ARUP LABORATORIES

Quarterly HOTLINE: Effective November 12, 2018

MEDICARE COVERAGE OF LABORATORY TESTING

Please remember when ordering laboratory tests that are billed to Medicare/Medicaid or other federally funded programs, the following requirements apply:

1. Only tests that are medically necessary for the diagnosis or treatment of the patient should be ordered. Medicare does not pay for screening tests except for certain specifically approved procedures and may not pay for non-FDA approved tests or those tests considered experimental.
2. If there is reason to believe that Medicare will not pay for a test, the patient should be informed. The patient should then sign an Advance Beneficiary Notice (ABN) to indicate that he or she is responsible for the cost of the test if Medicare denies payment.
3. The ordering physician must provide an ICD-10 diagnosis code or narrative description, if required by the fiscal intermediary or carrier.
4. Organ- or disease-related panels should be billed only when all components of the panel are medically necessary.
5. Both ARUP- and client-customized panels should be billed to Medicare only when every component of the customized panel is medically necessary.
6. Medicare National Limitation Amounts for CPT codes are available through the Centers for Medicare & Medicaid Services (CMS) or its intermediaries. Medicaid reimbursement will be equal to or less than the amount of Medicare reimbursement.

The CPT Code(s) for test(s) profiled in this bulletin are for informational purposes only. The codes reflect our interpretation of CPT coding requirements, based upon AMA guidelines published annually. CPT codes are provided only as guidance to assist you in billing. ARUP strongly recommends that clients reconfirm CPT code information with their local intermediary or carrier. CPT coding is the sole responsibility of the billing party.

The regulations described above are only guidelines. Additional procedures may be required by your fiscal intermediary or carrier.

Hotline Page #	Test Number	Summary of Changes by Test Name	Name Change	Methodology	Performed/Reported Schedule	Specimen Requirements	Reference Interval	Interpretive Data	Note	CPT Code	Component Change	Other Interface Change	New Test	Inactive
59	2013375	Allergen, Food, Milk (Sheep), IgE												x
59	0097911	Allergen, Food, Sugar Cane IgG4												x
59	0097325	Allergen, Food, Yam IgE												x
59	2008601	Allergen, Fungi and Molds, *Aspergillus fumigatus* IgG												x
59	0090393	Allergen, Fungi and Molds, *Trichophyton rubrum* IgG												x
59	0055087	Allergen, Mites, *Euroglyphus maynei* IgE												x
59	0055183	Allergen, Mites, *Tyrophagus putrescentiae* IgE												x

Hotline Page #	Test Number	Summary of Changes by Test Name	Name Change	Methodology	Performed/Reported Schedule	Specimen Requirements	Reference Interval	Interpretive Data	Note	CPT Code	Component Change	Other Interface Change	New Test	Inactive
9	3000600	Allergens, Inhalants, Southeast Panel IgE											x	
59	0055240	Allergens, Inhalants/Foods, Southeast Profile												x
59	2003418	Alpha-1-Antichymotrypsin (A1ACT) by Immunohistochemistry												x
9	0090161	Amiodarone and Metabolite					x	x						
10	2010075	Amphetamines, Urine, Quantitative					x	x		x	x			
10	0060202	Antimicrobial Susceptibility - Anaerobe			x									
10	2009257	Antimicrobial Susceptibility - Fungal (Yeasts and Molds)							x					
10	0060193	Antimicrobial Susceptibility - *Nocardia*			x									
11	0060222	Antimicrobial Susceptibility - Viridans *Streptococcus*			x									
11	0060217	Antimicrobial Susceptibility, AFB/Mycobacteria							x					
12	0050317	Antinuclear Antibodies (ANA), IgG by ELISA with Reflex to ANA HEp-2 Substrate, IgG by IFA and ENA Confirmation	x				x	x		x		x		
13	0050080	Antinuclear Antibodies (ANA), IgG by ELISA with Reflex to ANA, HEp-2 Substrate, IgG by IFA	x			x	x	x				x		
14	3000082	Antinuclear Antibody (ANA) with HEp-2 Substrate, IgG by IFA											x	
15	3000601	Antinuclear Antibody (ANA) with HEp-2 Substrate, IgG by IFA with Reflex by Pattern											x	
59	2008467	Anti-Nuclear Antibody (ANA), IgG by IFA with Reflex by IFA Pattern												x
16	2006540	Aortopathy Panel, Sequencing and Deletion/Duplication (Pricing Change)	x		x									
59	2007344	Arsenic Analysis, Nails												x
16	0099045	Arsenic, Blood				x	x	x	x					
17	3000876	*Aspergillus fumigatus* Antibody IgG											x	
59	0097771	*Aspergillus fumigatus* Antibody, IgG by ELISA												x
59	2005275	Baclofen Quantitative, Fluid												x
18	3000724	B-Cell Acute Lymphocytic Leukemia (B-ALL) Minimum Residual Disease Detection by Flow Cytometry (COG Protocol)											x	
18	0060117	*Bordetella pertussis* Culture			x									
59	2003472	Breast 2 (GCDFP-15) by Immunohistochemistry												x
19	0025013	Cadmium Exposure Panel - OSHA				x								
19	0099675	Cadmium, Blood				x		x	x					

Hotline Page #	Test Number	Summary of Changes by Test Name	Name Change	Methodology	Performed/Reported Schedule	Specimen Requirements	Reference Interval	Interpretive Data	Note	CPT Code	Component Change	Other Interface Change	New Test	Inactive
20	0092211	Carbamazepine Epoxide and Total		x	x	x		x						
20	2010183	Cardiomyopathy and Arrhythmia Panel, Sequencing and Deletion/Duplication (Pricing Change)	x		x									
59	2003565	CD42b by Immunohistochemistry												x
59	2003592	CD57 by Immunohistochemistry												x
20	2012151	Charcot-Marie-Tooth (CMT) and Related Hereditary Neuropathies Panel, Sequencing (Pricing Change)	x		x				x					
21	2012155	Charcot-Marie-Tooth (CMT) and Related Hereditary Neuropathies, *PMP22* Deletion/Duplication with Reflex to Sequencing Panel			x				x					
21	2001551	*Chlamydia trachomatis* and *Neisseria gonorrhoeae* by Transcription-Mediated Amplification (TMA), SurePath				x								
21	0097688	Chromosome Analysis - Breakage, Fanconi Anemia, Whole Blood		x										
21	0093399	Circulating Tumor Cell Count				x								
21	0060140	*Clostridium difficile* Culture with Reflex to Cytotoxin Cell Assay							x	x				
22	2011157	Cobalamin/Propionate/Homocysteine Metabolism Related Disorders Panel, Sequencing and Deletion/Duplication (Pricing Change)	x		x									
22	0050588	*Coccidioides* Antibodies Panel, Serum by CF, ID, ELISA				x								
22	0050170	*Coccidioides* Antibody by CF				x								
59	2011616	Colon Cancer Gene Panel, Somatic												x
23	3000480	Comprehensive Systemic Sclerosis Panel											x	
24	3000479	Criteria Systemic Sclerosis Panel											x	
24	2013991	Dermatomyositis Panel			x									
24	2011241	Duchenne/Becker Muscular Dystrophy (*DMD*) Deletion/Duplication with Reflex to Sequencing			x									
24	2011153	Duchenne/Becker Muscular Dystrophy (*DMD*) Sequencing (Pricing Change)			x									
59	0050232	Eosinophil Cationic Protein												x
25	3000537	Eosinophil Cationic Protein (ECP)											x	
25	2006336	Exome Sequencing, Proband (Pricing Change)	x		x									
25	2006332	Exome Sequencing, Trio (Pricing Change)	x		x									
25	2008803	Expanded Hearing Loss Panel, Sequencing and Deletion/Duplication (Pricing Change)	x		x									
59	0020156	Fetal Hemoglobin, APT Test												x

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26	3000235	Fungal Antibodies with Reflex to *Blastomyces dermatitidis* Antibodies by Immunodiffusion				x								
26	2007138	Galectin-3, Serum				x								
59	2001540	Hantavirus Antibodies, IgG and IgM												x
59	2003914	HBME-1 (Mesothelial Cell) by Immunohistochemistry												x
26	0099470	Heavy Metals Panel 3, Blood				x	x		x			x		
27	2011304	Heavy Metals Panel 3, Random Urine with Reflex to Arsenic Fractionated			x	x	x							
28	0099475	Heavy Metals Panel 3, Urine with Reflex to Arsenic Fractionated			x	x	x							
29	0020584	Heavy Metals Panel 4, Blood				x	x		x			x		
30	0020572	Heavy Metals Panel 4, Urine with Reflex to Arsenic Fractionated			x	x	x							
31	0025055	Heavy Metals Panel 6, Urine with Reflex to Arsenic Fractionated			x	x	x							
32	0020221	Hemoglobin, Urine				x								
32	3000863	Hepatitis B Virus (HBV) by Quantitative NAAT											x	
33	3000866	Hepatitis B Virus (HBV) by Quantitative NAAT with Reflex to HBV Genotype by Sequencing											x	
59	2004722	Hepatitis B Virus (HBV) by Quantitative PCR with Reflex to HBV Genotype by Sequencing												x
59	0056025	Hepatitis B Virus by Quantitative PCR												x
33	2012026	Hereditary Breast and Ovarian Cancer Panel, Sequencing and Deletion/Duplication (Pricing Change)	x		x									
33	2012032	Hereditary Cancer Panel, Sequencing and Deletion/Duplication (Pricing Change)	x		x									
33	2013449	Hereditary Gastrointestinal Cancer Panel, Sequencing and Deletion/Duplication (Pricing Change)	x		x									
34	2012052	Hereditary Hemolytic Anemia Panel Sequencing (Pricing Change)	x		x				x					
34	2009337	Hereditary Hemorrhagic Telangiectasia (HHT) Panel, Sequencing and Deletion/Duplication (Pricing Change)	x		x									
34	2010214	Hereditary Renal Cancer Panel, Sequencing and Deletion/Duplication (Pricing Change)	x		x									
34	0050641	Herpes Simplex Virus Type 1 and/or 2 Antibodies, IgM by ELISA			x									

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34	0050408	Herpes Simplex Virus Type 1 and/or 2 Antibodies, IgM by ELISA, CSF			x									
34	2008848	Holoprosencephaly Panel, Sequencing and Deletion/Duplication (Pricing Change)	x		x									
34	2008863	Holoprosencephaly Panel, Sequencing and Deletion/Duplication, Fetal (Pricing Change)	x		x				x					
35	2012674	Human Immunodeficiency Virus (HIV) Combo Antigen/Antibody (HIV-1/O/2) by CIA, Reflexive Panel		x	x	x	x		x			x		
36	3000871	Human Immunodeficiency Virus 1 (HIV-1) by Quantitative NAAT with Reflex to HIV PhenoSense GT											x	
37	3000870	Human Immunodeficiency Virus 1 (HIV-1) by Quantitative NAAT with Reflex to HIV-1 Genotype by Sequencing											x	
38	3000872	Human Immunodeficiency Virus 1 (HIV-1) by Quantitative NAAT, CSF											x	
39	3000867	Human Immunodeficiency Virus 1 (HIV-1) by Quantitative NAAT, Plasma											x	
59	2010797	Human Immunodeficiency Virus 1 (HIV-1) by Quantitative PCR with Reflex to HIV PhenoSense GT												x
59	2002689	Human Immunodeficiency Virus 1 (HIV-1) by Quantitative PCR with Reflex to HIV-1 Genotype by Sequencing												x
59	0055598	Human Immunodeficiency Virus 1 by Quantitative PCR												x
59	2005375	Human Immunodeficiency Virus Type 1 (HIV-1) Antibody by CIA with Reflex to HIV-1 Antibody Confirmation by Western Blot												x
39	0020284	Human Immunodeficiency Virus Type 1 (HIV-1) Antibody Confirmation by Western Blot			x									
59	2005377	Human Immunodeficiency Virus Types 1 and 2 (HIV-1, HIV-2) Antibodies by CIA with Reflex to HIV-1 Antibody Confirmation by Western Blot												x
40	2012669	Human Immunodeficiency Virus Types 1 and 2 (HIV-1/2) Antibody Differentiation, Supplemental, with Reflex to HIV-1 Quantitative NAAT, Plasma	x	x		x	x		x			x		
41	3000462	Immature PLT Fraction											x	
59	2003957	Immunoglobulin A (IgA) by Immunohistochemistry												x
59	2003966	Immunoglobulin M (IgM) by Immunohistochemistry												x

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41	2008320	Infliximab or Biosimilar Activity and Neutralizing Antibody	x			x								
41	2013612	Infliximab or Biosimilar Activity with Reflex to Antibody	x			x	x							
42	2013993	Interstitial Lung Disease Panel			x		x		x	x	x			
59	0080940	Lamellar Body Counts												x
59	2007346	Lead Analysis, Hair												x
43	0020745	Lead, Blood (Capillary)				x		x						
44	0020098	Lead, Blood (Venous)				x		x						
45	0025016	Lead, Industrial Exposure Panel, Adults				x		x						
46	2011482	Lead, Random Urine				x	x	x						
46	0025060	Lead, Urine				x	x							
47	0060113	*Legionella* Species, Culture			x									
47	0060158	*Leptospira* Culture			x									
59	0091351	Levodopa Quantitative, Serum or Plasma												x
47	0080503	Lipoprotein Electrophoresis								x				
47	0050119	Lupus Comprehensive Reflexive Panel										x		
59	2005848	MDM2 by Immunohistochemistry												x
47	0051205	Medium Chain Acyl-CoA Dehydrogenase (*ACADM*) 2 Mutations			x									
59	0091110	Mephenytoin and Metabolite Quantitative, Serum or Plasma												x
48	2011481	Mercury, Random Urine			x	x	x	x						
49	0025050	Mercury, Urine			x	x	x							
50	0099305	Mercury, Whole Blood			x	x	x	x	x			x		
59	2002928	Metformin Quantitation, Urine												x
50	2011539	Mexiletine, Serum or Plasma					x	x						
50	2006065	Mitochondrial Disorders (mtDNA) Sequencing (Pricing Change)			x									
51	2006054	Mitochondrial Disorders Panel (mtDNA Sequencing, Nuclear Genes Sequencing, and Deletion/Duplication) (Pricing Change)			x				x					
51	2013961	Myositis Extended Panel			x									
59	0091346	Naproxen, Serum or Plasma												x
59	0091099	Naproxen, Urine												x
51	0060093	*Nocardia* Culture and Gram Stain			x									

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51	2010772	Noonan Spectrum Disorders Panel, Sequencing (Pricing Change)	x		x									
51	2010769	Noonan Spectrum Disorders Panel, Sequencing, Fetal (Pricing Change)	x		x									
59	0050639	Nuclear Antibody (ANA) by IFA, IgG												x
52	3000496	PanFungal Identification by Sequencing											x	
52	2007370	Periodic Fever Syndromes Panel, Sequencing and Deletion/Duplication (Pricing Change)	x		x									
59	2011555	Perphenazine, Serum or Plasma												x
52	2013992	Polymyositis and Dermatomyositis Panel			x									
52	2013990	Polymyositis Panel			x									
52	2011156	Primary Antibody Deficiency Panel, Sequencing and Deletion/Duplication (Pricing Change)	x		x									
59	2004106	Procollagen I by Immunohistochemistry												x
53	3000712	Propafenone Quantitation, Serum or Plasma											x	
59	2011561	Propafenone, Serum or Plasma												x
53	3000240	Prostaglandin D2 (PG D2), Urine				x								
54	3000134	Prostate Health Index											x	
54	2008095	14-3-3 Protein Tau/Theta, CSF								x				
55	2009345	Pulmonary Arterial Hypertension (PAH) Panel, Sequencing and Deletion/Duplication (Pricing Change)	x		x									
55	2012849	Rapid Mendelian Genes Sequencing Panel, Trio											x	
55	2007085	Retinitis Pigmentosa/Leber Congenital Amaurosis Panel, Sequencing and Deletion/Duplication (Pricing Change)	x		x									
59	0091077	Silicon, Urine												x
56	2012015	Skeletal Dysplasia Panel, Sequencing and Deletion/Duplication (Pricing Change)	x		x									
56	2012010	Skeletal Dysplasia Panel, Sequencing and Deletion/Duplication, Fetal (Pricing Change)	x		x									
56	2007991	Solid Tumor Mutation Panel by Next Generation Sequencing								x				
56	3000714	Sotalol Quantitation, Serum/Plasma											x	
59	2011757	Sotalol, Serum or Plasma												x
56	0050725	*Streptococcus pneumoniae* Antibodies, IgG (14 Serotypes)			x									
59	2013325	Systemic Sclerosis Comprehensive Panel												x

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59	2012057	Systemic Sclerosis Panel												x
60	2004160	Tartrate-Resistant Acid Phosphatase (TRAP) by Immunohistochemistry												x
57	0025019	Thallium, Urine			x	x	x							
60	2011783	Thiothixene, Serum or Plasma												x
60	0091566	Trichloroacetic Acid Quantitative, Serum or Plasma												x
57	2007384	Vascular Malformations Panel, Sequencing and Deletion/Duplication (Pricing Change)	x		x									
57	0092628	Voltage-Gated Calcium Channel (VGCC) Antibody				x								
58	3000721	Ziprasidone Quantitation, Serum or Plasma											x	
60	2007955	Ziprasidone, Serum or Plasma												x

New Test **3000600** **Allergens, Inhalants, Southeast Panel IgE** **SE INH PAN**

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Methodology: Quantitative ImmunoCAP Fluorescent Enzyme Immunoassay
Performed: Sun-Sat
Reported: 1-2 days

Specimen Required: Patient Prep: Multiple patient encounters should be avoided.
Collect: Serum Separator Tube (SST). Multiple specimen tubes should be avoided.
Specimen Preparation: Separate from cells ASAP or within 2 hours of collection. Transfer 1.7 mL serum to an ARUP Standard Transport Tube. (Min: 0.8 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Hemolyzed, icteric, or lipemic specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year

Reference Interval: Allergens included: *Alternaria alternata (tenuis)*, *Aspergillus fumigatus*, Bermuda Grass, *Candida albicans*, Cat Epithelium & Dander, Common/Short Ragweed, *D. farinae* (Mites), Dog Dander, English Plantain, *Hormodendrum* (*Cladosporium*), House Dust Greer, Meadow Fescue, Oak Tree, *Penicillium notatum*, White Pine tree.

Reporting Range (reported in kU/L)	Probability of IgE Mediated Clinical Reaction	Class Scoring
Less than 0.10	No significant level detected	0
0.10 - 0.34	Clinical relevance undetermined	0/1
0.35 - 0.70	Low	1
0.71 - 3.50	Moderate	2
3.51 - 17.50	High	3
17.51 - 50.00	Very high	4
50.01 - 100.00	Very high	5
Greater than 100.00	Very high	6

Interpretive Data: Allergen results of 0.10-0.34 kU/L are intended for specialist use as the clinical relevance is undetermined. Even though increasing ranges are reflective of increasing concentrations of allergen-specific IgE, these concentrations may not correlate with the degree of clinical response or skin testing results when challenged with a specific allergen. The correlation of allergy laboratory results with clinical history and in vivo reactivity to specific allergens is essential. A negative test may not rule out clinical allergy or even anaphylaxis.

