NGAL Rapid ELISA Kit (KIT 037)

- Results within the hour
- Measures in urine, plasma or serum
- User-friendly
- For *in-vitro* diagnostic (IVD) use in selected countries*

Cat. No.	Product name
KIT 037	NGAL Rapid ELISA Kit

* Please visit www.bioporto.com for availability in your country.

References

1. Bennett M, Dent CL, Ma Q, Dastrala S, Grenier F, Workman R, Syed H, Ali S, Barasch J, Devarajan P (2008) Urine NGAL predicts severity of acute kidney injury after cardiac surgery: a prospective study. Clin J Am Soc Nephrol 3:665-673.

2. Devarajan P (2008) Neutrophil gelatinase-associated lipocalin (NGAL): a new marker of kidney disease. Scand J Clin Lab Invest Suppl 241:89-94.

3. Parikh CR and Devarajan P (2008) New biomarkers of acute kidney injury. Crit Care Med 36:S159-S165.

4. Mishra J, Dent C, Tarabishi R, Mitsnefes MM, Ma Q, Kelly C, Ruff SM, Zahedi K, Shao M, Bean J, Mori K, Barasch J, Devarajan P (2005) Neutrophil gelatinase-associated lipocalin (NGAL) as a biomarker for acute renal injury after cardiac surgery. Lancet 365:1231-1238.

What the nephrologists say

"The amount of NGAL in urine at 2 h after cardiopulmonary bypass was the most powerful independent predictor of acute renal injury"

Mishra J, Dent C, Tarabishi R, Mitsnefes MM, Ma Q, Kelly C, Ruff SM, Zahedi K, Shao M, Bean J, Mori K, Barasch J, Devarajan P (2005) Neutrophil gelatinase-associated lipocalin (NGAL) as a biomarker for acute renal injury after cardiac surgery. Lancet 365:1231-1238.

"Urine NGAL is an early predictive biomarker of AKI severity after cardiopulmonary bypass"

Bennett M, Dent CL, Ma Q, Dastrala S, Grenier F, Workman R, Syed H, Ali S, Barasch J, Devarajan P (2008) Urine NGAL predicts severity of acute kidney injury after cardiac surgery: a prospective study. Clin J Am Soc Nephrol 3:665-673.

"NGAL levels clearly correlate with severity of renal impairment, probably expressing the degree of active damage underlying the chronic condition. For all these reasons, NGAL may become one of the most promising next-generation biomarkers in clinical nephrology and beyond"

Bolignano D, Donato V, Coppolino G, Campo S, Buemi A, Lacquaniti A, Buemi M (2008) Neutrophil gelatinase-associated lipocalin (NGAL) as a marker of kidney damage. Am J Kidney Dis 52:595-605.

"NGAL has rapidly emerged from the initial discovery phase to potentially occupying center stage in the acute kidney injury arena"

Parikh CR, Jani A, Mishra J, Ma Q, Kelly C, Barasch J, Edelstein CL, Devarajan P (2006) Urine NGAL and IL-18 are predictive biomarkers for delayed graft function following kidney transplantation. Am J Transplant 6:1639-1645.

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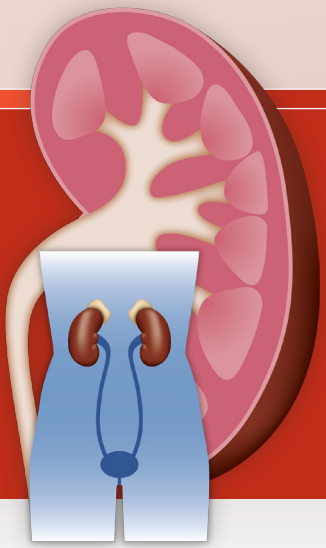
NGAL

- changing the diagnosis and management of acute kidney injury



BioPorto®
Diagnostics

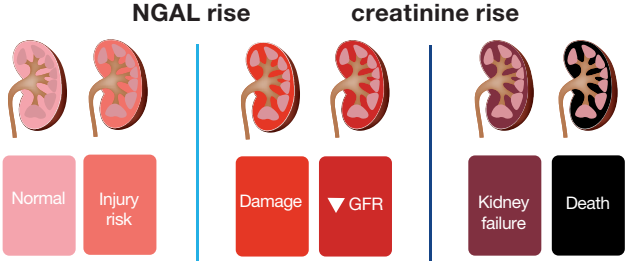
NGAL

NGAL is a novel biomarker for diagnosing acute kidney injury (AKI). The key advantage of NGAL is that it responds earlier than other renal status markers and shows a proportionate response to injury. Therefore, NGAL permits the early diagnosis and prognostic stratification of acute kidney injury, enabling new specific therapies to be developed.

