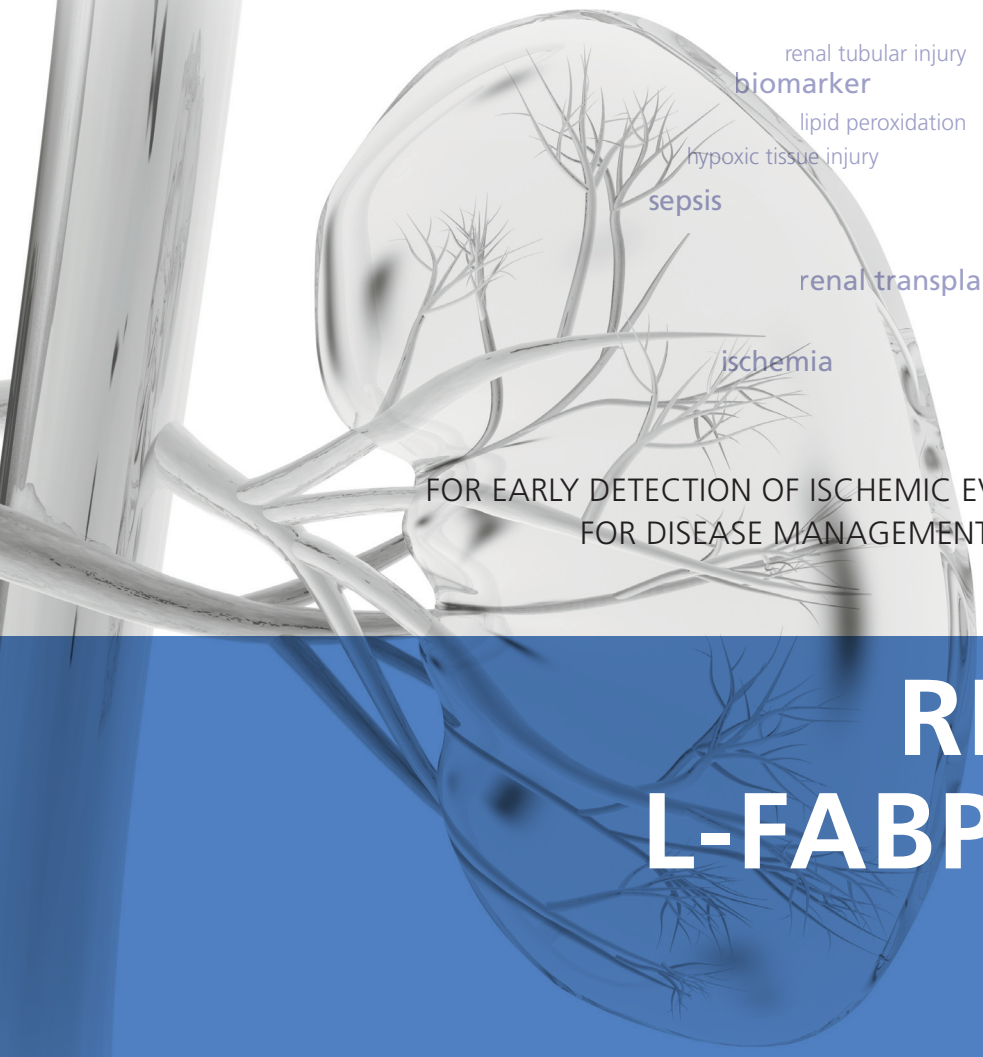

FOR EARLY DETECTION OF ISCHEMIC EVENTS ON **ACUTE KIDNEY INJURY**
FOR DISEASE MANAGEMENT OF **CHRONIC KIDNEY DISEASES**

RENISCHEM®
L-FABP ELISA Kit

Urinary L-FABP ELISA kit

L-FABP BIOMARKER WEBSITE OPENED!

