

Methodology:	Semi-Quantitative Enzyme-Linked Immunosorbent Assay	
Specimen Required:	<u>Collect:</u> Serum separator tube or Lt. blue (sodium citrate). <u>Specimen Preparation:</u> Transfer 0.5 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.3 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Hemolyzed, grossly icteric, or lipemic specimens. <u>Stability:</u> After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year	
CPT Code(s):	0030T x2	
0051302	Prothrombin Antibody, IgG	PROTHROM G
Methodology:	Semi-Quantitative Enzyme-Linked Immunosorbent Assay	
Specimen Required:	<u>Collect:</u> Serum separator tube or Lt. blue (sodium citrate). <u>Specimen Preparation:</u> Transport 1 mL serum or plasma. (Min: 0.1 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Hemolyzed or lipemic specimens. <u>Stability:</u> After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year	
CPT Code(s):	0030T	
0051303	Prothrombin Antibody, IgM	PROTHROM M
Methodology:	Semi-Quantitative Enzyme-Linked Immunosorbent Assay	
Specimen Required:	<u>Collect:</u> Serum separator tube or Lt. blue (sodium citrate). <u>Specimen Preparation:</u> Transfer 1 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.1 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Hemolyzed or lipemic specimens. <u>Stability:</u> After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year	
CPT Code(s):	0030T	
0056060	Prothrombin (F2) G20210A Mutation	PT PCR
Methodology:	Polymerase Chain Reaction/Fluorescence Monitoring	
Specimen Required:	<u>Collect:</u> Lavender (EDTA), pink (K ₂ EDTA), or yellow (ACD Solution A or B). <u>Specimen Preparation:</u> Transport 3 mL whole blood. (Min: 1 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Stability:</u> Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable	
CPT Code(s):	83891 Isolation; 83898 Amplification; 83896 Nucleic acid probe; 83912 Interpretation and report - Additional CPT code modifiers may be required for procedures performed to test for oncologic or inherited disorders.	
0030215	Prothrombin Time	PT
Methodology:	Electromagnetic Mechanical Clot Detection	
Specimen Required:	<u>Collect:</u> Lt. blue (sodium citrate). <u>Specimen Preparation:</u> Separate plasma from cells within 24 hours. Transfer 1 mL platelet-poor plasma to an ARUP Standard Transport Tube. (Min: 0.5 mL) <u>Storage/Transport Temperature:</u> Frozen. <u>Unacceptable Conditions:</u> Serum. Clotted, hemolyzed, or refrigerated specimens. <u>Stability:</u> Ambient: 24 hours; Refrigerated: Unacceptable; Frozen: 2 weeks	
CPT Code(s):	85610	
0030224	Prothrombin Time/International Normalized Ratio	PT INR
Methodology:	Electromagnetic Mechanical Clot Detection	
Specimen Required:	<u>Collect:</u> Lt. blue (sodium citrate). <u>Specimen Preparation:</u> Transfer 1 mL platelet-poor plasma to an ARUP Standard Transport Tube. (Min: 0.5 mL) <u>Storage/Transport Temperature:</u> Frozen. <u>Unacceptable Conditions:</u> Serum. Non-frozen, clotted, or hemolyzed specimens. <u>Stability:</u> Ambient: 24 hours; Refrigerated: 24 hours; Frozen: 1 week	
CPT Code(s):	85610	
2005898	Protocadherin 19 (PCHD19) Sequencing	PCDH19
Methodology:	Polymerase Chain Reaction/Sequencing	
Specimen Required:	<u>Collect:</u> Collect: Lavender (EDTA). <u>Specimen Preparation:</u> Transport 4 mL whole blood. (Min: 4 mL) <u>Storage/Transport Temperature:</u> Room temperature <u>Stability:</u> Ambient: 3 weeks; Refrigerated: Unacceptable; Frozen	
CPT Code(s):	83891 Isolation, 83898 x11 Amplification, 83904 x11 Sequencing, 83909 x11 Capillary electrophoresis, 83912 Interpretation and report	
0090106	Protriptyline	PROTRIP
Methodology:	Quantitative Liquid Chromatography-Tandem Mass Spectrometry	
Specimen Required:	<u>Collect:</u> Plain red. Also acceptable: Lavender (EDTA), pink (K ₂ EDTA), green (sodium heparin), or gray (sodium fluoride/potassium oxalate). Avoid use of separator tubes and gels. <u>Specimen Preparation:</u> Transfer 2 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.5 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Specimens collected and stored in gel separator tubes for more than 2 hours at room temperature. Specimens refrigerated on a gel separator for more than 30 minutes. <u>Stability:</u> After separation from cells: Ambient: 5 days; Refrigerated: 5 days; Frozen: 6 months	
CPT Code(s):	80299	
0020159	Pseudocholinesterase, Dibucaine Inhibition	PCHE PHENO
Methodology:	Quantitative Enzymatic	
Specimen Required:	<u>Patient Preparation:</u> Specimen must be drawn prior to surgery or more than two days following surgery. Do not draw in recovery room. <u>Collect:</u> Serum separator tube, green (sodium or lithium heparin), lavender (EDTA), or pink (K ₂ EDTA). <u>Specimen Preparation:</u> Allow specimen to clot completely at room temperature. Separate serum or plasma from cells ASAP or within 2	

