

Effective as of **03/02/2026**

Additional ordering and billing information

[Information when ordering laboratory tests that are billed to Medicare/Medicaid](#)

[Information regarding Current Procedural Terminology \(CPT\)](#)

Test Number	Mnemonic	Test Name	New Test	Test Name Change	Specimen Requirements	Methodology	Note	Interpretive Data	Reference Interval	Component Charting Name	Component Change	Reflex Pattern	Result Type	Ask at Order Prompt	Numeric Map	Unit of Measure	CPT Code	Pricing Change	Inactivation w/ Replacement	Inactivation w/o Replacement
0050470	RNP	Smith/RNP (ENA) Antibody, IgG			x	x		x	x											
0050652	ENA ABS4	Extractable Nuclear Antigen Antibodies (Smith/RNP, Smith, SSA 52, SSA 60, and SSB)			x	x		x	x											
0051668	CONN	Connective Tissue Diseases Profile			x	x		x	x											
0090786	PAROXE SP	Paroxetine Quantitative, Serum or Plasma			x													x		
0091234	FLUVOXAM	Fluvoxamine Quantitative, Serum or Plasma			x					x								x		
0092382	ESCITALO	Escitalopram Quantitative, Serum or Plasma			x		x			x								x		
2002925	LUPUS PRO	Lupus Profile with Reflex to ANA and dsDNA by IFA			x			x	x											
2003302	CITALO	Citalopram Quantitative, Serum or Plasma			x		x											x		
2006328	GLUT TOT	Glutathione Total			x															
2006473	DULOX SP	Duloxetine Quantitative, Serum or Plasma			x													x		

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2009214	STREPTO	Antimicrobial Level, Streptomycin by HPLC, Serum		x	x					x										
2009359	AZITHRO	Antimicrobial Level, Azithromycin by HPLC, Serum		x	x					x										
2009363	RIFABU	Antimicrobial Level, Rifabutin by HPLC, Serum		x	x					x										
2009367	CYCLOS	Antimicrobial Level, Cycloserine, Serum		x	x					x										
2014180	FLUOX SP	Fluoxetine and Metabolite Quantitative, Serum or Plasma				x											x			
3000460	SMITH_RNP	Smith and Smith/RNP (ENA) Antibodies, IgG			x	x		x	x											
3000480	SCL COMPRE	Comprehensive Systemic Sclerosis Panel						x	x											
3002463	CTD PAN	Connective Tissue Disease First Line Panel with Reflex						x	x											
3004386	UGT1A1 NGS	UGT1A1 Sequencing			x															

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3018867	MYOS EXT2	Extended Myositis Panel				x		x	x											
3020435	VITAMB7 SP	Vitamin B7 (Biotin), Serum or Plasma			x															

TEST CHANGE

Smith/RNP (ENA) Antibody, IgG

0050470, RNP

Specimen Requirements:

Patient Preparation:

Collect: Serum separator tube.

Specimen Preparation: Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP standard transport tube. (Min: 0.5 mL)

Transport Temperature: Refrigerated.

Unacceptable Conditions: Plasma or other body fluids. Contaminated, hemolyzed, or severely lipemic specimens.

Remarks:

Stability: After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 ~~year~~~~month~~ (avoid repeated freeze/thaw cycles)

Methodology: Semi-Quantitative ~~Multiplex Bead Assay~~ ~~Enzyme Immunoassay (EIA)~~

Note: An affinity purified RNP/Sm antigen complex is used in this assay.

CPT Codes: 86235

New York DOH Approval Status: This test is New York DOH approved.

Interpretive Data:

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.

Component	Interpretation
Smith/RNP (U1) (Ribonucleic Protein) (ENA) Ab Antibody, IgG	29 AU/mL 19 Units or less; Negative 30-20- 39 Units Weak Positive 40 AU/mL: Equivocal 41 AU/mL-80 Units Moderate Positive 81 Units or greater: Strong Positive

Reference Interval:

Test Number	Components	Reference Interval
	Smith/RNP (ENA) Ab, IgG	40 AU/mL 19 Units or less

TEST CHANGE

Extractable Nuclear Antigen Antibodies (Smith/RNP, Smith, SSA 52, SSA 60, and SSB)
0050652, ENA ABS4

Specimen Requirements:

Patient Preparation:

Collect: Serum separator tube.

Specimen Preparation: Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP standard transport tube. (Min: 0.5 mL)

Transport Temperature: Refrigerated.

Unacceptable Conditions: Plasma or other body fluids. Bacterially contaminated or severely lipemic specimens.

Remarks:

Stability: After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 ~~year~~month (avoid repeated freeze/thaw cycles)

Methodology: ~~Quantitative Enzyme-Linked Immunosorbent Assay (ELISA)~~
Quantitative Multiplex Bead Assay

Note:

CPT Codes: 86235 x5

New York DOH Approval Status: This test is New York DOH approved.