CPT Code(s): 86003 x15

New York DOH Approved.

HOTLINE NOTE: Refer to the Test Mix Addendum for interface build information.

0090161 **Amiodarone and Metabolite** **AMIOD**

Reference Interval:
Effective November 12, 2018

Therapeutic Range	0.5-2.0 µg/mL
Toxic Level	Greater than 3.0 µg/mL

Interpretive Data: Toxic concentrations may exacerbate arrhythmias, cause liver and lung toxicity, and thyroid dysfunction. The concentration of desethylamiodarone, an active major metabolite, is also reported but no therapeutic range is established. At steady-state, the metabolite concentration is similar to the amiodarone concentration.

See Compliance Statement B: www.aruplab.com/CS

2010075 Amphetamines, Urine, Quantitative AMPS UR

Reference Interval:
Effective November 12, 2018

Drugs Covered	Cutoff Concentrations
Amphetamine	50 ng/mL
Methamphetamine	200 ng/mL
Methylenedioxyamphetamine (MDA)	200 ng/mL
Methylenedioxymethamphetamine (Ecstasy, MDMA)	200 ng/mL
Methylenedioxyethylamphetamine (Eve, MDEA)	200 ng/mL
Phentermine	200 ng/mL

Interpretive Data:
Methodology: Quantitative Liquid Chromatography-Tandem Mass Spectrometry.

Positive cutoff: 200 ng/mL unless specified below:
Amphetamine 50 ng/mL

For medical purposes only; not valid for forensic use.

The absence of expected drug(s) and/or drug metabolite(s) may indicate non-compliance, inappropriate timing of specimen collection relative to drug administration, poor drug absorption, diluted/adulterated urine, or limitations of testing. The concentration value must be greater than or equal to the cutoff to be reported as positive. Interpretive questions should be directed to the laboratory.
See Compliance Statement B: www.aruplab.com/CS

CPT Code(s): 80325; 80359 (Alt code: G0480)

HOTLINE NOTE: There is a component change associated with this test.
Add component 2010082, Phentermine, Urn, Quant

0060202 Antimicrobial Susceptibility - Anaerobe MA ANA

Performed: Sun-Sat
Reported: 4-6 days

2009257 Antimicrobial Susceptibility - Fungal (Yeasts and Molds) MA FUNGAL

Note: Vitreal Penetration: NOT expected for the echinocandins.
CSF Penetration: NOT expected for the echinocandins.
Urine Penetration: ONLY fluconazole and flucytosine (note that the lack of detectable urine concentrations does not necessarily preclude use of other drugs when the infection involves the renal parenchyma.)

Selective reporting by organism and source. The following antifungal agents are tested: Amphotericin B, anidulafungin, caspofungin, fluconazole, 5-fluorocytosine, itraconazole, isavuconazole, micafungin, posaconazole, and voriconazole.

Susceptibility testing for dermatophytes and dimorphic fungi is not performed at ARUP. If requested, isolates will be sent to the Fungus Testing Laboratory, San Antonio, TX. Specify agents to be tested on the susceptibility test requisition form.

Testing is not performed on isolates from environmental sources.

An additional processing fee will be billed for all organisms not submitted in pure culture, as indicated in the specimen requirements.

If species identification is not provided, identification will be performed at ARUP. Additional charges apply.

An additional charge will be added for drug requests that are not tested at ARUP and require sendout

0060193 Antimicrobial Susceptibility - *Nocardia* MA NOC

Performed: Sun-Sat
Reported: 4-7 days

0060222	**Antimicrobial Susceptibility - Viridans *Streptococcus***	**MA VIRS**

Performed: Sun-Sat
Reported: 2-4 days

0060217	**Antimicrobial Susceptibility, AFB/Mycobacteria**	**MA AFB**

Note: AFB susceptibility testing is billed at the panel level. Charges will vary based on organism identified. An additional handling fee will be billed for all organisms submitted that are not in pure culture as indicated in the specimen requirements. If species identification is not provided, identification will be performed at ARUP. Additional charges apply.

An additional charge will be added for drug requests that are not tested at ARUP and require sendout.

0050317 Antinuclear Antibodies (ANA), IgG by ELISA with Reflex to ANA HEp-2 Substrate, IgG by IFA and ENA Confirmation — ANA REF

Reference Interval:
Effective November 12, 2018

Test Number	Components	Reference Interval
0050080	Antinuclear Antibodies (ANA), IgG by ELISA with Reflex to ANA, HEp-2 Substrate, IgG by IFA	Effective November 12, 2018
		Test Number / **Components** / **Reference Interval**
		(blank) / Antinuclear Antibodies (ANA), IgG by ELISA / None Detected
		3000082 / Antinuclear Antibody (ANA), HEp-2, IgG / Less than 1:80
0050215	Double-Stranded DNA (dsDNA) Antibody, IgG by ELISA with Reflex to dsDNA Antibody, IgG by IFA	Effective August 20, 2012
		Test Number / **Components** / **Reference Interval**
		(blank) / Double-Stranded DNA (dsDNA) Antibody, IgG by ELISA / None Detected.
		2002693 / Double-Stranded DNA (dsDNA) Antibody, IgG by IFA (using *Crithidia luciliae*) / Less than 1:10
0050470	RNP (U1) (Ribonucleic Protein) (ENA) Antibody, IgG	29 AU/mL or less: Negative 30-40 AU/mL: Equivocal 41 AU/mL or greater: Positive
0050599	Scleroderma (Scl-70) (ENA) Antibody, IgG	29 AU/mL or less: Negative 30-40 AU/mL: Equivocal 41 AU/mL or greater: Positive
0050085	Smith (ENA) Antibody, IgG	29 AU/mL or less: Negative 30-40 AU/mL: Equivocal 41 AU/mL or greater: Positive
2012074	SSA 52 and 60 (Ro) (ENA) Antibodies, IgG	**Test Number** / **Components** / **Reference Interval**
		(blank) / SSA-52 (Ro52) (ENA) Antibody, IgG / 29 AU/mL or Less: Negative 30-40 AU/mL: Equivocal 41 AU/mL or greater: Positive
		(blank) / SSA-60 (Ro60) (ENA) Antibody, IgG / 29 AU/mL or Less: Negative 30-40 AU/mL: Equivocal 41 AU/mL or greater: Positive
0050692	SSB (La) (ENA) Antibody, IgG	29 AU/mL or less: Negative 30-40 AU/mL: Equivocal 41 AU/mL or greater: Positive
0099592	Jo-1 Antibody, IgG	29 AU/mL or less: Negative 30-40 AU/mL: Equivocal 41 AU/mL or greater: Positive

Interpretive Data: 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, histone, SS-A (Ro), SS-B (La), Smith, snRNP/Sm, Scl-70, Jo-1, centromere, and an extract of lysed HEp-2 cells. 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.

Note: ANA lacks diagnostic specificity, and is associated with in variety diseases (cancers, autoimmune, infectious, and inflammatory conditions) and occurs in healthy individuals in varying prevalence. The lack of diagnostic specificity requires confirmation of positive ANA by more-specific serologic tests, which may be guided by the pattern(s) observed.

Specimens are screened for ANA using ELISA. If ANA IgG is detected by ELISA, then Antinuclear Antibody (ANA), HEp-2, IgG by IFA will be added. If ANA, IgG by IFA is confirmed positive with a titer of 1:80 or greater, then a titer and pattern will be reported. In addition, samples positive for ANA, IgG by IFA will reflex to Double-Stranded DNA (dsDNA) Antibody, IgG by ELISA, Jo-1 Antibody, IgG, RNP (U1) (Ribonucleic Protein) (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. 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.

ANA determined by indirect fluorescence assay (IFA) use HEp-2 substrate and IgG-specific conjugate at a screening dilution of 1:80. If positive, patterns reported include homogeneous, speckled, centromere, nucleolar, nuclear dots, or cytoplasmic. All positive results are reported with endpoint titers.

CPT Code(s): 86038; if reflexed, add 86039; if reflexed, add 86235 x7 and 86225; if reflexed, add 86256

HOTLINE NOTE: There is a reflexive pattern change associated with this test.
Add reflex to 3000082, Antinuclear Antibody (ANA), HEp-2, IgG
Add reflex to 0050599, Scleroderma (Scl-70) (ENA) Antibody, IgG
Add reflex to 0099592, Jo-1 Antibody, IgG
Remove reflex to 0050639, ANA by IFA, IgG

0050080 **Antinuclear Antibodies (ANA), IgG by ELISA with Reflex to ANA, HEp-2 Substrate, IgG by IFA** **ANA**

Specimen Required: Collect: Serum Separator Tube (SST).
Specimen Preparation: Separate serum from cells ASAP or within 2 hours of collection. Transfer 0.5 mL serum to an ARUP Standard Transport Tube. (Min: 0.3 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Non-serum, heat inactivated, grossly hemolyzed and severely lipemic specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)

Reference Interval:
Effective November 12, 2018

Test Number	Components	Reference Interval
	Antinuclear Antibodies (ANA), IgG by ELISA	None Detected
3000082	Antinuclear Antibody (ANA), HEp-2, IgG	Less than 1:80

Interpretive Data: 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, histone, SS-A (Ro), SS-B (La), Smith, snRNP/Sm, Scl-70, Jo-1, centromere, and an extract of lysed HEp-2 cells. 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.

Note: ANA lacks diagnostic specificity, and is associated with a variety of diseases (cancers, autoimmune, infectious, and inflammatory conditions) and occurs in healthy individuals in varying prevalence. The lack of diagnostic specificity requires a confirmation of positive ANA by more-specific serologic tests, which may be guided by the pattern(s) observed.

If ANA are detected by ELISA, then Antinuclear Antibody (ANA), HEp-2, IgG by IFA will be added. Additional charges apply

ANA determined by indirect fluorescence assay (IFA) use HEp-2 substrate and IgG-specific conjugate at a screening dilution of 1:80. If positive, patterns reported include homogeneous, speckled, centromere, nucleolar, nuclear dots, or cytoplasmic. All positive results are reported with endpoint titers.

HOTLINE NOTE: There is a reflexive pattern change associated with this test.
Add reflex to 3000082, Antinuclear Antibody (ANA), HEp-2, IgG
Remove reflex to 0050639, ANA by IFA, IgG

New Test **3000082** **Antinuclear Antibody (ANA) with HEp-2 Substrate, IgG by IFA** **ANA IFA AB**

Click for Pricing

Additional Technical Information

Methodology: Semi-Quantitative Indirect Fluorescent Antibody
Performed: Sun-Sat
Reported: 1-3 days

Specimen Required: 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: 0.15 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Plasma. Contaminated, hemolyzed, or severely lipemic specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)

Reference Interval: Less than 1:80

Interpretive Data: Presence of antinuclear antibodies (ANA) is a hallmark feature of systemic autoimmune rheumatic diseases (SARD). 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. Diagnosis may be aided by the pattern(s) observed.

Negative results do not necessarily rule out SARD.

Note: ANA are determined by indirect fluorescence assay (IFA) using HEp-2 substrate and IgG-specific conjugate at a screening dilution of 1:80. If positive, patterns reported include homogeneous, speckled, centromere, nucleolar, nuclear dots, or cytoplasmic. All positive results are reported with endpoint titers.

CPT Code(s): 86039

New York DOH Approved.

HOTLINE NOTE: Refer to the Test Mix Addendum for interface build information.

New Test **3000601** **Antinuclear Antibody (ANA) with HEp-2 Substrate, IgG by IFA with Reflex by Pattern** **ANA AB PAT**

Click for Pricing

Additional Technical Information

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

Performed: Sun-Sat

Reported: 1-8 days

Specimen Required: Collect: Serum Separator Tube (SST).
Specimen Preparation: Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.6 mL)
Storage/Transport Temperature: Refrigerated
Unacceptable Conditions: Non-serum specimens. Contaminated, grossly hemolyzed, heat-inactivated, severely lipemic specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)

Reference Interval:

Test Number	Components	Reference Interval
3000082	Antinuclear Antibody (ANA), HEp-2, IgG	Less than 1:80
2003040	PM/Scl-100 Antibody, IgG by Immunoblot	Negative
2012173	Fibrillarin (U3 RNP) Antibody, IgG	Negative
0050215	Double-Stranded DNA (dsDNA) Antibody, IgG by ELISA with Reflex to dsDNA Antibody, IgG by IFA	**Test Number** / **Components** / **Reference Interval** — / Double-Stranded DNA (dsDNA) Antibody, IgG by ELISA / None Detected. 2002693 / Double-Stranded DNA (dsDNA) Antibody, IgG by IFA (using Crithidia luciliae) / Less than 1:10
2005287	Chromatin Antibody, IgG	19 Units or less: Negative 20-60 Units: Moderate Positive 61 Units or greater: Strong Positive
2001601	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
0050599	Scleroderma (Scl-70) (ENA) Antibody, IgG	29 AU/mL or less: Negative 30-40 AU/mL: Equivocal 41 AU/mL or greater: Positive
0050470	RNP (U1) (Ribonucleic Protein) (ENA) Antibody, IgG	29 AU/mL or less: Negative 30-40 AU/mL: Equivocal 41 AU/mL or greater: Positive
0050085	Smith (ENA) Antibody, IgG	29 AU/mL or less: Negative 30-40 AU/mL: Equivocal 41 AU/mL or greater: Positive
2012074	SSA 52 and 60 (Ro) (ENA) Antibodies, IgG	**Test Number** / **Components** / **Reference Interval** — / 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
0050692	SSB (La) (ENA) Antibody, IgG	29 AU/mL or less: Negative 30-40 AU/mL: Equivocal 41 AU/mL or greater: Positive

Interpretive Data: Refer to report.

Note: The Antinuclear Antibody (ANA), IgG by IFA with Reflex by IFA Pattern begins with Nuclear Antibody (ANA) by IFA, IgG. Depending on findings, one or more reflexive tests may be required. Tests added may include Double-Stranded DNA (dsDNA) Antibody, IgG by ELISA; Double-Stranded DNA (dsDNA) Antibody, IgG by IFA (using Crithidiae luciliae); Chromatin Antibody, IgG; RNP (U1) (Ribonucleic Protein) (ENA) Antibody, IgG; Fibrillarin (U3 RNP) Antibody, IgG; Smith (ENA) Antibody, IgG; SSA 52 (Ro) (ENA) Antibody, IgG; SSA 60 (Ro) (ENA) Antibody, IgG; SSB (La) (ENA) Antibody, IgG; Scleroderma (Scl-70) (ENA) Antibody, IgG; PM/Scl-100 Antibody, IgG, by Immunoblot; and/or RNA Polymerase III Antibody, IgG. Additional charges apply.

ANA determined by indirect fluorescence assay (IFA) use HEp-2 substrate and IgG-specific conjugate at a screening dilution of 1:80. If positive, patterns reported include homogeneous, speckled, centromere, nucleolar, nuclear dots, or cytoplasmic. All positive results are reported with endpoint titers.

CPT Code(s): 86039; if homogenous or speckled pattern add 86235 x6, 86225, and 83516; if reflexed add 86256; If nucleolar pattern add 86235 x3 and 83516

New York DOH Approved.

HOTLINE NOTE: Refer to the Test Mix Addendum for interface build information.

2006540 Aortopathy Panel, Sequencing and Deletion/Duplication — AORT PANEL

Performed: Varies
Reported: 3-6 weeks

HOTLINE NOTE: There is a price change associated with this test. Please contact ARUP Client Services at (800) 522-2787 for additional information.

0099045 Arsenic, Blood — ARS B

Specimen Required: Patient Prep: Diet, medication, and nutritional supplements may introduce interfering substances. Patient should be encouraged to discontinue nutritional supplements, vitamins, minerals, and non-essential over-the-counter medications (upon the advice of their physician) and avoid shellfish and seafood for 48 to 72 hours.
Collect: Royal blue (K_2EDTA or Na_2EDTA).
Specimen Preparation: Transport 7 mL whole blood in the original collection tube. (Min: 0.5 mL)
Storage/Transport Temperature: Room temperature. Also acceptable: Refrigerated.
Remarks: Trace Elements requisition form may be required (ARUP form #32990).
Unacceptable Conditions: Specimens collected in tubes other than Royal Blue (EDTA). Specimens transported in containers other than Royal Blue (EDTA) tube or Trace Element-Free Transport Tube. Heparin anticoagulant. Clotted specimens.
Stability (collection to initiation of testing): Ambient: Indefinitely; Refrigerated: Indefinitely; Frozen: Unacceptable

Reference Interval:
Effective November 12, 2018
0.0-12.0 µg/L

Interpretive Data: Elevated results may be due to skin or collection-related contamination, including the use of a noncertified metal-free collection/transport tube. If contamination concerns exist due to elevated levels of blood arsenic, confirmation with a second specimen collected in a certified metal-free tube is recommended.

Potentially toxic ranges for blood arsenic: Greater than or equal to 600 µg/L.

Blood arsenic is for the detection of recent exposure poisoning only. Blood arsenic levels in healthy subjects vary considerably with exposure to arsenic in the diet and the environment. A 24-hour urine arsenic is useful for the detection of chronic exposure.

See Compliance Statement B: www.aruplab.com/CS

HOTLINE NOTE: Remove information found in the Note field.

New Test **3000876** ***Aspergillus fumigatus* Antibody IgG** **ASPERF IGG**

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Methodology: Quantitative ImmunoCAP Fluorescent Enzyme Immunoassay
Performed: Sun
Reported: 1-8 days

Specimen Required: Collect: Serum Separator Tube (SST).
Specimen Preparation: Separate from cells ASAP or within 2 hours of collection. Transfer 0.5 mL serum to an ARUP Standard Transport Tube. (Min: 0.2 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Hemolyzed, icteric, or lipemic specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year

Reference Interval:

0.00-90.00 mcg/mL	Negative - No significant level of *A. fumigatus* IgG antibody detected.
90.01-99.99 mcg/mL	Equivocal - Questionable presence of *A. fumigatus* IgG antibody.
100.00 mcg/mL or greater	Positive – *A. fumigatus* IgG antibody detected. A positive result satisfies a single criterion in the determination of allergic bronchopulmonary aspergillosis (ABPA).

Interpretive Data: See Compliance Statement B: www.aruplab.com/CS

CPT Code(s): 86606

New York DOH Approved.

HOTLINE NOTE: Refer to the Test Mix Addendum for interface build information.

