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0020222	UHEMSID	Hemosiderin, Urine					x														
0040131	RNA EXT	RNA Extraction and Storage			x		x														
0050011	RPR FTA	Rapid Plasma Reagin (RPR) with Reflex to Titer and FTA-ABS			x	x															
0050091	HENS G	Bartonella henselae Antibody, IgG by IFA			x																
0050092	HENS M	Bartonella henselae Antibody, IgM by IFA			x																
0050093	QUINT M	Bartonella quintana Antibody, IgM by IFA			x																
0050094	QUINT G	Bartonella quintana Antibody, IgG by IFA			x																
0050101	ASPER PRO	Aspergillus Antibodies by Complement Fixation and Immunodiffusion			x	x															
0050106	BART PAN	Bartonella quintana Antibodies, IgG & IgM by IFA			x																
0050108	CATSCRATCH	Bartonella henselae (Cat Scratch) Antibodies, IgG & IgM by IFA			x																
0050253	LYME M WB	Borrelia burgdorferi Antibody, IgM by Immunoblot					x														
0050254	LYME WB	Borrelia burgdorferi Antibodies, IgG and IgM by Immunoblot					x														

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0050255	LYME G WB	Borrelia burgdorferi Antibody, IgG by Immunoblot					x														
0050267	LYME ACUTE	Borrelia burgdorferi Antibodies, Total by ELISA with Reflex to IgG and IgM by Immunoblot (Early Disease) (Change effective as of 05/15/23: Refer to 3006053, 3003254)																		x	
0050268	LYME CHRO	Borrelia burgdorferi Total Antibodies, IgG and/or IgM by ELISA with Reflex to IgG by Immunoblot (Late Disease) (Change effective as of 05/15/23: Refer to 3006053, 3003255)																		x	
0050369	RMSF G	Rickettsia rickettsii (Rocky Mountain Spotted Fever) Antibody, IgG			x																
0050371	RMSF G/M	Rickettsia rickettsii (Rocky Mountain Spotted Fever) Antibodies, IgG & IgM by IFA			x																
0050372	RMSF M	Rickettsia rickettsii (Rocky Mountain Spotted Fever) Antibody, IgM			x																

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0050381	TYPHU G	Rickettsia typhi (Typhus Fever) Antibody, IgG by IFA			x																
0050383	TYPHU M	Rickettsia typhi (Typhus Fever) Antibody, IgM by IFA			x																
0050384	TYPHU G/M	Rickettsia typhi (Typhus Fever) Antibodies, IgG & IgM by IFA			x																
0050471	RPRT	Rapid Plasma Reagin (RPR) with Reflex to Titer			x	x															
0050477	FTA	Treponema pallidum Antibody, IgG by IFA (FTA-ABS), Serum			x																
0050478	RPR PAN	Rapid Plasma Reagin (RPR) with Reflex to Titer and TP-PA Confirmation			x	x															
0050588	COCCI PAN	Coccidioides Antibodies Panel, Serum			x	x															
0050627	HISTO PAN	Histoplasma Antibodies by Complement Fixation and Immunodiffusion			x	x															
0050777	MHA	Treponema pallidum Antibody by TP-PA			x	x															
0051002	E CHAF ABS	Ehrlichia chaffeensis Antibodies, IgG & IgM by IFA			x																
0051003	E CH M	Ehrlichia chaffeensis Antibody, IgM by IFA			x																

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0051004	E CH G	Ehrlichia chaffeensis Antibody, IgG by IFA			x																
0055258	LYMEMWBCSF	Borrelia burgdorferi Antibody, IgM by Immunoblot (CSF)					x														
0055259	LYMEGWBCSF	Borrelia burgdorferi Antibody, IgG by Immunoblot (CSF)					x														
0055260	LYME WBCSF	Borrelia burgdorferi Antibodies, IgG and IgM by Immunoblot (CSF)					x														
0055436	HOPS	Allergen, Food, Hops (Inactive as of 05/15/23)																			x
0060046	PARAST	Cryptosporidium and Coccidia Exam, Fecal					x														
0060047	ECSLT AG	E. coli Shiga-like Toxin by EIA			x	x															
0060050	MICROST	Microsporidia Stain by Modified Trichrome					x														
0060117	MC PERT	Bordetella pertussis Culture			x	x															
0060284	FLUFAC	Influenza Virus A and B DFA with Reflex to Influenza Virus A and B Rapid Culture (Change effective as of 05/15/23: Refer to 0060764)																		x	
0060286	V FLUC	Influenza Virus A and B Rapid Culture (Change effective as of 05/15/23: Refer to 0060764)																		x	

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0060714	MC UORG	Unusual Organism Culture						x													
0065055	V MEASLES	Measles (Rubeola) Virus Culture (Inactive as of 05/15/23)																			x
0065056	V MUMPS	Mumps Virus Culture (Change effective as of 05/15/23: Refer to 3000523)																		x	
0065100	V CHLM PAN	Chlamydia Antibody Panel, IgG & IgM by IFA			x																
0065105	V CHLAM M	Chlamydia Antibody Panel, IgM by IFA			x																
0065139	CHLAM G	Chlamydia Antibody Panel, IgG by IFA			x																
0070062	NTX	N-Telopeptide, Cross-Linked, Urine			x																
0070105	RENIN	Renin Activity					x														
0070413	INHIBINB	Inhibin B								x											
0090161	AMIOD	Amiodarone and Metabolite			x		x		x	x											
0090448	CDTI7	Drugs of Abuse 7 Panel, Urine - Screen Only								x											
0090449	CDTI7A	Drugs of Abuse 7A Panel, Urine - Screen Only								x											
0090453	CDTI9	Drugs of Abuse 9 Panel, Urine - Screen Only								x											
0090454	CDTI9A	Drugs of Abuse 9A Panel, Urine - Screen Only								x											

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0092184	CDASU 7	Drug Panel 7, Urine - Screen with Reflex to Confirmation/Quantitation								x											
0092185	CDASU 7A	Drug Panel 7A, Urine - Screen with Reflex to Confirmation/Quantitation				x				x											
0092186	CDASU 9	Drug Panel 9, Urine - Screen with Reflex to Confirmation/Quantitation								x											
0092187	CDASU 9A	Drug Panel 9A, Urine - Screen with Reflex to Confirmation/Quantitation				x				x											
0092316	CONFTHC M	Marijuana Metabolite,Meconium, Qualitative		x							x										
0093048	BAB MIC AB	Babesia microti Antibodies, IgG and IgM by IFA			x																
0093049	BAB IGG	Babesia microti Antibody, IgG by IFA			x																
0093050	BAB IGM	Babesia microti Antibody, IgM by IFA			x																
0093093	VDRL SERU	Treponema pallidum (VDRL), Serum with Reflex to Titer			x																
0093399	CTC COUNT	Circulating Tumor Cell Count (Inactive as of 05/15/23)																			x

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0097303	HGE G/M	Anaplasma phagocytophilum (HGA) Antibodies, IgG and IgM			x																
0097317	HGE IGG	Anaplasma phagocytophilum (HGA) Antibody, IgG			x																
0097318	HGE IGM	Anaplasma phagocytophilum (HGA) Antibody, IgM			x																
0099483	LYME CSF	Borrelia burgdorferi Antibodies, Total by ELISA, CSF					x														
2002280	BARTONELLA	Bartonella henselae & B. quintana Antibodies, IgG & IgM			x																
2002440	EGFR PCR	EGFR Mutation Detection by Pyrosequencing			x																
2002582	A/DR	Aldosterone and Renin, Direct with Ratio (Change Effective as of 5/15/2023 Refer to 3005949 in the May Hotline)																		x	
2002643	FLUFAPCR	Influenza Virus A and B DFA with Reflex to Respiratory Virus Mini Panel by PCR (Change effective as of 05/15/23: Refer to 0060764)																		x	
2003216	DOUGLAS	Allergen, Tree, Douglas Fir IgE (Inactive as of 05/15/23)																			x

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2003239	RPRTITER	Rapid Plasma Reagin (RPR) Titer			x	x															
2004243	ABPA	Allergic Bronchopulmonary Aspergillosis (ABPA) Panel			x																
2004760	CMV RESIST	Cytomegalovirus Antiviral Drug Resistance by Sequencing (Change effective as of 05/15/23: Refer to 3004615)																		x	
2005077	AS PWS	Angelman Syndrome and Prader-Willi Syndrome by Methylation-Sensitive PCR (Change effective as of 5/15/2023: Refer to 3006247 in the May Hotline)																		x	
2006178	DNA HYDAT	Products of Conception, Ploidy by Flow Cytometry					x														
2007335	LYMECSFR	Borrelia burgdorferi (Lyme Disease) Reflexive Panel (CSF)					x														
2007443	RPR REV	Rapid Plasma Reagin (RPR) with Reflex to RPR Titer or T. pallidum Antibody by Particle Agglutination			x	x															

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2007479	PAIN HYB U	Drug Profile, Targeted by Tandem Mass Spectrometry and Enzyme Immunoassay, Urine				x			x	x	x										
2009257	MA FUNGAL	Antimicrobial Susceptibility - Fungal (Yeasts and Molds)					x														
2009288	PAIN HYB 2	Drug Profile, Targeted with Interpretation by Tandem Mass Spectrometry and Enzyme Immunoassay, Urine				x			x	x	x										
2010164	LH IHC	Luteinizing Hormone (LH) by Immunohistochemistry (Change effective as of 05/15/23: Refer to 3006297 in the May Hotline)																		x	
2010166	FSH IHC	Follicle Stimulating Hormone (FSH) by Immunohistochemistry (Change effective as of 05/15/23: Refer to 3006300 in the May Hotline)																		x	

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2012232	AS PWS FE	Angelman Syndrome and Prader-Willi Syndrome by Methylation-Sensitive PCR, Fetal (Change effective as of 5/15/2023: Refer to 3006247 in the May Hotline)																		x	
2012270	THC RFX U	THC (Cannabinoids), Urine Screen with Reflex to Quantitation				x				x											
2012312	PAIN RFX U	Drug Profile, Screen with Reflex to Quantitation				x				x											
2012625	QF G 1/2	Coxiella burnetii (Q-Fever) Antibody IgG, Phase I and II with Reflex to Titer			x																
2012634	Q-F GM	Coxiella burnetii (Q-Fever) Antibodies, IgG and IgM, Phase I and II with Reflex to Titer			x																
2013798	CANDPCR	Candida Species by PCR			x																
2014318	CLOT REF R	Prolonged Clot Time Reflex Panel (Change effective as of 05/15/23: Refer to 3006383 in the May Hotline)																		x	
3000230	FUNG R CSF	Fungal Antibodies with Reflex to Blastomyces dermatitidis Antibodies by Immunodiffusion, CSF			x	x															

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3000235	FUNG R SER	Fungal Antibodies with Reflex to Blastomyces dermatitidis Antibodies by Immunodiffusion, Serum			x	x															
3000400	QFT-PLUS	QuantiFERON-TB Gold Plus, 1-Tube			x																
3001501	2C8/2C9	CYP2C8, CYP2C9, and CYP2C cluster			x																
3001561	HYPEREXT	Hypersensitivity Pneumonitis Extended Panel (Farmer's Lung Panel)			x																
3001576	MSK AB	Muscle-Specific Kinase (MuSK) Antibody, IgG (Change effective as of 05/15/23: Refer to 3006198 in the May Hotline)																		x	
3001662	OP FEC	Ova and Parasite Exam, Fecal (Immunocompromised or Travel History)			x																
3001868	ACHR BIN R	Acetylcholine Receptor Binding Antibody with reflex to Muscle-Specific Kinase (MuSK) Ab, IgG											x					x			
3001869	MG R PAN	Myasthenia Gravis Reflexive Panel											x					x			
3002001	KEL GENO	Kell K/k (KEL) Antigen Genotyping			x																

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3002002	RHC GENO	RhC/c (RHCE) Antigen Genotyping			x																
3002003	RHE GENO	RhE/e (RHCE) Antigen Genotyping			x																
3002253	PEANUT R	Allergen, Food, Peanut w/Component Rflx		x																	
3002598	PETH	Phosphatidylethanol (PEth), Whole Blood, Quantitative										x									
3002776	COV19QUALG	COVID-19 IgG, Qualitative by CIA			x	x	x														
3002858	ELASTASE	Pancreatic Elastase, Fecal by Immunoassay					x														
3002859	CALPRO FEC	Calprotectin, Fecal by Immunoassay					x														
3002995	COCC.CFIDS	Coccidioides Antibodies by Complement Fixation and Immunodiffusion, Serum			x	x															
3004310	2B6GENO	CYP2B6			x																
3005674	GUDP PCR	Genital Ulcer Disease Panel by PCR	x																		
3005928	RWGS FAM	Rapid Whole Genome Sequencing, Familial Control	x																		
3005933	RWGS FRPT	Rapid Whole Genome Sequencing, Familial Control with Report	x																		
3005935	RWGS NGS	Rapid Whole Genome Sequencing	x																		

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3005939	RWGS REA	Rapid Whole Genome Reanalysis	x																		
3005949	ALD/DR	Aldosterone and Renin Direct, With Ratio	x																		
3006053	LYME MTTT	Borrelia burgdorferi VlsE1/pepC10 Antibodies, Total by ELISA With Reflex to IgM and IgG by ELISA (Modified Two-Tier Testing)	x																		
3006168	TSH-IHC	Thyroid Stimulating Hormone by Immunohistochemistry	x																		
3006178	C4 URINE	Isobutyryl/butyryl-carnitine (C4) Quantitative, Urine	x																		
3006198	MuSK SER	Muscle-Specific Kinase (MuSK) Antibody, IgG by CBA-IFA with Reflex to Titer, Serum	x																		
3006201	AIENCDEMS	Autoimmune Encephalopathy/Dementia Panel, Serum	x																		
3006202	AIENCDEMC	Autoimmune Encephalopathy/Dementia Panel, CSF	x																		
3006203	AIDYS	Autoimmune Dysautonomia Panel, Serum	x																		
3006204	AIEPS	Autoimmune Epilepsy Panel, Serum	x																		

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3006205	AIEPC	Autoimmune Epilepsy Panel, CSF	x																		
3006206	AIMDS	Autoimmune Movement Disorder Panel, Serum	x																		
3006207	AIMDC	Autoimmune Movement Disorder Panel, CSF	x																		
3006208	AIMYS	Autoimmune Myelopathy Panel, Serum	x																		
3006209	AIMYC	Autoimmune Myelopathy Panel, CSF	x																		
3006210	AIPEDS	Autoimmune Pediatric CNS Disorders, Serum	x																		
3006211	AIPEDC	Autoimmune Pediatric CNS Disorders, CSF	x																		
3006234	AISPSS	Autoimmune Stiff-Person Disorders, Serum	x																		
3006235	AISPSC	Autoimmune Stiff-Person Disorders, CSF	x																		
3006242	MTB IHC	Mycobacterium Tuberculosis by Immunohistochemistry	x																		
3006247	AS-PWS DD	Angelman Syndrome and Prader-Willi Syndrome by Methylation-Specific MLPA	x																		
3006297	LH-IHC	Luteinizing Hormone by Immunohistochemistry	x																		

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3006300	FSH-IHC	Follicle Stimulating Hormone by Immunohistochemistry	x																		
3006343	PRENAT HEP	Prenatal Hepatitis Panel	x																		
3006371	C PAN_THC	Drug Detection Panel and THC Metabolite, Umbilical Cord Tissue, Qualitative	x																		
3006373	M PAN_THC	Drug Detection Panel and THC Metabolite, Meconium, Qualitative	x																		
3006383	CLOT RFLX	Prolonged Clot Time Reflexive Profile	x																		

TEST CHANGE

Hemosiderin, Urine

0020222, UHEMSID

Specimen Requirements:	
Patient Preparation:	First-morning collection is preferred.
Collect:	Random urine.
Specimen Preparation:	Mix specimen well. Transfer 4 mL to an ARUP standard transport tube.~~Standard Transport Tube.~~ (Min: 1 mL).
Transport Temperature:	Frozen.
Unacceptable Conditions:	Specimens in preservatives.
Remarks:	
Stability:	Ambient: 1 hour; Refrigerated: 1 week; Frozen: 1 week
Methodology:	Semi-Quantitative Microscopy
Performed:	Sun-Sat
Reported:	1-2 days ~~Within 24 hours~~
Note:	Absent = Negative Present = 1+ to 4+
CPT Codes:	83070
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

As of Nov 16, 2020, reporting has switched from semiquantitative~~semi-quantitative~~ to qualitative (absent versus present).

Reference Interval:

Effective November 16, 2020
Absent

TEST CHANGE

RNA Extraction and Storage

0040131, RNA EXT

Specimen Requirements:	
Patient Preparation:	
Collect:	Whole blood~~Lavender (EDTA),~~ or bone marrow in lavender (EDTA).~~)~~
Specimen Preparation:	Whole Blood:~~Do not freeze.~~ Transport 5 mL whole blood. (Min: 3~~1~~ mL) Bone Marrow:~~OR~~ Transport 3 mL bone marrow. (Min: 1 mL)
Transport Temperature:	Whole blood and bone marrow: CRITICAL REFRIGERATED. Separate specimens must be submitted when multiple tests are ordered. ~~Refrigerated.~~
Unacceptable Conditions:	
Remarks:	Specimens must be received within 48 hours of collection due to lability of RNA.
Stability:	~~Ambient: 4 hours;~~ Refrigerated: 48~~72~~ hours; Frozen: Unacceptable
Methodology:	RNA Extraction
Performed:	Sun-Sat
Reported:	Not Applicable ~~1-3 days~~
Note:	RNA will be held for 6 months for possible add-on testing. Extracted RNA is used exclusively for ARUP testing and will not be sent back to clients or forwarded to vendor laboratories.
CPT Codes:	NA
New York DOH Approval Status:	Specimens from New York clients will be sent out to a New York DOH approved laboratory, if possible.
Interpretive Data:	

Reference Interval:

Test	Components	Reference Interval

Number		

TEST CHANGE

Rapid Plasma Reagin (RPR) with Reflex to Titer and FTA-ABS

0050011, RPR FTA

Specimen Requirements:	
Patient Preparation:	
Collect:	Serum separator tube.
Specimen Preparation:	Separate serum from cells ASAP or within 2 hours of collection. Transfer 1mL serum to an ARUP standard transport tube.~~Standard Transport Tube.~~ (Min: 0.54 mL) Avoid freezing if possible.
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	CSF or plasma. Contaminated, hemolyzed, or severely lipemic specimens.
Remarks:	
Stability:	After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year
Methodology:	Semi-Quantitative Particle~~Charcoal~~ Agglutination~~/Semi-Quantitative Indirect Fluorescent Antibody~~
Performed:	Sun-Sat
Reported:	1-3 days
Note:	
CPT Codes:	86592; if reflexed, add 86593; 86780
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

Component	Interpretation
Rapid Plasma Reagin (RPR)	RPR (+) = Reactive RPR (-) = Nonreactive

Reference Interval:

Test Number	Components	Reference Interval
	Rapid Plasma Reagin (RPR)	Non Reactive
	Rapid Plasma Reagin (RPR)	
		Component Result: Rapid Plasma Reagin (RPR) — Interpretation: RPR (+) = Reactive RPR (-) = Nonreactive

TEST CHANGE

Bartonella henselae Antibody, IgG by IFA

0050091, HENS G

Specimen Requirements:	
Patient Preparation:	
Collect:	Serum separator tube.
Specimen Preparation:	Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP standard transport tube. ~~Standard Transport Tube.~~ (Min: 0.4~~15~~ mL) Parallel testing is preferred and convalescent specimens must be received within 30 days from receipt of the acute specimens. Mark specimens plainly as "acute" or "convalescent."
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Contaminated, hemolyzed, or severely lipemic specimens.
Remarks:	
Stability:	After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)
Methodology:	Semi-Quantitative Indirect Fluorescent Antibody (IFA)
Performed:	Mon, Thu
Reported:	1-8 days
Note:	
CPT Codes:	86611
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

A low positive result suggests past exposure or infection, while a high positive result may indicate recent or current infection, but is inconclusive for diagnosis. Seroconversion between acute and convalescent sera is considered strong evidence of recent infection. The best evidence for infection is significant change on two appropriately timed specimens where both tests are done in the same laboratory at the same time.

~~This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the US Food and Drug Administration. This test was performed in a CLIA certified laboratory and is intended for clinical purposes.~~

Reference Interval:

<1:64 Negative - No significant level of *Bartonella henselae* IgG antibody detected.
1:64-1:128 Equivocal - Questionable presence of *Bartonella henselae* IgG antibody detected. Repeat testing in 10-14 days may be helpful.
≥ 1:256 Positive - Presence of IgG antibody to *Bartonella henselae* detected, suggestive of current or past infection.

TEST CHANGE

Bartonella henselae Antibody, IgM by IFA

0050092, HENS M

Specimen Requirements:	
Patient Preparation:	
Collect:	Serum separator tube.
Specimen Preparation:	Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP standard transport tube. ~~Standard Transport Tube.~~ (Min: 0.4~~15~~ mL) Parallel testing is preferred and convalescent specimens must be received within 30 days from receipt of the acute specimens. Mark specimens plainly as "acute" or convalescent." ~~.~~
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Contaminated, hemolyzed, or severely lipemic specimens.
Remarks:	
Stability:	After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)
Methodology:	Semi-Quantitative Indirect Fluorescent Antibody (IFA)
Performed:	Mon, Thu
Reported:	1-8 days
Note:	
CPT Codes:	86611
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

The presence of IgM antibodies suggests recent infection. Low levels of IgM antibodies may occasionally persist for more than 12 months post infection. ~~-infection.~~

~~This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the US Food and Drug Administration. This test was performed in a CLIA certified laboratory and is intended for clinical purposes.~~

Reference Interval:

< 1:16 Negative - No significant level of *Bartonella henselae* IgM antibody detected.
≥ 1:16 Positive - Presence of IgM antibody to *Bartonella henselae* detected, suggestive of current or recent infection.

TEST CHANGE

Bartonella quintana Antibody, IgM by IFA

0050093, QUINT M

Specimen Requirements:	
Patient Preparation:	
Collect:	Serum separator tube.
Specimen Preparation:	Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP standard transport tube. ~~Standard Transport Tube.~~ (Min: 0.4~~3~~ mL) Parallel testing is preferred and convalescent specimens must be received within 30 days from receipt of the acute specimens. Mark specimens plainly as acute or convalescent.
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Contaminated, hemolyzed, or severely lipemic specimens.
Remarks:	
Stability:	After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)
Methodology:	Semi-Quantitative Indirect Fluorescent Antibody (IFA)
Performed:	Mon, Thu
Reported:	1-8 days
Note:	
CPT Codes:	86611
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

The presence of IgM antibodies suggests recent infection. Low levels of IgM antibodies may occasionally persist for more than 12 months post infection. ~~-infection.~~

~~This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the US Food and Drug Administration. This test was performed in a CLIA certified laboratory and is intended for clinical purposes.~~

Reference Interval:

< 1:16 Negative - No significant level of *Bartonella quintana* IgM antibody detected.
≥ 1:16 Positive - Presence of IgM antibody to *Bartonella quintana* detected, suggestive of current or recent infection.

TEST CHANGE

Bartonella quintana Antibody, IgG by IFA

0050094, QUINT G

Specimen Requirements:	
Patient Preparation:	
Collect:	Serum separator tube.
Specimen Preparation:	Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP standard transport tube. ~~Standard Transport Tube.~~ (Min: 0.4~~3~~ mL) Parallel testing is preferred and convalescent specimens must be received within 30 days from receipt of the acute specimens. Mark specimens plainly as acute or convalescent.
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Contaminated, hemolyzed, or severely lipemic specimens.
Remarks:	
Stability:	After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)
Methodology:	Semi-Quantitative Indirect Fluorescent Antibody (IFA)
Performed:	Mon, Thu
Reported:	1-8 days
Note:	
CPT Codes:	86611
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

A low positive result suggests past exposure or infection, while a high positive result may indicate recent or current infection, but is inconclusive for diagnosis. Seroconversion between acute and convalescent sera is considered strong evidence of recent infection. The best evidence for infection is a significant change on two appropriately timed specimens where both tests are done in the same laboratory at the same time.

~~This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the US Food and Drug Administration. This test was performed in a CLIA certified laboratory and is intended for clinical purposes.~~

Reference Interval:

< 1:64 Negative - No significant level of *Bartonella quintana* IgG antibody detected.
1:64-1:128 Equivocal - Questionable presence of *Bartonella quintana* IgG antibody detected. Repeat testing in 10-14 days may be helpful.
≥ 1:256 Positive - Presence of IgG antibody to *Bartonella quintana* detected, suggestive of current or past infection.

TEST CHANGE

Aspergillus Antibodies by Complement Fixation and Immunodiffusion

0050101, ASPER PRO

Specimen Requirements:	
Patient Preparation:	
Collect:	Serum separator tube.
Specimen Preparation:	Separate serum from cells ASAP or within 2 hours of collection. Transfer 2~~Transfer1~~ mL serum to an ARUP standard transport tube.~~Standard Transport Tube.~~ (Min: 0.8~~5~~ mL) Parallel testing is preferred and convalescent specimens must be received within 30 days from receipt of the acute specimens. Mark specimens plainly as "acute" or "convalescent."
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Contaminated, hemolyzed, or severely lipemic specimens.
Remarks:	
Stability:	After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)
Methodology:	Semi-Quantitative Complement Fixation/Qualitative Immunodiffusion
Performed:	Sun-Sat
Reported:	3-6 days
Note:	The immunodiffusion component of this test uses pooled mycelial-phase culture filtrates of Aspergillus fumigatus, Aspergillus flavus, Aspergillus niger, and Aspergillus terreus.
CPT Codes:	86606 x2
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

Refer to report.

Reference Interval:

Test Number	Components	Reference Interval
	Aspergillus Antibodies by CF	Less than 1:8

	Aspergillus Antibodies by ID	Not detected

TEST CHANGE

Bartonella quintana Antibodies, IgG & IgM by IFA

0050106, BART PAN

Specimen Requirements:	
Patient Preparation:	
Collect:	Serum separator tube.
Specimen Preparation:	Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP standard transport tube. ~~Standard Transport Tube.~~ (Min: 0.4~~3~~ mL) Parallel testing is preferred and convalescent specimens must be received within 30 days from receipt of the acute specimens. Mark specimens plainly as "acute" or "convalescent."
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Contaminated, hemolyzed, or severely lipemic specimens.
Remarks:	
Stability:	After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)
Methodology:	Semi-Quantitative Indirect Fluorescent Antibody (IFA)
Performed:	Mon, Thu
Reported:	1-8 days
Note:	
CPT Codes:	86611 x2
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

Refer to individual components. ~~Refer to individual components.~~

~~This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the US Food and Drug Administration. This test was performed in a CLIA certified laboratory and is intended for clinical purposes.~~

Component	Interpretation
Bartonella quintana Antibody, IgG by IFA	< 1:64 Negative - No significant level of Bartonella quintana IgG antibody detected. 1:64-

	1:128 Equivocal - Questionable presence of Bartonella quintana IgG antibody detected. Repeat testing in 10-14 days may be helpful. {>=}1:256 Positive - Presence of IgG antibody to Bartonella quintana detected, suggestive of current or past infection.	
Bartonella quintana Antibody, IgM by IFA	< 1:16 Negative - No significant level of Bartonella quintana IgM antibody detected. {>=}1:16 Positive - Presence of IgM antibody to Bartonella quintana detected, suggestive of current or recent infection.	

Reference Interval:

TEST CHANGE

Bartonella henselae (Cat Scratch) Antibodies, IgG & IgM by IFA

0050108, CATSCRATCH

Specimen Requirements:	
Patient Preparation:	
Collect:	Serum separator tube.
Specimen Preparation:	Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP standard transport tube. ~~Standard Transport Tube.~~ (Min: 0.4~~15~~ mL) Parallel testing is preferred and convalescent specimens must be received within 30 days from receipt of the acute specimens. Mark specimens plainly as "acute" or "convalescent."
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Contaminated, hemolyzed, or severely lipemic specimens.
Remarks:	
Stability:	After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)
Methodology:	Semi-Quantitative Indirect Fluorescent Antibody (IFA)
Performed:	Mon, Thu
Reported:	1-8 days
Note:	
CPT Codes:	86611 x2
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

Refer to individual components. ~~Refer to individual components.~~

~~This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the US Food and Drug Administration. This test was performed in a CLIA certified laboratory and is intended for clinical purposes.~~

Component Result	Interpretation
Bartonella henselae Antibody, IgG by IFA	<1:64 Negative - No significant level of Bartonella henselae IgG antibody

	detected. 1:64-1:128 Equivocal - Questionable presence of Bartonella henselae IgG antibody detected. Repeat testing in 10-14 days may be helpful. {>=}1:256 Positive - Presence of IgG antibody to Bartonella henselae detected, suggestive of current or past infection.	
Bartonella henselae Antibody, IgM by IFA	< 1:16 Negative - No significant level of Bartonella henselae IgM antibody detected. {>=} 1:16 Positive - Presence of IgM antibody to Bartonella henselae detected, suggestive of current or recent infection.	

Reference Interval:

TEST CHANGE

Borrelia burgdorferi Antibody, IgM by Immunoblot

0050253, LYME M WB

Specimen Requirements:	
Patient Preparation:	
Collect:	Serum separator tube.
Specimen Preparation:	Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.15 mL)
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	CSF or plasma. Contaminated, heat-inactivated, severely hemolyzed, severely lipemic, and severely icteric specimens.
Remarks:	
Stability:	After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)
Methodology:	Qualitative Immunoblot
Performed:	Sun-Sat
Reported:	1-42 days
Note:	Current CDC recommendations for the serologic diagnosis of Lyme disease are to screen with a polyvalent EIA test and confirm equivocal and positive with immunoblot. Both IgM and IgG immunoblots should be performed on specimens less than 4 weeks after appearance of erythema migrans. Only IgG immunoblot should be performed on specimens greater than 4 weeks after disease onset. IgM immunoblot in the chronic stage is not recommended and does not aid in the diagnosis of neuroborreliosis or chronic Lyme disease. Please submit requests for appropriate immunoblot testing within 10 days.
CPT Codes:	86617
New York DOH Approval Status:	This test is New York DOH approved.
Interpretive Data:	
For this assay, a positive result is reported when any 2 or more of the following bands are present: 23, 39, or 41 kDa. All other banding patterns are reported as negative.	
Reference Interval:	

Effective August 15, 2011

Negative

TEST CHANGE

Borrelia burgdorferi Antibodies, IgG and IgM by Immunoblot

0050254, LYME WB

Specimen Requirements:	
Patient Preparation:	
Collect:	Serum separator tube.
Specimen Preparation:	Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.15 mL)
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	CSF or plasma. Contaminated, heat-inactivated, severely hemolyzed, severely lipemic, and severely icteric specimens.
Remarks:	
Stability:	After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)
Methodology:	Qualitative Immunoblot
Performed:	Sun-Sat
Reported:	1-42 days
Note:	Per CDC guidelines, if ELISA test result is NEGATIVE, immunoblot should not be performed. This test should be used for confirmation of an equivocal or positive B. burgdorferi total antibodies, IgG and/or IgM test performed on patients less than 4 weeks after appearance of erythema migrans.
CPT Codes:	86617 x2
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

IgG: For this assay, a positive result is reported when any 5 or more of the following 10 bands are present: 18, 23, 28, 30, 39, 41, 45, 58, 66, or 93 kDa. All other banding patterns are reported as negative.

IgM: For this assay, a positive result is reported when any 2 or more of the following bands are present: 23, 39, or 41 kDa. All other banding patterns are reported as negative.

Reference Interval:

Effective August 15, 2011

Negative

TEST CHANGE

Borrelia burgdorferi Antibody, IgG by Immunoblot

0050255, LYME G WB

Specimen Requirements:	
Patient Preparation:	
Collect:	Serum separator tube.
Specimen Preparation:	Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.1 mL)
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	CSF or plasma. Contaminated, heat-inactivated, severely hemolyzed, severely lipemic, and severely icteric specimens.
Remarks:	
Stability:	After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)
Methodology:	Qualitative Immunoblot
Performed:	Sun-Sat
Reported:	1-42 days
Note:	This test should be used for confirmation of an equivocal or positive B. burgdorferi Total Antibodies, IgG and/or IgM test performed on patients greater than 4 weeks after disease onset. A negative result indicates that the immunoblot evaluation for the Lyme antibody demonstrates no antibodies unique to B. burgdorferi and is, therefore, not supportive of Lyme disease. A positive result indicates that the immunoblot evaluation for B. burgdorferi antibody is consistent with the presence of antibody produced by patients in response to infection by B. burgdorferi and suggests the presence of Lyme disease. Although the test has been shown to have a high degree of reliability for diagnostic purposes, laboratory data should always be correlated with clinical findings. Current CDC recommendations for the serological diagnosis of Lyme disease are to screen with a polyvalent ELISA test and confirm equivocals and positives with immunoblot. Both IgM and IgG immunoblots should be performed on samples obtained less than 4 weeks after appearance of erythema migrans. Only IgG immunoblot is to be performed on samples greater than 4

	weeks after disease onset. IgM immunoblot in the chronic stage is not recommended and does not aid in the diagnosis of neuroborreliosis or chronic Lyme disease.
CPT Codes:	86617
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

For this assay, a positive result is reported when any 5 or more of the following 10 bands are present: 18, 23, 28, 30, 39, 41, 45, 58, 66, or 93 kDa. All other banding patterns are reported as negative.

