Overview

Useful For
Screening for presence or absence of hemoglobin S (sickle cell disease)

Note: for quantification of hemoglobin S order HBELEC / Hemoglobin Electrophoresis Cascade, Blood

Method Name
HemoglobinSSolubility

NY State Available
Yes

Specimen

Specimen Type
Whole Blood EDTA

Necessary Information
1. Patient's age is required.
2. Include recent transfusion information.

Specimen Required

Container/Tube:
Preferred: Lavender top (EDTA)
Acceptable: ACD (solution B), heparin

Specimen Volume: 1 mL

Forms
If not ordering electronically, complete, print, and send a Benign Hematology Test Request Form (T755) with the specimen.

Specimen Minimum Volume
0.5 mL

Reject Due To

| Gross hemolysis | Reject |

Specimen Stability Information

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<th>Specimen Type</th>
<th>Temperature</th>
<th>Time</th>
<th>Special Container</th>
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<tbody>
<tr>
<td>Whole Blood EDTA</td>
<td>Refrigerated</td>
<td>7 days</td>
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Clinical and Interpretive

Clinical Information
Homozygous hemoglobin S (sickle cell disease) is a serious chronic hemolytic anemia most commonly found in those of African or Middle Eastern descent.

Hemoglobin S is freely soluble when fully oxygenated; when oxygen is removed, polymerization of the abnormal hemoglobin occurs, forming tactoids that are rigid and deformed cells. This leads to sickling of the cells, hemolysis, and many other complications.

Heterozygous hemoglobin S (sickle cell trait) is the most common hemoglobinopathy in the United States. This condition is present in about 8% of African Americans. Usually, hemoglobin S trait exhibits no clinical or hematological effects. A small fraction of people with sickle cell trait have recurrent hematuria.

Reference Values
Negative

Interpretation
A positive result should be followed by a complete hemoglobin evaluation (HBELC / Hemoglobin Electrophoresis Cascade, Blood) to confirm the presence and concentration of hemoglobin S.

Cautions
A positive test is presumptive evidence for hemoglobin (Hb) S (sickle cell disease). However, rare sickling hemoglobins such as Hb C-Harlem (C-Georgetown) and Hb I will also produce a positive result.

This test only detects the presence of Hb S. It cannot differentiate sickle cell trait (heterozygous Hb S) from sickle cell disease (homozygous Hb S), or Hb S in combination with other abnormalities (eg, S/C, S/D, S/G, S/E, S/beta-thalassemia, S/O-Arab, S/New York, and C-Georgetown trait).

The use of packed RBCs instead of whole blood significantly reduces false negatives due to anemia and false positives due to hypergammaglobulinemia (eg, multiple myeloma).

False positives can occur due to large numbers of nucleated RBCs.

False negatives can occur due to an insufficient quantity of Hb S due to age (neonates) or transfusion. Hb S concentrations 15% to 20% or less may give a negative result.

Clinical Reference

Performance

Method Description
Hemoglobin S reduced by dithionite is insoluble in concentrated inorganic buffers, and thus, the solution is so turbid that newsprint cannot be read through a tube containing the hemolysate and reagents. (Fairbanks VF, Klee GG: Biochemical aspects of hematology. In Tietz Textbook of Clinical Chemistry. Third edition. Edited by CA Burtis, ER Ashwood, Philadelphia, WB Saunders Company, 1999, pp 1678-1679)
PDF Report
No

Day(s) and Time(s) Test Performed
Monday through Saturday

Analytic Time
1 day

Maximum Laboratory Time
4 days

Specimen Retention Time
7 days

Performing Laboratory Location
Rochester

Fees and 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 Regional Manager. 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. This test has not been cleared or approved by the U.S. Food and Drug Administration.

CPT Code Information
85660

LOINC® Information

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