

Quarterly HOT LINE: Effective May 16, 2011

This Hot Line is published by ARUP Laboratories to notify clients of updates to our test menu. New tests, inactivated tests, and test changes will be included in the Hot Line. [Hot Lines](#) may be viewed on our Web site at aruplab.com 45 days before the effective date. The up-to-date [Laboratory Test Directory](#) can be viewed online on the effective date. For additional information, contact ARUP Client Services at (800) 522-2787.

Changes are indicated by the red type. Note that only amended fields of an assay appear in this publication. All other fields remain the same. A red check mark (✓) indicates changes that also apply to other tests.

Hot Line 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
23	0051265	Achondroplasia (<i>FGFR3</i>) 2 Mutations, Fetal						●						
23	0060325	Acid Fast Stain, Partial or Modified (for <i>Nocardia sp.</i>)				●								
23	0091246	Actifed, Serum or Plasma				●								
24	0091328	Acyclovir (Zovirax®), Serum or Plasma				●								
24	0040033	Acylcarnitine Quantitative Profile, Plasma				●								
24	0030056	ADAMTS13 Activity				●								
24	0098115	Adenosine Deaminase, Body Fluid				●								
25	0060115	Aerobic Organism Identification		●		●			●					
25	0065070	Aerobic Organism Identification with Reflex to Susceptibility		●		●			●					
26	0060152	AFB Culture (Includes AFB Stain 0060151)		●		●	●							
26	0060738	AFB Culture (Includes AFB Stain 0060151) with Reflex to <i>Mycobacterium tuberculosis</i> Amplified Direct Detection (0060095)			●	●								
24	0091312	Albuterol, Serum or Plasma (See 0091328 on pg 24)				●								
26	2002582	Aldosterone & Renin, Direct with Ratio (See 0070015 on pg 26)					●							
26	0070015	Aldosterone, Serum					●							
27	0070480	Aldosterone, Urine				●								
27	0070073	Aldosterone/Renin Activity Ratio					●							

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27	0021020	Alkaline Phosphatase Isoenzymes				●								
27	0055195	Allergen, Epidermals & Animal Proteins, Pig (Swine) Epithelium IgE	●			●								
27	0055197	Allergen, Epidermals & Animal Proteins, Rat Epithelium IgE	●			●								
28	0055446	Allergen, Food, Pinto Bean IgE	●			●								
28	0097911	Allergen, Food, Sugar Cane IgG				●		●						
28	2004670	Allergen, Fungi & Molds, <i>Botrytis cinerea</i> Available April 18, 2011											●	
28	0097935	Allergen, Tree, Maple Red Tree												●
28	2004243	Allergic Bronchopulmonary Aspergillosis (ABPA) Panel by ID & EIA			●									
29	0050043	Alpha-1-Microglobulin, Urine				●								
29	0098727	Alpha-2-Antiplasmin, Activity				●								
29	0099408	Aluminum, Urine				●								
29	0080044	Amino Acids Quantitative, Urine				●								
30	0080103	Aminolevulinic Acid (ALA), Urine				●								
30	0020471	Amylase, Urine				●								
30	0060164	Anaerobic Organism Identification		●		●			●	●				
31	0060198	Anaerobic Organism Identification with Reflex to Susceptibility		●		●		●	●					
31	0078001	Androstenediol Glucuronide				●								
32	0051113	Angelman Syndrome by Methylation												●
32	2005077	Angelman Syndrome and Prader-Willi Syndrome by Methylation											●	
33	0091349	Antabuse Disulfiram (DEDTC Metabolite), Serum or Plasma	●			●								
33	2004886	Antibiotic Level, Cefazidime Available April 18, 2011											●	

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33	0013005	Antibody Identification, RBC (Prenatal Only)			●									
33	0093142	Antimicrobial Level - Doxycycline (Serum), BA				●			●					
34	0092065	Antimicrobial Level - Streptomycin, HPLC				●			●					
34	0060227	Antimicrobial Susceptibility - Mould Susceptibility				●		●	●					
35	0060235	Antimicrobial Susceptibility - Yeast Susceptibility			●		●	●	●					
29	0099409	Antimony, Urine <i>(See 0099408 on pg 29)</i>				●								
35	0050080	Anti-Nuclear Antibodies (ANA), IgG by ELISA with Reflex to ANA, IgG by IFA	●					●	●					
35	0050317	Anti-Nuclear Antibody (ANA), IgG by ELISA with Reflexes to ANA by IFA and to dsDNA, RNP, Smith, SSA, and SSB Antibodies	●						●					
36	0030370	Antithrombin Panel		●										
36	0030192	APC Resistance Profile with Reflex to Factor V Leiden				●								
36	0025000	Arsenic, Urine with Reflex to Fractionated				●								
36	0091333	Atropine, Serum or Plasma				●								
36	0091171	Atropine, Urine				●								
61	0055351	Autoimmune Hepatitis Panel Plus with Reflex to Titers <i>(See 0055248 on pg 61)</i>					●							
61	0055356	Autoimmune Hepatitis Panel with Reflex to ANA IFA Titer <i>(See 0055248 on pg 61)</i>					●							
37	2005017	BCR-ABLI, Major (p210), Quantitative											●	
38	2005016	BCR-ABLI, Minor (p190), Quantitative											●	
39	2005010	BCR-ABLI, Qualitative with Reflex to BCR-ABLI Quantitative											●	
40	2004924	BCR-ABLI, T315I Mutation Detection, Quantitative Available April 18, 2011											●	

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40	0055553	<i>BCR-ABL</i> , t(9;22) Translocation Qualitative by RT-PCR <i>(Price Change)</i>				●	●	●	●	●				
40	0051066	<i>BCR-ABL</i> , t(9;22) Translocation Quantitative Assay by RT-PCR												●
41	0091315	Belladonna Alkaloids Panel	●			●								
41	2002464	Bence Jones Protein Detection, Quantitation & Characterization with Reflex to Quantitative Free Kappa & Lambda Light Chains, Urine. (Test Orderable by University of Utah Only)				●								
41	0050161	Bence Jones Protein, Qualitative Free Kappa & Lambda Light Chains, Urine				●								
41	0050618	Bence Jones Protein, Quantitative Free Kappa & Lambda Light Chains, Urine				●								
41	0050689	Bence Jones Protein, Quantitative Free Kappa Light Chains, Urine				●								
41	0050682	Bence Jones Protein, Quantitative Free Lambda Light Chains, Urine				●								
42	0050388	Beta Globin (<i>HBB</i>) Sequencing, Fetal			●	●		●						
23	0051422	Beta Globin (<i>HBB</i>) HbS, HbC, and HbE Mutations, Fetal <i>(See 0051265 on pg 23)</i>						●						
42	2002434	(1,3)-Beta-D-Glucan (Fungitell®)				●								
43	0070029	Beta-hCG, Quantitative (Tumor Marker)		●		●		●						
43	0020730	Beta-hCG, Quantitative (Tumor Marker), CSF		●		●		●						
43	0020229	Beta-hCG, Urine Qualitative				●								
43	0020245	Bicarbonate (HCO ₃), Urine				●								
44	0020511	Bilirubin, Direct, Body Fluid												●
29	0099410	Bismuth, Urine <i>(See 0099408 on pg 29)</i>				●								

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44	2002926	<i>Blastomyces dermatitidis</i> Antigen EIA				●								
23	0051434	Bloom (<i>BLM</i>) 2281del6/ins7 Mutation, Fetal (See 0051265 on pg 23)						●						
44	0051750	<i>BRAF</i> codon 600 Mutation Detection with Reflex to <i>MLH1</i> Promoter Methylation	●	●	●	●			●					
44	0090193	Bupropion and Metabolite	●			●					●			
29	0025040	Cadmium, Urine (See 0099408 on pg 29)				●								
44	0099460	Calculi (Stone) Analysis						●						
23	0051454	Canavan (<i>ASPA</i>) 4 Mutations, Fetal (See 0051265 on pg 23)						●						
44	0070412	Carbohydrate Deficient Transferrin for Alcohol Use					●		●					
45	2002918	Carbohydrate Deficient Transferrin for Congenital Disorders of Glycosylation				●								
45	0080065	Carnitine, Free				●	●							
45	0080068	Carnitine, Free & Total (Includes Carnitine, Esterified)				●								
45	0080067	Carnitine, Total				●	●							
46	0080407	Catecholamines Fractionated by LC-MS/MS, Urine Free				●	●							
46	2005114	CD19 by Immunohistochemistry Available April 18, 2011											●	
47	2004927	CDKL5-Related Disorders (CDKL5) Deletion/Duplication Available April 18, 2011											●	
48	2004931	CDKL5-Related Disorders (CDKL5) Sequencing Available April 18, 2011											●	
49	2004935	CDKL5-Related Disorders (CDKL5) Sequencing and Deletion/Duplication Available April 18, 2011											●	
50	2005018	Celiac Disease (HLA-DQA1*05, HLA-DQB1*02, and HLA-DQB1*03:02) Genotyping Available April 18, 2011											●	

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51	0051273	Cell-Mediated Immune Function Screen			●	●	●	●						
51	0050160	Ceruloplasmin				●								
51	0060224	<i>Chlamydia trachomatis</i> & <i>Neisseria gonorrhoeae</i> DNA Probe				●			●					
52	0065059	<i>Chlamydia trachomatis</i> DNA Probe				●		●	●					
29	0025068	Chromium, Urine (See 0099408 on pg 29)				●								
52	0080469	Chromogranin A				●	●	●						
22	0093194	Chronic Lymphocytic Leukemia Follow up Phenotyping by Flow Cytometry									●			
52	2003302	Citalopram, Serum or Plasma	●	●		●								
52	0091362	Clonidine, Serum or Plasma				●								
52	0091223	Clonidine, Urine				●								
53	0060140	<i>Clostridium difficile</i> Culture with reflex to Cytotoxin Cell Assay				●			●					
53	0098930	Clozapine			●									
29	0025032	Cobalt, Urine (See 0099408 on pg 29)				●								
53	0081119	Coenzyme Q10, Total				●								
53	0050198	Complement Activity Enzyme Immunoassay, Total				●	●							
53	0099078	Complement Component 1, Functional			●									
28	2003304	Complement Component 3A (See 2004243 on pg 28)			●									
54	2003180	Complement Component 4A			●									
53	0099072	Complement Component 6 (See 0099078 on pg 53)			●									
53	0099131	Complement Component 6 Functional (See 0099078 on pg 53)			●									
53	0099121	Complement Component 7 Functional (See 0099078 on pg 53)			●									

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53	0099133	Complement Component 8 Functional <i>(See 0099078 on pg 53)</i>			●									
53	0099120	Complement Component 9 Functional <i>(See 0099078 on pg 53)</i>			●									
22	0020694	Copper, Liver									●			
29	0020461	Copper, Urine <i>(See 0099408 on pg 29)</i>				●								
54	0097222	Cortisol Urine Free by LC-MS/MS				●								
54	0092100	Cortisol/Cortisone Urine Free by LC-MS/MS				●								
54	0050182	C-Reactive Protein, High Sensitivity										●		
54	0055256	Cyclic Citrullinated Peptide (CCP) Antibody, IgG	●			●								
23	2001970	Cystic Fibrosis (CFTR) 32 Mutations, Fetal <i>(See 0051265 on pg 23)</i>						●						
54	0081106	Cystine Quantitative, Urine				●								
54	0081105	Cystinuria Panel				●								
55	0051104	Cytochrome P450 2C19 (CYP2C19) 9 Mutations								●				
55	0050165	Cytomegalovirus Antibody, IgG				●			●					
55	2004760	Cytomegalovirus Antiviral Resistance by Sequencing Available April 18, 2011											●	
55	0091576	Darvocet, Serum or Plasma		●		●								
56	0091589	Darvocet, Urine				●								
56	0030057	D-Dimer				●		●						
56	0030461	Dilute Russell Viper Venom Time (dRVVT) with Reflex to dRVVT 1:1 Mix & Confirmation				●								
56	2003254	Drug Screen, Targeted, Serum or Plasma				●		●						
57	0092420	Drugs of Abuse 9 Panel, Serum or Plasma - Screen with Reflex to Confirmation/Quantitation				●								

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57	0090439	Drugs of Abuse Confirmation/Quantitation - Amphetamines - Urine				●								
57	0090357	Drugs of Abuse Confirmation/Quantitation - Barbiturates - Urine				●								
57	0090676	Drugs of Abuse Confirmation/Quantitation - Cannabinoids (9-carboxy-THC) - Serum or Plasma						●				●		
58	0090369	Drugs of Abuse Confirmation/Quantitation - Cannabinoids (9-carboxy-THC) - Urine				●		●				●		
58	0090359	Drugs of Abuse Confirmation/Quantitation - Cocaine Metabolite (Benzoylecgonine) - Urine				●								
57	0092570	Drugs of Abuse Confirmation/Quantitation - Fentanyl & Metabolite – Urine <i>(See 0090439 on pg 57)</i>				●								
58	0090362	Drugs of Abuse Confirmation/Quantitation - Methadone & Metabolite - Urine				●								
58	0090364	Drugs of Abuse Confirmation/Quantitation - Opiates – Urine <i>(See 0090362 on pg 58)</i>				●								
58	0090368	Drugs of Abuse Confirmation/Quantitation - Propoxyphene & Metabolite – Urine <i>(See 0090362 on pg 58)</i>				●								
58	0090306	Drugs of Abuse Screen - Cocaine & Metabolites - Urine				●								
58	0090312	Drugs of Abuse Screen - Opiates - Urine				●								
59	0090302	Drugs of Abuse Screen - Stimulant Amines - Urine				●								
23	0051464	Dysautonomia, Familial (IKBKAP) 2 Mutations, Fetal <i>(See 0051265 on pg 23)</i>						●						

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59	2002440	EGFR Mutation Detection by PCR and Fragment Analysis				●		●	●	●				
60	2004857	EGFR Mutation Detection with Reflex to EML4/ALK Translocation by RT-PCR Available April 18, 2011											●	
60	0049350	EGFR pharmDx™ Tissue Assay, Paraffin												●
60	0080351	Ehlers-Danlos Syndrome Type VI Screen				●								
60	0093005	Epidermal (Skin) Antibody												●
60	0020610	Erythrocyte Porphyrin (EP), Whole Blood				●								
61	0092382	Escitalopram, Serum or Plasma		●		●				●				
61	0055248	F-Actin (Smooth Muscle) Antibody, IgG			●	●	●							
61	0051174	F-Actin (Smooth Muscle) Antibody, IgG by ELISA with Reflex to Smooth Muscle Antibody, IgG Titer (See 0055248 on pg 61)					●							
62	2004920	Familial Adenomatous Polyposis (APC) Deletion/Duplication Available April 18, 2011											●	
63	2004863	Familial Adenomatous Polyposis (APC) Sequencing Available April 18, 2011											●	
64	2004915	Familial Adenomatous Polyposis Panel: APC Sequencing, APC Deletion/Duplication, and MYH 2 Mutations Available April 18, 2011											●	
65	2001980	Familial Mutation, Targeted Sequencing, Fetal						●						
23	0051469	Fanconi Anemia, Group C (FANCC) 2 Mutations, Fetal (See 0051265 on pg 23)						●						
65	2002354	Fat, Fecal Quantitative 24-Hour Collection (Includes Homogenization)								●				

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65	2002355	Fat, Fecal Quantitative 48-Hour Collection (Includes Homogenization) <i>(See 2002354 on pg 65)</i>								•				
65	2002356	Fat, Fecal Quantitative 72-Hour Collection (Includes Homogenization) <i>(See 2002354 on pg 65)</i>								•				
65	0030130	Fibrinogen				•								
65	0030137	Fibrinogen Panel				•								
65	0091341	Fluoride, Serum or Plasma				•								
23	0050543	Fragile X (<i>FMRI</i>) Diagnostic, Fetal <i>(See 0051265 on pg 23)</i>						•						
66	0060149	Fungal Culture				•			•					
66	0060728	Fungal Culture, Skin, Hair or Nails							•					
66	0060163	Fungal (Mould/Yeast) Identification				•			•					
66	0090057	Gabapentin			•									
22	0051346	Galactosemia (<i>GALT</i>) Sequencing									•			
67	0051270	Galactosemia, (<i>GALT</i>) 9 Mutations, Fetal				•		•			•			
22	0051176	Galactosemia, (<i>GALT</i>) 9 Mutations									•			
22	0051175	Galactosemia, (<i>GALT</i>) Enzyme Activity & 9 Mutations									•			
23	0051439	Gaucher (<i>GBA</i>) 8 Mutations, Fetal <i>(See 0051265 on pg 23)</i>						•						
67	0091357	Glipizide, Serum or Plasma				•								
67	0099165	Glucagon				•								
68	0020476	Glucose, Urine				•								
68	0070080	Growth Hormone				•								
68	0070069	Growth Hormone, Timed - Other				•								
68	0070081	Growth Hormone, 0 Minutes <i>(See 0070069 on pg 68)</i>				•								
68	0070048	Growth Hormone, 15 Minutes <i>(See 0070069 on pg 68)</i>				•								

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68	0070082	Growth Hormone, 30 Minutes <i>(See 0070069 on pg 68)</i>				●								
68	0070049	Growth Hormone, 45 Minutes <i>(See 0070069 on pg 68)</i>				●								
68	0070083	Growth Hormone, 60 Minutes <i>(See 0070069 on pg 68)</i>				●								
68	0070084	Growth Hormone, 90 Minutes <i>(See 0070069 on pg 68)</i>				●								
68	0070164	Growth Hormone, 120 Minutes <i>(See 0070069 on pg 68)</i>				●								
68	0099470	Heavy Metals Panel 3, Blood				●								
69	0099475	Heavy Metals Panel 3, Urine with Reflex to Arsenic Fractionated				●								
69	0020584	Heavy Metals Panel 4, Blood				●								
69	0020572	Heavy Metals Panel 4, Urine with Reflex to Arsenic Fractionated <i>(See 0099475 on pg 69)</i>				●								
69	0025055	Heavy Metals Panel 6, Urine with Reflex to Arsenic Fractionated <i>(See 0099475 on pg 69)</i>				●								
69	0020597	Hepatitis A Virus Panel				●								
69	2001567	Hepatitis B Virus Genotype				●		●	●					
70	0020094	Hepatitis Be Virus Antigen				●								
70	2002483	Hepatitis C Virus Antibody by CIA				●								
70	0030064	Hexagonal Phospholipid Neutralization				●								
70	0070038	Histamine, Urine			●	●	●							
70	0070037	Histamine, Whole Blood				●	●							
71	0050860	Histone Antibody, IgG				●	●							
71	0060730	<i>Histoplasma</i> Antigen by EIA, Urine				●								
71	0080413	Homocystine Quantitative, Urine				●								
71	0020284	Human Immunodeficiency Virus 1 Antibody, Confirmation				●								

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72	0055670	Human Immunodeficiency Virus 1, Genotyping				●		●	●					
72	2002688	Human Immunodeficiency Virus 1 RNA Quantitative bDNA with Reflex to Genotype			●	●								
72	2002689	Human Immunodeficiency Virus 1 RNA Quantitative Real-Time PCR with Reflex to Genotype		●		●								
73	0051186	Human Immunodeficiency Virus 1, virco [®] TYPE				●		●	●					
73	0060816	Human Papillomavirus (HPV) DNA Probe, High Risk (ThinPrep [®]) with Reflex to Genotyping												●
73	0060818	Human Papillomavirus (HPV) DNA Probe, High Risk, Cervical Brush (Digene) with Reflex to Genotyping												●
73	0060817	Human Papillomavirus (HPV) DNA Probe, High Risk SurePath [®] (AutoCyte) with Reflex to Genotyping												●
73	0099721	Human Placental Lactogen			●									
73	0091172	Hydralazine, Urine				●								
73	0091128	Hydrocarbon & Oxygenated Volatiles, Urine				●								
74	2002348	25-Hydroxyvitamin D ₂ and D ₃ by Tandem Mass Spectrometry, Serum					●							
24	0091207	Hydroxyzine, Serum or Plasma (See 0091328 on pg 24)				●								
74	0050525	Immunoglobulin A, Saliva				●								
74	0080403	Indicans, Urine Qualitative				●								
74	2003260	Inhibitor Assay, PT with Reflex to PT 1:1 Mix				●								
74	2003266	Inhibitor Assay, PTT with Reflex to PTT 1:1 Mix, with Reflex to 1-Hour Incubation				●								
74	0070022	Insulin, Other						●	●					

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75	0093148	Interferon-Alpha by EIA, Serum or Plasma	●			●								
75	0092487	Iodine, 24 Hour, Urine			●	●								
75	0028250	Iron, Liver					●				●			
75	2000271	Isohemagglutinin Titer, IgG				●								
75	2000280	Isohemagglutinin Titer, IgG & IgM				●								
75	2000270	Isohemagglutinin Titer, IgM				●								
76	2004984	Juvenile Polyposis (<i>BMPRIA</i>) Deletion/Duplication Available April 18, 2011											●	
77	2004988	Juvenile Polyposis (<i>BMPRIA</i>) Sequencing Available April 18, 2011											●	
78	2004992	Juvenile Polyposis (<i>BMPRIA</i>) Sequencing and Deletion/Duplication Available April 18, 2011											●	
23	0051644	Kell K/k Antigen (<i>KEL</i>) Genotyping (See 0051265 on pg 23)						●						
78	0098627	Keppra® (Levetiracetam)			●									
78	0090177	Lamotrigine			●									
29	0025060	Lead, Urine (See 0099408 on pg 29)				●								
78	0070322	<i>Legionella pneumophila</i> Antigen, Urine				●								
79	0060113	<i>Legionella</i> Species, Culture				●								
79	0060158	<i>Leptospira</i> Culture				●								
22	0095244	Leukemia/Lymphoma Phenotyping (Comprehensive - Bone Marrow)									●			
22	0095243	Leukemia/Lymphoma Phenotyping (Comprehensive – Miscellaneous)									●			
22	0096299	Leukemia/Lymphoma Phenotyping (Comprehensive-Whole Blood)									●			
79	0097328	Limulus Amebocyte Lysate (LAL)				●								

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79	0099529	Listeria Antibody, Serum by CF				●								
79	0099270	Liver-Kidney Microsome Antibody, IgG						●						
80	0091200	LSD, Serum or Plasma				●								
80	0091224	LSD, Urine		●		●				●				
80	0030181	Lupus Anticoagulant Reflexive Panel				●								
80	0095854	Lymphocyte Subset Panel 1 – CD4 Absolute Count Only				●								
80	0095853	Lymphocyte Subset Panel 3 – T-Cell Subsets (CD4 & CD8), Absolute Counts Only				●								
81	2004963	Malaria Detection and Speciation, Qualitative by Real-Time PCR											●	
29	0025070	Manganese, Urine (See 0099408 on pg 29)				●								
81	0051692	Mannose Binding Lectin				●								
81	0020372	Meat Fibers, Fecal												●
81	0091084	Mercaptopurine Quantitation, Serum or Plasma		●		●				●				
29	0025050	Mercury, Urine (See 0099408 on pg 29)				●								
82	0080436	Metanephrines, Urine				●								
82	0091276	Methyl dopa, Serum or Plasma				●								
82	0099431	Methylmalonic Acid, Serum or Plasma (Vitamin B ₁₂ Deficiency)	●	●		●			●					
82	0083918	Methylmalonic Acid, Urine	●	●		●								
82	0091451	Molindone Serum or Plasma	●			●								
82	0091450	Molindone, Urine	●			●								
83	0051223	Motor & Sensory Neuropathy Evaluation with Immunofixation Electrophoresis & Reflex to ANNA Titer & ANNA Immunoblot			●									

Hot Line 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
83	0051224	Motor & Sensory Neuropathy Evaluation with Reflex to ANNA Titer & ANNA Immunoblot			●									
23	0051449	Mucopolipidosis, Type IV (<i>MCOLN1</i>) 2 Mutations, Fetal (See 0051265 on pg 23)						●						
83	0081357	Mucopolysaccharides, Quantitative, Urine				●								
83	0051390	Multiple Endocrine Neoplasia Type 2 (<i>MEN2</i>), <i>RET</i> Gene Mutations by Sequencing			●									
83	0051492	Multiple Endocrine Neoplasia, Type 2B (<i>RET</i>) 2 Mutations						●						
84	0060095	<i>Mycobacterium tuberculosis</i> Amplified Direct Detection				●								
84	2003294	<i>Mycoplasma hominis</i> Culture, Urogenital Source	●			●								
85	2004911	MYH-Associated Polyposis (MYH) 2 Mutations Available April 18, 2011											●	
86	2003093	Myositis Profile												●
86	2005176	Myositis-Specific Panel (15 Antibodies)											●	
86	0020223	Myoglobin, Urine				●								
87	0095835	Narcolepsy – HLA DNA Panel												●
87	2005023	Narcolepsy (HLA-DQB1*06:02) Genotyping											●	
87	0060223	<i>Neisseria gonorrhoeae</i> DNA Probe				●		●						
22	0093000	Neoplastic Mature T-Cell Evaluation by Flow Cytometry									●			
88	2004230	Neurokinin A (Substance K)			●									
88	0055506	Neutrophil-Associated Antibodies				●								
88	0092168	Niacin (Vitamin B ₃)			●									
29	0025045	Nickel, Urine (See 0099408 on pg 29)				●								
88	0092356	Nicotine & Metabolites, Urine				●								

Hot Line 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
23	0051459	Niemann-Pick, Type A (SMPD1) 4 Mutations, Fetal (See 0051265 on pg 23)						●						
88	0092140	Nitrogen, Total, Urine				●								
89	2005091	Opiates, Confirmation Only, Urine											●	
89	2005096	Opiates, Screen Only, Urine											●	
90	2005093	Opiates Screen with Reflex to Confirmation, Urine											●	
91	2004892	Ornithine Transcarbamylase Deficiency (OTC) Deletion/Duplication Available April 18, 2011											●	
92	2004901	Ornithine Transcarbamylase Deficiency (OTC) Sequencing Available April 18, 2011											●	
93	2004896	Ornithine Transcarbamylase Deficiency (OTC) Sequencing and Deletion/Duplication Available April 18, 2011											●	
93	0098834	Oxcarbazepine Metabolite			●									
94	2005097	Oxycodone/Oxymorphone, Confirmation Only, Urine											●	
94	2005103	Oxycodone/Oxymorphone Screen Only, Urine											●	
95	2005100	Oxycodone/Oxymorphone Screen with Reflex to Confirmation, Urine											●	
95	2004700	PAM50 Breast Cancer Intrinsic Classifier Currently Available											●	
95	2004232	Pancreastatin			●									
96	0099436	Pancreatic Polypeptide				●								
96	0060247	Parasite Examination, Macroscopic				●					●			
96	0095611	Parathyroid Hormone, CAP				●								
24	0090786	Paroxetine Quantitation, Serum or Plasma (See 0091328 on pg 24)				●								
96	2004366	Paroxysmal Nocturnal Hemoglobinuria, High Sensitivity, RBC	●			●		●	●					

Hot Line 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
97	2005006	Paroxysmal Nocturnal Hemoglobinuria Panel, RBC and WBC											●	
98	2005003	Paroxysmal Nocturnal Hemoglobinuria, WBC											●	
98	0096666	Paroxysmal Nocturnal Hemoglobinuria Profile, High Resolution - WBC												●
98	0030235	Partial Thromboplastin Time				●								
98	0020507	pH, Body Fluid				●								
99	0020305	pH, Urine				●								
24	0091551	Phenobarbital, Free & Total, Serum or Plasma <i>(See 0091328 on pg 24)</i>				●								
99	0091418	Phenothiazines Screen, Serum or Plasma				●			●	●				
99	0091417	Phenothiazines Screen, Urine				●			●	●				
99	0090090	Phenytoin						●						
100	2004980	Plasminogen Activator Inhibitor-1, PAI-1 (<i>SERPINE1</i>) Genotyping Available April 18, 2011											●	
24	0090800	Polychlorinated Biphenyls, Serum <i>(See 0091328 on pg 24)</i>				●								
100	0080260	Porphobilinogen (PBG), Urine				●								
100	2002181	Porphyrins & Porphobilinogen (PBG), Urine				●								
101	2002058	Porphyrins, Fractionation & Quantitation, Urine				●								
101	0051116	Prader-Willi Syndrome by Methylation												●
101	0091488	Prazosin, Urine				●								
24	2002554	Pregabalin <i>(See 0091328 on pg 24)</i>				●								
101	0070110	Progesterone		●		●	●							
101	0030114	Protein S, Functional						●						
102	0030215	Prothrombin Time				●								
102	0080342	Pyridinoline & Deoxypyridinoline by HPLC				●								

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Hot Line 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
23	0050421	RhCc Antigen (<i>RHCE</i>) Genotyping (See 0051265 on pg 23)						●						
23	0051368	RhD Antigen (<i>RhD</i>) Genotyping (See 0051265 on pg 23)						●						
23	0050423	RhEe Antigen (<i>RHCE</i>) Genotyping (See 0051265 on pg 23)						●						
102	2003277	Rheumatoid Arthritis Panel			●	●								
102	2003382	Ristocetin-Induced Platelet Aggregation Available April 18, 2011											●	
24	2003176	Rufinamide, Serum or Plasma (See 0091328 on pg 24)				●								
103	0099772	Secretin Available April 18, 2011											●	
29	0025067	Selenium, Urine (See 0099408 on pg 29)				●								
103	2003243	Septin 9 (<i>SEPT9</i>), Methylated DNA Detection by Real-Time PCR				●								
103	0080397	Serotonin, Serum				●		●						
104	0080395	Serotonin, Whole Blood				●								
24	0091539	Silicon, Serum or Plasma (See 0091328 on pg 24)				●								
104	2001573	Soluble CD30				●								
104	0081284	Soluble Mesothelin Related Peptides (MESOMARK®)			●									
104	0020375	Starch, Fecal												●
104	0060135	Stool Culture, <i>Campylobacter</i>				●								
104	0060134	Stool Culture, Routine (Includes <i>E. coli</i> Shiga-like Toxin by EIA 0060047)		●		●	●	●						
105	0060136	Stool Culture, <i>Vibrio</i>				●								
105	0060137	Stool Culture, <i>Yersinia</i>				●								
105	0060126	<i>Streptococcus</i> (Group A) Culture								●				
105	0091574	Strychnine				●								

Hot Line 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
23	0051429	Tay-Sachs (HEXA) 7 Mutations, Fetal (See 0051265 on pg 23)						●						
22	0093199	T-Cell Clonality by Flow Cytometry Analysis of TCR V-Beta									●			
29	0025009	Tellurium, Urine (See 0099408 on pg 29)				●								
24	0091561	Terbutaline, Serum or Plasma (See 0091328 on pg 24)				●								
105	2003246	Testosterone, Free, Adult Males by ED/LC-MS/MS,	●											
29	0025019	Thallium, Urine (See 0099408 on pg 29)				●								
23	0051508	Thanatophoric Dysplasia, Types 1 & 2 (FGFR3) 13 Mutations, Fetal (See 0051265 on pg 23)						●						
105	0030177	Thrombotic Risk, Inherited Etiologies (Uncommon)		●				●						
105	0050105	Thyroglobulin Antibody				●								
105	0050645	Thyroid Antibodies				●								
106	0050075	Thyroid Peroxidase (TPO) Antibody				●								
106	0070145	Thyroid Stimulating Hormone					●							
106	0070225	Thyroid Stimulating Hormone 3rd Generation					●							
106	0070138	Thyroxine, Free (Free T4)					●							
107	0093244	Thyroxine, Free by Equilibrium Dialysis/HPLC-Tandem Mass Spectrometry				●	●							
107	0099187	Tissue Plasminogen Activator, Antigen			●									
24	0091434	Titanium, Serum or Plasma (See 0091328 on pg 24)				●								
107	0070390	Topiramate			●									
107	0096372	Toxic-Shock Syndrome Panel, MAID		●		●								
107	0051272	Transplantation (ImmuKnow®) Immune Cell Function Assay			●			●						

Hot Line 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
24	0091354	Trifluoperazine, Serum or Plasma <i>(See 0091328 on pg 24)</i>				●								
107	0091101	Trifluoperazine, Urine				●								
108	0093243	Triiodothyronine, Free by Equilibrium Dialysis/HPLC-Tandem Mass Spectrometry				●	●							
24	0091396	Trimethoprim, Serum or Plasma <i>(See 0091328 on pg 24)</i>				●								
108	0020480	Urea Nitrogen, Urine				●								
108	0065031	Ureaplasma urealyticum & Mycoplasma hominis Culture				●			●					
108	0081145	Urine Supersaturation Profile				●								
109	0099435	Vasoactive Intestinal Peptide				●								
24	0090832	Venlafaxine, Serum or Plasma <i>(See 0091328 on pg 24)</i>				●								
109	0080389	Vitamin B ₁ (Thiamine), Plasma			●	●								
88	2003186	Vitamin B ₅ (Pantothenic Acid) <i>(See 0092168 on pg 88)</i>			●									
109	0080111	Vitamin B ₆ (Pyridoxal 5-Phosphate)				●		●	●					
109	2003184	Vitamin B ₇ (Biotin)			●									
109	0055662	Vitamin B ₁₂ with Reflex to Methylmalonic Acid, Serum or Plasma (Vitamin B ₁₂ Deficiency)	●				●		●					
110	0080379	Vitamin D, 25-Hydroxy					●							
110	0099225	Vitamin K ₁ , Serum				●								
110	2004250	Very Long-Chain and Branched Fatty Acids Profile <i>(Price Change)</i>												
110	2004890	Voltage-Gated Potassium Channel (VGKC) Antibody Available April 18, 2011											●	
22	2003387	von Willebrand Panel with Reflex to von Willebrand Multimeric Analysis									●			
111	0013025	Warm Triple Adsorption			●									
111	0060150	Yeast Culture				●			●					

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Hot Line 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
111	2004769	Yeast Differentiation by PNA FISH Available April 18, 2011											●	
111	0020605	Zinc Protoporphyrin (ZPP), Whole Blood				●								
111	0020614	Zinc Protoporphyrin (ZPP), Whole Blood Industrial				●								
29	0020462	Zinc, Urine (See 0099408 on pg 29)				●								
24	0091519	Ziprasidone (Geodon [®]), Serum or Plasma (See 0091328 on pg 24)				●								

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-9 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.

COMPONENT CHANGES

✓ **HOT LINE NOTE:** The following tests have component changes only. The changes to these tests will only affect interface clients. Refer to the Test Mix Addendum for further information.

- Chronic Lymphocytic Leukemia Follow up Phenotyping by Flow Cytometry (0093194)
- Copper, Liver (0020694)
- Galactosemia (*GALT*) Sequencing (0051346)
- Galactosemia, (*GALT*) 9 Mutations (0051176)
- Galactosemia, (*GALT*) Enzyme Activity & 9 Mutations (0051175)
- Leukemia/Lymphoma Phenotyping (Comprehensive - Bone Marrow) (0095244)
- Leukemia/Lymphoma Phenotyping (Comprehensive - Miscellaneous) (0095243)
- Leukemia/Lymphoma Phenotyping (Comprehensive - Whole Blood) (0096299)
- Neoplastic Mature T-Cell Evaluation by Flow Cytometry (0093000)
- T-Cell Clonality by Flow Cytometry Analysis of TCR V-Beta (0093199)
- von Willebrand Panel with Reflex to von Willebrand Multimeric Analysis (2003387)

0051265 Achondroplasia (FGFR3) 2 Mutations, Fetal

AD PCR FE

Interpretive Data:

Background information for Achondroplasia (FGFR3) 2 Mutations, Fetal:

Characteristics: Short stature with disproportionately short arms and legs, a large head, usually normal life span and intelligence; increased risk for death in infancy from compression of spinal cord and/or upper airway obstruction.

Incidence: 1:25,000.

Inheritance: Autosomal dominant; 80 percent arise from de novo mutations.

Penetrance: 100 percent.

Cause: Pathogenic *FGFR3* gene mutation.

Clinical Sensitivity: Two mutations, c.1138G>A and c.1138G>C, in the *FGFR3* gene account for greater than 99 percent of cases.

Methodology: PCR and fluorescent hybridization probes.

Analytical Sensitivity and Specificity: Greater than 99 percent.

Limitations: Mutations other than c.1138G>A and c.1138G>C will not be detected.

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

This test is performed pursuant to an agreement with Roche Molecular Systems, Inc.

Counseling and informed consent are recommended for genetic testing. Consent forms are available online at www.aruplab.com.

Refer to Statement C under Testing Information at <http://www.aruplab.com>.

✓ **HOT LINE NOTE:** This change also applies to:

- Beta Globin (*HBB*) HbS, HbC, and HbE Mutations, Fetal (0051422)
- Bloom (*BLM*) 2281del6/ins7 Mutation, Fetal (0051434)
- Canavan (*ASPA*) 4 Mutations, Fetal (0051454)
- Cystic Fibrosis (*CFTR*) 32 Mutations, Fetal (2001970)
- Dysautonomia, Familial (*IKBKAP*) 2 Mutations, Fetal (0051464)
- Fanconi Anemia, Group C (*FANCC*) 2 Mutations, Fetal (0051469)
- Fragile X (*FMRI*) Diagnostic, Fetal (0050543)
- Gaucher (*GBA*) 8 Mutations, Fetal (0051439)
- Kell K/k Antigen (*KEL*) Genotyping (0051644)
- Mucopolipidosis, Type IV (*MCOLNI*) 2 Mutations, Fetal (0051449)
- Niemann-Pick, Type A (*SMPDI*) 4 Mutations, Fetal (0051459)
- RhCc Antigen (*RHCE*) Genotyping (0050421)
- RhD Antigen (*RhD*) Genotyping (0051368)
- RhEe Antigen (*RHCE*) Genotyping (0050423)
- Tay-Sachs (*HEXA*) 7 Mutations, Fetal (0051429)
- Thanatophoric Dysplasia, Types 1 & 2 (*FGFR3*) 13 Mutations, Fetal (0051508)

0060325 Acid Fast Stain, Partial or Modified (for *Nocardia* sp.)

MS PAFS

Specimen Required: Collect: Tissue, fluid, aspirate, or respiratory specimen.

