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**Lab Dept:** Coagulation

**Test Name:** ANTITHROMBIN III, CHROMOGENIC

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***General Information***

**Lab Order Codes:** ATIII

**Synonyms:** ATIII; AT3; ATIII, functional; Anti - Thrombin III

**CPT Codes:** 85300 – Clotting inhibitors or anticoagulants; antithrombin III activity

**Test Includes:** Chromogenic Activity reported as a %.

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***Logistics***

**Test Indications:** Antithrombin inactivates thrombin and other serine proteases (activated Factors 12, 11, 10 and 9). In the absence of heparin, this process is relatively slow. In the presence of heparin, antithrombin almost instantaneously inactivates thrombin. Heterozygous deficiencies are associated with a thrombotic tendency. Homozygous state is probably not compatible with life. This activity test will detect abnormalities of both decreased levels of normal molecule and/or normal amounts of an abnormal molecule. Therefore, this activity (chromogenic) test is preferred.

**Lab Testing Section:** Coagulation

**Phone Numbers:** MIN Lab: 612-813-6280

STP Lab: 651-220-6550

**Test Availability:** Daily, 24 hours

**Turnaround Time:** 4 hours

**Special Instructions:** Deliver immediately to the laboratory.

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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).

This test may be combined with other coagulation testing.

**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. Freeze at -20°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 deadspace.

## 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:**

None

**Sample Rejection:**

Improper tube; clotted sample; underfilled tubes; mislabeled or unlabeled specimens

***Interpretive*****Reference Range:**

<b>Age:</b>	<b>Range (%):</b>
0 – 5 days:	51 – 75%
5 days – 1 month:	54 – 80%
1 – 3 months:	63 – 93%

3 – 6 months:	85 – 109%
>6 months:	92 – 118%

**Critical Values:**

N/A

**Limitations:**

If specimen contains heparin (drawn after heparin flush or after receiving heparin), results may be erroneous.

**Methodology:**

Chromogenic Activity Assay

**References:**

Harmening DH (1997) Clinical Hematology and Fundamentals of Hemostasis

**Updates:**

3/26/2008: Removed statement, do not tube through pneumatic tube system.  
9/15/14: Off campus collection information added.