Interpretive Data:

Component	Interpretation
Smith/RNP (ENA) Antibody, IgG	29 AU/mL Units or less: Negative 30-20- 39 Units Weak Positive 40 AU/mL: Equivocal 41 AU/mL-80 Units Moderate Positive 81 Units or greater: Strong Positive
Smith (ENA) Antibody, IgG	29 AU/mL or less: Negative 30-40 AU/mL: Equivocal 41 AU/mL or greater: Positive
SSA-52 (Ro52) (ENA) Antibody, IgG	29 AU/mL or less: Negative 30-40 AU/mL: Equivocal 41 AU/mL or greater: Positive
SSA-60 (Ro60) (ENA) Antibody, IgG	29 AU/mL or less: Negative 30-40 AU/mL: Equivocal

SSB (La) (ENA) Antibody, IgG	41 AU/mL or greater: Positive 29 AU/mL or less: Negative 30-40 AU/mL: Equivocal 41 AU/mL or greater: Positive
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Reference Interval:

Test Number	Components	Reference Interval
	Smith (ENA) Antibody, IgG	40 AU/mL or less
	Smith/RNP (ENA) Ab, IgG	40 AU/mL 19 Units or less
	SSA-52 (Ro52) (ENA) Antibody, IgG	40 AU/mL or less
	SSA-60 (Ro60) (ENA) Antibody, IgG	40 AU/mL or less
	SSB (La) (ENA) Antibody, IgG	40 AU/mL or less

TEST CHANGE

Connective Tissue Diseases Profile

0051668, CONN

Specimen Requirements:

Patient Preparation:

Collect: Serum separator tube.

Specimen Preparation: Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP standard transport tube. (Min: 0.5 mL)

Transport Temperature: Refrigerated.

Unacceptable Conditions: Plasma or other body fluids. Bacterially contaminated specimens.

Remarks:

Stability: After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 ~~year~~ (avoid repeated freeze/thaw cycles) ~~month~~

Methodology: Semi-Quantitative Enzyme-Linked Immunosorbent Assay (ELISA) / Semi-Quantitative Multiplex Bead Assay

Note:

CPT Codes: 86235 x7; 83516 x2

New York DOH Approval Status: This test is New York DOH approved.

Interpretive Data:

Refer to report.

Component		Interpretation
Smith (ENA) Antibody, IgG	29 AU/mL or less	Negative
	30-40 AU/mL 41	Equivocal
	AU/mL or greater	Positive
Smith/RNP (ENA) Antibody, IgG	29 AU/mL <u>19 Units</u> or less	Negative
	30-40 AU/mL <u>30-40 units</u>	Equivocal <u>Weak Positive</u>
	41 AU/mL <u>41 AU/mL</u>	<u>Moderate Positive</u>
	80 AU/mL <u>80 units</u>	<u>Positive-Strong</u>
	81 units or greater	Positive
SSA-52 (Ro52) (ENA) Antibody, IgG	29 AU/mL or Less	Negative
	30-40 AU/mL 41	Equivocal
	AU/mL or greater	Positive
SSA-60 (Ro60) (ENA) Antibody, IgG	29 AU/mL or Less	Negative
	30-40 AU/mL 41	Equivocal
	AU/mL or greater	Positive
SSB (La) (ENA) Antibody, IgG	29 AU/mL or less	Negative
	30-40 AU/mL 41	Equivocal
	AU/mL or greater	Positive
Jo-1 Antibody, IgG	29 AU/mL or less	Negative
	30-40 AU/mL 41	Equivocal

	AU/mL or greater	Positive
Ribosomal P Protein Antibody	29 AU/mL or less 30-40 AU/mL 41 AU/mL or greater	Negative Equivocal Positive
Centromere Antibody, IgG	29 AU/mL or less 30-40 AU/mL 41 AU/mL or greater	Negative Equivocal Positive
Scleroderma (Scl-70) (ENA) Antibody, IgG	29 AU/mL or less 30-40 AU/mL 41 AU/mL or greater	Negative Equivocal Positive

Reference Interval:

Test Number	Components	Reference Interval
	Centromere Ab, IgG	0-40 AU/mL
	Jo-1 (Histidyl-tRNA Synthetase) Ab, IgG	40 AU/mL or less
	Ribosome P Antibody, IgG	0-40 AU/mL
	Scleroderma (Scl-70) (ENA) Antibody, IgG	40 AU/mL or less
	Smith (ENA) Antibody, IgG	40 AU/mL or less
	Smith/RNP (ENA) Ab, IgG	40 AU/mL 19 Units or less
	SSA-52 (Ro52) (ENA) Antibody, IgG	40 AU/mL or less
	SSA-60 (Ro60) (ENA) Antibody, IgG	40 AU/mL or less
	SSB (La) (ENA) Antibody, IgG	40 AU/mL or less

TEST CHANGE

Paroxetine Quantitative, Serum or Plasma

0090786, PAROXE SP

Specimen Requirements:

Patient Preparation:

Collect: Plain ~~red, lavender~~~~Red, Lavender~~ (K2 EDTA), or ~~p~~**P**ink (K2EDTA).

Specimen Preparation: Separate from cells ASAP or within 2 hours of collection. Transfer 1 mL serum or plasma to an ARUP ~~standard transport tube~~~~Standard Transport Tube~~. (Min: 0.4 mL)
Test is not performed at ARUP; separate specimens must be submitted when multiple tests are ordered.

Transport Temperature: Refrigerated. Also acceptable: Room temperature or frozen.

Unacceptable Conditions: ~~Polymer gel separation tube (SST or PST)~~~~Separator tubes~~.

Remarks:

Stability: Ambient: ~~1 month~~~~2-week~~; Refrigerated: 1 month; Frozen: ~~1 month~~~~6-months~~

Methodology: Quantitative Liquid Chromatography-Tandem Mass Spectrometry

Note:

CPT Codes: 80332 (~~Alt code: G0480~~)

New York DOH Approval Status: This test is New York DOH approved.

Interpretive Data:

Reference Interval:

~~Refer to~~**By** report

TEST CHANGE

Fluvoxamine Quantitative, Serum or Plasma

0091234, FLUVOXAM

Specimen Requirements:

Patient Preparation:

Collect: Plain red, lavender (K2EDTA), or pink (K3EDTA).

Specimen Preparation: Separate from cells ASAP or within 2 hours of collection. Transfer 1 mL serum or plasma to an ARUP standard transport tube. (Min: 0.4 mL)
Test is not performed at ARUP; separate specimens must be submitted when multiple tests are ordered.

