Datasheet for ABIN1000259

Creatinine Assay Kit

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Overview

Quantity:	500 tests
Target:	Creatinine (CR)
Application:	Biochemical Assay (BCA)

Product Details

Sample Type:	Plasma, Serum, Urine
Specificity:	0.1 mg/dL (8 µM)
Characteristics:	Sensitive and accurate. Use 30 µL samples. Detection limit 0.10 mg/dL (8µM) creatinine in 96-well plate assay. Simple and high-throughput. The procedure involves addition of a single working reagent and incubation for 5 min. Can be automated as a high-throughput assay for thousands of samples per day. Improved reagent stability and versatility. The optimized formulation has greatly enhanced reagent and signal stability. Assays can be executed in 96-well plate or cuvet. Low interference in biological samples. No pretreatments are needed. Assays can be directly performed on raw biological samples.
Components:	Reagent A: 50 mL. Reagent B: 50 mL. Creatinine Standard: 1 mL 50 mg/dL.
Material not included:	Pipeting devices and accessories (e.g. multi-channel pipettor). Clear bottom 96-well plates (e.g. Corning Costar) and plate reader for the plate procedure. Spectrophotometer and cuvets for measuring OD 510nm for the cuvette procedure.

Target Details

Target:	Creatinine (CR)
Alternative Name:	Creatinine (CR Products)
Target Type:	Amino Acid
Background:	Quantitative determination of creatinine by colorimetric (510nm) method. Procedure: 20 min. Creatinine is synthesized in the body at a fairly constant rate from creatine, which is produced during muscle contractions from creatine phosphate. In the blood, creatinine is removed by filtration through the glomeruli of the kidney and is secreted into urine. In healthy individuals, creatinine secretion is independent of diet and is fairly constant. The creatinine clearance test has become one of the most sensitive tests for measuring glomerular filtration rate. In kidney disease, creatinine levels in the blood are elevated, whereas the creatinine clearance rate and hence the urine levels are diminished. Creatinine test is most widely used to assess kidney function. Simple, direct and automation-ready procedures for measuring creatinine concentration in biological samples are becoming popular in Research and Drug Discovery. This creatinine assay kit is designed to measure creatinine directly in biological samples without any pretreatment. The improved Jaffe method utilizes picrate that forms a red colored complex with creatinine. The intensity of the color, measured at 510nm, is directly proportional to creatinine concentration in the sample. The optimized formulation substantially reduces interference by substances in the raw sample.

Application Details

Application Notes:	Direct Assays: urine, serum, plasma and biological preparations. Drug Discovery/Pharmacology: effects of drugs on creatinine metabolism.
Protocol:	This assay is based on a kinetic Jaffe reaction. To ensure identical incubation time, addition of Working Reagent to standard and samples should be quick and mixing should be brief but thorough. Use of a multi-channel pipettor is recommended. Procedure using 96-well plate: BLOOD ASSAY (LOW CREATININE LINEAR UP TO 50 mg/dL): 1. Dilute standard to 2 mg/dL by mixing 5 µL 50 mg/dL standard stock and 120 µL distilled water. Transfer 30 µL diluted standard and serum/plasma in duplicate into wells of a clear bottom 96-well plate. 2. Prepare enough Working Reagent by mixing per well reaction at least 100 µL Reagent A and

Application Details

	100 µL Reagent B. Add 200 µL Working Reagent quickly to all wells. Tap plate briefly to mix. 3. Read optical density immediately (OD0) and then at 5 min (OD5) at 490-530nm (peak absorbance at 510nm). URINE ASSAY (HIGH CREATININE LINEAR UP TO 300 mg/dL): 1. Transfer 5 µL 50 mg/dL standard and urine in duplicate into wells of a clear bottom 96-well plate. 2. Prepare enough Working Reagent by mixing per well reaction 50 µL Reagent A, 50 µL Reagent B and 100 µL water. Add 200 µL Working Reagent quickly to all wells. Tap plate briefly to mix. 3. Read optical density immediately (OD0) and then at 5 min (OD5) at 490-530nm (peak absorbance at 510nm). Procedure using cuvette: 1. Transfer 100 µL 2 mg/dL Standard and serum/plasma samples (Urine Assay: 15 µL 50 mg/dL Standard and 15 µL urine) to cuvets. 2. Prepare appropriate Working Reagent as above for the 96-well plate procedures. Add 1000 µL Working Reagent to each cuvet and pipet briefly to mix (avoid bubble formation). 3. Read OD immediately (OD0) and at 5 min (OD5) at 490-530nm.
Reagent Preparation:	Equilibrate reagents to room temperature prior to use. Please note the difference in standard/sample volume and Working Reagent strength for blood and urine assay.
Restrictions:	For Research Use only

Handling

Storage:	4 °C

Publications

Product cited in:	Wang, Luo, Xu, Wei, Zhang, Zhu: "Elevated oxidative damage in kitchen workers in Chinese restaurants." in: **Journal of occupational health**, Vol. 53, Issue 5, pp. 327-33, (2011) (PubMed). Tang, Man, Lee, Xu, Kerbel: "Impact of metronomic UFT/cyclophosphamide chemotherapy and antiangiogenic drug assessed in a new preclinical model of locally advanced orthotopic hepatocellular carcinoma." in: **Neoplasia (New York, N.Y.)**, Vol. 12, Issue 3, pp. 264-74, (2010) (PubMed).

Publications

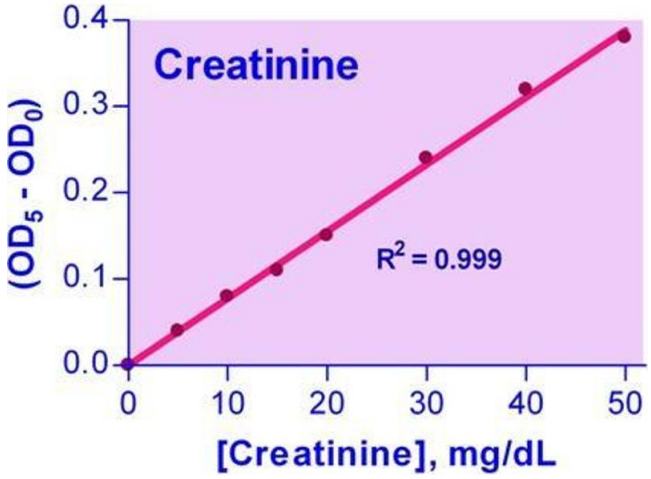
Jaruga, Dizdaroglu: "Identification and quantification of (5'R)- and (5'S)-8,5'-cyclo-2'-deoxyadenosines in human urine as putative biomarkers of oxidatively induced damage to DNA." in: **Biochemical and biophysical research communications**, Vol. 397, Issue 1, pp. 48-52, (2010) (PubMed).

Xu, Huang, Li, Zheng, Epstein: "FVB mouse genotype confers susceptibility to OVE26 diabetic albuminuria." in: **American journal of physiology. Renal physiology**, Vol. 299, Issue 3, pp. F487-94, (2010) (PubMed).

Hauser, De Fazio, Bruno, Sdei, Grange, Bussolati, Benedetto, Camussi: "Stem cells derived from human amniotic fluid contribute to acute kidney injury recovery." in: **The American journal of pathology**, Vol. 177, Issue 4, pp. 2011-21, (2010) (PubMed).

There are more publications referencing this product on: Product page

Images



Biochemical Assay

Image 1.