Specimen Preparation: Transport fluid or aspirate in sealed, sterile container. **OR** transport tissue in sterile container with moist gauze.

Storage/Transport Temperature: Room temperature. Submit specimen according to Biological Substance, Category B, shipping guidelines.

Stability (collection to initiation of testing): Ambient: 72 hours; Refrigerated: 72 hours; Frozen: Unacceptable

0091246 Actifed, Serum or Plasma

ACTIFED SP

Specimen Required: Collect: Plain red or lavender (EDTA).

Specimen Preparation: Separate serum or plasma from cells **within 2 hours**. Transfer 6 mL serum or plasma to ARUP Standard Transport Tubes. (Min: 2.6 mL)

Storage/Transport Temperature: Refrigerated.

Unacceptable Conditions: Separator tubes.

Stability (collection to initiation of testing): Ambient: **Undetermined**; Refrigerated: **Undetermined**; Frozen: **Undetermined**

0091328 Acyclovir (Zovirax®), Serum or Plasma

ACYCLOV

Specimen Required: Collect: Plain red.

Specimen Preparation: Separate serum or plasma from cells within **2 hours**. Transfer 1 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.5 mL)

Storage/Transport Temperature: Refrigerated.

Unacceptable Conditions: **Separator** tubes.

Stability (collection to initiation of testing): Ambient: 1 month; Refrigerated: 1 month; Frozen: 1 month

✓ **HOT LINE NOTE:** This change also applies to:

- Albuterol, Serum or Plasma (0091312)
- Hydroxyzine, Serum or Plasma (0091207)
- Paroxetine Quantitation, Serum or Plasma (0090786)
- Phenobarbital, Free & Total, Serum or Plasma (0091551)
- Polychlorinated Biphenyls, Serum (0090800)
- Pregabalin (2002554)
- Rufinamide, Serum or Plasma (2003176)
- Silicon, Serum or Plasma (0091539)
- Terbutaline, Serum or Plasma (0091561)
- Titanium, Serum or Plasma (0091434)
- Trifluoperazine, Serum or Plasma (0091354)
- Trimethoprim, Serum or Plasma (0091396)
- Venlafaxine, Serum or Plasma (0090832)
- Ziprasidone (Geodon®), Serum or Plasma (0091519)

0040033 Acylcarnitine Quantitative Profile, Plasma

ACYLCARN

Specimen Required: Collect: Green (sodium or lithium heparin). **Also acceptable: Plain red.**

Specimen Preparation: Separate **serum or plasma** from cells **ASAP or within 2 hours of collection**. Transfer 0.5 mL **serum or plasma** to an ARUP Standard Transport Tube **and freeze immediately**. (Min: 0.2 mL) **Avoid hemolysis.**

Storage/Transport Temperature: **CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.**

Remarks: **Clinical information is needed for appropriate interpretation.** Additional required information includes age, gender, diet (eg, TPN therapy), drug therapy, and family history. Biochemical Genetics Patient History Form is available on the ARUP Web site at aruplab.com/patienthistory or by contacting ARUP Client Services.

Unacceptable Conditions: Room temperature specimens. Specimens that have been refrigerated for longer than 12 hours.

Stability (collection to initiation of testing): After separation from cells: Ambient: Unacceptable; Refrigerated: 12 hours; Frozen: 1 month (avoid repeated freeze/thaw cycles)

0030056 ADAMTS13 Activity

ADAMTS-13

Specimen Required: Collect: Lt. blue (sodium citrate). Refer to Specimen Handling at aruplab.com for hemostasis/thrombosis specimen handling guidelines.

Specimen Preparation: Transfer 1 mL platelet-poor plasma to an ARUP Standard Transport Tube. (Min: 0.5 mL)

Storage/Transport Temperature: **CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.**

Unacceptable Conditions: Hemolyzed specimens. Serum or EDTA plasma.

Stability (collection to initiation of testing): Ambient: **3 hours**; Refrigerated: Unacceptable; Frozen: 2 weeks

0098115 Adenosine Deaminase, Body Fluid

ADA FLD

Specimen Required: Collect: Body fluid, CSF, peritoneal fluid, or pleural fluid. Collect specimen supernatant.

Specimen Preparation: Centrifuge specimen at room temperature. Transfer 0.3 mL **fluid** to an ARUP Standard Transport Tube and freeze. (Min: 0.1 mL)

Storage/Transport Temperature: Frozen. Specimen must remain frozen until received in lab.

Remarks: **Indicate source on requisition.**

Unacceptable Conditions: Turbid specimens. Whole blood. **Bronchioalveolar Lavage (BAL) specimens.**

Stability (collection to initiation of testing): Ambient: 24 hours; Refrigerated: 72 hours; Frozen: 6 months

0060115 Aerobic Organism Identification

MC ORG

Methodology: Identification methods including Biochemical, MALDI TOF and/or 16S rDNA sequencing.

Specimen Required: Collect: Actively growing organism, in pure culture.

Specimen Preparation: Transport sealed container with pure culture on agar slant or on a swab in bacterial transport media. Source of specimen is required.

Storage/Transport Temperature: Room temperature. Submit specimen according to Biological Substance, Category B, shipping guidelines.

Remarks: Indicate suspected pathogen.

Unacceptable Conditions: Mixed cultures or non-viable organisms. Leaking containers.

Stability (collection to initiation of testing): Ambient: 1 week; Refrigerated: Unacceptable; Frozen: Unacceptable

Note: Testing performed and associated charges billed depends on specimen source and type of organism suspected. An additional handling fee will be billed for all mixed cultures as indicated in the specimen requirements.

For suspected agents of bioterrorism, Salmonella, or Shigella, notify your state department of health and refer isolates to your state laboratory for identification. Susceptibilities on agents of bioterrorism are not performed at ARUP.

For identification by 16S rDNA sequencing only, order Organism Identification by 16s rDNA Sequencing (ARUP test code 0060720). For identification AND susceptibility testing order Aerobic Organism Identification with Reflex to Susceptibility (ARUP test code 0065070). For identification of Shiga-like toxin producing E. coli, order E. coli Shiga-like toxin by EIA (ARUP test code 0060047).

0065070 Aerobic Organism Identification with Reflex to Susceptibility

MC ORGIS

Methodology: Identification methods including Biochemical, MALDI TOF and/or 16S rDNA sequencing.

Specimen Required: Collect: Actively growing organism, in pure culture.

Specimen Preparation: Transport sealed container with pure culture on agar slant or on a swab in bacterial transport media. Source of specimen is required.

Storage/Transport Temperature: Room temperature. Submit specimen according to Biological Substance, Category B, shipping guidelines.

Remarks: Indicate suspected pathogen.

Unacceptable Conditions: Mixed cultures or non-viable organisms. Leaking containers.

Stability (collection to initiation of testing): Ambient: 1 week; Refrigerated: Unacceptable; Frozen: Unacceptable

Note: Testing performed and associated charges billed depends on specimen source and type of organism suspected. If a significant organism is identified, then the appropriate susceptibility panel will be added. An additional handling fee will be billed for all mixed cultures as indicated in the specimen requirements.

For suspected agents of bioterrorism, Salmonella or Shigella, notify your state department of health and refer isolates to your state laboratory for identification. Susceptibilities on agents of bioterrorism are not performed at ARUP.

For identification of Shiga-like toxin producing E. coli order test E. coli Shiga-like toxin by EIA (ARUP test code 0060047).

0060152 AFB Culture (Includes AFB Stain 0060151)

MC AFB

Methodology: Standard reference procedures for stain and culture. Identification **tests** of AFB **are** ordered and billed separately. DNA probes are available for *M. tuberculosis* complex and *M. avium-intracellulare* complex as indicated. DNA sequencing and other molecular techniques are used for identification. For drug susceptibilities, refer to Antimicrobial Susceptibility - AFB Mycobacteria (ARUP test code 0060217).

Specimen Required: Patient Preparation: **Three sputum specimens should be collected at 8-24 hour intervals (24 hours when possible) and should include at least one first-morning specimen.**

Collect: Sputum, CSF, urine, body fluid, tissue, **OR** gastric aspirate.

Specimen Preparation: Gastric lavage specimens must be neutralized with sodium carbonate if transport is delayed for more than four hours. Source of specimen is required. Transfer (**for each collection**) 10-15 mL sputum (Min: 1 mL), 5 mL CSF (Min: 1 mL), at least 40 mL urine (Min: 10 mL), at least 5 mL body fluid (Min: 1 mL), tissue (Min: Visible), **OR** 5-10 mL gastric aspirate (Min: 1 mL) to a sterile, leak-proof container. Place each specimen in an individual sealed bag.

Storage/Transport Temperature: Refrigerated. Submit specimen according to Biological Substance, Category B, shipping guidelines.

Remarks: Acid fast stain will **NOT** be performed on stool specimens, CSF if less than 5 mL, or urine specimens if less than 40 mL. However, these specimens will be cultured.

Unacceptable Conditions: Multiple same-site specimens (more than one in 24 hours), dry material, or material collected and transported on a **SWAB**.

Stability (collection to initiation of testing): Ambient: 24 hours; Refrigerated: 1 week; Frozen: 1 week

Reference Interval:

Culture negative for **acid fast bacilli**.

Identification ordered and performed on positives.

Susceptibility performed on all initial isolates of *M. tuberculosis* complex.

Susceptibility performed on *Mycobacterium* other than *M. tuberculosis* complex isolates by request only.

Susceptibility testing of *M. gordonae* is inappropriate.

0060738 AFB Culture (Includes AFB Stain 0060151) with Reflex to *Mycobacterium tuberculosis* Amplified Direct Detection (0060095)

MC AFBR

Performed: Sun-Sat

Reported: 1-62 days

Stain: 24 hours; Final negative **after** 8 weeks

Positive cultures are reported as soon as detected

Specimen Required: Patient Preparation: **Three sputum specimens should be collected at 8-24 hour intervals (24 hours when possible) and should include at least one first-morning specimen.**

Collect: Respiratory specimen.

Specimen Preparation: Transfer (**for each collection**) 10-15 mL respiratory specimen to a sterile, leak-proof container. (Min: 1 mL) Source of specimen is required.

Storage/Transport Temperature: Refrigerated. Submit specimen according to Biological Substance, Category B, shipping guidelines.

Unacceptable Conditions: Multiple same-site specimens (more than one in 24 hours), dry material, or material collected and transported on a **SWAB**. Specimens other than respiratory are unacceptable.

Stability (collection to initiation of testing): Ambient: Unacceptable; Refrigerated: 1 week; Frozen: 2 weeks

0070015 Aldosterone, Serum

ALDOST

Reference Interval:

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

✓ **HOT LINE NOTE:** This change also applies to Aldosterone & Renin, Direct with Ratio (2002582).

0070480 Aldosterone, Urine

ALDO U

Specimen Required: Collect: 24-hour urine. Refrigerate during collection.

Specimen Preparation: Add 1 g boric acid per 100 mL urine. Transfer 4 mL aliquot from a 24-hour collection to an ARUP Standard Transport Tube and freeze immediately. (Min: 0.5 mL) Record total volume and collection time interval on transport tube and test request form. **Also acceptable: Preserved urine; adjust the pH of the specimen to 2-4 with 6M HCl or 50 percent acetic acid.**

Storage/Transport Temperature: Frozen. Also acceptable: Refrigerated, if preserved with HCl or acetic acid.

Stability (collection to initiation of testing): Ambient: 2 hours; Refrigerated (with preservative): 1 week; Frozen: 1 month

0070073 Aldosterone/Renin Activity Ratio

A/RA

Reference Interval:

Available Separately	Components	Reference Interval			
Yes (0070015)	Aldosterone, Serum	Age	Posture Unspecified	Supine	Upright
		0-6 days	5.0-102.0 ng/dL		
		1-3 weeks	6.0-179.0 ng/dL		
		1-11 months	7.0-99.0 ng/dL		
		1-2 years	7.0-93.0 ng/dL		
		3-10 years	4.0-44.0 ng/dL		
		11-14 years	4.0-31.0 ng/dL		
		15 years and older	Less than or equal to 31.0 ng/dL	Less than or equal to 16.0 ng/dL	4.0-31.0 ng/dL
Yes (0070105)	Renin Activity	Adult, normal sodium diet	Children, normal sodium diet, supine		Children, normal sodium diet, upright
		Supine: 0.2-1.6 ng/mL/hr Upright: 0.5-4.0 ng/mL/hr	Newborn (1-7 days): 2.0-35.0 ng/mL/hr Cord blood: 4.0-32.0 ng/mL/hr 1-12 months: 2.4-37.0 ng/mL/hr 13 months-3 years: 1.7-11.2 ng/mL/hr 4-5 years: 1.0-6.5 ng/mL/hr 6-10 years: 0.5-5.9 ng/mL/hr 11-15 years: 0.5-3.3 ng/mL/hr		0-3 years: Not Available 4-5 years: Less than or equal to 15 ng/mL/hr 6-10 years: Less than or equal to 17 ng/mL/hr 11-15 years: Less than or equal to 16 ng/mL/hr
No	Aldosterone/Renin Activity Calculation	Less than 25 An Aldosterone/Renin Activity Ratio of greater than 25 is suggestive of hyperaldosteronism if the aldosterone concentration is greater than 15 ng/dL.			

0021020 Alkaline Phosphatase Isoenzymes

ALKP-ISO

Specimen Required: Collect: Serum separator tube or green (sodium or lithium heparin).

Specimen Preparation: Separate serum from cells ASAP or within 2 hours of collection. Transfer 2 mL serum or plasma to an ARUP Standard Transport Tube and refrigerate or freeze immediately. (Min: 1 mL)

Storage/Transport Temperature: Refrigerated.

Unacceptable Conditions: Specimens collected in EDTA, sodium fluoride, or potassium oxalate. Grossly hemolyzed or lipemic specimens.

Stability (collection to initiation of testing): After separation from cells: Ambient: 1 hour; Refrigerated: 1 week (total activity will increase 2 percent per day); Frozen: 1 year

HOT LINE NOTE: Remove information found in the Remarks field under Specimen Requirements.

0055195 Allergen, Epidermals & Animal Proteins, Pig (Swine) Epithelium IgE

PIG EPI

Specimen Required: Collect: Serum separator tube or plain red.

Specimen Preparation: Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.5 mL/allergen)

Storage/Transport Temperature: Room temperature.

Unacceptable Conditions: Hemolyzed, icteric, or lipemic specimens.

Stability (collection to initiation of testing): Ambient: 1 month; Refrigerated: 1 month; Frozen: 1 year

HOT LINE NOTE: Remove the information found in the Remarks field under Specimen Requirements.

0055197 Allergen, Epidermals & Animal Proteins, Rat Epithelium IgE

RAT EPI

Specimen Required: Collect: Serum separator tube or plain red.

Specimen Preparation: Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.5 mL/allergen)

Storage/Transport Temperature: Room temperature.

Unacceptable Conditions: Hemolyzed, icteric, or lipemic specimens.

Stability (collection to initiation of testing): Ambient: 1 month; Refrigerated: 1 month; Frozen: 1 year

HOT LINE NOTE: Remove the information found in the Remarks field under Specimen Requirements.

0055446 Allergen, Food, Pinto Bean IgE PINTO BEAN

Specimen Required: Collect: Serum separator tube or plain red.
Specimen Preparation: Transfer 0.5 mL serum to an ARUP Standard Transport Tube. (Min: 0.5 mL/allergen)
Storage/Transport Temperature: Room temperature.
Stability (collection to initiation of testing): Ambient: 1 month; Refrigerated: 1 month; Frozen: 1 year

HOT LINE NOTE: Remove the information found in both the Remarks and Unacceptable Conditions fields under Specimen Requirements.

0097911 Allergen, Food, Sugar Cane IgG SUGAR IGG4

Specimen Required: Collect: Serum separator tube or plain red.
Specimen Preparation: Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.5 mL/allergen)
Storage/Transport Temperature: Room temperature.
Unacceptable Conditions: Hemolyzed, icteric, or lipemic specimens.
Stability (collection to initiation of testing): Ambient: 1 week; Refrigerated: 2 weeks; Frozen: Indefinitely

HOT LINE NOTE: Remove the information found in the Remarks field under Specimen Requirements and the Note field.

New Test 2004670 Allergen, Fungi & Molds, Botrytis cinerea BOTRYTIS

Available April 18, 2011

Methodology: Quantitative ImmunoCAP®
Performed: Sun-Sat
Reported: 1-2 days

Specimen Required: Collect: Serum separator tube. Multiple specimen draws should be avoided.
Specimen Preparation: Separate serum from cells ASAP or within 2 hours of collection. Transfer 0.25 mL serum to an ARUP Standard Transport Tube. Add 0.1 mL for each allergen ordered. (Min: 0.25 mL plus 0.04 mL for each allergen ordered).
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Hemolyzed, icteric, or lipemic specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year

Reference Interval:

Less than 0.10 kU/L	No significant level detected
0.10-0.34 kU/L	Clinical relevance undetermined
0.35-0.70 kU/L	Low
0.71-3.50 kU/L	Moderate
3.51-17.50 kU/L	High
17.51 kU/L or greater	Very High

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

CPT Code(s): 86003

New York DOH Approved.

HOT LINE NOTE: Refer to Test Mix Addendum for interface build information.

Delete 0097935 Allergen, Tree, Maple Red MAPLE RED

HOT LINE NOTE: Delete this test and refer to Allergen, Tree, Box Elder/Maple Tree (0055003).

2004243 Allergic Bronchopulmonary Aspergillosis (ABPA) Panel by ID & EIA ABPA

Performed: Varies
Reported: 14-17 days

✓ **HOT LINE NOTE:** This change also applies to Complement Component 3A (2003304)

0050043 Alpha-1-Microglobulin, Urine

A1M

Specimen Required: Collect: 24-hour urine. Specimen must be refrigerated during collection.
Specimen Preparation: Transfer a 4 mL aliquot from a well-mixed 24-hour collection to an ARUP Standard Transport Tube. (Min: 0.3 mL) Do not add acid or other preservatives. Record total volume and collection time interval on transport tube and test request form.
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Frozen or preserved specimens.
Stability (collection to initiation of testing): Ambient: 8 hours; Refrigerated: 8 days; Frozen: Unacceptable

0098727 Alpha-2-Antiplasmin, Activity

ALPHA 2A

Specimen Required: Collect: Lt. blue (sodium citrate). Refer to Specimen Handling at aruplab.com for hemostasis/thrombosis specimen handling guidelines.
Specimen Preparation: Transfer 1 mL platelet-poor plasma to an ARUP Standard Transport Tube. (Min: 1 mL)
Storage/Transport Temperature: **CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.**
Unacceptable Conditions: Serum. Non-frozen or hemolyzed specimens.
Stability (collection to initiation of testing): Ambient: 8 hours; Refrigerated: **Unacceptable**; Frozen: **1 month**

0099408 Aluminum, Urine

AL U

Specimen Required: Patient Preparation: Diet, medication, and nutritional supplements may introduce interfering substances. Patients should be encouraged to discontinue nutritional supplements, vitamins, minerals, nonessential over-the-counter medications (upon the advice of their physician). **High concentrations of iodine may interfere with elemental testing. Abstinence from iodine-containing medications or contrast agents for at least 1 month prior to collecting specimens for elemental testing is recommended.**
Collect: 24-hour or random urine collection. Specimen must be collected in a plastic container. **ARUP studies indicate that refrigeration of urine alone, during and after collection, preserves specimens adequately, if tested within 14 days of collection.**
Specimen Preparation: Transfer an 8 mL aliquot from a well-mixed collection to ARUP Trace Element-Free Transport Tubes (ARUP supply #43116). **Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787.** (Min: 1 mL) Record total volume and collection time interval on transport tube and on test request form.
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Urine collected within 48 hours after administration of a gadolinium (Gd) containing contrast media (may occur with MRI studies). Acid preserved urine.
Stability (collection to initiation of testing): Ambient: 1 week; Refrigerated: 2 weeks; Frozen: 1 year

✓ **HOT LINE NOTE:** This change also applies to:

- Antimony, Urine (0099409)
- Bismuth, Urine (0099410)
- Cadmium, Urine (0025040)
- Chromium, Urine (0025068)
- Cobalt, Urine (0025032)
- Copper, Urine (0020461)
- Lead, Urine (0025060)
- Manganese, Urine (0025070)
- Mercury, Urine (0025050)
- Nickel, Urine (0025045)
- Selenium, Urine (0025067)
- Tellurium, Urine (0025009)
- Thallium, Urine (0025019)
- Zinc, Urine (0020462)

0080044 Amino Acids Quantitative, Urine

UAA QNT

Specimen Required: Patient Preparation: First morning urine is preferred.
Collect: Random urine. Avoid dilute urine when possible.
Specimen Preparation: Mix urine well. Transfer 8 mL aliquot of urine to ARUP Standard Transport Tubes and freeze immediately. (Min: 3 mL)
Storage/Transport Temperature: **CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.**
Remarks: **Clinical information is needed for appropriate interpretation.** Additional required information includes age, gender, diet (eg, TPN therapy), drug therapy, and family history. **Biochemical Genetics Patient History Form is available on the ARUP Web site or by contacting ARUP Client Services.**
Stability (collection to initiation of testing): Ambient: Unacceptable; Refrigerated: 24 hours; Frozen: 1 month

0080103 Aminolevulinic Acid (ALA), Urine

ALA U

Specimen Required: Patient Preparation: Refrain from alcohol consumption 24 hours prior to collection.
Collect: 24 hour or random urine. Refrigerate 24-hour specimens during collection.
Specimen Preparation: Protect from light. Transfer a 4 mL aliquot from a well-mixed 24 hour or random collection to an ARUP Amber Transport Tube. (Min: 1.2 mL) Record total volume and collection time interval on transport tube and test request form.
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Body fluids other than urine.
Stability (collection to initiation of testing): Ambient: Unacceptable; Refrigerated: 4 days; Frozen: 1 month

0020471 Amylase, Urine

UAMY

Specimen Required: Collect: 24-hour or timed urine collection. Specimen must be refrigerated during collection.
Specimen Preparation: If pH is less than 6, adjust pH to greater than or equal to 6 by adding 5 percent NaOH (approximately 2 mL per liter). Amylase is not stable in acidified specimens (pH less than 6) and decreases of up to 30 percent may occur. Mix 24 hour urine collection well. Transfer 4 mL urine to an ARUP Standard Transport Tube. (Min: 0.5 mL) Record total volume and collection time interval on transport tube and test request form.
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Frozen specimens. Specimens containing acetic acid, boric acid (sodium formate), concentrated HCl, or urine preservatives containing hexamethylenetetramine or mercuric acid.
Stability (collection to initiation of testing): Ambient: 1 week; Refrigerated: 1 month; Frozen: Unacceptable

0060164 Anaerobic Organism Identification

MC ANAID

Methodology: Identification methods including Biochemical, MALDI TOF and/or 16S rDNA sequencing.

Specimen Required: Collect: Actively growing organism in pure culture.
Specimen Preparation: Transport sealed container with pure culture on agar slant in anaerobic transport pouch or on a swab in anaerobic transport media. Source of specimen is required.
Storage/Transport Temperature: Room temperature. Submit specimen according to Biological Substance, Category B, shipping guidelines.
Remarks: Indicate source of organism and any other pertinent information.
Unacceptable Conditions: Non-viable organisms or leaking containers.
Stability (collection to initiation of testing): Ambient: 72 hours; Refrigerated: Unacceptable; Frozen: Unacceptable

Note: Testing performed and associated charges billed depends on specimen source and type of organism suspected. An additional handling fee will be billed for all mixed cultures as indicated in the specimen requirements.

Submission of mixed cultures will result in delayed turnaround time and increased charges. Isolation of organism should be ensured prior to submission. Order a separate MC ANAID test for each organism identification required.

For identification by 16s rDNA sequencing only, order Organism Identification by 16s rDNA Sequencing (ARUP test code 0060720).

CPT Code(s): 87076 and/or 87153; CPT codes for identification vary based upon method.

0060198 Anaerobic Organism Identification with Reflex to Susceptibility MC ANAIS

Methodology: Identification methods including Biochemical, MALDI TOF and/or 16S rDNA sequencing and susceptibility tests.

Specimen Required: Collect: Actively growing organism, in pure culture.

Specimen Preparation: Transport sealed container with pure culture on agar slant in anaerobic transport pouch or on a swab in anaerobic transport media. Source of specimen is required.

Storage/Transport Temperature: Room temperature. Submit specimen according to Biological Substance, Category B, shipping guidelines.

Remarks: Indicate source of organism and any other pertinent information.

Unacceptable Conditions: Non-viable organisms or leaking containers.

Stability (collection to initiation of testing): Ambient: 72 hours; Refrigerated: Unacceptable; Frozen: Unacceptable

Note: Testing performed and associated charges billed depends on specimen source and type of organism suspected. If a significant organism is identified, then the appropriate susceptibility panel will be added. An additional handling fee will be billed for all mixed cultures as indicated in the specimen requirements.

Submission of mixed cultures will result in delayed turnaround time and increased charges. Isolation of organism should be ensured prior to submission. Order a separate test for each organism identification required.

Anaerobe susceptibility testing is appropriate in the case of serious infections involving: blood, bone, joint, tissue, or brain abscess. (Refer to Antimicrobial Susceptibility - Anaerobe (ARUP test code 0060202)).

For identification by 16s rDNA sequencing only, order Organism Identification by 16s rDNA Sequencing (ARUP test code 0060720).

HOT LINE NOTE: Remove information found in the Interpretive Data field.

0078001 Androstenediol Glucuronide ANDR-G

Specimen Required: Collect: Serum separator tube. Also acceptable: Lavender (EDTA) or pink (K₂EDTA).

Specimen Preparation: Allow serum to sit in collection tube for 15-20 minutes at room temperature for proper clot formation.

Centrifuge and 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: 0.3 mL)

Storage/Transport Temperature: Frozen.

Unacceptable Conditions: Hemolyzed or lipemic specimens.

Stability (collection to initiation of testing): After separation from cells: Ambient: 2 hours; Refrigerated: 24 hours; Frozen: 6 months

Delete **0051113** **Angelman Syndrome by Methylation** **ANGEL**

HOT LINE NOTE: Delete this test and refer to Angelman Syndrome and Prader-Willi Syndrome by Methylation (2005077).

New Test **2005077** **Angelman Syndrome and Prader-Willi Syndrome by Methylation** **AS PWS**



Consent Form Recommended

Methodology: Methylation Sensitive Polymerase Chain Reaction/Fluorescence Monitoring
Performed: Mon, Thu
Reported: 7-10 days

Specimen Required: Collect: 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.
Stability (collection to initiation of testing): Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable

Reference Interval: By report

Interpretive Data:

Background information: Angelman Syndrome and Prader-Willi Syndrome by Methylation:

Characteristics of Angelman Syndrome (AS): Developmental delays by 6-12 months of age, seizures, microcephaly, movement or balance disorder, minimal or absent speech, and a distinctive behavioral phenotype, which includes a happy demeanor with frequent laughter, hand flapping, and excitability.
Prevalence: 1 in 15,000.

Inheritance: Varies, depending on the molecular genetic mechanism.

Cause: Absence of maternal expression of the *UBE3A* gene.

Molecular Genetic Mechanisms: Microdeletions in the AS/PWS critical region (68 percent), *UBE3A* mutations (11 percent), paternal uniparental disomy of chromosome 15 (7 percent), imprinting center defects (3 percent), unbalanced chromosome translocation (less than 1 percent), and unknown (10 percent).

Clinical Sensitivity: 78 percent.

Analytical Sensitivity and Specificity: 99 percent.

Methodology: Bisulfite conversion and PCR amplification to detect methylation using melting curve analysis.

Limitations: Molecular mechanisms not affecting methylation patterns that may result in AS will not be assessed.

Characteristics of Prader-Willi Syndrome (PWS): Neonatal hypotonia, hyperphagia, obesity, global developmental delay, mild intellectual disability, hypogonadism, and a distinctive behavioral phenotype, which includes temper tantrums, stubbornness, manipulative behavior, and obsessive-compulsive behavior.

Prevalence: 1 in 15,000.

Inheritance: Varies, depending on the molecular genetic mechanism.

Cause: Absence of the paternally contributed PWS/AS critical region of chromosome 15q11.2-q13.

Molecular Genetic Mechanisms: Microdeletions in the PWS/AS critical region (70-75 percent), maternal uniparental disomy of chromosome 15 (25-29 percent), imprinting center defect or balanced chromosome translocation (less than 1 percent).

Clinical Sensitivity: Over 99 percent.

Analytical Sensitivity and Specificity: 99 percent.

Methodology: Bisulfite conversion and PCR amplification to detect methylation using melting curve analysis.

Limitations: Molecular mechanisms not affecting methylation patterns that may result in PWS will not be assessed.

This test is performed pursuant to an agreement with Roche Molecular Systems, Inc.

Counseling and informed consent are recommended for genetic testing. Consent forms are available online at www.aruplab.com.

Refer to Statement C under Testing Information at <http://www.aruplab.com>.

CPT Code(s): 83891 Isolation; 83898 Amplification; 83912 Interpretation and report - Additional CPT code modifiers may be required for procedures performed to test for oncologic or inherited disorders.

New York DOH Approved.

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

0091349 Antabuse Disulfiram (DEDTC Metabolite), Serum or Plasma ANTABUS SP

Specimen Required: Collect: Plain red or lavender EDTA.
Specimen Preparation: Separate serum or plasma from cells within 1 hour. Transfer 7 mL serum or plasma to ARUP Standard Transport Tubes and freeze immediately. (Min: 3.2 mL)
Storage/Transport Temperature: **CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.**
Unacceptable Conditions: Specimens submitted in glass tubes. Separator tubes.
Stability (collection to initiation of testing): Ambient: Undetermined; Refrigerated: Undetermined; Frozen: Undetermined

New Test 2004886 Antibiotic Level, Ceftazidime ML CEFTAZ

Available April 18, 2011

Methodology: Bioassay
Performed: Sun-Sat
Reported: 1-2 days

Specimen Required: Collect: Plain red.
Specimen Preparation: Aseptically remove serum. Transfer 3 mL serum to a sterile tube (ARUP supply# 43115) and freeze. Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787. (Min: 1 mL)
Storage/Transport Temperature: Frozen.
Remarks: Required information includes time and date of collection, time of last dose, and list of all antibiotics the patient is receiving or has received in the past 48 hours.
Unacceptable Conditions: Plasma. Delayed transport of non-frozen specimens. Inadequate information.
Stability (collection to initiation of testing): Ambient: 2 hours; Refrigerated: 24 hours (local clients only); Frozen: 1 week

Reference Interval: 40-180 µg/mL

Interpretive Data: Normal therapeutic peak serum concentration for ceftazidime is 40-180 µg/mL. Trough serum concentration is not well established.

For bioassay measurements, the presence of other antimicrobial agents may interfere with the assay. Other factors that may influence antimicrobial levels include inherent differences among patients and their underlying physical conditions as well as the dose and route of administration of the antimicrobial agent.

Note: Please include time of last dose and list **all** antibiotics the patient is receiving or has received in the past 48 hours. This information is essential for performing the test and subsequent physician interpretation of results.

CPT Code(s): 80299

New York DOH Approved.

HOT LINE NOTE: Refer to Test Mix Addendum for interface build information.

0013005 Antibody Identification, RBC (Prenatal Only) IRL-ABID

Performed: Mon-Fri
Reported: 2-5 days

0093142 Antimicrobial Level - Doxycycline (Serum), BA DOXY

Specimen Required: Collect: Plain red.
Specimen Preparation: Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.5 mL)
Storage/Transport Temperature: **CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.**
Remarks: List all other antimicrobials being used to treat the patient.
Unacceptable Conditions: Thawed specimens. Separator tubes.
Stability (collection to initiation of testing): Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen: 1 month

Note: Specimens collected just before or within 15 minutes of the next dose represent the trough levels. Specimens obtained within 15-30 minutes after the end of I.V. infusion or 45-60 minutes after an IM injection or 90 minutes after oral intake represent the PEAK level. Any undisclosed antimicrobials may affect the results.

0092065 Antimicrobial Level - Streptomycin, HPLC

STP MYCIN

Specimen Required: Collect: Plain red.

Specimen Preparation: Transfer 1 mL serum to an ARUP Standard Transport Tube (Min: 0.5 mL)

Storage/Transport Temperature: **CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.**

Remarks: List all other antimicrobials being used to treat the patient.

Unacceptable Conditions: Separator tubes.

Stability (collection to initiation of testing): Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen: Indefinitely

Note: Specimens collected just before or within 15 minutes of the next dose represent the trough levels. Specimens obtained within 15-30 minutes after the end of I.V. infusion or 45-60 minutes after an IM injection or 90 minutes after oral intake represent the PEAK level. Drugs that may interfere with this assay include: Sulindac.

0060227 Antimicrobial Susceptibility - Mould Susceptibility

MA MOULD

Specimen Required: Collect: Viable mould in pure culture on fungal medium slant.

Specimen Preparation: Transport viable mould in a sealed container. Indicate isolate identification and specimen source.

Storage/Transport Temperature: Room temperature. Submit specimen according to Biological Substance, Category B, shipping guidelines.

Unacceptable Conditions: Mixed cultures or non-viable moulds. Agar plates or leaking containers.

Stability (collection to initiation of testing): Ambient: 2 weeks; Refrigerated: 2 weeks; Frozen: Unacceptable

Interpretive Data: Interpretive MIC breakpoints have not been established for mould. Experience to date indicates that amphotericin B MICs for most opportunistic mould isolates cluster between 0.5-2.0 µg/mL. However, for some species (eg, *A. terreus*) the MIC may range between 2-16 µg/mL. Filamentous fungi are usually not susceptible to 5-fluorocytosine or fluconazole and therefore are not reported. The echinocandins do not have activity against *Fusarium* species and therefore are not reported.

Susceptibility testing is performed by CLSI-approved broth microdilution method.

Refer to Statement B under Testing Information at <http://www.aruplab.com>.

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

Testing is not performed on isolates from environmental sources. If isolate identification is not provided, identification will be performed at ARUP for an additional charge. An additional handling fee will be billed for all organisms submitted that are not in pure culture per specimen requirements.

HOT LINE NOTE: Remove information found in the Remarks field under Specimen Requirements.

0060235 Antimicrobial Susceptibility - Yeast Susceptibility

MA YST

Performed: Sun-Sat
Reported: 2-5 days

Reference Interval:

Susceptible, intermediate, SDD (susceptible dose dependent), or resistant. Interpretive guidelines are provided only for *Candida* species.
 MICs (minimum inhibitory concentrations) without interpretative guidelines are reported for yeast species other than *Candida*.
 MECs (minimum effective concentration) are not reported for yeast species.

Interpretive Data:

SDD = susceptibility is dose dependent.
 NONE = Interpretive guidelines are not available

For **amphotericin B**, there are no CLSI breakpoints, but MIC greater than 1 is considered resistant.

For **fluconazole** the guidelines are based on experience with mucosal and invasive infections due to *Candida* species. When the isolate is *C. glabrata* and the MIC is less than or equal to 32 µg/mL the maximum dosage regimen should be used.

5-fluorocytosine MIC breakpoints are based largely on historical data and partially on the drug's pharmacokinetics.

For **itraconazole**, the data are based entirely on experience with mucosal infections, and data supporting breakpoints for invasive infections due to *Candida* spp. are not available.

Voriconazole MIC interpretation is used as surrogate for **posaconazole** interpretation.

SDD (susceptible dose dependent) applies to fluconazole, itraconazole, **posaconazole**, and **voriconazole**. **Susceptibility** is dependent on achieving the maximum possible level.

For **anidulafungin**, **caspofungin**, and **micafungin**, the data are based substantially on experience with non-neutropenic patients with candidemia. Clinical relevance in other settings is uncertain.

Susceptibility testing is performed by CLSI-approved broth microdilution method.

Refer to Statement B under Testing Information at <http://www.aruplab.com>.

Note: The following agents will be tested: Amphotericin B, anidulafungin, caspofungin, fluconazole, 5-fluorocytosine, itraconazole, micafungin, posaconazole, and voriconazole.

If species identification is not provided, identification will be performed at ARUP for an additional charge.

0050080 Anti-Nuclear Antibodies (ANA), IgG by ELISA with Reflex to ANA, IgG by IFA

ANA

Interpretive Data: ANA Specimens are screened using enzyme-linked immunosorbent assay (ELISA) methodology. All ELISA results reported as Detected are further tested by indirect fluorescent assay (IFA) using HEp-2 substrate with an IgG-specific conjugate. The ANA ELISA screen is designed to detect antibodies against dsDNA, histone, SS-A (Ro), SS-B (La), Smith, snRNP/Sm, Scl-70, Jo-1, centromere, and an extract of lysed HEp-2 cells. ANA ELISA assays have been reported to have lower sensitivities for antibodies associated with nucleolar and speckled ANA-IFA patterns.

