Test Definition: URIC

Uric Acid, S

Overview

Useful For

Diagnosis and treatment of renal failure

Monitoring patients receiving cytotoxic drugs and a variety of other disorders, including gout, leukemia, psoriasis, starvation and other wasting conditions

Method Name

Photometric,Uricase/Quinone-ImineDyeFormation

NY State Available

Yes

Specimen

Specimen Type

Serum

Necessary Information

Patient's age and sex are required.

Specimen Required

Collection Container/Tube:

Preferred: Serum gel

Acceptable: Red top

Specimen Volume: 0.5 mL

Submission Container/Tube: Plastic vial

Collection Instructions:

1. Serum gel tubes should be centrifuged within 2 hours of collection.

2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

Specimen Minimum Volume

0.25 mL

Reject Due To

Hemolysis	Mild OK; Gross reject
Lipemia	NA
Icterus	NA
Other	NA

Specimen Stability Information

Specimen Type	Temperature	Time
Serum	Refrigerated (preferred)	7 days
	Frozen	180 days

Clinical and Interpretive

Clinical Information

Uric acid is the final product of purine metabolism in humans. Purines, compounds that are vital components of nucleic acids and coenzymes, may be synthesized in the body or they may be obtained by ingesting foods rich in nucleic material (eg, liver, sweetbreads). Approximately 75% of the uric acid excreted is lost in the urine; most of the remainder is secreted into the gastrointestinal tract where it is degraded to allantoin and other compounds by bacterial enzymes.

Asymptomatic hyperuricemia is frequently detected through biochemical screening. The major causes of hyperuricemia are increased purine synthesis, inherited metabolic disorder, excess dietary purine intake, increased nucleic acid turnover, malignancy, cytotoxic drugs, and decreased excretion due to chronic renal failure or increased renal reabsorption. Long-term follow-up of these patients is undertaken because many are at risk of developing renal disease; few of these patients ever develop the clinical syndrome of gout.

Hypouricemia, often defined as serum urate below 2.0 mg/dL, is much less common than hyperuricemia. It may be secondary to severe hepatocellular disease with reduced purine synthesis, defective renal tubular reabsorption, overtreatment of hyperuricemia with allopurinol, as well as some cancer therapies (eg, 6-mercaptopurine).

Reference Values

Males

1-10 years: 2.4-5.4 mg/dL

11 years: 2.7-5.9 mg/dL

12 years: 3.1-6.4 mg/dL

13 years: 3.4-6.9 mg/dL

14 years: 3.7-7.4 mg/dL

15 years: 4.0-7.8 mg/dL

> or =16 years: 3.7-8.0 mg/dL

Reference values have not been established for patients who are <12 months of age.

Females

1 year: 2.1-4.9 mg/dL

2 years: 2.1-5.0 mg/dL

3 years: 2.2-5.1 mg/dL

4 years: 2.3-5.2 mg/dL

5 years: 2.3-5.3 mg/dL

6 years: 2.3-5.4 mg/dL

7-8 years: 2.3-5.5 mg/dL

9-10 years: 2.3-5.7 mg/dL

11 years: 2.3-5.8 mg/dL

12 years: 2.3-5.9 mg/dL

> or =13 years: 2.7-6.1 mg/dL

Reference values have not been established for patients who are <12 months of age.

Interpretation

Hyperuricemia is most commonly defined by serum or plasma uric acid concentrations above 8.0 mg/dL in males or above 6.1 mg/dL in females.

Cautions

The following drugs cause interference (falsely decreased levels) at therapeutic concentrations:

-Alpha-methyldopa

-Desferoxamine

-Calcimdobesilate

Results can be falsely decreased in patients with elevated levels of N-acetyl-p-benzoquinone imine (NAPQI, a metabolite of acetaminophen), N-acetylcysteine (NAC), and metamizole.

Clinical Reference

Tietz Textbook of Clinical Chemistry. Chapter 24: Fourth edition, Edited by CA Burtis, ER Ashwood, WS Bruns. WB Saunders Company, Philadelphia, 2006, pp 803-807

Performance

Method Description

Uric acid is oxidized by uricase to form allantoin and hydrogen peroxide. The hydrogen peroxide reacts with TOOS (N-ethyl-N-[2-hydroxy-3-sulfopropyl]-3-methylaniline) and 4-aminophenazone in the presence of peroxidase to form a quinone-imine dye. The intensity of the red color formed is proportional to the uric acid concentration. Prior to the start of the reaction, the sample is initially incubated with a reagent mixture containing ascorbate oxidase and a clearing system. This eliminates any ascorbic acid present in the sample which could interfere with the peroxidase indicator reaction.(Package insert: Roche Uric Acid reagent, Roche Diagnostic Corp., Indianapolis IN, V10. 12/2018)

PDF Report

No

Day(s) and Time(s) Test Performed

Monday through Sunday; Continuously

Analytic Time

Same day/1 day

Maximum Laboratory Time

2 days

Specimen Retention Time

1 week

Performing Laboratory Location

Rochester

Fees and 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 Regional Manager. For assistance, contact Customer Service.

Test Classification

This test has been cleared or approved by the U.S. 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

84550

LOINC® Information

Test ID	Test Order Name	Order LOINC Value
URIC	Uric Acid, S	3084-1

Result ID	Test Result Name	Result LOINC Value
URIC	Uric Acid, S	3084-1