



# TEST UPDATE

## Quick Facts

### Multiplex ANA Screen

- ▶ Multiplex ANA tests for 11 clinically significant autoantibodies simultaneously in each patient sample.
- ▶ If any autoantibodies are detected, the ANA is “positive” and the individual autoantibody results are provided.
- ▶ Since each positive autoantibody is reported semi-quantitatively, there is no need to “titer” the ANA itself or report a pattern.
- ▶ Double stranded DNA autoantibodies are fully quantified, since their level correlates with disease activity in Lupus patients. Initially, we will re-baseline patients by performing dsDNA by both the Multiplex and IFA methods at no additional charge.

For more information, please contact Client Services or see us on the web at

[WWW.PAML.COM](http://WWW.PAML.COM)

# Multiplex ANA Screen

*Thomas J. Allerdig, M.D., FCAP, Medical Director*

ANA has been the primary screening test for connective tissue diseases (CTD's) for many years. While its value is proven, traditional ANA methods have always detected a complex mixture of autoantibodies - some useful and others not. The result is a high percentage of nonspecific positive ANA results.

PAML has now introduced a new Multiplex method for ANA testing that significantly reduces this problem. The Multiplex system (BioPlex 2200) uses a standard enzyme immunoassay method of proven accuracy. However, instead of performing single tests in individual reaction chambers, it performs multiple tests simultaneously on microscopic beads. This means that each patient's sample is assayed for 11 clinically significant autoantibodies at the same time in the same tube. If any of these autoantibodies are detected, the ANA is called “positive”, and the individual autoantibody results are provided. Since each result is reported semi-quantitatively, there is no need to “titer” the ANA itself or report a pattern.

If double stranded DNA autoantibodies are detected, the Bioplex provides a true quantitative result – an important feature since the level of this autoantibody correlates with disease activity in patients with SLE, especially Lupus nephritis.

## Ordering Procedure

ANA testing can now be ordered in several ways, depending on the clinical circumstances

- ANA – Multiplex ANA testing with full enumeration of all positive clinically significant autoantibodies.
- Connective Tissue Disease Profile – Multiplex ANA, C3, C4 and the rheumatoid arthritis markers RF and CCP. (Rheumatoid arthritis is the most common CTD, with SLE and Scleroderma being second and third most common, respectively.)
- Other disease specific profiles (e.g., SSA and SSB autoantibodies for Sjogren's syndrome) are also available as described in our test directory.
- Any of the 11 autoantibodies in the multiplex system (e.g., SSA or Scl-70) can be ordered individually.
- Finally, ANA (titer and pattern) and ds-DNA (Crithidia) can also be ordered individually by the older immunofluorescence (IFA) method. Initially, we will re-baseline patients by performing ds-DNA testing by both the Multiplex method and IFA at no additional charge.

*Provided for the clients of*




PATHOLOGY ASSOCIATES MEDICAL LABORATORIES • PACLAB NETWORK LABORATORIES  
TRI-CITIES LABORATORY • TREASURE VALLEY LABORATORY • ALPHA MEDICAL LABORATORY

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NOVEMBER 2007

The following table lists the prevalence of each multiplex autoantibody in various CTD's. It is important to remember that many of these autoantibodies, while quite specific for individual diseases, are relatively insensitive and may be absent in patients with disease. Close correlation with the clinical presentation is key to the diagnosis of CTD's.

## Association of Disease and Antibody Patterns

Bio-Rad Laboratories  BIOPLEX 2200 SYSTEM		 						
Association of Disease and Antibody Patterns		BioPlex 2200 ANA Screen Antibody Prevalence						
IFA Pattern	Antibody	Targeted Connective Tissue Diseases						Normal Population
		Systemic Lupus Erythematosus <sup>1</sup>	Systemic Lupus Erythematosus <sup>2</sup>	Mixed Connective Tissue Disease <sup>2</sup>	Sjögren's <sup>2</sup> Syndrome	Scleroderma <sup>2</sup>	Polymyositis <sup>2</sup>	Blood bank <sup>3</sup>
Speckled	SSA (60kD + 52kD)	52%	33%	13%	>80%	23%	42%	<2%
	SSB	27%	13%	<2%	>80%	5%	<2%	<2%
	Sm	42%	15%	31%	<2%	5%	8%	<2%
	Sm RNP	45%	23%	>80%	<2%	7%	<2%	<2%
	RNP (A + 68kD)	48%	22%	>80%	<2%	9%	8%	2%
Homogeneous	Chromatin	73%	37%	>80%	12%	14%	8%	<2%
	dsDNA	45%	28%	12%	6%	9%	<2%	<2%
Mixed	Sci-70	3%	2%	7%	<2%	16%	<2%	<2%
Cent	Centromere B	12%	3%	7%	<2%	27%	<2%	<2%
Cytoplasmic	Ribosomal P	30%	9%	7%	<2%	<2%	<2%	<2%
	Jo-1	<2%	<2%	7%	<2%	<2%	17%	<2%
	BioPlex™ 2200 ANA Screen Positive Rate	94%	66%	100%	94%	66%	50%	7%