Reference Interval:

Negative

TEST CHANGE

Rickettsia rickettsii (Rocky Mountain Spotted Fever) Antibody, IgG

0050369, RMSF G

Specimen Requirements:	
Patient Preparation:	
Collect:	Serum Separator Tube (SST).
Specimen Preparation:	Separate from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP standard transport tube. ~~Standard Transport Tube.~~ (Min: 0.4~~3~~ mL) Parallel testing is preferred and convalescent specimens must be received within 30 days from receipt of the acute specimens.
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Contaminated, hemolyzed, or severely lipemic specimens.
Remarks:	Mark specimens plainly as "acute" or "convalescent."
Stability:	After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)
Methodology:	Semi-Quantitative Indirect Fluorescent Antibody (IFA)
Performed:	Sun-Sat
Reported:	1-3 days
Note:	
CPT Codes:	86757
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

Antibody reactivity to *Rickettsia rickettsii* antigen should be considered Spotted Fever group reactive. Other organisms within the group include *R. akari, R. conorrii, R. australis*, and *R. sibirica.*

Seroconversion, a fourfold or greater rise in antibody titer, between acute and convalescent sera is considered strong evidence of recent infection. Acute-phase specimens are collected during the first week of illness and convalescent-phase samples are generally obtained 2-4 weeks after resolution of illness. Ideally these samples should be tested simultaneously at the same facility. If the sample submitted was collected during the acute-phase of illness, submit a marked convalescent sample within 25 days for paired testing.

Reference Interval:

Less than 1:64	Negative - No significant level of IgG antibody detected.
1:64 - 1:128	Low Positive - Presence of IgG antibody detected, suggestive of current or past infection.
1:256 or greater	Positive - Presence of IgG antibody suggestive of recent or current infection.

TEST CHANGE

Rickettsia rickettsii (Rocky Mountain Spotted Fever) Antibodies, IgG & IgM by IFA

0050371, RMSF G/M

Specimen Requirements:	
Patient Preparation:	
Collect:	Serum Separator Tube (SST).
Specimen Preparation:	Separate from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP standard transport tube. ~~Standard Transport Tube.~~ (Min: 0.4~~3~~ mL) Parallel testing is preferred and convalescent specimens must be received within 30 days from receipt of the acute specimens.
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Contaminated, hemolyzed, or severely lipemic specimens.
Remarks:	Mark specimens plainly as "acute" or "convalescent."
Stability:	After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)
Methodology:	Semi-Quantitative Indirect Fluorescent Antibody (IFA)
Performed:	Sun-Sat
Reported:	1-3 days
Note:	
CPT Codes:	86757 x2
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

Component	Interpretation
Rickettsia rickettsii (Rocky Mountain Spotted Fever) Antibody, IgG	Less than 1:64 Negative - No significant level of IgG antibody detected. 1:64 - 1:128 Low Positive - Presence of IgG antibody detected, suggestive of current or past

	infection. 1:256 or greater Positive - Presence of IgG antibody suggestive of recent or current infection.	
Rickettsia rickettsii (Rocky Mountain Spotted Fever) Antibody, IgM	Less than 1:64 Negative - No significant level of IgM antibody detected. 1:64 or greater Positive - Presence of IgM antibody detected, which may indicate a current or recent infection; however, low levels of IgM antibodies may occasionally persist for more than 12 months post-infection.	

Reference Interval:

Test Number	Components	Reference Interval
	Rocky Mt Spotted Fever IgG	Less than 1:64
	Rocky Mt Spotted Fever IgM	Less than 1:64

TEST CHANGE

Rickettsia rickettsii (Rocky Mountain Spotted Fever) Antibody, IgM

0050372, RMSF M

Specimen Requirements:	
Patient Preparation:	
Collect:	Serum Separator Tube (SST).
Specimen Preparation:	Separate from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP standard transport tube. ~~Standard Transport Tube.~~ (Min: 0.4~~3~~ mL) Parallel testing is preferred and convalescent specimens must be received within 30 days from receipt of the acute specimens.
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Contaminated, hemolyzed, or severely lipemic specimens.
Remarks:	Mark specimens plainly as "acute" or "convalescent."
Stability:	After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)
Methodology:	Semi-Quantitative Indirect Fluorescent Antibody (IFA)
Performed:	Sun-Sat
Reported:	1-3 days
Note:	
CPT Codes:	86757
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

The CDC does not use IgM results for routine diagnostic testing of Rocky Mountain Spotted Fever, as the response may not be specific for the agent (resulting in false positives) and the IgM response may be persistent from past infection.

Antibody reactivity to *Rickettsia rickettsii* antigen should be considered Spotted Fever group reactive. Other organisms within the group include *R. akari, R. conorrii, R. australis*, and *R. sibirica.*

Seroconversion, a fourfold or greater rise in antibody titer, between acute and convalescent sera is considered strong evidence of recent infection. Acute-phase specimens are collected during the first week of illness and convalescent-phase samples are generally obtained 2-4 weeks after resolution of illness. Ideally these samples should be tested simultaneously at the same facility. If

the sample submitted was collected during the acute-phase of illness, submit a marked convalescent sample within 25 days for paired testing.

Reference Interval:

Less than 1:64	Negative - No significant level of IgM antibody detected.
1:64 or greater	Positive - Presence of IgM antibody detected, which may indicate a current or recent infection; however, low levels of IgM antibodies may occasionally persist for more than 12 months post-infection.

TEST CHANGE

Rickettsia typhi (Typhus Fever) Antibody, IgG by IFA

0050381, TYPHU G

Specimen Requirements:	
Patient Preparation:	
Collect:	Serum Separator Tube (SST).
Specimen Preparation:	Separate from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP standard transport tube. ~~Standard Transport Tube.~~ (Min: 0.4~~3~~ mL) Parallel testing is preferred and convalescent specimens must be received within 30 days from receipt of the acute specimens.
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Contaminated, hemolyzed, or severely lipemic specimens.
Remarks:	Mark specimens plainly as "acute" or "convalescent."
Stability:	After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)
Methodology:	Semi-Quantitative Indirect Fluorescent Antibody (IFA)
Performed:	Sun-Sat
Reported:	1-3 days
Note:	
CPT Codes:	86757
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

Antibody reactivity to *Rickettsia typhi* antigen should be considered group-reactive for the Typhus Fever group, which includes *Rickettsia prowazekii*.

Seroconversion between acute and convalescent sera is considered strong evidence of recent infection. The best evidence for infection is a significant change (fourfold difference in titer) on two appropriately timed specimens, where both tests are done in the same laboratory at the same time. Acute-phase specimens are collected during the first week of illness and convalescent-phase samples are generally obtained 2-4 weeks after resolution of illness. Ideally these samples should be tested simultaneously at the same facility. If the sample submitted was collected during the acute phase of illness, submit a marked convalescent sample within 25 days for paired testing.

Reference Interval:

Less than 1:64	Negative - No significant level of IgG antibody detected.
1:64-1:128	Equivocal - Questionable presence of IgG antibody detected. Repeat testing in 10-14 days may be helpful.
1:256 or greater	Positive - Presence of IgG antibody detected, suggestive of current or past infection.

TEST CHANGE

Rickettsia typhi (Typhus Fever) Antibody, IgM by IFA

0050383, TYPHU M

Specimen Requirements:	
Patient Preparation:	
Collect:	Serum Separator Tube (SST).
Specimen Preparation:	Separate from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP standard transport tube. ~~Standard Transport Tube.~~ (Min: 0.4~~3~~ mL) Parallel testing is preferred and convalescent specimens must be received within 30 days from receipt of the acute specimens.
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Contaminated, hemolyzed, or severely lipemic, specimens.
Remarks:	Mark specimens plainly as "acute" or "convalescent."
Stability:	After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)
Methodology:	Semi-Quantitative Indirect Fluorescent Antibody (IFA)
Performed:	Sun-Sat
Reported:	1-3 days
Note:	
CPT Codes:	86757
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

Antibody reactivity to *Rickettsia typhi* antigen should be considered group-reactive for the Typhus Fever group, which includes *Rickettsia prowazekii*.

Seroconversion between acute and convalescent sera is considered strong evidence of recent infection. The best evidence for infection is a significant change (fourfold difference in titer) on two appropriately timed specimens, where both tests are done in the same laboratory at the same time. Acute-phase specimens are collected during the first week of illness and convalescent-phase samples are generally obtained 2-4 weeks after resolution of illness. Ideally these samples should be tested simultaneously at the same facility. If the sample submitted was collected during the acute-phase of illness, submit a marked convalescent sample within 25 days for paired testing.

Reference Interval:

Less than 1:64	Negative - No significant level of IgM antibody detected.
1:64 or greater	Positive - Presence of IgM antibody to detected, which may indicate a current or recent infection; however, low levels of IgM antibodies may occasionally persist for more than 12 months post-infection.

TEST CHANGE

Rickettsia typhi (Typhus Fever) Antibodies, IgG & IgM by IFA

0050384, TYPHU G/M

Specimen Requirements:	
Patient Preparation:	
Collect:	Serum Separator Tube (SST).
Specimen Preparation:	Separate from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP standard transport tube. ~~Standard Transport Tube.~~ (Min: 0.4~~3~~ mL) Parallel testing is preferred and convalescent specimens must be received within 30 days from receipt of the acute specimens.
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Contaminated, hemolyzed, or severely lipemic specimens.
Remarks:	Mark specimens plainly as "acute" or "convalescent."
Stability:	After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)
Methodology:	Semi-Quantitative Indirect Fluorescent Antibody (IFA)
Performed:	Sun-Sat
Reported:	1-3 days
Note:	
CPT Codes:	86757 x2
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

Component	Interpretation
Rickettsia typhi (Typhus Fever) Antibody, IgG by IFA	Less than 1:64 Negative - No significant level of IgG antibody detected. 1:64-1:128 Equivocal - Questionable presence of IgG antibody detected. Repeat testing in 10-14 days may be

	helpful. 1:256 or greater Positive - Presence of IgG antibody detected, suggestive of current or past infection	
Rickettsia typhi (Typhus Fever) Antibody, IgM by IFA	Less than 1:64 Negative - No significant level of IgM antibody detected. 1:64 or greater Positive - Presence of IgM antibody to detected, which may indicate a current or recent infection; however, low levels of IgM antibodies may occasionally persist for more than 12 months post-infection.	

Reference Interval:

Test Number	Components	Reference Interval		
	Typhus Fever Antibody, IgG	Less than 1:64		
	Typhus Fever Antibody, IgG			
		Component Result	Intrepretation	
		Rickettsia rickettsii (Rocky Mountain Spotted Fever) Antibody, IgG	Less than 1:64 Negative - No significant level of IgG antibody detected. 1:64 - 1:128 Low Positive - Presence of IgG antibody detected, suggestive of current or past infection. 1:256 or greater Positive - Presence of IgG antibody suggestive of recent or current infection.	
	Typhus Fever Antibody, IgM	Less than 1:64		
	Typhus Fever Antibody, IgM			

		Component result	Interpretation	
		Rickettsia rickettsii (Rocky Mountain Spotted Fever) Antibody, IgM	Less than 1:64 Negative - No significant level of IgM antibody detected. 1:64 or greater Positive - Presence of IgM antibody detected, which may indicate a current or recent infection; however, low levels of IgM antibodies may occasionally persist for more than 12 months post-infection.	

TEST CHANGE

Rapid Plasma Reagin (RPR) with Reflex to Titer

0050471, RPRT

Specimen Requirements:	
Patient Preparation:	
Collect:	Serum separator tube.
Specimen Preparation:	Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP standard transport tube.~~Standard Transport Tube.~~ (Min: 0.54 mL) Avoid freezing if possible.
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Plasma, CSF, or other body fluids.
Remarks:	
Stability:	After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)
Methodology:	Semi-Quantitative Particle~~Charcoal~~ Agglutination
Performed:	Sun-Sat
Reported:	Within 24 hours
Note:	If RPR is reactive, then a titer will be added. Additional charges apply.
CPT Codes:	86592; if reflexed, add 86593
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

Component	Interpretation
Rapid Plasma Reagin (RPR)	RPR (+) = Reactive RPR (-) = Nonreactive

Reference Interval:

Test Number	Components	Reference Interval
	Rapid Plasma Reagin (RPR)	Non Reactive
	Rapid Plasma Reagin (RPR)	
		Component Result: Rapid Plasma Reagin (RPR) — Interpretation: RPR (+) = Reactive RPR (-) = Nonreactive

TEST CHANGE

Treponema pallidum Antibody, IgG by IFA (FTA-ABS), Serum

0050477, FTA

Specimen Requirements:	
Patient Preparation:	
Collect:	Serum separator tube.
Specimen Preparation:	Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP standard transport tube. ~~Standard Transport Tube.~~ (Min: 0.42 ~~2~~ mL)
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	CSF, plasma, or other body fluids. Contaminated, hemolyzed, or severely lipemic specimens.
Remarks:	
Stability:	After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)
Methodology:	Semi-Quantitative Indirect Fluorescent Antibody (IFA)
Performed:	Sun-Sat
Reported:	1-3 days
Note:	The Fluorescent Treponema Antibody (FTA) is recommended for follow-up of reactive nontreponemal tests for syphilis, and as a single test in patients suspected of late syphilis. The FTA may be used to resolve discrepancies between laboratory results and clinical impressions. FTA tests for syphilis may be falsely positive in some cases of systemic lupus erythematosus, pregnancy, and leprosy. Can be used to provide additional evidence of neurosyphilis when VDRL-CSF test results are reactive.
CPT Codes:	86780
New York DOH Approval Status:	This test is New York DOH approved.
Interpretive Data:	
Reference Interval:	
Nonreactive	

TEST CHANGE

Rapid Plasma Reagin (RPR) with Reflex to Titer and TP-PA Confirmation

0050478, RPR PAN

Specimen Requirements:	
Patient Preparation:	
Collect:	Serum Separator Tube
Specimen Preparation:	Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP standard transport tube. ~~Standard Transport Tube.~~ (Min: 0.5~~4~~ mL) Avoid freezing if possible.
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Plasma, CSF, or other body fluids.
Remarks:	
Stability:	After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)
Methodology:	~~Semi-Quantitative Charcoal Agglutination/~~Semi-Quantitative Particle Agglutination
Performed:	Sun-Sat
Reported:	1-4 days
Note:	This panel is for clients in states where automatic confirmation using a treponemal test is required for all reactive RPR tests. If RPR is reactive, then a titer to endpoint and TP-PA confirmation will be added. Additional charges apply.
CPT Codes:	86592; if reflexed, add 86593; 86780
New York DOH Approval Status:	This test is New York DOH approved.
Interpretive Data:	
Reference Interval:	

Test Number	Components	Reference Interval
	Rapid Plasma Reagin (RPR)	Non Reactive
	Rapid Plasma Reagin (RPR)	
		Component Result: Rapid Plasma Reagin (RPR); Interpretation: RPR (+) = Reactive RPR (-) = Nonreactive
	Rapid Plasma Reagin (RPR) Titer	< 1:1
	Treponema pallidum Ab by TP-PA Reflex	Nonreactive

TEST CHANGE

Coccidioides Antibodies Panel, Serum

0050588, COCCI PAN

Specimen Requirements:	
Patient Preparation:	
Collect:	Serum Separator Tube (SST).
Specimen Preparation:	Separate from cells ASAP or within 2 hours of collection. Transfer 2 mL serum to an ARUP standard transport tube. ~~Standard Transport Tube.~~ (Min: 1.2~~0.6~~ mL) Parallel testing is preferred and convalescent specimens must be received within 30 days from receipt of the acute specimens.
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Other body fluids. Contaminated, hemolyzed, icteric, or lipemic specimens.
Remarks:	Mark specimens plainly as "acute" or "convalescent."
Stability:	Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)
Methodology:	Semi-Quantitative Complement Fixation/Qualitative Immunodiffusion /Semi-Quantitative ~~/~~Enzyme-Linked Immunosorbent Assay (ELISA)
Performed:	Sun-Sat
Reported:	3-6 days
Note:	The immunodiffusion component of this test uses culture filtrates of Coccidioides immitis and includes CF and TP antigens.
CPT Codes:	86635 x4
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

Component	Interpretation
Coccidioides Antibodies, IgG by Immunoassay, Serum	0.9 IV or less Negative - No significant level of Coccidioides IgG antibody

	detected. 1.0-1.4 IV Equivocal - Questionable presence of Coccidioides IgG antibody detected. Repeat testing in 10-14 days may be helpful. 1.5 IV or greater Positive - Presence of IgG antibody to Coccidioides detected, suggestive of current or past infection.
Coccidioides Antibodies, IgM by Immunoassay, Serum	0.9 IV or less Negative - No significant level of Coccidioides IgM antibody detected. 1.0-1.4 IV Equivocal - Questionable presence of Coccidioides IgM antibody detected. Repeat testing in 10-14 days may be helpful. 1.5 IV or greater Positive - Presence of IgM antibody to Coccidioides detected, suggestive of current or recent infection.

Reference Interval:

Test Number	Components	Reference Interval
	Coccidioides Antibody by CF	Less than 1:2
	Coccidioides by Immunodiffusion, Serum	Not detected.
	Coccidioides Antibody, IgG by ELISA	0.9 IV or less
	Coccidioides Antibody, IgM by ELISA	0.9 IV or less

TEST CHANGE

Histoplasma Antibodies by Complement Fixation and Immunodiffusion

0050627, HISTO PAN

Specimen Requirements:	
Patient Preparation:	
Collect:	Serum separator tube.
Specimen Preparation:	Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP standard transport tube. ~~Standard Transport Tube.~~ (Min: 0.8~~5~~ mL) Parallel testing is preferred and convalescent specimens must be received within 30 days from receipt of the acute specimens. Mark specimens plainly as "acute" or "convalescent."
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Contaminated, hemolyzed, or severely lipemic specimens.
Remarks:	
Stability:	After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)
Methodology:	Semi-Quantitative Complement Fixation/Qualitative Immunodiffusion
Performed:	Sun-Sat
Reported:	3-6 days
Note:	The immunodiffusion component of this test detects total antibodies against the H and M antigens of Histoplasma capsulatum. The complement fixation component of this test detects total antibodies to mycelial and yeast antigens of Histoplasma.
CPT Codes:	86698 x3
New York DOH Approval Status:	This test is New York DOH approved.
Interpretive Data:	
Refer to report.	
Reference Interval:	

Test Number	Components	Reference Interval
	Histoplasma Antibodies by ID	Not detected.
	Histoplasma Mycelia Antibodies by CF	Less than 1:8
	Histoplasma Yeast Antibodies by CF	Less than 1:8

TEST CHANGE

Treponema pallidum Antibody by TP-PA

0050777, MHA

Specimen Requirements:	
Patient Preparation:	
Collect:	Serum separator tube or plasma separator tube.
Specimen Preparation:	Separate serum or plasma from cells ASAP or within 2 hours of collection. Transfer 1 mL serum or plasma to an ARUP standard transport tube.~~Standard Transport Tube.~~ (Min: 0.4~~1~~ mL)
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	CSF or other body fluids.
Remarks:	
Stability:	After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)
Methodology:	Qualitative~~Semi-Quantitative~~ Particle Agglutination
Performed:	Mon-Fri
Reported:	1-4 days
Note:	TP-PA is a helpful diagnostic aid for the patient with a reactive reagin test, but presents with atypical signs of primary, secondary, or late syphilis. TP-PA compares favorably with the FTA test, but appears slightly less sensitive in cases of untreated early primary syphilis. In late syphilis, the agreement with FTA is 99%. VDRL is the preferred test for cerebrospinal fluid. Treponemal tests (TP-PA or FTA) are not recommended for CSF. FTAs on CSF may be tested, but TP-PA cannot be tested on CSF.
CPT Codes:	86780
New York DOH Approval Status:	This test is New York DOH approved.
Interpretive Data:	
Reference Interval:	
Nonreactive	

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Effective Date: May 15, 2023

TEST CHANGE

Ehrlichia chaffeensis Antibodies, IgG & IgM by IFA

0051002, E CHAF ABS

Specimen Requirements:	
Patient Preparation:	
Collect:	Serum Separator Tube.
Specimen Preparation:	Separate from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP standard transport tube.~~Standard Transport Tube.~~ (Min: 0.4~~3~~ mL) Parallel testing is preferred and convalescent specimens must be received within 30 days from receipt of the acute specimens. Mark specimens plainly as acute or convalescent.
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Contaminated, hemolyzed, or severely lipemic specimens.
Remarks:	
Stability:	After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)
Methodology:	Semi-Quantitative Indirect Fluorescent Antibody (IFA)
Performed:	Tue, Fri
Reported:	1-5 days
Note:	Human ehrlichiosis is a tick-borne disease caused by rickettsial-like agents. Two forms, human monocytic ehrlichiosis (HME) and human granulocytic ehrlichiosis (HGE), have been described. HME is often referred to as "spotless" or rashless Rocky Mountain spotted fever, and has been reported in various regions of the United States. The causative agent of HME has been identified as Ehrlichia chaffeensis. Infected individuals produce specific antibodies to Ehrlichia chaffeensis which can be detected by an immunofluorescent antibody (IFA) test.
CPT Codes:	86666 x2
New York DOH Approval Status:	This test is New York DOH approved.
Interpretive Data:	

Inserted Cells

~~This test was developed and its performance characteristics de~~
~~has not been cleared or approved by the US Food and Drug Adn~~
~~performed in a CLIA certified laboratory and is intended for clin~~

Component	Interpretation
Ehrlichia chaffeensis Antibody, IgG by IFA	< 1:64 Negative-No significant level of Ehrlichia chaffeensis IgG antibody detected. 1:64-1:128 Equivocal-Questionable presence of Ehrlichia chaffeensis IgG antibody detected. Repeat testing in 10-14 days may be helpful. {>=}1:256 Positive-Presence of IgG antibody to Ehrlichia chaffeensis detected, suggestive of current or past infection.
Ehrlichia chaffeensis Antibody, IgM by IFA	< 1:16 Negative-No significant level of Ehrlichia chaffeensis IgM antibody detected. {>=} 1:16 Positive-Presence of IgM antibody to Ehrlichia chaffeensis detected, suggestive of current or recent infection.

Reference Interval:

Test Number	Components	Reference Interval
	Ehrlichia chaffeensis Antibody, IgG	Less than 1:64
	Ehrlichia chaffeensis Antibody, IgM	Less than 1:16

TEST CHANGE

Ehrlichia chaffeensis Antibody, IgM by IFA

0051003, E CH M

Specimen Requirements:	
Patient Preparation:	
Collect:	Serum Separator Tube.
Specimen Preparation:	Separate from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP standard transport tube. ~~Standard Transport Tube.~~ (Min: 0.43 mL) Parallel testing is preferred and convalescent specimens must be received within 30 days from receipt of the acute specimens. Mark specimens plainly as acute or convalescent.
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Contaminated, hemolyzed, or severely lipemic specimens.
Remarks:	
Stability:	After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)
Methodology:	Semi-Quantitative Indirect Fluorescent Antibody (IFA)
Performed:	Tue, Fri
Reported:	1-5 days
Note:	Human ehrlichiosis is a tick-borne disease caused by rickettsial-like agents. Two forms, human monocytic ehrlichiosis (HME) and human granulocytic ehrlichiosis (HGE), have been described. HME is often referred to as "spotless" or rashless Rocky Mountain spotted fever, and has been reported in various regions of the United States. The causative agent of HME has been identified as Ehrlichia chaffeensis. Infected individuals produce specific antibodies to Ehrlichia chaffeensis which can be detected by an immunofluorescent antibody (IFA) test.
CPT Codes:	86666
New York DOH Approval Status:	This test is New York DOH approved.
Interpretive Data:	

While the presence of IgM antibodies suggests current or recent infection, low levels of IgM antibodies may occasionally persist for more than 12 months post-infection. A single IgM result should be interpreted with caution.

~~This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the US Food and Drug Administration. This test was performed in a CLIA certified laboratory and is intended for clinical purposes.~~

Reference Interval:

< 1:16 Negative-No significant level of *Ehrlichia chaffeensis* IgM antibody detected.
≥ 1:16 Positive-Presence of IgM antibody to *Ehrlichia chaffeensis* detected, suggestive of current or recent infection.

TEST CHANGE

Ehrlichia chaffeensis Antibody, IgG by IFA

0051004, E CH G

Specimen Requirements:	
Patient Preparation:	
Collect:	Serum Separator Tube.
Specimen Preparation:	Separate from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP standard transport tube. ~~Standard Transport Tube.~~ (Min: 0.4~~3~~ mL) Parallel testing is preferred and convalescent specimens must be received within 30 days from receipt of the acute specimens. Mark specimens plainly as acute or convalescent.
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Contaminated, hemolyzed, or severely lipemic specimens.
Remarks:	
Stability:	After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)
Methodology:	Semi-Quantitative Indirect Fluorescent Antibody (IFA)
Performed:	Tue, Fri
Reported:	1-5 days
Note:	Human ehrlichiosis is a tick-borne disease caused by rickettsial-like agents. Two forms, human monocytic ehrlichiosis (HME) and human granulocytic ehrlichiosis (HGE), have been described. HME is often referred to as "spotless" or rashless Rocky Mountain spotted fever, and has been reported in various regions of the United States. The causative agent of HME has been identified as Ehrlichia chaffeensis. Infected individuals produce specific antibodies to E. chaffeensis, which can be detected by an immunofluorescent antibody (IFA) test.
CPT Codes:	86666
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

Seroconversion between acute and convalescent sera is considered strong evidence of recent infection. The best evidence for infection is a significant change (fourfold difference in titer) on two

appropriately timed specimens, where both tests are done in the same laboratory at the same time.

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Reference Interval:

< 1:64 Negative-No significant level of *Ehrlichia chaffeensis* IgG antibody detected.
1:64-1:128 Equivocal-Questionable presence of *Ehrlichia chaffeensis* IgG antibody detected. Repeat testing in 10-14 days may be helpful.
≥ 1:256 Positive-Presence of IgG antibody to *Ehrlichia chaffeensis* detected, suggestive of current or past infection.

TEST CHANGE

Borrelia burgdorferi Antibody, IgM by Immunoblot (CSF)

0055258, LYMEMWBCSF

Specimen Requirements:	
Patient Preparation:	
Collect:	CSF.
Specimen Preparation:	Transfer 3 mL CSF to an ARUP Standard Transport Tube. (Min: 2 mL)
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Bacterially contaminated, heat-inactivated, hemolyzed, or xanthochromic specimens.
Remarks:	
Stability:	Ambient: 8 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)
Methodology:	Qualitative Immunoblot
Performed:	Sun-Sat
Reported:	1-4~~3~~ days
Note:	A negative result indicates that the immunoblot evaluation for B. burgdorferi antibody demonstrates no antibodies unique to B. burgdorferi and is, therefore, not supportive of Lyme disease. A positive result indicates that the immunoblot evaluation for Lyme antibody is consistent with the presence of antibody produced by patients in response to infection by B. burgdorferi and suggests the presence of Lyme disease. Although the test has been shown to have a high degree of reliability for diagnostic purposes, laboratory data should always be correlated with clinical findings. Current CDC recommendations for the serologic diagnosis of Lyme disease are to screen with a polyvalent EIA test and confirm equivocal and positive with immunoblot. Both IgM and IgG immunoblots should be performed on specimens obtained less than 4 weeks after appearance of erythema migrans. Only IgG immunoblot should be performed on specimens greater than 4 weeks after disease onset. IgM immunoblot in the chronic stage is not recommended and does not aid in the diagnosis of neuroborreliosis or chronic Lyme disease. Please submit requests for appropriate immunoblot testing within 10 days.

CPT Codes:	86617
New York DOH Approval Status:	Specimens from New York clients will be sent out to a New York DOH approved laboratory, if possible.

Interpretive Data:

For this assay, a positive result is reported when any 2 or more of the following bands are present: 23, 39, or 41 kDa. All other banding patterns are reported as negative.

The detection of antibodies to *Borrelia burgdorferi* in cerebrospinal fluid may indicate central nervous system infection. However, consideration must be given to possible contamination by blood or transfer of serum antibodies across the blood-brain barrier.

This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the US Food and Drug Administration. This test was performed in a CLIA certified laboratory and is intended for clinical purposes.

Reference Interval:

Effective August 15, 2011

Negative

TEST CHANGE

Borrelia burgdorferi Antibody, IgG by Immunoblot (CSF)

0055259, LYMEGWBCSF

Specimen Requirements:	
Patient Preparation:	
Collect:	CSF.
Specimen Preparation:	Transfer 3 mL CSF to an ARUP Standard Transport Tube. (Min: 2 mL)
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Bacterially contaminated, heat-inactivated, hemolyzed, or xanthochromic specimens.
Remarks:	
Stability:	Ambient: 8 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)
Methodology:	Qualitative Immunoblot
Performed:	Sun-Sat
Reported:	1-4~~3~~ days
Note:	A negative result indicates that the immunoblot evaluation for B. burgdorferi antibody demonstrates no antibodies unique to B. burgdorferi and is, therefore, not supportive of Lyme disease. A positive result indicates that the immunoblot evaluation for Lyme antibody is consistent with the presence of antibody produced by patients in response to infection by B. burgdorferi and suggests the presence of Lyme disease. Although the test has been shown to have a high degree of reliability for diagnostic purposes, laboratory data should always be correlated with clinical findings. Current CDC recommendations for the serological diagnosis of Lyme disease are to screen with a polyvalent ELISA test and confirm equivocals and positives with immunoblot. Both IgM and IgG immunoblots should be performed on samples obtained less than 4 weeks after appearance of erythema migrans. Only IgG immunoblot is to be performed on samples greater than 4 weeks after disease onset. IgM immunoblot in the chronic stage is not recommended and does not aid in the diagnosis of neuroborreliosis or chronic Lyme disease.

CPT Codes:	86617
New York DOH Approval Status:	Specimens from New York clients will be sent out to a New York DOH approved laboratory, if possible.

Interpretive Data:

For this assay, a positive result is reported when any 5 or more of the following 10 bands are present: 18, 23, 28, 30, 39, 41, 45, 58, 66, or 93 kDa. All other banding patterns are reported as negative.

The detection of antibodies to *Borrelia burgdorferi* in cerebrospinal fluid may indicate central nervous system infection. However, consideration must be given to possible contamination by blood or transfer of serum antibodies across the blood-brain barrier.

This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the US Food and Drug Administration. This test was performed in a CLIA certified laboratory and is intended for clinical purposes.

Reference Interval:

Effective August 15, 2011

Negative

TEST CHANGE

Borrelia burgdorferi Antibodies, IgG and IgM by Immunoblot (CSF)

0055260, LYME WBCSF

Specimen Requirements:	
Patient Preparation:	
Collect:	CSF.
Specimen Preparation:	Transfer 3 mL CSF to an ARUP Standard Transport Tube. (Min: 2 mL)
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Bacterially contaminated, heat-inactivated, hemolyzed, or xanthochromic specimens.
Remarks:	
Stability:	Ambient: 8 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)
Methodology:	Qualitative Immunoblot
Performed:	Sun-Sat
Reported:	1-4~~3~~ days
Note:	A negative result indicates that the immunoblot evaluation for B. burgdorferi antibody demonstrates no antibodies unique to B. burgdorferi and is, therefore not supportive of Lyme disease. A positive result indicates that the immunoblot evaluation for Lyme antibody is consistent with the presence of antibody produced by patients in response to infection by B. burgdorferi and suggests the presence of Lyme disease. Although the test has been shown to have a high degree of reliability for diagnostic purposes, laboratory data should always be correlated with clinical findings. Current CDC recommendations for the serological diagnosis of Lyme disease are to screen with a polyvalent ELISA test and confirm equivocals and positives with immunoblot. Both IgM and IgG immunoblots should be performed on samples obtained less than 4 weeks after appearance of erythema migrans. Only IgG immunoblot is to be performed on samples greater than 4 weeks after disease onset. IgM immunoblot in the chronic stage is not recommended and does not aid in the diagnosis of neuroborreliosis or chronic Lyme disease.

CPT Codes:	86617 x2
New York DOH Approval Status:	Specimens from New York clients will be sent out to a New York DOH approved laboratory, if possible.

Interpretive Data:

IgG: For this assay, a positive result is reported when any 5 or more of the following 10 bands are present: 18, 23, 28, 30, 39, 41, 45, 58, 66, or 93 kDa. All other banding patterns are reported as negative.

IgM: For this assay, a positive result is reported when any 2 or more of the following bands are present: 23, 39, or 41 kDa. All other banding patterns are reported as negative.

The detection of antibodies to *Borrelia burgdorferi* in cerebrospinal fluid may indicate central nervous system infection. However, consideration must be given to possible contamination by blood or transfer of serum antibodies across the blood-brain barrier.

This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the US Food and Drug Administration. This test was performed in a CLIA certified laboratory and is intended for clinical purposes.

