Overview

Useful For
Evaluating patients with rapid onset renal failure or pulmonary hemorrhage, as an aid in the diagnosis of Goodpasture syndrome

Method Name
MultiplexFlowImmunoassay

NY State Available
Yes

Specimen

Specimen Type
Serum

Advisory Information
If patient is being evaluated for autoimmune skin disease, order CIFS / Cutaneous Immunofluorescence Antibodies (IgG), Serum for evaluation of anti-intercellular substance (ICS) and antibasement membrane zone (BMZ) antibodies.

Specimen Required

Container/Tube:
Preferred: Serum gel
Acceptable: Red top

Specimen Volume: 0.5 mL

Forms
If not ordering electronically, complete, print, and send a Renal Diagnostics Test Request (T830) with the specimen.

Specimen Minimum Volume
0.35 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>
</tr>
<tr>
<td>Gross icterus</td>
<td>OK</td>
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</tbody>
</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>21 days</td>
<td></td>
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</table>
Clinical and Interpretive

Clinical Information

Antibodies to glomerular basement membrane (GBM) antigens cause glomerulonephritis, Goodpasture syndrome (glomerulonephritis, often with rapid onset renal failure, and pulmonary hemorrhage), and, less commonly, pulmonary hemosiderosis.(1) Nephrogenic GBM antigens are associated with the noncollagenous carboxyl extension of type IV procollagen. The immunologic stimuli that elicit production of GBM antibodies are not known. There is some evidence of a genetic association with HLA-DR2.

GBM antibody-mediated glomerulonephritis and Goodpasture syndrome occur with a bimodal age distribution primarily in males ages 20 to 40 and in patients older than age 50. Glomerulonephritis without pulmonary involvement is more common in the older age group, and shows a female predominance.

Reference Values

<1.0 U (negative)

> or =1.0 U (positive)

Reference values apply to all ages.

Interpretation

Positive results are consistent with Goodpasture syndrome. Glomerular basement membrane antibodies detected by immunoassay have been reported to be highly specific for Goodpasture syndrome. The sensitivity of this test approaches 87% in untreated patients with systemic disease.(1)

Cautions

A positive test for glomerular basement membrane (GBM) antibodies cannot be relied upon exclusively to establish the diagnosis of a disease mediated by GBM antibodies. Weakly-positive test results may occur in other immune-mediated diseases, and renal or lung biopsy is often required to establish the diagnosis.

If patient is being evaluated for autoimmune skin disease, order CIFS / Cutaneous Immunofluorescence Antibodies (IgG), Serum for evaluation of anti-intercellular substance (ICS) and antibasement membrane zone (BMZ) antibodies.

Clinical Reference


Performance

Method Description

Glomerular basement membrane (GBM) antigen is covalently coupled to polystyrene microspheres that are impregnated with fluorescent dyes to create a unique fluorescent signature. GBM antibodies, if present in diluted serum, bind to the GBM antigen on the microspheres. The microspheres are washed to remove extraneous serum proteins. Phycoerythrin (PE)-conjugated antihuman-IgG antibody is then added to detect IgG anti-GBM bound to the microspheres. The microspheres are washed to remove unbound conjugate, and bound conjugate is detected by
laser photometry. A primary laser reveals the fluorescent signature of each microsphere to distinguish it from microspheres that are labeled with other antigens. A secondary laser reveals the level of PE fluorescence associated with each microsphere. Results are calculated by comparing the median fluorescence response for GBM microspheres to a 4-point calibration curve. (Package insert: Bio-Plex 2200 Vasculitis. Bio-Rad Laboratories, Hercules, CA 4/2012)

PDF Report
No

Day(s) and Time(s) Test Performed
Monday through Friday, 4 p.m.

Analytic Time
Same day/1 day

Maximum Laboratory Time
3 days

Specimen Retention Time
14 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
83516

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>GBM</td>
<td>Glomerular Basement Membrane IgG Ab</td>
<td>31254-6</td>
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<table>
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<tr>
<th>Result ID</th>
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Test Definition: GBM
Glomerular Basement Membrane IgG Ab