34 patients with active SLE | 332 unselected SLE patients

Legend:  Diagnostic criteria  Frequently elevated

### References:

1. Binder SR et al. Computer-Assisted Pattern Recognition of Autoantibody Results. 2005; Clin Diag Lab Immunol. 2005;12:1353-1357
2. Moder KG et al. Measurement of Antinuclear Antibodies by Multiplex Immunoassay: A Prospective, Multicenter Clinical Evaluation. J Rheumatol 2007; 34:5:978–986
3. Showman O et al. Evaluation of the BioPlex 2200 ANA Screen. Analysis of 510 Healthy Subjects: Incidence of Natural/Predictive Autoantibodies. Ann NY Acad Sci. 2005;1050:380-388
4. Kavanaugh A et al. Guidelines for Clinical Use of the Antinuclear Antibody Test and Tests for Specific Autoantibodies to Nuclear Antigens. Arch Pathol Lab Med. 2000;124:71-81
5. Schmerling RH. Autoantibodies in Systemic Lupus Erythematosus – there before you know it. N Engl J Med 2003;349:1499-1500
6. Arbuckle MR et al. Development of Autoantibodies before the Clinical Onset of Systemic Lupus Erythematosus. N Engl J Med 2003;349:1526-1533

**Test Information****ANA SCREEN (REFLEXIVE)****DESCRIPTION**

ANA SCREEN (REFLEXIVE)

**METHOD**

Multiplex luminex

**ORDER CODE**

ANAMP

**CPT CODE**

86038 If ANA Screen positive, reflex CPT4 86225, 86235x9, 86038

**SPECIMEN REQUIREMENTS**

0.5 mL serum (SST tube). Separate serum from cells and put in separate plastic tube. Store and transport refrigerated. This test may reflex to additional tests depending upon the results of this test. Additional charges may be added.

**COMMENTS**

1) Min Amt: 0.25 mL. 2) Other acceptable specimens: EDTA or heparinized plasma (lavender or green top tube). 3) Unacceptable conditions: hemolyzed specimens, avoid repeat freeze/thaw cycles (no more than three). 4) Stability: Refrigerated-2 weeks, Frozen-3 months.

**RANGES**

ANA	Negative		
	A multiplex screen for 11 auto-antibodies (dsDNA, Sm, Ribosomal P, Chromatin, RNP, Sm RNP, Scl-70, Centromere B, SSA, SSB and Jo-1) was performed and no autoantibodies were detected.		
DSDNA Auto-antibody	Negative	LT 5	IU/mL
	Indeterminate	5-9	
	Positive	10 or more	
SM Auto-antibody	Negative	LT 1.0	AI
	Positive	1.0 or more	
Ribosomal P Autoantibody	Negative	LT 1.0	AI
	Positive	1.0 or more	
Chromatin Auto-antibodies	Negative	LT 1.0	AI
	Positive	1.0 or more	
RNP Auto-antibody	Negative	LT 1.0	AI
	Positive	1.0 or more	
SMRNP Auto-antibody	Negative	LT 1.0	AI
	Positive	1.0 or more	
SCL-70 Autoantibody	Negative	LT 1.0	AI
	Positive	1.0 or more	
Centromere B Autoantibody	Negative	LT 1.0	AI
	Positive	1.0 or more	
SSA (R0) Autoantibody	Negative	LT 1.0	AI
	Positive	1.0 or more	
SSB (LA) Autoantibody	Negative	LT 1.0	AI
	Positive	1.0 or more	
JO-1 Auto-antibody	Negative	LT 1.0	AI
	Positive	1.0 or more	

**Test Information****CONNECTIVE TISSUE DISEASE (REFLEX)****DESCRIPTION**

CONNECTIVE TISSUE DISEASE (REFLEX)

**METHOD**

Multiplex luminex, ELISA, Neph

**ORDER CODE**

CTD \*Profile includes: ANA, C3, C4, CCPABG, RA; with reflex if ANA positive.

