MAYO CLINIC LABORATORIES

Test Definition: RO60

Ro60 Antibody, IgG, Serum

Overview

Useful For

Evaluating patients at risk for connective tissue disease with or without interstitial lung disease

Differentiating single vs double positivity for Ro52 and Ro60 antibodies in combination with anti-Ro60

Highlights

Testing of antibodies to Ro60 or SSA-60 (anti-Ro60 or anti-SSA-60) in patients at-risk for autoimmune connective tissue disease with or without lung involvement

Method Name

Chemiluminescent Immunoassay

NY State Available

Yes

Specimen

Specimen Type

Serum

Ordering Guidance

This test detects antibodies to Ro60 only. For testing antibodies to both Ro 52 and Ro60, order ROPAN / Ro52 and Ro60 Antibodies, IgG, Serum.

Specimen Required

Supplies: Sarstedt Aliquot Tube, 5 mL (T914)
Collection Container/Tube:
Preferred: Serum gel
Acceptable: Red top
Submission Container: Plastic vial
Specimen Volume: 0.5 mL
Collection Instructions: Centrifuge and aliquot serum into plastic vial

Specimen Minimum Volume

0.4 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)	14 days	
	Frozen	21 days	

Clinical & Interpretive

Clinical Information

The SS-A/Ro is part of the Ro/La heterogeneous antigenic complex which is made up of three unique proteins (52 kDa Ro, 60 kDa Ro and La) and four small RNA particles.(1,2) Unlike antibodies to SS-B/La that are less common, reported separately and mainly associated with a diagnosis of primary Sjogren's syndrome, antibodies to SS-A/Ro are the most prevalent specificity among many autoimmune diseases such as primary Sjogren's syndrome (SS), systemic lupus erythematosus (SLE), systemic sclerosis (SSc), idiopathic inflammatory myopathy (IIM), rheumatoid arthritis (RA), and primary biliary cholangitis (PBC).(2-4) In addition, children born to mothers positive for anti-SS-A/Ro antibodies are at increased risk for congenital heart block.(3)

Historically, Ro52 and Ro60 autoantibodies were considered as a uniform autoantibody system. Therefore, when anti-Ro52 or anti-Ro60 antibody is positive, the result was typically reported as anti-SS-A/Ro antibody positive.(4,5) However, recent studies have provided evidence that Ro60 and Ro52 are not part of a stable macromolecular complex and that anti-Ro52 and anti-Ro60 antibodies have different clinical associations with implications for diagnosis, prognosis and patient management.(4-6)

The Ro52 antigen is also known as TRIM21; this protein has E3 ligase activity and functions in the process of ubiquitination.(1-3) The Ro60 antigen is a 60-kDa RNA-binding protein known to have repair functions for misfolded RNA.(1-3)

Individuals positive for anti-SS-A/Ro antibodies may react with either Ro52, Ro60, or both antigens.(4-6) Patients with only anti-Ro52 antibodies display a higher incidence of IIM,SSc, or interstitial lung disease (ILD).(7). Anti-Ro52 antibodies, in conjunction with antisynthetase antibodies such Jo-1 (others include PL-7, PL-12, EJ, and OJ) are also highly associated with ILD in patients with IIM.(7,8) In contrast, isolated anti-Ro60 antibodies are associated with increased risk for SLE and, to a lesser degree, for SS.(8) Positivity for both anti-Ro52 and anti-Ro60 antibodies are most strongly associated with SS; this association is even stronger if anti-SS-B/La antibodies are also detected.(9) The presence of anti-Ro52 and anti-Ro60 antibodies may also be observed in patients with SLE.(10)

Reference Values

<20 CU (negative)
> or =20 CU (positive)
Reference values apply to all ages

Interpretation

The presence of antibodies to both SSA 52 (Ro52) or SSA 60 (Ro60) is highly suggestive of a diagnosis of Sjogren syndrome (SS), with positivity for Ro60 alone more likely to be associated with systemic lupus erythematosus (SLE).

Antibodies to Ro52 may be present in patients with idiopathic inflammatory myopathy (IIM), systemic sclerosis (SSc), or overlap connective tissue disease (CTD). In CTD, antibodies to Ro52 alone or in association with other specific autoantibodies may be associated with interstitial lung diseases.