Reference Interval:

Effective August 15, 2011

Negative

TEST CHANGE

Cryptosporidium and Coccidia Exam, Fecal

0060046, PARAST

Specimen Requirements:	
Patient Preparation:	
Collect:	Stool. Due to the various shedding cycles of many parasites, three separate stool specimens collected over a 5-7 day period are recommended.
Specimen Preparation:	Preserve 2 g of stool within one hour of collection in AlcorFix (ARUP Supply #52059) available online through eSupply using ARUP Connect(TM) or contact ARUP Client Services at ~~(~~800~~-)~~ 522-2787. (Min: 1 g) Additional specimen collection instructions can be found at https://www.aruplab.com/parasep. Preserving in 10 percent formalin is also acceptable.
Transport Temperature:	Room temperature.
Unacceptable Conditions:	Specimens other than stool or unpreserved stool.
Remarks:	
Stability:	Ambient: 9 months; Refrigerated: 9 months; Frozen: Unacceptable
Methodology:	Qualitative Concentration/Stain/Microscopy
Performed:	Mon-Fri~~Sun-Sat~~
Reported:	1-3~~2~~ days
Note:	Cryptosporidium antigen detection by EIA is also available for stool samples only. Refer to Cryptosporidium Antigen by EIA (0060045). Nucleic Acid Amplification Testing (NAAT) for Cryptosporidium and Cyclospora is also available.
CPT Codes:	87177; 87207
New York DOH Approval Status:	This test is New York DOH approved.
Interpretive Data:	
Refer to report.	
Reference Interval:	

Negative

TEST CHANGE

E. coli Shiga-like Toxin by EIA

0060047, ECSLT AG

Specimen Requirements:	
Patient Preparation:	
Collect:	Stool ~~Stool. OR actively growing isolate of E. coli, in pure culture.~~
Specimen Preparation:	~~Stool:~~ Place 5 mL stool in enteric transport media (Cary-Blair) (ARUP Supply #29799) immediately after collection. Available online through eSupply using ARUP Connect(TM) or contact ARUP Client Services at 800-522-2787. (Min: 1 mL) ~~(800) 522-2787. (Min: 1 mL) E. coli Isolate: Transport sealed container with pure culture on agar slant or on a swab in bacterial transport media. Place each specimen in an individually sealed bag.~~
Transport Temperature:	Stool: Refrigerated. ~~E. coli Isolate: Room temperature.~~
Unacceptable Conditions:	Specimens ~~or isolates from sources~~ other than stool.
Remarks:	
Stability:	Stool in enteric transport media~~Transport Media~~: Ambient: 1 hour; Refrigerated: 72 hours; Frozen: 1 week ~~E. coli Isolate: Ambient: 1 week; Refrigerated: 1 week; Frozen: Unacceptable~~
Methodology:	Qualitative Enzyme-Linked Immunosorbent Assay (ELISA) ~~Immunoassay~~
Performed:	Sun-Sat
Reported:	1-2 days
Note:	This test will identify the presence of E. coli Shiga-like toxin, however it cannot determine specific of strains of E. coli. (e.g., E. coli O157:H7)
CPT Codes:	87427
New York DOH Approval Status:	This test is New York DOH approved.
Interpretive Data:	
By report.	
Reference Interval:	

Negative

TEST CHANGE

Microsporidia Stain by Modified Trichrome

0060050, MICROST

Specimen Requirements:	
Patient Preparation:	
Collect:	Stool. Recommended collection: 3 separate stool specimens within a 5-7-day period (an individual order must be submitted for each specimen).
Specimen Preparation:	Preserve 2 g of stool within one hour of collection in AlcorFix (ARUP Supply #52059) available online through eSupply using ARUP Connect(TM) contact ARUP Client Services at ~~(~~800-~~)~~ 522-2787. (Min: 1 g) Additional specimen collection instructions can be found at https://www.aruplab.com/parasep. Preserving in 10 percent formalin is also acceptable.
Transport Temperature:	Room temperature.
Unacceptable Conditions:	Unpreserved stool or specimens in any other preservative than indicated above.
Remarks:	
Stability:	Ambient: 9 months; Refrigerated: 9 months; Frozen: Unacceptable
Methodology:	Qualitative Stain
Performed:	Mon-Fri~~Sun-Sat~~
Reported:	1-3~~2~~ days
Note:	
CPT Codes:	87207; 87015
New York DOH Approval Status:	This test is New York DOH approved.
Interpretive Data:	
Refer to report.	
Reference Interval:	
Negative	

TEST CHANGE

Bordetella pertussis Culture

0060117, MC PERT

Specimen Requirements:	
Patient Preparation:	
Collect:	Nasal aspirate or ~~washing or~~ nasopharyngeal swab.
Specimen Preparation:	Aspirate~~ or Washing~~: Transfer to a sterile container. (~~(~~Min: 0.5 mL). Nasopharyngeal s~~S~~wab: Place swab in Regan-Lowe transport media and incubate for 24-48 hours at 35 (Degree)~~s~~ C (ARUP supply# 24962). Available online through eSupply using ARUP Connect(TM) or contact ARUP Client Services at ~~(~~800-~~)~~ 522-2787. Also acceptable: Swab in Jones Kendrick media or Amies with charcoal media, or swabs in described media sent directly without incubation.
Transport Temperature:	Room temperature or refrigerated.
Unacceptable Conditions:	Sputum, Eswabs, or medias other than listed above.
Remarks:	Specimen source preferred.
Stability:	Incubated Regan-Lowe: Ambient: 4 days; Refrigerated: 4 days; Frozen: Unacceptable Unincubated Regan-Lowe, Amie with charcoal swab, Aspirate~~ or Washing~~: Ambient: 48 hours; Refrigerated: 48 hours; Frozen: Unacceptable
Methodology:	Culture~~/Identification~~
Performed:	Sun-Sat
Reported:	1-8 days
Note:	Bordetella pertussis and Bordetella parapertussis detection by PCR also available (0065080).
CPT Codes:	87081; Identification CPT codes may vary based on method
New York DOH Approval Status:	This test is New York DOH approved.
Interpretive Data:	

Reference Interval:

Culture negative for *Bordetella pertussis*.

TEST CHANGE

Unusual Organism Culture

0060714, MC UORG

Specimen Requirements:	
Patient Preparation:	
Collect:	Please contact Bacteriology (801) 583-2787 at extension 2350 for specimen collection and transport instructions.
Specimen Preparation:	
Transport Temperature:	Please contact Bacteriology (801) 583-2787 at extension 2350 for specimen collection and transport instructions.
Unacceptable Conditions:	
Remarks:	
Stability:	
Methodology:	Culture
Performed:	Sun-Sat
Reported:	Varies
Note:	Specify suspected organism with submission. This culture is for unusual organism requests, such as Streptobacillus moniliformis, ~~Haemophilus ducreyii,~~ Neisseria gonorrhoeae, etc.~~,~~ for which there is no stand-alone culture. For Helicobacter pylori, refer to Helicobacter pylori Culture (ARUP test code 2006686). For Haemophilus ducreyi, refer to Genital Ulcer Disease Panel by PCR (ARUP test code 3005674). Identification and susceptibility tests are billed separately from culture.
CPT Codes:	87070; Identification CPT codes may vary based on method.
New York DOH Approval Status:	This test is New York DOH approved.
Interpretive Data:	
Reference Interval:	
By report.	

TEST CHANGE

Chlamydia Antibody Panel, IgG & IgM by IFA

0065100, V CHLM PAN

Specimen Requirements:	
Patient Preparation:	
Collect:	Plain red or 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. ~~Standard Transport Tube.~~ (Min: 0.4~~15~~ mL) Parallel testing is preferred and convalescent specimens must be received within 30 days from receipt of acute specimens. Mark specimens plainly as "acute" or "convalescent."
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Contaminated, hemolyzed, or hyperlipemic sera.
Remarks:	
Stability:	After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)
Methodology:	Semi-Quantitative Indirect Fluorescent Antibody (IFA)
Performed:	Sun-Fri
Reported:	1-4 days
Note:	
CPT Codes:	86631 x3; 86632 x3
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

Refer to individual components. ~~Refer to individual components.~~

~~This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the US Food and Drug Administration. This test was performed in a CLIA certified laboratory and is intended for clinical purposes.~~

Reference Interval:

< 1:64 *C. pneumoniae* IgG.
< 1:64 *C. psittaci* IgG.
< 1:64 *C. trachomatis* IgG.
< 1:20 *C. pneumoniae* IgM.

< 1:20 *C. psittaci* IgM.
< 1:20 *C. trachomatis* IgM.

TEST CHANGE

Chlamydia Antibody Panel, IgM by IFA

0065105, V CHLAM M

Specimen Requirements:	
Patient Preparation:	
Collect:	Plain red or 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. ~~Standard Transport Tube.~~ (Min: 0.4~~15~~ mL) Parallel testing is preferred and convalescent specimens must be received within 30 days from receipt of the acute specimens. Mark specimens plainly as "acute" or "convalescent."
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Contaminated, hemolyzed, or hyperlipemic sera.
Remarks:	
Stability:	After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)
Methodology:	Semi-Quantitative Indirect Fluorescent Antibody (IFA)
Performed:	Mon-Sat
Reported:	1-4 days
Note:	
CPT Codes:	86632 x3
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

The *Chlamydia* antibody test contains both species- and genus-specific antigens, and serological cross-reactions may be seen in both acute and convalescent samples (less than 1:128). A *C. pneumoniae*-specific reaction will exhibit titers twofold or greater than titers observed with *C. trachomatis* or *C. psittaci* serology. Ideally, acute and convalescent samples should be tested simultaneously at the same facility. If the sample submitted was collected during the acute-phase of illness, submit a marked convalescent sample within 25 days for paired testing. Seroconversion, a fourfold or greater rise in antibody titer between acute and convalescent sera, is considered strong evidence of recent infection.

The *Chlamydia* microimmunofluorescent assay utilizes *C. psittaci*, *C. pneumoniae*, and nine serotypes of *C. trachomatis*. It does not include the LGV strains of *C. trachomatis*.

~~This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the US Food and Drug Administration. This test was performed in a CLIA certified laboratory and is intended for clinical purposes.~~

Reference Interval:

< 1:20 *C. trachomatis* IgM.
< 1:20 *C. pneumoniae* IgM.
< 1:20 *C. psittaci* IgM.

TEST CHANGE

Chlamydia Antibody Panel, IgG by IFA

0065139, CHLAM G

Specimen Requirements:	
Patient Preparation:	
Collect:	Plain red or serum separator tube.
Specimen Preparation:	Separate serum from cells ASAP or within 2 hours of collection. Transfer1 mL serum to an ARUP standard transport tube. ~~Standard Transport Tube.~~ (Min: 0.4~~15~~ mL) Parallel testing is preferred and convalescent specimens must be received within 30 days from receipt of the acute specimens. Mark specimens plainly as "acute" or "convalescent."
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Contaminated, hemolyzed, or hyperlipemic sera.
Remarks:	
Stability:	After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)
Methodology:	Semi-Quantitative Indirect Fluorescent Antibody (IFA)
Performed:	Mon-Sat
Reported:	1-3 days
Note:	In adult populations, the prevalence of antibody titers indicative of exposure to the organism ranges from 50-78%.
CPT Codes:	86631 x3
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

The *Chlamydia* antibody test contains both species- and genus-specific antigens, and serological cross-reactions may be seen in both acute and convalescent samples (less than 1:128). A *C. pneumoniae*-specific reaction will exhibit titers twofold or greater than titers observed with *C. trachomatis* or *C. psittaci* serology. Any IgG titer may indicate past exposure to that particular species. IgG titers in recently infected individuals are typically greater than or equal to 1:512.

The *Chlamydia* microimmunofluorescent assay slides utilize *C. psittaci, C. pneumoniae*, and nine serotypes of *C. trachomatis*. The LGV strains of *C. trachomatis* are not included in this assay.

~~This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the US Food and Drug Administration. This test was performed in a CLIA certified laboratory and is intended for clinical purposes.~~

Reference Interval:

< 1:64 *C. trachomatis* IgG.
< 1:64 *C. pneumoniae* IgG.
< 1:64 *C. psittaci* IgG.

TEST CHANGE

N-Telopeptide, Cross-Linked, Urine

0070062, NTX

Specimen Requirements:	
Patient Preparation:	For monitoring therapy, a baseline specimen should be collected prior to initiation of therapy. Subsequent specimens for comparison should be collected at the same time of day as the baseline specimen.
Collect:	Second-morning void or 24-hour urine. Refrigerate during collection. Collect without preservative.
Specimen Preparation:	Transfer a 1 mL aliquot of urine from a well-mixed, second-morning void or 24-hour collection to an ARUP Standard Transport Tube. (Min: 0.5 mL)
Transport Temperature:	Frozen.
Unacceptable Conditions:	Specimens contaminated with blood or extensive hemolysis.
Remarks:	
Stability:	Ambient: 24 hours; Refrigerated: 1 week; Frozen: 4 weeks~~2 years~~
Methodology:	Quantitative Chemiluminescent Immunoassay
Performed:	Tue-Sat
Reported:	1-4 days
Note:	
CPT Codes:	82523
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

NTx Units = nM BCE/mM creatinine

A decrease of 30-40% from the NTx baseline after three months of therapy is a typical response to anti-resorptive therapy.

NTx = Cross-linked N-telopeptide of Type I Collagen
BCE = Bone Collagen Equivalent

Reference Interval:

Age	Male	Female
7-9 years	167-578 nM BCE/mM creatinine	201-626 nM BCE/mM creatinine
10-12 years	152-505 nM BCE/mM creatinine	173-728 nM BCE/mM creatinine
13-15 years	103-776 nM BCE/mM creatinine	38-515 nM BCE/mM creatinine
16-17 years	34-313 nM BCE/mM creatinine	20-144 nM BCE/mM creatinine
18 years and older	21-83 nM BCE/mM creatinine	
Premenopausal		17-94 nM BCE/mM creatinine
Postmenopausal		26-124 nM BCE/mM creatinine

TEST CHANGE

Renin Activity

0070105, RENIN

Specimen Requirements:	
Patient Preparation:	Collect midmorning after patient has been sitting, standing, or walking for at least 2 hours and seated for 5-15 minutes. Refer to the Additional Technical Information for specific patient preparation recommendations.
Collect:	Lavender (EDTA) or Pink (K2EDTA). Do not collect in refrigerated tubes.
Specimen Preparation:	Separate from cells ASAP or within 2 hours of collection. Transfer 2 mL plasma to an ARUP Standard Transport Tube and freeze immediately. (Min: 1.2 mL)
Transport Temperature:	CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.
Unacceptable Conditions:	Serum. Specimens collected in citrate, heparin, or oxalate. Hemolyzed specimens.
Remarks:	
Stability:	Ambient: 6 hours; Refrigerated: Unacceptable; Frozen: 1 month
Methodology:	Quantitative Enzyme-Linked Immunosorbent Assay
Performed:	Sun-Sat
Reported:	1-4~~3~~ days
Note:	Refer to the Additional Technical Information for Endocrine Society recommendations for patient preparation, specimen collection, medications for hypertension control during confirmatory testing for primary aldosteronism, and factors that may lead to false-positive or false-negative aldosterone-renin ratio (ARR) results.
CPT Codes:	84244
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

Plasma renin activity measures enzyme ability to convert angiotensinogen to angiotensin I and is limited by the availability of angiotensinogen. Plasma renin activity is not an accurate indicator of

enzyme activity when angiotensinogen is decreased.

This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the US Food and Drug Administration. This test was performed in a CLIA certified laboratory and is intended for clinical purposes.

Reference Interval:

Adult, normal sodium diet	Children, normal sodium diet, supine:	Children, normal sodium diet, upright:
Supine: 0.2-1.6 ng/mL/hr	Newborn (1-7 days): 2.0-35.0 ng/mL/hr	0-3 years: Not Available
Upright: 0.5-4.0 ng/mL/hr	Cord blood: 4.0-32.0 ng/mL/hr	4-5 years: Less than or equal to 15 ng/mL/hr
	1-12 months: 2.4-37.0 ng/mL/hr	6-10 years: Less than or equal to 17 ng/mL/hr
	13 months-3 years:1.7-11.2 ng/mL/hr	11-15 years: Less than or equal to 16 ng/mL/hr
	4-5 years:1.0-6.5 ng/mL/hr	
	6-10 years: 0.5-5.9 ng/mL/hr	
	11-15 years: 0.5-3.3 ng/mL/hr	

TEST CHANGE

Inhibin B

0070413, INHIBINB

Specimen Requirements:	
Patient Preparation:	For premenopausal females, collection is preferred during the follicular phase of the menstrual cycle.
Collect:	Serum separator tube or plain red.
Specimen Preparation:	Transport 0.5 mL serum. (Min: 0.2 mL)
Transport Temperature:	Frozen.
Unacceptable Conditions:	Room temperature specimens. Grossly hemolyzed specimens. Plasma
Remarks:	
Stability:	After separation from cells: Ambient: Unacceptable; Refrigerated: 72 hours; Frozen: 1 month
Methodology:	Quantitative Enzyme-Linked Immunosorbent Assay (ELISA)
Performed:	Wed, Fri
Reported:	1-8 days
Note:	
CPT Codes:	83520
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

This test is performed using the ANSH ultra-sensitive Inhibin B ELISA kit. Values obtained with different methodologies or kits cannot be used interchangeably.

This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the U.S.~~US~~ Food and Drug Administration. This test was performed in a CLIA certified laboratory and is intended for clinical purposes.

Reference Interval:

Effective February 16, 2021

Male	Female
<15 days: 68-373 pg/mL 15 days-6 months:	1 day-12 years: <=~~1~~182 pg/mL 13-41 years

42-516 pg/mL 7 months-7 years: 24-300 pg/mL 8-30 years: 47-383 pg/mL 31-72 years: 10-357 pg/mL	(regular cycle, follicular phase): 8-223 pg/mL 42-51 years (regular cycle, follicular phase): <=1-107 pg/mL 51-76 years (postmenopausal): <=1-11 pg/mL	

TEST CHANGE

Amiodarone and Metabolite

0090161, AMIOD

Specimen Requirements:	
Patient Preparation:	Timing of specimen collection: Predose~~Pre-dose~~ (trough) draw - at steady state concentration.
Collect:	Plain red. Also acceptable: Lavender (K2 or K3EDTA) or pink (K2EDTA).
Specimen Preparation:	Separate serum or plasma from cells ASAP or within 2 hours of collection. Transfer 1 mL serum or plasma to an ARUP standard transport tube. Freeze immediately and protect from light.(~~Standard Transport Tube. (~~Min: 0.5 mL)
Transport Temperature:	Critical Frozen. Additional specimens must be submitted when multiple tests are ordered. ~~Refrigerated.~~
Unacceptable Conditions:	Whole blood. Gel separator tubes, light blue (citrate), or yellow (SPS or ACD solution). Refrigerated or room temperature specimens.
Remarks:	
Stability:	After separation from cells: Ambient: Unacceptable~~1 month~~; Refrigerated: Unacceptable~~6 weeks~~; Frozen: 1 year~~6 weeks~~
Methodology:	Quantitative Liquid Chromatography-Tandem Mass Spectrometry
Performed:	Mon, ~~-~~Tue, Thu, Fri, ~~-~~Sat
Reported:	1-4 days
Note:	
CPT Codes:	80151
New York DOH Approval Status:	This test is New York DOH approved.

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.

~~This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the US Food and Drug Administration. This test was performed in a CLIA certified laboratory and is intended for clinical purposes.~~

Reference Interval:

Effective November 12, 2018

Therapeutic Range	0.5-2.0 ug/mL
Toxic Level	Greater than 2.5~~3.0~~ ug/mL

TEST CHANGE

Drugs of Abuse 7 Panel, Urine - Screen Only

0090448, CDTI7

Specimen Requirements:	
Patient Preparation:	
Collect:	Random urine.
Specimen Preparation:	Transfer 4 mL urine with no additives or preservatives to an ARUP Standard Transport Tube. (Min: 2 mL)
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Specimens exposed to repeated freeze/thaw cycles.
Remarks:	
Stability:	Ambient: 1 week; Refrigerated: 1 month; Frozen: 1 month
Methodology:	Qualitative Enzyme Multiplied Immunoassay Technique
Performed:	Sun-Sat
Reported:	1-2 days
Note:	
CPT Codes:	80307
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

This is a screening test only. False positive and false negative results can occur. Positive results are not automatically reflexed to a confirmatory test. Confirmation by GC/MS and/or LC-MS/MS must be requested separately. Confirmatory testing for drugs and/or drug classes detected by this screening test is recommended.

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 at which the screening test can detect a drug or metabolite varies within a drug class. 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.

For medical purposes only; not valid for forensic use.

Reference Interval:

~~Effective August 17, 2015~~

Drugs Covered and Cutoff Concentrations	
Drugs	Screen
THC (Cannabinoids)	50~~20~~ ng/mL
Cocaine	150 ng/mL
Opiates	300 ng/mL
Oxycodone	100 ng/mL
Phencyclidine	25 ng/mL
Amphetamines	300 ng/mL
MDMA (Ecstasy)	500 ng/mL
Barbiturates	200 ng/mL
Benzodiazepines	200 ng/mL

TEST CHANGE

Drugs of Abuse 7A Panel, Urine - Screen Only

0090449, CDTI7A

Specimen Requirements:	
Patient Preparation:	
Collect:	Random urine.
Specimen Preparation:	Transfer 4 mL urine with no additives or preservatives to an ARUP Standard Transport Tube. (Min: 2 mL)
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Specimens exposed to repeated freeze/thaw cycles.
Remarks:	
Stability:	Ambient: 1 week; Refrigerated: 1 month; Frozen: 1 month
Methodology:	Qualitative Enzyme Multiplied Immunoassay Technique/Enzymatic Assay
Performed:	Sun-Sat
Reported:	1-2 days
Note:	
CPT Codes:	80307
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

This is a screening test only. False positive and false negative results can occur. Positive results are not automatically reflexed to a confirmatory test. Confirmation by GC/MS and/or LC-MS/MS must be requested separately. Confirmatory testing for drugs and/or drug classes detected by this screening test is recommended.

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 at which the screening test can detect a drug or metabolite varies within a drug class. 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.

For medical purposes only; not valid for forensic use.

Reference Interval:

~~Effective August 17, 2015~~

Drugs Covered and Cutoff Concentrations	
Drugs	Screen
THC (Cannabinoids)	50~~20~~ ng/mL
Cocaine	150 ng/mL
Opiates	300 ng/mL
Oxycodone	100 ng/mL
Phencyclidine	25 ng/mL
Amphetamines	300 ng/mL
MDMA (Ecstasy)	500 ng/mL
Barbiturates	200 ng/mL
Benzodiazepines	200 ng/mL
Alcohol	40 mg/dL

TEST CHANGE

Drugs of Abuse 9 Panel, Urine - Screen Only

0090453, CDTI9

Specimen Requirements:	
Patient Preparation:	
Collect:	Random urine.
Specimen Preparation:	Transfer 4 mL urine with no additives or preservatives to an ARUP Standard Transport Tube. (Min: 2 mL)
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Specimens exposed to repeated freeze/thaw cycles.
Remarks:	
Stability:	Ambient: 1 week; Refrigerated: 1 month; Frozen: 1 month
Methodology:	Qualitative Enzyme Multiplied Immunoassay Technique
Performed:	Sun-Sat
Reported:	1-2 days
Note:	To order testing for individual opioids, refer to Fentanyl and Metabolite - Confirmation/Quantitation - Urine (ARUP test code 0092570), Buprenorphine and Metabolites - Confirmation/Quantitation - Urine (ARUP test code 2010092), Meperidine and Metabolite Quantitative, Urine (ARUP test code 3000248), Tramadol and Metabolites - Confirmation/Quantitation - Urine (ARUP test code 2002736). For the comprehensive panel, refer to Pain Management Drug Panel by High-Resolution Time-of-Flight Mass Spectrometry and Enzyme Immunoassay, Urine (ARUP test code 2007479).
CPT Codes:	80307
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

This is a screening test only. False positive and false negative results can occur. Positive results are not automatically reflexed to a confirmatory test. Confirmation by GC/MS and/or LC-MS/MS must be requested separately. Confirmatory testing for drugs and/or drug classes detected by this screening test is recommended.

The absence of expected drug(s) and/or drug metabolite(s) may indicate noncompliance,

inappropriate timing of specimen collection relative to drug administration, poor drug absorption, diluted/adulterated urine, or limitations of testing. The concentration at which the screening test can detect a drug or metabolite varies within a drug class. 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.

The following opioids are not detected in this test: fentanyl, buprenorphine, meperidine, tramadol, and tapentadol. A comprehensive panel that includes these opioids is available or individual opioid testing can be ordered. Refer to aruplab.com for test information.

For medical purposes only; not valid for forensic use.

Reference Interval:

~~Effective August 17, 2015~~

Drugs Covered and Cutoff Concentrations

Drugs	Screen
THC (Cannabinoids)	5020 ng/mL
Cocaine	150 ng/mL
Opiates	300 ng/mL
Oxycodone	100 ng/mL
Phencyclidine	25 ng/mL
Amphetamines	300 ng/mL
MDMA (Ecstasy)	500 ng/mL
Barbiturates	200 ng/mL
Benzodiazepines	200 ng/mL
Methadone	150 ng/mL
Propoxyphene	300 ng/mL

TEST CHANGE

Drugs of Abuse 9A Panel, Urine - Screen Only

0090454, CDTI9A

Specimen Requirements:	
Patient Preparation:	
Collect:	Random urine.
Specimen Preparation:	Transfer 4 mL urine with no additives or preservatives to an ARUP Standard Transport Tube. (Min: 2 mL)
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Specimens exposed to repeated freeze/thaw cycles.
Remarks:	
Stability:	Ambient: 1 week; Refrigerated: 1 month; Frozen: 1 month
Methodology:	Qualitative Enzyme Multiplied Immunoassay Technique/Enzymatic Assay
Performed:	Sun-Sat
Reported:	1-2 days
Note:	To order testing for individual opioids, refer to Fentanyl and Metabolite - Confirmation/Quantitation - Urine (ARUP test code 0092570), Buprenorphine and Metabolites - Confirmation/Quantitation - Urine (ARUP test code 2010092), Meperidine and Metabolite Quantitative, Urine (ARUP test code 3000248), Tramadol and Metabolites - Confirmation/Quantitation - Urine (ARUP test code 2002736). For the comprehensive panel, refer to Pain Management Drug Panel by High-Resolution Time-of-Flight Mass Spectrometry and Enzyme Immunoassay, Urine (ARUP test code 2007479).
CPT Codes:	80307
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

This is a screening test only. False positive and false negative results can occur. Positive results are not automatically reflexed to a confirmatory test Confirmation by GC/MS and/or LC-MS/MS must be requested separately. Confirmatory testing for drugs and/or drug classes detected by this screening test is recommended.

The absence of expected drug(s) and/or drug metabolite(s) may indicate noncompliance, inappropriate timing of specimen collection relative to drug administration, poor drug absorption, diluted/adulterated urine, or limitations of testing. The concentration at which the screening test can detect a drug or metabolite varies within a drug class. 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.

The following opioids are not detected in this test, but can be ordered separately: fentanyl, buprenorphine, meperidine, tramadol, and tapentadol. A comprehensive panel that includes these opioids is available or individual opioid testing can be ordered. Refer to aruplab.com for test information.

For medical purposes only; not valid for forensic use.

Reference Interval:

~~Effective August 17, 2015~~

Drugs Covered and Cutoff Concentrations

Drugs	Screen
THC (Cannabinoids)	5020 ng/mL
Cocaine	150 ng/mL
Opiates	300 ng/mL
Oxycodone	100 ng/mL
Phencyclidine	25 ng/mL
Amphetamines	300 ng/mL
MDMA (Ecstasy)	500 ng/mL
Barbiturates	200 ng/mL
Benzodiazepines	200 ng/mL
Methadone	150 ng/mL
Propoxyphene	300 ng/mL
Alcohol	40 mg/dL

TEST CHANGE

Drug Panel 7, Urine - Screen with Reflex to Confirmation/Quantitation

0092184, CDASU 7

Specimen Requirements:	
Patient Preparation:	
Collect:	Random urine.
Specimen Preparation:	Transfer 8 mL urine with no additives or preservative to ARUP Standard Transport Tubes. (Min: 4 mL)
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Specimens exposed to repeated freeze/thaw cycles.
Remarks:	
Stability:	Ambient: 1 week; Refrigerated: 1 month; Frozen: 1 month
Methodology:	Qualitative Enzyme Multiplied Immunoassay Technique/ Quantitative Gas Chromatography-Mass Spectrometry/Quantitative Liquid Chromatography-Tandem Mass Spectrometry
Performed:	Sun-Sat
Reported:	1-4 days
Note:	If the specimen screens positive, then Confirmation/Quantitation by GC/MS and/or LC-MS/MS will be added to confirm result. Additional charges apply.
CPT Codes:	80307; if reflexed, add 80325; 80345; 80346; 80349; 80353; 80359; 80361; 80365; 83992 (Reflexed Alt Code: G0480)
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

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 at which the screening test can detect a drug or metabolite varies within a drug class. Specimens for which drugs or drug classes are detected by the screen are reflexed to a second, more specific technology (GC/MS and/or LC-MS/MS). 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.

For medical purposes only; not valid for forensic use.

Oxycodone results are reported with the opiates results. MDMA results are reported with the amphetamines results.

Reference Interval:

~~Effective August 17, 2015~~

Drugs Covered and Cutoff Concentrations	
Drugs/Drug Classes	Screen
THC (Cannabinoids)	50~~20~~ ng/mL
Cocaine	150 ng/mL
Opiates	300 ng/mL
Oxycodone	100 ng/mL
Phencyclidine	25 ng/mL
Amphetamines	300 ng/mL
MDMA (Ecstasy)	500 ng/mL
Barbiturates	200 ng/mL
Benzodiazepines	200 ng/mL

TEST CHANGE

Drug Panel 7A, Urine - Screen with Reflex to Confirmation/Quantitation

0092185, CDASU 7A

Specimen Requirements:	
Patient Preparation:	
Collect:	Random urine.
Specimen Preparation:	Transfer 8 mL urine with no additives or preservatives to ARUP Standard Transport Tubes. (Min: 4 mL)
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Specimens exposed to repeated freeze/thaw cycles.
Remarks:	
Stability:	Ambient: 1 week; Refrigerated: 1 month; Frozen: 1 month
Methodology:	Enzyme Immunoassay/Gas Chromatography-Flame Ionization Detection/Gas Chromatography-Mass Spectrometry/Liquid Chromatography-Tandem Mass Spectrometry
Performed:	Sun-Sat
Reported:	1-4 days
Note:	If the specimen screens positive, then Confirmation/Quantitation by GC/MS, GC/FID, and/or LC-MS/MS will be added to confirm result. Additional charges apply.
CPT Codes:	80307; if reflexed, add 80320; 80325; 80345; 80346; 80349; 80353; 80359; 80361; 80365; 83992 (Reflexed Alt Code: G0480)
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

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 at which the screening test can detect a drug or metabolite varies within a drug class. Specimens for which drugs or drug classes are detected by the screen are reflexed to a second, more specific technology (GC/MS, GC/FID, and/or LC-MS/MS). 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.

For medical purposes only; not valid for forensic use.

Oxycodone results are reported with the opiates results. MDMA results are reported with the amphetamines results.

Reference Interval:

~~Effective August 17, 2015~~

Drugs Covered and Cutoff Concentrations	
Drugs/Drug Classes	Screen
THC (Cannabinoids)	5020 ng/mL
Cocaine	150 ng/mL
Opiates	300 ng/mL
Oxycodone	100 ng/mL
Phencyclidine	25 ng/mL
Amphetamines	300 ng/mL
MDMA (Ecstasy)	500 ng/mL
Barbiturates	200 ng/mL
Benzodiazepines	200 ng/mL
Alcohol	40 mg/dL

TEST CHANGE

Drug Panel 9, Urine - Screen with Reflex to Confirmation/Quantitation

0092186, CDASU 9

Specimen Requirements:	
Patient Preparation:	
Collect:	Random urine.
Specimen Preparation:	Transfer 8 mL urine with no additives or preservatives to ARUP Standard Transport Tubes. (Min: 4 mL)
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Specimens exposed to repeated freeze/thaw cycles.
Remarks:	
Stability:	Ambient: 1 week; Refrigerated: 1 month; Frozen: 1 month
Methodology:	Qualitative Enzyme Multiplied Immunoassay Technique/ Quantitative Gas Chromatography-Mass Spectrometry/Quantitative Liquid Chromatography-Tandem Mass Spectrometry
Performed:	Sun-Sat
Reported:	1-4 days
Note:	If the specimen screens positive, then Confirmation/Quantitation by GC/MS and/or LC-MS/MS will be added to confirm result. Additional charges apply. To order testing for individual opioids, refer to Fentanyl and Metabolite - Confirmation/Quantitation - Urine (ARUP test code 0092570), Buprenorphine and Metabolites - Confirmation/Quantitation - Urine (ARUP test code 2010092), Meperidine and Metabolite Quantitative, Urine (ARUP test code 3000248), Tramadol and Metabolites - Confirmation/Quantitation - Urine (ARUP test code 2002736). For the comprehensive panel, refer to Pain Management Drug Panel by High-Resolution Time-of-Flight Mass Spectrometry and Enzyme Immunoassay, Urine (ARUP test code 2007479).
CPT Codes:	80307; if reflexed, add 80325; 80345; 80346; 80349; 80353; 80358; 80359; 80361; 80365; 80367; 83992 (Reflexed Alt Code: G0480)
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

The absence of expected drug(s) and/or drug metabolite(s) may indicate noncompliance, inappropriate timing of specimen collection relative to drug administration, poor drug absorption, diluted/adulterated urine, or limitations of testing. The concentration at which the screening test can detect a drug or metabolite varies within a drug class. Specimens for which drugs or drug classes are detected by the screen are reflexed to a second, more specific technology (GC/MS and/or LC-MS/MS). 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.

Oxycodone results are reported with the opiates results. MDMA results are reported with the amphetamines results. The following opioids are not detected in this test: fentanyl, buprenorphine, meperidine, tramadol, and tapentadol. A comprehensive panel that includes these opioids is available or individual opioid testing can be ordered. Refer to aruplab.com for test information.

For medical purposes only; not valid for forensic use.

