MAYO CLINIC LABORATORIES

Test Definition: F_12

Coag Factor XII Assay, P

Overview

Useful For

Diagnosing deficiency of coagulation factor XII

Determining cause of prolonged activated partial thromboplastin time

Special Instructions

- Coagulation Guidelines for Specimen Handling and Processing

Method Name

Optical Clot-Based

NY State Available

Yes

Specimen

Specimen Type

Plasma Na Cit

Ordering Guidance

Coagulation testing is highly complex, often requiring the performance of multiple assays and correlation with clinical information. For that reason we suggest ordering Coagulation Consultations.

Necessary Information

If priority specimen, mark request form, give reason, and request a call-back.

Specimen Required

Specimen Type: Platelet-poor plasma

Patient Preparation: Patient must not be receiving Coumadin or heparin therapy.

Collection Container/Tube: Light-blue top (citrate)

Submission Container/Tube: Plastic vial

Specimen Volume: 1 mL

Collection Instructions:

1. Specimen must be collected prior to factor replacement therapy
2. For complete instructions, see Coagulation Guidelines for Specimen Handling and Processing in Special Instructions.
3. Centrifuge, transfer all plasma into a plastic vial, and centrifuge plasma again.
4. Aliquot plasma into a plastic vial, leaving 0.25 mL in the bottom of centrifuged vial.
5. Freeze plasma immediately (no longer than 4 hours after collection) at -20 degrees C or, ideally, < or =-40 degrees C.

Additional Information:

1. Double-centrifuged specimen is critical for accurate results as platelet contamination may cause spurious results.
2. Each coagulation assay requested should have its own vial.

Forms

If not ordering electronically, complete, print, and send a Coagulation Test Request (T753) with the specimen.

Reject Due To

Gross hemolysis	Reject
Gross lipemia	Reject
Gross icterus	Reject

Specimen Minimum Volume

0.5 mL

Specimen Stability Information

Specimen Type	Temperature	Time	Special Container
Plasma Na Cit	Frozen (preferred)	14 days	

Clinical & Interpretive

Clinical Information

Factor XII is synthesized in the liver. Its biological half-life is 40 to 50 hours. Factor XII is a component of the contact activation system and is involved in both intrinsic pathway and fibrinolytic system.

Factor XII deficiency is often discovered when activated partial thromboplastin time is found to be unexpectedly long. The deficiency causes no known bleeding disorder.

An association between severe factor XII deficiency and thrombosis risk has been proposed, but not proven.

Reference Values

Adults: 55-180%

Normal, full-term newborn infants or healthy premature infants may have decreased levels (> or =15% to 20%) which may not reach adult levels for > or =180 days postnatal.*

*See Pediatric Hemostasis References section in Coagulation Guidelines for Specimen Handling and Processingin Special Instructions.

Interpretation

Acquired deficiency is associated with liver disease, nephritic syndrome, and chronic granulocytic leukemia.

Congenital homozygous deficiency: 20% activity

Congenital heterozygous deficiency: 20% to 50% activity

Cautions

Deficiencies of other contact activator proteins (prekallikrein, high molecular weight kininogen) can also cause prolonged activated partial thromboplastin time but do not cause clinical bleeding.

Clinical Reference

Renne T, Schmaier AH, Nickel KF, et al: In vivo roles of factor XII. Blood. 2012 Nov 22;120(22):4296-4303

Performance

Method Description

The factor XII assay is performed on the Instrumentation Laboratory ACL TOP using the activated partial thromboplastin time (APTT) method and a factor-deficient substrate. Patient plasma is combined and incubated with a factor XII-deficient substrate (normal plasma depleted of factor XII by immunoadsorption) and an APTT reagent. After a specified incubation time, calcium is added to trigger the coagulation process in the mixture. Then the time to clot formation is measured optically at a wavelength of 671 nm.(Owen CA Jr, Bowie EJW, Thompson JH Jr: Diagnosis of Bleeding Disorders. 2nd ed. Little, Brown and Company, 1975; Meijer P, Verbruggen HW, Spannagi M: Clotting factors and inhibitors: Assays and Interpretation. In: Kottke-Marchant K, ed. Laboratory Hematology Practice. Wiley Blackwell Publishing; 2012:435-446)

PDF Report

No

Specimen Retention Time

7 days

Performing Laboratory Location

Rochester

Fees & Codes

Test Classification

This test has been modified from the manufacturer's instructions. Its performance characteristics were determined by Mayo Clinic in a manner consistent with CLIA requirements. This test has not been cleared or approved by the US Food and Drug Administration.

CPT Code Information

85280