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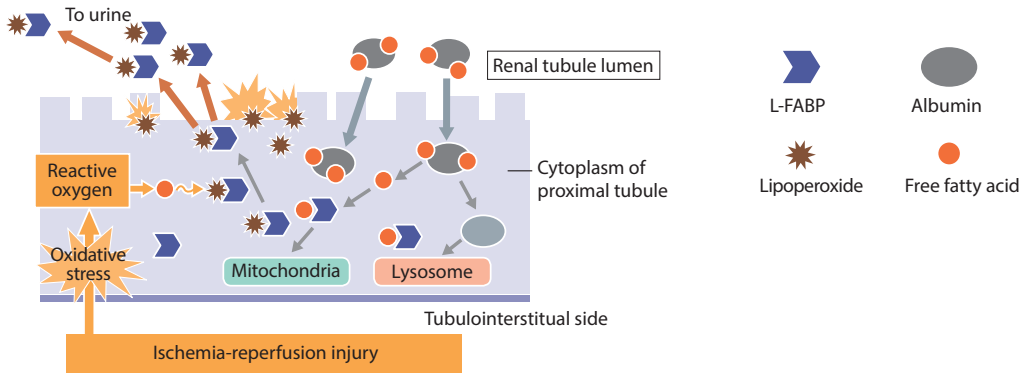
CMIC HOLDINGS Co., Ltd.

Mechanism of L-FABP excretion

L-FABP urinary excretion within proximal tubule cytoplasm

Free Fatty Acids (FFAs) are bound to serum albumin filtered through glomeruli and reabsorbed into the proximal tubule along with albumin. FFAs up-regulate of L-FABP gene expression. L-FABP, a carrier protein or 14kDa expressed in the proximal tubule plays a role in the intracellular transport of FFAs to mitochondria and/or peroxisomes for metabolism.
Lipoperoxides are accumulated in proximal tubules during renal ischemia/reperfusion. L-FABP is excreted from the proximal tubules into urine by binding these cytotoxic lipids.

Reactive oxygen generated due to peritubular ischemia/reperfusion injury change free fatty acids to fatty acid peroxides(lipoperoxides), which are highly toxic to cells.
L-FABP binds with these lipoperoxides, and is excreted outside of cells. Thus, it is thought that L-FABP is "renoprotective"—it works to protect the kidneys.

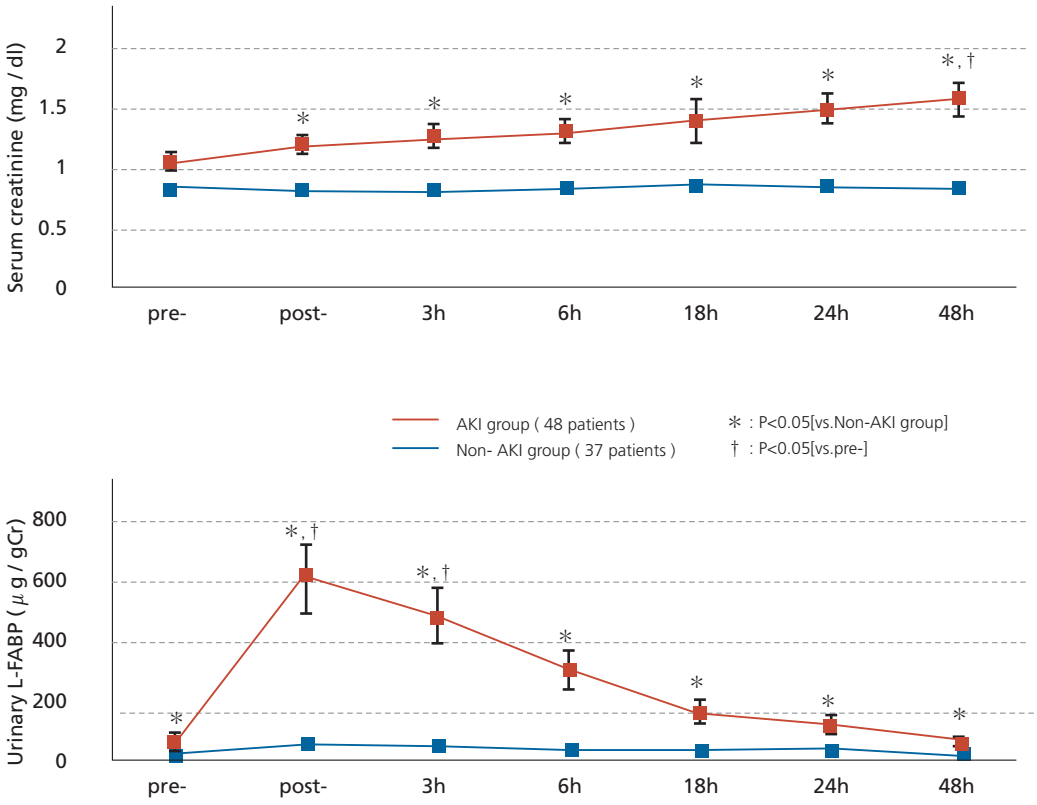


Clinical Evidence

Urinary L-FABP is a useful biomarker for early detection of Acute Kidney Injury (AKI) and is a good predictor of the onset of AKI

