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**Lab Dept:** Chemistry

**Test Name:** ALPHA-1-ANTITRYPSIN CLEARANCE, STOOL AND SERUM

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***General Information***

**Lab Order Codes:** AACL

**Synonyms:** Alpha-1-Antitrypsin Clearance; A1A Clearance; AAT Clearance

**CPT Codes:** 82103 – Alpha-1-antitrypsin; total

**Test Includes:** Clearance result in mL/24 h, stool A1A concentration in mg/dL and serum A1A concentration in mg/dL.

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***Logistics***

**Test Indications:** Useful for diagnosing protein losing enteropathies.

**Lab Testing Sections:** Chemistry - Sendouts

**Referred to:** Mayo Medical Laboratories (MML Test: CA1A)

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

STP Lab: 651-220-6550

**Test Availability:** Daily, 24 hours

**Turnaround Time:** 1 - 2 days, test set up Monday - Saturday

**Special Instructions:** Both feces and serum are required for this test. The blood must be drawn during the stool collection period.

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***Specimen***

**Specimen Type:** Blood and stool (24 hour collection)

**Container:** **Blood:** SST (Gold, marble or red) tube

**Stool:** Stool containers supplied by Mayo Medical Laboratories (Supply T291) and obtained from Children's laboratory

**Draw Volume:** 3 mL (Minimum: 1.5 mL) blood

Entire 24 hour collection of stool, frozen

**Processed Volume:** 1 mL (Minimum: 0.5 mL) serum  
Entire 24 hour collection of stool, frozen

**Collection:** **Blood:** Must be drawn during the stool collection period.  
**Stool:** Each stool obtained during the collection can be sent immediately to the lab for freezing. The individual samples will be pooled at Mayo.

**Note:** If no specimen is obtained in 24 hours, extend collection to 48 - 72 hours and note time frame on request form.

**Special Processing:** Lab Staff:  
**Blood:** Centrifuge blood specimen, remove serum aliquot and place in a screw-capped plastic vial. Store and ship serum frozen.  
**Stool:** Freeze entire stool collection and ship frozen. If the collection period had been extended, note either 48 or 72 hours on the request form.

**Patient Preparation:** None

**Sample Rejection:** Mislabeled or unlabeled specimens

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### ***Interpretive***

**Reference Range:**

**A1AT Clearance:**  $\leq 27$  mL/24 hours

**A1AT Fecal concentration:**  $\leq 54$  mg/dL

**A1AT Serum concentration:** 100 - 190 mg/dL

Interpretation: Elevated alpha-1-antitrypsin (A1A) clearance suggests excessive gastrointestinal protein loss. (The positive predictive value of the test has been found to be 97.7% and the negative predictive value is 75%).

Patients with protein-losing enteropathies generally have A1A clearance values  $>50$  mL/24 hours and A1A stool concentrations  $>100$  mg/mL.

Borderline elevations above the normal range are equivocal for protein-losing enteropathies.

**Critical Values:** N/A

**Limitations:**

In the absence of a 24 hour stool collection and/or a contemporary serum specimen, the fecal concentration of A1A can be used as a surrogate marker. The clearance is preferred in order to normalize the large range of serum A1A concentrations and the variability in random stool A1A concentration.

**Methodology:**

Nephelometry

**References:**

[Mayo Medical Laboratories Web Page](#) December 2017