New Test **3000724** **B-Cell Acute Lymphocytic Leukemia (B-ALL) Minimum Residual Disease Detection by Flow Cytometry (COG Protocol)** **B-ALL MRD**

Click for Pricing

Time Sensitive

Additional Technical Information

Methodology: Flow Cytometry
Performed: Sun-Sat
Reported: 1-2 days

Specimen Required: Collect: Bone marrow. Whole blood: Green (Sodium Heparin) or Lavender (EDTA).
Specimen Preparation: Transport 2 mL heparinized bone marrow (Min: 1.0 mL*) **OR** 3 mL whole blood (Min: 1mL*)
Storage/Transport Temperature: Room temperature. Also acceptable: Refrigerated. **Specimen should be received within 24 hours of collection for optimal cell viability**.
Remarks: Provide specimen source, CBC, Wright stained smear (if available), clinical history, differential diagnosis.
Follow up: If previous leukemia/lymphoma phenotyping was performed at another lab, the outside flow cytometry report and histograms (if possible) should accompany the specimen.
Unacceptable Conditions: Clotted or hemolyzed specimens.
Stability (collection to initiation of testing): Ambient: 48 hours; Refrigerated: 48 hours; Frozen: Unacceptable

Reference Interval: By Report

Interpretive Data: Refer to report.
See Compliance Statement A: www.aruplab.com/CS

Note: This assay is a minimal residual disease assessment of B-ALL by flow cytometry.

Available Markers*: CD3, CD9, CD10, CD13, CD19, CD20, CD33, CD34, CD38, CD45, CD58, CD71, Syto 16

*Not all markers will be reported in all cases.

DAY 8 Peripheral Blood sample will have CD10, CD19, CD20, CD34, CD45, and Syto 16 run and reported. (6 markers total).

Day 29 Bone Marrow sample will have CD3, CD9, CD10, CD13, CD19, CD20, CD33, CD34, CD38, CD45, CD58, CD71, Syto 16 run and reported. (13 markers total).

The report will include a pathologist interpretation and a marker interpretation range corresponding to CPT codes of 2-8 markers, 9-15 markers interpreted. Charges apply per marker.

CPT Code(s): 88184; 88185; each additional marker 88187 or 88188.

New York DOH approval pending. Call for status update.

HOTLINE NOTE: Refer to the Test Mix Addendum for interface build information.

0060117 ***Bordetella pertussis* Culture** **MC PERT**

Performed: Sun-Sat
Reported: Within 8 days
Preliminary: as soon as positive detected; Final: Negative at 7 days

0025013 Cadmium Exposure Panel - OSHA CD EXP

Specimen Required: Patient Prep: To avoid contamination, please collect specimens at the beginning of work shift. Blood and urine should be collected the same day.
Urine: Diet, medication, and nutritional supplements may introduce interfering substances. Patients should be encouraged to discontinue nutritional supplements, vitamins, minerals, and non-essential over-the-counter medications (upon the advice of their physician). High concentrations of iodine may interfere with elemental testing. Collection of urine specimens from patients receiving iodinated or gadolinium-based contrast media should be avoided for a minimum of 72 hours post-exposure. Collection from patients with impaired kidney function should be avoided for a minimum of 14 days post contrast media exposure.
Collect: Royal blue (K_2EDTA or Na_2EDTA) **AND** minimum 40 mL urine using spot technique (single void) in an open-top urine collection cup.
Specimen Preparation: Transfer specimens to the appropriate transport device using the Cadmium exposure kit, ARUP supply #16450, available online through eSupply using ARUP Connect™ or by contacting ARUP Client Services at (800) 522-2787.
Blood: Transport 7 mL whole blood in the original collection tube. (Min: 0.5 mL)
Urine for Beta-2-Microglobulin: Transfer 3 mL aliquot from original urine collection to an ARUP Standard Transport Tube. Adjust the pH of this specimen immediately after pouring off collection, so the pH is between 6 and 8. Use 1M HCl or 5 percent NaOH to adjust the urine pH. Label tube as β2 Microglobulin. Freeze within one hour of collection.
Urine for Cadmium: Transfer 7 mL aliquot from original urine collection to ARUP Trace Element-Free Transport Tubes (ARUP supply #43116). Available online through eSupply using ARUP Connect™ or by contacting ARUP Client Services at (800) 522-2787. (Min: 0.5 mL) Label tube as Cadmium.
Urine for Creatinine: Transfer 2 mL aliquot from original urine collection to an ARUP Standard Transport Tube. (Min: 0.5 mL) Label tube as Creatinine.
Storage/Transport Temperature: **Blood:** Refrigerated.
Urine for Beta-2-Microglobulin: Frozen
Urine for Cadmium: Refrigerated.
Urine for Creatinine: Refrigerated.
Remarks: Trace Elements requisition form may be required (ARUP form #32990).
Unacceptable Conditions: **Blood:** Specimens collected in tubes other than Royal Blue (EDTA). Specimens transported in containers other than Royal Blue (EDTA) tube or Trace Element-Free Transport Tube. Heparin anticoagulant. Clotted specimens.
Urine: Specimens transported in non-trace element free transport tube (with the exception of the original device). Specimens collected within 72 hours after administration of iodinated or gadolinium-based contrast media. Specimens containing blood or fecal materials.
Stability (collection to initiation of testing): **Blood**: Ambient: Indefinitely; Refrigerated: Indefinitely; Frozen: Unacceptable
Urine for Beta-2-Microglobulin: Ambient: 8 hours; Refrigerated: 48 hours; Frozen: 2 months
Urine for Cadmium: Ambient: 1 week; Refrigerated: 2 weeks; Frozen: 1 year
Urine for Creatinine: Ambient: 2 days; Refrigerated: 1 month; Frozen: 6 months

0099675 Cadmium, Blood CADMIUM B

Specimen Required: Patient Prep: Diet, medication, and nutritional supplements may introduce interfering substances. Patients should be encouraged to discontinue nutritional supplements, vitamins, minerals, non-essential over-the-counter medications (upon the advice of their physician).
Collect: Royal blue (K_2EDTA or Na_2EDTA).
Specimen Preparation: Transport 7 mL whole blood in the original collection tube. (Min: 0.5 mL)
Storage/Transport Temperature: Room temperature. Also acceptable: Refrigerated.
Remarks: Trace Elements requisition form may be required (ARUP form #32990).
Unacceptable Conditions: Specimens collected in tubes other than Royal Blue (EDTA). Specimens transported in containers other than Royal Blue (EDTA) tube or Trace Element-Free Transport Tube. Heparin anticoagulant. Clotted specimens.
Stability (collection to initiation of testing): Ambient: Indefinitely; Refrigerated: Indefinitely; Frozen: Unacceptable

Interpretive Data: Elevated results may be due to skin or collection-related contamination, including the use of a noncertified metal-free collection/transport tube. If contamination concerns exist due to elevated levels of blood cadmium, confirmation with a second specimen collected in a certified metal-free tube is recommended.

Blood cadmium levels can be used to monitor acute toxicity and in combination with cadmium urine and B-2 microglobulin is the preferred method for monitoring occupational exposure. Symptoms associated with cadmium toxicity vary based upon route of exposure and may include tubular proteinuria, fever, headache, dyspnea, chest pain, conjunctivitis, rhinitis, sore throat and cough. Ingestion of cadmium in high concentration may cause vomiting, diarrhea, salivation, cramps, and abdominal pain.

See Compliance Statement B: www.aruplab.com/CS

HOTLINE NOTE: Remove information found in the Note field.

0092211 Carbamazepine Epoxide and Total — CARB EPOXT

Methodology: Quantitative Liquid Chromatography-Tandem Mass Spectrometry
Performed: Mon
Reported: 1-8 days

Specimen Required: Patient Prep: Timing of specimen collection: Pre-dose (trough) draw - At steady state concentration.
Collect: Plain red. Also acceptable: Lavender (K_2 or K_3EDTA) or pink (K_2EDTA).
Specimen Preparation: Separate serum or plasma from cells within 2 hours of collection. Transfer 1 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.5 mL)
Storage/Transport Temperature: Frozen.
Unacceptable Conditions: Whole blood. Gel separator tubes, light blue (citrate), or yellow (SPS or ACD solution).
Stability (collection to initiation of testing): After separation from cells: Ambient: 48 hours; Refrigerated: 1 week; Frozen: 1 month

Interpretive Data: The therapeutic range is based on serum pre-dose (trough) draw at steady-state concentration. The carbamazepine metabolite, Carbamazepine-10, 11-Epoxide, has anticonvulsant activity and a proposed therapeutic range of 0.4-4 µg/mL.

A rare, adverse drug reaction to carbamazepine therapy includes Stevens-Johnson syndrome or toxic epidermal necrolysis. Patients of Asian ancestry with the presence of the *HLA-B*15:02* have an increased risk for this carbamazepine-induced, life-threatening reaction. Pharmacogenetic testing for *HLA-B*15:02* is recommended prior to treatment for patients at risk of carbamazepine hypersensitivity. This information has been included in the FDA-approved label for carbamazepine (https://www.accessdata.fda.gov/scripts/cder/daf/index.cfm?event=overview.process&varApplNo=016608) and in the guideline from the Clinical Pharmacogenetics Implementation Consortium (https://www.pharmgkb.org/guidelines). [*HLA-B*15:02* Genotyping, Carbamazepine Hypersensitivity, ARUP test code 2012049.]

A combination of therapeutic drug monitoring with *HLA-B*15:02* pharmacogenetics genotyping may benefit patients at increased risk of developing carbamazepine-induced adverse events due to rare genotypes other than the *HLA-B*15:02* variant allele.

See Compliance Statement B: www.aruplab.com/CS

2010183 Cardiomyopathy and Arrhythmia Panel, Sequencing and Deletion/Duplication — CARDIACPAN

Performed: Varies
Reported: 3-6 weeks

HOTLINE NOTE: There is a price change associated with this test. Please contact ARUP Client Services at (800) 522-2787 for additional information.

2012151 Charcot-Marie-Tooth (CMT) and Related Hereditary Neuropathies Panel, Sequencing — CMT SEQ

Performed: Varies
Reported: 3-6 weeks

Note: Genes sequenced: *AARS, AIFM1, ARHGEF10, ATL1, ATP7A, BAG3, BICD2, BSCL2, CCT5, DCTN1, DHTKD1, DNAJB2, DNM2, DNMT1, DYNC1H1, EGR2, FAM134B, FBLN5, FGD4, FIG4, GAN, GARS, GDAP1, GJB1, GNB4, HARS, HEXA, HINT1, HK1, HOXD10, HSPB1, HSPB3, HSPB8, IGHMBP2, IKBKAP, INF2, KARS, KIF1A, KIF1B, KIF5A, LAS1L, LITAF, LMNA, LRSAM1, MARS, MED25, MFN2, MPZ, MTMR2, MYH14, NDRG1, NEFL, NGF, NTRK1, PDK3, PLEKHG5, PMP22, PRNP, PRPS1, PRX, RAB7A, REEP1, SBF1, SBF2, SCN9A, SETX, SH3TC2, SLC12A6, SLC5A7, SOX10, SPTLC1, SPTLC2, TDP1, TFG, TRIM2, TRPV4, WNK1, YARS.*

HOTLINE NOTE: There is a price change associated with this test. Please contact ARUP Client Services at (800) 522-2787 for additional information.

2012155 Charcot-Marie-Tooth (CMT) and Related Hereditary Neuropathies, *PMP22* Deletion/Duplication with Reflex to Sequencing Panel — CMT REFLEX

Performed: Varies
Reported: Within 2 weeks, if reflexed add 3-6 weeks

Note: Deletion/Duplication analysis is performed on all samples. If no large deletions or duplications are detected and/or results do not explain the clinical scenario, then sequencing of the Charcot-Marie-Tooth and Related Hereditary Neuropathy gene will be added. Additional charges apply. If reflexed, an additional 8-10 weeks is required to complete testing.

Genes sequenced: *AARS, AIFM1, ARHGEF10, ATL1, ATP7A, BAG3, BICD2, BSCL2, CCT5, DCTN1, DHTKD1, DNAJB2, DNM2, DNMT1, DYNC1H1, EGR2, FAM134B, FBLN5, FGD4, FIG4, GAN, GARS, GDAP1, GJB1, GNB4, HARS, HEXA, HINT1, HK1, HOXD10, HSPB1, HSPB3, HSPB8, IGHMBP2, IKBKAP, INF2, KARS, KIF1A, KIF1B, KIF5A, LAS1L, LITAF, LMNA, LRSAM1, MARS, MED25, MFN2, MPZ, MTMR2, MYH14, NDRG1, NEFL, NGF, NTRK1, PDK3, PLEKHG5, PMP22, PRNP, PRPS1, PRX, RAB7A, REEP1, SBF1, SBF2, SCN9A, SETX, SH3TC2, SLC12A6, SLC5A7, SOX10, SPTLC1, SPTLC2, TDP1, TFG, TRIM2, TRPV4, WNK1, YARS.*

2001551 *Chlamydia trachomatis* and *Neisseria gonorrhoeae* by Transcription-Mediated Amplification (TMA), SurePath — CTNG SP

Specimen Required: Collect: Cervical brush in SurePath liquid-based Pap test Media. Refer to "Sample Collection for the Diagnosis of STD" under Specimen Handling at www.aruplab.com for specific specimen collection and transport instructions.
Specimen Preparation: Vortex SurePath media and transfer 1 mL to APTIMA Specimen Transfer Tube (ARUP supply #42711) within 24 hours of collection. Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787. To reduce the potential for contamination, SurePath specimens should be poured off, using sterile technique, into the APTIMA Specimen Transfer Tube prior to Cytology Testing.
Storage/Transport Temperature: Refrigerated.
Remarks: Specimen source is required.
Unacceptable Conditions: Specimens in any container other than APTIMA Specimen Transfer Media. Specimens from patients that are less than 16 years of age.
Stability (collection to initiation of testing): **APTIMA Specimen Transfer Tube:** Ambient: 2 weeks; Refrigerated: 1 month; Frozen: 1 month

0097688 Chromosome Analysis - Breakage, Fanconi Anemia, Whole Blood — BREAKAGE

Methodology: Stimulated Cell Culture with Clastogenic Stress/Unbanded Breakage Analysis

0093399 Circulating Tumor Cell Count — CTC COUNT

Specimen Required: Patient Prep: If the patient is on doxorubicin therapy, allow at least 1 week following administration of a dose of doxorubicin before blood draw.
Collect: 2 CellSave Preservative tubes (ARUP supply # 44867) available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787. (Min: 8 mL per tube)
Specimen Preparation: Transport 20 mL whole blood. (Min: 16 mL)
Storage/Transport Temperature: Room temperature.
Remarks: Submit with Order: Source of metastatic cancer. This assay is FDA approved only for breast, colorectal, or prostate metastatic cancers; other types will not be tested.
Unacceptable Conditions: Specimens not collected in the CellSave tube or collected in expired CellSave tubes. Short draws.
Stability (collection to initiation of testing): Ambient: 4 days; Refrigerated: Unacceptable; Frozen: Unacceptable

0060140 *Clostridium difficile* Culture with Reflex to Cytotoxin Cell Assay — MC CDIF

Note: For routine stool screening, refer to *Clostridium difficile* toxin B gene (tcdB) by PCR (ARUP test code 2002838).
If *Clostridium difficile* culture is positive, then *Clostridium difficile* Cytotoxin Cell Assay will be added. Additional charges apply.

CPT Code(s): 87075; if positive add 87076; if reflexed add 87230

2011157 **Cobalamin/Propionate/Homocysteine Metabolism Related Disorders Panel, Sequencing and Deletion/Duplication** **VB12 PANEL**

Performed: Varies
Reported: 3-6 weeks

HOTLINE NOTE: There is a price change associated with this test. Please contact ARUP Client Services at (800) 522-2787 for additional information.

0050588 ***Coccidioides* Antibodies Panel, Serum by CF, ID, ELISA** **COCCI PAN**

Specimen Required: Collect: Serum Separator Tube (SST).
Specimen Preparation: Separate from cells ASAP or within 2 hours of collection. Transfer two 2 mL serum to an ARUP Standard Transport Tube. (Min: 0.6 mL) Parallel testing is preferred and convalescent specimens **must** be received within 30 days from receipt of the acute specimens.
Storage/Transport Temperature: Refrigerated.
Remarks: **Mark specimens plainly as "acute" or "convalescent."**
Unacceptable Conditions: Other body fluids. Hemolyzed, icteric, or lipemic specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)

0050170 ***Coccidioides* Antibody by CF** **COCCI**

Specimen Required: 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: 0.15 mL) Parallel testing is preferred and convalescent specimens **must** be received within 30 days from receipt of acute specimens.
Storage/Transport Temperature: Refrigerated.
Remarks: **Mark specimens plainly as "acute" or "convalescent."**
Unacceptable Conditions: Hemolyzed, icteric, or lipemic specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)

New Test **3000480** **Comprehensive Systemic Sclerosis Panel** **SCL COMPRE**

Click for Pricing

Additional Technical Information

Methodology: Qualitative Immunoblot/Semi-Quantitative Indirect Fluorescent Antibody/Semi-Quantitative Multiplex Bead Assay/Semi-Quantitative Enzyme-Linked Immunosorbent Assay
Performed: Thu
Reported: 1-8 days

Specimen Required: Collect: Serum 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. (Min: 1.5 mL)
Storage/Transport Temperature: Refrigerated. Also acceptable: Room temperature or frozen.
Unacceptable Conditions: Hemolyzed, hyperlipemic, icteric, heat-treated or contaminated specimens
Stability (collection to initiation of testing): Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year

Reference Interval:

Test Number	Components	Reference Interval	
0050599	Scleroderma (Scl-70) (ENA) Antibody, IgG	29 AU/mL or less	Negative
		30-40 AU/mL	Equivocal
		41 AU/mL or greater	Positive
0050470	RNP (U1) (Ribonucleic Protein) (ENA) Antibody, IgG	29 AU/mL or less	Negative
		30-40 AU/mL	Equivocal
		41 AU/mL or greater	Positive
3000082	Antinuclear Antibody (ANA) with HEp-2 Substrate, IgG by IFA	Less than 1:80	
2012173	Fibrillarin (U3 RNP) Antibody, IgG	Negative	
2003040	PM/Scl-100 Antibody, IgG by Immunoblot	Negative	
2001601	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

Interpretive Data: Refer to report

Note: Panel includes: Anti-Nuclear Ab (ANA) Titer, Anti-Nuclear Ab (ANA) Pattern, Anti-Scl-70, Anti-RNA Polymerase III Ab, Anti-U1 RNP Ab, Anti-Fibrillarin (U3 RNP), Anti-PM/Scl-100 Ab

CPT Code(s): 86039; 86235 x4; 83516

New York DOH Approved.

HOTLINE NOTE: Refer to the Test Mix Addendum for interface build information.