Note: When cell culture substrates (HEp-2 cells) are used, the ANA incidence is greater than 90 percent in systemic lupus erythematosus (SLE), 80 percent in Sjögren syndrome and scleroderma, and 40 percent in juvenile idiopathic arthritis.

ARUP uses anti-human IgG conjugate since many (20-77 percent) healthy individuals have low levels (1:40 to 1:80) of ANA-IgM. Conversion of ANAs from IgM to IgG generally precedes the onset of autoimmune disease states. If clinical presentation is inconsistent with the ANA IFA result, consult ARUP for alternative testing.

0050317 Anti-Nuclear Antibody (ANA), IgG by ELISA with Reflexes to ANA by IFA and to dsDNA, RNP, Smith, SSA, and SSB Antibodies

ANA REF

Note: When cell culture substrates (HEp-2 cells) are used, the ANA incidence is greater than 90 percent in systemic lupus erythematosus (SLE), 80 percent in Sjögren syndrome and scleroderma, and 40 percent in juvenile idiopathic arthritis.

ARUP uses anti-human IgG-specific conjugate since many (20-77 percent) normal individuals have low levels (1:10 to 1:80) of ANA-IgM. Conversion of ANAs from IgM to IgG generally precedes the onset of autoimmune disease states. If clinical presentation is inconsistent with the ANA IFA result, consult ARUP for alternative testing.

Specimens are screened for ANA using ELISA. If the ELISA screen is positive, then an IFA using HEp-2 substrate will be added. If confirmed by IFA, then a titer and pattern will be reported and testing for dsDNA antibody and ENA (RNP, Smith, SSA, and SSB) antibodies will be added.

0030370	Antithrombin Panel	AT3 PAN
Methodology:	Chromogenic Assay/Microlatex Particle-Mediated Immunoassay	
0030192	APC Resistance Profile with Reflex to Factor V Leiden	APC R
Specimen Required:	<p><u>Collect:</u> Lt. blue (sodium citrate) AND one lavender (EDTA), pink (K₂EDTA), or yellow (ACD Solution A or B). Refer to Specimen Handling at aruplab.com for hemostasis/thrombosis specimen handling guidelines.</p> <p><u>Specimen Preparation:</u> Transport 1.5 mL platelet-poor plasma AND 3 mL whole blood. (Min: 1 mL/each)</p> <p><u>Storage/Transport Temperature:</u> Plasma: frozen. Whole Blood: refrigerated.</p> <p><u>Unacceptable Conditions:</u> Plasma: Non-frozen specimens.</p> <p><u>Stability (collection to initial testing):</u> Plasma: Ambient: 2 hours; Refrigerated: 4 hours; Frozen: 2 weeks</p> <p>Whole Blood: Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable</p>	
0025000	Arsenic, Urine with Reflex to Fractionated	ARS U
Specimen Required:	<p><u>Patient Preparation:</u> Diet, medication, and nutritional supplements may introduce interfering substances. Patients should be encouraged to discontinue nutritional supplements, vitamins, minerals, nonessential over-the-counter medications (upon the advice of their physician), and avoid shellfish and seafood for 48 to 72 hours. High concentrations of iodine may interfere with elemental testing. Abstinence from iodine-containing medications or contrast agents for at least 1 month prior to collecting specimens for elemental testing is recommended.</p> <p><u>Collect:</u> 24-hour or random urine collection. Specimen must be collected in a plastic container and refrigerated during collection. ARUP studies indicate that refrigeration of urine alone, during and after collection, preserves specimens adequately if tested within 14 days of collection.</p> <p><u>Specimen Preparation:</u> Transfer an 8 mL aliquot from a well-mixed collection to ARUP Trace Element-Free Transport Tubes (ARUP supply #43116). Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787. (Min: 2 mL)</p> <p><u>Storage/Transport Temperature:</u> Refrigerated.</p> <p><u>Unacceptable Conditions:</u> Urine collected within 48 hours after administration of a gadolinium (Gd) containing contrast media (may occur with MRI studies). Acid preserved urine.</p> <p><u>Stability (collection to initiation of testing):</u> Ambient: 1 week; Refrigerated (preferred): 2 weeks; Frozen: 1 year</p>	
0091333	Atropine, Serum or Plasma	ATROPIN SP
Specimen Required:	<p><u>Collect:</u> Plain red, lavender (EDTA), or pink (K₂EDTA).</p> <p><u>Specimen Preparation:</u> Separate serum or plasma from cells within 2 hours. Transfer 3 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 1.2)</p> <p><u>Storage/Transport Temperature:</u> Refrigerated.</p> <p><u>Unacceptable Conditions:</u> Separator tubes.</p> <p><u>Stability (collection to initiation of testing):</u> Ambient: 1 week; Refrigerated: 2 weeks; Frozen: 1 month</p>	
0091171	Atropine, Urine	ATROPIN U
Specimen Required:	<p><u>Collect:</u> Random urine.</p> <p><u>Specimen Preparation:</u> Transfer 2 mL urine to an ARUP Standard Transport Tube. (Min: 0.7 mL)</p> <p><u>Storage/Transport Temperature:</u> Refrigerated.</p> <p><u>Stability (collection to initiation of testing):</u> Ambient: 1 week; Refrigerated: 29 days; Frozen: 29 days</p>	

New Test **2005017** **BCR-ABL1, Major (p210), Quantitative**

BCR MAJ



Time Sensitive

Methodology: Reverse Transcription/Quantitative Polymerase Chain Reaction

Performed: **RNA isolation:** Sun-Sat

Assay: Varies

Reported: 5-7 days

Specimen Required: Collect: Lavender (EDTA) or bone marrow (EDTA).

Specimen Preparation: Transport 5 mL whole blood or 3 mL bone marrow. (Min: 1 mL whole blood or 1 mL bone marrow)

Specimens must be received within 48 hours of collection due to lability of RNA.

Storage/Transport Temperature: Refrigerated.

Unacceptable Conditions: Serum or plasma. Specimens collected in preservatives other than EDTA. Severely hemolyzed specimens.

Frozen or clotted whole blood or bone marrow.

Stability (collection to initiation of testing): Ambient: 1 hour; Refrigerated: 48 hours; Frozen: Unacceptable

Interpretive Data: Refer to report.

Refer to Statement D under Testing Information at <http://www.aruplab.com>.

Note: This test does not detect the rare *BCR-ABL1* micro (p230) fusion form.

For the p190 fusion form (minor breakpoint), order *BCR-ABL1*, Minor (p190), Quantitative (ARUP test code 2005016).

CPT Code(s): 83891 Isolation; 83902 Reverse transcription; 83898 x2 Amplification; 83896 x2 Nucleic acid probes; 83912 Interpretation and report
- Additional CPT code modifiers may be required for procedures performed to test for oncologic or inherited disorders.

New York DOH Approved.

HOT LINE NOTE: Refer to Test Mix Addendum for interface build information.

New Test **2005016** **BCR-ABL1, Minor (p190), Quantitative**

BCR MIN



Time Sensitive

Methodology: Reverse Transcription/Quantitative Polymerase Chain Reaction

Performed: **RNA isolation:** Sun-Sat

Assay: Varies

Reported: 5-7 days

Specimen Required: Collect: Lavender (EDTA) or bone marrow (EDTA).

Specimen Preparation: Transport 5 mL whole blood or 3 mL bone marrow. (Min: 1 mL whole blood or 1 mL bone marrow)

Specimens must be received within 48 hours of collection due to lability of RNA.

Storage/Transport Temperature: Refrigerated.

Unacceptable Conditions: Serum or plasma. Specimens collected in preservatives other than EDTA. Severely hemolyzed specimens.

Frozen or clotted whole blood or bone marrow.

Stability (collection to initiation of testing): Ambient: 1 hour; Refrigerated: 48 hours; Frozen: Unacceptable

Interpretive Data: Refer to report.

Refer to Statement D under Testing Information at <http://www.aruplab.com>.

Note: For p210 fusion form (major breakpoint), order *BCR-ABL1*, Major (p210), Quantitative (ARUP test code 2005017).

CPT Code(s): 83891 Isolation; 83902 Reverse transcription; 83898 x2 Amplification; 83896 x2 Nucleic acid probes; 83912 Interpretation and report
- Additional CPT code modifiers may be required for procedures performed to test for oncologic or inherited disorders.

New York DOH Approved.

HOT LINE NOTE: Refer to Test Mix Addendum for interface build information.

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



Time Sensitive

Methodology: Reverse Transcription Polymerase Chain Reaction
Performed: **RNA isolation:** Sun-Sat
Assay: Varies
Reported: 7-10 days

Specimen Required: Collect: Lavender (EDTA) or bone marrow (EDTA).
Specimen Preparation: Transport 5 mL whole blood or 3 mL bone marrow. (Min: 1 mL whole blood or 1 mL bone marrow)
Specimens must be received within 48 hours of collection due to lability of RNA.
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Serum or plasma. Specimens collected in preservatives other than EDTA. Severely hemolyzed specimens.
Frozen or clotted whole blood or bone marrow.
Stability (collection to initiation of testing): Ambient: 1 hour; Refrigerated: 48 hours; Frozen: Unacceptable

Interpretive Data: Refer to report.

Refer to Statement B under Testing Information at <http://www.aruplab.com>.

Note: This reflex assay is recommended when the *BCR-ABL1* fusion form is not known or unclear. This reflex assay detects the presence of either the p210 (major breakpoint) or p190 (minor breakpoint). If the presence of either the p210 or p190 *BCR-ABL1* fusion is detected, then the appropriate quantitative test will be performed.

If the fusion form is known, refer to *BCR-ABL1*, Major (p210), Quantitative (ARUP test code 2005017) or *BCR-ABL1*, Minor (p190), Quantitative (ARUP test code 2005016).

CPT Code(s): 83891 Isolation; 83902 Reverse transcription; 83898 x6 Amplification; 83894 x3 Gel separation; 83912 Interpretation and report. If reflexed add 83902 Reverse transcription; 83898 x2 Amplification; 83896 x2 Nucleic acid probes; 83912 Interpretation and report - Additional CPT code modifiers may be required for procedures performed to test for oncologic or inherited disorders.

New York DOH Approved.

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

New Test 2004924 *BCR-ABL1, T315I Mutation Detection, Quantitative* **ABL1 T315I**

Available April 18, 2011



Time Sensitive

Methodology: Reverse Transcription Polymerase Chain Reaction/Pyrosequencing
Performed: **RNA isolation:** Sun-Sat
Assay: Varies
Reported: 10-12 days

Specimen Required: Collect: Lavender (EDTA) or bone marrow (EDTA).
Specimen Preparation: Transport 5 mL whole blood or 3 mL bone marrow. (Min: 1 mL whole blood or 1mL bone marrow)
Specimens must be received within 48 hours of collection due to lability of RNA.
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Serum or plasma. Frozen or clotted whole blood or bone marrow. Specimens collected in preservatives other than EDTA. Severely hemolyzed specimens.
Stability (collection to initiation of testing): Ambient: 1 hour; Refrigerated: 48 hours; Frozen: Unacceptable

Interpretive Data: Refer to report.

Refer to Statement B under Testing Information at <http://www.aruplab.com>.

Note: This assay will only detect the *BCR-ABL1* T315I mutation. For a more comprehensive ABL1 mutation detection test, please order *BCR-ABL1* Kinase Domain Mutation Analysis (ARUP test code 0040138).

CPT Code(s): 83891 Isolation; 83902 Reverse transcription; 83898 x2 Amplification; 83904 Sequencing; 83912 Interpretation and report - Additional CPT code modifiers may be required for procedures performed to test for oncologic or inherited disorders.

New York DOH approval pending. Call for status update.

HOT LINE NOTE: Refer to Test Mix Addendum for interface build information.

0055553 *BCR-ABL, t(9;22) Translocation Qualitative by RT-PCR* **BCR-ABL**

Specimen Required: Collect: Lavender (EDTA) or bone marrow (EDTA).
Specimen Preparation: Transport 5 mL whole blood or 3 mL bone marrow. (Min: 1 mL whole blood or 1 mL bone marrow)
Specimens must be received within 48 hours of collection due to lability of RNA.
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Serum or plasma. Specimens collected in preservatives other than EDTA. Severely hemolyzed specimens.
Frozen or clotted whole blood or bone marrow.
Stability (collection to initiation of testing): Ambient: 1 hour; Refrigerated: 48 hours; Frozen: Unacceptable

Interpretive Data: Refer to report.

Note: For quantitative testing, see *BCR-ABL1*, Major (p210), Quantitative (ARUP test code 2005017) or *BCR-ABL1*, Minor (p190), Quantitative (ARUP test code 2005016).

CPT Code(s): 83891 Isolation; 83902 Reverse transcription; 83898 x6 Amplification; 83894 x3 Gel separation; 83912 Interpretation and report - Additional CPT code modifiers may be required for procedures performed to test for oncologic or inherited disorders.

HOT LINE NOTE: Remove information found in the Reference Interval field. There is a price change associated with this test. Please contact ARUP Client Services at (800) 522-2787 for additional information.

Delete 0051066 *BCR-ABL, t(9;22) Translocation Quantitative Assay by RT-PCR* **BCRABL QNT**

HOT LINE NOTE: Delete this test and refer to *BCR-ABL1*, Major (p210), Quantitative (2005017) and *BCR-ABL1*, Minor (p190), Quantitative (2005016).

0091315	Belladonna Alkaloids Panel	BELLADONNA
<p>Specimen Required: <u>Collect:</u> Plain red, lavender (EDTA), or pink (K₂EDTA). <u>Specimen Preparation:</u> Separate from cells within 2 hours. Transfer 3 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 1.2 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Separator tubes. <u>Stability (collection to initiation of testing):</u> Ambient: 1 week; Refrigerated: 2 weeks; Frozen: 1 month</p>		
2002464	Bence Jones Protein Detection, Quantitation & Characterization with Reflex to Quantitative Free Kappa & Lambda Light Chains, Urine. (Test Orderable by University of Utah Only)	BJP-U REFLEX
<p>Specimen Required: <u>Collect:</u> 24-hour urine. Refrigerate during collection. Also acceptable: Urine supernatant. <u>Specimen Preparation:</u> Transfer two 4 mL aliquots from well-mixed 24 hour collection to individual ARUP Standard Transport Tubes. (Min: 4 mL) Record total volume and collection time interval on transport tube and test request form. <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Non-refrigerated specimens. <u>Stability (collection to initiation of testing):</u> Ambient: 2 hours; Refrigerated: 1 week; Frozen: 1 month</p>		
0050161	Bence Jones Protein, Qualitative Free Kappa & Lambda Light Chains, Urine	BJQUAL
<p>Specimen Required: <u>Collect:</u> 24-hour urine. Refrigerate during collection. Also acceptable: Random specimens and urine supernate. <u>Specimen Preparation:</u> Transfer two 4 mL aliquots from a well-mixed 24-hour urine collection to individual ARUP Standard Transport Tubes. (Min: 4 mL) Record total volume and collection time interval on transport tube and test request form. <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Non-refrigerated specimens. <u>Stability (collection to initiation of testing):</u> Ambient: 2 hours; Refrigerated: 1 week; Frozen: 1 month</p>		
0050618	Bence Jones Protein, Quantitative Free Kappa & Lambda Light Chains, Urine	BJ QUANT
<p>Specimen Required: <u>Collect:</u> 24-hour urine. Refrigerate during collection. Also acceptable: Random urine specimens and urine supernate. <u>Specimen Preparation:</u> Transfer two 4 mL aliquots from a well-mixed 24-hour collection to individual ARUP Standard Transport Tubes. (Min: 4 mL) Record total volume and collection time interval on transport tube and test request form. <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Non-refrigerated specimens. <u>Stability (collection to initiation of testing):</u> Ambient: 2 hours; Refrigerated: 1 week; Frozen: 1 month</p>		
0050689	Bence Jones Protein, Quantitative Free Kappa Light Chains, Urine	BJQNTKAPP
<p>Specimen Required: <u>Collect:</u> 24-hour urine. Refrigerate during collection. Also acceptable: Urine supernate. <u>Specimen Preparation:</u> Transfer two 4 mL aliquots from a well-mixed 24-hour urine collection to individual ARUP Standard Transport Tubes. (Min: 4 mL) Record total volume and collection time interval on transport tube and test request form. <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Random specimens. Non-refrigerated specimens. <u>Stability (collection to initiation of testing):</u> Ambient: 2 hours; Refrigerated: 1 week; Frozen: 1 month</p>		
0050682	Bence Jones Protein, Quantitative Free Lambda Light Chains, Urine	BJQNTLAMB
<p>Specimen Required: <u>Collect:</u> 24-hour urine. Refrigerate during collection. Also acceptable: Urine supernate. <u>Specimen Preparation:</u> Transfer two 4 mL aliquots from a well-mixed 24-hour urine collection to individual ARUP Standard Transport Tubes. (Min: 4 mL) Record total volume and collection time interval on transport tube and test request form. <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Random specimens. Non-refrigerated specimens. <u>Stability (collection to initiation of testing):</u> Ambient: 2 hours; Refrigerated: 1 week; Frozen: 1 month</p>		

0050388 Beta Globin (*HBB*) Sequencing, Fetal

BGSEQ FE

Performed: Varies
Reported: 14-21 days

Specimen Required: Collect: **Cultured cells:** Two T-25 flasks at 80% confluent of cultured amniocytes. **If the client is unable to culture amniocytes, this can be arranged by contacting ARUP Client Services at (800) 522-2787.**

Maternal specimen: Lavender (EDTA), pink (K₂EDTA), or yellow (ACD Solution A or B).

Specimen Preparation: Fetal Specimen: Fill flasks with culture media. Transport two T-25 flasks at 80% confluent of cultured amniocytes filled with culture media. Backup cultures must be retained at the client's institution until testing is complete.

Maternal Specimen: Transport 3 mL whole blood.

Storage/Transport Temperature: Fetal Specimen: CRITICAL ROOM TEMPERATURE. Must be received within 48 hours of shipment due to lability of cells.

Maternal Specimen: Room temperature.

Remarks: Maternal specimen is recommended for proper test interpretation. Order Maternal Cell Contamination. Patient History Form is available on the ARUP Web site or by contacting ARUP Client Services.

Stability (collection to initiation of testing): Fetal: Ambient: 48 hours; Refrigerated: Unacceptable; Frozen: Unacceptable

Maternal: Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable

Interpretive Data:

Background Information Beta Globin (*HBB*) Sequencing, Fetal:

Characteristics: Structural hemoglobinopathies or thalassemias (insufficient or absent beta-chain production).

Incidence: Varies with ethnicity.

Inheritance: Usually autosomal recessive, infrequently autosomal dominant.

Cause: Pathogenic mutations in the *HBB* gene.

Clinical Sensitivity: Up to 97 percent, depending upon ethnicity.

Methodology: Bidirectional sequencing of the *HBB* coding regions, intron-exon boundaries, proximal promoter, 5' and 3' untranslated regions, and intronic mutations IVS-II-654, IVS-II-705 and IVS-II-745. The 619del mutation is detected by PCR followed by gel electrophoresis.

Analytical sensitivity: 99 percent.

Limitations: Rare diagnostic errors can occur due to primer site mutations. Large deletions, other than 619del, and mutations in distal regulatory elements are not detected.

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

This test is performed pursuant to an agreement with Roche Molecular Systems, Inc.

Counseling and informed consent are recommended for genetic testing. Consent forms are available online at www.aruplab.com.

Refer to Statement C under Testing Information at <http://www.aruplab.com>.

2002434 (1,3)-Beta-D-Glucan (Fungitell®)

BDGLUCAN

Specimen Required: Collect: Plain red.

Specimen Preparation: Separate serum from cells ASAP or within 2 hours of collection. Transfer 2 mL serum to a sterile ARUP Standard Transport Tube (ARUP supply # 43115). Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787. (Min: 0.5 mL)

Storage/Transport Temperature: Refrigerated. Submit specimen according to Biological Substance, Category B, shipping guidelines.

Unacceptable Conditions: Hemolyzed, icteric, or lipemic specimens.

Stability (collection to initiation of testing): Ambient: Unacceptable, Refrigerated: 2 weeks; Frozen: 2 weeks

0070029 Beta-hCG, Quantitative (Tumor Marker) BHCG TM

Methodology: **Electrochemiluminescent** Immunoassay

Specimen Required: Collect: Serum separator tube. Also acceptable: Lavender (EDTA), pink (K₂EDTA), or green (sodium or lithium heparin).
Specimen Preparation: Allow specimen to clot completely at room temperature. Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.4 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: **Specimens left to clot at 2-8°C or specimens subjected to repeated freeze/thaw cycles.**
Stability (collection to initiation of testing): After separation from cells: Ambient: 8 hours; Refrigerated: 1 week; Frozen: 12 months

Interpretive Data: Human chorionic gonadotropin (hCG) is a valuable aid in the management of patients with trophoblastic tumors, nonseminomatous testicular tumors, and seminomas when used in conjunction with information available from the clinical evaluation and other diagnostic procedures. Increased serum hCG concentrations have also been observed in melanoma, carcinomas of the breast, gastrointestinal tract, lung, and ovaries, and in benign conditions, including cirrhosis, duodenal ulcer, and inflammatory bowel disease. This result cannot be interpreted as absolute evidence of the presence or absence of malignant disease. This result is not interpretable as a tumor marker in pregnant females.

The combination of the specific monoclonal antibodies used in the Roche Beta HCG electrochemiluminescent immunoassay recognize the holo-hormone, “nicked” forms of hCG, the beta-core fragment, and the free beta-subunit. Although this assay is FDA cleared for use in the detection of pregnancy, it is not labeled for use as a tumor marker.

0020730 Beta-hCG, Quantitative (Tumor Marker), CSF BHCG CSF

Methodology: **Electrochemiluminescent** Immunoassay

Specimen Required: Collect: CSF. Also acceptable: CSF collected in plain red or green (sodium or lithium heparin).
Specimen Preparation: Transfer 0.5 mL CSF to an ARUP Standard Transport Tube. (Min: 0.3 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Any other body fluids.
Stability (collection to initiation of testing): Ambient: 8 hours; Refrigerated: 1 week; Frozen: 12 months

Interpretive Data: Human chorionic gonadotropin (hCG) is a valuable aid in the management of patients with trophoblastic tumors, nonseminomatous testicular tumors, and seminomas when used in conjunction with information available from the clinical evaluation and other diagnostic procedures. Increased hCG concentrations have also been observed in melanoma, carcinomas of the breast, gastrointestinal tract, lung, and ovaries, and in benign conditions including cirrhosis, duodenal ulcer, and inflammatory bowel disease. The result cannot be interpreted as absolute evidence of the presence or absence of malignant disease. The result is not interpretable as a tumor marker in pregnant females.

The combination of the specific monoclonal antibodies used in the Roche Beta HCG electrochemiluminescent immunoassay recognize the holo-hormone, “nicked” forms of hCG, the beta-core fragment, and the free beta-subunit. Although this assay is FDA cleared for use in the detection of pregnancy, it is not labeled for use as a tumor marker or with CSF specimens. The performance characteristics of this assay were determined by ARUP.

0020229 Beta-hCG, Urine Qualitative BHCG-U

Specimen Required: Collect: Urine in a plastic container. First-morning urine is the preferred specimen as it usually contains the highest concentration of beta-hCG; however, any specimen is suitable for testing.
Specimen Preparation: Transfer 1 mL aliquot of urine to an ARUP Standard Transport Tube. **If frozen, mix after thawing. Do not refreeze.**
Storage/Transport Temperature: Refrigerated.
Stability (collection to initiation of testing): Ambient: 8 hours; Refrigerated: 72 hours; Frozen: **6 months (one freeze/thaw cycle is acceptable)**

HOT LINE NOTE: Remove information found in the Remarks field under Specimen Requirements.

0020245 Bicarbonate (HCO₃), Urine BICARB

Specimen Required: Collect: Random urine in sealed container.
Specimen Preparation: Immediately upon collection, mix and transfer 4 mL to an ARUP Standard Transport Tube. (Min: 0.3 mL) Do not expose to air.
Storage/Transport Temperature: **CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.**
Unacceptable Conditions: **Room temperature or refrigerated specimens.**
Stability (collection to initiation of testing): Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen: 1 month (unstable if thawed and refrozen)

Delete **0020511** **Bilirubin, Direct, Body Fluid** **DBILI-FL**

HOT LINE NOTE: Delete this test and refer to Bilirubin, Total, Body Fluid (0020510).

2002926 **Blastomyces dermatitidis Antigen EIA** **BLAST DERM**

Specimen Required: Collect: Random urine. **OR** plain red, serum separator tube, or green (sodium or lithium heparin). Also acceptable: CSF or BALF.
Specimen Preparation: Transfer 2 mL urine, serum, or plasma to an ARUP Standard Transport Tube. (Min: 1.5 mL)
Storage/Transport Temperature: Refrigerated. Also acceptable: Room temperature or frozen.
Unacceptable Conditions: EDTA plasma.
Stability (collection to initiation of testing): Ambient: 1 week; Refrigerated: 1 month; Frozen: Indefinitely

0051750 **BRAF codon 600 Mutation Detection with Reflex to MLH1 Promoter Methylation** **BRAF RFLX**

Methodology: Polymerase Chain Reaction/Pyrosequencing
Performed: Sun-Sat
Reported: 10-14 days

Specimen Required: Collect: Tumor tissue.
Specimen Preparation: Formalin fix (10% neutral buffered formalin) and paraffin embed tissue. Transport tissue block or 5 unstained 5 microns slides. (Min: 3 slides). Protect paraffin block and/or slides from excessive heat. Ship in cooled container during summer months.
Storage/Transport Temperature: Room temperature or refrigerated.
Remarks: Include surgical pathology report.
Unacceptable Conditions: Frozen specimens. Specimens fixed/processed in alternative fixatives (alcohol, Prefer®) or heavy metal fixatives (B-4 or B-5). No tumor in tissue. Decalcified specimens.
Stability (collection to initiation of testing): Ambient: Indefinitely; Refrigerated: Indefinitely; Frozen: Unacceptable

Note: If BRAF codon 600 Mutation Detection is negative, then MLH1 Promoter Methylation will be added.

0090193 **Bupropion and Metabolite** **BUPROP**

Specimen Required: Collect: Plain red. Also acceptable: Green (sodium heparin).
Specimen Preparation: Transfer 3 mL serum or plasma to an ARUP Standard Transport Tube and freeze immediately. (Min: 0.6 mL)
Storage/Transport Temperature: CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.
Unacceptable Conditions: Serum separator tubes.
Stability (collection to initiation of testing): Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen: 6 months

HOT LINE NOTE: Remove information found in the Remarks field under Specimen Requirements. There is a component change associated with this test that affects interface clients only. Refer to Test Mix Addendum for further information.

0099460 **Calculi (Stone) Analysis** **CALCULI**

Interpretive Data: Calculi are the products of physiological processes that yield crystalline compounds in a matrix of biological compounds and blood. Matrix components are not reported. The clinically significant crystalline components identified in calculi specimens are reported.

0070412 **Carbohydrate Deficient Transferrin for Alcohol Use** **CDT**

Reference Interval:

Normal	0-1.3%
Inconclusive	1.4-1.6%
Elevated	Greater than or equal to 1.7%

Note: This assay can detect chronic ethanol use (greater than 40 g/day for two weeks).

2002918 Carbohydrate Deficient Transferrin for Congenital Disorders of Glycosylation CARBOH-CDG

Specimen Required: Collect: Plain red or serum separator tube.
Specimen Preparation: Transfer 0.1 mL serum to an ARUP Standard Transport Tube. (Min: 0.05 mL)
Storage/Transport Temperature: **Frozen.**
Remarks: Patient age is required on the test request form. Provide reason (eg, diagnosis) for referral with each specimen.
Stability (collection to initiation of testing): Ambient: Unacceptable; Refrigerated: **1 week**; Frozen: 1 month

0080065 Carnitine, Free CARN

Specimen Required: Collect: Green (sodium or lithium heparin). **Also acceptable: Plain red.**
Specimen Preparation: Separate **serum or** plasma from cells and freeze ASAP or within 2 hours of collection. Transfer 0.5 mL **serum or** plasma to an ARUP Standard Transport Tube and freeze immediately. (Min: 0.2 mL) Avoid hemolysis.
Storage/Transport Temperature: **CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.**
Unacceptable Conditions: Room temperature specimens. Specimens that have been refrigerated for greater than 12 hours.
Stability (collection to initiation of testing): After separation from cells: Ambient: Unacceptable; Refrigerated: 12 hours; Frozen: 1 month (avoid repeated freeze/thaw cycles).

Reference Interval:

Age	Free Carnitine
1-31 days	15-55 µmol/L
32 days-12 months	29-61 µmol/L
13 months-6 years	25-55 µmol/L
7 years-20 years	22-63 µmol/L
21 years or older	25-60 µmol/L

0080068 Carnitine, Free & Total (Includes Carnitine, Esterified) CARN F&T

Specimen Required: Collect: Green (sodium or lithium heparin). **Also acceptable: Plain red.**
Specimen Preparation: Separate **serum or** plasma from cells ASAP or within 2 hours of collection. Transfer 0.5 mL **serum or** plasma to an ARUP Standard Transport Tube and freeze immediately. (Min: 0.2 mL) Avoid hemolysis.
Storage/Transport Temperature: **CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.**
Unacceptable Conditions: Room temperature specimens. Specimens refrigerated greater than 12 hours.
Stability (collection to initiation of testing): After separation from cells: Ambient: Unacceptable; Refrigerated: 12 hours; Frozen: 1 month (avoid repeated freeze/thaw cycles)

0080067 Carnitine, Total CARN TOTAL

Specimen Required: Collect: Green (sodium or lithium heparin). **Also acceptable: Plain red.**
Specimen Preparation: Separate **serum or** plasma from cells ASAP or within 2 hours of collection. Transfer 0.5 mL **serum or** plasma to an ARUP Standard Transport Tube and freeze immediately. (Min: 0.2 mL) Avoid hemolysis.
Storage/Transport Temperature: **CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.**
Unacceptable Conditions: Room temperature specimens. Specimens that have been refrigerated for greater than 12 hours.
Stability (collection to initiation of testing): Ambient: Unacceptable; Refrigerated: 12 hours; Frozen: 1 month (avoid repeated freeze/thaw cycles)

Reference Interval:

Age	Total Carnitine
1-31 days	21-83 µmol/L
32 days-12 months	38-73 µmol/L
13 months-6 years	35-90 µmol/L
7 years-20 years	31-78 µmol/L
21 years or older	34-86 µmol/L

0080407 Catecholamines Fractionated by LC-MS/MS, Urine Free

CATE UF

Specimen Required: Patient Preparation: Abstain from medications for 72 hours prior to collection.
Collect: 24-hour or random urine. Refrigerate 24-hour specimen during collection.
Specimen Preparation: Transfer a 4 mL aliquot from a well-mixed 24-hour or random collection to an ARUP Standard Transport Tube. (Min: 2.5 mL) Preservation can be enhanced by adjusting the pH to 2-3 by adding an acid such as 6 mol/L HCl. Catecholamines are not stable above pH 7. The pH of such specimens must be adjusted by the addition of acid prior to transport. A pH less than 2 can cause assay interference. Record total volume and collection time interval on transport tube and test request form.
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Room temperature specimens.
Stability (collection to initiation of testing): Ambient: **Unacceptable**; Refrigerated: 1 month; Frozen: 6 months

Reference Interval:

Components	Reference Intervals (18 years and older)
Dopamine	60-440 µg/d
Epinephrine	0-25 µg/d
Norepinephrine	0-100 µg/d

New Test 2005114 CD19 by Immunohistochemistry

CD19 IHC

Available April 18, 2011



Immunohistochemistry Stain Form Recommended

Methodology: Immunohistochemistry
Performed: Mon-Fri
Reported: 1-5 days

Specimen Required: Collect: Tissue or cells.
Specimen Preparation: Formalin fix (10% neutral buffered formalin is preferred) and paraffin embed specimen (cells must be prepared into a cellblock). If sending precut slides, do not oven bake. Protect paraffin block and/or slides from excessive heat. Ship in cooled container during summer months.
Storage/Transport Temperature: Room temperature or refrigerated.
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, please contact ARUP Client Services.
Unacceptable Conditions: Depleted specimens. Specimens submitted with non-representative tissue type.
Stability (collection to initiation of testing): Ambient: Indefinite; Refrigerated: Indefinite; Frozen: Indefinite

Note: All stains will be handled as "Stain and Return" unless a consultation is requested. To request a consultation, submit the pathology report, all associated case materials (clinical history, blocks, slides, etc.), and the Anatomic Pathology requisition form (form #32960) with Surgical or Hematopathology Consult checked.

CPT Code(s): 88342

New York DOH Approved.

HOT LINE NOTE: Refer to Test Mix Addendum for interface build information.

New Test 2004927 CDKL5-Related Disorders (CDKL5) Deletion/Duplication CDKL5 DD

Available April 18, 2011



Patient History for Rett Syndrome

Methodology: Polymerase Chain Reaction/Multiplex Ligation-Dependent Probe Amplification
Performed: Varies
Reported: 14 days

Specimen Required: Collect: 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.
Stability (collection to initiation of testing): Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable

Interpretive Data:

Background Information for CDKL5-Related Disorders (CDKL5) Deletion/Duplication:

Characteristics: Vary widely but may include early onset intractable seizures, severe developmental delay, with females often exhibiting features of Rett syndrome.

Incidence: Unknown; more frequent in females than males.

Inheritance: X-linked dominant; reported cases are *de novo*.

Penetrance: 100 percent.

Cause: Pathogenic *CDKL5* gene mutations.

Clinical Sensitivity: Unknown.

Methodology: Multiplex ligation-dependent probe amplification (MLPA) to detect large *CDKL5* coding region deletions/duplications.

Analytical Sensitivity and Specificity: 99 percent.

Limitations: Rare diagnostic errors can occur due to probe site mutations. Single base pair substitutions, small deletions/duplications, regulatory region mutations, and deep intronic mutations will not be detected. Large deletions/duplications of exon 3 will not be detected. The breakpoints of large deletions/duplications will not be determined.

Counseling and informed consent are recommended for genetic testing. Consent forms are available online at www.aruplab.com.

Refer to Statement C under Testing Information at <http://www.aruplab.com>.

CPT Code(s): 83891 Isolation; 83896 x 21 Nucleic acid probes; 83898 x 21 Amplification; 83914 x 21 Extension; 83909 Capillary electrophoresis; 83912 Interpretation and report - Additional CPT code modifiers may be required for procedures performed to test for oncologic or inherited disorders.

New York DOH approval pending. Call for status update.

HOT LINE NOTE: Refer to Test Mix Addendum for interface build information.

New Test 2004931 CDKL5-Related Disorders (CDKL5) Sequencing

CDKL5 FGS

Available April 18, 2011



Patient History for Rett Syndrome

Methodology: Polymerase Chain Reaction/Sequencing
Performed: Varies
Reported: 28 days

Specimen Required: Collect: 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.
Stability (collection to initiation of testing): Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable

Interpretive Data:

Background Information for CDKL5-Related Disorders (CDKL5) Sequencing:

Characteristics: Vary widely but may include early onset intractable seizures, severe developmental delay, with females often exhibiting features of Rett syndrome.

Incidence: Unknown; more frequent in females than males.

Inheritance: X-linked dominant; reported cases are *de novo*.

Penetrance: 100 percent.

Cause: Pathogenic *CDKL5* gene mutations.

Clinical Sensitivity: Approximately 17 percent in females with infantile spasms/seizures.

Methodology: Bidirectional sequencing of the *CDKL5* coding region and intron-exon boundaries.

Analytical Sensitivity and Specificity: 99 percent.

Limitations: Rare diagnostic errors can occur due to primer site mutations. Regulatory region mutations, deep intronic mutations, and large deletions/duplications will not be detected.

Counseling and informed consent are recommended for genetic testing. Consent forms are available online at www.aruplab.com.

Refer to Statement C under Testing Information at <http://www.aruplab.com>.

CPT Code(s): 83891 Isolation; 83898 x26 Amplification; 83904 x26 Sequencing; 83909 Capillary electrophoresis; 83912 Interpretation and report - Additional CPT code modifiers may be required for procedures performed to test for oncologic or inherited disorders.

New York DOH approval pending. Call for status update.

HOT LINE NOTE: Refer to test mix addendum for interface build information.

New Test 2004935 *CDKL5*-Related Disorders (*CDKL5*) Sequencing and Deletion/Duplication

CDKL5 FGA

Available April 18, 2011



Patient History for Rett Syndrome

Methodology: Polymerase Chain Reaction/Sequencing/Multiplex Ligation-Dependent Probe Amplification
Performed: Varies
Reported: 35 days

Specimen Required: Collect: Lavender (EDTA), pink (K₂EDTA) or yellow (ACD Solution A or B).
Specimen Preparation: Transport 3 mL whole blood. (Min: 2 mL)
Storage/Transport Temperature: Refrigerated.
Stability (collection to initiation of testing): Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable

Interpretive Data:

Background Information for *CDKL5*-Related Disorders (*CDKL5*) Sequencing and Deletion/Duplication:

Characteristics: Vary widely but may include early onset intractable seizures, severe developmental delay, with females often exhibiting features of Rett syndrome.

