
Test Code 5311 (ARUP # 0020605) Zinc Protoporphyrin (ZPP), Whole Blood ZPP

Methodology: Hematofluorometry
Performed: Referral – ARUP (Monday – Friday)
Reported: 2 – 5 days

Specimen Required: **Collect:** One 7 mL dark blue (EDTA) or one 5 mL lavender (EDTA).
 Transport: 1 mL whole blood (dark blue or lavender, EDTA) at 2-8°C. (Min: 0.5 mL)
 Pediatric Minimum/Transport (single test with no repeat): 0.2 mL whole blood (dark blue or lavender, EDTA) at 2-8°C.
 Remarks: Use dark blue (EDTA) tube when also testing for lead; specimen should be tested for lead **FIRST** to avoid potential contamination problems. Protect from strong light.
 Unacceptable Conditions: Frozen, hemolyzed or clotted samples.
 Stability: Ambient: Unacceptable; Refrigerated: 5 weeks; Frozen: Unacceptable

Reference Interval: 0 – 69 µmol ZPP/mol heme

Note: Elevated ZPP results are seen in both early and late iron deficiency, the anemia of chronic disease, and in chronic lead poisoning (typically when blood lead is greater than 25 µg/dL). Elevated protoporphyrin (as in erythropoietic protoporphyria) can also increase the ZPP concentration. Causes for false elevations include markedly elevated bilirubin or riboflavin, and hemolyzed, clotted or improperly aliquoted specimens.

A more specific test for free protoporphyrin is Porphyrins, Serum Total (CPT Code 84311). Erythrocyte Porphyrins (EP), Whole Blood (CPT Code 84202) can also be considered.

CPT Code: 84202

Misc Test Zinc Protoporphyrin (ZPP), Whole Blood Industrial ZPP IND

Methodology: Hematofluorometry
Performed: Referral – ARUP (Monday – Friday)
Reported: 2 – 5 days

Specimen Required: **Collect:** One 7 mL dark blue (EDTA).
 Transport: 1 mL whole blood (dark blue, EDTA) at 2-8°C. (Min: 0.5 mL)
 Pediatric Minimum/Transport (single test with no repeat): 0.2 mL whole blood (dark blue, EDTA) at 2-8°C.
 Remarks: Specimen should be tested for lead **FIRST** to avoid potential contamination problems. Protect from strong light.
 Unacceptable Conditions: Frozen, hemolyzed or clotted samples.
 Stability: Ambient: 30 hours; Refrigerated: 5 weeks; Frozen: Unacceptable

Reference Interval:

Components	Reference Interval
Zinc Protoporphyrin (ZPP), to Heme Ratio	0 – 69 µmol ZPP/mol heme
Zinc Protoporphyrin (ZPP), Whole Blood	0 – 40 µg/dL

Interpretive Data: For occupational exposure to lead, OSHA require ZPP whole blood testing reported in units of µg/dL. For adults, conversion of ZPP units of µg/dL assumes a hematocrit of 45%

Note: Elevated ZPP results are seen in both early and late iron deficiency, the anemia of chronic disease, erythropoietic protoporphyria, and chronic lead poisoning. Causes for false elevations include markedly elevated bilirubin or riboflavin, hemolyzed, clotted or improperly aliquoted specimens.

CPT Code: 84202

Test Code 5395 (ARUP #0020097)

Zinc, Serum

ZINC

Methodology: Inductively Coupled Plasma/Mass Spectrometry
Performed: Referral – ARUP (Monday - Friday)
Reported: 2 – 5 days

Specimen Required:

Collect: One 7 mL dark blue (no additives).

Transport: 2 mL serum (dark blue, no additives) at 2-8°C. (Min: 0.7 mL)

Pediatric Minimum/Transport (single test with no repeat): 0.5 mL serum (dark blue, no additives) at 2-8°C.

Remarks: Centrifuge and pour off serum into a plastic vial ASAP. **Avoid the use of glass.** Hemolysis will produce falsely elevated zinc results.

Unacceptable Conditions: Samples drawn in any tube other than dark blue stopper will cause false elevations of zinc results.

Stability: If the sample is drawn and stored in the appropriate container, the trace element values do not change with time.

Reference Interval:

Age	Male	Female
0 – 16 years	66 – 144 µg/dL	66 – 144 µg/dL
17 years & over	75 – 291 µg/dL	65 – 256 µg/dL

CPT Code: 84630

ZPP, Whole Blood

Refer to Zinc Protoporphyrin (ZPP), Whole Blood.

ZPP, Whole Blood, Industrial

Refer to Zinc Protoporphyrin (ZPP), Whole Blood Industrial.

Test Code 3461

Culture – Dermatophyte

Methodology: Standard reference procedures for dermatophyte culture and identification

Performed: Sunday – Saturday

Reported: Preliminary: As soon as positive detected

Final: Negative at 4 weeks

Specimen Required: **Collect:** Skin, hair, nails

Transport: Sterile, leak-proof container at 2-30 C

Remarks: Culture specifically designed for isolation of Trichophyton, Microsporum and Epidermophyton sp.

Unacceptable Conditions: Non-sterile or leaking container

Stability: Ambient: 1 week; Refrigerated: 1 week; Frozen: Unacceptable

Reference Interval: No fungus isolated

Note: Mold identification is billed separately from cultures. KOH prep (3329) must be ordered separately if needed.

CPT Code: 87101 - culture
87220 – KOH prep

Test Code 3496**Culture – Yeast**

Methodology: Standard reference procedures for yeast culture and identification.
Performed: Sunday – Saturday
Reported: Preliminary: As soon as positive detected
Final: Negative at 1 week

Specimen Required: **Collect:** Urine, vaginal, throat or fecal specimen. **Specimen source is required.**
Transport: Specimen in a sterile, leak-proof container at 2-8 C
Unacceptable Conditions: Non-sterile or leaking container
Stability: Ambient: 1 week; Refrigerated: 1 week; Frozen: Unacceptable

Reference Interval: No Yeast isolated
Identification performed on all isolates from sterile body sites. Limited yeast identification is performed on isolates from non-sterile sites.

Note: Yeast identification is billed separately from culture.

CPT Code: 87102

Test Code 6315**Cyclic Citrullinated Peptide Antibody, IgG****CCP AB,IGG**

Methodology: Enzyme-Linked Immunosorbent Assay
Performed: Variable
Reported: 5-7 days

Specimen Required: **Collect:** One gold top or plain red. Plasma (EDTA, Lithium heparin, sodium citrate) specimens are also acceptable.
Transport: 1 mL serum at 2-8°C. (Min: 0.5 mL)
Remarks: Centrifuge and separate serum from cells ASAP.
Unacceptable Conditions: severely hemolyzed or turbid samples.
Stability: After separation from clot: Ambient; Unstable; Refrigerated: 4 weeks; Frozen 1 year (avoid repeated freeze/thaw cycles)

Reference Interval:
Less than or equal to 5 U/ML.....Negative
5 U/ML or greater.....Positive

Interpretive Data: Approximately 70% of patients with Rheumatoid Arthritis are positive for CCP IgG Antibody, while only 2% of random blood donors and disease control are positive. The diagnostic value of CCP antibodies in Juvenile Rheumatoid Arthritis has not been determined.

CPT Code: 86200
