

Specimen Collected: 11/18/2024 07:43 MST

Interstitial Lung Disease Autoantibody 2	Received: 11/18/2024 07:46 MST	Report/Verified: 11/18/2024 07:57 MST
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Procedure	Result	Units	Reference Interval
Rheumatoid Factor	25 ^H	IU/mL	[0-14]
SSA-52 (Ro52) (ENA) Antibody, IgG	55 ^H ⁱ¹	AU/mL	[0-40]
SSA-60 (Ro60) (ENA) Antibody, IgG	65 ^H ⁱ²	AU/mL	[0-40]
Jo-1 (Histidyl-tRNA Synthetase) Ab, IgG	75 ^H ⁱ³	AU/mL	[0-40]
PL-12 (alanyl-tRNA synthetase) Antibody	Positive *		[Negative]
PL-7 (threonyl-tRNA synthetase) Antibody	Positive *		[Negative]
EJ (glycyl-tRNA synthetase) Antibody	Positive *		[Negative]
OJ (isoleucyl-tRNA synthetase) Antibody	Positive *		[Negative]
SRP (Signal Recognition Particle) Ab	Positive *		[Negative]
Ku Antibody	Positive *		[Negative]
PM/Scl 100 Antibody, IgG	Positive * ⁱ⁴		[Negative]
MDA5 (CADM-140) Ab	Positive *		[Negative]
NXP2 (Nuclear matrix protein-2) Ab	High Positive *		[Negative]
Interpretive Information	See Note ⁱ⁵		
Scleroderma (Scl-70) (ENA) Antibody, IgG	55 ^H ⁱ⁶	AU/mL	[0-40]
RNA Polymerase III Antibody, IgG	65 ^H ⁱ⁷	Units	[0-19]
Antinuclear Antibody (ANA), HEp-2, IgG	Detected *		[<1:80]
ANA Interpretive Comment	See Note ^{t1} ⁱ⁸		
Cyclic Citrullinated Peptide Ab, IgG/A	55 ^H ⁱ⁹	Units	[0-19]
Ha (tyrosyl-tRNA synthetase) Ab	Positive * ^{t2}		[Negative]
Ks (asparaginyl-tRNA synthetase) Ab	Positive * ^{t3}		[Negative]
Zo (phenylalanyl-tRNA synthetase) Ab	Positive * ^{t4}		[Negative]

Antinuclear Ab, Dual Pattern	Received: 11/18/2024 07:46 MST	Report/Verified: 11/18/2024 07:57 MST
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Procedure	Result	Units	Reference Interval
ANA Titer 2	1:640 *		
ANA Pattern	Speckled *		
ANA Titer	1:2560 *		

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Unless otherwise indicated, testing performed at:

ARUP Laboratories

500 Chipeta Way, Salt Lake City, UT 84108

Laboratory Director: Jonathan R. Genzen, MD, PhD

ARUP Accession: 24-323-900007

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Antinuclear Ab, Dual Pattern	Received: 11/18/2024 07:46 MST	Report/Verified: 11/18/2024 07:57 MST
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Procedure	Result	Units	Reference Interval
ANA Pattern 2	Nuclear Dot *		

Cytoplasmic Pattern	Received: 11/18/2024 07:46 MST	Report/Verified: 11/18/2024 07:57 MST
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Procedure	Result	Units	Reference Interval
Cytoplasmic Titer	1:320 *		
Cytoplasm Pattern	GW Body-like *		

Interpretive Text

t1: 11/18/2024 07:43 MST (ANA Interpretive Comment)

Speckled Pattern

Clinical associations: SLE, SSc, SjS, DM, PM, MCTD, UCTD. May also be found in healthy individuals

Main autoantibodies: Anti-SSA-52 (Ro52), anti-SSA-60 (Ro60), anti-SS-B/LA, anti-Topo-1 (anti-Scl-70), Smith, anti-U1-RNP, anti-U2-RNP, anti-Mi-2, anti-p155/140 (TIF1g), anti-Ku, anti-RNA polymerase, anti-DFS70/LEDGF-P75

Nuclear Dots Pattern

Clinical associations: PBC, DM, SjS, SLE, SSc, PM

Main autoantibodies: Anti-NXP-2, anti-Sp100

Cytoplasmic discrete dots/GW Body-like pattern

Clinical Associations: SjS, SLE, RA and some neurologic disorders (ataxia, motor and sensory neuropathy)

Main autoantibodies: No available tests

List of Abbreviations

Antisynthetase syndrome (ARS), chronic active hepatitis (CAH), inflammatory myopathies (IM) [dermatomyositis (DM), polymyositis (PM), necrotizing autoimmune myopathy (NAM)], interstitial lung disease (ILD), juvenile idiopathic arthritis (JIA), mixed connective tissue disease (MCTD), primary biliary cholangitis (PBC), rheumatoid arthritis (RA), systemic autoimmune rheumatic diseases (SARD), Sjogren syndrome (SjS), systemic lupus erythematosus (SLE), systemic sclerosis (SSc), undifferentiated connective tissue disease (UCTD).