hours of collection. Transport 1 mL serum or plasma. (Min: 0.25 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Lt. blue (sodium citrate) or gray (oxalate/fluoride). Whole blood.
Stability: Ambient: 4 hours; Refrigerated: 1 week; Frozen: 3 months

CPT Code(s): 82638 Dibucaine number; 82480 Total

0020167 Pseudocholinesterase, Total CHE-P
Methodology: Quantitative Enzymatic
Specimen Required: Patient Preparation: Specimen must be drawn prior to surgery or more than two days following surgery. Do not draw in recovery room.
Collect: Serum separator tube, lavender (EDTA), pink (K₂EDTA), or green (sodium or 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. Transport 0.5 mL serum or plasma. (Min: 0.1 mL)
Storage/Transport Temperature: Refrigerated.
Remarks: Plasma values are slightly lower than serum.
Unacceptable Conditions: Whole blood on clot. Hemolyzed specimens.
Stability: Ambient: 4 hours; Refrigerated: 1 week; Frozen: 3 months

CPT Code(s): 82480

0091443 Pseudoephedrine, Serum or Plasma PSEUDO SP
Methodology: Liquid Chromatography/Tandem Mass Spectrometry
Specimen Required: Collect: One 7 mL plain red or lavender (EDTA).
Storage/Transport Temperature: 1 mL serum or plasma at 2-8°C. (Min: 0.5 mL) Submit sample in an ARUP Standard Transport Tube.
Remarks: Remove serum/plasma from cells ASAP.
Unacceptable Conditions: Serum separator tubes.
Stability: Ambient: 2 weeks; Refrigerated: 2 weeks; Frozen: 2 weeks

CPT Code(s): 80299

0091442 Pseudoephedrine, Urine PSEUDO UR
Methodology: Liquid Chromatography/Tandem Mass Spectrometry
Specimen Required: Collect: Random urine.
Storage/Transport Temperature: 1 mL urine at 2-8°C. (Min: 0.5 mL) Submit sample in an ARUP Standard Transport Tube.
Stability: Ambient: 2 weeks; Refrigerated: 2 weeks; Frozen: 2 weeks

CPT Code(s): 80299

2004115 PTEN by Immunohistochemistry PTEN IHC
Methodology: Immunohistochemistry
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: Ambient: Indefinite; Refrigerated: Indefinite; Frozen: Indefinite

CPT Code(s): 88342

2002726 PTEN-Related Disorders (PTEN) Deletion/Duplication PTENDEL DDP
Methodology: Polymerase Chain Reaction/Multiplex Ligation-dependent Probe Amplification
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: Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable

CPT Code(s): 83891 Isolation; 83896 Nucleic acid probes; 83898 Amplification; 83914 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.

2002722 PTEN-Related Disorders (PTEN) Sequencing PTEN FGS
Methodology: Polymerase Chain Reaction/Sequencing
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: Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable

CPT Code(s): 83891 Isolation; 83898 x12 Amplification; 83904 x12 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.