The conventional diagnostic method for AKI, uses serum creatinine as an indicator of detected AKI development 24 hours after cardiac surgery. In contrast, urinary L-FABP showed a significant increase immediately after the operation which demonstrated that urinary L-FABP can be used for earlier detection of AKI development.

A total of 85 patients who underwent cardiac surgery were classified into AKI group and non-AKI group according to AKIN criteria. Serum creatinine and urinary L-FABP were measured both pre- and post- operation.



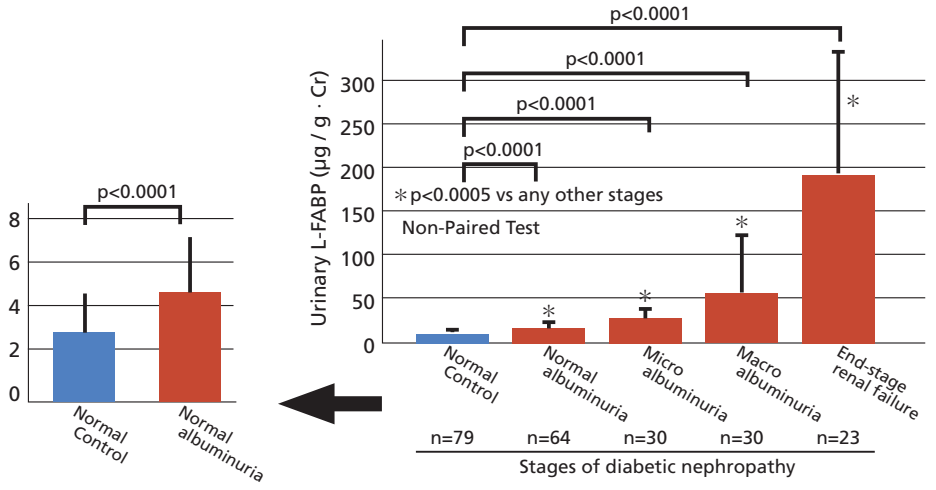
Katsuomi Matsui, et al. Circulation Journal.2012; 76: 213-220

Clinical Evidence

For early diagnosis of diabetic nephropathy

The level of urinary L-FABP increased significantly according to the severity of diabetic nephropathy. Urinary L-FABP in the patients with normal albuminuria was significantly higher than in normal control subjects. Thus, urinary L-FABP is a useful biomarker for early diagnosis of diabetic nephropathy.

Relationship between urinary L-FABP levels and progression of diabetic nephropathy

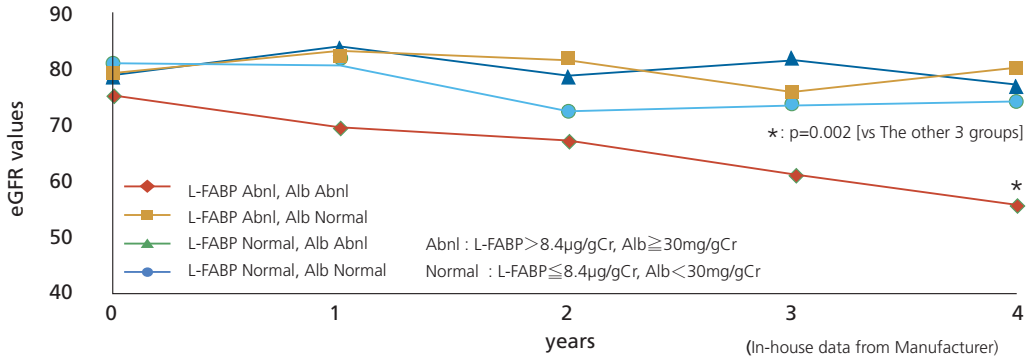


Modified from Kamijyo-Ikemori.A.et al.Diabetes Care 34: 691-696,2011

Urinary L-FABP was measured in 147 patients who had diabetic nephropathy and was divided according to the disease stage. The average value and standard variation of each disease stage were calculated and shown in the graph to the right, together with the urinary L-FABP value of healthy volunteers.

