Quarterly HOTLINE: Effective May 15, 2017

MEDICARE COVERAGE OF LABORATORY TESTING

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

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

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

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

Hotline Page #	Test Number	Summary of Changes by Test Name	Name Change	Methodology	Performed/Reported Schedule	Specimen Requirements	Reference Interval	Interpretive Data	Note	CPT Code	Component Change	Other Interface Change	New Test	Inactive
24	2011880	Adrenoleukodystrophy, X-Linked (*ABCD1*) Deletion/Duplication												x
6	2014168	Alagille Syndrome (*JAG1*) Sequencing and Microarray											x	
6	2014011	Allergen, Food, Alpha-Gal (galactose-alpha-1,3-galactose) Panel											x	
7	2014247	Allergens, Respiratory IgE Panel, Region 1, North Atlantic (CT, MA, NJ, PA, VT, ME, NH, NY, RI)											x	
24	2005717	Allergens, Respiratory Panel, Region 1, North Atlantic (CT, MA, NJ, PA, VT, ME, NH, NY, RI) IgE												x

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8	0080427	Alpha Fetoprotein (Amniotic Fluid) with Reflex to Acetylcholinesterase and Fetal Hemoglobin					x							
24	2001582	Alpha Globin (HBA1 and HBA2) Sequencing												x
24	2002394	Alport Syndrome, X-linked (*COL4A5*) Deletion/Duplication												x
8	0099266	Aluminum, Serum					x	x				x		
8	0099408	Aluminum, Urine					x					x		
24	2008462	Antimicrobial Susceptibility - Carbapenem Resistance Confirmation by PCR												x
24	2008443	*ATP7A*-Related Copper Transporter Disorders (*ATP7A*) Deletion/Duplication												x
24	0060762	Bartonella Species by PCR, Whole Blood												x
8	2002926	*Blastomyces dermatitidis* Antigen Quantitative by EIA				x					x			
24	2011915	Breast and Ovarian Hereditary Cancer Syndrome (*BRCA1* and *BRCA2*) Deletion/Duplication												x
9	2008708	Calculi Risk Assessment, Urine				x								
9	0080461	Cancer Antigen-GI (CA 19-9)				x								
9	2011763	Carbamazepine, Free and Total, Serum or Plasma			x									
24	2004927	*CDKL5*-Related Disorders (*CDKL5*) Deletion/Duplication												x
24	2003172	Cerebral Cavernous Malformation (*CCM1*, *CCM2* and *CCM3*) Deletion/Duplication												x
9	2011075	*Coccidioides* Antigen Quantitative by EIA	x			x					x			
24	2008606	Creatine Transporter Deficiency (SLC6A8) Deletion/Duplication												x
24	0051642	Cystic Fibrosis (CFTR) Deletion/Duplication												x
9	2003414	Cytogenomic SNP Microarray				x								
24	0060031	Cytomegalovirus by PCR, Whole Blood or Bone Marrow												x
24	2005555	Ehlers-Danlos Syndrome Kyphoscoliotic Form, Type VI (*PLOD1*) Deletion/Duplication												x
10	2013906	Epi proColon				x			x					
24	0051353	Epstein-Barr Virus, Quantitative PCR, Whole Blood												x
24	0055248	F-Actin (Smooth Muscle) Antibody, IgG												x
10	2014248	Factor V, R2 Mutation Detection by PCR											x	
24	2004920	Familial Adenomatous Polyposis (*APC*) Deletion/Duplication												x
24	0051752	FG Syndrome, FGS1 (*MED12*) R961W Mutation												x

Hotline Page #	Test Number	Summary of Changes by Test Name	Name Change	Methodology	Performed/Reported Schedule	Specimen Requirements	Reference Interval	Interpretive Data	Note	CPT Code	Component Change	Other Interface Change	New Test	Inactive
11	2014093	Filaria Antibody IgG4 by ELISA, Serum											x	
11	2007228	5-Fluorouracil (5-FU) Toxicity and Chemotherapeutic Response, 5 Mutations								x				
11	2014180	Fluoxetine and Metabolite Quantitative, Serum or Plasma											x	
24	2011424	*GLI3*-related Disorders (*GLI3*) Deletion/Duplication												x
11	0099165	Glucagon				x								
12	2001956	Hearing Loss, Nonsyndromic, Connexin 30 (*GJB6*) 2 Deletions			x									
12	2006686	*Helicobacter pylori* Culture							x	x				
24	2001751	Hemophilia A (*F8*) Deletion/Duplication												x
24	2010499	Hemophilia B (*F9*) Deletion/Duplication												x
12	2014139	Hepatitis C Virus (HCV) *NS5A* Drug Resistance by Sequencing											x	
24	0051348	Hereditary Hemorrhagic Telangiectasia (*ACVRL1* and *ENG*) Deletion/Duplication												x
24	2007113	Hereditary Paraganglioma-Pheochromocytoma (*SDHB*, *SDHC*, and *SDHD*) Deletion/Duplication												x
24	2005408	Hereditary Persistence of Fetal Hemoglobin (HPFH) 8 Mutations												x
24	0050459	Herpes Simplex Virus Types 1 and 2 Glycoprotein G-Specific Antibodies, IgG by Immunoblot												x
13	2012674	Human Immunodeficiency Virus (HIV) Combo Antigen/Antibody (HIV-1/O/2) by CIA, Reflexive Panel	x	x	x	x	x		x					
14	2006526	Human Immunodeficiency Virus (HIV) Combo Antigen/Antibody (HIV-1/O/2) by CIA, with Reflex to HIV-1 Antibody Confirmation by Western Blot	x	x	x	x	x							
14	2013333	Human Immunodeficiency Virus (HIV) Combo Antigen/Antibody (HIV-1/O/2) by CIA, with Reflex to HIV-1/HIV-2 Antibody Differentiation, Supplemental	x	x	x	x			x					
15	2014234	Human Immunodeficiency Virus 1 (HIV-1) by Qualitative Transcription-Mediated Amplification (TMA)											x	
15	0055598	Human Immunodeficiency Virus 1 by Quantitative PCR				x								
24	2011937	Human Papillomavirus (HPV) 16 and 18 Genotype by PCR, SurePath												x
15	0050157	Hypersensitivity Pneumonitis Extended Panel (Farmer's Lung Panel)				x								

Hotline Page #	Test Number	Summary of Changes by Test Name	Name Change	Methodology	Performed/Reported Schedule	Specimen Requirements	Reference Interval	Interpretive Data	Note	CPT Code	Component Change	Other Interface Change	New Test	Inactive
15	2014183	Ibuprofen Quantitative, Serum or Plasma											x	
16	2006444	*IDH1* and *IDH2* Mutation Analysis, Exon 4				x				x				
16	2014188	*IDH1* and *IDH2* Mutation Analysis, Exon 4, Formalin-Fixed, Paraffin-Embedded (FFPE) Tissue											x	
24	0055557	*IGH-CCND1* (BCL-1/JH) Translocation, t(11;14) by PCR												x
24	2006344	Inosine Triphosphatase (*ITPA*) and Interleukin 28 B (*IL28B*)-Associated Variants, 4 SNPs												x
24	2001976	Juvenile Polyposis (*SMAD4*) Deletion/Duplication												x
24	2004984	Juvenile Polyposis Syndrome (*BMPR1A*) Deletion/Duplication												x
17	0020843	Kidney Stone Risk Panel, Urine				x		x						
17	2007935	Lactate to Pyruvate Ratio, Whole Blood				x			x					
17	0020504	Lactic Acid, Body Fluid				x		x						
24	2003987	Laminin by Immunohistochemistry												x
24	2008373	Legius Syndrome (*SPRED1*) Deletion/Duplication												x
24	2009294	Li-Fraumeni Syndrome (*TP53*) Deletion/Duplication												x
24	2005580	Marfan Syndrome (*FBN1*) Deletion/Duplication												x
18	0098816	Melatonin					x							
18	2005405	Methotrexate, Sensitive				x								
24	2005346	Multiple Endocrine Neoplasia Type 1 (*MEN1)* Deletion/Duplication												x
18	2010775	*Mycobacterium tuberculosis* Complex Detection and Rifampin Resistance by PCR				x			x					
24	0060771	*Mycobacterium tuberculosis* Complex Speciation												x
24	2004892	Ornithine Transcarbamylase Deficiency (*OTC*) Deletion/Duplication												x
19	0020482	Oxalate, Urine				x	x	x						
19	2001491	Parathyroid Hormone, Fine Needle Aspiration (FNA)				x								
19	2010677	Parathyroid Hormone-Related Peptide (PTHrP) by LC-MS/MS, Plasma				x								
24	0060028	Parvovirus B19, by PCR, Bone Marrow												x
20	2013284	PD-L1 22C3 pharmDx by Immunohistochemistry with Interpretation, pembrolizumab (KEYTRUDA)				x			x	x				
24	2008377	Peutz-Jeghers Syndrome (*STK11*) Deletion/Duplication												x
24	0020507	pH, Body Fluid												x