2002470 PTEN-Related Disorders (PTEN) Sequencing and Deletion/Duplication PTEN FGA
Methodology: Polymerase Chain Reaction/Sequencing/Multiplex Ligation-dependent Probe Amplification
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: Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable

CPT Code(s): Sequencing: 83891 Isolation; 83898 x12 Amplification; 83904 x12 Sequencing; 83909 capillary electrophoresis. Del/Dup: 83896 Nucleic Acid Probes; 83898 Amplification; 83914 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

2003401 Pulmonary Arterial Hypertension (BMPR2) Deletion/Duplication BMPR2 DD

Methodology:	Polymerase Chain Reaction/Multiplex Ligation-dependent Probe Amplification	
Specimen Required:	<u>Collect:</u> Lavender (EDTA), pink (K ₂ EDTA), or yellow (ACD Solution A or B). <u>Specimen Preparation:</u> Transport 3 mL whole blood. (Min: 1 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Stability:</u> Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable	
CPT Code(s):	83891 Isolation; 83896 Nucleic acid probes; 83898 Amplification; 83914 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.	
2003410	Pulmonary Arterial Hypertension (BMPR2) Sequencing	BMPR2 FGS
Methodology:	Polymerase Chain Reaction/Sequencing	
Specimen Required:	<u>Collect:</u> Lavender (EDTA), pink (K ₂ EDTA), or yellow (ACD Solution A or B). <u>Specimen Preparation:</u> Transport 3 mL whole blood. (Min: 1 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Stability:</u> Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable	
CPT Code(s):	Sequencing: 83891 Isolation; 83898 x16 Amplification; 83904 x16 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.	
2003405	Pulmonary Arterial Hypertension (BMPR2) Sequencing and Deletion/Duplication	BMPR2 FGA
Methodology:	Polymerase Chain Reaction/Sequencing/Multiplex Ligation-dependent Probe Amplification	
Specimen Required:	<u>Collect:</u> Lavender (EDTA), pink (K ₂ EDTA), or yellow (ACD Solution A or B). <u>Specimen Preparation:</u> Transport 3 mL whole blood. (Min: 2 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Stability:</u> Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable	
CPT Code(s):	Sequencing: 83891 Isolation; 83898 x16 Amplification; 83904 x16 Sequencing; 83909 Capillary electrophoresis. Del/Dup: 83896 Nucleic acid probes; 83898 Amplification; 83914 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.	
0059444	Purkinje Cell Cytoplasmic Antibody by IFA with Reflex to Titer & Immunoblot	PCCA R
Methodology:	Semi-Quantitative Indirect Fluorescent Antibody/Qualitative Immunoblot	
Specimen Required:	<u>Collect:</u> Serum separator tube. <u>Specimen Preparation:</u> 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) <u>Storage/Transport Temperature:</u> Frozen. <u>Unacceptable Conditions:</u> Plasma. Contaminated, heat-inactivated, hemolyzed, or lipemic specimens. <u>Stability:</u> After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year	
CPT Code(s):	86255; if reflexed, add 86256 Titer; 83516 Immunoblot	
0098510	Purkinje Cell Cytoplasmic Antibody by IFA with Reflex to Titer & Western Blot, CSF	PURK CSF
Methodology:	Qualitative Immunofluorescence Assay/Quantitative Western Blot	
Specimen Required:	<u>Collect:</u> CSF. <u>Specimen Preparation:</u> Transport 1 mL CSF. (Min: 0.5 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Stability:</u> Ambient: Unacceptable; Refrigerated: 2 weeks; Frozen: 1 month	
CPT Code(s):	86255 PCCA; if reflexed, add 86256 Titer; 84181 Western blot	
0070213	Pyridinium Crosslinks (Total)	PYD
Methodology:	Quantitative Enzyme Immunoassay	
Specimen Required:	<u>Patient Preparation:</u> First-morning void. <u>Collect:</u> Urine. <u>Specimen Preparation:</u> Transfer 3.5 mL aliquot from a well-mixed, first-morning urine to an ARUP Standard Transport Tube. (Min: 0.5 mL) <u>Storage/Transport Temperature:</u> Frozen. <u>Stability:</u> Ambient: 2 hours; Refrigerated: 4 days; Frozen: 3 months	
CPT Code(s):	82523	
0080342	Pyridinoline & Deoxypyridinoline by HPLC	PYD & DPD
Methodology:	High Performance Liquid Chromatography	
Specimen Required:	<u>Patient Preparation:</u> First morning void. <u>Collect:</u> Urine. <u>Specimen Preparation:</u> Transfer 8 mL urine to ARUP Standard Transport Tubes. (Min: 4 mL) <u>Storage/Transport Temperature:</u> Frozen. <u>Unacceptable Conditions:</u> Random urine. <u>Stability:</u> Ambient: Unacceptable; Refrigerated: 1 week; Frozen: 6 months	
CPT Code(s):	82523	
0091547	Pyridostigmine (Mestinon), Serum or Plasma	PYRIDOSTIG
Methodology:	Gas Chromatography	
Specimen Required:	<u>Collect:</u> Plain red or lavender (EDTA). <u>Specimen Preparation:</u> Centrifuge. Transfer 5 mL serum or plasma to ARUP Standard Transport Tubes and freeze immediately. (Min: 2.2 mL) <u>Storage/Transport Temperature:</u> CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered. <u>Unacceptable Conditions:</u> Separator tubes. Thawed specimens. <u>Stability:</u> Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen: 3 weeks	
CPT Code(s):	82491	
0080290	Pyruvate Kinase	PK
Methodology:	Quantitative Enzymatic	

