Lab Dept: Chemistry

Test Name: ALPHA-1-ANTITRYPSON CLEARANCE, STOOL AND SERUM

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.

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.

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

**Interpretive**

**Reference Range:**

<table>
<thead>
<tr>
<th>Test</th>
<th>Range</th>
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<tbody>
<tr>
<td><strong>A1AT Clearance</strong></td>
<td>≤27 mL/24 hours</td>
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<tr>
<td><strong>A1AT Fecal concentration</strong></td>
<td>≤54 mg/dL</td>
</tr>
<tr>
<td><strong>A1AT Serum concentration</strong></td>
<td>100 - 190 mg/dL</td>
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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](https://www.mayoclinic.org) December 2017