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0020135	IONCA-S	Calcium, Ionized, Serum			x					x											
0030133	THROM COM	Thrombotic Risk, Inherited Etiologies (Most Common) with Reflex to Factor V Leiden (Change effective as of 02/21/23: Refer to 0030095, 0030192, 0030235, 0056060, 0099869)																		x	
0030177	THROMUNCOM	Thrombotic Risk, Inherited Etiologies (Uncommon) (Change effective as of 02/21/23: Refer to 0030010, 0030113, 0030215, 0030235, 0098894)																		x	
0050085	SMITH	Smith (ENA) Antibody, IgG					x														
0050234	WNILE IGG	West Nile Virus Antibody, IgG by ELISA, Serum					x														
0050470	RNP	Smith/RNP (ENA) Antibody, IgG					x														
0050599	SCLER	Scleroderma (Scl-70) (ENA) Antibody, IgG					x														
0050652	ENA ABS4	Extractable Nuclear Antigen Antibodies (Smith/RNP, Smith, SSA 52, SSA 60, and SSB)					x														
0050692	SSB	SSB (La) (ENA) Antibody, IgG					x														

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0050714	ANTICENT	Centromere Antibody, IgG					x														
0051069	INFLU ABS	Influenza A & B Virus Antibodies, IgG & IgM (Inactive as of 02/21/23: DO NOT REFER)																			x
0051079	FLUB M	Influenza B Virus Antibody, IgM (Inactive as of 02/21/23: DO NOT REFER)																			x
0051081	FLUA M	Influenza A Virus Antibody, IgM (Inactive as of 02/21/23: DO NOT REFER)																			x
0051352	EBV QNT	Epstein-Barr Virus by Quantitative PCR (Change effective as of 02/21/23: Refer to 3006079 in the February Hotline)																		x	
0051668	CONN	Connective Tissue Diseases Profile					x														
0055076	HYPER PRO	Hypersensitivity Pneumonitis I (Change effective as of 02/21/2023: Refer to 3006065 in the Feb Hotline)																		x	
0060052	PNEUMST	Pneumocystis jirovecii DFA					x														
0065058	V ENTTYP	Enterovirus Typing (Inactive as of 02/21/23)																			x

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0065121	PARVO G	Parvovirus B19 Antibody, IgG					x														
0070135	T3 UP	T3 Uptake Change effective as of 02/21/23: Refer to 3005977 in the February Hotline																		x	
0070140	T4	Thyroxine Change effective as of 02/21/23: Refer to 3005978 in the February Hotline																		x	
0070141	T7	Thyroid Panel Change effective as of 02/21/23: Refer to 3005976 in the February Hotline																		x	
0090067	BK QNT	BK Virus, Quantitative PCR (Change effective as of 02/21/23: Refer to 3006075, 3006076 in the February Hotline)																		x	
0093097	DEN G	Dengue Fever Virus Antibody, IgG					x														
0098457	CHYLO FL	Chylomicron Screen, Body Fluid (Change effective as of 02/21/23: Refer to 3005996 in the February Hotline)																		x	
0098727	ALPHA 2A	Alpha-2-Antiplasmin, Activity			x		x			x											
0099249	RIBPP	Ribosomal P Protein Antibody					x														
0099592	ANTI-JO	Jo-1 Antibody, IgG					x														

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2002290	CHR LKB	Chromosome Analysis, Leukemic Blood											x								
2002292	CHR BM	Chromosome Analysis, Bone Marrow											x								
2002304	BK QNT BLD	BK Virus, Quantitative PCR, Blood (Change effective as of 02/21/23: Refer to 3006076 in the February Hotline)																		x	
2002310	BK QNT URN	BK Virus, Quantitative PCR, Urine (Change effective as of 02/21/23: Refer to 3006075 in the February Hotline)																		x	
2002357	JAK2 EX12	JAK2 Exon 12 Mutation Analysis by PCR			x																
2004421	FLUA PAN	Influenza A Virus Antibodies, IgG & IgM (Inactive as of 02/21/23: DO NOT REFER)																			x
2004422	FLUB PAN	Influenza B Virus Antibodies, IgG & IgM (Inactive as of 02/21/23: DO NOT REFER)																			x
2004598	LEGIONFA	Legionella pneumophila DFA					x														
2005730	EVPEHV	Enterovirus and Parechovirus by PCR (Change effective as of 02/21/23: Refer to 0050249, 2005731 in the February Hotline)																		x	

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2005792	HB CASCADE	Hemoglobin Evaluation Reflexive Cascade			x																
2005924	CONGO R SS	Special Stain, Congo Red			x																
2006193	BCELL SCRN	B-Cell Clonality Screening (IgH and IgK) by PCR			x																
2007130	BM REFLEX	Chromosome Analysis, Bone Marrow with Reflex to Genomic Microarray											x								
2007131	LKB REFLEX	Chromosome Analysis, Leukemic Blood with Reflex to Genomic Microarray											x								
2007132	BRAF HCL	BRAF V600E Mutation Detection in Hairy Cell Leukemia by Real-Time PCR, Quantitative			x																
2007469	FLUTYPEPCR	Influenza A Virus H1/H3 Subtype by PCR (Inactive as of 02/21/23)																			x
2008863	HPE PAN FE	Holoprosencephaly Panel, Sequencing and Deletion/Duplication, Fetal			x		x	x													
2008915	ENCEPH	Encephalitis Panel with Reflex to Herpes Simplex Virus Types 1 and 2 Glycoprotein G-Specific Antibodies, IgG, Serum			x	x															

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2008916	ENCEPHCSF	Encephalitis Panel with Reflex to Herpes Simplex Virus Types 1 and 2 Glycoprotein G-Specific Antibodies, IgG, CSF			x	x															
2010673	CALR	CALR (Calreticulin) Exon 9 Mutation Analysis by PCR			x																
2010769	NOONAN FE	Noonan Spectrum Disorders Panel, Sequencing, Fetal			x		x	x													
2011660	PARAMICPCR	Gastrointestinal Parasite and Microsporidia by PCR (Change effective as of 02/21/22: Refer to 2011150, 2011626)																		x	
2011708	HBA FGA	Alpha Globin (HBA1 and HBA2) Sequencing and Deletion/Duplication			x		x														
2012010	SKEL FE	Skeletal Dysplasia Panel, Sequencing and Deletion/Duplication, Fetal			x		x	x													
2012049	HLA B1502	HLA-B*15:02 Genotyping, Carbamazepine Hypersensitivity							x												
2012074	SSA RO	SSA 52 and 60 (Ro) (ENA) Antibodies, IgG					x														

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2013444	SMA DD FE	Spinal Muscular Atrophy (SMA) Copy Number Analysis, Fetal										x									
3000460	SMITH_RNP	Smith and Smith/RNP (ENA) Antibodies, IgG					x														
3000472	TOXOCA AB	Toxocara Antibody by ELISA (Change effective as of 02/21/23: Refer to 3006066 in the February Hotline)																		x	
3000477	HYPER PAN	Hypersensitivity Pneumonitis Panel					x	x		x		x						x	x		
3000539	IMATINIB	Imatinib (Inactive as of 02/21/23)																			x
3001431	ENCEPH EXT	Autoimmune Encephalitis Extended Panel, Serum (Change effective as of 02/21/2023: Refer to 3006050 in the Feb Hotline)																		x	
3001561	HYPEREXT	Hypersensitivity Pneumonitis Extended Panel (Farmer's Lung Panel)						x				x						x	x		
3001633	CNSCAN NGS	Hereditary Central Nervous System Cancer Panel, Sequencing and Deletion/Duplication	x																		
3001648	GBA FGS	Gaucher Disease (GBA) Sequencing			x		x														

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3001784	ILD PANEL	Interstitial Lung Disease Autoantibody Panel			x																
3001957	HBG FGS	Gamma Globin (HBG1 and HBG2) Sequencing			x		x														
3002096	TSC NGS FE	Tuberous Sclerosis Complex Panel, Sequencing and Deletion/Duplication, Fetal			x			x													
3002479	LIVER PAN	Autoimmune Liver Disease Reflexive Panel			x																
3002480	BILIARY CH	Primary Biliary Cholangitis Panel			x																
3002673	MELCAN NGS	Hereditary Melanoma Panel, Sequencing and Deletion/Duplication	x																		
3002787	AENCEPHCSF	Autoimmune Encephalitis Reflexive Panel, CSF (Change effective as of 02/21/2023: Refer to 3006049 in the Feb Hotline)																		x	
3002887	NEURORCSF	Autoimmune Neurologic Disease Reflexive Panel, CSF (Change effective as of 02/21/23: Refer to 3006052 in the Feb Hotline)																		x	
3003279	GIPPCR	Gastrointestinal Pathogens Panel by PCR										x									

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3004070	NEURO R3	Autoimmune Neurologic Disease Reflexive Panel, Serum (Change effective as of 02/21/2023: Refer to 3006051 in the Feb Hotline)																		x	
3004277	MSIPCR	Microsatellite Instability (MSI) HNPCC/Lynch Syndrome by PCR			x																
3004308	MLH1 PCR	MLH1 Promoter Methylation			x																
3004508	CMVNGS4	Cytomegalovirus Drug Resistance by Next Generation Sequencing, Ganciclovir, Foscarnet, Cidofovir, and Maribavir	x																		
3004509	CMVNGS	Cytomegalovirus Drug Resistance by Next Generation Sequencing, Letermovir	x																		
3004550	BG NGS FE	Beta Globin (HBB) Sequencing, Fetal			x		x	x													
3004615	CMVNGS5	Cytomegalovirus Drug Resistance by Next Generation Sequencing, Ganciclovir, Foscarnet, Cidofovir, Maribavir, and Letermovir	x																		
3005900	PHOX2B IHC	PHOX2B by Immunohistochemistry	x																		

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3005912	PGLPCC NGS	Hereditary Paraganglioma-Pheochromocytoma Expanded Panel, Sequencing and Deletion/Duplication	x																		
3005916	CIC FISH	CIC (19q13.2) Gene Rearrangement by FISH	x																		
3005944	THYCAN NGS	Hereditary Thyroid Cancer Panel, Sequencing and Deletion/Duplication	x																		
3005960	C5 FUNCT	Complement C5, Functional	x																		
3005961	C5 INH PAN	C5 Inhibitors Drug Monitoring Panel	x																		
3005963	GASCAN NGS	Hereditary Gastric Cancer Panel, Sequencing and Deletion/Duplication	x																		
3005976	FTIP	Free Thyroxine Index Panel	x																		
3005977	T UPTAKE	T Uptake	x																		
3005978	T4 TOTAL	Thyroxine, Total T4	x																		
3005996	CHYLO RFLX	Triglycerides Body Fluid with Reflex to Chylomicron Electrophoresis	x																		

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3006003	GABA-A CSF	Gamma-Aminobutyric Acid Receptor, Type A (GABA-AR) Antibody, IgG by CBA-IFA with Reflex to Titer, CSF	x																		
3006008	GABA-A SER	Gamma-Aminobutyric Acid Receptor, Type A (GABA-AR) Antibody, IgG by CBA-IFA with Reflex to Titer, Serum	x																		
3006013	IGLON5 CSF	IgLON Family Member 5 (IgLON5) Antibody, IgG by CBA-IFA With Reflex to Titer, CSF	x																		
3006018	IGLON5 SER	IgLON Family Member 5 (IgLON5) Antibody, IgG by CBA-IFA With Reflex to Titer, Serum	x																		
3006023	ITPR1 CSF	Inositol 1,4,5-Trisphosphate Receptor Type 1 (ITPR1) Antibody, IgG by CBA-IFA With Reflex to Titer, CSF	x																		
3006031	ITPR1 SER	Inositol 1,4,5-Trisphosphate Receptor Type 1 (ITPR1) Antibody, IgG by CBA-IFA With Reflex to Titer, Serum	x																		
3006039	MGLUR1 CSF	Metabotropic Glutamate Receptor 1 (mGluR1) Antibody, IgG by CBA-IFA With Reflex to Titer, CSF	x																		

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3006044	MGLUR1 SER	Metabotropic Glutamate Receptor 1 (mGluR1) Antibody, IgG by CBA-IFA With Reflex to Titer, Serum	x																		
3006049	AE CSF	Autoimmune Encephalitis Reflex Panel, CSF	x																		
3006050	ENCEPHEXT 2	Autoimmune Encephalitis Extended Panel, Serum	x																		
3006051	NEURO R4	Autoimmune Neurologic Disease Panel with Reflex, Serum	x																		
3006052	NEURORCS F2	Autoimmune Neurologic Disease Panel With Reflex, CSF	x																		
3006065	HYPER 1	Hypersensitivity Pneumonitis 1	x																		
3006066	TOXOCARA G	Toxocara Antibodies, IgG by ELISA	x																		
3006075	BKQ U	BK Virus by Quantitative NAAT, Urine	x																		
3006076	BKQ P	BK Virus by Quantitative NAAT, Plasma	x																		
3006079	EBVQ	Epstein-Barr Virus by Quantitative NAAT, Plasma	x																		

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TEST CHANGE

Calcium, Ionized, Serum

0020135, IONCA-S

Specimen Requirements:	
Patient Preparation:	
Collect:	Serum separator tube.
Specimen Preparation:	Do not open the tube or split the specimen. Do not freeze separator tube. Do not expose specimen to air at any time during collection or transport process. Centrifuge with stopper in place within one hour of collection. Transport 5 mL serum in original serum separator tube. (Min: 0.5 mL)
Transport Temperature:	Refrigerated. Ship upright in original serum separator collection tube and transport in the ARUP shipping rack. Do not ship on dry ice.
Unacceptable Conditions:	Plasma and samples exposed to air in aliquot tubes. Frozen specimens.
Remarks:	
Stability:	Ambient: 24 hours; Refrigerated: 1 week; Frozen: Unacceptable
Methodology:	Ion-Selective Electrode/pH Electrode
Performed:	Sun-Sat
Reported:	Within 24 hours
Note:	Differences between the ionized calcium result and the ionized calcium normalized to pH 7.4 are due to the sample having a pH significantly different from pH 7.4. Specimen pH may be artificially decreased due to delayed processing and may be increased when the specimen is exposed to air. Due to these factors, it is recommended that the ionized calcium normalized to pH 7.4 be interpreted with caution and only used when the clinician has knowledge of the patient's acid/base status. Accurate determination of in vivo pH is best determined by arterial blood gas testing.
CPT Codes:	82330
New York DOH Approval Status:	This test is New York DOH approved.
Interpretive Data:	

Reference Interval:

Ionized calcium (ISE):
~~Birth up to~~ 1.09 ~~month: 1.10-1.35 mmol/L~~
~~1 month-adult: 1.11~~-1.30 mmol/L

Ionized calcium (calculation at pH 7.4):
1.09
~~Birth up to 1 month: 1.10-1.35 mmol/L~~
~~1 month-adult: 1.11~~-1.30 mmol/L

TEST CHANGE

Smith (ENA) Antibody, IgG

0050085, SMITH

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: 0.2 mL)
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Plasma or other body fluids. Contaminated, hemolyzed, or severely lipemic specimens.
Remarks:	
Stability:	After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)
Methodology:	Semi-Quantitative Multiplex Bead Assay
Performed:	Sun-Sat
Reported:	1-32 days
Note:	
CPT Codes:	86235
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

Smith antibody is highly specific (greater than 90 percent) for systemic lupus erythematosus (SLE) but only occurs in 30-35 percent of SLE cases. The presence of antibodies to Smith has variable associations with SLE clinical manifestations.

Reference Interval:

29 AU/mL or less	Negative
30-40 AU/mL	Equivocal
41 AU/mL or greater	Positive

TEST CHANGE

West Nile Virus Antibody, IgG by ELISA, Serum

0050234, WNILE IGG

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) Parallel testing is preferred and convalescent specimens must be received within 30 days from receipt of the acute specimens. Mark specimen plainly as "acute" or "convalescent."
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 (avoid repeated freeze/thaw cycles)
Methodology:	Semi-Quantitative Enzyme-Linked Immunosorbent Assay
Performed:	Sun, Tue, Fri
Reported:	1-64 days
Note:	
CPT Codes:	86789
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

This test is intended to be used as a semi-quantitative means of detecting West Nile virus-specific IgG in serum specimens in which there is a clinical suspicion of West Nile virus infection. This test should not be used solely for quantitative purpose, nor should the results be used without correlation to clinical history or other data. Because other members of the Flaviviridae family, such as St. Louis encephalitis virus, show extensive cross-reactivity with West Nile virus, serologic testing specific for these species should be considered.

Seroconversion between acute and convalescent sera is considered strong evidence of current or 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.

Reference Interval:

1.29 IV or less: Negative - No significant level of West Nile virus IgG antibody detected.
1.30-1.49 IV: Equivocal - Questionable presence of West Nile virus IgG antibody detected. Repeat testing in 10-14 days may be helpful.
1.50 IV or greater: Positive - Presence of IgG antibody to West Nile virus detected, suggestive of current or past infection.

TEST CHANGE

Smith/RNP (ENA) Antibody, IgG

0050470, RNP

Specimen Requirements:	
Patient Preparation:	
Collect:	Serum separator tube.
Specimen Preparation:	Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.2 mL)
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Plasma or other body fluids. Contaminated, hemolyzed, or severely lipemic specimens.
Remarks:	
Stability:	After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 month (avoid repeated freeze/thaw cycles)
Methodology:	Semi-Quantitative Enzyme-Linked Immunosorbent Assay
Performed:	Sun-Sat
Reported:	1-32 days
Note:	An affinity purified RNP/Sm antigen complex is used in this assay.
CPT Codes:	86235
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

Smith/RNP antibodies are frequently seen in patients with mixed connective tissue disease (MCTD) and are also associated with other systemic autoimmune rheumatic diseases (SARDs), such as systemic lupus erythematosus (SLE), systemic sclerosis, and myositis. Antibodies targeting the Smith/RNP antigenic complex also recognize Smith antigens, therefore, the Smith antibody response must be considered when interpreting these results.

Reference Interval:

19 Units or less	Negative
20-39 Units	Weak Positive
40-80 Units	Moderate Positive
81 Units or greater	Strong Positive

TEST CHANGE

Scleroderma (Scl-70) (ENA) Antibody, IgG

0050599, SCLER

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: 0.2 mL)
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Plasma or other body fluids. Contaminated, hemolyzed, or severely lipemic specimens.
Remarks:	
Stability:	After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)
Methodology:	Semi-Quantitative Multiplex Bead Assay
Performed:	Sun-Sat
Reported:	1-32 days
Note:	
CPT Codes:	86235
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

The presence of Scl-70 antibodies (also referred to as topoisomerase I, topo-I or ATA) is considered diagnostic for systemic sclerosis (SSc). Scl-70 antibodies alone are detected in about 20 percent of SSc patients and are associated with the diffuse form of the disease, which may include specific organ involvement and poor prognosis. Scl-70 antibodies have also been reported in a varying percentage of patients with systemic lupus erythematosus (SLE). Scl-70 (topo-1) is a DNA binding protein and anti-DNA/DNA complexes in the sera of SLE patients may bind to topo-I, leading to a false-positive result. The presence of Scl-70 antibody in sera may also be due to contamination of recombinant Scl-70 with DNA derived from cellular material used in immunoassays. Strong clinical correlation is recommended if both Scl-70 and dsDNA antibodies are detected.

Negative results do not necessarily rule out the presence of SSc. If clinical suspicion remains, consider further testing for centromere, RNA polymerase III and U3-RNP, PM/Scl, or Th/To antibodies.