Specimen Required: Collect: Lavender (EDTA) or pink (K₂EDTA). Also acceptable: Green (sodium heparin) or yellow (ACD Solution A or B).
Specimen Preparation: **Do not freeze.** Transport 1 mL whole blood.
Storage/Transport Temperature: Refrigerated.
Stability: Ambient: Unacceptable; Refrigerated: 20 days; Frozen: Unacceptable

CPT Code(s): 84220

0080310 Pyruvic Acid PYRU

Methodology: Quantitative Enzymatic

Specimen Required: Collect: Whole blood using either a syringe or Vacutainer® pink (K₂EDTA), Vacutainer® lavender (EDTA), or Vacutainer® green (sodium or lithium heparin).
Specimen Preparation: 1) Immediately after blood is drawn, add exactly 1 mL whole blood to a chilled pyruvate collection tube containing 2 mL 8% (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.
Unacceptable Conditions: If less than 1 mL of blood is added to collection tube, pH of the supernatant will be too low for testing to be performed.
Stability: Ambient: Unacceptable; Refrigerated: 1 month; Frozen: 6 months

CPT Code(s): 84210

0080312 Pyruvic Acid, CSF PYRU CSF

Methodology: Quantitative Enzymatic

Specimen Required: Collect: CSF.
Specimen Preparation: 1) Immediately after CSF is collected, add exactly 1 mL CSF to a chilled pyruvate collection tube containing 2 mL 8% (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.
Unacceptable Conditions: CSF not prepared as indicated in specimen preparation instructions.
Stability: Ambient: Unacceptable; Refrigerated: 1 month; Frozen: 6 months

CPT Code(s): 84210

0051729 QuantiFERON®-TB Gold In Tube QFTG-TB IT

Methodology: Semi-Quantitative Cell Culture/Quantitative Enzyme-Linked Immunosorbent Assay

Specimen Required: Collect: Three Cellestis QuantiFERON®-TB Gold In Tube collection tubes (Nil, TB, and Mitogen, ARUP Supply #45112). High Altitude collection tubes (ARUP Supply #46261). Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787. Tubes should be between 17 and 25 (63 to 77 at the time of blood filling).
Specimen Preparation: Immediately after filling tubes, shake them ten (10) times just firmly enough to ensure the entire inner surface of the tube is coated with blood, to solubilize antigens on tube walls. Over-energetic shaking may cause gel disruption and could lead to aberrant results.
After mixing, incubate upright at 37 ° C for 16-24 hours (within 16 hours of collection).
After incubation, centrifuge for 15 minutes at 2000-3000 RCF (g).
Transport 1 mL whole blood in each of the 3 original collection tubes.
Storage/Transport Temperature: Refrigerated.
Remarks: Further information on mixing QuantiFERON-TB Gold In-Tube collection tubes and an instructional video can be found at: <http://www.aruplab.com/Specimen-Handling/SpecialSpecimenCollection/quantiferon.jsp>
Unacceptable Conditions: Room temperature specimens. Specimens that have not been centrifuged.
Stability: After incubation and centrifugation: Ambient: 2 hours; Refrigerated: 4 weeks; Frozen: 4 months

