HOTLINE: Effective August 15, 2022

MEDICARE COVERAGE OF LABORATORY TESTING

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

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

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

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

Hotline Page #	Test Number	Summary of Changes by Test Name	Name Change	Methodology	Performed/Reported Schedule	Specimen Requirements	Reference Interval	Interpretive Data	Note	CPT Code	Component Change	Other Interface Change	New Test	Inactive
8	3001257	Alpha-Amino-3-hydroxy-5-methyl-4-isoxazolepropionic Acid (AMPA) Receptor Antibody, IgG by CBA-IFA with Reflex to Titer, CSF	x	x										
8	3001260	Alpha-amino-3-hydroxy-5-methyl-4-isoxazolepropionic Acid (AMPA) Receptor Antibody, IgG by CBA-IFA with Reflex to Titer, Serum	x	x										
9	0060143	Anaerobe Culture	x	x					x			x		
10	0060217	Antimicrobial Susceptibility, AFB/Mycobacteria			x		x							

Hotline Page #	Test Number	Summary of Changes by Test Name	Name Change	Methodology	Performed/Reported Schedule	Specimen Requirements	Reference Interval	Interpretive Data	Note	CPT Code	Component Change	Other Interface Change	New Test	Inactive
12	2006540	Aortopathy Panel, Sequencing and Deletion/Duplication		x	x	x			x	x				
12	2013320	Aquaporin-4 Antibody, IgG by CBA-IFA with Reflex to Titer, Serum	x	x										
13	2011699	Aquaporin-4 Antibody, IgG by CBA-IFA, CSF with Reflex to Titer	x	x										
13	0051415	Ashkenazi Jewish Diseases, 16 Genes			x					x				
13	0050100	*Aspergillus* Antibodies by Complement Fixation	x			x		x	x			x		
14	0050101	*Aspergillus* Antibodies by Complement Fixation and Immunodiffusion	x	x	x	x	x	x	x			x		
14	0050171	*Aspergillus* Antibodies by Immunodiffusion	x	x	x	x	x	x	x			x		
15	3001283	Autoimmune CNS Demyelinating Disease Reflexive Panel		x										
15	3001431	Autoimmune Encephalitis Extended Panel, Serum		x										
15	3002787	Autoimmune Encephalitis Reflexive Panel, CSF		x										
16	3002887	Autoimmune Neurologic Disease Reflexive Panel, CSF		x										
17	3004070	Autoimmune Neurologic Disease Reflexive Panel, Serum		x										
17	2006193	B-Cell Clonality Screening (IgH and IgK) by PCR			x									
18	3004827	BCOR by Immunohistochemistry											x	
18	2005017	*BCR-ABL1*, Major (p210), Quantitative			x									
18	2005016	*BCR-ABL1*, Minor (p190), Quantitative			x									
18	2005010	*BCR-ABL1*, Qualitative with Reflex to *BCR-ABL1* Quantitative			x									
19	3000231	*Blastomyces dermatitidis* Antibodies by Immunoassay with Reflex to Immunodiffusion, CSF	x	x			x	x	x			x		
19	3000236	*Blastomyces dermatitidis* Antibodies by Immunoassay with Reflex to Immunodiffusion, Serum	x	x		x	x		x			x		
20	0050172	*Blastomyces dermatitidis* Antibodies by Immunodiffusion, Serum	x	x	x	x	x	x	x			x		
66	0065078	Bordetella pertussis by PCR												x
20	2010673	*CALR* (Calreticulin) Exon 9 Mutation Analysis by PCR			x									
20	0095200	*Candida albicans* Antibodies IgA, IgG, and IgM by ELISA				x								
20	0099344	Cardiolipin Antibodies, IgG and IgM			x									
20	0051162	Cardiolipin Antibodies, IgG, IgM, and IgA			x									
20	0098358	Cardiolipin Antibody, IgA			x									

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21	0050901	Cardiolipin Antibody, IgG			x									
21	0050902	Cardiolipin Antibody, IgM			x									
21	2010183	Cardiomyopathy and Arrhythmia Panel, Sequencing and Deletion/Duplication			x	x			x	x				
21	2011114	*CBFB-MYH11* inv(16) Detection, Quantitative			x									
21	3004383	Cerebral Autosomal Dominant Arteriopathy with Subcortical Infarcts and Leukoencephalopathy, CADASIL (*NOTCH3*), Sequencing				x								
22	3002286	Cerebral Cavernous Malformation Panel, Sequencing and Deletion/Duplication		x	x	x			x	x				
66	2008100	Chimerism, Additional Donor												x
22	3005468	Chimerism, Additional Donor											x	
23	3005462	Chimerism, Donor											x	
66	2002067	Chimerism, Donor												x
24	3005454	Chimerism, Posttransplant											x	
66	2002066	Chimerism, Post-Transplant (Extended TAT as of 11/20/20-no referral available)												x
25	3005401	Chimerism, Posttransplant, Sorted Cells (B Cells)											x	
26	3005441	Chimerism, Posttransplant, Sorted Cells (CD 56+ Cells)											x	
27	3005409	Chimerism, Posttransplant, Sorted Cells (CD33+ Cells)											x	
28	3005433	Chimerism, Posttransplant, Sorted Cells (CD34+ Cells)											x	
66	2002064	Chimerism, Post-Transplant, Sorted Cells (Extended TAT as of 11/20/20-no referral available)												x
29	3005417	Chimerism, Posttransplant, Sorted Cells (Granulocytes)											x	
30	3005425	Chimerism, Posttransplant, Sorted Cells (Monocytes)											x	
31	3005393	Chimerism, Posttransplant, Sorted Cells (T Cells)											x	
66	2002065	Chimerism, Recipient Pre-Transplant												x
32	3005449	Chimerism, Recipient, Pretransplant											x	
66	2001551	Chlamydia trachomatis and Neisseria gonorrhoeae by Transcription-Mediated Amplification (TMA), SurePath												x
32	2011157	Cobalamin/Propionate/Homocysteine Metabolism Related Disorders Panel, Sequencing and Deletion/Duplication		x	x	x			x	x				
33	3001986	Contactin-Associated Protein-2 Antibody, IgG CBA-IFA with Reflex to Titer, CSF	x	x										

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33	2009452	Contactin-Associated Protein-2 Antibody, IgG CBA-IFA with Reflex to Titer, Serum	x	x										
33	2012849	Critically Ill Rapid Genetic Diagnosis Panel, ~5000 Genes	x								x	x		
33	2013956	CV2.1 Screen by CBA-IFA with Reflex to Titer	x	x										
33	3002257	CV2.1 Screen by CBA-IFA with Reflex to Titer, CSF	x	x										
33	3001513	*CYP2D6*						x	x	x				
66	2013663	Cystic Fibrosis (CFTR) 165 Pathogenic Variants with Reflex to Sequencing												x
66	2013664	Cystic Fibrosis (CFTR) 165 Pathogenic Variants with Reflex to Sequencing and Reflex to Deletion/Duplication												x
33	3001524	Cytochrome P450 Genotyping Panel						x	x	x				
34	3004255	Cytochrome P450 Genotyping Panel, with GeneDose Access						x	x	x				
34	3003144	Deletion/Duplication Analysis by MLPA							x			x		
34	3004512	Dipeptidyl Aminopeptidase-Like Protein 6 (DPPX) Antibody, IgG by CBA-IFA With Reflex to Titer, CSF	x	x										
34	3004359	Dipeptidyl Aminopeptidase-Like Protein 6 (DPPX) Antibody, IgG by CBA-IFA With Reflex to Titer, Serum	x	x										
35	0050595	Diphtheria & Tetanus Antibodies, IgG			x									
35	0050215	Double-Stranded DNA (dsDNA) Antibody, IgG by ELISA with Reflex to dsDNA Antibody, IgG by IFA				x								
35	2002693	Double-Stranded DNA (dsDNA) Antibody, IgG by IFA (using *Crithidia luciliae)*				x								
35	3005060	Drug Profile, Expanded Targeted Panel by LC-MS/MS, Urine											x	
36	3004833	Drug Profile, Expanded Targeted Panel by LC-MS/MS, Serum/Plasma											x	
66	0090499	Drug Screen (Nonforensic), Serum												x
66	0090500	Drug Screen (Nonforensic), Urine, Qualitative												x
36	3001585	Early-Onset Alzheimer's Panel, Sequencing			x	x								
66	2008803	Expanded Hearing Loss Panel, Sequencing and Deletion/Duplication												x
37	3004764	Fetal Aneuploidy Screening											x	
38	3004778	Fetal Aneuploidy Screening with 22q11.2 Microdeletion											x	

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39	3004781	Fetal Aneuploidy Screening with Microdeletions											x	
40	0050164	Fungal Antibodies by Immunodiffusion			x	x	x	x	x			x		
41	3000230	Fungal Antibodies with Reflex to *Blastomyces dermatitidis* Antibodies by Immunodiffusion, CSF		x			x		x			x		
42	3000235	Fungal Antibodies with Reflex to *Blastomyces dermatitidis* Antibodies by Immunodiffusion, Serum	x	x		x	x		x			x		
42	3001267	Gamma Aminobutyric Acid Receptor, Type B (GABA-BR) Antibody, IgG by CBA-IFA with Reflex to Titer, CSF	x	x										
42	3001270	Gamma Aminobutyric Acid Receptor, Type B (GABA-BR) Antibody, IgG by CBA-IFA with Reflex to Titer, Serum	x	x										
43	3005478	Glomerular Filtration Rate (Estimated)											x	
66	0020725	Glomerular Filtration Rate, Estimated												x
44	3005011	H3.3 G34W Mutant by Immunohistochemistry											x	
44	2012026	Hereditary Breast and Gynecological Cancers Panel, Sequencing and Deletion/Duplication	x	x	x	x			x	x				
45	2012032	Hereditary Cancer Panel, Sequencing and Deletion/Duplication		x		x			x	x				
45	2013449	Hereditary Gastrointestinal Cancer Panel, Sequencing and Deletion/Duplication		x		x			x	x				
45	2009337	Hereditary Hemorrhagic Telangiectasia (HHT) Panel, Sequencing and Deletion/Duplication		x	x	x			x	x				
46	2010214	Hereditary Renal Cancer Panel, Sequencing and Deletion/Duplication		x		x			x	x				
66	2011148	Herpes Simplex Virus (HSV) by PCR with Reflex to HSV (HSV-1/HSV-2) Subtype by PCR												x
66	0060041	Herpes Simplex Virus by PCR												x
46	0065005	Herpes Simplex Virus Culture		x	x	x				x				
46	0065065	Herpes Simplex Virus Culture with Reflex to HSV Typing		x	x	x				x				
47	0050625	*Histoplasma* Antibodies by Complement Fixation	x			x		x	x			x		
47	0050627	*Histoplasma* Antibodies by Complement Fixation and Immunodiffusion	x	x	x	x	x	x	x			x		
48	0050174	*Histoplasma* Antibodies by Immunodiffusion	x	x	x	x	x	x	x			x		
48	2008848	Holoprosencephaly Panel, Sequencing and Deletion/Duplication		x	x	x			x	x				
49	2008863	Holoprosencephaly Panel, Sequencing and Deletion/Duplication, Fetal		x		x			x	x				
49	3004046	*JAK2* (V617F) Mutation by ddPCR, Qualitative			x									

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49	3003751	*JAK2* (V617F) Mutation by ddPCR, Quantitative			x									
49	2002357	*JAK2* Exon 12 Mutation Analysis by PCR			x									
49	2012259	Keratan Sulfate, Quantitative by LC-MS/MS, Urine									x			
66	3000599	Kidney Profile												x
50	3002956	*KIT* (D816V) Mutation by ddPCR, Quantitative			x									
50	3005200	*Legionella pneumophila* Antibodies (Types 1-6), IgG, IgM, and IgA by ELISA											x	
50	2009460	Leucine-Rich, Glioma-Inactivated Protein 1 Antibody, IgG CBA-IFA and Contactin-Associated Protein-2 Antibody, IgG CBA-IFA with Reflex to Titers, Serum	x	x										
50	3001992	Leucine-Rich, Glioma-Inactivated Protein 1 Antibody, IgG CBA-IFA with Reflex to Titer, CSF	x	x										
51	2009456	Leucine-Rich, Glioma-Inactivated Protein 1 Antibody, IgG CBA-IFA with Reflex to Titer, Serum	x	x										
51	3001603	Long QT Panel, Sequencing and Deletion/Duplication		x	x	x			x	x				
51	0055655	Methylenetetrahydrofolate Reductase (*MTHFR*) 2 Variants										x		
51	2002715	Monoclonal Protein Study, Expanded Panel, Serum									x			
51	3002568	Monoclonal Protein Study, Serum									x			
51	2007967	Motor and Sensory Neuropathy Evaluation with Immunofixation Electrophoresis and Reflex to Titer and Neuronal Immunoblot									x			
51	0051225	Motor Neuropathy Panel									x			
52	3003566	Mucopolysaccharidoses Type 1/2, Total Heparan Sulfate and NRE (Sensi-Pro®) Quantitative, Serum or Plasma									x			
52	3003552	Mucopolysaccharidoses Type 1/2, Total Heparan Sulfate and NRE (Sensi-Pro®) Quantitative, Urine									x			
52	3003487	Mucopolysaccharidoses Type 4A/6 Total Chondroitin Sulfate and Dermatan Sulfate with NRE (Sensi-Pro®) Quantitative, Serum									x			
52	3003539	Mucopolysaccharidoses Type 4A/6 Total Chondroitin Sulfate and Dermatan Sulfate with NRE (Sensi-Pro®) Quantitative, Urine									x			
52	3001277	Myelin Oligodendrocyte Glycoprotein (MOG) Antibody, IgG by CBA-IFA with Reflex to Titer, Serum	x	x										
52	0092361	Nicotine and Metabolites, Serum or Plasma, Quantitative					x	x			x			

Hotline Page #	Test Number	Summary of Changes by Test Name	Name Change	Methodology	Performed/Reported Schedule	Specimen Requirements	Reference Interval	Interpretive Data	Note	CPT Code	Component Change	Other Interface Change	New Test	Inactive
53	2005164	N-methyl-D-Aspartate Receptor Antibody, IgG CBA-IFA, CSF with Reflex to Titer	x	x										
53	2004221	N-methyl-D-Aspartate Receptor Antibody, IgG CBA-IFA, Serum with Reflex to Titer	x	x										
54	3003043	Non-Invasive Prenatal Aneuploidy Screen by cell-free DNA Sequencing											x	
66	2007537	Non-Invasive Prenatal Testing for Fetal Aneuploidy												x
66	2013142	Non-Invasive Prenatal Testing for Fetal Aneuploidy with 22q11.2 Microdeletion												x
66	2010232	Non-Invasive Prenatal Testing for Fetal Aneuploidy with Microdeletions												x
55	3000066	*NPM1* Mutation Detection by RT-PCR, Quantitative			x									
55	2008767	Opioid Receptor, mu *OPRM1*, 1 Variant			x			x			x	x		
55	3000704	Orotic Acid, Urine					x							
55	3002929	Paraneoplastic Reflexive Panel		x										
56	2005006	Paroxysmal Nocturnal Hemoglobinuria (PNH), High Sensitivity, RBC and WBC				x		x	x		x	x		
57	2004366	Paroxysmal Nocturnal Hemoglobinuria, High Sensitivity, RBC				x		x	x		x	x		
58	2005003	Paroxysmal Nocturnal Hemoglobinuria, High Sensitivity, WBC				x		x			x	x		
59	3004471	Pharmacogenetics Panel: Psychotropics											x	
59	2006495	Phosphatidylserine Antibodies, IgG and IgM			x									
59	0050905	Phosphatidylserine Antibodies, IgG, IgM, and IgA			x									
60	3004813	Phosphorylated TDP43 by Immunohistochemistry											x	
66	3001170	Platelet Antigen 1 Genotyping (HPA-1)												x
60	2002871	*PML-RARA* Detection by RT-PCR, Quantitative			x									
61	2011156	Primary Antibody Deficiency Panel, Sequencing and Deletion/Duplication		x	x	x			x	x				
61	2002109	Protein Electrophoresis with Reflex to Immunofixation, Serum									x			
61	0050640	Protein Electrophoresis, Serum									x			
61	2009345	Pulmonary Arterial Hypertension (PAH) Panel, Sequencing and Deletion/Duplication		x	x	x			x	x				
61	2010138	*RUNX1-RUNX1T1* (*AML1-ETO*) t(8;21) Detection, Quantitative			x									
62	2012015	Skeletal Dysplasia Panel, Sequencing and Deletion/Duplication		x	x	x			x	x				
62	2012010	Skeletal Dysplasia Panel, Sequencing and Deletion/Duplication, Fetal				x			x	x				

Hotline Page #	Test Number	Summary of Changes by Test Name	Name Change	Methodology	Performed/Reported Schedule	Specimen Requirements	Reference Interval	Interpretive Data	Note	CPT Code	Component Change	Other Interface Change	New Test	Inactive
62	0055567	T-Cell Clonality Screening by PCR			x									
63	3002100	Tuberous Sclerosis Complex Panel, Sequencing and Deletion/Duplication		x	x	x				x				
63	3002096	Tuberous Sclerosis Complex Panel, Sequencing and Deletion/Duplication, Fetal			x	x		x	x	x				
64	2007384	Vascular Malformations Panel, Sequencing and Deletion/Duplication		x	x	x			x	x				
64	2009463	Voltage-Gated Potassium Channel (VGKC) Antibody with Reflex to LGI1 and CASPR2 Screen and Titer, Serum		x										
64	3001996	Voltage-Gated Potassium Channel (VGKC) Complex Antibody Panel with Reflex to Titer, CSF		x										
65	0050228	West Nile Virus Antibodies, IgG and IgM by ELISA, CSF				x								
65	0050238	West Nile Virus Antibody, IgG by ELISA, CSF				x								
65	0050239	West Nile Virus Antibody, IgM by ELISA, CSF				x								

3001257 **Alpha-Amino-3-hydroxy-5-methyl-4-isoxazolepropionic Acid (AMPA) Receptor Antibody, IgG by CBA-IFA with Reflex to Titer, CSF** **AMPA CSF**

Methodology: Semi-Quantitative Cell-Based Indirect Fluorescent Antibody

3001260 **Alpha-amino-3-hydroxy-5-methyl-4-isoxazolepropionic Acid (AMPA) Receptor Antibody, IgG by CBA-IFA with Reflex to Titer, Serum** **AMPA SER**

Methodology: Semi-Quantitative Cell-Based Indirect Fluorescent Antibody

0060143 **Anaerobe Culture** **MC ANA**

Methodology: Culture/Identification

Note: Identification and susceptibility tests are billed separately from culture.

Indicate if *Actinomyces* is suspected.

Contact the laboratory prior to collection of the specimen if consultation on collection containers or transport is needed.

If gram stain is required, order Gram Stain (ARUP test #0060101).

For University of Utah Hospital and affiliated clinics, anaerobic cultures must be paired with an aerobic culture. Please order appropriate aerobic culture. If aerobic culture is not ordered, the laboratory will order it.

