MAYO CLINIC LABORATORIES

Test Definition: SALCA

Salicylate, S

Overview

Useful For

Assessing toxicity

This test is **not useful** for assessing low-dose aspirin therapy

Method Name

Photometric

NY State Available

Yes

Specimen

Specimen Type

Serum

Specimen Required

Container/Tube:

Preferred: Serum gel

Acceptable: Red top

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 aliquoted within 2 hours of collection.

Reject Due To

Gross hemolysis	Reject

Specimen Minimum Volume

0.25 mL

Specimen Stability Information

Specimen Type	Temperature	Time	Special Container
Serum	Refrigerated (preferred)	7 days	
	Frozen	28 days	
	Ambient		

Clinical & Interpretive

Clinical Information

Therapeutic salicylates include, among others, salicylic acid, sodium salicylate, methyl salicylate (oil of wintergreen), and acetylsalicylic acid (aspirin).

Aspirin is an analgesic, antipyretic, anti-inflammatory drug contained in a large number of preparations. Aspirin is rapidly hydrolyzed by hepatic and blood esterases to the pharmacologically active intermediate, salicylic acid, which has a dose-dependent serum half-life ranging from 3 to 20 hours.

Stimulation of the respiratory center in the central nervous system and uncoupling of oxidative phosphorylation are direct effects of salicylate that lead to many of the toxic symptoms observed in overdose situations.

Symptoms of salicylate toxicity can include nausea, vomiting, tinnitus, headache, hyperpnea, confusion, hyperthermia, slurred speech, and convulsions. Acid-base disturbances such as compensated respiratory alkalosis (mild toxicity) and metabolic acidosis with increased anion gap (severe toxicity) are commonplace.

Reference Values

Therapeutic: <30.0 mg/dL

Critical value: > or =50.0 mg/dL

Interpretation

Therapeutic concentrations for antipyretic/analgesic are 3.0 to 10.0 mg/dL, while concentrations between 1.5 and 30 mg/dL are for anti-inflammatory effect and treatment of rheumatic fever.

Toxic concentrations are 50.0 mg/dL or higher.

Cautions

This test is not intended for use with low-dose aspirin therapy. Most patients on low daily doses of aspirin for cardiovascular prophylaxis will have serum concentrations near or below the lower limit of the analytical range.

Clinical Reference

1. Done AK: Aspirin overdosage: incidence, diagnosis, and management. Pediatrics 1978;62:890-897

2. Medical Toxicology, Third edition, Edited by RC Dart. 2004 pp 1811

Performance

Method Description

This determination depends upon the conversion of salicylate in the presence of the reduced form of nicotinamide adenine dinucleotide (NADH) by salicylate hydroxylase to catechol and nicotinamide adenine dinucleotide (NAD). The concomitant conversion of NADH to NAD is measured by the decrease in absorbance at 340 nm. The decrease is proportional to the concentration of salicylate present in the sample.(Package insert: Roche SALI reagent, Roche Diagnostics Corp, Indianapolis, IN)

PDF Report

No

Specimen Retention Time

1 week

Performing Laboratory Location

Rochester

Fees & Codes

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

80179

LOINC® Information

Test ID	Test Order Name	Order LOINC Value
SALCA	Salicylate, S	4024-6

Result ID	Reporting Name	LOINC®
SALCA	Salicylate, S	4024-6