CPT Code(s): 86480

2001627 QuantiFERON®-TB Gold In Tube & Mycobacterium tuberculosis Antibody, IgG TB PAN

Methodology: Semi-Quantitative Cell Culture/Quantitative and Semi-Quantitative Enzyme-Linked Immunosorbent Assay

Specimen Required: Collect: Three Cellestis QuantiFERON®-TB Gold In Tube collection tubes (Nil, TB, and Mitogen, ARUP Supply #45112) or high Altitude collection tubes (ARUP Supply #46261). Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787. Tubes should be between 17 and 25 (63 to 77 at the time of blood filling).
Specimen Preparation: Immediately after filling tubes, shake them ten (10) times just firmly enough to ensure the entire inner surface of the tube is coated with blood, to solubilize antigens on tube walls. Over-energetic shaking may cause gel disruption and could lead to aberrant results.
After mixing, incubate upright at 37 ° C for 16-24 hours (within 16 hours of collection).
After incubation, centrifuge for 15 minutes at 2000-3000 RCF (g).
Transport 1 mL whole blood in each of the 3 original collection tubes.
Storage/Transport Temperature: Refrigerated.
Remarks: Further information on mixing QuantiFERON-TB Gold In-Tube collection tubes and an instructional video can be found at: <http://www.aruplab.com/Specimen-Handling/SpecialSpecimenCollection/quantiferon.jsp>
Unacceptable Conditions: Room temperature specimens. Specimens that have not been centrifuged.
Stability: After incubation and centrifugation: Ambient: 2 hours; Refrigerated: 4 weeks; Frozen: 4 months

CPT Code(s): 86480 QuantiFERON, 86609 IgG ELISA

2003118 Quetiapine (Seroquel®), Serum or Plasma QUETIAP

Methodology: Quantitative Liquid Chromatography-Tandem Mass Spectrometry

Specimen Required: Collect: Plain red, lavender (EDTA), pink (K₂EDTA), or green (sodium or lithium heparin).
Specimen Preparation: Transfer 1 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.5 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Serum separator tubes.

