MAYO CLINIC LABORATORIES

Test Definition: APOA1

Apolipoprotein A1, Serum

Overview

Useful For

Evaluating risk for atherosclerotic cardiovascular disease

Aiding in the detection of Tangier disease

Method Name

Turbidimetric Immunoassay

NY State Available

Yes

Specimen

Specimen Type

Serum

Specimen Required

Preferred: Serum gel

Acceptable: Red top

Specimen Volume: 0.5 mL

Collection Instructions:

1. Centrifuge and aliquot within 2 hours of collection.
2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

Forms

If not ordering electronically, complete, print, and send a Cardiovascular Test Request Form (T724) with the specimen.

Specimen Minimum Volume

0.5 mL

Reject Due To

Gross hemolysis	Reject
Gross lipemia	OK
Gross icterus	Reject

Specimen Stability Information

Specimen Type	Temperature	Time	Special Container
Serum	Refrigerated (preferred)	8 days	
	Ambient	24 hours	
	Frozen	60 days	

Clinical & Interpretive

Clinical Information

Apolipoprotein A1 (ApoA1) is the primary protein associated with high-density lipoprotein (HDL) particles, and plays a central role in reverse cholesterol transport.(1) HDL cholesterol (HDL-C) and ApoA1 concentrations are inversely related to the risk for coronary artery disease (CAD).(2) There are a variable number of ApoA1 proteins per HDL particle. Therefore, ApoA1 is not a 1:1 surrogate marker for HDL particles. Similarly, the number of ApoA1 proteins and the amount of cholesterol contained in HDL particles is highly variable. This heterogeneity has led to unique clinical findings related to ApoA1 compared with HDL-C.

Increased ApoA1 concentrations are more strongly associated with a reduction in risk of a first myocardial infarction than HDL-C concentrations.(3) Low concentrations of ApoA1, but not HDL-C, are predictive of preclinical atherosclerosis as assed by computed tomography estimated coronary artery calcium (CAC) scoring.(4) Increased ApoA1, but not HDL-C concentrations, are associated with reduced cardiovascular events among statin-treated patients, even when LDL-C <50 mg/dL.(5) In statin-treated patients, patients whose ApoA1 increased while on treatment were at lower risk than those whose ApoA1 did not increase.

Reference Values

Males

Age	Apolipoprotein A (mg/dL)
<24 months	Not established
2-17 years	Low: <115 Borderline low: 115-120 Acceptable: >120
>18 years	> or =120

Females

Age	Apolipoprotein A (mg/dL)
<24 months	Not established
2-17 years	Low: <115 Borderline low: 115-120 Acceptable: >120
>18 years	> or =140

Interpretation

Low levels of apolipoprotein A1 (ApoA1) confer increased risk of atherosclerotic cardiovascular disease.

ApoA1 below 25 mg/dL may aid in the detection of a genetic disorder such as Tangier disease.

ApoA1 is often interpreted as a ratio with apolipoprotein B (ApoB).

Clinical Reference

1. Sorci-Thomas MG, Thomas MJ: Why Targeting HDL Should Work as a Therapeutic Tool, but Has Not. J Cardiovasc. Pharmacol 2013;62:239-246
2. Di Angelantonio E, Sarwar N, Perry P, et al: Emerging Risk Factors Collaboration. Major lipids, apolipoproteins, and risk of vascular disease. JAMA 2009;302:1993-2000
3. McQueen MJ, Hawken S, Wang X, et al: Lipids, lipoproteins, and apolipoproteins as risk markers of myocardial infarction in 52 countries (the INTERHEART study): a case control study. Lancet 2008;372:224-233
4. Sung KC, Wild SH, Byrne CD: Controlling for apolipoprotein A-I concentrations changes the inverse direction of the relationship between high HDL-C concentration and a measure of pre-clinical atherosclerosis. Atherosclerosis 2013;231:181-186
5. Boekholdt SM, Arsenault BJ, Hovingh GK, et.al: Levels and Changes of HDL Cholesterol and Apolipoprotein A-I in Relation to Risk of Cardiovascular Events Among Statin-Treated Patients: A Meta-Analysis. Circulation 2013;128:1504-1512

Performance

Method Description

Antiapolipoprotein A-1 antibodies react with the antigen in the sample to form antigen/antibody complexes which, following agglutination, can be measured turbidimetrically.(Package Insert: Tina-quant Apolipoprotein A-1, Roche Diagnostics. Indianapolis, IN. 05/2017)

PDF Report

No

Day(s) Performed

Monday through Sunday

Report Available

1 to 2 days

Specimen Retention Time

1 week

Performing Laboratory Location

Mayo Clinic Laboratories - Rochester Main Campus

Fees & Codes

Fees

- Authorized users can sign in to Test Prices for detailed fee information.
- Clients without access to Test Prices can contact Customer Service 24 hours a day, seven days a week.
- Prospective clients should contact their account representative. For assistance, contact Customer Service.

Test Classification

This test has been cleared, approved, or is exempt by the US Food and Drug Administration and is used per manufacturer's instructions. Performance characteristics were verified by Mayo Clinic in a manner consistent with CLIA requirements.

CPT Code Information

82172

LOINC® Information

Test ID	Test Order Name	Order LOINC® Value
APOA1	Apolipoprotein A1, S	1869-7

Result ID	Test Result Name	Result LOINC® Value
APOA1	Apolipoprotein A1, S	1869-7