Reference Interval:

29 AU/mL or less	Negative
30-40 AU/mL	Equivocal
41 AU/mL or greater	Positive

TEST CHANGE

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

0050652, ENA ABS4

Specimen Requirements:	
Patient Preparation:	
Collect:	Serum separator tube.
Specimen Preparation:	Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.3 mL)
Transport Temperature:	Refrigerated..
Unacceptable Conditions:	Plasma or other body fluids. Bacterially contaminated or severely lipemic specimens.
Remarks:	
Stability:	After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 month (avoid repeated freeze/thaw cycles)
Methodology:	Quantitative Enzyme-Linked Immunosorbent Assay/Quantitative Multiplex Bead Assay
Performed:	Sun-Sat
Reported:	1-3~~2~~ days
Note:	
CPT Codes:	86235 x5
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

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

SSA-52 (Ro52) (ENA) Antibody, IgG	29 AU/mL or Less Negative 30-40 AU/mL Equivocal 41 AU/mL or greater Positive
SSA-60 (Ro60) (ENA) Antibody, IgG	29 AU/mL or Less Negative 30-40 AU/mL Equivocal 41 AU/mL or greater Positive
SSB (La) (ENA) Antibody, IgG	29 AU/mL or less Negative 30-40 AU/mL Equivocal 41 AU/mL or greater Positive

Reference Interval:

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

TEST CHANGE

SSB (La) (ENA) Antibody, IgG

0050692, SSB

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: 0.2 mL)
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Plasma or other body fluids. Contaminated, hemolyzed, or severely lipemic specimens.
Remarks:	
Stability:	After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)
Methodology:	Semi-Quantitative Multiplex Bead Assay
Performed:	Sun-Sat
Reported:	1-32 days
Note:	
CPT Codes:	86235
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

SSB (La) antibody is seen in 50-60% of Sjögren syndrome cases and is specific if it is the only ENA antibody present. Fifteen-25% of patients with systemic lupus erythematosus (SLE) and 5-10% of patients with progressive systemic sclerosis (PSS) also have this antibody.

Reference Interval:

29 AU/mL or less	Negative
30-40 AU/mL	Equivocal
41 AU/mL or greater	Positive

TEST CHANGE

Centromere Antibody, IgG

0050714, ANTICENT

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: 0.25 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 year (avoid repeated freeze/thaw cycles)
Methodology:	Semi-Quantitative Multiplex Bead Assay
Performed:	Sun-Sat
Reported:	1-32 days
Note:	
CPT Codes:	83516
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

When detected by this multiplex bead assay, the presence of centromere antibodies is mainly associated with CREST syndrome, a variant of systemic sclerosis (SSc). These antibodies target the centromere B, a dominant antigen of the centromeric complex associated with the centromere pattern observed in antinuclear antibody (ANA) testing by IFA. Centromere antibodies may also be seen in a varying percentage of patients with other autoimmune diseases, including diffuse cutaneous SSc, Raynaud syndrome, interstitial pulmonary fibrosis, autoimmune liver disease, systemic lupus erythematosus (SLE) and rheumatoid arthritis (RA).

A negative result indicates no detectable IgG antibodies to centromere B. If the result is negative but clinical suspicion for SSc is strong, consider testing for ANA by IFA along with other antibodies associated with SSc, including Scl-70, U3-RNP, PM/Scl, or Th/To.

Reference Interval:

29 AU/mL or less	Negative
30-40 AU/mL	Equivocal
41 AU/mL or greater	Positive

TEST CHANGE

Connective Tissue Diseases Profile

0051668, CONN

Specimen Requirements:	
Patient Preparation:	
Collect:	Serum separator tube.
Specimen Preparation:	Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.3 mL)
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Plasma or other body fluids. Bacterially contaminated specimens.
Remarks:	
Stability:	After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 month
Methodology:	Semi-Quantitative Enzyme-Linked Immunosorbent Assay/Semi-Quantitative Multiplex Bead Assay
Performed:	Sun-Sat
Reported:	1-3~~2~~ days
Note:	
CPT Codes:	86235 x7; 83516 x2
New York DOH Approval Status:	This test is New York DOH approved.
Interpretive Data:	

Refer to report.

Component		Interpretation
Smith (ENA) Antibody, IgG	29 AU/mL or less 30-40 AU/mL 41 AU/mL or greater	Negative Equivocal Positive
Smith/RNP (ENA) Antibody, IgG	19 Units or less 20-39 Units 40-80 Units 81 Units or greater	Negative Weak Positive Moderate Positive Strong Positive
SSA-52 (Ro52) (ENA) Antibody, IgG	29 AU/mL or Less 30-40 AU/mL 41 AU/mL or greater	Negative Equivocal Positive
SSA-60 (Ro60) (ENA) Antibody, IgG	29 AU/mL or Less 30-40 AU/mL 41 AU/mL or greater	Negative Equivocal Positive
SSB (La) (ENA) Antibody, IgG	29 AU/mL or less 30-40 AU/mL 41 AU/mL or greater	Negative Equivocal Positive
Jo-1 Antibody, IgG	29 AU/mL or less 30-40 AU/mL 41 AU/mL or greater	Negative Equivocal Positive
Ribosomal P Protein Antibody	29 AU/mL or less 30-40 AU/mL 41 AU/mL or greater	Negative Equivocal Positive
Centromere Antibody, IgG	29 AU/mL or less 30-40 AU/mL 41 AU/mL or greater	Negative Equivocal Positive
Scleroderma (Scl-70) (ENA) Antibody, IgG	29 AU/mL or less 30-40 AU/mL 41 AU/mL or greater	Negative Equivocal Positive

Reference Interval:

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

TEST CHANGE

Pneumocystis jirovecii DFA

0060052, PNEUMST

Specimen Requirements:	
Patient Preparation:	
Collect:	Respiratory specimen: Bronchial washing, bronchoalveolar lavage (BAL), or induced sputum.
Specimen Preparation:	Transfer 5 mL respiratory specimen to a sterile container. (Min: 0.5 mL) Place each specimen in an individually sealed bag.
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Tissues. Formalinized specimens. Slides or swabs.
Remarks:	Specimen source preferred.
Stability:	Ambient: 2 hours; Refrigerated: 1 week; Frozen: Unacceptable
Methodology:	Direct Fluorescent Antibody Stain
Performed:	Sun-Sat
Reported:	1-2 days ~~Within 24 hours~~
Note:	A negative stain result does not exclude the possibility of infection. False-negative results may occur due to sampling errors or a low number of organisms in the specimen.
CPT Codes:	87015; 87281
New York DOH Approval Status:	This test is New York DOH approved.
Interpretive Data:	
Reference Interval:	
Negative	

TEST CHANGE

Parvovirus B19 Antibody, IgG

0065121, PARVO G

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) Parallel testing is preferred and convalescent specimens must be received within 30 days from receipt of the acute specimens.
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Bacterially contaminated, heat-inactivated, hemolyzed, icteric, lipemic, or turbid 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 Enzyme-Linked Immunosorbent Assay
Performed:	Sun-Sat
Reported:	1-32 days
Note:	
CPT Codes:	86747
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

The best evidence for current infection is a significant change on two appropriately timed specimens, where both tests are done in the same laboratory at the same time.

Reference Interval:

0.90 IV or less: Negative - No significant level of detectable Parvovirus B19 IgG antibody.
0.91-1.09 IV: Equivocal - Repeat testing in 7-21 days may be helpful.
1.10 IV or greater: Positive - IgG antibody to Parvovirus B19 detected, which may indicate a current or past infection.

TEST CHANGE

Dengue Fever Virus Antibody, IgG

0093097, DEN 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. (Min: 0.1 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, heat-inactivated, hemolyzed, icteric, lipemic, or turbid specimens.
Remarks:	
Stability:	After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)
Methodology:	Semi-Quantitative Enzyme-Linked Immunosorbent Assay
Performed:	Mon, Wed, Fri
Reported:	1-54 days
Note:	
CPT Codes:	86790
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

Patients in the early stage of dengue fever virus infection may not have detectable IgG antibodies, as the IgG response may take several weeks to develop. In the absence of detectable IgG, testing for IgM class antibody is strongly recommended. The best evidence for current 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 IV or less: Negative - No significant level of detectable dengue fever virus IgG antibody.
1.65-2.84 IV: Equivocal - Questionable presence of antibodies. Repeat testing in 10-14 days may be helpful.
2.85 IV or greater: Positive - IgG antibody to dengue fever virus detected, which may indicate a current or past infection.

TEST CHANGE

Alpha-2-Antiplasmin, Activity

0098727, ALPHA 2A

Specimen Requirements:	
Patient Preparation:	
Collect:	Lt. blue (sodium citrate). Refer to Specimen Handling at aruplab.com for hemostasis/thrombosis specimen handling guidelines.
Specimen Preparation:	Transfer 1 mL platelet-poor plasma to an ARUP standard transport tube.~~Standard Transport Tube.~~ (Min: 0.5 mL)
Transport Temperature:	CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.
Unacceptable Conditions:	Serum. EDTA plasma, clotted or hemolyzed specimens.
Remarks:	
Stability:	~~A~~mbient: 4 hours; Refrigerated: Unacceptable; Frozen: at -20 Degrees C: 3 months; at -70 Degrees C: 6 months
Methodology:	Chromogenic Assay
Performed:	~~Mon,~~ Thu
Reported:	1-8~~5~~ days
Note:	
CPT Codes:	85410
New York DOH Approval Status:	This test is New York DOH approved.
Interpretive Data:	

Reference Interval:

By Report

Age	Activity (%)
1-4 days	55-115%
5-29 days	70-130%
30-89	76-124%
90-179 days	76-140%
180-364 days	83-139%
1-5 years	93-117%
6 years	89-110%
7-9 years	88-147%
10-11 years	90-144%
12-13 years	87-142%
14-15 years	83-136%
16-17 years	77-134%
18 years and older	82-133%

TEST CHANGE

Ribosomal P Protein Antibody

0099249, RIBPP

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: 0.2 mL)
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Plasma or other body fluids. Bacterially contaminated or severely lipemic specimens.
Remarks:	
Stability:	After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)
Methodology:	Semi-Quantitative Multiplex Bead Assay
Performed:	Sun-Sat
Reported:	1-32 days
Note:	
CPT Codes:	83516
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

Autoantibodies reacting with cytoplasmic ribosomes are highly specific for systemic lupus erythematosus. Ribosomal-P antibodies are found in approximately 12% of patients with systemic lupus erythematosus (SLE) and in 90% of patients with lupus psychosis; titers often increase more than fivefold during and before active phases of psychosis.

Reference Interval:

29 AU/mL or less	Negative
30-40 AU/mL	Equivocal
41 AU/mL or greater	Positive

TEST CHANGE

Jo-1 Antibody, IgG

0099592, ANTI-JO

Specimen Requirements:	
Patient Preparation:	
Collect:	Serum separator tubes.
Specimen Preparation:	Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.2 mL)
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Plasma or other body fluids.
Remarks:	
Stability:	After separation from the cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)
Methodology:	Semi-Quantitative Multiplex Bead Assay
Performed:	Sun-Sat
Reported:	1-3~~2~~ days
Note:	Presence of Jo-1 antibody is found in patients with pure polymyositis, pure dermatomyositis, or myositis associated with another rheumatic disease or with interstitial lung disease.
CPT Codes:	86235
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

Presence of Jo-1 (antihistidyl transfer RNA [t-RNA] synthetase) antibody is associated with polymyositis and may also be seen in patients with dermatomyositis. Jo-1 antibody is associated with pulmonary involvement (interstitial lung disease), Raynaud phenomenon, arthritis, and mechanic's hands (implicated in antisynthetase syndrome).

Reference Interval:

29 AU/mL or less	Negative
30-40 AU/mL	Equivocal
41 AU/mL or greater	Positive

TEST CHANGE

Chromosome Analysis, Leukemic Blood

2002290, CHR LKB

Specimen Requirements:	
Patient Preparation:	
Collect:	Green (sodium heparin).
Specimen Preparation:	Transport 5 mL whole blood. (Min: 0.5 mL)
Transport Temperature:	Room temperature.
Unacceptable Conditions:	Frozen specimens. Clotted specimens.
Remarks:	
Stability:	Ambient: 48 hours; Refrigerated: 48 hours; Frozen: Unacceptable
Methodology:	Giemsa Band
Performed:	Sun-Sat
Reported:	3-10 days
Note:	These studies involve culturing of living cells; therefore, turnaround times given represent average times, which are subject to multiple variables. A processing fee will be charged if this procedure is canceled at the client's request after the test has been set up or if the specimen integrity is inadequate to allow culture growth. This test must be ordered using Oncology test request form (#43099) or through your ARUP interface. Specimens enrolled in external studies (e.g. COG studies) requiring additional work-up and/or supplementary data collection and submission will have the following charges added based on type and extent of work performed: Cytogenetics Study Submission - Basic (3006071) or Cytogenetics Study Submission - Extensive (3006072).
CPT Codes:	88237; 88264
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:

By report

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

Chromosome Analysis, Bone Marrow

2002292, CHR BM

Specimen Requirements:	
Patient Preparation:	
Collect:	Nondiluted bone marrow aspirate. Collect in a heparinized syringe.
Specimen Preparation:	Do not freeze or expose to extreme temperatures. Transfer 3 mL bone marrow to a green (sodium heparin). (Min: 0.5 mL)
Transport Temperature:	Room temperature.
Unacceptable Conditions:	Frozen specimens. Clotted specimens.
Remarks:	
Stability:	Ambient: 48 hours; Refrigerated: 48 hours; Frozen: Unacceptable
Methodology:	Giemsa Band
Performed:	Sun-Sat
Reported:	3-10 days
Note:	These studies involve culturing of living cells; therefore, turnaround times given represent average times, which are subject to multiple variables. A processing fee will be charged if this procedure is canceled at the client's request after the test has been set up or if the specimen integrity is inadequate to allow culture growth. Although bone marrow is the recommended specimen type for hematological disorder studies, blood can be substituted if bone marrow cannot be obtained. Refer to Chromosome Analysis, Leukemic Blood (ARUP test code 2002290). This test must be ordered using Oncology test request form #43099 or through your ARUP interface. Specimens enrolled in external studies (e.g. COG studies) requiring additional work-up and/or supplementary data collection and submission will have the following charges added based on type and extent of work performed: Cytogenetics Study Submission - Basic (3006071) or Cytogenetics Study Submission - Extensive (3006072).
CPT Codes:	88237; 88264

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:

By report

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

JAK2 Exon 12 Mutation Analysis by PCR

2002357, JAK2 EX12

Specimen Requirements:	
Patient Preparation:	
Collect:	Whole blood or bone marrow (EDTA). ~~Also acceptable: DNA extracted by CLIA-certified lab.~~
Specimen Preparation:	Whole Blood: Do not freeze. Transport 5 mL whole blood. (Min: 1 mL) Bone Marrow: Do not freeze. Transport 3 mL bone marrow. (Min: 1 mL) ~~(Min: 1 mL) Extracted DNA: Transport 40 uL DNA with at least 50 ng/uL concentration. (Min: 40 uL) Transport DNA 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:	Refrigerated.
Unacceptable Conditions:	Plasma, serum, FFPE tissue blocks/slides, or frozen tissue. Specimens collected in anticoagulants other than EDTA. Clotted or grossly hemolyzed specimens.
Remarks:	
Stability:	Ambient: 24 hours; Refrigerated: 4 days; Frozen: Unacceptable ~~Extracted DNA: Ambient: 1 month; Refrigerate: Indefinitely; Frozen: Indefinitely~~
Methodology:	Polymerase Chain Reaction
Performed:	DNA isolation: Sun-Sat Assay: Varies
Reported:	3-9 days
Note:	
CPT Codes:	81279
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 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

Legionella pneumophila DFA

2004598, LEGIONFA

Specimen Requirements:	
Patient Preparation:	
Collect:	Pericardial fluid, respiratory, or tissue specimens.
Specimen Preparation:	Fluid: Prepare two duplicate slides. OR transfer 1 mL fluid to a sterile container. Tissue: Transfer tissue to a sterile container and place on gauze moistened with sterile non-bacteriostatic saline to prevent drying.
Transport Temperature:	Refrigerated. OR frozen if transport occurs more than 48 hours after collection.
Unacceptable Conditions:	Non-respiratory specimens. Specimens in preservatives or viral transport medium.
Remarks:	Specimen source preferred.
Stability:	Fluid or Tissue: Ambient: 12 hours; Refrigerated: 48 hours; Frozen: 1 week Slides: Ambient: 1 week; Refrigerated: 1 week; Frozen: 1 week
Methodology:	Direct Fluorescent Antibody Stain
Performed:	Sun-Sat
Reported:	1-2 days ~~Within 24 hours~~
Note:	A negative stain result does not exclude the possibility of infection. False-negative results may occur due to sampling errors or a low number of organisms in the specimen. DFA is not recommended for diagnosing Legionella pneumophila-caused infections. For diagnosing Legionella pneumophila-caused infections, refer to Legionella Species, Culture (ARUP test code 0060113), Legionella Species by Qualitative PCR (ARUP test code 2010125) for amplified DNA testing of respiratory specimens, or Legionella pneumophila Antigen, Urine (ARUP test code 0070322) for urine specimens.
CPT Codes:	87278
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:
Reference Interval:
Negative

TEST CHANGE

Hemoglobin Evaluation Reflexive Cascade

2005792, HB CASCADE

Specimen Requirements:	
Patient Preparation:	
Collect:	Lavender (K 2 EDTA~~K2EDTA~~) or pink (K 2 EDTA~~Pink (K2EDTA~~).
Specimen Preparation:	Transport 5mL~~5 mL~~ whole blood. (Min: 3~~2~~ mL)
Transport Temperature:	Refrigerated. Separate specimens must be submitted when multiple tests are ordered.
Unacceptable Conditions:	
Remarks:	Patient history form, including information from a recent CBC, is required for interpretation.
Stability:	Ambient: Unacceptable; Refrigerated: 1 week; Frozen: Unacceptable
Methodology:	High Performance Liquid Chromatography (HPLC)/Capillary Electrophoresis/RBC Solubility/Polymerase Chain Reaction (PCR)/~~/~~Fluorescence Resonance Energy Transfer (FRET)/~~/~~Sequencing/Massively Parallel Sequencing
Performed:	Sun-Sat
Reported:	Varies
Note:	The Hemoglobin Evaluation Reflexive Cascade begins with HPLC analysis. If an abnormal hemoglobin is detected or if the CBC data is suggestive of a hemoglobinopathy, appropriate testing will be performed at an additional charge. Depending on findings, one or more reflexive tests may be required in order to provide a clinical interpretation. Tests added may include electrophoresis, solubility testing, mutational analysis and/or sequencing. Quantitation of hemoglobin by HPLC or electrophoresis is most definitive in individuals one year of age and older. If quantitation of hemoglobin was performed before one year of age, repeat testing is recommended. Abnormal hemoglobin variants may require additional testing, which increases TAT up to 21 days.
CPT Codes:	83021. If reflexed additional CPT codes may apply; refer to the reflexed test code for applicable codes.