t2: 11/18/2024 07:43 MST (Ha (tyrosyl-tRNA synthetase) Ab)

Ha positive by line immunoassay. Band corresponding to 65 kDa observed by immunoprecipitation. Profile consistent with Ha antibody positivity.

t3: 11/18/2024 07:43 MST (Ks (asparaginyl-tRNA synthetase) Ab)

Ks positive by line immunoassay. Band corresponding to 65 kDa observed by immunoprecipitation. Profile consistent with Ks antibody positivity.

t4: 11/18/2024 07:43 MST (Zo (phenylalanyl-tRNA synthetase) Ab)

Zo positive by line immunoassay. Bands corresponding to 68 and 58 kDa observed by immunoprecipitation. Profile consistent with Zo antibody positivity.

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Test Information

i1: SSA-52 (Ro52) (ENA) Antibody, IgG

INTERPRETIVE INFORMATION: SSA-52 (Ro52) (ENA) Antibody, IgG

29 AU/mL or Less Negative

30 - 40 AU/mL Equivocal

41 AU/mL or Greater Positive

SSA-52 (Ro52) and/or SSA-60 (Ro60) antibodies are associated with a diagnosis of Sjogren syndrome, systemic lupus erythematosus (SLE), and systemic sclerosis. SSA-52 antibody overlaps significantly with the major SSc-related antibodies. SSA-52 (Ro52) antibody occurs frequently in patients with inflammatory myopathies, often in the presence of interstitial lung disease.

i2: SSA-60 (Ro60) (ENA) Antibody, IgG

REFERENCE INTERVAL: SSA-60 (Ro60) (ENA) Antibody, IgG

29 AU/mL or Less Negative

30 - 40 AU/mL Equivocal

41 AU/mL or Greater Positive

i3: Jo-1 (Histidyl-tRNA Synthetase) Ab, IgG

INTERPRETIVE INFORMATION: Jo-1 Antibody, IgG

29 AU/mL or less.....Negative

30-40 AU/mL.....Equivocal

41 AU/mL or greater.....Positive

Presence of Jo-1 (antihistidyl transfer RNA [t-RNA] synthetase) antibody is associated with polymyositis and may also be seen in patients with dermatomyositis. Jo-1 antibody is associated with pulmonary involvement (interstitial lung disease), Raynaud phenomenon, arthritis, and mechanic's hands (implicated in antisynthetase syndrome).

i4: PM/Scl 100 Antibody, IgG

INTERPRETIVE INFORMATION: PM/Scl-100 Antibody, IgG by
Immunoblot

The presence of PM/Scl-100 IgG antibody along with a positive ANA IFA nucleolar pattern is associated with connective tissue diseases such as polymyositis (PM), dermatomyositis (DM), systemic sclerosis (SSc), and polymyositis/systemic sclerosis overlap syndrome. The clinical relevance of PM/Scl-100 IgG antibody with a negative ANA IFA nucleolar pattern is unknown. PM/Scl-100 is the main target epitope of the PM/Scl complex, although antibodies to other targets not detected by this assay may occur.

This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the US Food and Drug Administration. This test was performed in a CLIA certified laboratory and is intended for clinical purposes.

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Patient Age/Sex: Unknown

Test Information

i5: Interpretive Information
INTERPRETIVE INFORMATION: Interstitial Lung Disease Autoantibodies

If present, myositis-specific antibodies (MSA) are specific for myositis, and may be useful in establishing diagnosis as well as prognosis. MSAs are generally regarded as mutually exclusive with rare exceptions; the occurrence of two or more MSAs should be carefully evaluated in the context of patient's clinical presentation. Myositis-associated antibodies (MAA) may be found in patients with CTD including overlap syndromes, and are generally not specific for myositis. The following table will help in identifying the association of any antibodies found as either MSAs or MAAs.

Antibody Specificity	MSA	MAA
SSA 52 (Ro) (ENA) Antibody IgG		X
SSA 60 (Ro) (ENA) Antibody IgG		X
Smith/RNP (ENA) Ab, IgG		X
Jo-1 (histidyl-tRNA synthetase) Ab, IgG	X	
PL-12 (alanyl-tRNA synthetase) Antibody	X	
PL-7 (threonyl-tRNA synthetase) Antibody	X	
EJ (glycyl-tRNA synthetase) Antibody	X	
OJ (isoleucyl-tRNA synthetase) Antibody	X	
SRP (Signal Recognition Particle) Ab	X	
Ku Antibody		X
PM/SCL 100 Antibody, IgG		X
U2 sn (small nuclear) RNP Antibody		X
Fibrillarin (U3 RNP) Ab, IgG		X
Mi-2 (nuclear helicase protein) Antibody	X	
P155/140 Antibody	X	
TIF-1 gamma (155 kDa) Ab	X	
SAE1 (SUMO activating enzyme) Ab	X	
MDA5 (CADM-140) Ab	X	
NXP2 (Nuclear matrix proten-2) Ab	X	

