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**Lab Dept:** Coagulation

**Test Name:** FACTOR VIII ASSAY, CHROMOGENIC

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***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

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***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

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***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 1 hour.
  - Do not refrigerate.
  - If not received in our lab within 1 hour 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:

- One (1) hour when stored in capped tube above the packed cells 18 to 24°C.
- One (1) hour as plasma that has been separated from cells by centrifugation when stored 2 to 8°C or 18 to 24°C.
- Four (4) weeks when stored -20°C.
- Plasma must be frozen if testing cannot be completed within one (1) hour of processing.
- 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.

5/8/2025: Updated stability instructions to 1 hour.