HOTLINE NOTE: There is a clinically significant charting name change associated with this test.
Change the charting name for component 0060143, Anaerobe Culture and Gram Stain from Anaerobe Culture and Gram Stain to Anaerobe Culture.

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

Performed: Mon-Sun
Reported: Varies

Reference Interval:

Available Separately	Test Name	Methodology	Reference Interval/Drugs Tested	CPT Code
0060347	Antimicrobial Susceptibility - AFB/*Mycobacterium tuberculosis* Primary Panel	MGIT960	The interpretation provided is based on results for the following drugs at the stated concentrations: **Drugs tested:** Ethambutol: 5.0 µg/mL; Isoniazid: 0.1 µg/mL (0.4 µg/mL if resistant to 0.1 µg/mL); Pyrazinamide: 100 µg/mL; Rifampin: 1.0 µg/mL. This procedure screens isolates of *M. tuberculosis* complex for drug resistance. The procedure does not use serial dilutions to provide quantitative MIC values. Single critical concentrations for each antimycobacterial agent used have been defined by the United States Public Health Service.	87188 x4
	Antimicrobial Susceptibility - AFB/*Mycobacterium tuberculosis* Secondary Panel	Agar proportion and Broth dilution	Effective February 21, 2012 **Note:** If *M. tuberculosis* isolate is resistant to rifampin or any two primary drugs, a secondary panel will be performed as a send-out test. The interpretation provided is based on testing for the following drugs at the stated concentrations: **Drugs tested:** Amikacin: 6 µg/mL; capreomycin: 10 µg/mL; cycloserine: 60 µg/mL; ethionamide: 10 µg/mL; kanamycin: 6 µg/mL; PAS: 8 µg/mL; streptomycin at a low level (2.0 µg/mL) and a high level (4.0 µg/mL). Levofloxacin and moxifloxacin are tested at 2, 4 and 8 µg/mL	87190 x6, 87188 x3
	Antimicrobial Susceptibility - AFB/*Mycobacteria*	Broth Microdilution	See organism-specific panels below.	87186
	Mycobacterium avium-intracellulare Complex	Broth Microdilution	Effective April 1, 2022 Drugs tested: Amikacin, , clarithromycin, linezolid, moxifloxacin, Clarithromycin results predict azithromycin. Because MIC results do not predict clinical response and may be misleading, rifampin, rifabutin, and ethambutol MICs are not tested.	87186
	Rapid Growing *Mycobacteria*	Broth Microdilution	Effective April 1, 2022 Drugs tested: Amikacin, cefoxitin, ciprofloxacin, clarithromycin, doxycycline, imipenem, linezolid, moxifloxacin, tigecycline, tobramycin (*M. chelonae* only), and trimethoprim/sulfamethoxazole (TMP/SXT). Extended 14-day incubation is performed on isolates initially susceptible to clarithromycin to detect Erm(41)-dependent inducible macrolide resistance except *Mycobacterium* species with a nonfunctional Erm(41) gene	87186

	Other Slowly-Growing Non-tuberculosis *Mycobacteria* (NTM)	Broth Microdilution	Effective April 1 ,2022 **Drugs tested:** Amikacin, ciprofloxacin, clarithromycin, doxycycline, linezolid, moxifloxacin, rifabutin, rifampin, streptomycin and trimethoprim/sulfamethoxazole (TMP/SXT). Selective reporting by organism. CLSI recommends that isolates of *M. kansasii* be tested against rifampin and clarithromycin only. Rifampin-susceptible isolates are also susceptible to rifabutin. If the isolate is rifampin-resistant, the following secondary drugs will also be reported: Amikacin, ciprofloxacin, linezolid, moxifloxacin, rifabutin, streptomycin and trimethoprim-sulfamethoxazole. *M. marinum* isolates are tested against amikacin, ciprofloxacin, clarithromycin, doxycycline, moxifloxacin, rifabutin, rifampin, and trimethoprim-sulfamethoxazole. Slow-growing NTM other than *M. kansasii* and *M. marinum* are tested against amikacin, ciprofloxacin, clarithromycin, linezolid, moxifloxacin, rifabutin, rifampin, streptomycin, and trimethoprim-sulfamethoxazole.	87186

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

Methodology: Massively Parallel Sequencing
Performed: Varies
Reported: 3 weeks

Specimen Required: Collect: Lavender or pink (EDTA) or yellow (ACD solution A or B).
Specimen Preparation: Transport 3 mL whole blood. (Min: 2 mL)
Storage/Transport Temperature: Refrigerated
Unacceptable Conditions: Serum or plasma; grossly hemolyzed or frozen specimens; saliva, buccal brush, or swab; FFPE tissue.
Stability (collection to initiation of testing): Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable

Note: Genes tested: *ACTA2, BGN, CBS,* COL1A1, COL1A2,* COL3A1, COL5A1,* COL5A2, EFEMP2, FBN1, FBN2, FLNA, FOXE3,* LOX, MFAP5, MYH11, MYLK,* NOTCH1,* PLOD1, PRKG1, SKI, SLC2A10, SMAD2, SMAD3, SMAD4, TGFB2, TGFB3,** TGFBR1, TGFBR2*

*One or more exons are not covered by sequencing and/or deletion/duplication analysis for the indicated gene; see Additional Technical Information.
**Deletion/duplication detection is not available for this gene.

CPT Code(s): 81410; 81411

HOTLINE NOTE: Remove information found in the Remarks field.

2013320 Aquaporin-4 Antibody, IgG by CBA-IFA with Reflex to Titer, Serum — AQP4 SER

Methodology: Semi-Quantitative Cell-Based Indirect Fluorescent Antibody

2011699 **Aquaporin-4 Antibody, IgG by CBA-IFA, CSF with Reflex to Titer** **AQP4 CSF**

Methodology: Semi-Quantitative Cell-Based Indirect Fluorescent Antibody

0051415 **Ashkenazi Jewish Diseases, 16 Genes** **AJP**

Performed: Varies
Reported: 5-10 days

CPT Code(s): 81401, 81209, 81200, 81260, 81242, 81251, 81250, 81479, 81205, 81290, 81400, 81330, 81255,

0050100 ***Aspergillus* Antibodies by Complement Fixation** **ASPER**

Specimen Required: 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: 0.4 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."**
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Contaminated, hemolyzed, or severely lipemic specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)

Interpretive Data:
A titer of 1:8 or greater suggests *Aspergillus* infection or allergy. Cross-reactions with dimorphic fungi are not unusual within the genus *Aspergillus*.

HOTLINE NOTE: There is a clinically significant charting name change associated with this test.
Change the charting name for component 0050100, Aspergillus Antibody by CF from Aspergillus Antibody by CR to Aspergillus Antibodies by CF. Remove information found in the Note field.

0050101 *Aspergillus* Antibodies by Complement Fixation and Immunodiffusion — ASPER PRO

Methodology: Semi-Quantitative Complement Fixation/Immunodiffusion
Performed: Sun-Sat
Reported: 3-6 days

Specimen Required: Collect: Serum separator tube.
Specimen Preparation: Separate serum from cells ASAP or within 2 hours of collection. Transfer1 mL serum to an ARUP Standard Transport Tube. (Min: 0.5 mL) Parallel testing is preferred and convalescent specimens **must** be received within 30 days from receipt of the acute specimens. **Mark specimens plainly as "acute" or "convalescent."**
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Contaminated, hemolyzed, or severely lipemic specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)

Reference Interval:

Test Number	Components	Reference Interval
0050100	*Aspergillus* Antibodies by Complement Fixation	Less than 1:8
0050171	*Aspergillus* Antibodies by Immunodiffusion	Not Detected

Interpretive Data:
Refer to report.

Note: The immunodiffusion component of this test uses pooled mycelial-phase culture filtrates of *Aspergillus fumigatus*, *Aspergillus flavus*, *Aspergillus niger*, and *Aspergillus terreus*.

HOTLINE NOTE: There is a clinically significant charting name change associated with this test.
Change the charting name for component 0050100, Aspergillus Antibody by CF from Aspergillus Antibody by CF to Aspergillus Antibodies by CF.
Change the charting name for component 0050171, Aspergillus spp. Abs, Precipitin from Aspergillus spp. Abs, Precipitin to Aspergillus Antibodies by ID.

0050171 *Aspergillus* Antibodies by Immunodiffusion — ASPER PPT

Methodology: Immunodiffusion
Performed: Sun-Sat
Reported: 3-6 days

Specimen Required: Collect: Serum separator tube.
Specimen Preparation: Separate serum from cells ASAP or within 2 hours of collection. Transfer 0.5 mL serum an ARUP Standard Transport Tube. (Min: 0.15 mL) Mark specimens plainly as "acute" or "convalescent."
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Contaminated, hemolyzed, or severely lipemic specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)

Reference Interval:
Not Detected

Interpretive Data:
Refer to Report.

Note: This immunodiffusion test uses pooled mycelial-phase culture filtrates of *Aspergillus fumigatus*, *Aspergillus flavus*, *Aspergillus niger*, and *Aspergillus terreus*.

HOTLINE NOTE: There is a clinically significant charting name change associated with this test.
Change the charting name for component 0050171, Aspergillus spp. Abs, Precipitin from Aspergillus spp. Abs, Precipitin to Aspergillus Antibodies by ID.

3001283 Autoimmune CNS Demyelinating Disease Reflexive Panel — CNS PAN

Methodology: Semi-Quantitative Cell-Based Indirect Fluorescent Antibody

Reference Interval:

Test Number	Components	Reference Interval
2013320	Aquaporin-4 Receptor Antibody, IgG by CBA-IFA with Reflex to Titer, Serum	Less than 1:10
3001277	Myelin Oligodendrocyte Glycoprotein (MOG) Antibody, IgG by CBA-IFA with Reflex to Titer, Serum	Less than 1:10

3001431 Autoimmune Encephalitis Extended Panel, Serum — ENCEPH EXT

Methodology: Semi-Quantitative Cell-Based Indirect Fluorescent Antibody/Quantitative Radioimmunoassay/Semi-Quantitative Enzyme-Linked Immunosorbent Assay

Reference Interval:

Test Number	Components	Reference Interval
2004221	N-methyl-D-Aspartate Receptor Antibody, IgG CBA-IFA, Serum with Reflex to Titer	Less than 1:10
2001771	Glutamic Acid Decarboxylase Antibody	0.0-5.0 IU/mL
2004890	Voltage-Gated Potassium Channel (VGKC) Antibody, Serum	Negative: 31 pmol/L or less Indeterminate: 32-87 pmol/L Positive: 88 pmol/L or greater
2003036	Aquaporin-4 Receptor Antibody	Effective October 3, 2016 Negative: 2.9 U/mL or less Positive: 3.0 U/mL or greater
2013320	Aquaporin-4 Receptor Antibody, IgG by CBA-IFA with Reflex to Titer, Serum	Less than 1:10
2009456	Leucine-Rich, Glioma-Inactivated Protein 1 Antibody, IgG CBA-IFA with Reflex to Titer, Serum	Less than 1:10
2009452	Contactin-Associated Protein-2 Antibody, IgG CBA-IFA with Reflex to Titer, Serum	Less than 1:10
3001260	Alpha-amino-3-hydroxy-5-methyl-4-isoxazolepropionic Acid (AMPA) Receptor Antibody, IgG by CBA-IFA with Reflex to Titer, Serum	Less than 1:10
3001270	Gamma Aminobutyric Acid Receptor, Type B (GABA-BR) Antibody, IgG by CBA-IFA with Reflex to Titer, Serum	Less than 1:10
3001277	Myelin Oligodendrocyte Glycoprotein (MOG) Antibody, IgG by CBA-IFA with Reflex to Titer, Serum	Less than 1:10

3002787 Autoimmune Encephalitis Reflexive Panel, CSF — AENCEPHCSF

Methodology: Semi-Quantitative Cell-Based Indirect Fluorescent Antibody/Quantitative Radioimmunoassay/Semi-Quantitative Enzyme-Linked Immunosorbent Assay

Reference Interval:

Test Number	Components	Reference Interval
3002788	Glutamic Acid Decarboxylase Antibody, CSF	0.0-5.0 IU/mL
2005164	N-methyl-D-Aspartate Receptor Antibody, IgG CBA-IFA, CSF with Reflex to Titer	Effective May 21, 2012 < 1:1
2011699	Aquaporin-4 Receptor Antibody, IgG by CBA-IFA, CSF with Reflex to Titer	less than 1:1
3001257	Alpha-Amino-3-hydroxy-5-methyl-4-isoxazolepropionic Acid (AMPA) Receptor Antibody, IgG by CBA-IFA with Reflex to Titer, CSF	Less than 1:1
3001267	Gamma Aminobutyric Acid Receptor, Type B (GABA-BR) Antibody, IgG by CBA-IFA with Reflex to Titer, CSF	Less than 1:1
3001387	Voltage-Gated Potassium Channel (VGKC) Antibody, CSF	Negative: 0.0-1.1 pmol/L Positive: 1.2 pmol/L or greater
3001986	Contactin-Associated Protein-2 Antibody, IgG CBA-IFA with Reflex to Titer, CSF	Less than 1:1
3001992	Leucine-Rich, Glioma-Inactivated Protein 1 Antibody, IgG CBA-IFA with Reflex to Titer, CSF	Less than 1:1
3004512	Dipeptidyl Aminopeptidase-Like Protein 6 (DPPX) Antibody, IgG by CBA-IFA With Reflex to Titer, CSF	Less than 1:1

3002887 Autoimmune Neurologic Disease Reflexive Panel, CSF NEURORCSF

Methodology: Semi-Quantitative Cell-Based Indirect Fluorescent Antibody/Qualitative Immunoblot/Quantitative Radioimmunoassay/Semi-quantitative Enzyme-Linked Immunosorbent Assay

Reference Interval:

Test Number	Components	Reference Interval
2005164	N-methyl-D-Aspartate Receptor Antibody, IgG CBA-IFA, CSF with Reflex to Titer	Effective May 21, 2012 < 1:1
3001257	Alpha-Amino-3-hydroxy-5-methyl-4-isoxazolepropionic Acid (AMPA) Receptor Antibody, IgG by CBA-IFA with Reflex to Titer, CSF	Less than 1:1
3001267	Gamma Aminobutyric Acid Receptor, Type B (GABA-BR) Antibody, IgG by CBA-IFA with Reflex to Titer, CSF	Less than 1:1
3001986	Contactin-Associated Protein-2 Antibody, IgG CBA-IFA with Reflex to Titer, CSF	Less than 1:1
3001387	Voltage-Gated Potassium Channel (VGKC) Antibody, CSF	Negative: 0.0-1.1 pmol/L Positive: 1.2 pmol/L or greater
2010841	Paraneoplastic Antibodies (PCCA/ANNA) by IFA with Reflex to Titer and Immunoblot, CSF	Test Number / Components / Reference Interval: Paraneoplastic Abs (PCCA/ANNA) IgG, CSF: Refer to report Neuronal Nuclear Ab Titer, IgG CSF: Refer to report Purkinje Cell Antibody Titer IgG, CSF: Refer to report 3004527 Neuronal Nuclear Antibodies (Hu, Ri, Yo, Tr/DNER) IgG by Immunoblot, CSF: Refer to report
3001992	Leucine-Rich, Glioma-Inactivated Protein 1 Antibody, IgG CBA-IFA with Reflex to Titer, CSF	Less than 1:1
3002257	CV2.1 Screen by CBA-IFA with Reflex to Titer, CSF	Less than 1:1
3002788	Glutamic Acid Decarboxylase Antibody, CSF	0.0-5.0 IU/mL
3002886	SOX1 Antibody, IgG by Immunoblot, CSF	Negative
3004512	Dipeptidyl Aminopeptidase-Like Protein 6 (DPPX) Antibody, IgG by CBA-IFA With Reflex to Titer, CSF	Less than 1:1
3004510	Amphiphysin Antibody IgG, CSF	Negative

3004070 Autoimmune Neurologic Disease Reflexive Panel, Serum — NEURO R3

Methodology: Semi-Quantitative Cell-Based Indirect Fluorescent Antibody/Qualitative Immunoblot/Quantitative Radioimmunoassay/Semi-Quantitative Enzyme-Linked Immunosorbent Assay

Reference Interval:

Test Number	Components	Reference Interval
2004221	N-methyl-D-Aspartate Receptor Antibody, IgG CBA-IFA, Serum with Reflex to Titer	Less than 1:10
2001771	Glutamic Acid Decarboxylase Antibody	0.0-5.0 IU/mL
2013956	CV2.1 Screen by CBA-IFA with Reflex to Titer	Less than 1:10
2004890	Voltage-Gated Potassium Channel (VGKC) Antibody, Serum	Negative: 31 pmol/L or less Indeterminate: 32-87 pmol/L Positive: 88 pmol/L or greater
2007961	PCCA/ANNA by IFA with Reflex to Titer and Immunoblot	Effective August 17, 2020 Purkinje Cell/Neuronal Nuclear IgG Scrn: None Detected Neuronal Nuclear Antibody (ANNA) IFA Titer, IgG: Less than 1:10 Purkinje Cell Antibody, Titer: Less than 1:10 3002917 Neuronal Nuclear Antibodies (Hu, Ri, Yo, Tr/DNER) IgG by Immunoblot, Serum: Refer to report
2008893	Amphiphysin Antibody, IgG	Negative
2013320	Aquaporin-4 Receptor Antibody, IgG by CBA-IFA with Reflex to Titer, Serum	Less than 1:10
2009456	Leucine-Rich, Glioma-Inactivated Protein 1 Antibody, IgG CBA-IFA with Reflex to Titer, Serum	Less than 1:10
2009452	Contactin-Associated Protein-2 Antibody, IgG CBA-IFA with Reflex to Titer, Serum	Less than 1:10
0080009	Acetylcholine Receptor Binding Antibody	Negative: 0.0-0.4 nmol/L Positive: 0.5 nmol/L or greater
3001260	Alpha-amino-3-hydroxy-5-methyl-4-isoxazolepropionic Acid (AMPA) Receptor Antibody, IgG by CBA-IFA with Reflex to Titer, Serum	Less than 1:10
3001270	Gamma Aminobutyric Acid Receptor, Type B (GABA-BR) Antibody, IgG by CBA-IFA with Reflex to Titer, Serum	Less than 1:10
3001277	Myelin Oligodendrocyte Glycoprotein (MOG) Antibody, IgG by CBA-IFA with Reflex to Titer, Serum	Less than 1:10
3002885	SOX1 Antibody, IgG by Immunoblot, Serum	Negative
0092628	P/Q-Type Voltage-Gated Calcium Channel (VGCC) Antibody	Effective November 14, 2011 Negative: 0.0 to 24.5 pmol/L Indeterminate: 24.6 to 45.6 pmol/L Positive: 45.7 pmol/L or greater
3003020	Ganglionic Acetylcholine Receptor Antibody	Negative: 0.0 - 8.4 pmol/L Indeterminate: 8.5 - 11.6 pmol/L Positive: 11.7 pmol/L or greater
3004359	Dipeptidyl Aminopeptidase-Like Protein 6 (DPPX) Antibody, IgG by CBA-IFA With Reflex to Titer, Serum	Effective November 15, 2021 Less than 1:10

2006193 B-Cell Clonality Screening (IgH and IgK) by PCR — BCELL SCRN

Performed: DNA isolation: Sun-Sat; Assay: Varies
Reported: 5-9 days

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3004827 **BCOR by Immunohistochemistry** **BCOR IHC**

Immunohistochemistry Stain Form Recommended (ARUP form #32978)

Methodology: Immunohistochemistry
Performed: Mon-Fri
Reported: 1-3 days

Specimen Required: 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 (but not required) 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.
Storage/Transport Temperature: Room temperature. Also acceptable: Refrigerated. Ship in cooled container during summer months.
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.
Unacceptable Conditions: Specimens submitted with nonrepresentative tissue type. Depleted specimens.
Stability (collection to initiation of testing): Ambient: Indefinitely; Refrigerated: Indefinitely; Frozen: Unacceptable

Interpretive Data:
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.