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25	2012246	Polycystic Kidney Disease, Autosomal Dominant (*PKD1* and *PKD2)* Deletion/Duplication												x
25	2004199	Primary Carnitine Deficiency (*SLC22A5*) Deletion/Duplication												x
20	0070121	Prostate Specific Antigen, Total				x								
20	0070234	Prostate Specific Antigen, Total - Medicare Screening				x								
20	0098581	Prostate Specific Antigen, Ultrasensitive				x								
20	2014059	Prostate-Specific Kallikrein, 4Kscore								x				
25	2002726	*PTEN*-Related Disorders (*PTEN*) Deletion/Duplication												x
25	2003401	Pulmonary Arterial Hypertension (*BMPR2*) Deletion/Duplication												x
21	0080310	Pyruvic Acid				x			x					
25	2007830	*RASA1*-Related Disorders (*RASA1*) Deletion/Duplication												x
25	0051618	Rett Syndrome (*MECP2*), Deletion and Duplication												x
21	2013011	Selenium, RBCs			x	x								
21	2002098	Signal Recognition Particle (SRP) Antibody				x								
21	2008771	Supersaturation Profile, Urine				x								
25	2008409	T-Cell Clonality by Next Generation Sequencing												x
21	0090064	Thiocyanate, 24-Hour Urine					x							
22	2011575	Thiocyanate, Serum or Plasma					x							
22	0020753	Thyroglobulin, Fine Needle Aspiration (FNA)				x								
22	0093244	Thyroxine, Free by Equilibrium Dialysis/HPLC-Tandem Mass Spectrometry				x								
22	2014109	Total Inhibin Serum											x	
23	2014025	Trypsin				x								
23	0099435	Vasoactive Intestinal Peptide				x								
25	2004208	Very Long-Chain Acyl-CoA Dehydrogenase Deficiency (*ACADVL)* Deletion/Duplication												x
25	2002988	von Hippel-Lindau (*VHL*) Deletion/Duplication												x
23	0030002	von Willebrand Multimeric Panel		x										
23	2003387	von Willebrand Panel with Reflex to von Willebrand Multimeric Analysis		x										
25	2004434	X Chromosome Ultra-High Density Microarray												x

New Test Available Now **2014168** **Alagille Syndrome (*JAG1*) Sequencing and Microarray** **JAG1**

Additional Technical Information

Patient History and Informed Consent

Methodology: Sequencing/Exonic Oligonucleotide-based CGH Microarray
Performed: Varies
Reported: 7-8 weeks

Specimen Required: Collect: Lavender (EDTA). Also acceptable: Pink (K_2EDTA).
Specimen Preparation: Transport 5 mL whole blood. (Min: 2 mL)
Storage/Transport Temperature: Refrigerated. Protect from extreme temperatures.
Remarks: **Clinical indication or reason for testing is required.**
Stability (collection to initiation of testing): Ambient: 24 hours; Refrigerated: 1 week; Frozen: Unacceptable

Reference Interval: By report

Note: Test provides sequence analysis of exons 1-6, 9, 12, 16, 17, 20, 23 and 24, to evaluate for a deletion or duplication of one or more exons of the *JAG1* gene.

CPT Code(s): 81479

New York DOH Approved.

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

New Test Available Now **2014011** **Allergen, Food, Alpha-Gal (galactose-alpha-1,3-galactose) Panel** **ALPHAG PAN**

Methodology: Immunoassay/Quantitative ImmunoCAP Fluorescent Enzyme Immunoassay
Performed: Varies
Reported: 3-6 days

Specimen Required: Collect: Plain red or serum separator tube (SST).
Specimen Preparation: Transfer 2 mL serum to an ARUP Standard Transport Tube. (Min: 1 mL)
Storage/Transport Temperature: Room temperature. Also acceptable: Refrigerated or frozen.
Unacceptable Conditions: Lipemic specimens.
Stability (collection to initiation of testing): Ambient: 1 month; Refrigerated: 1 month; Frozen: 1 year

Reference Interval: By report

CPT Code(s): 86003 x4

New York DOH Approved.

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

New Test 2014247 **Allergens, Respiratory IgE Panel, Region 1, North Atlantic (CT, MA, NJ, PA, VT, ME, NH, NY, RI)** **REG1PAN**

Available Now

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

Specimen Required: Patient Prep: Multiple patient encounters should be avoided.
Collect: Serum Separator Tube (SST). Multiple specimen tubes should be avoided.
Specimen Preparation: Separate from cells ASAP or within 2 hours of collection. Transfer 4 mL serum to an ARUP Standard Transport Tube. (Min: 1.4 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Hemolyzed, icteric, or lipemic specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year

Reference Interval:

Allergens, Respiratory Panel, Region 1, North Atlantic (CT, MA, NJ, PA, VT, ME, NH, NY, RI) Reference Intervals for all Components

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

Test Number	Components	Reference Interval	
0050345	Immunoglobulin E	Effective November 17, 2014	
		Age	**Reference Interval**
		0-5 months	13 kU/L or less
		6-12 months	34 kU/L or less
		1-2 years	97 kU/L or less
		3 years	199 kU/L or less
		4-6 years	307 kU/L or less
		7-8 years	403 kU/L or less
		9-12 years	696 kU/L or less
		13-15 years	629 kU/L or less
		16-17 years	537 kU/L or less
		18 years and older	214 kU/L or less

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

Note: Allergens included in this panel: *Alternaria alternata (tenuis)*, *Aspergillus fumigatus*, Bermuda Grass, Birch Tree, Box Elder/Maple Tree, Cat Dander, Cockroach (German), Common Short Ragweed, Cottonwood Tree, *D. pteronyssinus* (mites), *D. farinae* (mites), Dog Dander, Elm Tree, *Hormodendrum* (*Cladosporium)*, Mouse Epithelium, Mountain Cedar (Juniper) Tree, *Mucor racemosus*, Mugwort, Oak Tree, *Penicillium notatum*, Pigweed, Sheep Sorrel (Dock), Sycamore Tree, Timothy Grass, Walnut Tree, White Ash Tree, White Mulberry Tree, and IgE Serum Total.

CPT Code(s): 86003 x27; 82785

New York DOH Approved.

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

0080427 Alpha Fetoprotein (Amniotic Fluid) with Reflex to Acetylcholinesterase and Fetal Hemoglobin — AFP AF

Reference Interval:
Effective May 15, 2017

Test Number	Components	Reference Interval
	AFP, Amniotic Fluid	By report Ranges are based upon the weeks of gestation.
	Multiple of Median	1.99 or less
2006848	Acetylcholinesterase and Fetal Hemoglobin, Amniotic Fluid	Acetylcholinesterase: Negative Fetal Hemoglobin: Negative

0099266 Aluminum, Serum — AL S

Reference Interval: 0.0-15.0 µg/L

Interpretive Data: Serum aluminum greater than 50.0 µg/L is consistent with overload and may correlate with toxicity.
See Compliance Statement B: www.aruplab.com/CS

HOTLINE NOTE: There is a numeric map change associated with this test.
The numeric map for component 0099266, Aluminum, Serum is changing from XXXX to XXXX.X

0099408 Aluminum, Urine — AL U

Reference Interval:

Test Number	Components	Reference Interval		
	Aluminum, Urine	Effective May 15, 2017 0.0-7.0 µg/L		
	Aluminum, Urine (24-hour)	0-10 µg/d		
0020473	Creatinine, 24-Hour Urine	**Age**	**Male**	**Female**
		3-8 years	140-700 mg/d	140-700 mg/d
		9-12 years	300-1300 mg/d	300-1300 mg/d
		13-17 years	500-2300 mg/d	400-1600 mg/d
		18-50 years	1000-2500 mg/d	700-1600 mg/d
		51-80 years	800-2100 mg/d	500-1400 mg/d
		81 years and older	600-2000 mg/d	400-1300 mg/d
	Aluminum per gram of creatinine	No reference interval (µg/g crt)		

HOTLINE NOTE: There is a numeric map change associated with this test.
The numeric map for component 0099268, Aluminum, Urine – µg/L is changing from XXX to XXX.X

