MAYO CLINIC LABORATORIES

Test Definition: QUIN

Quinidine, Serum

Overview

Useful For

Assessing and adjusting quinidine dosage for optimal therapeutic level

Assessing quinidine toxicity

Method Name

Kinetic Interaction of Microparticles in Solution (KIMS)

NY State Available

Yes

Specimen

Specimen Type

Serum Red

Specimen Required

Supplies: Sarstedt Aliquot Tube, 5 mL (T914)
Collection Container/Tube: Red top (serum gel/SST are **not** acceptable)
Submission Container/Tube: Plastic vial
Specimen Volume: 0.5 mL
Collection Instructions: Within 2 hours of collection, centrifuge and aliquot serum into a plastic vial.

Forms

If not ordering electronically, complete, print, and send 1 of the following forms with the specimen:
-Cardiovascular Test Request (T724)
-Therapeutics Test Request (T831)

Specimen Minimum Volume

0.25 mL

Reject Due To

Gross hemolysis	Reject

Specimen Stability Information

Specimen Type	Temperature	Time	Special Container

Serum Red	Refrigerated (preferred)	14 days	
	Ambient	14 days	
	Frozen	28 days	

Clinical & Interpretive

Clinical Information

Quinidine is indicated for atrial fibrillation and flutter, and life-threatening ventricular arrhythmia. Optimal serum concentrations are in the range of 2.0 to 5.0 mcg/mL, with toxicity apparent at levels of 6.0 mcg/mL or higher. Symptoms of toxicity (cinchonism) include tinnitus, light-headedness, premature ventricular contractions, and atrioventricular block. Gastrointestinal distress is a frequent side effect that becomes more severe and is associated with nausea and vomiting at higher drug concentrations.

The half-life of quinidine is 6 to 8 hours. Physiologic processes that generally reduce hepatic metabolism and renal clearance increase serum quinidine levels, while comedication with cytochrome p450 (CYP)-enzyme inducers enhances clearance and results in lower blood concentrations.

Reference Values

Therapeutic: 2.0-5.0 mcg/mL
Critical value: > or =6.0 mcg/mL

Interpretation

Optimal response to quinidine occurs when the serum level is between 2.0 to 5.0 mcg/mL.

Cautions

No significant cautionary statements

Clinical Reference

1. Milone MC, Shaw LM. Therapeutic drugs and their management. In: Rifai N, Chiu RWK, Young I, Burnham C-AD, Wittwer CT, eds. Tietz Textbook of Laboratory Medicine. 7th ed. Elsevier; 2023:420-453.e9.
2. Brunton LL, Hilal-Dandan R, Knollmann BC, eds. Goodman and Gilman's: The Pharmacological Basis of Therapeutics. McGraw-Hill; 2018

Performance

Method Description

Kinetic interaction of microparticles in solution as measured by changes in light transmission. The assay is a homogeneous immunoassay based on the principle of measuring changes in scattered light or absorbance which result when activated microparticles aggregate. The microparticles are coated with quinidine and rapidly aggregate in the presence of a quinidine antibody solution. When a sample containing quinidine is introduced, the aggregation reaction is partially inhibited, slowing the rate of the aggregation process. Antibody bound to sample drug is no longer available to promote microparticle aggregation, and subsequent particle lattice formation is inhibited. Thus, a classic inhibition curve with respect to quinidine concentration is obtained, with the maximum rate of aggregation at the lowest quinidine

concentration. By monitoring the change in scattered light or absorbance, a concentration-dependent curve is obtained.(Package insert: Quinidine reagent. Roche Diagnostics; 08/2015)

PDF Report
No

Day(s) Performed
Monday through Saturday

Report Available
Same day/1 to 2 days

Specimen Retention Time
2 weeks

Performing Laboratory Location
Mayo Clinic Laboratories - Rochester Superior Drive

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 modified from the manufacturer's instructions. Its performance characteristics were determined by Mayo Clinic in a manner consistent with CLIA requirements. This test has not been cleared or approved by the US Food and Drug Administration.

CPT Code Information
80194

LOINC® Information

Test ID	Test Order Name	Order LOINC® Value
QUIN	Quinidine, S	6694-4

Result ID	Test Result Name	Result LOINC® Value
8302	Quinidine, S	6694-4