Overview

Useful For
Screening for factor XIII deficiency

Method Name
Only orderable as part of a profile. For more information see ALBLD / Bleeding Diathesis Profile, Limited, Plasma.

Clot-Based

NY State Available
Yes

Specimen

Specimen Type
Plasma Na Cit

Specimen Required
Only orderable as part of a profile. For more information see ALBLD / Bleeding Diathesis Profile, Limited, Plasma.

Reject Due To

<table>
<thead>
<tr>
<th>Gross hemolysis</th>
<th>Reject</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross lipemia</td>
<td>Reject</td>
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<tr>
<td>Gross icterus</td>
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</table>

Specimen Stability Information

<table>
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<tr>
<th>Specimen Type</th>
<th>Temperature</th>
<th>Time</th>
<th>Special Container</th>
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<tbody>
<tr>
<td>Plasma Na Cit</td>
<td>Frozen</td>
<td>14 days</td>
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Clinical and Interpretive

Clinical Information
Factor XIII is found in plasma and platelets. Plasma factor XIII consists of 2 A-subunits and 2 B-subunits; platelet factor XIII consists of only 2 A-subunits. After factor XIII is activated by thrombin, it catalyzes the formation of peptide bonds between adjacent molecules of fibrin monomers, thus conferring mechanical and chemical stability to the fibrin clot. Fibrin that is not covalently cross-linked exhibits an increased susceptibility to fibrinolysis.

Congenital factor XIII deficiency is an autosomal recessive bleeding disorder. Homozygous individuals (FXIII <1%) experience soft tissue hemorrhage, hematrhrosis, and hematomas. Typically, affected patients suffer from delayed bleeding occurring 24 to 48 hours after the initial hemostatic response to an injury. In newborns, bleeding from the umbilical stump may occur after separation of the umbilical cord, as well as intracranial bleeding. Poor wound healing and abnormal scar formation is also observed. Heterozygous carriers may be asymptomatic; however, females may
experience recurrent spontaneous abortions.

Acquired factor XIII deficiency is rare and typically occurs as a result of development of autoantibodies. These patients develop adult-onset bleeding.

**Reference Values**

Only orderable as part of a profile. For more information see ALBLD / Bleeding Diathesis Profile, Limited, Plasma.

**Normal**

**Interpretation**

Normally, no clot dissolution is observed after 30 minutes in 1% monochloroacetic acid. Clot dissolution begins once factor XIII levels are reduced to 1% or 2%.

**Cautions**

A normal factor XIII screen does not exclude the possibility of mild heterozygous deficiency of factor XIII.

**Clinical Reference**


**Performance**

**Method Description**

The covalent stabilization of fibrin by thrombin-activated factor XIII (XIIIa) is the final event in the coagulation of blood. Plasma factor XIII (fibrin-stabilizing factor; FSF) zymogen consists of 2 "A" and 2 "B" subunits, the "A" subunits containing an active-center sulfydryl grouping mediating the transamidase activity of the enzyme. The action of thrombin converts fibrinogen to fibrin monomer causing the monomeric molecules to polymerize and be held together by noncovalent hydrogen bonds. These bonds can be broken by 5 M urea or weak acid solutions in the absence of factor XIII. Subsequent to fibrin polymerization by hydrogen bonding, the action of factor XIII results in the formation of covalent bonds that cannot be broken by 5 M urea or weak acid solutions as used in this procedure (1% monochloroacetic acid). Dissolution of a clot by urea or monochloroacetic acid is therefore a qualitative test for factor XIII activity. (Owen CA Jr, Bowie EJW, Thompson JH Jr: Diagnosis of Bleeding Disorders. Second edition. Little, Brown and Company, Boston, MA, 1975; Meijer P, Verbruggen and Spannagi M: Chapter 33: Clotting factors and inhibitors: Assays and Interpretation. In Laboratory Hematology Practice. Edited by K Kottke-Marchant. Wiley Blackwell Publishing, 2012, pp 435-446)

**PDF Report**

No

**Day(s) and Time(s) Test Performed**

Monday through Friday

**Analytic Time**

3 hours

**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
85291

LOINC® Information

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<td>Factor XIII(13),Scrn</td>
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