Transport Temperature: Refrigerated. Also acceptable: Room temperature or frozen~~Frozen~~.

Unacceptable Conditions: Polymer gel separation tube (SST or PST)~~Separator tubes~~.

Remarks:

Stability: Ambient: 1 week~~Unacceptable~~; Refrigerated: 1 month; Frozen: 1 year~~3 months~~

Methodology: Quantitative High Performance Liquid Chromatography-Tandem Mass Spectrometry

Note:

CPT Codes: 80332 (~~Alt code: G0480~~)

New York DOH Approval Status: This test is New York DOH approved.

Interpretive Data:

Reference Interval:

Refer to report

TEST CHANGE

Escitalopram Quantitative, Serum or Plasma

0092382, ESCITALO

Specimen Requirements:

Patient Preparation:

Collect: Plain red, lavender (K2EDTA), or pink (K2EDTA).

Specimen Preparation: Separate from cells ASAP or within 2 hours of collection. Transfer 1 mL serum or plasma to an ARUP standard transport tube. (Min: 0.4 mL)
Test is not performed at ARUP; separate specimens must be submitted when multiple tests are ordered.

Transport Temperature: Refrigerated. Also acceptable: Room temperature or frozen.

Unacceptable Conditions: ~~Polymer gel separation tube (SST or PST) Separator tubes.~~

Remarks:

Stability: Ambient: 1 month; Refrigerated: 1 month; Frozen: ~~1 month~~ 7 months

Methodology: Qualitative High Performance Liquid Chromatography-Tandem Mass Spectrometry

Note: ~~Test is not chiral specific. Patients who have taken racemic citalopram (Celexa), as opposed to escitalopram (Lexapro), within the past 3 days may have falsely elevated values.~~

CPT Codes: 80332 ~~(Alt code: G0480)~~

New York DOH Approval Status: This test is New York DOH approved.

Interpretive Data:

Reference Interval:

~~Refer to~~ By report

TEST CHANGE

Lupus Profile with Reflex to ANA and dsDNA by IFA

2002925, LUPUS PRO

Specimen Requirements:

Patient Preparation:

Collect: One 10 mL serum separator tube.

Specimen Preparation:

Transport Temperature: 4 mL serum, frozen. (Min: 2 mL) Submit specimen in an ARUP [standard transport tube](#) ~~Standard Transport Tube~~.

Unacceptable Conditions: Plasma. Any body fluids other than serum. Severely lipemic, contaminated, or hemolyzed specimens. Specimens left to clot at 2-8 degrees C.

Remarks:

Allow specimen to clot for 30 to 60 minutes at 20-25 degrees C. Separate serum from cells ASAP and freeze.

Stability:

~~After separation from cells:~~ Ambient: **4 days 8 hours**;
Refrigerated: **8 days**; ~~1 week~~; Frozen: **2 weeks**; ~~1 month~~

Methodology:

Qualitative Enzyme-Linked Immunosorbent Assay (ELISA) / Semi-Quantitative Indirect Fluorescent Antibody (IFA) / Semi-Quantitative Multiplex Bead Assay / Immunoturbidimetry / Chemiluminescent Immunoassay (CLIA) / Semi-Quantitative Enzyme-Linked Immunosorbent Assay (ELISA)

Note:

Initial testing includes ANA; Thyroid Peroxidase (TPO) Antibody; Complement Component 3; Complement Component 4; Cardiolipin Antibody IgG; Cardiolipin Antibody IgA; Cardiolipin Antibody IgM, Centromere Antibody, IgG; Double-Stranded DNA (dsDNA) Antibody, IgG by ELISA with Reflex to dsDNA Antibody, IgG by IFA; Smith/RNP (ENA) Antibody, IgG; Scleroderma (Scl-70) (ENA) Antibody, IgG; Smith (ENA) Antibody, IgG; SSA 52 and 60 (Ro) (ENA) Antibodies, IgG; and SSB (La) (ENA) Antibody, IgG. Specimens are screened for ANA using ELISA. If antibodies are detected, then an IFA titer will be added. Additional charges apply. ANA identified by indirect fluorescence assay (IFA) using HEp-2 substrate and IgG-specific conjugate at a screening dilution of 1:80. Positive nuclear patterns reported include homogeneous, speckled, centromere, nucleolar, or nuclear dots. Positive cytoplasmic patterns reported include reticular/AMA, discrete/GW body-like, polar/golgi-like, rods and rings, or cytoplasmic speckled patterns. All positive results are reported with endpoint titers at no additional charge. Specimens are screened for dsDNA using ELISA. If antibodies are detected, then an IFA titer will be added.

CPT Codes:

86038; 86376; 86160 x2; 86147 x3; 83516; 86225; 86235 x6; if

reflexed, add 86039; 86256

New York DOH Approval Status: This test is New York DOH approved.

Interpretive Data:

Refer to report.