2002926 *Blastomyces dermatitidis* Antigen Quantitative by EIA — BLAST DERM

Specimen Required: Collect: Urine, Plain Red, Serum Separator Tube (SST), Lavender (EDTA), Green (Sodium or Lithium Heparin), Light Blue (Sodium Citrate), CSF, or BAL.
Specimen Preparation: **Urine or BAL:** Transfer 1 mL urine or BAL to an ARUP Standard Transport Tube. (Min: 0.5 mL)
Serum or Plasma: Transfer 2 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 1.2 mL)
CSF: Transfer 1 mL CSF to an ARUP Standard Transport Tube. (Min: 0.8 mL)
Storage/Transport Temperature: Refrigerated. Also acceptable: Room temperature or frozen.
Stability (collection to initiation of testing): Ambient: 2 weeks; Refrigerated: 2 weeks; Frozen: Indefinitely

HOTLINE NOTE: There is a component change associated with this test.
Add component 2014217, Balstomyces dermatididis Ag – Source

2008708 Calculi Risk Assessment, Urine — CRA

Specimen Required: Collect: 24-hour urine. Refrigerate during collection.
Specimen Preparation: Thoroughly mix entire collection (24-hour) in one container. Transport four separate 4 mL aliquots of urine using Calculi Risk/Supersaturation Urine Collection Kit (ARUP supply# 46007) available online through eSupply using ARUP Connect™ or contact Client Services at (800) 522-2787. Do not exceed 4 mL in tubes.
Aliquot according to the following specifications:
1st aliquot (pH 2): Transfer 4 mL urine into a Sulfamic Acid Tube. (Min: 4 mL) Mix well. Freeze immediately.
2nd aliquot (pH 2): Transfer 4 mL urine into a Sulfamic Acid Tube. (Min: 4 mL) Mix well. Freeze immediately.
3rd aliquot (pH 9): Transfer 4 mL urine into a Sodium Carbonate Tube. (Min: 4 mL) Mix well. Freeze immediately.
4th aliquot: Transfer 4 mL urine into an Unpreserved Tube. (Min: 4 mL) Freeze immediately.
If collection kit is unavailable, transport four 4 mL unadjusted aliquots of urine.
Storage/Transport Temperature: Frozen.
Remarks: **Record total volume and collection time interval on transport tube and test request form.**
Stability (collection to initiation of testing): Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen: 2 weeks

HOTLINE NOTE: Remove information found in the Unacceptable Conditions field.

0080461 Cancer Antigen-GI (CA 19-9) — CA-GI

Specimen Required: Collect: Serum Separator Tube (SST) or Plasma Separator Tube (PST). Also acceptable: Green (Sodium or Lithium Heparin), Lavender (EDTA), or Pink (K_2EDTA).
Specimen Preparation: Allow specimen to clot completely at room temperature. Separate from cells ASAP or within 2 hours of collection. Transfer 1 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.5 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Body Fluid (refer to Cancer Antigen-GI (CA19-9), Body Fluid, ARUP test code 0020746). Specimens collected in sodium citrate.
Stability (collection to initiation of testing): After separation from cells: Ambient: 5 days; Refrigerated: 2 weeks; Frozen: 3 months

2011763 Carbamazepine, Free and Total, Serum or Plasma — CARB FT

Performed: Mon, Thu, Fri
Reported: 1-5 days

2011075 *Coccidioides* Antigen Quantitative by EIA — COCCI AG

Specimen Required: Collect: Urine, Plain Red, Serum Separator Tube (SST), Lavender (EDTA), Pink (K_2EDTA), Green (Sodium or Lithium Heparin), Light Blue (CTAD), CSF, or BAL.
Specimen Preparation: **Urine or BAL:** Transfer 1 mL urine or BAL to an ARUP Standard Transport Tube. (Min: 0.5 mL)
Serum or Plasma: Transfer 2 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 1.2 mL)
CSF: Transfer 1 mL CSF to an ARUP Standard Transport Tube. (Min: 0.8 mL)
Storage/Transport Temperature: Refrigerated. Also acceptable: Frozen.
Stability (collection to initiation of testing): Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: Indefinitely

HOTLINE NOTE: There is a component change associated with this test.
Add component 2014179, Coccidioides Antigen - Source

2003414 Cytogenomic SNP Microarray — CMA SNP

Specimen Required: Collect: Green (Sodium Heparin). Peripheral blood required. Also acceptable, Lavender (EDTA).
New York State Clients: Green (Sodium Heparin) AND Lavender (EDTA).
Specimen Preparation: Transport 5 mL whole blood. (Min: 1 mL).
New York State Clients: Transport 8 mL (4 mL per tube) whole blood or bone marrow. (Min: 4 mL total (2 mL per tube)). Do not send to ARUP Laboratories. Specimen must be received at performing laboratory within 48 hours of collection. For specimen requirements and direct submission instructions please contact ARUP Referral Testing at (800) 242-2787, ext. 5145.
Storage/Transport Temperature: Room temperature.
Unacceptable Conditions: Clotted specimens.
Stability (collection to initiation of testing): Ambient: 48 hours; Refrigerated: 72 hours; Frozen: Unacceptable
New York State Clients: Ambient: 48 hours; Refrigerated: 48 hours; Frozen: Unacceptable

2013906 **Epi proColon** **EPIPRO**

Specimen Required: Collect: Lavender (K_2EDTA). Collect 20 mL whole blood. (Min: 10 mL). Blood collection tubes should be allowed to complete the evacuated fill.
Specimen Preparation: **Plasma preparation should be performed ASAP or within 4 hours of collection. Centrifuge for 12 min at 1350 ± 150 rcf.** Transfer the plasma to a 15 mL conical tube **and centrifuge for an additional 12 minutes at 1350 ± 150 rcf.** Ensure a minimum of 8 mL plasma is obtained following centrifugation. Transfer 4 mL plasma into 2 cryovial tubes or freezable specimen transport tubes. (Min: 4 mL, no repeat testing)
Storage/Transport Temperature: Frozen. Also acceptable: Refrigerated.
Unacceptable Conditions: Serum, stool, or whole blood. Hemolyzed specimens.
Stability (collection to initiation of testing): Ambient: Unacceptable; Refrigerated: 72 hours; Frozen: 2 weeks

Note: This test is not intended to replace a colonoscopy. NOT recommended for pregnant women because of a potential for false-positive results in these individuals.

Accurate test performance requires following the specimen preparation instructions. Minimum volume of 4 mL is required for testing without repeats. If a repeat is necessary, an additional specimen will be requested.

New Test
Available Now

2014248 **Factor V, R2 Mutation Detection by PCR** **F5R2 MUTAT**

Additional Technical Information

Methodology: Polymerase Chain Reaction
Performed: Varies
Reported: 3-12 days

Specimen Required: Collect: Lavender (EDTA). Also acceptable: Yellow (ACD solution A or B).
Specimen Preparation: Transfer 5 mL whole blood to an ARUP Standard Transport Tube. (Min: 1 mL)
Storage/Transport Temperature: Room temperature. Also acceptable: Refrigerated.
Stability (collection to initiation of testing): Ambient: 1 week, Refrigerated: 1 week; Frozen: Unacceptable

CPT Code(s): 81400

New York DOH Approved.

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

New Test
Available Now

2014093 **Filaria Antibody IgG4 by ELISA, Serum** **FILARIA**

Methodology: Semi-Quantitative Enzyme-Linked Immunosorbent Assay
Performed: Varies
Reported: 3-17 days

Specimen Required: Collect: Plain Red. Also acceptable: Serum Separator Tube (SST).
Specimen Preparation: Transfer 0.2 mL serum to an ARUP Standard Transport Tube. (Min: 0.1 mL)
Storage/Transport Temperature: Refrigerated. Also acceptable: Room temperature or frozen.
Stability (collection to initiation of testing): Ambient: 1 week; Refrigerated: 2 weeks; Frozen: 1 month

Reference Interval: By Report

CPT Code(s): 86682

New York DOH Approved.

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

2007228 **5-Fluorouracil (5-FU) Toxicity and Chemotherapeutic Response, 5 Mutations** **5-FU PANEL**

CPT Code(s): 81400; 81401

New Test
Available Now

2014180 **Fluoxetine and Metabolite Quantitative, Serum or Plasma** **FLUOX SP**

Methodology: Quantitative Gas Chromatography/Mass Spectrometry (GC/MS)
Performed: Varies
Reported: 3-10 days

Specimen Required: Collect: Plain Red. Also acceptable: Lavender (EDTA) or Pink (K_2EDTA).
Specimen Preparation: Separate from cells ASAP or within 2 hours of collection. Transfer 3 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 1.2 mL)
Storage/Transport Temperature: Refrigerated. Also acceptable: Room temperature or frozen.
Unacceptable Conditions: Separator tubes.
Stability (collection to initiation of testing): Ambient: 1 week; Refrigerated: 2 weeks; Frozen: 18 months

CPT Code(s): 80332 (Alt code: G0480)

New York DOH Approved.

