
Lab Dept: Coagulation

Test Name: FACTOR VIII ASSAY, CHROMOGENIC

General Information

Lab Order Codes: F8C

Synonyms: AHF; AHG; Antihemophilic Factor; FVIII, VIIC; Factor VIII Activity, Factor 8 Chromogenic

CPT Codes: 85130 – Factor VIII Chromogenic

Test Includes: Factor VIII level reported as a % using the chromogenic method

Logistics

Test Indications: Useful for the detection of a single factor congenital deficiency for Hemophilia A or von Willebrands disease or an acquired deficiency due to liver disease or DIC.

Lab Testing Sections: Coagulation

Phone Numbers: MIN Lab: 612-813-6280

STP Lab: 651-220-6550

Test Availability: Daily, 24 hours; Testing is performed at Minneapolis Laboratory only.

Turnaround Time: 4 hours

Special Instructions: Patient should not be receiving heparin. If so, this should be noted on the request form. Heparin therapy will affect certain coagulation factors or assays, preclude

Specimen

Specimen Type: Whole blood

Container: Light Blue top (Buffered Na Citrate 3.2%) tube

Draw Volume: 1.8 mL blood (in 2 mL tube) or 2.7 mL blood (in a 3 mL tube).

Processed Volume: 0.9 mL plasma

Collection:

- A clean venipuncture is essential, avoid foaming
- Entire sample must be collected with single collection, pooling of sample is unacceptable.
- Capillary collection is unacceptable.
- Patient's with a hematocrit level >55% must have a special tube made to adjust for the hematocrit; contact lab for a special tube.
- Mix thoroughly by gentle inversion. Deliver immediately to the laboratory at room temperature via courier or pneumatic tube.

Off campus collections:

- Must be tested within 4 hours.
 - Do not refrigerate.
 - If not received in our lab within 4 hours of collection, sample must be centrifuged and "platelet-poor plasma removed from cells and transferred to an aliquot tube being careful not to distribute to disturb the cell layer. Centrifuge the plasma a second time and transfer into a clean aliquot tube being careful not to include any residual platelets on the bottom of the tube. Freeze at -20 degrees C and deliver to the lab on dry ice within 2 weeks.
- *Validation of your lab's centrifuge for platelet poor plasma is required.**

Special Processing:

Lab staff: Centrifuge in Stat Spin for 5 minutes or 10 minutes at 3000 rpm at room temperature. For primary tube testing, leave plasma on cells OR remove plasma and place in a 4 mL plastic cup; allow for 100 mL of dead-space.

Test within:

- Four (4) hours when stored in the capped tube above the packed cells 18 to 24°C.
- Four (4) hours as plasma that has been separated from cells by centrifugation when stored 2 to 8°C or 18 to 24°C.
- Two (2) weeks when stored -20°C.
- Six (6) months when stored -70°C (rapidly frozen).
- Plasma must be frozen if testing cannot be completed within four (4) hours.
- Frozen plasmas are thawed at 37°C for three (3) minutes, test immediately.

Patient Preparation:

Avoid heparin therapy for two days prior to the test.

Sample Rejection:

Improper tube; clotted samples; under-filled tube; mislabeled or unlabeled specimens

Interpretive

Reference Range:

Age	Range (%)
0 – 1 day	61 – 139%
2 – 5 days	55 – 121%

6 – 30 days	58 – 124%
31 – 90 days	56 – 102%
91 – 180 days	55 – 91%
6 months – 5 years	59 – 142%
11 – 16 years	53 – 131%
>16 years	50 – 150%

Critical Values: N/A

Limitations: Direct Factor Xa inhibitors (Rivaroxaban, Apixaban) may result in decreased Chromogenic Factor VIII values.

Methodology: Factor VIII in the sample is activated by thrombin. Activated Factor VIII then accelerates the conversion of Factor X into Factor Xa in the presence of activated Factor IX, phospholipids and calcium ions. The Factor Xa activity is assessed by hydrolysis of p-nitroanilide substrate specific to Factor Xa. The initial rate of release of p-nitroanilide measured is proportional to the Factor Xa activity, thus to the Factor VIII activity of the sample.

Contraindications: Patient on anticoagulant therapy.

References: Andrew M et al (1987) Development of the Human Coagulation System in the Full-Term Infant, Blood 70:165-57

Andrew M et al (1988) Development of the Human Coagulation System in the Healthy Premature Infant, Blood 72:1651-57

Andrew M et al (1992) Development of the Human Coagulation System During Early Childhood, Blood 80:1998-2005

Updates: 7/18/23: Updated special processing instructions. Testing location to Minneapolis lab only.