Note: This test is performed as a stain and return (technical) service only.

CPT Code(s): 88342

New York DOH Approved.

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

2005017 ***BCR-ABL1*, Major (p210), Quantitative** **BCR MAJ**

Performed: **RNA isolation:** Sun-Sat
Assay: Varies
Reported: 3-9 days

2005016 ***BCR-ABL1*, Minor (p190), Quantitative** **BCR MIN**

Performed: **RNA isolation:** Sun-Sat
Assay: Sun, Tue, Thu
Reported: 5-9 days

2005010 ***BCR-ABL1*, Qualitative with Reflex to *BCR-ABL1* Quantitative** **BCR RFLX**

Performed: **RNA isolation:** Sun-Sat
Assay: Varies
Reported: 4-10 days

3000231 *Blastomyces dermatitidis* Antibodies by Immunoassay with Reflex to Immunodiffusion, CSF — BLST R CSF

Methodology: Semi-Quantitative Enzyme-Linked Immunosorbent Assay/Immunodiffusion

Reference Interval:
Effective August 15, 2022

0.9 IV or less	Negative
1.0-1.4 IV	Equivocal
1.5 IV or greater	Positive

Interpretive Data:
Refer to report.

Note: This immunoassay detects total antibodies against yeast-phase antigens from *Blastomyces dermatitidis*.
If *Blastomyces* antibodies are equivocal or positive by immunoassay then *Blastomyces dermatitidis* Antibodies by Immunodiffusion will be added. Additional charges apply.

HOTLINE NOTE: There is a clinically significant charting name change associated with this test.
Change the charting name for component 3000233, Blastomyces Antibody by EIA, CSF from Blastomyces Antibody by EIA, CSF to Blastomyces Antibodies EIA, CSF.

3000236 *Blastomyces dermatitidis* Antibodies by Immunoassay with Reflex to Immunodiffusion, Serum — BLST R SER

Methodology: Semi-Quantitative Enzyme-Linked Immunosorbent Assay/Immunodiffusion

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

Reference Interval:
Effective August 15, 2022

0.9 IV or less	Negative
1.0-1.4 IV	Equivocal
1.5 IV or greater	Positive

Note: This immunoassay detects total antibodies against yeast-phase antigens from *Blastomyces dermatitidis*.
If *Blastomyces* antibodies are equivocal or positive by immunoassay then *Blastomyces dermatitidis* Antibodies by Immunodiffusion will be added. Additional charges apply.

HOTLINE NOTE: There is a clinically significant charting name change associated with this test.
Change the charting name for component 3000237, Blastomyces Antibody by EIA, SER from Blastomyces Antibody by EIA, SER to Blastomyces Antibodies EIA, SER.

0050172 *Blastomyces dermatitidis* Antibodies by Immunodiffusion, Serum — BLASTO PPT

Methodology: Immunodiffusion
Performed: Sun-Sat
Reported: 3-6 days

Specimen Required: Collect: Serum separator tube.
Specimen Preparation: Separate serum from cells ASAP or within 2 hours of collection. Transfer 0.5 mL serum to an ARUP Standard Transport Tube. (Min: 0.15 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Contaminated, hemolyzed, or severely lipemic specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)

Reference Interval: Not Detected

Interpretive Data:
Refer to report.

Note: This immunodiffusion test detects total antibodies to the 'A' antigen of *Blastomyces dermatitidis*.

HOTLINE NOTE: There is a clinically significant charting name change associated with this test.
Change the charting name for component 0050172, Blastomyces dermatitidis Abs, Precipitin from Blastomyces dermatitidis Abs, Precipitin to Blastomyces Antibodies by ID.

2010673 *CALR* (Calreticulin) Exon 9 Mutation Analysis by PCR — CALR

Performed: **DNA isolation:** Sun-Sat
Assay: Varies
Reported: 2-9 days

0095200 *Candida albicans* Antibodies IgA, IgG, and IgM by ELISA — CANDIDA AB

Specimen Required: Collect: Serum separator tube.
Specimen Preparation: Separate serum from cells ASAP or within 2 hours of collection. Transfer 0.5 mL serum to an ARUP Standard Transport Tube (Min: 0.15 mL)
Storage/Transport Temperature: Refrigerated
Unacceptable Conditions: Bacterially contaminated, heat-inactivated, hemolyzed, icteric, lipemic, or turbid specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 6 months

0099344 Cardiolipin Antibodies, IgG and IgM — ANTI-CARD

Performed: Sun-Sat
Reported: 1-2 days

0051162 Cardiolipin Antibodies, IgG, IgM, and IgA — CARD PAN

Performed: Sun-Sat
Reported: 1-2 days

0098358 Cardiolipin Antibody, IgA — CARDIO IGA

Performed: Sun-Sat
Reported: 1-2 days

0050901 **Cardiolipin Antibody, IgG** **AC-IGG**

Performed: Sun-Sat
Reported: 1-2 days

0050902 **Cardiolipin Antibody, IgM** **AC-IGM**

Performed: Sun-Sat
Reported: 1-2 days

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

Performed: Varies
Reported: 3 weeks

Specimen Required: Collect: Lavender or pink (EDTA) or yellow (ACD solution A or B).
Specimen Preparation: Transport 3 mL whole blood. (Min: 3 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Serum or plasma; grossly hemolyzed or frozen specimens; saliva, buccal brush, or swab; FFPE tissue.
Stability (collection to initiation of testing): Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable

Note: Genes Tested: *ABCC9*; *ACTC1*; *ACTN2*; *AGL*; *ALMS1*; *ALPK3*; *BAG3*; *BRAF**; *CACNA1C*; *CALM1**; *CALM2*; *CALM3*; *CASQ2*; *CRYAB*; *CSRP3**; *DES**; *DMD*; *DOLK*; *DSC2*; *DSG2*; *DSP*; *EMD*; *FHL1**; *FKTN**; *FLNC**; *GAA*; *GLA*; *HCN4*; *HRAS*; *JPH2*; *JUP*; *KCNE1*; *KCNE2*; *KCNH2**; *KCNJ2*; *KCNQ1*; *KRAS*; *LAMP2*; *LDB3*; *LMNA*; *MAP2K1*; *MAP2K2**; *MYBPC3*; *MYH6**; *MYH7**; *MYL2*; *MYL3*; *NEXN*; *NKX2-5*; *NRAS*; *PKP2**; *PLN*; *PRDM16*; *PRKAG2**; *PTPN11***; *RAF1**; *RBM20*; *RIT1**; *RYR2*; *SCN5A*; *SOS1**; *TAFAZZIN*; *TCAP*; *TECRL**; *TMEM43*; *TNNC1*; *TNNI3*; *TNNI3K*; *TNNT2*; *TPM1**; *TRDN**; *TTN**; *TTR*; *VCL*

*One or more exons are not covered by sequencing and/or deletion/duplication analysis for the indicated gene; see Additional Technical Information.
**Deletion/duplication detection is not available for this gene.

CPT Code(s): 81403; 81404; 81405; 81406; 81407; 81408; 81479; 81414

2011114 ***CBFB-MYH11* inv(16) Detection, Quantitative** **INV 16 QNT**

Performed: RNA isolation: Sun-Sat
Assay: Varies
Reported: 5-9 days

3004383 **Cerebral Autosomal Dominant Arteriopathy with Subcortical Infarcts and Leukoencephalopathy, CADASIL (*NOTCH3*), Sequencing** **NOTCH3 NGS**

Specimen Required: Collect: Lavender or pink (EDTA) or yellow (ACD solution A or B).
Specimen Preparation: Transport 5 mL whole blood. (Min: 3 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Serum or plasma; grossly hemolyzed or frozen specimens; saliva, buccal brush, or swab; FFPE tissue.
Stability (collection to initiation of testing): Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable

3002286 Cerebral Cavernous Malformation Panel, Sequencing and Deletion/Duplication CCM NGS

Methodology: Massively Parallel Sequencing
Performed: Varies
Reported: 3 weeks

Specimen Required: Collect: Lavender or pink (EDTA) or yellow (ACD solution A or B)
Specimen Preparation: Transport 3 mL whole blood. (Min: 3 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Serum or plasma; grossly hemolyzed or frozen specimens; saliva, buccal brush, or swab; FFPE tissue.
Stability (collection to initiation of testing): Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable

Note: Genes tested: *CCM2**, *KRIT1*, *PDCD10*
* - One or more exons are not covered by deletion/duplication analysis; see additional technical information.

CPT Code(s): 81479

New Test 3005468 Chimerism, Additional Donor STR AD DON

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Additional Technical Information

Methodology: Polymerase Chain Reaction/Fragment Analysis
Performed: Sun-Sat
Reported: 5-9 days after receipt of corresponding Chimerism, Recipient, Pretransplant (3005449) specimen

Specimen Required: Collect: Lavender (EDTA), pink (K2EDTA), or yellow (ACD solution A or B). **OR** Bone marrow in lavender (EDTA). **OR** Buccal brushes from donor.
Specimen Preparation: Transport 2 mL whole blood. (Min: 1 mL) **OR** Transport 1 mL bone marrow. (Min: 1 mL) **OR** Transport 2 buccal brushes in a sterile, dry tube. (Min: 2 brushes)
Storage/Transport Temperature: Refrigerated. Also acceptable: Ambient.
Remarks: **Posttransplant results will be compared to pretransplant recipient and donor genotypes, therefore, donor and recipient samples must be obtained and genotyped before the transplant event occurs.**
Stability (collection to initiation of testing): Room Temperature: 1 week; Refrigerated: 1 month; Frozen: Unacceptable

Interpretive Data:
Background Information: Chimerism, Additional Donor
Indication: Monitoring for bone marrow transplant patients; interval between bone marrow transplantation and testing is necessary for proper interpretation of results.
Methodology: PCR followed by capillary electrophoresis. Specimens are analyzed using 15 autosomal markers (D8S1179, D21S11, D7S820, CSF1PO, D3S1358, THO1, D13S317, D16S539, D2S1338, D19S433, vWa, TPOX, D18S51, D5S818 and FGA) and one gender marker (amelogenin).
Limitations: Diagnostic errors can occur due to rare sequence variations.

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.

CPT Code(s): 81266

New York DOH Approved.

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

New Test **3005462** **Chimerism, Donor** **STR_DONOR**

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Additional Technical Information

Methodology: Polymerase Chain Reaction/Fragment Analysis
Performed: Sun-Sat
Reported: 5-9 days after receipt of corresponding Chimerism, Recipient, Pretransplant (3005449) specimen

Specimen Required: Collect: Lavender (EDTA), pink (K2EDTA), or yellow (ACD solution A or B) **OR** bone marrow in lavender (EDTA) **OR** buccal brushes from donor.
Specimen Preparation: Transport 2 mL whole blood (Min: 1 mL) **OR** 1 mL bone marrow (Min: 1 mL) **OR** 2 buccal brushes in a sterile, dry tube. (Min: 2 brushes)
Storage/Transport Temperature: Refrigerated. Also acceptable: Ambient.
Remarks: **Posttransplant results will be compared to pretransplant recipient and donor genotypes, therefore, donor and recipient samples must be obtained and genotyped before the transplant event occurs.**
Stability (collection to initiation of testing): Room temperature: 1 week; Refrigerated: 1 month; Frozen: Unacceptable

Interpretive Data:
Background Information: Chimerism, Donor
Indication: Monitoring for bone marrow transplant patients; interval between bone marrow transplantation and testing is necessary for proper interpretation of results.
Methodology: PCR followed by capillary electrophoresis. Specimens are analyzed using 15 autosomal markers (D8S1179, D21S11, D7S820, CSF1PO, D3S1358, THO1, D13S317, D16S539, D2S1338, D19S433, vWa, TPOX, D18S51, D5S818 and FGA) and one gender marker (amelogenin).
Limitations: Diagnostic errors can occur due to rare sequence variations.

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.

CPT Code(s): See CPT codes under Chimerism, Recipient, Pretransplant (3005449)

New York DOH Approved.

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

New Test **3005454** **Chimerism, Posttransplant** **STR_POST**

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Additional Technical Information

Methodology: Polymerase Chain Reaction/Fragment Analysis
Performed: Sun-Sat
Reported: 5-10 days

Specimen Required: Collect: Lavender (EDTA), pink (K2EDTA), or yellow (ACD solution A or B). **OR** bone marrow in lavender (EDTA).
Specimen Preparation: Transport 2 mL whole blood (Min: 1 mL) **OR** 1 mL bone marrow (Min: 1 mL).
Storage/Transport Temperature: Refrigerated. Also acceptable: Ambient.
Remarks: **Posttransplant results will be compared to pretransplant recipient and donor genotypes, therefore, donor and recipient specimens must be obtained and genotyped before the transplant event occurs.**
If cell sorting is required, refer to:
Chimerism, Posttransplant, Sorted Cells (T Cells) (3005393) or
Chimerism, Posttransplant, Sorted Cells (B Cells) (3005401) or
Chimerism, Posttransplant, Sorted Cells (CD33+ Cells) (3005409) or
Chimerism, Posttransplant, Sorted Cells (Granulocytes) (3005417) or
Chimerism, Posttransplant, Sorted Cells (Monocytes) (3005425) or
Chimerism, Posttransplant, Sorted Cells (CD34+ Cells) (3005433) or
Chimerism, Posttransplant, Sorted Cells (56+ Cells) (3005441)
Stability (collection to initiation of testing): Room temperature: 1 week; Refrigerated: 1 month; Frozen: Unacceptable

Interpretive Data:
Background Information: Chimerism, Posttransplant
Indication: Monitoring for bone marrow transplant patients; correlation with clinical status and consideration of the interval between bone marrow transplantation and testing is necessary for proper interpretation of results.
Methodology: PCR followed by capillary electrophoresis. Specimens are analyzed using 15 autosomal markers (D8S1179, D21S11, D7S820, CSF1PO, D3S1358, THO1, D13S317, D16S539, D2S1338, D19S433, vWa, TPOX, D18S51, D5S818, and FGA) and one gender marker (amelogenin).
Limit of Detection: 2 percent of minor cell population.
Limitations: Diagnostic errors can occur due to rare sequence variations.

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.

Note: Type Donor: Donor cells only.
Type Recipient: Recipient cells only.
Mixed: Donor and recipient cells present. Semiquantitative results of percentage of donor and recipient cells will be reported.

CPT Code(s): 81267

New York DOH Approved.

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

New Test **3005401** **Chimerism, Posttransplant, Sorted Cells (B Cells)** **STRPOST-B**

Click for Pricing

Cell Isolation Request for Chimerism, Post-Transplant, Sorted Cells

Additional Technical Information

Methodology: Polymerase Chain Reaction/Fragment Analysis/Immunomagnetic Cell Separation, Positive Selection
Performed: Sun-Sat
Reported: 5-10 days

Specimen Required: Collect: Lavender (EDTA), pink (K2EDTA), or yellow (ACD solution A or B). **OR** bone marrow in lavender (EDTA).
Specimen Preparation: Transport 2 mL whole blood. (Min: 2 mL) **OR** 1 mL bone marrow (Min: 1 mL). Ship overnight. If cell sorting is required, specimens should be received within 24 hours of collection for **optimal** isolation of the requested cell line(s).
Storage/Transport Temperature: Refrigerated. Also acceptable: Ambient.
Remarks: **Posttransplant genotypes will be compared to pretransplant recipient and donor genotypes. Therefore, donor and recipient specimens must be obtained and genotyped before the transplant event occurs.** Please provide the results and date of the patient's most recent WBC and differential counts. When submitting bone marrow specimens for cell sorting, please provide information regarding the general cellularity of the patient's bone marrow. See Cell Isolation Request for Chimerism, Posttransplant, Sorted Cells.
Unacceptable Conditions: Clotted or hemolyzed specimens.
Stability (collection to initiation of testing): Ambient: 72 hours; Refrigerated: 72 hours; Frozen: Unacceptable

Interpretive Data:
Background Information: Chimerism, Posttransplant, Sorted Cells (B Cells)
Indication: Monitoring for bone marrow transplant patients; correlation with clinical status and consideration of the interval between bone marrow transplantation and testing is necessary for proper interpretation of results.
Methodology: PCR followed by capillary electrophoresis. Specimens are analyzed using 15 autosomal markers (D8S1179, D21S11, D7S820, CSF1PO, D3S1358, THO1, D13S317, D16S539, D2S1338, D19S433, vWa, TPOX, D18S51, D5S818, and FGA) and one gender marker (amelogenin).
Limit of Detection: 2 percent of minor cell population.
Limitations: Diagnostic errors can occur due to rare sequence variations.

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.

Note: Type Donor: Donor cells only.
Type Recipient: Recipient cells only.
Mixed: Donor and recipient cells present. Semiquantitative results of percentage of donor and recipient cells will be reported.

CPT Code(s): 81268; 88184

New York DOH Approved.

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

New Test **3005441** **Chimerism, Posttransplant, Sorted Cells (CD 56+ Cells)** **STRPOST-56**
Click for Pricing

Cell Isolation Request for Chimerism, Post-Transplant, Sorted Cells

Additional Technical Information

Methodology: Polymerase Chain Reaction/Fragment Analysis/Fluorescence-activated Cell Sorting
Performed: Sun-Sat
Reported: 5-12 days

Specimen Required: Collect: Lavender (EDTA), pink (K2EDTA), or yellow (ACD solution A or B). **OR** bone marrow in lavender (EDTA).
Specimen Preparation: Transport 2 mL whole blood. (Min: 2 mL) **OR** 1 mL bone marrow (Min: 1 mL). Ship overnight. If cell sorting is required, specimens should be received within 24 hours of collection for **optimal** isolation of the requested cell line(s).
Storage/Transport Temperature: Refrigerated. Also acceptable: Ambient.
Remarks: **Posttransplant genotypes will be compared to pretransplant recipient and donor genotypes. Therefore, donor and recipient specimens must be obtained and genotyped before the transplant event occurs.** Please provide the results and date of the patient's most recent WBC and differential counts. When submitting bone marrow specimens for cell sorting, please provide information regarding the general cellularity of the patient's bone marrow. See Cell Isolation Request for Chimerism, Posttransplant, Sorted Cells.
Unacceptable Conditions: Clotted or hemolyzed specimens.
Stability (collection to initiation of testing): Room temperature: 72 hours; Refrigerated: 72 hours; Frozen: Unacceptable

Interpretive Data:
Background Information: Chimerism, Posttransplant, Sorted Cells (CD56+ Cells)
Indication: Monitoring for bone marrow transplant patients; correlation with clinical status and consideration of the interval between bone marrow transplantation and testing is necessary for proper interpretation of results.
Methodology: PCR followed by capillary electrophoresis. Specimens are analyzed using 15 autosomal markers (D8S1179, D21S11, D7S820, CSF1PO, D3S1358, THO1, D13S317, D16S539, D2S1338, D19S433, vWa, TPOX, D18S51, D5S818, and FGA) and one gender marker (amelogenin).
Limit of Detection: 2 percent of minor cell population.
Limitations: Diagnostic errors can occur due to rare sequence variations.

