MAYO CLINIC LABORATORIES

Test Definition: SBWB

Antimony, Blood

Overview

Useful For

Determining antimony toxicity

Special Instructions

- Metals Analysis Specimen Collection and Transport

Method Name

Inductively Coupled Plasma-Mass Spectrometry (ICP-MS)

NY State Available

Yes

Specimen

Specimen Type

Whole blood

Specimen Required

Patient Preparation: High concentrations of gadolinium and iodine are known to interfere with most metal tests. If either gadolinium- or iodine-containing contrast media has been administered, a specimen should not be collected for 96 hours.

Supplies: Greiner Bio-One VACUETTE TUBE 6 mL NH Trace Elements Sodium Heparin tube (T819)

Container/Tube: Greiner Bio-One Vacuette Tube 6 mL NH Trace Elements Sodium Heparin tube for blood is required. Becton-Dickinson (BD) royal blue-top tubes are **not acceptable** for this testing.

Specimen Volume: 0.8 mL

Collection Instructions:

1. See Metals Analysis Specimen Collection and Transport for complete instructions.
2. Send whole blood specimen in original tube. **Do not aliquot**.

Specimen Minimum Volume

0.25 mL

Reject Due To

Gross hemolysis	OK
Gross lipemia	OK
Gross icterus	OK

Specimen Stability Information

Specimen Type	Temperature	Time	Special Container
Whole blood	Refrigerated	7 days	

Clinical & Interpretive

Clinical Information

Antimony is a silvery white metal that is used in alloys for lead batteries, solder, sheet metal, bearings, castings, ammunition, and pewter. It is also used for pigments, abrasives, flame-proofing fabrics, and in medications (ie, sodium stibogluconate [Pentostam], which is used to treat cutaneous leishmaniasis).(1) Antimony typically enters the environment during mining, processing of ores, emissions from coal-burning power plants, and production of alloys. Exposure to antimony can occur through inhalation, ingestion, or dermal contact with soil, water, foods, or medications that contain it. In the workplace, exposure is usually via inhalation. OSHA has set a limit of 0.5 mg/m(3) of antimony in workroom air to protect workers during an 8-hour work shift (40-hour workweek).(2)

Absorption of antimony through the lungs may take days to weeks. Absorption of antimony from ingestion typically enters the blood within a few hours.(2) The amount and form of the antimony affects how much is absorbed. Once in the blood, antimony is distributed to the liver, lungs, intestines, and spleen. Elimination is primarily through the urine, occurring over several weeks. The half-life varies depending on the chemical form. Trivalent antimony is primarily bound to erythrocytes, while pentavalent antimony is primarily found in plasma, which makes whole blood the preferred specimen to analyze for acute intoxication. Whole blood concentrations in healthy subjects not exposed to antimony averaged 0.7 mcg/L and usually do not exceed 2 mcg/L.(3) In battery plant workers, median blood antimony concentrations of 2.6 mcg/L were found in metal casters and 10 mcg/L in metal formers.(4)

The effects of acute or chronic antimony poisoning are similar to arsenic poisoning and include abdominal pain, dyspnea, nausea, vomiting, dermatitis, and visual disturbances.(1) Additionally, toxicity can include pneumoconiosis, and altered electrocardiograms.(2)

Reference Values

<3 ng/mL (unexposed)
3-10 ng/mL (exposed)

Interpretation

Normal blood concentrations are 0.7-2 ng/mL in the unexposed, and 2.6-10 ng/mL in exposed workers.(3)

Cautions

No significant cautionary statements

Clinical Reference

1. Baselt R: Disposition of Toxic Drugs and Chemicals In Man. 10th ed. Biomedical Publications; 2014
2. Agency for Toxic Substances and Disease Registry: Toxicological profile for antimony and compounds. US Department of Health and Human Services; October 2019. Accessed May 18, 2020. Available at www.atsdr.cdc.gov/toxprofiles/tp23.pdf
3. Gebel T, Claussen K, Dunkelberg H: Human biomonitoring of antimony. Int Arch Occup Environ Health. 1998

May;71(3):221-224
4. Kentner M, Leinemann M, Schaller KH, Weltle D, Lehnert G: External and internal antimony exposure in starter battery production. Int Arch Occup Environ Health. 1995;67(2):119-123
5. Roberts NB, Taylor A, Sodi R: Vitamins and trace elements. Rifai N, Horvath AR, Wittwer CT, eds: Tietz Textbook of Clinical Chemistry and Molecular Diagnostics. 6th ed. Elsevier; 2018:chap 37

Performance

Method Description
The metal of interest is analyzed by inductively coupled plasma mass spectrometry.(Unpublished Mayo method)

PDF Report
No

Day(s) Performed
Wednesday

Report Available
2 to 8 days

Specimen Retention Time
14 days

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 was developed and its performance characteristics determined by Mayo Clinic in a manner consistent with CLIA requirements. It has not been cleared or approved by the US Food and Drug Administration.

CPT Code Information
83018

LOINC® Information

Test ID	Test Order Name	Order LOINC® Value

SBWB	Antimony, B	5578-0

Result ID	Test Result Name	Result LOINC® Value
64273	Antimony, B	5578-0