Reference Interval:

~~Effective June 1, 2015~~

Drugs Covered and Cutoff Concentrations

Drugs/Drug Classes	Screen
THC (Cannabinoids)	50~~20~~ ng/mL
Cocaine	150 ng/mL
Opiates	300 ng/mL
Oxycodone	100 ng/mL
Phencyclidine	25 ng/mL
Amphetamines	300 ng/mL
MDMA (Ecstasy)	500 ng/mL
Barbiturates	200 ng/mL
Benzodiazepines	200 ng/mL
Methadone	150 ng/mL
Propoxyphene	300 ng/mL

TEST CHANGE

Drug Panel 9A, Urine - Screen with Reflex to Confirmation/Quantitation

0092187, CDASU 9A

Specimen Requirements:	
Patient Preparation:	
Collect:	Random urine.
Specimen Preparation:	Transfer 8 mL urine with no additives or preservatives in ARUP Standard Transport Tubes. (Min: 4 mL)
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Specimens exposed to repeated freeze/thaw cycles.
Remarks:	
Stability:	Ambient: 1 week; Refrigerated: 1 month; Frozen: 1 month
Methodology:	Enzyme Immunoassay/Gas Chromatography-Flame Ionization Detection/Gas Chromatography-Mass Spectrometry/Liquid Chromatography-Tandem Mass Spectrometry
Performed:	Sun-Sat
Reported:	1-4 days
Note:	If the specimen screens positive, then Confirmation/Quantitation by GC/MS, GC/FID, and/or LC-MS/MS will be added to confirm result. Additional charges apply. To order testing for individual opioids, refer to Fentanyl and Metabolite - Confirmation/Quantitation - Urine (ARUP test code 0092570), Buprenorphine and Metabolites - Confirmation/Quantitation - Urine (ARUP test code 2010092), Meperidine and Metabolite Quantitative, Urine (ARUP test code 3000248), Tramadol and Metabolites - Confirmation/Quantitation - Urine (ARUP test code 2002736). For the comprehensive panel, refer to Pain Management Drug Panel by High-Resolution Time-of-Flight Mass Spectrometry and Enzyme Immunoassay, Urine (ARUP test code 2007479).
CPT Codes:	80307; if reflexed, add 80320; 80325; 80345; 80346; 80349; 80353; 80358; 80359; 80361; 80365; 80367; 83992 (Reflexed Alt Code: G0480)
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

The absence of expected drug(s) and/or drug metabolite(s) may indicate noncompliance, inappropriate timing of specimen collection relative to drug administration, poor drug absorption, diluted/adulterated urine, or limitations of testing. The concentration at which the screening test can detect a drug or metabolite varies within a drug class. Specimens for which drugs or drug classes are detected by the screen are reflexed to a second, more specific technology (GC/MS, GC/FID, and/or LC-MS/MS). 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.

For medical purposes only; not valid for forensic use.

Oxycodone results are reported with the opiates results. MDMA results are reported with the amphetamines results. The following opioids are not detected in this test: fentanyl, buprenorphine, meperidine, tramadol, and tapentadol. A comprehensive panel that includes these opioids is available or individual opioid testing can be ordered. Refer to aruplab.com for test information.

Reference Interval:

~~Effective August 17, 2015~~

Drugs Covered and Cutoff Concentrations

Drugs/Drug Classes	Screen
THC (Cannabinoids)	50~~20~~ ng/mL
Cocaine	150 ng/mL
Opiates	300 ng/mL
Oxycodone	100 ng/mL
Phencyclidine	25 ng/mL
Amphetamines	300 ng/mL
MDMA (Ecstasy)	500 ng/mL
Barbiturates	200 ng/mL
Benzodiazepines	200 ng/mL
Methadone	150 ng/mL
Propoxyphene	300 ng/mL
Alcohol	40 mg/dL

TEST CHANGE

~~Drugs of Abuse Confirmation/Qualitative - Cannabinoids (~~Marijuana Metabolite,~~) -~~ Meconium, Qualitative

0092316, CONFTHC M

Specimen Requirements:	
Patient Preparation:	
Collect:	All meconium (blackish material) excreted until milk/formula based stool (yellow-green) appears.
Specimen Preparation:	Transport 0.5 g (equivalent to 1/2 inch cube) for each separate confirmation required. (Min: 0.13 g or 1/4 inch cube)
Transport Temperature:	Room temperature.
Unacceptable Conditions:	
Remarks:	
Stability:	Ambient: 1 week; Refrigerated: 3 months; Frozen: 1 year
Methodology:	Liquid Chromatography-Tandem Mass Spectrometry
Performed:	Sun-Sat
Reported:	1-4 days
Note:	
CPT Codes:	80349 (Alt code: G0480)
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

Drugs Covered: 9-carboxy-THC
Positive cutoff: 5 ng/g

Meconium begins to form between the 12th and 16th week of gestation. Meconium drug testing can detect maternal drug use during the last 4 to 5 months of pregnancy. A negative result does not exclude the possibility that a mother used drugs during pregnancy. Detection of drug use depends on the quantity and quality of the specimen tested as well as the pattern and frequency of drug(s) used by mother. 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.

For medical purposes only; not valid for forensic use.

This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the U.S.~~US~~ Food and Drug Administration. This test was performed in a CLIA -certified laboratory and is intended for clinical purposes.

Reference Interval:

ARUP LABORATORIES | *A nonprofit enterprise of the University of Utah and its Department of Pathology*

Effective Date: May 15, 2023

TEST CHANGE

Babesia microti Antibodies, IgG and IgM by IFA

0093048, BAB MIC AB

Specimen Requirements:	
Patient Preparation:	
Collect:	Serum Separator Tube (SST).
Specimen Preparation:	Separate from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP standard transport tube. ~~Standard Transport Tube.~~ (Min: 0.4~~2~~ mL) Parallel testing is preferred, and convalescent specimens must be received within 30 days from receipt of the acute specimens. Mark specimens plainly as "acute" or "convalescent."
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Bacterially contaminated, hemolyzed or lipemic specimens.
Remarks:	
Stability:	After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)
Methodology:	Semi-Quantitative Indirect Fluorescent Antibody (IFA)
Performed:	Mon, Wed, Sat
Reported:	1-5 days
Note:	
CPT Codes:	86753 x2
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

~~This test was developed and its performance characteristics de~~
~~has not been cleared or approved by the US Food and Drug Adn~~
~~performed in a CLIA certified laboratory and is intended for clin~~

Component	Interpretation
Babesia microti Antibody, IgG by IFA	< 1:16 Negative - No significant level of detectable Babesia IgG antibody. 1:16 Equivocal - Repeat testing in

Inserted Cells

	10-14 days may be helpful. > 1:16 Positive - IgG antibody to Babesia detected, which may indicate a current or past infection.
Babesia microti Antibody, IgM by IFA	< 1:20 Negative - No significant level of detectable Babesia IgM antibody. 1:20 Equivocal - Repeat testing in 10-14 days may be helpful. > 1:20 Positive - IgM antibody to Babesia detected, which may indicate a current or recent infection.

Reference Interval:

Test Number	Components	Reference Interval
	Babesia microti IgG	Less than 1:16
	Babesia microti IgM	Less than 1:20

Effective Date: May 15, 2023

TEST CHANGE

Babesia microti Antibody, IgG by IFA

0093049, BAB IGG

Specimen Requirements:	
Patient Preparation:	
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.~~Standard Transport Tube.~~ (Min: 0.4~~2~~ mL) Parallel testing is preferred and convalescent specimens must be received within 30 days from receipt of the acute specimens. Mark specimens plainly as "acute" or "convalescent."
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Bacterially contaminated, hemolyzed, or lipemic specimens.
Remarks:	
Stability:	After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)
Methodology:	Semi-Quantitative Indirect Fluorescent Antibody (IFA)
Performed:	Mon, Wed, Sat
Reported:	1-5 days
Note:	
CPT Codes:	86753
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

~~This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the US Food and Drug Administration. This test was performed in a CLIA certified laboratory and is intended for clinical purposes.~~

Deleted Cells

Reference Interval:

< 1:16 Negative - No significant level of detectable *Babesia* IgG antibody.
1:16 Equivocal - Repeat testing in 10-14 days may be helpful.
> 1:16 Positive - IgG antibody to *Babesia* detected, which may indicate a current or past infection.

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Effective Date: May 15, 2023

TEST CHANGE

Babesia microti Antibody, IgM by IFA

0093050, BAB IGM

Specimen Requirements:	
Patient Preparation:	
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.~~Standard Transport Tube.~~ (Min: 0.4~~2~~ mL) Parallel testing is preferred and convalescent specimens must be received within 30 days from receipt of the acute specimens. Mark specimens plainly as "acute" or "convalescent."
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Bacterially contaminated, hemolyzed, or lipemic specimens.
Remarks:	
Stability:	After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)
Methodology:	Semi-Quantitative Indirect Fluorescent Antibody (IFA)
Performed:	Mon, Wed, Sat
Reported:	1-5 days
Note:	
CPT Codes:	86753
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

~~This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the US Food and Drug Administration. This test was performed in a CLIA certified laboratory and is intended for clinical purposes.~~

Reference Interval:

< 1:20 Negative - No significant level of detectable *Babesia* IgM antibody.
1:20 Equivocal - Repeat testing in 10-14 days may be helpful.
> 1:20 Positive - IgM antibody to *Babesia* detected, which may indicate a current or recent infection.

Deleted Cells

TEST CHANGE

Treponema pallidum (VDRL), Serum with Reflex to Titer

0093093, VDRL SERU

Specimen Requirements:	
Patient Preparation:	
Collect:	Plain red or 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~~Standard Transport Tube~~ (Min: 0.4~~25~~ mL)
Transport Temperature:	Refrigerated
Unacceptable Conditions:	CSF or other body fluids. Contaminated, heat-inactivated, hemolyzed, or severely lipemic specimens.
Remarks:	
Stability:	After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)
Methodology:	Semi-Quantitative Flocculation
Performed:	Sun-Sat
Reported:	1-2 days
Note:	If VDRL is reactive, a titer will be added. Additional charges apply.
CPT Codes:	86592; if reflexed, add 86593
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

VDRL as a screening test is less sensitive than RPR.

Reference Interval:

Nonreactive

TEST CHANGE

DNA Cell Cycle Analysis - Ploidy and S-Phase

0095155, DNA MISC

Specimen Requirements:	
Patient Preparation:	
Collect:	Peripheral~~Tumor tissue, body fluid, peripheral~~ blood in lavender (EDTA, pink (K2EDTA),~~Green (Sodium~~ or green (sodium or lithium heparin). Bone~~Lithium Heparin), bone~~ marrow in green (sodium or lithium heparin).~~Green (Sodium or Lithium Heparin), OR urine/bladder washings.~~
Specimen Preparation:	Tissue: Paraffin -embedded tissue block enriched with tumor ~~OR Body Fluid: Transport: 100 mL body fluid. (Min: 10 mL)~~ OR Peripheral Blood: Transport 5 mL ~~whole blood.~~ (Min: 1 mL) with Wright's stained slide OR bone marrow~~ OR Bone Marrow~~: Transport 2 mL ~~bone marrow.~~ (Min: 1 mL) with Wright's stained slide~~Specimens with low mononuclear cell counts may require more volume. OR Urine/Bladder Washings: Centrifuge and remove supernatant. The cell pellet should then be re-suspended in a cell culture media such as Hank's Balanced Salt Solution or RPMI~~.
Transport Temperature:	Tissue (paraffin embedded), peripheral blood with Wright's stained slide,~~Peripheral Blood~~ or bone marrow with Wright's stained slide~~Bone Marrow~~: Refrigerated ~~Body Fluid~~ or room temperature.~~Urine/Bladder Washings: Refrigerated~~
Unacceptable Conditions:	Products of c~~C~~onception. No tumor tissue remaining on block. Specimens fixed in Bouin's solution (picric acid), mercuric chloride containing fixatives (e.g., B5, Zenker's solution) or ethanol-based fixatives containing ethylene glycol, acetic acid, or zinc chloride. Clotted or hemolyzed whole blood or bone marrow. Decalcified specimens.
Remarks:	Provide the clinical information (pathology report) and specimen source.~~ Peripheral Blood, Bone Marrow or Urine/Bladder Washings: Provide a Wright stained slide with specimens.~~ If multiple specimens (blocks or slides) are sent to ARUP, they must be accompanied by one of the following: an order comment indicating that the ARUP pathologist should choose the specimen most appropriate for testing (e.g., "Choose best block"), or individual orders for each sample submitted. A Pathologist Block Selection Fee (ARUP test code 3002076) will be added to orders that utilize the first option. If multiple specimens are sent to ARUP without a request for pathologist block/slide selection or individual orders, they will

	be held until clarification is provided.
Stability:	Tissue (paraffin embedded): Ambient: Indefinitely; Refrigerated: Indefinitely; Frozen: Unacceptable ~~Body Fluid or Urine/Bladder Washings: Ambient: Unacceptable; Refrigerated: 24 hours; Frozen: Unacceptable~~ Peripheral blood with Wright's stained slide or bone marrow with Wright's stained slide~~Blood or Bone Marrow~~: Ambient: 48 hours; Refrigerated: 48 hours; Frozen: Unacceptable
Methodology:	Quantitative Flow Cytometry
Performed:	~~Sun,~~ Tue, Thu
Reported:	3-9 days
Note:	This test is suitable for all tumor tissue specimens (including prostate, colon, and breast) except p~~P~~roducts of c~~C~~onception. For p~~P~~roducts of c~~C~~onception testing, please refer to DNA Content/Cell Cycle Analysis, Hydatidiform Mole (ARUP test code 2006178). A thin section of each tissue submitted is stained with H & E to verify the presence of tumor. The DNA content of each tumor is classified as diploid, near-diploid, tetraploid, aneuploid, hypertetraploid, or hypodiploid. The DNA index is the ratio of tumor G0-G1 cells to normal G0-G1 cells. The tumor-specific S-phase is used when possible. An average histogram S-phase is used for diploid, near-diploid and hypodiploid tumors where the tumor and host S-phases cannot be separated. An average histogram S-phase is also used when the percentage of aneuploid cells in the histogram is low (less than 25 percent).
CPT Codes:	88182
New York DOH Approval Status:	Specimens from New York clients will be sent out to a New York DOH approved laboratory, if possible.

Interpretive Data:

The diagnostic and prognostic importance of tumor DNA content depends on the tumor type and source of tissue. Interpretative information, if available for the tumor type, is included with the DNA histogram.

This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the U.S. Food and Drug Administration. This test was performed in a CLIA-certified laboratory and is intended for clinical purposes.

Reference Interval:

Report components include: DNA content, S-phase percent , and copy of histogram.

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Effective Date: May 15, 2023

TEST CHANGE

Anaplasma phagocytophilum (HGA) Antibodies, IgG and IgM

0097303, HGE G/M

Specimen Requirements:	
Patient Preparation:	
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: 0.4 mL) Parallel testing is preferred and convalescent specimens must be received within 30 days from receipt of acute specimens. Mark specimens plainly as "acute" or "convalescent." ~~Transfer 0.5 mL serum to an ARUP Standard Transport Tube. (Min: 0.2 mL)~~
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Bacterially contaminated, heat-inactivated, hemolyzed, icteric, lipemic, or turbid specimens.
Remarks:	
Stability:	After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year
Methodology:	Semi-Quantitative Indirect Fluorescent Antibody (IFA)
Performed:	Tue, Fri
Reported:	1-5 days
Note:	
CPT Codes:	86666 x2
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

~~This test was developed and its performance characteristics dete~~
~~has not been cleared or approved by the US Food and Drug Admi~~
~~performed in a CLIA certified laboratory and is intended for clinic~~

Component	Interpretation
Anaplasma phagocytophilum (HGA) Antibody, IgG	Less than 1:80 - No significant level of IgG antibodies to A.

Inserted Cells

	phagocytophilum detected. Greater than or equal to 1:80 - Suggestive of a recent or past infection with A. phagocytophilum
phagocytophilum (HGA) Antibody, IgM	Less than 1:16 - No significant level of IgM antibodies to A. phagocytophilum detected. Greater than or equal to 1:16 - Suggestive of a current or recent infection with A. phagocytophilum.

Reference Interval:

Test Number	Components	Reference Interval
	A. Phagocytophilum Antibody, IgG	Less than 1:80
	A. Phagocytophilum Antibody, IgM	Less than 1:16

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Effective Date: May 15, 2023

TEST CHANGE

Anaplasma phagocytophilum (HGA) Antibody, IgG

0097317, HGE IGG

Specimen Requirements:	
Patient Preparation:	
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: 0.4 mL) Parallel testing is preferred and convalescent specimens must be received within 30 days from receipt of acute specimens. Mark specimens plainly as "acute" or "convalescent." ~~Transfer 0.5 mL serum to an ARUP Standard Transport Tube. (Min: 0.2 mL)~~
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Bacterially contaminated, heat inactivated, hemolyzed, icteric, lipemic, or turbid specimens.
Remarks:	
Stability:	After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year
Methodology:	Semi-Quantitative Indirect Fluorescent Antibody (IFA)
Performed:	Tue, Fri
Reported:	1-5 days
Note:	
CPT Codes:	86666
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

~~This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the US Food and Drug Administration. This test was performed in a CLIA certified laboratory and is intended for clinical purposes.~~

Deleted Cells

Reference Interval:

Less than 1:80 - No significant level of IgG antibodies to *A. phagocytophilum* detected.
Greater than or equal to 1:80 - Suggestive of a recent or past infection with *A. phagocytophilum*

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Effective Date: May 15, 2023

TEST CHANGE

Anaplasma phagocytophilum (HGA) Antibody, IgM

0097318, HGE IGM

Specimen Requirements:	
Patient Preparation:	
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: 0.4 mL) Parallel testing is preferred and convalescent specimens must be received within 30 days from receipt of acute specimens. Mark specimens plainly as "acute" or "convalescent." ~~Transfer 0.5 mL serum to an ARUP Standard Transport Tube. (Min: 0.2 mL)~~
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Bacterially contaminated, heat inactivated, hemolyzed, icteric, lipemic, or turbid specimens.
Remarks:	
Stability:	After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year
Methodology:	Semi-Quantitative Indirect Fluorescent Antibody (IFA)
Performed:	Tue, Fri
Reported:	1-5 days
Note:	
CPT Codes:	86666
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

~~This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the US Food and Drug Administration. This test was performed in a CLIA certified laboratory and is intended for clinical purposes.~~

Deleted Cells

Reference Interval:

Less than 1:16 - No significant level of IgM antibodies to *A. phagocytophilum* detected.
Greater than or equal to 1:16 - Suggestive of a current or recent infection with *A. phagocytophilum*.

TEST CHANGE

Borrelia burgdorferi Antibodies, Total by ELISA, CSF

0099483, LYME CSF

Specimen Requirements:	
Patient Preparation:	
Collect:	CSF.
Specimen Preparation:	Transfer 3 mL CSF to an ARUP Standard Transport Tube. (Min: 0.5 mL)
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Bacterially contaminated, heat-inactivated, hemolyzed, or xanthochromic specimens.
Remarks:	
Stability:	Ambient: 8 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)
Methodology:	Semi-Quantitative Enzyme-Linked Immunosorbent Assay
Performed:	Sun-Sat
Reported:	1-4~~3~~ days
Note:	Once this test is performed, if: a) Negative - no further testing is done. b) Positive or equivocal - Immunoblot testing will be performed on the original sample upon receiving a request. Sample will be held for 30 days only.
CPT Codes:	86618
New York DOH Approval Status:	Specimens from New York clients will be sent out to a New York DOH approved laboratory, if possible.

Interpretive Data:

The detection of antibodies to *B. burgdorferi* in cerebrospinal fluid may indicate central nervous system infection. However, consideration must be given to possible contamination by blood or transfer of serum antibodies across the blood-brain barrier.

Current CDC recommendations for the serologic diagnosis of Lyme disease are to screen with a polyvalent ELISA test and confirm equivocal and positive results with immunoblot. Both IgM and IgG immunoblots should be performed on samples less than 4 weeks after appearance of erythema migrans. Only IgG immunoblot should be performed on samples greater than 4 weeks after the disease onset. IgM immunoblot in the chronic stage is not recommended and does not aid in the

diagnosis of neuroborreliosis or chronic Lyme disease. Please submit requests for appropriate immunoblot testing within 10 days.

This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the US Food and Drug Administration. This test was performed in a CLIA certified laboratory and is intended for clinical purposes.

Reference Interval:

0.99 LIV or less	Negative - Antibody to B. burgdorferi not detected.
1.00-1.20 LIV	Equivocal - Repeat testing in 10-14 days may be helpful.
1.21 LIV or greater	Positive - Probable presence of antibody to B. burgdorferi detected.

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Effective Date: May 15, 2023

TEST CHANGE

Bartonella henselae & B. quintana Antibodies, IgG & IgM

2002280, BARTONELLA

Specimen Requirements:	
Patient Preparation:	
Collect:	Serum separator tube.
Specimen Preparation:	Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP standard transport tube. ~~Standard Transport Tube.~~ (Min: 0.4~~3~~ mL) Parallel testing is preferred and convalescent specimens must be received within 30 days from receipt of the acute specimens. Mark specimens plainly as "acute" or "convalescent."
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Contaminated, hemolyzed, or severely lipemic specimens.
Remarks:	
Stability:	After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)
Methodology:	Semi-Quantitative Indirect Fluorescent Antibody (IFA)
Performed:	Mon, Thu
Reported:	1-8 days
Note:	
CPT Codes:	86611 x4
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

~~This test was developed and its performance characteristics de~~
~~has not been cleared or approved by the US Food and Drug Adn~~
~~performed in a CLIA certified laboratory and is intended for clin~~

Component	Interpretation
Bartonella henselae Antibody, IgG by IFA	<1:64 Negative - No significant level of Bartonella henselae IgG antibody detected. 1:64-1:128 Equivocal - Questionable

Inserted Cells

	presence of Bartonella henselae IgG antibody detected. Repeat testing in 10-14 days may be helpful. {>=}1:256 Positive - Presence of IgG antibody to Bartonella henselae detected, suggestive of current or past infection.
Bartonella henselae Antibody, IgM by IFA	< 1:16 Negative - No significant level of Bartonella henselae IgM antibody detected. {>=}1:16 Positive - Presence of IgM antibody to Bartonella henselae detected, suggestive of current or recent infection.
Bartonella quintana Antibody, IgG by IFA	< 1:64 Negative - No significant level of Bartonella quintana IgG antibody detected. 1:64-1:128 Equivocal - Questionable presence of Bartonella quintana IgG antibody detected. Repeat testing in 10-14 days may be helpful. {>=}1:256 Positive - Presence of IgG antibody to Bartonella quintana detected, suggestive of current or past infection.
Bartonella quintana Antibody, IgM by	< 1:16 Negative - No significant level of Bartonella

IFA	quintana IgM antibody detected. {>=}1:16 Positive - Presence of IgM antibody to Bartonella quintana detected, suggestive of current or recent infection.

Reference Interval:

TEST CHANGE

EGFR Mutation Detection by Pyrosequencing

2002440, EGFR PCR

Specimen Requirements:	
Patient Preparation:	~~For a general FNA collection and smear preparation refer to ARUP's Laboratory Test Directory: Cytology, Fine Needle Aspiration Collection at http://ltd.aruplab.com/tests/pdf/366~~
Collect:	Tumor tissue.
Specimen Preparation:	Tumor Tissue: Formalin fix (10 percent neutral buffered formalin) and paraffin embed tissue. Protect from excessive heat. Tissue block will be returned after testing. Transport tissue block or 5 unstained 5-micron slides. (Min: 3 slides) ~~(Min: 3 slides) Fine Needle Aspirate (FNA): Prepare FNA smear with Diff-Quik or equivalent stain by standard methods (air-dried slides are preferred). Number of slides needed is dependent on the tumor cellularity of the smear. (Min: 1 slide). Slide(s) will be destroyed during testing process and will not be returned to client.~~ Transport block and/or slide(s) in a tissue transport kit (ARUP Supply #47808) available online through eSupply using ARUP Connect(TM) or contact ARUP Client Services at (800) 522-2787.
Transport Temperature:	Room temperature. Also acceptable: Refrigerated. Ship in cooled container during summer months.
Unacceptable Conditions:	Less than 25 percent tumor. Specimens fixed/processed in alternative fixatives (alcohol, Prefer) or heavy metal fixatives (B-4 or B-5). Decalcified specimens. ~~FNA smears with less than 50 tumor cells.~~
Remarks:	Include surgical pathology report. If multiple specimens (blocks or slides) are sent to ARUP, they must be accompanied by one of the following: an order comment indicating that the ARUP pathologist should choose the specimen most appropriate for testing (e.g., "Choose best block"), or individual orders for each sample submitted. A Pathologist Block Selection Fee (ARUP test code 3002076) will be added to orders that utilize the first option. If multiple specimens are sent to ARUP without a request for pathologist block/slide selection or individual orders, they will be held until clarification is provided.
Stability:	Ambient: Indefinitely; Refrigerated: Indefinitely; Frozen: Unacceptable

Methodology:	Polymerase Chain Reaction/Pyrosequencing
Performed:	Varies
Reported:	6-14 days
Note:	This test detects mutations in EGFR exons 18, 19, 20 and 21 (codons 719, 745-753, 768, 790, 858, and 861).
CPT Codes:	81235
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

Refer to report.

This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the US Food and Drug Administration. This test was performed in a CLIA certified laboratory and is intended for clinical purposes.

Reference Interval:

TEST CHANGE

Rapid Plasma Reagin (RPR) Titer

2003239, RPRTITER

Specimen Requirements:	
Patient Preparation:	
Collect:	Serum Separator Tube.
Specimen Preparation:	Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP standard transport tube.~~Standard Transport Tube.~~ (Min: 0.5~~35~~ mL) Avoid freezing if possible.
Transport Temperature:	1 mL serum at 2-8 Degrees C. (Min: 0.3 mL) Submit specimen in an ARUP standard transport tube~~Standard Transport Tube~~.
Unacceptable Conditions:	Plasma, CSF, and other body fluids.
Remarks:	Separate serum from cells ASAP.
Stability:	After separation from cells: Ambient: 2 days; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)
Methodology:	Semi-Quantitative Particle~~Charcoal~~ Agglutination
Performed:	Sun-Sat
Reported:	Within 24 hours
Note:	
CPT Codes:	86593
New York DOH Approval Status:	This test is New York DOH approved.
Interpretive Data:	
Reference Interval:	
<1:1	

TEST CHANGE

Allergic Bronchopulmonary Aspergillosis (ABPA) Panel

2004243, ABPA

Specimen Requirements:	
Patient Preparation:	
Collect:	Plain red or serum separator tube.
Specimen Preparation:	Separate serum from cells within 2 hours of collection. Transfer 2.3 mL serum to an ARUP standard transport tube. ~~Standard Transport Tube.~~ (Min: 1~~0.5~~ mL)
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Plasma. Hemolyzed, icteric or lipemic specimens.
Remarks:	Multiple specimen tubes and multiple patient encounters should be avoided.
Stability:	Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year
Methodology:	Quantitative ImmunoCAP Fluorescent Enzyme Immunoassay/Qualitative Immunodiffusion
Performed:	Sun-Sat
Reported:	3-7 days
Note:	
CPT Codes:	82785; 86003; 86606 x2
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

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

Reference Interval:

Test Number	Components	Reference Interval
	Immunoglobulin E	
		Age: Reference Interval (kU/L) 0-5 months: 13 or less 6-12 months: 34 or less 1-2 years: 97 or less 3 years: 199 or less 4-6 years: 307 or less 7-8 years: 403 or less 9-12 years: 696 or less 13-15 years: 629 or less 16-17 years: 537 or less 18 years and older: 214 or less
	Allergen, Fungi/Mold, A. fumigatus IgE	Less than or equal to 0.34 kU/L
	A. fumigatus #1 Ab, Precipitin	None detected
	A. fumigatus #6 Ab, Precipitin	None detected

TEST CHANGE

Products of Conception, Ploidy by Flow Cytometry

2006178, DNA HYDAT

Specimen Requirements:	
Patient Preparation:	
Collect:	Products of conception in paraffin tissue block.
Specimen Preparation:	Formalin fix and paraffin embed products of conception in a tissue block. Tissue transport kit (ARUP Supply #47808) recommended, available online through eSupply using ARUP Connect(TM) or contact ARUP Client Services at ~~(~~800~~-)~~ 522-2787.
Transport Temperature:	Refrigerated
Unacceptable Conditions:	
Remarks:	Include H&E-stained slide if only submitting tissue shavings (no block submitted). Also include a copy of the surgical pathology report, if available. If multiple specimens (blocks or slides) are sent to ARUP, they must be accompanied by one of the following: an order comment indicating that the ARUP pathologist should choose the specimen most appropriate for testing (e.g., "Choose best block"), or individual orders for each sample submitted. A Pathologist Block Selection Fee (ARUP test code 3002076) will be added to orders that utilize the first option. If multiple specimens are sent to ARUP without a request for pathologist block/slide selection or individual orders, they will be held until clarification is provided.
Stability:	Ambient: Indefinitely; Refrigerated: Indefinitely; Frozen: Unacceptable
Methodology:	Quantitative Flow Cytometry
Performed:	~~Sun,~~ Tue, Thu
Reported:	3-9 days
Note:	A thin section of each tissue submitted is stained with H&E. The DNA content is classified as diploid, triploid, tetraploid, or aneuploid. The DNA index is the ratio of the DNA content of abnormal cells compared to normal cells.
CPT Codes:	88182

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

Interpretive Data:

Diagnostic Data: Flow cCytometry can be used to help identify partial hydatidiform moles. Partial moles are usually triploid while complete moles are diploid, tetraploid, or aneuploid [Clinical Medicine: Pathology, 2008;-1:61-67; Gynecol Oncol, 2001;-81:67-70]. However, most products of conception are diploid, so a diploid histogram does not suggest a complete mole unless supported clinically and microscopically.

Prognostic Data: Persistent trophoblastic disease occurs in about 20% of diploid and tetraploid complete moles. Aneuploid complete moles may be associated with less risk for persistent disease [Gynecol Oncol, 2001;-81:67-70]. The risk of persistent trophoblastic disease after a triploid mole is very low (0 out of 105 cases) [Obstet Gynecol, 2006;-107:1006-1011]. In rare cases, a triploid result can also be due to nonmolar triploidy (digynic triploidy) where the extra haploid set of chromosomes are maternal. Nonmolar digynic triploid pregnancies are not associated with gestational trophoblastic disease and do not lead to an increased risk of recurrent molar pregnancy. Differentiating between a triploid partial mole and nonmolar triploid pregnancy requires clinical, microscopic, and molecular genetic testing correlation. [Clin Case Rep. 2020;8(5):785-789]. ~~2020 Feb 11;8(5):785-789].~~

~~This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the U.S. Food and Drug Administration. This test was performed in a CLIA-certified laboratory and is intended for clinical purposes.~~

Reference Interval:

TEST CHANGE

Borrelia burgdorferi (Lyme Disease) Reflexive Panel (CSF)

2007335, LYMECSFR

Specimen Requirements:	
Patient Preparation:	
Collect:	CSF.
Specimen Preparation:	Transfer 6 mL CSF to an ARUP Standard Transport Tube. (Min: 2.5 mL)
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Bacterially contaminated, heat-inactivated, hemolyzed, or xanthochromic specimens.
Remarks:	
Stability:	Ambient: 8 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)
Methodology:	Semi-Quantitative Enzyme-Linked Immunosorbent Assay (ELISA)/~~/~~Qualitative Immunoblot
Performed:	Sun-Sat
Reported:	1-4~~3~~ days
Note:	If B. burgdorferi total antibodies by ELISA are 1.00 LIV or greater, then B. burgdorferi IgG antibody by immunoblot and IgM antibody by immunoblot will be added. Additional charges apply.
CPT Codes:	86618; if reflexed, add 86617 x2
New York DOH Approval Status:	Specimens from New York clients will be sent out to a New York DOH approved laboratory, if possible.

Interpretive Data:

Refer to individual components.

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Component	Interpretation
Borrelia burgdorferi	0.99 LIV or less: Negative -

Antibodies, Total by ELISA, CSF	Antibody to B. burgdorferi not detected. 1.00-1.20 LIV: Equivocal - Repeat testing in 10-14 days may be helpful. 1.21 LIV or greater: Positive - Probable presence of antibody to B. burgdorferi detected.	

Reference Interval:

Test Number	Components	Reference Interval
	Borrelia burgdorferi Abs, ELISA, CSF	0.99 LIV or less

TEST CHANGE

Rapid Plasma Reagin (RPR) with Reflex to RPR Titer or T. pallidum Antibody by Particle Agglutination

2007443, RPR REV

Specimen Requirements:	
Patient Preparation:	
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.~~Standard Transport Tube.~~ (Min: 0.54 mL). Avoid freezing if possible.
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Plasma, CSF, or other body fluids.
Remarks:	
Stability:	After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)
Methodology:	~~Semi-Quantitative Charcoal Agglutination/~~Semi-Quantitative Particle Agglutination
Performed:	Sun-Sat
Reported:	1-4 days
Note:	If RPR is reactive, then a titer to endpoint will be added. If RPR is nonreactive, a TP-PA (MHA) confirmation will be added. Additional charges apply.
CPT Codes:	86592 RPR; if reflexed, add (nonreactive) TP-PA 86780 or (reactive) 86593 RPR titer
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

Component	Interpretation
Rapid Plasma Reagin (RPR)	RPR (+) = Reactive RPR (-) = Nonreactive

Reference Interval:

Test Number	Components	Reference Interval
	Rapid Plasma Reagin (RPR)	Non Reactive
	Rapid Plasma Reagin (RPR)	
		Component Result: Rapid Plasma Reagin (RPR) — Interpretation: RPR (+) = Reactive RPR (-) = Nonreactive

TEST CHANGE

Drug Profile, Targeted by Tandem Mass Spectrometry and Enzyme Immunoassay, Urine

2007479, PAIN HYB U

Specimen Requirements:	
Patient Preparation:	
Collect:	Random urine.
Specimen Preparation:	Transfer 4 mL each into two (2) ARUP Standard Transport Tubes urine with no additives or preservatives. (Min: 2 mL each)
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Specimens exposed to repeated freeze/thaw cycles.
Remarks:	
Stability:	Ambient: 1 week (Clonazepam may be unstable at ambient condition beyond three days); Refrigerated: 1 month; Frozen: 1 month
Methodology:	Qualitative Liquid Chromatography-Tandem Mass Spectrometry/Enzyme Immunoassay/Quantitative Spectrophotometry
Performed:	Sun-Sat
Reported:	1-3 days
Note:	Creatinine concentration is also provided. The carisoprodol immunoassay has cross-reactivity to carisoprodol and meprobamate.
CPT Codes:	80326; 80347; 80364; 80355; 80307 (Alt code: G0481)
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

Methodology: Qualitative Enzyme Immunoassay and Qualitative Liquid Chromatography-Tandem Mass Spectrometry, Quantitative Spectrophotometry

The absence of expected drug(s) and/or drug metabolite(s) may indicate noncompliance, inappropriate timing of specimen collection relative to drug administration, poor drug absorption, diluted/adulterated urine, or limitations of testing. The concentration must be greater than or equal to the cutoff concentration to be reported as present. If specific drug concentrations are required, contact the laboratory within two weeks of specimen collection to request confirmation and

quantification by a second analytical technique. Interpretive questions should be directed to the laboratory.

