MAYO CLINIC LABORATORIES

Test Definition: CLU

Chloride, 24 Hour, Urine

Overview

Useful For
Indication of fluid balance and acid-base homeostasis using a 24-hour urine collection

Special Instructions
- Urine Preservatives-Collection and Transportation for 24-Hour Urine Specimens

Method Name
Indirect Potentiometry

NY State Available
Yes

Specimen

Specimen Type
Urine

Necessary Information
24-Hour volume (in milliliters) is required.

Specimen Required
Supplies: Sarstedt 5 mL Aliquot Tube (T914)
Collection Container/Tube: 24-Hour graduated urine container with no metal cap or glued insert
Submission Container/Tube: Plastic, 5 mL tube or a clean, plastic aliquot container with no metal cap or glued insert
Specimen Volume: 4 mL
Collection Instructions:
1. Collect urine for 24 hours.
2. Refrigerate specimen within 4 hours of completion of 24-hour collection.
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 additive)	OK

Refrigerate (no additive)	Preferred
Frozen (no additive)	OK
50% Acetic Acid	OK
Boric Acid	OK
Diazolidinyl Urea	OK
6M Hydrochloric Acid	No
6M Nitric Acid	No
Sodium Carbonate	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

Chloride is the major extracellular anion. Its precise function in the body is not well understood; however, it is involved in maintaining osmotic pressure, proper body hydration, and electric neutrality. In the absence of acid-base disturbances, chloride concentrations in plasma will generally follow those of sodium.

Since urine is the primary mode of elimination of ingested chloride, urinary chloride excretion during steady state conditions will reflect ingested chloride, which predominantly is in the form of sodium chloride. However, under certain clinical conditions, the renal excretion of chloride may not reflect intake. For instance, during states of extracellular volume depletion, urine chloride (and sodium) excretion is reduced.

Reference Values

> or =18 years: 34-286 mmol/24 hours
Reference values have not been stablished for patients who are less than 18 years of age.

Reference values apply to 24-hour collection.

Interpretation

Urine sodium and chloride excretion are similar, and, under steady-state conditions, both the urinary sodium and

chloride excretion reflect the intake of sodium chloride. During states of extracellular volume depletion, low values indicate appropriate renal reabsorption of these ions, whereas elevated values indicate inappropriate excretion (renal wasting). Urinary sodium and chloride excretion may be dissociated during metabolic alkalosis with volume depletion where urine sodium excretion may be high (due to renal excretion of sodium bicarbonate), while urine chloride excretion remains appropriately low.

Cautions

High urine values of other halide ions (eg, bromide, fluoride, iodide) may lead to falsely high readings on the chloride ion-selective electrode.

Clinical Reference

1. Delaney MP, Lamb EJ: Kidney disease. In: Rifai N, Horvath AR, Wittwer CT, eds: Tietz Textbook of Clinical Chemistry and Molecular Diagnostics. 6th ed. Elsevier; 2018:1308-1309
2. Kamel KS, Ethier JH, Richardson RM, Bear RA, Halperin ML: Urine electrolytes and osmolality: when and how to use them. Am J Nephrol. 1990;10(2):89-102

Performance

Method Description

An ion-selective electrode (ISE) makes use of the unique properties of ion-selective membrane to develop an electrical potential (electromotive force: EMF) for the measurements of ions in solution. Selective membrane is in contact with both the test solution and an internal filling solution. Due to the selectivity of the membrane, only the ions to be measured contribute to the EMF. The membrane EMF is determined by the difference in concentration of the test ion in the test solution and the internal filling solution. The EMF develops according to Nernst equation of a specific ion in solution.(Package insert: ISE indirect Na-K-Cl for Gen 2. Roche Diagnostics; 05/2024)

PDF Report

No

Day(s) Performed

Monday through Sunday

Report Available

1 to 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

82436

LOINC® Information

Test ID	Test Order Name	Order LOINC® Value
CLU	Chloride, 24 HR, U	43128-8

Result ID	Test Result Name	Result LOINC® Value
CL24H	Chloride, 24 HR, U	2079-2
TM30	Collection Duration	13362-9
VL28	Urine Volume	3167-4