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i6: Scleroderma (Scl-70) (ENA) Antibody, IgG
INTERPRETIVE INFORMATION: Scleroderma (Scl-70) (ENA) Ab, IgG

29 AU/mL or Less	Negative
30 - 40 AU/mL	Equivocal
41 AU/mL or Greater	Positive

Test Information

i6: Scleroderma (Scl-70) (ENA) Antibody, IgG

The presence of Scl-70 antibodies (also referred to as topoisomerase I, topo-I or ATA) is considered diagnostic for systemic sclerosis (SSc). Scl-70 antibodies alone are detected in about 20 percent of SSc patients and are associated with the diffuse form of the disease, which may include specific organ involvement and poor prognosis. Scl-70 antibodies have also been reported in a varying percentage of patients with systemic lupus erythematosus (SLE). Scl-70 (topo-1) is a DNA binding protein and anti-DNA/DNA complexes in the sera of SLE patients may bind to topo-I, leading to a false-positive result. The presence of Scl-70 antibody in sera may also be due to contamination of recombinant Scl-70 with DNA derived from cellular material used in immunoassays. Strong clinical correlation is recommended if both Scl-70 and dsDNA antibodies are detected.

Negative results do not necessarily rule out the presence of SSc. If clinical suspicion remains, consider further testing for centromere, RNA polymerase III and U3-RNP, PM/Scl, or Th/To antibodies.

i7: RNA Polymerase III Antibody, IgG

INTERPRETIVE INFORMATION: RNA Polymerase III Antibody, IgG

19 Units or lessNegative
20 - 39 UnitsWeak Positive
40 - 80 UnitsModerate Positive
81 Units or greater ...Strong Positive

The presence of RNA polymerase III IgG antibody, when considered in conjunction with other laboratory and clinical findings, is an aid in the diagnosis of systemic sclerosis (SSc) with increased incidence of skin involvement and renal crisis with the diffuse cutaneous form of SSc. RNA polymerase III IgG antibody occur in about 11-23 percent of SSc patients, and typically in the absence of anti-centromere and anti-Scl-70 antibodies.

A negative result indicates no detectable IgG antibodies to the dominant antigen of RNA polymerase III and does not rule out the possibility of SSc. False-positive results may also occur due to non-specific binding of immune complexes. Strong clinical correlation is recommended.

If clinical suspicion remains, consider additional testing for other antibodies associated with SSc, including centromere, Scl-70, U3-RNP, PM/Scl, or Th/To.

i8: ANA Interpretive Comment

INTERPRETIVE INFORMATION: ANA Interpretive Comment

Presence of antinuclear antibodies (ANA) is a hallmark feature of systemic autoimmune rheumatic diseases (SARD). However, ANA lacks diagnostic specificity and is associated with a variety of diseases (cancers, autoimmune, infectious, and

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Test Information

i8: ANA Interpretive Comment
inflammatory conditions) and may also occur in healthy individuals in varying prevalence. The lack of diagnostic specificity requires confirmation of positive ANA by more specific serologic tests. ANA (nuclear reactivity) positive patterns reported include centromere, homogeneous, nuclear dots, nucleolar, or speckled. ANA (cytoplasmic reactivity) positive patterns reported include reticular/AMA, discrete/GW body-like, polar/golgi-like, cytoplasmic speckled or rods and rings. All positive patterns are reported to endpoint titers (1:2560). Reported patterns may help guide differential diagnosis, although they may not be specific for individual antibodies or diseases. Mitotic staining patterns not reported. Negative results do not necessarily rule out SARD.

i9: Cyclic Citrullinated Peptide Ab, IgG/A
INTERPRETIVE INFORMATION: Cyclic Citrullinated Peptide Ab, IgG/A

19 Units or less Negative
20-39 Units Weak Positive
40-59 Units Moderate Positive
60 Units or greater Strong Positive

A positive result for cyclic citrullinated peptide (CCP) antibodies in conjunction with consistent clinical features may be suggestive of rheumatoid arthritis (RA). Anti-CCP, IgG/IgA antibodies are present in about 66-74 percent of RA patients and have specificities of 96-99 percent. Detection of IgA antibodies in addition to the usual IgG antibodies enhances the sensitivity due to some RA patients having IgA antibodies to CCP in the absence of IgG. These autoantibodies may be present in the preclinical phase of disease, are associated with future RA development, and may predict radiographic joint destruction. Patients with weak positive results should be monitored and testing repeated.

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