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:

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 19, 2013

HPLC testing Age-Defined Normal Hemoglobin Reference Intervals

Age	Hb A Percent	Hb A2 Percent	Hb F Percent	Hb S Percent	Hb C Percent	Hb E Percent	Hb Other Percent
0-1 month	7.6-54.8	0.0-1.4	45.8-91.7	0.0	0.0	0.0	0.0
2 months	14.7-70.1	0.0-2.0	32.7-85.2	0.0	0.0	0.0	0.0
3 months	26.6-81.8	0.1-2.6	14.5-73.7	0.0	0.0	0.0	0.0
4 months	43.0-89.5	0.8-3.0	4.2-56.9	0.0	0.0	0.0	0.0
5 months	60.8-94.0	1.5-3.3	1.0-38.1	0.0	0.0	0.0	0.0
6-8 months	78.2-96.6	1.8-3.5	0.9-19.4	0.0	0.0	0.0	0.0
9-12 months	86.1-97.2	1.9-3.5	0.6-11.6	0.0	0.0	0.0	0.0
13-23 months	85.1-97.7	1.9-3.5	0.0-8.5	0.0	0.0	0.0	0.0
2 years and older	95.0-97.9	2.0-3.5	0.0-2.1	0.0	0.0	0.0	0.0

TEST CHANGE

Special Stain, Congo Red

2005924, CONGO R SS

Specimen Requirements:	
Patient Preparation:	
Collect:	Tissue or cells.
Specimen Preparation:	Formalin fix (10 percent neutral buffered formalin is preferred) 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 (8~~3~~- to 10~~5~~-micron thick sections), positively charged slides 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. (Min: 1 slide).
Transport Temperature:	Room temperature or refrigerated. Ship in cooled container during summer months.
Unacceptable Conditions:	Specimens submitted with non-representative tissue type. Depleted specimens.
Remarks:	HISTOLOGY SPECIAL STAINS SUBMISSION DETAILS: Submit electronic request. If you do not have electronic ordering capability, use an ARUP Anatomic Pathology Form (#32960) 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:	Special Stain
Performed:	Mon-Fri
Reported:	1-5 days
Note:	All stains will be handled as Stain and Return unless a consultation is requested. To request a consultation, submit the pathology report, all associated case materials (clinical history, blocks, slides, etc.), and the Anatomic Pathology Requisition Form (#32960).
CPT Codes:	88313

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

Interpretive Data:

Reference Interval:

Test Number	Components	Reference Interval

TEST CHANGE

B-Cell Clonality Screening (IgH and IgK) by PCR

2006193, BCELL SCRN

Specimen Requirements:	
Patient Preparation:	
Collect:	Whole blood or bone marrow (EDTA), tissue, formalin-fixed tissue.
Specimen Preparation:	Whole Blood: Do not freeze. Transport 5 mL whole blood. (Min: 1 mL) Bone Marrow: Do not freeze. Transport 3 mL bone marrow. (Min: 1 mL) Fresh Tissue: Freeze immediately. Transport 100 mg or 0.5-2.0 cm3 tissue. FFPE 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 four 10-micron shavings 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:	Whole Blood, Bone Marrow: Refrigerated. Fresh Tissue: Frozen on dry ice. FFPE Tumor Tissue: Room temperature. Also acceptable: Refrigerated. Ship in cooled container during summer months
Unacceptable Conditions:	Plasma, serum. Specimens collected in anticoagulants other than EDTA. Clotted or grossly hemolyzed specimens. Tissue: Specimens fixed/processed in alternative fixatives, heavy metal fixatives (B-4 or B-5), or tissue sections on slides. Decalcified specimens.
Remarks:	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:	Whole Blood or Bone Marrow: Ambient: 24 hours; Refrigerated: 5 days; Frozen: Unacceptable Fresh Tissue: Ambient: Unacceptable; Refrigerated: 2 hours; Frozen: 1 year FFPE Tumor Tissue: Ambient: Indefinitely; Refrigerated: Indefinitely; Frozen: Unacceptable ~~Extracted DNA: Ambient: 1 month;~~

	~~Refrigerate: Indefinitely; Frozen: Indefinitely~~
Methodology:	Capillary Electrophoresis
Performed:	DNA isolation: Sun-Sat; Assay: Varies
Reported:	5-9 days
Note:	
CPT Codes:	81261; 81264
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 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

Chromosome Analysis, Bone Marrow with Reflex to Genomic Microarray

2007130, BM REFLEX

Specimen Requirements:	
Patient Preparation:	
Collect:	Nondiluted bone marrow aspirate. Collect in a heparinized syringe
Specimen Preparation:	Do not freeze or expose to extreme temperatures. Transfer 3 mL bone marrow to a Green (Sodium Heparin). (Min: 0.5 mL)
Transport Temperature:	Room temperature
Unacceptable Conditions:	Clotted specimens
Remarks:	
Stability:	Ambient: 48 hours; Refrigerated: 48 hours; Frozen: Unacceptable
Methodology:	Giemsa Band/Genomic Microarray (Oligo-SNP array)
Performed:	Sun-Sat
Reported:	3-10 days If reflexed: 7-12 additional days required for microarray.
Note:	These studies involve culturing of living cells; therefore, turnaround times given represent average times, which are subject to multiple variables. A processing fee will be charged if this procedure is canceled at the client's request after the test has been set up or if the specimen integrity is inadequate to allow culture growth. If Chromosome Analysis is "normal" or "no growth," then Genomic Microarray testing will be added. Additional charges apply. Specimens enrolled in external studies (e.g. COG studies) requireing additional work-up and/or supplementary data collection and submission will have the following charges added based on type and extent of work performed: Cytogenetics Study Submission - Basic (3006071) or Cytogenetics Study Submission - Extensive (3006072).
CPT Codes:	88237; 88264; if reflexed, add 81277
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.

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:

By report

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

Chromosome Analysis, Leukemic Blood with Reflex to Genomic Microarray

2007131, LKB REFLEX

Specimen Requirements:	
Patient Preparation:	
Collect:	Green (Sodium Heparin).
Specimen Preparation:	Do not freeze or expose to extreme temperatures. Transfer 5mL whole blood to a Green (Sodium Heparin). (Min: 1 mL)
Transport Temperature:	Room temperature
Unacceptable Conditions:	Clotted specimens
Remarks:	
Stability:	Ambient: 48 hours; Refrigerated: 48 hours; Frozen: Unacceptable
Methodology:	Giemsa Band/Genomic Microarray (Oligo-SNP array)
Performed:	Sun-Sat
Reported:	3-10 days If reflexed: 7-12 additional days required for microarray.
Note:	These studies involve culturing of living cells; therefore, turnaround times given represent average times and are subject to multiple variables. A processing fee will be charged if this procedure is canceled at the client's request after the test has been set up or if the specimen integrity is inadequate to allow culture growth. If Chromosome Analysis is "normal" or "no growth," then Genomic Microarray testing will be added. Additional charges apply. Specimens enrolled in external studies (e.g. COG studies) requiring additional work-up and/or supplementary data collection and submission will have the following charges added based on type and extent of work performed: Cytogenetics Study Submission Basic (3006071) or Cytogenetics Study Submission Extensive (3006072).
CPT Codes:	88237; 88264; if reflexed, add 81277
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

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:

By report

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

BRAF V600E Mutation Detection in Hairy Cell Leukemia by Real-Time PCR, Quantitative

2007132, BRAF HCL

Specimen Requirements:	
Patient Preparation:	
Collect:	Lavender (EDTA) or bone marrow (EDTA). ~~Also acceptable: DNA extracted by CLIA certified lab.~~
Specimen Preparation:	Whole Blood: Do not freeze. Transport 5 mL whole blood. (Min: 1 mL) Bone Marrow: Transport 3 mL bone marrow. (Min: 1 mL) ~~Extracted DNA: Transport 40 uL DNA with at least 50 ng/uL concentration. (Min: 40 uL) Transport DNA in a tissue transport kit (ARUP Supply #47808) available online through eSupply using ARUP Connect? or contact ARUP Client Services at (800) 522-2787.~~
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Plasma, serum, FFPE tissue blocks/slides, or frozen tissue~~,~~ ~~DNA extracted by a non-CLIA lab~~. Specimens collected in anticoagulants other than EDTA or sodium heparin. Clotted or grossly hemolyzed specimens.
Remarks:	
Stability:	Ambient: 24 hours; Refrigerated: 5 days; Frozen: Unacceptable ~~Extracted DNA: Ambient: 1 month; Refrigerate: Indefinitely; Frozen: Indefinitely~~
Methodology:	Polymerase Chain Reaction
Performed:	DNA isolation: Sun-Sat Testing: Varies
Reported:	4-10 days
Note:	
CPT Codes:	81210
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

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

Holoprosencephaly Panel, Sequencing and Deletion/Duplication, Fetal

2008863, HPE PAN FE

Specimen Requirements:	
Patient Preparation:	
Collect:	Fetal Specimen: Two ~~(2)~~ T-25 flasks at 90~~80~~% confluent of cultured amniocytes or cultured chorionic villus sampling (CVS). AND MaAND Maternal Whole Blood Specimen~~whole blood specimen~~: Lavender (EDTA), pink (K2EDTA), or yellow (ACD S~~s~~olution A or B).
Specimen Preparation:	Cultured A~~a~~mniocytes or C~~c~~ultured CVS: Fill flasks with culture media. Transport two ~~(2)~~ T-25 flasks at 90 percent~~80%~~ confluent of cultured amniocytes or cultured CVS filled with Culture Media.~~culture media.~~ Backup cultures must be retained at the client's institution until testing is complete. If ARUP receives a sample below~~If~~ the minimum confluence, CG GRW&SND (0040182) will be added on by ARUP, and additional charges will apply. If clients are~~client is~~ unable to culture specimens, CG GRW&SND should be added~~amniocytes, this can be arranged by contacting ARUP Client Services at (800) 522-2787 ext. 2141 prior~~ to initial order.~~test submission.~~ Maternal Whole Blood Specimen~~whole blood specimen~~: Transport 3 mL whole blood. (Min: 1~~3~~ mL)
Transport Temperature:	Cultured A~~a~~mniocytes or C~~c~~ultured CVS: CRITICAL ROOM TEMPERATURE. Must be received within 48 hours of shipment due to viability of cells. Maternal Specimen: Room T~~t~~emperature
Unacceptable Conditions:	
Remarks:	
Stability:	Cultured A~~a~~mniocytes or C~~c~~ultured CVS: Room temperature: 48 hours; Refrigerated: Unacceptable; Frozen: Unacceptable Maternal Whole Blood Specimen~~whole blood specimen~~: Room temperature: 7 days, Refrigerated: 1 month, Frozen: Unacceptable
Methodology:	Massively Parallel Sequencing
Performed:	Varies
Reported:	2-3~~4~~ weeks; if culture is required, an additional 1 to 2 weeks is required for processing time.

Note:	Determine the etiology of holoprosencephaly in an affected pregnancy or determine if parents of an affected pregnancy are carriers. Chromosome analysis should be performed in an affected pregnancy before ordering this test. Genes tested: CDON; FGFR1*; GLI2; PTCH1; SHH; SIX3; TGIF1; ZIC2* *One or more exons are not covered by sequencing and/or deletion/duplication analysis for the indicated gene; see Additional Technical Information. Reported times are based on receiving the two T-25 flasks at 90 percent confluent. Cell culture time is independent of testing turnaround time. Maternal specimen is recommended for proper test interpretation. Order Maternal Cell Contamination.
CPT Codes:	81479; 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:

Refer to report.

Patient History forms are available online at www.aruplab.com.

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

Encephalitis Panel with Reflex to Herpes Simplex Virus Types 1 and 2 Glycoprotein G-Specific Antibodies, IgG, Serum

2008915, ENCEPH

Specimen Requirements:	
Patient Preparation:	
Collect:	Serum separator tube.
Specimen Preparation:	Transfer 4.0mL ~~3 mL~~ serum to an ARUP standard transport tube. ~~Standard Transport Tube.~~ (Min: 2.0mL ~~1.5 mL~~)
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Refer to individual components. CSF (refer to Encephalitis Panel with Reflex to Herpes Simplex Virus Types 1 and 2 Glycoprotein G-Specific Antibodies, IgG, CSF, test code 2008916).
Remarks:	
Stability:	After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year
Methodology:	Semi-Quantitative Enzyme-Linked Immunosorbent Assay (ELISA)/ ~~/~~Semi-Quantitative Chemiluminescent Immunoassay (CLIA)
Performed:	Sun-Sat
Reported:	2-6 days
Note:	If HSV 1 and/or 2 IgG is 1.10 IV or greater, then HSV 1 G-Specific IgG and HSV 2 G-Specific IgG will be added. Additional charges apply.
CPT Codes:	86765 x2; 86735 x2; 86787 x2; 86789; 86788; 86694 x2; if reflexed, add 86695; 86696
New York DOH Approval Status:	This test is New York DOH approved.
Interpretive Data:	

Component	Interpretation
Measles (Rubeola) Antibody, IgG	13.4 AU/mL or less: Negative - No significant level of detectable measles (rubeola) IgG antibody. 13.5-16.4 AU/mL: Equivocal - Repeat testing in 10-14 days may be helpful. 16.5 AU/mL or greater: Positive - IgG antibody to measles (rubeola) detected, which may indicate a current or past exposure/immunization to measles (rubeola).
Measles (Rubeola) Antibody, IgM	0.79 AU or less: Negative - No significant level of IgM antibodies to measles (rubeola) virus detected. 0.80-1.20 AU: Equivocal - Repeat testing in 10-14 days may be helpful. 1.21 AU or greater: Positive - IgM antibodies to measles (rubeola) virus detected. Suggestive of current or recent infection or immunization. However, low levels of IgM antibodies may occasionally persist for more than 12 months post-infection or immunization.
Mumps Virus Antibody, IgG	8.9 AU/mL or less: Negative - No significant level of detectable IgG mumps virus antibody. 9.0-10.9 AU/mL: Equivocal - Repeat testing in 10-14 days may be helpful. 11.0 AU/mL or greater: Positive - IgG antibody to mumps virus detected, which may indicate a current or past exposure/immunization to mumps virus.
Mumps Virus Antibody, IgM	0.79 IV or less: Negative - No significant level of detectable IgM

	antibody to Mumps virus. 0.80-1.20 IV: Equivocal - Borderline levels of IgM antibody to Mumps virus. Repeat testing in 10-14 days may be helpful. 1.21 IV or greater: Positive - Presence of IgM antibody to Mumps virus detected, which may indicate a current or recent infection. However, low levels of IgM antibody may occasionally persist for more than 12 months post-infection or immunization.
Varicella-Zoster Virus Antibody, IgG	134.9 IV or less: Negative - No significant level of detectable varicella-zoster IgG antibody. 135.0-164.9 IV: Equivocal - Repeat testing in 10-14 days may be helpful. 165.0 IV or greater: Positive - IgG antibody to varicella-zoster detected, which may indicate a current or past varicella-zoster infection.
Varicella-Zoster Virus Antibody, IgM	0.90 ISR or less: Negative - No significant level of detectable varicella-zoster virus IgM antibody. 0.91-1.09 ISR: Equivocal - Repeat testing in 10-14 days may be helpful. 1.10 ISR or greater: Positive - Significant level of detectable varicella-zoster virus IgM antibody. Indicative of current or recent infection. However, low levels of IgM antibodies may occasionally persist for more than 12 months post-infection or immunization.
Herpes Simplex Virus Type 1	0.89 IV or less: Not Detected. 0.90-1.09 IV: Indeterminate - Repeat

and/or 2 Antibodies, IgM by ELISA	testing in 10-14 days may be helpful. 1.10 IV or greater: Detected - IgM antibody to HSV 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.
Herpes Simplex Virus Type 1 and/or 2 Antibodies, IgG	0.89 IV or less: Not Detected. 0.90-1.09 IV: Indeterminate - Repeat testing in 10-14 days may be helpful. 1.10 IV or greater: Detected.
West Nile Virus Antibody, IgG by ELISA, Serum	1.29 IV or less: Negative - No significant level of West Nile virus IgG antibody detected. 1.30-1.49 IV: Equivocal - Questionable presence of West Nile virus IgG antibody detected. Repeat testing in 10-14 days may be helpful. 1.50 IV or greater: Positive - Presence of IgG antibody to West Nile virus detected, suggestive of current or past infection.
West Nile Virus Antibody, IgM by ELISA, Serum	0.89 IV or less: Negative - No significant level of West Nile virus IgM antibody detected. 0.90-1.10 IV: Equivocal - Questionable presence of West Nile virus IgM antibody detected. Repeat testing in 10-14 days may be helpful. 1.11 IV or greater: Positive - Presence of IgM antibody to West Nile virus detected, suggestive of current or recent infection.

Reference Interval:

Test Number	Components	Reference Interval
	HSV 1 and/or 2 Abs, IgM by ELISA	0.89 IV or less
	West Nile Virus Ab, IgG, Ser	1.29 IV or less
	West Nile Virus Ab, IgM, Ser	0.89 IV or less
	Mumps Virus Antibody, IgM	0.79 IV or less
	Measles, Rubeola, Antibody IgM	0.79 AU or less
	Varicella-Zoster Virus Antibody, IgM	0.90 ISR or less

TEST CHANGE

Encephalitis Panel with Reflex to Herpes Simplex Virus Types 1 and 2 Glycoprotein G-Specific Antibodies, IgG, CSF

2008916, ENCEPHCSF

Specimen Requirements:	
Patient Preparation:	
Collect:	CSF.
Specimen Preparation:	Transfer 5.0mL ~~3 mL~~ CSF to an ARUP standard transport tube. ~~Standard Transport Tube.~~ (Min: 2.5mL ~~1.05 mL~~)
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Serum or plasma. Contaminated, heat-inactivated, or hemolyzed specimens.
Remarks:	
Stability:	Ambient: 8 hours; Refrigerated: 2 weeks; Frozen: 1 year
Methodology:	Semi-Quantitative Enzyme-Linked Immunosorbent Assay (ELISA)/~~/~~Semi-Quantitative Chemiluminescent Immunoassay (CLIA)
Performed:	Sun-Sat
Reported:	4-6 days
Note:	If HSV 1 and/or 2 IgG, CSF is 1.10 IV or greater, then HSV 1 G-Specific IgG, CSF and HSV 2 G-Specific IgG, CSF will be added. Additional charges apply.
CPT Codes:	86765 x2; 86735 x2; 86787 x2; 86789; 86788; 86694 x2; if reflexed, add 86695; 86696
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:	

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
Measles (Rubeola) Antibody, IgG, CSF	13.4 AU/mL or less Negative - No significant level of IgG antibody to measles (rubeola) virus detected. 13.5-16.4 AU/mL Equivocal - Repeat testing in 10-14 days may be helpful. 16.5 AU/mL or greater Positive - IgG antibody to measles (rubeola) detected, which may indicate a current or past measles (rubeola) infection.
Measles (Rubeola) Antibody, IgM, CSF	0.79 AU or less Negative - No significant level of IgM antibodies to measles (rubeola) virus detected. 0.80-1.20 AU Equivocal - Repeat testing in 10-14 days may be helpful. 1.21 AU or greater Positive - IgM antibodies to measles (rubeola) virus detected. Suggestive of current or recent infection or immunization. However, low levels of IgM antibodies may occasionally persist for more than 12 months post-infection or immunization.
Mumps Virus Antibody IgG, CSF	8.9 AU/mL or less Negative - No significant level of detectable IgG mumps virus

	antibody. 9.0-10.9 AU/mL Equivocal - Repeat testing in 10-14 days may be helpful. 11.0 AU/mL or greater Positive - IgG antibody to mumps virus detected, which may indicate a current or past mumps virus infection.
Mumps Virus Antibody IgM, CSF	0.79 IV or less Negative - No significant level of detectable IgM antibody to Mumps virus. 0.80-1.20 IV Equivocal - Borderline levels of IgM antibody to Mumps virus. Repeat testing in 10-14 days may be helpful. 1.21 IV or greater Positive - Presence of IgM antibody to Mumps virus detected, which may indicate a current or recent infection. However, low levels of IgM antibody may occasionally persist for more than 12 months post-infection or immunization.
Varicella-Zoster Virus Antibody, IgG, CSF	134.9 IV or less Negative - No significant level of IgG antibody to varicella-zoster virus detected. 135.0-164.9 IV Equivocal - Repeat testing in 10-14 days may be helpful. 165.0 IV or greater Positive - IgG antibody to

	varicella-zoster virus detected, which may indicate a current or past varicella-zoster infection.	
Varicella-Zoster Virus Antibody, IgM by ELISA (CSF)	0.90 ISR or less Negative - No significant level of IgM antibody to varicella-zoster virus detected. 0.91-1.09 ISR Equivocal - Repeat testing in 10-14 days may be helpful. 1.10 ISR or greater Positive - Significant level of IgM antibody to varicella-zoster virus detected, which may indicate current or recent infection. However, low levels of IgM antibodies may occasionally persist for more than 12 months post-infection.	
Herpes Simplex Virus Type 1 and/or 2 Antibodies, IgM by ELISA, CSF	0.89 IV or less Negative - No significant level of detectable HSV IgM antibody. 0.90-1.09 IV Equivocal - Questionable presence of IgM antibodies. Repeat testing in 10-14 days may be helpful. 1.10 IV or greater Positive - IgM antibody to HSV 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.
Herpes Simplex Virus Type 1 and/or 2 Antibodies, IgG, CSF	0.89 IV or less Negative - No significant level of detectable HSV IgG antibody. 0.90-1.09 IV Equivocal - Questionable presence of IgG antibodies. Repeat testing in 10-14 days may be helpful. 1.10 IV or greater Positive - IgG antibody to HSV detected which may indicate a current or past HSV infection.
West Nile Virus Antibody, IgG by ELISA, CSF	1.29 IV or less Negative - No significant level of West Nile virus IgG antibody detected. 1.30-1.49 IV Equivocal - Questionable presence of West Nile virus IgG antibody detected. Repeat testing in 10-14 days may be helpful. 1.50 IV or greater Positive - Presence of IgG antibody to West Nile virus detected, suggestive of current or past infection.
West Nile Virus Antibody, IgM by ELISA, CSF	0.89 IV or less Negative - No significant level of West Nile virus IgM antibody detected. 0.90-1.10 IV Equivocal - Questionable presence of West Nile virus IgM antibody detected. Repeat testing in 10-14 days may be helpful. 1.11 IV or greater Positive -

	Presence of IgM antibody to West Nile virus detected, suggestive of current or recent infection.

