
Lab Dept: Chemistry

Test Name: CHROMIUM

General Information

Lab Order Codes: CHRМ

Synonyms: Chromium, serum; Cr

CPT Codes: 82495 - Chromium

Test Includes: Serum chromium result measured in ng/mL.

Logistics

Test Indications: Useful for detecting exposure to chromium, monitoring nutritional supplementation levels, clinical trials, monitoring metallic prosthetic implant wear.

Lab Testing Sections: Chemistry - Sendouts

Referred to: Mayo Medical Laboratories (Test# 8638/CRS)

Phone Numbers: MIN Lab: 612-813-6280

STP Lab: 651-220-6550

Test Availability: Daily, 24 hours

Turnaround Time: 1 - 4 days

Special Instructions: Obtain special syringe/tube from the laboratory. See [Container, Collection](#)

Specimen

Specimen Type: Blood

Container: Royal Blue top, Trace element tube (Mayo Supply T184)

Draw Volume: 4.8 mL (Minimum: 1.2 mL) blood

Processed Volume: 1.6 mL (Minimum: 0.4 mL) serum

Collection: Routine venipuncture

Special Processing: Lab Staff: Allow specimen to clot in the syringe 30 minutes. To prevent contamination, **Do Not** ream the specimen with a wooden stick. Centrifuge sample. To prevent contamination **Do Not** transfer the specimen with a pipette. Pour off serum into a 7 mL Metal-Free screw-capped polypropylene tube. Serum aliquot is stored refrigerated. Forward promptly.

Patient Preparation: None

Sample Rejection: Mislabeled or unlabeled specimens; grossly icteric

Interpretive

Reference Range: <0.3 ng/mL

When collected by a phlebotomist experienced in ultra clean collection technique and handled according to the instructions, the normal concentration of chromium in serum to be <0.3 ng/mL. However, the majority of specimens submitted for analysis from normal, unexposed individuals contain 0.3 – 0.9 ng/mL of chromium. Commercial evacuated blood collection tubes yield serum containing 2.0 – 5.0 ng/mL chromium.

Critical Values: N/A

Limitations: Normal specimens have extremely low levels of Cr; therefore, elevated results could easily be a result of external contamination. Precautions must be taken to ensure the specimen is not contaminated. Metal-free serum collection procedures must be followed and centrifuged serum must be aliquoted into an acid washed Mayo metal free vial. Specimens collected using an anticoagulant are unacceptable, due to trace amounts of Cr found in anticoagulants.

High concentrations of gadolinium and iodide are known to interfere with most metals tests. If either gadolinium or iodide-containing contrast media has been administered a specimen can not be collected for 48 hours.

Methodology: Dynamic Reaction Cell-Inductivity Coupled Plasma-Mass Spectrometry (DRC-ICP-MS)

References: [Mayo Medical Laboratories Web Page](#) January 2013

Updates: 12/15/05: Method update at MML, previously listed as Graphite Furnace Atomic Absorption Spectrometry.
11/4/2008: Units change from ug/L to ng/mL.