

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

Physician: Doctor, Example

**Patient: Patient, Example**

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

**Antinuclear Antibodies (ANA), IgG by ELISA with Reflex to ANA HEP-2 Substrate, IgG by IFA and ENA Confirmation**

ARUP test code 0050317

Anti-Nuclear Ab (ANA), IgG by ELISA

**Detected \* (Ref Interval: None Detected)**

Antibodies to Anti-Nuclear Antibodies (ANA) detected. Additional testing to follow.

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)**

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

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

**1:160 \* (Ref Interval: <1:10)**

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 <http://www.arupconsult.com/Topics/AutoimmuneDz/ConnectiveTissueDz/index.html>.

**Smith (ENA) Antibody, IgG**

ARUP test code 0050085

Smith (ENA) Antibody, IgG

**85 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.

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

Unless otherwise indicated, testing performed at:

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

ARUP test code 2012074

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

**456 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

**88 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

Smith/RNP (ENA) Ab, IgG

**35 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.

**Jo-1 Antibody, IgG**

ARUP test code 0099592

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

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

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

Unless otherwise indicated, testing performed at:

**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).

**SSB (La) (ENA) Antibody, IgG**

ARUP test code 0050692

SSB (La) (ENA) Antibody, IgG

**655 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

**65 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.

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

ARUP test code 3000082

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

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

ANA Interpretive Comment

See Note

Homogeneous Pattern  
Clinical associations: SLE, drug-induced SLE or JIA.  
Main autoantibodies: Anti-dsDNA, anti-histones or anti-chromatin (anti-nucleosome)

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, Single Pattern (Reflex for 3000082 ANA IFA AB Only Not Orderable by Clients)**

ARUP test code 3000083

ANA Pattern      **Homogeneous**      \*

ANA Titer      **1:640**      \*

Extractable Nuclear Antigen Antibodies (RNP, Smith, SSA 52, SSA 60, Scleroderma, Jo-1, and SSB), and Double Stranded DNA (dsDNA) Antibody IgG to follow.

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

VERIFIED/REPORTED DATES				
Procedure	Accession	Collected	Received	Verified/Reported
Anti-Nuclear Ab (ANA), IgG by ELISA	23-101-102428	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00
Double-Stranded DNA (dsDNA) Ab IgG ELISA	23-101-102428	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00
Double-Stranded DNA (dsDNA) Ab IgG IFA	23-101-102428	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00
Smith (ENA) Antibody, IgG	23-101-102428	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00
SSA-52 (Ro52) (ENA) Antibody, IgG	23-101-102428	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00
SSA-60 (Ro60) (ENA) Antibody, IgG	23-101-102428	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00
Smith/RNP (ENA) Ab, IgG	23-101-102428	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00
Jo-1 (Histidyl-tRNA Synthetase) Ab, IgG	23-101-102428	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00
SSB (La) (ENA) Antibody, IgG	23-101-102428	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00
Scleroderma (Scl-70) (ENA) Antibody, IgG	23-101-102428	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00
Antinuclear Antibody (ANA), HEp-2, IgG	23-101-102428	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00
ANA Pattern	23-101-102428	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00
ANA Titer	23-101-102428	00/00/0000 00:00	00/00/0000 00:00	00/00/0000 00:00
ANA Interpretive Comment	23-101-102428	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: 23-101-102428  
Patient Identifiers: 01234567890ABCD, 012345  
Visit Number (FIN): 01234567890ABCD  
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