
Lab Dept: Chemistry

Test Name: OXYGEN DISSOCIATION P50, RBC

General Information

Lab Order Codes: O2D

Synonyms: Oxygen Dissociation, p50, Erythrocytes; Hemoglobin Oxygen Affinity; Oxyhemoglobin Dissociation; O2 Affinity

CPT Codes: 82820 – Hemoglobin - oxygen affinity

Test Includes: Oxygen dissociation, p50, erythrocytes reported in mm Hg.

Logistics

Test Indications: Useful for identifying hemoglobin variants associated with polycythemias or cyanotic and hypoxic disorders.

Lab Testing Sections: Chemistry - Sendouts

Referred to: Mayo Medical Laboratories (Mayo Test: P50B)

Phone Numbers: MIN Lab: 612-813-6280

STP Lab: 651-220-6550

Test Availability: Daily, 24 hours

Turnaround Time: 1 - 7 days, daily

Special Instructions: Specimen must arrive at Mayo within 72 hours of collection. See [Collection](#) below. Obtain special tube(s) from the laboratory.

Specimen

Specimen Type: Whole blood

Container: Green top (Na Heparin) tube, available from lab

Draw Volume: 5 mL (Minimum:1 mL) blood for both patient and control specimens

Processed Volume: Same as Draw Volume

Collection:	Routine venipuncture Note: Lab must also send a control specimen from a normal, unrelated person who is a non-smoker. Refrigerate. Label clearly on outermost label " Normal Control ".
Special Processing:	Lab Staff: * Do Not centrifuge, refrigerate immediately *Send both patient and control samples in their original collection container. Do Not transfer to other tubes. *Make sure each are labeled appropriately distinguishing the patient and the control samples. *Rubberband the patient and control samples together. *Store and ship at refrigerated temperatures. * Must arrive at Mayo within 72 hours of collection. Specimens must not be frozen. Forward promptly.
Patient Preparation:	None
Sample Rejection:	Frozen specimens; specimens other than Na heparinized whole blood; mislabeled or unlabeled specimens

Interpretive

Reference Range: Patients: ≥ 12 months: 24 - 30 mm Hg

Note: Reference values have not been established for patients who are < 12 months of age.

Critical Values: N/A

Limitations:

- To ensure valid results, the specimen must not be > 72 hours old.
- The shipping control specimen is required to adequately interpret these cases, as temperature extremes can impact the integrity of the specimen and give falsely altered results.

Resulting cautions:

- P50 results will be reported if the shipping control is normal. The shipping control is necessary for ensuring valid results. If the specimen is compromised, such as during transport, this often results in an abnormal result in both the control and specimen.
- If the shipped control is abnormal and the p50 results are within normal range, the results will be reported; however, a comment will be added to the report indicating that the shipping control was not entirely satisfactory.
- The test will be cancelled if the patient specimen and shipping control are both abnormal.

Methodology: Hemox-Analyzer Measures and Plots O₂ Saturation

References:

[Mayo Medical Laboratories](#) January 2016