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!

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.

Liperoxides are accumulated in proximal tubules during renal ischemia/reperfusion. L-FABP is excreted from the proximal tubules into urine by binding these cytotoxic lipids.

**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.
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

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.

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.

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.
**Assay specifications**

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

**Kit component**

- **L-FABP Antibody Coated Microplate**
- **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** 96 Well x 1
- **Plate Seal** 2 sheets

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**L-FABP-Related Articles**

**CKD**


**AKI**


**Pharmacology**


**Toxicology**

33. L-type fatty acid binding protein transgenic mouse as a novel tool to explore cytotoxicity to renal proximal tubules. Drug Metab Pharmacokinet. 23(4): 271-278, 2008.