New Test **3000479** **Criteria Systemic Sclerosis Panel** **SSC PANEL**
Click for Pricing

Additional Technical Information

Methodology: Semi-Quantitative Indirect Fluorescent Antibody/Semi-Quantitative Multiplex Bead Assay/Semi-Quantitative Enzyme-Linked Immunosorbent Assay
Performed: Sun, Tue, Thu
Reported: 1-3 days

Specimen Required: Collect: Serum 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. (Min: 0.25 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Contaminated, hemolyzed, or severely lipemic specimens.
Stability (collection to initiation of testing): Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)

Reference Interval:

Test Number	Components	Reference Interval	
3000082	Antinuclear Antibody (ANA), HEp-2, IgG	Less than 1:80	
0050599	Scleroderma (Scl-70) (ENA) Antibody, IgG	29 AU/mL or less	Negative
		30-40 AU/mL	Equivocal
		41 AU/mL or greater	Positive
2001601	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

Interpretive Data: Refer to report.

CPT Code(s): 86039; 86235; 83516

New York DOH Approved.

HOTLINE NOTE: Refer to the Test Mix Addendum for interface build information.

2013991 **Dermatomyositis Panel** **DERM MYO**

Performed: Mon, Tue, Thu, Fri
Reported: 7-18 days

2011241 **Duchenne/Becker Muscular Dystrophy (*DMD*) Deletion/Duplication with Reflex to Sequencing** **DMD REFLEX**

Performed: Varies
Reported: Within 2 weeks, if reflexed add 2-4 weeks

2011153 **Duchenne/Becker Muscular Dystrophy (*DMD*) Sequencing** **DMD SEQ**

Performed: Varies
Reported: 2-4 weeks

HOTLINE NOTE: There is a price change associated with this test. Please contact ARUP Client Services at (800) 522-2787 for additional information.

New Test **3000537** **Eosinophil Cationic Protein (ECP)** **EC PROT**
Click for Pricing

Methodology: Quantitative Fluorescent Enzyme Immunoassay
Performed: Sunday
Reported: 1-8 days

Specimen Required: Collect: Serum separator tube (SST).
Specimen Preparation: Collect blood by venipuncture using Serum separator tube (SST). Gently invert the tube several times. Do not shake or vortex the tube. Release ECP by clotting for 60-120 minutes at room temperature (20-24° C). Centrifuge at 1000-1300 x g for 10 minutes at room temperature. Transfer 1ml of serum to an ARUP Standard Transport Tube (Min: 0.25 mL)
Storage/Transport Temperature: Frozen, Also acceptable; Refrigerated
Unacceptable Conditions: Plasma and hemolyzed serum cannot be used
Stability (collection to initiation of testing):
After separation from cells; Ambient: 48 hours, Refrigerated: 5 Days, Frozen: 30 Days

Reference Interval: Less than 17.8 ug/L

Interpretive Data: Test developed and characteristics determined by ARUP Laboratories. See Compliance Statement B: aruplab.com/CS

CPT Code(s): 83520

New York DOH approval pending. Call for status update.

HOTLINE NOTE: Refer to the Test Mix Addendum for interface build information.

2006336 **Exome Sequencing, Proband** **EXOSEQ PRO**

Performed: Varies
Reported: 4-8 weeks

HOTLINE NOTE: There is a price change associated with this test. Please contact ARUP Client Services at (800) 522-2787 for additional information.

2006332 **Exome Sequencing, Trio** **EXOME SEQ**

Performed: Varies
Reported: 4-8 weeks

HOTLINE NOTE: There is a price change associated with this test. Please contact ARUP Client Services at (800) 522-2787 for additional information.

2008803 **Expanded Hearing Loss Panel, Sequencing and Deletion/Duplication** **EHL PANEL**

Performed: Varies
Reported: 3-6 weeks

HOTLINE NOTE: There is a price change associated with this test. Please contact ARUP Client Services at (800) 522-2787 for additional information.

3000235 Fungal Antibodies with Reflex to *Blastomyces dermatitidis* Antibodies by Immunodiffusion — FUNG R SER

Specimen Required: 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: 0.4 mL) Parallel testing is preferred and convalescent specimens **must** be received within 30 days from receipt of the acute specimens.
Storage/Transport Temperature: Refrigerated.
Remarks: **Mark specimens plainly as acute or convalescent.**
Unacceptable Conditions: Hemolyzed, icteric, or lipemic specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)

2007138 Galectin-3, Serum — GALECTIN

Specimen Required: Collect: Plain red
Specimen Preparation: Allow serum specimen to clot completely at room temperature. Separate serum from cells ASAP or within 2 hours of collection. Transport 1 mL serum. (Min: 0.2 mL)
Storage/Transport Temperature: Frozen
Unacceptable Conditions: Plasma. Specimens stored or transported at room temperature for more than 48 hours. Visibly hemolyzed specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 4 months (Avoid repeated freeze/thaw cycles)

0099470 Heavy Metals Panel 3, Blood — HY MET B

Specimen Required: Patient Prep: Diet, medication, and nutritional supplements may introduce interfering substances. Patients should be encouraged to discontinue nutritional supplements, vitamins, minerals, non-essential over-the-counter medications (upon the advice of their physician), and avoid shellfish and seafood for 48 to 72 hours.
Collect: Royal blue (K_2EDTA or Na_2EDTA).
Specimen Preparation: Transport 7 mL whole blood in the original collection tube. (Min: 0.5 mL)
Storage/Transport Temperature: Room temperature. Also acceptable: Refrigerated.
Remarks: Trace Elements requisition form may be required (ARUP form #32990).
Unacceptable Conditions: Specimens collected in tubes other than Royal Blue (EDTA). Specimens transported in containers other than Royal Blue (EDTA) tube or Trace Element-Free Transport Tube. Heparin anticoagulant. Clotted specimens.
Stability (collection to initiation of testing): Ambient: 1 week; Refrigerated: 1 week; Frozen: Unacceptable

Reference Interval:
Effective November 12, 2018

Test Number	Components	Reference Interval
0099045	Arsenic, Blood	0.0-12.0 µg/L
0099305	Mercury, Whole Blood	0.0-10.0 µg/L
0020098	Lead, Blood (Venous)	0.0-4.9 µg/dL

Note: Mercury is volatile; concentration may decrease over time. If the specimen is drawn and stored in the appropriate container, the arsenic and lead values do not change with time.

HOTLINE NOTE: There is a numeric map change associated with this test.
Change the numeric map for component 0099305, Mercury, Whole Blood from XXXXX to XXX.X.

2011304 Heavy Metals Panel 3, Random Urine with Reflex to Arsenic Fractionated HYMETU RND

Performed: Sun-Sat
Reported: 1-3 days

Specimen Required: Patient Prep: Diet, medication, and nutritional supplements may introduce interfering substances. Patients should be encouraged to discontinue nutritional supplements, vitamins, minerals, non-essential over-the-counter medications (upon the advice of their physician), and avoid shellfish and seafood for 48 to 72 hours. High concentrations of iodine may interfere with elemental testing. Collection of urine specimens from patients receiving iodinated or gadolinium-based contrast media should be avoided for a minimum of 72 hours post-exposure. Collection from patients with impaired kidney function should be avoided for a minimum of 14 days post-contrast media exposure.
Collect: Random urine.
Specimen Preparation: Transfer an 8 mL aliquot from a well-mixed collection to ARUP Trace Element-Free Transport Tubes (ARUP supply #43116), available online through eSupply using ARUP Connector contact ARUP Client Services at (800) 522-2787. (Min: 2 mL)
Storage/Transport Temperature: Refrigerated. Also acceptable: Room temperature or frozen.
Unacceptable Conditions: Urine collected within 72 hours after administration of iodinated or gadolinium-based contrast media.. Acid preserved urine. Specimens contaminated with blood or fecal material. Specimens transported in non-trace element-free transport tube (with the exception of the original device).
Stability (collection to initiation of testing): Ambient: 1 week; Refrigerated: 2 weeks; Frozen: 1 year

Reference Interval:

Test Number	Components	Reference Interval
	Arsenic Urine - per volume	Effective November 13, 2017 0.0-34.9 µg/L (based on Biological Exposure Index)
	Arsenic, Urine - ratio to CRT	Effective November 13, 2017 0.0-29.9 ug/gCRT
0020734	Arsenic, Fractionated, Urine	

Test Number	Components	Reference Interval
	As Organic	Refer to report
	Arsenic Total Inorganic	Refer to report
	Arsenic, Methylated	Refer to report

	Lead, Urine - per volume	Effective November 12, 2018 0.0-5.0 µg/L
	Lead, Urine - ratio to CRT	Effective November 12, 2018 0.0-5.0 ug/gCRT
	Mercury, Urine - per volume	Effective November 12, 2018 0.0-5.0 µg/L
	Mercury, Urine - ratio to CRT	Effective November 13, 2017 0.0-20.0 µg/gCRT

0099475 Heavy Metals Panel 3, Urine with Reflex to Arsenic Fractionated HY MET U

Performed: Sun-Sat
Reported: 1-3 days

Specimen Required: Patient Prep: Diet, medication, and nutritional supplements may introduce interfering substances. Patients should be encouraged to discontinue nutritional supplements, vitamins, minerals, non-essential over-the-counter medications (upon the advice of their physician), and avoid shellfish and seafood for 48 to 72 hours. High concentrations of iodine may interfere with elemental testing. Collection of urine specimens from patients receiving iodinated or gadolinium-based contrast media should be avoided for a minimum of 72 hours post-exposure. Collection from patients with impaired kidney function should be avoided for a minimum of 14 days post-contrast media exposure.
Collect: 24-hour or random urine collection. Specimen must be collected in a plastic container and should be refrigerated during collection. **ARUP studies indicate that refrigeration of urine alone, during and after collection, preserves specimens adequately if tested within 14 days of collection.**
Specimen Preparation: Transfer 8 mL aliquot from a well-mixed collection to ARUP Trace Element-Free Transport Tubes (ARUP supply #43116). Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787. (Min: 2 mL)
Storage/Transport Temperature: Refrigerated. Also acceptable: Room temperature or frozen.
Remarks: Trace Elements requisition form may be required (ARUP form #32990-Barcode; #32991-No Barcode). Record total volume and collection time interval on transport tube and on test request form.
Unacceptable Conditions: Urine collected within 72 hours after administration of iodinated or gadolinium-based contrast media. Acid preserved urine. Specimens contaminated with blood or fecal material. Specimens transported in non-trace element-free transport tube (with the exception of the original device).
Stability (collection to initiation of testing): Ambient: 1 week; Refrigerated: 2 weeks; Frozen: 1 year

Reference Interval:

Test Number	Components	Reference Interval
0025000	Arsenic, Urine with Reflex to Fractionated	Effective November 13, 2017

Test Number	Components	Reference Interval
	Arsenic, Urine - per volume	0-34.9 µg/L (based on Biological Exposure Index)
	Arsenic, Urine - per 24h	0-49.9 µg/d
	Arsenic, Urine - ratio to CRT	0.0-29.9 µg/gCRT
0020734	Arsenic, Fractionated, Urine	Refer to report
	Creatinine, Urine - per 24h	Refer to report

Test Number	Components	Reference Interval
0025060	Lead, Urine	Effective November 12, 2018
	Lead, Urine - per volume	0.0-5.0 µg/L
	Lead, Urine - per 24h	0.0-8.1 µg/d
	Lead Urine-ratio to CRT	0.0-5.0 ug/gCRT
	Creatinine, Urine - per 24h	Refer to report
0025050	Mercury, Urine	Effective November 12, 2018
	Mercury, Urine - per volume	0.0-5.0 µg/L
	Mercury, Urine - per 24h	0.0-20.0 µg/d
	Mercury, Urine - ratio to CRT	0.0-20.0 µg/gCRT
	Creatinine, Urine - per 24h	Refer to report

0020584 Heavy Metals Panel 4, Blood — HY MET B4

Specimen Required: Patient Prep: Diet, medication, and nutritional supplements may introduce interfering substances. Patients should be encouraged to discontinue nutritional supplements, vitamins, minerals, non-essential over-the-counter medications (upon the advice of their physician), and avoid shellfish and seafood for 48 to 72 hours.
Collect: Royal blue (K_2EDTA or Na_2EDTA).
Specimen Preparation: Transport 7 mL whole blood. (Min: 0.5 mL)
Storage/Transport Temperature: Room temperature. Also acceptable: Refrigerated.
Remarks: Trace Elements requisition form may be required (ARUP form #32990).
Unacceptable Conditions: Specimens collected in tubes other than Royal Blue (EDTA). Specimens transported in containers other than Royal Blue (EDTA) tube or Trace Element-Free Transport Tube. Heparin anticoagulant. Clotted specimens.
Stability (collection to initiation of testing): Ambient: 1 week; Refrigerated: 1 week; Frozen: Unacceptable

Reference Interval:
Effective November 12, 2018

Test Number	Components	Reference Interval
0099045	Arsenic, Blood	0.0-12.0 µg/L
0099675	Cadmium, Blood	0.0-5.0 µg/L
0099305	Mercury, Whole Blood	0.0-10.0 µg/L
0020098	Lead, Blood (Venous)	0.0-4.9 µg/dL

Note: Mercury is volatile; concentration may decrease over time. If the specimen is drawn and stored in the appropriate container, the arsenic, cadmium, and lead values do not change with time.

HOTLINE NOTE: There is a numeric map change associated with this test.
Change the numeric map for component 0099305, Mercury, Whole Blood from XXXXX to XXX.X.

0020572 Heavy Metals Panel 4, Urine with Reflex to Arsenic Fractionated HY MET U4

Performed: Sun-Sat
Reported: 1-3 days

Specimen Required: Patient Prep: Diet, medication, and nutritional supplements may introduce interfering substances. Patients should be encouraged to discontinue nutritional supplements, vitamins, minerals, non-essential over-the-counter medications (upon the advice of their physician), and avoid shellfish and seafood for 48 to 72 hours. High concentrations of iodine may interfere with elemental testing. Collection of urine specimens from patients receiving iodinated or gadolinium-based contrast media should be avoided for a minimum of 72 hours post-exposure. Collection from patients with impaired kidney function should be avoided for a minimum of 14 days post-contrast media exposure.
Collect: 24-hour or random urine collection. Specimen must be collected in a plastic container and should be refrigerated during collection. **ARUP studies indicate that refrigeration of urine alone, during and after collection, preserves specimens adequately if tested within 14 days of collection.**
Specimen Preparation: Transfer 8 mL aliquot from a well-mixed collection to ARUP Trace Element-Free Transport Tubes (ARUP supply #43116). Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787. (Min: 2 mL)
Storage/Transport Temperature: Refrigerated. Also acceptable: Room temperature or frozen.
Remarks: Trace Elements requisition form may be required (ARUP form #32990-Barcode; #32991-No Barcode). Record total volume and collection time interval on transport tube and on test request form.
Unacceptable Conditions: Urine collected within 72 hours after administration of iodinated or gadolinium-based contrast media. Acid preserved urine. Specimens contaminated with blood or fecal material. Specimen transported in non-trace element-free transport tube (with the exception of the original device).
Stability (collection to initiation of testing): Ambient: 1 week; Refrigerated: 2 weeks; Frozen: 1 year

Reference Interval:

Test Number	Components	Reference Interval		
0025000	Arsenic, Urine with Reflex to Fractionated	Effective November 13, 2017		
		Test Number	**Components**	**Reference Interval**
			Arsenic, Urine - per volume	0-34.9 µg/L (based on Biological Exposure Index)
			Arsenic, Urine - per 24h	0-49.9 µg/d
			Arsenic, Urine- ratio to CRT	0.0-29.9 µg/gCRT
		0020734	Arsenic, Fractionated, Urine	Refer to report
			Creatinine, Urine - per 24h	Refer to report
0025060	Lead, Urine	Effective November 12, 2018		
		Test Number	**Components**	**Reference Interval**
			Lead, Urine - per volume	0.0-5.0 µg/L
			Lead, Urine - per 24h	0.0-8.1 µg/d
			Lead Urine-ratio to CRT	0.0-5.0 ug/gCRT
			Creatinine, Urine - per 24h	Refer to report
0025050	Mercury, Urine	Effective November 12, 2018		
		Test Number	**Components**	**Reference Interval**
			Mercury, Urine - per volume	0.0-5.0 µg/L
			Mercury, Urine - per 24h	0.0-20.0 µg/d
			Mercury, Urine - ratio to CRT	0.0-20.0 µg/gCRT
			Creatinine, Urine - per 24h	Refer to report
0025040	Cadmium, Urine	Effective November 13, 2017		
		Test Number	**Components**	**Reference Interval**
			Cadmium, Urine - per volume	0.0-1.0 µg/L
			Cadmium, Urine - per 24h	0.0-3.2 µg/d
			Cadmium, Urine - ratio to CRT	0.0-3.2 µg/g crt
			Creatinine, Urine - per 24h	Refer to report

0025055 Heavy Metals Panel 6, Urine with Reflex to Arsenic Fractionated HYMET 6

Performed: Sun-Sat
Reported: 1-3 days

Specimen Required: Patient Prep: Diet, medication, and nutritional supplements may introduce interfering substances. Patients should be encouraged to discontinue nutritional supplements, vitamins, minerals, non-essential over-the-counter medications (upon the advice of their physician), and avoid shellfish and seafood for 48 to 72 hours. High concentrations of iodine may interfere with elemental testing. Collection of urine specimens from patients receiving iodinated or gadolinium-based contrast media should be avoided for a minimum of 72 hours post-exposure. Collection from patients with impaired kidney function should be avoided for a minimum of 14 days post-contrast media exposure.
Collect: 24-hour or random urine collection. Specimen must be collected in a plastic container and should be refrigerated during collection. **ARUP studies indicate that refrigeration of urine alone, during and after collection, preserves specimens adequately if tested within 14 days of collection.**
Specimen Preparation: Transfer 8 mL aliquot from a well-mixed collection to ARUP Trace Element-Free Transport Tubes (ARUP supply #43116). Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787. (Min: 2 mL)
Storage/Transport Temperature: Refrigerated. Also acceptable: Room temperature or frozen.
Remarks: Trace Elements requisition form may be required (ARUP form #32990-Barcode; #32991-No Barcode). Record total volume and collection time interval on transport tube and on test request form.
Unacceptable Conditions: Urine collected within 72 hours after administration of iodinated or gadolinium-based contrast media. Acid preserved urine. Specimens contaminated with blood or fecal material. Specimen transported in non-trace element free transport tube (with the exception of the original device).
Stability (collection to initiation of testing): Ambient: 1 week; Refrigerated: 2 weeks; Frozen: 1 year

Reference Interval:

Test Number	Components	Reference Interval		
0025000	Arsenic, Urine with Reflex to Fractionated	Effective November 13, 2017		
		Test Number	**Components**	**Reference Interval**
			Arsenic, Urine - per volume	0-34.9 µg/L (based on Biological Exposure Index)
			Arsenic, Urine - per 24h	0-49.9 µg/d
			Arsenic, Urine - ratio to CRT	0.0-29.9 µg/gCRT
		0020734	Arsenic, Fractionated, Urine	Refer to report
			Creatinine, Urine - per 24h	Refer to report
0025040	Cadmium, Urine	Effective November 13, 2017		
		Test Number	**Components**	**Reference Interval**
			Cadmium, Urine - per volume	0.0-1.0 µg/L
			Cadmium, Urine - per 24h	0.0-3.2 µg/d
			Cadmium, Urine - ratio to CRT	0.0-3.2 µg/g crt
			Creatinine, Urine - per 24h	Refer to report
0020461	Copper, Urine	Effective November 13,2017		
		Test Number	**Components**	**Reference Interval**
			Copper, Urine-per volume	0.3-3.2 µg/dL
			Copper, Urine-per 24h	3.0-45.0 µg/d
			Creatinine, Urine - per 24h	Refer to report
			Copper, Urine-ratio to CRT	10.0-45.0 µg/gCRT
0025060	Lead, Urine	Effective November 12, 2018		
		Test Number	**Components**	**Reference Interval**
			Lead, Urine - per volume	0.0-5.0 µg/L
			Lead, Urine - per 24h	0.0-8.1 µg/d
			Lead Urine-ratio to CRT	0.0-5.0 ug/gCRT
			Creatinine, Urine - per 24h	Refer to report
0025050	Mercury, Urine	Effective November 12, 2018		
		Test Number	**Components**	**Reference Interval**
			Mercury, Urine - per volume	0.0-5.0 µg/L
			Mercury, Urine - per 24h	0.0-20.0 µg/d
			Mercury, Urine - ratio to CRT	0.0-20.0 µg/gCRT
			Creatinine, Urine - per 24h	Refer to report
0020462	Zinc, Urine	Effective November 13,2017		
		Test Number	**Components**	**Reference Interval**
			Zinc, Urine	15.0-120.0 µg/dL
			Zinc, Urine-per 24h	150.0-1200.0 µg/d
			Zinc, Urine-ratio to CRT	110.0-750.0 µg/gCRT
			Creatinine, Urine - per 24h	Refer to report

0020221 **Hemoglobin, Urine** **HGBU**

Specimen Required: Collect: Random urine.
Specimen Preparation: Centrifuge and separate urine from cells and other sediment. Transfer 4 mL aliquot of supernatant to an ARUP Standard Transport Tube. (Min: 0.7 mL)
Storage/Transport Temperature: Frozen.
Stability (collection to initiation of testing): Ambient: Unacceptable; Refrigerated: 8 hours; Frozen: 1 month

New Test **3000863** **Hepatitis B Virus (HBV) by Quantitative NAAT** **HBV QNT**
Click for Pricing

Methodology: Quantitative Transcription-Mediated Amplification
Performed: Sun-Sat
Reported: 2-4 days

Specimen Required: Collect: Lavender (EDTA), Pink (K_2EDTA), Yellow (ACD), Plasma Preparation Tube (PPT), or Serum Separator Tube (SST).
Specimen Preparation: Separate from cells within 24 hours. Transfer 2 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.8 mL)
Storage/Transport Temperature: Frozen.
Unacceptable Conditions: Heparinized specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: Unacceptable; Refrigerated: 5 days; Frozen: 2 months

Reference Interval: Not detected

Interpretive Data: Normal range for this assay is "Not Detected".
The quantitative range of this assay is 1.00-9.00 log IU/mL (10-1,000,000,000 IU/mL).

An interpretation of "Not Detected" does not rule out the presence of inhibitors in the patient specimen or HBV DNA concentration below the level of detection of the test. Care should be taken when interpreting any single viral load determination.

This assay should not be used for blood donor screening, associated re-entry protocols, or for screening Human Cell, Tissues and Cellular Tissue-Based Products (HCT/P).

Note: The limit of quantification for this DNA assay is 1.00 log IU/mL (10 IU/mL). If the assay DID NOT DETECT the virus, the test result will be reported as "Not Detected". If the assay DETECTED the presence of the virus but was not able to accurately quantify the viral load, the test result will be reported as "< 10 Detected".

Specimens received with less than minimum volume for testing will automatically be run with a dilution.
-Specimens with 240-700 µL will be diluted resulting in a modification of the quantitative range of the assay to 1.48-9.48 log IU/mL (30-3,000,000,000 IU/mL).

This test is intended for use in conjunction with clinical presentation and other laboratory markers as an indicator of disease prognosis. This test is also used as an aid in assessing viral response to treatment as measured by changes in HBV DNA concentration.

CPT Code(s): 87517

New York DOH Approved.

HOTLINE NOTE: Refer to the Test Mix Addendum for interface build information.

New Test **3000866** **Hepatitis B Virus (HBV) by Quantitative NAAT with Reflex to HBV Genotype by Sequencing** **HBV QNT GR**

Click for Pricing

Methodology: Quantitative Transcription-Mediated Amplification/Sequencing
Performed: Sun-Sat
Reported: 2-14 days

Specimen Required: Collect: Lavender (EDTA), Pink (K_2EDTA), Plasma Preparation Tube (PPT), or Serum Separator Tube (SST).
Specimen Preparation: Separate from cells within 24 hours. Transfer 3.5 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 1.5 mL)
Storage/Transport Temperature: Frozen.
Unacceptable Conditions: Heparinized specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: Unacceptable; Refrigerated: 5 days; Frozen: 6 weeks

Reference Interval:

Available Separately	Components	Reference Interval
3000863	Hepatitis B Virus (HBV) by Quantitative NAAT	Not Detected
2001567	Hepatitis B Virus Genotype by Sequencing	By report

Interpretive Data: Refer to report.

Note: If Hepatitis B Virus by Quantitative NAAT result is greater than or equal to 3.00 log IU/mL (1000 IU/mL), then Hepatitis B Virus Genotype by Sequencing will be added. Additional charges apply.

CPT Code(s): 87517; if reflexed, add 87912

New York DOH Approved.

HOTLINE NOTE: Refer to the Test Mix Addendum for interface build information.

2012026 **Hereditary Breast and Ovarian Cancer Panel, Sequencing and Deletion/Duplication** **BOCAPAN**

Performed: Varies
Reported: 3-6 weeks

HOTLINE NOTE: There is a price change associated with this test. Please contact ARUP Client Services at (800) 522-2787 for additional information.

2012032 **Hereditary Cancer Panel, Sequencing and Deletion/Duplication** **CANCERPAN**

Performed: Varies
Reported: 3-6 weeks

HOTLINE NOTE: There is a price change associated with this test. Please contact ARUP Client Services at (800) 522-2787 for additional information.

2013449 **Hereditary Gastrointestinal Cancer Panel, Sequencing and Deletion/Duplication** **GICAN PAN**

Performed: Varies
Reported: 3-6 weeks

HOTLINE NOTE: There is a price change associated with this test. Please contact ARUP Client Services at (800) 522-2787 for additional information.

2012052 **Hereditary Hemolytic Anemia Panel Sequencing** **HHA SEQ**

Performed: Varies
Reported: 3-6 weeks

Note: Recent CBC result is required. Genes tested: *ADA, AK1, ALDOA, ANK1, CYB5R3, EPB41, EPB42, G6PD, GCLC, GPI, GSR, GSS, HK1, NT5C3A, PFKL, PGK1, PFKM, PIEZO1, PKLR, SLC4A1, SLCO1B1, SLCO1B3, SPTA1, SPTB, TPI1, UGT1A1, UGT1A6, UGT1A7*

HOTLINE NOTE: There is a price change associated with this test. Please contact ARUP Client Services at (800) 522-2787 for additional information.

2009337 **Hereditary Hemorrhagic Telangiectasia (HHT) Panel, Sequencing and Deletion/Duplication** **HHT PANEL**

Performed: Varies
Reported: 3-6 weeks

HOTLINE NOTE: There is a price change associated with this test. Please contact ARUP Client Services at (800) 522-2787 for additional information.

2010214 **Hereditary Renal Cancer Panel, Sequencing and Deletion/Duplication** **RENCAPAN**

Performed: Varies
Reported: 3-6 weeks

HOTLINE NOTE: There is a price change associated with this test. Please contact ARUP Client Services at (800) 522-2787 for additional information.

0050641 **Herpes Simplex Virus Type 1 and/or 2 Antibodies, IgM by ELISA** **HSV MC**

Performed: Sun-Sat
Reported: 1-2 days

0050408 **Herpes Simplex Virus Type 1 and/or 2 Antibodies, IgM by ELISA, CSF** **HSVMCCSF**

Performed: Sun-Sat
Reported: 1-2 days

2008848 **Holoprosencephaly Panel, Sequencing and Deletion/Duplication** **HPE PAN**

Performed: Varies
Reported: 3-6 weeks

HOTLINE NOTE: There is a price change associated with this test. Please contact ARUP Client Services at (800) 522-2787 for additional information.

2008863 **Holoprosencephaly Panel, Sequencing and Deletion/Duplication, Fetal** **HPE PAN FE**

Performed: Varies
Reported: 2-4 weeks, if culture is required, an additional 1 to 2 weeks is required for processing time.

Note: Reported times are based on receiving the four T-25 flasks at 80 percent confluent. Cell culture time is independent of testing turn-around time. Maternal specimen is recommended for proper test interpretation. Order Maternal Cell Contamination.

HOTLINE NOTE: There is a price change associated with this test. Please contact ARUP Client Services at (800) 522-2787 for additional information.

2012674 Human Immunodeficiency Virus (HIV) Combo Antigen/Antibody (HIV-1/O/2) by CIA, Reflexive Panel — HIV PANEL

Methodology: Qualitative Chemiluminescent Immunoassay/Qualitative Immunoassay/Quantitative Transcription-Mediated Amplification
Performed: Sun-Sat
Reported: 1-2 days

Specimen Required: Collect: Lavender (EDTA) or Pink (K_2EDTA).
Specimen Preparation: Separate from cells within 24 hours of collection. Transfer 3 mL plasma into an ARUP Standard Transport Tube. (Min: 2 mL) Remove particulate material. This test requires a dedicated transport tube submitted only for HIV testing.
Storage/Transport Temperature: Frozen.
Unacceptable Conditions: Serum. Heparinized or citrated plasma specimens. Plasma preparation tube. Specimens containing particulate material. Severely hemolyzed or heat-inactivated specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: Unacceptable; Refrigerated: 72 hours; Frozen: 3 months (avoid repeated freeze/thaw cycles)

Reference Interval:
Effective November 12, 2018

Test Number	Components	Reference Interval		
	HIV 1,2 Combo Antigen/Antibody	Negative		
2012669	Human Immunodeficiency Virus Types 1 and 2 (HIV-1/2) Antibody Differentiation, Supplemental, with Reflex to HIV-1 Quantitative NAAT, Plasma	**Test Number**	**Components**	**Reference Interval**
			HIV-1 Antibody	Negative
			HIV-2 Antibody	Negative
		3000867	Human Immunodeficiency Virus 1 (HIV-1) by Quantitative NAAT, Plasma	Not detected

Note: The fourth-generation screen test is for the simultaneous qualitative detection of Human Immunodeficiency Virus Type 1 (HIV-1) p24 antigen and antibodies to HIV Type 1 (HIV-1 groups M and O) and HIV Type 2 (HIV-2). Results of the screen cannot be used to distinguish between the presence of HIV-1 p24 antigen, HIV-1 antibody, or HIV-2 antibody.

If the HIV-1,2 Combo Antigen/Antibody screen is repeatedly reactive, then the HIV-1/2 Ab Differentiation Immunoassay will be performed. Additional charges apply. The HIV-1/2 Ab Differentiation Immunoassay confirms and discriminates between HIV-1 and HIV-2 antibodies. Results for each type are reported.

If the HIV-1/2 Ab Differentiation Immunoassay is Negative or Indeterminate, then the Human Immunodeficiency Virus 1 (HIV-1) by Quantitative NAAT, Plasma will be added. Additional charges apply.

This multi-test algorithm is recommended by the Centers for Disease Control and Prevention (CDC) and was adopted by the Clinical Laboratory Standards Institute (CLSI) for the diagnosis of HIV (refer to http://www.arupconsult.com/Topics/HIV.html).

Refer to the following tests for additional information regarding Performed or Reported times, Interpretive Data and Notes for the reflex tests of this panel: Human Immunodeficiency Virus Types 1 and 2 (HIV-1/2) Antibody Differentiation, Supplemental with Reflex to HIV-1 Quantitative NAAT, Plasma (ARUP test code 2012669); Human Immunodeficiency Virus 1 (HIV-1) by Quantitative NAAT, Plasma (ARUP test code 3000867).

HOTLINE NOTE: There is a reflexive pattern change associated with this test.
Add reflex to 3000867, HIV-1 by Quantitative NAAT, Plasma to reflexive orderable 2012669
Remove reflex to 0055598, HIV-1 by Quantitative PCR from reflexive orderable 2012669

New Test **3000871** **Human Immunodeficiency Virus 1 (HIV-1) by Quantitative NAAT with Reflex to HIV PhenoSense GT** **HIV QT PHR**

Click for Pricing

Methodology: Quantitative Transcription-Mediated Amplification/Sequencing/Culture
Performed: Sun-Sat
Reported: 2-26 days

Specimen Required: Collect: Two Lavender (EDTA). Also acceptable: Two Plasma Preparation Tubes (PPT).
Specimen Preparation: Separate from cells within 6 hours of collection. Transfer two 3 mL aliquots (6 mL total) of plasma into individual ARUP Standard Transport Tubes and freeze. (Min: 4.5 mL total) Two tubes are required. Quantitative assay will be performed on one tube; if reflexed, the other tube will be tested by HIV PhenoSense GT.
Storage/Transport Temperature: **CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.**
Unacceptable Conditions: Serum. Heparinized specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen: 2 weeks

Reference Interval:

Available Separately	Components	Reference Interval
3000867	Human Immunodeficiency Virus 1 (HIV-1) by Quantitative NAAT, Plasma	Not Detected
0092399	HIV PhenoSense GT	By report

Interpretive Data: Refer to report.

Note: If Human Immunodeficiency Virus 1 by Quantitative NAAT result is greater than or equal to 2.69 log copies/mL, then HIV-1 PhenoSense GT will be added. Additional charges apply.

CPT Code(s): 87536; if reflexed add 87900; 87901; 87903; 87904 x 11

New York DOH Approved.

HOTLINE NOTE: Refer to the Test Mix Addendum for interface build information.

New Test **3000870** **Human Immunodeficiency Virus 1 (HIV-1) by Quantitative NAAT with Reflex to HIV-1 Genotype by Sequencing** **HIV QT GR**

Click for Pricing

Methodology: Quantitative Transcription-Mediated Amplification/Sequencing
Performed: Sun-Sat
Reported: 2-13 days

Specimen Required: Collect: Lavender (EDTA), Pink (K_2EDTA), or Plasma Preparation Tube (PPT).
Specimen Preparation: Separate from cells within 24 hours of collection. Transfer 4 mL plasma to an ARUP Standard Transport Tube and freeze. (Min: 2.5 mL)
Storage/Transport Temperature: Frozen.
Unacceptable Conditions: Serum. Heparinized specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: Unacceptable; Refrigerated: 72 hours; Frozen: 3 months

Reference Interval:

Available Separately	Components	Reference Interval
3000867	Human Immunodeficiency Virus 1 (HIV-1) by Quantitative NAAT, Plasma	Not Detected
0055670	Human Immunodeficiency Virus 1, Genotype by Sequencing	By report

Interpretive Data: Refer to report.

Note: If Human Immunodeficiency Virus 1 by Quantitative NAAT result is greater than or equal to 3.00 log copies/mL, then HIV-1 Genotype by Sequencing will be added. Additional charges apply.

CPT Code(s): 87536; if reflexed add 87901

New York DOH Approved.

HOTLINE NOTE: Refer to the Test Mix Addendum for interface build information.

New Test **3000872** **Human Immunodeficiency Virus 1 (HIV-1) by Quantitative NAAT, CSF** **HIVCSF QNT**

Click for Pricing

Methodology: Quantitative Transcription-Mediated Amplification
Performed: Sun-Sat
Reported: 1-4 days

Specimen Required: Collect: Cerebral spinal fluid.
Specimen Preparation: Transfer 2 mL CSF to an ARUP Standard Transport Tube and freeze. (Min: 0.8 mL)
Storage/Transport Temperature: Frozen.
Unacceptable Conditions: Plasma (refer to Human Immunodeficiency Virus 1 (HIV-1) by Quantitative NAAT, Plasma, ARUP test code 3000867).
Stability (collection to initiation of testing): Ambient: Unacceptable; Refrigerated: 5 days; Frozen: 1 month

Reference Interval: Not detected

Interpretive Data: Normal range for this assay is "Not Detected".
The quantitative range of this assay is 1.47-7.00 log copies/mL (30-10,000,000 copies/mL).

An interpretation of "Not Detected" does not rule out the presence of inhibitors or HIV-1 RNA concentration below the level of detection of the assay. Care should be taken in the interpretation of any single viral load determination.
The clinical significance of changes in HIV-1 RNA concentration has not been fully established; however, a change of 0.5 log copies/mL may be significant.

This assay should not be used for blood donor screening, associated re-entry protocols, or for screening Human Cell, Tissues and Cellular Tissue-Based Products (HCT/P).

See Compliance Statement B: www.aruplab.com/CS

Note: The limit of quantification for this RNA assay is 1.47 log copies/mL (30 copies/mL). If the assay DETECTED the presence of the virus but was not able to accurately quantify the viral load, the test result will be reported as "<30 Detected".

This test is intended for use in conjunction with clinical presentation and other laboratory markers as an indicator of disease prognosis. This test is also used as an aid in assessing viral response to antiretroviral treatment as measured by changes in HIV-1 RNA concentration.

CPT Code(s): 87536

New York DOH approval pending. Call for status update.

HOTLINE NOTE: Refer to the Test Mix Addendum for interface build information.

New Test **3000867** **Human Immunodeficiency Virus 1 (HIV-1) by Quantitative NAAT, Plasma** **HIV QNT**

Click for Pricing

Methodology: Quantitative Transcription-Mediated Amplification
Performed: Sun-Sat
Reported: 1-4 days

Specimen Required: Collect: Lavender (EDTA), Pink (K_2EDTA), Yellow (ACD), or Plasma Preparation Tube (PPT).
Specimen Preparation: Separate from cells within 24 hours of collection. Transfer 2 mL plasma to an ARUP Standard Transport Tube and freeze. (Min: 0.8 mL)
Storage/Transport Temperature: Frozen.
Unacceptable Conditions: Serum. CSF (refer to Human Immunodeficiency Virus 1 (HIV-1) by Quantitative NAAT, CSF, ARUP test code 3000872). Heparinized specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: Unacceptable; Refrigerated: 72 hours; Frozen: 3 months

Reference Interval: Not detected

Interpretive Data: Normal range for this assay is "Not Detected".
The quantitative range of this assay is 1.47-7.00 log copies/mL (30-10,000,000 copies/mL).