**CPT CODE**

86038, 86160x2, 86200, 86431 If ANA Screen positive, reflex CPT4 86225, 86235x9, 86038

**SPECIMEN REQUIREMENTS**

3 mL serum (SST tube). Separate serum from cells and put in 3 separate plastic tubes freeze one and refrigerate the other two. Store and transport appropriately. This test may reflex to additional tests depending upon the results of this test. Additional charges will be added.

**COMMENTS**

1) Min Amt: 1.5 mL. 2) Unacceptable conditions: grossly hemolyzed or lipemic, contaminated or heat-treated samples. 3) Stability: Refrigerated- 2 days, Frozen-3 months.

**RANGES**

ANA	Negative		
	A multiplex screen for 11 auto-antibodies (dsDNA, Sm, Ribosomal P, Chromatin, RNP, Sm RNP, Scl-70, Centromere B, SSA, SSB and Jo-1) was performed and no autoantibodies were detected.		
DSDNA Auto- Antibody	Negative	LT 5	IU/mL
	Indeterminate	5-9	
	Positive	10 or more	
SM Auto- antibody	Negative	LT 1.0	AI
	Positive	1.0 or more	
Ribosomal P Autoantibody	Negative	LT 1.0	AI
	Positive	1.0 or more	
Chromatin Auto- antibodies	Negative	LT 1.0	AI
	Positive	1.0 or more	
RNP Auto- antibody	Negative	LT 1.0	AI
	Positive	1.0 or more	
SMRNP Auto- antibody	Negative	LT 1.0	AI
	Positive	1.0 or more	
SCL-70 Autoantibody	Negative	LT 1.0	AI
	Positive	1.0 or more	
Centromere B Autoantibody	Negative	LT 1.0	AI
	Positive	1.0 or more	
SSA (R0) Autoantibody	Negative	LT 1.0	AI
	Positive	1.0 or more	
SSB (LA) Autoantibody	Negative	LT 1.0	AI
	Positive	1.0 or more	
JO-1 Auto- antibody	Negative	LT 1.0	AI
	Positive	1.0 or more	
Complement, C3	0-1 days	50-168	mg/dL
	2-60 days	55-170	
	2-5 mo	59-176	
	6-24 mo	66-180	
	25-60 mo	74-184	
	5-9 yrs	74-190	
	10-14 yrs	77-198	
	15+ yrs	90-200	
C4	0-7 days	0.0-45.7	mg/dL
	8-60 days	1.5-47.9	
	2-5 mo	1.5-47.9	
	6-24 mo	3.0-47.9	
	25-60 mo	4.5-48.4	
	5-9 yrs	5.3-50.6	
	10-14 yrs	6.0-52.8	
	15 yrs & older	15.0-55.0	
Cyclic Citrullinated Peptide Ab, IgG	Negative	LT 20	EU
	Weak Positive	20-39	
	Mod Positive	40-59	
	Strong Positive	60 or more	
	Approximately 70% of patients with RA are positive for CCP IgG, while only 2% of random blood donors and disease controls are positive. The diagnostic value of antibodies to CCP in juvenile rheumatoid arthritis patients has not been determined.		
RA		LT 20	IU/mL

**Test Information****AUTOIMMUNE PROFILE (REFLEXIVE)****DESCRIPTION**

AUTOIMMUNE PROFILE (REFLEXIVE)

**METHOD**

Multiplex luminex, Nephelometry

**ORDER CODE**

AIP \*Profile includes: RA, ANA, CRP, C3C; with reflex if ANA positive.

**CPT CODE**

86038, 86160, 86140, 86431 If ANA Screen positive, reflex CPT4 86225, 86235x9, 86038

**SPECIMEN REQUIREMENTS**

1 mL serum (SST tube). Separate serum from cells and put in 2 separate plastic tubes. Store and transport both tubes refrigerated. This test may reflex to additional tests depending upon the results of this test. An additional charge will be added.

**COMMENTS**

1) Min Amt: 0.5 mL. 2) Stability: Refrigerated-3 days, Frozen-3 months.

