Overview

Useful For
Diagnosis and monitoring of liver disease associated with hepatic necrosis

Method Name
Photometric Rate, L-Alanine with Pyridoxal-5-Phosphate

NY State Available
Yes

Specimen

Specimen Type
Serum

Necessary Information
Patient’s age and sex are required.

Specimen Required
Container/Tube:

Preferred: Serum gel

Acceptable: Red top

Specimen Volume: 0.5 mL

Collection Instructions:
1. Serum gel tubes should be centrifuged within 2 hours of collection.
2. Red-top tubes should be centrifuged and aliquoted within 2 hours of collection.

Specimen Minimum Volume
0.25 mL

Reject Due To

| Gross hemolysis | Reject |

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>7 days</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Frozen</td>
<td>7 days</td>
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</table>
Clinical and Interpretive

Clinical Information
Alanine aminotransferase (ALT) is present primarily in liver cells. In viral hepatitis and other forms of liver disease associated with hepatic necrosis, serum ALT is elevated even before the clinical signs and symptoms of the disease appear. Although serum levels of both aspartate aminotransferase (AST) and ALT become elevated whenever disease processes affect liver cell integrity, ALT is a more liver-specific enzyme. Serum elevations of ALT are rarely observed in conditions other than parenchymal liver disease. Moreover, the elevation of ALT activity persists longer than does AST activity.

Reference Values
Males
> or =1 year: 7-55 U/L

Reference values have not been established for patients who are <12 months of age.

Females
> or =1 year: 7-45 U/L

Reference values have not been established for patients who are <12 months of age.

Interpretation
Elevated alanine aminotransferase (ALT) values are seen in parenchymal liver diseases characterized by a destruction of hepatocytes. Values are typically at least 10 times above the normal range. Levels may reach values as high as 100 times the upper reference limit, although 20- to 50-fold elevations are most frequently encountered. In infectious hepatitis and other inflammatory conditions affecting the liver, ALT is characteristically as high as or higher than aspartate aminotransferase (AST), and the ALT:AST ratio, which normally and in other condition is less than 1, becomes greater than unity. ALT levels are usually elevated before clinical signs and symptoms of disease appear.

Cautions
Pyridoxal phosphate is a cofactor in the reaction and must be present for optimal enzyme activity.

Clinical Reference

Performance

Method Description
Alanine aminotransferase (ALT) activity is determined by a kinetic method using a coupled enzyme reaction where the rate of NADH consumption is measured at 340 nm. The NADH decrease is directly proportional to the ALT activity. (Package insert: Roche ALT reagent, Indianapolis, IN, January 2000)

PDF Report
No

Day(s) and Time(s) Test Performed
Test Definition: ALT
Alanine Aminotransferase (ALT), S

Monday through Sunday; Continuously

**Analytic Time**
2 days

**Maximum Laboratory Time**
2 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**

84460

**LOINC® Information**

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<th>Test Order Name</th>
<th>Order LOINC Value</th>
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<tbody>
<tr>
<td>ALT</td>
<td>Alanine Aminotransferase (ALT), S</td>
<td>1743-4</td>
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<table>
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