



## SELECTED OPPORTUNITIES IN URO-NEPHROLOGY

**NGAL as a biomarker for Predicting the evolution and treatment of chronic kidney disease (BIO10870)**

# NGAL AS A BIOMARKER FOR PREDICTING THE EVOLUTION AND TREATMENT OF CHRONIC KIDNEY DISEASE (BIO10870)

Stage:  
Human POC

## Product factsheet

### ▶ Biomarker:

- ◆ NGAL

### ▶ Technology:

- ◆ IHC, ELISA, RT-PCR

### ▶ Sample:

- ◆ Blood, Urine

### ▶ Information:

- ◆ Patient Stratification
- ◆ Prognosis

### ▶ Scientific and Clinical Rationale:

- ◆ Chronic kidney disease (CKD) is characterized by progressive destruction of the renal parenchyma and the loss of functional nephrons which ultimately lead to end stage renal failure (ESRF).
- ◆ Understanding the pathophysiology of CKD progression is a key challenge for medical planning.

### ▶ POC:

- ◆ In human CKD (Autosomal dominant polycystic kidney disease (n = 84), oligomeganephronia (n = 11), IgA nephropathy (n = 12)).
- ◆ LCN2 was increased particularly in patients who rapidly progressed to end-stage renal failure.

### ▶ Selling points:

#### ◆ Patent:

- ◆ EP10 306 077.8 on 2010/10/01
- ◆ PCT/EP2011/067236 on 2011/10/03
- ◆ Granted: EP(GB, ES, DE, IT, FR)

#### ◆ Scientific Publication(s):

- ◆ J Clin Invest, 2010 November 1, *Viau A. et al.*, doi: 10.1172/JCI42004

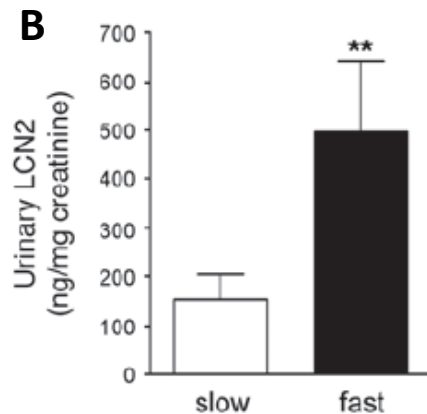
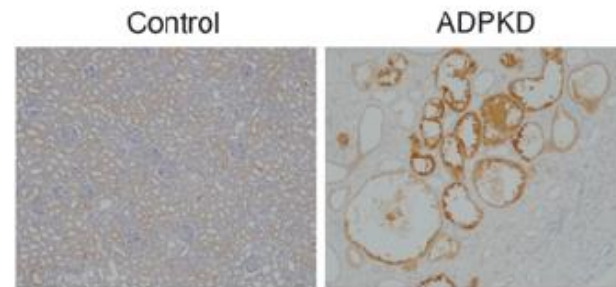
# NGAL AS A BIOMARKER FOR PREDICTING THE EVOLUTION AND TREATMENT OF CHRONIC KIDNEY DISEASE (BIO10870)

## Proof of concept

### ▶ **Human POC: Lcn2 is overexpressed in polycystic kidney disease in humans and correlates with CKD progression**

- ◆ (A) LCN2 staining in kidneys from controls (n = 9) and patients with ADPKD (n = 9). Original magnification,  $\times 100$ .
- ◆ (B) Urinary LCN2 excretion in patients with slow progression (eGFR decline  $< 4.5$  ml/min/1.73 m<sup>2</sup> per year) as compared with fast progressors (eGFR decline  $> 4.5$  ml/min/1.73 m<sup>2</sup> per year) toward ESRF.
- ◆ (C) Urinary LCN2 excretion inversely correlates with eGFR in patients with ADPKD ( $r = -0.77$ ,  $P < 0.0001$ ). Data are mean  $\pm$  SEM; n = 87 for ADPKD patients. Mann-Whitney U test:  $**P < 0.01$  slow versus fast progressors.

**A**



**C**