Reference Interval:

Test Number	Components	Reference Interval
	West Nile Virus Antibody IgG CSF	1.29 IV or less
	Measles, Rubeola, Antibody IgM CSF	0.79 AU or less
	West Nile Virus Antibody IgM CSF	0.89 IV or less
	HSV 1/2 Antibody Screen IgG, CSF	0.89 IV or less
	HSV 1/2 Antibody Screen IgG, CSF	
	HSV 1 and/or 2 Antibodies IgM, CSF	0.89 IV or less
	Measles, Rubeola, Antibody IgG CSF	16.4 AU/mL or less
	Mumps Virus Antibody IgG CSF	10.9 AU/mL or less
	Mumps Virus Antibody IgM CSF	0.79 IV or less
	VZV Antibody IgM CSF	0.90 ISR or less

TEST CHANGE

CALR (Calreticulin) Exon 9 Mutation Analysis by PCR

2010673, CALR

Specimen Requirements:	
Patient Preparation:	
Collect:	Whole blood or bone marrow (EDTA).
Specimen Preparation:	Whole Blood: Do not freeze. Transport 5 mL whole blood. (Min: 1 mL) Bone Marrow: Do not freeze. Transport 3 mL bone marrow. (Min: 1 mL)
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Plasma, serum, FFPE tissue blocks/slides, or frozen tissue. Specimens collected in anticoagulants other than EDTA. Clotted or grossly hemolyzed specimens.
Remarks:	
Stability:	Ambient: 24 hours; Refrigerated: 5 days; Frozen: Unacceptable ~~Extracted DNA: Ambient: 1 month; Refrigerate: Indefinitely; Frozen: Indefinitely~~
Methodology:	Capillary Electrophoresis
Performed:	DNA isolation: Sun-Sat Assay: Varies
Reported:	2-9 days
Note:	
CPT Codes:	81219
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 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

Noonan Spectrum Disorders Panel, Sequencing, Fetal

2010769, NOONAN FE

Specimen Requirements:	
Patient Preparation:	
Collect:	Fetal Sspecimen: Two (2) T-25 flasks at 90 percent80% confluent of cultured amniocytes or cultured CVS. If the client is unable to culture, this can be arranged by contacting ARUP Client Services at (800) 522-2787. AND Maternal Cell Contamination Specimencell contamination specimen: Lavender (EDTA), pink (K2EDTA), or yellow (ACD Ssolution A or B).
Specimen Preparation:	Cultured Amniocytes or Cultured CVS: Fill flasks with culture media. Transport two (2) T-25 flasks at 9080 percent confluent of cultured cells 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. AND Maternal Cell Contamination Specimen: Transport 3 mL whole blood (Min: 1 mL)
Transport Temperature:	Culture Amniocytes or Cultured CVS: CRITICAL ROOM TEMPERATURE. Must be received within 48 hours of shipment due to lability of cells. Maternal Cell Contamination Specimen: Ambient.
Unacceptable Conditions:	
Remarks:	
Stability:	Cultured Amniocytes or Cultured CVSFetal Specimen: Ambient: 48 hours; Refrigerated: Unacceptable; Frozen: Unacceptable Maternal: Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable
Methodology:	Massively Parallel Sequencing
Performed:	Varies
Reported:	2-3 weeks; if culture is required, an additional 1 to 2 weeks is required for processing time.
Note:	Reported times are based on receiving the two T-25 flasks at 90 percent confluency. Cell culture time is independent of

	testing turn-around time. Maternal specimen is recommended for proper test interpretation. Order Maternal Cell Contamination. GENES TESTED: BRAF, CBL, HRAS, KRAS, LZTR1, MAP2K1, MAP2K2, NRAS, PTPN11, RAF1, RASA2, RIT1, SHOC2, SOS1, SOS2, SPRED1
CPT Codes:	81442; 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:

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.

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

Reference Interval:

By report

TEST CHANGE

Alpha Globin (HBA1 and HBA2) Sequencing and Deletion/Duplication

2011708, HBA FGA

Specimen Requirements:	
Patient Preparation:	
Collect:	Lavender (EDTA), pink (K2EDTA), or Yellow (ACD Solution A or B).
Specimen Preparation:	Transport 3 mL whole blood. (Min: 2 mL)
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Frozen specimens
Remarks:	
Stability:	Ambient: 1 week; Refrigerated: 1 month; Frozen: unacceptable~~6 month~~
Methodology:	Polymerase Chain Reaction/Sequencing/Multiplex Ligation-Dependent Probe Amplification
Performed:	Varies~~Sun- Sat~~
Reported:	2-3 weeks~~14-21 days~~
Note:	
CPT Codes:	81259; 81269
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

Background Information for Alpha Globin (*HBA1* and *HBA2*) Sequencing and Deletion/Duplication Characteristics:
Alpha thalassemia is caused by decreased or absent synthesis of the hemoglobin alpha chain resulting in variable clinical presentations. Alpha (+) thalassemia results from variants of a single *HBA2* globin gene (-a/aa) and is clinically asymptomatic (silent carrier). Alpha (0) thalassemia (trait) is caused by variants of both *HBA2* globin
genes (-a/-a) or variants in the *HBA1* and *HBA2* globin genes on the same chromosome (--/aa) and results in mild microcytic anemia. Hemoglobin H disease occurs due to variants of three alpha globin genes (--/-a) and results in hemolysis with Heinz bodies, moderate anemia, and splenomegaly. Hb Bart Hydrops Fetalis Syndrome results when variants occur in all four alpha globin genes (--/--) and is lethal in the fetal or early neonatal period. Alpha globin gene triplications result in three active alpha globin genes on a single chromosome. Nondeletional alpha globin variants may be pathogenic or benign; both may result in an abnormal protein detectable by hemoglobin evaluation. Pathogenic nondeletional variants often have a more severe effect than

single gene deletions.
Incidence: Carrier frequency in Mediterranean (1:30-50), Middle Eastern, Southeast Asian (1:20), African, African American (1:3).
Inheritance: Autosomal recessive.
Cause: Pathogenic variants in the alpha globin gene cluster.
Clinical Sensitivity: 99 percent.
Methodology: Bidirectional sequencing of the *HBA1* and *HBA2* coding regions, intron-exon boundaries and 3' polyadenylation signal. Multiplex ligation-dependent probe amplification (MLPA) of the alpha globin gene cluster (*HBZ, HBM, HBA1, HBA2, HBQ1*) and its HS-40 regulatory region.
Analytical Sensitivity and Specificity: 99 percent.
Limitations: Diagnostic errors can occur due to rare sequence variations. Sequence analysis will not detect all regulatory region variants or variants in alpha globin cluster genes other than *HBA1* and *HBA2*. Sequencing of both *HBA1* and *HBA2* may not be possible in individuals harboring large alpha globin deletions on both alleles. This assay is unable to sequence *HBA2-HBA1* fusion genes; thus, *HBA1* or *HBA2* sequence variants occurring in cis with a 3.7 kb deletion or other *HBA2-HBA1* hybrid gene will not be detected (e.g., Hb G -Philadelphia will not be detected when in cis with the 3.7 kb deletion). It may not be possible to determine phase of identified sequence variants. Specific breakpoints of large deletions/duplications will not be determined; therefore, it may not be possible to distinguish variants of similar size. Individuals carrying both a deletion and duplication within the alpha globin gene cluster may appear to have a normal number of alpha globin gene copies. Rare syndromic or acquired forms of alpha thalassemia associated with *ATRX* variants will not be detected.

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.

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

Reference Interval:

TEST CHANGE

Skeletal Dysplasia Panel, Sequencing and Deletion/Duplication, Fetal

2012010, SKEL FE

Specimen Requirements:	
Patient Preparation:	
Collect:	Fetal Sspecimen: Two (2) T-25 flasks at 9080% confluent of cultured amniocytes or cultured chorionic villus sampling (CVS). AND Maternal Whole Blood Specimenwhole blood specimen: Lavender (EDTA), pink (K2EDTA), or yellow (ACD Ssolution A or B).
Specimen Preparation:	Cultured Aamniocytes or Ccultured CVS: Fill flasks with culture media. Transport two (2) T-25 flasks at 90 percent80% confluent of cultured amniocytes or cultured CVS 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 areclient is unable to culture specimens, CG GRW&SND should be addedamniocytes, this can be arranged by contacting ARUP Client Services at (800) 522-2787 ext. 2141 prior to initial order.test submission. Maternal Whole Blood Specimenwhole blood specimen: Transport 3 mL whole blood. (Min: 12 mL)).
Transport Temperature:	Cultured Aamniocytes or Ccultured CVS: CRITICAL ROOM TEMPERATURE. Must be received within 48 hours of shipment due to viability of cells. Maternal Specimen: Room temperature.
Unacceptable Conditions:	
Remarks:	
Stability:	Cultured Aamniocytes or Ccultured CVS: Room temperature: 48 hours; Refrigerated: Unacceptable; Frozen: Unacceptable Maternal Whole Blood Specimenblood specimen: Room temperature: 7 days; Refrigerated: 1 month; Frozen: Unacceptable
Methodology:	Massively Parallel Sequencing
Performed:	Varies
Reported:	2-34 weeks, if culture is required an additional 1 to 2 weeks is required for processing time.

Note:	Genes Tested: AGPS; ALPL; ARSL; CANT1; CCN6; CILK1; COL1A1; COL1A2*; COL2A1; COL10A1; COL11A1; COL11A2; COMP; CRTAP; DDR2; DLL3; DYM*; DYNC2H1; EBP; EVC; EVC2; FGFR1*; FGFR2; FGFR3; FKBP10; FLNA; FLNB; GDF5; GNPAT; HSPG2; IFT80; INPPL1; LBR; LIFR; NEK1*; NPR2; P3H1; PCNT; PEX7; POR*; PPIB; PTH1R; RUNX2; SERPINH1; SLC26A2; SLC35D1; SMARCAL1; SOX9; TRIP11; TRPV4; TTC21B; WDR19; WDR35 *One or more exons are not covered by sequencing and/or deletion/duplication analysis for the indicated gene; see Additional Technical Information. Reported times are based on receiving the two T-25 flasks at 90 percent confluent. Cell culture time is independent of testing turnaround time. Maternal specimen is recommended for proper test interpretation. Order Maternal Cell Contamination.
CPT Codes:	81405; 81408; 81479; 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:

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.

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

Reference Interval:

By report

TEST CHANGE

HLA-B*15:02 Genotyping, Carbamazepine Hypersensitivity

2012049, HLA B1502

Specimen Requirements:	
Patient Preparation:	
Collect:	Lavender (EDTA), pink (K 2 EDTA~~Pink (K2EDTA~~), or y~~Y~~ellow (ACD Solution A or B).
Specimen Preparation:	Transport 5 mL whole blood. (Min: 3 mL)
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Specimens collected in green (sodium or lithium heparin).
Remarks:	
Stability:	Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable
Methodology:	Polymerase Chain Reaction (PCR)/~~/~~Sequence-Specific Oligonucleotide Probe Hybridization
Performed:	Mon-Fri
Reported:	3-7 days
Note:	
CPT Codes:	81381
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

Background Information for HLA-B*1502 Genotype, Carbamazepine Hypersensitivity:
Characteristics: Carbamazepine (CBZ) is an aromatic antiepileptic drug, approved for the treatment of epilepsy and trigeminal neuralgia. Rarely, CBZ can induce severe life threatening reactions such as Stevens-Johnson syndrome (SJS) or toxic epidermal necrolysis (TEN). Symptoms usually appear within the first months of treatment, and include skin rash, hives, sores in the mouth, blistering or peeling of the skin, and erosion of the mucous membranes in the respiratory and gastrointestinal tract. The presence of HLA-B*15:02 increases risk for CBZ-induced SJS/TEN in individuals of Asian ancestry. The incidence of CBZ-induced life-threatening reactions such SJS, TEN, or hypersensitivity syndrome (HSS) is 1-10 per 10,000, which can be higher in some Asian countries.
Incidence: HLA-B*15:02 allele frequency varies by ethnicity, with highest incidence in Asians: 10.2 percent in Han Chinese, 10 percent in Taiwanese (18 percent in indigenous Puyuma), greater than 5 percent in the populations of Hong Kong, Thailand, Malaysia, Vietnam, Philippines, India (Khandesh and West Bhil) and Indonesia. Frequency is low in African Americans (0.1-1 percent) and less than 0.1 percent in Caucasians.

Cause: In patient of Asian descent, CBZ-induced SJS/TEN is strongly associated with the presence of HLA-B*15:02 allele. The mechanism is immune mediated and involves drug-induced changes in peptide presentation by HLA-B*15:02, which allows for the activation of self-reactive T lymphocytes. Activated immune cells contribute to the cellular death of keratinocytes in the skin, which causes the epidermal destruction and detachment of the skin seen in SJS/TEN.
Alleles tested: HLA-B*15:02 allele. Other members of the HLA B75 serogroup detected by this assay can also be associated with carbamazepine-induced SJS/TEN~~, including HLA-B*15:08, 15:11, 15:21, and possibly 15:31 and 15:32.~~
Clinical Sensitivity and Specificity: 80-97 percent and 99 percent, respectively in populations where the HLA-B*15:02 allele is common.
Methodology: PCR followed by Sequence Specific Oligonucleotide Probe Hybridization of HLA-B locus.
Analytical Sensitivity and Specificity: Greater than 99 percent.
Limitations: Copy number of HLA-B*15:02 allele will not be reported.

Test systems were developed and their performance characteristics determined by the H&I laboratory at the University of Utah Health, under the accreditation guidelines from the American Society for Histocompatibility and Immunogenetics (ASHI).

Reference Interval:

By report

TEST CHANGE

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

2012074, SSA RO

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: 0.2 mL)
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Plasma or other body fluids. Contaminated, hemolyzed, or severely lipemic specimens.
Remarks:	
Stability:	After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)
Methodology:	Semi-Quantitative Multiplex Bead Assay
Performed:	Sun-Sat
Reported:	1-32 days
Note:	
CPT Codes:	86235 x2
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

SSA-52 (Ro52) and/or SSA-60 (Ro60) antibodies are associated with a diagnosis of Sjögren syndrome, systemic lupus erythematosus (SLE), and systemic sclerosis. SSA-52 antibody overlaps significantly with the major SSc-related antibodies. SSA-52 (Ro52) antibody occurs frequently in patients with inflammatory myopathies, often in the presence of interstitial lung disease.

Component	Interpretation
SSA-52 (Ro52) (ENA) Antibody, IgG	29 AU/mL or Less: Negative 30-40 AU/mL: Equivocal 41 AU/mL or greater: Positive
SSA-60 (Ro60) (ENA) Antibody, IgG	29 AU/mL or Less: Negative 30-40 AU/mL:

	Equivocal 41 AU/mL or greater: Positive

Reference Interval:

Test Number	Components	Reference Interval
	SSA-52 (Ro52) (ENA) Antibody, IgG	40 AU/mL or less
	SSA-60 (Ro60) (ENA) Antibody, IgG	40 AU/mL or less

TEST CHANGE

Spinal Muscular Atrophy (SMA) Copy Number Analysis, Fetal

2013444, SMA DD FE

Specimen Requirements:	
Patient Preparation:	
Collect:	Cultured amniocytes or Cultured CVS AND Maternal Whole Blood Specimen: Lavender (EDTA), Pink (K2EDTA), or Yellow (ACD Solution A or B).
Specimen Preparation:	Cultured Amniocytes or Cultured CVS: Transfer cultured amniocytes or cultured CVS to two T-25 flasks at 80 percent confluence (Min: one T-25 flask at 80% confluence). Backup cultures must be retained at the client's institution until testing is complete. If the client is unable to culture amniocytes or CVS, this can be arranged by contacting ARUP Client Services at (800) 522-2787. Please contact an ARUP genetic counselor at (800) 242-2787 ext. 2141 prior to test submission. Maternal Whole Blood Specimen: Transport 2 mL whole blood. (Min: 1 mL)
Transport Temperature:	Cultured Amniocytes or Cultured CVS: CRITICAL ROOM TEMPERATURE. Must be received within 48 hours of collection due to viability of cells. Maternal Whole Blood Specimen: Room temperature.
Unacceptable Conditions:	
Remarks:	Please contact an ARUP genetic counselor at 800-242-2787 x2141 prior to sample submission. Patient History Form is available on the ARUP Web site or by contacting ARUP Client Services at (800) 522-2787.
Stability:	Cultured Amniocytes or Cultured CVS: Room temperature: 48 hours; Refrigerated: Unacceptable; Frozen: Unacceptable Maternal Whole Blood Specimen: Room Temperature: 7 days; Refrigerated: 1 month; Frozen: Unacceptable
Methodology:	Multiplex Ligation-dependent Probe Amplification
Performed:	Varies
Reported:	Within 10 days
Note:	~~Note: Maternal specimens are recommended as controls for proper test interpretation. Submit maternal blood specimen for Maternal Cell Contamination in addition to fetal specimen.~~

CPT Codes:	81329; 81265 Fetal Cell Contamination (FCC)
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

Background information for Spinal Muscular Atrophy (SMA) Copy Number Analysis, Fetal Characteristics: Spinal muscular atrophy (SMA) is the most common lethal genetic disease in children. It is characterized by progressive muscle atrophy and weakness, poor weight gain, restrictive lung disease, scoliosis, and joint contractures due to degeneration of lower motor neurons and brain stem nuclei. Onset ranges from before birth to young adulthood and severity is highly variable. Individuals with SMA have no functional copies of the *SMN1* gene either due to homozygous loss of *SMN1* from deletion or gene conversion (95 percent) or loss of one *SMN1* gene and a pathogenic sequence variant in the other (5 percent). The *SMN2* gene produces a small amount of functional survival motor neuron protein compared to *SMN1*. An increased number of SMN2 gene copies may reduce disease severity but phenotype cannot be predicted with certainty.
Inheritance: Autosomal recessive.
Cause: Pathogenic variants in the *SMN1* gene.
Variants Tested: For copy number: *SMN1* (NM_000344.3) exon 7 c.840C and exon 8 c.*239G, and *SMN2* (NM_017411.3) exon 7 c.840T.
Clinical sensitivity: 95-98 percent.
Methodology: Multiplex probe ligation-dependent amplification (MLPA).
Analytical sensitivity and specificity: 99 percent.
Limitations: Diagnostic errors can occur due to rare sequence variations. Single base pair substitutions, small deletions/duplications, regulatory region and deep intronic variants will not be detected. This test is unable to determine chromosomal phase of *SMN1* or *SMN2* copies.

For quality assurance purposes, ARUP Laboratories will confirm the above result at no charge following delivery. Order Confirmation of Fetal Testing and include a copy of the original fetal report (or the mother's name and date of birth) with the test submission. Please contact an ARUP genetic counselor at (800) 242-2787 extension 2141 prior to specimen submission.