**RANGES**

ANA	Negative		
	A multiplex screen for 11 auto-antibodies (dsDNA, Sm, Ribosomal P, Chromatin, RNP, Sm RNP, Scl-70, Centromere B, SSA, SSB and Jo-1) was performed and no autoantibodies were detected.		
DSDNA Auto-Antibody	Negative	LT 5	IU/mL
	Indeterminate	5-9	
	Positive	10 or more	
SM Auto-antibody	Negative	LT 1.0	AI
	Positive	1.0 or more	
Ribosomal P Autoantibody	Negative	LT 1.0	AI
	Positive	1.0 or more	
Chromatin Auto-antibodies	Negative	LT 1.0	AI
	Positive	1.0 or more	
RNP Auto-antibody	Negative	LT 1.0	AI
	Positive	1.0 or more	
SMRNP Auto-antibody	Negative	LT 1.0	AI
	Positive	1.0 or more	
SCL-70 Autoantibody	Negative	LT 1.0	AI
	Positive	1.0 or more	
Centromere B Autoantibody	Negative	LT 1.0	AI
	Positive	1.0 or more	
SSA (R0) Autoantibody	Negative	LT 1.0	AI
	Positive	1.0 or more	
SSB (LA) Autoantibody	Negative	LT 1.0	AI
	Positive	1.0 or more	
JO-1 Auto-antibody	Negative	LT 1.0	AI
	Positive	1.0 or more	
Complement, C3	0-1 days	50-168	mg/dL
	2-60 days	55-170	
	2-5 mo	59-176	
	6-24 mo	66-180	
	25-60 mo	74-184	
	5-9 yrs	74-190	
	10-14 yrs	77-198	
	15+ yrs	90-200	
CRP		1.5 or less	mg/dL
RA		LT 20	IU/mL

**Test Information****ANCA PANEL (REFLEXIVE)****DESCRIPTION**

ANCA PANEL (REFLEXIVE)

**METHOD**

Multiplex luminex, IFA, ELISA

**ORDER CODE**

ANCAME \*Profile includes: ANA, ANCA Titer, ANCA Pattern, Proteinase 3 Antibody, Myeloperoxidase Antibody; with reflex if ANA positive.

**CPT CODE**

86038, 86255, 83516x2 If ANA Screen positive, reflex CPT4 86225, 86235x9, 86038

**SPECIMEN REQUIREMENTS**

2 mL serum (SST tube). Separate serum from cells ASAP and place in two separate plastic tubes. Store and transport one refrigerated and one frozen. This test may reflex to additional tests depending upon the results of this test. An additional fee will be added.

**COMMENTS**

1) Min Amt: 1 mL. 2) Unacceptable conditions: plasma, hemolyzed, lipemic, contaminated samples; samples containing fluorescing drugs &amp; other body fluids and repeat freeze/thaw cycles. 3) Stability: Refrigerated-48 hours, Frozen-GT 48 hours.

**RANGES**

ANA	Negative		
	A multiplex screen for 11 auto-antibodies (dsDNA, Sm, Ribosomal P, Chromatin, RNP, Sm RNP, Scl-70, Centromere B, SSA, SSB and Jo-1) was performed and no autoantibodies were detected.		
DSDNA Auto-Antibody	Negative	LT 5	IU/mL
	Indeterminate	5-9	
	Positive	10 or more	
SM Auto-antibody	Negative	LT 1.0	AI
	Positive	1.0 or more	
Ribosomal P Autoantibody	Negative	LT 1.0	AI
	Positive	1.0 or more	
Chromatin Auto-antibodies	Negative	LT 1.0	AI
	Positive	1.0 or more	
RNP Auto-antibody	Negative	LT 1.0	AI
	Positive	1.0 or more	
SMRNP Auto-antibody	Negative	LT 1.0	AI
	Positive	1.0 or more	
SCL-70 Autoantibody	Negative	LT 1.0	AI
	Positive	1.0 or more	
Centromere B Autoantibody	Negative	LT 1.0	AI
	Positive	1.0 or more	
SSA (R0) Autoantibody	Negative	LT 1.0	AI
	Positive	1.0 or more	
SSB (LA) Autoantibody	Negative	LT 1.0	AI
	Positive	1.0 or more	
JO-1 Auto-antibody	Negative	LT 1.0	AI
	Positive	1.0 or more	
ANCA Titer, IFA		LT 1:20 Negative	
ANCA Pattern			
Proteinase 3 Antibody		LT 3.5	U/mL
Myeloperoxidase Ab		LT 9.0	U/mL

**Test Information****EXTRACTABLE NUCLEAR AUTOABS****DESCRIPTION**

EXTRACTABLE NUCLEAR AUTOABS

**METHOD**

Multiplex luminex

**ORDER CODE**

ENAMP

**CPT CODE**

86235 x 3

**SPECIMEN REQUIREMENTS**

0.5 mL serum (SST tube). Separate serum from cells and put in separate plastic tube. Store and transport refrigerated.