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

0099165 **Glucagon** **GLUCA**

Specimen Collection and Handling

Specimen Required: Collect: Protease Inhibitor tube (PPACK; Phe-Pro-Arg-cholormethylketone) (ARUP supply #49662), available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787. A winged collection set must be used.
Specimen Preparation: Mix well. Separate from cells within 1 hour of collection. Transfer 1 mL plasma to an ARUP Standard Transport Tube. (Min: 0.5 mL)
Storage/Transport Temperature: Frozen. Separate specimens must be submitted when multiple tests are ordered.
Unacceptable Conditions: Grossly hemolyzed specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: Unacceptable; Refrigerated: 48 hours; Frozen: 3 months

2001956 **Hearing Loss, Nonsyndromic, Connexin 30 (*GJB6*) 2 Deletions** **GJB6 DEL**

Performed: Varies
Reported: 7-10 days

2006686 ***Helicobacter pylori* Culture** **MC HPYL**

Note: Identification and susceptibility tests are billed separately from culture. Cultures positive for H. pylori will be sent for susceptibility testing to Mayo Medical Lab.

CPT Code(s): 87070, 87176; Identification and susceptibility CPT codes may vary based on method.

New Test
Available Now

2014139 **Hepatitis C Virus (HCV) *NS5A* Drug Resistance by Sequencing** **HCV NS5A**

Methodology: Polymerase Chain Reaction/Sequencing
Performed: Mon
Reported: 10-13 days

Specimen Required: Collect: Lavender (EDTA), Pink (K_2EDTA), Plasma Preparation Tube (PPT), or Serum Separator Tube (SST).
Specimen Preparation: Separate from cells ASAP or within 2 hours of collection. Transfer 2 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 1 mL)
Storage/Transport Temperature: Frozen.
Unacceptable Conditions: Heparinized specimens.
Stability (collection to initiation of testing): Ambient: Unacceptable; Refrigerated: 72 hours; Frozen: 4 months

Reference Interval: By Report

Interpretive Data: This assay detects resistance-associated variants in *NS5A* codons 20-101 for HCV genotypes 1a and 1b. Variants in viral sub-populations below 20 percent of total may not be detected. For further information, please refer to drug package inserts for the applicable direct-acting antiviral drug and current HCV treatment guidelines (eg., AASLD/IDSA guidelines or EASL HCV treatment recommendations).

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

Note: This test may be unsuccessful if the HCV RNA viral load is less than log 3.4 or 2500 IU/mL and/or if the HCV RNA genotype is not 1a or 1b.

CPT Code(s): 87902

New York DOH approval pending. Call for status update.

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

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

Methodology: Qualitative Chemiluminescent Immunoassay/Qualitative Immunoassay/Quantitative Polymerase Chain Reaction
Performed: Sun-Sat
Reported: 1-3 days

Specimen Required: Collect: Lavender (EDTA) or Pink (K_2EDTA).
Specimen Preparation: Separate from cells ASAP or within 2 hours of collection. Transfer 3 mL plasma into an ARUP Standard Transport Tube. (Min: 2 mL) Remove particulate material. This test requires a dedicated transport tube submitted only for HIV testing.
Storage/Transport Temperature: Frozen.
Unacceptable Conditions: Serum. Heparinized or citrated plasma specimens. Plasma preparation tubes. Specimens containing particulate material. Severely hemolyzed or heat-inactivated specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: Unacceptable; Refrigerated: 6 days; Frozen: 6 weeks (avoid repeated freeze/thaw cycles)

Reference Interval:

Test Number	Components	Reference Interval
	HIV 1,2 Combo Antigen/Antibody	Negative
2012669	Human Immunodeficiency Virus Types 1 and 2 (HIV-1/2) Antibody Differentiation, Supplemental, with Reflex to HIV-1 Quantitative PCR	

Test Number	Components	Reference Interval
	HIV-1 Antibody	Negative
	HIV-2 Antibody	Negative
0055598	Human Immunodeficiency Virus 1 by Quantitative PCR	Not detected

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

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

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

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

Refer to the following tests for additional information regarding Performed or Reported times, Interpretive Data and Notes for the reflex tests of this panel: Human Immunodeficiency Virus Types 1 and 2 (HIV-1/2) Antibody Differentiation, Supplemental with Reflex to HIV-1 Quantitative PCR (2012669); Human Immunodeficiency Virus 1 by Quantitative PCR (0055598)

HOTLINE NOTE: Remove information found in the Remarks field.

2006526 Human Immunodeficiency Virus (HIV) Combo Antigen/Antibody (HIV-1/O/2) by CIA, with Reflex to HIV-1 Antibody Confirmation by Western Blot — HIV AGAB

Methodology: Qualitative Chemiluminescent Immunoassay /Qualitative Western Blot
Performed: Sun-Sat
Reported: 1-2 days

Specimen Required: Collect: Serum Separator Tube (SST). Also acceptable: Lavender (EDTA) or Pink (K_2EDTA).
Specimen Preparation: Separate from cells ASAP or within 2 hours of collection. Transfer 1.5 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.75 mL) Remove particulate material.
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Specimens containing particulate material. Severely hemolyzed or heat-inactivated specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: Unacceptable; Refrigerated: 1 week; Frozen: 8 months (avoid repeated freeze/thaw cycles)

Reference Interval:

Test Number	Components	Reference Interval
	Human Immunodeficiency Virus (HIV) Combo Antigen/Antibody (HIV-1/O/2) by CIA	Negative
0020284	Human Immunodeficiency Virus Type 1 (HIV-1) Antibody Confirmation by Western Blot	Negative

2013333 Human Immunodeficiency Virus (HIV) Combo Antigen/Antibody (HIV-1/O/2) by CIA, with Reflex to HIV-1/HIV-2 Antibody Differentiation, Supplemental — HIVAGABGE

Methodology: Qualitative Chemiluminescent Immunoassay/Qualitative Immunoassay
Performed: Sun-Sat
Reported: 1-2 days

Specimen Required: Collect: Serum Separator Tube (SST). Also acceptable: Lavender (EDTA) orPink (K_2EDTA).
Specimen Preparation: Separate from cells ASAP or within 2 hours of collection. Transfer 1.5 mL serum into an ARUP Standard Transport Tube. (Min: 0.75 mL) Remove particulate material.
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Specimens containing particulate material. Severely hemolyzed or heat-inactivated specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: Unacceptable; Refrigerated: 1 week; Frozen: 8 months (avoid repeated freeze/thaw cycles)

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

The reflexed HIV-1/ HIV-2 Antibody Differentiation test discriminates between HIV-1 and HIV-2 antibodies. Results for each type are reported.

If the HIV-1,2 Combo Antigen/Antibody screen is repeatedly reactive, then the HIV-1/ HIV-2 Antibody Differentiation test will be performed. Additional charges apply. A recommendation to order further testing on a separate specimen for HIV-1 Nucleic Acid will be made for certain results. This multi-test algorithm is recommended by the Centers for Disease Control and Prevention (CDC) and was adopted by the Clinical Laboratory Standards Institute (CLSI) for the diagnosis of HIV.

New Test **2014234** **Human Immunodeficiency Virus 1 (HIV-1) by Qualitative Transcription-Mediated Amplification (TMA)** **HIV-1 TMA**

Methodology: Qualitative Transcription-Mediated Amplification
Performed: Varies
Reported: 3-12 days

Specimen Required: Collect: Lavender (EDTA). Also acceptable: Yellow (ACD Solution A), Light Blue (Sodium Citrate) or Plasma Preparation Tube (PPT).
Specimen Preparation: Transfer 1.6 mL plasma or serum to an ARUP Standard Transport Tube. (Min: 0.6 mL)
Storage/Transport Temperature: Frozen. Also acceptable: Refrigerated.
Unacceptable Conditions: Frozen plasma in Plasma Preparation Tube (PPT).
Stability (collection to initiation of testing): Ambient: 72 hours; Refrigerated: 5 days; Frozen: 35 days

Reference Interval: By report

CPT Code(s): 87535

New York DOH Approved.