Urinary L-FABP is useful to detect the risk of renal function deterioration

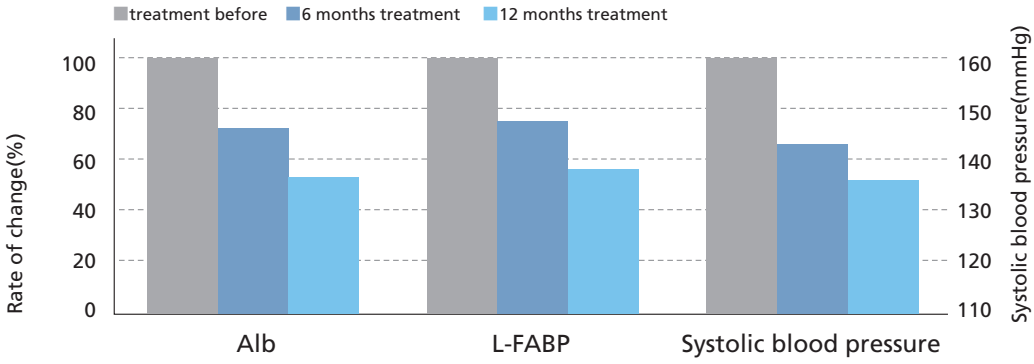
Renal function decreased significantly in the following 4 years in the group that showed abnormal values in both urinary L-FABP and urinary albumin. Early stage risk of renal function deterioration resulting in diabetic nephropathy can be detected with high accuracy by measuring urinary L-FABP, which reflects tubular function, together with simultaneous measurement of urinary albumin, which is an indicator of glomerular injury.



A total of 86 cases with eGFR 60 were taken from the 147 diabetic patients and classified into 4 groups according to urinary L-FABP levels (Normal: 8.4μg/gCr or less) and urinary albumin levels (Normal: under 30mg/gCr) collected during the first year following diagnosis. The changes in eGFR were tracked in the 4 groups.

For monitoring effectiveness of kidney disease treatment

Urinary albumin, urinary L-FABP, and systolic blood pressure after 6 months of treatment and 12 months treatment were significantly decreased compared to the baseline values. Urinary L-FABP, similarly to urinary albumin is useful, for monitoring antihypertensive therapy for early-stage diabetic nephropathy.



Tsukasa Nakamura, et al.Diabetologia.2007 Feb;50(2):490-2

Patients who have microalbuminuria were randomly assigned to receive ARB for 12 months. Urinary albumin, urinary L-FABP, and systolic blood pressure were then monitored to observe the course of treatment.

RENISCHEM®
L-FABP ELISA TMB Kit, High Sensitivity Kit

CE IVD

Urinary L-FABP ELISA kit

Assay specifications	
Size:	96 Wells
Intended User:	Lab professionals
Store Temperature:	2-8°C
Method:	Enzyme-Linked-Immuno-Sorbent Assay of 2-step sandwich method
Sample:	Human urine
Assay time:	120min.
Shelf life:	24 months (TMB) 12 months (High Sensitivity)
Measurable range:	1.5 – 200ng/mL (TMB) 0.3 – 60ng/mL (High Sensitivity)

Kit component	
L-FABP Antibody Coated Microplate	96 Well x 1
Pretreatment Solution	12mL x 1
Assay Buffer	12mL x 1
The 2nd Ab-POD Conjugate	12mL x 1
Substrate Solution	12mL x 1
Wash Agent (x 40 concentrate)	50mL x 1
Stop Solution	12mL x 1
Standard Diluent (0ng/mL)	2.5mL x 1
L-FABP Standard (400ng/mL)	0.5mL x 1
Pretreatment Microplate	96Well x 1
Plate Seal	x 2 sheets

L-FABP-Related Articles

CKD

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Pharmacology

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