**COMMENTS**

1) Min Amt: 0.25 mL. 2) Other acceptable specimens: EDTA or heparinized plasma (lavender or green top tube). 3) Unacceptable conditions: hemolyzed specimens, avoid repeat freeze/thaw cycles (no more than three). 4) Stability: Refrigerated-2 weeks, Frozen-3 months.

**RANGES**

SM Auto-antibody	Negative	LT 1.0	AI
	Positive	1.0 or more	
RNP Auto-antibody	Negative	LT 1.0	AI
	Positive	1.0 or more	
SMRNP Auto-antibody	Negative	LT 1.0	AI
	Positive	1.0 or more	

**Test Information****RHEUMATOID ARTHRITIS PNL REFLEX****DESCRIPTION**

RHEUMATOID ARTHRITIS PNL REFLEX

**METHOD**

Multiplex luminex, Neph, Enzymatic

**ORDER CODE**

RAPTVM \*Profile includes: ANA, RA, CRP, Uric Acid; with reflex if ANA positive.

**CPT CODE**

86038, 86431, 86140, 84550 If ANA Screen positive, reflex CPT4 86225, 86235x9, 86038

**SPECIMEN REQUIREMENTS**

2 mL serum (SST tube). Separate serum from cells ASAP and put in 3 separate plastic tubes. Store and transport all refrigerated. This test may reflex to additional tests depending upon the results of this test. Additional fees will be added.

**COMMENTS**

1) Min Amt: 1.5 mL. 2) Unacceptable conditions: sodium fluoride/potassium oxalate plasma specimens (gray top tube) and lipemic specimens. Hemolyzed specimens, avoid repeat freeze/thaw cycles (no more than three). 4) Stability: Refrigerated-3 days, Frozen-3 months.

**RANGES**

ANA	Negative		
	A multiplex screen for 11 auto-antibodies (dsDNA, Sm, Ribosomal P, Chromatin, RNP, Sm RNP, Scl-70, Centromere B, SSA, SSB and Jo-1) was performed and no autoantibodies were detected.		
DSDNA Auto-Antibody	Negative	LT 5	IU/mL
	Indeterminate	5-9	
	Positive	10 or more	
SM Auto-antibody	Negative	LT 1.0	AI
	Positive	1.0 or more	
Ribosomal P Autoantibody	Negative	LT 1.0	AI
	Positive	1.0 or more	
Chromatin Auto-antibodies	Negative	LT 1.0	AI
	Positive	1.0 or more	
RNP Auto-antibody	Negative	LT 1.0	AI
	Positive	1.0 or more	
SMRNP Auto-antibody	Negative	LT 1.0	AI
	Positive	1.0 or more	
SCL-70 Autoantibody	Negative	LT 1.0	AI
	Positive	1.0 or more	
Centromere B Autoantibody	Negative	LT 1.0	AI
	Positive	1.0 or more	
SSA (R0) Autoantibody	Negative	LT 1.0	AI
	Positive	1.0 or more	
SSB (LA) Autoantibody	Negative	LT 1.0	AI
	Positive	1.0 or more	
JO-1 Auto-antibody	Negative	LT 1.0	AI
	Positive	1.0 or more	
RA		LT 20	IU/mL
CRP		1.5 or less	mg/dL
Uric Acid		0-16 yrs	2.0-5.5
	M	17+ yrs	3.1-8.1
	F	17+ yrs	2.0-6.7

**Test Information****SJOGRENS AUTOANTIBODIES**

## DESCRIPTION

SJOGRENS AUTOANTIBODIES

## METHOD

Multiplex luminex

## ORDER CODE

SJOMP

## CPT CODE

86235x2

## SPECIMEN REQUIREMENTS

0.5 mL serum (SST tube). Separate serum from cells and put in separate plastic tube. Store and transport refrigerated.

## COMMENTS

1) Min Amt: 0.25 mL. 2) Other acceptable specimens: EDTA or heparinized plasma (lavender or green top tube). 3) Unacceptable conditions: hemolyzed specimens, avoid repeat freeze/thaw cycles (no more than three). 4) Stability: Refrigerated-2 weeks, Frozen-3 months.