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.

Note: Type Donor: Donor cells only.
Type Recipient: Recipient cells only.
Mixed: Donor and recipient cells present. Semiquantitative results of percentage of donor and recipient cells will be reported.

CPT Code(s): 81268; 88184; 88185

New York DOH Approved.

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

New Test **3005409** **Chimerism, Posttransplant, Sorted Cells (CD33+ Cells)** **STRPOST-33**
Click for Pricing

Cell Isolation Request for Chimerism, Post-Transplant, Sorted Cells

Additional Technical Information

Methodology: Polymerase Chain Reaction/Fragment Analysis/Immunomagnetic Cell Separation, Positive Selection
Performed: Sun-Sat
Reported: 5-10 days

Specimen Required: Collect: Lavender (EDTA), pink (K2EDTA), or yellow (ACD solution A or B). **OR** bone marrow in lavender (EDTA).
Specimen Preparation: Transport 2 mL whole blood. (Min: 2 mL) **OR** 1 mL bone marrow (Min: 1 mL). Ship overnight. If cell sorting is required, specimens should be received within 24 hours of collection for **optimal** isolation of the requested cell line(s).
Storage/Transport Temperature: Refrigerated. Also acceptable: Ambient.
Remarks: **Posttransplant genotypes will be compared to pretransplant recipient and donor genotypes. Therefore, donor and recipient specimens must be obtained and genotyped before the transplant event occurs.** Please provide the results and date of the patient's most recent WBC and differential counts. When submitting bone marrow specimens for cell sorting, please provide information regarding the general cellularity of the patient's bone marrow. See Cell Isolation Request for Chimerism, Posttransplant, Sorted Cells.
Unacceptable Conditions: Clotted or hemolyzed specimens.
Stability (collection to initiation of testing): Ambient: 72 hours; Refrigerated: 72 hours; Frozen: Unacceptable

Interpretive Data:
Background Information: Chimerism, Posttransplant, Sorted Cells (CD33+ Cells)
Indication: Monitoring for bone marrow transplant patients; correlation with clinical status and consideration of the interval between bone marrow transplantation and testing is necessary for proper interpretation of results.
Methodology: PCR followed by capillary electrophoresis. Specimens are analyzed using 15 autosomal markers (D8S1179, D21S11, D7S820, CSF1PO, D3S1358, THO1, D13S317, D16S539, D2S1338, D19S433, vWa, TPOX, D18S51, D5S818, and FGA) and one gender marker (amelogenin).
Limit of Detection: 2 percent of minor cell population.
Limitations: Diagnostic errors can occur due to rare sequence variations.

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.

Note: Type Donor: Donor cells only.
Type Recipient: Recipient cells only.
Mixed: Donor and recipient cells present. Semiquantitative results of percentage of donor and recipient cells will be reported.

CPT Code(s): 81268; 88184

New York DOH Approved.

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

New Test **3005433** **Chimerism, Posttransplant, Sorted Cells (CD34+ Cells)** **STRPOST-34**
Click for Pricing

Cell Isolation Request for Chimerism, Post-Transplant, Sorted Cells

Additional Technical Information

Methodology: Polymerase Chain Reaction/Fragment Analysis/Fluorescence-activated Cell Sorting
Performed: Sun-Sat
Reported: 5-12 days

Specimen Required: Collect: Lavender (EDTA), pink (K2EDTA), or yellow (ACD solution A or B). **OR** bone marrow in lavender (EDTA).
Specimen Preparation: Transport 2 mL whole blood. (Min: 2 mL) **OR** 1 mL bone marrow (Min: 1 mL). Ship overnight. If cell sorting is required, specimens should be received within 24 hours of collection for **optimal** isolation of the requested cell line(s).
Storage/Transport Temperature: Refrigerated. Also acceptable: Ambient.
Remarks: **Posttransplant genotypes will be compared to pretransplant recipient and donor genotypes. Therefore, donor and recipient specimens must be obtained and genotyped before the transplant event occurs.** Please provide the results and date of the patient's most recent WBC and differential counts. When submitting bone marrow specimens for cell sorting, please provide information regarding the general cellularity of the patient's bone marrow. See Cell Isolation Request for Chimerism, Posttransplant, Sorted Cells.
Unacceptable Conditions: Clotted or hemolyzed specimens.
Stability (collection to initiation of testing): Room temperature: 72 hours; Refrigerated: 72 hours; Frozen: Unacceptable

Interpretive Data:
Background Information: Chimerism, Posttransplant, Sorted Cells (CD34+ Cells)
Indication: Monitoring for bone marrow transplant patients; correlation with clinical status and consideration of the interval between bone marrow transplantation and testing is necessary for proper interpretation of results.
Methodology: PCR followed by capillary electrophoresis. Specimens are analyzed using 15 autosomal markers (D8S1179, D21S11, D7S820, CSF1PO, D3S1358, THO1, D13S317, D16S539, D2S1338, D19S433, vWa, TPOX, D18S51, D5S818, and FGA) and one gender marker (amelogenin).
Limit of Detection: 2 percent of minor cell population.
Limitations: Diagnostic errors can occur due to rare sequence variations.

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.

Note: Type Donor: Donor cells only.
Type Recipient: Recipient cells only.
Mixed: Donor and recipient cells present. Semiquantitative results of percentage of donor and recipient cells will be reported.

CPT Code(s): 81268; 88184; 88185

New York DOH Approved.

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

New Test **3005417** **Chimerism, Posttransplant, Sorted Cells (Granulocytes)** **STRPOST-GR**

Click for Pricing

Cell Isolation Request for Chimerism, Post-Transplant, Sorted Cells

Additional Technical Information

Methodology: Polymerase Chain Reaction/Fragment Analysis/Immunomagnetic Cell Separation, Positive Selection
Performed: Sun-Sat
Reported: 5-10 days

Specimen Required: Collect: Lavender (EDTA), pink (K2EDTA), or yellow (ACD solution A or B). **OR** bone marrow in lavender (EDTA).
Specimen Preparation: Transport 2 mL whole blood. (Min: 2 mL) **OR** 1 mL bone marrow (Min: 1 mL). Ship overnight. If cell sorting is required, specimens should be received within 24 hours of collection for **optimal** isolation of the requested cell line(s).
Storage/Transport Temperature: Refrigerated. Also acceptable: Ambient.
Remarks: **Posttransplant genotypes will be compared to pretransplant recipient and donor genotypes. Therefore, donor and recipient specimens must be obtained and genotyped before the transplant event occurs.** Please provide the results and date of the patient's most recent WBC and differential counts. When submitting bone marrow specimens for cell sorting, please provide information regarding the general cellularity of the patient's bone marrow. See Cell Isolation Request for Chimerism, Posttransplant, Sorted Cells.
Unacceptable Conditions: Clotted or hemolyzed specimens.
Stability (collection to initiation of testing): Ambient: 72 hours; Refrigerated: 72 hours; Frozen: Unacceptable

Interpretive Data:
Background Information: Chimerism, Posttransplant, Sorted Cells (Granulocytes)
Indication: Monitoring for bone marrow transplant patients; correlation with clinical status and consideration of the interval between bone marrow transplantation and testing is necessary for proper interpretation of results.
Methodology: PCR followed by capillary electrophoresis. Specimens are analyzed using 15 autosomal markers (D8S1179, D21S11, D7S820, CSF1PO, D3S1358, THO1, D13S317, D16S539, D2S1338, D19S433, vWa, TPOX, D18S51, D5S818, and FGA) and one gender marker (amelogenin).
Limit of Detection: 2 percent of minor cell population.
Limitations: Diagnostic errors can occur due to rare sequence variations.

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.

Note: Type Donor: Donor cells only.
Type Recipient: Recipient cells only.
Mixed: Donor and recipient cells present. Semiquantitative results of percentage of donor and recipient cells will be reported.

CPT Code(s): 81268; 88184

New York DOH Approved.

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

New Test **3005425** **Chimerism, Posttransplant, Sorted Cells (Monocytes)** **STRPOST-MO**

Click for Pricing

Cell Isolation Request for Chimerism, Post-Transplant, Sorted Cells

Additional Technical Information

Methodology: Polymerase Chain Reaction/Fragment Analysis/Fluorescence-activated Cell Sorting
Performed: Sun-Sat
Reported: 5-12 days

Specimen Required: Collect: Lavender (EDTA), pink (K2EDTA), or yellow (ACD solution A or B). **OR** bone marrow in lavender (EDTA).
Specimen Preparation: Transport 2 mL whole blood. (Min: 2 mL) **OR** 1 mL bone marrow (Min: 1 mL). Ship overnight. If cell sorting is required, specimens should be received within 24 hours of collection for **optimal** isolation of the requested cell line(s).
Storage/Transport Temperature: Refrigerated. Also acceptable: Ambient.
Remarks: **Posttransplant genotypes will be compared to pretransplant recipient and donor genotypes. Therefore, donor and recipient specimens must be obtained and genotyped before the transplant event occurs.** Please provide the results and date of the patient's most recent WBC and differential counts. When submitting bone marrow specimens for cell sorting, please provide information regarding the general cellularity of the patient's bone marrow. See Cell Isolation Request for Chimerism, Posttransplant, Sorted Cells.
Unacceptable Conditions: Clotted or hemolyzed specimens.
Stability (collection to initiation of testing): Room temperature: 72 hours; Refrigerated: 72 hours; Frozen: Unacceptable

Interpretive Data:
Background Information: Chimerism, Posttransplant, Sorted Cells (Monocytes)
Indication: Monitoring for bone marrow transplant patients; correlation with clinical status and consideration of the interval between bone marrow transplantation and testing is necessary for proper interpretation of results.
Methodology: PCR followed by capillary electrophoresis. Specimens are analyzed using 15 autosomal markers (D8S1179, D21S11, D7S820, CSF1PO, D3S1358, THO1, D13S317, D16S539, D2S1338, D19S433, vWa, TPOX, D18S51, D5S818, and FGA) and one gender marker (amelogenin).
Limit of Detection: 2 percent of minor cell population.
Limitations: Diagnostic errors can occur due to rare sequence variations.

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.

Note: Type Donor: Donor cells only.
Type Recipient: Recipient cells only.
Mixed: Donor and recipient cells present. Semiquantitative results of percentage of donor and recipient cells will be reported.

CPT Code(s): 81268; 88184; 88185

New York DOH Approved.

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

New Test **3005393** **Chimerism, Posttransplant, Sorted Cells (T Cells)** **STRPOST-T**

Click for Pricing

Cell Isolation Request for Chimerism, Post-Transplant, Sorted Cells

Additional Technical Information

Methodology: Polymerase Chain Reaction/Fragment Analysis/Immunomagnetic Cell Separation, Positive Selection
Performed: Sun-Sat
Reported: 5-10 days

Specimen Required: Collect: Lavender (EDTA), pink (K2EDTA), or yellow (ACD solution A or B). **OR** bone marrow in lavender (EDTA).
Specimen Preparation: Transport 2 mL whole blood. (Min: 2 mL) **OR** 1 mL bone marrow (Min: 1 mL). Ship overnight. If cell sorting is required, specimens should be received within 24 hours of collection for **optimal** isolation of the requested cell line(s).
Storage/Transport Temperature: Refrigerated. Also acceptable: Ambient.
Remarks: **Posttransplant genotypes will be compared to pretransplant recipient and donor genotypes. Therefore, donor and recipient specimens must be obtained and genotyped before the transplant event occurs.** Please provide the results and date of the patient's most recent WBC and differential counts. When submitting bone marrow specimens for cell sorting, please provide information regarding the general cellularity of the patient's bone marrow. See Cell Isolation Request for Chimerism, Posttransplant, Sorted Cells.
Unacceptable Conditions: Clotted or hemolyzed specimens.
Stability (collection to initiation of testing): Ambient: 72 hours; Refrigerated: 72 hours; Frozen: Unacceptable

Interpretive Data:
Background Information: Chimerism, Posttransplant, Sorted Cells (T Cells)
Indication: Monitoring for bone marrow transplant patients; correlation with clinical status and consideration of the interval between bone marrow transplantation and testing is necessary for proper interpretation of results.
Methodology: PCR followed by capillary electrophoresis. Specimens are analyzed using 15 autosomal markers (D8S1179, D21S11, D7S820, CSF1PO, D3S1358, THO1, D13S317, D16S539, D2S1338, D19S433, vWa, TPOX, D18S51, D5S818, and FGA) and one gender marker (amelogenin).
Limit of Detection: 2 percent of minor cell population.
Limitations: Diagnostic errors can occur due to rare sequence variations.

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.

Note: Type Donor: Donor cells only.
Type Recipient: Recipient cells only.
Mixed: Donor and recipient cells present. Semiquantitative results of percentage of donor and recipient cells will be reported.

CPT Code(s): 81268; 88184

New York DOH Approved.

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

New Test **3005449** **Chimerism, Recipient, Pretransplant** **STR_PRE**
Click for Pricing

Additional Technical Information

Methodology: Polymerase Chain Reaction/Fragment Analysis
Performed: Sun-Sat
Reported: varies

Specimen Required: Collect: Lavender (EDTA), pink (K2EDTA), or yellow (ACD solution A or B). **OR** bone marrow in lavender (EDTA). **OR** buccal brushes from recipient.
Specimen Preparation: Transport 2 mL whole blood (Min: 1 mL) **OR** 1 mL bone marrow (Min: 1 mL) **OR** 2 buccal brushes in a sterile, dry tube. (Min: 2 brushes)
Storage/Transport Temperature: Refrigerated. Also acceptable: Ambient.
Remarks: **Posttransplant results will be compared to pretransplant recipient and donor genotypes, therefore, donor and recipient specimens must be obtained and genotyped before the transplant event occurs. If transplant event occurred prior to specimen collection, dry buccal brushes (not bloody) are acceptable.**
Stability (collection to initiation of testing): Room temperature: 1 week; Refrigerated: 1 month; Frozen: Unacceptable

Interpretive Data:
Background Information: Chimerism, Recipient Pretransplant
Indication: Monitoring for bone marrow transplant patients; correlation with clinical status and consideration of the interval between bone marrow transplantation and testing is necessary for proper interpretation of results.
Methodology: PCR followed by capillary electrophoresis. Specimens are analyzed using 15 autosomal markers (D8S1179, D21S11, D7S820, CSF1PO, D3S1358, THO1, D13S317, D16S539, D2S1338, D19S433, vWa, TPOX, D18S51, D5S818 and FGA) and one gender marker (amelogenin).
Limitations: Diagnostic errors can occur due to rare sequence variations.

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.

CPT Code(s): 81265

New York DOH Approved.

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

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

Methodology: Massively Parallel Sequencing
Performed: Varies
Reported: 3 weeks

Specimen Required: Collect: Lavender or pink (EDTA) or yellow (ACD solution A or B).
Specimen Preparation: Transport 3 mL whole blood. (Min: 2 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Serum or plasma; grossly hemolyzed or frozen specimens; saliva, buccal brush, or swab; FFPE tissue.
Stability (collection to initiation of testing): Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable

Note: Genes Tested: *ABCD4**; *ACSF3*; *ADK*; *AHCY*; *AMN**; *CBLIF*; *CBS**; *CD320*; *CTH*; *CUBN*; *HCFC1*; *IVD**; *LMBRD1*; *MAT1A*; *MCEE*; *MLYCD*; *MMAA*; *MMAB*; *MMACHC*; *MMADHC*; *MMUT*; *MTHFR*; *MTR*; *MTRR*; *PCCA**; *PCCB*; *SUCLA2*; *SUCLG1*; *TCN2*

*One or more exons are not covered by sequencing and/or deletion/duplication analysis for the indicated gene; see additional technical information

CPT Code(s): 81404; 81405; 81406; 81479

3001986	**Contactin-Associated Protein-2 Antibody, IgG CBA-IFA with Reflex to Titer, CSF**	**CASPR2GCSF**

Methodology: Semi-Quantitative Cell-Based Indirect Fluorescent Antibody

2009452	**Contactin-Associated Protein-2 Antibody, IgG CBA-IFA with Reflex to Titer, Serum**	**CASPR2 IGG**

Methodology: Semi-Quantitative Cell-Based Indirect Fluorescent Antibody

2012849	Critically Ill Rapid Genetic Diagnosis Panel, ~5000 Genes	**RAPID SEQ**

HOTLINE NOTE: There is a component change associated with this test.
Remove component 2012850, Rapid Sequencing Specimen
There is a clinically significant charting name change associated with this test.
Change the charting name for component 2012851, Rapid Sequencing Interpretation from Rapid Sequencing Interpretation to Rapid Panel Interpretation.

2013956	**CV2.1 Screen by CBA-IFA with Reflex to Titer**	**CV2.1 SCRN**

Methodology: Semi-Quantitative Cell-Based Indirect Fluorescent Antibody

3002257	**CV2.1 Screen by CBA-IFA with Reflex to Titer, CSF**	**CV2.1 CSF**

Methodology: Semi-Quantitative Cell-Based Indirect Fluorescent Antibody

3001513	***CYP2D6***	**2D6GENO**

Interpretive Data: Refer to report.

Note: Whole blood is the preferred specimen type. Saliva samples that yield inadequate DNA quality and/or quantity will be reported as inconclusive if test performance does not meet laboratory-determined criteria for reporting. Saliva is only validated for the OpenArray and CNV portions of testing and not the long-range PCR/duplication testing. Long-range PCR/duplication testing will not be performed for saliva samples.

If long-range PCR/duplication testing is performed, additional charges will apply. Approximately less than 5% of samples require 2D6 copy number determination.

CPT Code(s): 81226; if reflexed, add 81479

3001524	**Cytochrome P450 Genotyping Panel**	**CYP PANEL**

Interpretive Data: Refer to report.

Note: Whole blood is the preferred specimen type. Saliva samples that yield inadequate DNA quality and/or quantity will be reported as inconclusive if test performance does not meet laboratory-determined criteria for reporting. Saliva is only validated for the OpenArray and CNV portions of testing and not the long-range PCR/duplication testing. Long-range PCR/duplication testing will not be performed for saliva samples.

If long-range PCR/duplication testing is performed, additional charges will apply. Approximately less than 5% of samples require 2D6 copy number determination.

CPT Code(s): 81225; 81226; 81227; 81230; 81231; 81479; if reflexed, add 81479

3004255 Cytochrome P450 Genotyping Panel, with GeneDose Access — CYP GD

Interpretive Data: Refer to report.

