Overview

Useful For
Assessing intermediate-term glycemic control

Method Name
Colorimetric Rate Reaction

NY State Available
Yes

Specimen

Specimen Type
Serum

Specimen Required
Container/Tube:

Preferred: Serum gel

Acceptable: Red top

Specimen Volume: 1 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

<table>
<thead>
<tr>
<th>Condition</th>
<th>Acceptance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hemolysis</td>
<td>Mild reject; Gross reject</td>
</tr>
<tr>
<td>Lipemia</td>
<td>NA</td>
</tr>
<tr>
<td>Icterus</td>
<td>Mild reject; Gross reject</td>
</tr>
<tr>
<td>Other</td>
<td>NA</td>
</tr>
</tbody>
</table>

Specimen Stability Information

<table>
<thead>
<tr>
<th>Specimen Type</th>
<th>Temperature</th>
<th>Time</th>
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</thead>
<tbody>
<tr>
<td>Serum</td>
<td>Refrigerated (preferred)</td>
<td>7 days</td>
</tr>
<tr>
<td></td>
<td>Frozen</td>
<td>7 days</td>
</tr>
<tr>
<td></td>
<td>Ambient</td>
<td>72 hours</td>
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</table>
Clinical and Interpretive

Clinical Information
Fructosamine is a general term, which applies to any glycated protein. It is formed by the nonenzymatic reaction of glucose with the α- and β-amino groups of proteins to form intermediate compounds called aldimes. These aldimes may dissociate or undergo an Amadori rearrangement to form stable ketoamines called fructosamines. This nonenzymatic glycation of specific proteins in vivo is proportional to the prevailing glucose concentration during the lifetime of the protein. Therefore, glycated protein measurement in the diabetic patient is felt to be a better monitor of long-term glycemic control than individual or sporadic glucose determinations. The best known of these proteins is glycated hemoglobin which is often measured as hemoglobin A1c, and reflects glycemic control over the past 6 to 8 weeks. In recognition of the need for a measurement that reflects intermediate-term glycemic control and was easily automated, a nonspecific test, termed fructosamine, was developed. Since albumin is the most abundant serum protein, it accounts for 80% of the glycated serum proteins, and thus, a high proportion of the fructosamine. Although a large portion of the color generated in the reaction is contributed by glycated albumin, the method will measure all proteins, each with a different half-life and different levels of glycation.

Reference Values
200-285 mcmol/L

Interpretation
In general, fructosamine reflects glycemic control in diabetic patients over the previous 2 to 3 weeks. High values indicate poor control.

Cautions
Since the assay is nonspecific, color may be generated by compounds other than glycated proteins. Interferences are seen from ascorbic acid (vitamin C) and elevated bilirubin values.

However, the second-generation assays have been shown to be highly specific for glycated proteins.

Fasting blood glucose and hemoglobin A1c are the usual and preferred means of monitoring glycemic control.

Clinical Reference


Performance

Method Description
The fructosamine assay is a colorimetric test based on the ability of ketoamines to reduce nitroblue tetrazolium to formazan in an alkaline medium. The rate of formation of formazan is directly proportional to the concentration of fructosamine, and is measured photometrically at 546 nm.(Package insert: Roche Fructosamine reagent, Roche
Test Definition: FRUCT
Fructosamine, S

Diagnostics Corp., Indianapolis, IN 1999)

PDF Report
No

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

Analytic Time
Same day/1 day

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
82985

LOINC® Information

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<thead>
<tr>
<th>Test ID</th>
<th>Test Order Name</th>
<th>Order LOINC Value</th>
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<tbody>
<tr>
<td>FRUCT</td>
<td>Fructosamine, S</td>
<td>15069-8</td>
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<table>
<thead>
<tr>
<th>Result ID</th>
<th>Test Result Name</th>
<th>Result LOINC Value</th>
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