## RANGES

SSA (R0) Autoantibody	Negative Positive	LT 1.0 1.0 or more	AI
SSB (LA) Autoantibody	Negative Positive	LT 1.0 1.0 or more	AI

**Test Information****CENTROMERE B AUTOANTIBODY**

## DESCRIPTION

CENTROMERE B AUTOANTIBODY

## METHOD

Multiplex luminex

## ORDER CODE

CENTMP

## CPT CODE

86038

## SPECIMEN REQUIREMENTS

0.5 mL serum (SST tube). Separate serum from cells and put in separate plastic tube. Store and transport refrigerated.

## COMMENTS

1) Min Amt: 0.25 mL. 2) Other acceptable specimens: EDTA or heparinized plasma (lavender or green top tube). 3) Unacceptable conditions: hemolyzed specimens, avoid repeat freeze/thaw cycles (no more than three). 4) Stability: Refrigerated-2 weeks, Frozen-3 months.

## RANGES

Centromere B Autoantibody	Negative Positive	LT 1.0 1.0 or more	AI
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**Test Information****CHROMATIN AUTOANTIBODIES**

## DESCRIPTION

CHROMATIN AUTOANTIBODIES

## METHOD

Multiplex luminex

## ORDER CODE

CHROMP

## CPT CODE

86235

## SPECIMEN REQUIREMENTS

0.5 mL serum (SST tube). Separate serum from cells and put in separate plastic tube. Store and transport refrigerated.

## COMMENTS

1) Min Amt: 0.25 mL. 2) Other acceptable specimens: EDTA or heparinized plasma (lavender or green top tube). 3) Unacceptable conditions: hemolyzed specimens, avoid repeat freeze/thaw cycles (no more than three). 4) Stability: Refrigerated-2 weeks, Frozen-3 months.

## RANGES

Chromatin Auto- antibodies	Negative Positive	LT 1.0 1.0 or more	AI
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**Test Information****DSDNA AUTOANTIBODY**

## DESCRIPTION

DSDNA AUTOANTIBODY

## METHOD

Multiplex luminex

## ORDER CODE

DNAMP

## CPT CODE

86225

## SPECIMEN REQUIREMENTS

0.5 mL serum (SST tube). Separate serum from cells and put in separate plastic tube. Store and transport refrigerated.

## COMMENTS

1) Min Amt: 0.25 mL. 2) Other acceptable specimens: EDTA or heparinized plasma (lavender or green top tube). 3) Unacceptable conditions: hemolyzed specimens, avoid repeat freeze/thaw cycles (no more than three). 4) Stability: Refrigerated-2 weeks, Frozen-3 months.

## RANGES

DSDNA Auto- Antibody	Negative Indeterminate Positive	LT 5 5-9 10 or more	IU/mL
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**Test Information****JO-1 AUTOANTIBODY**

## DESCRIPTION

JO-1 AUTOANTIBODY

## METHOD

Multiplex luminex

## ORDER CODE

JO1MP

## CPT CODE

86235

## SPECIMEN REQUIREMENTS

0.5 mL serum (SST tube). Separate serum from cells and put in separate plastic tube. Store and transport refrigerated.

## COMMENTS

1) Min Amt: 0.25 mL. 2) Other acceptable specimens: EDTA or heparinized plasma (lavender or green top tube). 3) Unacceptable conditions: hemolyzed specimens, avoid repeat freeze/thaw cycles (no more than three). 4) Stability: Refrigerated-2 weeks, Frozen-3 months.

## RANGES

JO-1 Auto- antibody	Negative Positive	LT 1.0 1.0 or more	AI
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**Test Information****RIBOSOMAL P AUTOANTIBODY**

## DESCRIPTION

RIBOSOMAL P AUTOANTIBODY

## METHOD

Multiplex luminex

## ORDER CODE

RIBPMP

## CPT CODE

86235

## SPECIMEN REQUIREMENTS

0.5 mL serum (SST tube). Separate serum from cells and put in separate plastic tube. Store and transport refrigerated.

## COMMENTS

1) Min Amt: 0.25 mL. 2) Other acceptable specimens: EDTA or heparinized plasma (lavender or green top tube). 3) Unacceptable conditions: hemolyzed specimens, avoid repeat freeze/thaw cycles (no more than three). 4) Stability: Refrigerated-2 weeks, Frozen-3 months.

