Overview

Useful For
Aiding in the exclusion of the diagnosis of acute coronary syndrome in a single plasma specimen
Aiding in the diagnosis of acute coronary syndrome
Monitoring acute coronary syndromes and estimating prognosis
Possible utility in monitoring patients with nonischemic causes of cardiac injury

Method Name
Electrochemiluminescent Immunoassay

NY State Available
Yes

Specimen

Specimen Type
Plasma Li Heparin

Specimen Required
Collection Container/Tube:
Preferred: Lithium heparin gel
Acceptable: Lithium heparin

Submission Container/Tube: Plastic vial

Specimen Volume: 1 mL

Collection Instructions:
1. Lithium heparin gel tubes should be centrifuged within 2 hours of collection.
2. Plasma from lithium heparin 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

<table>
<thead>
<tr>
<th>Gross hemolysis</th>
<th>Reject</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross lipemia</td>
<td>OK</td>
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</table>
Test Definition: TRPS
Troponin T, 5th gen, P

Gross icterus

OK

Specimen Stability Information

<table>
<thead>
<tr>
<th>Specimen Type</th>
<th>Temperature</th>
<th>Time</th>
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</thead>
<tbody>
<tr>
<td>Plasma Li Heparin</td>
<td>Frozen (preferred)</td>
<td>365 days</td>
</tr>
<tr>
<td></td>
<td>Ambient</td>
<td>24 hours</td>
</tr>
<tr>
<td></td>
<td>Refrigerated</td>
<td>24 hours</td>
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Clinical and Interpretive

Clinical Information
Troponin T is a myofibrillar protein found in striated musculature. There are 2 types of myofilament: a thick filament containing myosin and a thin filament consisting of 3 different proteins, namely actin, tropomyosin, and troponin. Troponin is itself a complex of 3 protein subunits, which are termed troponin T, troponin I, and troponin C:

- Troponin T binds the troponin complex to tropomyosin
- Troponin I inhibits actomyosin ATPase in relation to the calcium concentration
- Troponin C has 4 binding sites for calcium and mediates calcium dependency

Troponin T is found in free cytosol and structurally bound protein. The unbound pool of troponin T is the source of early protein release in myocardial damage. Troponin T is released from the structural elements at a later stage, corresponding to the degradation of myofibrils that occurs in irreversible myocardial damage. Troponin T becomes elevated 2 to 4 hours after the onset of myocardial necrosis and can remain elevated for up to 14 days, or even longer on occasion.

The most common cause of cardiac injury is myocardial ischemia, ie, acute myocardial infarction. These patients are known to have an adverse short- and long-term prognosis compared to patients with unstable angina and no elevation of troponin T. Many of these patients, especially those with troponin T elevations above 30 ng/L, benefit from an aggressive strategy with anticoagulation and an invasive interventional strategy.

Reference Values
Males: < or =15 ng/L
Females: < or =10 ng/L

Interpretation
Values for healthy adults, based upon available literature and clinical guidelines, are 10 ng/L or less for women and 15 ng/L or less for men.

For patients who present with suspected acute coronary syndromes, troponin T values greater than the reference interval with a rising (> or =10 ng/L over 2 hours or > or =12 ng/L over 6 hours) pattern are highly suggestive of acute cardiac injury. Decreasing values are indicative of recent cardiac injury. Serial measurement is highly recommended for the diagnosis or exclusion of acute coronary syndromes.
Troponin T values greater than the reference interval are associated with adverse events in patients with ischemic heart disease and many other clinical situations. Clinical judgment is necessary to distinguish patients who have ischemic heart disease from those who do not.

Cautions

As with all markers of cardiac injury, elevations of cardiac troponin T (cTnT) do not in and of themselves indicate the presence of an ischemic mechanism. Many other disease states can be associated with elevations of cTnT via mechanisms different from those that cause injury in patients with acute coronary syndromes. These include: trauma including contusion, ablation, pacing; congestive heart failure; pulmonary embolism; renal failure; and myocarditis.

Clinical Reference


Performance

Method Description

The Cobas e immunoassay Troponin T Gen 5 method employs 2 monoclonal antibodies specifically directed against human cardiac troponin T. A biotinylated monoclonal antibody and a second monoclonal antibody labeled with a ruthenium complex react with troponin T to form a sandwich complex. After the addition of streptavidin-coated microparticles, the complex becomes bound to the solid phase via interaction of biotin and streptavidin. The reaction mixture is aspirated into the measuring cell where the microparticles are magnetically captured onto the surface of the electrode. Application of a voltage to the electrode then induces chemiluminescent emission which is measured by a photomultiplier. (Package insert: Elecsys Troponin T Gen 5 STAT, Roche Diagnostics Corporation, Indianapolis, IN Version: 03/2017)

PDF Report

No

Day(s) and Time(s) Test Performed

Monday through Sunday; Continuously

Analytic Time

Same day/1 day

Maximum Laboratory Time

1 day

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 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**
84484

**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>TRPS</td>
<td>Troponin T, 5th gen, P</td>
<td>67151-1</td>
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<table>
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