Incidence: Unknown; more frequent in females than males.

Inheritance: X-linked dominant; reported cases are *de novo*.

Penetrance: 100 percent.

Cause: Pathogenic *CDKL5* gene mutations.

Clinical Sensitivity: Approximately 17 percent in females with infantile spasms or seizures.

Methodology: Bidirectional sequencing of the *CDKL5* coding region and intron-exon boundaries. Multiplex ligation-dependent probe amplification (MLPA) to detect large *CDKL5* coding region deletions/duplications.

Analytical Sensitivity and Specificity of Sequencing and MLPA: 99 percent.

Limitations: Rare diagnostic errors can occur due to primer or probe site mutations. Regulatory region mutations and deep intronic mutations will not be detected. Large deletions/duplications of exon 3 will not be detected. The breakpoints of large deletions/duplications will not be determined.

Counseling and informed consent are recommended for genetic testing. Consent forms are available online at www.aruplab.com.

Refer to Statement C under Testing Information at <http://www.aruplab.com>.

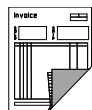
CPT Code(s): Sequencing: 83891 Isolation; 83898 x26 Amplification; 83904 x26 Sequencing; 83909 Capillary electrophoresis; 83912 Interpretation and report.
 DelDup: 83896 x 21 Nucleic Acid Probes; 83898 x21 Amplification; 83914 x21 Extension; 83909 Capillary Electrophoresis -
 Additional CPT code modifiers may be required for procedures performed to test for oncologic or inherited disorders.

New York DOH approval pending. Call for status update.

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

New Test **2005018** **Celiac Disease (*HLA-DQA1*05*, *HLA-DQB1*02*, and *HLA-DQB1*03:02*) Genotyping** **HLA CELIAC**

Available April 18, 2011



HLA Test Request Form Recommended

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

Specimen Required: Collect: Lavender (EDTA), pink (K₂EDTA), or yellow (ACD Solution A or B).
Specimen Preparation: Transport 3 mL whole blood. (Min: 1 mL)
Storage/Transport Temperature: Room temperature or refrigerated.
Stability (collection to initiation of testing): Ambient: 1 week; Refrigerated: 1 week; Frozen: Unacceptable

Reference Interval: By report

Interpretive Data:

Background Information for Celiac Disease (*HLA-DQA1*05*, *HLA-DQB1*02*, and *HLA-DQB1*03:02*) Genotyping:

Characteristics: Celiac disease is a systemic autoimmune disorder that may be associated with gastrointestinal symptoms including: diarrhea, weight loss, anorexia, lactose intolerance, and abdominal distention and discomfort. Non-gastrointestinal characteristics are highly variable and include: chronic fatigue, joint pain/inflammation, migraines, epilepsy, depression, attention deficit disorder, iron-deficiency anemia, vitamin deficiency, osteoporosis/osteopenia, short stature, delayed puberty, dental enamel defects, infertility, recurrent fetal loss, and dermatitis herpetiformis.

Incidence: One in 133 individuals in the US is affected.

Inheritance: Multifactorial.

Cause: The presence of either the *HLA-DQB*02/DQA*05* heterodimer or the *HLA-DQB*03:02* allele in combination with dietary gluten.

Alleles tested: *HLA-DQA1*05*, *HLA-DQB1*02*, and *HLA-DQB1*03:02*.

Clinical Sensitivity and Specificity: Approximately 100 percent and 3 percent, respectively.

Methodology: PCR with melting curve analysis.

Analytical Sensitivity and Specificity: 99 percent.

Limitations: Rare diagnostic errors may occur due to primer site mutations. Copy number of each detected allele will not be determined. Alleles other than *HLA-DQA1*05*, *HLA-DQB1*02*, and *HLA-DQB1*03:02* will not be identified. Other genetic and non genetic factors that influence celiac disease are not evaluated.

The test is performed pursuant to an agreement with Roche Molecular Systems, Inc.

Counseling and informed consent are recommended for genetic testing. Consent forms are available online at www.aruplab.com.

Refer to Statement C under Testing Information at <http://www.aruplab.com>.

CPT Code(s): 83891 Isolation; 83898 Amplification; 83900 Multiplex amplification; 83912 Interpretation and report - Additional CPT code modifiers may be required for procedures performed to test for oncologic or inherited disorders.

New York DOH approval pending. Call for status update.

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

0051273 Cell-Mediated Immune Function Screen

LMPS

Performed: Mon-Sun
Reported: 1-2 days

Specimen Required: Collect: Green (sodium heparin). Specimen must be collected within 30 hours of test performance.
Specimen Preparation: Transport 3 mL whole blood in original collection tube. (Min: 0.5 mL) **LIVE LYMPHOCYTES REQUIRED.**
Storage/Transport Temperature: **CRITICAL ROOM TEMPERATURE. Do not refrigerate or freeze.**
Unacceptable Conditions: Refrigerated or frozen specimens. **Specimens older than 30 hours.**
Stability (collection to initiation of testing): Ambient: 30 hours; Refrigerated: Unacceptable; Frozen: Unacceptable

Reference Interval: 226-524 ng/mL

Interpretive Data: This assay quantifies the concentration of adenosine triphosphate (ATP) produced by circulating immune cells in response to phytohemagglutinin-L (PHA-L) stimulation. This assay does not directly quantify the level of immunosuppression.

ATP Level	Result	Interpretation
225 ng/mL or lower	Low	The patient's circulating immune cells are showing low response to PHA-L stimulation.
226-524 ng/mL	Moderate	The patient's circulating immune cells are showing moderate response to PHA-L stimulation.
525 ng/mL or greater	Strong	The patient's circulating immune cells are showing strong response to PHA-L stimulation.

HOT LINE NOTE: Remove the table found in the Reference Interval field.

0050160 Ceruloplasmin

CERU

Specimen Required: Patient Preparation: A fasting specimen is preferred.
Collect: Serum separator tube or plasma separator tube. Also acceptable: Plasma collected in green (lithium heparin).
Specimen Preparation: Allow specimen to clot completely at room temperature. Separate serum or plasma from cells ASAP or within 2 hours of collection. Transfer 0.5 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.2 mL)
Storage/Transport Temperature: Frozen.
Unacceptable Conditions: EDTA plasma or hemolyzed specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: 8 hours; Refrigerated: 72 hours; Frozen: 1 month

0060224 Chlamydia trachomatis & Neisseria gonorrhoeae DNA Probe

GCCHP

Specimen Required: Patient Preparation: For urethral swab specimens, patients should not have urinated for at least 1 hour prior to collection.
Collect: Female endocervical or male urethral swabs. Use Gen-Probe® Pace 2 collection and transport kit. Female kit: ARUP supply #12575; male kit: ARUP supply #12576. **Use test-specific kits provided by the manufacturer for each specimen type. Closely follow kit instructions for specimen collection and transport. Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787.**
Specimen Preparation: Transport swabs in Gen-Probe® Pace 2 transport tubes.
Storage/Transport Temperature: Refrigerated.
Remarks: Gross presence of blood in the specimen may interfere with the test performance. This test is not recommended for pediatric patients.
Unacceptable Conditions: Specimens not in Gen-Probe® Pace 2 transport media. Specimens without a swab in transport media.
Stability (collection to initiation of testing): In Gen-Probe® Pace 2 media: Ambient: 1 week; Refrigerated: 1 week; Frozen: 1 week

HOT LINE NOTE: Remove information found in the Note field.

0065059 Chlamydia trachomatis DNA Probe CHLDNAP

Specimen Required: Patient Preparation: For urethral swab specimens, patients should not have urinated for at least 1 hour prior to collection.
Collect: Female endocervical, male urethral, or conjunctival swabs. Use Gen-Probe® Pace 2 collection and transport media. Female kit: ARUP supply #12575; male kit: ARUP supply #12576. **Use test-specific kits provided by the manufacturer for each specimen type. Closely follow kit instructions for specimen collection and transport. Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787.**
Specimen Preparation: Transport swabs in Gen-Probe® Pace 2 transport tubes
Storage/Transport Temperature: Refrigerated.
Remarks: Gross presence of blood in the specimen may interfere with the test performance. This test is not recommended for pediatric patients.
Unacceptable Conditions: Specimens not in Gen-Probe® Pace 2 transport.
Stability (collection to initiation of testing): In Gen-Probe® Pace 2 transport media: Ambient: 1 week; Refrigerated: 1 week; Frozen: 1 week

Interpretive Data: Nucleic-acid amplification tests (NAAT) are superior to direct DNA probe testing for detection of *Chlamydia trachomatis*. For NAAT, refer to *Chlamydia trachomatis* & *Neisseria gonorrhoeae* by Amplified Detection (APTIMA®) (ARUP test code 0060241) or *Chlamydia trachomatis* by Amplified Detection (APTIMA®) (ARUP test code 0060243).

HOT LINE NOTE: Remove information found in the Note field.

0080469 Chromogranin A CGA SERUM

Specimen Required: Collect: Serum separator tube or plain red.
Specimen Preparation: Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.5 mL)
Storage/Transport Temperature: Frozen.
Unacceptable Conditions: Plasma. Icteric or lipemic specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: **48 hours**; Refrigerated: **2 weeks**; Frozen: **6 weeks**

Reference Interval: 0-95 ng/mL

Interpretive Data: This assay is performed using the **Cisbio Chromoa™** EIA. Results obtained with different assay methods or kits cannot be used interchangeably.

Refer to Statement D under Testing Information at <http://www.aruplab.com>.

HOT LINE NOTE: Remove information found in the Remarks field under Specimen Requirements.

2003302 Citalopram, Serum or Plasma CITALO

Methodology: Quantitative **Liquid Chromatography-Tandem Mass Spectrometry**

Specimen Required: Collect: Plain red, lavender (EDTA), or pink (K₂EDTA).
Specimen Preparation: Separate from cells within **2 hours** of draw. Transfer 1 mL serum or plasma into an ARUP Standard Transport Tube. (Min: **0.4 mL**)
Storage/Transport Temperature: Refrigerated. Also acceptable: Room temperature or frozen.
Unacceptable Conditions: Separator tubes.
Stability (collection to initiation of testing): Ambient: **1 month**; Refrigerated: **1 month**; Frozen: **1 month**

0091362 Clonidine, Serum or Plasma CLONIDI SP

Specimen Required: Collect: **Plain red, lavender** (EDTA), or pink (K₂EDTA).
Specimen Preparation: Transfer **2 mL** serum or plasma to an ARUP Standard Transport Tube. (Min: **0.7 mL**)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Separator tubes.
Stability (collection to initiation of testing): Ambient: **1 month**; Refrigerated: **1 month**; Frozen: **1 month**

0091223 Clonidine, Urine CLONID UR

Specimen Required: Collect: Random urine.
Specimen Preparation: Transfer **1 mL** urine to an ARUP Standard Transport Tube. (Min: **0.25 mL**)
Storage/Transport Temperature: Refrigerated.
Stability (collection to initiation of testing): Ambient: **1 month**; Refrigerated: **1 month**; Frozen: **1 month**

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

Specimen Required: Collect: Stool or other intestinal source (i.e. tissue) from patient with symptoms of *C. difficile*-associated disease.
Specimen Preparation: Transport 5 mL stool in a clean stool transport vial (ARUP supply #40910) **OR transport in enteric transport media (ARUP supply #29799).** (Min: 1 mL) Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787.
Storage/Transport Temperature: Frozen. Submit specimen according to Biological Substance, Category B, shipping guidelines.
Unacceptable Conditions: Leaking containers. Dry specimens, multiple specimens (more than one in 24 hours), formed stools, or stool in PVA or formalin.
Stability (collection to initiation of testing): Unpreserved or preserved: Ambient: 2 hours; Refrigerated: 48 hours; Frozen: 1 week

Note: For routine stool screening, refer to *Clostridium difficile* toxin B gene (tcdB) by PCR (ARUP test code 2002838).

If *Clostridium difficile* culture is positive, then *Clostridium difficile* Cytotoxin Cell Assay (ARUP test code 0060851) will be added. Additional charges apply.

HOT LINE NOTE: Remove information found in the Remarks field under Specimen Requirements.

0098930 Clozapine CLOZAPINE

Performed: Sun-Sat
Reported: 1-2 days

0081119 Coenzyme Q10, Total COENZ Q10

Specimen Required: Patient Preparation: Patient should fast overnight prior to specimen collection. Patient may have water. It is not necessary to discontinue nutritional supplements prior to this test.
Collect: Plasma separator tube, green (sodium or lithium heparin), serum separator tube, or plain red.
Specimen Preparation: Protect from light **within one hour of collection and during storage** and shipment. Transfer 1 mL serum or plasma to an ARUP Amber Transport Tube. (Min: 0.3 mL)
Storage/Transport Temperature: Frozen.
Unacceptable Conditions: Specimens other than heparinized plasma or serum. Hemolyzed specimens. Specimens exposed to repeated freeze/thaw cycles.
Stability (collection to initiation of testing): After separation from cells: Ambient: Unacceptable; Refrigerated: 3 weeks; Frozen: 1 month

0050198 Complement Activity Enzyme Immunoassay, Total CH50

Specimen Required: Collect: Plain red.
Specimen Preparation: Allow specimen to clot for one hour at room temperature. Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.3 mL)
Storage/Transport Temperature: **CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.**
Unacceptable Conditions: Separator tubes. Specimens left to clot at 2-8°C. Specimens exposed to repeated freeze/thaw cycles. Nonfrozen specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: 2 hours; Refrigerated: Unacceptable; Frozen: 2 weeks

Reference Interval: 60-144 CAE Units

0099078 Complement Component 1, Functional C1

Performed: Varies
Reported: 28-31 Days

- ✓ **HOT LINE NOTE:** This change also applies to:
- Complement Component 6 (0099072)
 - Complement Component 6 Functional (0099131)
 - Complement Component 7 Functional (0099121)
 - Complement Component 8 Functional (0099133)
 - Complement Component 9 Functional (0099120)

2003180	Complement Component 4A	COMP 4A
Performed:	Varies	
Reported:	14-17 days	
0097222	Cortisol Urine Free by LC-MS/MS	CORT UF
Specimen Required: <u>Collect:</u> 24-hour or random urine. Refrigerate 24-hour specimen during collection.		
<u>Specimen Preparation:</u> Transport one 4 mL aliquot of urine. (Min: 1 mL) Record total volume and collection time interval on transport tube and test request form.		
<u>Storage/Transport Temperature:</u> Refrigerated.		
<u>Unacceptable Conditions:</u> Room temperature specimens. Acidified specimens or specimens with preservatives.		
<u>Stability (collection to initiation of testing):</u> Ambient: Unacceptable; Refrigerated: 2 weeks; Frozen: 6 months		
0092100	Cortisol/Cortisone Urine Free by LC-MS/MS	CORTURATIO
Specimen Required: <u>Collect:</u> 24-hour or random urine. Refrigerate 24-hour specimen during collection.		
<u>Specimen Preparation:</u> Transport one 4 mL aliquot of urine. (Min: 1 mL) Record total volume and collection time interval on transport tube and test request form.		
<u>Storage/Transport Temperature:</u> Refrigerated.		
<u>Unacceptable Conditions:</u> Room temperature specimens. Acidified specimens or specimens with preservatives.		
<u>Stability (collection to initiation of testing):</u> Ambient: Unacceptable; Refrigerated: 1 week; Frozen: 1 month		
0050182	C-Reactive Protein, High Sensitivity	HSCRIP
HOT LINE NOTE: There is a change associated with this test that affects interface clients only. Refer to Test Mix Addendum for further information.		
0055256	Cyclic Citrullinated Peptide (CCP) Antibody, IgG	CCP IGG
Specimen Required: <u>Collect:</u> Serum separator tube.		
<u>Specimen Preparation:</u> Separate serum from cells ASAP or within 2 hours of collection. Transfer 0.5 mL serum to an ARUP Standard Transport Tube. (Min: 0.3 mL)		
<u>Storage/Transport Temperature:</u> Refrigerated.		
<u>Unacceptable Conditions:</u> Urine or plasma. Contaminated, hemolyzed, grossly icteric, heat-inactivated, or severely lipemic specimens.		
<u>Stability (collection to initiation of testing):</u> After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)		
0081106	Cystine Quantitative, Urine	QNT CYS U
Specimen Required: <u>Collect:</u> 24-hour or other timed urine collection. Avoid dilute urine when possible. Refrigerate 24-hour/timed specimens during collection.		
<u>Specimen Preparation:</u> Mix urine well. Transfer 8 mL aliquot urine to ARUP Standard Transport Tubes and freeze immediately. (Min: 3 mL) Record total volume and collection time interval on transport tube and test request form.		
<u>Storage/Transport Temperature:</u> CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.		
<u>Remarks:</u> Clinical information is needed for appropriate interpretation. Additional required information includes age, gender, diet (eg, TPN therapy), drug therapy, and family history. Biochemical Genetics Patient History Form is available on the ARUP Web site or by contacting ARUP Client Services.		
<u>Unacceptable Conditions:</u> Refrigerated or room temperature specimens.		
<u>Stability (collection to initiation of testing):</u> Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen: 1 month		
0081105	Cystinuria Panel	CYS PAN
Specimen Required: <u>Collect:</u> Random urine. Avoid dilute urine when possible.		
<u>Specimen Preparation:</u> Mix urine well. Transfer 8 mL urine to ARUP Standard Transport Tubes and freeze immediately. (Min: 3 mL)		
<u>Storage/Transport Temperature:</u> CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.		
<u>Remarks:</u> Clinical information is needed for appropriate interpretation. Additional required information includes age, gender, diet (eg, TPN therapy), drug therapy, and family history. Biochemical Genetics Patient History Form is available on the ARUP Web site or by contacting ARUP Client Services.		
<u>Unacceptable Conditions:</u> Refrigerated or room temperature specimens.		
<u>Stability (collection to initiation of testing):</u> Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen: 1 month		

0051104 Cytochrome P450 2C19 (CYP2C19) 9 Mutations CYP2C19

CPT Codes: 83891 Isolation; 83900 Multiplex Amplification; 83901 x4 Additional Amplification; 83914 x18 Extension; 83912 Interpretation and report - Additional CPT code modifiers may be required for procedures performed to test for oncologic or inherited disorders.

0050165 Cytomegalovirus Antibody, IgG CMV IGG

Specimen Required: Collect: Serum separator tube.

Specimen Preparation: Allow specimen to clot completely at room temperature. Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.5 mL) Acute and convalescent specimens must be labeled as such; parallel testing is preferred and convalescent specimens **must** be received within 30 days from receipt of the acute specimens. **Mark specimen plainly as "acute" or "convalescent."** Also acceptable: Serum from umbilical cord blood.

Storage/Transport Temperature: Refrigerated.

Unacceptable Conditions: **Urine.** Contaminated, hemolyzed, or heat-inactivated 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)

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

New Test 2004760 Cytomegalovirus Antiviral Drug Resistance by Sequencing CMV RESIST

Available April 18, 2011

Methodology: Polymerase Chain Reaction/Sequencing

Performed: Sun-Sat

Reported: 2-3 days

Specimen Required: Collect: Lavender (EDTA) or plasma preparation tube.

Specimen Preparation: Separate from cells within 8 hours. Transport 4 mL plasma. (Min: 2.5 mL)

Storage/Transport Temperature: Frozen. Separate specimens must be submitted when multiple tests are ordered. Submit specimen according to Biological Substance, Category B, shipping guidelines.

Unacceptable Conditions: Serum, whole blood, or heparinized plasma.

Stability (collection to initiation of testing): Ambient: 8 hours; Refrigerated: 72 hours; Frozen: 1 month

Interpretive Data: Codons 457-630 of the *UL97* gene and codons 393-1000 of the *UL54* gene are sequenced. Mutations associated with resistance to ganciclovir, cidofovir, and foscarnet are reported. Mutations in viral sub-populations below 20 percent of total may not be detected.

Refer to Statement B under Testing Information at <http://www.aruplab.com>.

Note: This test may be unsuccessful if the plasma CMV DNA viral load is less than 1,500 CMV DNA copies per mL of plasma.

CPT Code(s): 83891 Isolation; 83894 Separation; 83898 x5 Amplification; 83904 x5 Sequencing; 83909 Capillary electrophoresis; 83912 Interpretation

New York DOH approval pending. Call for status update.

HOT LINE NOTE: Refer to Test Mix Addendum for interface build information.

0091576 Darvocet, Serum or Plasma DARVOCET S

Methodology: Quantitative Gas Chromatography/Mass Spectrometry/High Performance Liquid Chromatography

Specimen Required: Collect: Plain red, gray (sodium fluoride/potassium oxalate), green (sodium heparin), or lavender (EDTA).

Specimen Preparation: Transfer 3 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 1.1 mL)

Storage/Transport Temperature: Refrigerated.

Unacceptable Conditions: Separator tubes.

Stability (collection to initiation of testing): Ambient: **Undetermined**; Refrigerated: **Undetermined**; Frozen: **Undetermined**

0091589 Darvocet, Urine

DARVO URN

Specimen Required: Collect: Random urine.

Specimen Preparation: Transfer 2 mL urine to an ARUP Standard Transport Tube. (Min: 1 mL)

Storage/Transport Temperature: Refrigerated.

Stability (collection to initiation of testing): Ambient: **Undetermined**; Refrigerated: **Undetermined**; Frozen: **Undetermined**

0030057 D-Dimer

D-DI

Specimen Required: Collect: Light blue (sodium citrate). Refer to Specimen Handling at aruplab.com for hemostasis/thrombosis specimen handling guidelines.

Specimen Preparation: Transfer 2 mL platelet poor plasma (Min: 0.5 mL) into an ARUP Standard Transport Tube.

Storage/Transport Temperature: **CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.**

Unacceptable Conditions: Serum. Non-frozen or hemolyzed specimens.

Stability (collection to initiation of testing): After separation from cells: Ambient: 8 hours; Refrigerated: 8 hours; Frozen: 1 month

Interpretive Data: The presence of rheumatoid factor may lead to false-positive results with the D-Dimer test. This test should not be used to rule out venous thromboembolism.

Maximal values less than 10 are rarely indicative of DIC.

Results are reported in Fibrinogen Equivalent Units (FEU).

0030461 Dilute Russell Viper Venom Time (dRVVT) with Reflex to dRVVT 1:1 Mix & Confirmation

DRV CONF

Specimen Required: Collect: Lt. blue (sodium citrate). Refer to Specimen Handling at aruplab.com for hemostasis/thrombosis specimen handling guidelines.

Specimen Preparation: Transfer 2 mL platelet-poor plasma to an ARUP Standard Transport Tube. (Min: 1 mL)

Storage/Transport Temperature: Frozen.

Unacceptable Conditions: Serum. Hemolyzed specimens.

Stability (collection to initiation of testing): Ambient: 4 hours; Refrigerated: 4 hours; Frozen: 2 weeks

2003254 Drug Screen, Targeted, Serum or Plasma

TOF SCR SP

Specimen Required: Collect: Gray (sodium fluoride/potassium oxalate). Also acceptable: Plain red, green (sodium heparin), lavender (EDTA), or pink (K₂EDTA).

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.

Remarks: Cocaine and cocaethylene are more stable in fluoride-preserved plasma than serum.

Unacceptable Conditions: Specimens exposed to repeated freeze/thaw cycles. Separator tubes. Plasma or whole blood collected in lt. blue (sodium citrate).

Stability (collection to initiation of testing): After separation from cells: Ambient: 1 week; Refrigerated: 2 weeks; Frozen: 3 years

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

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

For medical purposes only; not valid for forensic use.

Drugs/Drug Classes	Range of Cutoff Concentrations
Opioids: buprenorphine, codeine, dihydrocodeine, fentanyl, heroin, hydrocodone, hydromorphone, meperidine, methadone, morphine, oxycodone, oxymorphone, propoxyphene, tapentadol, tramadol	1-25 ng/mL
Stimulants: amphetamine, cocaine, methamphetamine, MDMA (Ecstasy), MDEA (Eve), MDA	20-40 ng/mL
Sedative-hypnotics: alprazolam, amobarbital, butalbital, clonazepam, diazepam, flurazepam, lorazepam, midazolam, nordiazepam, oxazepam, pentobarbital, phenobarbital, secobarbital, temazepam, triazolam	25-500 ng/mL
Cannabinoids (11-nor-9-carboxy-THC)	60 ng/mL
Phencyclidine (PCP)	10 ng/mL

0092420 Drugs of Abuse 9 Panel, Serum or Plasma - Screen with Reflex to Confirmation/Quantitation DRUG SCRSP

Specimen Required: Collect: Gray (sodium fluoride/potassium oxalate). Also acceptable: Plain red, green (sodium heparin), lavender (EDTA), or pink (K₂EDTA).
Specimen Preparation: Remove plasma from cells ASAP or within 2 hours of collection. Transfer 4 mL plasma to an ARUP Standard Transport Tube. (Min: 3 mL) Also acceptable: Serum.
Storage/Transport Temperature: Refrigerated.
Remarks: Cocaine and cocaethylene are more stable in fluoride-preserved plasma than serum.
Unacceptable Conditions: Specimens exposed to repeated freeze/thaw cycles. Separator tubes. Plasma or whole blood collected in lt. blue (sodium citrate).
Stability (collection to initiation of testing): After separation from cells: Ambient: 1 week; Refrigerated: 2 weeks; Frozen: 3 years

0090439 Drugs of Abuse Confirmation/Quantitation - Amphetamines – Urine CDCO AMPS

Specimen Required: Collect: Random urine.
Specimen Preparation: Do not use additives or preservatives. Transfer 4 mL urine to an ARUP Standard Transport Tube. (Min: 0.5 mL)
Storage/Transport Temperature: Room temperature.
Unacceptable Conditions: Specimens exposed to repeated freeze/thaw cycles.
Stability (collection to initiation of testing): Ambient: 1 week; Refrigerated: 1 month; Frozen: 3 years

✓ **HOT LINE NOTE:** This change also applies to Drugs of Abuse Confirmation/Quantitation - Fentanyl & Metabolite – Urine (0092570)

0090357 Drugs of Abuse Confirmation/Quantitation - Barbiturates – Urine CDCO BARB

Specimen Required: Collect: Random urine.
Specimen Preparation: Do not use additives or preservatives. Transfer 4 mL urine an ARUP Standard Transport Tube. (Min: 2 mL)
Storage/Transport Temperature: Room temperature.
Unacceptable Conditions: Specimens exposed to repeated freeze/thaw cycles.
Stability (collection to initiation of testing): Ambient: 1 week; Refrigerated: 1 month; Frozen: 3 years

0090676 Drugs of Abuse Confirmation/Quantitation - Cannabinoids (9-carboxy-THC) - Serum or Plasma CANNAB SP

Interpretive Data:
Drugs covered: 9-carboxy-THC

Methodology: Liquid Chromatography-Tandem Mass Spectrometry

Positive cutoff: 5 ng/mL

The drug analyte detected in this assay, 9-carboxy THC, is a metabolite of delta-9-tetrahydrocannabinol (THC). Detection of 9-carboxy THC suggests use of, or exposure to, a product containing THC. This test cannot distinguish between prescribed or non-prescribed forms of THC, nor can it distinguish between active or passive use. The plasma half-life for 9-carboxy THC metabolite is estimated to range from 4-12 hours.

For medical purposes only; not valid for forensic use.

HOT LINE NOTE: There is a change associated with this test that affects interface clients only. Refer to Test Mix Addendum for further information.

**0090369 Drugs of Abuse Confirmation/Quantitation - Cannabinoids (9-carboxy-THC) - CDCO THC
Urine**

Specimen Required: Collect: Random urine.
Specimen Preparation: Do not use additives or preservatives. Transfer 4 mL urine to an ARUP Standard Transport Tube. (Min: 0.5 mL)
Storage/Transport Temperature: Room temperature.
Unacceptable Conditions: Specimens exposed to repeated freeze/thaw cycles.
Stability (collection to initiation of testing): Ambient: 1 week; Refrigerated: 1 month; Frozen: 3 years

Interpretive Data:
Drugs covered: 9-carboxy-THC

Methodology: Liquid Chromatography-Tandem Mass Spectrometry

Positive cutoff: 5 ng/mL

The drug analyte detected in this assay, 9-carboxy THC, is a metabolite of delta-9-tetrahydrocannabinol (THC). Detection of 9-carboxy THC suggests use of, or exposure to, a product containing THC. This test cannot distinguish between prescribed or non-prescribed forms of THC, nor can it distinguish between active or passive use. The 9-carboxy THC metabolite can be detected in urine for several weeks. Normalization of results to creatinine concentration can help document elimination or suggest recent use, when specimens are collected at least one week apart.

For medical purposes only; not valid for forensic use.

HOT LINE NOTE: There is a change associated with this test that affects interface clients only. Refer to Test Mix Addendum for further information.

**0090359 Drugs of Abuse Confirmation/Quantitation - Cocaine Metabolite CDCO COCA
(Benzoyllecgonine) – Urine**

Specimen Required: Collect: Random urine.
Specimen Preparation: Do not use additives or preservatives. Transfer 4 mL urine to an ARUP Standard Transport Tube. (Min: 2 mL)
Storage/Transport Temperature: Room temperature.
Unacceptable Conditions: Specimens exposed to repeated freeze/thaw cycles.
Stability (collection to initiation of testing): Ambient: 1 week; Refrigerated: 1 month; Frozen: 3 years

**0090362 Drugs of Abuse Confirmation/Quantitation - Methadone & Metabolite - CDCO METH
Urine**

Specimen Required: Collect: Random urine.
Specimen Preparation: Do not use additives or preservatives. Transfer 4 mL urine to an ARUP Standard Transport Tube. (Min: 1 mL)
Storage/Transport Temperature: Room temperature.
Unacceptable Conditions: Specimens exposed to repeated freeze/thaw cycles.
Stability (collection to initiation of testing): Ambient: 1 week; Refrigerated: 1 month; Frozen: 3 years

- ✓ **HOT LINE NOTE:** This change also applies to:
- Drugs of Abuse Confirmation/Quantitation - Opiates – Urine (0090364)
 - Drugs of Abuse Confirmation/Quantitation - Propoxyphene & Metabolite – Urine (0090368)

0090306 Drugs of Abuse Screen - Cocaine & Metabolites - Urine U COC

Specimen Required: Collect: Random urine.
Specimen Preparation: **Mix well.** Transfer 4 mL urine to an ARUP Standard Transport Tube. (Min: 1 mL)
Storage/Transport Temperature: **Refrigerated. Also acceptable: Room temperature or frozen.**
Stability (collection to initiation of testing): Ambient: 1 week; Refrigerated: 1 month; Frozen: 3 years

0090312 Drugs of Abuse Screen - Opiates - Urine U OPI

Specimen Required: Collect: Random urine.
Specimen Preparation: **Mix well.** Transfer 4 mL urine to an ARUP Standard Transport Tube. (Min: 1 mL)
Storage/Transport Temperature: **Refrigerated. Also acceptable: Room temperature or frozen.**
Stability (collection to initiation of testing): Ambient: 1 week; Refrigerated: 1 month; Frozen: 3 years

0090302 Drugs of Abuse Screen - Stimulant Amines - Urine

U AMP

Specimen Required: Collect: Random urine.
Specimen Preparation: **Mix well.** Transfer 4 mL urine to an ARUP Standard Transport Tube. (Min: 1 mL)
Storage/Transport Temperature: Frozen. **Also acceptable: Room temperature or refrigerated.**
Unacceptable Conditions: Specimens exposed to repeated freeze/thaw cycles.
Stability (collection to initiation of testing): Ambient: 1 week; Refrigerated: 1 month; Frozen: 3 years

HOT LINE NOTE: Remove the information found in the Remarks field under Specimen Requirements.

2002440 EGFR Mutation Detection by PCR and Fragment Analysis

EGFR PCR

Specimen Required: Collect: Tumor tissue.
Specimen Preparation: Formalin fix (**10% neutral buffered formalin**) and paraffin embed tissue. Transport tissue block or 5 unstained 5 micron slides. (Min: 3 slides) Protect paraffin block from excessive heat. Ship in cooled container during summer months.
Storage/Transport Temperature: Room temperature **or refrigerated.**
Unacceptable Conditions: Frozen specimens. Specimens fixed/processed in alternative fixatives (alcohol, Prefer[®]) **or heavy metal fixatives (B-4 or B-5).** No tumor in tissue. **Decalcified specimens.**
Stability (collection to initiation of testing): Ambient: Indefinitely; Refrigerated: **Indefinitely**; Frozen: Unacceptable

Interpretive Data: Refer to report.

This test is performed pursuant to an agreement with Roche Molecular Systems, Inc.

Refer to Statement B under Testing Information at <http://www.aruplab.com>.

Note: This test is designed to detect exon 19 deletions and the exon 21 L858R point mutation. These mutations account for about 90 percent of all reported EGFR mutations.

CPT Code(s): 88381 Microdissection; 83907 Lysis; 83898 **x2** Amplification; 83892 Digestion; 83909 Separation and identification; 83896 **x2** Nucleic acid probes; 83912 Interpretation and report - Additional CPT code modifiers may be required for procedures performed to test oncologic or inherited disorders.

New Test **2004857** **EGFR Mutation Detection with Reflex to EML4/ALK Translocation by RT-PCR** **EGFR RFLX**

Available April 18, 2011

Methodology: Qualitative Polymerase Chain Reaction/Qualitative Reverse Transcription Polymerase Chain Reaction
Performed: Sun-Sat
Reported: 12-14 days

Specimen Required: Collect: Tumor tissue.
Specimen Preparation: Formalin fix (10% neutral buffered formalin) and paraffin embed tissue. Transport tissue block or 5 unstained 5 micron slides (Min: 3 slides). **AND** 6 tissue scrolls (tissue shavings) 10 microns thick. Protect from excessive heat. Ship in cooled container during summer months.
Storage/Transport Temperature: Room temperature or refrigerated.
Remarks: Include surgical pathology report. A tissue block will be returned after testing.
Unacceptable Conditions: Frozen specimens. Specimens fixed/processed in alternative fixatives (alcohol, Prefer®) or heavy metal fixatives (B-4 or B-5). No tumor in tissue. Decalcified specimens.
Stability (collection to initiation of testing): Ambient: Indefinitely; Refrigerated: Indefinitely; Frozen: Unacceptable

Interpretive Data: Refer to report.

Refer to Statement B under Testing Information at <http://www.aruplab.com>.

Note: If EGFR Mutation Detection is reported as Not Detected, then EML4/ALK testing will be performed.

CPT Code(s): 88381 Microdissection; 83907 Lysis; 83898 x2 Amplification; 83892 Digestion; 83909 Separation and identification; 83896 x2 Nucleic acid probes; 83912 Interpretation and report.
 If reflexed add 83907 Lysis; 83891 Isolation; 83902 Reverse Transcription; 83898 x3 Amplification; 83894 x3 Gel Separation; 83912 Interpretation and report - Additional CPT code modifiers may be required for procedures performed to test oncologic or inherited disorders.

New York DOH Approved

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

Delete **0049350** **EGFR pharmDx™ Tissue Assay, Paraffin** **EGFR IP**

HOT LINE NOTE: Delete this test and refer to KRAS Mutation Detection (0040248).

0080351 **Ehlers-Danlos Syndrome Type VI Screen** **EDS6**

Specimen Required: Patient Preparation: First-morning urine is preferred.
Collect: Urine. First-morning void. Also acceptable: Random specimens.
Specimen Preparation: Transfer 4 mL urine to an ARUP Standard Transport Tube. (Min: 3 mL)
Storage/Transport Temperature: Frozen.
Stability (collection to initiation of testing): Ambient: Unacceptable; Refrigerated: 1 week; Frozen: 6 months

HOT LINE NOTE: Remove the information found in the Remarks field under Specimen Requirements.

Delete **0093005** **Epidermal (Skin) Antibody** **EPIDERMAL**

HOT LINE NOTE: Delete this test and refer to Pemphigoid Panel - Epithelial Basement Membrane Zone IgG & IgA, BP180 & BP230 IgG Antibodies (0092001).

0020610 **Erythrocyte Porphyrin (EP), Whole Blood** **FEP**

Specimen Required: Collect: Royal blue (EDTA), lavender (EDTA), or pink (K₂EDTA). Use royal blue tube when also testing for lead.
Specimen Preparation: **Protect from light within one hour of collection and during storage and shipment.** Transfer 1 mL whole blood to an ARUP Amber Transport Tube. (Min: 0.5 mL)
Storage/Transport Temperature: Refrigerated.
Remarks: Specimen should be tested for lead **FIRST** to avoid potential contamination problems. Specimens not protected from light acceptable with a disclaimer.
Unacceptable Conditions: **Specimens not collected in EDTA.** Clotted specimens.
Stability (collection to initiation of testing): Ambient: Unacceptable; Refrigerated: 2 weeks; Frozen: 1 month

0092382 Escitalopram, Serum or Plasma ESCITALO

Methodology: Quantitative **Liquid Chromatography-Tandem Mass Spectrometry**

Specimen Required: Collect: Plain **red, lavender** (EDTA), or pink (**K₂EDTA**).
Specimen Preparation: **Transfer 1 mL** serum or plasma to an **ARUP Standard Transport Tube**. (Min: 0.4 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: **Separator tubes**.
Stability (collection to initiation of testing): Ambient: **1 month**; Refrigerated: **1 month**; Frozen: **1 month**

CPT Code(s): 82491

HOT LINE NOTE: Remove information found in the Remarks field under Specimen Requirements.