CPT Code(s):	<u>Stability:</u> Ambient: 1 week; Refrigerated: 1 month; Frozen: 1 month 80299	
0090245	Quinidine	QUIN
Methodology:	Fluorescence Polarization Immunoassay	
Specimen Required:	<u>Collect:</u> Plain red. Also acceptable: Green (sodium heparin). <u>Specimen Preparation:</u> Transfer 1 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.5 mL) <u>Storage/Transport Temperature:</u> Frozen. <u>Unacceptable Conditions:</u> Gray (sodium fluoride/potassium oxalate), lavender (EDTA), or separator tubes. Hemolyzed specimens. <u>Stability:</u> After separation from cells: Ambient: 8 hours; Refrigerated: 24 hours; Frozen: 1 month	
CPT Code(s):	80194	
0091572	Quinine, Serum or Plasma	QUININE SP
Methodology:	High Performance Liquid Chromatography/Tandem Mass Spectrometry	
Specimen Required:	<u>Collect:</u> Lavender (EDTA), pink (K ₂ EDTA). Also acceptable: Plain red. <u>Specimen Preparation:</u> Separate from cells within 2 hours of draw. Transfer 1 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.22 mL) <u>Storage/Transport Temperature:</u> Refrigerated. Also acceptable: Room temperature or frozen. <u>Unacceptable Conditions:</u> Separator tubes. <u>Stability:</u> Ambient: 1 month; Refrigerated: 1 month; Frozen: 1 month	
CPT Code(s):	84228	
0091227	Quinine, Urine	QUININ UR
Methodology:	High Performance Liquid Chromatography/Tandem Mass Spectrometry	
Specimen Required:	<u>Collect:</u> Random urine. <u>Specimen Preparation:</u> Transfer 1 mL urine to an ARUP Standard Transport Tube. (Min: 0.22 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Stability:</u> Ambient: 1 month; Refrigerated: 1 month; Frozen: 1 month	
CPT Code(s):	84228	
0099132	Rabies Antibody, IgG (Vaccine Response)	RABIES
Methodology:	Semi-Quantitative Enzyme-Linked Immunosorbent Assay	
Specimen Required:	<u>Collect:</u> Serum separator tube. <u>Specimen Preparation:</u> Transfer 0.5 mL serum to an ARUP Standard Transport Tube. (Min: 0.1 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Plasma or CSF. Hemolyzed, icteric, or lipemic specimens. <u>Stability:</u> After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year	
CPT Code(s):	86790	
0050302	Raji Cell Immune Complex Assay	RAJI
Methodology:	Quantitative Flow Cytometry	
Specimen Required:	<u>Collect:</u> Plain red or serum separator tube. <u>Specimen Preparation:</u> Let stand for 2 hours, then separate serum from cells within 1 hour and freeze immediately. Transport 3 mL serum. (Min: 0.5 mL) <u>Storage/Transport Temperature:</u> CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered. <u>Unacceptable Conditions:</u> Non-frozen specimens. Specimens exposed to repeated freeze/thaw cycles. <u>Stability:</u> Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen: 30 days	
CPT Code(s):	86332	
0091569	Ranitidine (Zantac®), Serum or Plasma	RANITIDI
Methodology:	High Performance Liquid Chromatography	
Specimen Required:	<u>Collect:</u> Plain red or lavender (EDTA). <u>Specimen Preparation:</u> Transfer 2 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 1 mL) <u>Storage/Transport Temperature:</u> Room temperature. <u>Unacceptable Conditions:</u> Serum separator tubes. <u>Stability:</u> Ambient: 2 weeks; Refrigerated: 2 weeks; Frozen: 2 weeks	
CPT Code(s):	80299	
0091424	Ranitidine (Zantac®), Urine	RANITI UR
Methodology:	High Performance Liquid Chromatography	
Specimen Required:	<u>Collect:</u> Random urine. <u>Specimen Preparation:</u> 2 mL urine to an ARUP Standard Transport Tube. (Min: 1 mL) <u>Storage/Transport Temperature:</u> Room temperature. <u>Stability:</u> Ambient: 2 weeks; Refrigerated: 2 weeks; Frozen: 2 weeks	
CPT Code(s):	80299	
2002730	RASAI-Related Disorders (RASAI) Sequencing	RASAI FGS
Methodology:	Polymerase Chain Reaction/Sequencing	
Specimen Required:	<u>Collect:</u> Lavender (EDTA), pink (K ₂ EDTA), or yellow (ACD Solution A or B). <u>Specimen Preparation:</u> Transport 3 mL whole blood. (Min: 1 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Stability:</u> Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable	
CPT Code(s):	83891 Isolation; 83898 x30 Amplification; 83904 x30 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.	
0040270	Red Blood Cell Count	RBC
Methodology:	Automated Cell Count	
Specimen Required:	<u>Collect:</u> Lavender (EDTA) or pink (K ₂ EDTA).	

Specimen Preparation: Mix well immediately after draw. Transport 3 mL whole blood. (Min: 0.25 mL)

Storage/Transport Temperature: Refrigerated.

Unacceptable Conditions: Frozen specimens. Clotted or hemolyzed specimens.

Stability: Ambient: 24 hours; Refrigerated: 72 hours; Frozen: Unacceptable

CPT Code(s): 85041

0020373 Reducing Substances, Fecal **FECRED**

Methodology: Semi-quantitative Colorimetry

Specimen Required: Collect: Stool.

Specimen Preparation: Transfer 5 g stool to an unpreserved stool transport vial (ARUP Supply #40910). Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787. (Min: 1 g)

Storage/Transport Temperature: Frozen.

Unacceptable Conditions: Diapers. Specimens in preservatives.

Stability: Ambient: Unacceptable; Refrigerated: 36 hours; Frozen: 1 week

CPT Code(s): 84376

2004124 Renal Cell Carcinoma (RCC) Antigen by Immunohistochemistry **RCC IHC**

Methodology: Immunohistochemistry

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: Ambient: Indefinite; Refrigerated: Indefinite; Frozen: Indefinite

CPT Code(s): 88342

0020144 Renal Function Panel **RENAL**

Methodology: Refer to individual components

Specimen Required: Collect: Plasma separator tube or serum separator tube.

Specimen Preparation: Allow serum tube to clot completely at room temperature. Separate serum or plasma from cells 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 collected in citrate, EDTA, or oxalate.

Stability: After separation from cells: Ambient: Calcium and CO₂: 4 hours, All others: 24 hours; Refrigerated: 1 week; Frozen: 6 months

CPT Code(s): 80069

Renal Pathology Special Studies

Methodology: Microscopic Exam

Specimen Required: Collect: Obtain Renal Biopsy kit prior to collection procedure (ARUP supply #40460). Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787. Special fixatives are required.

