



NephroTest[®]

Kidney Damage
Early Detection Solution

Acute Kidney Injury (AKI) and the Need for New Biomarkers(1)

Acute kidney injury (AKI) is defined as;

- an increase in serum creatinine of 0.3 mg/dL or more within 48 hours,
- an increase in serum creatinine of 1.5 times or more from baseline, known or estimated to occur within 7 days
- urine volume less than 0.5 mL/kg/hour for 6 hours or more

But, acute kidney disease (AKD) is defined as kidney disease that is thought to last less than 90 days.

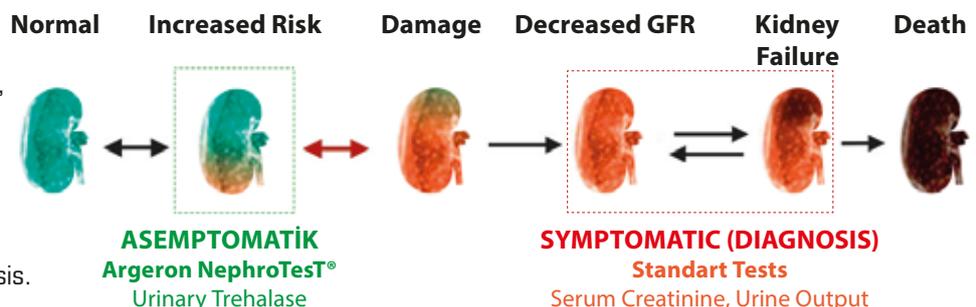
AKI can occur for a variety of reasons. It most commonly occurs after exposure to hemodynamic damage (eg, high volumes of blood loss or surgeries) or administration of nephrotoxic pharmaceutical agents (eg, radiographic contrast agents, chemotherapeutics, or antibiotics).

It is difficult to predict acute kidney function loss from “estimated glomerular filtration rate” (“eGFR”) that is derived from the equations or from serum/plasma concentrations of creatinine or cystatin C, the endogenous filtration markers used for filtration of blood by the kidneys (glomerular filtration). Because, changes in serum concentrations fall behind the change in measured GFR. For example, after a sudden decrease in GFR, creatinine serum concentration returns to steady state only after 2-3 days. It is even more difficult to estimate GFR from serum creatinine or cystatin C concentrations when GFR is continuously changing (higher or lower). EGFR is important in the management of patients with AKI because of the need for appropriate drug dosing. Estimation of GFR requires an analysis from baseline.

New biomarkers are needed for early detection of kidney damage before kidney function declines to overcome the limitations of current markers.

AKI biomarkers are expected to;

- provide evidence for renal tubular function,
- make the differential diagnosis of AKI etiologies,
- differentiate prerenal disease from acute tubular necrosis, and
- detect subclinical AKI that does not decrease GFR but indicates a poor prognosis.



Argeron NephroTest is a test that meets these expectations.

Urine Trehalase Activity

Urine trehalase enzyme activity is an indicator of kidney damage. Argeron NephroTest is suitable to measure urine trehalase enzyme activity by using all kits (including urine strip tests) used for urine glucose measurement in the field of in vitro diagnostics (biochemical medical diagnosis).

Trehalase is a glycoprotein enzyme with a molecular weight of 75kDa, found in the renal proximal tubules. Urine trehalase measurement can be used for screening, diagnosis and follow-up for kidney damage(2,3). For example, it has been reported that trehalase activity is higher than the control group in the early stages of diabetes, even when proteinuria and glucosuria are negative (4). It can show early kidney damage due to some environmental toxins such as lead and cadmium and drugs such as ampicillin and tobramycin (5-8). In addition, increased urinary trehalase activity has been reported in chronic glomerular disease and especially in nephrotic syndrome (9).

Argeron NephroTest Allows Very Early Detection of Kidney Damage

Purpose

The primary purpose of the test is to ensure that the kits used for glucose measurement in urine (including urine strips) are also used for measurement of urine trehalase activity. Unlike urine trehalase measurement, urine glucose measurement is a routine measurement performed in almost all medical diagnostic laboratories around the world. This allows the very commonly used urine glucose measurements to be used for urine trehalase activity measurement as well.

Screening, diagnosis and follow-up

Screening of kidney damage helps in early, rapid, widespread and economical diagnosis and follow-up.

Provides the opportunity to take precautions thanks to early diagnosis

Thanks to the early diagnosis of kidney damage, the elimination of the factor(s) causing the damage or early treatment can prevent the progression of the damage.

EARLY DETECTION OF KIDNEY INJURY IS VERY IMPORTANT

Early detection of kidney damage

Argeron NephroTest trehalase test can meet the need for a much-needed widespread test that enables the early diagnosis of acute kidney damage. Early diagnosis also contributes greatly to reducing health expenditures.

Kidney injury is a common problem

Kidney injury is a very common problem in both outpatients and inpatients. Kidney damage can occur as an adverse effect of many drugs or as a complication of many diseases. Existing tests for damage detection have many limitations.

Early Detection for Timely Intervention

Many risk factors leading to kidney injury are known. However, it is difficult to predict exactly when the damage will occur. Therefore, there is a great need for common test methods that can be used for early diagnosis.

SOME EXAMPLE CLINICAL CONDITIONS

- Nephrotoxic drug use
- Excessive fluid loss
- Surgery
- Heart disease
- Bleeding
- Exposure to toxins
- Diabetes

PRODUCT

Argeron-NephroTest® (Kidney damage early detection solution) is a solution for the measurement of trehalase activity in urine. For use with urine glucose measurement kits in the field of in vitro diagnostics (biochemical medical diagnosis) to measure urinary trehalase enzyme activity as an indicator of kidney damage.

PRODUCT DETAIL

Catalog No :	A10010
Contents :	Reagent 1: Solvent (2.5mL) Reagent 2: Reaction Solution (2.5mL)
Recommended Incubation Time:	30 minutes minimum.
Storage condition :	Store at room temperature between 2°C and 25°C.
Shelf life :	12 months after production date.
Regulatory Status:	CE Marked and available for in vitro diagnostic use in the European Union. Suitable for research use in all regions.
Patent Status :	This product is protected by Türkpatent. European, USA and other foreign country patent processes are continuing.



Argeron Medikal Araştırma Sanayi ve Ticaret Anonim Şirketi

Altınkale Mah. Akdeniz Bulvarı No:191 Döşemealtı 07190 Antalya / Türkiye • Tel: +90 (242) 340 33 91
www.nephrotest.com • www.argeron.com.tr