0055248 F-Actin (Smooth Muscle) Antibody, IgG ACTIN IGG

Performed: Sun-Sat
Reported: Within 24 hours

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: 0.3 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: **Urine or plasma**. Contaminated, heat-inactivated, hemolyzed, **icteric**, 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:

19 Units or less	Negative
20-30 Units	Weak Positive - Suggest repeat testing in two to three weeks with fresh specimen.
31 Units or greater	Positive - Suggestive of autoimmune hepatitis type 1 or chronic active hepatitis.

✓ **HOT LINE NOTE:** The Reference Interval change also applies to:

- Autoimmune Hepatitis Panel Plus with Reflex to Titers (0055351)
- Autoimmune Hepatitis Panel with Reflex to ANA IFA Titer (0055356)
- F-Actin (Smooth Muscle) Antibody, IgG by ELISA with Reflex to Smooth Muscle Antibody, IgG Titer (0051174)

New Test 2004920 Familial Adenomatous Polyposis (APC) Deletion/Duplication APC DELDUP

Available April 18, 2011



Patient History for Familial Adenomatous Polyposis (FAP)

Methodology: Polymerase Chain Reaction/Multiplex Ligation-Dependent Probe Amplification
Performed: Varies
Reported: 14 days

Specimen Required: Collect: 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.
Stability (collection to initiation of testing): Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable

Interpretive Data:

Background Information for Familial Adenomatous Polyposis (APC) Deletion/Duplication:

Characteristics of APC-associated Polyposis:

Familial Adenomatous Polyposis (FAP): Development of hundreds to thousands of adenomatous colonic polyps beginning in early adolescence; lifetime risk for cancer is 100 percent. Additional findings may include dental anomalies, polyps of the gastric fundus and duodenum, and congenital hypertrophy of the retinal pigment epithelium (CHRPE).

Attenuated FAP: Fewer colonic adenomatous polyps (average of 30), which are more proximally located and cancer generally occurs at a later age; lifetime risk for cancer is 70 percent.

Gardner syndrome: Multiple colonic adenomatous polyps along with osteomas, desmoid tumors, and soft tissue tumors.

Incidence: Less than 1 percent of colorectal cancer cases.

Inheritance: Autosomal dominant.

Penetrance: Greater than 99 percent in untreated individuals with classic FAP.

Cause: Pathogenic *APC* mutations.

Clinical Sensitivity: Approximately 8-12 percent for classic FAP.

Methodology: Multiplex ligation-dependent probe amplification (MLPA) to detect large *APC* coding region deletions and duplications.

Analytical Sensitivity and Specificity of MLPA: 99 percent.

Limitations: Rare diagnostic errors can occur due to probe site mutations. Single base pair substitutions, small deletions/duplications, regulatory region mutations, and deep intronic mutations will not be detected. Deletion/duplication breakpoints will not be determined. Mutations in genes other than *APC* will not be detected.

Counseling and informed consent are recommended for genetic testing. Consent forms are available online at www.aruplab.com.

Refer to Statement C under Testing Information at <http://www.aruplab.com>.

CPT Code(s): 83891 Isolation; 83896 x17 Nucleic acid probes; 83898 x17 Amplification; 83914 x17 Extension; 83909 Capillary electrophoresis; 83912 Interpretation and report - Additional CPT code modifiers may be required for procedures performed to test for oncologic or inherited disorders.

New York DOH approval pending. Call for status update.

HOT LINE NOTE: Refer to test mix addendum for interface build information.

New Test 2004863 Familial Adenomatous Polyposis (APC) Sequencing

APC FGS

Available April 18, 2011



Patient History for Familial Adenomatous Polyposis (FAP)

Methodology: Polymerase Chain Reaction/Sequencing
Performed: Varies
Reported: 28 days

Specimen Required: Collect: 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.
Stability (collection to initiation of testing): Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable

Interpretive Data:

Background Information for Familial Adenomatous Polyposis (APC) Sequencing:

Characteristics of APC-associated Polyposis:

Familial Adenomatous Polyposis (FAP): Development of hundreds to thousands of adenomatous colonic polyps beginning in early adolescence; lifetime risk for cancer is 100 percent. Additional findings may include dental anomalies, polyps of the gastric fundus and duodenum, and congenital hypertrophy of the retinal pigment epithelium (CHRPE).

Attenuated FAP: Fewer colonic adenomatous polyps (average of 30), which are more proximally located and cancer generally occurs at a later age; lifetime risk for cancer is 70 percent.

Gardner syndrome: Multiple colonic adenomatous polyps along with osteomas, desmoid tumors, and soft tissue tumors.

Incidence: Less than 1 percent of colorectal cancer cases.

Inheritance: Autosomal dominant.

Penetrance: Greater than 99 percent in untreated individuals.

Causes: Pathogenic APC allelic variations

Clinical Sensitivity: Approximately 90 percent for classic FAP and less than 30 percent for attenuated FAP.

Methodology: Bidirectional sequencing of the APC coding region and intron-exon boundaries.

Analytical Sensitivity and Specificity: 99 percent.

Limitations: Rare diagnostic errors can occur due to primer site mutations. Regulatory region mutations, deep intronic mutations, and large deletion/duplications will not be detected.

Counseling and informed consent are recommended for genetic testing. Consent forms are available online at www.aruplab.com.

Refer to Statement C under Testing Information at <http://www.aruplab.com>.

CPT Code(s): Sequencing: 83891 Isolation; 83898 x40 Amplification; 83904 x40 Sequencing; 83909 capillary electrophoresis; 83912 Interpretation and report - Additional CPT code modifiers may be required for procedures performed to test for oncologic or inherited disorders.

New York DOH approval pending. Call for status update.

HOT LINE NOTE: Refer to Test Mix Addendum for interface build information.

New Test 2004915 Familial Adenomatous Polyposis Panel: APC Sequencing, APC Deletion/Duplication, and MYH 2 Mutations FAP PANEL

Available April 18, 2011



Patient History for Familial Adenomatous Polyposis (FAP)

Methodology: Polymerase Chain Reaction/Sequencing/Multiplex Ligation-Dependent Probe Amplification
Performed: Varies
Reported: 35 days

Specimen Required: Collect: Lavender (EDTA), pink (K₂EDTA), or yellow (ACD Solution A or B).
Specimen Preparation: Transport 3 mL whole blood. (Min: 2 mL)
Storage/Transport Temperature: Refrigerated.
Stability (collection to initiation of testing): Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable

Interpretive Data:

Background Information for Familial Adenomatous Polyposis Panel: APC Sequencing, APC Deletion/Duplication, and MYH 2 Mutations:

Characteristics of APC-associated Polyposis: Familial Adenomatous Polyposis (FAP): Development of hundreds to thousands of adenomatous colonic polyps beginning in early adolescence; lifetime risk for cancer is 100 percent. Additional findings may include dental anomalies, polyps of the gastric fundus and duodenum, and congenital hypertrophy of the retinal pigment epithelium (CHRPE).

Attenuated FAP: Fewer colonic adenomatous polyps (average of 30), which are more proximally located and cancer generally occurs at a later age; lifetime risk for cancer is 70 percent.

Gardner syndrome: Multiple colonic adenomatous polyps along with osteomas, desmoid tumors, and soft tissue tumors.

Incidence: Less than 1 percent of colorectal cancer cases.

Inheritance: Autosomal dominant.

Penetrance: Greater than 99 percent in untreated individuals.

Causes: Pathogenic APC allelic variations.

Clinical Sensitivity: Approximately 95 percent for classic FAP and less than 30 percent for attenuated FAP.

Methodology: Bidirectional sequencing of the APC coding region and intron-exon boundaries. Multiplex ligation-dependent probe amplification (MLPA) to detect large APC coding region deletions or duplications.

Analytical Sensitivity and Specificity: 99 percent.

Limitations: Rare diagnostic errors can occur due to primer or probe site mutations. APC regulatory region and deep intronic mutations will not be detected. Deletion/duplication breakpoints will not be determined.

Characteristics of MYH-associated Polyposis (MAP): Development of colonic polyps (10-100) with the age of diagnosis occurring in the third decade or older.

Incidence: Less than 1 percent of colorectal cancer cases.

Inheritance: Autosomal recessive.

Penetrance: Greater than 99 percent in untreated individuals.

Causes: Biallelic MYH gene allelic variations.

Clinical Sensitivity: 85 percent of MYH allelic variations in Caucasians.

Methodology: Targeted testing for the MYH allelic variations Y165C and G382D by PCR and bidirectional sequencing.

Analytical Sensitivity and Specificity: 99 percent.

Limitations: Rare diagnostic errors can occur due to primer site mutations. Mutations in the MYH gene, other than Y165C and G382D, are not evaluated.

Counseling and informed consent are recommended for genetic testing. Consent forms are available online at www.aruplab.com.

Refer to Statement C under Testing Information at <http://www.aruplab.com>.

CPT Code(s): Sequencing (APC and MYH): 83891 Isolation; 83898 x42 Amplification; 83904 x42 Sequencing; 83909 Capillary electrophoresis Del/Dup; 83896 x17 Nucleic acid probes; 83898 x17 Amplification; 83914 x17 Extension; 83909 Capillary electrophoresis; 83912 Interpretation and report - Additional CPT code modifiers may be required for procedures performed to test for oncologic or inherited disorders.

New York DOH approval pending. Call for status update.

HOT LINE NOTE: Refer to test mix addendum for interface build information.

2001980 Familial Mutation, Targeted Sequencing, Fetal

SEQ FSM FE

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

Counseling and informed consent are recommended for genetic testing. Consent forms are available online at www.aruplab.com.

Refer to Statement C under Testing Information at <http://www.aruplab.com>.

2002354 Fat, Fecal Quantitative 24-Hour Collection (Includes Homogenization)

FECQFAT24

CPT Code(s): 82710

✓ **HOT LINE NOTE:** This change also applies to:

- Fat, Fecal Quantitative 48-Hour Collection (Includes Homogenization) (2002355)
- Fat, Fecal Quantitative 72-Hour Collection (Includes Homogenization) (2002356)

0030130 Fibrinogen

FIB

Specimen Required: Collect: Lt. blue (sodium citrate). Refer to Specimen Handling at aruplab.com for hemostasis/thrombosis specimen handling guidelines.

Specimen Preparation: Separate plasma from cells ASAP or within 2 hours of collection. Transfer 1 mL platelet-poor plasma to an ARUP Standard Transport Tube.

Storage/Transport Temperature: Frozen.

Unacceptable Conditions: Serum. Clotted, hemolyzed, or non-frozen specimens.

Stability (collection to initial testing): After separation from cells: Ambient: 4 hours; Refrigerated: 24 hours; Frozen: 1 month

0030137 Fibrinogen Panel

FIB PAN

Specimen Required: Collect: Lt. blue (sodium citrate). Refer to Specimen Handling at aruplab.com for hemostasis/thrombosis specimen handling guidelines.

Specimen Preparation: Transfer 2 mL platelet-poor plasma to an ARUP Standard Transport Tube. (Min: 1.5 mL)

Storage/Transport Temperature: Frozen.

Unacceptable Conditions: Serum. Hemolyzed specimens. Specimens older than 24 hours.

Stability (collection to initial testing): Ambient: 4 hours; Refrigerated: 24 hours; Frozen: 1 month

0091341 Fluoride, Serum or Plasma

FLUORIDE

Specimen Required: Collect: Lavender (EDTA).

Specimen Preparation: Separate from cells within 2 hours. Transfer 2 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 1 mL)

Storage/Transport Temperature: Refrigerated.

Unacceptable Conditions: Gray (potassium oxalate/sodium fluoride) or separator tubes.

Stability (collection to initiation of testing): Ambient: 1 week; Refrigerated: 2 weeks; Frozen: 2 months

0060149 Fungal Culture

MC FUNG

Specimen Required: Collect: Material or fluid from any body site, **EXCEPT blood, fecal, genital, hair, nails, oral, skin, and urine.**
Specimen Preparation: Place each specimen in a separate, individually sealed bag. (Min: 1 mL fluid) A single specimen may be cultured for both bacteria and fungi. **Source of specimen is required.** Also acceptable: Swabs (but sub-optimal for recovery of fungi).
Storage/Transport Temperature: Specimens from a sterile body site (fluids, tissues, etc.): Room temperature.
 Specimens from a nonsterile site (respiratory, GI tract, etc.): Refrigerated.
 If CSF cannot be transported within eight hours, hold CSF at 35°C until the time of transport. Submit specimen according to Biological Substance, Category B, shipping guidelines.
Remarks: Please notify laboratory if *Malassezia furfur* is suspected. Special media must be used for the cultivation of this yeast.
Unacceptable Conditions: Catheter tips.
Stability (collection to initiation of testing): Ambient: 24 hours; Refrigerated: 1 week; Frozen: Unacceptable

Note: If *Histoplasma*, *Coccidioides*, or *Blastomyces* is the presumptive diagnosis, a DNA probe will be added for confirmation at an additional charge per probe.

Identification performed on mould isolates. Limited yeast identification performed from non-sterile sites. Identification of moulds and/or yeasts on positives is billed separately from culture.

Fungal smear must be ordered separately. Refer to Fungal **Stain, KOH with Calcofluor White (ARUP test code 2004589).**

Order test according to source type:

Blood/Bone Marrow: Blood Culture, Fungal (ARUP test code: 0060070)

Genital, fecal and oral: Yeast Culture (ARUP test code: 0060150)

Skin, hair and nails: Fungal Culture, Skin, Hair and Nails (ARUP test code: 0060728)

All other sources: Fungal Culture (ARUP test code: 0060149)

0060728 Fungal Culture, Skin, Hair or Nails

MC FUNGSHN

Note: Identification performed on mould isolates. Yeast identification is reported by request only. Identification of moulds and/or yeasts on positives is billed separately from culture.

0060163 Fungal (Mould/Yeast) Identification

MC FUNGID

Specimen Required: Collect: Viable **fungal isolate** (mould or yeast) in pure culture on agar slant.
Specimen Preparation: Transfer viable **fungal isolate** (mould or yeast) in pure culture to a sealed container. Specimen source is preferred. Indicate source of organism.
Storage/Transport Temperature: Room temperature. Submit specimen according to Biological Substance, Category B, shipping guidelines.
Unacceptable Conditions: Non-viable organisms, **mixed cultures**, isolates from environmental sources, **organisms submitted on an agar plate.**
Stability (collection to initiation of testing): Ambient: 4 weeks; Refrigerated: 4 weeks; Frozen: Unacceptable

Note: An additional handling charge will be billed for all organisms submitted for identification that are not in pure culture as indicated in the specimen requirements. Identification of referred isolates is performed and billed by the extent of tests required for identification. **When the specimen submitted contains both mould and yeast, both will be identified.**

Testing to differentiate between *Candida albicans* and *Candida dubliniensis* is performed by request only.

Cryptococcus gattii will be ruled out when routine biochemical testing identifies organism as *Cryptococcus neoformans*.

Organisms submitted for identification are kept for 7 days; if organism fails to grow, the client will be contacted. All original submissions are held until the identification is completed or the test is cancelled.

Identification: Test Name

Histoplasma capsulatum: *Histoplasma capsulatum* Identification by DNA Probe (ARUP test code 0062226)

Coccidioides immitis: *Coccidioides immitis* Identification by DNA Probe (ARUP test code 0062225)

Blastomyces dermatitidis: *Blastomyces dermatitidis* Identification by DNA Probe (ARUP test code 0062224)

ITS rDNA sequencing **only**: Fungal Identification by ITS rDNA Sequencing (ARUP test code 0060756)

0090057 Gabapentin

GABAP

Performed: Sun-Sat
Reported: 1-2 days

0051270 Galactosemia, (GALT) 9 Mutations, Fetal

GALTDNA FE

Specimen Required: Collect: **Cultured cells:** Two T-25 flasks at 80% confluent of cultured amniocytes. **If the client is unable to culture amniocytes, this can be arranged by contacting ARUP Client Services at (800) 522-2787.**
Maternal specimen: Lavender (EDTA), pink (K₂EDTA), or yellow (ACD Solution A or B) at 20-25°C.
Specimen Preparation: **Fetal Specimen:** Fill flasks with culture media. Transport two T-25 flasks at 80% confluent of cultured amniocytes filled with culture media. Backup cultures must be retained at the client's institution until testing is complete.
Maternal Specimen: Transport 3 mL whole blood.
Storage/Transport Temperature: **Fetal Specimen: CRITICAL ROOM TEMPERATURE.** Must be received within 48 hours of shipment due to lability of cells.
Maternal Specimen: Room temperature.
Remarks: **Maternal specimen is recommended for proper test interpretation. Order Maternal Cell Contamination. Patient History Forms are available on aruplab.com or by contacting ARUP Client Services.**
Stability (collection to initiation of testing): **Fetal:** Ambient: 48 hours; Refrigerated: Unacceptable; Frozen: Unacceptable
Maternal: Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable

Interpretive Data:

Background Information for Galactosemia, (GALT) 9 Mutations, Fetal:

Characteristics: Affected infants present at 3-14 days old with poor feeding, vomiting, diarrhea, jaundice, lethargy progressing to coma, and abdominal distension with hepatomegaly usually followed by progressive liver failure. Patients with galactosemia are also at increased risk for *E. coli* or other Gram negative neonatal sepsis. Diagnosis is made by measuring *GALT* enzyme activity in red blood cells.

Incidence: Approximately 1 in 30,000 to 60,000 for classic galactosemia in Caucasians; varies in other populations.

Inheritance: Autosomal recessive.

Penetrance: 100 percent for severe *GALT* mutations.

Cause: Mutations in the *GALT* gene.

Mutations Tested: Seven *GALT* gene mutations (Q188R, S135L, K285N, T138M, L195P, Y209C, and IVS2-2 A>G) and two variants (N314D and L218L).

Clinical Sensitivity: Approaches 80 percent in Caucasians but reduced in other ethnic groups.

Methodology: Polymerase chain reaction followed by single nucleotide extension (SNE) and capillary electrophoresis.

Analytical Sensitivity: 99 percent for mutations listed.

Limitations: *GALT* gene mutations, other than the 9 targeted, will not be detected. Rare diagnostic errors can occur due to primer site mutations.

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

Counseling and informed consent are recommended for genetic testing. Consent forms are available online at www.aruplab.com.

Refer to Statement C under Testing Information at <http://www.aruplab.com>.

HOT LINE NOTE: Remove information found in the Unacceptable Conditions field under Specimen Requirements. There is a component change associated with this test that affects interface clients only. Refer to Test Mix Addendum for further information.

0091357 Glipizide, Serum or Plasma

GLIPIZID

Specimen Required: Collect: Plain red or lavender (EDTA).
Specimen Preparation: Transfer 3 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 1.2 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Serum separator tubes.
Stability (collection to initiation of testing): Ambient: 1 week; Refrigerated: 1 week; Frozen: 4 months

0099165 Glucagon

GLUCA

Specimen Required: Collect: Lavender (EDTA) or pink (K₂EDTA) plus aprotinin (ARUP supply #16570). Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787. Collect in chilled container.
Specimen Preparation: Add 0.04 cc of aprotinin per mL of whole blood **immediately** after collection. Example: 3 mL EDTA tube would require 0.12 cc of aprotinin (3 x 0.04 cc = 0.12 cc aprotinin). Centrifuge and separate plasma from cells ASAP or within 2 hours of collection. Transfer 1 mL plasma (EDTA plus aprotinin) to an ARUP Standard Transport Tube and freeze. (Min: 0.5 mL)
Storage/Transport Temperature: **CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.**
Unacceptable Conditions: Specimens transported in glass tubes.
Stability (collection to initiation of testing): After separation from cells: Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen: 3 months

0020476 Glucose, Urine

UGLU

Specimen Required: Collect: 24-hour urine. Specimen must be refrigerated during collection. Also Acceptable: Random urine (no reference intervals).
Specimen Preparation: Mix 24 hour urine collection well. Transfer 4 mL to an ARUP Standard Transport Tube. (Min 0.5 mL)
Storage/Transport Temperature: Refrigerated. **Also acceptable: Frozen.**
Remarks: Record total volume and collection time interval on transport tube and test request form.
Unacceptable Conditions: Urine collected in preservatives.
Stability (collection to initiation of testing): Ambient: Unacceptable; Refrigerated: 5 days; Frozen: 1 month

0070080 Growth Hormone

HGH

Specimen Required: Patient Preparation: **Patient must be fasting and at complete rest for 30 minutes before blood collection.**
Collect: Plasma separator tube or serum separator tube. Also acceptable: Green (sodium or lithium heparin), lavender (EDTA), or pink (K₂EDTA).
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: 0.4 mL)
Storage/Transport Temperature: **Frozen.**
Unacceptable Conditions: Grossly hemolyzed or lipemic specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: 3 **hours**; Refrigerated: 8 **hours**; Frozen: 2 months

0070069 Growth Hormone, Timed - Other

GH OTHER

Specimen Required: Collect: Plasma separator tube or serum separator tube. Also acceptable: Green (sodium or lithium heparin) or lavender (EDTA).
Specimen Preparation: Transport 1 mL serum or plasma. (Min: 0.4 mL)
Storage/Transport Temperature: **Frozen.**
Unacceptable Conditions: Grossly hemolyzed or lipemic specimens.
Stability (collection to initial testing): Ambient: 3 **hours**; Refrigerated: 8 **hours**; Frozen: 2 months

✓ **HOT LINE NOTE:** This change also applies to:

- Growth Hormone, 0 Minutes (0070081)
- Growth Hormone, 15 Minutes (0070048)
- Growth Hormone, 30 Minutes (0070082)
- Growth Hormone, 45 Minutes (0070049)
- Growth Hormone, 60 Minutes (0070083)
- Growth Hormone, 90 Minutes (0070084)
- Growth Hormone, 120 Minutes (0070164)

0099470 Heavy Metals Panel 3, Blood

HY MET B

Specimen Required: Collect: Royal blue (K₂EDTA or Na₂EDTA).
Specimen Preparation: Transport 7 mL whole blood. (Min: 1.5 mL)
Storage/Transport Temperature: Room temperature.
Unacceptable Conditions: Heparin anticoagulant.
Stability (collection to initiation of testing): **Mercury is volatile; concentration may reduce after seven or more days of storage.** If the specimen is drawn and stored in the appropriate container, the **arsenic and lead** values do not change with time.

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

Specimen Required: Patient Preparation: Diet, medication, and nutritional supplements may introduce interfering substances. Patients should be encouraged to discontinue nutritional supplements, vitamins, minerals, non-essential over-the-counter medications (upon the advice of their physician), and avoid shellfish and seafood for 48 to 72 hours. **High concentrations of iodine may interfere with elemental testing. Abstinence from iodine-containing medications or contrast agents for at least 1 month prior to collecting specimens for elemental testing is recommended.**
Collect: 24-hour or random urine collection. Specimen must be collected in a plastic container and should be refrigerated during collection. **ARUP studies indicate that refrigeration of urine alone, during and after collection, preserves specimens adequately if tested within 14 days of collection.**
Specimen Preparation: Transfer 8 mL aliquot from a well-mixed collection to ARUP Trace Element-Free Transport Tubes (ARUP supply #43116). **Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787.** (Min: 2 mL) Record total volume and collection time interval on transport tube and on test request form.
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Urine collected within 48 hours after administration of a gadolinium (Gd) containing contrast media (may occur with MRI studies). Acid preserved urine.
Stability (collection to initiation of testing): Ambient: 1 week; Refrigerated: 2 weeks; Frozen: 1 year

- ✓ **HOT LINE NOTE:** This change also applies to:
- Heavy Metals Panel 4, Urine with Reflex to Arsenic Fractionated (0020572)
 - Heavy Metals Panel 6, Urine with Reflex to Arsenic Fractionated (0025055)

0020584 Heavy Metals Panel 4, Blood HY MET B4

Specimen Required: Patient Preparation: Diet, medication, and nutritional supplements may introduce interfering substances. Patients should be encouraged to discontinue nutritional supplements, vitamins, minerals, non-essential over-the-counter medications (upon the advice of their physician), and avoid shellfish and seafood for 48 to 72 hours.
Collect: Royal blue (K₂EDTA or Na₂EDTA).
Specimen Preparation: Transport 7 mL whole blood. (Min: 1.5 mL)
Storage/Transport Temperature: Room temperature.
Unacceptable Conditions: Heparin anticoagulant.
Stability (collection to initiation of testing): **Mercury is volatile; concentration may reduce after seven or more days of storage. If the specimen is drawn and stored in the appropriate container, the arsenic, cadmium, and lead values do not change with time.**

0020597 Hepatitis A Virus Panel HEP A PAN

Specimen Required: Patient Preparation: Refer to individual components.
Collect: Serum separator tube. **Also acceptable: Lavender (EDTA) or pink (K₂EDTA).**
Specimen Preparation: **Separate serum or plasma from cells ASAP or within 2 hours of collection. Transfer 1 mL serum or plasma to an ARUP Standard Transport Tube.** (Min: 0.5 mL)
Storage/Transport Temperature: Refrigerated. **Submit specimen according to Biological Substance, Category B, shipping guidelines.**
Unacceptable Conditions: Specimens containing particulate material. Severely hemolyzed or lipemic specimens. Heat-inactivated specimens. Specimens collected in citrate-based anticoagulant.
Stability (collection to initiation of testing): After separation from cells: Ambient: Unacceptable; Refrigerated: 1 week; Frozen: Indefinitely (avoid repeated freeze/thaw cycles)

2001567 Hepatitis B Virus Genotype HBVGENO

Specimen Required: Collect: Serum separator tube, plasma preparation tube, lavender (EDTA), or yellow (ACD Solution A or B).
Specimen Preparation: **Remove serum or plasma from cells or centrifuge separator tubes within 24 hours.** Transfer 2 mL serum or plasma to an ARUP Standard Transport Tube and freeze immediately. (Min: 0.5 mL)
Storage/Transport Temperature: Frozen. Submit specimen according to Biological Substance, Category B, shipping guidelines.
Unacceptable Conditions: **Whole blood or heparinized specimens.**
Stability (collection to initiation of testing): **On cells: Ambient: 24 hours. Plasma or serum removed from cells: Ambient: 72 hours; Refrigerated: 1 week; Frozen: 6 weeks**

Interpretive Data: Both the HBV RT polymerase and the HBsAg encoding regions are sequenced. Resistance and surface antigen mutations are reported. In addition, the eight major HBV genotypes (A, B, C, D, E, F, G and H) are identified. Mutations in viral sub-populations below 20 percent of total may not be detected.

This test is performed pursuant to a license agreement with Roche Molecular Systems, Inc.

Refer to Statement B under Testing Information at <http://www.aruplab.com>.

Note: This test may be unsuccessful if the HBV viral load is less than log 3.0 or 1,000 IU/mL of plasma or serum.

0020094 Hepatitis Be Virus Antigen HBEAG

Specimen Required: Collect: Serum separator tube. **Also acceptable:** Lavender (EDTA) or pink (K₂EDTA).
Specimen Preparation: Separate serum or plasma from cells ASAP or within 2 hours of collection. Transfer 1 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.5 mL)
Storage/Transport Temperature: Refrigerated. Submit specimen according to Biological Substance, Category B, shipping guidelines.
Unacceptable Conditions: Heat-inactivated, grossly hemolyzed or lipemic specimens. Specimens containing particulate material, or collected in citrate-based anticoagulant.
Stability (collection to initiation of testing): After separation from cells: Ambient: Up to 24 hours is acceptable, but not preferred; Refrigerated: 1 week; Frozen: Indefinitely (avoid repeated freeze/thaw cycles)

2002483 Hepatitis C Virus Antibody by CIA HCV AB

Specimen Required: Collect: Serum separator tube. **Also acceptable:** Lavender (EDTA) or pink (K₂EDTA).
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: Specimens containing particulate material. Severely hemolyzed, heat-inactivated, or lipemic specimens. Heparinized plasma.
Stability (collection to initiation of testing): After separation from cells: Ambient: Unacceptable; Refrigerated: 1 week; Frozen: Indefinitely (avoid freeze/thaw cycles)

0030064 Hexagonal Phospholipid Neutralization HEX PHOS

Specimen Required: Collect: Lt. blue (sodium citrate). Refer to Specimen Handling at aruplab.com for hemostasis/thrombosis specimen handling guidelines.
Specimen Preparation: Transfer 2 mL platelet-poor plasma to an ARUP Standard Transport Tube. (Min: 1 mL)
Storage/Transport Temperature: **CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.**
Unacceptable Conditions: Serum. Hemolyzed or non-frozen specimens.
Stability (collection to initial testing): Ambient: 2 hours; Refrigerated: 4 hours; Frozen: 1 month

0070038 Histamine, Urine HIST-U

Performed: Tue, Sat
Reported: 1-6 days

Specimen Required: Collect: Random or 24-hour urine in a plastic container. Refrigerate during collection.
Specimen Preparation: Transfer a 4 mL aliquot from a well-mixed random or 24-hour collection to an ARUP Standard Transport Tube and freeze immediately. (Min: 1 mL) Record total volume and collection time interval on transport tube and test request form. Also acceptable: Specimens preserved with HCl, if frozen immediately.
Storage/Transport Temperature: **CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.**
Unacceptable Conditions: Room temperature specimens.
Stability (collection to initiation of testing): Ambient: Unacceptable; Refrigerated: 24 hours; Frozen: 6 months

Reference Interval: 0-450 nmol/g crt

0070037 Histamine, Whole Blood HIST-WB

Specimen Required: Collect: Green (sodium or lithium heparin).
Specimen Preparation: Transfer 1 mL well-mixed whole blood to an ARUP Standard Transport Tube and freeze. (Min: 0.5 mL)
Storage/Transport Temperature: **CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.**
Unacceptable Conditions: Non-frozen specimens.
Stability (collection to initiation of testing): Ambient: 2 hours; Refrigerated: 6 hours; Frozen: 6 months

Reference Interval: 180-1800 nmol/L

0050860 Histone Antibody, IgG

AHA

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

Reference Interval:

0.9 units or less	Negative
1.0-1.5 units	Weak Positive
1.6-2.5 units	Moderate Positive
2.6 units or greater	Strong Positive

0060730 Histoplasma Antigen by EIA, Urine

HISTOAGU

Specimen Required: Collect: Random urine.
Specimen Preparation: Transfer 2 mL urine to an ARUP Standard Transport Tube.
Storage/Transport Temperature: Refrigerated. Submit specimen according to Biological Substance, Category B, shipping guidelines.
Stability (collection to initiation of testing): Ambient: 1 week; Refrigerated: 5 weeks; Frozen: Indefinitely (avoid repeated freeze/thaw cycles)

0080413 Homocystine Quantitative, Urine

HOMOCYS-U

Specimen Required: Patient Preparation: Patients should abstain from vitamin C ingestion for 48 hours prior to specimen collection.
Collect: 24-hour urine. Specimen must be refrigerated during collection. Also acceptable: Random urine (reported as homocystine/creatinine ratios).
Specimen Preparation: Mix well. Transfer 5 mL urine to ARUP Standard Transport Tubes. (Min: 3 mL) Record total volume and collection time interval on transport tube and test request form.
Storage/Transport Temperature: Frozen.
Unacceptable Conditions: pH less than 5 or greater than 8. Specimens with acid or other preservatives. Ascorbic acid interferes with this assay. Large amounts of blood or hemoglobin can interfere with quantitation.
Stability (collection to initiation of testing): Ambient: Unacceptable; Refrigerated: 24 hours; Frozen: 1 month

0020284 Human Immunodeficiency Virus 1 Antibody, Confirmation

HIV WBLOT

Specimen Required: Collect: Serum separator tube. Also acceptable: Lavender (EDTA), green (sodium or lithium heparin) or lt. blue (sodium citrate).
Specimen Preparation: Separate serum or plasma 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. Submit specimen according to Biological Substance, Category B, shipping guidelines.
Unacceptable Conditions: Hemolyzed or lipemic specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: Up to 1 week is acceptable, but not preferred; Refrigerated: 1 week; Frozen: Indefinitely (avoid repeated freeze/thaw cycles)

0055670 Human Immunodeficiency Virus 1, Genotyping

HIV1GENO

Specimen Required: Collect: Lavender (EDTA), pink (K₂EDTA), or plasma preparation tube.
Specimen Preparation: Separate plasma from cells within six hours. Transfer 4 mL plasma to an ARUP Standard Transport Tube. (Min: 2.5 mL)
Storage/Transport Temperature: **Frozen. Separate specimens must be submitted when multiple tests are ordered.** Submit specimen according to Biological Substance, Category B, shipping guidelines.
Unacceptable Conditions: Serum, whole blood, or heparinized plasma.
Stability (collection to initiation of testing): On Cells: Ambient: 6 hours. After separation from Cells: Ambient: 24 hours; Refrigerated: 5 days; Frozen: 4 months

Interpretive Data:

Test Information: HIV-1 Genotype

This assay predicts HIV-1 resistance to protease and reverse transcriptase inhibitor anti-retroviral drugs. The protease gene and codons 1-335 of the reverse transcriptase gene of the viral genome are **sequenced using** the Viroseq™ HIV-1 Genotyping System kit. **Drug resistance is assigned using ViroSeq™ software. The most current resistance algorithm and drug list is available by selecting the Drug Resistance Report above.**

This test should be used in conjunction with clinical presentation and other laboratory markers. A patient's response to therapy depends on multiple factors including patient compliance, percentage of resistant virus population, dosing, and drug pharmacology issues. Resistance interpretations may vary with test method.

According to the Viroseq™ HIV-1 Genotyping System software manual, some insertions or deletions may be difficult to detect using this software. This test may not detect minor HIV-1 populations less than 20 percent of the total population.

The performance characteristics of this test were determined by ARUP Laboratories, Inc.

Note: This test may be unsuccessful if the plasma HIV-1 RNA viral load is less than 1,000 HIV-1 RNA copies per mL of plasma.

HOT LINE NOTE: Remove information found in the Remarks field under Specimen Requirements.

2002688 Human Immunodeficiency Virus 1 RNA Quantitative bDNA with Reflex to Genotype

HIVBD GR

Performed: Wed, Sat
Reported: 2-15 days

Specimen Required: Collect: Lavender (EDTA), pink (K₂EDTA), or K₂ plasma preparation tube. **Multiple tubes may be required.**
Specimen Preparation: Transfer **two 3 mL aliquots of plasma to individual** ARUP Standard Transport Tubes. (Min: 3 mL)
Storage/Transport Temperature: **CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.** Submit specimen according to Biological Substance, Category B, shipping guidelines.
Unacceptable Conditions: Serum or whole blood. Heparinized plasma. Specimens exposed to repeat freeze/thaw cycles
Stability (collection to initiation of testing): **EDTA or K₂EDTA:** On cells: Ambient: 4 hours; After separation from cells: Refrigerated: 48 hours; Frozen at -20°C: 72 hours; Frozen at -70°C: 4 months
K₂ plasma preparation tube: On cells: Ambient: 2 hours. After separation from cells: Ambient: 24 hours; Refrigerated: Unacceptable; Frozen at -20°C: 72 hours; Frozen at -70°C: 4 months

HOT LINE NOTE: Remove information found in the Remarks field under Specimen Requirements.

2002689 Human Immunodeficiency Virus 1 RNA Quantitative Real-Time PCR with Reflex to Genotype

HIVQT GR

Methodology: Real-Time Polymerase Chain Reaction/**Sequencing**

Specimen Required: Collect: Lavender (EDTA), pink (K₂EDTA), or plasma preparation tube. **Multiple tubes may be required.**
Specimen Preparation: Transfer **two 3 mL aliquots of plasma to individual** ARUP Standard Transport Tubes. (Min: 3.0 mL)
Storage/Transport Temperature: Frozen. **Separate specimens must be submitted when multiple tests are ordered.** Submit specimen according to Biological Substance, Category B, shipping guidelines.
Unacceptable Conditions: Serum. Heparinized specimens. Specimens submitted in a plasma preparation tube. (aliquot plasma prior to freezing).
Stability (collection to initiation of testing): Ambient: On cells: 6 hours. After separation from cells: Ambient: 24 hours; Refrigerated: 5 days; Frozen: 4 months

HOT LINE NOTE: Remove the information found under the Remarks field under Specimen Requirements.

0051186 Human Immunodeficiency Virus 1, virco®TYPE HIV1VT

Specimen Required: Collect: Lavender (EDTA), pink (K₂EDTA), or plasma preparation tube.
Specimen Preparation: Separate plasma from cells within six hours. Transfer 4 mL plasma to an ARUP Standard Transport Tube. (Min: 2.5 mL)
Storage/Transport Temperature: **Frozen. Separate specimens must be submitted when multiple tests are ordered.** Submit specimen according to Biological Substance, Category B, shipping guidelines.
Unacceptable Conditions: Serum, whole blood, or heparinized plasma.
Stability (collection to initiation of testing): On cells: Ambient: 6 hours. After separation from cells: Ambient: 24 hours; Refrigerated: 5 days; Frozen: 4 months

Interpretive Data: The virco®TYPE HIV-1 assay predicts HIV-1 drug resistance based on the nucleic acid sequence of the patient's human immunodeficiency virus. The virco®TYPE HIV-1 analyzes sequences that encompass the entire protease gene and codons 1-335 of the reverse transcriptase gene. Virus from the patient is sequenced at ARUP Laboratories, and the sequence is sent to Virco (vircolab.com) for analysis using the Virtual Phenotype Linear Modeling analysis. This test should be used in conjunction with clinical presentation and other laboratory markers. A patient's response to therapy depends on multiple factors, including patient compliance, percentage of resistant virus population, dosing, and drug pharmacology issues. Resistance interpretations may vary with test method.

