MAYO CLINIC LABORATORIES

Test Definition: GLUR1

Glucose, Random, Urine

Overview

Useful For
Limited usefulness for routine screening or management of diabetes mellitus

Method Name
Reflectance Spectrophotometry

NY State Available
Yes

Specimen

Specimen Type
Urine

Specimen Required
Container/Tube: Plastic urine container
Specimen Volume: 20 mL
Collection Instructions:
1. Collect a random urine specimen.
2. No preservative.

Specimen Minimum Volume
2 mL

Reject Due To

Preservative added Any sample other than a random urine	Reject

Specimen Stability Information

Specimen Type	Temperature	Time	Special Container
Urine	Refrigerated (preferred)	72 hours	
	Ambient	2 hours	

Clinical & Interpretive

Clinical Information

The test is specific for glucose. No other substance excreted in urine is known to give a positive result, including other reducing substances (eg, galactose, fructose, and lactose). This test may be used to determine whether the reducing substance found in urine is glucose. Glucosuria occurs when the renal threshold for glucose is exceeded (typically >180 mg/dL); this is most commonly, although not exclusively, seen in diabetes. However, if the urine glucose is high and the patient is not known to have diabetes mellitus, more specific testing should be considered (fasting blood glucose and/or glycosylated hemoglobin).

Reference Values

Negative

Interpretation

Small amounts of glucose are normally excreted by the kidney. These amounts are usually below the sensitivity of this test but, on occasion, may produce a color between negative and 100 mg/dL (trace), which is interpreted by the instrument as a positive. Results at the first positive level may be significantly abnormal if found consistently.

Cautions

Ketone bodies reduce the sensitivity of the test; moderately high ketone levels (40 mg/dL) may cause false negatives for specimens containing small amounts of glucose (75-125 mg/dL), but the combination of such ketone levels and low glucose levels is metabolically improbable in screening.

Clinical Reference

1. Brunzel NA: Chemical examination of urine. In: Fundamentals of Urine and Body Fluids. 4th ed. Saunders; 2018:85-125
2. Chen J, Guo H, Yuan S, et al: Efficacy of urinary glucose for diabetes screening: a reconsideration. Acta Diabetol. 2019 Jan;56(1):45-53

Performance

Method Description

Glucose analysis is based on a double sequential enzyme reaction. One enzyme, glucose oxidase, catalyzes the formation of gluconic acid and hydrogen peroxide from the oxidation of glucose. A second enzyme, peroxidase, catalyzes the reaction of hydrogen peroxide with a potassium iodide chromogen to oxidize the chromogen to colors ranging from green to brown. The Clinitek Status+ analyzer is a reflectance spectrophotometer that analyzes the intensity and color of the light reflected from the reagent areas. No calculations are required.(Package insert: Multistix 10 SG Reagent Strip. AN30516J. Siemens; Rev, 02/2011)

PDF Report

No

Day(s) Performed

Monday through Sunday

Report Available
1 day

Specimen Retention Time
2 Days

Performing Laboratory Location
Mayo Clinic Laboratories - Rochester Main Campus

Fees & Codes

Fees
- Authorized users can sign in to Test Prices for detailed fee information.
- Clients without access to Test Prices can contact Customer Service 24 hours a day, seven days a week.
- Prospective clients should contact their account representative. For assistance, contact Customer Service.

Test Classification
This test has been cleared, approved, or is exempt by the US Food and Drug Administration and is used per manufacturer's instructions. Performance characteristics were verified by Mayo Clinic in a manner consistent with CLIA requirements.

CPT Code Information
82945

LOINC® Information

Test ID	Test Order Name	Order LOINC® Value
GLUR1	Glucose, Random, U	53328-1

Result ID	Test Result Name	Result LOINC® Value
GLUR1	Glucose, Random, U	In Process