## RANGES

Ribosomal P Autoantibody	Negative Positive	LT 1.0 1.0 or more	AI
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**Test Information****RNP AUTOANTIBODY**

## DESCRIPTION

RNP AUTOANTIBODY

## METHOD

Multiplex luminex

## ORDER CODE

RNPMP

## CPT CODE

86235

## SPECIMEN REQUIREMENTS

0.5 mL serum (SST tube). Separate serum from cells and put in separate plastic tube. Store and transport refrigerated.

## COMMENTS

1) Min Amt: 0.25 mL. 2) Other acceptable specimens: EDTA or heparinized plasma (lavender or green top tube). 3) Unacceptable conditions: hemolyzed specimens, avoid repeat freeze/thaw cycles (no more than three). 4) Stability: Refrigerated-2 weeks, Frozen-3 months.

## RANGES

RNP Auto-antibody	Negative	LT 1.0	AI
	Positive	1.0 or more	

**Test Information****SCL-70 AUTOANTIBODY**

## DESCRIPTION

SCL-70 AUTOANTIBODY

## METHOD

Multiplex luminex

## ORDER CODE

SCLMP

## CPT CODE

86235

## SPECIMEN REQUIREMENTS

0.5 mL serum (SST tube). Separate serum from cells and put in separate plastic tube. Store and transport refrigerated.

## COMMENTS

1) Min Amt: 0.25 mL. 2) Other acceptable specimens: EDTA or heparinized plasma (lavender or green top tube). 3) Unacceptable conditions: hemolyzed specimens, avoid repeat freeze/thaw cycles (no more than three). 4) Stability: Refrigerated-2 weeks, Frozen-3 months.

## RANGES

SCL-70 Autoantibody	Negative	LT 1.0	AI
	Positive	1.0 or more	

**Test Information****SM AUTOANTIBODY**

## DESCRIPTION

SM AUTOANTIBODY

## METHOD

Multiplex luminex

## ORDER CODE

SMMP

## CPT CODE

86235

## SPECIMEN REQUIREMENTS

0.5 mL serum (SST tube). Separate serum from cells and put in separate plastic tube. Store and transport refrigerated.

## COMMENTS

1) Min Amt: 0.25 mL. 2) Other acceptable specimens: EDTA or heparinized plasma (lavender or green top tube). 3) Unacceptable conditions: hemolyzed specimens, avoid repeat freeze/thaw cycles (no more than three). 4) Stability: Refrigerated-2 weeks, Frozen-3 months.

## RANGES

SM Auto-antibody	Negative	LT 1.0	AI
	Positive	1.0 or more	

**Test Information****SMRNP AUTOANTIBODY**

## DESCRIPTION

SM RNP AUTOANTIBODY

## METHOD

Multiplex luminex

## ORDER CODE

SMRNMP

## CPT CODE

86235

## SPECIMEN REQUIREMENTS

0.5 mL serum (SST tube). Separate serum from cells and put in separate plastic tube. Store and transport refrigerated.

## COMMENTS

1) Min Amt: 0.25 mL. 2) Other acceptable specimens: EDTA or heparinized plasma (lavender or green top tube). 3) Unacceptable conditions: hemolyzed specimens, avoid repeat freeze/thaw cycles (no more than three). 4) Stability: Refrigerated-2 weeks, Frozen-3 months.

## RANGES

SMRNP Auto-antibody	Negative Positive	LT 1.0 1.0 or more	AI
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**Test Information****SSA AUTOANTIBODY**

## DESCRIPTION

SSA AUTOANTIBODY

## METHOD

Multiplex luminex

## ORDER CODE

SSAMP

## CPT CODE

86235

## SPECIMEN REQUIREMENTS

0.5 mL serum (SST tube). Separate serum from cells and put in separate plastic tube. Store and transport refrigerated.

## COMMENTS

1) Min Amt: 0.25 mL. 2) Other acceptable specimens: EDTA or heparinized plasma (lavender or green top tube). 3) Unacceptable conditions: hemolyzed specimens, avoid repeat freeze/thaw cycles (no more than three). 4) Stability: Refrigerated-2 weeks, Frozen-3 months.

## RANGES

SSA (R0) Autoantibody	Negative Positive	LT 1.0 1.0 or more	AI
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**Test Information****SSB AUTOANTIBODY**

## DESCRIPTION

SSB AUTOANTIBODY

## METHOD

Multiplex luminex

## ORDER CODE

SSBMP

## CPT CODE

86235

## SPECIMEN REQUIREMENTS

0.5 mL serum (SST tube). Separate serum from cells and put in separate plastic tube. Store and transport refrigerated.