Component	Interpretation	
Cardiolipin Antibody, IgG	<p>≤14 GPL or less Negative</p> <p>15-19 GPL 20-80 Indeterminate</p> <p>GPL 81 GPL or Low to</p> <p>greater above Moderately</p> <p>Positive High</p> <p>Positive</p>	
Cardiolipin Antibody, IgA	<p>≤11 APL or less Negative</p> <p>12-19 APL 20-80 Indeterminate</p> <p>APL 81 APL or Low to</p> <p>greater above Moderately</p> <p>Positive High</p> <p>Positive</p>	
Cardiolipin Antibody, IgM	<p>≤12 MPL or less Negative</p> <p>13-19 MPL 20-80 Indeterminate</p> <p>MPL 81 MPL or Low to</p> <p>greater above Moderately</p> <p>Positive High</p> <p>Positive</p>	
Centromere Antibody, IgG	<p>29 AU/mL or less Negative</p> <p>30-40 AU/mL 41 Equivocal</p> <p>AU/mL or greater Positive</p>	
dsDNA (Double Stranded DNA) Antibody, IgG	Refer to report	Refer to report
Double-Stranded DNA (dsDNA) Antibody, IgG by IFA (using Crithidia luciliae)	Refer to report	Refer to report
Smith/RNP (ENA) Antibody, IgG	<p>29 AU/mL 19 Negative</p> <p>Units or less 30- Equivocal Weak</p> <p>20-39 Units 40 Positive</p> <p>AU/mL 41 Moderate</p> <p>AU/mL 80 Units Positive Strong</p> <p>81 Units or Positive</p> <p>greater</p>	
Scleroderma (Scl-70) (ENA) Antibody, IgG	<p>29 AU/mL or less Negative</p> <p>30-40 AU/mL 41 Equivocal</p> <p>AU/mL or greater Positive</p>	
Smith (ENA) Antibody, IgG	<p>29 AU/mL or less Negative</p> <p>30-40 AU/mL 41 Equivocal</p> <p>AU/mL or greater Positive</p>	
SSA-52 (Ro52) (ENA) Antibody, IgG	<p>29 AU/mL or Less Negative</p> <p>30-40 AU/mL 41 Equivocal</p> <p>AU/mL or greater Positive</p>	
SSA-60 (Ro60) (ENA) Antibody, IgG	<p>29 AU/mL or Less Negative</p> <p>30-40 AU/mL 41 Equivocal</p> <p>AU/mL or greater Positive</p>	
SSB (La) (ENA)	29 AU/mL or less Negative	

Antibody, IgG	30-40 AU/mL 41 AU/mL or greater	Equivocal Positive
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Reference Interval:

Test Number	Components	Reference Interval																																
	Anti-Nuclear Ab (ANA), IgG by ELISA	None detected																																
	Cardiolipin Antibody IgA	11 APL or less																																
	Cardiolipin Antibody IgG	14 GPL or less																																
	Cardiolipin Antibody IgM	12 MPL or less																																
	Centromere Ab, IgG	0-40 AU/mL or less																																
	Complement Component 3																																	
		<table border="1"> <thead> <tr> <th>Age</th> <th>Reference Interval (mg/dL)</th> </tr> </thead> <tbody> <tr><td>0-30 days</td><td>59-121</td></tr> <tr><td>1 month</td><td>55-129</td></tr> <tr><td>2 months</td><td>61-155</td></tr> <tr><td>3 months</td><td>67-136</td></tr> <tr><td>4 months</td><td>65-182</td></tr> <tr><td>5 months</td><td>67-174</td></tr> <tr><td>6 months</td><td>77-179</td></tr> <tr><td>7-8 months</td><td>78-173</td></tr> <tr><td>9-11 months</td><td>76-187</td></tr> <tr><td>1 year</td><td>87-181</td></tr> <tr><td>2 year</td><td>84-177</td></tr> <tr><td>3-4 years</td><td>80-178</td></tr> <tr><td>5-11 years</td><td>80-160</td></tr> <tr><td>12-17 years</td><td>82-163</td></tr> <tr><td>18 years and older</td><td>90-180</td></tr> </tbody> </table>	Age	Reference Interval (mg/dL)	0-30 days	59-121	1 month	55-129	2 months	61-155	3 months	67-136	4 months	65-182	5 months	67-174	6 months	77-179	7-8 months	78-173	9-11 months	76-187	1 year	87-181	2 year	84-177	3-4 years	80-178	5-11 years	80-160	12-17 years	82-163	18 years and older	90-180
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0-30 days	59-121																																	
1 month	55-129																																	
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1 year	87-181																																	
2 year	84-177																																	
3-4 years	80-178																																	
5-11 years	80-160																																	
12-17 years	82-163																																	
18 years and older	90-180																																	
	Complement Component 4																																	

	Age	Reference Interval (mg/dL)
	0-30 days	8-30
	1 month	9-33
	2 months	9-37
	3 months	10-35
	4 months	10-49
	5 months	9-48
	6 months	12-55
	7-8 months	13-48
	9-11 months	16-51
	1 year	16-52
	2-4 years	12-47
	5-11 years	13-44
	12-17 years	14-41
	18 years and older	10-40
Double-Stranded DNA (dsDNA) Ab IgG ELISA	24 IU/s or less	
Scleroderma (Scl-70) (ENA) Antibody, IgG	40 AU/mL or less	
Smith (ENA) Antibody, IgG	40 AU/mL or less	
Smith/RNP (ENA) Ab, IgG	40 AU/mL 19 Units or less	
SSA-52 (Ro52) (ENA) Antibody, IgG	40 AU/mL or less	
SSA-60 (Ro60) (ENA) Antibody, IgG	40 AU/mL or less	
SSB (La) (ENA) Antibody, IgG	40 AU/mL or less	
Thyroid Peroxidase (TPO) Antibody	0.0-9.0 IU/mL	

TEST CHANGE

Citalopram Quantitative, Serum or Plasma

2003302, CITALO

Specimen Requirements:

Patient Preparation:

Collect: Plain red, lavender (K2EDTA), or pink (K2EDTA).

Specimen Preparation: Separate from cells ASAP or within 2 hours of collection. Transfer 1 mL serum or plasma into an ARUP standard transport tube. (Min: 0.4 mL)
Test is not performed at ARUP; separate specimens must be submitted when multiple tests are ordered.

