Overview

Useful For
Assessing the likelihood of future coronary events, in patients with coronary heart disease, type II diabetes mellitus, or kidney disease

Prompting intervention and assessing improvements among subjects with elevated ADMA and hypercholesterolemia or type II diabetes mellitus

Method Name
Liquid Chromatography-Tandem Mass Spectrometry (LC-MS/MS)

NY State Available
Yes

Specimen

Specimen Type
Plasma EDTA

Specimen Required

Patient Preparation: Fasting-overnight (12 hours)

Collection Container/Tube: Lavender top (EDTA)

Submission Container/Tube: Plastic vial

Specimen Volume: 1 mL

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>Gross hemolysis</th>
<th>Reject</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross lipemia</td>
<td>Reject</td>
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</table>

Specimen Stability Information

<table>
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<tr>
<th>Specimen Type</th>
<th>Temperature</th>
<th>Time</th>
<th>Special Container</th>
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<tbody>
<tr>
<td>Plasma EDTA</td>
<td>Frozen (preferred)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ambient</td>
<td>7 days</td>
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</table>
Clinical and Interpretive

Clinical Information

Asymmetric dimethylarginine (ADMA) is an independent risk factor for major adverse cardiovascular events.(1-7) ADMA inhibits nitric oxide (NO) synthesis and is elevated in diseases related to endothelial dysfunction including hypertension, hyperlipidemia, and type II diabetes mellitus. Elevation in ADMA and subsequent NO synthesis inhibition leads to vasoconstriction, reduced peripheral blood flow, and reduced cardiac output.

Elevated plasma ADMA confers a 4- to 6-fold increased risk of subsequent cardiovascular events or mortality among patients with acute coronary syndrome,(3) unstable angina,(4) type II diabetes mellitus,(5) end-stage renal disease,(6) coronary heart disease,(7) and peripheral artery disease.(1) Baseline ADMA remained a significant risk factor of adverse events even after adjusting for low-density lipoprotein-cholesterol (LDL-C), high-density lipoprotein-cholesterol (HDL-C), triglycerides, creatinine, and high-sensitivity C-reactive protein.

Plasma ADMA concentrations are lowered by rosuvastatin and atorvastatin, but not simvastatin in patients with hypercholesterolemia.(8) Addition of vildagliptin (Galvus) to metformin significantly reduced ADMA concentrations among patients with type II diabetes mellitus.(9)

Reference Values

<18 years: not established

> or =18 years: 63-137 ng/mL

Interpretation

In patients with preexisting coronary conditions or at high risk for coronary events (diabetes, renal insufficiency), asymmetric dimethylarginine (ADMA) levels in the upper tertile, above 112 ng/mL, confer an increased risk for future coronary events.

Cautions

No significant cautionary statements

Clinical Reference


**Performance**

**Method Description**
Asymmetric dimethylarginine (ADMA) is separated and quantified by liquid chromatography-tandem mass spectrometry. (Unpublished Mayo method)

**PDF Report**
No

**Day(s) and Time(s) Test Performed**
Thursday; 11 a.m.

**Analytic Time**
2 days

**Maximum Laboratory Time**
9 days

**Specimen Retention Time**
7 days

**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 was developed and its performance characteristics determined by Mayo Clinic in a manner consistent with CLIA requirements. This test has not been cleared or approved by the U.S. Food and Drug Administration.
Test Definition: ADMA
Asymmetric Dimethyl Arginine, P

**CPT Code Information**
82542

**LOINC® Information**

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<td>ADMA</td>
<td>Asymmetric Dimethyl Arginine, P</td>
<td>80981-4</td>
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<td>32053</td>
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