Overview

Useful For

- Diagnosing hemophilia A
- Diagnosing von Willebrand disease when measured with the von Willebrand factor (VWF) antigen and VWF activity
- Diagnosing acquired deficiency states
- Investigation of prolonged activated partial thromboplastin time
- Monitoring infusions of factor VIII replacement during interventional procedures and prophylactic infusions

This test is **not useful for** inferring carrier status in suspected female carriers of hemophilia A, unless it is 50% of normal (<28% activity in adults).

Testing Algorithm

See [Hemophilia Testing Algorithm](#) in Special Instructions.

Special Instructions

- [Coagulation Guidelines for Specimen Handling and Processing](#)
- [Hemophilia Testing Algorithm](#)

Method Name

Optical Clot-Based

NY State Available

Yes

Specimen

Specimen Type

Plasma Na Cit

Advisory Information

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

**Patient Preparation:** Patient must not be receiving Coumadin (warfarin) or heparin therapy.

**Specimen Type:** Platelet-poor plasma

**Collection Container/Tube:** Light-blue top (3.2% sodium 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.

Specimen Minimum Volume

0.5 mL

Reject Due To

| Gross hemolysis | Reject |
| Gross lipemia   | Reject |
| Gross icterus   | 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>Plasma Na Cit</td>
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Clinical and Interpretive

Clinical Information

Factor VIII is synthesized in the liver and, perhaps, in other tissues. It is a coagulation cofactor that circulates bound to von Willebrand factor and is part of the intrinsic coagulation pathway. The biological half-life is 9 to 18 hours (average is 12 hours).

Congenital factor VIII deficiency is the cause of hemophilia A, which has an incidence of 1 in 10,000 and is inherited in a recessive sex-linked manner on the X chromosome. Severe deficiency (<1%) characteristically demonstrates as
hemarthrosis, deep-tissue bleeding, excessive bleeding with trauma, and ecchymoses.

Factor VIII may be decreased in von Willebrand disease. Acquired deficiency states also occur.

Antibodies specific for factor VIII are the most commonly occurring specific inhibitors of coagulation factors and can produce serious bleeding disorders (acquired hemophilia).

Spuriously decreased results may occur as factor VIII is highly susceptible to proteolytic inactivation.

**Reference Values**

Adults: 55-200%

Normal, full-term newborn infants or healthy premature infants typically have levels greater than or equal to 40%.*

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

**Interpretation**

Mild hemophilia A: 5% to 50%

Moderate hemophilia A: 1% to 5%

Severe hemophilia A: <1%

Congenital deficiency may also occur in combined association with factor V deficiency.

Liver disease usually causes an increase of factor VIII activity.

Acquired deficiencies of factor VIII have been associated with myeloproliferative or lymphoproliferative disorders (acquired von Willebrand disease; VWD), inhibitors of factor VIII (autoantibodies, postpartum conditions, etc), and intravascular coagulation and fibrinolysis.

Levels may be decreased with von Willebrand factor in VWD.

**Cautions**

Factor VIII is a labile protein. Improper handling of a specimen may give a false result.

Factor VIII is highly susceptible to proteolytic inactivation, with the potential for spuriously decreased assay results. Normal results can be regarded as reliable, but decreased results need to be correlated with other clinical and laboratory information. Repeat testing may be necessary.

Factor VIII activity in frozen-thawed plasma specimens may be 10% to 20% lower than if assayed in fresh specimens, even under optimum conditions of processing and transportation, and may be even lower if these conditions are suboptimal.

Factor VIII activity rises in response to a number of factors, including pregnancy, estrogen therapy, stress, disease, etc.

Once artefactual reduction in FVIII is excluded, it is important to measure von Willebrand factor (VWF) levels to ensure that the patient does not have von Willebrand disease.

**Clinical Reference**


Performance

Method Description


PDF Report

No

Day(s) and Time(s) Test Performed

Monday through Friday

Analytic Time

1 day

Maximum Laboratory Time

3 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 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 U.S. Food and Drug Administration.

**CPT Code Information**

85240

**LOINC® Information**

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<td>Coag Factor VIII Activity Assay, P</td>
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