MAYO CLINIC LABORATORIES

Test Definition: UNHB

Hemoglobin Stability, Blood (Non-Orderable)

Overview

Useful For

Only orderable as part of a profile or as a reflex. For more information see:
HAEV1 / Hemolytic Anemia Evaluation, Blood
HBEL1 / Hemoglobin Electrophoresis Evaluation, Blood
THEV1 / Thalassemia and Hemoglobinopathy Evaluation, Blood and Serum
REVE2 / Erythrocytosis Evaluation, Blood
MEV1 / Methemoglobinemia Evaluation, Blood

Work-up of congenital hemolytic anemias

Method Name

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-HBEL1 / Hemoglobin Electrophoresis Evaluation, Blood
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-REVE2 / Erythrocytosis Evaluation, Blood
-MEV1 / Methemoglobinemia Evaluation, Blood

Isopropanol and Heat Stability

NY State Available

Yes

Specimen

Specimen Type

Whole Blood EDTA

Specimen Required

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-HBEL1 / Hemoglobin Electrophoresis Evaluation, Blood
-THEV1 / Thalassemia and Hemoglobinopathy Evaluation, Blood and Serum
-REVE2 / Erythrocytosis Evaluation, Blood
-MEV1 / Methemoglobinemia Evaluation, Blood

Specimen Minimum Volume

1 mL

Reject Due To

Gross hemolysis	Reject

Specimen Stability Information

Specimen Type	Temperature	Time	Special Container
Whole Blood EDTA	Refrigerated	7 days	

Clinical & Interpretive

Clinical Information

Unstable hemoglobin disease is rare and may be caused by any of a large number of hemoglobin variants. They are inherited as autosomal dominant traits. The severity of the disease varies according to the hemoglobin variant; there may be no clinical symptoms, or the disease may produce a mild, moderate, or severe hemolytic anemia.

The stained peripheral blood smear shows anisocytosis, poikilocytosis, basophilic stippling, polychromasia, and sometimes, hypochromia. The reticulocyte count may be increased. Splenomegaly and Heinz bodies may also be present.

Reference Values

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-MEV1 / Methemoglobinemia Evaluation, Blood

Normal (reported as normal [stable] or abnormal [unstable])

Interpretation

An abnormal or unstable result is indicative of a hemoglobin variant present. Other confirmatory tests should be performed to identify the hemoglobinopathy (HBEL1 / Hemoglobin Electrophoresis Cascade, Blood).

Cautions

False-positive results will be obtained in blood specimens containing greater than 5% fetal hemoglobin or in specimens greater than 1 week old.

Clinical Reference

1. Hoyer JD, Hoffman DR. The thalassemia and hemoglobinopathy syndromes. In: McClatchey KD, Amin HM, Curry JL, eds. Clinical Laboratory Medicine. 2nd ed. Lippincott Williams and Wilkins; 2002:866-895
2. Benz EJ, Ebert BL. Hemoglobin variants associated with hemolytic anemia, altered oxygen affinity, and methemoglobinemias. In: Hoffman R, Benz EJ, Silberstein LE, et al. eds. Hematology: Basic Principles and Practice. 7th

ed. Elsevier; 2018:608-615
3. Shean RC, Agarwal A, Rets AV. Unstable hemoglobin, a rare but significant cause of hemolytic anemia: Recognition of peripheral smear findings is crucial for diagnosis. Int J Lab Hematol. Published online December 15, 2025. doi:10.1111/ijlh.70043

Performance

Method Description
Unstable hemoglobins precipitate in dilute solutions of isopropanol. Washed erythrocytes are hemolyzed and cleared by centrifugation. Isopropanol is added. The hemolysate is incubated at 37 degrees C for 20 minutes and examined for turbidity. There is no turbidity with normal hemoglobins.(Schmidt RM: Laboratory diagnosis of hemoglobinopathies. In: Bick RL ed. Hematology Clinical and Laboratory Practice. Mosby-Year Book Inc; 1993:327-389; Utsugisawa T, Kanno H. Hemoglobinopathies. Jpn J Transfus Cell Ther. 2022;68(1):3-11; Twumasi S, Opoku A, Ayirebi AA, Serwaa E, Antonio DNM. A Comparative Analysis of Haemoglobinopathy Diagnostic Techniques-The Ghanaian Picture and the Way Forward: A Narrative Review. Health Sci Rep. 2025;8(9):e71223. Published 2025 Sep 9. doi:10.1002/hsr2.71223.)

PDF Report
No

Day(s) Performed
Monday through Friday

Report Available
1 to 4 days

Specimen Retention Time
30 days

Performing Laboratory Location
Mayo Clinic Laboratories - Rochester Main Campus

Fees & Codes

Fees
- Authorized users can sign in to Test Prices for detailed fee information.
- Clients without access to Test Prices can contact Customer Service 24 hours a day, seven days a week.
- Prospective clients should contact their account representative. For assistance, contact Customer Service.

Test Classification
This test was developed and its performance characteristics determined by Mayo Clinic in a manner consistent with CLIA requirements. It has not been cleared or approved by the US Food and Drug Administration.

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CPT Code Information

83068

LOINC® Information

Test ID	Test Order Name	Order LOINC® Value
UNHB	Hb Stability, B	4639-1

Result ID	Test Result Name	Result LOINC® Value
9095	Hb Stability, B	4639-1