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

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

Smith and Smith/RNP (ENA) Antibodies, IgG

3000460, SMITH_RNP

Specimen Requirements:	
Patient Preparation:	
Collect:	Serum Separator Tube (SST).
Specimen Preparation:	Separate from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.2 mL)
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Plasma or other body fluids. Contaminated, hemolyzed, or severely lipemic specimens.
Remarks:	
Stability:	After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 month (avoid repeated freeze/thaw cycles)
Methodology:	Semi-Quantitative Enzyme-Linked Immunosorbent Assay/Semi-Quantitative Multiplex Bead Assay
Performed:	Sun-Sat
Reported:	1-32 days
Note:	
CPT Codes:	86235 x2
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

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

Reference Interval:

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

TEST CHANGE

Hypersensitivity Pneumonitis Panel

3000477, HYPER 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. (Min: 0.15 mL)
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Plasma.
Remarks:	
Stability:	After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)
Methodology:	Qualitative Immunodiffusion
Performed:	Sun-Sat
Reported:	3-7~~5~~ days
Note:	Testing includes antibodies directed at Aspergillus fumigatus #1, Aspergillus fumigatus #6, Aureobasidium pullulans, Pigeon Serum, Micropolyspora faeni, ~~Thermoactinomyces vulgaris #1,~~ Aspergillus flavus, Aspergillus fumigatus #2, Aspergillus fumigatus #3, Saccharomonospora viridis, and Thermoactinomyces candidus.
CPT Codes:	86331 x5~~x6~~; 86606 x5
New York DOH Approval Status:	This test is New York DOH approved.
Interpretive Data:	
Reference Interval:	

Test Number	Components	Reference Interval
	A. fumigatus #1 Ab, Precipitin	None detected
	A. fumigatus #6 Ab, Precipitin	None detected
	A. pullulans Ab, Precipitin	None detected
	Pigeon Serum Ab, Precipitin	None detected
	M. faeni Ab, Precipitin	None detected
	~~T. vulgaris #1 Ab, Precipitin~~	~~None detected~~
	A. flavus Ab, Precipitin	None detected
	A. fumigatus #2 Ab, Precipitin	None detected
	A. fumigatus #3 Ab, Precipitin	None detected
	S. viridis Ab, Precipitin	None detected
	T. candidus Ab, Precipitin	None detected

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.

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

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. (Min: 1 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.~~Thermoactinomyces vulgaris #1, 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~~x6~~; 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:

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.

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

NEW TEST

Click for Pricing

Hereditary Central Nervous System Cancer Panel, Sequencing and Deletion/Duplication

3001633, CNSCAN NGS

Specimen Requirements:	
Patient Preparation:	
Collect:	Lavender or pink (EDTA) or yellow (ACD solution A or B).
Specimen Preparation:	Transport 3 mL whole blood. (Min: 2 mL)
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Serum or plasma; grossly hemolyzed or frozen specimens; saliva, buccal brush, or swab; FFPE tissue; DNA.
Remarks:	
Stability:	Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable
Methodology:	Massively Parallel Sequencing/Sequencing/Multiplex Ligation-dependent Probe Amplification
Performed:	Varies
Reported:	3-6 weeks
Note:	Genes tested: ALK; APC*; DICER1; EPCAM**; HRAS; LZTR1; MEN1*; MLH1; MSH2; MSH6; NF1; NF2; PMS2; POT1; PRKAR1A; PTCH1; PTEN*; RB1*; SMARCA4; SMARCB1; SMARCE1*; SUFU; TP53; TSC1; TSC2; VHL* *One or more exons are not covered by sequencing and/or deletion/duplication analysis for the indicated gene; see Additional Technical Information. **Deletion/duplication analysis of EPCAM (NM_002354) exon 9 only, sequencing is not available for this gene.
CPT Codes:	81201; 81203; 81403; 81404; 81405; 81406; 81407; 81408; 81479
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.

TEST CHANGE

Gaucher Disease (GBA) Sequencing

3001648, GBA FGS

Specimen Requirements:	
Patient Preparation:	
Collect:	Lavender (K2EDTA or K3EDTA), pink (K2EDTA), ~~K3 EDTA)~~ or yellow~~Pink (K2 EDTA). Also acceptable: Yellow~~ (ACD s~~S~~olution A or B).
Specimen Preparation:	Transport 3 mL whole blood. (Min: 1 mL)
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	
Remarks:	
Stability:	Ambient: 1 week; Refrigerated: 1 month; Frozen: 6 months
Methodology:	Polymerase Chain Reaction/Sequencing
Performed:	Varies~~Sun-Sat~~
Reported:	2-3 weeks
Note:	
CPT Codes:	81479
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 for Gaucher Disease (*GBA)* Sequencing:
Characteristics: Gaucher disease (GD) is a lysosomal storage disorder with phenotypes ranging from perinatal lethality to lack of symptoms. There are three GD subtypes. Type 1 GD manifests with bone disease, hepatosplenomegaly, anemia, thrombocytopenia, and lung disease but no central nervous system (CNS) involvement. Type 2 GD exhibits CNS symptoms before age 2 and rapidly progresses resulting in death by age 4. Type 3 GD presents as early as age 2 with CNS symptoms that slowly progress resulting in death during the third or fourth decade.
Incidence: 1 in 900 Ashkenazi Jewish individuals; approximately 1 in 57,000 to 1 in 75,000 in general population.
Inheritance: Autosomal recessive.
Cause: Two pathogenic *GBA* variants on opposite chromosomes.
Clinical Sensitivity: 99 percent.
Methodology: Long range PCR followed by bidirectional sequencing of all coding regions and intron-exon boundaries of the *GBA* gene.
Analytical Sensitivity and Specificity: approximately 99 percent.

Limitations: Diagnostic errors can occur due to rare sequence variations. Regulatory region variants, deep intronic variants, large deletions/duplications/insertions, gene conversion and complex gene events may not be detected.

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:

TEST CHANGE

Interstitial Lung Disease Autoantibody Panel

3001784, ILD PANEL

Specimen Requirements:	
Patient Preparation:	
Collect:	Serum Separator Tube (SST).
Specimen Preparation:	Separate from cells ASAP or within 2 hours of collection. Transfer five 1 mL serum aliquots to ARUP Standard Transport Tubes. (Min: 2.8~~0.5~~ mL~~/aliquot~~)
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Hemolyzed, hyperlipemic, icteric, heat-treated or contaminated specimens.
Remarks:	
Stability:	Ambient: 24 hours; Refrigerated: 1 weeks; Frozen: 1 month
Methodology:	Qualitative Immunoprecipitation/Semi-Quantitative Multiplex Bead Assay/Qualitative Immunoblot/Semi-Quantitative Enzyme-Linked Immunosorbent Assay/Quantitative Immunoturbidimetry
Performed:	Sun-Sat
Reported:	7-18 days
Note:	Antibodies: Ro52, Ro60, Jo-1, PL-7, PL12, EJ, Ku, SRP, OJ, PM/Scl-100, MDA5, CCP, Scl-70, RA, ANA, NXP-2, RNA Polymerase III
CPT Codes:	86235 x5; 83516 x7; 84182 x2; 86431; 86200; 86039
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.

Component	Interpretation	
SSA-52 (Ro52) (ENA) Antibody, IgG	29 AU/mL or Less 30-40 AU/mL 41 AU/mL or greater	Negative Equivocal Positive
SSA-60 (Ro60) (ENA) Antibody, IgG	29 AU/mL or Less 30-40 AU/mL 41 AU/mL or greater	Negative Equivocal Positive
Scleroderma (Scl-70) (ENA) Antibody, IgG	29 AU/mL or less 30-40 AU/mL 41 AU/mL or greater	Negative Equivocal Positive
Jo-1 Antibody, IgG	29 AU/mL or less 30-40 AU/mL 41 AU/mL or greater	Negative Equivocal Positive
Cyclic Citrullinated Peptide (CCP) Antibody, IgG	19 Units or less 20-39 Units 40-59 Units 60 Units or Greater	Negative Weak positive Moderate positive Strong positive
RNA Polymerase III Antibody, IgG	19 Units or less 20-39 Units 40-80 Units 81 Units or greater	Negative Weak positive Moderate positive Strong positive

Reference Interval:

Test Number	Components	Reference Interval
	Rheumatoid Factor	0-14 IU/mL
	Antinuclear Antibody (ANA), HEp-2, IgG	Less than 1:80
	Scleroderma (Scl-70) (ENA) Antibody, IgG	40 AU/mL or less
	SSA-52 (Ro52) (ENA) Antibody, IgG	40 AU/mL or less
	Cyclic Citrullinated Peptide Ab, IgG	0-19 Units
	Jo-1 (Histidyl-tRNA Synthetase) Ab, IgG	40 AU/mL or less
	PL-7 (threonyl-tRNA synthetase) Antibody	Negative
	PL-12 (alanyl-tRNA synthetase) Antibody	Negative
	EJ (glycyl-tRNA synthetase) Antibody	Negative
	Ku Antibody	Negative
	SRP (Signal Recognition Particle) Ab	Negative
	OJ (isoleucyl-tRNA synthetase) Antibody	Negative
	SSA-60 (Ro60) (ENA) Antibody, IgG	40 AU/mL or less
	MDA5 (CADM-140) Ab	Negative
	NXP2 (Nuclear matrix protein-2) Ab	Negative
	PM/Scl 100 Antibody, IgG	Negative
	RNA Polymerase III Antibody, IgG	19 Units or less

TEST CHANGE

Gamma Globin (HBG1 and HBG2) Sequencing

3001957, HBG FGS

Specimen Requirements:	
Patient Preparation:	
Collect:	Lavender (K2EDTA), Pink (K2EDTA), or Yellow (ACD Solution A or B).
Specimen Preparation:	Transport 3 mL whole blood. (Min: 1 mL)
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	N/A
Remarks:	N/A
Stability:	Ambient: 1 week; Refrigerated: 1 month; Frozen: Unacceptable~~6 months~~
Methodology:	Polymerase Chain Reaction/Sequencing
Performed:	Varies
Reported:	~~Within~~ 2-3 weeks
Note:	
CPT Codes:	81479
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

Background information for Gamma Globin (*HBG1* and *HBG2*) Sequencing:
Characteristics: Variants in the gamma globin genes, *HBG1* and *HBG2*, may occasionally result in either a quantitative defect (gamma thalassemia or nondeletional hereditary persistence of fetal hemoglobin) or a qualitative abnormality (gamma variant). Gamma variants resulting in unstable, high- and low-oxygen affinity or M hemoglobin variants may result in hemolytic anemia/hyperbilirubinemia, erythrocytosis/cyanosis, or methemoglobinemia in neonates, respectively. Clinical symptoms related to gamma globin variants commonly resolve after the first six months of life given the switch from fetal hemoglobin expression to adult hemoglobin expression.
Incidence: Unknown.
Inheritance: Autosomal dominant.
Cause: Pathogenic germline variants in *HBG1* or *HBG2*.
Clinical Sensitivity: Unknown. Gamma globin variants are a rare cause of neonatal hemolytic anemia, cyanosis, erythrocytosis, or methemoglobinemia.

Methodology: Long range PCR followed by nested PCR and bidirectional sequencing of all coding regions, intron-exon boundaries, and 5' proximal promoters of the *HBG1* and *HBG2* genes.
Analytical Sensitivity and Specificity: 99 percent.
Limitations: Diagnostic errors can occur due to rare sequence variations or repeat element insertions. Large deletions/duplications, distal regulatory region variants, deep intronic variants, and hybrid gene events will not be detected.

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

Tuberous Sclerosis Complex Panel, Sequencing and Deletion/Duplication, Fetal

3002096, TSC NGS FE

Specimen Requirements:	
Patient Preparation:	
Collect:	Fetal Sspecimen: Two (2) T-25 flasks at 9080% confluent of cultured amniocytes or cultured chorionic villus sampling (CVS). AND Maternal Whole Blood Specimenwhole blood specimen: Lavender (EDTA), pink (K2EDTA), or yellow (ACD Ssolution A or B).
Specimen Preparation:	Cultured Aamniocytes or Ccultured CVS: Fill flasks with culture media. Transport two (2) T-25 flasks at 90 percent80% confluent of cultured amniocytes or cultured CVS 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 areclient is unable to culture specimens, CG GRW&SND should be addedamniocytes, this can be arranged by contacting ARUP Client Services at (800) 522-2787 ext. 2 prior to initial order.test submission. Maternal Whole Blood Specimenwhole blood specimen: Transport 3 mL whole blood. (Min: 12 mL)).
Transport Temperature:	Cultured Aamniocytes or Ccultured CVS: CRITICAL ROOM TEMPERATURE. Must be received within 48 hours of shipment due to viability of cells. Maternal Sspecimen: Room temperature.
Unacceptable Conditions:	
Remarks:	
Stability:	Cultured Aamniocytes or Ccultured CVS: AmbientRoom temperature: 48 hours; Refrigerated: Unacceptable; Frozen: Unacceptable Maternal Cell Contamination Specimenwhole blood specimen: Room temperature: 7 days; Refrigerated: 1 month; Frozen: Unacceptable
Methodology:	Massively Parallel Sequencing
Performed:	Varies
Reported:	2-3 weeks; if culture is required, an additional 1-2 weeks is required for processing time.

Note:	Genes tested: TSC1, TSC2 Reported times are based on receiving the two T-25 flasks at 90 percent confluent. Cell culture time is independent of testing turn-aroundturnaround time. Maternal specimen is recommended for proper test interpretation. Order Maternal Cell Contamination.
CPT Codes:	81405; 81406; 81407; 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: Refer to report.	
Reference Interval: By report	

TEST CHANGE

Autoimmune Liver Disease Reflexive Panel

3002479, LIVER PAN

Specimen Requirements:	
Patient Preparation:	
Collect:	Serum Separator Tube (SST).
Specimen Preparation:	Separate from cells ASAP or within 2 hours of collection. Transfer 1~~0~~.5 mL serum to an ARUP Standard Transport Tube. (Min: 1.0~~.3~~ mL)
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Non-serum, heat-inactivated, contaminated, grossly icteric, severely lipemic, grossly hemolyzed specimens or inclusion of fibrin clot.
Remarks:	
Stability:	After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)
Methodology:	Semi-Quantitative Enzyme-Linked Immunosorbent Assay/Semi-Quantitative Indirect Fluorescent Antibody
Performed:	Sun-Sat
Reported:	1-8 days
Note:	If F-Actin, IgG by ELISA is 20 Units or greater, then Smooth Muscle Antibody (SMA), IgG by IFA titer will be added. Additional charges apply. ANA identified by indirect fluorescence assay (IFA) using HEp-2 substrate and IgG-specific conjugate at a screening dilution of 1:80. Positive nuclear patterns reported include homogeneous, speckled, centromere, nucleolar, or nuclear dots. Positive cytoplasmic patterns reported include reticular/AMA, discrete/GW body-like, polar/golgi-like, rods and rings, or cytoplasmic speckled patterns. All positive results are reported with endpoint titers at no additional charge.
CPT Codes:	86381; 83516; 86376; 86015; 86039; if reflexed, add 86256
New York DOH Approval Status:	This test is New York DOH approved.
Interpretive Data:	

Component	Interpretation
Mitochondrial M2 Antibody, IgG (ELISA)	20.0 Units or less Negative 20.1-24.9 Units Equivocal 25.0 Units or greater Positive
Soluble Liver Antigen Antibody, IgG	0.0-20.0 U Negative 20.1-24.9 U Equivocal Greater than or equal to 25.0 U Positive
Liver-Kidney Microsome - 1 Antibody, IgG	0.0-20.0 U Negative 20.1-24.9 U Equivocal 25.0 U or greater Positive
F-Actin (Smooth Muscle) Ab, IgG by ELISA	19 Units or less Negative 20 - 30 Units Weak Positive-Suggest repeat testing in two to three weeks with fresh specimen. 31 Units or greater Positive-Suggestive of autoimmune hepatitis type 1 or chronic active hepatitis.

Reference Interval:

Test Number	Components	Reference Interval	
	Mitochondrial (M2) Antibody, IgG	24.9 Units or less	
	Soluble Liver Antigen Antibody, IgG	24.9 U or less	
	Liver-Kid Microsome-1 Ab, IgG by ELISA	24.9 U or less	
	F-Actin (Smooth Muscle) Ab, IgG by ELISA	19 Units or less	
	F-Actin (Smooth Muscle) Ab, IgG by ELISA		
		19 Units or less	Negative
		20-30 Units	Weak Positive - Suggest repeat testing in two to three weeks with a fresh specimen.
		31 Units or greater	Positive - Suggestive of autoimmune hepatitis or chronic active hepatitis.

	Antinuclear Antibody (ANA), HEp-2, IgG	Less than 1:80

TEST CHANGE

Primary Biliary Cholangitis Panel

3002480, BILIARY CH

Specimen Requirements:	
Patient Preparation:	
Collect:	Serum Separator Tube (SST).
Specimen Preparation:	Separate from cells ASAP or within 2 hours of collection. Transfer 1.2~~0.5~~ mL serum to an ARUP Standard Transport Tube. (Min: 0.8~~3~~ mL)
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Non-serum, heat-inactivated, contaminated, grossly icteric, severely lipemic, grossly hemolyzed specimens or inclusion of fibrin clot.
Remarks:	
Stability:	After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 month
Methodology:	Semi-Quantitative Enzyme-Linked Immunosorbent Assay/Semi-Quantitative Indirect Fluorescent Antibody
Performed:	Sun-Sat
Reported:	1-8 days
Note:	ANA identified by indirect fluorescence assay (IFA) using HEp-2 substrate and IgG-specific conjugate at a screening dilution of 1:80. Positive nuclear patterns reported include homogeneous, speckled, centromere, nucleolar, or nuclear dots. Positive cytoplasmic patterns reported include reticular/AMA, discrete/GW body-like, polar/golgi-like, rods and rings, or cytoplasmic speckled patterns. All positive results are reported with endpoint titers at no additional charge.
CPT Codes:	83516 x2; 86381; 86039
New York DOH Approval Status:	This test is New York DOH approved.
Interpretive Data:	

Component	Interpretation
Mitochondrial M2 Antibody, IgG (ELISA)	20.0 Units or less Negative 20.1-24.9 Units Equivocal 25.0 Units or greater Positive
Anti-sp100 Antibody, IgG	20.0 Units or less Negative 20.1-24.9 Units Equivocal 25.0 Units or greater Positive
Anti-gp210 Antibody, IgG	20.0 Units or less Negative 20.1-24.9 Units Equivocal 25.0 Units or greater Positive

Reference Interval:

Test Number	Components	Reference Interval
	Mitochondrial (M2) Antibody, IgG	24.9 Units or less
	Antinuclear Antibody (ANA), HEp-2, IgG	Less than 1:80
	Anti-gp210 Antibody, IgG	24.9 Units or less
	Anti-sp100 Antibody, IgG	24.9 Units or less

NEW TEST

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Hereditary Melanoma Panel, Sequencing and Deletion/Duplication

3002673, MELCAN NGS

Specimen Requirements:	
Patient Preparation:	
Collect:	Lavender or pink (EDTA) or yellow (ACD solution A or B).
Specimen Preparation:	Transport 3 mL whole blood. (Min: 2 mL)
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Serum or plasma; grossly hemolyzed or frozen specimens; saliva; buccal brush, or swab; FFPE tissue.
Remarks:	
Stability:	Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable
Methodology:	Massively Parallel Sequencing/Sequencing
Performed:	Varies
Reported:	3 weeks
Note:	GENES TESTED: BAP1; BRCA2; CDK4; CDKN2A*; MC1R; MITF*; POT1; PTEN*; RB1*; TERT; TP53 *One or more exons are not covered by sequencing and/or deletion/duplication analysis for the indicated gene; see Additional Technical Information.
CPT Codes:	81167; 81216; 81404; 81321; 81323; 81351; 81479
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.

TEST CHANGE

Gastrointestinal Pathogens Panel by PCR

3003279, GIPPCR

Specimen Requirements:	
Patient Preparation:	
Collect:	Stool.
Specimen Preparation:	Transfer stool to enteric transport media (Cary-Blair) (ARUP supply #29799) available online through eSupply using ARUP Connect(TM) or contact ARUP Client Services at (800) 522-2787. (Min: 0.5 mL)
Transport Temperature:	Refrigerated
Unacceptable Conditions:	Unpreserved stool, stool in media other than Cary-Blair, rectal swabs, specimens outside stability.
Remarks:	This test is New York DOH approved; however, per NYDOH regulations, testing cannot be performed for New York City clients.
Stability:	In enteric transport media: Ambient: 4 days, Refrigerated: 4 days, Frozen: Unacceptable.
Methodology:	Qualitative Polymerase Chain Reaction
Performed:	Mon-Sun
Reported:	1-3 days
Note:	This assay detects Campylobacter spp. (C. jejuni, C. coli, C. upsaliensis), Clostridium difficile toxin A/B, Plesiomonas shigelloides, Salmonella spp., Vibrio spp. (V. parahaemolyticus, V. vulnificus, V. cholerae) including specific identification of V. cholerae, Yersinia enterocolitica, Enteroaggregative Escherichia coli (EAEC), Enteropathogenic Escherichia coli (EPEC), Enterotoxigenic Escherichia coli (ETEC) lt/st, Shiga-like toxin-producing Escherichia coli (STEC) stx1/stx2 including specific identification of E. coli O157, Shigella/Enteroinvasive Escherichia coli (EIEC), Cryptosporidium spp., Cyclospora cayetanensis, Entamoeba histolytica, Giardia lamblia (also known as G. intestinalis and G. duodenalis), Adenovirus F40/41, Astrovirus, Norovirus GI/GII, Rotavirus A, and Sapovirus (Genogroups I, II, IV, and V).

