

Client: Example Client ABC123
123 Test Drive
Salt Lake City, UT 84108
UNITED STATES

Physician: Doctor, Example

Patient: Patient, Example

DOB: Unknown
Gender: Male
Patient Identifiers: 01234567890ABCD, 012345
Visit Number (FIN): 01234567890ABCD
Collection Date: 00/00/0000 00:00

Thyroid Peroxidase (TPO) Antibody

ARUP test code 0050075

Thyroid Peroxidase (TPO) Antibody **15.0 IU/mL H** (Ref Interval: 0.0-9.0)

Lupus Comprehensive Reflexive Panel

ARUP test code 0050119

Complement Component 3 **9999 mg/dL**
REFERENCE INTERVAL: Complement Component 3
Access complete set of age- and/or gender-specific reference intervals for this test in the ARUP Laboratory Test Directory (aruplab.com).

Complement Component 4 **>200 mg/dL**
REFERENCE INTERVAL: Complement Component 4
Access complete set of age- and/or gender-specific reference intervals for this test in the ARUP Laboratory Test Directory (aruplab.com).

Rheumatoid Factor **30 IU/mL H** (Ref Interval: 0-14)

Anti-Nuclear Ab (ANA), IgG by ELISA **Detected *** (Ref Interval: None Detected)
Antibodies to Anti-Nuclear Antibodies (ANA) detected. Additional testing to follow.

H=High, L=Low, *=Abnormal, C=Critical

INTERPRETIVE INFORMATION: Anti-Nuclear Antibodies (ANA), IgG by ELISA

Antinuclear Antibodies (ANA), IgG by ELISA: ANA specimens are screened using enzyme-linked immunosorbent assay (ELISA) methodology. All ELISA results reported as Detected are further tested by indirect fluorescent assay (IFA) using HEP-2 substrate with an IgG-specific conjugate. The ANA ELISA screen is designed to detect antibodies against dsDNA, histones, SS-A (Ro), SS-B (La), Smith, Smith/RNP, Scl-70, Jo-1, centromeric proteins, other antigens extracted from the HEP-2 cell nucleus. ANA ELISA assays have been reported to have lower sensitivities than ANA IFA for systemic autoimmune rheumatic diseases (SARD).

Negative results do not necessarily rule out SARD.

Double-Stranded DNA (dsDNA) Antibody, IgG by ELISA with Reflex to dsDNA Antibody, IgG by IFA

ARUP test code 0050215

Double-Stranded DNA (dsDNA) Ab IgG ELISA

55 IU H

(Ref Interval: 0-24)

INTERPRETIVE INFORMATION: Double-Stranded DNA (dsDNA) Ab IgG ELISA

24 IU or less.....Negative
25-30 IU.....Borderline Positive
30-60 IU.....Low Positive
60-200 IU.....Positive
201 IU or greater....Strong Positive

Positivity for anti-double stranded DNA (anti-dsDNA) IgG antibody is a diagnostic criterion of systemic lupus erythematosus (SLE). Specimens are initially screened by enzyme-linked immunosorbent assay (ELISA). If ordered as reflex (0050215), positive ELISA results (>24 IU) will be reflexed to a highly specific IFA titer (Crithidia luciliae indirect fluorescent test [CLIFT]) for confirmation. Some patients with early or inactive SLE may be positive for anti-dsDNA IgG by ELISA but negative by CLIFT. If the patient is negative by CLIFT but positive by ELISA and clinical suspicion remains, consider antinuclear antibody (ANA) testing by IFA. Additional information and recommendations for testing may be found at <https://arupconsult.com/content/systemic-lupus-erythematosus>.

