
Lab Dept: Chemistry

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

General Information

Lab Order Codes: AACL

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

CPT Codes: 82103 X2 – 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: A1AFS)

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:

A1AT Clearance: ≤ 27 mL/24 hours

A1AT Fecal concentration: ≤ 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](#) January 2019