Note: Whole blood is the preferred specimen type. Saliva samples that yield inadequate DNA quality and/or quantity will be reported as inconclusive if test performance does not meet laboratory-determined criteria for reporting. Saliva is only validated for the OpenArray and CNV portions of testing and not the long-range PCR/duplication testing. Long-range PCR/duplication testing will not be performed for saliva samples.

If long-range PCR/duplication testing is performed, additional charges will apply. Approximately less than 5% of samples require 2D6 copy number determination.

CPT Code(s): 81225; 81226; 81227; 81230; 81231; 81479; if reflexed, add 81479

3003144 Deletion/Duplication Analysis by MLPA — DELDUP

Note:
Deletion/duplication analysis by MLPA is offered for the following genes: *F8, HBB, MLH1/MSH2, MSH6, SDHB, SDHC, SDHD, SHOX*

HOTLINE NOTE: There is a reflexive pattern change associated with this test.
Remove reflex from 0051735, CFTR Deletion/Duplication Bill
Remove reflex from 3003147, ABCD1 Deletion/Duplication BILL
Remove reflex from 3003149, ALPORT Del/Dup BILL (COL4A5)
Remove reflex from 3003151, APC Deletion/Duplication BILL
Remove reflex from 3003153, ATP7A Deletion/Duplication BILL
Remove reflex from 3003155, BMPR1A Deletion/Duplication BILL
Remove reflex from 3003157, BRCA1 Deletion/Duplication BILL (BRCA1)
Remove reflex from 3003159, BRCA2 Deletion/Duplication BILL (BRCA2)
Remove reflex from 3003161, EDS-VI Deletion/Duplication BILL (PLOD1)
Remove reflex from 3003163, F9 Deletion/Duplication BILL
Remove reflex from 3003165, FBN1 Deletion/Duplication BILL
Remove reflex from 3003167, HHT Del/Dup BILL (ACVRL1 and ENG)
Remove reflex from 3003169, LS Deletion/Duplication BILL (SPRED1)
Remove reflex from 3003171, MEN1 Deletion/Duplication BILL
Remove reflex from 3003181, NF1 Deletion/Duplication BILL
Remove reflex from 3003183, OTC Deletion/Duplication BILL
Remove reflex from 3003185, PCD Deletion/Duplication BILL (SLC22A5)
Remove reflex from 3003191, PRSS1 Deletion/Duplication BILL
Remove reflex from 3003193, PTEN Deletion/Duplication BILL
Remove reflex from 3003195, RASA1 Deletion/Duplication BILL
Remove reflex from 3003197, RETT Deletion/Duplication BILL (MECP2)
Remove reflex from 3003203, SMAD4 Deletion/Duplication BILL
Remove reflex from 3003205, SPINK1 Deletion/Duplication BILL
Remove reflex from 3003207, STK11 Deletion/Duplication BILL
Remove reflex from 3003209, TP53 Deletion/Duplication BILL
Remove reflex from 3003211, VHL Deletion/Duplication BILL
Remove reflex from 3003213, VLCAD Deletion/Duplication BILL (ACADVL)

3004512 Dipeptidyl Aminopeptidase-Like Protein 6 (DPPX) Antibody, IgG by CBA-IFA With Reflex to Titer, CSF — DPPX CSF

Methodology: Semi-Quantitative Cell-Based Indirect Fluorescent Antibody

3004359 Dipeptidyl Aminopeptidase-Like Protein 6 (DPPX) Antibody, IgG by CBA-IFA With Reflex to Titer, Serum — DPPX SER

Methodology: Semi-Quantitative Cell-Based Indirect Fluorescent Antibody

0050595 **Diphtheria & Tetanus Antibodies, IgG** **D/T**

Performed: Sun-Sat
Reported: 1-3 days

0050215 **Double-Stranded DNA (dsDNA) Antibody, IgG by ELISA with Reflex to dsDNA Antibody, IgG by IFA** **DNA**

Specimen Required: Collect: Serum separator tube.
Specimen Preparation: Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.5 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Plasma. Contaminated, hemolyzed, or severely lipemic specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 month (avoid repeated freeze/thaw cycles)

2002693 **Double-Stranded DNA (dsDNA) Antibody, IgG by IFA (using *Crithidia luciliae)*** **DNA IFA**

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

New Test **3005060** **Drug Profile, Expanded Targeted Panel by LC-MS/MS, Urine** **COMPDRUGUR**
Click for Pricing

Methodology: Qualitative Liquid Chromatography-Tandem Mass Spectrometry
Performed: Mon., Fri.
Reported: 1-7 days

Specimen Required: Collect: Random urine with no additives. Fresh morning catch if possible. If an acute ingestion has taken place, collecting the specimen too early after the ingestion may produce negative results. It is suggested to wait at least 4 to 6 hours post ingestion to obtain the specimen for best results.
Specimen Preparation: Transport 4 mL urine. (Min: 2 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Specimens exposed to repeated freeze/thaw cycles.
Stability (collection to initiation of testing): Ambient: 1 days; Refrigerated: 2 weeks; Frozen: 2 months

Reference Interval: By report

Interpretive Data:
The drug screen panel can detect 127 drugs and drug metabolites by LC-MS/MS. The absence of expected drug(s) and/or drug metabolite(s) may indicate non-compliance, inappropriate timing of specimen collection relative to drug administration, poor drug absorption, diluted/adulterated urine, or limitations of testing. The concentration at which the screening test can detect a drug or metabolite varies within a drug class. The concentration value must be greater than or equal to the cutoff to be reported as positive. Interpretive questions should be directed to the laboratory.

For medical purposes only; not valid for forensic use

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.

CPT Code(s): 80323; 80325; 80329; 80334; 80337; 80338; 80341; 80344; 80347; 80348; 80353; 80354; 80355; 80356; 80357; 80359; 80360; 80361; 80363; 80365; 80366; 80368; 80370; 80371; 80372; 80373; 80377; 83992 (Alt code: GO482)

New York DOH Approved.

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

New Test **3004833** **Drug Profile, Expanded Targeted Panel by LC-MS/MS, Serum/Plasma** **COMPDRUGSP**

Click for Pricing

Methodology: Qualitative Liquid Chromatography-Tandem Mass Spectrometry
Performed: Mon, Fri
Reported: 1-8 days

Specimen Required: Collect: Plain red (no additives). If an acute ingestion has taken place, it is preferable to obtain the specimen between 2 and 6 hours after ingestion or when the patient is symptomatic. Samples collected in plain red, grey-top, sodium/potassium heparin (lavender), or pink (K2EDTA) are acceptable.
Specimen Preparation: Remove plasma from cells ASAP or within 2 hours of collection. Transfer 4 mL plasma to an ARUP Standard Transport Tube. (Min: 2 mL) Also acceptable: Serum.
Storage/Transport Temperature: Refrigerated.
Separator tubes or light blue (sodium citrate). Specimens exposed to repeated freeze/thaw cycles. Post-mortem specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: 24 hours; Refrigerated: 2 weeks; Frozen: 2 months.

Reference Interval: By report

Interpretive Data:
(Serum/Plasma)
The drug screen panel can detect 127 drugs and drug metabolites by LC-MS/MS. The absence of expected drug(s) and/or drug metabolite(s) may indicate non-compliance, inappropriate timing of specimen collection relative to drug administration, poor drug absorption, or limitations of testing. The concentration at which the screening test can detect a drug or metabolite varies within a drug class. The concentration value must be greater than or equal to the cutoff to be reported as positive. Interpretive questions should be directed to the laboratory.

For medical purposes only; not valid for forensic use

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.

CPT Code(s): 80323; 80325; 80329; 80334; 80337; 80338; 80341; 80344; 80347; 80348; 80353; 80354; 80355; 80356; 80357; 80359; 80360; 80361; 80363; 80365; 80366; 80368; 80370; 80371; 80372; 80373; 80377; 83992 (Alt code: GO482)

New York DOH Approved.

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

3001585 **Early-Onset Alzheimer's Panel, Sequencing** **ALZ NGS**

Performed: Varies
Reported: 3 weeks

Specimen Required: Collect: Lavender or pink (EDTA) or yellow (ACD solution A or B).
Specimen Preparation: Transport 3 mL whole blood. (Min: 2 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Serum or plasma; grossly hemolyzed or frozen specimens; saliva, buccal brush, or swab; FFPE tissue.
Stability (collection to initiation of testing): Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable

New Test **3004764** **Fetal Aneuploidy Screening** **FAS**

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History Form for Fetal Aneuploidy Screening - REQUIRED

Additional Technical Information

Optional Informed Consent Form for Fetal Aneuploidy Screening

Methodology: Targeted Sequencing with SNPs
Performed: Varies
Reported: 12-14 days

Specimen Required: Collect: Maternal whole blood in Cell-Free DNA BCT tube. A kit must be ordered prior to specimen collection (ARUP Supply #50223) available online through eSupply using ARUP Connect™ or by contacting ARUP Client Services at (800) 522-2787.
Specimen Preparation: Transport 20 mL maternal blood in Cell-Free DNA BCT tube. (Min: 16 mL)
Storage/Transport Temperature: Room temperature.
Remarks: A patient history form is required prior to testing.
Stability (collection to initiation of testing): Ambient: 5 days; Refrigerated: Unacceptable; Frozen: Unacceptable

Reference Interval: By report

Interpretive Data:
Refer to report.

Note: Testing utilizes a single-nucleotide polymorphism (SNP)/informatics-based approach to detect fetal copy number for the five chromosomes responsible for most live-birth aneuploidies (chromosomes 13, 18, 21, X, Y, and triploidy). This is a screening test to help identify fetuses at risk for Down Syndrome, trisomy 18, trisomy 13, and Turner Syndrome. Test should not be considered diagnostic. It is recommended that any positive result be confirmed by amniocentesis or CVS.

CPT Code(s): 81420

New York DOH Approved.

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

New Test **3004778** **Fetal Aneuploidy Screening with 22q11.2 Microdeletion** **FAS 22**

Click for Pricing

Methodology: Targeted Sequencing with SNPs
Performed: Sun-Sat: Varies
Reported: 12-14 days

Specimen Required: Collect: Maternal whole blood in Cell-Free DNA BCT tube. A kit must be ordered prior to specimen collection (ARUP Supply #50223) available online through eSupply using ARUP Connect™ or by contacting ARUP Client Services at (800) 522-2787.
Specimen Preparation: Transport 20 mL maternal blood in Cell-Free DNA BCT tube. (Min: 16 mL)
Storage/Transport Temperature: Room temperature.
Remarks: Patient history form is required prior to testing.
Stability (collection to initiation of testing): Ambient: 5 days; Refrigerated: Unacceptable; Frozen: Unacceptable

Reference Interval: By report

Interpretive Data:
Refer to report.

Note: Testing utilizes a single-nucleotide polymorphism (SNP)/informatics-based approach to detect fetal copy number for the five chromosomes responsible for most live-birth aneuploidies (chromosomes 13, 18, 21, X, Y, and triploidy) and certain specific microdeletion syndromes (see current list of microdeletion syndromes listed under "Ordering Recommendations"). This is a screening test to help identify fetuses at risk for Down syndrome, trisomy 18, trisomy 13, and Turner syndrome, as well as fetuses affected with the specified microdeletion syndromes listed. Test should not be considered diagnostic. All positive results should be confirmed by amniocentesis or CVS.

CPT Code(s): 81420; 81422

New York DOH Approved.

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

New Test **3004781** **Fetal Aneuploidy Screening with Microdeletions** **FAS MD**

Click for Pricing

History Form for Fetal Aneuploidy Screening REQUIRED

Additional Technical Information

Optional Informed Consent Form for Fetal Aneuploidy Screening

Methodology: Targeted Sequencing with SNPs
Performed: Varies
Reported: 12-14 days

Specimen Required: Collect: Maternal whole blood in Cell-Free DNA BCT tube. A kit must be ordered prior to specimen collection (ARUP Supply #50223) available online through eSupply using ARUP Connect™ or by contacting ARUP Client Services at (800) 522-2787.
Specimen Preparation: Transport 20 mL maternal blood in Cell-Free DNA BCT tube. (Min: 16 mL)
Storage/Transport Temperature: Room temperature.
Remarks: Patient history form is required prior to testing.
Stability (collection to initiation of testing): Ambient: 5 days; Refrigerated: Unacceptable; Frozen: Unacceptable

Reference Interval: By report

Interpretive Data:
Refer to report.

Note: Testing utilizes a single-nucleotide polymorphism (SNP)/informatics-based approach to detect fetal copy number for the five chromosomes responsible for most live-birth aneuploidies (chromosomes 13, 18, 21, X, Y, and triploidy) and certain specific microdeletion syndromes (see current list of microdeletion syndromes listed under "Ordering Recommendations"). This is a screening test to help identify fetuses at risk for Down syndrome, trisomy 18, trisomy 13, and Turner syndrome, as well as fetuses affected with the specified microdeletion syndromes listed. Test should not be considered diagnostic. All positive results should be confirmed by amniocentesis or CVS.

CPT Code(s): 81420; 81422

New York DOH Approved.

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

0050164 Fungal Antibodies by Immunodiffusion FUNG PPT

Performed: Sun-Sat
Reported: 3-6 days

Specimen Required: Collect: Serum separator tube (SST)
Specimen Preparation: Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.4 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."
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Contaminated, hemolyzed, or severely lipemic specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)

Reference Interval:

Test Number	Components	Reference Interval
0050171	*Aspergillus* Antibodies by Immunodiffusion	Not Detected
0050172	*Blastomyces dermatitidis* Antibodies by Immunodiffusion, Serum	Not Detected
	Coccidioides Antibody by ID	Not Detected
0050174	*Histoplasma* Antibodies by Immunodiffusion	Not Detected

Interpretive Data:
Refer to report.

Note: This immunodiffusion test detects antibodies to *Aspergillus*, *Coccidioides*, *Histoplasma*, and *Blastomyces*.

HOTLINE NOTE: There is a clinically significant charting name change associated with this test.
Change the charting name for component 0050171, Aspergillus spp. Abs, Precipitin from Aspergillus spp. Abs, Precipitin to Aspergillus Antibodies by ID.
Change the charting name for component 0050172, Blastomyces dermatitidis Abs, Precipitin from Blastomyces dermatitidis Abs, Precipitin to Blastomyces Antibodies by ID.
Change the charting name for component 0050174, Histoplasma spp. Abs, Precipitin from Histoplasma spp. Abs, Precipitin to Histoplasma Antibodies by ID.

3000230 Fungal Antibodies with Reflex to *Blastomyces dermatitidis* Antibodies by Immunodiffusion, CSF — FUNG R CSF

Methodology: Semi-Quantitative Complement Fixation/Semi-Quantitative Enzyme-Linked Immunosorbent Assay/Immunodiffusion

Reference Interval:

Test Number	Components	Reference Interval
	Aspergillus Antibodies, CSF by CF	Less than 1:2
3000231	*Blastomyces dermatitidis* Antibodies by Immunoassay with Reflex to Immunodiffusion, CSF	

Test Number	Components	Reference Interval
3000231	*Blastomyces dermatitidis* Antibodies by Immunoassay with Reflex to Immunodiffusion, CSF	0.9 IV or less: Negative 1.0-1.4 IV: Equivocal 1.5 IV or greater: Positive
	Blastomyces dermatitidis Antibodies by Immunodiffusion, CSF	Not Detected

3000059	*Coccidioides* Antibodies by Complement Fixation, CSF	Less than 1:2
	Histoplasma Mycelia by CF	Less than 1:2
	Histoplasma Yeast by CF	Less than 1:2

Note: This test detects antibodies to *Aspergillus*, *Coccidioides*, and *Histoplasma* by complement fixation and *Blastomyces* by immunoassay. If *Blastomyces* antibodies are equivocal or positive by immunoassay then *Blastomyces dermatitidis* Antibodies by Immunodiffusion, CSF will be added. Additional charges apply.

HOTLINE NOTE: There is a clinically significant charting name change associated with this test.
Change the charting name for component 3000233, Blastomyces Antibody by EIA, CSF from Blastomyces Antibody by EIA, CSF to Blastomyces Antibodies EIA, CSF.

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

Methodology: Semi-Quantitative Complement Fixation/Semi-Quantitative Enzyme-Linked Immunosorbent Assay/Immunodiffusion

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

Reference Interval:

Test Number	Components	Reference Interval
0050100	*Aspergillus* Antibodies by Complement Fixation	Less than 1:8
0050170	*Coccidioides* Antibodies by Complement Fixation	Less than 1:2
0050625	*Histoplasma* Antibodies by Complement Fixation	

Test Number	Components	Reference Interval
	Histoplasma Mycelia Antibodies by CF	Less than 1:8
	Histoplasma Yeast Antibodies by CF	Less than 1:8

3000236	*Blastomyces dermatitidis* Antibodies by Immunoassay with Reflex to Immunodiffusion, Serum	

Test Number	Components	Reference Interval
3000236	*Blastomyces dermatitidis* Antibodies by Immunoassay with Reflex to Immunodiffusion, Serum	0.9 IV or less: Negative 1.0-1.4 IV: Equivocal 1.5 IV or greater: Positive
0050172	*Blastomyces dermatitidis* Antibodies by Immunodiffusion, Serum	Not Detected

Note: This test detects antibodies to *Aspergillus*, *Coccidioides*, and *Histoplasma* by complement fixation and *Blastomyces* by immunoassay. If *Blastomyces* antibodies are equivocal or positive by immunoassay, then *Blastomyces dermatitidis* Antibodies by Immunodiffusion will be added. Additional charges apply.

HOTLINE NOTE: There is a clinically significant charting name change associated with this test.
Change the charting name for component 0050100, Aspergillus Antibody by CF from Aspergillus Antibody by CF to Aspergillus Antibodies by CF.
Change the charting name for component 0050330, Histoplasma Mycelia, CF from Histoplasma Mycelia, CF to Histoplasma Mycelia Antibodies by CF.
Change the charting name for component 0050335, Histoplasma Yeast, CF from Histoplasma Yeast, CF to Histoplasma Yeast Antibodies by CF.
Change the charting name for component 3000237, Blastomyces Antibody by EIA, SER from Blastomyces Antibody by EIA, SER to Blastomyces Antibodies EIA, SER.