Double-Stranded DNA (dsDNA) Antibody, IgG by IFA (using Crithidia luciliae)

ARUP test code 2002693

Double-Stranded DNA (dsDNA) Ab IgG IFA

1:320 *

(Ref Interval: <1:10)

H=High, L=Low, *=Abnormal, C=Critical

INTERPRETIVE INFORMATION: Double-Stranded DNA (dsDNA) Antibody, IgG by IFA (using Crithidia luciliae)

Positivity for anti-double stranded DNA (anti-dsDNA) IgG antibody is a diagnostic criterion of systemic lupus erythematosus (SLE). The presence of the anti-dsDNA IgG antibody is identified by IFA titer (Crithidia luciliae indirect fluorescent test [CLIFT]). CLIFT is highly specific for SLE with a sensitivity of 50-60 percent.

Some patients with early or inactive SLE may be positive for anti-dsDNA IgG by ELISA but negative by CLIFT. If the CLIFT result is negative but the patient has a positive ELISA and clinical suspicion remains, consider antinuclear antibody (ANA) testing by IFA. Additional information and recommendations for testing may be found at <https://arupconsult.com/content/connective-tissue-diseases>.

Smith (ENA) Antibody, IgG

ARUP test code 0050085

Smith (ENA) Antibody, IgG

75 AU/mL H (Ref Interval: 0-40)

INTERPRETIVE INFORMATION: Smith (ENA) Antibody, IgG

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

Smith antibody is highly specific (greater than 90 percent) for systemic lupus erythematosus (SLE) but only occurs in 30-35 percent of SLE cases. The presence of antibodies to Smith has variable associations with SLE clinical manifestations.

SSA 52 and 60 (Ro) (ENA) Antibodies, IgG

ARUP test code 2012074

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

95 AU/mL H (Ref Interval: 0-40)

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.

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

120 AU/mL H (Ref Interval: 0-40)

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

Smith/RNP (ENA) Antibody, IgG

ARUP test code 0050470

H=High, L=Low, *=Abnormal, C=Critical

Unless otherwise indicated, testing performed at:

Smith/RNP (ENA) Ab, IgG

55 Units H (Ref Interval: 0-19)

INTERPRETIVE INFORMATION: Smith/RNP (ENA) Antibody, IgG

19 Units or Less Negative
20 to 39 Units Weak Positive
40 to 80 Units Moderate Positive
81 Units or greater Strong Positive

Smith/RNP antibodies are frequently seen in patients with mixed connective tissue disease (MCTD) and are also associated with other systemic autoimmune rheumatic diseases (SARDs) such as systemic lupus erythematosus (SLE), systemic sclerosis, and myositis. Antibodies targeting the Smith/RNP antigenic complex also recognize Smith antigens, therefore, the Smith antibody response must be considered when interpreting these results.

SSB (La) (ENA) Antibody, IgG

ARUP test code 0050692

SSB (La) (ENA) Antibody, IgG

85 AU/mL H (Ref Interval: 0-40)

INTERPRETIVE INFORMATION: SSB (La) (ENA) Ab, IgG

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

SSB (La) antibody is seen in 50-60% of Sjogren syndrome cases and is specific if it is the only ENA antibody present. 15-25% of patients with systemic lupus erythematosus (SLE) and 5-10% of patients with progressive systemic sclerosis (PSS) also have this antibody.

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

ARUP test code 0050599

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

60 AU/mL H (Ref Interval: 0-40)

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

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.

H=High, L=Low, *=Abnormal, C=Critical

Unless otherwise indicated, testing performed at:

Antinuclear Antibody (ANA) with HEP-2 Substrate, IgG by IFA

ARUP test code 3000082

Antinuclear Antibody (ANA), HEP-2, IgG **Detected** * (Ref Interval: <1:80)

ANA Interpretive Comment

See Note

Nucleolar Pattern

Clinical associations: SSC, SSC/PM overlap, Sjs
Main autoantibodies: Anti-PM/Scl, anti-RNA polymerase, anti-URNP, anti-U3-RNP (anti-fibrillar), anti-Th/To, NOR-90

Nuclear Dots Pattern

Clinical associations: PBC, DM, Sjs, SLE, SSC, PM
Main autoantibodies: Anti-NXP-2, anti-Sp100

Cytoplasmic speckled pattern (includes dense fine speckled and fine speckled patterns)

Clinical Associations: anti-synthetase (ARS), SLE, necrotizing myopathy, dermatomyositis
Main autoantibodies: EJ, Jo-1, OJ, PL-7, PL-12, MDA5, ribosomal p, SRP

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).