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

0055598 **Human Immunodeficiency Virus 1 by Quantitative PCR** **HIVPCRQ**

Specimen Required: Collect: Lavender (EDTA), Pink (K_2EDTA), or Plasma Preparation Tube (PPT).
Specimen Preparation: Separate from cells within 24 hours of collection. Transfer 3 mL plasma to an ARUP Standard Transport Tube and freeze. (Min: 1.5 mL)
Storage/Transport Temperature: Frozen.
Unacceptable Conditions: Serum. Heparinized specimens. Specimens **submitted** in plasma preparation tube.
Stability (collection to initiation of testing): After separation from cells: Ambient: 24 hours; Refrigerated: 6 days; Frozen: 6 weeks

0050157 **Hypersensitivity Pneumonitis Extended Panel (Farmer's Lung Panel)** **HYPER EXT**

Specimen Required: Collect: Serum Separator Tube (SST).
Specimen Preparation: Separate from cells ASAP or within 2 hours of collection. Transfer two 2.5 mL aliquots of serum to individual ARUP Standard Transport Tubes. (Min: 1 mL each)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Plasma. Contaminated, hemolyzed, or severely lipemic specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)

New Test Available Now **2014183** **Ibuprofen Quantitative, Serum or Plasma** **IBUPRO SP**

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

Specimen Required: Collect: Plain Red. Also acceptable: Lavender (EDTA) or Pink (K_2 EDTA).
Specimen Preparation: Separate from cells ASAP or within 2 hours of collection. Transfer 1 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.4 mL)
Storage/Transport Temperature: Refrigerated. Also acceptable: Room temperature or frozen.
Unacceptable Conditions: Separator tubes
Stability (collection to initiation of testing): Ambient: 16 days; Refrigerated: 16 days; Frozen: 6 months

CPT Code(s): 80329 (Alt code: G0480)

New York DOH Approved.

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

2006444 ***IDH1* and *IDH2* Mutation Analysis, Exon 4** **IDH1-2**

Specimen Required: Collect: Lavender (EDTA). Also acceptable: Bone Marrow (EDTA).
Specimen Preparation: **Whole Blood:** Transport 5 mL whole blood. (Min: 1 mL)
Bone Marrow: Transport 3 mL bone marrow. (Min: 1 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Serum or plasma. Specimens collected in anticoagulants other than EDTA. Clotted or grossly hemolyzed specimens.
Stability (collection to initiation of testing): Ambient: 24 hours; Refrigerated: 5 days; Frozen: Unacceptable

CPT Code(s): 81403 x2

HOTLINE NOTE: Remove information found in the Remarks field.

New Test **2014188** ***IDH1* and *IDH2* Mutation Analysis, Exon 4, Formalin-Fixed, Paraffin-Embedded (FFPE) Tissue** **IDH1-2FFPE**

Available Now

Additional Technical Information

Methodology: Polymerase Chain Reaction/Sequencing
Performed: Sun, Tue, Thu
Reported: 12-14 days

Specimen Required: Collect: Tumor tissue.
Specimen Preparation: Formalin fix (10 percent neutral buffered formalin) and paraffin embed tissue. Protect from excessive heat. Transport tissue block or 4 unstained 5-micron slides. (Min: 3 slides) Transport block and/or slide(s) in a tissue transport kit (ARUP supply #47808) available online through eSupply using ARUP Connect™or contact ARUP Client Services at (800) 522-2787.
Storage/Transport Temperature: Room temperature. Also acceptable: Refrigerated. Ship in cooled containers during summer months.
Remarks: For FFPE specimens include surgical pathology report. Tissue block will be returned after testing.
Unacceptable Conditions: No tumor in tissue. 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.
See Compliance Statement B: www.aruplab.com/CS

CPT Code(s): 81403 x2; 88381

New York DOH Approved.

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

0020843 Kidney Stone Risk Panel, Urine KID

Specimen Required: Collect: 24-hour urine. Refrigerate during collection.
Specimen Preparation: Thoroughly mix entire collection (24-hour) in one container. Transport four separate 4 mL aliquots of urine using Calculi Risk/Supersaturation Urine Collection Kit (ARUP supply# 46007) available online through eSupply using ARUP Connect™ or contact Client Services at (800) 522-2787. Do not exceed 4 mL in tubes.
Aliquot according to the following specifications:
1st aliquot (pH 2): Transfer 4 mL urine into a Sulfamic Acid Tube. (Min: 4 mL) Mix well. Freeze immediately.
2nd aliquot (pH 2): Transfer 4 mL urine into a Sulfamic Acid Tube. (Min: 4 mL) Mix well. Freeze immediately.
3rd aliquot (pH 9): Transfer 4 mL urine into a Sodium Carbonate Tube. (Min: 4 mL) Mix well. Freeze immediately.
4th aliquot: Transfer 4 mL urine into an Unpreserved Tube. (Min: 4 mL) Freeze immediately.
If collection kit is unavailable, transport four 4 mL unadjusted aliquots of urine.
Storage/Transport Temperature: Frozen.
Remarks: **Record total volume and collection time interval on transport tube and test request form.**
Stability (collection to initiation of testing): Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen: 2 weeks

HOTLINE NOTE: Remove information found in the Interpretive Data field.

2007935 Lactate to Pyruvate Ratio, Whole Blood LP RATIO

Specimen Required: Patient Prep: Patient should be fasting and at complete rest. Patient should avoid any exercise of the arm or hand before or during collection. Draw the specimen without the use of a tourniquet or within three minutes of applying the tourniquet, but before releasing the tourniquet.
Collect: Green (Sodium or Lithium Heparin).
Specimen Preparation: If whole blood is collected in a syringe, transfer immediately to green (sodium or lithium heparin) tube before preparing specimen.
1) Immediately after blood is drawn, add exactly 1 mL whole blood to a chilled pyruvate collection tube containing 2 mL 8 percent (w/v) perchloric acid (ARUP supply #16567) available online through eSupply using ARUP Connect™ or contact Client Services at (800) 522-2787.
2) Mix well for 30 seconds then place in an ice bath for 10 minutes.
3) Centrifuge for 10 minutes at 1500 x g.
4) Decant 2 mL supernatant to an ARUP Standard Transport Tube and freeze. (Min: 1 mL)
Storage/Transport Temperature: Frozen.
Stability (collection to initiation of testing): Ambient: Unacceptable; Refrigerated: 2 days; Frozen: 4 weeks

Note: If addition to perchloric acid is delayed, lactate concentration of whole blood increases by approximately 30 percent after 30 minutes, 50 percent after 1 hour, and 75 percent after 2 hours at room temperature. If less than 1 mL of blood is added to collection tube, pH of the supernatant will be too low for testing.

HOTLINE NOTE: Remove information found in the Unacceptable Conditions field.

0020504 Lactic Acid, Body Fluid LA-FL

Specimen Required: Collect: Peritoneal or synovial fluid.
Specimen Preparation: Centrifuge and separate to remove cellular material. Transport 1 mL peritoneal or synovial fluid in an ARUP Standard Transport Tube. (Min: 0.2 mL)
Storage/Transport Temperature: Frozen.
Remarks: Indicate source on test request form.
Unacceptable Conditions: Specimens other than those listed.
Stability (collection to initiation of testing): Ambient: Unacceptable; Refrigerated: 2 weeks; Frozen: 1 month

Interpretive Data: Reference ranges for this assay have not been established for body fluid. Results should be interpreted in comparison to the lactic acid concentration in blood and in conjunction with clinical context.

0098816 Melatonin — MELATONIN

Reference Interval:
Effective May 15, 2017

Adults	Reference Interval
Daytime	3.4 to 53.9 pg/mL
Nighttime	7.1 to 89.5 pg/mL

2005405 Methotrexate, Sensitive — METREXSN

Specimen Required: Collect: Plain Red. Also acceptable: Green (Sodium or Lithium Heparin), Lavender (EDTA), or Pink (K_2EDTA).
Specimen Preparation: **Protect from light during collection, storage, and shipment.** Separate from cells ASAP or within 2 hours of collection. Transfer 3 mL serum to an ARUP Amber Transport Tube. (Min: 1 mL)
Storage/Transport Temperature: Frozen.
Unacceptable Conditions: Serum separator tubes. Specimens not protected from light.
Stability (collection to initiation of testing): After separation from cells: Ambient: 4 hours; Refrigerated: 2 weeks; Frozen: 6 months

2010775 *Mycobacterium tuberculosis* Complex Detection and Rifampin Resistance by PCR — MTBRIF PCR

Specimen Required: Collect: Respiratory specimens, CSF, or Pleural Fluid.
Specimen Preparation: **Unprocessed Specimens:** Transport 5-10 mL respiratory specimen, CSF or pleural fluid in a sterile container. (Min: 1 mL) Label as unprocessed.
Processed Specimens: Transport 2-5 mL digested/decontaminated respiratory specimen, CSF or pleural fluid in a sterile container. (Min: 1 mL)
Place each specimen in an individually sealed bag.
Storage/Transport Temperature: Refrigerated.
Remarks: Specimen source required. **Processed Specimens:** Identify method used for digestion and provide smear results.
Unacceptable Conditions: Blood, paraffin blocks, stool, swabs, tissue, and urine.
Stability (collection to initiation of testing): **Unprocessed**: Ambient: 3 days; Refrigerated: 1 week; Frozen: 1 month
Processed: Ambient: Unacceptable; Refrigerated: 1 week; Frozen: 1 month

Note: Body Fluids other than Pleural Fluid will be run with a disclaimer.

