Lab Dept: Chemistry

Test Name: ZINC, BLOOD

General Information

Lab Order Codes: ZB

Synonyms: Zn

CPT Codes: 84630 - Zinc

Test Includes: Blood zinc level reported in mcg/mL.

Logistics

Test Indications: Useful in detecting zinc deficiency.

Zinc is an essential element; it is a critical co-factor for carbonic anhydrase, alkaline phosphatase, RNA and DNA polymerases, alcohol dehydrogenase, and many other physiologically important proteins. The peptidases, kinases, and phosphorylases are most sensitive to zinc depletion. Zinc is a key element required for active wound healing.

Lab Testing Sections: Chemistry - Sendouts

Referred to: Mayo Medical Laboratories (MML Test: ZNS)

Phone Numbers: MIN Lab: 612-813-6280

STP Lab: 651-220-6550

Test Availability: Daily, 24 hours

Turnaround Time: 1 - 3 days, test set up Monday-Saturday

Special Instructions: See Container and Collection and Patient Preparation for special requirements.

Specimen

Specimen Type: Blood

Container: **Dark Blue top with Red Stripe** [Metal Free Navy (No additive) tube] – available from the laboratory)

Draw Volume: 2.4 mL (Minimum: 1.5 mL) blood

Processed Volume: 0.8 mL (Minimum: 0.2 mL) serum

Note: Submission of the minimum volume does not allow for repeat analysis.

Collection: Use stainless steel needle or butterfly vacutainer collection. Collect in a royal blue top tube (See Container). Avoid hemolysis.

Special Processing: Lab Staff: Blood specimens for serum testing should be collected in the Dark blue-top Trace Element (No additive) Blood Collection Tube.

1. Allow the specimen to clot for 30 minutes; then centrifuge the specimen to separate serum from the cellular fraction within 4 hours of specimen collection.

2. Remove the stopper and carefully pour 0.4 mL serum into a 7.0 mL, Mayo metal free, screw-capped, polypropylene vial (Mayo Supply T173), avoiding transfer of the cellular components of blood. **Do Not** insert a pipet into the serum to accomplish transfer, and **Do Not** ream the specimen with a wooden stick to assist with serum transfer.

3. Place the cap on the polypropylene vial tightly, attach a specimen label and send specimen to the laboratory at refrigerated or frozen temperature.

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

Sample Rejection: Not collected in a metal free tube/syringe; any sign of hemolysis; gross lipemia; grossly icteric; mislabeled or unlabeled specimens; specimens other than serum

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Interpretive

Reference Range:

Age:	Reference Range (mcg/mL):
0 – 10 yrs.	0.60 – 1.20 mcg/mL
≥11 yrs.	0.66 – 1.10 mcg/mL

Burn patients with acrodermatitis may have zinc as low as 0.4 mcg/mL; these patients respond quickly to zinc supplementation.

Elevated serum zinc is of minimal clinical interest.

Critical Values: N/A

Limitations:	Hemolyzed specimens will cause false elevation of serum zinc levels. It is essential that the specimen is collected following trace metals collection procedures. High concentrations of gadolinium, iodine, and barium are known to interfere with most metals tests. If either gadolinium, iodine, or barium-containing contrast media has been administered, a specimen should not be collected for 96 hours.
Methodology:	Dynamic Reaction Cell DRC) II Inductively Coupled Plasma Mass Spectrophotometry (DRC-ICP-MS)
References:	Mayo Medical Laboratories Web Page August 2013
Updates:	10/24/2006: Specimen volume change, previously listed as 5.0 mL. 3/24/2008: Metal-free syringes are no longer available for specimen collection. 11/11/2008: Reference range previously reported as 0.66 - 1.10 ug/mL. Pediatric ranges have now been established. 4/6/2010: Method change; previously listed as Inductively Coupled Plasma (ICP) Emission Spectroscopy 11/23/2016: Update minimum draw volume due to short samples. 2/14/2017: Tube update.