3001267 Gamma Aminobutyric Acid Receptor, Type B (GABA-BR) Antibody, IgG by CBA-IFA with Reflex to Titer, CSF — GABA-B CSF

Methodology: Semi-Quantitative Cell-Based Indirect Fluorescent Antibody

3001270 Gamma Aminobutyric Acid Receptor, Type B (GABA-BR) Antibody, IgG by CBA-IFA with Reflex to Titer, Serum — GABA-B SER

Methodology: Semi-Quantitative Cell-Based Indirect Fluorescent Antibody

New Test **3005478** **Glomerular Filtration Rate (Estimated)** **GFR EST**

Click for Pricing

Methodology: Quantitative Enzymatic
Performed: Sun-Sat
Reported: Within 24 hours

Specimen Required: Collect: Plasma separator tube or serum separator tube.
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: 0.2 mL)
Storage/Transport Temperature: Refrigerated.
Remarks: Patient age and sex are required for calculation.
Unacceptable Conditions: Specimens obtained through catheters used to infuse hyperalimentation fluid. Specimens collected with potassium oxalate/sodium fluoride or sodium citrate.
Stability (collection to initiation of testing): After separation from cells: Ambient: 1 week; Refrigerated: 1 week; Frozen: 3 months

Reference Interval: Calculated GFR - >= 60 mL/min / 1.73 square meters

Creatinine

Age	Male	Female
0-30 days	0.50-1.20 mg/dL	0.50-0.90 mg/dL
31-364 days	0.40-0.70 mg/dL	0.40-0.60 mg/dL
1-3 years	0.40-0.70 mg/dL	0.40-0.70 mg/dL
4-6 years	0.50-0.80 mg/dL	0.50-0.80 mg/dL
7-9 years	0.30-0.60 mg/dL	0.30-0.70 mg/dL
10-11 years	0.30-0.70 mg/dL	0.40-0.80 mg/dL
12-13 years	0.40-0.80 mg/dL	0.40-0.80 mg/dL
14-15 years	0.40-1.10 mg/dL	0.30-0.90 mg/dL
16-18 years	0.60-1.20 mg/dL	0.50-1.00 mg/dL
19 years and older	0.69-1.22 mg/dL	0.59-1.01 mg/dL

Interpretive Data:

The estimated glomerular filtration rate (eGFR) was calculated using the 2021 CKD-EPI eGFR creatinine equation, which does not include race as a factor. This equation is validated in individuals 18 years of age and older. Accurate estimation of GFR requires stable day-to-day creatinine. Creatinine-based eGFR is less accurate in patients with extremes of muscle mass, restriction of dietary protein, ingestion of creatine, extra-renal metabolism of creatinine, or treatment with medications that affect renal tubular creatinine secretion. The eGFR is normalized to a body surface area of 1.73 square meters.

GFR Categories in Chronic Kidney Disease (CKD)

GFR Category	GFR (mL/min/1.73 square meters)	Interpretation
G1	90 or greater	Normal to high*
G2	60-89	Mild decrease*
G3a	45-59	Mild to moderate decrease
G3b	30-44	Moderate to severe decrease
G4	15-29	Severe decrease
G5	14 or less	Kidney failure
*In the absence of evidence of kidney damage, neither GFR category G1 nor G2 fulfill the criteria for CKD (Kidney Int Suppl 2013;3:1-150)		

CPT Code(s): 82565

New York DOH Approved.

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

New Test Available Now Click for Pricing | **3005011** | **H3.3 G34W Mutant by Immunohistochemistry** | **H3G34W IHC**

Immunohistochemistry Stain Form Recommended (ARUP form #32978)

Methodology: Immunohistochemistry
Performed: Mon-Fri
Reported: 1-3 days

Specimen Required: 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.
Storage/Transport Temperature: Room temperature. Also acceptable: Refrigerated. Ship in cooled container during summer months.
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.
Unacceptable Conditions: Specimens submitted with nonrepresentative tissue type. Depleted specimens.
Stability (collection to initiation of testing): Ambient: Indefinitely; Refrigerated: Indefinitely; Frozen: Unacceptable

Interpretive Data:
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.

Note: This test is performed as a stain and return (technical) service only.

CPT Code(s): 88342

New York DOH Approved.

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

2012026 | **Hereditary Breast and Gynecological Cancers Panel, Sequencing and Deletion/Duplication** | **BOCAPAN**

Methodology: Massively Parallel Sequencing/Sequencing/Multiplex Ligation-dependent Probe Amplification
Performed: Varies
Reported: 3-6 weeks

Specimen Required: Collect: Lavender or pink (EDTA) or yellow (ACD solution A or B).
Specimen Preparation: Transport 3 mL whole blood. (Min: 3 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Serum or plasma; grossly hemolyzed or frozen specimens; saliva, buccal brush, or swab; FFPE tissue; DNA.
Stability (collection to initiation of testing): Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable

Note: Genes tested: *ATM*; *BARD1*; *BRCA1**; *BRCA2*; *BRIP1*; *CDH1**; *CHEK2**; *DICER1*; *EPCAM***; *MLH1*; *MSH2*; *MSH6*; *NBN*; *NF1*; *PALB2*; *PMS2*; *PTEN**; *RAD51C*; *RAD51D*; *RECQL**; *SMARCA4*; *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 Code(s): 81432; 81433

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

Methodology: Massively Parallel Sequencing/Sequencing/Multiplex Ligation-dependent Probe Amplification

Specimen Required: Collect: Lavender or pink (EDTA) or yellow (ACD solution A or B).
Specimen Preparation: Transport 3 mL whole blood. (Min: 2 mL)
Storage/Transport Temperature: Refrigerated
Unacceptable Conditions: Serum or plasma; grossly hemolyzed or frozen specimens; saliva, buccal brush, or swab; FFPE tissue; DNA
Stability (collection to initiation of testing): Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable

Note: Genes Tested: *ALK*; *APC**; *ATM*; *AXIN2*; *BAP1*; *BARD1*; *BMPR1A**; *BRCA1**; *BRCA2*; *BRIP1*; *CDC73*; *CDH1**; *CDK4*; *CDKN1B*; *CDKN2A**; *CHEK2**; *CTNNA1**; *DICER1*; *EGFR*; *EPCAM***; *FH*; *FLCN**; *HOXB13*; *HRAS*; *KIT*; *LZTR1*; *MAX*; *MC1R*; *MEN1**; *MET*; *MITF**; *MLH1*; *MLH3**; *MSH2*; *MSH3*; *MSH6*; *MUTYH*; *NBN*; *NF1*; *NF2*; *NTHL1*; *PALB2*; *PDGFRA**; *PMS2*; *POLD1*; *POLE*; *POT1*; *PRKAR1A*; *PTCH1*; *PTEN**; *RAD51C*; *RAD51D*; *RB1**; *RECQL**; *RET*; *SDHA**; *SDHAF2*; *SDHB*; *SDHC**; *SDHD**; *SMAD4*; *SMARCA4*; *SMARCB1*; *SMARCE1**; *STK11*; *SUFU*; *TERT*; *TMEM127*; *TP53*; *TSC1*; *TSC2*; *VHL**; *WT1*

* - 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 Code(s): 81432; 81433; 81435; 81436; 81437; 81438

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

Methodology: Massively Parallel Sequencing/Sequencing/Multiplex Ligation-dependent Probe Amplification

Specimen Required: Collect: Lavender or pink (EDTA) or yellow (ACD solution A or B).
Specimen Preparation: Transport 3 mL whole blood. (Min: 3 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Serum or plasma; grossly hemolyzed or frozen specimens; saliva, buccal brush, or swab; FFPE tissue; DNA.
Stability (collection to initiation of testing): Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable

Note: Genes Tested: *APC**; *AXIN2*; *BMPR1A**; *CDH1**; *CHEK2**; *EPCAM***; *KIT*; *MLH1*; *MLH3**; *MSH2*; *MSH3*; *MSH6*; *MUTYH*; *NTHL1*; *PDGFRA**; *PMS2*; *POLD1*; *POLE*; *PTEN**; *SDHA**; *SDHB*; *SDHC**; *SDHD**; *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 Code(s): 81435; 81436

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

Methodology: Massively Parallel Sequencing
Performed: Varies
Reported: 3 weeks

Specimen Required: Collect: Lavender or pink (EDTA) or yellow (ACD solution A or B).
Specimen Preparation: Transport 3 mL whole blood. (Min: 3 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Serum or plasma; grossly hemolyzed or frozen specimens; saliva, buccal brush, or swab; FFPE tissue.
Stability (collection to initiation of testing): Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable

Note: GENES TESTED: *ACVRL1, BMPR2, ENG,* EPHB4, GDF2, RASA1, SMAD4*

*One or more exons are not covered by deletion/duplication analysis for the indicated gene; see Additional Technical Information.
HOTLINE NOTE: Remove information found in the Remarks field.

CPT Code(s): 81405; 81406; 81479

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

Methodology: Massively Parallel Sequencing/Sequencing/Multiplex Ligation-dependent Probe Amplification

Specimen Required: Collect: Lavender or pink (EDTA) or yellow (ACD solution A or B)
Specimen Preparation: Transport 3 mL whole blood. (Min: 2 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Serum or plasma; grossly hemolyzed or frozen specimens; saliva, buccal brush, or swab; FFPE tissue; DNA
Stability (collection to initiation of testing): Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable

Note: Genes Tested: *BAP1*; *DICER1*; *EPCAM***; *FH*; *FLCN**; *MET*; *MLH1*; *MSH2*; *MSH6*; *PMS2*; *PTEN**; *SDHA**; *SDHB*; *SDHC**; *SDHD**; *SMARCA4*; *SMARCB1*; *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 Code(s): 81292; 81294; 81295; 81297; 81298; 81300; 81317; 81319; 81321; 81323; 81351

0065005 Herpes Simplex Virus Culture — V HSVC

Methodology: Cell Culture/Microscopy
Performed: Sun-Sat
Reported: 1-5 days

Specimen Required: Collect: Buccal mucosa, eye, genital, rectal, throat or vesicle swab, neonatal surface swab, bronchoalveolar lavage (BAL), tissue, or vesicle fluid.
Specimen Preparation: **Fluid:** Transfer 3 mL specimen to a sterile container. (Min: 0.5 mL) Also acceptable: Transfer to 3 mL viral transport media (ARUP Supply #12884) available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787.
Swab or Tissue: Place in 3 mL viral transport media (ARUP Supply #12884) available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787.
Storage/Transport Temperature: Refrigerated.
Remarks: **Specimen source preferred.**
Unacceptable Conditions: Blood, CSF, plasma, or serum. Bacterial transport systems; molecular transport systems; calcium alginate, dry, or wood swabs.
Stability (collection to initiation of testing): Ambient: 2 hours; Refrigerated: 72 hours; Frozen: Unacceptable

CPT Code(s): 87255

0065065 Herpes Simplex Virus Culture with Reflex to HSV Typing — V HSVCT

Methodology: Cell Culture/Microscopy/Immunofluorescent Stain
Performed: Sun-Sat
Reported: 1-5 days

Specimen Required: Collect: Buccal mucosa, eye, genital, rectal, throat or vesicle swab, neonatal surface swab, or bronchoalveolar lavage, tissue, or vesicle fluid.
Specimen Preparation: **Fluid:** Transfer 3 mL specimen to a sterile container. (Min: 0.5 mL) Also acceptable: Transfer to 3 mL viral transport media (ARUP Supply #12884) available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787.
Swab or Tissue: Place in 3 mL viral transport media (ARUP Supply #12884) available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787.
Storage/Transport Temperature: Refrigerated.
Remarks: **Specimen source preferred.**
Unacceptable Conditions: Blood, CSF, plasma, or serum. Bacterial transport systems; molecular transport systems; calcium alginate, dry, or wood swabs.
Stability (collection to initiation of testing): Ambient: 2 hours; Refrigerated: 72 hours; Frozen: Unacceptable

CPT Code(s): 87255; if reflexed, add 87140 x2

0050625 *Histoplasma* Antibodies by Complement Fixation HISTO

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

Reference Interval:

Test Number	Components	Reference Interval
	Histoplasma Mycelia Antibodies by CF	Less than 1:8
	Histoplasma Yeast Antibodies by CF	Less than 1:8

Interpretive Data:
A titer of 1:8 or greater is generally considered presumptive evidence of histoplasmosis. A titer of 1:32 or greater or rising titers indicate strong presumptive evidence of histoplasmosis. Cross-reactions, usually at lower titers, may occur with other fungal disease.

Note: This complement fixation test detects total antibodies to mycelial and yeast antigens of *Histoplasma*.

HOTLINE NOTE: There is a clinically significant charting name change associated with this test.
Change the charting name for component 0050330, Histoplasma Mycelia, CF from Histoplasma Mycelia, CF to Histoplasma Mycelia Antibodies by CF.
Change the charting name for component 0050335, Histoplasma Yeast, CF from Histoplasma Yeast, CF to Histoplasma Yeast Antibodies by CF.

0050627 *Histoplasma* Antibodies by Complement Fixation and Immunodiffusion HISTO PAN

Methodology: Semi-Quantitative Complement Fixation/Immunodiffusion
Performed: Sun-Sat
Reported: 3-6 days

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

Reference Interval:

Test Number	Components	Reference Interval
0050174	*Histoplasma* Antibodies by Immunodiffusion	Not Detected
	Histoplasma Yeast Antibodies by CF	Less than 1:8
	Histoplasma Mycelia Antibodies by CF	Less than 1:8

Interpretive Data:
Refer to report.

Note: The immunodiffusion component of this test detects total antibodies against the H and M antigens of *Histoplasma capsulatum*. The complement fixation component of this test detects total antibodies to mycelial and yeast antigens of *Histoplasma*.

HOTLINE NOTE: There is a clinically significant charting name change associated with this test.
Change the charting name for component 0050174, Histoplasma spp. Abs, Precipitin from Histoplasma spp. Abs, Precipitin to Histoplasma Antibodies by ID.
Change the charting name for component 0050330, Histoplasma Mycelia, CF from Histoplasma Mycelia, CF to Histoplasma Mycelia Antibodies by CF.
Change the charting name for component 0050335, Histoplasma Yeast, CF from Histoplasma Yeast, CF to Histoplasma Yeast Antibodies by CF.

0050174 *Histoplasma* Antibodies by Immunodiffusion HISTO PPT

Methodology: Immunodiffusion
Performed: Sun-Sat
Reported: 3-6 days

Specimen Required: Collect: Serum separator tube.
Specimen Preparation: Separate serum from cells ASAP or within 2 hours of collection. Transfer 0.5 mL serum to an ARUP Standard Transport Tube. (Min 0.15 mL) Parallel testing is preferred and convalescent specimens must be received within 30 days from receipt of the acute specimens. Mark specimens plainly as "acute" or "convalescent."
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Contaminated, hemolyzed, or severely lipemic specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)

Reference Interval:
Not Detected

Interpretive Data:
Refer to report.

Note: This immunodiffusion test detects total antibodies against the H and M antigens of *Histoplasma capsulatum*.

HOTLINE NOTE: There is a clinically significant charting name change associated with this test.
Change the charting name for component 0050174, Histoplasma spp. Abs, Precipitin from Histoplasma spp. Abs, Precipitin to Histoplasma Antibodies by ID.

2008848 Holoprosencephaly Panel, Sequencing and Deletion/Duplication HPE PAN

Methodology: Massively Parallel Sequencing
Performed: Varies
Reported: 3 weeks

Specimen Required: Collect: Lavender or pink (EDTA) or yellow (ACD Solution A or B)
Specimen Preparation: Transport 3 mL whole blood. (Min: 2 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Serum or plasma; grossly hemolyzed or frozen specimens; saliva, buccal brush, or swab; FFPE tissue.
Stability (collection to initiation of testing): Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable

Note: 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.

CPT Code(s): 81479

HOTLINE NOTE: Remove information found in the Remarks field.

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

Methodology: Massively Parallel Sequencing

Specimen Required: Collect: **Fetal Specimen**: Four (4) T-25 flasks at 80% confluent of cultured amniocytes or cultured chorionic villus sampling (CVS). **AND Maternal Whole Blood Specimen**: Lavender (EDTA), pink (K_2EDTA), or yellow (ACD Solution A or B).
Specimen Preparation: **Cultured Amniocytes or Cultured CVS**: Fill flasks with culture media. Transport four (4) T-25 flasks at 80 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 the client is unable to culture amniocytes, this can be arranged by contacting ARUP Client Services at (800) 522-2787 ext. 2141 prior to test submission.**
Maternal Whole Blood Specimen: Transport 3 mL whole blood. (Min: 3 mL)
Storage/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
Stability (collection to initiation of testing): **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

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 four (4) T-25 flasks at 80 percent confluent. Cell culture time is independent of testing turnaround time. Maternal specimen is recommended for proper test interpretation. Order Maternal Cell Contamination.

CPT Code(s): 81479; 81265 Fetal Cell Contamination (FCC)

HOTLINE NOTE: Remove information found in the Remarks field.

3004046 *JAK2* (V617F) Mutation by ddPCR, Qualitative — JAK2 QUAL

Performed: DNA Isolation: Sun-Sat
Assay: Varies
Reported: 2-9 days

3003751 *JAK2* (V617F) Mutation by ddPCR, Quantitative — JAK2V617FQ

Performed: DNA Isolation: Sun-Sat
Assay: Varies
Reported: 2-9 days

2002357 *JAK2* Exon 12 Mutation Analysis by PCR — JAK2 EX12

Performed: **DNA isolation:** Sun-Sat
Assay: Varies
Reported: 3-9 days

2012259 Keratan Sulfate, Quantitative by LC-MS/MS, Urine — KS U MS

HOTLINE NOTE: There is a component change associated with this test.
Add component 3005207, EER Keratan Sulfate, Urine

3002956 ***KIT* (D816V) Mutation by ddPCR, Quantitative** **KITD816V Q**

Performed: **DNA isolation:** Sun-Sat
Assay: Varies
Reported: 2-9 days

New Test **3005200** ***Legionella pneumophila* Antibodies (Types 1-6), IgG, IgM, and IgA by ELISA** **LEGION AB**

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Methodology: Semi-Quantitative Enzyme-Linked Immunosorbent Assay
Performed: Mon-Fri
Reported: 1-4 days

Specimen Required: Collect: Serum separator tube (SST) or plain red.
Specimen Preparation: Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.3 mL)
Storage/Transport Temperature: Preferred transport temp: Refrigerated. Also acceptable: Frozen
Unacceptable Conditions: Contaminated, heat-inactivated, hemolyzed, icteric, or lipemic specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 month

Reference Interval:

≤0.90 IV	Negative: No significant amount of IgG/IgM/IgA antibodies to *L. pneumophila* detected.
0.91 to 1.09 IV	Equivocal: Recommend repeat testing in 1-3 weeks with fresh sample.
≥1.10 IV	Positive: IgG/IgM/IgA antibodies specific to *L. pneumophila* were detected suggesting current or prior infection. A positive result cannot distinguish between previous or active infection, therefore this result alone cannot be used to establish a diagnosis.

Note: N/A

CPT Code(s): 86713

New York DOH Approved.

