Datasheet for ABIN1000263

Glucose Assay Kit

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Overview

Quantity:	100 tests
Target:	Glucose
Application:	Biochemical Assay (BCA)

Product Details

Sample Type:	Serum, Plasma, Food, Beverages
Specificity:	0.7 mg/dL (39 µM)
Characteristics:	Sensitive and accurate. Use as little as 5 µL samples. Linear detection range 0.7 mg/dL (39 µM) to 300 mg/dL (16.6 mM) glucose in 96-well plate. Simple and convenient. The procedure involves addition of a single working reagent and incubation for 8 min in a boiling water bath. Improved reagent stability. The optimized formulation has greatly enhanced the reagent and signal stability. Low interference in biological samples. No pretreatments are needed. Assays can be directly performed on serum and plasma samples.
Components:	Reagent: 50 ml. Standard: 1 ml 300 mg/dL.
Material not included:	Pipeting devices, centrifuge tubes, boiling water bath, tube holder. Clear bottom 96-well plates (e.g. Corning Costar) and plate reader. Spectrophotometer and Cuvets for measuring OD at 620-650nm.

Target Details

Target:	Glucose
Background:	Quantitative determination of glucose by chemical colorimetric (630nm) method. Procedure: 10 min. Glucose (C6H12O6) is a ubiquitous fuel molecule in biology. It is oxidized through a series of enzyme-catalyzed reactions to form carbon dioxide and water, yielding the universal energy molecule ATP. Due to its importance in metabolism, glucose level is a key diagnostic parameter for many metabolic disorders. Increased glucose levels have been associated with diabetes mellitus, hyperactivity of thyroid, pituitary and adrenal glands. Decreased levels are found in insulin secreting tumors, myxedema, hypopituitarism and hypoadrenalism. Simple, direct and automation-ready procedures for measuring glucose concentrations find wide applications in research and drug discovery. This glucose assay kit is designed to measure glucose directly in serum or plasma without any pretreatment. The improved o-toluidine method utilizes a specific color reaction with glucose. The absorbance at 630nm is directly proportional to glucose concentration in the sample.

Application Details

Application Notes:	Direct Assays: glucose in biological samples (e.g. serum and plasma). Drug Discovery/Pharmacology: effects of drugs on glucose metabolism. Food and Beverages: glucose in food, beverages etc.
Protocol:	THE REAGENT CONTAINS ACETIC ACID. THIS ASSAY IS PREFERABLY CARRIED OUT IN A CHEMICAL FUME HOOD. Procedure using 96-well plate: 1. Dilute standard in distilled water. Set up1.5-mL centrifuge tubes. Transfer 5 µL diluted standards and samples to appropriately labeled tubes. Transfer 500 µL Reagent to each tube. Close the tubes tightly and mix. Store diluted standards at -20°C for future use. 2. Place the tubes in a tube holder and heat in a boiling water bath or heat block for 8 min. Cool down in cold water bath for 4 min. 3. Transfer 200 µL in duplicate into a clear bottom 96-well plate. Careful: avoid bubble formation. Read optical density at 620-650nm (peak absorbance at 630nm). Procedure using cuvette: 1. Dilute standards and transfer 12 µL water blank, Standards and samples to appropriately labeled tubes. Transfer 1200 µL Reagent to each tube. Close the tubes tightly and mix.

Application Details

	2. Place the tubes in a tube holder and heat in a boiling water bath for 8 min. Cool down in cold-water bath for 4 min. 3. Transfer 1000 µL reaction mixture into cuvet. Read optical density at 620-650nm (peak absorbance at 630nm) against blank. Note: 1. if the Sample OD is higher than the Standard OD at 300mg/dL, dilute sample in water and repeat the assay. 2. To determine low glucose concentrations, use 50 µL sample and standards (instead of 5 µL) per 500 µL Reagent.
Calculation of Results:	Subtract blank OD (water, #5) from the standard OD values and plot the OD against standard concentrations. Determine the slope using linear regression fitting. Typical serum/plasma glucose values: 70 - 110 mg/dL. Conversions: 1mg/dL glucose equals 55.5 µM, 0.001% or 10 ppm.
Restrictions:	For Research Use only

Handling

Storage:	4 °C

Publications

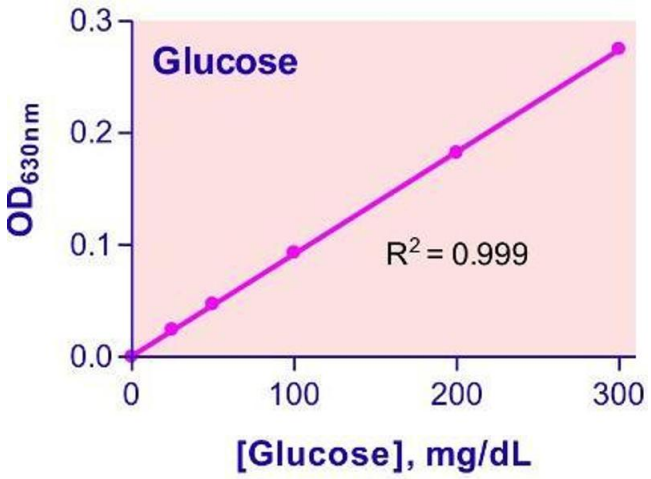
Product cited in:	Jin, Norris, Vaziri: "Dysregulation of hepatic fatty acid metabolism in chronic kidney disease." in: **Nephrology, dialysis, transplantation : official publication of the European Dialysis and Transplant Association - European Renal Association**, Vol. 28, Issue 2, pp. 313-20, (2013) (PubMed). Lu, Zhang, Li, Jin, Huang: "TLR4 antagonist reduces early-stage atherosclerosis in diabetic apolipoprotein E-deficient mice." in: **The Journal of endocrinology**, Vol. 216, Issue 1, pp. 61-71, (2013) (PubMed). Hwang, Lee, Huh, Park, Lee, Ho, Ha: "Catalase deficiency accelerates diabetic renal injury through peroxisomal dysfunction." in: **Diabetes**, Vol. 61, Issue 3, pp. 728-38, (2012) (PubMed). Jelinek, Castillo, Richardson, Luo, Heidenreich, Garver: "The Niemann-Pick C1 gene is downregulated in livers of C57BL/6J mice by dietary fatty acids, but not dietary cholesterol, through feedback inhibition of the SREBP pathway." in: **The Journal of nutrition**, Vol. 142, Issue 11, pp. 1935-42, (2012) (PubMed).

Publications

Seo, Um, Rico, Kang: "Antihyperlipidemic and body fat-lowering effects of silk proteins with different fibroin/sericin compositions in mice fed with high fat diet." in: **Journal of agricultural and food chemistry**, Vol. 59, Issue 8, pp. 4192-7, (2011) (PubMed).

There are more publications referencing this product on: Product page

Images



Biochemical Assay

Image 1.