Test Definition: PLA2R

Phospholipase A2 Receptor AB, S

Overview

Useful For

Distinguishing primary from secondary membranous nephropathy

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.

A titer increase, decrease, or disappearance generally precedes a change in clinical status.

Profile Information

Test ID	Reporting Name	Available Separately	Always Performed
SCOPE	Phospholipase A2 Receptor IFA, S	No	Yes
EURO	Phospholipase A2 Receptor ELISA, S	No	Yes

Method Name

EURO: Enzyme-Linked Immunosorbent Assay (ELISA)

SCOPE: Indirect Immunofluorescence Assay (IFA)

NY State Available

Yes

Specimen

Specimen Type

Serum SST

Specimen Required

Collection Container/Tube: Serum gel

Specimen Volume: 1 mL

Forms

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

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 SST	Refrigerated (preferred)	14 days	
	Frozen	14 days	
	Ambient	8 hours	

Clinical and 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)

Reference Values

ELISA:

Negative: <14 RU/mL

Borderline: > or =14-<20 RU/mL

Positive: > or =20 RU/mL

IFA: Negative

Interpretation

Therapy outcome can be monitored by measuring the anti-phospholipase A2 receptor (PLA2R) antibody titer. A titer increase, decrease, or disappearance generally precedes a change in clinical status. Thus, the determination of the antibody titer has a high predictive value with respect to clinical remission, relapse, or risk assessment after kidney transplantation.

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 (PLA2R) 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

Enzyme-Linked Immunosorbent Assay (ELISA):

The test kit provides microtiter strips each with 8 break-off reagent wells. In the case of positive samples, specific IgG antibodies (also IgA and IgM) will bind to the antigens. To detect the bound antibodies, a second incubation is carried out using an enzyme-labelled antihuman IgG (enzyme conjugate) catalyzing a color reaction.(Package insert: EUROIMMUN Anti-PLA2R ELISA [IgG] Kit, EUROIMMUN US, Morris Plains, NJ, V 9/23/2014)

Indirect Immunofluorescence Assay (IFA):

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: EUROIMMUN Anti-PLA2R IFA Kit, EUROIMMUN US, Morris Plains, NJ, V 9/23/2014)

PDF Report

No

Day(s) and Time(s) Test Performed

Monday, Wednesday, Friday

Analytic Time

3 days

Maximum Laboratory Time

7 days

Specimen Retention Time

7 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, approved or is exempt 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

EURO-83520

SCOPE-86255

LOINC® Information

Test ID	Test Order Name	Order LOINC Value
PLA2R	Phospholipase A2 Receptor AB, S	In Process

Result ID	Test Result Name	Result LOINC Value
EURO	Phospholipase A2 Receptor ELISA, S	73737-9
SCOPE	Phospholipase A2 Receptor IFA, S	81201-6