Test Definition: APOLB
Apolipoprotein B, S

Overview

Useful For
Assessment of cardiovascular risk

Follow-up studies in individuals with basic lipid measures inconsistent with risk factors or clinical presentation

Definitive studies of cardiac risk factors in individuals with significant family histories of coronary artery disease or other increased risk factors

Confirmation of suspected abetalipoproteinemia or hypobetalipoproteinemia

Method Name
Automated Turbidimetric Immunoassay

NY State Available
Yes

Specimen

Specimen Type
Serum

Specimen Required
Collection Container/Tube:

Preferred: Serum gel

Acceptable: Red top

Submission Container/Tube: Plastic vial

Specimen Volume: 1 mL

Collection Instructions: Centrifuge and aliquot 1 mL of serum.

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

<table>
<thead>
<tr>
<th>Condition</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross hemolysis</td>
<td>Reject</td>
</tr>
<tr>
<td>Gross lipemia</td>
<td>OK</td>
</tr>
<tr>
<td>Gross icterus</td>
<td>Reject</td>
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</table>
Specimen Stability Information

<table>
<thead>
<tr>
<th>Specimen Type</th>
<th>Temperature</th>
<th>Time</th>
<th>Special Container</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serum</td>
<td>Refrigerated (preferred)</td>
<td>8 days</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Frozen</td>
<td>60 days</td>
<td></td>
</tr>
<tr>
<td>Ambient</td>
<td></td>
<td>24 hours</td>
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Clinical and Interpretive

Clinical Information

Apolipoprotein B (ApoB) is the primary protein component of low-density lipoprotein (LDL). The amount of cholesterol contained within LDL varies, but each LDL contains exactly 1 ApoB protein. Therefore, ApoB is a more reliable indicator of circulating LDL compared to LDL cholesterol (LDL-C). ApoB has been demonstrated to perform equally with LDL particles measured by nuclear magnetic resonance spectroscopy.(1)

ApoB is strongly associated with increased risk of developing cardiovascular disease (CVD) and often outperforms LDL-C at predicting risk of coronary heart disease.(2-4) Patients with acceptable non-HDL-C (or LDL-C) but elevated ApoB remain at higher risk of developing CVD; conversely, patients with acceptably low ApoB but moderate non-HDL-C or LDL-C elevations are at a reduced risk for CVD.(5,6)

Finally, in 7 different placebo-controlled randomized clinical trials, on-statin reduction of ApoB was more closely related to CVD risk reduction than non-HDL-C or LDL-C.(7)

Reference Values

<table>
<thead>
<tr>
<th>Age</th>
<th>Apolipoprotein B (mg/dL)</th>
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<tbody>
<tr>
<td>&lt;24 months</td>
<td>Not established</td>
</tr>
<tr>
<td>2-17 years</td>
<td>Acceptable: &lt;90</td>
</tr>
<tr>
<td></td>
<td>Borderline high: 90-109</td>
</tr>
<tr>
<td></td>
<td>High: &gt; or =110</td>
</tr>
<tr>
<td>&gt;18 years</td>
<td>Desirable: &lt;90</td>
</tr>
<tr>
<td></td>
<td>Above Desirable: 90-99</td>
</tr>
<tr>
<td></td>
<td>Borderline high: 100-119</td>
</tr>
<tr>
<td></td>
<td>High: 120-139</td>
</tr>
<tr>
<td></td>
<td>Very high: &gt; or =140</td>
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</table>
Interpretation
Elevated ApoB confers increased risk of atherosclerotic cardiovascular disease, even in a context of acceptable LDL cholesterol.

Extremely low values of ApoB (<48 mg/dL) are related to malabsorption of food lipids and can lead to polyneuropathy.

Cautions
In very rare cases, gammopathy, in particular type IgM (Waldenstrom macroglobulinemia), may cause unreliable results.

Clinical Reference


Performance
Method Description
Antiapolipoprotein B 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 B, Roche Diagnostics. Indianapolis, IN. 05/2019)

PDF Report
No

Day(s) and Time(s) Test Performed
Monday through Saturday; Continuously

Analytic Time
1 day

Maximum Laboratory Time
3 days

Specimen Retention Time
1 week

Performing Laboratory Location
Rochester

Fees and 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 Regional Manager. For assistance, contact Customer Service.

Test Classification
This test has been cleared or approved by the U.S. 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

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<th>Test ID</th>
<th>Test Order Name</th>
<th>Order LOINC Value</th>
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<tbody>
<tr>
<td>APOLB</td>
<td>Apolipoprotein B, S</td>
<td>1884-6</td>
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