Specimen source required. To perform this test it is essential to know whether or not the submitted specimen has been processed (digestion and decontamination procedure). If processed, smear results must be provided as a comment on the test order or requisition. Delayed turnaround time will occur if the required information is not provided.

0020482 Oxalate, Urine — UOXAL

Specimen Required: Patient Prep: Patient should avoid ingestion of vitamin C prior to collection.
Collect: 24-hour urine. Refrigerate during collection.
Specimen Preparation: Thoroughly mix entire collection (24-hour) in one container. Do not exceed 4 mL in tubes.
Preserved: Transfer 4 mL aliquot to an ARUP Transport Tube with Sulfamic Acid (ARUP supply #48098) available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787. (Min: 1.5 mL) Mix well. Freeze immediately.
Unpreserved: Transfer 4 mL unadjusted aliquot of urine to an ARUP Standard Transport Tube. (Min: 1.5 mL) Freeze immediately.
Storage/Transport Temperature: CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.
Remarks: **Record total volume and collection time interval on transport tube and test request form.**
Stability (collection to initiation of testing): After collection complete: Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen: 1 month

Reference Interval:

Test Number	Components	Reference Interval		
	Oxalate, Urine – per 24h	Effective May 15, 2017		
		Age	**Male**	**Female**
		0-12 years	7-31 mg/d	7-31 mg/d
		13 years and older	16-49 mg/d	13-40 mg/d
	Creatinine, Urine - per 24h	**Age**	**Male**	**Female**
		3-8 years	140-700 mg/d	140-700 mg/d
		9-12 years	300-1300 mg/d	300-1300 mg/d
		13-17 years	500-2300 mg/d	400-1600 mg/d
		18-50 years	1000-2500 mg/d	700-1600 mg/d
		51-80 years	800-2100 mg/d	500-1400 mg/d
		81 years and older	600-2000 mg/d	400-1300 mg/d

HOTLINE NOTE: Remove information found in the Interpretive Data field.

✓ The reference range change also applies to:

- Calculi Risk Assessment, Urine (2008708)
- Kidney Stone Risk Panel, Urine (0020843)
- Supersaturation Profile, Urine (2008771)

2001491 Parathyroid Hormone, Fine Needle Aspiration (FNA) — PTH FNA

Specimen Required: Collect: Fine needle aspiration in saline. Also acceptable: Specimens collected in Green (Sodium or Lithium Heparin) or Lavender (EDTA).
Specimen Preparation: Specimen must be non-viscous and free of particulate matter. Centrifuge to remove cellular material. Transfer 0.5 mL saline needle rinse to an ARUP Standard Transport Tube. (Min: 0.5 mL)
Storage/Transport Temperature: Frozen.
Remarks: Indicate source on test request form.
Unacceptable Conditions: Specimen types other than those listed. Specimens too viscous to be aspirated by the instrument.
Stability (collection to initiation of testing): Ambient: 8 hours; Refrigerated: 24 hours; Frozen: 6 months

2010677 Parathyroid Hormone-Related Peptide (PTHrP) by LC-MS/MS, Plasma — PTHRP

Additional Technical Information

Specimen Collection and Handling

Specimen Required: Collect: Protease Inhibitor tube (PPACK; Phe-Pro-Arg-chlormethylketone) (ARUP supply #49662), available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787. A winged collection set must be used.
Specimen Preparation: Mix well. Separate from cells within 1 hour of collection. Transfer 1.5 mL plasma to an ARUP Standard Transport Tube. (Min: 0.7 mL)
Storage/Transport Temperature: Frozen. Separate specimens must be submitted when multiple tests are ordered.
Unacceptable Conditions: Grossly hemolyzed specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen: 3 months

2013284 **PD-L1 22C3 pharmDx by Immunohistochemistry with Interpretation, pembrolizumab (KEYTRUDA)** **22C3 IP**

Specimen Required: Collect: Tumor tissue.
Specimen Preparation: Formalin fix (10 percent neutral buffered formalin) and paraffin embed specimen. Protect paraffin block and/or slides from excessive heat. Transport tissue block or 5 unstained (3- to 5-micron thick sections), positively charged slides in a tissue transport kit (ARUP supply #47808 recommended but not required), available online through eSupply using ARUP Connector contact ARUP Client Services at (800) 522-2787. (Min: 3 slides) If sending precut slides, do not oven bake.
Storage/Transport Temperature: Room temperature. Also acceptable: Refrigerated. Ship in cooled container during summer months.
Remarks: Include surgical pathology report and indicate tissue site with the test order. For additional technical details, please contact ARUP Client Services at (800) 522-2787.
Unacceptable Conditions: Paraffin block with no tumor tissue remaining. Specimens fixed in any fixative other than 10 percent neutral buffered formalin. Decalcified specimens. Specimens with fewer than 100 viable tumor cells.
Stability (collection to initiation of testing): Ambient: Indefinitely; Refrigerated: Indefinitely; Frozen: Unacceptable

Note: This test code includes pathologist interpretation. At least 100 viable tumor cells are required for interpretation.

CPT Code(s): 88360

0070121 **Prostate Specific Antigen, Total** **PSA**

Specimen Required: Collect: Serum Separator Tube (SST) or Plasma Separator Tube (PST). Also acceptable: Plain Red, Green (Sodium or Lithium Heparin), Lavender (EDTA), or Pink (K_2EDTA).
Specimen Preparation: Allow specimen to clot completely at room temperature. Separate from cells ASAP or within 2 hours of collection. Transfer 1 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.5 mL)
Storage/Transport Temperature: Frozen.
Unacceptable Conditions: Grossly hemolyzed specimens. Vaginal washings.
Stability (collection to initiation of testing): After separation from cells: Ambient: 24 hours; Refrigerated: 3 days; Frozen: 6 months

0070234 **Prostate Specific Antigen, Total - Medicare Screening** **PSA SCN**

Specimen Required: Collect: Serum Separator Tube (SST) or Plasma Separator Tube (PST). Also acceptable: Plain Red, Green (Sodium or Lithium Heparin), Lavender (EDTA), or Pink (K_2EDTA).
Specimen Preparation: Transport 1 mL serum or plasma in an ARUP Standard Transport Tube. (Min: 0.5 mL)
Storage/Transport Temperature: Frozen.
Unacceptable Conditions: Hemolyzed specimens.
Stability (collection to initiation of testing): Ambient: 24 hours; Refrigerated: 3 days; Frozen: 6 months

0098581 **Prostate Specific Antigen, Ultrasensitive** **PSA ULTRA**

Specimen Required: Collect: Serum Separator Tube (SST) or Plasma Separator Tube (PST). Also acceptable: Plain Red, Green (Sodium or Lithium Heparin), Lavender (EDTA), or Pink (K_2EDTA).
Specimen Preparation: Allow specimen to clot completely at room temperature. Separate from cells ASAP or within 2 hours of collection. Transfer 1 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.5 mL)
Storage/Transport Temperature: Frozen.
Unacceptable Conditions: Grossly hemolyzed specimens. Vaginal washings.
Stability (collection to initiation of testing): After separation from cells: Ambient: 24 hours; Refrigerated: 3 days; Frozen: 6 months

2014059 **Prostate-Specific Kallikrein, 4Kscore** **4KSCORE**

CPT Code(s): 81539

0080310 Pyruvic Acid PYRU

Specimen Required: Patient Prep: Patient should be fasting and at complete rest. Patient should avoid any exercise of the arm or hand before or during collection. Draw the specimen without the use of a tourniquet or within three minutes of applying the tourniquet, but before releasing the tourniquet.
Collect: Green (Sodium or Lithium Heparin).
Specimen Preparation: If whole blood is collected in a syringe, transfer immediately to green (sodium or lithium heparin) tube before preparing specimen.
1) Immediately after blood is drawn, add exactly 1 mL whole blood to a chilled pyruvate collection tube containing 2 mL 8 percent (w/v) perchloric acid (ARUP supply #16567) available online through eSupply using ARUP Connect™ or contact Client Services at (800) 522-2787.
2) Mix well for 30 seconds then place in an ice bath for 10 minutes.
3) Centrifuge for 10 minutes at 1500 x g.
4) Decant 2 mL supernatant to an ARUP Standard Transport Tube and freeze. (Min: 1 mL)
Storage/Transport Temperature: Frozen.
Stability (collection to initiation of testing): Ambient: Unacceptable; Refrigerated: 2 days; Frozen: 4 weeks

Note: If less than 1 mL of blood is added to collection tube, pH of the supernatant will be too low for testing.

