Lab Dept: Chemistry

Test Name: ALUMINUM

General Information

Lab Order Codes:	ALM
Synonyms:	Al, Serum
CPT Codes:	82108 - Aluminum
Test Includes:	Serum aluminum level in ng/mL

Logistics

Test Indications:	Preferred monitoring for aluminum toxicity in patients undergoing dialysis. Preferred testing for routine aluminum screening. Monitoring metallic prosthetic implant wear.
Lab Testing Sections:	Chemistry - Sendouts
Referred to:	Mayo Medical Laboratories (Test: AL)
Phone Numbers:	MIN Lab: 612-813-6280 STP Lab: 651-220-6550
Test Availability:	Daily, 24 hours
Turnaround Time:	1 - 4 days, test set up Tuesday and Friday
Special Instructions:	Special tube required. Contact the laboratory. See Container

Specimen

Specimen Type:	Blood
Container:	**Dark Blue top with Red Stripe** [Metal Free Navy (No additive) tube] – available from the laboratory) This special tube is required for this testing.
Draw Volume:	6 mL (Minimum: 1.5 mL) blood
Processed Volume:	2 mL (Minimum: 0.5 mL) serum

Collection:	Routine venipuncture
Special Processing:	Lab Staff: Allow specimen to clot for 30 minutes, centrifuge and separate serum. Remove stopper and carefully pour the serum into a 7.0 mL Mayo metal-free, screw-capped, polypropylene vial, avoiding the transfer of any cellular products. Do not insert a pipette into the serum to accomplish the transfer. Do not ream the specimen with a wooden stick. Close the cap. Refrigerate specimen. Forward promptly.
Patient Preparation:	None
Sample Rejection:	Mislabeled or unlabeled specimens; specimen drawn into the wrong collection container

Interpretive

Reference Range:	All ages: 0 – 6 ng/mL Dialysis patients: <60 ng/mL Note: Reference values for serum do not apply to plasma specimens.
Critical Values:	N/A
Limitations:	Failure to pay attention to proper specimen collection procedures can cause abnormal results due to specimen contamination, which can lead to misinterpretation and misdiagnosis: ● Special evacuated blood collection tubes are required for aluminum testing. These tubes are readily available (Mayo Supply T713) and should always be used. ● Most common evacuated blood collection devices used have stoppers that are comprised of aluminum-silicate. Simple puncture of the rubber stopper for blood collection is sufficient to contaminate the specimen with aluminum. Typically, blood drawn in standard evacuated blood tubes will be contaminated by 20 to 60 ng/mL aluminum. ● The use of wooden applicator sticks or pipette tips during specimen aliquoting can cause abnormal results due to contamination. High concentrations of gadolinium and iodine are known to interfere with most metals tests. If either gadolinium or iodine containing contrast media has been administered, a specimen cannot be collected for 96 hours.
Methodology:	Dynamic Reaction Cell-Inductively Coupled Plasma-Mass Spectrometry (DRC-ICP-MS)
References:	Mayo Medical Laboratories Web Page October 2013

Updates:	7/12/2005: Method changed at MML, previously listed as Flameless Atomic Absorption Spectrometry. 4/15/2013: Days performed update. 10/28/2013: Method update, ref range update, tube type update. 2/14/2017: Tube update