

Overview

Useful For

Assessment of tissue stores of selenium

Special Instructions

- [Trace Metals Analysis Specimen Collection and Transport](#)

Method Name

Triple-Quadrupole Inductively Coupled Plasma Mass Spectrometry (ICP-MS)

NY State Available

Yes

Specimen

Specimen Type

Whole blood

Ordering Guidance

This test can be used to assess tissue stores of selenium. For routine assessment of selenium deficiency or toxicity, the preferred test is selenium urine.

For assessment of recent intake, order SES / Selenium, Serum.

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: Metal Free B-D Tube (EDTA), 6 mL (T183)

Container/Tube: Royal blue top (EDTA)

Specimen Volume: 0.8 mL

Collection Instructions:

1. See [Trace Metals Analysis Specimen Collection and Transport](#) in Special Instructions for complete instructions.
2. Send specimen in original tube.

Specimen Minimum Volume

0.3 mL

Reject Due To

| | |
|-----------------|----|
| Gross hemolysis | OK |
| Gross lipemia | OK |

| | |
|---------------|--------|
| Gross icterus | OK |
| Microtainer | Reject |

Specimen Stability Information

| Specimen Type | Temperature | Time | Special Container |
|---------------|--------------------------|---------|-------------------|
| Whole blood | Refrigerated (preferred) | 28 days | |
| | Ambient | 28 days | |
| | Frozen | 28 days | |

Clinical and Interpretive

Clinical Information

Selenium is a naturally occurring, solid substance that is widely but unevenly distributed in the earth's crust. Selenium and its compounds are used in some photographic devices, gun bluing, plastics, paints, anti-dandruff shampoos, vitamin and mineral supplements, fungicides, and certain types of glass. Selenium is also used to prepare drugs and as a nutritional feed supplement for poultry and livestock. It is an essential element for humans and animals.

People are exposed to low levels of selenium daily through food, water, and air. Plasma and serum typically contain approximately 75% of the selenium measured in whole blood. Selenium whole blood concentrations can be used to assess tissue stores. For routine assessment of selenium deficiency or toxicity, the preferred test is selenium urine.

Reference Values

0-17 years: not established

> or =18 years: 150-241 ng/mL

Interpretation

Ultimately, any metal ion concentration value needs to be interpreted in relation to the overall clinical scenario including symptoms, physical findings, and other diagnostic results when determining further actions.

Cautions

No significant cautionary statements

Clinical Reference

1. US Department of Health and Human Services: Toxicological profile for selenium. HHS: Agency for Toxic Substances and Disease Registry; 2003. Accessed July 30, 2021. Available at www.atsdr.cdc.gov/toxprofiles/tp92.pdf

2. Rifai N, Horwath AR, Wittwer CT: Tietz Textbook of Clinical Chemistry and Molecular Diagnostics. 6th ed. Elsevier; 2018

Performance

Method Description

Selenium in whole blood is analyzed by an inductively coupled plasma-triple quadrupole mass spectrometer in mass shift mode using oxygen as a reaction gas, gallium as an internal standard, and a salt and urea matrix calibration. The (6)Li isotope is used as a marker analyte. (Unpublished Mayo method)

PDF Report

No

Day(s) Performed

Monday

Report Available

1 to 7 days

Specimen Retention Time

14 days

Performing Laboratory Location

Rochester

Fees and 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 Regional Manager. 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. This test has not been cleared or approved by the US Food and Drug Administration.

CPT Code Information

84255

LOINC® Information

| Test ID | Test Order Name | Order LOINC Value |
|---------|-----------------|-------------------|
| SEWB | Selenium, B | 5722-4 |

| Result ID | Test Result Name | Result LOINC Value |
|-----------|------------------|--------------------|
| 65600 | Selenium, B | 5722-4 |