HOTLINE NOTE: Remove information found in the Unacceptable Conditions field.

2013011 Selenium, RBCs SELENI RBC

Performed: Varies
Reported: 3-10 days

Specimen Required: Collect: Royal blue (Trace metal-free EDTA).
Specimen Preparation: Separate cells ASAP or within 2 hours of collection. Transport 1 mL RBCs in the original collection tube. (Min: 0.4 mL)
Storage/Transport Temperature: Refrigerated. Also acceptable: Room temperature.
Stability (collection to initiation of testing): Ambient: 1 month; Refrigerated: 1 month; Frozen: Unacceptable

2002098 Signal Recognition Particle (SRP) Antibody SRP

Specimen Required: Collect: Lavender (EDTA). Also acceptable: Plain Red or Serum Separator Tube (SST).
Specimen Preparation: Transfer 2 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 1 mL)
Storage/Transport Temperature: Refrigerated.
Stability (collection to initiation of testing): Ambient: 4 days; Refrigerated: 2 weeks; Frozen: 1 month

2008771 Supersaturation Profile, Urine SUPERSAT

Specimen Required: Collect: 24-hour urine. Refrigerate during collection.
Specimen Preparation: Thoroughly mix entire collection (24-hour) in one container. Transport four separate 4 mL aliquots of urine using Calculi Risk/Supersaturation Urine Collection Kit (ARUP supply# 46007) available online through eSupply using ARUP Connect™ or contact Client Services at (800) 522-2787. Do not exceed 4 mL in tubes.
Aliquot according to the following specifications:
1st aliquot (pH 2): Transfer 4 mL urine into a Sulfamic Acid Tube. (Min: 4 mL) Mix well. Freeze immediately.
2nd aliquot (pH 2): Transfer 4 mL urine into a Sulfamic Acid Tube. (Min: 4 mL) Mix well. Freeze immediately.
3rd aliquot (pH 9): Transfer 4 mL urine into a Sodium Carbonate Tube. (Min: 4 mL) Mix well. Freeze immediately.
4th aliquot: Transfer 4 mL urine into an Unpreserved Tube. (Min: 4 mL) Freeze immediately.
If collection kit is unavailable, transport four 4 mL unadjusted aliquots of urine.
Storage/Transport Temperature: Frozen.
Remarks: **Record total volume and collection time interval on transport tube and test request form.**
Stability (collection to initiation of testing): Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen: 2 weeks

HOTLINE NOTE: Remove information found in the Unacceptable Conditions field.

0090064 Thiocyanate, 24-Hour Urine THIO-U 24

Reference Interval:
Effective May 15, 2017

Nonsmoker	Less than or equal to 4 mg/d
Smoker	7-17 mg/d

2011575 **Thiocyanate, Serum or Plasma** **THIO SP**

Reference Interval:
Effective May 15, 2017

Nonsmoker	Less than or equal to 4 µg/mL
Smoker	3-12 µg/mL
Toxic	Greater than 50 µg/mL
Values seen with nitroprusside therapy	6-29 µg/mL

0020753 **Thyroglobulin, Fine Needle Aspiration (FNA)** **THYROG FNA**

Specimen Required: Collect: Fine needle aspiration in saline.
Specimen Preparation: Centrifuge to remove cellular material. Specimen must be non-viscous and free of particulate matter. Transport 0.5 mL saline needle rinse. (Min: 0.5 mL) Also acceptable: Heparinized specimens.
Storage/Transport Temperature: Frozen.
Remarks: Indicate source on test request form.
Unacceptable Conditions: Specimen types other than those listed. Specimens containing EDTA. Viscous specimens.
Stability (collection to initiation of testing): Ambient: 8 hours; Refrigerated: 48 hours; Frozen: 6 months

0093244 **Thyroxine, Free by Equilibrium Dialysis/HPLC-Tandem Mass Spectrometry** **FT4 ED-TMS**

Specimen Required: Collect: Plain Red or Serum Separator Tube (SST).
Specimen Preparation: Separate from cells or gel ASAP or within 2 hours of collection. Transfer 2 mL serum to an ARUP Standard Transport Tube. (Min: 0.3 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Plasma.
Stability (collection to initiation of testing): After separation from cells: Ambient: 4 days; Refrigerated: 2 weeks; Frozen: 1 month

New Test
Available Now

2014109 **Total Inhibin Serum** **T INHIB**

Test not New York DOH approved at any laboratory. An approved NPL form must accompany specimen.

Methodology: Quantitative Enzyme-Linked Immunosorbent Assay
Performed: Tue
Reported: 1-8 days

Specimen Required: Collect: Serum Separator Tube (SST) or Plain Red.
Specimen Preparation: Transport 0.5 mL serum in an ARUP Standard Transport Tube. (Min: 0.2 mL)
Storage/Transport Temperature: Frozen.
Unacceptable Conditions: Hemolyzed or lipemic specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: 12 hours; Refrigerated: 1 week; Frozen: 3 months

Reference Interval:

Females, Premenopausal	10–300 pg/mL
Females, Postmenopausal	0–10 pg/mL
Males	50–190 pg/mL

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

CPT Code(s): 83520

New York DOH approval pending. Call for status update.

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

2014025 **Trypsin** **TRYPS**

Specimen Required: Collect: Serum Separator Tube (SST) or Plain Red.
Specimen Preparation: Allow specimen to clot for 15-20 minutes at room temperature. Separate from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.3 mL)
Storage/Transport Temperature: Frozen.
Unacceptable Conditions: Plasma or cord blood. Grossly hemolyzed or lipemic specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: 2 hours; Refrigerated: 24 hours; Frozen: 3 months

0099435 **Vasoactive Intestinal Peptide** **VIP**

Specimen Collection and Handling

Specimen Required: Collect: Protease Inhibitor tube (PPACK; Phe-Pro-Arg-cholormethylketone) (ARUP supply #49662), available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787. A winged collection set must be used.
Specimen Preparation: Mix well. Separate from cells within 1 hour of collection. Transfer 1 mL plasma to an ARUP Standard Transport Tube. (Min: 0.5 mL)
Storage/Transport Temperature: Frozen. Separate specimens must be submitted when multiple tests are ordered.
Unacceptable Conditions: Grossly hemolyzed specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: Unacceptable; Refrigerated: 72 hours; Frozen: 3 months

0030002 **von Willebrand Multimeric Panel** **VW MUL PAN**

Methodology: Electrophoresis/Clotting/Microlatex Particle-Mediated Immunoassay/Platelet Agglutination

2003387 **von Willebrand Panel with Reflex to von Willebrand Multimeric Analysis** **VW PANEL R**

Methodology: Electrophoresis/Clotting/Microlatex Particle-Mediated Immunoassay/Platelet Agglutination

The following will be discontinued from ARUP's test menu on May 15, 2017.
Replacement test options are supplied if applicable.