CPT Codes:	87507
New York DOH Approval Status:	This test is New York DOH approved.
Interpretive Data:	

Reference Interval:

Test Number	Components	Reference Interval

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

Microsatellite Instability (MSI) HNPCC/Lynch Syndrome by PCR

3004277, MSIPCR

Specimen Requirements:	
Patient Preparation:	
Collect:	Tumor AND normal epithelial tissue.
Specimen Preparation:	Tissue: Formalin fix (10 percent neutral buffered formalin) and paraffin embed tissue. Protect from excessive heat. Transport tissue block(s) or 10 unstained 5-micron slides (5 tumor and 5 normal epithelial). (Min: 3 tumor tissue and 3 normal epithelial tissue slides) Transport block(s) 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 ~~Extracted DNA: Refrigerated.~~
Unacceptable Conditions:	Less than 25 percent tumor or less than 50 percent normal epithelial tissue. ~~DNA extracted by a non-CLIA lab. DNA extracted without a corresponding circled H&E slide.~~ Specimens fixed/processed in alternative fixatives (alcohol, Prefer) or heavy metal fixatives (B-4 or B-5). Decalcified specimens.
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 ~~Extracted DNA: Ambient: 1 month; Refrigerated: Indefinitely; Frozen: Indefinitely~~
Methodology:	Capillary Electrophoresis
Performed:	DNA isolation: Sun-Sat Assay: Varies

Reported:	10-20 days
Note:	
CPT Codes:	81301
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 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

MLH1 Promoter Methylation

3004308, MLH1 PCR

Specimen Requirements:	
Patient Preparation:	
Collect:	Tumor tissue. ~~Tumor tissue. Also acceptable: DNA extracted by CLIA certified lab with corresponding client-circled H&E slide.~~
Specimen Preparation:	Tumor Tissue: Formalin fix (10 percent neutral buffered formalin) and paraffin embed tissue. Protect from excessive heat. Transport tissue block or 5 unstained 5-micron slides. (Min: 3 slides) 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. ~~Extracted DNA: Transport 40 uL DNA with at least 50 ng/uL concentration. (Min: 40 uL) Transport DNA 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. ~~Extracted DNA: Refrigerated.~~
Unacceptable Conditions:	Less than 25 percent tumor. ~~DNA extracted by a non-CLIA lab. DNA extracted without a corresponding circled H&E slide.~~ Specimens fixed/processed in alternative fixatives (alcohol, Prefer) or heavy metal fixatives (B-4 or B-5). Decalcified specimens.
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 ~~Extracted DNA: Ambient: 1 month; Refrigerated: Indefinitely; Frozen: Indefinitely~~

Methodology:	Real-Time Polymerase Chain Reaction/Fluorescence Resonance Energy Transfer
Performed:	DNA isolation: Sun-Sat Assay: Varies
Reported:	7-12 days
Note:	
CPT Codes:	81288
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 U.S.~~US~~ Food and Drug Administration. This test was performed in a CLIA -certified laboratory and is intended for clinical purposes.

Reference Interval:

NEW TEST – Available Now

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Cytomegalovirus Drug Resistance by Next Generation Sequencing, Ganciclovir, Foscarnet, Cidofovir, and Maribavir

3004508, CMVNGS4

Specimen Requirements:	
Patient Preparation:	
Collect:	Lavender (EDTA), pink (K2EDTA) or plasma preparation tube.
Specimen Preparation:	Separate plasma from cells within 24 hours. Transfer 3 mL plasma to an ARUP Standard Transport Tube. (Min: 2.5 mL)
Transport Temperature:	Frozen.
Unacceptable Conditions:	Serum, heparinized specimens.
Remarks:	If available, please submit the following: most recent viral load and test date; information on current or past drug therapy.
Stability:	After separation from cells: Ambient: 8 hours; Refrigerated: 72 hours; Frozen: 1 month
Methodology:	Massively Parallel Sequencing
Performed:	Sunday-Saturday
Reported:	3-9 days
Note:	This test may be unsuccessful if the plasma CMV DNA viral load is less than 2.6 log IU/mL.
CPT Codes:	87910; 87900
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:

This assay assesses resistance to ganciclovir, foscarnet, cidofovir, and maribavir. Resistance-associated mutations in the *UL97*, *UL54*, and *UL27* genes are sequenced using next generation sequencing. Drug resistance is assigned using an ARUP-developed database of published resistance mutations. For a list of resistance mutations refer to https://ltd.aruplab.com/Tests/Pub/3004508.

This test detects populations down to 10% of the total population which may account for resistance interpretation differences between methods. Some insertions or deletions may be

difficult to detect using this software.

Result interpretations are as follows:

• Sensitive indicates no evidence of drug resistance compared with a wild-type virus.
• Possible resistance indicates mutations were detected with borderline-level drug resistance or conflicting resistance status reported in the literature.
• Resistant indicates evidence of drug resistance compared with a wild-type virus.
• Not determined indicates incomplete sequence coverage across a given gene or genes.
• Additional mutations include variants that have not been associated with drug resistance.
• Uncalled mutation sites include drug resistance mutation positions with an inadequate number of sequencing reads.
• Inadequate sequence coverage indicates a low number of sequence reads at a given drug resistance site.

Drugs associated with each gene are as follows:

• *UL97*: ganciclovir, maribavir
• *UL54*: ganciclovir, foscarnet, cidofovir
• *UL27*: maribavir

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:

By report

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

NEW TEST – Available Now

Click for Pricing

Cytomegalovirus Drug Resistance by Next Generation Sequencing, Letermovir

3004509, CMVNGS

Specimen Requirements:	
Patient Preparation:	
Collect:	Lavender (EDTA), pink (K2EDTA), or plasma preparation tube.
Specimen Preparation:	Separate plasma from cells within 24 hours. Transfer 3 mL plasma to an ARUP Standard Transport Tube. (Min: 2.5 mL)
Transport Temperature:	Frozen.
Unacceptable Conditions:	Serum, heparinized specimens.
Remarks:	If available, please submit the following: most recent viral load and test date; information on current or past drug therapy.
Stability:	After separation from cells: Ambient: 8 hours; Refrigerated: 72 hours; Frozen: 1 month
Methodology:	Massively Parallel Sequencing
Performed:	Sunday-Saturday
Reported:	3-9 days
Note:	This test may be unsuccessful if the plasma CMV DNA viral load is less than 2.6 log IU/mL.
CPT Codes:	87910; 87900
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:

This assay assesses resistance to letermovir. Resistance-associated mutations in the *UL56* gene are sequenced using next generation sequencing. Drug resistance is assigned using an ARUP-developed database of published resistance mutations. For a list of resistance mutations refer to https://ltd.aruplab.com/Tests/Pub/3004509.

This test detects populations down to 10% of the total population which may account for resistance interpretation differences between methods. Some insertions or deletions may be difficult to detect using this software.

Result interpretations are as follows:

• Sensitive indicates no evidence of drug resistance compared with a wild-type virus.
• Possible resistance indicates mutations were detected with borderline-level drug resistance or conflicting resistance status reported in the literature.
• Resistant indicates evidence of drug resistance compared with a wild-type virus.
• Not determined indicates incomplete sequence coverage across a given gene or genes.
• Additional mutations include variants that have not been associated with drug resistance.
• Uncalled mutation sites include drug resistance mutation positions with an inadequate number of sequencing reads.
• Inadequate sequence coverage indicates a low number of sequence reads at a given drug resistance site.

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:

By report

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

TEST CHANGE

Beta Globin (HBB) Sequencing, Fetal

3004550, BG NGS FE

Specimen Requirements:	
Patient Preparation:	
Collect:	Fetal Sspecimen: Two (2) T-25 flasks at 9080% confluent of cultured amniocytes or cultured chorionic villus sampling (CVS). AND Maternal Whole Blood Specimenwhole blood specimen: Lavender (EDTA), pink (K2EDTA), or yellow (ACD solution A or B).
Specimen Preparation:	Cultured Amniocytes or Cultured CVS: Fill flasks with culture media. Transport two (2) T-25 flasks at 9080 percent confluent of cultured amniocytes or cultured CVS 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 areclient is unable to culture specimens, CG GRW&SND should be addedamniocytes, this can be arranged by contacting ARUP Client Services at (800) 522-2787 ext. 2141 prior to initial ordertest submission Maternal Whole Blood Specimen: Transport 3 mL whole blood. (Min: 12 mL).
Transport Temperature:	Cultured Amniocytes or Cultured CVS: CRITICAL ROOM TEMPERATURE. Must be received within 48 hours of shipment due to viability of cells. Maternal Specimen: Room temperature
Unacceptable Conditions:	
Remarks:	
Stability:	Cultured Amniocytes or Cultured CVS: Room temperature: 48 hours; Refrigerated: Unacceptable; Frozen: Unacceptable Maternal Whole Blood Specimen: Room temperature: 7 days; Refrigerated: 1 month; Frozen: Unacceptable
Methodology:	Massively Parallel Sequencing
Performed:	Varies
Reported:	2-3 weeks10-14 days; if culture is required, an additional 1 to 2 weeks is required for processing time
Note:	Gene tested: HBB (NM_000518) Deletion/duplication analysis is not performed for this gene. Reported times are based on

	receiving the two T-25 flasks at 90 percent confluent. Cell culture time is independent of testing turn-around time. Maternal specimen is recommended for proper test interpretation. Order Maternal Cell Contamination.
CPT Codes:	81364, 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: Refer to report	
Reference Interval: By report	

NEW TEST – Available Now

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Cytomegalovirus Drug Resistance by Next Generation Sequencing, Ganciclovir, Foscarnet, Cidofovir, Maribavir, and Letermovir

3004615, CMVNGS5

Specimen Requirements:	
Patient Preparation:	
Collect:	Lavender (EDTA), pink (K2EDTA), or plasma preparation tube.
Specimen Preparation:	Separate plasma from cells within 24 hours. Transfer 3 mL plasma to an ARUP Standard Transport Tube. (Min: 2.5 mL)
Transport Temperature:	Frozen.
Unacceptable Conditions:	Serum, heparinized specimens.
Remarks:	If available, please submit the following: most recent viral load and test date; information on current or past drug therapy.
Stability:	After separation from cells: Ambient: 8 hours; Refrigerated: 72 hours; Frozen: 1 month
Methodology:	Massively Parallel Sequencing
Performed:	Sunday-Saturday
Reported:	3-9 days
Note:	This test may be unsuccessful if the plasma CMV DNA viral load is less than 2.6 log IU/mL.
CPT Codes:	87910; 87900
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:

This assay assesses resistance to ganciclovir, foscarnet, cidofovir, maribavir, and letermovir. Resistance-associated mutations in the *UL97*, *UL54*, *UL27*, and *UL56* genes are sequenced using next generation sequencing. Drug resistance is assigned using an ARUP-developed database of published resistance mutations. For a list of resistance mutations refer to https://ltd.aruplab.com/Tests/Pub/3004615.

This test detects populations down to 10% of the total population which may account for resistance interpretation differences between methods. Some insertions or deletions may be

difficult to detect using this software.

Result interpretations are as follows:

• Sensitive indicates no evidence of drug resistance compared with a wild-type virus.
• Possible resistance indicates mutations were detected with borderline-level drug resistance or conflicting resistance status reported in the literature.
• Resistant indicates evidence of drug resistance compared with a wild-type virus.
• Not determined indicates incomplete sequence coverage across a given gene or genes.
• Additional mutations include variants that have not been associated with drug resistance.
• Uncalled mutation sites include drug resistance mutation positions with an inadequate number of sequencing reads.
• Inadequate sequence coverage indicates a low number of sequence reads at a given drug resistance site.

Drugs associated with each gene are as follows:

• *UL97*: ganciclovir, maribavir
• *UL54*: ganciclovir, foscarnet, cidofovir
• *UL27*: maribavir
• *UL56*: letermovir

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:

By report

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

NEW TEST – Available Now

Click for Pricing

PHOX2B by Immunohistochemistry

3005900, PHOX2B IHC

Specimen Requirements:	
Patient Preparation:	
Collect:	Tissue or cells.
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:	Specimens submitted with nonrepresentative tissue type. Depleted specimens.
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:	Immunohistochemistry
Performed:	Mon-Fri
Reported:	1-3 days
Note:	This test is performed as a stain and return (technical) service only
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

Hereditary Paraganglioma-Pheochromocytoma Expanded Panel, Sequencing and Deletion/Duplication

3005912, PGLPCC NGS

Specimen Requirements:	
Patient Preparation:	
Collect:	Lavender or pink (EDTA) or yellow (ACD solution A or B).
Specimen Preparation:	Transport 3 mL whole blood. (Min: 2 mL)
Transport Temperature:	Refrigerated
Unacceptable Conditions:	Serum or plasma; grossly hemolyzed or frozen specimens; saliva, buccal brush, or swab; FFPE tissue; DNA.
Remarks:	
Stability:	Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable
Methodology:	Massively Parallel Sequencing/Multiplex Ligation-dependent Probe Amplification
Performed:	Varies
Reported:	3-6 weeks
Note:	Genes Tested: FH; MAX; MEN1*; NF1; RET; SDHA*; SDHAF2; SDHB; SDHC*; SDHD*; TMEM127; VHL* *One or more exons are not covered by sequencing and/or deletion/duplication analysis for the indicated gene; see Additional Technical Information.
CPT Codes:	81437; 81438
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

Click for Pricing

CIC (19q13.2) Gene Rearrangement by FISH

3005916, CIC FISH

Specimen Requirements:	
Patient Preparation:	
Collect:	Tumor tissue.
Specimen Preparation:	Formalin fix (10 percent neutral buffered formalin) and paraffin embed tissue. Protect paraffin block from excessive heat. Transport tissue block or 5 unstained (4-micron thick sections) positively charged slides 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 (kit recommended but not necessary). (Min. 2 slides)
Transport Temperature:	Room temperature. Also acceptable: Refrigerated. Ship in cooled container during summer months.
Unacceptable Conditions:	Specimens fixed or processed in alternative fixatives (alcohol, Prefer) or heavy metal fixatives (B-4 or B-5). No tumor in tissue. Decalcified specimens.
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:	Fluorescence in situ Hybridization (FISH)
Performed:	Mon-Fri
Reported:	3-7 days
Note:	

CPT Codes:	88366
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:	

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

NEW TEST

Click for Pricing

Hereditary Thyroid Cancer Panel, Sequencing and Deletion/Duplication

3005944, THYCAN NGS

Specimen Requirements:	
Patient Preparation:	
Collect:	Lavender or pink (EDTA) or yellow (ACD Solution A or B).
Specimen Preparation:	Transport 3 mL whole blood. (Min: 2 mL)
Transport Temperature:	Refrigerated
Unacceptable Conditions:	Serum or plasma; grossly hemolyzed or frozen specimen; saliva; buccal brush, or swab; FFPE tissue.
Remarks:	
Stability:	Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable
Methodology:	Massively Parallel Sequencing/Sequencing
Performed:	Varies
Reported:	3 weeks
Note:	GENES TESTED: APC*; DICER1; MEN1*; PRKAR1A; PTEN*; RET; TP53 *One or more exons are not covered by sequencing and/or deletion/duplication analysis for the indicated gene; see Additional Technical Information.
CPT Codes:	81201; 81203; 81404; 81405; 81321; 81323; 81406; 81351; 81479
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

Click for Pricing

Complement C5, Functional

3005960, C5 FUNCT

Specimen Requirements:	
Patient Preparation:	
Collect:	Plain red.
Specimen Preparation:	Allow specimen to clot for one hour at room temperature. Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP standard transport tube. (Min: 0.5 mL)
Transport Temperature:	CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.
Unacceptable Conditions:	Separator tubes. Specimens left to clot at 2-8 Degrees C. Specimens exposed to repeated freeze/thaw cycles. Nonfrozen specimens. Grossly hemolyzed or severely lipemic specimens.
Remarks:	
Stability:	After separation from cells: Ambient: Unacceptable; Refrigerated: 8 days; Frozen: 1 month
Methodology:	Quantitative Immunoturbidimetry
Performed:	Tue, Fri
Reported:	1-7 days
Note:	
CPT Codes:	86161
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

Component	Interpretation
Complement C5, Functional	Low: 22.9 U/mL or less Low-Normal: 23.0-28.3 U/mL Normal: 28.4 U/mL or greater

Reference Interval:

Test Number	Components	Reference Interval
	Complement C5, Functional	23.0 U/mL or greater

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

NEW TEST

Click for Pricing

C5 Inhibitors Drug Monitoring Panel

3005961, C5 INH PAN

Specimen Requirements:	
Patient Preparation:	
Collect:	Plain red.
Specimen Preparation:	Separate serum from cells ASAP or within 2 hours of collection. Transfer 2.0 mL serum to an ARUP standard transport tube and freeze immediately. (Min: 2.0 mL)
Transport Temperature:	CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.
Unacceptable Conditions:	Specimens received refrigerated, ambient, lipemic specimens, or grossly hemolyzed specimens. Serum separator tubes. Specimens collected using calcium-binding anticoagulants (i.e., EDTA, ACD).
Remarks:	
Stability:	Refer to individual components.
Methodology:	Quantitative Turbidimetric/Quantitative Radial Immunodiffusion
Performed:	Tue, Fri
Reported:	1-9 days
Note:	
CPT Codes:	86160; 86161 x2; 86162
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

Component	Interpretation
Complement Activity, Total Turbidimetric	Low: 38.6 U/mL or less Normal: 38.7-89.9 U/mL High: 90.0 U/mL or greater
Complement C5, Functional	Low: 22.9 U/mL or less Low-Normal: 23.0-28.3 U/mL Normal:

	28.4 U/mL or greater	
Complement Activity, Alternative Pathway	This test is intended for screening of functional activity of the alternative pathway of the complement system. Abnormal test results can be due to hereditary absence or acquired functional defect in the activity of any of the individual components of the alternative pathway.	
C5 Inhibitors Drug Monitoring Pan Interp	Patients treated with C5 inhibitors may show decreased/absent activity in total complement functional assay (CH50), alternative pathway functional assay (AH50), and C5 functional assay with normal or elevated C5 protein concentrations. Normal CH50, AH50, or C5 functional activity with normal or elevated C5 protein concentrations indicate inadequate complement blockage. Serial measurements are recommended when monitoring treatment efficacy. Decreases in both C5 concentration and C5 functional activity suggests a secondary	

	consumption process or C5 deficiency. Repeat testing using a new specimen is suggested if in vitro complement activation and consumption of components due to conditions of collection, transport, and/or handling is suspected.	