Kidney damage is a major health problem in numerous clinical settings but standard procedures for assessing renal function have remained unchanged for over half a century. Serum creatinine remains the bread-and-butter test for the initial assessment of renal disorders. However, serum creatinine levels respond long after kidney damage has caused a deterioration of function. This limits its use as a marker of kidney function and even more as a marker of kidney injury, making it worthless for early diagnosis.

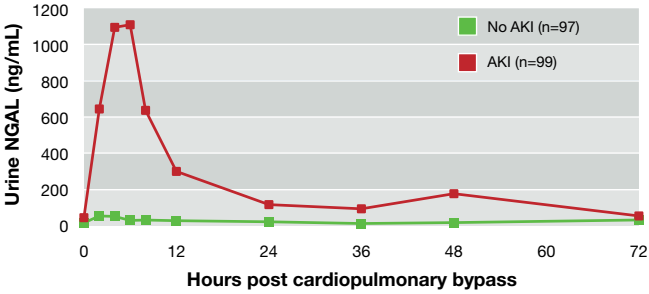
Animal studies have shown that specific therapies can be effective in AKI if applied early, i.e. as soon as possible after injury and well before any rise in serum creatinine. However, the lack of early AKI biomarkers has hindered the transfer of this type of preventive and therapeutic development to human patients. Early AKI biomarkers are therefore being eagerly sought, a search that has recently led to a breakthrough in the area – NGAL (neutrophil gelatinase-associated lipocalin).

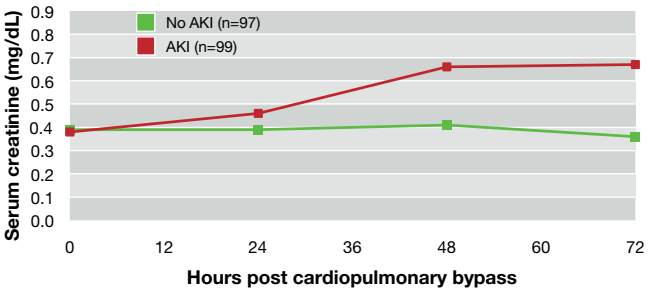
NGAL is ***the*** marker for the diagnosis and management of kidney injury. Under normal conditions, NGAL levels are low in urine and plasma, but they rise sharply from basal levels in response to kidney injury to reach diagnostic levels within a very short time – as much as 24 hours or more before any significant rise in serum creatinine.



Clinical significance

Early diagnosis of AKI by means of NGAL determination in urine or plasma can help you make a clinical decision at the critical time before renal failure supervenes and may help you take proactive measures to halt deterioration of renal function.





Adapted from: Bennet et al., Clin J Am Soc Nephrol 2008[1]

What is NGAL?

NGAL (neutrophil gelatinase-associated lipocalin, lipocalin-2, siderocalin) is a small protein expressed in neutrophils and certain epithelia, including the renal tubules.

Renal expression of NGAL is dramatically increased in kidney injury from a variety of causes, and NGAL is released into both urine and plasma. NGAL levels rise within 2 hours of the insult, making NGAL an early and sensitive biomarker of kidney injury.

Clinical application

AKI occurs in around 5% of all hospitalized patients and is associated with high morbidity and mortality[2,3]. Despite attempts by clinicians and researchers to improve the prevention and management of AKI, the incidence is continuing to increase.

Measuring NGAL in urine or plasma gives you information on AKI status that you need for rapid clinical decision-making, for example in the following settings:

Intensive care units

Timely monitoring of patients in the intensive care unit, where 30% or more of all patients may develop AKI[4]. Including NGAL as a simple screening parameter will provide the earliest warning of this serious complication and hence the best opportunity for improving outcome.

Emergency rooms

As a powerful triage tool – diagnosis of AKI in the emergency room itself, right on admission.

Cardiopulmonary bypass surgery

Monitoring NGAL levels after CPB reveals kidney injury that may result from the procedure.

Renal transplantation

Post-transplant NGAL levels provide a clear, predictive evaluation of graft function and survival.

Administration of i.v. iodine contrast agents

Monitoring NGAL levels provides crucial information on the possible kidney injury that may result from the use of such agents in diagnostic imaging.