Transport Temperature: Refrigerated. Also acceptable: Room temperature or frozen.

Unacceptable Conditions: ~~Polymer gel separation tube (SST or PST) Separator tubes.~~

Remarks:

Stability: Ambient: 1 month; Refrigerated: 1 month; Frozen: ~~1 month~~ 7 months

Methodology: Qualitative High Performance Liquid Chromatography-Tandem Mass Spectrometry

Note: ~~Test is not chiral specific. Patients who have taken escitalopram (Lexapro), as opposed to racemic citalopram (Celexa), within the past 3 days, may have falsely elevated values.~~

CPT Codes: 80332 ~~(Alt code: G0480)~~

New York DOH Approval Status: This test is New York DOH approved.

Interpretive Data:

Reference Interval:

~~Refer to~~ By report

TEST CHANGE

Glutathione Total

2006328, GLUT TOT

Specimen Requirements:

Patient Preparation:

Collect: Yellow (ACD solution B) (ARUP supply #49658) or yellow (ACD solution A). Available online through eSupply using ARUP Connect(TM) or contact ARUP Client Services at 800-522-2787.

Specimen Preparation: Transport whole blood in original collection container. ACD solution B: 10 mL (Min: 8.5) or ACD solution A: 8.5 mL (Min: 6.5 mL) or transfer 1 mL whole blood from a fully drawn tube to an ARUP standard transport tube (Min: 1 mL).
Test is not performed at ARUP; separate specimens must be submitted when multiple tests are ordered.

Transport Temperature: Critical refrigerated

Unacceptable Conditions:

Remarks: Collection tube must be filled greater than 50% of total volume.

Stability: Ambient: Unacceptable; Refrigerated: 3 weeks; Frozen: Unacceptable

Methodology: Quantitative Kinetic Assay

Note:

CPT Codes: 82978

New York DOH Approval Status: This test is New York DOH approved.

Interpretive Data:

Reference Interval:

Refer to report [By Report](#)

TEST CHANGE

Duloxetine Quantitative, Serum or Plasma

2006473, DULOX SP

Specimen Requirements:

Patient Preparation:

Collect: Plain red, lavender (K2EDTA), or pink (K2EDTA).

Specimen Preparation: Separate from cells ASAP or within 2 hours of collection. Transfer 1 mL serum or plasma to an ARUP standard transport tube. (Min: 0.4 mL) Requires light protection when submitted at room temperature. Test is not performed at ARUP; separate specimens must be submitted when multiple tests are ordered.

Transport Temperature: Refrigerated or frozen. Also acceptable: Room temperature (must be light protected).

Unacceptable Conditions: ~~Polymer gel separation tube (SST or PST) Separator tubes.~~

Remarks:

Stability: Ambient: ~~2 weeks~~ 1 month; Refrigerated: 1 month; Frozen: 1 year

Methodology: Quantitative High Performance Liquid Chromatography-Tandem Mass Spectrometry

Note:

CPT Codes: 80332 ~~(Alt code: G0480)~~

New York DOH Approval Status: This test is New York DOH approved.

Interpretive Data:

Reference Interval:

~~Refer to report~~ [By Report](#)



A nonprofit enterprise of the University of Utah
and its Department of Pathology

Effective Date: **March 2, 2026**

TEST CHANGE

Antimicrobial Level ~~±~~ Streptomycin by HPLC, Serum ~~or Plasma~~

2009214, STREPTO

Specimen Requirements:

Patient Preparation:

Collect: Plain red. ~~Also acceptable: Green (sodium heparin).~~

Specimen Preparation: Separate from cells ASAP or within one hour of collection. Transfer 2 mL serum ~~or plasma~~ to an ARUP standard transport tube and freeze immediately. (Min: 0.5 mL)
Test is not performed at ARUP; separate specimens must be submitted when multiple tests are ordered.

Transport Temperature: CRITICAL FROZEN.

Unacceptable Conditions: Severely hemolyzed or thawed specimens.

Remarks:

Stability: Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen: 1 month

Methodology: Quantitative High Performance Liquid Chromatography (HPLC)

Note:

CPT Codes: 80299

New York DOH Approval Status: Specimens from New York clients will be sent out to a New York DOH approved laboratory, if possible.

Interpretive Data:

Reference Interval:

[By Report](#)

Deleted Cells

TEST CHANGE

Antimicrobial Level, ~~—~~ Azithromycin by HPLC, Serum ~~or Plasma~~

2009359, AZITHRO

Specimen Requirements:	
Patient Preparation:	To collect peak concentrations draw patient 2-3 hours after dose. To test for delayed drug absorption, a second specimen may be collected 4 hours after the peak.
Collect:	Plain red. Also acceptable: Green (sodium heparin).
Specimen Preparation:	Separate from cells ASAP or within one hour of collection. Transfer 2 mL serum or plasma to an ARUP standard transport tube and freeze immediately. (Min: 0.5 mL) Test is not performed at ARUP; separate specimens must be submitted when multiple tests are ordered.
Transport Temperature:	CRITICAL FROZEN.
Unacceptable Conditions:	Severely hemolyzed or thawed specimens.
Remarks:	
Stability:	Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen: 1 month
Methodology:	Quantitative High Performance Liquid Chromatography-Tandem Mass Spectrometry
Note:	
CPT Codes:	80299
New York DOH Approval Status:	Specimens from New York clients will be sent out to a New York DOH approved laboratory, if possible.
Interpretive Data:	
Reference Interval:	
By report	

Deleted Cells



A nonprofit enterprise of the University of Utah
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Effective Date: **March 2, 2026**

TEST CHANGE

Antimicrobial Level, ~~—~~Rifabutin by HPLC, Serum ~~or Plasma~~
2009363, RIFABU

Specimen Requirements:

Patient Preparation:

Collect: Plain red. ~~Also acceptable: Green (sodium heparin).~~

Specimen Preparation: Separate from cells ASAP or within one hour of collection. Transfer 2 mL serum ~~or plasma~~ to an ARUP standard transport tube and freeze immediately. (Min: 0.5 mL)
Test is not performed at ARUP; separate specimens must be submitted when multiple tests are ordered.