Results based on immunoassay detection that do not match clinical expectations should be interpreted with caution. Confirmatory testing by mass spectrometry for immunoassay-based results is available, if ordered within two weeks of specimen collection. Additional charges apply.

For medical purposes only; not valid for forensic use.

This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the US Food and Drug Administration. This test was performed in a CLIA certified laboratory and is intended for clinical purposes.

Reference Interval:

~~Effective February 16, 2021~~

Drugs covered and range of cutoff concentrations. Note: Some drugs are identified based on the presence of unique drug metabolites not listed below.

Drugs/Drug Classes	Range of Cutoff Concentrations
Barbiturates	200 ng/mL
Benzodiazepine-like: alprazolam, clonazepam, diazepam, lorazepam, midazolam, nordiazepam, oxazepam, temazepam, zolpidem	20 - 60 ng/mL
Cannabinoids (11-nor-9-carboxy-THC)	50~~20~~ ng/mL
Ethyl Glucuronide	500 ng/mL
Muscle Relaxant(s): carisoprodol, meprobamate	100 ng/mL
Opiates/Opioids: buprenorphine, codeine, fentanyl, heroin, hydrocodone, hydromorphone, meperidine, methadone, morphine, naloxone, oxycodone, oxymorphone, tapentadol, tramadol	2-200 ng/mL
GABA analogues:	3,000 ng/mL

Gabapentin, pregabalin	
Phencyclidine (PCP)	25 ng/mL
Stimulants: amphetamine, cocaine, methamphetamine, methylphenidate, MDMA (Ecstasy), MDEA (Eve), MDA, phentermine	50-200 ng/mL

TEST CHANGE

Antimicrobial Susceptibility - Fungal (Yeasts and Molds)

2009257, MA FUNGAL

Specimen Requirements:	
Patient Preparation:	
Collect:	Actively growing isolate in pure culture.
Specimen Preparation:	Transport sealed container with pure culture on agar slant. Place each specimen in individually sealed bag.
Transport Temperature:	Room temperature.
Unacceptable Conditions:	Mixed cultures or nonviable~~non-viable~~ organisms.
Remarks:	Isolate identification and specimen source required.
Stability:	Ambient: 2 weeks; Refrigerated: 2 weeks; Frozen: Unacceptable
Methodology:	Broth Microdilution
Performed:	Sun-Sat
Reported:	2-21~~12~~ days
Note:	Vitreal Penetration: Systemic administration of echinocandins is not recommended for ocular infections because it has minimal tissue penetration. Consult ophthamology, pharmacy, or infectious disease service for guidance. CSF Penetration: The echinocandins have suboptimal pentration in CSF and CNS tissues. Consult the pharmacy and/or infectious disease service for additional guidance. 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). Liquid formulations of amphotericin B do not achieve adequate urine concentrations and should not be used to treat UTIs. 5-fluorocytosine: 5-FC should not be used as monotherapy for severe Candida infectionus because resistance can develop rapidly. It should be used rarely in neonates. 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. Penicillium species MIC will only be tested with ARUP medical director~~Medical Director~~ approval. 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 to requests for drug testing not performed at ARUP and require isolate sendout.
CPT Codes:	87186
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

Refer to report.

Reference Interval:

Susceptible, intermediate, SDD (susceptible dose dependent), or resistant.
MICs (minimum inhibitory concentrations) interpretations are based on current CLSI guidelines.
MECs (minimum effective concentration) without interpretation are reported for select mold species only.

TEST CHANGE

Drug Profile, Targeted with Interpretation by Tandem Mass Spectrometry and Enzyme Immunoassay, Urine

2009288, PAIN HYB 2

Specimen Requirements:	
Patient Preparation:	Information on the patient's current medications must be submitted with the order. Include trade name, generic name, dosing frequency and date of last dose, if known. Alternatively, please indicate if no prescription medication or drugs are being taken.
Collect:	Random urine.
Specimen Preparation:	Transfer 4 mL each into two (2) ARUP Standard Transport Tubes urine with no additives or preservatives. (Min: 2 mL each)
Transport Temperature:	Refrigerated
Unacceptable Conditions:	Specimens exposed to repeated freeze/thaw cycles.
Remarks:	
Stability:	Ambient: 1 week (Clonazepam may be unstable at ambient condition beyond three days); Refrigerated: 1 month; Frozen: 1 month
Methodology:	Qualitative Liquid Chromatography-Tandem Mass Spectrometry/Enzyme Immunoassay/Quantitative Spectrophotometry
Performed:	Sun-Sat
Reported:	1-4 days
Note:	Creatinine concentration is also provided. The carisoprodol immunoassay has cross-reactivity to carisoprodol and meprobamate.
CPT Codes:	80326; 80347; 80364; 80355; 80307 (Alt code: G0481)
New York DOH Approval Status:	This test is New York DOH approved.
Interpretive Data:	
Methodology: Qualitative Enzyme Immunoassay and Qualitative Liquid Chromatography-Tandem Mass Spectrometry, Quantitative Spectrophotometry	

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 must be greater than or equal to the cutoff concentration to be reported as present. If specific drug concentrations are required, contact the laboratory within two weeks of specimen collection to request confirmation and quantification by a second analytical technique. Interpretive questions should be directed to the laboratory.

Results based on immunoassay detection that do not match clinical expectations should be interpreted with caution. Confirmatory testing by mass spectrometry for immunoassay-based results is available if ordered within two weeks of specimen collection. Additional charges apply.

For medical purposes only; not valid for forensic use.

This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the US Food and Drug Administration. This test was performed in a CLIA certified laboratory and is intended for clinical purposes.

Reference Interval:

~~Effective February 16, 2021~~

Drugs covered and range of cutoff concentrations. Note: Some drugs are identified based on the presence of unique drug metabolites not listed below.

Drugs/Drug Classes	Range of Cutoff Concentrations
Barbiturates	200 ng/mL
Benzodiazepine-like: alprazolam, clonazepam, diazepam, lorazepam, midazolam, nordiazepam, oxazepam, temazepam, zolpidem	20 - 60 ng/mL
Cannabinoids (11-nor-9-carboxy-THC)	50~~20~~ ng/mL
Ethyl Glucuronide	500 ng/mL
Muscle Relaxant(s): carisoprodol, meprobamate	100 ng/mL
Opiates/Opioids: buprenorphine, codeine, fentanyl, heroin, hydrocodone, hydromorphone, meperidine, methadone,	2-200 ng/mL

morphine, naloxone, oxycodone, oxymorphone, tapentadol, tramadol		
GABA analogues: Gabapentin, pregabalin	3,000 ng/mL	
Phencyclidine (PCP)	25 ng/mL	
Stimulants: amphetamine, cocaine, methamphetamine, methylphenidate, MDMA (Ecstasy), MDEA (Eve), MDA, phentermine	50-200 ng/mL	

TEST CHANGE

THC (Cannabinoids), Urine Screen with Reflex to Quantitation

2012270, THC RFX U

Specimen Requirements:	
Patient Preparation:	
Collect:	Random urine.
Specimen Preparation:	Transfer 4 mL urine with no additives or preservatives to an ARUP Standard Transport Tube. (Min: 2 mL)
Transport Temperature:	Room temperature.
Unacceptable Conditions:	Breast milk.
Remarks:	
Stability:	Ambient: 1week; Refrigerated: 1 month; Frozen: 1 month
Methodology:	Qualitative Enzyme Immunoassay/Quantitative Liquid Chromatography-Tandem Mass Spectrometry
Performed:	Sun-Sat
Reported:	1-4 days
Note:	If the specimen screens positive, then Confirmation/Quantitation by LC-MS/MS (ARUP test code 0090369) will be added to confirm result. Additional charges apply. Compare to Pain Management, Marijuana Metabolite, Quantitative, with medMATCH, Urine; Pain Management, Marijuana Metabolite, with Confirmation with medMATCH, Urine.
CPT Codes:	80307; if reflexed, add 80349 (Reflexed Alt Code: G0480)
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

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 at which the screening test can detect a drug or metabolite varies. Specimens for which drugs or drug classes are detected by the screen are reflexed to a second, more specific technology (GC/MS and/or LC-MS/MS). 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.

For medical purposes only; not valid for forensic use.

Reference Interval:

Screen cutoff concentration: 5020 ng/mL

TEST CHANGE

Drug Profile, Screen with Reflex to Quantitation

2012312, PAIN RFX U

Specimen Requirements:	
Patient Preparation:	
Collect:	Random Urine.
Specimen Preparation:	Transfer 4 mL each into two (2) ARUP Standard Transport Tubes urine with no additives or preservatives. (Min: 2 mL each)
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Specimens exposed to multiple freeze/thaw cycles, Pharmaceutical preparation.
Remarks:	
Stability:	Ambient: 1 week; Refrigerated: 1 month; frozen: 1 month
Methodology:	Qualitative Enzyme Immunoassay/Quantitative Liquid Chromatography-Tandem Mass Spectrometry
Performed:	Sun-Sat
Reported:	1-8 days
Note:	If the specimen screens positive, then Confirmation/Quantitation by GC/MS and/or LC-MS/MS will be added to confirm result. Additional charges apply.
CPT Codes:	80307; if reflexed, add 80321; 80325; 80345; 80346; 80348; 80349; 80353; 80354; 80358; 80359; 80361; 80362; 80365; 80367; 80368; 80369; 80372; 80373; 83992 (Reflexed Alt Code: G0480)
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

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 at which the screening test can detect a drug or metabolite varies. Specimens for which drugs or drug classes are detected by the screen are reflexed to a second, more specific technology (GC/MS and or LC MS/MS). 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.

For medical purposes only; not valid for forensic use.

Reference Interval:

Drugs covered and range of cutoff concentrations

Drugs/Drug Classes	Screen
Amphetamines	300 ng/mL
Barbiturates	200 ng/mL
Benzodiazepines	200 ng/mL
Buprenorphine	5 ng/mL
Carisoprodol	100 ng/mL
Cocaine	150 ng/mL
Ethyl Glucuronide	500 ng/mL
Fentanyl	1 ng/mL
MDMA (Ecstasy)	500 ng/mL
Meperidine	200 ng/mL
Methadone	150 ng/mL
Opiates	300 ng/mL
Oxycodone	100 ng/mL
Phencyclidine	25 ng/mL
Propoxyphene	300 ng/mL
Tapentadol	200 ng/mL
Tramadol	100 ng/mL
THC (Cannabinoids)	5020 ng/mL
Zolpidem	20 ng/mL

TEST CHANGE

Coxiella burnetii (Q-Fever) Antibody IgG, Phase I and II with Reflex to Titer

2012625, QF G 1/2

Specimen Requirements:	
Patient Preparation:	
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. ~~Standard Transport Tube.~~ (Min: 0.4~~3~~ mL) Parallel testing is preferred and convalescent specimens must be received within 30 days from receipt of the acute specimens. Mark specimens plainly as "acute" and "convalescent."
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Contaminated, hemolyzed, or severely lipemic specimens.
Remarks:	
Stability:	After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)
Methodology:	Semi-Quantitative Indirect Fluorescent Antibody (IFA)
Performed:	Mon, Wed, Fri
Reported:	1-6 days
Note:	If either C. Burnetii Abs IgG Phase I and/or Phase II result is indeterminate or positive, then titer(s) will be added. Additional charges apply.
CPT Codes:	86638 x2; if reflexed add 86638 per titer
New York DOH Approval Status:	This test is New York DOH approved.
Interpretive Data:	
Single phase II IgG titers of 1:256 and greater are considered evidence of *C. burnetii* infection at some time prior to the date of the serum specimen. Phase I antibody titers of 1:16 and greater are consistent with chronic infection or convalescent phase of Q-fever.	
Reference Interval:	

Test Number	Component	Reference Interval
	C. burnetii (Q-Fever) Ab, Phase I IgG	Negative
	C. burnetii (Q-Fever) Ab, Phase II IgG	Negative

TEST CHANGE

Coxiella burnetii (Q-Fever) Antibodies, IgG and IgM, Phase I and II with Reflex to Titer

2012634, Q-F GM

Specimen Requirements:	
Patient Preparation:	
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. ~~Standard Transport Tube.~~ (Min: 0.4~~3~~ mL) Parallel testing is preferred and convalescent specimens must be received within 30 days from receipt of the acute specimens. Mark specimens plainly as "acute" and "convalescent."
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Contaminated, hemolyzed, or severely lipemic specimens.
Remarks:	
Stability:	After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)
Methodology:	Semi-Quantitative Indirect Fluorescent Antibody (IFA)
Performed:	Mon, Wed, Fri
Reported:	1-6 days
Note:	For IgG or IgM testing, if any Phase I or Phase II screening result is Indeterminate or Positive, then titer(s) will be added. Additional charges apply.
CPT Codes:	86638 x4; if reflexed add 86638 per titer
New York DOH Approval Status:	This test is New York DOH approved.
Interpretive Data:	
Refer to report.	
Reference Interval:	

Test Number	Components	Reference Interval
	C. burnetii (Q-Fever) Ab, Phase I IgG	Negative
	C. burnetii (Q-Fever) Ab, Phase II IgG	Negative
	C. burnetii (Q-Fever) Ab, Phase I IgM	Negative
	C. burnetii (Q-Fever) Ab, Phase II IgM	Negative

TEST CHANGE

Candida Species by PCR

2013798, CANDPCR

Specimen Requirements:	
Patient Preparation:	
Collect:	Body fluid, lLavender (K2EDTA) or pPink (K2EDTA).
Specimen Preparation:	Body Fluid: Transfer 1 mL body fluid to a sterile container. (Min: 0.5 mL). Whole Blood: Transfer 2 mL whole blood to a sterile container. (Min: 1 mL).
Transport Temperature:	Body Fluid: Frozen. Whole Blood: Refrigerated.
Unacceptable Conditions:	Plasma or serum, tissues.
Remarks:	Specimen source required.
Stability:	Body Fluid: Ambient: Unacceptable2 weeks; Refrigerated: 2 weeks; Frozen: 2 weeks Whole Blood: Ambient: Unacceptable1 week; Refrigerated; 1 week; Frozen: 1 week
Methodology:	Qualitative Polymerase Chain Reaction (PCR)
Performed:	Sun-Sat
Reported:	2-3 days
Note:	This test detects and differentiates C. albicans, C. glabrata, C. parapsilosis complex (C. parapsilosis, C. orthopsilosis, C. metapsilosis), C. tropicalis, C. krusei, and C. dubliniensis.
CPT Codes:	87481 x5
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

A negative result does not rule out the presence of PCR inhibitors in the patient specimen or test-specific nucleic acid in concentrations below the level of detection by the test.

This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the U.S.US Food and Drug Administration. This test was performed in a CLIA -certified laboratory and is intended for clinical purposes.

Reference Interval:

TEST CHANGE

Fungal Antibodies with Reflex to Blastomyces dermatitidis Antibodies by Immunodiffusion, CSF

3000230, FUNG R CSF

Specimen Requirements:	
Patient Preparation:	
Collect:	CSF.
Specimen Preparation:	Transfer 2~~1~~ mL CSF to an ARUP standard transport tube.~~Standard Transport Tube.~~ (Min: 1~~0.6~~ mL)
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Other body fluids. Contaminated, hemolyzed, xanthochromic, or severely lipemic specimens.
Remarks:	
Stability:	Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)
Methodology:	Semi-Quantitative Complement Fixation/Semi-Quantitative Enzyme-Linked Immunosorbent Assay (ELISA)/Qualitative ~~/~~Immunodiffusion
Performed:	Sun-Sat
Reported:	2-6 days
Note:	This test detects antibodies to Aspergillus, Coccidioides, and Histoplasma by complement fixation and Blastomyces by immunoassay. If Blastomyces antibodies are equivocal or positive by immunoassay then Blastomyces dermatitidis Antibodies by Immunodiffusion, CSF will be added. Additional charges apply.
CPT Codes:	86606; 86612; 86635; 86698 x2; if reflexed, add 86612
New York DOH Approval Status:	Specimens from New York clients will be sent out to a New York DOH approved laboratory, if possible.
Interpretive Data:	
Refer to report.	
Reference Interval:	

Test Number	Components	Reference Interval
	Coccidioides Ab by CF, CSF	Less than 1:2
	Aspergillus Antibody, CSF (CF)	Less than 1:2
	Histoplasma M, CSF (CF)	Less than 1:2
	Histoplasma Y, CSF (CF)	Less than 1:2
	Blastomyces Antibodies EIA, CSF	0.9 IV or less

TEST CHANGE

Fungal Antibodies with Reflex to Blastomyces dermatitidis Antibodies by Immunodiffusion, Serum

3000235, FUNG R SER

Specimen Requirements:	
Patient Preparation:	
Collect:	Serum separator tube.
Specimen Preparation:	Separate from cells ASAP or within 2 hours of collection. Transfer 2~~1~~ mL serum to an ARUP standard transport tube.~~Standard Transport Tube.~~ (Min: 1.2~~0.6~~ mL) Parallel testing is preferred and convalescent specimens must be received within 30 days from receipt of the acute specimens. Mark specimens plainly as "acute" or "convalescent."
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Contaminated, hemolyzed, or severely lipemic specimens.
Remarks:	
Stability:	After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)
Methodology:	Semi-Quantitative Complement Fixation/Semi-Quantitative Enzyme-Linked Immunosorbent Assay (ELISA)/Qualitative ~~/~~Immunodiffusion
Performed:	Sun-Sat
Reported:	2-6 days
Note:	This test detects antibodies to Aspergillus, Coccidioides, and Histoplasma by complement fixation and Blastomyces by immunoassay. If Blastomyces antibodies are equivocal or positive by immunoassay, then Blastomyces dermatitidis Antibodies by Immunodiffusion will be added. Additional charges apply.
CPT Codes:	86606; 86612; 86635; 86698 x2; if reflexed, add 86612
New York DOH Approval Status:	This test is New York DOH approved.
Interpretive Data:	
Refer to report.	

Reference Interval:

Test Number	Components	Reference Interval
	Aspergillus Antibodies by CF	Less than 1:8
	Coccidioides Antibody by CF	Less than 1:2
	Histoplasma Mycelia Antibodies by CF	Less than 1:8
	Histoplasma Yeast Antibodies by CF	Less than 1:8
	Blastomyces Antibodies EIA, SER	0.9 IV or less

TEST CHANGE

QuantiFERON-TB Gold Plus, 1-Tube

3000400, QFT-PLUS

Specimen Requirements:	
Patient Preparation:	
Collect:	QuantiFERON(R)-TB Gold Plus 1-tube (ARUP Supply #54015) available online through eSupply using ARUP Connect(TM) or contact ARUP Client Services at (800) 522-2787. For collection and transport instructions refer to QuantiFERON under Special Handling at https://www.aruplab.com/testing/quantiferon#collection. NOTE: The specimen must be submitted in the ARUP-provided collection tube due to the requirements of the laboratory automation.
Specimen Preparation:	Transport 6 mL whole blood. (Min: 5 mL).
Transport Temperature:	Refrigerated. Must be collected and shipped directly to ARUP the same calendar day.
Unacceptable Conditions:	Clotted specimens.
Remarks:	Do not collect or ship on, or the day before, holidays.
Stability:	Ambient: 3 hours; Refrigerated: 48 hours; Frozen: Unacceptable
Methodology:	Cell Culture/Semi-Quantitative Enzyme-Linked Immunosorbent Assay
Performed:	Sun-Sat
Reported:	1-4 days
Note:	If the stability requirements cannot be met, please refer to test 3000399, QuantiFERON-TB Gold Plus, 4-Tube.
CPT Codes:	86480
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

Interferon gamma release is measured for specimens from each of the four collection tubes. A qualitative result (Negative, Positive, or Indeterminate) is based on interpretation of the four values, NIL, MITOGEN minus NIL (MITOGEN-NIL), TB1 minus NIL (TB1-NIL), and TB2 minus NIL (TB2-NIL). The NIL value represents nonspecific reactivity produced by the patient specimen. The MITOGEN-

NIL value serves as the positive control for the patient specimen, demonstrating successful lymphocyte activity. The TB1-NIL tube specifically detects CD4+ lymphocyte reactivity, specifically stimulated by the TB1 antigens. The TB2-NIL tube detects both CD4+ and CD8+ lymphocyte reactivity, stimulated by TB2 antigens. An overall Negative result does not completely rule out TB infection.

A false-positive result in the absence of other clinical evidence of TB infection is not uncommon. Refer to: Updated Guidelines for Using Interferon Gamma Release Assays to Detect Mycobacterium tuberculosis Infection -- United States, 2010 (<http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5905a1.htm>), for more information concerning test performance in low-prevalence populations and use in occupational screening.

Reference Interval:

Components	Reference Interval
QuantiFERON-TB Gold In-Tube	Negative
QuantiFERON-TB1 minus NIL	0.34 IU/mL or less
QuantiFERON-TB2 minus NIL	0.34 IU/mL or less
QuantiFERON MITOGEN minus NIL	No reference interval
QuantiFERON NIL	No reference interval

TEST CHANGE

CYP2C8, CYP2C9, and CYP2C cluster

3001501, 2C8/2C9

Specimen Requirements:	
Patient Preparation:	
Collect:	Lavender (EDTA), pPink (K2EDTA), or yYellow (ACD sSolution A or B).
Specimen Preparation:	Transport 3 mL whole blood. (Min: 1 mL)
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Plasma or serum. Specimens collected in sodium heparin or lithium heparin. Frozen specimens in glass collection tubes.
Remarks:	
Stability:	Ambient: 72 hours; Refrigerated: 1 week; Frozen: 1 month
Methodology:	Polymerase Chain Reaction (PCR)/Fluorescence Monitoring
Performed:	Varies
Reported:	5-10 days
Note:	Whole blood is the preferred specimen. Saliva samples that yield inadequate DNA quality and/or quantity will be reported as inconclusive if test performance does not meet laboratory-determined criteria for reporting.
CPT Codes:	81227; 81479
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

Background Information for *CYP2C8*, *CYP2C9,* and *CYP2C* cluster:
Characteristics: The cytochrome P450 (CYP) isozymes 2C8 and 2C9 are involved in the metabolism of many drugs. Variants in the genes that code for CYP2C8 and CYP2C9 may influence pharmacokinetics of substrates, and may predict or explain nonstandardnon-standard dose requirements, therapeutic failure or adverse reactions. The *CYP2C* cluster variant (rs12777823) is associated with a decreased warfarin dose requirement in some people of African descent.
Inheritance: Autosomal codominant.
Cause: *CYP2C8* and *CYP2C9* gene variants and the *CYP2C* cluster variant affect enzyme function.
Variants Tested: See the "Additional Technical Information" document.
Clinical Sensitivity: Drug-dependent.

Methodology: Polymerase chain reaction (PCR) and fluorescence monitoring.
Analytical Sensitivity and Specificity: Greater than 99 percent.
Limitations: Only the targeted *CYP2C8,CYP2C9*, and *CYP2C* cluster variants will be detected by this panel, and assumptions about phase and content are made to assign alleles. Publicly available sources such as the www.pharmvar.org or www.pharmgkb.org provide guidance on phenotype predictions and allele frequencies. Diagnostic errors can occur due to rare sequence variations. Risk of therapeutic failure or adverse reactions with CYP2C8 or CYP2C9 substrates may be affected by genetic and nongenetic~~non-genetic~~ factors that are not detected by this test. This result does not replace the need for therapeutic drug or clinical monitoring.

Please note the information contained in this report does not contain medication recommendations, and should not be interpreted as recommending any specific medications. Any dosage adjustments or other changes to medications should be evaluated in consultation with a medical provider.

~~This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the US Food and Drug Administration. This test was performed in a CLIA certified laboratory and is intended for clinical purposes.~~

Counseling and informed consent are recommended for genetic testing. Consent forms are available online.

Reference Interval:

By report

TEST CHANGE

Hypersensitivity Pneumonitis Extended Panel (Farmer's Lung Panel)

3001561, HYPEREXT

Specimen Requirements:	
Patient Preparation:	
Collect:	Serum Separator Tube (SST).
Specimen Preparation:	Separate from cells ASAP or within 2 hours of collection. Transfer two 2.5 mL aliquots of serum to individual ARUP standard transport tubes.~~Standard Transport Tubes.~~ (Min: 1.5 mL Per aliquot)
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Plasma. Contaminated, hemolyzed, or severely lipemic specimens.
Remarks:	
Stability:	After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)
Methodology:	Qualitative Immunodiffusion/Quantitative ImmunoCAP Fluorescent Enzyme Immunoassay
Performed:	Sun-Sat
Reported:	3-7 days
Note:	Testing includes antibodies directed at Aspergillus fumigatus #1, A. fumigatus #2, A. fumigatus #3, A. fumigatus #6, A. flavus, Aureobasidium pullulans, Micropolyspora faeni, T. candidus, Saccharomonospora viridis and pigeon serum. Testing also includes the following allergens: Feather Mix, Beef, Pork, and Phoma betae.
CPT Codes:	86003 x3; 86005; 86331 x5; 86606 x5
New York DOH Approval Status:	This test is New York DOH approved.

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.

Reference Interval:

TEST CHANGE

Ova and Parasite Exam, Fecal (Immunocompromised or Travel History)

3001662, OP FEC

Specimen Requirements:	
Patient Preparation:	Specimens analyzed to determine the efficacy of treatment should be collected three to four weeks after completion of therapy. Antibiotics may affect results of exam.
Collect:	Stool. Recommended collection: 3 separate stool specimens within a 5-7-day period (an individual order must be submitted for each specimen).
Specimen Preparation:	Transfer 2 g of stool within one hour of collection into AlcorFix (ARUP Supply #52059) available online through eSupply using ARUP Connect(TM) or contact ARUP Client Services at ~~(~~800~~-)~~ 522-2787. (Min: 1 g) Also acceptable: Transfer 5 g of stool within one hour of collection into both 10 percent formalin and modified PVA (10 g total). (Min: 10 g total) Additional specimen collection instructions can be found at https://www.aruplab.com/parasep.
Transport Temperature:	Room t~~T~~emperature.
Unacceptable Conditions:	Rectal swabs. Multiple specimens (more than one in 24 hours). Unpreserved specimens. Specimens preserved in SAF (sodium acetate formalin). Specimens containing barium, bismuth~~oil~~, or urine.
Remarks:	Indicate suspected parasites.
Stability:	Ambient: 9 months; Refrigerated: 9 months; Frozen: Unacceptable
Methodology:	Qualitative Concentration/Trichrome Stain/Microscopy
Performed:	Sun-Sat
Reported:	3-7 days
Note:	For o~~O~~va and p~~P~~arasite exams from nonstool sources, refer to Ova and Parasite Exam, Body Fluid or Urine (ARUP test code 3001663). For Cryptosporidium, Cyclospora, and Cystoisospora stains, refer to Parasitology Stain by Modified Acid-Fast (ARUP test code 0060046). For macroscopic parasite identification (worms or proglottids), refer to Parasite Examination, Macroscopic (ARUP test code 2007361). For additional test

	information refer to ARUP Ceonsult, https://arupconsult.com/content/diarrhea
CPT Codes:	87177; 87209
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

Method for identification of oOva and pParasites includes wet mount and trichrome stain.

Due to the various shedding cycles of many parasites, three separate stool specimens collected over a 5-7-day period are recommended for ova and parasite examination. A single negative result does not rule out the possibility of a parasitic infection. The ova and parasite exam does not specifically detect *Cryptosporidium*, *Cyclospora*, *Cystoisospora*, and Microsporidia. For additional test information refer to ARUP Ceonsult, https://arupconsult.com/content/diarrhea

Reference Interval:

Negative

TEST CHANGE

Acetylcholine Receptor Binding Antibody with reflex to Muscle-Specific Kinase (MuSK) Ab, IgG

3001868, ACHR BIN R

Specimen Requirements:	
Patient Preparation:	
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: 0.3 mL)
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Plasma. Contaminated, hemolyzed, or severely lipemic specimens.
Remarks:	
Stability:	After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 month (avoid repeated freeze/thaw cycles)
Methodology:	Quantitative Radioimmunoassay (RIA)
Performed:	Sun-Sat
Reported:	2-8 days
Note:	If Acetylcholine Receptor Binding Antibody result is less than or equal to 0.4 nmol/L then Muscle-Specific Kinase (MuSK) Ab, IgG (ARUP test code 3006198576) will be added. Additional charges apply.
CPT Codes:	83519; if reflexed, add 86255; if reflexed, add 8625683519
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

Approximately 85-90 percent of patients with myasthenia gravis (MG) express antibodies to the acetylcholine receptor (AChR), which can be divided into binding, blocking, and modulating antibodies. Binding antibody can activate complement and lead to loss of AChR. Blocking antibody may impair binding of acetylcholine to the receptor, leading to poor muscle contraction. Modulating antibody causes receptor endocytosis resulting in loss of AChR expression, which correlates most closely with clinical severity of disease. Approximately 10-15 percent of individuals with confirmed myasthenia gravis have no measurable binding, blocking, or modulating antibodies.

This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the US Food and Drug Administration. This test was performed in a CLIA certified laboratory and is intended for clinical purposes.

Component	Interpretive Data
Acetylcholine Binding Antibody	0.0-0.4 nmol/L: Negative 0.5 nmol/L or greater: Positive

Reference Interval:

Test Number	Components	Reference Interval
	Acetylcholine Binding Antibody	0.4 nmol/L or less

HOTLINE NOTE: There is a reflexive pattern change associated with this test. One or more orderable or component has been added or removed to the reflexive pattern. Refer to the Hotline Test Mix for interface build information.

TEST CHANGE

Myasthenia Gravis Reflexive Panel

3001869, MG R PAN

Specimen Requirements:	
Patient Preparation:	
Collect:	Serum Separator Tube (SST).
Specimen Preparation:	Separate from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.5 mL)
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Contaminated, hemolyzed, or severely lipemic specimens.
Remarks:	
Stability:	After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 month (avoid repeated freeze/thaw cycles)
Methodology:	Quantitative Radioimmunoassay (RIA)/~~/~~Semi-Quantitative Flow Cytometry
Performed:	Sun-Sat
Reported:	3-8 days
Note:	If Acetylcholine Receptor Binding Antibody result is greater than 0.4 nmol/L or Acetylcholine Receptor Blocking Antibody result is greater than 26 percent, then Acetylcholine Receptor Modulating Antibody (ARUP test code 0099521) will be added. If Acetylcholine Receptor Binding Antibody result is less than or equal to 0.4 nmol/L, then Muscle-Specific Kinase (MuSK) Ab, IgG (ARUP test code 300619857~~6~~) will be added. Additional charges apply.
CPT Codes:	83519; 83516; if reflexed, add 83516 or 86255; if reflexed add 86256~~, 83519~~
New York DOH Approval Status:	This test is New York DOH approved.
Interpretive Data:	

Approximately 85-90 percent of patients with myasthenia gravis (MG) express antibodies to the acetylcholine receptor (AChR), which can be divided into binding, blocking, and modulating antibodies. Binding antibody can activate complement and lead to loss of AChR. Blocking antibody may impair binding of acetylcholine to the receptor, leading to poor muscle contraction. Modulating antibody causes receptor endocytosis resulting in loss of AChR expression, which correlates most closely with clinical severity of disease. Approximately 10-15 percent of individuals with confirmed myasthenia gravis have no measurable binding, blocking, or modulating antibodies.

This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the US Food and Drug Administration. This test was performed in a CLIA certified laboratory and is intended for clinical purposes.

Components	Interpretive Data
Acetylcholine Binding Antibody	0.0-0.4 nmol/L: Negative 0.5 nmol/L or greater: Positive
Acetylcholine Blocking Antibody	0-26% blocking: Negative 27-41% blocking: Indeterminate 42% or greater blocking: Positive

Reference Interval:

Test Number	Components	Reference Interval
	Acetylcholine Binding Antibody	0.4 nmol/L or less
	Acetylcholine Blocking Antibody	26 % blocking or less

HOTLINE NOTE: There is a reflexive pattern change associated with this test. One or more orderable or component has been added or removed to the reflexive pattern. Refer to the Hotline Test Mix for interface build information.

TEST CHANGE

Kell K/k (KEL) Antigen Genotyping

3002001, KEL GENO

Specimen Requirements:	
Patient Preparation:	
Collect:	Fetal genotyping: Amniotic fluid OR Cultured amniocytes: Two T-25 flasks at 80 percent confluency. If the client is unable to culture, order test Cytogenetics Grow and Send (ARUP test code 0040182) in addition to this test and ARUP will culture upon receipt (culturing fees will apply). If you have any questions, contact ARUP's Genetics Processing at 800-522-2787 ext. 3301. WITH maternal cell contamination specimen (see Note): Lavender (K2EDTA), pPink (K2EDTA), or yYellow (ACD sSolution A or B). Parental genotyping: Lavender (K2EDTA), pPink (K2EDTA).
Specimen Preparation:	Amniotic fluid: Transport 10 mL amniotic fluid in a sterile container. (Min: 5 mL). Cultured amniocytes: Transport two T-25 flasks at 80 percent confluency filled with culture media. Backup cultures must be retained at the client's institution until testing is complete. Maternal cell contamination specimen: Transport 3 mL whole blood (Min: 1 mL) Whole blood (parental genotyping): Transport 3 mL whole blood. (Min: 1 mL)
Transport Temperature:	Amniotic fluid, cultured amniocytes: CRITICAL ROOM TEMPERATURE. Must be received within 48 hours of shipment due to lability of cells. Whole blood or maternal cell contamination specimen: Refrigerated.
Unacceptable Conditions:	Plasma or serum. Specimens collected in sodium heparin tubes. Frozen specimens in glass collection tubes.
Remarks:	Patient History Form is available on the ARUP website or by contacting ARUP Client Services.
Stability:	Fetal specimens: Ambient: 48 hours; Refrigerated: Unacceptable; Frozen: Unacceptable Whole blood or maternal cell contamination specimen: Ambient: 72 hours; Refrigerated: 1 week; Frozen: 1 month
Methodology:	Polymerase Chain Reaction (PCR)/Fluorescence Monitoring
Performed:	Varies
Reported:	3-10 days

Note:	Maternal specimen is recommended for proper test interpretation if contamination of the fetal specimen from the mother is suspected. Order Maternal Cell Contamination.
CPT Codes:	0001U
New York DOH Approval Status:	This test is New York DOH approved.
Interpretive Data:	
Refer to report	
Reference Interval:	
By report.	