An interpretation of "Not Detected" does not rule out the presence of inhibitors or HIV-1 RNA concentration below the level of detection of the assay. Care should be taken in the interpretation of any single viral load determination.
The clinical significance of changes in HIV-1 RNA concentration has not been fully established; however, a change of 0.5 log copies/mL may be significant.

This assay should not be used for blood donor screening, associated re-entry protocols, or for screening Human Cell, Tissues and Cellular Tissue-Based Products (HCT/P).

Note: The limit of quantification for this RNA assay is 1.47 log copies/mL (30 copies/mL). If the assay DETECTED the presence of the virus but was not able to accurately quantify the viral load, the test result will be reported as "< 30 Detected".

Specimens received with less than minimum volume for testing will automatically be run with a dilution according to the guidelines below:
--Specimens with 240-700 µL will be diluted resulting in a modification of the quantitative range of the assay to 1.95-7.48 log copies/mL (90-30,000,000 copies/mL).

This test is intended for use in conjunction with clinical presentation and other laboratory markers as an indicator of disease prognosis. This test is also used as an aid in assessing viral response to antiretroviral treatment as measured by changes in HIV-1 RNA concentration.

CPT Code(s): 87536

New York DOH Approved.

HOTLINE NOTE: Refer to the Test Mix Addendum for interface build information.

0020284 **Human Immunodeficiency Virus Type 1 (HIV-1) Antibody Confirmation by Western Blot** **HIV WBLOT**

Performed: Varies
Reported: 1-5 days

2012669 Human Immunodeficiency Virus Types 1 and 2 (HIV-1/2) Antibody Differentiation, Supplemental, with Reflex to HIV-1 Quantitative NAAT, Plasma — HIV AB DIF

Methodology: Qualitative Immunoassay/Quantitative Transcription-Mediated Amplification

Specimen Required: Collect: Lavender (EDTA), or Pink (K_2EDTA).
Specimen Preparation: Separate from cells within 24 hours of collection. Transfer 3 mL plasma into an ARUP Standard Transport Tube dedicated only for HIV testing. (Min: 1 mL) Remove particulate material.
Storage/Transport Temperature: Frozen.
Unacceptable Conditions: Serum. Heparinized or citrated plasma specimens. Specimens submitted in plasma preparation tube. Specimens containing particulate material. Severely hemolyzed or heat-inactivated specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: Unacceptable; Refrigerated: 72 hours; Frozen: 3 months (avoid repeated freeze/thaw cycles)

Reference Interval:
Effective November 12, 2018

Test Number	Components	Reference Interval
	HIV-1 Antibody	Negative
	HIV-2 Antibody	Negative
3000867	Human Immunodeficiency Virus 1 (HIV-1) by Quantitative NAAT, Plasma	Not detected

Note: For use only when patient has a repeatedly reactive third or fourth generation HIV screen test result. This test discriminates between HIV-1 and HIV-2 antibodies. Results for each type are reported. This test is for use as the antibody differentiation test in the specific multi-test algorithm. It is not to be ordered as a rapid screen test and cannot be used as a supplemental test if the initial screen test was a rapid test.

If the HIV-1/ 2 Antibody Differentiation Immunoassay is Negative or Indeterminate, then the Human Immunodeficiency Virus 1 (HIV-1) by Quantitative NAAT, Plasma, will be added. Additional charges apply. Refer to Human Immunodeficiency Virus 1 (HIV-1) by Quantitative NAAT, Plasma (ARUP test code 3000867) for additional information regarding Performed or Reported times, Interpretive Data and Notes for the reflex test.

The multi-test algorithm is recommended by the Centers for Disease Control and Prevention (CDC) and the Clinical Laboratory Standards Institute (CLSI) for the diagnosis of HIV (refer to http://www.arupconsult.com/Topics/HIV.html).

HOTLINE NOTE: Remove information found in the Specimen Required Remarks field.
There is a reflexive pattern change associated with this test.
Add reflex to 3000867, HIV-1 by Quantitative NAAT, Plasma
Remove reflex to 0055598, HIV-1 by Quantitative PCR

New Test **3000462** **Immature PLT Fraction** **IMM PLT**
Click for Pricing

Methodology: Automated Cell Count
Performed: Sun-Sat
Reported: Within 24 hours

Specimen Required: Collect: Lavender (EDTA) or Pink (K_2EDTA).
Specimen Preparation: Transport 3 mL whole blood. (Min: 0.5 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Clotted or hemolyzed specimens.
Stability (collection to initiation of testing): Ambient: 8 hours; Refrigerated: 48 hours; Frozen: Unacceptable

Reference Interval:

Age	Male (%)	Female (%)
0-180 days	2.3-7.1	1.6-7.1
6-23 months	1.7-4.1	1.7-4.8
2-5 years	1.4-3.9	1.3-3.9
6-11 years	1.3-5.2	1.3-5.0
12-17 years	1.9-6.4	1.7-6.7
18 years and older	1.0-11.4	1.0-11.4

CPT Code(s): 85055

New York DOH approval pending. Call for status update.

HOTLINE NOTE: Refer to the Test Mix Addendum for interface build information.

2008320 **Infliximab or Biosimilar Activity and Neutralizing Antibody** **IFX NAB**

Specimen Required: Patient Prep: Collect specimens before infliximab or biosimilar treatment.
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)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Contaminated, hemolyzed, icteric, or lipemic specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: 48 hours; Refrigerated: 4 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)

2013612 **Infliximab or Biosimilar Activity with Reflex to Antibody** **IFX DL R**

Specimen Required: Patient Prep: Collect specimens before infliximab or biosimilar treatment.
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)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Contaminated, hemolyzed, icteric, or lipemic specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: 48 hours; Refrigerated: 4 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)

Reference Interval:

Components	Reference Interval
Infliximab Activity w/Rflx to Ab	Not Detected
Infliximab Neutralizing Antibody Titer	Not Detected

2013993 Interstitial Lung Disease Panel ILD PAN

Performed: Mon, Tue, Thu, Fri
Reported: 7-18 days

Reference Interval:
Effective November 12, 2018

Test Number	Components	Reference Interval		
2012074	SSA 52 and 60 (Ro) (ENA) Antibodies, IgG	**Test Number**	**Components**	**Reference Interval**
			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
0050599	Scleroderma (Scl-70) (ENA) Antibody, IgG	29 AU/mL or less	Negative	
		30-40 AU/mL	Equivocal	
		41 AU/mL or greater	Positive	
0099592	Jo-1 Antibody, IgG	29 AU/mL or less	Negative	
		30-40 AU/mL	Equivocal	
		41 AU/mL or greater	Positive	
	PL-7 (threonyl-tRNA synthetase) Antibody	Negative		
	PL-12 (alanyl-tRNA synthetase) Antibody	Negative		
	EJ (glycyl-tRNA synthetase) Antibody	Negative		
	Ku Antibody	Negative		
	SRP (Signal Recognition Particle) Ab	Negative		
	OJ (isoleucyl-tRNA synthetase) Antibody	Negative		
2003040	PM/Scl-100 Antibody, IgG by Immunoblot	Negative		
	MDA5 (CADM-140) Antibody	Negative		
	NXP-2 (Nuclear matrix protein-2) Ab	Negative		
0050465	Rheumatoid Factor	0-14 IU/mL		
0055256	Cyclic Citrullinated Peptide (CCP) Antibody, IgG	19 Units or less	Negative	
		20-39 Units	Weak positive	
		40-59 Units	Moderate positive	
		60 Units or Greater	Strong positive	
3000082	Antinuclear Antibody (ANA), HEp-2, IgG	Less than 1:80		
2001601	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	

Note: Antibodies: Ro52, Ro60, Jo-1, PL-7, PL12, EJ, Ku, SRP, OJ, PM/Scl-100, MDA5, CCP, Scl-70, RA, ANA, NXP-2, RNA Polymerase III

CPT Code(s): 83516 x9; 86235 x5; 86200; 86431; 86039

HOTLINE NOTE: There is a component change associated with this test.
Add component 2001602, RNA Polymerase III Antibody, IgG
Add component 3000090, Antinuclear Antibody (ANA), HEp-2, IgG
Add component 3000096, ANA Interpretive Comment
Remove component 0050639, Anti-Nuclear Antibody (ANA), IgG by IFA

0020745 Lead, Blood (Capillary) LEAD CAP

Specimen Required: Patient Prep: Clean puncture site well with soap and water before collection procedure begins.
Collect: Lavender Pediatric (EDTA).
Specimen Preparation: Invert specimen 10 times to prevent clot formation. Transport 0.5 mL whole blood. (Min: 0.3 mL)
Storage/Transport Temperature: Room temperature. Also acceptable: Refrigerated.
Remarks: Trace Elements requisition form may be required (ARUP form #32990).
Unacceptable Conditions: Specimens collected in tubes other than Lavender Pediatric (EDTA). Specimens transported in tubes other than trace-element free transport tubes or Lavender Pediatric (EDTA) tubes. Heparin anticoagulant. Clotted specimens. Venous whole blood, refer to Lead, Blood (Venous) 0020098.
Stability (collection to initiation of testing): Ambient: Indefinitely; Refrigerated: Indefinitely; Frozen: Unacceptable

Interpretive Data: Elevated results may be due to skin or collection-related contamination, including the use of a noncertified lead-free collection/transport tube. If contamination concerns exist due to elevated levels of blood lead, confirmation with a venous specimen collected in a certified lead-free tube is recommended.

Repeat testing is recommended prior to initiating chelation therapy or conducting environmental investigations of potential lead sources. Repeat testing collections should be performed using a venous specimen collected in a certified lead-free collection tube.

Information sources for reference intervals and interpretive comments include the "CDC Response to the 2012 Advisory Committee on Childhood Lead Poisoning Prevention Report" and the "Recommendations for Medical Management of Adult Lead Exposure, Environmental Health Perspectives, 2007." Thresholds and time intervals for retesting, medical evaluation, and response vary by state and regulatory body. Contact your State Department of Health and/or applicable regulatory agency for specific guidance on medical management recommendations.

Age	Concentration	Comment
All ages	5-9.9 µg/dL	Adverse health effects are possible, particularly in children under 6 years of age and pregnant women. Discuss health risks associated with continued lead exposure. For children and women who are or may become pregnant, reduce lead exposure.
All ages	10-19.9 µg/dL	Reduced lead exposure and increased biological monitoring are recommended.
All ages	20-69.9 µg/dL	Removal from lead exposure and prompt medical evaluation are recommended. Consider chelation therapy when concentrations exceed 50 µg/dL and symptoms of lead toxicity are present.
Less than 19 years of age	Greater than 44.9 µg/dL	Critical. Immediate medical evaluation is recommended. Consider chelation therapy when symptoms of lead toxicity are present.
Greater than 19 years of age	Greater than 69.9 µg/dL	Critical. Immediate medical evaluation is recommended. Consider chelation therapy when symptoms of lead toxicity are present.

See Compliance Statement B: www.aruplab.com/CS

0020098 Lead, Blood (Venous) LEAD-WB

Specimen Required: Collect: Royal blue (K_2EDTA or Na_2EDTA) or tan (K_2EDTA).
Specimen Preparation: Transport 7 mL whole blood (royal blue). (Min: 0.5 mL) **OR** Transport 3 mL whole blood (tan). (Min: 0.5 mL)
Storage/Transport Temperature: Room temperature. Also acceptable: Refrigerated.
Remarks: Trace Elements requisition form may be required (ARUP form #32990).
Unacceptable Conditions: Serum. Specimens collected in tubes other than Royal Blue (K_2EDTA or Na_2EDTA) or tan (K_2EDTA). Heparinized or clotted specimens. Capillary pediatric EDTA collection tubes, refer to Lead, Blood (Capillary) 0020745.
Stability (collection to initiation of testing): Ambient: Indefinitely; Refrigerated: Indefinitely; Frozen: Unacceptable

Interpretive Data: Elevated results may be due to skin or collection-related contamination, including the use of a noncertified lead-free tube. If contamination concerns exist due to elevated levels of blood lead, confirmation with a second specimen collected in a certified lead-free tube is recommended.
Information sources for reference intervals and interpretive comments include the "CDC Response to the 2012 Advisory Committee on Childhood Lead Poisoning Prevention Report" and the "Recommendations for Medical Management of Adult Lead Exposure, Environmental Health Perspectives, 2007." Thresholds and time intervals for retesting, medical evaluation, and response vary by state and regulatory body. Contact your State Department of Health and/or applicable regulatory agency for specific guidance on medical management recommendations.

Age	Concentration	Comment
All ages	5-9.9 µg/dL	Adverse health effects are possible, particularly in children under 6 years of age and pregnant women. Discuss health risks associated with continued lead exposure. For children and women who are or may become pregnant, reduce lead exposure.
All ages	10-19.9 µg/dL	Reduced lead exposure and increased biological monitoring are recommended.
All ages	20-69.9 µg/dL	Removal from lead exposure and prompt medical evaluation are recommended. Consider chelation therapy when concentrations exceed 50 µg/dL and symptoms of lead toxicity are present.
Less than 19 years of age	Greater than 44.9 µg/dL	Critical. Immediate medical evaluation is recommended. Consider chelation therapy when symptoms of lead toxicity are present.
Greater than 19 years of age	Greater than 69.9 µg/dL	Critical. Immediate medical evaluation is recommended. Consider chelation therapy when symptoms of lead toxicity are present.

See Compliance Statement B: www.aruplab.com/CS

0025016 Lead, Industrial Exposure Panel, Adults LEAD-IND

Specimen Required: Patient Prep: Collect from patient aged 16 years or older.
Collect: Royal blue (K_2EDTA or Na_2EDTA) or tan (K_2EDTA).
Specimen Preparation: Transport 7 mL whole blood (royal blue). (Min: 2 mL) **OR** Transport 3 mL whole blood (tan). (Min: 2 mL)
Storage/Transport Temperature: Refrigerated.
Remarks: Trace Elements requisition form may be required (ARUP form #32990).
Unacceptable Conditions: Serum. Specimens collected in tubes other than Royal Blue (K_2EDTA or Na_2EDTA) or tan (K_2EDTA). Heparinized, hemolyzed or clotted specimens.
Stability (collection to initiation of testing): Ambient: 30 hours; Refrigerated: 5 weeks; Frozen: Unacceptable

Interpretive Data: Elevated results may be due to skin or collection-related contamination, including the use of a noncertified lead-free collection/transport tube. If contamination concerns exist due to elevated levels of blood lead, confirmation with a second specimen collected in a certified lead-free tube is recommended.

Reference interval and interpretive comments are based on the "Recommendations for Medical Management of Adult Lead Exposure, Environmental Health Perspectives, 2007." Thresholds and time intervals for retesting, medical evaluation, and response vary by state and regulatory body. Actions described by OSHA in 1978 and finalized in 1983 are shown below. Contact your State Department of Health and/or applicable regulatory agency for specific guidance on medical management recommendations.

"Occupational Safety and Health Standards: Lead (1983). 29 CFR Part 1910.1025 App C"

Action required for workers with Elevated Lead Values OSHA, Occupational Exposure to Lead, 1978

No. of Tests	Lead	Action Required
1	Greater than or equal to 40.0 µg/dL	Notification of worker in writing; medical examination of worker and consultation.
3 (average)	Greater than or equal to 50.0 µg/dL	Removal of worker from job with potential lead exposure.
1	Greater than or equal to 60.0 µg/dL	Removal of worker from job with potential lead exposure.
2	Less than 40.0 µg/dL	Reinstatement of worker in job with potential lead exposure is based upon symptoms and medical evaluation.
		OSHA requirements in effect since 1978 call for the measurement of whole blood lead and zinc protoporphyrins (ZPP) (NCCLS document C42-A, Nov. 1996) to evaluate the occupational exposure to lead. OSHA requires ZPP whole blood testing to be reported in units of µg/dL. For adults, conversion of ZPP units of µg/dL whole blood assumes a hematocrit of 45 percent. Conversion factor: µmol/mol heme x 0.584= µg/dL. Information sources for reference intervals and interpretive comments provided below include the "CDC Response to the 2012 Advisory Committee on Childhood Lead Poisoning Prevention Report" and the "Recommendations for Medical Management of Adult Lead Exposure, Environmental Health Perspectives, 2007." Thresholds and time intervals for retesting, medical evaluation, and response vary by state and regulatory body. Contact your State Department of Health and/or applicable regulatory agency for specific guidance on medical management recommendations.

Age	Concentration	Comment
All ages	5-9.9 µg/dL	Adverse health effects are possible, particularly in children under 6 years of age pregnant women. Discuss health risks associated with continued lead exposure. For children and women who are or may become pregnant, reduce lead exposure.
All ages	10-19.9 µg/dL	Reduced lead exposure and increased biological monitoring are recommended.
All ages	20-69.9 µg/dL	Removal from lead exposure and prompt medical evaluation are recommended. Consider chelation therapy when concentrations exceed 50 µg/dL and symptoms of lead toxicity are present.
<19 years of age	Greater than 44.9 µg/dL	Critical. Immediate medical evaluation is recommended. Consider chelation therapy when symptoms of lead toxicity are present.
≥19 years of age	Greater than 69.9 µg/dL	Critical. Immediate medical evaluation is recommended. Consider chelation therapy when symptoms of lead toxicity are present.

See Compliance Statement B: www.aruplab.com/CS

2011482 Lead, Random Urine U LEADRAND

Specimen Required: Patient Prep: Diet, medication, and nutritional supplements may introduce interfering substances. Patients should be encouraged to discontinue nutritional supplements, vitamins, minerals, and non-essential over-the-counter medications (upon the advice of their physician). High concentrations of iodine may interfere with elemental testing. Collection of urine specimens from patients receiving iodinated or gadolinium-based contrast media should be avoided for a minimum of 72 hours post-exposure. Collection from patients with impaired kidney function should be avoided for a minimum of 14 days post-contrast media exposure.
Collect: Random urine.
Specimen Preparation: Transfer an 8 mL aliquot from a well-mixed collection to ARUP Trace Element-Free Transport Tubes (ARUP supply #43116), available online through eSupply using ARUP Connector contact ARUP Client Services at (800) 522-2787. (Min: 1 mL)
Storage/Transport Temperature: Refrigerated. Also acceptable: Room temperature or frozen.
Unacceptable Conditions: Urine collected within 72 hours after administration of iodinated or gadolinium-based contrast media.
Stability (collection to initiation of testing): Ambient: 1 week; Refrigerated: 2 weeks; Frozen: 1 year

Reference Interval:
Effective November 12, 2018

Components	Reference Interval
Lead, Urine - per volume	0.0-5.0 µg/L
Lead, Urine - ratio to CRT	0.0-5.0 ug/gCRT

Interpretive Data: Quantification of urine excretion rates before or after chelation therapy has been used as an indicator of lead exposure. Urinary excretion of >125 mg of lead per 24 hours is usually associated with related evidence of lead toxicity.