Reference Interval:

Test Number	Components	Reference Interval
	Complement Activity, Total Turbidimetric	38.7-89.9 U/mL
	Complement Component 5	7-20 mg/dL
	Complement Activity, Alternative Pathway	59 percent normal or greater
	Complement C5, Functional	23.0 U/mL or greater

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

NEW TEST

Click for Pricing

Hereditary Gastric Cancer Panel, Sequencing and Deletion/Duplication

3005963, GASCAN NGS

Specimen Requirements:	
Patient Preparation:	
Collect:	Lavender or pink (EDTA) or yellow (ACD solution A or B).
Specimen Preparation:	Transport 3 mL whole blood. (Min: 2 mL)
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Serum or plasma; grossly hemolyzed or frozen specimens; saliva, buccal brush, or swab; FFPE tissue; DNA.
Remarks:	
Stability:	Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable
Methodology:	Massively Parallel Sequencing/Sequencing/Multiplex Ligation-dependent Probe Amplification
Performed:	Varies
Reported:	3-6 weeks
Note:	Genes Tested: APC*; BMPR1A*; CDH1*; CTNNA1*; EPCAM**; MLH1; MSH2; MSH6; PMS2; SMAD4; STK11; TP53 *One or more exons are not covered by sequencing and/or deletion/duplication analysis for the indicated gene; see Additional Technical Information. **Deletion/duplication analysis of EPCAM (NM_002354) exon 9 only, sequencing is not available for this gene.
CPT Codes:	81201; 81203; 81292; 81294; 81295; 81297; 81298; 81300; 81317; 81319; 81403
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

Click for Pricing

Free Thyroxine Index Panel

3005976, FTIP

Specimen Requirements:	
Patient Preparation:	
Collect:	Serum separator tube. Also acceptable: Lavender (K2EDTA or K3EDTA), pink (K2EDTA), or green (lithium heparin).
Specimen Preparation:	Allow specimen to clot completely at room temperature. 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. (Min: 0.5 mL)
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Grossly hemolyzed specimens.
Remarks:	
Stability:	After separation of cells: Ambient: 4 days; Refrigerated: 8 days; Frozen: 1 year
Methodology:	Quantitative Electrochemiluminescent Immunoassay
Performed:	Sun-Sat
Reported:	Within 24 hours
Note:	FTI = Free Thyroxine Index
CPT Codes:	84479; 84436
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

Thyroxine, Free (FT4) (0070138) is the preferred test alternative for T Uptake and Free Thyroxine Index tests.

Reference Interval:

Test Number	Components	Reference Interval
	T Uptake	0.8-1.3 TBI
	Thyroxine, Total T4	
		Cord Blood: 6.60-17.50 ug/dL 0-3 days: 5.37-22.40 ug/dL 4-30 days: 5.24-23.20 ug/dL 1-23 months: 5.37-16.00 ug/dL 2-6 years: 5.26-14.80 ug/dL 7-11 years: 5.70-14.10 ug/dL 12-19 years: 4.74-14.60 ug/dL 20 years and older: 4.50-11.70 ug/dL
	Free Thyroxine Index Calc	4.8-12.7 ug/dL

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

NEW TEST

Click for Pricing

T Uptake

3005977, T UPTAKE

Specimen Requirements:	
Patient Preparation:	
Collect:	Serum Separator Tube (SST). Also acceptable: Lavender (K2EDTA or K3EDTA), pink (K2EDTA), or green (lithium heparin).
Specimen Preparation:	Allow specimen to clot completely at room temperature. Separate from cells ASAP or within 2 hours of collection. Transfer 1 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.5 mL)
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Grossly hemolyzed specimens.
Remarks:	
Stability:	After separation of cells: Ambient: 8 days; Refrigerated: 2 weeks; Frozen: 2 years
Methodology:	Quantitative Electrochemiluminescent Immunoassay
Performed:	Sun-Sat
Reported:	Within 24 hours
Note:	T uptake is of little clinical value alone; it is used to determine the free thyroxine index.
CPT Codes:	84479
New York DOH Approval Status:	This test is New York DOH approved.
Interpretive Data:	
Thyroxine, Free (Free T4) (0070138) is the preferred test alternative for T Uptake and Free Thyroxine Index tests.	
Reference Interval:	
0.8-1.3 TBI	

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

NEW TEST

Click for Pricing

Thyroxine, Total T4

3005978, T4 TOTAL

Specimen Requirements:	
Patient Preparation:	
Collect:	Serum separator tube or green (lithium heparin). Also acceptable: lavender (K2 EDTA or K3 EDTA), or pink (K2 EDTA).
Specimen Preparation:	Allow specimen to clot completely at room temperature. 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. (Min: 0.5 mL)
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Grossly hemolyzed specimens.
Remarks:	
Stability:	After separation from cells: Ambient: 4 days; Refrigerated: 8 days; Frozen: 1 year
Methodology:	Quantitative Electrochemiluminescent Immunoassay
Performed:	Sun-Sat
Reported:	Within 24 hours
Note:	
CPT Codes:	84436
New York DOH Approval Status:	This test is New York DOH approved.
Interpretive Data:	
Reference Interval:	

Test Number	Components	Reference Interval	
	Thyroxine, Total T4		
		Cord Blood	6.60-17.50 ug/dL
		0-3 days	5.37-22.40 ug/dL
		4-30 days	5.24-23.20 ug/dL
		1-23 months	5.37-16.00 ug/dL
		2-6 years	5.26-14.80 ug/dL
		7-11 years	5.70-14.10 ug/dL
		12-19 years	4.74-14.60 ug/dL
		20 years and older	4.50-11.70 ug/dL

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

NEW TEST

Click for Pricing

Triglycerides Body Fluid with Reflex to Chylomicron Electrophoresis

3005996, CHYLO RFLX

Specimen Requirements:	
Patient Preparation:	
Collect:	Drain, pericardial, peritoneal/ascites, or pleural fluid.
Specimen Preparation:	Transfer 1 mL body fluid to an ARUP Standard Transport Tube. (Min: 0.5 mL)
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Specimen types other than those listed. Specimens too viscous to be aspirated by instrument.
Remarks:	Specimen source must be provided.
Stability:	Ambient: 48 hours; Refrigerated: 1 week; Frozen: 3 months
Methodology:	Quantitative Enzymatic/Electrophoresis
Performed:	Thurs
Reported:	1-8 days
Note:	If Triglyceride concentration is 25-200 mg/dL, then Chylomicron Electrophoresis testing will be added. Additional charges apply.
CPT Codes:	84478; if reflexed, add 82664
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 information on body fluid reference ranges and/or interpretive guidance visit http://aruplab.com/bodyfluids/

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

Click for Pricing

Gamma-Aminobutyric Acid Receptor, Type A (GABA-AR) Antibody, IgG by CBA-IFA with Reflex to Titer, CSF

3006003, GABA-A CSF

Specimen Requirements:	
Patient Preparation:	
Collect:	CSF.
Specimen Preparation:	Transfer 0.5 mL CSF to an ARUP standard transport tube. (Min: 0.15 mL)
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Grossly hemolyzed or contaminated specimens.
Remarks:	
Stability:	Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 month (Three freeze/thaw cycles are acceptable)
Methodology:	Semiquantitative Cell-Based Indirect Fluorescent Antibody
Performed:	Wed
Reported:	1-8 days
Note:	If GABA-AR antibody IgG is positive, then GABA-AR antibody IgG 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:

Gamma-aminobutyric acid receptor, type A (GABA-AR) antibody is found in a subset of patients with autoimmune encephalitis or autoimmune epilepsy and may occur with or without an associated tumor. A negative test result does not rule out a diagnosis of autoimmune limbic encephalitis or autoimmune epilepsy. Interpretation of any antineural antibody test requires clinical correlation.

This indirect fluorescent antibody assay utilizes GABA-AR transfected cell lines for detection and semiquantification of GABA-AR IgG antibody.

Reference Interval:

Less than 1:1

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

NEW TEST

Click for Pricing

Gamma-Aminobutyric Acid Receptor, Type A (GABA-AR) Antibody, IgG by CBA-IFA with Reflex to Titer, Serum

3006008, GABA-A SER

Specimen Requirements:	
Patient Preparation:	
Collect:	Serum separator tube.
Specimen Preparation:	Separate serum from cells within 2 hours of collection. Transfer 1 mL serum to an ARUP standard transport tube. (Min: 0.2 mL)
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	CSF or plasma. Contaminated, grossly hemolyzed, icteric, or lipemic specimens.
Remarks:	
Stability:	Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 month (Three freeze/thaw cycles are acceptable)
Methodology:	Semiquantitative Cell-Based Indirect Fluorescent Antibody
Performed:	Wed
Reported:	1-8 days
Note:	If GABA-AR antibody IgG is positive, then GABA-AR antibody IgG 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:

Gamma-aminobutyric acid receptor, type A (GABA-AR) antibody is found in a subset of patients with autoimmune encephalitis or autoimmune epilepsy and may occur with or without associated tumor. A negative test result does not rule out a diagnosis of autoimmune limbic encephalitis or autoimmune epilepsy. Interpretation of any antineural antibody test requires clinical correlation.

This indirect fluorescent antibody assay utilizes GABA-AR transfected cell lines for detection and semiquantification of GABA-AR IgG antibody.

Reference Interval:

Less than 1:10

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

NEW TEST

Click for Pricing

IgLON Family Member 5 (IgLON5) Antibody, IgG by CBA-IFA With Reflex to Titer, CSF

3006013, IGLON5 CSF

Specimen Requirements:	
Patient Preparation:	
Collect:	Separate CSF.
Specimen Preparation:	Transfer 0.5 mL CSF to an ARUP standard transport tube. (Min: 0.15 mL)
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Grossly hemolyzed or contaminated specimens.
Remarks:	
Stability:	Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 month (Three freeze/thaw cycles are acceptable)
Methodology:	Semiquantitative Cell-Based Indirect Fluorescent Antibody
Performed:	Wed
Reported:	1-8 days
Note:	If IgLON5 antibody IgG is positive, then IgLON5 antibody IgG 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:

IgLON Family Member 5 (IgLON5) antibody is found in a subset of patients with autoimmune encephalitis or other autoimmune neurologic/neurodegenerative disorders and may occur with or without associated tumor. A negative test result does not rule out a diagnosis of an autoimmune neurologic disorder. Interpretation of any antineural antibody test requires clinical correlation.

This indirect fluorescent antibody assay utilizes IgLON5 transfected cell lines for detection and semiquantification of IgLON5 IgG antibody.

Reference Interval:

Less than 1:1

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

NEW TEST

Click for Pricing

IgLON Family Member 5 (IgLON5) Antibody, IgG by CBA-IFA With Reflex to Titer, Serum

3006018, IGLON5 SER

Specimen Requirements:	
Patient Preparation:	
Collect:	Serum separator tube.
Specimen Preparation:	Separate serum from cells within 2 hours of collection. Transfer 1 mL serum to an ARUP standard transport tube. (Min: 0.2 mL)
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	CSF or plasma. Contaminated, grossly hemolyzed, icteric, or lipemic specimens.
Remarks:	
Stability:	After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 month (Three freeze/thaw cycles are acceptable)
Methodology:	Semiquantitative Cell-Based Indirect Fluorescent Antibody
Performed:	Wed
Reported:	1-8 days
Note:	If IgLON5 antibody IgG is positive, then IgLON5 antibody IgG 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:

IgLON Family Member 5 (IgLON5) antibody is found in a subset of patients with autoimmune encephalitis or other autoimmune neurologic/neurodegenerative disorders and may occur with or without associated tumor. A negative test result does not rule out a diagnosis of an autoimmune neurologic disorder. Interpretation of any antineural antibody test requires clinical correlation.

This indirect fluorescent antibody assay utilizes IgLON5 transfected cell lines for detection and semiquantification of IgLON5 IgG antibody.

Reference Interval:

Less than 1:10

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

NEW TEST

Click for Pricing

Inositol 1,4,5-Trisphosphate Receptor Type 1 (ITPR1) Antibody, IgG by CBA-IFA With Reflex to Titer, CSF

3006023, ITPR1 CSF

Specimen Requirements:	
Patient Preparation:	
Collect:	Separate CSF.
Specimen Preparation:	Transfer 0.5 mL CSF to an ARUP standard transport tube. (Min: 0.15 mL)
Transport Temperature:	
Unacceptable Conditions:	Grossly hemolyzed or contaminated specimens.
Remarks:	
Stability:	Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 month (Three freeze/thaw cycles are acceptable)
Methodology:	Semiquantitative Cell-Based Indirect Fluorescent Antibody
Performed:	Wed
Reported:	1-8 days
Note:	If ITPR1 antibody IgG is positive, then ITPR1 antibody IgG 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:

Inositol 1, 4, 5-trisphosphate receptor type 1 (ITPR1) antibody is found in a subset of patients with autoimmune cerebellar ataxia, encephalitis, neuropathy, or myelopathy and may occur with or without associated tumor. A negative test result does not rule out a diagnosis of autoimmune cerebellar ataxia or related autoimmune neurologic disorders. Interpretation of any antineural antibody test requires clinical correlation.

This indirect fluorescent antibody assay utilizes ITPR1 transfected cell lines for detection and sem-quantification of ITPR1 IgG antibody.

Reference Interval:

Less than 1:1

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

NEW TEST

Click for Pricing

Inositol 1,4,5-Trisphosphate Receptor Type 1 (ITPR1) Antibody, IgG by CBA-IFA With Reflex to Titer, Serum

3006031, ITPR1 SER

Specimen Requirements:	
Patient Preparation:	
Collect:	Serum separator tube.
Specimen Preparation:	Separate serum from cells within 2 hours of collection. Transfer 1 mL serum to an ARUP standard transport tube. (Min: 0.2 mL)
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	CSF or plasma. Contaminated, grossly hemolyzed, icteric, or lipemic specimens.
Remarks:	
Stability:	After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 month (Three freeze/thaw cycles are acceptable)
Methodology:	Semiquantitative Cell-Based Indirect Fluorescent Antibody
Performed:	Wed
Reported:	1-8 days
Note:	If ITPR1 antibody IgG is positive, then ITPR1 antibody IgG 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:

Inositol 1, 4, 5-trisphosphate receptor type 1 (ITPR1) antibody is found in a subset of patients with autoimmune cerebellar ataxia, encephalitis, neuropathy, or myelopathy and may occur with or without associated tumor. A negative test result does not rule out a diagnosis of autoimmune cerebellar ataxia or related autoimmune neurologic disorders. Interpretation of any antineural antibody test requires clinical correlation.

This indirect fluorescent antibody assay utilizes ITPR1 transfected cell lines for detection and

semiquantification of ITPR1 IgG antibody.

Reference Interval:

Less than 1:10

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

NEW TEST

Click for Pricing

Metabotropic Glutamate Receptor 1 (mGluR1) Antibody, IgG by CBA-IFA With Reflex to Titer, CSF

3006039, MGLUR1 CSF

Specimen Requirements:	
Patient Preparation:	
Collect:	Separate CSF.
Specimen Preparation:	Transfer 0.5 mL CSF to an ARUP standard transport tube. (Min: 0.15 mL)
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	Grossly hemolyzed or contaminated specimens.
Remarks:	
Stability:	Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 month (Three freeze/thaw cycles are acceptable)
Methodology:	Semiquantitative Cell-Based Indirect Fluorescent Antibody
Performed:	Wed
Reported:	1-8 days
Note:	If mGluR1 antibody IgG is positive, then mGluR1 antibody IgG 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:

Metabotropic glutamate receptor 1 (mGluR1) antibody is found in a subset of patients with autoimmune cerebellar ataxia or autoimmune encephalitis and may occur with or without associated tumor. A negative test result does not rule out a diagnosis of autoimmune cerebellar ataxia or limbic encephalitis. Interpretation of any antineural antibody test requires clinical correlation.

This indirect fluorescent antibody assay utilizes mGluR1 transfected cell lines for detection and semiquantification of mGluR1 IgG antibody.

Reference Interval:

Less than 1:1

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

NEW TEST

Click for Pricing

Metabotropic Glutamate Receptor 1 (mGluR1) Antibody, IgG by CBA-IFA With Reflex to Titer, Serum

3006044, MGLUR1 SER

Specimen Requirements:	
Patient Preparation:	
Collect:	Serum separator tube.
Specimen Preparation:	Separate serum from cells within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.2 mL)
Transport Temperature:	Refrigerated.
Unacceptable Conditions:	CSF or plasma. Contaminated, grossly hemolyzed, icteric, or lipemic specimens.
Remarks:	
Stability:	After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 month (Three freeze/thaw cycles are acceptable)
Methodology:	Semiquantitative Cell-Based Indirect Fluorescent Antibody
Performed:	Wed
Reported:	Within 8 days
Note:	If mGluR1 antibody IgG is positive, then mGluR1 antibody IgG 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:

Metabotropic glutamate receptor 1 (mGluR1) antibody is found in a subset of patients with autoimmune cerebellar ataxia or autoimmune encephalitis and may occur with or without associated tumor. A negative test result does not rule out a diagnosis of autoimmune cerebellar ataxia or limbic encephalitis. Interpretation of any antineural antibody test requires clinical correlation.

This indirect fluorescent antibody assay utilizes mGluR1 transfected cell lines for detection and

semiquantification of mGluR1 IgG antibody.

Reference Interval:

Less than 1:10

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

NEW TEST

Click for Pricing

Autoimmune Encephalitis Reflex Panel, CSF

3006049, AE CSF

Specimen Requirements:	
Patient Preparation:	
Collect:	CSF
Specimen Preparation:	Transfer three (3) 1 mL CSF aliquots to ARUP standard transport tubes. (Min: 1.5 mL)
Transport Temperature:	Frozen.
Unacceptable Conditions:	Contaminated specimens.
Remarks:	
Stability:	Ambient: 24 hours; Refrigerated: 1 week; Frozen: 1 month (Three freeze/thaw cycles are acceptable)
Methodology:	Semiquantitative Cell-Based Indirect Fluorescent Antibody/Quantitative Radioimmunoassay/Semiquantitative Enzyme-Linked Immunosorbent Assay
Performed:	Tue
Reported:	3-10 days
Note:	If NMDA CSF antibody IgG is positive, then titer will be added. Additional charges apply. If AQP4 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. If LGI1 CSF antibody IgG is positive, then titer will be added. Additional charges apply. If DPPX CSF antibody IgG is positive, then titer will be added. Additional charges apply. If IgLON5 CSF antibody IgG is positive, then titer will be added. Additional charges apply. If GABA-AR CSF antibody IgG is positive, then titer will be added. Additional charges apply. If mGluR1 CSF antibody IgG is positive, then titer will be added. Additional charges apply.
CPT Codes:	86052; 86255 x9; 83519; 86341; if reflexed, add 86256 per titer.

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.

Component	Interpretation
Voltage-Gated Potassium Channel Ab, CSF	0.0-1.1 pmol/L: Negative 1.2 pmol/L or greater: Positive

Reference Interval:

Test Number	Components	Reference Interval
	Glutamic Acid Decarboxylase Antibody CSF	0.0-5.0 IU/mL
	N-methyl-D-Aspartate Receptor Ab, CSF	Less than 1:1
	Neuromyelitis Optica/AQP4-IgG, 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
	Voltage-Gated Potassium Channel Ab, CSF	0.0-1.1 pmol/L
	CASPR2 Ab IgG Screen by IFA, CSF	Less than 1:1
	LGI1 Ab IgG Screen by IFA, 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
	GABA-AR Ab IgG CBA-IFA Screen, CSF	Less than 1:1
	mGluR1 Ab IgG CBA-IFA Screen, CSF	Less than 1:1

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

NEW TEST

Click for Pricing

Autoimmune Encephalitis Extended Panel, Serum

3006050, ENCEPHEXT2

Specimen Requirements:	
Patient Preparation:	
Collect:	Serum Separator Tube (SST).
Specimen Preparation:	Separate from cells ASAP or within 2 hours of collection. Transfer three (3) 1 mL serum aliquots to ARUP standard transport tubes. (Min: 1.5 mL)
Transport Temperature:	Frozen.
Unacceptable Conditions:	Contaminated specimens.
Remarks:	
Stability:	After separation from cells: Ambient: 24 hours; Refrigerated: 1 week; Frozen: 1 month (Three freeze/thaw cycles are acceptable)
Methodology:	Semiquantitative Cell-Based Indirect Fluorescent Antibody/Quantitative Radioimmunoassay/Semiquantitative Enzyme-Linked Immunosorbent Assay
Performed:	Tue
Reported:	3-10 days
Note:	If N-methyl-D-Aspartate Receptor antibody is positive, then a titer will be added. Additional charges apply. If Aquaporin-4 Receptor antibody IgG is positive, then a titer will be added. Additional charges apply. If LGI1 antibody IgG is positive, then LGI1 antibody IgG titer will be added. Additional charges apply. If CASPR2 antibody IgG is positive, then CASPR2 antibody IgG titer will be added. Additional charges apply. If AMPAR antibody IgG is positive, then a titer will be added. Additional charges apply. If GABABR antibody IgG is positive, then a titer will be added. Additional charges apply. If MOG antibody IgG is positive, then a titer will be added. Additional charges apply. If DPPX antibody IgG is positive, then a titer will be added. Additional charges apply. If GABAAR antibody IgG is positive, then a titer will be added. Additional charges apply. If IgLON5 antibody IgG is positive, then a titer will be added. Additional charges apply. If mGluR1 antibody IgG is positive, then a titer

	will be added. Additional charge apply.
CPT Codes:	83519; 86052; 86341; 86362; 86255 x9; if reflexed, add 86256 per titer.
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.