TEST CHANGE

RhC/c (RHCE) Antigen Genotyping

3002002, RHC GENO

Specimen Requirements:	
Patient Preparation:	
Collect:	Fetal genotyping: Amniotic fluid. OR Cultured amniocytes: Two T-25 flasks at 80 percent confluency. If the client is unable to culture, order test Cytogenetics Grow and Send (ARUP test code 0040182) in addition to this test and ARUP will culture upon receipt (culturing fees will apply). If you have any questions, contact ARUP's Genetics Processing at 800-522-2787 ext. 3301. WITH maternal cell contamination specimen (see Note): Lavender (K2EDTA), pPink (K2EDTA), or yYellow (ACD sSolution A or B). Parental genotyping: Lavender (K2EDTA), pPink (K2EDTA)
Specimen Preparation:	Amniotic fluid: Transport 10 mL amniotic fluid in a sterile container. (Min: 5 mL). Cultured amniocytes: Transport two T-25 flasks at 80 percent confluency filled with culture media. Backup cultures must be retained at the client's institution until testing is complete. Maternal cell contamination specimen: Transport 3 mL whole blood (Min: 1 mL) Whole blood (parental genotyping): Transport 3 mL whole blood. (Min: 1 mL)
Transport Temperature:	Cultured amniocytes: CRITICAL ROOM TEMPERATURE. Must be received within 48 hours of shipment due to lability of cells. Whole blood or maternal cell contamination specimen: Refrigerated.
Unacceptable Conditions:	Plasma or serum. Specimens collected in sodium heparin tubes. Frozen specimens in glass collection tubes.
Remarks:	Patient History Form is available on the ARUP website or by contacting ARUP Client Services.
Stability:	Fetal specimens: Ambient: 48 hours; Refrigerated: Unacceptable; Frozen: Unacceptable Whole blood or maternal cell contamination specimen: Ambient: 72 hours; Refrigerated: 1 week; Frozen: 1 month
Methodology:	Polymerase Chain Reaction (PCR)/Fluorescence Monitoring
Performed:	Varies
Reported:	3-10 days

Note:	Maternal specimen is recommended for proper test interpretation if contamination of the fetal specimen from the mother is suspected. Order Maternal Cell Contamination.
CPT Codes:	0001U
New York DOH Approval Status:	This test is New York DOH approved.
Interpretive Data:	
Refer to report	
Reference Interval:	
By report	

TEST CHANGE

RhE/e (RHCE) Antigen Genotyping

3002003, RHE GENO

Specimen Requirements:	
Patient Preparation:	
Collect:	Fetal genotyping: Amniotic fluid. Cultured amniocytes: Two T-25 flasks at 80 percent confluency. If the client is unable to culture, order test Cytogenetics Grow and Send (ARUP test code 0040182) in addition to this test and ARUP will culture upon receipt (culturing fees will apply). If you have any questions, contact ARUP's Genetics Processing at 800-522-2787 ext. 3301. WITH maternal cell contamination specimen (see Note): Lavender (K2EDTA), pPink (K2EDTA), or yYellow (ACD sSolution A or B). Parental genotyping: Lavender (K2EDTA), pPink (K2EDTA).
Specimen Preparation:	Amniotic fluid: Transport 10 mL amniotic fluid in a sterile container. (Min: 5 mL). Cultured amniocytes: Transport two T-25 flasks at 80 percent confluency filled with culture media. Backup cultures must be retained at the client's institution until testing is complete. Maternal cell contamination specimen: Transport 3 mL whole blood (Min: 1 mL) Whole blood (parental genotyping): Transport 3 mL whole blood. (Min: 1 mL)
Transport Temperature:	Amniotic fluid, cultured amniocytes: CRITICAL ROOM TEMPERATURE. Must be received within 48 hours of shipment due to lability of cells. Whole blood or maternal cell contamination specimen: Refrigerated.
Unacceptable Conditions:	Plasma or serum. Specimens collected in sodium heparin tubes. Frozen specimens in glass collection tubes.
Remarks:	Patient History Form is available on the ARUP Web site or by contacting ARUP Client Services.
Stability:	Fetal specimens: Ambient: 48 hours; Refrigerated: Unacceptable; Frozen: Unacceptable Whole blood or maternal cell contamination specimen: Ambient: 72 hours; Refrigerated: 1 week; Frozen: 1 month
Methodology:	Polymerase Chain Reaction (PCR)/Fluorescence Monitoring
Performed:	Varies
Reported:	3-10 days

Note:	Maternal specimen is recommended for proper test interpretation if contamination of the fetal specimen from the mother is suspected. Order Maternal Cell Contamination.
CPT Codes:	0001U
New York DOH Approval Status:	This test is New York DOH approved.
Interpretive Data:	
Refer to report	
Reference Interval:	
By report	

TEST CHANGE

Allergen, Food, Peanut w/Component Rflx~~with Reflex~~

3002253, PEANUT R

Specimen Requirements:	
Patient Preparation:	Multiple patient encounters should be avoided.
Collect:	Serum Separator Tube.
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: 0.25 mL). For multiple allergen orders refer to "Allergen Specimen Collection Instructions" at www.aruplab.com/testing/resources/specimen.
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Hemolyzed, icteric, or lipemic specimens.
Remarks:	
Stability:	After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year
Methodology:	Quantitative ImmunoCAP Fluorescent Enzyme Immunoassay
Performed:	Sun-Sat
Reported:	1-3 days
Note:	This assay will reflex to 6 unique peanut protein components if the result is 0.1 or higher. Additional charges apply.
CPT Codes:	86003; if reflexed add 86008 x6
New York DOH Approval Status:	This test is New York DOH approved.

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.

Reference Interval:

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

TEST CHANGE

Phosphatidylethanol (PEth), Whole Blood, Quantitative

3002598, PETH

Specimen Requirements:	
Patient Preparation:	
Collect:	Lavender (K2 or K3 EDTA), Pink (K2EDTA), Green (lithium heparin), or Gray (potassium oxalate).
Specimen Preparation:	Transport 1 mL whole blood. (Min: 0.5 mL)
Transport Temperature:	Refrigerated. Also acceptable: Frozen.
Unacceptable Conditions:	Gel separator tubes, Plain Red, light blue (citrate), or yellow (SPS or ACD solution).
Remarks:	
Stability:	Ambient: 2 hours; Refrigerated: 2 weeks; Frozen: 1 month (-20 Degrees C)
Methodology:	Quantitative Liquid Chromatography-Tandem Mass Spectrometry
Performed:	Sun-Sat
Reported:	1-4 days
Note:	
CPT Codes:	80321 (Alt code: G0480)
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

Phosphatidylethanol (PEth) is a group of phospholipids formed in the presence of ethanol, phospholipase D and phosphatidylcholine. PEth is known to be a direct alcohol biomarker. The predominant PEth homologues are PEth 16:0/18:1 (POPEth) and PEth 16:0/18:2 (PLPEth), which account for 37-46% and 26-28% of the total PEth homologues, respectively. PEth is incorporated into the phospholipid membrane of red blood cells and has a general half-life of 4 - 10 days and a window of detection of 2 - 4 weeks. However, the window of detection is longer in individuals who chronically or excessively consume alcohol. Serial monitoring of PEth may be helpful in monitoring alcohol abstinence over time. PEth results should be interpreted in the context of the patient's clinical and behavioral history. Patients with advanced liver disease may have falsely elevated PEth concentrations (Nguyen VL et al 2018, Alcoholism Clinical & Experimental Research).

Reference Interval:

Effective September 8, 2020

By Report

HOTLINE NOTE: There is a component change associated with this test. One or more components have been added or removed. Refer to the Hotline Test Mix for interface build information.

TEST CHANGE

COVID-19 IgG, Qualitative by CIA

3002776, COV19QUALG

Specimen Requirements:	
Patient Preparation:	
Collect:	Serum separator tube (SST) or EDTA plasma
Specimen Preparation:	Separate serum or plasma from cells ASAP or within 2 hours of collection. Transfer 0.5mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.25 mL)
Transport Temperature:	Refrigerated
Unacceptable Conditions:	Grossly hemolyzed, grossly icteric, or severely lipemic specimens. Postmortem specimens.
Remarks:	Preferred: ARUP Standard Transport Tube for specimen submission (ARUP Item# 15824).
Stability:	Refrigerated: 1 week; Frozen: 1 month
Methodology:	Qualitative Chemiluminescent Immunoassay (CLIA)
Performed:	Mon, Wed, Fri ~~Sun-Sat~~
Reported:	1-5 days
Note:	
CPT Codes:	86769
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

The COVID-19 IgG, Qualitative by CIA test is for in vitro diagnostic use under an FDA Emergency Use Authorization (EUA). In compliance with this authorization, please visit https://www.aruplab.com/infectious-disease/coronavirus/testing for more information and to access the applicable information sheets. This test should not be used for screening of donated blood.
Use for the qualitative detection of IgG antibodies against the nucleocapsid protein of SARS-CoV-2 (COVID-19) that develop in response to natural infection with SARS-CoV-2. These antibodies do not develop as a result of a COVID-19 vaccination. There are no current recommendations for assessing COVID-19 vaccine response.

Reference Interval:

Negative

TEST CHANGE

Pancreatic Elastase, Fecal by Immunoassay

3002858, ELASTASE

Specimen Requirements:	
Patient Preparation:	
Collect:	Stool.
Specimen Preparation:	Transfer 5 g stool to an unpreserved stool transport vial (ARUP supply #40910). Available online through eSupply using ARUP Connect(TM) or contact ARUP Client Services at ~~(~~800-~~)~~-522-2787. (Min: 1 g)
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Stool in media or preservative. Swabs.
Remarks:	
Stability:	Ambient: Unacceptable; Refrigerated: 2 weeks; Frozen: 30 days.
Methodology:	Quantitative Chemiluminescent Immunoassay (CLIA)
Performed:	Sun-Sat
Reported:	1-4~~3~~ days
Note:	Enzyme substitution therapy does not influence the determination of Pancreatic Elastase-1.
CPT Codes:	82653
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

Reference range does not apply for infants less than one month old.

Reference Interval:

Effective August 17, 2020

Greater or equal to 200 ug/g	Normal
100 to <200 ug/g	Moderate to mild exocrine pancreatic insufficiency
Less than 100	Severe exocrine

ug/g	pancreatic insufficiency	

TEST CHANGE

Calprotectin, Fecal by Immunoassay

3002859, CALPRO FEC

Specimen Requirements:	
Patient Preparation:	
Collect:	Stool.
Specimen Preparation:	Transfer 5 g stool to an unpreserved stool transport vial (ARUP Supply #40910). Available online through eSupply using ARUP Connect(TM) or contact ARUP Client Services at ~~(~~800~~-)~~ 522-2787. (Min: 1 g)
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Specimens in media or preservatives.
Remarks:	
Stability:	Ambient: Unacceptable; Refrigerated: 7 days; Frozen: 30 days
Methodology:	Quantitative Chemiluminescent Immunoassay (CLIA)
Performed:	Sun-Sat
Reported:	1-4~~3~~ days
Note:	
CPT Codes:	83993
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

Fecal Calprotectin is an indicator of the presence of neutrophils in stool and is not specific for IBD. Other intestinal ailments including GI infections and colorectal cancer can result in elevated concentrations of calprotectin. The diagnosis of IBD cannot be established solely on the basis of a positive calprotectin result. Patients with IBD fluctuate between active and inactive stages of disease. Calprotectin results may also fluctuate.

Reference Interval:

49 ug/g or less	Normal
50-120 ug/g	Borderline elevated, test should be re-evaluated in 4-6 weeks.
121 ug/g	Elevated

TEST CHANGE

Coccidioides Antibodies by Complement Fixation and Immunodiffusion, Serum

3002995, COCC.CFIDS

Specimen Requirements:	
Patient Preparation:	
Collect:	Serum Separator Tube (SST).
Specimen Preparation:	Separate from cells ASAP or within 2 hours of collection. Transfer 2 mL serum to an ARUP standard transport tube. ~~Standard Transport Tube.~~ (Min: 0.8~~6~~ mL). Parallel testing is preferred, and convalescent specimens must be received within 30 days from receipt of the acute specimens.
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Other body fluids. Contaminated, hemolyzed, icteric, or lipemic specimens.
Remarks:	Mark specimens plainly as "acute" or "convalescent".
Stability:	Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)
Methodology:	Semi-Quantitative Complement Fixation/Qualitative Immunodiffusion
Performed:	Sun-Sat
Reported:	2-6 days
Note:	This immunodiffusion test uses culture filtrates of Coccidioides immitis and includes CF and TP antigens.
CPT Codes:	86635 x2
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

Refer to report

Reference Interval:

Test Number	Components	Reference Interval
	Coccidioides Antibody by CF	Less than 1:2

	Coccidioides by Immunodiffusion, Serum	Not detected.

TEST CHANGE

CYP2B6

3004310, 2B6GENO

Specimen Requirements:	
Patient Preparation:	
Collect:	Lavender (EDTA), pPink (K2EDTA), or yYellow (ACD sSolution A or B).
Specimen Preparation:	Transport 3 mL whole blood. (Min: 1 mL)
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Plasma or serum. Specimens collected in sodium heparin or lithium heparin. Frozen specimens in glass collection tubes.
Remarks:	
Stability:	Ambient: 72 hours; Refrigerated: 1 week; Frozen: 1 month
Methodology:	Polymerase Chain Reaction (PCR)/Fluorescence Monitoring
Performed:	Varies
Reported:	5-10 days
Note:	Whole blood is the preferred specimen. Saliva samples that yield inadequate DNA quality and/or quantity will be reported as inconclusive if test performance does not meet laboratory-determined criteria for reporting.
CPT Codes:	81479
New York DOH Approval Status:	This test is New York DOH approved.
Interpretive Data:	
Refer to report.	
Reference Interval:	
By report	

NEW TEST – Available Now

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Genital Ulcer Disease Panel by PCR

3005674, GUDP PCR

Specimen Requirements:	
Patient Preparation:	
Collect:	Genital, anal, or rectal swabs with APTIMA Unisex Swab Specimen Collection kit (ARUP supply #28907) OR in Viral Transport Media (ARUP supply #12884) available online through eSupply using ARUP Connect, or contact ARUP Client Services at (800) 522-2787.
Specimen Preparation:	APTIMA Swab: Place blue swab in Swab Specimen Transport Tube, break shaft off at score line, then recap tube. Swab in Viral Transport Media (VTM): Transfer swab to viral transport media.
Transport Temperature:	Frozen
Unacceptable Conditions:	Serum, plasma, ocular fluid, and CSF
Remarks:	Specimen source required
Stability:	Ambient: 3 days; Refrigerated: 1 month; Frozen: 1 month
Methodology:	Qualitative Polymerase Chain Reaction
Performed:	Tues, Thurs, Sat
Reported:	1-5 days
Note:	This test detects and differentiates Herpes simplex virus 1, Herpes simplex virus 2, Treponema pallidum, Haemophilus ducreyi, and Chlamydia trachomatis L serovar. This test does not differentiate Chlamydia trachomatis L1-L3 serovars.
CPT Codes:	87491, 87529 x2, 87798 x2
New York DOH Approval Status:	Specimens from New York clients will be sent out to a New York DOH approved laboratory, if possible.

Interpretive Data:

A negative result does not rule out the presence of PCR inhibitors in the patient specimen or test-specific nucleic acid in concentrations below the level of detection by this assay.

This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the U.S. Food and Drug Administration. This test was performed in a CLIA-certified laboratory and is intended for clinical purposes.

Reference Interval:

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

NEW TEST – Available Now

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Rapid Whole Genome Sequencing, Familial Control

3005928, RWGS FAM

Specimen Requirements:	
Patient Preparation:	
Collect:	Lavender (EDTA) or yellow (ACD solution A or B). Peripheral blood required. Contact ARUP's genetic counselor at 800-242-2787 ext. 2141 prior to test submission
Specimen Preparation:	Transport 2 mL whole blood. (Min: 0.5 mL)
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	
Remarks:	This test is used for parental control samples associated with a proband sample submitted for RWGS NGS. A report will NOT be provided for samples ordered using this test code. If a report for parental control sample is desired, order RWGS FRPT (3005933).
Stability:	Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable
Methodology:	Massively Parallel Sequencing
Performed:	Varies
Reported:	5-7 days
Note:	Parental samples are used to aid in interpretation of the proband's genome sequencing data. This test is ordered when a report of ACMG secondary findings is not desired for submitted parental controls.
CPT Codes:	NA
New York DOH Approval Status:	Specimens from New York clients will be sent out to a New York DOH approved laboratory, if possible.
Interpretive Data:	
Refer to report.	
Reference Interval:	
By report	

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

NEW TEST – Available Now

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Rapid Whole Genome Sequencing, Familial Control with Report

3005933, RWGS FRPT

Specimen Requirements:	
Patient Preparation:	
Collect:	Lavender (EDTA) or yellow (ACD solution A or B). Peripheral blood required. Contact ARUP's genetic counselor at 800-242-2787 ext. 2141 prior to test submission
Specimen Preparation:	Transport 2 mL whole blood. (Min: 0.5 mL)
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	
Remarks:	This test is used for parental control samples associated with a proband sample submitted for RWGS NGS. A report will be provided for samples ordered using this test code. If a report for parental control sample is not desired, order RWGS FAM (3005928).
Stability:	Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable
Methodology:	Massively Parallel Sequencing
Performed:	Varies
Reported:	5-7 days
Note:	Parental samples are used to aid in interpretation of the proband's genome sequencing data. This test is ordered when a report of ACMG secondary findings is desired for submitted parental controls. For each parental specimen, please indicate on the intake form that the sample is control and reference the patient's name.
CPT Codes:	NA
New York DOH Approval Status:	Specimens from New York clients will be sent out to a New York DOH approved laboratory, if possible.
Interpretive Data:	
Refer to report.	
Reference Interval:	

By report

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

NEW TEST – Available Now

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Rapid Whole Genome Sequencing

3005935, RWGS NGS

Specimen Requirements:	
Patient Preparation:	
Collect:	Lavender (EDTA) or yellow (ACD solution A or B). Peripheral blood required. Contact ARUP's genetic counselor at 800-242-2787 ext. 2141 prior to test submission Refer to RWGS FAM (3005928) or RWGS FRPT (3005933) for parental specimen requirements. RWGS NGS requires two parental controls ordered using either of the test codes above. Testing will not be approved if 3 specimens (proband, 2 parental controls) are not received with associated orders. New York State Clients: ARUP cannot facilitate testing for New York patients. Please work directly with a New York-approved laboratory.
Specimen Preparation:	Transport 2 mL whole blood. (Min: 0.5 mL) Refer to RWGS FAM (3005928) or RWGS FRPT (3005933) for parental specimen requirements.
Transport Temperature:	Refrigerated. Refer to RWGS FAM (3005928) or RWGS FRPT (3005933) for parental specimen requirements.
Unacceptable Conditions:	
Remarks:	Testing will not be approved if 3 total specimens (proband, 2 parental controls) are not received with associated orders.
Stability:	Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable
Methodology:	Massively Parallel Sequencing
Performed:	Varies
Reported:	5-7 days
Note:	This test is not orderable on proband only. Familial (parental) controls are required for analysis. The ability to identify causative variant(s) for the patient's presentation is strongly influenced by the quality of the clinical information required.
CPT Codes:	81425; per familial comparator, 81426 is added
New York DOH Approval Status:	Specimens from New York clients will be sent out to a New

York DOH approved laboratory, if possible.

Interpretive Data:
Refer to report.
Reference Interval:
By report

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

NEW TEST – Available Now

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Rapid Whole Genome Reanalysis

3005939, RWGS REA

Specimen Requirements:	
Patient Preparation:	
Collect:	No new specimen is required to process this test. New York State Clients: ARUP cannot facilitate testing for New York patients. Please work directly with a New York-approved laboratory.
Specimen Preparation:	
Transport Temperature:	
Unacceptable Conditions:	
Remarks:	Patient History Form for Rapid Whole Genome Reanalysis (REQUIRED); Fax to Genetics Processing at 801-584-5249.
Stability:	
Methodology:	Bioinformatic Processing and Variant Analysis
Performed:	Varies
Reported:	Within 21 days
Note:	Only the proband will receive an updated report. The most current list of American College of Medical Genetics and Genomics (ACMG) recommended genes will be examined for the proband if consent for reporting ACMG variants was originally provided.
CPT Codes:	81427
New York DOH Approval Status:	Specimens from New York clients will be sent out to a New York DOH approved laboratory, if possible.
Interpretive Data:	
Refer to report.	
Reference Interval:	
By report.	

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

NEW TEST

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Aldosterone and Renin Direct, With Ratio

3005949, ALD/DR

Specimen Requirements:	
Patient Preparation:	Collect midmorning (i.e., 7am10am) after patient has been sitting, standing, or walking for at least 30 minutes and seated for 5-15 minutes. If the patient is supine, ensure that the patient is in this position for at least 30 minutes prior to collection. Fasting specimens are recommended but not required.
Collect:	Serum separator tube (SST) AND lavender (EDTA) from a supine or upright patient. Do not collect in refrigerated tubes nor store tubes on ice. Process blood at room temperature and centrifuge tubes in a nonrefrigerated centrifuge.
Specimen Preparation:	Separate from cells ASAP or within 2 hours of collection. Serum: Transfer 1 mL serum to an ARUP standard transport tube (Min: 0.5mL) AND Plasma: Transfer 2 mL EDTA plasma to an ARUP standard transport tube and freeze immediately. (Min: 1 mL)
Transport Temperature:	Both specimens should be collected and submitted together for testing. Serum: Frozen. Also acceptable: Refrigerated. Plasma: Frozen
Unacceptable Conditions:	Refrigerated plasma or plasma collected in citrate, heparin, or oxalate. Grossly hemolyzed specimens.
Remarks:	
Stability:	Serum: Ambient: 8 hours; Refrigerated: 5 days; Frozen: 1 month Plasma: Ambient: 8 hours; Refrigerated: Unacceptable; Frozen: 1 month
Methodology:	Qualitative Chemiluminescent Immunoassay (CLIA)
Performed:	Mon, Wed, Fri
Reported:	1-5 days
Note:	Do not use this test for patients treated with cathepsin B. Menstruating females and those taking estrogen containing medications may have lower renin direct concentrations, resulting in falsely high aldosterone-renin ratio (ARR). In these cases, order Aldosterone/Renin Activity Ratio (ARUP test code 0070073). Refer to the Additional Technical Information for Endocrine Society recommendations for patient preparation, specimen collection, medications for hypertension control during confirmatory testing for primary aldosteronism, and factors that may lead to false-positive or false-negative ARR results.

CPT Codes:	Refer to Aldosterone (0070015) and Renin, Direct (2001575)
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

Normal serum levels of aldosterone are dependent on the sodium intake and whether the patient is upright or supine. High sodium intake will tend to suppress serum aldosterone, whereas low sodium intake will elevate serum aldosterone. The reference intervals for serum aldosterone are based on normal sodium intake.

Reference Interval:

Test Number	Components	Reference Interval
	Direct Renin	

Age	Upright (pg/mL)	Supine (pg/mL)
Less than or equal to 40 years	4.2-52.2	3.2-33.2
Greater than 40 years	3.6-81.6	2.5-45.1

	Aldosterone

Age	Posture Unspecified (ng/dL)	Supine (ng/dL)	Upright (ng/dL)
0-6 days	5.0-102.0		
1-3 weeks	6.0-179.0		
1-11 months	7.0-99.0		
1-2 years	7.0-93.0		
3-10 years	4.0-44.0		
11-14 years	4.0-31.0		
15 years and older	31.0 or less	16.0 or less	4.0-31.0

	Aldosterone/Direct Renin Calculation

0.1-3.7

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

NEW TEST – Available Now

Click for Pricing

Borrelia burgdorferi VlsE1/pepC10 Antibodies, Total by ELISA With Reflex to IgM and IgG by ELISA (Modified Two-Tier Testing)

3006053, LYME MTTT

Specimen Requirements:	
Patient Preparation:	
Collect:	Serum separator tube.
Specimen Preparation:	Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.15 mL)
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	CSF or plasma. Contaminated, heat-inactivated, hemolyzed, or severely lipemic specimens.
Remarks:	
Stability:	After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 month (avoid repeated freeze/thaw cycles)
Methodology:	Semiquantitative Enzyme-Linked Immunosorbent Assay
Performed:	Mon-Fri
Reported:	1-4 days
Note:	If VlsE1/pepC10 antibodies by ELISA is 0.91 IV or greater, then IgM and IgG by ELISA will be added. Additional charges apply.
CPT Codes:	86618; if reflexed, add 86618 x2
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

Refer to report.

Component	Interpretation
B. Burgdorferi VlsE1/pepC10 Abs, ELISA	0.90 IV or less; Negative - VlsE1 and pepC10 antibodies to B. burgdorferi not detected. 0.91-1.09 IV; Equivocal

	- Repeat testing in 10-14 days may be helpful. 1.10 IV or greater; Positive - VlsE1 and pepC10 antibodies to B. burgdorferi detected.	

Reference Interval:

Test Number	Components	Reference Interval
	B. burgdorferi VlsE1/pepC10 Abs, ELISA	0.90 IV or less
	B. burgdorferi VlsE1/pepC10 Abs, ELISA	

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

NEW TEST – Available Now

Click for Pricing

Thyroid Stimulating Hormone by Immunohistochemistry

3006168, TSH-IHC

Specimen Requirements:	
Patient Preparation:	
Collect:	Tissue
Specimen Preparation:	Formalin fix (10 percent neutral buffered formalin) and paraffin embed specimen (cells must be prepared into a cellblock). Protect paraffin block and/or slides from excessive heat. Transport tissue block or 2 unstained (4-micron thick sections), positively charged slides in a tissue transport kit (ARUP supply #47808) available online through eSupply using ARUP Connector contact ARUP Client Services at (800) 522-2787. (Min: 2 slides) If sending precut slides, do not oven bake.
Transport Temperature:	Room temperature. Also acceptable: Refrigerated. Ship in cooled container during summer months.
Unacceptable Conditions:	N/A
Remarks:	
Stability:	Ambient: Indefinitely; Refrigerated: Indefinitely; Frozen: Unacceptable
Methodology:	Qualitative Immunohistochemistry (IHC)
Performed:	Mon-Fri
Reported:	1-3 days
Note:	
CPT Codes:	88342
New York DOH Approval Status:	This test is New York DOH approved.
Interpretive Data:	

Reference Interval:

Test Number	Components	Reference Interval

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

NEW TEST – Available Now

Click for Pricing

Isobutyryl/butyryl-carnitine (C4) Quantitative, Urine

3006178, C4 URINE

Specimen Requirements:	
Patient Preparation:	
Collect:	Random urine.
Specimen Preparation:	Transfer 2.5 mL urine to an ARUP standard transport tube and freeze immediately. (Min: 1.0 mL)
Transport Temperature:	Frozen. Separate specimens must be submitted when multiple tests are ordered.
Unacceptable Conditions:	Specimens that have been exposed to more than three freeze/thaw cycles.
Remarks:	Clinical information is needed for appropriate interpretation. Additional required information includes age, gender, diet (e.g., TPN therapy), drug therapy, and family history. Biochemical Genetics Patient History Form is available on the ARUP Web site at http://www.aruplab.com/patienthistory or by contacting ARUP Client Services.
Stability:	Ambient: Unacceptable; Refrigerated: 1 week; Frozen: 1 month
Methodology:	Liquid Chromatography-Tandem Mass Spectrometry (LC-MS/MS)
Performed:	Tue
Reported:	4-11 days
Note:	
CPT Codes:	82017
New York DOH Approval Status:	Specimens from New York clients will be sent out to a New York DOH approved laboratory, if possible.

Interpretive Data:

Methodology: Liquid Chromatography-Tandem Mass Spectrometry (LC-MS/MS)

If patient is receiving carnitine supplements, results may not be informative. Clinical correlation is recommended for interpretation of the result.

This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the U.S. Food and Drug Administration. This test was performed in a CLIA-certified laboratory and is intended for clinical purposes.

Reference Interval:

Test Number	Components	Reference Interval
	Isobutyrylcarnitine,Urine	
		Age: Reference Interval (mmol/mol creatinine) Less than or equal to 5.5 years: Less than or equal to 4.9 Greater than 5.5 years: Less than or equal to 2.3
	Butyrylcarnitine, Urine	Less than or equal to 0.15 mmol/mol creatinine

Reports include age appropriate reference interval.

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

NEW TEST

Click for Pricing

Muscle-Specific Kinase (MuSK) Antibody, IgG by CBA-IFA with Reflex to Titer, Serum

3006198, MuSK SER

Specimen Requirements:	
Patient Preparation:	
Collect:	One 4 mL plain red or serum separator tube (SST)
Specimen Preparation:	Separate from cells ASAP or within 2 hours of collection. Transfer 2 mL of serum to an ARUP standard transport tube. (Min: 0.5 mL)
Transport Temperature:	Refrigerated
Unacceptable Conditions:	Grossly lipemic, icteric, or hemolyzed specimens.
Remarks:	
Stability:	After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 month (avoid multiple freeze/thaw cycles)
Methodology:	Semi-Quantitative Cell-Based Indirect Fluorescent Antibody
Performed:	Mon, Wed, Fri
Reported:	1-6 days
Note:	If MuSK SER antibody IgG is positive, then titer will be added. Additional charges apply.
CPT Codes:	86255; if reflexed add 86256
New York DOH Approval Status:	Specimens from New York clients will be sent out to a New York DOH approved laboratory, if possible.

Interpretive Data:

Muscle-specific kinase (MuSK) antibody is found in a subset of patients with myasthenia gravis, primarily those seronegative for muscle acetylcholine receptor (AChR) antibody. Decreasing antibody levels may be associated with therapeutic response; therefore, clinical correlation must be strongly considered. A negative test result does not rule out a diagnosis of myasthenia gravis.

This indirect fluorescent antibody cell-based assay (CBA) utilizes muscle-specific kinase (MuSK) transfected cells for the detection of the MuSK IgG antibody.

Reference Interval:

Test Number	Components	Reference Interval
	MuSK Ab IgG CBA IFA Screen, Serum	Less than 1:10

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

NEW TEST

Click for Pricing

Autoimmune Encephalopathy/Dementia Panel, Serum

3006201, AIENCDEMS

Specimen Requirements:	
Patient Preparation:	N/A
Collect:	Serum sparator tube (SST)
Specimen Preparation:	Separate from cells ASAP or within 2 hours of collection. Transfer three 1 mL serum aliquots to ARUP standard transport tubes. (Min: 0.5 mL/aliquot)
Transport Temperature:	Frozen
Unacceptable Conditions:	Amniotic fluid, ocular fluid, peritoneal fluid, synovial fluid, CSF, or plasma. Contaminated, hemolyzed, icteric, or lipemic specimens.
Remarks:	
Stability:	After separation from cells: Ambient: 24 hours; Refrigerated: 1 week; Frozen: 30 days (avoid repeated freeze/thaw cycles)
Methodology:	Semi-Quantitative Cell-Based Indirect Fluorescent Antibody/Semi-Quantitative Indirect Fluorescent Antibody (IFA)/Qualitative Immunoblot/Semi-Quantitative Enzyme-Linked Immunosorbent Assay (ELISA)
Performed:	Varies
Reported:	3-10 days
Note:	If NMDA antibody IgG is positive, then titer will be performed. Additional charges apply. If CV2.1 antibody IgG is positive, then titer will be added. Additional charges apply. PCCA/ANNA antibody IgG is screened by IFA. If the IFA screen is indeterminate, then a Neuronal Nuclear Antibodies (Hu, Ri, Yo, and Tr/DNER) IgG by Immunoblot will be performed. If the IFA screen is positive at 1:10 or greater, then a PCCA/ANNA antibodies titer and Neuronal Nuclear Antibodies (Hu, Ri, Yo, Tr/DNER) IgG by Immunoblot will be performed. Additional charges apply. If LGI1 antibody IgG is positive, then titer will be added. Additional charges apply. If CASPR2 antibody IgG is positive, then titer will be added. Additional charges apply. If AMPA antibody IgG is positive, then titer will be added.