Transport Temperature: CRITICAL FROZEN.

Unacceptable Conditions: Severely hemolyzed or thawed specimens.

Remarks:

Stability: Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen: 1 month

Methodology: Quantitative High Performance Liquid Chromatography (HPLC)

Note:

CPT Codes: 80299

New York DOH Approval Status: Specimens from New York clients will be sent out to a New York DOH approved laboratory, if possible.

Interpretive Data:

Reference Interval:

[By report](#)

Deleted Cells

TEST CHANGE

Antimicrobial Level, ~~Cycloserine, Serum~~ **or Plasma**

2009367, CYCLOS

Specimen Requirements:

Patient Preparation:

Collect: Plain red. ~~Also acceptable: Dark green (sodium or lithium heparin).~~

Specimen Preparation: Separate from cells ASAP or within one hour of collection. Transfer 2 mL serum ~~or plasma~~ to an ARUP standard transport tube and freeze immediately. (Min: 0.5 mL)
Test is not performed at ARUP; separate specimens must be submitted when multiple tests are ordered.

Transport Temperature: CRITICAL FROZEN.

Unacceptable Conditions: Severely hemolyzed or thawed specimens.

Remarks:

Stability: Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen: 1 month

Methodology: Quantitative Colorimetry

Note:

CPT Codes: 80299

New York DOH Approval Status: Specimens from New York clients will be sent out to a New York DOH approved laboratory, if possible.

Interpretive Data:

Reference Interval:

~~By report~~

Deleted Cells

TEST CHANGE

Fluoxetine and Metabolite Quantitative, Serum or Plasma

2014180, FLUOX SP

Specimen Requirements:

Patient Preparation:

Collect: Plain ~~red, lavender~~~~Red, Lavender~~ (EDTA), or ~~p~~Pink (K2EDTA).

Specimen Preparation: Separate from cells ASAP or within 2 hours of collection. Transfer 3 mL serum or plasma to an ARUP ~~standard transport tube~~~~Standard Transport Tube~~. (Min: 1.2 mL)
Test is not performed at ARUP; separate specimens must be submitted when multiple tests are ordered.

Transport Temperature: Refrigerated. Also acceptable: Room temperature or frozen.

Unacceptable Conditions: ~~Polymer gel separation tube (SST or PST)~~~~Separator tubes~~.

Remarks:

Stability: Ambient: 2 weeks; Refrigerated: ~~1 month~~~~2 weeks~~; Frozen: ~~1 month~~~~9 months~~

Methodology: Quantitative Gas Chromatography-Mass Spectrometry (~~GC-MS~~)

Note:

CPT Codes: 80332 (~~Alt code: G0480~~)

New York DOH Approval Status: This test is New York DOH approved.

Interpretive Data:

Reference Interval:

TEST CHANGE

Smith and Smith/RNP (ENA) Antibodies, IgG

3000460, SMITH_RNP

Specimen Requirements:

Patient Preparation:

Collect: Serum separator tube (SST).

Specimen Preparation: Separate from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP standard transport tube. (Min: 0.5 mL)

Transport Temperature: Refrigerated.

Unacceptable Conditions: Plasma or other body fluids. Contaminated, hemolyzed, or severely lipemic specimens.

Remarks:

Stability: After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 ~~year~~month (avoid repeated freeze/thaw cycles)

Methodology: ~~Semi-Quantitative Enzyme-Linked Immunosorbent Assay (ELISA)~~ / Semi-Quantitative Multiplex Bead Assay

Note:

CPT Codes: 86235 x2

New York DOH Approval Status: This test is New York DOH approved.

Interpretive Data:

Components	Interpretation
Smith/RNP (ENA) Ab Antibody, IgG	29 AU/mL 19 Units or less: Negative 30-20- 39 Units: Weak Positive 40 AU/mL: Equivocal 41 AU/mL-80 Units: Moderate Positive 81 Units or greater: Strong Positive
Smith (ENA) Antibody, IgG	29 AU/mL or less: Negative 30-40 AU/mL: Equivocal 41 AU/mL or greater: Positive

Reference Interval:

Test Number	Components	Reference Interval
	Smith (ENA) Antibody, IgG	40 AU/mL or less
	Smith/RNP (ENA) Ab, IgG	40 AU/mL 19 Units or less



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Effective Date: **March 2, 2026**

TEST CHANGE

Comprehensive Systemic Sclerosis Panel

3000480, SCL COMPRE

Specimen Requirements:

Patient Preparation:

Collect: Serum ~~separator tube~~ **Separator Tube** (SST).

Specimen Preparation: Separate from cells ASAP or within 2 hours of collection. Transfer 3 mL serum to an ARUP **standard transport tube**. ~~Standard Transport Tube~~. (Min: 1.5 mL)

Transport Temperature: Refrigerated. Also acceptable: Room temperature or frozen.

Unacceptable Conditions: Hemolyzed, hyperlipemic, icteric, heat-treated, or contaminated specimens

Remarks:

Stability: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 month

Methodology: Qualitative Immunoblot / Semi-Quantitative Indirect Fluorescent Antibody (IFA) / Semi-Quantitative Multiplex Bead Assay / Semi-Quantitative Enzyme-Linked Immunosorbent Assay (ELISA)

Note: Panel includes: Antinuclear Antibody (ANA) with HEp-2 Substrate, IgG by IFA, Scleroderma (Scl-70) (ENA) Antibody, IgG, RNA Polymerase III Antibody, IgG, Smith/RNP (ENA) Antibody, IgG, Fibrillarin (U3 RNP) Antibody, IgG, PM/Scl-100 Antibody, IgG by Immunoblot.

