Test Definition: KS

Potassium, Serum

Overview

Useful For
Evaluation of electrolyte balance, cardiac arrhythmia, muscular weakness, hepatic encephalopathy, and renal failure

Method Name
Indirect Potentiometry

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
Submission Container/Tube: Plastic vial
Specimen Volume: 0.5 mL
Collection Instructions:
1. Serum gel tubes should be centrifuged within 2 hours of collection.
2. Red-top tubes should be centrifuged, and the serum aliquoted into a plastic vial within 2 hours of collection.

Forms
If not ordering electronically, complete, print, and send 1 of the following forms with the specimen:
-Kidney Transplant Test Request
-Renal Diagnostics Test Request (T830)

Specimen Minimum Volume
0.25 mL

Reject Due To

Gross hemolysis	Reject
Gross lipemia	OK

Specimen Stability Information

Specimen Type	Temperature	Time	Special Container
Serum	Refrigerated	48 hours	

Clinical & Interpretive

Clinical Information

Potassium is the major cation of the intracellular fluid. Disturbance of potassium homeostasis has serious consequences. Decreases in extracellular potassium are characterized by muscle weakness, irritability, and eventual paralysis. Cardiac effects include tachycardia, other cardiac conduction abnormalities that are apparent by electrocardiographic examination, and eventual cardiac arrest.

Hypokalemia (low potassium) is common in vomiting, diarrhea, alcoholism, and folic acid deficiency. Additionally, more than 90% of hypertensive patients with aldosteronism have hypokalemia.

Abnormally high extracellular potassium levels produce symptoms of mental confusion; weakness, numbness, and tingling of the extremities; weakness of the respiratory muscles; flaccid paralysis of the extremities; slowed heart rate; and eventually peripheral vascular collapse and cardiac arrest. Hyperkalemia may be seen in end-stage renal failure, hemolysis, trauma, Addison disease, metabolic acidosis, acute starvation, dehydration, and with rapid potassium infusion.

Potassium should be monitored during treatment of many conditions but especially in diabetic ketoacidosis and any intravenous therapy for fluid replacement.

Reference Values

<1 year: not established
> or =1 year: 3.6-5.2 mmol/L

Interpretation

Potassium levels below 3.0 mmol/L are associated with marked neuromuscular symptoms and are evidence of a critical degree of intracellular depletion. Potassium levels below 2.5 mmol/L are potentially life-threatening.

High potassium can be an acute medical emergency, particularly if the potassium increases over a short period of time. At values above 6.0 mmol/L, symptoms are typically apparent. Potassium levels above 6.0 mmol/L are potentially lifethreatening. Levels above 10.0 mmol/L are, in most cases, fatal.

Cautions

No significant cautionary statements

Clinical Reference

Tietz Textbook of Clinical Chemistry. Fourth edition. Edited by CA Burtis, ER Ashwood, DE Bruns. WB Saunders Company, Philadelphia, 2006;27:984-987; 2006;46:1754-1757

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

Same day/1 to 2 days

Specimen Retention Time

1 week

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

84132

LOINC® Information

Test ID	Test Order Name	Order LOINC® Value

KS	Potassium, S	2823-3

Result ID	Test Result Name	Result LOINC® Value
KS	Potassium, S	2823-3