

Overview

Useful For

Assessment of protein intake and/or nitrogen balance

Special Instructions

- [Urine Preservatives-Collection and Transportation for 24-Hour Urine Specimens](#)

Method Name

Kinetic Ultraviolet Assay

NY State Available

Yes

Specimen

Specimen Type

Urine

Necessary Information

- 24-Hour volume (in milliliters) is required.
- For any timed collection the volume and length of collection is required.

Specimen Required

Supplies: Sarstedt 5 mL Aliquot Tube (T914)

Container/Tube: Plastic, urine tube

Specimen Volume: 4 mL

Collection Instructions:

- Collect urine for 24 hours.
- Mix well before taking aliquot.

Additional Information: See [Urine Preservatives-Collection and Transportation for 24-Hour Urine Specimens](#) for multiple collections.

Forms

If not ordering electronically, complete, print, and send a [Renal Diagnostics Test Request](#) (T830) with the specimen.

Urine Preservative Collection Options

Note: The addition of preservative or application of temperature controls **must occur within 4 hours of completion** of the collection.

| | |
|-------------|----|
| Ambient | No |
| Refrigerate | OK |

| | |
|----------------------|-----------|
| Frozen | OK |
| 50% Acetic Acid | OK |
| Boric Acid | Preferred |
| Diazolidinyl Urea | OK |
| 6M Hydrochloric Acid | OK |
| 6M Nitric Acid | No |
| Sodium Carbonate | OK |
| Thymol | OK |
| Toluene | No |

Specimen Minimum Volume

1 mL

Reject Due To

All specimens will be evaluated at Mayo Clinic Laboratories for test suitability.

Specimen Stability Information

| Specimen Type | Temperature | Time | Special Container |
|---------------|--------------------------|---------|-------------------|
| Urine | Refrigerated (preferred) | 14 days | |
| | Ambient | 7 days | |
| | Frozen | 30 days | |

Clinical & Interpretive

Clinical Information

Urea is a low molecular weight substance (60 Da) that is freely filtered by glomeruli, and the majority is excreted into the urine, although variable amounts are reabsorbed along the nephron. It is the major end product of protein metabolism in humans and other mammals. Approximately 50% of urinary solute excretion and 90% to 95% of total nitrogen excretion is composed of urea under normal conditions. Factors that tend to increase urea excretion include increases in glomerular filtration rate, increased dietary protein intake, protein catabolic conditions, and water diuretic states. Factors that reduce urea excretion include low protein intake and conditions that result in low urine output (eg, dehydration).

Reference Values

> or =18 years: 7-42 g/24 hours

Reference values have not been established for patients who are less than 18 years of age.

Interpretation

Because multiple factors (glomerular filtration rate, dietary protein intake, protein catabolic rate, hydration state, etc.) can independently affect the urinary excretion of urea, all of these factors must be taken into account when interpreting the results.

Cautions

No significant cautionary statements

Clinical Reference

1. Lamb EJ, Jones GRD: Kidney function tests In: Rifai N, Horvath AR, Wittwer CT, eds. Textbook of Clinical Chemistry and Molecular Diagnostics. 6th ed. Elsevier; 2018:498-500
2. Bankir L, Trinh-Trang- Tan MM: Urea and the kidney. In: Brenner BM eds. The Kidney. 6th ed. WB Saunders Company; 2000

Performance**Method Description**

Urea is hydrolyzed by urease to form ammonia and carbon dioxide. The ammonia formed then reacts with ketoglutarate and reduced nicotinamide adenine dinucleotide (NADH) in the presence of glutamate dehydrogenase to yield glutamate and NAD⁺. The decrease in absorbance is due to consumption of NADH and is measured kinetically at 340 nm.(Package insert: Roche Urea; BUN. Roche Diagnostics; V 8.0, 02/2020)

PDF Report

No

Day(s) Performed

Monday through Sunday

Report Available

Same day/1 day

Specimen Retention Time

7 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

84540

LOINC® Information

| Test ID | Test Order Name | Order LOINC® Value |
|---------|-----------------|--------------------|
| URAU | Urea, 24 HR, U | 48999-7 |

| Result ID | Test Result Name | Result LOINC® Value |
|-----------|---------------------|---------------------|
| UREA | Urea, 24 HR, U | 48999-7 |
| TM33 | Collection Duration | 13362-9 |
| VL31 | Urine Volume | 3167-4 |
| URECN | Urea Concentration | 63481-6 |