Negative results for antibodies to Ro52 and Ro60 does not exclude the possibility of any connective tissue disease, including SS, SLE, SSc, and IIM.

Cautions

Results from this testing should be interpreted in the context of clinical findings and other laboratory testing. Tests cannot be exclusively relied upon to establish a diagnosis for any connective tissue disease or related disorder, including systemic lupus erythematosus, Sjogren syndrome (SS), systemic sclerosis, or idiopathic inflammatory myopathy.

When assessed by standard SS-A (Ro) solid-phase immunoassays, such as enzyme immunoassays using combined antigens, some antibodies specific for either SSA 52 (Ro52) or SSA 60 (Ro60) may not be detected due to masking of target epitopes. In addition, multiplex bead assays with Ro52 or Ro60 antigens may simply be reported as SS-A/Ro positive without differentiation of the specific positive antibody.

Clinical Reference

1. Schulte-Pelkum J, Fritzler M, Mahler M. Latest update on the Ro/SS-A autoantibody system. Autoimmun Rev. 2009;8(7):632-637
2. Defendenti C, Atzeni F, Spina MF, et al. Clinical and laboratory aspects of Ro/SSA-52 autoantibodies. Autoimmun Rev. 2010;10(3):150-154
3. Fayyaz A, Kurien BT, Scofield H. Autoantibodies in Sjogren's syndrome. Rheum Dis Clin North Am. 2016;42(3):419-434
4. Armagan B, Robinson SA, Bazoberry A, et al. Antibodies to both ro52 and ro60 for identifying Sjogren's syndrome patients best suited for clinical trials of disease-modifying therapies. Arthritis Care Res (Hoboken). 2022;74(9):1559-1565
5. Robbins A, Hentzien M, Toquet S, et al. Diagnostic utility of separate anti-Ro60 and anti-Ro52/TRIM21 antibody detection in autoimmune diseases. Front Immunol. 2019;10:444
6. Lee AYS, Reed JH, Gordon TP. Anti-Ro60 and anti-Ro52/TRIM21: Two distinct autoantibodies in systemic autoimmune diseases. J Autoimmun. 2021;124:102724.
7. Chan EKL. Anti-Ro52 autoantibody is common in systemic autoimmune rheumatic diseases and correlating with worse outcome when associated with interstitial lung disease in systemic sclerosis and autoimmune myositis. Clin Rev Allergy Immunol. 2022;63(2):178-193
8. Gkoutzourelas A, Liaskos C, Mytilinaiou MG, et al. Anti-Ro60 seropositivity determines anti-ro52 epitope mapping in patients with systemic sclerosis. Front Immunol. 2018;9:2835
9. Deroo L, Achten H, De Boeck K, et al. The value of separate detection of anti-Ro52, anti-Ro60 and anti-SSB/La reactivities in relation to diagnosis and phenotypes in primary Sjogren's syndrome. Clin Exp Rheumatol. 2022;40(12):2310-1317
10. Zampeli E, Mavrommati M, Moutsopoulos HM, Skopouli FN. Anti-Ro52 and/or anti-Ro60 immune reactivity: autoantibody and disease associations. Clin Exp Rheumatol. 2020;38 Suppl 126(4):134-141

Performance

Method Description

Paramagnetic beads are coated with purified recombinant Ro60 protein. The serum sample is diluted in assay buffer and incubated with the beads. Antibodies to Ro60 bind to their respective beads and are detected by anti-human IgG antibody conjugated with isoluminol. With addition of trigger reagents, a luminescent reaction is produced by the isoluminol conjugate. The light produced by the reaction is measured by a photomultiplier, proportional to the amount of antibodies that are bound to the beads. The antibodies are quantified according to the working curve on the instrument. Anti-Ro60 are reported in chemiluminescent units (CU) as derived from the relative light units measured from each sample.(Package insert: QUANTA Flash Ro60 Reagents, Inova Diagnostics; 10/2019)

PDF Report

No

Day(s) Performed

Wednesday

Report Available

2 to 8 days

Specimen Retention Time

14 days

Performing Laboratory Location

Mayo Clinic Laboratories - Rochester Superior Drive

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 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

86235

LOINC® Information

Test ID	Test Order Name	Order LOINC® Value
RO60	Ro60 Antibody, IgG, S	53019-6

Result ID	Test Result Name	Result LOINC® Value

RO60	Ro60 Antibody, IgG, S	53019-6