CPT Codes: 86039; 86235 x4; 83516

New York DOH Approval Status: This test is New York DOH approved.

Interpretive Data:

~~Refer to report.~~ ~~Refer to report.~~

~~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.~~

Component	Interpretation
Scleroderma (Scl-70) (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	29 AU/mL 19 Units or less: Negative 30-20 39 Units Weak Positive 40 AU/mL: Equivocal 41 AU/mL-80 Units Moderate

	Positive 81 Units or greater: Strong Positive
RNA Polymerase III Antibody, IgG	19 Units or less: Negative 20-39 Units Weak: Positive 40-80 Units Moderate: Positive 81 Units or greater: Strong Positive

Reference Interval:

Test Number	Components	Reference Interval
	Antinuclear Antibody (ANA), HEp-2, IgG	Less than 1:80
	Fibrillarin (U3 RNP) Ab, IgG	Negative
	PM/Scl 100 Antibody, IgG	Negative
	RNA Polymerase III Antibody, IgG	19 Units or less
	Scleroderma (Scl-70) (ENA) Antibody, IgG	40 AU/mL or less
	Smith/RNP (ENA) Ab, IgG	40 AU/mL 19 Units or less

TEST CHANGE

Connective Tissue Disease First Line Panel with Reflex

3002463, CTD PAN

Specimen Requirements:

Patient Preparation:

Collect: Serum separator tube (SST).

Specimen Preparation: Separate from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP standard transport tube. (Min: 0.5 mL)

Transport Temperature: Refrigerated.

Unacceptable Conditions: Specimen types other than those listed. Specimens containing fibrin clots. Contaminated, grossly hemolyzed, heat-inactivated, or severely lipemic specimens.

Remarks:

Stability: After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 month (avoid repeated freeze/thaw cycles)

Methodology: Semi-Quantitative Enzyme-Linked Immunosorbent Assay (ELISA) / Semi-Quantitative Indirect Fluorescent Antibody (IFA) / Semi-Quantitative Multiplex Bead Assay

Note: If Double-Stranded DNA (dsDNA) Antibody, IgG by ELISA is detected, then Double-Stranded DNA (dsDNA) Antibody, IgG by IFA (using *Crithidia luciliae*) will be added. Additional charges apply.

CPT Codes: 86235 x7 and 86225; if reflexed, add 86256

New York DOH Approval Status: This test is New York DOH approved.

Interpretive Data:

Refer to report.

Component	Interpretation
Double-Stranded DNA (dsDNA) Antibody, IgG by ELISA with Reflex to dsDNA	24 IU _s or less: Negative 25-30 IU _s : Equivocal 30-60 IU _s : Borderline Positive
Antibody, IgG by IFA	Low Positive: 60-200 IU _s Positive: 201 IU _s or greater: Strong Positive
Smith/RNP (ENA) Antibody, IgG	29 AU/mL: Units or less: Negative 30-39 AU/mL: Weak Positive 40 AU/mL: Positive 41 AU/mL-80 AU/mL: Equivocal Units: Moderate

	Positive 81 Units or greater: Strong Positive
Smith (ENA) Antibody, IgG	29 AU/mL or less: Negative 30-40 AU/mL: Equivocal 41 AU/mL or greater: Positive
SSA-52 (Ro52) (ENA) Antibody, IgG	29 AU/mL or less: Negative 30-40 AU/mL: Equivocal 41 AU/mL or greater: Positive
SSA-60 (Ro60) (ENA) Antibody, IgG	29 AU/mL or less: Negative 30-40 AU/mL: Equivocal 41 AU/mL or greater: Positive
SSB (La) (ENA) Antibody, IgG	29 AU/mL or less: Negative 30-40 AU/mL: Equivocal 41 AU/mL or greater: Positive
Jo-1 Antibody, IgG	29 AU/mL or less: Negative 30-40 AU/mL: Equivocal 41 AU/mL or greater: Positive
Scleroderma (Scl-70) (ENA) Antibody, IgG	29 AU/mL or less: Negative 30-40 AU/mL: Equivocal 41 AU/mL or greater: Positive

Reference Interval:

Test Number	Components	Reference Interval
	Double-Stranded DNA (dsDNA) Ab IgG ELISA	24 IUs or less
	Jo-1 (Histidyl-tRNA Synthetase) Ab, IgG	40 AU/mL or less
	Scleroderma (Scl-70) (ENA) Antibody, IgG	40 AU/mL or less
	Smith (ENA) Antibody, IgG	40 AU/mL or less
	Smith/RNP (ENA) Ab, IgG	40 AU/mL 19 Units or less
	SSA-52 (Ro52) (ENA) Antibody, IgG	40 AU/mL or less
	SSA-60 (Ro60) (ENA) Antibody, IgG	40 AU/mL or less
	SSB (La) (ENA) Antibody, IgG	40 AU/mL or less

TEST CHANGE

UGT1A1 Sequencing

3004386, UGT1A1 NGS

Specimen Requirements:

Patient Preparation:

Collect: Lavender (EDTA) or yellow (ACD solution A or B).
New York State Clients: Lavender (EDTA)

Specimen Preparation: Transport 3 mL whole blood. (Min: 2 mL)

Transport Temperature: Refrigerated.

