MAYO CLINIC LABORATORIES

Test Definition: PLA2I

Phospholipase A2 Receptor, Immunofluorescence, Serum

Overview

Useful For

Distinguishing primary from secondary membranous nephropathy in patients with low levels of anti-phospholipase A2 receptor (PLA2R) antibodies

Screening for anti-PLA2R antibodies

Monitoring patients with membranous nephropathy at very low antibody titers

Highlights

Anti-phospholipase A2 receptor (PLA2R) antibodies are highly specific for the diagnosis of primary membranous nephropathy.

As many as 70% to 75% of patients with primary membranous nephropathy are positive for anti-PLA2R.

This test can be used to identify whether a specific autoantibody is present in a patient with biopsy proven membranous nephropathy, or in a patient without a renal biopsy but with a clinical picture consistent with membranous nephropathy.

Method Name

Indirect Immunofluorescence Assay (IFA)

NY State Available

Yes

Specimen

Specimen Type

Serum

Ordering Guidance

This test can be used in a complementary fashion with a quantitative enzyme-linked immunosorbent assay to confirm a positive result, especially if it is a low-level titer. Since the immunofluorescence is more sensitive, it can also be used to detect or follow patients with low level antibodies not detected by ELISA.

Specimen Required

Supplies: Sarstedt Aliquot Tube 5 mL (T914)
Collection Container/Tube:
Preferred: Serum gel
Acceptable: Red top

Submission Container/Tube: Plastic vial
Specimen Volume: 1 mL
Collection Instructions: Centrifuge and aliquot serum into a plastic vial within 2 hours of collection.

Forms

If not ordering electronically, complete, print, and send 1 of the following forms with the specimen:
-Kidney Transplant Test Request
-Renal Diagnostics Test Request (T830)

Specimen Minimum Volume

0.5 mL

Reject Due To

Gross hemolysis	Reject
Gross lipemia	OK

Specimen Stability Information

Specimen Type	Temperature	Time	Special Container
Serum	Refrigerated (preferred)	14 days	
	Ambient	8 hours	
	Frozen	14 days	

Clinical & Interpretive

Clinical Information

Membranous nephropathy (MN) is a rare disease in which immune complexes deposit at the glomerular basement membrane, causing damage to the filtration barrier, resulting in proteinuria. Recent studies have shown that in approximately 70% of patients with primary MN (pMN), the immune complexes consist of autoantibodies against the podocyte protein M-type phospholipase A2 receptor (PLA2R).(1) There is also evidence that levels of anti-PLA2R autoantibodies correlate well with disease activity and progression.(2) The presence of anti-PLA2R antibodies could also potentially be used to differentiate pMN from other causes of nephrotic syndrome if a biopsy is not possible. Among patients with chronic kidney disease (CKD) awaiting kidney transplantation, higher levels of anti-PLA2R could predict those more likely to recur after transplantation.(2) Mayo Clinic Laboratory data suggest that there is a high concordance between the enzyme-linked immunosorbent assay and indirect immunofluorescence assay (IFA) PLA2R results, although the IFA may be more sensitive in monitoring patients with membranous nephropathy with very low antibody titers.

Reference Values

Negative

Interpretation

According to the manufacturer's package insert, the EUROIMMUN Anti-PLA2R indirect immunofluorescence assay was positive in 77.1% of patients with biopsy proven primary membranous nephropathy (pMN). This corresponds well with published literature that approximately 70% of patients with pMN will have anti-phospholipase A2 receptor antibodies.

Cautions

This test should not be used as a stand-alone test but an adjunct to other clinical information. A diagnosis of primary or secondary membranous nephropathy (MN) should not be made on a single test result. The clinical symptoms, results on physical examination, and laboratory tests (eg, serological tests), when appropriate, should always be taken into account when considering the diagnosis of primary versus secondary MN.

Absence of circulating anti-phospholipase A2 receptor autoantibodies does not rule out a diagnosis of primary MN.

Clinical Reference

1. Beck L, Bonegio R, Lambeau G, et al: M-type phospholipase A2 receptor as target antigen in idiopathic membranous nephropathy. N Engl J Med. 2009;361:11-21
2. Schlumberger W, Hornig N, Lange S, et al: Differential diagnosis of membranous nephropathy with autoantibodies to phospholipase A2 receptor 1. Autoimmun Rev. 2014 Feb;13(2):108-113

Performance

Method Description

Diluted patient samples are incubated with combinations of substrates. If the reaction is positive, specific antibodies of classes IgA, IgG, and IgM attach to the antigens. In a second step, the attached antibodies are stained with fluorescein-labelled antihuman antibodies and made visible with a fluorescence microscope.(Package insert: Anti-Phospholipase A2 Receptor (PLA2R) IFA EUROPattern Kit, EUROIMMUN US;V 11/23/2021)

PDF Report

No

Day(s) Performed

Monday, Wednesday, Friday

Report Available

3 to 7 days

Specimen Retention Time

7 days

Performing Laboratory Location

Mayo Clinic Laboratories - Rochester Main Campus

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 account representative. For assistance, contact Customer Service.

Test Classification

This test was developed and its performance characteristics determined by Mayo Clinic in a manner consistent with CLIA requirements. It has not been cleared or approved by the US Food and Drug Administration.

CPT Code Information

86255

LOINC® Information

Test ID	Test Order Name	Order LOINC® Value
PLA2I	PLA2R, Immunofluorescence, S	82991-1

Result ID	Test Result Name	Result LOINC® Value
PLA2I	PLA2R, Immunofluorescence, S	82991-1