Renal biopsy.

Specimen Preparation: Transport renal biopsy according to kit instructions.

Storage/Transport Temperature: Room temperature.

Remarks: Submit clinical history and a preliminary report if applicable.

Unacceptable Conditions: Specimens submitted without glomeruli. Specimens with inappropriate fixative. Specimens that are not collected and submitted according to instructions provided in collection kit.

Stability: Ambient: 72 hours; Refrigerated: 72 hours; Frozen: Unacceptable

CPT Code(s): 88305 Level IV surgical pathology and/or 88346 Immunofluorescent, each antibody and/or 88348 Electron microscopy.

0070105 Renin Activity **RENIN**

Methodology: Quantitative Radioimmunoassay

Specimen Required: Patient Preparation: **Supine:** 1. Specimen should be obtained between 8 a.m. and 10 a.m. (after at least two hours in supine position); 2. Normal sodium diet (100-200 mEq/day) for at least three days; 3. Take no medications known to affect renin-aldosterone system.

Upright: 1. Specimen should be obtained before noon (after at least two hours in upright position; seated or standing); 2. Normal sodium diet (100-200 mEq/day) for at least three days; 3. Take no medications known to affect renin-aldosterone system.

Contact Medical Director if more information is needed.

Collect: Lavender (EDTA) or pink (K₂EDTA). **Do not collect in refrigerated tubes.**

Specimen Preparation: Separate plasma from cells. Transfer 2 mL plasma to an ARUP Standard Transport Tube and freeze immediately. (Min: 1.2 mL)

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

Unacceptable Conditions: Serum. Specimens collected in citrate, heparin, or oxalate. Hemolyzed or refrigerated specimens.

Stability: After separation from cells: Ambient: 6 hours; Refrigerated: Unacceptable; Frozen: 1 month

CPT Code(s): 84244

2001575 Renin, Direct **RENIND**

Methodology: Quantitative Immunoradiometric Assay

Specimen Required: Patient Preparation: **Supine:** 1. Specimen should be obtained between 8 a.m. and 10 a.m. (after at least two hours in supine position); 2. Normal sodium diet (100-200 mEq/day) for at least three days; 3. Take no medications known to affect renin-aldosterone system.

Upright: 1. Specimen should be obtained before noon (after at least two hours in upright position; seated or standing); 2. Normal sodium diet (100-200 mEq/day) for at least three days; 3. Take no medications known to affect renin-aldosterone system.

Contact Medical Director if more information is needed.

Collect: Lavender (EDTA) or pink (K₂EDTA). **Do not collect in refrigerated tubes.**

Specimen Preparation: **Separate plasma from cells ASAP.** Transfer 2 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: Serum. Specimens collected in citrate, heparin, or oxalate. Hemolyzed or refrigerated specimens.
Stability: After separation from cells: Ambient: 4 hours; Refrigerated: Unacceptable; Frozen: 4 weeks

CPT Code(s):