	Additional charges apply. If GABA-BR antibody IgG is positive, then titer will be added. Additional charges apply. If DPPX antibody IgG by IFA is positive, then titer will be added. Additional charges apply. If IgLON5 antibody IgG by IFA is positive, then titer will be added. Additional charges apply. If mGluR1 antibody IgG by IFA is positive, then titer will be added. Additional charges apply.
CPT Codes:	86341; 84182 x2; 86255 x10; if reflexed add 84182 x4; 86256 per titer
New York DOH Approval Status:	This test is New York DOH approved.
Interpretive Data:	
Refer to report	

Reference Interval:

Test Number	Components	Reference Interval
	CV2.1 Antibody IgG Screen by IFA	Less than 1:10
	Neuronal Antibody (Amphiphysin)	Negative
	Glutamic Acid Decarboxylase Antibody	0.0-5.0 IU/mL
	Purkinje Cell/Neuronal Nuclear IgG Scrn	None Detected
	N-methyl-D-Aspartate Receptor Ab, Serum	Less than 1:10
	SOX1 Antibody, IgG by Immunoblot, Serum	Negative
	AMPA Receptor Ab IgG Screen, Serum	Less than 1:10
	GABA-B Receptor Ab IgG Screen, Serum	Less than 1:10
	DPPX Ab IgG CBA IFA Screen, Serum	Less than 1:10
	IgLON5 Ab IgG CBA-IFA Screen, Serum	Less than 1:10
	mGluR1 Ab IgG CBA-IFA Screen, Serum	Less than 1:10
	CASPR2 Ab IgG Screen by IFA, Serum	Less than 1:10
	LGI1 Ab IgG Screen by IFA, Serum	Less than 1:10

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

NEW TEST

Click for Pricing

Autoimmune Encephalopathy/Dementia Panel, CSF

3006202, AIENCDEMC

Specimen Requirements:	
Patient Preparation:	N/A
Collect:	CSF
Specimen Preparation:	Transfer three 1 mL CSF aliquots to ARUP standard transport tubes. (Min: 0.5 mL/aliquot)
Transport Temperature:	Frozen
Unacceptable Conditions:	Fluid other than CSF. Grossly hemolyzed specimens
Remarks:	
Stability:	After separation from cells: Ambient: 24 hours; Refrigerated: 1 week; Frozen: 30 days (avoid repeated freeze/thaw cycles)
Methodology:	Semi-Quantitative Cell-Based Indirect Fluorescent Antibody/Semi-Quantitative Indirect Fluorescent Antibody (IFA)/Qualitative Immunoblot/Semi-Quantitative Enzyme-Linked Immunosorbent Assay (ELISA)
Performed:	Varies
Reported:	3-10 days
Note:	If NMDA CSF antibody IgG is positive, then titer will be added. Additional charges apply. If AMPA CSF antibody IgG is positive, then titer will be added. Additional charges apply. If GABA-BR CSF antibody IgG is positive, then titer will be added. Additional charges apply. If CASPR2 CSF antibody IgG is positive, then titer will be added. Additional charges apply. PCCA/ANNA CSF antibody IgG is screened by IFA. If the IFA screen is indeterminate, then a Neuronal Nuclear Antibodies (Hu, Ri, Yo, and Tr/DNER) IgG by Immunoblot will be performed. If the IFA screen is positive at 1:10 or greater, then a PCCA/ANNA antibodies titer and Neuronal Nuclear Antibodies (Hu, Ri, Yo, Tr/DNER) IgG by Immunoblot will be performed. Additional charges apply. If LGI1 CSF antibody IgG is positive, then titer will be added. Additional charges apply. If CV2.1 CSF antibody IgG is positive, then titer will be added. Additional charges apply. If DPPX CSF antibody IgG by IFA is positive,

	then titer will be added. Additional charges apply. If IgLON5 CSF antibody IgG by IFA is positive, then titer will be added. Additional charges apply. If mGluR1 CSF antibody IgG by IFA is positive, then titer will be added. Additional charges apply.
CPT Codes:	86341; 84182 x2; 86255 x10; if reflexed add 84182 x4; 86256 per titer
New York DOH Approval Status:	This test is New York DOH approved.
Interpretive Data:	
Refer to report	

Reference Interval:

Test Number	Components	Reference Interval
	mGluR1 Ab IgG CBA-IFA Screen, CSF	Less than 1:1
	Glutamic Acid Decarboxylase Antibody CSF	0.0-5.0 IU/mL
	LGI1 Ab IgG Screen by IFA, CSF	Less than 1:1
	N-methyl-D-Aspartate Receptor Ab, CSF	Less than 1:1
	CASPR2 Ab IgG Screen by IFA, CSF	Less than 1:1
	AMPA Receptor Ab IgG Screen, CSF	Less than 1:1
	GABA-B Receptor Ab IgG Screen, CSF	Less than 1:1
	CV2.1 Ab IgG Screen, CSF	Less than 1:1
	DPPX Ab IgG CBA IFA Screen, CSF	Less than 1:1
	IgLON5 Ab IgG CBA-IFA Screen, CSF	Less than 1:1
	SOX1 Antibody, IgG by Immunoblot, CSF	Negative
	Amphiphysin Antibody, CSF	Negative
	Paraneoplastic Abs (PCCA/ANNA) IgG, CSF	None Detected

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

NEW TEST

Click for Pricing

Autoimmune Dysautonomia Panel, Serum

3006203, AIDYS

Specimen Requirements:	
Patient Preparation:	
Collect:	Serum separator tube (SST)
Specimen Preparation:	Separate from cells ASAP or within 2 hours of collection. Transfer three 1 mL serum aliquots to ARUP standard transport tubes. (Min: 0.5 mL/aliquot)
Transport Temperature:	Frozen
Unacceptable Conditions:	Amniotic fluid, ocular fluid, peritoneal fluid, synovial fluid, CSF, or plasma. Contaminated, hemolyzed, icteric, or lipemic specimens.
Remarks:	
Stability:	After separation from cells: Ambient: 48 hours; Refrigerated: 14 days; Frozen: 30 days (avoid repeated freeze/thaw cycles)
Methodology:	Semi-Quantitative Cell-Based Indirect Fluorescent Antibody/Semi-Quantitative Indirect Fluorescent Antibody (IFA)/Qualitative Radioimmunoassay (RIA)/Qualitative Immunoblot
Performed:	Varies
Reported:	3-10 days
Note:	PCCA/ANNA antibody IgG is screened by IFA. If the IFA screen is indeterminate, then a Neuronal Nuclear Antibodies (Hu) IgG by Immunoblot will be performed. If the IFA screen is positive at 1:10 or greater, then a PCCA/ANNA antibodies titer and Neuronal Nuclear Antibodies (Hu) IgG by Immunoblot will be performed. Additional charges apply. If CASPR2 antibody IgG is positive, then titer will be added. Additional charges apply. If LGI1 antibody IgG is positive, then titer will be added. Additional charges apply. If CV2.1 antibody IgG is positive, then titer will be added. Additional charges apply. If DPPX antibody IgG by IFA is positive, then titer will be added. Additional charges apply.
CPT Codes:	83519; 86255 x5; if reflexed add 84182; 86256 per titer

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

Interpretive Data:

Refer to report

Component	Interpretation
Ganglionic Acetylcholine Receptor Antibody	0.0 - 8.4 pmol/L Negative 8.5 - 11.6 pmol/L Indeterminate 11.7 pmol/L or greater Positive

Reference Interval:

Test Number	Components	Reference Interval
	CV2.1 Antibody IgG Screen by IFA	Less than 1:10
	Purkinje Cell/Neuronal Nuclear IgG Scrn	None Detected
	Ganglionic Acetylcholine Receptor Ab	8.4 pmol/L or less
	DPPX Ab IgG CBA IFA Screen, Serum	Less than 1:10
	CASPR2 Ab IgG Screen by IFA, Serum	Less than 1:10
	LGI1 Ab IgG Screen by IFA, Serum	Less than 1:10

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

NEW TEST

Click for Pricing

Autoimmune Epilepsy Panel, Serum

3006204, AIEPS

Specimen Requirements:	
Patient Preparation:	N/A
Collect:	Serum separator tube (SST)
Specimen Preparation:	Separate from cells ASAP or within 2 hours of collection. Transfer three 1 mL serum aliquots to ARUP standard transport tubes. (Min: 0.5 mL/aliquot)
Transport Temperature:	Frozen
Unacceptable Conditions:	Amniotic fluid, ocular fluid, peritoneal fluid, synovial fluid, CSF, or plasma. Contaminated, hemolyzed, icteric, or lipemic specimens.
Remarks:	
Stability:	After separation from cells: Ambient: 24 hours; Refrigerated: 1 week; Frozen: 30 days (avoid repeated freeze/thaw cycles)
Methodology:	Semi-Quantitative Cell-Based Indirect Fluorescent Antibody/Semi-Quantitative Indirect Fluorescent Antibody (IFA)/Qualitative Immunoblot/Semi-Quantitative Enzyme-Linked Immunosorbent Assay (ELISA)
Performed:	Varies
Reported:	3-10 days
Note:	If NMDA antibody IgG is positive, then titer will be performed. Additional charges apply. If CV2.1 antibody IgG is positive, then titer will be added. Additional charges apply. PCCA/ANNA antibody IgG is screened by IFA. If the IFA screen is indeterminate, then a Neuronal Nuclear Antibodies (Hu, Ri, Yo, and Tr/DNER) IgG by Immunoblot will be performed. If the IFA screen is positive at 1:10 or greater, then a PCCA/ANNA antibodies titer and Neuronal Nuclear Antibodies (Hu, Ri, Yo, Tr/DNER) IgG by Immunoblot will be performed. Additional charges apply. If LGI1 antibody IgG is positive, then titer will be added. Additional charges apply. If CASPR2 antibody IgG is positive, then titer will be added. Additional charges apply. If AMPA antibody IgG is positive, then titer will be added.

	Additional charges apply. If GABA-BR antibody IgG is positive, then titer will be added. Additional charges apply. If DPPX antibody IgG by IFA is positive, then titer will be added. Additional charges apply. If GABA-AR antibody IgG by IFA is positive, then titer will be added. Additional charges apply. If mGluR1 antibody IgG by IFA is positive, then titer will be added. Additional charges apply.
CPT Codes:	86341; 84182 x2; 86255 x10; if reflexed add 84182 x4; 86256 per titer
New York DOH Approval Status:	This test is New York DOH approved.
Interpretive Data:	
Refer to report	

Reference Interval:

Test Number	Components	Reference Interval
	CV2.1 Antibody IgG Screen by IFA	Less than 1:10
	Purkinje Cell/Neuronal Nuclear IgG Scrn	None Detected
	Neuronal Antibody (Amphiphysin)	Negative
	Glutamic Acid Decarboxylase Antibody	0.0-5.0 IU/mL
	N-methyl-D-Aspartate Receptor Ab, Serum	Less than 1:10
	SOX1 Antibody, IgG by Immunoblot, Serum	Negative
	AMPA Receptor Ab IgG Screen, Serum	Less than 1:10
	GABA-B Receptor Ab IgG Screen, Serum	Less than 1:10
	DPPX Ab IgG CBA IFA Screen, Serum	Less than 1:10
	GABA-AR Ab IgG CBA-IFA Screen, Serum	Less than 1:10
	mGluR1 Ab IgG CBA-IFA Screen, Serum	Less than 1:10
	CASPR2 Ab IgG Screen by IFA, Serum	Less than 1:10
	LGI1 Ab IgG Screen by IFA, Serum	Less than 1:10

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

NEW TEST

Click for Pricing

Autoimmune Epilepsy Panel, CSF

3006205, AIEPC

Specimen Requirements:	
Patient Preparation:	
Collect:	CSF
Specimen Preparation:	Transfer three 1 mL CSF aliquots to ARUP standard transport tubes. (Min: 0.5 mL/aliquot)
Transport Temperature:	Frozen
Unacceptable Conditions:	Fluid other than CSF. Grossly hemolyzed specimens.
Remarks:	
Stability:	After separation from cells: Ambient: 24 hours; Refrigerated: 1 week; Frozen: 30 days (avoid repeated freeze/thaw cycles)
Methodology:	Semi-Quantitative Cell-Based Indirect Fluorescent Antibody/Semi-Quantitative Indirect Fluorescent Antibody (IFA)/Qualitative Immunoblot/Semi-Quantitative Enzyme-Linked Immunosorbent Assay (ELISA)
Performed:	Varies
Reported:	3-10 days
Note:	If NMDA CSF antibody IgG is positive, then titer will be performed. Additional charges apply. If CV2.1 CSF antibody IgG is positive, then titer will be added. Additional charges apply. PCCA/ANNA CSF antibody IgG is screened by IFA. If the IFA screen is indeterminate, then a Neuronal Nuclear Antibodies (Hu, Ri, Yo, and Tr/DNER) IgG by Immunoblot will be performed. If the IFA screen is positive at 1:10 or greater, then a PCCA/ANNA antibodies titer and Neuronal Nuclear Antibodies (Hu, Ri, Yo, Tr/DNER) IgG by Immunoblot will be performed. Additional charges apply. If LGI1 CSF antibody IgG is positive, then titer will be added. Additional charges apply. If CASPR2 CSF antibody IgG is positive, then titer will be added. Additional charges apply. If AMPA CSF antibody IgG is positive, then titer will be added. Additional charges apply. If GABA-BR CSF antibody IgG is positive, then titer will be added. Additional charges apply. If DPPX CSF antibody IgG by IFA is positive, then titer will be added. Additional charges apply. If

	GABA-AR CSF antibody IgG by IFA is positive, then titer will be added. Additional charges apply. If mGluR1 CSF antibody IgG by IFA is positive, then titer will be added. Additional charges apply.
CPT Codes:	86341; 84182 x2; 86255 x10; if reflexed add 84182 x4; 86256 per titer
New York DOH Approval Status:	This test is New York DOH approved.
Interpretive Data: Refer to report	

Reference Interval:

Test Number	Components	Reference Interval
	mGluR1 Ab IgG CBA-IFA Screen, CSF	Less than 1:1
	Glutamic Acid Decarboxylase Antibody CSF	0.0-5.0 IU/mL
	LGI1 Ab IgG Screen by IFA, CSF	Less than 1:1
	N-methyl-D-Aspartate Receptor Ab, CSF	Less than 1:1
	CASPR2 Ab IgG Screen by IFA, CSF	Less than 1:1
	AMPA Receptor Ab IgG Screen, CSF	Less than 1:1
	GABA-B Receptor Ab IgG Screen, CSF	Less than 1:1
	CV2.1 Ab IgG Screen, CSF	Less than 1:1
	DPPX Ab IgG CBA IFA Screen, CSF	Less than 1:1
	SOX1 Antibody, IgG by Immunoblot, CSF	Negative
	Amphiphysin Antibody, CSF	Negative
	GABA-AR Ab IgG CBA-IFA Screen, CSF	Less than 1:1
	Paraneoplastic Abs (PCCA/ANNA) IgG, CSF	None Detected

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

NEW TEST

Click for Pricing

Autoimmune Movement Disorder Panel, Serum

3006206, AIMDS

Specimen Requirements:	
Patient Preparation:	
Collect:	Serum separator tube (SST)
Specimen Preparation:	Separate from cells ASAP or within 2 hours of collection. Transfer three 1 mL serum aliquots to ARUP standard transport tubes. (Min: 0.5 mL/aliquot)
Transport Temperature:	Frozen
Unacceptable Conditions:	Amniotic fluid, ocular fluid, peritoneal fluid, synovial fluid, CSF, or plasma. Contaminated, hemolyzed, icteric, or lipemic specimens.
Remarks:	
Stability:	After separation from cells: Ambient: 24 hours; Refrigerated: 1 week; Frozen: 30 days (avoid repeated freeze/thaw cycles)
Methodology:	Semi-Quantitative Cell-Based Indirect Fluorescent Antibody/Semi-Quantitative Indirect Fluorescent Antibody (IFA)/Qualitative Immunoblot/Semi-Quantitative Enzyme-Linked Immunosorbent Assay (ELISA)/Quantitative Radioimmunoassay (RIA)
Performed:	Varies
Reported:	3-10 days
Note:	If NMDA antibody IgG is positive, then titer will be performed. Additional charges apply. If CV2.1 antibody IgG is positive, then titer will be added. Additional charges apply. PCCA/ANNA antibody IgG is screened by IFA. If the IFA screen is indeterminate, then a Neuronal Nuclear Antibodies (Hu, Ri, Yo, and Tr/DNER) IgG by Immunoblot will be performed. If the IFA screen is positive at 1:10 or greater, then a PCCA/ANNA antibodies titer and Neuronal Nuclear Antibodies (Hu, Ri, Yo, Tr/DNER) IgG by Immunoblot will be performed. Additional charges apply. If LGI1 antibody IgG is positive, then titer will be added. Additional charges apply. If CASPR2 antibody IgG is positive, then titer will be added. Additional charges apply. If DPPX antibody IgG by IFA is positive, then titer will be added.

	Additional charges apply. If AMPA antibody IgG is positive, then titer will be added. Additional charges apply. If GABA-BR antibody IgG is positive, then titer will be added. Additional charges apply. If GABA-AR antibody IgG by IFA is positive, then titer will be added. Additional charges apply. If mGluR1 antibody IgG by IFA is positive, then titer will be added. Additional charges apply. If ITPR1 antibody IgG by IFA is positive, then titer will be added. Additional charges apply. If IgLON5 antibody IgG by IFA is positive, then titer will be added. Additional charges apply
CPT Codes:	86341; 86596; 84182 x2; 86255 x12; if reflexed add 84182 x4; 86256 per titer
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

Refer to report.

Component	Interpretation
P/Q-Type Voltage-Gated Calcium Channel (VGCC) Antibody	0.0-24.5 pmol/L Negative 24.6-45.6 pmol/L Indeterminate 45.7 pmol/L or greater Positive

Reference Interval:

Test Number	Components	Reference Interval
	CV2.1 Antibody IgG Screen by IFA	Less than 1:10
	Neuronal Antibody (Amphiphysin)	Negative
	Glutamic Acid Decarboxylase Antibody	0.0-5.0 IU/mL
	Purkinje Cell/Neuronal Nuclear IgG Scrn	None Detected
	N-methyl-D-Aspartate Receptor Ab, Serum	Less than 1:10
	P/Q-Type Calcium Channel Antibody	24.5 pmol/L or less
	SOX1 Antibody, IgG by Immunoblot, Serum	Negative
	AMPA Receptor Ab IgG Screen, Serum	Less than 1:10
	GABA-B Receptor Ab IgG Screen, Serum	Less than 1:10
	DPPX Ab IgG CBA IFA Screen, Serum	Less than 1:10
	GABA-AR Ab IgG CBA-IFA Screen, Serum	Less than 1:10
	IgLON5 Ab IgG CBA-IFA Screen, Serum	Less than 1:10
	mGluR1 Ab IgG CBA-IFA Screen, Serum	Less than 1:10
	ITPR1 Ab IgG CBA-IFA Screen, Serum	Less than 1:10
	CASPR2 Ab IgG Screen by IFA, Serum	Less than 1:10
	LGI1 Ab IgG Screen by IFA, Serum	Less than 1:10

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

NEW TEST

Click for Pricing

Autoimmune Movement Disorder Panel, CSF

3006207, AIMDC

Specimen Requirements:	
Patient Preparation:	N/A
Collect:	CSF
Specimen Preparation:	Transfer three 1 mL CSF aliquots to ARUP standard transport tubes. (Min: 0.5 mL/aliquot)
Transport Temperature:	Frozen
Unacceptable Conditions:	Fluid other than CSF. Grossly hemolyzed specimens
Remarks:	
Stability:	After separation from cells: Ambient: 24 hours; Refrigerated: 1 week; Frozen: 30 days (avoid repeated freeze/thaw cycles)
Methodology:	Semi-Quantitative Cell-Based Indirect Fluorescent Antibody/Semi-Quantitative Indirect Fluorescent Antibody (IFA)/Qualitative Immunoblot/Semi-Quantitative Enzyme-Linked Immunosorbent Assay (ELISA)
Performed:	Varies
Reported:	3-10 days
Note:	If NMDA CSF antibody IgG is positive, then titer will be performed. Additional charges apply. If CV2.1 CSF antibody IgG is positive, then titer will be added. Additional charges apply. PCCA/ANNA CSF antibody IgG is screened by IFA. If the IFA screen is indeterminate, then a Neuronal Nuclear Antibodies (Hu, Ri, Yo, and Tr/DNER) IgG by Immunoblot will be performed. If the IFA screen is positive at 1:10 or greater, then a PCCA/ANNA antibodies titer and Neuronal Nuclear Antibodies (Hu, Ri, Yo, Tr/DNER) IgG by Immunoblot will be performed. Additional charges apply. If LGI1 CSF antibody IgG is positive, then titer will be added. Additional charges apply. If CASPR2 CSF antibody IgG is positive, then titer will be added. Additional charges apply. If DPPX CSF antibody IgG by IFA is positive, then titer will be added. Additional charges apply. If AMPA CSF antibody IgG is positive, then titer will be added. Additional charges apply. If GABA-BR CSF antibody

	IgG is positive, then titer will be added. Additional charges apply. If GABA-AR CSF antibody IgG by IFA is positive, then titer will be added. Additional charges apply. If mGluR1 CSF antibody IgG by IFA is positive, then titer will be added. Additional charges apply. If ITPR1 CSF antibody IgG by IFA is positive, then titer will be added. Additional charges apply. If IgLON5 CSF antibody IgG by IFA is positive, then titer will be added. Additional charges apply
CPT Codes:	86341; 84182 x2; 86255 x12; if reflexed add 84182 x4; 86256 per titer
New York DOH Approval Status:	This test is New York DOH approved.
Interpretive Data:	
Refer to report	

Reference Interval:

Test Number	Components	Reference Interval
	mGluR1 Ab IgG CBA-IFA Screen, CSF	Less than 1:1
	Glutamic Acid Decarboxylase Antibody CSF	0.0-5.0 IU/mL
	LGI1 Ab IgG Screen by IFA, CSF	Less than 1:1
	N-methyl-D-Aspartate Receptor Ab, CSF	Less than 1:1
	CASPR2 Ab IgG Screen by IFA, CSF	Less than 1:1
	AMPA Receptor Ab IgG Screen, CSF	Less than 1:1
	GABA-B Receptor Ab IgG Screen, CSF	Less than 1:1
	CV2.1 Ab IgG Screen, CSF	Less than 1:1
	DPPX Ab IgG CBA IFA Screen, CSF	Less than 1:1
	IgLON5 Ab IgG CBA-IFA Screen, CSF	Less than 1:1
	SOX1 Antibody, IgG by Immunoblot, CSF	Negative
	Amphiphysin Antibody, CSF	Negative
	GABA-AR Ab IgG CBA-IFA Screen, CSF	Less than 1:1
	ITPR1 Ab IgG CBA-IFA Screen, CSF	Less than 1:1
	Paraneoplastic Abs (PCCA/ANNA) IgG, CSF	None Detected

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

NEW TEST

Click for Pricing

Autoimmune Myelopathy Panel, Serum

3006208, AIMYS

Specimen Requirements:	
Patient Preparation:	N/A
Collect:	Serum separator tube (SST)
Specimen Preparation:	Separate from cells ASAP or within 2 hours of collection. Transfer three 1 mL serum aliquots to ARUP standard transport tubes. (Min: 0.5 mL/aliquot)
Transport Temperature:	Frozen
Unacceptable Conditions:	Amniotic fluid, ocular fluid, peritoneal fluid, synovial fluid, CSF, or plasma. Contaminated, hemolyzed, icteric, or lipemic specimens.
Remarks:	
Stability:	After separation from cells: Ambient: 24 hours; Refrigerated: 1 week; Frozen: 30 days (avoid repeated freeze/thaw cycles)
Methodology:	Semi-Quantitative Cell-Based Indirect Fluorescent Antibody/Semi-Quantitative Indirect Fluorescent Antibody (IFA)/Qualitative Immunoblot/Semi-Quantitative Enzyme-Linked Immunosorbent Assay (ELISA)
Performed:	Varies
Reported:	3-10 days
Note:	If CV2.1 antibody IgG is positive, then titer will be added. Additional charges apply. PCCA/ANNA antibody IgG is screened by IFA. If the IFA screen is indeterminate, then a Neuronal Nuclear Antibodies (Hu, Ri, Yo, and Tr/DNER) IgG by Immunoblot will be performed. If the IFA screen is positive at 1:10 or greater, then a PCCA/ANNA antibodies titer and Neuronal Nuclear Antibodies (Hu, Ri, Yo, Tr/DNER) IgG by Immunoblot will be performed. Additional charges apply. If DPPX antibody IgG by IFA is positive, then titer will be added. Additional charges apply. If AQP4/NMO antibody IgG by IFA is positive, then titer will be added. Additional charges apply. If mGluR1 antibody IgG by IFA is positive, then titer will be added. Additional charges apply. If MOG antibody IgG by IFA is

	positive, then titer will be added. Additional charges apply. If GABA-BR antibody IgG by IFA is positive, then titer will be added. Additional charges apply.
CPT Codes:	86341; 86362; 86052; 84182 x2; 86255 x5; if reflexed add 84182 x4; 86256 per titer
New York DOH Approval Status:	This test is New York DOH approved.
Interpretive Data:	
Refer to report	

Reference Interval:

Test Number	Components	Reference Interval
	CV2.1 Antibody IgG Screen by IFA	Less than 1:10
	Neuronal Antibody (Amphiphysin)	Negative
	Glutamic Acid Decarboxylase Antibody	0.0-5.0 IU/mL
	Purkinje Cell/Neuronal Nuclear IgG Scrn	None Detected
	SOX1 Antibody, IgG by Immunoblot, Serum	Negative
	Neuromyelitis Optica/AQP4-IgG, Serum	Less than 1:10
	GABA-B Receptor Ab IgG Screen, Serum	Less than 1:10
	MOG Antibody IgG Screen, Serum	Less than 1:10
	DPPX Ab IgG CBA IFA Screen, Serum	Less than 1:10
	mGluR1 Ab IgG CBA-IFA Screen, Serum	Less than 1:10

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

NEW TEST

Click for Pricing

Autoimmune Myelopathy Panel, CSF

3006209, AIMYC

Specimen Requirements:	
Patient Preparation:	
Collect:	CSF
Specimen Preparation:	Transfer three 1 mL CSF aliquots to ARUP standard transport tubes. (Min: 0.5 mL/aliquot)
Transport Temperature:	Frozen
Unacceptable Conditions:	Fluid other than CSF. Grossly hemolyzed specimens
Remarks:	
Stability:	After separation from cells: Ambient: 24 hours; Refrigerated: 1 week; Frozen: 30 days (avoid repeated freeze/thaw cycles)
Methodology:	Semi-Quantitative Cell-Based Indirect Fluorescent Antibody/Semi-Quantitative Indirect Fluorescent Antibody (IFA)/Qualitative Immunoblot/Semi-Quantitative Enzyme-Linked Immunosorbent Assay (ELISA)
Performed:	Varies
Reported:	3-10 days
Note:	If CV2.1 CSF antibody IgG is positive, then titer will be added. Additional charges apply. PCCA/ANNA antibody IgG is screened by IFA. If the IFA screen is indeterminate, then a Neuronal Nuclear Antibodies (Hu, Ri, Yo, and Tr/DNER) IgG by Immunoblot will be performed. If the IFA screen is positive at 1:10 or greater, then a PCCA/ANNA antibodies titer and Neuronal Nuclear Antibodies (Hu, Ri, Yo, Tr/DNER) IgG by Immunoblot will be performed. Additional charges apply. If DPPX CSF antibody IgG by IFA is positive, then titer will be added. Additional charges apply. If GABA-BR CSF antibody IgG is positive, then titer will be added. Additional charges apply. If AQP4/NMO CSF antibody IgG by IFA is positive, then titer will be added. Additional charges apply. If mGluR1 CSF antibody IgG by IFA is positive, then titer will be added. Additional charges apply.
CPT Codes:	86341; 86052; 84182 x2; 86255 x5; if reflexed add 84182 x4;

	86256 per titer
New York DOH Approval Status:	This test is New York DOH approved.
Interpretive Data:	
Refer to report	

Reference Interval:

Test Number	Components	Reference Interval
	mGluR1 Ab IgG CBA-IFA Screen, CSF	Less than 1:1
	Glutamic Acid Decarboxylase Antibody CSF	0.0-5.0 IU/mL
	Neuromyelitis Optica/AQP4-IgG, CSF	Less than 1:1
	GABA-B Receptor Ab IgG Screen, CSF	Less than 1:1
	CV2.1 Ab IgG Screen, CSF	Less than 1:1
	DPPX Ab IgG CBA IFA Screen, CSF	Less than 1:1
	SOX1 Antibody, IgG by Immunoblot, CSF	Negative
	Amphiphysin Antibody, CSF	Negative
	Paraneoplastic Abs (PCCA/ANNA) IgG, CSF	None Detected

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

NEW TEST

Click for Pricing

Autoimmune Pediatric CNS Disorders, Serum

3006210, AIPEDS

Specimen Requirements:	
Patient Preparation:	N/A
Collect:	Serum separator tube (SST)
Specimen Preparation:	Separate from cells ASAP or within 2 hours of collection. Transfer three 1 mL serum aliquots to ARUP standard transport tubes. (Min: 0.5 mL/aliquot)
Transport Temperature:	Frozen
Unacceptable Conditions:	Amniotic fluid, ocular fluid, peritoneal fluid, synovial fluid, CSF, or plasma. Contaminated, hemolyzed, icteric, or lipemic specimens.
Remarks:	
Stability:	After separation from cells: Ambient: 24 hours; Refrigerated: 1 week; Frozen: 30 days (avoid repeated freeze/thaw cycles)
Methodology:	Semi-Quantitative Cell-Based Indirect Fluorescent Antibody/Semi-Quantitative Indirect Fluorescent Antibody (IFA)/Semi-Quantitative Enzyme-Linked Immunosorbent Assay (ELISA)
Performed:	Varies
Reported:	3-10 days
Note:	If NMDA antibody IgG is positive, then titer will be performed. Additional charges apply. PCCA/ANNA antibody IgG is screened by IFA. If the IFA screen is indeterminate, then a Neuronal Nuclear Antibodies (Hu and Tr/DNER) IgG by Immunoblot will be performed. If the IFA screen is positive at 1:10 or greater, then a PCCA/ANNA antibodies titer and Neuronal Nuclear Antibodies (Hu and Tr/DNER) IgG by Immunoblot will be performed. Additional charges apply. If LGI1 antibody IgG is positive, then titer will be added. Additional charges apply. If CASPR2 antibody IgG is positive, then titer will be added. Additional charges apply. If AQP4/NMO antibody IgG by IFA is positive, then titer will be added. Additional charges apply. If GABA-BR antibody IgG by

	IFA is positive, then titer will be added. Additional charges apply. If MOG antibody IgG by IFA is positive, then titer will be added. Additional charges apply. If DPPX antibody IgG by IFA is positive, then titer will be added. Additional charges apply. If mGluR1 antibody IgG by IFA is positive, then titer will be added. Additional charges apply. If GABA-AR antibody IgG by IFA is positive, then titer will be added. Additional charges apply
CPT Codes:	86341; 86362; 86052; 86255 x8; if reflexed add 84182 x2; 86256 per titer
New York DOH Approval Status:	This test is New York DOH approved.
Interpretive Data:	
Refer to report.	

Reference Interval:

Test Number	Components	Reference Interval
	Purkinje Cell/Neuronal Nuclear IgG Scrn	None Detected
	Glutamic Acid Decarboxylase Antibody	0.0-5.0 IU/mL
	N-methyl-D-Aspartate Receptor Ab, Serum	Less than 1:10
	Neuromyelitis Optica/AQP4-IgG, Serum	Less than 1:10
	GABA-B Receptor Ab IgG Screen, Serum	Less than 1:10
	MOG Antibody IgG Screen, Serum	Less than 1:10
	DPPX Ab IgG CBA IFA Screen, Serum	Less than 1:10
	GABA-AR Ab IgG CBA-IFA Screen, Serum	Less than 1:10
	mGluR1 Ab IgG CBA-IFA Screen, Serum	Less than 1:10
	CASPR2 Ab IgG Screen by IFA, Serum	Less than 1:10
	LGI1 Ab IgG Screen by IFA, Serum	Less than 1:10

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

NEW TEST

Click for Pricing

Autoimmune Pediatric CNS Disorders, CSF

3006211, AIPEDC

Specimen Requirements:	
Patient Preparation:	N/A
Collect:	CSF
Specimen Preparation:	Transfer three 1 mL CSF aliquots to ARUP standard transport tubes. (Min: 0.5 mL/aliquot)
Transport Temperature:	Frozen
Unacceptable Conditions:	Fluid other than CSF. Grossly hemolyzed specimens.
Remarks:	
Stability:	After separation from cells: Ambient: 24 hours; Refrigerated: 1 week; Frozen: 30 days (avoid repeated freeze/thaw cycles)
Methodology:	Semi-Quantitative Cell-Based Indirect Fluorescent Antibody/Semi-Quantitative Indirect Fluorescent Antibody (IFA)/Semi-Quantitative Enzyme-Linked Immunosorbent Assay (ELISA)
Performed:	Varies
Reported:	3-10 days
Note:	If NMDA CSF antibody IgG is positive, then titer will be performed. Additional charges apply. PCCA/ANNA antibody IgG is screened by IFA. If the IFA screen is indeterminate, then a Neuronal Nuclear Antibodies (Hu and Tr/DNER) IgG by Immunoblot will be performed. If the IFA screen is positive at 1:10 or greater, then a PCCA/ANNA antibodies titer and Neuronal Nuclear Antibodies (Hu and Tr/DNER) IgG by Immunoblot will be performed. Additional charges apply. If LGI1 CSF antibody IgG is positive, then titer will be added. Additional charges apply. If CASPR2 CSF antibody IgG is positive, then titer will be added. Additional charges apply. If AQP4/NMO CSF antibody IgG by IFA is positive, then titer will be added. Additional charges apply. If GABA-BR CSF antibody IgG by IFA is positive, then titer will be added. Additional charges apply. If DPPX CSF antibody IgG by IFA is positive, then titer will be added. Additional charges apply. If mGluR1

	CSF antibody IgG by IFA is positive, then titer will be added. Additional charges apply. If GABA-AR CSF antibody IgG by IFA is positive, then titer will be added. Additional charges apply.
CPT Codes:	86341; 86052; 86255 x8; if reflexed add 84182 x2; 86256 per titer
New York DOH Approval Status:	This test is New York DOH approved.
Interpretive Data:	
Refer to report.	