According to the Viroseq™ HIV-1 Genotyping System software manual, some insertions or deletions may be difficult to detect using this software. This test may not detect minor HIV-1 populations less than 20 percent of the total population.

The performance characteristics of this test were determined by ARUP Laboratories, Inc.

Note: This test may be unsuccessful if the plasma HIV-1 RNA viral load is less than 1,000 HIV-1 RNA copies per mL of plasma.

For a complete list of drugs currently profiled by this assay, please contact ARUP Client Services.

HOT LINE NOTE: Remove information found in the Remarks field under Specimen Requirements.

Delete **0060816** **Human Papillomavirus (HPV) DNA Probe, High Risk (ThinPrep®) with Reflex to Genotyping** **TP HPVHI R**

HOT LINE NOTE: Delete this test. No referral available.

Delete **0060818** **Human Papillomavirus (HPV) DNA Probe, High Risk, Cervical Brush (Digene) with Reflex to Genotyping** **HPV-HI R**

HOT LINE NOTE: Delete this test. No referral available.

Delete **0060817** **Human Papillomavirus (HPV) DNA Probe, High Risk SurePath® (AutoCyte) with Reflex to Genotyping** **SP HPVHI R**

HOT LINE NOTE: Delete this test. No referral available.

0099721 Human Placental Lactogen HPL

Performed: Varies
Reported: 3-11 days

0091172 Hydralazine, Urine HYDRAL UR

Specimen Required: Collect: Random Urine.
Specimen Preparation: Transfer 3 mL urine to an ARUP Standard Transport Tube. (Min: 1.2 mL)
Storage/Transport Temperature: Refrigerated.
Stability (collection to initiation of testing): Ambient: Undetermined; Refrigerated: Undetermined; Frozen: Undetermined

0091128 Hydrocarbon & Oxygenated Volatiles, Urine HYDR OX UR

Specimen Required: Collect: Urine.
Specimen Preparation: Transfer 2 mL urine to an ARUP Standard Transport Tube. (Min: 0.7 mL)
Storage/Transport Temperature: Refrigerated.
Stability (collection to initiation of testing): Ambient: Undetermined; Refrigerated: Undetermined; Frozen: Undetermined

2002348 25-Hydroxyvitamin D₂ and D₃ by Tandem Mass Spectrometry, Serum

VITD2D3TMS

Reference Interval:

1-17 years	
Deficiency	Less than 20 ng/mL
Optimum level	Greater than or equal to 20 ng/mL*
*(Wagner CL et al. Pediatrics 2008; 122: 1142-52.)	

18 years and older	
Deficiency	Less than 20 ng/mL
Insufficiency	20-29 ng/mL
Optimum Level	30-80 ng/mL
Possible Toxicity	Greater than 150 ng/mL

0050525 Immunoglobulin A, Saliva

SEC

Specimen Required: Collect: Saliva.

Specimen Preparation: Centrifuge and separate to remove cellular material. Transfer 1 mL saliva to an ARUP Standard Transport Tube. (Min: 0.4 mL)

Storage/Transport Temperature: Refrigerated.

Stability (collection to initiation of testing): Ambient: 8 hours; Refrigerated: 8 days; Frozen: **3 months** (if frozen within 24 hours)

0080403 Indicans, Urine Qualitative

INDICANS

Specimen Required: Collect: Random urine.

Specimen Preparation: Do not add preservatives. Transfer two **4** mL aliquots from a well-mixed random collection to individual ARUP Standard Transport Tubes. (Min: 3 mL)

Storage/Transport Temperature: Frozen.

Stability (collection to initiation of testing): Ambient: Unacceptable; Refrigerated: 8 hours; Frozen: 1 year

2003260 Inhibitor Assay, PT with Reflex to PT 1:1 Mix

PT INHIB

Specimen Required: Collect: Lt. blue (sodium citrate). Refer to Specimen Handling at aruplab.com for hemostasis/thrombosis specimen handling guidelines.

Specimen Preparation: Transport 1 mL plasma. (Min: 0.5 mL)

Storage/Transport Temperature: Critical Frozen.

Unacceptable Conditions: Serum. **Refrigerated specimens.** Hemolyzed specimens.

Stability (collection to initiation of testing): Ambient: 24 hours; Refrigerated: **Unacceptable**; Frozen: **2 weeks**

2003266 Inhibitor Assay, PTT with Reflex to PTT 1:1 Mix, with Reflex to 1-Hour Incubation

PTT INHIB

Specimen Required: Collect: Lt. blue (sodium citrate). Refer to Specimen Handling at aruplab.com for hemostasis/thrombosis specimen handling guidelines.

Specimen Preparation: Transfer 2 mL plasma to an ARUP Standard Transport Tube. (Min: 1 mL)

Storage/Transport Temperature: Critical Frozen.

Unacceptable Conditions: Serum. Specimens refrigerated more than four hours. Hemolyzed specimens.

Stability (collection to initiation of testing): Ambient: 4 hours; Refrigerated: 4 hours; Frozen: **2 weeks**

0070022 Insulin, Other

INSULINOTH

Interpretive Data: To convert to pmol, multiply $\mu\text{IU/mL}$ by 6.0. The reference interval for fasting insulin is 3-19 $\mu\text{IU/mL}$.

This assay reacts on a nearly equimolar basis with insulin aspart, insulin glargine, and insulin lispro.

HOT LINE NOTE: Remove information found in the Note field.

0093148 Interferon-Alpha by EIA, Serum or Plasma INTERFERON

Specimen Required: Collect: Plain red, serum separator tube, or lavender (EDTA).
Specimen Preparation: Transfer 1 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.5 mL)
Storage/Transport Temperature: **CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.**
Unacceptable Conditions: Refrigerated or room temperature specimens.
Stability (collection to initiation of testing): Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen: **1 month**

0092487 Iodine, 24 Hour, Urine IODINE URN

Performed: Varies
Reported: 3-7 days

Specimen Required: Patient Preparation: Gadolinium, iodine, and barium are known to interfere with most metals tests. If gadolinium, iodine, or barium containing contrast media has been administered, a specimen cannot be collected for 96 hours.
Collect: 24-hour urine collection in clean, plastic urine container(s) with no metal cap(s) or glued insert(s).
Specimen Preparation: Refrigerate specimen within 4 hours of completion of 24-hour collection. Transfer 10 mL aliquot from a well-mixed 24-hour urine collection to ARUP Standard Transport Tubes. (Min: 3 mL)
Storage/Transport Temperature: Refrigerated.
Remarks: 24-hour volume is required on test request form for processing.
Stability (collection to initiation of testing): Ambient: 2 weeks; Refrigerated: 2 weeks; Frozen: 2 weeks

0028250 Iron, Liver FE LIVER

Reference Interval:

	Male	Female
Hepatic Iron Content (HIC)	200-2,000 µg/g of tissue	200-1,600 µg/g of tissue
Hepatic Iron Index (HII)	Less than 1.0	Less than 1.0

HOT LINE NOTE: There is a component change associated with this test that affects interface clients only. Refer to Test Mix Addendum for further information.

2000271 Isohemagglutinin Titer, IgG IRL ISO G

Specimen Required: Collect: Plain red, lavender (EDTA), or pink (K₂EDTA).
Specimen Preparation: **Do not freeze red cells.** Transport 7 mL whole blood. (Min: 3 mL whole blood)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Separator or gel tubes.
Stability (collection to initiation of testing): Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable

2000280 Isohemagglutinin Titer, IgG & IgM IRL ISO MG

Specimen Required: Collect: Plain red, lavender (EDTA), or pink (K₂EDTA).
Specimen Preparation: **Do not freeze.** Transport 14 mL whole blood. (Min: 6 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Separator or gel tubes.
Stability (collection to initiation of testing): Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable

2000270 Isohemagglutinin Titer, IgM IRL ISO M

Specimen Required: Collect: Plain red, lavender (EDTA), or pink (K₂EDTA).
Specimen Preparation: **Do not freeze red cells.** Transport 7 mL whole blood. (Min: 3 mL whole blood)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Separator or gel tubes.
Stability (collection to initiation of testing): Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable

New Test 2004984 Juvenile Polyposis Syndrome (*BMPRI1A*) Deletion/Duplication *BMPRI1A* DD

Available April 18, 2011



Patient History for Juvenile Polyposis Syndrome

Methodology: Polymerase Chain Reaction/Multiplex Ligation-Dependent Probe Amplification
Performed: Varies
Reported: 14 days

Specimen Required: Collect: 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.
Stability (collection to initiation of testing): Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable

Interpretive Data:

Background Information for Juvenile Polyposis Syndrome (*BMPRI1A*) Deletion/Duplication:

Characteristics: Multiple juvenile (hamartomatous) polyps in the stomach, small intestine, colon, and rectum. Risk for colon cancer is 20 percent by age 35 and 70 percent by age 60.

Incidence: 1 in 16,000 to 100,000 individuals.

Inheritance: Autosomal dominant.

Penetrance: Greater than 90 percent for polyp development.

Cause: Pathogenic *BMPRI1A* and *SMAD4* mutations.

Clinical Sensitivity: 99 percent.

Methodology: Multiplex ligation-dependent probe amplification (MLPA) to detect large *BMPRI1A* coding region deletions and duplications; *BMPRI1A* exons 6 and 7 are not analyzed.

Analytical Sensitivity & Specificity: 99 percent.

Limitations: Rare diagnostic errors can occur due to probe site mutations. Single base pair substitutions, small deletions/duplications, regulatory region mutations, and deep intronic mutations will not be detected. Large deletions/duplications of exons 6 and 7 will not be detected. The breakpoints of large deletions/duplications will not be determined. Mutations in genes other than *BMPRI1A* are not evaluated.

Counseling and informed consent are recommended for genetic testing. Consent forms are available online at www.aruplab.com.

Refer to Statement C under Testing Information at <http://www.aruplab.com>.

CPT Code(s): 83891 Isolation; 83896 x13 Nucleic acid probes; 83898 x13 Amplification; 83914 x13 Extension; 83909 Capillary electrophoresis; 83912 Interpretation and report - Additional CPT code modifiers may be required for procedures performed to test for oncologic or inherited disorders.

New York DOH approval pending. Call for status update.

HOT LINE NOTE: Refer to Test Mix Addendum for interface build information.

New Test 2004988 Juvenile Polyposis Syndrome (*BMPRI1A*) Sequencing *BMPRI1A* FGS

Available April 18, 2011



Patient History for Juvenile Polyposis Syndrome

Methodology: Polymerase Chain Reaction/Sequencing
Performed: Varies
Reported: 28 days

Specimen Required: Collect: 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.
Stability (collection to initiation of testing): Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable

Interpretive Data:

Background Information for: Juvenile Polyposis Syndrome (*BMPRI1A*) Sequencing

Characteristics: Multiple juvenile (hamartomatous) polyps in the stomach, small intestine, colon, and rectum. Risk for colon cancer is 20 percent by age 35 and 70 percent by age 60.

Incidence: 1 in 16,000 to 100,000 individuals.

Inheritance: Autosomal dominant.

Penetrance: Greater than 90 percent for polyp development.

Cause: Pathogenic *BMPRI1A* and *SMAD4* mutations.

Clinical Sensitivity: 18 percent.

Methodology: Bidirectional sequencing of the entire *BMPRI1A* coding region and intron-exon boundaries.

Analytical Sensitivity & Specificity: 99 percent.

Limitations: Rare diagnostic errors can occur due to primer site mutations. Regulatory region mutations, deep intronic mutations, and large deletion/duplications will not be detected. Mutations in genes other than *BMPRI1A* are not evaluated.

Counseling and informed consent are recommended for genetic testing. Consent forms are available online at www.aruplab.com.

Refer to Statement C under Testing Information at <http://www.aruplab.com>.

CPT Code(s): Sequencing: 83891 Isolation; 83898 x10 Amplification; 83904 x10 Sequencing; 83909 Capillary electrophoresis; 83912 Interpretation and report - Additional CPT code modifiers may be required for procedures performed to test for oncologic or inherited disorders.

New York DOH approval pending. Call for status update.

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

New Test 2004992 Juvenile Polyposis Syndrome (BMPRI1A) Sequencing and Deletion/Duplication BMPRI1A FGA

Available April 18, 2011



Patient History for Juvenile Polyposis Syndrome

Methodology: Polymerase Chain Reaction/Sequencing/Multiplex Ligation-Dependent Probe Amplification
Performed: Varies
Reported: 35 days

Specimen Required: Collect: Lavender (EDTA), pink (K₂EDTA), or yellow (ACD Solution A or B).
Specimen Preparation: Transport 3 mL whole blood. (Min: 2 mL)
Storage/Transport Temperature: Refrigerated.
Stability (collection to initiation of testing): Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable

Interpretive Data:

Background Information for: Juvenile Polyposis Syndrome (BMPRI1A) Sequencing and Deletion/Duplication:

Characteristics: Multiple juvenile (hamartomatous) polyps in the stomach, small intestine, colon, and rectum. Risk for colon cancer is 20 percent by age 35 and 70 percent by age 60.

Incidence: 1 in 16,000 to 100,000 individuals.

Inheritance: Autosomal dominant.

Penetrance: Greater than 90 percent for polyp development.

Cause: Pathogenic *BMPRI1A* and *SMAD4* mutations.

Clinical Sensitivity: Approximately 24 percent.

Methodology: Bidirectional sequencing of the entire *BMPRI1A* coding region and intron-exon boundaries. Multiplex ligation-dependent probe amplification (MLPA) to detect large *BMPRI1A* coding region deletions and duplications. *BMPRI1A* exons 6 and 7 are not tested by MLPA.

Analytical Sensitivity & Specificity for Sequencing and MLPA: 99 percent.

Limitations: Rare diagnostic errors can occur due to primer or probe site mutations. Regulatory region mutations and deep intronic mutations will not be detected. Large deletions/duplications of exons 6 and 7 will not be detected. The breakpoints of large deletions/duplications will not be determined. Mutations in genes other than *BMPRI1A* are not evaluated.

Counseling and informed consent are recommended for genetic testing. Consent forms are available online at www.aruplab.com.

Refer to Statement C under Testing Information at <http://www.aruplab.com>.

CPT Code(s): Sequencing: 83891 Isolation; 83898 x10 Amplification; 83904 x10 Sequencing; 83909 Capillary electrophoresis; 83912 Interpretation and report.
 DelDup: 83896 x13 Nucleic Acid Probes; 83898 x13 Amplification; 83914 x13 Extension; 83909 Capillary electrophoresis -
 Additional CPT code modifiers may be required for procedures performed to test for oncologic or inherited disorders.

New York approval pending. Call for status update.

HOT LINE NOTE: Refer to Test Mix Addendum for interface build information.

0098627 Keppra® (Levetiracetam) KEPPRA

Performed: Sun-Sat
Reported: 1-2 days

0090177 Lamotrigine LAMOT

Performed: Sun-Sat
Reported: 1-2 days

0070322 Legionella pneumophila Antigen, Urine LEGAG-U

Specimen Required: Collect: Random urine.
Specimen Preparation: Transfer 4 mL aliquot from a well-mixed random urine to an ARUP Standard Transport Tube. (Min: 1 mL)
Storage/Transport Temperature: Refrigerated. Also acceptable: Frozen.
Unacceptable Conditions: Specimens in preservatives.
Stability (collection to initiation of testing): Ambient: 24 hours; Refrigerated: 2 weeks; Frozen: 2 weeks

0060113 Legionella Species, Culture MC LEGION

Specimen Required: Collect: Respiratory tract **specimens:** Secretions, aspirates, **BAL**, tissues, fluids, sputum, or abscess material. **OR** pericardial fluid or blood in SPS.
Specimen Preparation: To prevent drying, submit **tissue** specimen in sterile, non-bacteriostatic water, **or physiologic** saline. Transport in a sterile container. Transport blood in an SPS Vacutainer for Microbiology. (ARUP supply #24964) **Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787.** Place each specimen in a separate, individually sealed bag. (Min. 0.5 mL) Source of specimen is preferred.
Storage/Transport Temperature: Refrigerated. For non-blood specimens: If delay in transport (greater than 48 hours), transport frozen. Submit specimen according to Biological Substance, Category B, shipping guidelines.
Unacceptable Conditions: Stool, urine, wounds, or **other non-respiratory** sites. Leaking or non-sterile containers. Dry specimens.
 Specimens submitted **in formalin** or viral transport medium.
Stability (collection to initiation of testing): Ambient: 2 hours; Refrigerated: 48 hours; Frozen: 1 week

HOT LINE NOTE: Remove information found in the Remarks field under Specimen Requirements.

0060158 Leptospira Culture MC LEPTO

Specimen Required: Collect: Whole blood or CSF (week 1 of disease). **OR** urine (beyond **week** 1 of disease). **Testing performed for University of Utah Health Sciences Center and local Utah clients only.**
Specimen Preparation: Transport 7 mL whole blood in SPS, heparin or sodium oxalate tube, BACTEC® or other commercial blood culture bottles. (Min: 1 mL)
OR transport 0.5 mL CSF in sterile container. (Min: 0.1 mL)
OR transport 1 mL urine diluted 1:10 in 1% bovine serum albumin. (Min: 0.1 mL)
 Specimen must be diluted 1:10 with 1% bovine serum albumin within 1 hour of collection and prior to transport to Bacteriology. Source of specimen is required.
Storage/Transport Temperature: Room temperature. Deliver to Bacteriology immediately. Submit specimen according to Biological Substance, Category B, shipping guidelines.
Remarks: *Leptospiras* may not survive in acidic urine.
Unacceptable Conditions: Clotted whole blood or whole blood submitted in anticoagulant other than those listed above. Urine **not diluted with bovine serum albumin within 1 hour** of collection or **urine** in preservative. Frozen or **refrigerated** specimens. Leaking or non-sterile containers.
Stability (collection to initiation of testing): Ambient: Heparinized or oxalated whole blood, CSF, urine diluted with bovine serum albumin: 24 hours; Whole blood in SPS or blood culture bottle: 6 days; Refrigerated: Unacceptable; Frozen: Unacceptable

0097328 Limulus Amebocyte Lysate (LAL) LAL

Specimen Required: Collect: Aqueous solution used in patient management.
Specimen Preparation: Transfer 5 mL aqueous solution to ARUP Standard Transport Tubes. (Min: 3 mL)
Storage/Transport Temperature: **CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.**
Unacceptable Conditions: **Body** fluid. Glass vials.
Stability (collection to initiation of testing): Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen: No stability available

0099529 Listeria Antibody, Serum by CF LISTERIA

Specimen Required: Collect: Plain red.
Specimen Preparation: Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.5 mL)
Storage/Transport Temperature: Refrigerated.
Stability (collection to initiation of testing): Ambient: 5 days; Refrigerated: 2 weeks; Frozen: 1 month

0099270 Liver-Kidney Microsome Antibody, IgG LIVER-KID

Interpretive Data: Liver-Kidney Microsome IgG antibody (anti-LKM), as detected by indirect immunofluorescent antibody (IFA) techniques, may be observed in patients with autoimmune hepatitis type 2 (AIH-2), AIH-2 associated with autoimmune polyendocrinopathy-candidiasis-ectodermal dystrophy (APECED), viral hepatitis C or D, and some forms of drug-induced hepatitis. This IFA does not differentiate among the four types of LKM antibodies (LKM-1, LKM-2, LKM-3, and a fourth type that recognizes CYP1A2 and CYP2A6 antigens). Of these, anti-LKM-1 (cytochrome P450IID6) IgG antibodies are considered specific for AIH-2.

Refer to Statement D under Testing Information at <http://www.aruplab.com>.

0091200	LSD, Serum or Plasma	LSD SP
<p>Specimen Required: <u>Collect:</u> Plain red, lavender (EDTA), or pink (K₂EDTA). <u>Specimen Preparation:</u> Separate from cells within 2 hours of draw. Protect specimen from light. Transfer 3 mL serum or plasma to an ARUP Amber Transport Tube. (Min: 1.1 mL) <u>Storage/Transport Temperature:</u> Refrigerated. Also acceptable: Room temperature or frozen. <u>Unacceptable Conditions:</u> Specimens that have not been protected from light. Glass containers or serum separator tubes. <u>Stability (collection to initiation of testing):</u> Ambient: 2 weeks; Refrigerated: 1 month; Frozen: 1 month</p>		
0091224	LSD, Urine	LSD URN
<p>Methodology: Quantitative Immunoassay/Liquid Chromatography-Tandem Mass Spectrometry</p> <p>Specimen Required: <u>Collect:</u> Random urine. <u>Specimen Preparation:</u> Protect from light. Transfer 2 mL urine to an ARUP Amber Transport Tube. (Min: 0.85 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Specimens submitted in glass containers. <u>Stability (collection to initiation of testing):</u> Ambient: 1 month; Refrigerated: 1 month; Frozen: 1 month</p> <p>CPT Code(s): 80101 Drug screen, if positive add 83789</p>		
0030181	Lupus Anticoagulant Reflexive Panel	LUPUS R
<p>Specimen Required: <u>Collect:</u> Lt. blue (sodium citrate). Refer to Specimen Handling at aruplab.com for hemostasis/thrombosis specimen handling guidelines. <u>Specimen Preparation:</u> Transfer 2 mL platelet-poor plasma to an ARUP Standard Transport Tube. (Min: 1 mL) <u>Storage/Transport Temperature:</u> CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered. <u>Unacceptable Conditions:</u> Serum. Anticoagulants other than indicated. Clotted, hemolyzed, or non-frozen specimens. <u>Stability (collection to initiation of testing):</u> Ambient: 4 hours; Refrigerated: 4 hours; Frozen: 2 weeks</p>		
0095854	Lymphocyte Subset Panel 1 - CD4 Absolute Count Only	ABS4
<p>Specimen Required: <u>Collect:</u> Lavender Hemogard (EDTA), pink Hemogard (K₂EDTA), or green Hemogard (sodium or lithium heparin). Only Hemogard tubes are acceptable. <u>Specimen Preparation:</u> Transport 4 mL whole blood. (Min: 0.5 mL) Label tube with the patient's name, date and time of draw. <u>Storage/Transport Temperature:</u> CRITICAL ROOM TEMPERATURE. Submit specimen according to Biological Substance, Category B, shipping guidelines. <u>Remarks:</u> Specimens must be analyzed within 72 hours of collection in EDTA or within 48 hours of collection in heparin. Some medications may affect immunophenotyping results and should be listed on the patient test request form. This test is not approved for New York State Clients. <u>Unacceptable Conditions:</u> Specimens collected in ACD (yellow) tubes. Specimens older than 72 hours in EDTA or 48 hours in heparin. Clotted, hemolyzed, frozen, or refrigerated specimens. <u>Stability (collection to initiation of testing):</u> Ambient: 72 hours in EDTA, 48 hours in heparin; Refrigerated: Unacceptable; Frozen: Unacceptable</p>		
0095853	Lymphocyte Subset Panel 3 - T-Cell Subsets (CD4 & CD8), Absolute Counts Only	ABS
<p>Specimen Required: <u>Collect:</u> Lavender Hemogard (EDTA), pink Hemogard (K₂EDTA), or green Hemogard (sodium or lithium heparin). Only Hemogard tubes are acceptable. <u>Specimen Preparation:</u> Transport 4 mL whole blood. (Min: 0.5 mL) Label tube with patient's name, date and time of draw. <u>Storage/Transport Temperature:</u> CRITICAL ROOM TEMPERATURE. Submit specimen according to Biological Substance, Category B, shipping guidelines. <u>Remarks:</u> Specimens must be analyzed within 72 hours of collection in EDTA or within 48 hours in heparin. Some medications may affect immunophenotyping results and should be listed on the patient test request form. This test is not approved for New York State clients. <u>Unacceptable Conditions:</u> Specimens collected in ACD (yellow) tubes. Specimens older than 72 hours in EDTA or 48 hours in heparin. Clotted, hemolyzed, frozen, or refrigerated specimens. <u>Stability (collection to initiation of testing):</u> Ambient: 72 hours in EDTA, 48 hours in heparin; Refrigerated: Unacceptable; Frozen: Unacceptable</p>		

New Test **2004963** **Malaria Detection and Speciation, Qualitative by Real-Time PCR** **MALARIAPCR**

Methodology: Qualitative Real-Time Polymerase Chain Reaction
Performed: Sun-Sat
Reported: 1-3 days

Specimen Required: Collect: Lavender (EDTA) or pink (K₂EDTA).
Specimen Preparation: Transport 1 mL whole blood. (Min: 0.5 mL)
Storage/Transport Temperature: Refrigerated. Submit specimen according to Biological Substance, Category B, shipping guidelines.
Unacceptable Conditions: Leaking or non-sterile containers. Heparinized specimens.
Stability (collection to initiation of testing): Ambient: 24 hours; Refrigerated: 1 week; Frozen: 1 week

Interpretive Data: This qualitative test is intended only for the speciation of suspected malaria infections. It is not intended to monitor treatment or to be used on repeat specimens for evaluation of parasitic clearance. A positive result may still be obtained in the absence of visible parasites.

Detection of asymptomatic parasitemia in individuals from malaria-endemic areas is possible. Therefore, this test should only be used in conjunction with patient travel history and symptoms consistent with malaria. Only circulating parasites within the blood will be detected in this assay. Latent phase hypnozoites of *Plasmodium ovale* and *Plasmodium vivax* may not be detected.

Mixed infections (eg, multiple *Plasmodium* spp. present) may not be accurately identified if parasitemia is significantly higher for one of the *Plasmodium* spp.

This test will not detect other blood-borne parasites such as *Babesia* spp. and Trypanosomes, which may have similar clinical presentation. A negative result on this assay does not rule out the presence of PCR inhibitors in the patient specimen or assay-specific nucleic acid in concentrations below the level of detection by the assay.

Please refer to Statement B under testing information at aruplab.com,

CPT Code(s): 87798 *P. falciparum*; 87798 *P. vivax*; 87798 *P. ovale*; 87798 *P. malariae*; 87798 *P. knowlesi*

New York DOH approval pending. Call for status update.

HOT LINE NOTE: Refer to Test Mix Addendum for interface build information.

0051692 **Mannose Binding Lectin** **MBL**

Specimen Required: Collect: Serum separator tube, plain red, or green (lithium heparin).
Specimen Preparation: Separate serum or plasma from cells ASAP or within 2 hours of collection. Transfer 1 mL serum or plasma to an ARUP Standard Transport Tube. (Min 0.2 mL)
Storage/Transport Temperature: Frozen. **Separate specimens must be submitted when multiple tests are ordered.** Also acceptable: Refrigerated.
Unacceptable Conditions: Specimens collected in EDTA or citrate. Contaminated or heat-inactivated 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).

Delete **0020372** **Meat Fibers, Fecal** **FECFIB**

HOT LINE NOTE: Delete this test. No referral available.

0091084 **Mercaptopurine Quantitation, Serum or Plasma** **MERCAP SP**

Methodology: Quantitative High Performance Liquid Chromatography-Tandem Mass Spectrometry

Specimen Required: Collect: Plain red. Also acceptable: Lavender (EDTA) or pink (K₂EDTA).
Specimen Preparation: Separate from cells within 2 hours. Transfer 1 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.4 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Separator tubes.
Stability (collection to initiation of testing): Ambient: 1 week; Refrigerated: 3 weeks; Frozen: 2 months

CPT Code(s): 83789

HOT LINE NOTE: Remove information found in the Remarks field under Specimen Requirements.

0080436 Metanephrines, Urine META UF

Specimen Required: Collect: Patient Preparation: Abstain from medications for 72 hours prior to collection.
Collect: 24-hour or random urine. Refrigerate 24-hour specimen during collection.
Specimen Preparation: Transfer a 4 mL aliquot from a well-mixed 24-hour or random collection to an ARUP Standard Transport Tube. (Min: 1.5 mL) Stability can be enhanced by adjusting the pH to 2-3 by using an acid such as 6 mol/L HCl. A pH lower than 2 may cause assay interference. Record total volume and collection time interval on transport tube and test request form.
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Room temperature specimens.
Stability (collection to initiation of testing): Ambient: Unacceptable; Refrigerated: 2 weeks; Frozen: 1 month

0091276 Methyldopa, Serum or Plasma METHYLDOP

Specimen Required: Collect: Green (sodium heparin) or lavender (EDTA).
Specimen Preparation: Separate serum or plasma from cells within 2 hours. Transfer 2 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.7 mL)
Storage/Transport Temperature: CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.
Unacceptable Conditions: Separator tubes. Thawed specimens.
Stability (collection to initiation of testing): Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen: 1 week

0099431 Methylnalonic Acid, Serum or Plasma (Vitamin B₁₂ Deficiency) MMA QNT-P

Methodology: Quantitative Liquid Chromatography-Tandem Mass Spectrometry

Specimen Required: Collect: Plain red or serum separator tube. Also acceptable: Green (sodium heparin), lavender (EDTA), or pink (K₂EDTA).
Specimen Preparation: Centrifuge and remove serum or plasma from cells within 2 hours of collection. Transfer 3 mL serum or plasma to an ARUP Standard Transport Tube and refrigerate or freeze immediately after centrifugation. (Min: 1.5 mL)
Storage/Transport Temperature: Frozen.
Unacceptable Conditions: Room temperature specimens. Grossly hemolyzed or lipemic specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: Unacceptable; Refrigerated: 4 days; Frozen: 1 month

HOT LINE NOTE: Remove the information found in the Note field.

0083918 Methylnalonic Acid, Urine MMA U

Methodology: Quantitative Liquid Chromatography-Tandem Mass Spectrometry

Specimen Required: Collect: 24-hour or random urine. Refrigerate 24-hour specimens during collection.
Specimen Preparation: Transfer a 4 mL aliquot from a well-mixed 24-hour or random urine collection to an ARUP Standard Transport Tube and refrigerate or freeze immediately. (Min: 0.5 mL) Record total volume and collection time interval on transport tube and test request form.
Storage/Transport Temperature: Frozen.
Unacceptable Conditions: Room temperature specimens.
Stability (collection to initiation of testing): Ambient: Unacceptable; Refrigerated: 4 days; Frozen: 1 month

0091451 Molindone, Serum or Plasma MOLINDON

Specimen Required: Collect: Plain red or lavender (EDTA).
Specimen Preparation: Separate from cells within 2 hours of draw. Transfer 5 mL serum or plasma to ARUP Standard Transport Tubes. (Min: 2.1 mL)
Storage/Transport Temperature: Refrigerated
Unacceptable Conditions: Separator tubes.
Stability (collection to initiation of testing): Ambient: 1 week; Refrigerated: 1 week; Frozen: 19 days

0091450 Molindone, Urine MOLINDON U

Specimen Required: Collect: Random urine.
Specimen Preparation: Transfer 5 mL urine to ARUP Standard Transport Tubes. (Min: 2.1 mL)
Storage/Transport Temperature: Refrigerated.
Stability (collection to initiation of testing): Ambient: 1 week; Refrigerated: 1 week; Frozen: 19 days

0051223	Motor & Sensory Neuropathy Evaluation with Immunofixation Electrophoresis & Reflex to ANNA Titer & ANNA Immunoblot	MSN COMP
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Performed: Thu
Reported: 3-9 days

0051224	Motor & Sensory Neuropathy Evaluation with Reflex to ANNA Titer & ANNA Immunoblot	MSN EVAL
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Performed: Thu
Reported: 1-9 days

0081357	Mucopolysaccharides, Quantitative, Urine	MPS QNT
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Specimen Required: Patient Preparation: Morning void is preferred.
Collect: Urine.
Specimen Preparation: Transfer 10 mL urine to ARUP Standard Transport Tubes and freeze immediately. (Min: 5 mL)
Storage/Transport Temperature: Frozen.
Unacceptable Conditions: Contaminated specimens. Specimens containing preservatives.
Stability (collection to initiation of testing): Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen: 1 month (avoid repeated freeze/thaw cycles)

0051390	Multiple Endocrine Neoplasia Type 2 (MEN2), <i>RET</i> Gene Mutations by Sequencing	MEN2 SEQ
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Performed: Varies
Reported: 14-21 days

0051492	Multiple Endocrine Neoplasia, Type 2B (<i>RET</i>) 2 Mutations	MEN 2 B
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Interpretive Data:
Background Information for Multiple Endocrine Neoplasia, Type 2B (*RET*) 2 Mutations:
Characteristics: Medullary carcinoma of the thyroid, pheochromocytoma, mucosal neuromas, and Marfanoid body habitus.
Incidence: Approximately 1: 600,000
Inheritance: Autosomal dominant; 50 percent of cases caused by *de novo* mutations.
Penetrance: 100 percent for medullary thyroid carcinoma, 50 percent for pheochromocytoma.
Cause: *RET* proto-oncogene mutations.
Mutations Tested: M918T, A883F.
Clinical Sensitivity: 98 percent.
Methodology: Polymerase chain reaction followed by unlabeled probe and melting curve analysis.
Analytical Sensitivity and Specificity: 99 percent.
Limitations: *RET* mutations, other than M918T and A883F, will not be identified.

This test is performed pursuant to an agreement with Roche Molecular Systems, Inc.

Counseling and informed consent are recommended for genetic testing. Consent forms are available online at www.aruplab.com.

Refer to Statement C under Testing Information at <http://www.aruplab.com>.

0060095 *Mycobacterium tuberculosis* Amplified Direct Detection

MC MTD

Specimen Required: Patient Preparation: **Three sputum specimens should be collected at 8-24 hour intervals (24 hours when possible) and should include at least one first morning specimen.**
Collect: Sputum, bronchoalveolar lavage (BAL), pleural fluid or other respiratory specimens. Respiratory specimen processed by NaOH-NALC digestion decontamination procedure. Unprocessed specimen is preferred.
Specimen Preparation: **For unprocessed specimens:** Transport **5-10 mL** respiratory specimen in a sterile, leak-proof container. Place each specimen in a separate, individually sealed bag. (Min: 1 mL) Label as unprocessed.
For processed specimens: Transport **2-5 mL** digested/decontaminated respiratory specimen in a sterile, leak-proof container. Place each specimen in a separate, individually sealed bag. (Min: 1 mL) Identify method used for digestion and provide smear results.
Source of specimen is required.
Storage/Transport Temperature: Refrigerated. Submit specimen according to Biological Substance, Category B, shipping guidelines.
Remarks: **To perform this test it is essential to know whether or not the submitted specimen has been processed (digestion and decontamination procedure). If it has, smear results must be provided as a comment on the test order or requisition. Delayed turnaround time will occur when the required information is not provided.**
Unacceptable Conditions: Bloody specimens. **Pericardial fluid**, or tissue (**fresh or paraffin block**). Leaking containers. Specimens processed by Alpha-Tec Systems **are often inhibitory for this assay. For CSF refer to ARUP test code 0060063.**
Stability (collection to initiation of testing): Unprocessed: Ambient: Unacceptable; Refrigerated: 1 week; Frozen: 2 weeks
 Processed: Ambient: Unacceptable; Refrigerated: 72 hours; Frozen: 2 weeks

2003294 *Mycoplasma hominis* Culture, **Urogenital Source**

MC MYCO

Specimen Required: Collect: Urine, urethral, **vaginal**, or cervical swab, or **semen**.
Specimen Preparation: Place swab or specimen in *Mycoplasma* transport media (ARUP supply #12884) **Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787. (DO NOT USE M4 RT).** (Min: 0.5 mL). Use a sterile leak-proof container for fluids if *Mycoplasma* transport media is unavailable. Place each specimen in a separate, individually sealed bag. **Source of specimen is required.**
Storage/Transport Temperature: Frozen. Submit specimen according to Biological Substance, Category B, shipping guidelines.
Unacceptable Conditions: **Non-urogenital** sources. M4 RT, swabs in culturettes, or dry swabs.
Stability (collection to initiation of testing): Ambient: 8 hours; Refrigerated: 48 hours in *Mycoplasma* transport media; Frozen at -70°C: 1 month

New Test 2004911 MYH-Associated Polyposis (MYH) 2 Mutations

MYH SEQ

Available April 18, 2011



Patient History for Familial Adenomatous Polyposis (FAP)

Methodology: Polymerase Chain Reaction/Sequencing
Performed: Varies
Reported: 14 days

Specimen Required: Collect: 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.
Stability (collection to initiation of testing): Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable

Interpretive Data:

Background Information for MYH-Associated Polyposis (MYH) 2 Mutations:

Characteristics of MAP: Development of colonic polyps (10-100) with the age of diagnosis occurring in the third decade or older.

Incidence: Less than 1 percent of colorectal cancer cases.

Inheritance: Autosomal recessive.

Penetrance: Greater than 99 percent in untreated individuals.

Cause: Biallelic MYH gene mutations.

Clinical Sensitivity: 85 percent of MYH mutations in Caucasians.

Methodology: Targeted testing for the MYH gene mutations Y165C and G382D by PCR and bidirectional sequencing.

Analytical Sensitivity and Specificity: 99 percent.

Limitations: Rare diagnostic errors can occur due to primer site mutations. Mutations in the MYH gene, other than Y165C and G382D, are not evaluated.

Counseling and informed consent are recommended for genetic testing. Consent forms are available online at www.aruplab.com.

Refer to Statement C under Testing Information at <http://www.aruplab.com>.