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 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.

Antinuclear Antibody (ANA) with HEP-2 Substrate, IgG by IFA, Dual Pattern (Reflex for 3000082 ANA IFA AB Only Not Orderable by Clients)

ARUP test code 3000084

ANA Pattern **Nucleolar** *

H=High, L=Low, *=Abnormal, C=Critical

Unless otherwise indicated, testing performed at:

ANA Titer	1:1280	*	Extractable Nuclear Antigen Antibodies (RNP, Smith, Scleroderma, SSA 52, SSA 60, and SSB), Double Stranded DNA (dsDNA) Antibody, IgG and Thyroid Peroxidase (TPO) Antibody to follow.
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ANA Pattern 2	Nuclear Dot	*	
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ANA Titer 2	1:1280	*	Extractable Nuclear Antigen Antibodies (RNP, Smith, Scleroderma, SSA 52, SSA 60, and SSB), Double Stranded DNA (dsDNA) Antibody, IgG and Thyroid Peroxidase (TPO) Antibody to follow.
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Antinuclear Antibody (ANA) with HEp-2 Substrate, IgG by IFA, Cytoplasmic Pattern (Reflex for 3000082 ANA IFA AB Only Not Orderable by Clients)
ARUP test code 3000478

Cytoplasmic Titer	1:1280	*	
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Cytoplasm Pattern	speckled	*	
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H=High, L=Low, *=Abnormal, C=Critical

Unless otherwise indicated, testing performed at:

VERIFIED/REPORTED DATES

Procedure	Accession	Collected	Received	Verified/Reported
Thyroid Peroxidase (TPO) Antibody	24-190-110550	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00
Complement Component 3	24-190-110550	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00
Complement Component 4	24-190-110550	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00
Rheumatoid Factor	24-190-110550	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00
Anti-Nuclear Ab (ANA), IgG by ELISA	24-190-110550	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00
Double-Stranded DNA (dsDNA) Ab IgG ELISA	24-190-110550	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00
Double-Stranded DNA (dsDNA) Ab IgG IFA	24-190-110550	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00
Smith (ENA) Antibody, IgG	24-190-110550	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00
SSA-52 (Ro52) (ENA) Antibody, IgG	24-190-110550	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00
SSA-60 (Ro60) (ENA) Antibody, IgG	24-190-110550	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00
Smith/RNP (ENA) Ab, IgG	24-190-110550	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00
SSB (La) (ENA) Antibody, IgG	24-190-110550	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00
Scleroderma (Scl-70) (ENA) Antibody, IgG	24-190-110550	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00
Antinuclear Antibody (ANA), HEp-2, IgG	24-190-110550	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00
ANA Pattern	24-190-110550	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00
ANA Titer	24-190-110550	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00
ANA Pattern 2	24-190-110550	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00
ANA Titer 2	24-190-110550	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00
Cytoplasmic Titer	24-190-110550	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00
ANA Interpretive Comment	24-190-110550	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00
Cytoplasm Pattern	24-190-110550	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00

END OF CHART

H=High, L=Low, *=Abnormal, C=Critical

Unless otherwise indicated, testing performed at:

ARUP LABORATORIES | 800-522-2787 | aruplab.com
500 Chipeta Way, Salt Lake City, UT 84108-1221
Jonathan R. Genzen, MD, PhD, Laboratory Director

Patient: Patient, Example
ARUP Accession: 24-190-110550
Patient Identifiers: 01234567890ABCD, 012345
Visit Number (FIN): 01234567890ABCD
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