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

2009460 **Leucine-Rich, Glioma-Inactivated Protein 1 Antibody, IgG CBA-IFA and Contactin-Associated Protein-2 Antibody, IgG CBA-IFA with Reflex to Titers, Serum** **LGI1CASPR2**

Methodology: Semi-Quantitative Cell-Based Indirect Fluorescent Antibody

Reference Interval:

Test Number	Components	Reference Interval
2009456	Leucine-Rich, Glioma-Inactivated Protein 1 Antibody, IgG CBA-IFA with Reflex to Titer, Serum	Less than 1:10
2009452	Contactin-Associated Protein-2 Antibody, IgG CBA-IFA with Reflex to Titer, Serum	Less than 1:10

3001992 **Leucine-Rich, Glioma-Inactivated Protein 1 Antibody, IgG CBA-IFA with Reflex to Titer, CSF** **LGI1IGGCSF**

Methodology: Semi-Quantitative Cell-Based Indirect Fluorescent Antibody

2009456 **Leucine-Rich, Glioma-Inactivated Protein 1 Antibody, IgG CBA-IFA with Reflex to Titer, Serum** **LGI1 IGG**

Methodology: Semi-Quantitative Cell-Based Indirect Fluorescent Antibody

3001603 **Long QT Panel, Sequencing and Deletion/Duplication** **LQT NGS**

Methodology: Massively Parallel Sequencing
Performed: Varies
Reported: 3 weeks

Specimen Required: Collect: Lavender or pink (EDTA) or yellow (ACD solution A or B).
Specimen Preparation: Transport 3 mL whole blood. (Min: 2 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Serum or plasma; grossly hemolyzed or frozen specimens; saliva, buccal brush, or swab; FFPE tissue.
Stability (collection to initiation of testing): Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable

Note: *CACNA1C*; *CALM1**; *CALM2*; *CALM3; KCNE1**; *KCNE2**; *KCNH2**; *KCNJ2*; *KCNQ1*; *SCN5A*; *TRDN*
*One or more exons are not covered by sequencing and/or deletion/duplication analysis for the indicated gene; see additional technical information.

CPT Code(s): 81403; 81404; 81406; 81407; 81414; 81479

0055655 **Methylenetetrahydrofolate Reductase (*MTHFR*) 2 Variants** **MTHFR PCR**

HOTLINE NOTE: There is a clinically significant charting name change associated with this test.
Change the charting name for component 0055657, MTHFR Mutation: c.665C>T from MTHFR Mutation: c.665C>T to MTHFR Variant: c.665C>T.
Change the charting name for component 0055658, MTHFR Mutation: c.1286A>C from MTHFR Mutation: c.1286A>C to MTHFR Variant: c.1286A>C.

2002715 **Monoclonal Protein Study, Expanded Panel, Serum** **IFE FLC**

HOTLINE NOTE: There is a component change associated with this test.
Add component 2011827, Monoclonal Protein

3002568 **Monoclonal Protein Study, Serum** **IFE SPEP**

HOTLINE NOTE: There is a component change associated with this test.
Add component 2011827, Monoclonal Protein

2007967 **Motor and Sensory Neuropathy Evaluation with Immunofixation Electrophoresis and Reflex to Titer and Neuronal Immunoblot** **MSNCR**

HOTLINE NOTE: There is a component change associated with this test.
Add component 2011827, Monoclonal Protein

0051225 **Motor Neuropathy Panel** **MSN PAN**

HOTLINE NOTE: There is a component change associated with this test.
Add component 2011827, Monoclonal Protein

3003566	**Mucopolysaccharidoses Type 1/2, Total Heparan Sulfate and NRE (Sensi-Pro®) Quantitative, Serum or Plasma**	**MPS 1/2 SP**

HOTLINE NOTE: There is a component change associated with this test.
Add component 3005211, EER MPS 1/2 Serum/Plasma

3003552	**Mucopolysaccharidoses Type 1/2, Total Heparan Sulfate and NRE (Sensi-Pro®) Quantitative, Urine**	**MPS 1/2 U**

HOTLINE NOTE: There is a component change associated with this test.
Add component 3005210, EER MPS 1/2 Urine

3003487	**Mucopolysaccharidoses Type 4A/6 Total Chondroitin Sulfate and Dermatan Sulfate with NRE (Sensi-Pro®) Quantitative, Serum**	**MPS 4A/6 S**

HOTLINE NOTE: There is a component change associated with this test.
Add component 3005208, EER MPS 4A/6 Serum

3003539	**Mucopolysaccharidoses Type 4A/6 Total Chondroitin Sulfate and Dermatan Sulfate with NRE (Sensi-Pro®) Quantitative, Urine**	**MPS 4A/6 U**

HOTLINE NOTE: There is a component change associated with this test.
Add component 3005209, EER MPS 4A/6 Urine

3001277	**Myelin Oligodendrocyte Glycoprotein (MOG) Antibody, IgG by CBA-IFA with Reflex to Titer, Serum**	**MOG SER**

Methodology: Semi-Quantitative Cell-Based Indirect Fluorescent Antibody

0092361	**Nicotine and Metabolites, Serum or Plasma, Quantitative**	**NICOTINESP**

Reference Interval:
Effective August 15, 2022

Drugs Covered	Cutoff Concentrations
Nicotine	5 ng/mL
Cotinine (metabolite)	5 ng/mL

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

Positive cutoff: 5 ng/mL

For medical purposes only; not valid for forensic use.

This test is designed to evaluate recent use of nicotine-containing products. Passive and active exposure cannot be discriminated definitively, although a cutoff of 10 ng/mL cotinine is frequently used for surgery qualification purposes. For smoking cessation programs or compliance testing, the absence of expected drug(s) and/or drug metabolite(s) may indicate non-compliance, inappropriate timing of specimen collection relative to drug administration, poor drug absorption, or limitations of testing. This test cannot distinguish between use of tobacco and purified nicotine products. The concentration value must be greater than or equal to the cutoff to be reported as positive.

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.

HOTLINE NOTE: There is a component change associated with this test.
Remove component 0092364, 3-OH-Cotinine, S/P, Quant

2005164	**N-methyl-D-Aspartate Receptor Antibody, IgG CBA-IFA, CSF with Reflex to Titer**	**NMDA G CSF**

Methodology: Semi-Quantitative Cell-Based Indirect Fluorescent Antibody

2004221	**N-methyl-D-Aspartate Receptor Antibody, IgG CBA-IFA, Serum with Reflex to Titer**	**NMDA IGG**

Methodology: Semi-Quantitative Cell-Based Indirect Fluorescent Antibody

New Test **3003043** **Non-Invasive Prenatal Aneuploidy Screen by cell-free DNA Sequencing** **NIPT NGSAN**

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Non-Invasive Prenatal Aneuploidy Screening (NIPT/NIPS) Patient History Form

Methodology: Massively Parallel Sequencing
Performed: Varies
Reported: 5-7 days

Specimen Required: Patient Prep: Specimen must be collected at 10 weeks gestation or greater. Testing will be canceled for specimens collected at less than 10 weeks of gestation.
Collect: Black-and-tan top cell-free DNA BCT (Streck) Tube (ARUP Supply #56435) Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787.
Specimen Preparation: Transport 10 mL maternal whole blood (Min: 7 mL)
Storage/Transport Temperature: Refrigerated
Remarks: Patient History and Consent Form for Non-Invasive Prenatal Aneuploidy Screening Test (NIPT/NIPS) form is available on the ARUP Web site or by contacting Client Services at (800) 522-2787.
Unacceptable Conditions: Ambient and frozen specimens.
Stability (collection to initiation of testing): Ambient: Unacceptable; Refrigerated: 10 days; Frozen: Unacceptable.

Reference Interval: N/A

Interpretive Data:
INTERPRETIVE INFORMATION: Non-Invasive Prenatal Aneuploidy Screen by cell-free DNA Sequencing
CHARACTERISTICS: This assay is a screening test that interrogates chromosomal abnormalities (i.e., aneuploidies) using cell-free DNA (cfDNA) extracted from the blood plasma of any singleton pregnancy. Patient risk for trisomy 13, trisomy 18, trisomy 21, and sex chromosome aneuploidies is reported. Fetal fraction, in conjunction with other data quality metrics, must be met in order for each sample to yield a result. The assay is intended for use as a screen only and is not equivalent to prenatal genetic diagnostic testing.
METHODOLOGY: Next Generation Sequencing (NGS) (aka Massively Parallel Sequencing (MPS)) of fetal and maternal cfDNA present in the plasma.

ANALYTICAL VALIDATION ACCURACY: The analytical sensitivity was calculated using positive percent agreement compared to established methods to detect fetal aneuploidy. For samples with greater than 5% observed fetal fraction, the positive percent agreements (PPA) are as follows: T13 greater than 99.9%, T18 greater than 99.9%, and T21 is 96.1%. The combined PPA for all aneuploidies is 97.5%. For samples with less than or equal to 5% observed fetal fraction, the positive percent agreements (PPA) are as follows: T13 is 66.7%, T18 is 60%, and T21 is 87.5%. The combined PPA for all aneuploidies is 72.3%. The specificity, as calculated as negative percent agreement, is 99.5% across all observed fetal fraction values.

CLINICAL PERFORMANCE: Information on clinical performance for this assay can be found in the following reference: Borth H. Analysis of cell-free DNA in a consecutive series of 13,607 routine cases for the detection of fetal chromosomal aneuploidies in a single center in Germany. *Arch Gynecol Obstet*. 2021;303(6):1407-1414.

LIMITATIONS: This is a screening test and should not be considered in isolation from other clinical findings and diagnostic test results. High-risk results must be confirmed by diagnostic testing (amniocentesis, CVS, or postnatal testing) before any clinical decisions are made based on the screening test result. The current iteration of this assay is limited to reporting the following on singleton pregnancies: fetal sex, fetal fraction, risk level for trisomy 13, 18, 21, and risk level for sex chromosome aneuploidies XO, XXX, XXY, and XYY. This assay is not meant to detect deletions or duplications within a chromosome, polyploidy, maternal abnormalities, balanced chromosome rearrangements, or chromosomal aneuploidies not listed above. Results may be confounded by the following: recent maternal blood transfusion, organ transplant, surgery, immunotherapy, malignancy, maternal mosaicism, placental mosaicism, fetal demise, disappearing twin, fetal partial aneuploidy, and/or fetal mosaicism. Samples with observed fetal fraction less than 5.0% have lower sensitivity to detect fetal aneuploidy, and the accuracy of the fetal fraction estimate is significantly lower. Fetal demise/miscarriage is not assessed.

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.

Note: Results will not be reported without a gestational age greater than or equal to 10 weeks. ARUP only performs testing on singleton pregnancies. Multiple pregnancies will be sent out to Integrated Genetics to perform the MaterniT21 PLUS Core test..

CPT Code(s): 81420

New York DOH approval pending. Call for status update.

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

3000066 *NPM1* Mutation Detection by RT-PCR, Quantitative — NPM1 QNT

Performed: **RNA isolation:** Sun-Sat
Assay: Varies
Reported: 5-9 days

2008767 Opioid Receptor, mu *OPRM1*, 1 Variant — OPRM1

Performed: Varies
Reported: 5-10 days

Interpretive Data: Refer to report

HOTLINE NOTE: There is a component change associated with this test.
Add component 3005505, OPRM1 Phenotype, Interpretation
Add component 3005508, OPRM1, Interpretation
There is a clinically significant charting name change associated with this test.
Change the charting name for component 2008768 OPRM1 Genotype, Specimen from OPRM1 Genotype, Specimen to OPRM1 Specimen.

3000704 Orotic Acid, Urine — OROTICACID

Reference Interval:
Effective August 15, 2022

Age	Orotic Acid
0-4 years	Less than or equal to 5.1 mmol/mol creatinine
5 years and older	Less than or equal to 1.5 mmol/mol creatinine

3002929 Paraneoplastic Reflexive Panel — PNS PAN2

Methodology: Semi-Quantitative Cell-Based Indirect Fluorescent Antibody/Qualitative Immunoblot

Reference Interval:

Test Number	Components	Reference Interval
2013956	CV2.1 Screen by CBA-IFA with Reflex to Titer	Less than 1:10
2007961	PCCA/ANNA by IFA with Reflex to Titer and Immunoblot	Effective August 17, 2020
	Purkinje Cell/Neuronal Nuclear IgG Scrn	None Detected
	Neuronal Nuclear Antibody (ANNA) IFA Titer, IgG	Less than 1:10
	Purkinje Cell Antibody, Titer	Less than 1:10
3002917	Neuronal Nuclear Antibodies (Hu, Ri, Yo, Tr/DNER) IgG by Immunoblot, Serum	Refer to report
2008893	Amphiphysin Antibody, IgG	Negative
3002885	SOX1 Antibody, IgG by Immunoblot, Serum	Negative

2005006 Paroxysmal Nocturnal Hemoglobinuria (PNH), High Sensitivity, RBC and WBC PNH PAN

Specimen Required: Collect: Lavender (EDTA), pink (K_2EDTA), or green (sodium or lithium heparin).
Specimen Preparation: Transport 4 mL whole blood. (Min: 4 mL)
Storage/Transport Temperature: Refrigerated.
Remarks: Specimens must be analyzed within stability times provided.
Unacceptable Conditions: Clotted or hemolyzed specimens.
Stability (collection to initiation of testing): Ambient: 24 hours; Refrigerated: 72 hours; Frozen: Unacceptable
New York State Clients: Ambient: 24 hours; Refrigerated: 48 hours. Frozen: Unacceptable

Interpretive Data:
This test is preferred for the initial diagnosis of PNH, and was developed according to published guidelines (Cytometry B Clin. Cytom. 2010; 78:211) and as updated in 2018 (Cytometry B Clin. Cytom. 2018; 94B:49). The test includes high-sensitivity WBC and RBC analysis with a lower limit of quantification of 0.02 percent for PNH RBCs and PMNs (based on 250,000 cells analyzed) and 0.5 percent for PNH monocytes (based on 10,000 cells analyzed). The lower limit of detection for PNH RBCs and PMNs is 0.008 percent and for PNH monocytes 0.2 percent. For severely pancytopenic patients, the WBC assay sensitivity will be much lower.

WBC analysis is the most accurate measurement of the PNH clone size. FLAER and CD157 are used as GPI-linked markers; CD15 (PMNs) and CD64 (monocytes) are used as lineage-specific markers. RBC analysis quantifies Type II and Type III RBC clones when the percentage of PNH RBCs is greater than 1 percent. Glycophorin A (CD235a) is used to gate the RBC population, and CD59 is the GPI-linked antigen. Recent RBC transfusions may decrease the percentage of PNH cells measured in RBCs (Cytometry 2000; 42:223). The presence of a subclinical PNH population in myelodysplastic bone marrow disorders, such as aplastic anemia or refractory anemia, may correlate with a positive immunotherapeutic response (Blood 2006; 107, 1308-1314).

Patient Retesting Recommendations: The frequency of testing is dictated by clinical and hematologic parameters; repeat testing is indicated upon any significant change in clinical or laboratory parameters and is suggested at least annually for routine monitoring. In the setting of aplastic anemia, international guidelines recommend screening for PNH at diagnosis, and every 3 to 6 months initially, reducing the frequency of testing if the proportion of GPI-deficient cells has remained stable over an initial two-year period (Int J Lab Hematol 2019;41 Suppl 1:73-81).

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.

Note: If ≥1% PNH RBCs are detected, then PNH RBC TYPE reflex will be added at no additional charge

HOTLINE NOTE: There is a reflexive pattern change associated with this test.
Add reflex to 3005006, PNH RBC TYPE
There is a component change associated with this test.
Add component 3005033, RBC PNH Phenotype
Add component 3005034, Neutrophil PNH Phenotype
Add component 3005035, Monocyte PNH Phenotype
There is a clinically significant charting name change associated with this test.
Change the charting name for component 2004367, % PNH RBC from % PNH RBC to Total (II and III) CD59-deficient RBC.
Change the charting name for component 2005005, % PNH PMN from % PNH PMN to FLAER and CD157-deficient neutrophils.
Change the charting name for component 2005004, % PNH Monocytes from % PNH Monocytes to FLAER and CD157-deficient monocytes.

2004366 Paroxysmal Nocturnal Hemoglobinuria, High Sensitivity, RBC — PNH RBC

Specimen Required: Patient Prep: **New York State Clients: Testing is only approved for the Paroxysmal Nocturnal Hemoglobinuria (PNH), High Sensitivity, RBC and WBC (ARUP test code 2005006) on whole blood specimens.**
Collect: Lavender (EDTA), pink (K_2EDTA), or green (sodium or lithium heparin).
Specimen Preparation: Transport 4 mL whole blood. (Min: 0.5 mL)
Storage/Transport Temperature: Refrigerated.
Remarks: Specimens must be analyzed within stability times provided.
Unacceptable Conditions: Clotted or hemolyzed specimens.
Stability (collection to initiation of testing): Ambient: 4 days; Refrigerated: 4 days; Frozen: Unacceptable

Interpretive Data:
This high-sensitivity RBC assay tests for CD59 expression on erythrocytes using flow cytometry. It was developed according to published guidelines (Cytometry B Clin. Cytom. 2010; 78:211) and as updated in 2018 (Cytometry B Clin. Cytom. 2018; 94B:49). The lower limit of quantification is 0.02 percent for PNH RBCs (based on 250,000 cells analyzed). The lower limit of detection for PNH RBCs is 0.008 percent.

RBC analysis quantifies Type II and Type III RBC clones when the percentage of PNH RBCs is greater than 1 percent. Glycophorin A (CD235a) is used to gate the RBC population, and CD59 is the GPI-linked antigen. Recent RBC transfusions may decrease the percentage of PNH cells measured in RBCs (Cytometry 2000; 42:223). The presence of a subclinical PNH population in myelodysplastic bone marrow disorders, such as aplastic anemia or refractory anemia, may correlate with a positive immunotherapeutic response (Blood 2006; 107, 1308-1314).

For the most accurate measurement of the PNH clone size, order Paroxysmal Nocturnal Hemoglobinuria, High Sensitivity, WBC (ARUP test code 2005003) to assist with therapeutic decisions in conventional PNH.

For initial diagnosis of PNH and analysis of both RBCs and WBCs, order Paroxysmal Nocturnal Hemoglobinuria (PNH), High Sensitivity, RBC and WBC (ARUP test code 2005006).

Patient Retesting Recommendations: The frequency of testing is dictated by clinical and hematologic parameters. Repeat testing is indicated upon any significant change in clinical or laboratory parameters and is suggested at least annually for routine monitoring. In the setting of aplastic anemia, international guidelines recommend screening for PNH at diagnosis, and every 3 to 6 months initially, reducing the frequency of testing if the proportion of GPI-deficient cells has remained stable over an initial two-year period (Int J Lab Hematol 2019;41 Suppl 1:73-81).

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.

Note: If ≥1% PNH RBCs are detected, then PNH RBC TYPE reflex will be added at no additional charge.

HOTLINE NOTE: There is a reflexive pattern change associated with this test.
Add reflex to 3005006, PNH RBC TYPE
There is a clinically significant charting name change associated with this test.
Change the charting name for component 2004367, % PNH RBC from % PNH RBC to Total (II and III) CD59-deficient RBC.
There is a component change associated with this test.
Add component 2005033, RBC PNH Phenotype

2005003 Paroxysmal Nocturnal Hemoglobinuria, High Sensitivity, WBC — PNH WBC

Specimen Required: Patient Prep: **New York State Clients: Testing is only approved for the Paroxysmal Nocturnal Hemoglobinuria Panel (ARUP test code 2005006) on whole blood specimens.**
Collect: Lavender (EDTA), pink (K_2EDTA), or green (sodium or lithium heparin).
Specimen Preparation: Transport 4 mL whole blood. (Min: 4 mL)
Storage/Transport Temperature: Refrigerated.
Remarks: Specimens must be analyzed within stability times provided.
Unacceptable Conditions: Clotted or hemolyzed specimens.
Stability (collection to initiation of testing): Ambient: 24 hours; Refrigerated: 72 hours; Frozen: Unacceptable

Interpretive Data:
WBC analysis is the most accurate measurement of the PNH clone size. In this high-sensitivity assay, FLAER and CD157 are used as GPI-linked markers; CD15 (PMNs) and CD64 (monocytes) are used as lineage-specific markers. The assay was developed according to published guidelines (Cytometry B Clin. Cytom. 2010; 78:211) and as updated in 2018 (Cytometry B Clin. Cytom. 2018; 94B:49). The lower limit of quantification is 0.02 percent for PNH PMNs (based on 250,000 cells analyzed) and 0.5 percent for PNH monocytes (based on 10,000 cells analyzed). The lower limit of detection for PNH PMNs is 0.008 percent and for PNH monocytes 0.2 percent. For severely pan-cytopenic patients, the WBC assay sensitivity will be much lower.

