Test Definition: 5INHE

Factor V Inhib Profile, P

Overview

Useful For

Detection and quantitation of inhibitors against coagulation factor V

This test is **not useful** for the detection of a lupus-like circulating anticoagulant inhibitor, a nonspecific circulating anticoagulant, or other inhibitors that are not specific for coagulation factors.

Testing Algorithm

Testing begins with coagulation factor V activity assay with dilutions to evaluate assay inhibition; if the factor V activity assay is normal or increased, then a technical interpretation will be provided.

If the factor V activity assay is decreased, then an inhibitor screen will be performed at an additional charge to look for specific factor V inhibition and a professional interpretation will be provided. If specific inhibition is apparent, the titer of the inhibitor will be determined.

Special Instructions

- Coagulation Guidelines for Specimen Handling and Processing

Profile Information

Test Id	Reporting Name	Available Separately	Always Performed
5INHT	FV Inhib Profile Tech Interp	No	Yes
FACTV	Coag Factor V Assay, P	Yes	Yes

Reflex Tests

Test Id	Reporting Name	Available Separately	Always Performed
5AINH	FV Inhib Profile Prof Interp	No	No
5BETH	FV Bethesda Units, P	No	No
F5_IS	Factor V Inhib Scrn	No	No

Method Name

Optical Clot-Based

NY State Available

Yes

Specimen

Specimen Type
Plasma Na Cit

Ordering Guidance
This test is for factor V inhibitors only. If the presence or type of inhibitor is unknown, order APROL / Prolonged Clot Time Profile, Plasma, except for when screening studies are needed for patients with known hemophilia A or B.

Shipping Instructions
Send all vials in the same shipping container.

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

Specimen Required
Patient Preparation:

1. Patient must not be receiving Coumadin (warfarin) or heparin therapy

2. Fasting preferred

Specimen Type: Platelet-poor plasma

Collection Container/Tube: Light-blue top (3.2% sodium citrate)

Submission Container/Tube: 3 Plastic vials

Specimen Volume: 3 mL in 3 plastic vials, each containing 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 (1-2 mL per aliquot) into 3 separate plastic vials, 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

2 mL in 2 plastic vials, 1 mL each

Specimen Stability Information

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

Clinical & Interpretive

Clinical Information

Factor V inhibitors can occur in patients with congenital factor V deficiency after transfusion of fresh frozen plasma, however, they more commonly occur spontaneously in previously healthy older patients who have no underlying diseases. Topical bovine thrombin or fibrin glue, which contain bovine thrombin and factor V, are commonly used in surgery for topical hemostasis and can result in development of anti-bovine thrombin/factor V inhibitors that cross-react with human thrombin and factor V. Other associations include antibiotics, transfusions, and malignancies.

Reference Values

FACTOR V ACTIVITY ASSAY

Adults: 70-165%

Normal, full-term newborn infants may have borderline low or mildly decreased levels (> or =30-35%) which reach adult levels within 21 days postnatal.*

Healthy premature infants (30-36 weeks gestation) may have borderline low or mildly decreased levels.*

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

Interpretation

Normally, there is no inhibitor (ie, negative result).

If the screening assays indicate the presence of an inhibitor, it will be quantitated and reported in Bethesda (or equivalent) units.

Cautions

Occasionally, a potent lupus-like anticoagulant may cause false-positive testing for a specific factor inhibitor (eg, factor VIII or IX); see Ordering Guidance.

Clinical Reference

1. Hoffman R, Benz Jr EJ, Silberstein LE, et al: Hematology: Basic Principles and Practice. 7th ed. Elsevier; 2018

2. Kasper CK: Treatment of factor VIII inhibitors. Prog Hemost Thromb. 1989;9:57-86

3. Laboratory Hematology Practice. Kottke-Marchant K, ed. Wiley Blackwell Publishing; 2012

Performance

Method Description

This assay consists of measuring the difference in factor V activity (prothrombin time-based assay) before and after incubation of a mixture of normal plasma and patient's plasma for 1 hour at 37 degrees C. For optimal sensitivity, the factor V value of the normal plasma is adjusted to approximately 20%, because the factor V assay is more sensitive in this area of the curve. In addition, an excess of patient's plasma will make the test more sensitive to small amounts of inhibitors.(Owen CA Jr, Bowie EJW, Thompson JH Jr: The Diagnosis of Bleeding Disorders. 2nd ed. Little, Brown and Company; 1975:143-145; 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)

If the inhibitor screen is positive for an inhibitor of factor V, the inhibitor will be quantitated by the Bethesda assays. In the Bethesda procedure, inhibitors are quantified by mixing equal volumes of serially diluted plasma with normal plasma. This mixture is incubated 2 hours at 37 degrees C, and its factor V activity is measured and compared to a control run at the same time. The difference between the factor V activity of the patient's incubation mixture and that of the control is used to calculate titer. The residual factor V activity is converted to Bethesda units: 50% residual factor V is equal to 1 Bethesda unit.(Kasper CK, Aledort LM, Counts RB, et al: A more uniform measurement of factor VIII inhibitors. Thromb Diath Haemorrh. 1975;34:869-872; 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
85390-Factor V Tech Interp

85220-Factor V

85335-Factor inhibitor (if appropriate)

85335-Factor V Bethesda units (if appropriate)

85390-Factor V Professional Interp (if appropriate)

LOINC® Information

Test ID	Test Order Name	Order LOINC Value
5INHE	Factor V Inhib Profile, P	96458-5

Result ID	Reporting Name	LOINC®
FACTV	Coag Factor V Assay, P	3193-0
5INHT	FV Inhib Profile Tech Interp	69049-5