

## 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 a [Therapeutics Test Request](#) (T831) with the specimen.

### Specimen Minimum Volume

0.25 mL

### Reject Due To

|                 |        |
|-----------------|--------|
| Gross hemolysis | Reject |
|-----------------|--------|

### Specimen Stability Information

| Specimen Type | Temperature              | Time    | Special Container |
|---------------|--------------------------|---------|-------------------|
| Serum Red     | Ambient                  | 14 days |                   |
|               | Refrigerated (preferred) | 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**

Rochester

**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              |