The presence of a subclinical PNH population in myelodysplastic bone marrow disorders, such as aplastic anemia or refractory anemia, may correlate with a positive immunotherapeutic response (Blood 2006; 107, 1308-1314).

For initial diagnosis of PNH, order High Sensitivity RBC and WBC Panel (ARUP test code 2005006).

For delineation of RBC Types II and III populations when the RBC clone size is greater than 1 percent, order PNH, High Sensitivity, RBC (ARUP test code 2004366).

Patient Retesting Recommendations: The frequency of testing is dictated by clinical and hematological parameters. Repeat testing is indicated upon any significant change in clinical or laboratory parameters and is suggested at least annually for routine monitoring. In the setting of aplastic anemia, international guidelines recommend screening for PNH at diagnosis, and every 3 to 6 months initially, reducing the frequency of testing if the proportion of GPI-deficient cells has remained stable over an initial two-year period (Int J Lab Hematol 2019;41 Suppl 1:73-81).

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.

HOTLINE NOTE: There is a clinically significant charting name change associated with this test.
Change the charting name for component 2005004, % PNH Monocytes from % PNH Monocytes to FLAER and CD157-deficient monocytes.
Change the charting name for component 2005005, % PNH PMN from % PNH PMN to FLAER and CD157-deficient neutrophils.
There is a component change associated with this test.
Add component 3005034, Neutrophil PNH Phenotype
Add component 3005035, Monocyte PNH Phenotype

New Test **3004471** **Pharmacogenetics Panel: Psychotropics** **PGX PSYCH**

Click for Pricing

Supplemental Resources

Methodology: Polymerase Chain Reaction/Fluorescence Monitoring/Sequencing
Performed: Varies
Reported: 5-10 days

Specimen Required: Collect: **Whole Blood**: Lavender (EDTA), pink (K2EDTA), or yellow (ACD solution A or B).
Specimen Preparation: Transport 3 mL whole blood. (Min: 1 mL)
Storage/Transport Temperature: Refrigerated.
Remarks: Unacceptable Conditions: Plasma or serum. Specimens collected in sodium heparin or lithium heparin. Frozen specimens in glass collection tubes.
Stability (collection to initiation of testing): Ambient: 72 hours; Refrigerated: 1 week; Frozen: 1 month

Reference Interval: By report

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.

Note: Whole blood is the preferred specimen type. Saliva samples that yield inadequate DNA quality and/or quantity will be reported as inconclusive if test performance does not meet laboratory-determined criteria for reporting. Saliva is only validated for the OpenArray and CNV portions of testing and not the long-range PCR/duplication testing. Long-range PCR/duplication testing will not be performed for saliva samples.

If long-range PCR/duplication testing is performed, additional charges apply. Approximately less than 5% of samples require 2D6 copy number determination.

CPT Code(s): 81225; 81226; 81227; 81230; 81231; 81291; 81479; if reflexed, add 81479

New York DOH approval pending. Call for status update.

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

2006495 **Phosphatidylserine Antibodies, IgG and IgM** **PHOSSER GM**

Performed: Sun, Tue, Wed, Fri, Sat
Reported: 1-4 days

0050905 **Phosphatidylserine Antibodies, IgG, IgM, and IgA** **PHOS AB**

Performed: Sun, Tue, Wed, Fri, Sat
Reported: 1-4 days

New Test Available Now Click for Pricing

3004813 **Phosphorylated TDP43 by Immunohistochemistry** **PTDP43 IHC**

Immunohistochemistry Stain Form Recommended (ARUP form #32978)

Methodology: Immunohistochemistry
Performed: Mon-Fri
Reported: 1-3 days

Specimen Required: 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 but not required) 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.
Storage/Transport Temperature: Room temperature. Also acceptable: Refrigerated. Ship in cooled container during summer months.
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.
Unacceptable Conditions: Specimens submitted with nonrepresentative tissue type. Depleted specimens.
Stability (collection to initiation of testing): Ambient: Indefinitely; Refrigerated: Indefinitely; Frozen: Unacceptable

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.

Note: This test is performed as a stain and return (technical) service only.

CPT Code(s): 88342

New York DOH Approved.

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

2002871 ***PML-RARA* Detection by RT-PCR, Quantitative** **PML QNT**

Performed: **RNA isolation**: Sun-Sat
Assay: Varies
Reported: 2-9 days

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

Methodology: Massively Parallel Sequencing/Sequencing
Performed: Varies
Reported: 3 weeks

Specimen Required: Collect: Lavender or pink (EDTA) or yellow (ACD solution A or B).
Specimen Preparation: Transport 3 mL whole blood. (Min: 3 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Serum or plasma; grossly hemolyzed or frozen specimens; saliva, buccal brush, or swab; FFPE tissue.
Stability (collection to initiation of testing): Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable

Note: Genes Tested: *ADA*; *ADA2*; *AICDA*; *ATM*; *ATP6AP1*; *BLNK*; *BTK*; *CARD11*; *CD19*; *CD27*; *CD40*; *CD40LG*; *CD70*; *CD79A*; *CD79B*; *CDCA7*; *CR2*; *CTLA4*; *CXCR4**; *DCLRE1C**; *DNMT3B*; *GATA2*; *HELLS*; *ICOS*; *IGHM*; *IGLL1*; *IKZF1*; *IL21R*; *KDM6A*; *KMT2D*; *LRBA*; *MOGS*; *MS4A1*; *NBN*; *NFKB1*; *NFKB2*; *NFKBIA***; *PIK3CD*; *PIK3R1*; *PLCG2*; *PRKCD*; *RAC2*; *RAG1*; *RAG2*; *RNF168*; *SH2D1A*; *STAT3*; *TCF3***; *TNFRSF13B*; *TRNT1*; *TTC37*; *UNG*; *XIAP**; *ZBTB24*

*One or more exons are not covered by sequencing for the indicated gene; see limitations section below.
**Deletion/duplication analysis is not available for this gene.

CPT Code(s): 81403; 81404; 81405; 81406; 81408; 81479

2002109 Protein Electrophoresis with Reflex to Immunofixation, Serum — SPEP REFLEX

HOTLINE NOTE: There is a component change associated with this test.
Add component 2011827, Monoclonal Protein

0050640 Protein Electrophoresis, Serum — SPEP

HOTLINE NOTE: There is a component change associated with this test.
Add component 2011827, Monoclonal Protein

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

Methodology: Massively Parallel Sequencing
Performed: Varies
Reported: 3 weeks

Specimen Required: Collect: Lavender or pink (EDTA) or yellow (ACD solution A or B).
Specimen Preparation: Transport 3 mL whole blood. (Min: 3 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Serum or plasma; grossly hemolyzed or frozen specimens; saliva, buccal brush, or swab; FFPE tissue.
Stability (collection to initiation of testing): Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable

Note: Genes tested: *ACVRL1, BMPR2, CAV1, EIF2AK4, ENG,* GDF2, KCNA5, KCNK3, SMAD9, TBX4*
*One or more exons are not covered by deletion/duplication analysis for the indicated gene; see Additional Technical Information.

CPT Code(s): 81405; 81406; 81479

HOTLINE NOTE: Remove information found in the Remarks field.

2010138 *RUNX1-RUNX1T1* (*AML1-ETO*) t(8;21) Detection, Quantitative — AML1-ETO Q

Performed: RNA isolation: Sun-Sat
Assay: Varies
Reported: 5-9 days

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

Methodology: Massively Parallel Sequencing
Performed: Varies
Reported: 3 weeks

Specimen Required: Collect: Lavender or pink (EDTA) or yellow (ACD solution A or B).
Specimen Preparation: Transport 3 mL whole blood. (Min: 2 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Serum or plasma; grossly hemolyzed or frozen specimens; saliva, buccal brush, or swab; FFPE tissue.
Stability (collection to initiation of testing): Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable

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.

CPT Code(s): 81405; 81408; 81479

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

Specimen Required: Collect: **Fetal Specimen:** Four (4) T-25 flasks at 80% confluent of cultured amniocytes or cultured chorionic villus sampling (CVS).
AND Maternal Whole Blood Specimen: Lavender (EDTA), pink (K_2EDTA), or yellow (ACD Solution A or B).
Specimen Preparation: **Cultured Amniocytes or Cultured CVS:** Fill flasks with culture media. Transport four (4) T-25 flasks at 80 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 the client is unable to culture amniocytes, this can be arranged by contacting ARUP Client Services at (800) 522-2787 ext. 2141 prior to test submission.**
Maternal Whole Blood Specimen: Transport 3 mL whole blood (Min: 2 mL)
Storage/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.
Stability (collection to initiation of testing): **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

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 four T-25 flasks at 80 percent confluent. Cell culture time is independent of testing turnaround time. Maternal specimen is recommended for proper test interpretation. Order Maternal Cell Contamination.

CPT Code(s): 81405; 81408; 81479; 81265 Fetal Cell Contamination (FCC)

0055567 T-Cell Clonality Screening by PCR — T CELL-F

Performed: **DNA Isolation:** Sun-Sat
Assay: Varies
Reported: 5-9 days

3002100 Tuberous Sclerosis Complex Panel, Sequencing and Deletion/Duplication — TSC NGS

Methodology: Massively Parallel Sequencing
Performed: Varies
Reported: 3 weeks

Specimen Required: Collect: Lavender or pink (EDTA) or yellow (ACD solution A or B).
Specimen Preparation: Transport 3 mL whole blood. (Min: 3 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Serum or plasma; grossly hemolyzed or frozen specimens; saliva, buccal brush, or swab; FFPE tissue.
Stability (collection to initiation of testing): Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable

CPT Code(s): 81405, 81406, 81407

3002096 Tuberous Sclerosis Complex Panel, Sequencing and Deletion/Duplication, Fetal — TSC NGS FE

Performed: Varies
Reported: **2-3 weeks; if culture is required an additional 1 to 2 weeks is required for processing time**

Specimen Required: Collect: **Fetal Specimen:** Four (4) T-25 flasks at 80% confluent of cultured amniocytes or cultured chorionic villus sampling (CVS). **AND Maternal Whole Blood Specimen:** Lavender (EDTA), pink (KEDTA), or yellow (ACD Solution A or B).
Specimen Preparation: **Cultured Amniocytes or Cultured CVS:** Fill flasks with culture media. Transport four (4) T-25 flasks at 80 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 the client is unable to culture amniocytes, this can be arranged by contacting ARUP Client Services at (800) 522-2787 prior to test submission.**
Maternal Whole Blood Specimen: Transport 3 mL whole blood (Min: 2 mL)
Storage/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.
Stability (collection to initiation of testing): **Cultured Amniocytes or Cultured CVS:** Ambient: 48 hours; Refrigerated: Unacceptable; Frozen: Unacceptable
Maternal Cell Contamination Specimen: Room temperature: 7 days; Refrigerated: 1 month; Frozen: Unacceptable

Interpretive Data:
Refer to report.

Note: Genes tested: *TSC1*, *TSC2*

Reported times are based on receiving the four (4) T-25 flasks at 80 percent confluent. Cell culture time is independent of testing turn-around time. Maternal specimen is recommended for proper test interpretation. Order Maternal Cell Contamination.

CPT Code(s): 81405; 81406; 81407; 81265

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

Methodology: Massively Parallel Sequencing
Performed: Varies
Reported: 3 weeks

Specimen Required: Collect: Lavender or pink (EDTA) or yellow (ACD solution A or B).
Specimen Preparation: Transport 3 mL whole blood. (Min: 2 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Serum or plasma; grossly hemolyzed or frozen specimens; saliva, buccal brush, or swab; FFPE tissue.
Stability (collection to initiation of testing): Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable

Note: Genes Tested: *ACVRL1*; *AKT1*; *BMPR2*; *CCBE1*; *CCM2**; *EIF2AK4*; *ELMO2*; *ENG**; *EPHB4*; *FAT4*; *FLT4**; *FOXC2*; *GATA2*; *GDF2*; *GJC2**; *GLMN**; *KCNK3*; *KRIT1*; *PDCD10*; *PIEZO1**; *PTEN**; *RASA1*; *SMAD4*; *SMAD9*; *SOX18**; *STAMBP**; *TEK*; *VEGFC*

*One or more exons are not covered by sequencing and/or deletion/duplication analysis for the indicated gene; see Additional Technical Information.

CPT Code(s): 81321; 81323; 81405; 81406; 81479

HOTLINE NOTE: Remove information found in the Remarks field.

2009463 Voltage-Gated Potassium Channel (VGKC) Antibody with Reflex to LGI1 and CASPR2 Screen and Titer, Serum — VGKC R

Methodology: Quantitative Radioimmunoassay/Semi-Quantitative Cell-Based Indirect Fluorescent Antibody

Reference Interval:

Test Number	Components	Reference Interval
2004890	Voltage-Gated Potassium Channel (VGKC) Antibody, Serum	Negative: 31 pmol/L or less Indeterminate: 32-87 pmol/L Positive: 88 pmol/L or greater
2009456	Leucine-Rich, Glioma-Inactivated Protein 1 Antibody, IgG CBA-IFA with Reflex to Titer, Serum	Less than 1:10
2009452	Contactin-Associated Protein-2 Antibody, IgG CBA-IFA with Reflex to Titer, Serum	Less than 1:10

3001996 Voltage-Gated Potassium Channel (VGKC) Complex Antibody Panel with Reflex to Titer, CSF — VGKCCSFPAN

Methodology: Quantitative Radioimmunoassay/Semi-Quantitative Cell-Based Indirect Fluorescent Antibody

Reference Interval:

Test Number	Components	Reference Interval
3001387	Voltage-Gated Potassium Channel (VGKC) Antibody, CSF	Negative: 0.0-1.1 pmol/L Positive: 1.2 pmol/L or greater
3001992	Leucine-Rich, Glioma-Inactivated Protein 1 Antibody, IgG CBA-IFA with Reflex to Titer, CSF	Less than 1:1
3001986	Contactin-Associated Protein-2 Antibody, IgG CBA-IFA with Reflex to Titer, CSF	Less than 1:1

0050228 **West Nile Virus Antibodies, IgG and IgM by ELISA, CSF** **WNILE CSF**

Specimen Required: Collect: CSF.
Specimen Preparation: Transfer 2 mL CSF to an ARUP Standard Transport Tube. (Min: 0.3 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Bacterially contaminated, heat-inactivated, hemolyzed, or xanthochromic specimens.
Stability (collection to initiation of testing): Ambient: 8 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)

0050238 **West Nile Virus Antibody, IgG by ELISA, CSF** **WNIL IGG**

Specimen Required: Collect: CSF.
Specimen Preparation: Transfer 2 mL CSF to an ARUP Standard Transport Tube. (Min: 0.3 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Bacterially contaminated, heat-inactivated, hemolyzed, or xanthochromic specimens.
Stability (collection to initiation of testing): Ambient: 8 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)

0050239 **West Nile Virus Antibody, IgM by ELISA, CSF** **WNIL IGM**

Specimen Required: Collect: CSF.
Specimen Preparation: Transfer 2 mL CSF to an ARUP Standard Transport Tube. (Min: 0.3 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Bacterially contaminated, heat-inactivated, hemolyzed or xanthochromic specimens.
Stability (collection to initiation of testing): Ambient: 8 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)

HOTLINE: Effective August 15, 2022

The following will be discontinued from ARUP's test menu on August 15, 2022.
Replacement test options are supplied if applicable.

Test Number	Test Name	Refer To Replacement
0065078	Bordetella pertussis by PCR	Bordetella pertussis/parapertussis by PCR (0065080)
2008100	Chimerism, Additional Donor	Chimerism, Additional Donor (3005468)
2002067	Chimerism, Donor	Chimerism, Donor (3005462)
2002066	Chimerism, Post-Transplant (Extended TAT as of 11/20/20-no referral available)	Chimerism, Posttransplant (3005454)
2002064	Chimerism, Post-Transplant, Sorted Cells (Extended TAT as of 11/20/20-no referral available)	STRPOST-T; STRPOST-B; STRPOST-33; STRPOST-GR; STRPOST-MO; STRPOST-34; STRPOST-56 (3005393; 3005401; 3005409; 3005417; 3005425; 3005433; 3005441)
2002065	Chimerism, Recipient Pre-Transplant	Chimerism, Recipient, Pretransplant (3005449)
2001551	Chlamydia trachomatis and Neisseria gonorrhoeae by Transcription-Mediated Amplification (TMA), SurePath	
2013663	Cystic Fibrosis (CFTR) 165 Pathogenic Variants with Reflex to Sequencing	Cystic Fibrosis (CFTR) Sequencing and Deletion/Duplication (3004745)
2013664	Cystic Fibrosis (CFTR) 165 Pathogenic Variants with Reflex to Sequencing and Reflex to Deletion/Duplication	Cystic Fibrosis (CFTR) Sequencing and Deletion/Duplication (3004745)
0090499	Drug Screen (Nonforensic), Serum	Drug Profile, Expanded Targeted Panel by LC-MS/MS, Serum/Plasma (3004833)
0090500	Drug Screen (Nonforensic), Urine, Qualitative	Drug Profile, Expanded Targeted Panel by LC-MS/MS, Urine (3005060)
2008803	Expanded Hearing Loss Panel, Sequencing and Deletion/Duplication	
0020725	Glomerular Filtration Rate, Estimated	Glomerular Filtration Rate (Estimated) (3005478)
2011148	Herpes Simplex Virus (HSV) by PCR with Reflex to HSV (HSV-1/HSV-2) Subtype by PCR	Herpes Simplex Virus (HSV-1/HSV-2) Subtype by PCR (2010095)
0060041	Herpes Simplex Virus by PCR	Herpes Simplex Virus (HSV-1/HSV-2) Subtype by PCR (2010095)
3000599	Kidney Profile	Glomerular Filtration Rate (Estimated) (3005478)
2007537	Non-Invasive Prenatal Testing for Fetal Aneuploidy	
2013142	Non-Invasive Prenatal Testing for Fetal Aneuploidy with 22q11.2 Microdeletion	Fetal Aneuploidy Screening with 22q11 (3004778)
2010232	Non-Invasive Prenatal Testing for Fetal Aneuploidy with Microdeletions	Fetal Aneuploidy Screening with Microdeletions (3004781)
3001170	Platelet Antigen 1 Genotyping (HPA-1)	Platelet Antigen Genotyping Panel (3000193)