Test Number	Test Name	Refer To Replacement
2011880	Adrenoleukodystrophy, X-Linked (*ABCD1*) Deletion/Duplication	Adrenoleukodystrophy, X-Linked (*ABCD1*) Sequencing and Deletion/Duplication (2011906)
2005717	Allergens, Respiratory Panel, Region 1, North Atlantic (CT, MA, NJ, PA, VT, ME, NH, NY, RI) IgE	Allergens, Respiratory IgE Panel, Region 1, North Atlantic (CT, MA, NJ, PA, VT, ME, NH, NY, RI) (2014247)
2001582	Alpha Globin (HBA1 and HBA2) Sequencing	
2002394	Alport Syndrome, X-linked (*COL4A5*) Deletion/Duplication	Alport Syndrome, X-linked (*COL4A5*) Sequencing and Deletion/Duplication (2002398)
2008462	Antimicrobial Susceptibility - Carbapenem Resistance Confirmation by PCR	Antimicrobial Susceptibility – Carbapenemase Gene Detection by PCR (2014277)
2008443	*ATP7A*-Related Copper Transporter Disorders (*ATP7A*) Deletion/Duplication	ATP7A-Related Copper Transport Disorders (*ATP7A*) Sequencing and Deletion/Duplication (2008471)
0060762	Bartonella Species by PCR, Whole Blood	*Bartonella* Species by PCR (0093057)
2011915	Breast and Ovarian Hereditary Cancer Syndrome (*BRCA1* and *BRCA2*) Deletion/Duplication	Breast and Ovarian Hereditary Cancer Syndrome (*BRCA1* and *BRCA2*) Sequencing and Deletion/Duplication (2011949)
2004927	*CDKL5*-Related Disorders (*CDKL5*) Deletion/Duplication	*CDKL5*-Related Disorders (*CDKL5*) Sequencing and Deletion/Duplication (2004935)
2003172	Cerebral Cavernous Malformation (*CCM1*, *CCM2* and *CCM3*) Deletion/Duplication	Cerebral Cavernous Malformation (CCM) Panel, Sequencing and Deletion/Duplication, 3 Genes (2009326)
2008606	Creatine Transporter Deficiency (SLC6A8) Deletion/Duplication	Creatine Transporter Deficiency (*SLC6A8*) Sequencing and Deletion/Duplication (2008610)
0051642	Cystic Fibrosis (CFTR) Deletion/Duplication	Cystic Fibrosis (*CFTR*) Sequencing with Reflex to Deletion/Duplication (0051640)
0060031	Cytomegalovirus by PCR, Whole Blood or Bone Marrow	Cytomegalovirus by Qualitative PCR (0060040)
2005555	Ehlers-Danlos Syndrome Kyphoscoliotic Form, Type VI (*PLOD1*) Deletion/Duplication	Ehlers-Danlos Syndrome Kyphoscoliotic Form, Type VI (*PLOD1*) Sequencing and Deletion/Duplication (2005559)
0051353	Epstein-Barr Virus, Quantitative PCR, Whole Blood	Epstein-Barr Virus by Quantitative PCR (0051352)
0055248	F-Actin (Smooth Muscle) Antibody, IgG	Autoimmune Liver Disease Evaluation with Reflex to Smooth Muscle Antibody (SMA), IgG by IFA (2007210), F-Actin (Smooth Muscle) Antibody, IgG by ELISA with Reflex to Smooth Muscle Antibody, IgG Titer (0051174) or F-Actin and Mitochondrial M2 Antibodies, IgG by ELISA with Reflex to Smooth Muscle Antibody (SMA), IgG by IFA (2007209)
2004920	Familial Adenomatous Polyposis (*APC*) Deletion/Duplication	Familial Adenomatous Polyposis Panel: (*APC*) Sequencing and Deletion/Duplication, (*MUTYH*) 2 Mutations (2004915)
0051752	FG Syndrome, FGS1 (*MED12*) R961W Mutation	
2011424	*GLI3*-related Disorders (*GLI3*) Deletion/Duplication	GLI3-Related Disorders (*GLI3*) Sequencing and Deletion/Duplication (2011465)
2001751	Hemophilia A (*F8*) Deletion/Duplication	Hemophilia A (*F8*) 2 Inversions with Reflex to Sequencing and Reflex to Deletion/Duplication (2001614)
2010499	Hemophilia B (*F9*) Deletion/Duplication	Hemophilia B (*F9*) Sequencing and Deletion/Duplication (2010494)
0051348	Hereditary Hemorrhagic Telangiectasia (*ACVRL1* and *ENG*) Deletion/Duplication	Hereditary Hemorrhagic Telangiectasia (*ACVRL1* and *ENG*) Sequencing and Deletion/Duplication (0051382)
2007113	Hereditary Paraganglioma-Pheochromocytoma (*SDHB*, *SDHC*, and *SDHD*) Deletion/Duplication	Hereditary Paraganglioma-Pheochromocytoma (*SDHB*, *SDHC*, and *SDHD*) Sequencing and Deletion/Duplication Panel (2007167)
2005408	Hereditary Persistence of Fetal Hemoglobin (HPFH) 8 Mutations	Beta Globin (*HBB*) Deletion/Duplication (2010113)
0050459	Herpes Simplex Virus Types 1 and 2 Glycoprotein G-Specific Antibodies, IgG by Immunoblot	Herpes Simplex Virus Type 1 and/or 2 Antibodies, IgG with Reflex to Type 1 and 2 Glycoprotein G-Specific Ab, IgG (0051708)
2011937	Human Papillomavirus (HPV) 16 and 18 Genotype by PCR, SurePath	Human Papillomavirus (HPV), High Risk with 16 and 18 Genotype by PCR, SurePath (2011933)
0055557	*IGH-CCND1* (BCL-1/JH) Translocation, t(11;14) by PCR	*IGH-CCND1* Fusion, t(11;14) by FISH (2007226)
2006344	Inosine Triphosphatase (*ITPA*) and Interleukin 28 B (*IL28B*)-Associated Variants, 4 SNPs	Interleukin 28 B (*IL28B*)-Associated Variants, 2 SNPs (2004680)
2001976	Juvenile Polyposis (*SMAD4*) Deletion/Duplication	Juvenile Polyposis (*SMAD4*) Sequencing and Deletion/Duplication (2001971)
2004984	Juvenile Polyposis Syndrome (*BMPR1A*) Deletion/Duplication	Juvenile Polyposis Syndrome (*BMPR1A*) Sequencing and Deletion/Duplication (2004992)
2003987	Laminin by Immunohistochemistry	
2008373	Legius Syndrome (*SPRED1*) Deletion/Duplication	Legius Syndrome (*SPRED1*) Sequencing and Deletion/Duplication (2008347)
2009294	Li-Fraumeni Syndrome (*TP53*) Deletion/Duplication	Li-Fraumeni (*TP53*) Sequencing and Deletion/Duplication (2009313)
2005580	Marfan Syndrome (*FBN1*) Deletion/Duplication	Marfan Syndrome (*FBN1*) Sequencing and Deletion/Duplication (2005584)
2005346	Multiple Endocrine Neoplasia Type 1 (*MEN1)* Deletion/Duplication	Multiple Endocrine Neoplasia Type 1 (*MEN1*) Sequencing and Deletion/Duplication (2005360)
0060771	*Mycobacterium tuberculosis* Complex Speciation	Acid-Fast Bacillus (AFB) Identification (0060999)
2004892	Ornithine Transcarbamylase Deficiency (*OTC*) Deletion/Duplication	Ornithine Transcarbamylase Deficiency (*OTC*) Sequencing and Deletion/Duplication (2004896)
0060028	Parvovirus B19, by PCR, Bone Marrow	Parvovirus B19 by Qualitative PCR (0060043)
2008377	Peutz-Jeghers Syndrome (*STK11*) Deletion/Duplication	Peutz-Jeghers Syndrome (*STK11*) Sequencing and Deletion/Duplication (2008398)
0020507	pH, Body Fluid	

2012246	Polycystic Kidney Disease, Autosomal Dominant (*PKD1* and *PKD2)* Deletion/Duplication	Polycystic Kidney Disease, Autosomal Dominant (*PKD1* and *PKD2*) Sequencing and Deletion/Duplication (2012250)
2004199	Primary Carnitine Deficiency (*SLC22A5*) Deletion/Duplication	Primary Carnitine Deficiency (*SLC22A5*) Sequencing and Deletion/Duplication (2004203)
2002726	*PTEN*-Related Disorders (*PTEN*) Deletion/Duplication	PTEN-Related Disorders (*PTEN*) Sequencing and Deletion/Duplication (2002470)
2003401	Pulmonary Arterial Hypertension (*BMPR2*) Deletion/Duplication	Pulmonary Arterial Hypertension (*BMPR2*) Sequencing and Deletion/Duplication (2003405)
2007830	*RASA1*-Related Disorders (*RASA1*) Deletion/Duplication	RASA1-Related Disorders (*RASA1*) Sequencing and Deletion/Duplication (2007852)
0051618	Rett Syndrome (*MECP2*), Deletion and Duplication	Rett Syndrome (*MECP2*), Sequencing and Deletion/Duplication (0051614)
2008409	T-Cell Clonality by Next Generation Sequencing	T-Cell Clonality Screening by PCR (0055567)
2004208	Very Long-Chain Acyl-CoA Dehydrogenase Deficiency (*ACADVL)* Deletion/Duplication	Very Long-Chain Acyl-CoA Dehydrogenase Deficiency (*ACADVL*) Sequencing and Deletion/Duplication (2004212)
2002988	von Hippel-Lindau (*VHL*) Deletion/Duplication	von Hippel-Lindau (*VHL*) Sequencing and Deletion/Duplication (2002965)
2004434	X Chromosome Ultra-High Density Microarray	