## COMMENTS

1) Min Amt: 0.25 mL. 2) Other acceptable specimens: EDTA or heparinized plasma (lavender or green top tube). 3) Unacceptable conditions: hemolyzed specimens, avoid repeat freeze/thaw cycles (no more than three). 4) Stability: Refrigerated-2 weeks, Frozen-3 months.

## RANGES

SSB (LA) Autoantibody	Negative Positive	LT 1.0 1.0 or more	AI
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**Test Information****ANTINUCLEAR ANITBODY TITER BY IFA****DESCRIPTION**

ANTINUCLEAR ANITBODY TITER BY IFA

**METHOD**

IFA

**ORDER CODE**

IFANA

**CPT CODE**

86039

**SPECIMEN REQUIREMENTS**

1 mL serum (SST tube). Separate serum from cells and put in separate plastic tube. Store and transport refrigerated.

**COMMENTS**

1) Min Amt: 0.5 mL. 2) Unacceptable conditions: plasma and heat-inactivated specimens. Interfering substances including turbidity, hemolysis, visible bacterial growth, lipemia and fluorescing drugs. Avoid repeat freeze/thaw cycles. 3) Stability: Refrigerated-2 weeks, Frozen-3 months.

**RANGES**

ANA by IFA Titer	LT 1:40	Titer
ANA by IFA Pattern		

Anti-nuclear antibodies are seen in a variety of systemic rheumatic diseases.  
In general, a titer equal to or greater than 1:160 is considered a significant positive.  
Titers equal to or less than 1:80 are usually of no or questionable significance.  
Low titer ANAs are common with advancing age.

**Test Information****DNA, DOUBLE STRANDED CRITHIDIA IFA****DESCRIPTION**

DNA, DOUBLE STRANDED CRITHIDIA IFA

**METHOD**

IFA-Crithidia

**ORDER CODE**

IFDNA

**CPT CODE**

86225

**SPECIMEN REQUIREMENTS**

1 mL serum (SST tube). Separate serum from cells and put in separate plastic tube. Store and transport refrigerated.

**COMMENTS**

1) Min Amt: 0.5 mL 2) Unacceptable conditions: repeat freeze/thaw cycles. 3) Stability: Refrigerated-2 weeks, Frozen-6 months.

**RANGES**

DNA Dbl Strand (Crithidia)	Negative: LT 1:10
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**Deleted Test Codes and Descriptions**

WORKPAR	ORDERCODE	DESCRIPTION
AI	AI	AUTO-IMMUNE PROFILE (REFLEXIVE)
ANA/MA	ANAMA	ANA & MA (REFLEXIVE)
ANACOM	ANACOM	ANA COMPLETION PROFILE
ANA-HEP2.REFLEX	OMLRX2	ANA (HEP2) (REFLEX)
ANA-PR	ANAPR	ANA PROFILE (REFLEXIVE)
ANAPRC	ANAPRC	ANA PROFILE COMPLETION
ANAR	ANAR	ANA WITH REFLEX
ANCAD	ANCAD	ANCA PANEL, REFLEXIVE
ANTI-CENT	CENT	ANTI-CENTROMERE ANTIBODY
ANTI-SM	SMAB	ANTI-SMITH (SM)
DNA	DNADS	DNA ANTIBODY, DOUBLE STRAND
ENA	ENA	ANTI-ENA
JO1.AB	JO1AB	JO-1 ANTIBODY, IGG
OMLANA	OMLANA	ANA COMPLETE (OML)
OMLANA.REFLEX	OMLRX1	ANA COMPLETE (REFLEX) (OML)
RIBAB	RIBAB	RIBOSOMAL P PROTEIN AB
RNP	RNP	RNP
SCL AB	SCLR	ANTI-SCLERODERMA AB
SJO	SJO	SJOGRENS ANTIBODY
SSA	SSA	SS-A (RO) ANTIBODY
SSB	SSB	SS-B (LA) ANTIBODY
TVLANA	TVLANA	ANA+DNA+ANTISM+RNP+SSA+SSB+ ANTICENT+SCL AB+RA
ANA	ANA	ANA SCREEN (REFLEXIVE)
n/a	TVLARP	RHEUMATOID ARTHRITIS PANEL [TVL]
ANA.RDL.COMP	ANARDL	ANA PROFILE II
ANA.RDL.SCR	RDLSCL	ANA SCREEN