

Overview

Useful For

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

Method Name

Multiplex Flow Immunoassay

NY State Available

Yes

Specimen

Specimen Type

Serum

Ordering Guidance

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

Gross hemolysis	Reject
Gross lipemia	Reject
Gross icterus	OK

Specimen Stability Information

Specimen Type	Temperature	Time	Special Container
Serum	Refrigerated (preferred)	21 days	
	Frozen	21 days	

Clinical & 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

1. Pusey CD: Anti-glomerular basement membrane disease. *Kidney Int* 2003;64:1535-1550

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) Performed

Monday through Friday

Report Available

Same day/1 to 3 days

Specimen Retention Time

14 days

Performing Laboratory Location

Rochester

Fees & 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, approved, or is exempt by the US 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

Test Definition: GBM

Glomerular Basement Membrane Antibodies,
IgG, Serum

Test ID	Test Order Name	Order LOINC® Value
GBM	Glomerular Basement Membrane IgG Ab	31254-6

Result ID	Test Result Name	Result LOINC® Value
GBM	Glomerular Basement Membrane IgG Ab	31254-6