See Compliance Statement B: www.aruplab.com/CS

0025060 Lead, Urine LEAD U

Specimen Required: Patient Prep: Diet, medication, and nutritional supplements may introduce interfering substances. Patients should be encouraged to discontinue nutritional supplements, vitamins, minerals, and non-essential over-the-counter medications (upon the advice of their physician). High concentrations of iodine may interfere with elemental testing. Collection of urine specimens from patients receiving iodinated or gadolinium-based contrast media should be avoided for a minimum of 72 hours post-exposure. Collection from patients with impaired kidney function should be avoided for a minimum of 14 days post-contrast media exposure.
Collect: 24-hour or random urine collection. Specimen must be collected in a plastic container. **ARUP studies indicate that refrigeration of urine alone, during and after collection, preserves specimens adequately, if tested within 14 days of collection.**
Specimen Preparation: Transfer an 8 mL aliquot from a well-mixed collection to ARUP Trace Element-Free Transport Tubes (ARUP supply #43116). Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787. (Min: 1 mL)
Storage/Transport Temperature: Refrigerated. Also acceptable: Room temperature or frozen.
Remarks: Trace Elements requisition form may be required (ARUP form #32990-Barcode; #32991-No Barcode). Record total volume and collection time interval on transport tube and on test request form.
Unacceptable Conditions: Urine collected within 72 hours after administration of iodinated or gadolinium-based contrast media. Acid preserved urine. Specimens contaminated with blood or fecal material. Specimens transported in non-trace element free transport tube (with the exception of the original device).
Stability (collection to initiation of testing): Ambient: 1 week; Refrigerated: 2 weeks; Frozen: 1 year

Reference Interval:

Test Number	Components	Reference Interval		
	Lead, Urine- per Volume	Effective November 12, 2018 0-5.0 ug/L		
	Lead, Urine - per 24h	0-8.1 µg/d		
	Lead Urine-ratio to CRT	Effective November 12, 2018 0.0-5.0 ug/gCRT		
	Creatinine, Urine - per 24h	**Age**	**Male**	**Female**
		3-8 years	140-700 mg/d	140-700 mg/d
		9-12 years	300-1300 mg/d	300-1300 mg/d
		13-17 years	500-2300 mg/d	400-1600 mg/d
		18-50 years	1000-2500 mg/d	700-1600 mg/d
		51-80 years	800-2100 mg/d	500-1400 mg/d
		81 years and older	600-2000 mg/d	400-1300 mg/d

0060113 ***Legionella* Species, Culture** **MC LEGION**

Performed: Sun-Sat
Reported: Within 8 days
Positives are reported as soon as detected
Final: Negative at 7 days

0060158 ***Leptospira* Culture** **MC LEPTO**

Performed: Sun-Sat
Reported: Within 43 days
Positives are reported as soon as detected.
Final: Negative at 6 weeks

0080503 **Lipoprotein Electrophoresis** **LIPOELECT**

CPT Code(s): 83700, 80061

0050119 **Lupus Comprehensive Reflexive Panel** **LUPUS COMP**

HOTLINE NOTE: There is a reflexive pattern change associated with this test.
Add reflex to 3000082, Antinuclear Antibody (ANA), HEp-2, IgG
Remove reflex to 0050639, ANA by IFA, IgG

0051205 **Medium Chain Acyl-CoA Dehydrogenase (*ACADM*) 2 Mutations** **MCADPCR**

Performed: DNA isolation: Sun-Sat; Assay: Sun-Sat
Reported: 3-5 days

2011481 Mercury, Random Urine U MERCRAND

Performed: Sun-Sat
Reported: 1-3 days

Specimen Required: Patient Prep: Diet, medication, and nutritional supplements may introduce interfering substances. Patients should be encouraged to discontinue nutritional supplements, vitamins, minerals, and non-essential over-the-counter medications (upon the advice of their physician), and avoid shellfish and seafood for 48 to 72 hours. High concentrations of iodine may interfere with elemental testing. Collection of urine specimens from patients receiving iodinated or gadolinium-based contrast media should be avoided for a minimum of 72 hours post-exposure. Collection from patients with impaired kidney function should be avoided for a minimum of 14 days post-contrast media exposure.
Collect: Random urine.
Specimen Preparation: Transfer an 8 mL aliquot from a well-mixed collection to ARUP Trace Element-Free Transport Tubes (ARUP supply #43116), available online through eSupply using ARUP Connector contact ARUP Client Services at (800) 522-2787. (Min: 1 mL).
Storage/Transport Temperature: Refrigerated. Also acceptable: Room temperature or frozen.
Unacceptable Conditions: Urine collected within 72 hours after administration of iodinated or gadolinium-based contrast media. Acid preserved urine. Specimens contaminated with blood or fecal material. Specimens transported in non-trace element free transport tube (with the exception of the original device).
Stability (collection to initiation of testing): Ambient: 1 week; Refrigerated: 2 weeks; Frozen: 1 year

Reference Interval:
Effective November 12, 2018

Components	Reference Interval
Mercury, Urine - per volume	0-5.0 µg/L
Mercury, Urine - ratio to CRT	0.0-20.0 µg/gCRT

Interpretive Data: Urinary mercury levels predominantly reflect acute or chronic elemental or inorganic mercury exposure. Urine concentrations in unexposed individuals are typically less than 10 µg/L. 24-hour urine concentrations of 30 to 100 µg/L may be associated with subclinical neuropsychiatric symptoms and tremors. Concentrations greater than 100 µg/L can be associated with overt neuropsychiatric disturbances and tremors. Urine mercury levels may be useful in monitoring chelation therapy.

See Compliance Statement B: www.aruplab.com/CS

0025050 Mercury, Urine — MERCURY U

Performed: Sun-Sat
Reported: 1-3 days

Specimen Required: Patient Prep: Diet, medication, and nutritional supplements may introduce interfering substances. Patients should be encouraged to discontinue nutritional supplements, vitamins, minerals, and non-essential over-the-counter medications (upon the advice of their physician), and avoid shellfish and seafood for 48 to 72 hours. High concentrations of iodine may interfere with elemental testing. Collection of urine specimens from patients receiving iodinated or gadolinium-based contrast media should be avoided for a minimum of 72 hours post-exposure. Collection from patients with impaired kidney function should be avoided for a minimum of 14 days post-contrast media exposure.
Collect: 24-hour or random urine collection. Specimen must be collected in a plastic container. **ARUP studies indicate that refrigeration of urine alone, during and after collection, preserves specimens adequately, if tested within 14 days of collection.**
Specimen Preparation: Transfer an 8 mL aliquot from a well-mixed collection to ARUP Trace Element-Free Transport Tubes (ARUP supply #43116). Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787. (Min: 1 mL)
Storage/Transport Temperature: Refrigerated. Also acceptable: Room temperature or frozen.
Remarks: Trace Elements requisition form may be required (ARUP form #32990-Barcode; #32991-No Barcode). Record total volume and collection time interval on transport tube and on test request form.
Unacceptable Conditions: Urine collected within 72 hours after administration of iodinated or gadolinium-based contrast media. Acid preserved urine. Specimens contaminated with blood or fecal material. Specimens transported in non-trace element free transport tube (with the exception of the original device).
Stability (collection to initiation of testing): Ambient: 1 week; Refrigerated: 2 weeks; Frozen: 1 year

Reference Interval:

Test Number	Components	Reference Interval		
	Mercury, Urine - per volume	Effective November 12, 2018 0.0-5.0 µg/L		
	Mercury, Urine - per 24h	Effective November 12, 2018 0.0-20.0 µg/d		
	Mercury, Urine - ratio to CRT	0.0-20.0 µg/gCRT		
	Creatinine, Urine - per 24h	**Age**	**Male**	**Female**
		3-8 years	140-700 mg/d	140-700 mg/d
		9-12 years	300-1300 mg/d	300-1300 mg/d
		13-17 years	500-2300 mg/d	400-1600 mg/d
		18-50 years	1000-2500 mg/d	700-1600 mg/d
		51-80 years	800-2100 mg/d	500-1400 mg/d
		81 years and older	600-2000 mg/d	400-1300 mg/d

0099305 Mercury, Whole Blood HG B

Performed: Sun-Sat
Reported: 1-3 days

Specimen Required: Patient Prep: Diet, medication, and nutritional supplements may introduce interfering substances. Patient should be encouraged to discontinue nutritional supplements, vitamins, minerals, and non-essential over-the-counter medications (upon the advice of their physician), and avoid shellfish and seafood for 48 to 72 hours.
Collect: Royal blue (K_2EDTA or Na2EDTA).
Specimen Preparation: Transport 7 mL whole blood in the original collection tube. (Min: 0.5 mL)
Storage/Transport Temperature: Room temperature. Also acceptable: Refrigerated.
Remarks: Trace Elements requisition form may be required (ARUP form #32990).
Unacceptable Conditions: Specimens collected in tubes other than Royal Blue (EDTA). Specimens transported in containers other than Royal Blue (EDTA) tube or Trace Element-Free Transport Tube. Heparin anticoagulant. Clotted specimens.
Stability (collection to initiation of testing): Ambient: 1 week; Refrigerated: 1 week; Frozen: Unacceptable

Reference Interval: Effective November 12, 2018
0.0-10.0 µg/L

Interpretive Data: Elevated results may be due to skin or collection-related contamination, including the use of a noncertified metal-free collection/transport tube. If contamination concerns exist due to elevated levels of blood mercury, confirmation with a second specimen collected in a certified metal-free tube is recommended.

Blood mercury levels predominantly reflect recent exposure and are most useful in the diagnosis of acute poisoning as blood mercury concentrations rise sharply and fall quickly over several days after ingestion. Blood concentrations in unexposed individuals rarely exceed 20 µg/L. The provided reference interval relates to inorganic mercury concentrations. Dietary and non-occupational exposure to organic mercury forms may contribute to an elevated total mercury result. Clinical presentation after toxic exposure to organic mercury may include dysarthria, ataxia and constricted vision fields with mercury blood concentrations from 20 to 50 µg/L.

See Compliance Statement B: www.aruplab.com/CS

Note: Mercury is volatile; concentration may decrease over time.

HOTLINE NOTE: There is a numeric map change associated with this test.
Change the numeric map for component 0099305, Mercury, Whole Blood from XXXXX to XXX.X.

2011539 Mexiletine, Serum or Plasma MEXILE

Reference Interval:
Effective November 12, 2018

Therapeutic Range	0.5-2.0 µg/mL
Toxic Level	Greater than 2.0 µg/mL

Interpretive Data: The therapeutic range is based on serum pre-dose (trough) draw at steady-state concentration. Toxic concentrations may cause hypotension, tremor and cardiac abnormalities.

See Compliance Statement B: www.aruplab.com/CS

2006065 Mitochondrial Disorders (mtDNA) Sequencing MT SEQ

Performed: Varies
Reported: 3-6 weeks

HOTLINE NOTE: There is a price change associated with this test. Please contact ARUP Client Services at (800) 522-2787 for additional information.

2006054 **Mitochondrial Disorders Panel (mtDNA Sequencing, Nuclear Genes Sequencing, and Deletion/Duplication)** **MT PANEL**

Performed: Varies
Reported: 3-6 weeks

Note: *Genes tested by Sequencing: MT-ATP6, MT-ATP8, MT-CO1, MT-CO2, MT-CO3, MT-CYB, MT-ND1, MT-ND2, MT-ND3, MT-ND4, MT-ND4L, MT-ND5, MT-ND6, MT-RNR1, MT-RNR2, MT-TA, MT-TC, MT-TD, MT-TE, MT-TF, MT-TG, MT-TH, MT-TI, MT-TK, MT-TL1, MT-TL2, MT-TM, MT-TN, MT-TP, MT-TQ, MT-TR, MT-TS1, MT-TS2, MT-TT, MT-TV, MT-TW, MT-TY, ABCB7, ACAD9, ACADL, ACADM, ACADS, ACADVL, ACAT1, ADCK3, APTX, ASS1, ATPAF2, BCKDHA, BCKDHB, BCS1L, C10orf2, COQ2, COQ9, COX10, COX15, COX4I2, COX6B1, CPT1A, CPT2, CYCS, DARS2, DBT, DGUOK, DLAT, DLD, DNAJC19, DNM1L, ETFA, ETFB, ETFDH, ETHE1, FASTKD2, FH, FXN, GFER, GFM1, HADH, HADHA, HADHB, HMGCL, HMGCS2, HSPD1, ISCU, LARS2, LRPPRC, MCCC2, MFN2, MPV17, MRPS16, MRPS22, NDUFA1, NDUFA11, NDUFA2, NDUFAF1, NDUFAF2, NDUFAF3, NDUFAF4, NDUFAF5, NDUFS1, NDUFS2, NDUFS3, NDUFS4, NDUFS6, NDUFS7, NDUFS8, NDUFV1, NDUFV2, OPA1, OXCT1, PC, PCK2, PDHA1, PDHB, PDHX, PDP1, PDSS1, PDSS2, PINK1, POLG, POLG2, PPM1B, PREPL, PUS1, RARS2, RRM2B, SCO1, SCO2, SDHAF1, SDHB, SDHC, SDHD, SLC22A5, SLC25A13, SLC25A15, SLC25A19, SLC25A20, SLC25A22, SLC25A3, SLC25A4, SLC3A1, SPG7, SUCLA2, SUCLG1, SUOX, SURF1, TAZ, TIMM8A, TK2, TMEM70, TRMU, TSFM, TUFM, TYMP, UQCRB, UQCRQ, WFS1*

Genes tested by Deletion/Duplication: *ABCB7, ACAD9, ACADL, ACADM, ACADS, ACADVL, ACAT1, ADCK3, APTX, ASS1, ATPAF2, BCKDHA, BCKDHB, BCS1L, C10orf2, COQ2, COQ9, COX10, COX15, COX4I2, COX6B1, CPT1A, CPT2, CYCS, DARS2, DBT, DGUOK, DLAT, DLD, DNAJC19, DNM1L, ETFA, ETFB, ETFDH, ETHE1, FASTKD2, FH, FXN, GFER, GFM1, HADH, HADHA, HADHB, HMGCL, HMGCS2, HSPD1, ISCU, LRPPRC, MCCC2, MFN2, MPV17, MRPS16, MRPS22, NDUFA1, NDUFA11, NDUFAF1, NDUFAF2, NDUFAF3, NDUFAF4, NDUFAF5, NDUFS1, NDUFS2, NDUFS3, NDUFS4, NDUFS6, NDUFS7, NDUFS8, NDUFV1, NDUFV2, OPA1, OXCT1, PC, PCK2, PDHA1, PDHB, PDHX, PDP1, PDSS1, PDSS2, PINK1, POLG, POLG2, PPM1B, PREPL, PUS1, RARS2, RRM2B, SCO1, SCO2, SDHAF1, SDHB, SDHC, SDHD, SLC22A5, SLC25A13, SLC25A15, SLC25A19, SLC25A20, SLC25A22, SLC25A3, SLC25A4, SLC3A1, SPG7, SUCLA2, SUCLG1, SUOX, SURF1, TAZ, TIMM8A, TK2, TMEM70, TRMU, TSFM, TUFM, TYMP, UQCRB, UQCRQ, WFS1*

HOTLINE NOTE: There is a price change associated with this test. Please contact ARUP Client Services at (800) 522-2787 for additional information.

2013961 **Myositis Extended Panel** **MYOS PAN**

Performed: Mon, Tue, Thu, Fri
Reported: 7-18 days

0060093 ***Nocardia* Culture and Gram Stain** **MC NOC**

Performed: Sun-Sat
Reported: Within 15 days
Positive: As soon as detected
Final: Negative at 14 days

2010772 **Noonan Spectrum Disorders Panel, Sequencing** **NOONAN SEQ**

Performed: Varies
Reported: 3-6 weeks

HOTLINE NOTE: There is a price change associated with this test. Please contact ARUP Client Services at (800) 522-2787 for additional information.

2010769 **Noonan Spectrum Disorders Panel, Sequencing, Fetal** **NOONAN FE**

Performed: Varies
Reported: 2-4 weeks, if culture is required an additional 1 to 2 weeks is required for processing time.

HOTLINE NOTE: There is a price change associated with this test. Please contact ARUP Client Services at (800) 522-2787 for additional information.

New Test Available Now Click for Pricing | **3000496** | **PanFungal Identification by Sequencing** | **PANFUNGSEQ**

Methodology: Polymerase Chain Reaction/Sequencing
Performed: Sun, Mon, Wed
Reported: 3-5 days

Specimen Required: Collect: Tissue.
Specimen Preparation: Transfer fresh tissue to a sterile container and freeze immediately. (Min: 25 mg) Also acceptable: Formalin-fixed paraffin-embedded (FFPE) tissue. (Min: 3 10-micron thick sections)
Storage/Transport Temperature: **Fresh Tissue**: Frozen.
FFPE: Room temperature.
Unacceptable Conditions: Formalin-fixed paraffin-embedded tissue on slides.
Stability (collection to initiation of testing): **Fresh Tissue**: Ambient: 5 days; Refrigerated: 5 days; Frozen: 5 days
FFPE: Ambient: 1 month; Refrigerated: 1 month; Frozen: Unacceptable

Interpretive Data: This assay detects and identifies human fungal pathogens by Sanger sequencing. This assay cannot differentiate invasive fungal infection from environmental fungal DNA. Clinical correlation of sequencing result is recommended.
See Compliance Statement B: www.aruplab.com/CS

CPT Code(s): 87999

New York DOH approval pending. Call for status update.

HOTLINE NOTE: Refer to the Test Mix Addendum for interface build information.

2007370 | **Periodic Fever Syndromes Panel, Sequencing and Deletion/Duplication** | **PRFEVERPAN**

Performed: Varies
Reported: 3-6 weeks

HOTLINE NOTE: There is a price change associated with this test. Please contact ARUP Client Services at (800) 522-2787 for additional information.

2013992 | **Polymyositis and Dermatomyositis Panel** | **COMBI MYO**

Performed: Mon, Tue, Thu, Fri
Reported: 7-18 days

2013990 | **Polymyositis Panel** | **POLY MYO**

Performed: Mon, Tue, Thu, Fri
Reported: 7-18 days

2011156 | **Primary Antibody Deficiency Panel, Sequencing and Deletion/Duplication** | **PAD PANEL**

Performed: Varies
Reported: 3-6 weeks

HOTLINE NOTE: There is a price change associated with this test. Please contact ARUP Client Services at (800) 522-2787 for additional information.