Unacceptable Conditions: Serum or plasma, grossly hemolyzed or frozen specimens

Remarks:

Stability: Ambient: 72 hours; Refrigerated: 2 weeks; Frozen:
Unacceptable

New York State Clients: Preferred Ambient: 4 days;
Refrigerated: 4 days; Frozen: 4 days
Specimens are preferred to be received within 4 days of
collection. Extraction will be attempted for specimens received
after 4 days, and DNA yield will be evaluated to determine if
testing may proceed.

Methodology: Massively Parallel Sequencing

Note: Gene Tested: *UGT1A1* (NM_000463), promoter (NC_000002)
Deletion/duplication analysis is not available for this gene.

CPT Codes: 81404

New York DOH Approval Status: Specimens from New York clients will be sent out to a New York DOH approved laboratory, if possible.

Interpretive Data:

Refer to report.

Reference Interval:

Refer to **By** report

TEST CHANGE

Extended Myositis Panel

3018867, MYOS EXT2

Specimen Requirements:

Patient Preparation:

Collect: Serum separator tube (SST), red top tube

Specimen Preparation: Separate from cells ASAP or within 2 hours of collection. Transfer 4 mL to ARUP standard transport tube. (Min: 3 mL)

Transport Temperature: Refrigerated

Unacceptable Conditions: Hemolyzed, hyperlipemic, icteric, heat-treated, or contaminated specimens.

Remarks:

Stability: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 month

Methodology: ~~Semi-Quantitative Enzyme-Linked Immunosorbent Assay (ELISA)~~ / Qualitative Immunoprecipitation / Semi-Quantitative Multiplex Bead Assay / Qualitative Immunoblot / Semi-Quantitative Indirect Fluorescent Antibody (IFA) / Qualitative Particle-Based Multianalyte Technology (PMAT)

Note: Antibodies: Mi-2, PL-7, PL12, P155/140, EJ, Ku, OJ, PM/ScI, SRP, Smith/RNP, Ro52, Ro60, Jo-1, U3 Fib, SAE1, NXP2, MDA5, TIF1-gamma, ANA, Ha, Ks, Zo

If HMGCR antibody, IgG is positive, additional testing to follow.

CPT Codes: 83516 x13; 84182 x3; 86039; 86235 x6; if reflexed, add 82397

New York DOH Approval Status: This test is New York DOH approved.

Interpretive Data:

Refer to report.

Component	Interpretation
SSA-52 (Ro52) (ENA) Antibody, IgG	29 AU/mL or less: Negative 30-40 AU/mL: Equivocal 41 AU/mL or greater: Positive
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	29 AU/mL 19 Units or less: Negative 30-20-39 Units : Weak Positive 40 AU/mL: Equivocal 41 AU/mL-80 Units : Moderate

Jo-1 Antibody, IgG	<p>Positive 81 Units or greater: Strong Positive</p> <p>29 AU/mL or less: Negative 30-40 AU/mL: Equivocal 41 AU/mL or greater: Positive</p>
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Reference Interval:

Test Number	Components	Reference Interval
	Antinuclear Antibody (ANA), HEp-2, IgG	Less than 1:80
	EJ (glycyl-tRNA synthetase) Antibody	Negative
	Fibrillarin (U3 RNP) Ab, IgG	Negative
	Ha (tyrosyl-tRNA synthetase) Ab	Negative
	HMGCR Antibody Screen	Negative
	Jo-1 (Histidyl-tRNA Synthetase) Ab, IgG	40 AU/mL or less
	Ks (asparaginyl-tRNA synthetase) Ab	Negative
	Ku Antibody	Negative
	MDA5 (CADM-140) Ab	Negative
	Mi-2 (nuclear helicase protein) Antibody	Negative
	NXP2 (Nuclear matrix protein-2) Ab	Negative
	OJ (isoleucyl-tRNA synthetase) Antibody	Negative
	P155/140 Antibody	Negative
	PL-12 (alanyl-tRNA synthetase) Antibody	Negative
	PL-7 (threonyl-tRNA synthetase) Antibody	Negative
	PM/Scl 100 Antibody, IgG	Negative
	SAE1 (SUMO activating enzyme) Ab	Negative
	Smith/RNP (ENA) Ab, IgG	40 AU/mL 19 Units or less
	SRP (Signal Recognition Particle) Ab	Negative
	SSA-52 (Ro52) (ENA) Antibody, IgG	40 AU/mL or less
	SSA-60 (Ro60) (ENA) Antibody, IgG	40 AU/mL or less
	TIF-1 gamma (155 kDa) Ab	Negative
	Zo (phenylalanyl-tRNA synthetase) Ab	Negative

TEST CHANGE

Vitamin B7 (Biotin), Serum or Plasma

3020435, VITAMB7 SP

Specimen Requirements:

Patient Preparation:

Collect: Plain red, lavender (K2EDTA), or pink (K2EDTA)

Specimen Preparation: Separate from cells ASAP or within 2 hours of collection. Transfer 2 mL serum or plasma to an ARUP standard transport tube. (Min: 0.7 mL)
Test is not performed at ARUP; separate specimens must be submitted when multiple tests are ordered.

Transport Temperature: Frozen. Also acceptable: Room temperature or refrigerated. ~~Frozen~~

Unacceptable Conditions: Polymer gel separation tube (SST or PST).

Remarks:

Stability: Ambient: 2 weeks ~~Unacceptable~~; Refrigerated: 2 weeks ~~24 hours~~; Frozen: 2 weeks

Methodology: Quantitative High Performance Liquid Chromatography-Tandem Mass Spectrometry

Note:

CPT Codes: 84591

New York DOH Approval Status: This test is New York DOH approved.

Interpretive Data:

Reference Interval:

Refer to report