

Overview

Useful For

Distinguishing primary from secondary membranous nephropathy

Method Name

Indirect Immunofluorescence Assay (IFA)

NY State Available

Yes

Specimen

Specimen Type

Serum

Specimen Required

[Collection Container/Tube:](#)

Preferred: Serum gel

Acceptable: Red top

Submission Container: Plastic vial

Specimen Volume: 1 mL

Collection Information: Centrifuge within 2 hours. Aliquot and ship in plastic vial.

Forms

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

Reject Due To

Gross hemolysis Reject

Gross lipemia OK

Specimen Minimum Volume

0.5 mL

Specimen Stability Information

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

Clinical & Interpretive

Clinical Information

Recently, autoantibodies against phospholipase A2 receptor (PLA2R) in the kidney were determined to be the major target antigen for patients with idiopathic/primary membranous nephropathy (MN).(1) Approximately 70% of patients with primary MN circulate anti-PLA2R antibodies, and in the remaining 30% (who are PLA2R-negative), antithrombospondin type-1 domain-containing 7A (THSD7A) was shown to have approximately a 10% prevalence (or about 3% of all primary MN patients).(2) Mouse podocytes express THSD7A and introduction of anti-THSD7A autoantibodies induces MN in murine models. Mouse podocytes do not express PLA2R so exogenous administration of anti-PLA2R does not recapitulate membranous nephropathy in mice.(3) Additionally, THSD7A has been described as a potential tumor antigen and, thus, it has been suggested that THSD7A-positive patients merit a thorough cancer screening.(4)

Reference Values

Negative

Interpretation

Therapy outcome can be monitored by measuring the 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 as an adjunct to other clinical information. A diagnosis of primary or secondary membranous nephropathy (MN) should not be made based 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 autoantibodies does not rule out a diagnosis of primary MN.

Clinical Reference

1. Beck LH Jr, Bonegio RG, Lambeau G, et al: M-type phospholipase A2 receptor as target antigen in idiopathic membranous nephropathy. *N Engl J Med* 2009;361:11-21. doi: 10.1056/NEJMoa0810457
2. Tomas NM, Beck LH Jr, Meyer-Schwesinger C, et al: Thrombospondin type-1 domain-containing 7A in idiopathic membranous nephropathy. *N Engl J Med*. 2014;371:2277-2287. doi: 10.1056/NEJMoa1409354
3. Tomas NM, Hoxha E, Reinicke AT, et al: Autoantibodies against thrombospondin type 1 domain-containing 7A induce membranous nephropathy. *J Clin Invest*. 2016;126(7):2519-2532. doi: 10.1172/JCI85265
4. Stahl PR, Hoxha E, Wiech T, et al: THSD7A expression in human cancer. *Genes Chromosomes Cancer*. 2017;56:314-327. doi: 10.1002/gcc.22440

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: EUROIMMUN Anti-THSD7A IFA Kit, EUROIMMUN US, Morris Plains, NJ, V 9/19/2016)

PDF Report

No

Specimen Retention Time

7 days

Performing Laboratory Location

Rochester

Fees & Codes**Test Classification**

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

CPT Code Information

86255