New Test **3000712** **Propafenone Quantitation, Serum or Plasma** **PROPA SP**
Click for Pricing

Methodology: Quantitative High Performance Liquid Chromatography
Performed: Varies
Reported: 3-9 days

Specimen Required: Collect: Plain Red, Lavender (EDTA), or Pink (K_2EDTA).
Specimen Preparation: Transfer 2 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.7 mL)
Storage/Transport Temperature: Refrigerated. Also acceptable: Room temperature or frozen.
Unacceptable Conditions: Separator tubes.
Stability (collection to initiation of testing): Ambient: 2 weeks; Refrigerated: 2 weeks; Frozen: 8 months

Reference Interval: By report

Note: Use of peak serum level is recommended for patient monitoring. Blood drug level drops rapidly, leading to many negative results at the trough. Peak serum concentration occurs 3 to 4 hours post dose.

CPT Code(s): 80375 (Alt code: G0480)

New York DOH Approved.

HOTLINE NOTE: Refer to the Test Mix Addendum for interface build information.

3000240 **Prostaglandin D2 (PG D2), Urine** **PROST D2U**

Specimen Required: Patient Prep: Aspirin, indomethacin, or anti-inflammatory medications should be discontinued, if possible, at least 48 hours prior to collection.
Collect: Random urine
Specimen Preparation: Transfer 10 mL urine to ARUP Standard Transport Tubes and freeze immediately. (Min: 5 mL)
Storage/Transport Temperature: CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.
Unacceptable Conditions: 24 hour urine collection.
Stability (collection to initiation of testing): Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen: 6 months

New Test **3000134** **Prostate Health Index** **PROST INDX**
Click for Pricing

Methodology: Quantitative Chemiluminescent Immunoassay
Performed: Mon
Reported: 1-7 days

Specimen Required: Patient Prep: Specimens for testing must be drawn prior to prostate manipulations such as digital rectal examination (DRE), prostatic massage, transrectal ultrasound (TRUS), and prostatic biopsy.
Collect: Serum Separator Tube (SST) or Plain Red.
Specimen Preparation: Allow specimen to clot completely at room temperature. Separate from cells within 3 hours of collection. Transfer 1.5 mL serum to an ARUP Standard Transport Tube. (Min: 1 mL)
Storage/Transport Temperature: CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered. Ship patient and control specimens together.
Unacceptable Conditions: Plasma.
Stability (collection to initiation of testing): After separation from cells: Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen: 5 months

Reference Interval: By report

Interpretive Data: The Prostate Health Index (P Score) is indicated for use as an aid in distinguishing prostate cancer from benign prostatic conditions, for prostate cancer detection in men aged 50 years and older with total PSA between 4 and 10 ng/mL, and with digital rectal examination findings that are not suspicious for cancer. The P Score may also be used to determine the probability of prostate cancer on biopsy for an individual patient. Higher P Scores are associated with higher probability of prostate cancer. Prostatic biopsy is required for diagnosis of cancer.

Testing is performed with Beckman Coulter UniCel DxI 800 Access PSA, free PSA, and p2PSA assays using Hybritech calibration. Results obtained with different assay methods or kits cannot be used interchangeably. Results cannot be interpreted as absolute evidence of the presence or absence of malignant disease.

Probability of prostate cancer on biopsy based on P Score in patients with PSA between 4 and 10 ng/mL

Prostate Health Index (P Score)	Probability of Cancer (percent)	95 percent Confidence Interval
0-26.9	9.8	5.2-15.4
27.0-35.9	16.8	11.3-22.2
36.0-54.9	33.3	26.8-39.9
55.0 and greater	50.1	39.8-61.0
When total PSA is <4 ng/mL or >10 ng/mL, free PSA and p2PSA assays are not performed. P Scores are therefore not available in that scenario.		

When PSA is between 4 and 10 ng/mL, percent free PSA is also calculated.
The probability of prostate cancer for men with non-suspicious digital rectal exam (DRE) results and PSA between 4 and 10 ng/ml by patient age based on percent free PSA

Percent free PSA	Probability of Cancer for Ages 50-64 years	Probability of Cancer for Ages 65-75 years
0-10	56	55
11-15	24	35
16-20	17	23
21-25	10	20
25 or greater	5	9

Note: If the Total PSA result is in the range of 4 to 10 ng/mL, then free PSA and p2PSA along with calculation of the free PSA percent and a P Score will be added. Additional charges will apply.

CPT Code(s): 84153; if reflexed add 84154, 86316

New York DOH Approved.

HOTLINE NOTE: Refer to the Test Mix Addendum for interface build information.

2008095 **14-3-3 Protein Tau/Theta, CSF** **14-3-3 CSF**

CPT Code(s): 0035U (Alt code: 86317; 84182; 87798)

2009345 **Pulmonary Arterial Hypertension (PAH) Panel, Sequencing and Deletion/Duplication** **PAH PANEL**

Performed: Varies
Reported: 3-6 weeks

HOTLINE NOTE: There is a price change associated with this test. Please contact ARUP Client Services at (800) 522-2787 for additional information.

New Test **2012849** **Rapid Mendelian Genes Sequencing Panel, Trio** **RAPID SEQ**
Click for Pricing

Informed Consent for Rapid Mendelian Genes Sequencing Panel, Trio

Patient History for Rapid Mendelian Genes Sequencing Panel, Trio

Methodology: Massively Parallel Sequencing
Performed: Varies
Reported: 2-4 weeks

Specimen Required: Collect: Lavender (EDTA). Peripheral blood required.
AND Maternal Specimen: Lavender (EDTA). Peripheral blood required.
AND Paternal Specimen: Lavender (EDTA). Peripheral blood required.
Specimen Preparation: Transport 3 mL whole blood. (Min: 1 mL)
AND Maternal Specimen: Transport 3 mL whole blood. (Min: 1 mL)
AND Paternal Specimen: Transport 3 mL whole blood. (Min: 1 mL)
Storage/Transport Temperature: Refrigerated.
Remarks: Specimens from both parents must also be submitted for proper interpretation
Stability (collection to initiation of testing): Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable

Reference Interval: By report

Interpretive Data: Refer to report.

See Compliance Statement C: www.aruplab.com/CS

Note: The following must be submitted with the test order: Completed Rapid Sequencing consent form signed by a legal guardian and a completed Patient History for Rapid Sequencing form for each specimen. Control specimens from both parents must be submitted and a Genomics Control (ARUP Test Code 2007820) should be also ordered (at no additional charge) to aid in the interpretation of the patient's result. For each parental specimen, please indicate on the test requisition form that the specimen is either a "maternal control" or "paternal control" and clearly reference the patient's name.

CPT Code(s): 81479

New York DOH approval pending. Call for status update.

HOTLINE NOTE: Refer to the Test Mix Addendum for interface build information.

2007085 **Retinitis Pigmentosa/Leber Congenital Amaurosis Panel, Sequencing and Deletion/Duplication** **RP PANEL**

Performed: Varies
Reported: 3-6 weeks

HOTLINE NOTE: There is a price change associated with this test. Please contact ARUP Client Services at (800) 522-2787 for additional information.

2012015 **Skeletal Dysplasia Panel, Sequencing and Deletion/Duplication** **SKEL PANEL**

Performed: Varies
Reported: 3-6 weeks

HOTLINE NOTE: There is a price change associated with this test. Please contact ARUP Client Services at (800) 522-2787 for additional information.

2012010 **Skeletal Dysplasia Panel, Sequencing and Deletion/Duplication, Fetal** **SKEL FE**

Performed: Varies
Reported: 2-4 weeks, if culture is required an additional 1 to 2 weeks is required for processing time.

HOTLINE NOTE: There is a price change associated with this test. Please contact ARUP Client Services at (800) 522-2787 for additional information.

2007991 **Solid Tumor Mutation Panel by Next Generation Sequencing** **SOLID NGS**

CPT Code(s): 81445, 88381

New Test **3000714** **Sotalol Quantitation, Serum/Plasma** **SOTA SP**
Click for Pricing

Methodology: Quantitative High Performance Liquid Chromatography-Tandem Mass Spectrometry
Performed: Varies
Reported: 3-10 days

Specimen Required: Collect: Plain Red, Lavender (EDTA), or Pink (K_2EDTA).
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: 0.22 mL)
Storage/Transport Temperature: Refrigerated. Also acceptable: Room temperature or frozen.
Unacceptable Conditions: Separator tubes.
Stability (collection to initiation of testing): Ambient: 2 weeks; Refrigerated: 1 month; Frozen: 1 month

Reference Interval: By report

CPT Code(s): 80375 (Alt code: G0480)

New York DOH Approved.

HOTLINE NOTE: Refer to the Test Mix Addendum for interface build information.

0050725 ***Streptococcus pneumoniae* Antibodies, IgG (14 Serotypes)** **PNEUMO AB**

Performed: Sun-Sat
Reported: 1-3 days

0025019 Thallium, Urine — THALU

Performed: Sun-Sat
Reported: 1-3 days

Specimen Required: Patient Prep: Diet, medication, and nutritional supplements may introduce interfering substances. Patients should be encouraged to discontinue nutritional supplements, vitamins, minerals, and non-essential over-the-counter medications (upon the advice of their physician). High concentrations of iodine may interfere with elemental testing. Collection of urine specimens from patients receiving iodinated or gadolinium-based contrast media should be avoided for a minimum of 72 hours post-exposure. Collection from patients with impaired kidney function should be avoided for a minimum of 14 days post-contrast media exposure.
Collect: 24-hour or random urine collection. Specimen must be collected in a plastic container. **ARUP studies indicate that refrigeration of urine alone, during and after collection, preserves specimens adequately if tested within 14 days of collection.**
Specimen Preparation: Transfer an 8 mL aliquot from a well-mixed collection to ARUP Trace Element-Free Transport Tubes (ARUP supply #43116). Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787. (Min: 1 mL)
Storage/Transport Temperature: Refrigerated. Also acceptable: Room temperature or frozen.
Remarks: Record total volume and collection time interval on transport tube and on test request form.
Unacceptable Conditions: Urine collected within 72 hours after administration of iodinated or gadolinium-based contrast media. Acid preserved urine. Specimens contaminated with blood or fecal material. Specimens transported in non-trace element-free transport tube (with the exception of the original device).
Stability (collection to initiation of testing): Ambient: 1 week; Refrigerated: 2 weeks; Frozen: 1 year

Reference Interval:
Effective November 12, 2018

Test Number	Components	Reference Interval		
	Thallium, Urine - per volume	0.0-2.0 µg/L		
	Thallium, Urine - per 24h	0.0-0.4 µg/d		
	Thallium, Urine - ratio to CRT	0.0-2.0 µg/g CRT		
0020473	Creatinine, Urine - per 24h	**Age**	**Male**	**Female**
		3-8 years	140-700 mg/d	140-700 mg/d
		9-12 years	300-1300 mg/d	300-1300 mg/d
		13-17 years	500-2300 mg/d	400-1600 mg/d
		18-50 years	1000-2500 mg/d	700-1600 mg/d
		51-80 years	800-2100 mg/d	500-1400 mg/d
		81 years and older	600-2000 mg/d	400-1300 mg/d

2007384 Vascular Malformations Panel, Sequencing and Deletion/Duplication — VASC PANEL

Performed: Varies
Reported: 3-6 weeks

HOTLINE NOTE: There is a price change associated with this test. Please contact ARUP Client Services at (800) 522-2787 for additional information.

0092628 Voltage-Gated Calcium Channel (VGCC) Antibody — VGCC AB

Specimen Required: Collect: Plain Red or 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: 0.2 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Plasma. Hemolyzed or grossly lipemic specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: 72 hours; Refrigerated: 2 weeks; Frozen: 1 month

New Test **3000721** **Ziprasidone Quantitation, Serum or Plasma** **ZIPRA SP**

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Methodology: Quantitative High Performance Liquid Chromatography-Tandem Mass Spectrometry
Performed: Varies
Reported: 3-10 days

Specimen Required: Collect: Plain Red, Lavender (EDTA), or Pink (K_2EDTA).
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)
Storage/Transport Temperature: Refrigerated. Also acceptable: Room temperature or frozen.
Unacceptable Conditions: Separator tubes.
Stability (collection to initiation of testing): Ambient: 2 weeks; Refrigerated: 1 month; Frozen: 1 year

Reference Interval: By report

CPT Code(s): 80342 (Alt code: G0480)

New York DOH Approved.

HOTLINE NOTE: Refer to the Test Mix Addendum for interface build information.

The following will be discontinued from ARUP's test menu on November 12, 2018.
Replacement test options are supplied if applicable.

Test Number	Test Name	Refer To Replacement
2013375	Allergen, Food, Milk (Sheep), IgE	
0097911	Allergen, Food, Sugar Cane IgG4	
0097325	Allergen, Food, Yam IgE	
2008601	Allergen, Fungi and Molds, *Aspergillus fumigatus* IgG	Aspergillus fumigatus Antibody IgG (3000876)
0090393	Allergen, Fungi and Molds, *Trichophyton rubrum* IgG	
0055087	Allergen, Mites, *Euroglyphus maynei* IgE	
0055183	Allergen, Mites, *Tyrophagus putrescentiae* IgE	
0055240	Allergens, Inhalants/Foods, Southeast Profile	Allergens, Inhalants, Southeast Panel IgE (3000600)
2003418	Alpha-1-Antichymotrypsin (A1ACT) by Immunohistochemistry	
2008467	Anti-Nuclear Antibody (ANA), IgG by IFA with Reflex by IFA Pattern	Antinuclear Antibody (ANA) with HEp-2 Substrate, IgG by IFA with Reflex by Pattern (3000601)
2007344	Arsenic Analysis, Nails	
0097771	*Aspergillus fumigatus* Antibody, IgG by ELISA	Aspergillus fumigatus Antibody IgG (3000876)
2005275	Baclofen Quantitative, Fluid	
2003472	Breast 2 (GCDFP-15) by Immunohistochemistry	GATA3 by Immunohistochemistry (2012558)
2003565	CD42b by Immunohistochemistry	CD61 (Platelet Glycoprotein IIIA) by Immunohistochemistry (2003595)
2003592	CD57 by Immunohistochemistry	PD-1 by Immunohistochemistry (2004085) and CXCL13 by Immunohistochemistry (2008622)
2011616	Colon Cancer Gene Panel, Somatic	*KRAS* Mutation Detection (0040248), *BRAF* Codon 600 Mutation Detection by Pyrosequencing (2002498), NRAS Mutation Detection by Pyrosequencing (2003123), Solid Tumor Mutation Panel by Next Generation Sequencing (2007991)
0050232	Eosinophil Cationic Protein	Eosinophil Cationic Protein (ECP) (3000537)
0020156	Fetal Hemoglobin, APT Test	
2001540	Hantavirus Antibodies, IgG and IgM	
2003914	HBME-1 (Mesothelial Cell) by Immunohistochemistry	
2004722	Hepatitis B Virus (HBV) by Quantitative PCR with Reflex to HBV Genotype by Sequencing	Hepatitis B Virus (HBV) by Quantitative NAAT with Reflex to HBV Genotype by Sequencing (3000866)
0056025	Hepatitis B Virus by Quantitative PCR	Hepatitis B Virus (HBV) by Quantitative NAAT (3000863)
2010797	Human Immunodeficiency Virus 1 (HIV-1) by Quantitative PCR with Reflex to HIV PhenoSense GT	Human Immunodeficiency Virus 1 (HIV-1) by Quantitative NAAT with Reflex to HIV PhenoSense GT (3000871)
2002689	Human Immunodeficiency Virus 1 (HIV-1) by Quantitative PCR with Reflex to HIV-1 Genotype by Sequencing	Human Immunodeficiency Virus 1 (HIV-1) by Quantitative NAAT with Reflex to HIV-1 Genotype by Sequencing (3000870)
0055598	Human Immunodeficiency Virus 1 by Quantitative PCR	Human Immunodeficiency Virus 1 (HIV-1) by Quantitative NAAT, Plasma (3000867)
2005375	Human Immunodeficiency Virus Type 1 (HIV-1) Antibody by CIA with Reflex to HIV-1 Antibody Confirmation by Western Blot	Human Immunodeficiency Virus (HIV) Combo Antigen/Antibody (HIV-1/O/2) by CIA, Reflexive Panel (2012674), Human Immunodeficiency Virus (HIV) Combo Antigen/Antibody (HIV-1/O/2) by CIA with Reflex to HIV-1/HIV-2 Antibody Differentiation, Supplemental (2013333) or Human Immunodeficiency Virus (HIV) Combo Antigen/Antibody (HIV-1/O/2) by CIA, with Reflex to HIV-1 Antibody Confirmation by Western Blot (2006526)
2005377	Human Immunodeficiency Virus Types 1 and 2 (HIV-1, HIV-2) Antibodies by CIA with Reflex to HIV-1 Antibody Confirmation by Western Blot	Human Immunodeficiency Virus (HIV) Combo Antigen/Antibody (HIV-1/O/2) by CIA, Reflexive Panel (2012674), Human Immunodeficiency Virus (HIV) Combo Antigen/Antibody (HIV-1/O/2) by CIA with Reflex to HIV-1/HIV-2 Antibody Differentiation, Supplemental (2013333) or Human Immunodeficiency Virus (HIV) Combo Antigen/Antibody (HIV-1/O/2) by CIA, with Reflex to HIV-1 Antibody Confirmation by Western Blot (2006526)
2003957	Immunoglobulin A (IgA) by Immunohistochemistry	
2003966	Immunoglobulin M (IgM) by Immunohistochemistry	
0080940	Lamellar Body Counts	
2007346	Lead Analysis, Hair	
0091351	Levodopa Quantitative, Serum or Plasma	
2005848	MDM2 by Immunohistochemistry	MDM2 Gene Amplification by FISH (2003016)
0091110	Mephenytoin and Metabolite Quantitative, Serum or Plasma	
2002928	Metformin Quantitation, Urine	
0091346	Naproxen, Serum or Plasma	
0091099	Naproxen, Urine	
0050639	Nuclear Antibody (ANA) by IFA, IgG	Antinuclear Antibody (ANA) with HEp-2 Substrate, IgG by IFA (3000082)
2011555	Perphenazine, Serum or Plasma	
2004106	Procollagen I by Immunohistochemistry	
2011561	Propafenone, Serum or Plasma	Propafenone Quantitation, Serum or Plasma (3000712)
0091077	Silicon, Urine	
2011757	Sotalol, Serum or Plasma	Sotalol Quantitation, Serum/Plasma (3000714)
2013325	Systemic Sclerosis Comprehensive Panel	Comprehensive Systemic Sclerosis Panel (3000480)
2012057	Systemic Sclerosis Panel	Criteria Systemic Sclerosis Panel (3000479)

Test Number	Test Name	Refer To Replacement
2004160	Tartrate-Resistant Acid Phosphatase (TRAP) by Immunohistochemistry	Hairy Cell Leukemia, DBA.44 by Immunohistochemistry (2003860)
2011783	Thiothixene, Serum or Plasma	
0091566	Trichloroacetic Acid Quantitative, Serum or Plasma	
2007955	Ziprasidone, Serum or Plasma	Ziprasidone Quantitation, Serum or Plasma (3000721)