CPT Code(s): 83891 Isolation; 83898 x2 Amplification; 83904 x2 Sequencing; 83909 Capillary electrophoresis; 83912 Interpretation and report - Additional CPT code modifiers may be required for procedures performed to test for oncologic or inherited disorders.

New York approval pending. Call for status update.

HOT LINE NOTE: Refer to Test Mix Addendum for interface build information.

Delete **2003093** **Myositis Profile** **MYOSITIS**

HOT LINE NOTE: Delete this test and refer to Myositis-Specific Panel (15 Antibodies) (2005176).

New Test **2005176** **Myositis-Specific Panel (15 Antibodies)** **MYOSIT PAN**

Methodology: Qualitative Enzyme Immunoassay/Immunoprecipitation
Performed: Varies
Reported: 14-17 days

Specimen Required: Collect: Plain red or serum separator tube. Also acceptable: Lavender (EDTA)
Specimen Preparation: Separate from cells. Transfer 4 mL serum to an ARUP Standard Transport Tube. (Min: 2 mL) Also acceptable: Plasma.
Storage/Transport Temperature: Refrigerated. Also acceptable: Room temperature or frozen.
Stability (collection to initiation of testing): Ambient: 1 week; Refrigerated: 2 weeks; Frozen: Indefinitely

Reference Interval: By report

Note: Antibodies: Mi-2, PL-12, PL-7, EJ, OJ, Ku, U2 snRNP, SRP, PM/ScI, Jo-1, SSA-52 kd, P140, P155/140, U1 snRNP, U3 RNP Fibrillar

CPT Code(s): 86235 Jo-1; 86235 U1snRNP; 86235 SSA-52 kd; 83516 EJ; 83516 OJ; 83516 PL-7; 83516 PL-12; 83516 Mi-2; 83516 SRP; 83516 Ku; 83516 U2snRNP; 83516 U3 RNP Fib; 83516 PM/ScI; 83516 P155/140; 83516 P140

New York approval pending. Call for status update.

HOT LINE NOTE: Refer to Test Mix Addendum for interface build information.

0020223 **Myoglobin, Urine** **MYOG-U**

Specimen Required: Collect: Random or 24-hour urine Refrigerate during collection.
Specimen Preparation: Mix well and **adjust pH to 8-9 by adding 10% Na₂CO₃** (Myoglobin is unstable in urine, unless the pH is 8.0-9.0) immediately after collection. Transfer 1 mL aliquot from a random or 24-hour collection to an ARUP Standard Transport Tube. (Min: 0.5 mL)
Storage/Transport Temperature: Refrigerated.
Stability (collection to initiation of testing): pH 8-9: Ambient: 1 hour; Refrigerated: 72 hours; Frozen: 1 month

HOT LINE NOTE: Remove information found in both the Unacceptable Conditions and Remarks fields under Specimen Requirements.

Delete **0095835** **Narcolepsy - HLA DNA Panel** **NARCO**

HOT LINE NOTE: Delete this test and refer to Narcolepsy (*HLA-DQB1*06:02*) Genotyping (2005023).

New Test **2005023** **Narcolepsy (*HLA-DQB1*06:02*) Genotyping** **NARCOLEPSY**

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

Specimen Required: Collect: Lavender (EDTA), pink (K₂EDTA), or yellow (ACD Solution A or B).
Specimen Preparation: Transport 3 mL whole blood. (Min: 1 mL)
Storage/Transport Temperature: Room temperature or refrigerated.
Stability (collection to initiation of testing): Ambient: 1 week; Refrigerated: 1 week; Frozen: Unacceptable

Reference Interval: By report

Interpretive Data:

Background Information for Narcolepsy (*HLA-DQB1*06:02*) Genotyping:

Characteristics: Narcolepsy is a sleep disorder associated with invalidating excessive daytime sleepiness and cataplexy (the sudden loss of muscle tone triggered by strong emotions). Additionally, disturbed nighttime sleep, sleep paralysis, and hypnagogic hallucinations (occurring in the period between sleep and wakefulness) are common.

Incidence: Narcolepsy affects approximately 1 in 2,000 individuals.

Inheritance: Multifactorial.

Cause: The *HLA-DQB1*06:02* allele is strongly associated with narcolepsy, but, by itself, is not causative. Recent studies indicate *HLA-DRB1*15* is no longer associated with narcolepsy.

Mutations Tested: *HLA-DQB1*06:02* allele.

Clinical Sensitivity: 85-95 percent depending on ethnicity. Greater than 99 percent of affected Caucasians with cataplexy have the *HLA-DQB1*06:02* allele.

Clinical Specificity: Less than 1 percent; 15-25 percent of unaffected Caucasians have the *HLA-DQB1*06:02* allele.

Methodology: PCR with melting curve analysis.

Analytical Sensitivity and Specificity: 99 percent.

Limitations: This methodology will not differentiate between individuals who are heterozygous (one copy) and those who are homozygous (two copies) for the *HLA-DQB1*06:02* allele. Rare diagnostic errors may occur due to primer site mutations. Alleles other than *HLA-DQB1*06:02* will not be identified. Other genetic and non genetic factors that influence narcolepsy are not evaluated.

This test is performed pursuant to an agreement with Roche Molecular Systems, Inc.

Counseling and informed consent are recommended for genetic testing. Consent forms are available online at www.aruplab.com.

Refer to Statement C under Testing Information at <http://www.aruplab.com>.

CPT Code(s): 83891 Isolation; 83898 Amplification; 83912 Interpretation and report - Additional CPT code modifiers may be required for procedures performed to test for oncologic or inherited disorders.

New York DOH approval pending. Call for status update.

HOT LINE NOTE: Refer to Test Mix Addendum for interface build information.

0060223 ***Neisseria gonorrhoeae* DNA Probe** **GCDNAP**

Specimen Required: Patient Preparation: For urethral swab specimens, patients should not have urinated for at least 1 hour prior to collection.
Collect: Female endocervical or male urethral swabs. Use Gen-Probe® Pace 2 collection and transport kit. Female kit: ARUP supply #12575; male kit: ARUP supply #12576. Use test-specific kits provided by the manufacturer for each specimen type. Closely follow kit instructions for specimen collection and transport. Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787.
Specimen Preparation: Transport swabs in Gen-Probe® Pace 2 transport tubes.
Storage/Transport Temperature: Refrigerated.
Remarks: Gross presence of blood in the specimen may interfere with the test performance. This test is not recommended for pediatric patients.
Unacceptable Conditions: Specimens not in Gen-Probe® transport. Conjunctival swabs. Specimens without a swab in transport media.
Stability (collection to initiation of testing): In Gen-Probe® Pace 2 transport media: Ambient: 1 week; Refrigerated: 1 week; Frozen: 1 week

Interpretive Data: Nucleic-acid amplification tests (NAAT) are superior to direct DNA probe testing for detection of *Neisseria gonorrhoeae*. For NAAT, refer to *Chlamydia trachomatis* & *Neisseria gonorrhoeae* by Amplified Detection (APTIMA®) (ARUP test code 0060241) or *Neisseria gonorrhoeae* by Amplified Detection (APTIMA®) (ARUP test code 0060244).

2004230	Neurokinin A (Substance K)	NEUROKIN
Performed:	Varies	
Reported:	4-21 days	
0055506	Neutrophil-Associated Antibodies	ANTI-NEU
Specimen Required:	<u>Collect:</u> Plain red or serum separator tube. <u>Specimen Preparation:</u> Remove serum from cells ASAP or within 2 hours of collection. Transfer 3 mL serum to an ARUP Standard Transport Tube and freeze . (Min: 0.5 mL) <u>Storage/Transport Temperature:</u> Frozen (on dry ice). <u>Stability (collection to initiation of testing):</u> After separation from cells: Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen: 1 month	
0092168	Niacin (Vitamin B₃)	NIACIN B3
Performed:	Varies	
Reported:	3-13 days	
<p>✓ HOT LINE NOTE: This change also applies to Vitamin B₅ (Pantothenic Acid) (2003186).</p>		
0092356	Nicotine & Metabolites, Urine	NICOTINEUR
Specimen Required:	<u>Collect:</u> Random urine. <u>Specimen Preparation:</u> Do not use additives or preservatives. Transfer 4 mL urine to an ARUP Standard Transport Tube. (Min: 2 mL) <u>Storage/Transport Temperature:</u> Room temperature. <u>Unacceptable Conditions:</u> Specimens exposed to repeated freeze/thaw cycles. <u>Stability (collection to initiation of testing):</u> Ambient: 10 days; Refrigerated: 10 days; Frozen: 8 months	
0092140	Nitrogen, Total, Urine	NITRO UR
Specimen Required:	<u>Collect:</u> 24-hour urine. <u>Specimen Preparation:</u> Transfer 10 mL aliquot from a well-mixed 24-hour urine collection to ARUP Standard Transport Tubes. (Min: 2 mL) Do not use preservatives. <u>Storage/Transport Temperature:</u> Refrigerated. <u>Remarks:</u> 24 hour volume required. <u>Stability (collection to initiation of testing):</u> Ambient: 1 week; Refrigerated: 1 week; Frozen: 3 years	
<p>HOT LINE NOTE: Please remove the information found under the Unacceptable Conditions field in Specimen Requirements.</p>		

New Test **2005091** **Opiates, Confirmation Only, Urine** **OPI CONF U**

Methodology: Quantitative Liquid Chromatography-Tandem Mass Spectrometry
Performed: Sun-Sat
Reported: 1-4 days

Specimen Required: Collect: Random urine.
Specimen Preparation: Transfer 4 mL urine with no additives or preservatives to an ARUP Standard Transport Tube. (Min: 2 mL)
Storage/Transport Temperature: Room temperature.
Unacceptable Conditions: Specimens exposed to repeated freeze/thaw cycles.
Stability (collection to initiation of testing): Ambient: 1 week; Refrigerated: 1 month; Frozen: 3 years

Reference Interval: Cutoff concentration: 5 ng/mL

Interpretive Data: Confirmation results are obtained 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 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.

Note: This test detects hydrocodone, free hydromorphone, free codeine, free morphine, and 6-acetylmorphine.

For detection of free oxycodone and free oxymorphone, see Oxycodone/Oxymorphone, Confirmation Only, Urine (ARUP test code 2005097).

CPT Code(s): 83925

New York DOH Approved.

HOT LINE NOTE: Refer to Test Mix Addendum for interface build information.

New Test **2005096** **Opiates, Screen Only, Urine** **OPI SCR UR**

Methodology: Qualitative Enzyme Immunoassay
Performed: Sun-Sat
Reported: 1-2 days

Specimen Required: Collect: Random urine.
Specimen Preparation: Transfer 4 mL urine with no additives or preservatives to an ARUP Standard Transport Tube. (Min: 2 mL)
Storage/Transport Temperature: Room temperature.
Remarks: Specimens exposed to repeated freeze/thaw cycles.
Stability (collection to initiation of testing): Ambient: 1 week; Refrigerated: 1 month; Frozen: 3 years

Reference Interval: Cutoff concentration: 300 ng/mL

Interpretive Data: Screening results are obtained by immunoassay. Results obtained by immunoassay are not confirmed unless confirmation testing is specifically requested.

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. 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.

Note: This test detects morphine, hydrocodone, and similar compounds. For quantitation, see Opiates, Confirmation Only, Urine (ARUP test code 2005091).

For detection of oxycodone and/or oxymorphone, see Oxycodone/Oxymorphone Screen Only, Urine (ARUP test code 2005103). For quantitation, see Oxycodone/Oxymorphone, Confirmation Only, Urine (ARUP test code 2005097).

CPT Code(s): 80101

New York DOH Approved.

HOT LINE NOTE: Refer to Test Mix Addendum for interface build information.

New Test 2005093 Opiates, Screen with Reflex to Confirmation, Urine OPI RFX UR

Methodology: Qualitative Enzyme Immunoassay/Quantitative Liquid Chromatography-Tandem Mass Spectrometry
Performed: Sun-Sat
Reported: 1-4 days

Specimen Required: Collect: Random urine.
Specimen Preparation: Transfer 4 mL urine with no additives or preservatives to an ARUP Standard Transport Tube. (Min: 2 mL)
Storage/Transport Temperature: Room temperature.
Remarks: Specimens exposed to repeated freeze/thaw cycles.
Stability (collection to initiation of testing): Ambient: 1 week; Refrigerated: 1 month; Frozen: 3 years

Reference Interval: Screen cutoff concentration: 300 ng/mL

Interpretive Data: Refer to report.

Note: This test detects morphine, hydrocodone and, similar compounds.

If analyte concentration is greater than or equal to the screen cutoff value, then Opiates, Confirmation Only, Urine will be added.

For detection of oxycodone and/or oxymorphone see Oxycodone/Oxymorphone Screen with Reflex to Confirmation, Urine (ARUP test code 2005100).

CPT Code(s): 80101; if reflexed add 83925

New York DOH Approved.

HOT LINE NOTE: Refer to Test Mix Addendum for interface build information.

New Test 2004892 Ornithine Transcarbamylase Deficiency (OTC) Deletion/Duplication OTC DELDUP

Available April 18, 2011



Patient History for Ornithine Transcarbamylase Deficiency

Methodology: Polymerase Chain Reaction/Multiplex Ligation-Dependent Probe Amplification
Performed: Varies
Reported: 14 days

Specimen Required: Collect: 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.
Stability (collection to initiation of testing): Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable

Interpretive Data:

Background Information for Ornithine Transcarbamylase Deficiency (OTC) Deletion/Duplication:

Characteristics: Classic *OTC* deficiency is a urea cycle disorder characterized by hyperammonemia, cyclical vomiting, seizures, lethargy, coma and neonatal death if not treated. Clinical presentation varies widely in females, and some males can have non-classical forms.

Incidence: Approximately 1 in 20,000.

Inheritance: X-linked.

Penetrance: Variable depending on sex and mutation.

Cause: Pathogenic *OTC* gene mutations.

Clinical Sensitivity: Approximately 10 percent.

Methodology: Multiplex ligation-dependent probe amplification (MLPA) to detect large *OTC* coding region deletions/duplications.

Analytical Sensitivity and Specificity: 99 percent.

Limitations: Rare diagnostic errors can occur due to probe site mutations. Single base pair substitutions, small deletions/duplications, regulatory region mutations, and deep intronic mutations will not be detected. Large, single exon 1 deletions/duplications will not be detected. The breakpoints of large deletions/duplications will not be determined.

Counseling and informed consent are recommended for genetic testing. Consent forms are available online at www.aruplab.com.

Refer to Statement C under Testing Information at <http://www.aruplab.com>.

CPT Code(s): 83891 Isolation; 83896 x10 Nucleic acid probes; 83898 x10 Amplification; 83914 x10 Extension; 83909 Capillary electrophoresis; 83912 Interpretation and report - Additional CPT code modifiers may be required for procedures performed to test for oncologic or inherited disorders.

New York approval pending. Call for status update.

HOT LINE NOTE: Refer to Test Mix Addendum for interface build information.

New Test 2004901 Ornithine Transcarbamylase Deficiency (OTC) Sequencing OTC FGS

Available April 18, 2011



Patient History for Ornithine Transcarbamylase Deficiency

Methodology: Polymerase Chain Reaction/Sequencing
Performed: Varies
Reported: 21 days

Specimen Required: Collect: 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.
Stability (collection to initiation of testing): Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable

Interpretive Data:

Background Information for Ornithine Transcarbamylase Deficiency (OTC) Deletion/Duplication:

Characteristics: Classic *OTC* deficiency is a urea cycle disorder characterized by hyperammonemia, cyclical vomiting, seizures, lethargy, coma and neonatal death if not treated. Clinical presentation varies widely in females, and some males can have non-classical forms.

Incidence: Approximately 1 in 20,000.

Inheritance: X-linked.

Penetrance: Variable depending on sex and mutation.

Cause: Pathogenic *OTC* gene mutations.

Clinical Sensitivity: Approximately 10 percent.

Methodology: Multiplex ligation-dependent probe amplification (MLPA) to detect large *OTC* coding region deletions/duplications.

Analytical Sensitivity and Specificity: 99 percent.

Limitations: Rare diagnostic errors can occur due to primer site mutations. Regulatory region mutations, deep intronic mutations, and large deletions/duplications will not be detected. Deletion/duplication breakpoints will not be determined.

Counseling and informed consent are recommended for genetic testing. Consent forms are available online at www.aruplab.com.

Refer to Statement C under Testing Information at <http://www.aruplab.com>.

CPT Code(s): 83891 Isolation; 83898 x10 Amplification; 83904 x10 Sequencing; 83909 Capillary electrophoresis; 83912 Interpretation and report - Additional CPT code modifiers may be required for procedures performed to test for oncologic or inherited disorders.

New York DOH approval pending. Call for status update.

HOT LINE NOTE: Refer to Test Mix Addendum for interface build information.

New Test 2004896 Ornithine Transcarbamylase Deficiency (OTC) Sequencing and Deletion/Duplication OTC FGA

Available April 18, 2011



Patient History for Ornithine Transcarbamylase Deficiency

Methodology: Polymerase Chain Reaction/Sequencing/Multiplex Ligation-Dependent Probe Amplification
Performed: Varies
Reported: 35 days

Specimen Required: Collect: Lavender (EDTA), pink (K₂EDTA), or yellow (ACD Solution A or B).
Specimen Preparation: Transport 3 mL whole blood. (Min: 2 mL)
Storage/Transport Temperature: Refrigerated.
Stability (collection to initiation of testing): Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable

Interpretive Data:

Background Information for Ornithine Transcarbamylase Deficiency (OTC) Sequencing and Deletion/Duplication:

Characteristics: Classic OTC deficiency is a urea cycle disorder characterized by hyperammonemia, cyclical vomiting, seizures, lethargy, coma and neonatal death if not treated. Clinical presentation varies widely in females, and some males can have non-classical forms.

Incidence: Approximately 1 in 20,000.

Inheritance: X-linked.

Penetrance: Variable depending on sex and mutation.

Cause: Pathogenic *OTC* gene mutations.

Clinical Sensitivity: Approaches 90 percent.

Methodology: Bidirectional sequencing of the entire coding region and intron-exon boundaries of the *OTC* gene. Multiplex ligation-dependent probe amplification (MLPA) to detect large *OTC* coding region deletions/duplications.

Analytical Sensitivity and Specificity: 99 percent.

Limitations: Rare diagnostic errors can occur due to primer or probe site mutations. Regulatory region mutations and deep intronic mutations will not be detected. Large, single exon 1 deletions/duplications will not be detected. The breakpoints of large deletions/duplications will not be determined.

Counseling and informed consent are recommended for genetic testing. Consent forms are available online at www.aruplab.com.

Refer to Statement C under Testing Information at <http://www.aruplab.com>.

CPT Code(s): Sequencing: 83891 Isolation; 83898 x10 Amplification; 83904 x10 Sequencing; 83909 Capillary electrophoresis; 83912 Interpretation and report.
 Del/Dup: 83896 x10 Nucleic Acid Probes; 83898 x10 Amplification; 83914 x10 Extension; 83909 Capillary electrophoresis -
 Additional CPT code modifiers may be required for procedures performed to test for oncologic or inherited disorders.

New York DOH approval pending. Call for status update.

HOT LINE NOTE: Refer to Test Mix Addendum for interface build information.

0098834 Oxcarbazepine Metabolite OXCARB

Performed: Sun-Sat
Reported: 1-2 days

New Test 2005097 Oxycodone/Oxymorphone, Confirmation Only, Urine OXY CONF U

Methodology: Quantitative Liquid Chromatography-Tandem Mass Spectrometry
Performed: Sun-Sat
Reported: 1-4 days

Specimen Required: Collect: Random urine.
Specimen Preparation: Transfer 4 mL urine with no additives or preservatives to an ARUP Standard Transport Tube. (Min: 2 mL)
Storage/Transport Temperature: Room temperature.
Unacceptable Conditions: Specimens exposed to repeated freeze/thaw cycles.
Stability (collection to initiation of testing): Ambient: 1 week; Refrigerated: 1 month; Frozen: 3 years

Reference Interval: Cutoff concentration: 5 ng/mL

Interpretive Data: Confirmation results are obtained 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 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.

Note: This test detects free oxycodone and free oxymorphone.

For detection of hydrocodone, free hydromorphone, free codeine, free morphine, and/or 6-acetylmorphine see Opiates, Confirmation Only, Urine (ARUP test code 2005091).

CPT Code(s): 83925

New York DOH Approved.

HOT LINE NOTE: Refer to Test Mix Addendum for interface build information.

New Test 2005103 Oxycodone/Oxymorphone Screen Only, Urine OXY SCR UR

Methodology: Qualitative Enzyme Immunoassay
Performed: Sun-Sat
Reported: 1-2 days

Specimen Required: Collect: Random urine.
Specimen Preparation: Transfer 4 mL urine with no additives or preservatives to an ARUP Standard Transport Tube. (Min: 2 mL)
Storage/Transport Temperature: Room temperature.
Unacceptable Conditions: Specimens exposed to repeated freeze/thaw cycles.
Stability (collection to initiation of testing): Ambient: 1 week; Refrigerated: 1 month; Frozen: 3 years

Reference Interval: Cutoff concentration: 100 ng/mL

Interpretive Data: Screening results are obtained by immunoassay. Results obtained by immunoassay are not confirmed unless confirmation testing is specifically requested.

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. 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.

Note: This test detects oxycodone and/or oxymorphone. For quantitation, see Oxycodone/Oxymorphone, Confirmation Only, Urine (ARUP test code 2005097).

For detection of morphine, hydrocodone, and similar compounds, see Opiates, Screen Only, Urine (ARUP test code 2005096). For quantitation see Opiates, Confirmation Only, Urine (ARUP test code 2005091).

CPT Code(s): 80101

New York DOH Approved.

HOT LINE NOTE: Refer to Test Mix Addendum for interface build information.

New Test **2005100** **Oxycodone/Oxymorphone Screen with Reflex to Confirmation, Urine** **OXY RFX UR**

Methodology: Qualitative Enzyme Immunoassay/Quantitative Liquid Chromatography-Tandem Mass Spectrometry
Performed: Sun-Sat
Reported: 1-4 days

Specimen Required: Collect: Random urine.
Specimen Preparation: Transfer 4 mL urine with no additives or preservatives to an ARUP Standard Transport Tube. (Min: 2 mL)
Storage/Transport Temperature: Room temperature.
Unacceptable Conditions: Specimens exposed to repeated freeze/thaw cycles.
Stability (collection to initiation of testing): Ambient: 1 week; Refrigerated: 1 month; Frozen: 3 years

Reference Interval: Screen cutoff concentration: 100 ng/mL

Interpretive Data: Refer to report.

Note: This test detects oxycodone and oxymorphone.

If analyte concentration is greater than or equal to the screen cutoff value, then Oxycodone/Oxymorphone, Confirmation Only, Urine will be added.

For detection of morphine, hydrocodone, and similar compounds, see Opiates Screen with Reflex to Confirmation, Urine (ARUP test code 2005093).

CPT Code(s): 80101; if reflexed add 83925

New York DOH Approved.

HOT LINE NOTE: Refer to Test Mix Addendum for interface build information.

New Test **2004700** **PAM50 Breast Cancer Intrinsic Classifier** **BRST TYPE**

Currently Available

Methodology: Reverse Transcription/Quantitative Polymerase Chain Reaction
Performed: Varies
Reported: 12-14 days

Specimen Required: Collect: Tumor tissue.
Specimen Preparation: .Formalin fix (10% neutral buffered formalin) and paraffin embed tissue. Protect from excessive heat. Ship in cooled container during summer months.
Storage/Transport Temperature: Room temperature or refrigerated.
Remarks: Surgical report requested. Direct punches may be required to complete testing. Client will be contacted for permission if a direct punch is required. Tissue block will be returned after testing.
Unacceptable Conditions: Specimens with less than 75 percent tumor. Frozen specimens. Specimens fixed/processed in alternative fixatives (alcohol, Prefer®) or heavy metal fixatives (B-4 or B-5). Decalcified specimens.
Stability (collection to initiation of testing): Ambient: Indefinitely; Refrigerated: Indefinitely; Frozen: Unacceptable

Interpretive Data: Refer to report.

Refer to Statement B under Testing Information at <http://www.aruplab.com>.

Note: For more information see aruplab.com/PAM50.

CPT Code(s): 83907 Lysis; 83891 Isolation; 83902 Reverse transcription; 83898 x55 Amplification; 83912 Interpretation and report - Additional CPT code modifiers may be required for procedures performed to test for oncologic or inherited disorders.

New York approval pending. Call for status update.

HOT LINE NOTE: Refer to Test Mix Addendum for interface build information.

2004232 **Pancreastatin** **PANCREA**

Performed: Varies
Reported: 5-22 days

0099436 Pancreatic Polypeptide PAN POLY

Specimen Required: Patient Preparation: Patient should be fasting for 10 hours prior to collection of specimen.
Collect: Serum separator tube or plain red.
Specimen Preparation: Allow specimen to sit in collection tube for 15-20 minutes at room temperature for proper clot formation.
Centrifuge and 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: Frozen.
Unacceptable Conditions: Plasma. Severely hemolyzed or lipemic specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: 24 hours; Refrigerated: 24 hours; Frozen: 2 months

0060247 Parasite Examination, Macroscopic ECTO

Specimen Required: Collect: Ecto parasite larvae/worm. If scabies is suspected, scrape the stratum corneum from the leading edge of the lesion.
Specimen Preparation: Immerse ecto parasite larvae in 5-10 mL of 70-80% ethanol and place in a clean, unpreserved vial (ARUP supply #40910). Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787. Place stratum corneum (if submitting) in 2-3 mL of 70-80% alcohol in a clean, unpreserved vial. Source of specimen is preferred.
Storage/Transport Temperature: Room temperature. Submit specimen according to Biological Substance, Category B, shipping guidelines.
Unacceptable Conditions: Stool, dry specimen (unpreserved). Specimens submitted in preservative other than ethanol.
Stability (collection to initiation of testing): Ambient: 1 month; Refrigerated: 1 month; Frozen: Unacceptable

HOT LINE NOTE: There is a component change associated with this test that affects interface clients only. Refer to Test Mix Addendum for further information.

0095611 Parathyroid Hormone, CAP CAP

Specimen Required: Collect: Lavender (EDTA).
Specimen Preparation: Separate plasma from cells within one hour of collection. Transfer 2 mL plasma to an ARUP Standard Transport Tube and freeze immediately. (Min: 2 mL)
Storage/Transport Temperature: CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.
Unacceptable Conditions: Thawed specimens. Specimens not collected in lavender (EDTA). Specimens not frozen within one hour of collection.
Stability (collection to initiation of testing): Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen: 1 year

2004366 Paroxysmal Nocturnal Hemoglobinuria, High Sensitivity, RBC PNH RBC

Specimen Required: Collect: Lavender (EDTA), pink (K₂EDTA), 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 4 days of collection.
Unacceptable Conditions: Clotted, hemolyzed, or frozen specimens. Specimens older than 4 days.
Stability (collection to initiation of testing): Ambient: 4 days; Refrigerated: 4 days; Frozen: Unacceptable

Interpretive Data: This assay tests for CD59 on erythrocytes using flow cytometry. The percentage of red blood cells (RBCs) with normal expression of CD59 is decreased in paroxysmal nocturnal hemoglobinuria (PNH). The presence of a subclinical (0.005 percent-0.999 percent) 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).

The lower limit of detection of this assay is 0.005 percent PNH cells and distinguishes between Type II and Type III cells when the PNH cell percentage is 1 percent or greater. Glycophorin A is used to gate the RBC population. CD59 is the GPI-linked antigen.

Refer to Statement A under Testing Information at <http://www.aruplab.com>.

Note: For initial diagnosis of PNH, Paroxysmal Nocturnal Hemoglobinuria Panel, RBC and WBC (ARUP test code 2005006), which analyzes both RBCs and WBCs, is recommended.

For accurate measurement of the PNH clone size, Paroxysmal Nocturnal Hemoglobinuria, WBC (ARUP test code 2005003) is recommended.

New Test 2005006 Paroxysmal Nocturnal Hemoglobinuria Panel, RBC and WBC PNH PAN

Methodology: Quantitative Flow Cytometry
Performed: Sun-Sat
Reported: 1-4 days

Specimen Required: Collect: Lavender (EDTA), pink (K₂EDTA), or green (sodium or lithium heparin).
Specimen Preparation: Transport 4 mL whole blood. (Min: 3 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Frozen specimens. Specimens older than 72 hours. Clotted or hemolyzed specimens.
Stability (collection to initiation of testing): Ambient: Unacceptable; Refrigerated: 72 hours; Frozen: Unacceptable

Reference Interval: By report

Interpretive Data: This panel was developed according to recently published guidelines (Cytometry B Clin Cytom. 2010 Jul; 78(4):211-30) and includes diagnostic WBC analysis and high sensitivity RBC analysis. The WBC analysis has a lower limit of detection of 0.1 percent PNH cells and uses FLAER, CD14, and CD24 as GPI-linked markers with CD15 and CD33 as lineage-specific markers. The high sensitivity RBC analysis has a lower limit of detection of 0.005 percent PNH cells and quantifies Type II and Type III RBC populations when the percentage of PNH RBCs is greater than 1 percent. Glycophorin A is used to gate the RBC population. CD59 is the GPI-linked antigen.

Refer to Statement A under Testing Information at <http://www.aruplab.com>.

Note: For initial diagnosis of PNH, Paroxysmal Nocturnal Hemoglobinuria Panel, RBC and WBC (ARUP test code 2005006), which analyzes both RBCs and WBCs, is recommended.

For accurate measurement of the PNH clone size, Paroxysmal Nocturnal Hemoglobinuria, WBC (ARUP test code 2005003) is recommended.

For delineation of Types II and III RBC populations when the PNH clone is 1 percent or greater, Paroxysmal Nocturnal Hemoglobinuria, High Sensitivity, RBC (ARUP test code 2004366) is recommended. This assay also detects minor (0.005-0.999 percent) PNH clone populations that are found in bone marrow failure disorders.

CPT Code(s): 86356 CD14; 86356 CD15; 86356 CD24; 86356 CD33; 86356 FLAER; 86356 CD59; 86356 Glycophorin

New York DOH approval pending. Call for status update.

HOT LINE NOTE: Refer to Test Mix Addendum for interface build information.

New Test **2005003** **Paroxysmal Nocturnal Hemoglobinuria, WBC** **PNH WBC**

Methodology: Quantitative Flow Cytometry
Performed: Sun-Sat
Reported: 2-4 days

Specimen Required: Collect: Lavender (EDTA), pink (K₂EDTA), or green (sodium or lithium heparin).
Specimen Preparation: Transport 4 mL whole blood. (Min: 4 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Frozen specimens. Specimens older than 72 hours. Clotted or hemolyzed specimens
Stability (collection to initiation of testing): Ambient: Unacceptable; Refrigerated: 72 hours; Frozen: Unacceptable

Reference Interval: By report

Interpretive Data: This assay was developed according to recently published guidelines (Cytometry B Clin Cytom. 2010 Jul; 78 (4):211-30), and includes diagnostic WBC analysis using FLAER, CD14, and CD24 as GPI-linked markers with CD15 and CD33 as lineage specific markers. The lower limit of detection of this assay is 0.1 percent PNH cells and is the most accurate measurement of the PNH clone size used in determining therapy in conventional PNH.

Refer to Statement A under Testing Information at <http://www.aruplab.com>.

Note: For initial diagnosis of PNH, Paroxysmal Nocturnal Hemoglobinuria Panel, RBC and WBC (ARUP test code 2005006), which analyzes both RBCs and WBCs, is recommended.

For delineation of Types II and III RBC populations when the PNH clone is 1 percent or greater, Paroxysmal Nocturnal Hemoglobinuria, High Sensitivity, RBC (ARUP test code 2004366) is recommended. This assay also detects minor (0.005-0.999 percent) PNH clone populations that are found in bone marrow failure disorders.

CPT Code(s): 86356 CD14; 86356 CD15; 86356 CD24; 86356 CD33; 86356 FLAER

New York DOH approval pending. Call for status update.

HOT LINE NOTE: Refer to Test Mix Addendum for interface build information.

Delete **0096666** **Paroxysmal Nocturnal Hemoglobinuria Profile, High Resolution - WBC** **PNH-WBC**

HOT LINE NOTE: Delete this test and refer to Paroxysmal Nocturnal Hemoglobinuria, WBC (2005003).

0030235 **Partial Thromboplastin Time** **PTT**

Specimen Required: Collect: Lt. blue (sodium citrate).
Specimen Preparation: Separate serum from cells ASAP or within 2 hours of collection and freeze. Transfer 1 mL platelet-poor plasma to an ARUP Standard Transport Tube.
Storage/Transport Temperature: Frozen.
Unacceptable Conditions: Serum. Specimens refrigerated or at room temperature for greater than four hours. Clotted or hemolyzed specimens.
Stability (collection to initiation of testing): Ambient: 4 hours; Refrigerated: 4 hours; Frozen: **2 weeks**

0020507 **pH, Body Fluid** **PH-FL**

Specimen Required: Collect: Body fluid.
Specimen Preparation: **Mix well.** Transfer 4 mL body fluid to an ARUP Standard Transport Tube. (Min: 2 mL)
Storage/Transport Temperature: Frozen.
Remarks: Indicate source on test request form.
Unacceptable Conditions: Highly viscous specimens.
Stability (collection to initiation of testing): Ambient: 1 hour; Refrigerated: 24 hours; Frozen: 6 months

0020305 pH, Urine

UA PH

Specimen Required: Collect: Random urine.
Specimen Preparation: Mix well. Transfer 4 mL urine to an ARUP Standard Transport Tube. (Min: 2 mL)
Storage/Transport Temperature: Refrigerated.
Remarks: Record collection time on test request form.
Stability (collection to initiation of testing): Ambient: 1 hour; Refrigerated: 24 hours; Frozen: Unacceptable

0091418 Phenothiazines Screen, Serum or Plasma

PHENOTH SP

Specimen Required: Collect: Plain red or lavender (EDTA).
Specimen Preparation: Transfer 4 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 2.4 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Separator tubes.
Stability (collection to initiation of testing): Ambient: 1 week; Refrigerated: 8 days; Frozen: 9 months

Note: Confirmation testing is automatically performed on all positive screens.

CPT Code(s): 84022; if positive, add 80102

0091417 Phenothiazines Screen, Urine

PHENOTH U

Specimen Required: Collect: Random urine.
Specimen Preparation: Transfer 4 mL urine to an ARUP Standard Transport Tube. (Min: 1.4 mL)
Storage/Transport Temperature: Refrigerated.
Stability (collection to initiation of testing): Ambient: 1 week; Refrigerated: 8 days; Frozen: 9 months

Note: Confirmation testing is automatically performed on all positive screens.

CPT Code(s): 84022; if positive, add 80102

HOT LINE NOTE: Remove information found in both the Remarks field and Unacceptable Conditions fields under Specimen Requirements.

0090090 Phenytoin

DIL

Interpretive Data: The therapeutic range for phenytoin applies to non-uremic patients. In critically ill uremic patients who are receiving fosphenytoin, the value reported may be higher than the patient's actual serum concentration due to interfering substances.

New Test 2004980 Plasminogen Activator Inhibitor-1, PAI-1 (SERPINE1) PAI-1 GENO
Genotyping

Available April 18, 2011



Patient History For Molecular Genetics

Methodology: Polymerase Chain Reaction/Fluorescence Monitoring
Performed: Mon, Thu
Reported: 7-10 days

Specimen Required: Collect: 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.
Stability (collection to initiation of testing): Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable

Reference Interval: By report

Interpretive Data:

Background Information: Plasminogen Activator Inhibitor-1, PAI-1 (SERPINE1) Genotyping:

Characteristics: The 4G allele within in the promoter region of the PAI-1 (*SERPINE1*) gene is associated with higher plasma PAI-1 activity when compared with the 5G allele. Heterozygosity or homozygosity for the 4G allele confers a risk for venous thromboembolism (VTE), especially in individuals with other thrombophilic risk factors, as well as a risk for myocardial infarction.

Frequency of the 4G Allele: Caucasian 0.52, Hispanic 0.38, African-American 0.13-0.28.

Inheritance: Autosomal dominant.

Clinical sensitivity: Unknown.

Methodology: Polymerase chain reaction and fluorescence monitoring.

Analytical Sensitivity and Specificity: 99 percent.

Limitations: Variants in the PAI-1 (*SERPINE1*) gene, other than the 4G/5G polymorphism, are not evaluated. Rare diagnostic errors may occur due to primer and probe site mutations.

This test is performed pursuant to an agreement with Roche Molecular Systems, Inc.

Counseling and informed consent are recommended for genetic testing. Consent forms are available online at www.aruplab.com.

Refer to Statement C under Testing Information at <http://www.aruplab.com>.

CPT Code(s): 83891 Isolation; 83898 Amplification; 83896 x2 Nucleic acid probes; 83912 Interpretation and report - Additional CPT code modifiers may be required for procedures performed to test for oncologic or inherited disorders.

New York DOH approval pending. Call for status update.

HOT LINE NOTE: Refer to Test Mix Addendum for interface build information.