Reference Interval:

Test Number	Components	Reference Interval
	mGluR1 Ab IgG CBA-IFA Screen, CSF	Less than 1:1
	Glutamic Acid Decarboxylase Antibody CSF	0.0-5.0 IU/mL
	LGI1 Ab IgG Screen by IFA, CSF	Less than 1:1
	N-methyl-D-Aspartate Receptor Ab, CSF	Less than 1:1
	Neuromyelitis Optica/AQP4-IgG, CSF	Less than 1:1
	CASPR2 Ab IgG Screen by IFA, CSF	Less than 1:1
	GABA-B Receptor Ab IgG Screen, CSF	Less than 1:1
	DPPX Ab IgG CBA IFA Screen, CSF	Less than 1:1
	GABA-AR Ab IgG CBA-IFA Screen, CSF	Less than 1:1
	Paraneoplastic Abs (PCCA/ANNA) IgG, CSF	None Detected

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

NEW TEST

Click for Pricing

Autoimmune Stiff-Person Disorders, Serum

3006234, AISPSS

Specimen Requirements:	
Patient Preparation:	N/A
Collect:	Serum separator tube (SST)
Specimen Preparation:	Separate from cells ASAP or within 2 hours of collection. Transfer three 1 mL serum aliquots to ARUP standard transport tubes. (Min: 0.5 mL/aliquot)
Transport Temperature:	Frozen
Unacceptable Conditions:	Amniotic fluid, ocular fluid, peritoneal fluid, synovial fluid, CSF, or plasma. Contaminated, hemolyzed, icteric, or lipemic specimens.
Remarks:	
Stability:	After separation from cells: Ambient: 24 hours; Refrigerated: 1 week; Frozen: 30 days (avoid repeated freeze/thaw cycles)
Methodology:	Semi-Quantitative Cell-Based Indirect Fluorescent Antibody/Qualitative Immunoblot/Semi-Quantitative Enzyme-Linked Immunosorbent Assay (ELISA)
Performed:	Varies
Reported:	3-10 days
Note:	If DPPX antibody IgG by IFA is positive, then titer will be added. Additional charges apply.
CPT Codes:	86341; 84182; 86255; if reflexed, add 86256
New York DOH Approval Status:	This test is New York DOH approved.
Interpretive Data:	
Refer to report.	
Reference Interval:	

Test Number	Components	Reference Interval
	Neuronal Antibody (Amphiphysin)	Negative
	Glutamic Acid Decarboxylase Antibody	0.0-5.0 IU/mL
	DPPX Ab IgG CBA IFA Screen, Serum	Less than 1:10

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

NEW TEST

Click for Pricing

Autoimmune Stiff-Person Disorders, CSF

3006235, AISPSC

Specimen Requirements:	
Patient Preparation:	N/A
Collect:	CSF
Specimen Preparation:	Transfer three 1 mL CSF aliquots to ARUP standard transport tubes. (Min: 0.5 mL/aliquot)
Transport Temperature:	Frozen
Unacceptable Conditions:	Fluid other than CSF. Grossly hemolyzed specimens
Remarks:	
Stability:	After separation from cells: Ambient: 24 hours; Refrigerated: 1 week; Frozen: 30 days (avoid repeated freeze/thaw cycles)
Methodology:	Semi-Quantitative Cell-Based Indirect Fluorescent Antibody/Qualitative Immunoblot/Semi-Quantitative Enzyme-Linked Immunosorbent Assay (ELISA)
Performed:	Varies
Reported:	3-10 days
Note:	If DPPX CSF Antibody IgG by IFA is positive, then titer will be added. Additional charges apply
CPT Codes:	86341; 84182; 86255; if reflexed, add 86256
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

Refer to report.

Reference Interval:

Test Number	Components	Reference Interval
	Glutamic Acid Decarboxylase Antibody CSF	0.0-5.0 IU/mL
	DPPX Ab IgG CBA IFA Screen, CSF	Less than 1:1

	Amphiphysin Antibody, CSF	Negative

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

NEW TEST – Available Now

Click for Pricing

Mycobacterium Tuberculosis by Immunohistochemistry

3006242, MTB IHC

Specimen Requirements:	
Patient Preparation:	
Collect:	Tissue
Specimen Preparation:	Formalin fi x (10 percent neutral buffered formalin) and paraffi n embed specimen (cells must be prepared into a cellblock). Protect paraffi n block and/or slides from excessive heat. Transport tissue block or 2 unstained (3- to 5-micron thick sections), positively charged slides in a Tissue Transport Kit (ARUP supply #47808 highly recommended) available online through eSupply using ARUP Connect or contact ARUP Client Services at 800-522-2787 (Min: 2 slides). If sending precut slides, do not oven bake.
Transport Temperature:	Room temperature. Also acceptable: Refrigerated. Ship in cooled container during summer months.
Unacceptable Conditions:	Tissue or cells not processed and placed in a paraffin block; serum, blood, or other body fluids; tissue not mounted on positively charged slides.
Remarks:	
Stability:	Ambient: Indefinitely; Refrigerated: Indefinitely; Frozen: Unacceptable
Methodology:	Qualitative Immunohistochemistry (IHC)
Performed:	Mon-Fri
Reported:	1-3 days
Note:	
CPT Codes:	88342
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

Reference Interval:

Test	Components	Reference Interval

Number		

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

NEW TEST

Click for Pricing

Angelman Syndrome and Prader-Willi Syndrome by Methylation-Specific MLPA

3006247, AS-PWS DD

Specimen Requirements:	
Patient Preparation:	
Collect:	For Nonfetal Specimens: Lavender (EDTA), pink (K2EDTA), or yellow (ACD solution A) For Fetal Specimens: Two T-25 flasks at 80 percent confluent of cultured amniocytes AND Maternal Whole Blood Specimen: Lavender (EDTA), pink (K2EDTA), or yellow (ACD solution A) Fetal Specimens will require MCC-FETAL testing to be added on by ARUP, and additional charges will apply.
Specimen Preparation:	For Nonfetal Specimens: Transport 3 mL whole blood (Min: 1mL) For Fetal Specimens: Cultured Amniocytes: Fill flasks with culture media. Transport two T-25 flasks at 80 percent confluent of cultured amniocytes filled with culture media. Backup cultures must be retained at the client's institution until testing is complete. If ARUP receives a sample below the minimum confluence, CG GRW&SND (0040182) will be added on by ARUP, and additional charges will apply. If clients are unable to culture specimens, CG GRW&SND should be added to initial order. Maternal Whole Blood Specimen: Transport 3 mL whole blood (Min: 1 mL)
Transport Temperature:	For Nonfetal Specimens: Whole Blood: Refrigerated. Also acceptable: Ambient. For Fetal Specimens: Cultured Amniocytes: CRITICAL ROOM TEMPERATURE. Must be received within 48 hours of shipment due to viability Maternal Whole Blood Specimen: Refrigerated. Also acceptable: Ambient.
Unacceptable Conditions:	Direct chorionic villus sampling (direct CVS), direct amniotic fluid (direct AF), plasma, serum, and tissue (FFPE)
Remarks:	
Stability:	For Nonfetal Specimens: Whole Blood: Room temperature: 1 week; Refrigerated: 1 month; Frozen: unacceptable. For Fetal Specimens: Cultured Amniocytes: Room temperature: 48 hours; Refrigerated: Unacceptable; Frozen: Unacceptable Maternal Whole Blood Specimen: Room temperature: 1 week; Refrigerated: 1 month; Frozen: Unacceptable.
Methodology:	Qualitative /Methylation-Specific Multiplex Ligation-Dependent

	Probe Amplification (MS-MLPA)
Performed:	Varies
Reported:	12-14 days
Note:	
CPT Codes:	81331; for fetal specimens add 81265
New York DOH Approval Status:	Specimens from New York clients will be sent out to a New York DOH approved laboratory, if possible.

Interpretive Data:

BACKGROUND INFORMATION: Angleman Syndrome and Prader-Willi Syndrome by Methylation-Specific MLPA

Characteristics of Angelman Syndrome (AS): Developmental delays by 6-12 months of age, seizures, microcephaly, movement or balance disorder, minimal or absent speech, and a distinctive behavioral phenotype, which includes a happy demeanor with frequent laughter, hand flapping, and excitability.
Characteristics of Prader-Willi Syndrome (PWS): Neonatal hypotonia, hyperphagia, obesity, global developmental delay, mild intellectual disability, hypogonadism, and a distinctive behavioral phenotype, which includes temper tantrums, stubbornness, manipulative behavior, and obsessive-compulsive behavior.
Prevalence: 1 in 15,000 for AS; 1 in 15,000 for PWS.
Inheritance: Varies, depending on the molecular genetic mechanism.
Cause: AS: Absence of maternal expression of the UBE3A gene. PWS: Absence of the paternally contributed PWS/AS critical region of chromosome 15q11.2-q13.
Molecular Genetic Mechanisms: AS: Microdeletions in the AS/PWS critical region (68 percent), UBE3A mutations (11 percent), paternal uniparental disomy of chromosome 15 (7 percent), imprinting center defects (3 percent), unbalanced chromosome translocation (less than 1 percent), and unknown (10 percent). PWS: Microdeletions in the PWS/AS critical region (70-75 percent), maternal uniparental disomy of chromosome 15 (25-29 percent), imprinting center defect or balanced chromosome translocation (less than 1 percent).
Clinical Sensitivity: PWS: Over 99 percent. AS: 80 percent.
Methodology: Methylation-specific multiplex ligation probe amplification (MLPA) of the AS/PWS critical region of chromosome 15q11.2-q13.
Analytical Sensitivity and Specificity: 99 percent for AS and PWS.
Limitations: Disease mechanisms causing AS that do not alter methylation patterns will not be detected. Diagnostic errors can occur due to rare sequence variations. This assay is not validated to detect increased copy number of 15q11.2-q13 nor determine parent of origin for duplications. This assay cannot distinguish between uniparental disomy (UPD) or an imprinting defect for PWS or AS. AS and PWS mosaicism will not be assessed by this assay. Interpretation of this test result may be impacted if this patient has had an allogeneic stem cell transplantation. Methylation patterns may not be fully established in early gestation; thus, diagnostic testing on chorionic villus samples is not recommended.

This test was developed and its performance characteristics determined by ARUP Laboratories. It

has not been cleared or approved by the U.S.US Food and Drug Administration. This test was performed in a CLIA -certified laboratory and is intended for clinical purposes.

Counseling and informed consent are recommended for genetic testing. Consent forms are available online.

Reference Interval:

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

NEW TEST

Click for Pricing

Luteinizing Hormone by Immunohistochemistry

3006297, LH-IHC

Specimen Requirements:	
Patient Preparation:	
Collect:	Tissue
Specimen Preparation:	Formalin fix (10 percent neutral buffered formalin) and paraffin embed specimen (cells must be prepared into a cellblock). Protect paraffin block and/or slides from excessive heat. Transport tissue block or 5 unstained (3- to 5-micron thick sections), positively charged slides in a Tissue Transport Kit (ARUP supply #47808 highly recommended) available online through eSupply using ARUP Connect or contact ARUP Client Services at 800-522-2787 (Min: 2 slides). If sending precut slides, do not oven bake.
Transport Temperature:	Room temperature. Also acceptable: Refrigerated. Ship in cooled container during summer months.
Unacceptable Conditions:	Tissue not mounted on positively charged slides. Specimens submitted with nonrepresentative tissue type. Depleted specimens. Serum, blood, or bodily fluids.
Remarks:	IMMUNOHISTOCHEMISTRY ORDERING AND SUBMISSION DETAILS: Submit electronic request. If you do not have electronic ordering capability, use an ARUP Immunohistochemistry Stain Form (#32978) with an ARUP client number. For additional technical details, contact ARUP Client Services at 800-522-2787.
Stability:	Ambient: Indefinitely; Refrigerated: Indefinitely; Frozen: Unacceptable
Methodology:	Qualitative Immunohistochemistry (IHC)
Performed:	Mon-Sat
Reported:	1-3 days
Note:	
CPT Codes:	88342

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

Interpretive Data:

Reference Interval:

Test Number	Components	Reference Interval

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

NEW TEST

Click for Pricing

Follicle Stimulating Hormone by Immunohistochemistry

3006300, FSH-IHC

Specimen Requirements:	
Patient Preparation:	
Collect:	Tissue
Specimen Preparation:	Formalin fix (10 percent neutral buffered formalin) and paraffi n embed specimen (cells must be prepared into a cellblock). Protect paraffi n block and/or slides from excessive heat. Transport tissue block or 5 unstained (3- to 5-micron thick sections), positively charged slides in a Tissue Transport Kit (ARUP supply #47808 highly recommended) available online through eSupply using ARUP Connect or contact ARUP Client Services at 800-522-2787 (Min: 2 slides). If sending precut slides, do not oven bake.
Transport Temperature:	Room temperature. Also acceptable: Refrigerated. Ship in cooled container during summer months.
Unacceptable Conditions:	Tissue not mounted on positively charged slides. Specimens submitted with nonrepresentative tissue type. Depleted specimens. Serum, blood, or bodily fluids.
Remarks:	IMMUNOHISTOCHEMISTRY ORDERING AND SUBMISSION DETAILS: Submit electronic request. If you do not have electronic ordering capability, use an ARUP Immunohistochemistry Stain Form (#32978) with an ARUP client number. For additional technical details, contact ARUP Client Services at 800-522-2787.
Stability:	Ambient: Indefinitely; Refrigerated: Indefinitely; Frozen: Unacceptable
Methodology:	Qualitative Immunohistochemistry (IHC)
Performed:	Sun-Sat
Reported:	1-3 days
Note:	
CPT Codes:	88342

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

Interpretive Data:

Reference Interval:

N/A

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

NEW TEST

Click for Pricing

Prenatal Hepatitis Panel

3006343, PRENAT HEP

Specimen Requirements:	
Patient Preparation:	
Collect:	Serum separator tube (SST). Also acceptable: Pink (K2EDTA).
Specimen Preparation:	Separate from cells ASAP or within 2 hours of collection. Transfer 3 mL serum or plasma to an ARUP standard transport tube. (Min: 2.0 mL)
Transport Temperature:	Frozen
Unacceptable Conditions:	Specimen: Body fluids other than serum or plasma. Condition: Heparinized plasma. Specimens containing particulate material or obvious microbial contamination. Heat-inactivated, severely hemolyzed or lipemic specimens.
Remarks:	
Stability:	After separation from cells: Ambient: 24 hours; Refrigerated: 5 days; Frozen: 2 months (avoid freeze/thaw cycles)
Methodology:	Qualitative Chemiluminescent Immunoassay (CLIA)/Quantitative Transcription-Mediated Amplification (TMA)
Performed:	Sun-Sat
Reported:	1-4 days
Note:	Order this test only for prenatal specimens. If results for HBsAg screen are reactive (= 1.0), then HBsAg Confirmation, Prenatal will be added. Additional charges apply. If the anti-HCV screening result is low positive or high positive, the Hepatitis C Virus by Quantitative NAAT will be added. Additional charges apply.
CPT Codes:	87340; 86803; if reflexed, add 87341; 87522
New York DOH Approval Status:	This test is New York DOH approved.
Interpretive Data:	

This test should not be used for blood donor screening, associated reentry protocols, or for screening human cells, tissues, and cellular- and tissue-based products (HCT/P).

Components	Interpretation
Hepatitis C Antibody by CIA Index	0.79 IV or less Negative 0.80 to 0.99 IV Equivocal 1.00 to 10.99 IV Low Positive 11.00 IV or greater High Positive

Reference Interval:

Test Number	Components	Reference Interval
	Hepatitis C Antibody by CIA Interp	Negative
	Hepatitis B Surface Antigen, Prenatal	Negative

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

NEW TEST

Click for Pricing

Drug Detection Panel and THC Metabolite, Umbilical Cord Tissue, Qualitative

3006371, C PAN_THC

Specimen Requirements:	
Patient Preparation:	
Collect:	Umbilical cord (at least 8 inches, approximately the width of a sheet of paper.)
Specimen Preparation:	Drain and discard any blood. Rinse the exterior of the cord segment with normal saline or water. Pat the cord dry and transport at least 8 inches of umbilical cord in a routine urine collection cup or Security Kit for Meconium/Umbilical Drug Detection (ARUP supply #51548) available online through eSupply using ARUP Connect(TM) or by contacting ARUP Client Services at 800-522-2787.
Transport Temperature:	Refrigerated
Unacceptable Conditions:	Cords soaking in blood or other fluid. Formalin fixed. Tissue that is obviously decomposed.
Remarks:	
Stability:	Ambient: 1 week; Refrigerated: 3 weeks; Frozen: 1 year
Methodology:	Qualitative Liquid Chromatography-Tandem Mass Spectrometry
Performed:	Sun-Sat
Reported:	1-4 days
Note:	For alcohol metabolite, order Ethyl Glucuronide, Umbilical Cord Tissue, Qualitative (ARUP test code 3000443). For kratom metabolite, order Kratom, Umbilical Cord Tissue, Qualitative (ARUP test code 3005874). If there is not enough sample to complete both components of testing, test will be canceled and client can order an individual test. Drug Detection Panel, Umbilical Cord Tissue, Qualitative (ARUP test code 2006621), or Marijuana Metabolite, Umbilical Cord Tissue, Qualitative (ARUP test code 3000256).
CPT Codes:	80326; 80347; 80364; 80355; 80349 (Alt code: G0481)

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

Interpretive Data:

Methodology: Qualitative Liquid Chromatography/Tandem Mass Spectrometry

Detection of drugs in umbilical cord tissue is intended to reflect maternal drug use during approximately the last trimester of a full-term pregnancy. The pattern and frequency of drug(s) used by the mother cannot be determined by this test. A negative result does not exclude the possibility that a mother used drugs during pregnancy. Detection of drugs in umbilical cord tissue depends on extent of maternal drug use, as well as drug stability, unique characteristics of drug deposition in umbilical cord tissue, and the performance of the analytical method. Drugs administered during labor and delivery may be detected. Detection of drugs in umbilical cord tissue does not insinuate impairment and may not affect outcomes for the infant. Interpretive questions should be directed to the laboratory.

Reference Interval:

Test Number	Components	Reference Interval
	Buprenorphine, Cord, Qual	Cutoff 1 ng/g
	Codeine, Cord, Qual	Cutoff 0.5 ng/g
	Dihydrocodeine, Cord, Qual	Cutoff 1 ng/g
	Fentanyl, Cord, Qual	Cutoff 0.5 ng/g
	Hydrocodone, Cord, Qual	Cutoff 0.5 ng/g
	Hydromorphone, Cord, Qual	Cutoff 0.5 ng/g
	Meperidine, Cord, Qual	Cutoff 2 ng/g
	Methadone, Cord, Qual	Cutoff 2 ng/g
	Methadone Metabolite, Cord, Qual	Cutoff 1 ng/g
	6-Acetylmorphine, Cord, Qual	Cutoff 1 ng/g
	Morphine, Cord, Qual	Cutoff 0.5 ng/g
	Naloxone, Cord, Qual	Cutoff 1 ng/g
	Oxycodone, Cord, Qual	Cutoff 0.5 ng/g
	Oxymorphone, Cord, Qual	Cutoff 0.5 ng/g
	Propoxyphene, Cord, Qual	Cutoff 1 ng/g
	Tapentadol, Cord, Qual	Cutoff 2 ng/g
	Tramadol, Cord, Qual	Cutoff 2 ng/g
	N-desmethyltramadol, Cord, Qual	Cutoff 2 ng/g
	O-desmethyltramadol, Cord, Qual	Cutoff 2 ng/g
	Amphetamine, Cord, Qual	Cutoff 5 ng/g
	Benzoylecgonine, Cord, Qual	Cutoff 1 ng/g
	m-OH-Benzoylecgonine, Cord, Qual	Cutoff 1 ng/g
	Cocaethylene, Cord, Qual	Cutoff 1 ng/g
	Cocaine, Cord, Qual	Cutoff 1 ng/g
	MDMA- Ecstasy, Cord, Qual	Cutoff 5 ng/g
	Methamphetamine, Cord, Qual	Cutoff 5 ng/g
	Phentermine, Cord, Qual	Cutoff 8 ng/g
	Alprazolam, Cord, Qual	Cutoff 0.5 ng/g
	Alpha-OH-Alprazolam, Cord, Qual	Cutoff 0.5 ng/g
	Butalbital, Cord, Qual	Cutoff 25 ng/g
	Clonazepam, Cord, Qual	Cutoff 1 ng/g
	7-Aminoclonazepam, Cord, Qual	Cutoff 1 ng/g
	Diazepam, Cord, Qual	Cutoff 1 ng/g
	Lorazepam, Cord, Qual	Cutoff 5 ng/g
	Midazolam, Cord, Qual	Cutoff 1 ng/g
	Alpha-OH-Midazolam, Cord, Qual	Cutoff 2 ng/g
	Nordiazepam, Cord, Qual	Cutoff 1 ng/g

	Oxazepam, Cord, Qual	Cutoff 2 ng/g
	Phenobarbital, Cord, Qual	Cutoff 75 ng/g
	Temazepam, Cord, Qual	Cutoff 1 ng/g
	Zolpidem, Cord, Qual	Cutoff 0.5 ng/g
	Phencyclidine- PCP, Cord, Qual	Cutoff 1 ng/g
	Norbuprenorphine, Cord, Qual	Cutoff 0.5 ng/g
	Norhydrocodone, Cord, Qual	Cutoff 1 ng/g
	Noroxycodone, Cord, Qual	Cutoff 1 ng/g
	Noroxymorphone, Cord, Qual	Cutoff 0.5 ng/g
	THC-COOH, Cord, Qual	Cutoff 0.2 ng/g
	Gabapentin, Cord, Qual	Cutoff 10 ng/g

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

NEW TEST

Click for Pricing

Drug Detection Panel and THC Metabolite, Meconium, Qualitative

3006373, M PAN_THC

Specimen Requirements:	
Patient Preparation:	
Collect:	All meconium (blackish material) excreted until milk/formula-based stool (yellow-green) appears.
Specimen Preparation:	Transport all available meconium (4 grams is preferred) to routine urine collection cup or Security Kit for Meconium/Umbilical Drug Detection (ARUP supply #51548) available online through eSupply using ARUP Connect or by contacting ARUP Client Services at 800-522-2787.
Transport Temperature:	Refrigerated
Unacceptable Conditions:	Unknown fluids, pharmaceutical preparation, and breast milk. Diapers, cotton swabs, baby wipes, tongue depressors, bottles.
Remarks:	
Stability:	Ambient: 1 week; Refrigerated: 3 weeks; Frozen: 1 year
Methodology:	Qualitative Liquid Chromatography-Tandem Mass Spectrometry
Performed:	Sun-Sat
Reported:	1-4 days
Note:	If only enough sample is available for one component of testing, this test will be canceled and client can order individual test. Drug Detection Panel, Meconium, Qualitative (3004583) or Marijuana, Meconium, Qualitative (0092316).
CPT Codes:	80326; 80347; 80364; 80355; 80349 (Alt code: G0481)
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

Methodology: Qualitative Liquid Chromatography/Tandem Mass Spectrometry

Detection of drugs in meconium is intended to reflect maternal drug use during approximately the last trimester of a full-term pregnancy. The pattern and frequency of drug(s) used by the mother cannot be determined by this test. A negative result does not exclude the possibility that a mother

used drugs during pregnancy. Detection of drugs in meconium depends on the extent of maternal drug use, as well as drug stability, unique characteristics of drug deposition in meconium, and the performance of the analytical method. Drugs administered during labor and delivery may be detected. Detection of drugs in meconium does not insinuate impairment and may not affect outcomes for the infant. Interpretive questions should be directed to the laboratory.

For medical purposes only; not valid for forensic use.

Reference Interval:

Test Number	Components	Reference Interval
	Marjiuana, Meconium, Qual	Cutoff 5 ng/g
	6-Acetylmorphine, MEC, Qual	Cutoff 20 ng/g
	7-Aminoclonazepam, MEC, Qual	Cutoff 5 ng/g
	Alpha-OH-Alprazolam, MEC, Qual	Cutoff 5 ng/g
	Alpha-OH-Midazolam, MEC, Qual	Cutoff 20 ng/g
	Alprazolam, MEC, Qual	Cutoff 5 ng/g
	Amphetamine, MEC, Qual	Cutoff 20 ng/g
	Benzoylecgonine, MEC, Qual	Cutoff 20 ng/g
	Buprenorphine, MEC, Qual	Cutoff 20 ng/g
	Butalbital, MEC, Qual	Cutoff 50 ng/g
	Clonazepam, MEC, Qual	Cutoff 5 ng/g
	Cocaethylene, MEC, Qual	Cutoff 20 ng/g
	Cocaine, MEC, Qual	Cutoff 20 ng/g
	Codeine, MEC, Qual	Cutoff 2 ng/g
	Diazepam, MEC, Qual	Cutoff 5 ng/g
	Dihydrocodeine, MEC, Qual	Cutoff 20 ng/g
	Methadone Metabolite, MEC, Qual	Cutoff 10 ng/g
	Fentanyl, MEC, Qual	Cutoff 10 ng/g
	Gabapentin, MEC, Qual	Cutoff 20 ng/g
	Hydrocodone, MEC, Qual	Cutoff 20 ng/g
	Hydromorphone, MEC, Qual	Cutoff 20 ng/g
	Lorazepam, MEC, Qual	Cutoff 20 ng/g
	MDMA- Ecstasy, MEC, Qual	Cutoff 20 ng/g
	Meperidine, MEC, Qual	Cutoff 20 ng/g
	Methadone, MEC, Qual	Cutoff 10 ng/g
	Methamphetamine, MEC, Qual	Cutoff 20 ng/g
	Methylphenidate, MEC, Qual	Cutoff 20 ng/g
	Midazolam, MEC, Qual	Cutoff 20 ng/g
	m-OH-Benzoylecgonine, MEC, Qual	Cutoff 20 ng/g
	Morphine, MEC, Qual	Cutoff 20 ng/g
	Naloxone, MEC, Qual	Cutoff 20 ng/g
	N-desmethyltramadol, MEC, Qual	Cutoff 20 ng/g
	Norbuprenorphine, MEC, Qual	Cutoff 20 ng/g
	Nordiazepam, MEC, Qual	Cutoff 20 ng/g
	Norhydrocodone, MEC, Qual	Cutoff 20 ng/g
	Noroxycodone, MEC, Qual	Cutoff 20 ng/g
	O-desmethyltramadol, MEC, Qual	Cutoff 20 ng/g

	Oxazepam, MEC, Qual	Cutoff 20 ng/g
	Oxycodone, MEC, Qual	Cutoff 20 ng/g
	Oxymorphone, MEC, Qual	Cutoff 20 ng/g
	Phencyclidine- PCP, MEC, Qual	Cutoff 10 ng/g
	Phenobarbital, MEC, Qual	Cutoff 200 ng/g
	Phentermine, MEC, Qual	Cutoff 20 ng/g
	Tapentadol, MEC, Qual	Cutoff 20 ng/g
	Temazepam, MEC, Qual	Cutoff 20 ng/g
	Tramadol, MEC, Qual	Cutoff 20 ng/g
	Zolpidem, MEC, Qual	Cutoff 10 ng/g

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

NEW TEST

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Prolonged Clot Time Reflexive Profile

3006383, CLOT RFLX

Specimen Requirements:	
Patient Preparation:	N/A
Collect:	At least five light blue (sodium citrate) tubes. Refer to Specimen Handling at aruplab.com for hemostasis/thrombosis specimen handling guidelines.
Specimen Preparation:	Transfer five 1 mL aliquots of platelet-poor plasma to five ARUP standard transport tubes and label as sodium citrate. (Min: 1 mL/aliquot and 5 mL total)
Transport Temperature:	CRITICAL FROZEN. Separate specimens must be submitted when additional tests codes are ordered.
Unacceptable Conditions:	Anything other than sodium citrated plasma. Specimens containing anticoagulant medications. Clotted or hemolyzed specimens.
Remarks:	Submit the Patient History form for the Prolonged Clot Time Reflexive Profile.
Stability:	Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen at -202 weeks; Frozen at -706 months
Methodology:	Electromagnetic Mechanical Clot Detection/Immunoturbidimetry/Microlatex Particle-Mediated Immunoassay/Platelet Agglutination/Chromogenic Assay
Performed:	Sun-Sat
Reported:	2-10 days
Note:	Submission of a completed Patient History form with test order will allow for optimal panel interpretation. The Patient History form for the Prolonged Clot Time Reflexive Profile is available on the ARUP web site or by contacting ARUP Client Services at 800-522-2787. Initial testing will include D-Dimer (0030057), Fibrinogen (0030130), and Lupus Anticoagulant Reflexive Panel (0030181). Depending on these initial findings, a pathologist will order one or more reflexive tests to provide a comprehensive interpretation. Additional testing may include

	Factor II, Activity (Prothrombin) (0030007); Factor V, Activity (0030075); Factor VII Activity (0030080), Factor VIII Activity (0030095), Chromogenic Factor VIII, Activity (3002343); Factor VIII Activity with Reflex to Bethesda Quantitative, Factor VIII (0030026); Factor IX, Activity (0030100); Factor IX Activity with Reflex to Bethesda Quantitative, Factor IX (0030032); Factor X, Activity (0030105); Factor XI, Activity (0030110); Factor XII, Activity (0030115); von Willebrand Factor Activity (Ristocetin Cofactor) (0030250); von Willebrand Factor Antigen (0030285); Fibrinogen Antigen (0030135); Inhibitor Assay, PT with Reflex to PT 1:1 Mix (2003260); and Inhibitor Assay, PTT with Reflex to PTT 1:1 Mix, with Reflex to 1-Hour Incubation (2003266). Additional charges apply.
CPT Codes:	85390-26; additional CPT codes may apply: 85210; 85220; 85230; 85240; 85245; 85246; 85250; 85260; 85270; 85280; 85335; 85379; 85384; 85385; 85525; 85597; 85598; 85610; 85611; 85613; 85635; 85670; 85730; 85732
New York DOH Approval Status:	This test is New York DOH approved.
Interpretive Data:	
Refer to report.	
Reference Interval:	
Refer to individual components.	

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

ARUP LABORATORIES

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Inactivations

The following will be discontinued from ARUP's test menu on May 15, 2023
Replacement test options are indicated when applicable.

Test Number	Test Name	Refer to Replacement Test
0050267	Borrelia burgdorferi Antibodies, Total by ELISA with Reflex to IgG and IgM by Immunoblot (Early Disease) (Change effective as of 05/15/23: Refer to 3006053, 3003254)	Borrelia burgdorferi VlsE1/pepC10 Antibodies, Total by ELISA With Reflex to IgM and IgG by ELISA (Modified Two-Tier Testing) (3006053), Borrelia burgdorferi VlsE1/pepC10 Antibodies, Total by ELISA with Reflex to IgG and IgM by Immunoblot (3003254)
0050268	Borrelia burgdorferi Total Antibodies, IgG and/or IgM by ELISA with Reflex to IgG by Immunoblot (Late Disease) (Change effective as of 05/15/23: Refer to 3006053, 3003255)	Borrelia burgdorferi VlsE1/pepC10 Antibodies, Total by ELISA With Reflex to IgM and IgG by ELISA (Modified Two-Tier Testing) (3006053), Borrelia burgdorferi VlsE1/pepC10 Antibodies, Total by ELISA with Reflex to IgG by Immunoblot (3003255)
0055436	Allergen, Food, Hops (Inactive as of 05/15/23)	
0060284	Influenza Virus A and B DFA with Reflex to Influenza Virus A and B Rapid Culture (Change effective as of 05/15/23: Refer to 0060764)	Respiratory Virus Mini Panel by PCR (0060764)
0060286	Influenza Virus A and B Rapid Culture (Change effective as of 05/15/23: Refer to 0060764)	Respiratory Virus Mini Panel by PCR (0060764)
0065055	Measles (Rubeola) Virus Culture (Inactive as of 05/15/23)	
0065056	Mumps Virus Culture (Change effective as of 05/15/23: Refer to 3000523)	Mumps Virus by PCR (3000523)
0093399	Circulating Tumor Cell Count (Inactive as of 05/15/23)	

Test Number	Test Name	Refer to Replacement Test
2002582	Aldosterone and Renin, Direct with Ratio (Change Effective as of 5/15/2023 Refer to 3005949 in the May Hotline)	Aldosterone and Renin, With Ratio (3005949)
2002643	Influenza Virus A and B DFA with Reflex to Respiratory Virus Mini Panel by PCR (Change effective as of 05/15/23: Refer to 0060764)	Respiratory Virus Mini Panel by PCR (0060764)
2003216	Allergen, Tree, Douglas Fir IgE (Inactive as of 05/15/23)	
2004760	Cytomegalovirus Antiviral Drug Resistance by Sequencing (Change effective as of 05/15/23: Refer to 3004615)	Cytomegalovirus Drug Resistance by Next Generation Sequencing, Ganciclovir, Foscarnet, Cidofovir, Maribavir, and Letermovir (3004615)
2005077	Angelman Syndrome and Prader-Willi Syndrome by Methylation-Sensitive PCR (Change effective as of 5/15/2023: Refer to 3006247 in the May Hotline)	Angelman Syndrome and Prader-Willi Syndrome by Methylation-Specific MLPA (3006247)
2010164	Luteinizing Hormone (LH) by Immunohistochemistry (Change effective as of 05/15/23: Refer to 3006297 in the May Hotline)	Luteinizing Hormone by Immunohistochemistry (3006297)
2010166	Follicle Stimulating Hormone (FSH) by Immunohistochemistry (Change effective as of 05/15/23: Refer to 3006300 in the May Hotline)	Follicle Stimulating Hormone by Immunohistochemistry (3006300)
2012232	Angelman Syndrome and Prader-Willi Syndrome by Methylation-Sensitive PCR, Fetal (Change effective as of 5/15/2023: Refer to 3006247 in the May Hotline)	Angelman Syndrome and Prader-Willi Syndrome by Methylation-Specific MLPA (3006247)
2014318	Prolonged Clot Time Reflex Panel (Change effective as of 05/15/23: Refer to 3006383 in the May Hotline)	Prolonged Clot Time Reflexive Profile (3006383)

Test Number	Test Name	Refer to Replacement Test
3001576	Muscle-Specific Kinase (MuSK) Antibody, IgG (Change effective as of 05/15/23: Refer to 3006198 in the May Hotline)	Muscle-Specific Kinase (MuSK) Antibody, IgG by CBA-IFA with Reflex to Titer, Serum (3006198)