Component	Interpretive Data (pmol/L)
Voltage-Gated Potassium Channel Ab, Ser	31 or less: Negative 32-87: Indeterminate 88 or greater: Positive

Reference Interval:

Test Number	Components	Reference Interval
	Glutamic Acid Decarboxylase Antibody	0.0-5.0 IU/mL
	N-methyl-D-Aspartate Receptor Ab, Serum	Less than 1:10
	Voltage-Gated Potassium Channel Ab, Ser	31 pmol/L or less
	CASPR2 Ab IgG Screen by IFA, Serum	Less than 1:10
	LGI1 Ab IgG Screen by IFA, Serum	Less than 1:10
	Neuromyelitis Optica/AQP4-IgG, Serum	Less than 1:10
	AMPA Receptor Ab IgG Screen, 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
	IgLON5 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 Neurologic Disease Panel with Reflex, Serum

3006051, NEURO R4

Specimen Requirements:	
Patient Preparation:	
Collect:	Serum Separator Tube (SST)
Specimen Preparation:	Separate from cells ASAP or within 2 hours of collection. Transfer four 1 mL serum aliquots to ARUP standard transport tubes. (Min: 2.8 mL)
Transport Temperature:	Frozen
Unacceptable Conditions:	Amniotic fluid, ocular fluid, peritoneal fluid, synovial fluid, CSF, or plasma. Contaminated, grossly hemolyzed, icteric, or lipemic specimens.
Remarks:	
Stability:	After separation from cells: Ambient: 24 hours; Refrigerated: 1 week; Frozen: 1 month (Three freeze/thaw cycles are acceptable)
Methodology:	Semiquantitative Cell-Based Indirect Fluorescent Antibody/Qualitative Immunoblot/Quantitative Radioimmunoassay/Semiquantitative Enzyme-Linked Immunosorbent Assay
Performed:	Tue
Reported:	3-10 days
Note:	If N-methyl-D-Aspartate Receptor Antibody is positive, then titer will be performed. Additional charges apply. If CV2.1 Antibody IgG Screen by IFA is positive, then titer will be performed, and Acetylcholine Receptor Binding Antibody will be added. Additional charges apply. If AQP4 antibody IgG is positive, then titer will be added. Additional charges apply. If 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 AMPAR 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 MOG antibody IgG is positive, then titer will be added. Additional charges apply. If DPPX antibody IgG is positive, then titer will be added. Additional charges apply. If ITPR1 antibody IgG is positive, then titer will be added. Additional charges apply. If IgLON5 antibody IgG is positive, then titer will be added. Additional charges apply. If GABA-AR antibody IgG is positive, then titer will be added. Additional charges apply. If mGLUR1 antibody IgG is positive, then titer will be added. Additional charges apply.
CPT Codes:	83519 x2; 84182 x2; 86255 x12; 86341; 86052; 86362; 86596; if reflexed, add 83519; 84182 x4; 86256 per titer
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

Component	Interpretation
Voltage-Gated Potassium Channel (VGKC) Antibody, Serum	31 pmol/L or less: Negative 32-87 pmol/L: Indeterminate 88 pmol/L or greater: Positive
P/Q-Type Voltage-Gated Calcium Channel (VGCC) Antibody	0.0 to 24.5 pmol/L: Negative 24.6 to 45.6 pmol/L: Indeterminate 45.7 pmol/L or greater: Positive
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
	Neuronal Antibody (Amphiphysin)	Negative
	P/Q-Type Calcium Channel Antibody	24.5 pmol/L or less
	Glutamic Acid Decarboxylase Antibody	0.0-5.0 IU/mL
	N-methyl-D-Aspartate Receptor Ab, Serum	Less than 1:10
	Voltage-Gated Potassium Channel Ab, Ser	31 pmol/L or less
	Purkinje Cell/Neuronal Nuclear IgG Scrn	None Detected
	CASPR2 Ab IgG Screen by IFA, Serum	Less than 1:10
	LGI1 Ab IgG Screen by IFA, Serum	Less than 1:10
	Neuromyelitis Optica/AQP4-IgG, Serum	Less than 1:10
	CV2.1 Antibody IgG Screen by IFA	Less than 1:10
	AMPA Receptor Ab IgG Screen, 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
	SOX1 Antibody, IgG by Immunoblot, Serum	Negative
	Ganglionic Acetylcholine Receptor Ab	8.4 pmol/L or less
	DPPX Ab IgG CBA IFA Screen, Serum	Less than 1:10
	ITPR1 Ab IgG CBA-IFA Screen, Serum	Less than 1:10
	IgLON5 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

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

NEW TEST

Click for Pricing

Autoimmune Neurologic Disease Panel With Reflex, CSF

3006052, NEURORCSF2

Specimen Requirements:	
Patient Preparation:	
Collect:	CSF
Specimen Preparation:	Transfer four 1 mL CSF aliquots to ARUP standard transport tubes. (Min: 2.8 mL)
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: 1 month (Three freeze/thaw cycles are acceptable)
Methodology:	Semiquantitative Cell-Based Indirect Fluorescent Antibody/Qualitative Immunoblot/Quantitative Radioimmunoassay/Semiquantitative Enzyme-Linked Immunosorbent Assay
Performed:	Tue
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 antibodies are screened by IFA. If the IFA screen is indeterminate, then the Immunoblot will be added. If the IFA screen is positive at 1:1, then a specific titer (PCCA or ANNA) and Immunoblot will be added. 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 is positive, then titer will be added. Additional charges apply. If ITPR1 CSF antibody IgG is positive, then titer will be added. Additional charges apply. If

	IgLON5 CSF antibody IgG is positive, then titer will be added. Additional charges apply. If GABA-AR CSF antibody IgG is positive, then titer will be added. Additional charges apply. If mGLUR1 antibody IgG is positive, then titer will be added. Additional charges apply.
CPT Codes:	86255 x12; 83519; 86341; 84182 x2; if reflexed, add 84182 x4; 86256 per titer
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

Component	Interpretive Data
Voltage-Gated Potassium Channel Ab, CSF	0.0-1.1 pmol/L: Negative 1.2 pmol/L or greater: Positive

Reference Interval:

Test Number	Components	Reference Interval
	N-methyl-D-Aspartate Receptor Ab, CSF	Less than 1:1
	Paraneoplastic Abs (PCCA/ANNA) IgG, CSF	None Detected
	AMPA Receptor Ab IgG Screen, CSF	Less than 1:1
	GABA-B Receptor Ab IgG Screen, CSF	Less than 1:1
	CASPR2 Ab IgG Screen by IFA, CSF	Less than 1:1
	Voltage-Gated Potassium Channel Ab, CSF	0.0-1.1 pmol/L
	LGI1 Ab IgG Screen by IFA, CSF	Less than 1:1
	CV2.1 Ab IgG Screen, CSF	Less than 1:1
	Glutamic Acid Decarboxylase Antibody CSF	0.0-5.0 IU/mL
	SOX1 Antibody, IgG by Immunoblot, CSF	Negative
	Amphiphysin Antibody, CSF	Negative
	DPPX Ab IgG CBA IFA Screen, CSF	Less than 1:1
	ITPR1 Ab IgG CBA-IFA Screen, CSF	Less than 1:10
	IgLON5 Ab IgG CBA-IFA Screen, CSF	Less than 1:1
	GABA-AR Ab IgG CBA-IFA Screen, CSF	Less than 1:1
	mGluR1 Ab IgG CBA-IFA Screen, CSF	Less than 1:1

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

NEW TEST

Click for Pricing

Hypersensitivity Pneumonitis 1

3006065, HYPER 1

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:	Plasma.
Remarks:	
Stability:	After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)
Methodology:	Qualitative Immunodiffusion
Performed:	Sun-Sat
Reported:	3-7 days
Note:	Testing includes antibodies directed at Aspergillus fumigatus #1, Aspergillus fumigatus #6, Aureobasidium pullulans, pigeon serum, and Micropolyspora faeni.
CPT Codes:	86331 x3; 86606 x2
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

Reference Interval:

Test Number	Components	Reference Interval
	A. fumigatus #1 Ab, Precipitin	None detected
	A. fumigatus #6 Ab, Precipitin	None detected
	A. pullulans Ab, Precipitin	None detected
	Pigeon Serum Ab, Precipitin	None detected

	M. faeni Ab, Precipitin	None detected

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

NEW TEST

Click for Pricing

Toxocara Antibodies, IgG by ELISA

3006066, TOXOCARA G

Specimen Requirements:	
Patient Preparation:	
Collect:	Serum separator tube (SST) or plain red.
Specimen Preparation:	Transfer 1 mL serum to an ARUP standard transport tube. (Min: 0.5 mL)
Transport Temperature:	Preferred transport temp: Refrigerated. Also acceptable: Frozen
Unacceptable Conditions:	Contaminated, heat-inactivated, grossly hemolyzed, or lipemic specimens.
Remarks:	
Stability:	After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 month
Methodology:	Semiquantitative Enzyme-Linked Immunosorbent Assay
Performed:	Wed, Sat
Reported:	1-7 days
Note:	N/A
CPT Codes:	86682
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

Component	Interpretation
Toxocara Antibodies, IgG by ELISA	< 9 U Negative: No significant level of Toxocara IgG antibodies detected. 9 - 11 U Equivocal: Recommend repeat testing in 2-4 weeks. >11 U Positive: IgG antibodies to Toxocara detected,

	indicating current or past infection. False-positive results due to infections with other helminths are possible.	

Reference Interval:

Test Number	Components	Reference Interval
	Toxocara Antibodies, IgG by ELISA	8 U or less

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

NEW TEST

Click for Pricing

BK Virus by Quantitative NAAT, Urine

3006075, BKQ U

Specimen Requirements:	
Patient Preparation:	
Collect:	Urine.
Specimen Preparation:	Immediately transfer urine to a cobas(R) PCR urine sample tube (ARUP supply #58056 PK/100 or #58084 PK/10) available online through eSupply using ARUP Connect or contact Client Services at 800-522-2787. Liquid level must be between the black fill lines on the tube.
Transport Temperature:	Refrigerated
Unacceptable Conditions:	Under- or over-filled tubes. Specimens in any transport media other than indicated above. Neat urine. Plasma (refer to BK Virus by Quantitative NAAT, Plasma, ARUP test code 3006076).
Remarks:	
Stability:	Urine in media: Ambient: 90 days; Refrigerated: 90 days; Frozen: Unacceptable.
Methodology:	Quantitative Polymerase Chain Reaction
Performed:	Sun-Sat
Reported:	1-3 days
Note:	The limit of quantification for this assay is 2.30 log IU/mL (200 IU/mL). If the assay DETECTED the presence of the virus but was not able to accurately quantify the viral load, the test result will be reported as "Not Quantified, Detected".
CPT Codes:	87799
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

The quantitative range of this assay is 2.30-8.00 log IU/mL (200-100,000,000 IU/mL).

An interpretation of "Not Detected" does not rule out the presence of inhibitors or BKV DNA concentration below the level of detection of the assay. Care should be taken in the interpretation of any single viral load determination.

International standardization has improved comparability of assay results across laboratories, but discrepancies still exist due to commutability issues with the standard.

Reference Interval:

Not detected

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

NEW TEST

Click for Pricing

BK Virus by Quantitative NAAT, Plasma

3006076, BKQ P

Specimen Requirements:	
Patient Preparation:	
Collect:	Lavender (EDTA), pink (K2EDTA), or Plasma Preparation Tube (PPT).
Specimen Preparation:	Separate from cells within 24 hours of collection. Transfer 2mL plasma to an ARUP standard transport tube (ARUP supply #15824). Available online through eSupply using ARUP Connect(TM) or contact ARUP Client Services at 800-522-2787. (Minimum volume, 1mL)
Transport Temperature:	Frozen.
Unacceptable Conditions:	Heparinized specimens, whole blood, serum. Urine (refer to BK Virus by Quantitative NAAT, Urine, ARUP test code 3006075).
Remarks:	
Stability:	After separation from cells: Ambient: Unacceptable; Refrigerated: 6 days; Frozen: 6 months
Methodology:	Quantitative Polymerase Chain Reaction
Performed:	Sun-Sat
Reported:	1-3 days
Note:	The limit of quantification for this assay is 1.33 log IU/mL (21.5 IU/mL). If the assay DETECTED the presence of the virus but was not able to accurately quantify the viral load, the test result will be reported as "Not Quantified, Detected ".
CPT Codes:	87799
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

The quantitative range of this assay is 1.33-8.00 log IU/mL (21.5-100,000,000 IU/mL)

An interpretation of "Not Detected" does not rule out the presence of inhibitors or BKV DNA concentration below the level of detection of the assay. Care should be taken in the interpretation of any single viral load determination.

International standardization has improved comparability of assay results across laboratories, but discrepancies still exist due to commutability issues with the standard.

Reference Interval:

Not detected

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

NEW TEST

Click for Pricing

Epstein-Barr Virus by Quantitative NAAT, Plasma

3006079, EBVQ

Specimen Requirements:	
Patient Preparation:	
Collect:	Lavender (EDTA), pink (K2EDTA), or plasma preparation tube (PPT).
Specimen Preparation:	Separate from cells within 24 hours of collection. Transfer 2 mL plasma to an ARUP standard transport tube (ARUP supply #15824). Available online through eSupply using ARUP Connect(TM)or contact ARUP Client Services at 800-522-2787. (Minimum volume, 1mL)
Transport Temperature:	Frozen.
Unacceptable Conditions:	Heparinized specimens, whole blood, serum, CSF, tissue, bone marrow, body fluid. Refer to Epstein-Barr Virus by Qualitative PCR, ARUP test code 0050246, for other sample types
Remarks:	
Stability:	After separation from cells: Ambient: Unacceptable; Refrigerated: 6 days; Frozen: 6 months
Methodology:	Quantitative Polymerase Chain Reaction
Performed:	Sun-Sat
Reported:	1-4 days
Note:	The limit of quantification for this assay is 1.54 log IU/mL (35.0 IU/mL). If the assay DETECTED the presence of the virus but was not able to accurately quantify the viral load, the test result will be reported as "Not Quantified, Detected".
CPT Codes:	87799
New York DOH Approval Status:	This test is New York DOH approved.

Interpretive Data:

The quantitative range of this test is 1.54-8.00 log IU/mL (35.0-100,000,000 IU/mL).

An interpretation of "Not Detected" does not rule out the presence of inhibitors or EBV DNA concentration below the level of detection of the assay. Care should be taken in the interpretation

of any single viral load determination.

International standardization has improved comparability of assay results across laboratories, but discrepancies still exist due to commutability issues with the standard.

Reference Interval:

Not detected

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

ARUP LABORATORIES

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

Inactivations

The following will be discontinued from ARUP's test menu on February 21, 2023
Replacement test options are indicated when applicable.

Test Number	Test Name	Refer to Replacement Test
0030133	Thrombotic Risk, Inherited Etiologies (Most Common) with Reflex to Factor V Leiden (Change effective as of 02/21/23: Refer to 0030095, 0030192, 0030235, 0056060, 0099869)	Factor VIII, Activity (0030095) APC Resistance Profile with Reflex to Factor V Leiden (0030192) Partial Thromboplastin Time (0030235) Prothrombin (F2) c.*97G>A (G20210A) Pathogenic Variant (0056060) Homocysteine, Total (0099869)
0030177	Thrombotic Risk, Inherited Etiologies (Uncommon) (Change effective as of 02/21/23: Refer to 0030010, 0030113, 0030215, 0030235, 0098894)	Antithrombin, Enzymatic (Activity) (0030010) Protein C, Functional (0030113) Prothrombin Time (0030215) Partial Thromboplastin Time (0030235) Protein S Free, Antigen (0098894)
0051069	Influenza A & B Virus Antibodies, IgG & IgM (Inactive as of 02/21/23: DO NOT REFER)	
0051079	Influenza B Virus Antibody, IgM (Inactive as of 02/21/23: DO NOT REFER)	
0051081	Influenza A Virus Antibody, IgM (Inactive as of 02/21/23: DO NOT REFER)	
0051352	Epstein-Barr Virus by Quantitative PCR (Change effective as of 02/21/23: Refer to 3006079 in the February Hotline)	Epstein-Barr Virus by Quantitative NAAT, Plasma (3006079)
0055076	Hypersensitivity Pneumonitis I (Change effective as of 02/21/2023: Refer to 3006065 in the Feb Hotline)	Hypersensitivity Pneumonitis 1 (3006065)
0065058	Enterovirus Typing (Inactive as of 02/21/23)	

Test Number	Test Name	Refer to Replacement Test
0070135	T3 Uptake Change effective as of 02/21/23: Refer to 3005977 in the February Hotline	T3 Uptake (3005977)
0070140	Thyroxine Change effective as of 02/21/23: Refer to 3005978 in the February Hotline	Thyroxine, Total T4(3005978)
0070141	Thyroid Panel Change effective as of 02/21/23: Refer to 3005976 in the February Hotline	Free Thyroxine Index Panel (3005976)
0090067	BK Virus, Quantitative PCR (Change effective as of 02/21/23: Refer to 3006075, 3006076 in the February Hotline)	BK Virus by Quantitative NAAT, Plasma (3006076) BK Virus by Quantitative NAAT, Urine (3006075)
0098457	Chylomicron Screen, Body Fluid (Change effective as of 02/21/23: Refer to 3005996 in the February Hotline)	Triglycerides Body Fluid with Reflex to Chylomicron Electrophoresis (3005996)
2002304	BK Virus, Quantitative PCR, Blood (Change effective as of 02/21/23: Refer to 3006076 in the February Hotline)	BK Virus by Quantitative NAAT, Plasma (3006076)
2002310	BK Virus, Quantitative PCR, Urine (Change effective as of 02/21/23: Refer to 3006075 in the February Hotline)	BK Virus by Quantitative NAAT, Urine (3006075)
2004421	Influenza A Virus Antibodies, IgG & IgM (Inactive as of 02/21/23: DO NOT REFER)	
2004422	Influenza B Virus Antibodies, IgG & IgM (Inactive as of 02/21/23: DO NOT REFER)	
2005730	Enterovirus and Parechovirus by PCR (Change effective as of 02/21/23: Refer to 0050249, 2005731 in the February Hotline)	Enterovirus by PCR (0050249) and Parechovirus by PCR (2005731)
2007469	Influenza A Virus H1/H3 Subtype by PCR (Inactive as of 02/21/23)	

Test Number	Test Name	Refer to Replacement Test
2011660	Gastrointestinal Parasite and Microsporidia by PCR (Change effective as of 02/21/22: Refer to 2011150, 2011626)	Gastrointestinal Parasite Panel by PCR (2011150), Microsporidia by PCR (2011626)
3000472	Toxocara Antibody by ELISA (Change effective as of 02/21/23: Refer to 3006066 in the February Hotline)	Toxocara Antibodies, IgG by ELISA (3006066)
3000539	Imatinib (Inactive as of 02/21/23)	
3001431	Autoimmune Encephalitis Extended Panel, Serum (Change effective as of 02/21/2023: Refer to 3006050 in the Feb Hotline)	Autoimmune Encephalitis Extended Panel, Serum (3006050)
3002787	Autoimmune Encephalitis Reflexive Panel, CSF (Change effective as of 02/21/2023: Refer to 3006049 in the Feb Hotline)	Autoimmune Encephalitis Reflex Panel, CSF (3006049)
3002887	Autoimmune Neurologic Disease Reflexive Panel, CSF (Change effective as of 02/21/23: Refer to 3006052 in the Feb Hotline)	Autoimmune Neurologic Disease Panel with Reflex, CSF (3006052)
3004070	Autoimmune Neurologic Disease Reflexive Panel, Serum (Change effective as of 02/21/2023: Refer to 3006051 in the Feb Hotline)	Autoimmune Neurologic Disease Panel with Reflex, Serum (3006051)