0080260 Porphobilinogen (PBG), Urine PBGQT

Specimen Required: Collect: 24-hour or random urine. Refrigerate 24-hour specimens during collection.
Specimen Preparation: Protect from light. Transfer 8 mL aliquot from a well-mixed 24-hour collection to ARUP Amber Transport Tubes. (Min: 3.5 mL) Record total volume and collection time interval on transport tube and test request form.
Storage/Transport Temperature: Frozen.
Unacceptable Conditions: Body fluids other than urine.
Stability (collection to initiation of testing): Ambient: Unacceptable; Refrigerated: 4 days; Frozen: 1 month

2002181 Porphyrins & Porphobilinogen (PBG), Urine PORUFPBGU

Specimen Required: Collect: 24-hour or random urine. Refrigerate 24-hour specimens during collection.
Specimen Preparation: Protect from light. Transfer 8 mL aliquot to an ARUP Amber Transport Tube. (Min: 4 mL) Record total volume and collection time interval on transport tube and test request form.
Storage/Transport Temperature: Frozen.
Unacceptable Conditions: Body fluids other than urine.
Stability (collection to initiation of testing): Ambient: Unacceptable; Refrigerated: 4 days; Frozen: 1 month

2002058 Porphyrins, Fractionation & Quantitation, Urine PORURINE

Specimen Required: Collect: 24-hour or random urine. Refrigerate 24-hour specimens during collection.
Specimen Preparation: Protect from light. Transfer 4 mL aliquot of urine to an ARUP Amber Transport Tube. (Min: 2 mL) Record total volume and collection time interval on transport tube and test request form.
Storage/Transport Temperature: Frozen.
Unacceptable Conditions: Body fluids other than urine.
Stability (collection to initiation of testing): Ambient: Unacceptable; Refrigerated: 4 days; Frozen: 1 month

Delete 0051116 Prader-Willi Syndrome by Methylation PRADER

HOT LINE NOTE: Delete this test and refer to *Angelman Syndrome and Prader-Willi Syndrome by Methylation (2005077)*.

0091488 Prazosin, Urine PRAZOSI UR

Specimen Required: Collect: Random urine.
Specimen Preparation: Transfer 3 mL urine at to an ARUP Standard Transport Tube. (Min: 1.2 mL)
Storage/Transport Temperature: Refrigerated.
Stability (collection to initiation of testing): Ambient: Undetermined; Refrigerated: Undetermined; Frozen: Undetermined

0070110 Progesterone PROGES

Methodology: Chemiluminescent Immunoassay

Specimen Required: Collect: Serum separator tube or red top tube.
Specimen Preparation: Allow specimen to clot completely at room temperature before centrifuging. Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.2 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Specimens submitted in lavender (EDTA), green (lithium or sodium heparin), lt. blue (sodium citrate), or gray (sodium fluoride/potassium oxalate). **Specimens shipped in gel separator tube.**
Stability (collection to initiation of testing): After separation from cells: Ambient: 8 hours; Refrigerated: 1 week; Frozen: 3 months

Reference Interval:

Pediatric, Male and Female	
1-5 months	0.3-17.0 ng/mL
6-12 months	2.0 ng/mL or less
1-9 years	1.3 ng/mL or less

Adult, Male	
10 years and older	0.6 ng/mL or less

Adult, Female	
Follicular phase	1.1 ng/mL or less
Luteal phase	1.0-21.0 ng/mL
Mid-luteal phase	6.0-24.0 ng/mL
Post-menopausal	1.0 ng/mL or less
Pregnancy, 1 st trimester	9.3-33.2 ng/mL
Pregnancy, 2 nd trimester	29.5-50.0 ng/mL
Pregnancy, 3 rd trimester	83.1-160.0 ng/mL

0030114 Protein S, Functional PROT S F

Interpretive Data: Patients on oral anticoagulants may have decreased functional protein S values. Patients should be off oral anticoagulant therapy for two weeks for accurate measurement of functional protein S. Artificially increased functional protein S values may be due to heparin therapy or the presence of direct thrombin inhibitors.

0030215 Prothrombin Time PT

Specimen Required: Collect: Lt. blue (sodium citrate).
Specimen Preparation: Separate plasma from cells within 24 hours. Transfer 1 mL platelet-poor plasma to an ARUP Standard Transport Tube. (Min: 0.5 mL)
Storage/Transport Temperature: Frozen.
Unacceptable Conditions: Serum. Clotted, hemolyzed, or refrigerated specimens.
Stability (collection to initiation of testing): Ambient: 24 hours; Refrigerated: **Unacceptable**; Frozen: **2 weeks**

0080342 Pyridinoline & Deoxypyridinoline by HPLC PYD & DPD

Specimen Required: Patient Preparation: First morning void.
Collect: Urine.
Specimen Preparation: Transfer 8 mL urine to ARUP Standard Transport Tubes. (Min: 4 mL)
Storage/Transport Temperature: Frozen.
Unacceptable Conditions: Random urine.
Stability (collection to initiation of testing): Ambient: Unacceptable; Refrigerated: 1 week; Frozen: 6 months

2003277 Rheumatoid Arthritis Panel RA PAN

Performed: Sun-Sat
Reported: Within 24 hours

Specimen Required: Patient Preparation: Fasting specimen preferred.
Collect: Serum separator tube.
Specimen Preparation: Allow serum to clot completely at room temperature before centrifuging. Transfer 2 mL serum to an ARUP Standard Transport Tube. (Min: 1 mL) Serum is the only acceptable specimen type for this assay without a disclaimer.
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: **Urine** or plasma. **Contaminated, heat-inactivated,** hemolyzed, **icteric,** or severely lipemic specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: 24 hours; Refrigerated: 1 week; Frozen: 2 weeks (avoid repeated freeze/thaw cycles)

New Test 2003382 Ristocetin-Induced Platelet Aggregation RIPA

Available April 18, 2011



Time Sensitive



UUHSC Testing Only

Methodology: Qualitative Aggregation
Performed: Tue
Reported: 1-2 days

Specimen Required: Patient Preparation: Patient must fast from midnight until specimen is drawn in a.m. Patient may drink water.
Collect: **Hemostasis/Thrombosis laboratory must be called at (801) 583-2787 extension 2151 to schedule testing before specimen is drawn.** Lt. blue (sodium citrate). **AND** lavender (EDTA) or pink (K₂EDTA).
Specimen Preparation: Specimen must be received within one hour of draw. Transport 15 mL whole blood (lt. blue) **AND** 5 mL whole blood (EDTA). ((Min: 15 mL whole blood (lt. blue) **AND** 5 mL whole blood (EDTA))
Storage/Transport Temperature: **CRITICAL ROOM TEMPERATURE.**
Remarks: Include list of current medications and most recent platelet count.
Unacceptable Conditions: **Specimens not collected at ARUP's Red Butte Clinic.** Specimens that have been centrifuged or refrigerated.
Stability (collection to initiation of testing): Ambient: 1 hour; Refrigerated: Unacceptable; Frozen: Unacceptable

Reference Interval:

Ristocetin-Induced Platelet Aggregation High Dose	Normal
Ristocetin-Induced Platelet Aggregation Low Dose	Normal

CPT Code(s): 85576

New York DOH approval pending. Call for status update.

HOT LINE NOTE: Refer to Test Mix Addendum for interface build information.

New Test 0099772 Secretin

SECRETIN

Available April 18, 2011

Methodology: Quantitative Radioimmunoassay
Performed: Varies
Reported: Varies

Specimen Required: Patient Preparation: Patient should be fasting for 10-12 hours prior to collection of specimen. Medications affecting intestinal motility or insulin levels should be discontinued, if possible 48 hours prior to collection.
Collect: GI preservative tube (ARUP supply #47531). Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787. Tubes for this test are provided at a cost of \$30 each.
Specimen Preparation: Separate plasma from cells within 10 minutes. Transfer 3 mL plasma to an ARUP Standard Transport Tube and freeze immediately. (Min: 1 mL)
Storage/Transport Temperature: **CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.**
Unacceptable Conditions: Specimens not collected in a GI preservative tube.
Stability (collection to initiation of testing): Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen: 6 months

Reference Interval: By report

CPT Code(s): 83519

New York DOH approval pending. Call for status update.

2003243 Septin 9 (SEPT9), Methylated DNA Detection by Real-Time PCR

SEPTIN 9

Specimen Required: Collect: Lavender (EDTA). Collect a minimum of 10 mL whole blood. Also acceptable: Collection kits available upon request (ARUP supply #46270). Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787.
Specimen Preparation: Allow whole blood to sit for 30 minutes post draw. Within 4 hours of collection, spin (1350 g) for 12 minutes. Transfer plasma to a 15 mL conical tube. Spin plasma for another 12 minutes at the same speed. Transfer 4 mL of plasma to a 4 mL cryovial tube or any freezable specimen transport tube. (Min: 4 mL)
Storage/Transport Temperature: Frozen.
Remarks: Accurate test performance requires following specimen preparation instructions.
Unacceptable Conditions: Refrigerated or room temperature plasma. Whole blood, serum, or stool. Less than 4 mL of plasma.
Stability (collection to initiation of testing): Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen: Indefinitely

0080397 Serotonin, Serum

SEROT-SER

Specimen Required: Patient Preparation: Abstain from medications for 72 hours prior to collection.
Collect: Serum separator tube.
Specimen Preparation: Spin and separate within one hour. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.3 mL)
Storage/Transport Temperature: **CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.**
Unacceptable Conditions: Specimens other than serum. Non-frozen specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: Unacceptable; Refrigerated: 24 hours; Frozen: 1 month

Note: Medications that may affect serotonin concentrations include lithium, MAO inhibitors, methyl dopa, morphine, and reserpine. In general, foods that contain serotonin do not interfere significantly. Slight increases may be seen in acute intestinal obstruction, acute MI, cystic fibrosis, dumping syndromes, and nontropical sprue. Metastasizing abdominal carcinoid tumors often show serotonin concentrations greater than 400 ng/mL.

In general, EDTA whole blood (as compared to serum) preserved with ascorbic acid will give values most representative of blood concentrations. Most (95 percent) of blood serotonin is found in platelets. Refer to Serotonin, Whole Blood (ARUP test code 0080395).

HOT LINE NOTE: Remove information found in the Remarks field under Specimen Requirements.

0080395 Serotonin, Whole Blood SEROT-WB

Specimen Required: Patient Preparation: Abstain from medications for 72 hours prior to collection.
Collect: Lavender (EDTA) or pink (K₂EDTA).
Specimen Preparation: **Place on ice.** Transfer 3 mL whole blood to an ARUP **Serotonin** Transport Tube containing ascorbic acid (ARUP supply #16568). **Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787.** (Min: 1 mL) Mix well. Specimen must be preserved and frozen within 2 hours of collection.
Storage/Transport Temperature: **CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.**
Remarks: Serotonin, Serum (ARUP test code 0080397) is recommended for patients that are difficult to draw.
Unacceptable Conditions: Non-frozen specimens. **Specimens other than whole blood.**
Stability (collection to initiation of testing): After transfer to Serotonin Transport Tube: Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen: 1 month

2001573 Soluble CD30 SCD30

Specimen Required: Collect: Serum separator tube, plain red, or green (lithium heparin).
Specimen Preparation: Separate serum or plasma from cells ASAP or within 2 hours of collection. Transfer 1 mL serum or plasma into an ARUP Standard Transport Tube. (Min: 0.3 mL)
Storage/Transport Temperature: **Frozen. Separate specimens must be submitted when multiple tests are ordered.**
Unacceptable Conditions: Heat-inactivated, refrigerated or contaminated specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: 30 minutes; Refrigerated: Unacceptable; Frozen: 1 year

HOT LINE NOTE: Please remove the information found in the Remarks field under Specimen Requirements.

0081284 Soluble Mesothelin Related Peptides (MESOMARK®) MESO

Performed: Thu
Reported: 1-8 days

Delete 0020375 Starch, Fecal FECSTARCH

HOT LINE NOTE: Delete this test. No referral available.

0060135 Stool Culture, *Campylobacter* MC CAMP

Specimen Required: Collect: Stool.
Specimen Preparation: Preserve 5 mL stool in enteric transport media immediately (ARUP supply #29799). **Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787. (Min: 1 mL)**
Storage/Transport Temperature: Refrigerated. Submit specimen according to Biological Substance, Category B, shipping guidelines.
Unacceptable Conditions: Non-sterile or leaking containers. Dry specimens or multiple specimens (more than one in 24 hours). Delayed transport to ARUP without use of appropriate preservative.
Stability (collection to initiation of testing): Unpreserved: Ambient: 2 hours; Refrigerated: Unacceptable; Frozen: Unacceptable
 Preserved: Ambient: **72 hours**; Refrigerated: **72 hours**; Frozen: Unacceptable

0060134 Stool Culture, Routine (Includes *E. coli* Shiga-like Toxin by EIA 0060047) MC SSC

Methodology: Standard reference procedures for *Salmonella*, *Shigella*, *Campylobacter*, and *E. coli* 0157 culture and identification.

Specimen Required: Collect: Stool.
Specimen Preparation: Preserve 5 mL stool to enteric transport media immediately after collection (ARUP supply #29799). **Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787. (Min: 1 mL)**
Storage/Transport Temperature: Refrigerated. Submit specimen according to Biological Substance, Category B, shipping guidelines.
Unacceptable Conditions: Non-sterile or leaking containers. Dry specimens, multiple specimens (more than one in 24 hours). Delayed transport without use of appropriate preservative.
Stability (collection to initiation of testing): Unpreserved: Ambient: 2 hours; Refrigerated: Unacceptable; Frozen: Unacceptable
 Preserved: Ambient: **72 hours**; Refrigerated: **72 hours**; Frozen: Unacceptable

Reference Interval: Culture negative for *Salmonella*, *Shigella*, *Campylobacter*, and *E. coli* 0157.

Note: Routine Stool Culture includes culture for *Salmonella*, *Shigella*, *Campylobacter*, and *E. coli* 0157 as well as EIA for Shiga-like toxin from *E. coli*.

To send an isolate for Shiga-like toxin testing (eg STEC), refer to *E. coli* Shiga-like Toxin by EIA (ARUP test code 0060047).

0060136 Stool Culture, *Vibrio* MC VIB

Specimen Required: Collect: Stool.
Specimen Preparation: Preserve 5 mL stool in enteric transport media immediately (ARUP supply #29799). Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787. (Min: 1 mL)
Storage/Transport Temperature: Refrigerated. Submit specimen according to Biological Substance, Category B, shipping guidelines.
Unacceptable Conditions: Non-sterile or leaking containers. Dry specimens or multiple specimens (more than one in 24 hours). Delayed transport without use of appropriate preservative.
Stability (collection to initiation of testing): Unpreserved: Ambient: 2 hours; Refrigerated: Unacceptable; Frozen: Unacceptable
 Preserved: Ambient: 72 hours; Refrigerated: 72 hours; Frozen: Unacceptable

0060137 Stool Culture, *Yersinia* MC YERS

Specimen Required: Collect: Stool.
Specimen Preparation: Preserve 5 mL stool in enteric transport media immediately (ARUP supply #29799). Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787. (Min: 1 mL)
Storage/Transport Temperature: Refrigerated. Submit specimen according to Biological Substance, Category B, shipping guidelines.
Unacceptable Conditions: Non-sterile or leaking containers. Dry specimens or multiple specimens (more than one in 24 hours). Delayed transport without use of appropriate preservative.
Stability (collection to initiation of testing): Unpreserved: Ambient: 2 hours; Refrigerated: Unacceptable; Frozen: Unacceptable
 Preserved: Ambient: 72 hours; Refrigerated: 72 hours; Frozen: Unacceptable

0060126 *Streptococcus* (Group A) Culture MC STREP

CPT Code(s): 87081 presumptive identification. If definitive identification is required, add 87077.

0091574 Strychnine STRYCHNI S

Specimen Required: Collect: Plain red or lavender (EDTA).
Specimen Preparation: Transfer 5 mL serum or plasma to ARUP Standard Transport Tubes. (Min: 2.2 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Separator tubes.
Stability (collection to initiation of testing): Ambient: Undetermined; Refrigerated: Undetermined; Frozen: Undetermined

2003246 Testosterone, Free, Adult Males by ED/LC-MS/MS FREE T TMS

HOT LINE NOTE: Name change only.

0030177 Thrombotic Risk, Inherited Etiologies (Uncommon) THROMUNCOM

Methodology: Refer to individual components

Interpretive Data: Refer to report.

0050105 Thyroglobulin Antibody ATHYG

Specimen Required: Collect: Serum separator tube.
Specimen Preparation: Transfer 0.5 mL serum to an ARUP Standard Transport Tube. (Min: 0.3 mL) Also acceptable: Heparinized plasma.
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Grossly hemolyzed or lipemic specimens. EDTA plasma.
Stability (collection to initiation of testing): After separation from cells: Ambient: 8 hours; Refrigerated: 1 week; Frozen: 6 months

0050645 Thyroid Antibodies THYRO

Specimen Required: Collect: Serum separator tube. Also acceptable: Green (sodium or lithium heparin).
Specimen Preparation: Transfer 0.5 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.3 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Grossly hemolyzed or lipemic specimens. EDTA plasma.
Stability (collection to initiation of testing): After separation from cells: Ambient: 8 hours; Refrigerated: 1 week; Frozen: 6 months

0050075 Thyroid Peroxidase (TPO) Antibody

AMICR

Specimen Required: Collect: Serum separator tube. Also acceptable: Lavender (EDTA), pink (K₂ EDTA), or green (sodium or lithium heparin).
Specimen Preparation: Transfer 0.5 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.3 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Grossly hemolyzed or lipemic specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: 8 hours; Refrigerated: **1 week**; Frozen: 6 months

0070145 Thyroid Stimulating Hormone

TSH

Reference Interval:

	Males	Females
Cord Blood	2.00-40.00 mU/L	2.00-40.00 mU/L
0-3 days	5.17-14.60 mU/L	5.17-14.60 mU/L
4-30 days	0.43-16.10 mU/L	0.43-16.10 mU/L
1-24 months	0.62-8.05 mU/L	0.62-8.05 mU/L
2-6 years	0.54-4.53 mU/L	0.54-4.53 mU/L
7-11 years	0.66-4.14 mU/L	0.66-4.14 mU/L
12-19 years	0.53-3.59 mU/L	0.53-3.59 mU/L
20 years and older	0.30-4.00 mU/L	0.30-4.00 mU/L
1st trimester (10-13 weeks gestation)		0.03-3.40 mU/L
2nd trimester (14-20 weeks gestation)		0.19-4.06 mU/L

0070225 Thyroid Stimulating Hormone 3rd Generation

TSH 3

Reference Interval:

	Males	Females
Cord Blood	2.000-40.000 mU/L	2.000-40.000 mU/L
0-3 days	5.170-14.600 mU/L	5.170-14.600 mU/L
4-30 days	0.430-16.100 mU/L	0.430-16.100 mU/L
1-24 months	0.620-8.050 mU/L	0.620-8.050 mU/L
2-6 years	0.540-4.530 mU/L	0.540-4.530 mU/L
7-11 years	0.660-4.140 mU/L	0.660-4.140 mU/L
12-19 years	0.530-3.590 mU/L	0.530-3.590 mU/L
20 years and older	0.300-4.000 mU/L	0.300-4.000 mU/L
1st trimester (10-13 weeks gestation)		0.03-3.40 mU/L
2nd trimester (14-20 weeks gestation)		0.19-4.06 mU/L

0070138 Thyroxine, Free (Free T4)

FT4

Reference Interval:

Free Thyroxine, ng/dL	
0-3 days	0.7-2.7 ng/dL
4-30 days	0.8-3.1 ng/dL
1-23 months	0.5-2.3 ng/dL
2-6 years	0.9-1.8 ng/dL
7-11 years	0.9-1.7 ng/dL
12-19 years	0.9-1.6 ng/dL
20 years and older	0.8-1.7 ng/dL
Pregnancy, 1st Trimester	0.9-1.4 ng/dL
Pregnancy, 2nd Trimester	0.7-1.3 ng/dL

0093244 Thyroxine, Free by Equilibrium Dialysis/HPLC-Tandem Mass Spectrometry FT4 ED-TMS

Specimen Required: Collect: Plain red.
Specimen Preparation: Transfer 2 mL serum to an ARUP Standard Transport Tube. (Min: 0.3 mL)
Storage/Transport Temperature: Refrigerated.
Stability (collection to initiation of testing): After separation from cells: Ambient: 4 days; Refrigerated: 2 weeks; Frozen: 1 month

Reference Interval:

Free Thyroxine ng/dL		
Age	Female	Male
25-30 weeks gestation:	0.5-3.3 ng/dL	0.5-3.3 ng/dL
31-36 weeks gestation:	1.3-4.7 ng/dL	1.3-4.7 ng/dL
Birth to 1 week:	2.2-5.3 ng/dL	2.2-5.3 ng/dL
2-3 weeks:	0.9-4.0 ng/dL	0.9-4.0 ng/dL
1-5 months:	1.1-2.2 ng/dL	1.1-2.2 ng/dL
6 months- 6 years	1.4-2.7 ng/dL	1.4-2.7 ng/dL
7 years- 17 years:	1.1-2.0 ng/dL	1.1-2.0 ng/dL
18 years and older	1.1-2.4 ng/dL	1.1-2.4 ng/dL
Pregnancy, 1 st Trimester	0.7-2.0 ng/dL	
Pregnancy, 2 nd Trimester	0.7-2.1 ng/dL	
Pregnancy, 3 rd Trimester	0.5-1.6 ng/dL	

0099187 Tissue Plasminogen Activator, Antigen TPA AG

Performed: Tue, Fri
Reported: 1-8 days

0070390 Topiramate TOPIR

Performed: Sun-Sat
Reported: 1-2 days

0096372 Toxic-Shock Syndrome Panel, MAID TOXIC SHOC

Methodology: Qualitative Multi-Analyte Immunodetection
Specimen Required: Collect: Pure culture of *Staphylococcus aureus*.
Specimen Preparation: Transport safely contained, pure culture in a sealed container.
Storage/Transport Temperature: Room temperature.
Stability (collection to initiation of testing): Ambient: Undetermined; Refrigerated: Undetermined; Frozen: Undetermined

0051272 Transplantation (ImmuKnow®) Immune Cell Function Assay TICFA

Performed: Mon-Sun
Reported: 1-2 days

Interpretive Data: This assay quantifies the concentration of adenosine triphosphate (ATP) produced by circulating immune cells in response to phytohemagglutinin-L (PHA-L) stimulation. This assay does not directly quantify the level of immunosuppression.

ATP Level	Result	Interpretation	Risk of Infection	Risk of Rejection
225 ng/mL or lower	Low	The patient's circulating immune cells are showing low response to PHA stimulation.	Increased	Decreased
226-524 ng/mL	Moderate	The patient's circulating immune cells are showing moderate response to PHA stimulation.	Normal	Decreased
525 ng/mL or greater	Strong	The patient's circulating immune cells are showing strong response to PHA stimulation.	Normal	Increased

0091101 Trifluoperazine, Urine TRIFLU UR

Specimen Required: Collect: Random urine.
Specimen Preparation: Transfer 3 mL urine to an ARUP Standard Transport Tube. (Min: 1.2 mL)
Storage/Transport Temperature: Refrigerated.
Stability (collection to initiation of testing): Ambient: 9 days; Refrigerated: 9 days; Frozen: 9 months

HOT LINE NOTE: Remove information found in the Unacceptable Conditions field under Specimen Requirements.

0093243 Triiodothyronine, Free by Equilibrium Dialysis/HPLC-Tandem Mass Spectrometry

FT3 ED-TMS

Specimen Required: Collect: Plain red.

Specimen Preparation: Transfer 2 mL serum to an ARUP Standard Transport Tube. (Min: 0.3 mL)

Storage/Transport Temperature: Refrigerated.

Stability (collection to initiation of testing): After separation from cells: Ambient: 4 days; Refrigerated: 2 weeks; Frozen: 1 month

Reference Interval:

Free Triiodothyronine pg/mL		
Age	Female	Male
6 month-6 years	3.8-8.5 pg/mL	3.7-7.7 pg/mL
7-12 years	3.6-6.5 pg/mL	3.7-6.4 pg/mL
13-17 years	2.9-5.6 pg/mL	3.4-6.1 pg/mL
18 years and older	3.2-6.6 pg/mL	3.2-6.6 pg/mL
Pregnancy, 1 st Trimester	3.0-5.7 pg/mL	
Pregnancy, 2 nd Trimester	2.3-5.6 pg/mL	
Pregnancy, 3 rd Trimester	3.0-5.7 pg/mL	

0020480 Urea Nitrogen, Urine

UUN

Specimen Required: Collect: 24-hour urine (no additive). Refrigerate during collection. Also acceptable: Random urine.

Specimen Preparation: Transfer 3 mL aliquot from a well-mixed 24-hour collection to an ARUP Standard Transport Tube. (Min: 0.5 mL) Record total volume and collection time interval on transport tube and test request form.

Storage/Transport Temperature: Refrigerated.

Unacceptable Conditions: Urine collected with acid. Specimens stored at room temperature.

Stability (collection to initiation of testing): Ambient: 48 hours; Refrigerated: 1 week; Frozen: 1 month

0065031 Ureaplasma urealyticum & Mycoplasma hominis Culture

V UREA

Specimen Required: Collect: Urine, urethral or cervical swab, semen, tissue, body fluid, CSF, respiratory.

Specimen Preparation: Place swab or specimen in Mycoplasma/Ureaplasma transport media (ARUP supply #12884) immediately.

Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787. Use a sterile, leak-proof container for tissue or fluids if Mycoplasma/Ureaplasma transport media is unavailable. (Min: 0.5 mL) Place each specimen in a separate, individually sealed bag. **Source of specimen is required.** Also acceptable: Any transport media validated for Mycoplasma/Ureaplasma transport (DO NOT USE M4 RT).

Storage/Transport Temperature: Frozen. Transport specimen on dry ice. Submit specimen according to Biological Substance, Category B, shipping guidelines.

Unacceptable Conditions: M4 RT, swabs in culettes, Non-patient specimens. Dry swabs.

Stability (collection to initiation of testing): Ambient: 8 hours; Refrigerated: 48 hours in Mycoplasma/Ureaplasma transport media; Frozen at -70°C: 1 month

Note: This culture will recover both *Mycoplasma hominis* and *Ureaplasma urealyticum*, if present.

No environmental cultures performed. This testing is not suitable for determining mycoplasma contamination in any cell line or tissue culture.

HOT LINE NOTE: Remove information found in the Remarks field under Specimen Requirements.

0081145 Urine Supersaturation Profile

URINE SAT

Specimen Required: Collect: 24-hour urine. Use Kidney Stone/Supersaturation Urine Collection Kit (ARUP supply# 46007). Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787. Specimens should be refrigerated during collection.

Specimen Preparation: Specimen should be delivered to laboratory ASAP following collection. Freeze specimens immediately after aliquoting. **Do not exceed 4 mL in tubes.** Transport four separate 4 mL aliquots from a well-mixed 24-hour urine collection according to the following specifications:

1st aliquot (pH 1.5-2): Dispense 4 mL of specimen into the Sulfamic Acid Tube. Mix well, then freeze.

2nd aliquot (pH 9): Dispense 4 mL of specimen into the Sodium Carbonate Tube. Mix well, then freeze.

3rd aliquot: Dispense 4 mL of specimen into an Unpreserved Tube. Mix well, then freeze.

4th aliquot: Dispense 4 mL of specimen into an Unpreserved Tube. Mix well, then freeze.

Storage/Transport Temperature: Frozen.

Unacceptable Conditions: Time collection other than 24 hours. Random urine.

Stability (collection to initiation of testing): Ambient: Unacceptable; Refrigerated: 24 hours; Frozen: 2 weeks

0099435 Vasoactive Intestinal Peptide

VIP

Specimen Required: Collect: Lavender (EDTA) or pink (K₂EDTA) plus aprotinin. (ARUP supply #16570) Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787. Collect in chilled container.
Specimen Preparation: Add 0.04 cc of aprotinin per mL of whole blood **immediately** after collection. Example: 3 mL EDTA tube would require 0.12cc of aprotinin (3 x 0.04 cc = 0.12 cc aprotinin). Centrifuge and separate plasma from cells ASAP or within 2 hours of collection. Transfer 1 mL plasma (EDTA plus aprotinin) to an ARUP Standard Transport Tube and freeze. (Min: 0.5 mL)
Storage/Transport Temperature: **CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.**
Unacceptable Conditions: Hemolyzed or non-frozen specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen: 3 months

0080389 Vitamin B₁ (Thiamine), Plasma

VIT B1 P

Performed: Sun-Sat
Reported: 2-5 days

Specimen Required: Collect: Green (sodium or lithium heparin), lavender (EDTA), or pink (K₂ EDTA).
Specimen Preparation: Separate plasma from cells **within one hour** of collection. Protect from light **within one hour of collection, and during** storage and transport. Transfer 3 mL plasma to an ARUP Amber Transport Tube. (Min: 0.2 mL)
Storage/Transport Temperature: Frozen. **Separate specimens must be submitted when multiple tests are ordered.**
Unacceptable Conditions: Hemolyzed specimens **or specimens other than heparin or EDTA plasma.**
Stability (collection to initiation of testing): After separation from cells: Ambient: Unacceptable; Refrigerated: 1 week; Frozen at -20°C: 6 months

0080111 Vitamin B₆ (Pyridoxal 5-Phosphate)

VIT B6

Specimen Required: Patient Preparation: Collect specimen after an overnight fast.
Collect: Green (sodium or lithium heparin) or plasma separator tube. Also acceptable: Plain red. Protect from light during collection, storage, and shipment.
Specimen Preparation: Separate plasma from cells and freeze ASAP, or within 2 hours of collection. Transfer 1 mL plasma to in an ARUP Amber Transport Tube. (Min: 0.5 mL)
Storage/Transport Temperature: **CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.**
Unacceptable Conditions: Specimens collected in EDTA yield a higher pyridoxal 5'-phosphate concentration; therefore, EDTA is not acceptable. Non-frozen specimens, EDTA preserved specimens, **hemolyzed, SST**, and whole blood.
Stability (collection to initiation of testing): After separation from cells: Ambient: Unacceptable; Refrigerated: 4 hours; Frozen: 2 months

Interpretive Data: Pyridoxal 5'-phosphate measured in a specimen collected following an 8 hour or overnight fast accurately indicates vitamin B₆ nutritional status. Non-fasting specimen concentration reflects recent vitamin intake.

Note: The biologically active form of vitamin B₆, pyridoxal 5-phosphate, is measured in this assay.

2003184 Vitamin B₇ (Biotin)

B7

Performed: Varies
Reported: 4-14 days

0055662 Vitamin B₁₂ with Reflex to Methylmalonic Acid, Serum or Plasma (Vitamin B₁₂ Deficiency)

B12 MMA

Reference Interval:

Available Separately	Components	Reference Interval
Yes (0070150)	Vitamin B ₁₂	210-911 pg/mL
No	Methylmalonic Acid, Serum or Plasma (Vitamin B ₁₂ Deficiency)	0.00-0.40 μmol/L

Note: If Vitamin B12 is 300 pg/mL, then Methylmalonic Acid, Serum or Plasma (Vitamin B₁₂ Deficiency) will be added.

0080379 Vitamin D, 25-Hydroxy

VIT D 25

Reference Interval:

0-17 years	
Deficiency	Less than 20 ng/mL
Optimum level	Greater than or equal to 20 ng/mL*
*(Wagner CL et al. Pediatrics 2008; 122: 1142-52.)	

18 years and older	
Deficiency	Less than 20 ng/mL
Insufficiency	20-29 ng/mL
Optimum Level	30-80 ng/mL
Possible Toxicity	Greater than 150 ng/mL

0099225 Vitamin K₁, Serum

VIT K

Specimen Required: Patient Preparation: Refrain from consuming alcohol 24 hours prior to draw. Fast for 12 hours (overnight) prior to draw.

Collect: Plain red or serum separator tube. Also acceptable: Lavender (EDTA) or pink (K₂ EDTA).

Specimen Preparation: Protect from light. Avoid hemolysis. Transfer 2 mL serum or plasma to an ARUP Amber Transport Tube. (Min: 1.2 mL)

Storage/Transport Temperature: Frozen. **Separate specimens must be submitted when multiple tests are ordered.**

Stability (collection to initiation of testing): After separation from cells: Ambient: Unacceptable; Refrigerated: 1 month; Frozen: 6 months

2004250 Very Long-Chain and Branched-Chain Fatty Acids Profile

VLCFA

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

New Test 2004890 Voltage-Gated Potassium Channel (VGKC) Antibody

VGKC AB

Available April 18, 2011

Methodology: Quantitative Radiobinding Assay

Performed: Tue

Reported: 1-8 days

Specimen Required: Collect: Plain red or serum separator tube.

Specimen Preparation: Separate serum from cells within 1 hour. Transfer 4 mL serum to an ARUP Standard Transport Tube. (Min: 0.5 mL)

Storage/Transport Temperature: Refrigerated.

Unacceptable Conditions: Grossly lipemic or icteric specimens. Plasma.

Stability (collection to initiation of testing): After separation from cells: Ambient: Less than 72 hours; Refrigerated: 2 weeks; Frozen: 1 month (avoid repeated freeze/thaw cycles).

Reference Interval:

Negative	31 pmol/L or less
Indeterminate	32- 87 pmol/L
Positive	88 pmol/L or greater

Interpretive Data: Voltage-Gated Potassium Channel (VGKC) antibodies are associated with neuromuscular weakness as found in neuromyotonia (also known as Issacs syndrome) and Morvan syndrome. VGKC antibodies are also associated with paraneoplastic neurological syndromes and limbic encephalitis; however, VGKC antibody-associated limbic encephalitis may be associated with antibodies to leucine-rich, glioma-inactivated 1 protein (Lgi1) or contactin-associated protein-2 (Caspr-2) instead of potassium channel antigens.

Refer to Statement D under Testing Information at <http://www.aruplab.com>.

CPT Code(s): 83519

New York approval pending. Call for status update.

HOT LINE NOTE: Refer to Test Mix Addendum for interface build information.

0013025 Warm Triple Adsorption AD-TRIPLE

Performed: Mon-Fri
Reported: 2-5 days (depending on complexity)

0060150 Yeast Culture MC YST

Specimen Required: Collect: Genital, fecal, oral cavity (esophagus, gums, mouth, teeth, throat, tongue, etc) specimens, or urine.
Specimen Preparation: Transport swab in bacterial transport media. Transport 10 mL urine in sterile container. (Min: 2 mL) **Source of specimen is required.**
Storage/Transport Temperature: Refrigerated. Submit specimen according to Biological Substance, Category B, shipping guidelines.
Unacceptable Conditions: Catheter tips.
Stability (collection to initiation of testing): Ambient: 1 week; Refrigerated: 1 week; Frozen: Unacceptable

Note: Yeast identification is billed separately from culture. Identification is performed and billed by the extent of tests required for identification. For detection of *Candida* species, *Gardnerella vaginalis*, and *Trichomonas vaginalis* in patients with vaginitis/vaginosis, refer to Vaginal Pathogens DNA Direct Probes (ARUP test code 0065153).

New Test 2004769 Yeast Differentiation by PNA FISH YST FISH

Available April 18, 2011

Methodology: Qualitative Peptide Nucleic Acid Fluorescence in situ Hybridization (PNA FISH)
Performed: Sun-Sat
Reported: Within 24 hours

Specimen Required: Collect: Client laboratory identified positive blood culture bottle with yeast from an automated or manual system.
Specimen Preparation: Transfer 5 mL aliquot of blood from yeast-positive blood culture bottle to a sterile transport tube. Also acceptable: A yeast-positive blood culture bottle. (Min: 1 mL)
Storage/Transport Temperature: Room temperature. Submit specimen according to Biological Substance, Category B, shipping guidelines.
Remarks: Provide any stain results performed at client laboratory.
Unacceptable Conditions: Negative blood culture. Whole blood, body fluid, or slides.
Stability (collection to initiation of testing): Ambient: 48 hours; Refrigerated: Unacceptable; Frozen: Unacceptable

Interpretive Data: *Candida krusei* is intrinsically resistant to fluconazole. *C. glabrata* and *C. tropicalis* may be resistant to fluconazole. Consult your institution's antibiogram or an infectious disease physician for guidance on empiric therapy.

Note: This is a presumptive result; definitive yeast identification should be performed from subculture.

For fungal identification, refer to Fungal (Mould/Yeast) Identification (ARUP test code 0060163). For fungal susceptibility, refer to Antimicrobial Susceptibility - Yeast Susceptibility (ARUP test code 0060235).

CPT Code(s): 87149

New York DOH Approved.

HOT LINE NOTE: Refer to Test Mix Addendum for interface build information.

0020605 Zinc Protoporphyrin (ZPP), Whole Blood ZPP

Specimen Required: Collect: Royal blue, (EDTA), tan (EDTA), lavender (EDTA), or pink (K₂ EDTA). Use royal blue (EDTA) tube when also testing for lead.
Specimen Preparation: Transport 1 mL whole blood. (Min: 0.2 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Specimens not collected in EDTA. Clotted, frozen, or hemolyzed specimens.
Stability (collection to initiation of testing): Ambient: 30 hours; Refrigerated: 5 weeks; Frozen: Unacceptable

0020614 Zinc Protoporphyrin (ZPP), Whole Blood Industrial ZPP IND

Specimen Required: Collect: Lavendar (EDTA), royal blue (EDTA), or tan (EDTA).
Specimen Preparation: Transport 1 mL whole blood. (Min: 0.2 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Specimens not collected in EDTA. Clotted, frozen, or hemolyzed specimens.
Stability (collection to initiation of testing): Ambient: 30 hours; Refrigerated: 5 weeks; Frozen: Unacceptable