84244

0030295	Reptilase Time with Reflex to Reptilase Time 1:1 Mix	REP
Methodology:	Clotting	
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>Remarks:</u> Unacceptable Conditions: Serum. Non-frozen or hemolyzed specimens. <u>Stability:</u> Ambient: 2 hours; Refrigerated: 4 hours; Frozen: 2 weeks	
CPT Code(s):	85635 Reptilase time; if reflexed add 85635 Reptilase time 1:1 mix	
0060122	Respiratory Culture (Includes Gram Stain 0060101)	MC RESP
Methodology:	Standard reference procedures for bacterial stain, aerobic culture, and identification. Sinus swabs or aspirates should be ordered as a Wound Culture (0060132).	
Specimen Required:	<u>Collect:</u> Respiratory specimen: Sputum, tracheal aspirate. Acceptable for Neonates: Gastric aspirate. <u>Specimen Preparation:</u> Fluid: Transfer to a sterile container. OR Swab: Place into bacterial transport media. <u>Storage/Transport Temperature:</u> Refrigerated. Submit specimen according to Biological Substance, Category B, shipping guidelines. <u>Remarks:</u> Specimen source required. Client will be notified of unacceptable specimen. Refer to <i>Bordetella pertussis</i> Culture (ARUP test code 0060117), <i>Corynebacterium diphtheriae</i> Culture (ARUP test code 0060360), or <i>Legionella</i> Species, Culture (ARUP test code 0060113) for special instructions, if requested. <u>Unacceptable Conditions:</u> Multiple specimens (more than one in 24 hours). Dry specimens or poor quality sputum (presence of greater than 10 epithelial cells per 100x field). <u>Stability:</u> Ambient: 2 hours; Refrigerated: 24 hours; Frozen: Unacceptable	
CPT Code(s):	87070	
0051087	Respiratory Syncytial Virus Antibodies, IgG & IgM	RSV PAN
Methodology:	Semi-Quantitative Enzyme-Linked Immunosorbent Assay	
Specimen Required:	<u>Collect:</u> Serum separator tube. <u>Specimen Preparation:</u> Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.05 mL) Parallel testing is preferred and convalescent specimens must be received within 30 days of receipt of the acute specimens. Mark specimens plainly "acute" and "convalescent." <u>Storage/Transport Temperature:</u> Refrigerated. Also acceptable: Room temperature or frozen. <u>Unacceptable Conditions:</u> Plasma. Bacterially contaminated, heat-inactivated, hemolyzed, icteric, lipemic, or turbid specimens. <u>Stability:</u> After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year	
CPT Code(s):	86756 x2	
0051085	Respiratory Syncytial Virus Antibody, IgG	RSV G
Methodology:	Semi-Quantitative Enzyme-Linked Immunosorbent Assay	
Specimen Required:	<u>Collect:</u> Serum separator tube. <u>Specimen Preparation:</u> Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.05 mL) Parallel testing is preferred and convalescent specimens must be received within 30 days of receipt of the acute specimens. Mark specimens plainly "acute" and "convalescent." <u>Storage/Transport Temperature:</u> Refrigerated. Also acceptable: Room temperature or frozen. <u>Unacceptable Conditions:</u> Plasma. Bacterially contaminated, heat-inactivated, hemolyzed, icteric, lipemic, or turbid specimens. <u>Stability:</u> After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year	
CPT Code(s):	86756	
0051086	Respiratory Syncytial Virus Antibody, IgM	RSV M
Methodology:	Semi-Quantitative Enzyme-Linked Immunosorbent Assay	
Specimen Required:	<u>Collect:</u> Serum separator tube. <u>Specimen Preparation:</u> Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.05 mL) Parallel testing is preferred and convalescent specimens must be received within 30 days of receipt of the acute specimens. Mark specimens plainly "acute" and "convalescent." <u>Storage/Transport Temperature:</u> Refrigerated. Also acceptable: Room temperature or frozen. <u>Unacceptable Conditions:</u> Plasma. Bacterially contaminated, heat-inactivated, hemolyzed, icteric, lipemic, or turbid specimens. <u>Stability:</u> After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year	
CPT Code(s):	86756	
0060288	Respiratory Syncytial Virus DFA	RSV
Methodology:	Direct Fluorescent Antibody Stain	
Specimen Required:	<u>Collect:</u> Respiratory specimen: Nasopharyngeal aspirate, swab, or washing, tracheal aspirate, or respiratory secretions. <u>Specimen Preparation:</u> Do not freeze. Fluid: Transfer specimen to a sterile container. Also acceptable: Transfer to viral transport media (ARUP Supply #12884). Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787. Swab: Place in viral transport media. Place each specimen in an individually sealed bag. <u>Storage/Transport Temperature:</u> Refrigerated. Submit specimen according to Biological Substance, Category B, shipping guidelines. <u>Remarks:</u> Specimen source preferred. <u>Unacceptable Conditions:</u> Dry swabs. <u>Stability:</u> Ambient: 2 hours; Refrigerated: 72 hours; Frozen: Unacceptable	
CPT Code(s):	87280	
0060764	Respiratory Virus Mini Panel by RT-PCR	RESPMINI

Methodology: Qualitative Reverse Transcription Polymerase Chain Reaction
Specimen Required: Collect: Respiratory specimen: Bronchoalveolar lavage (BAL), nasal wash, nasopharyngeal swab, or pleural fluid.
Specimen Preparation: **Fluid:** Transfer 1 mL respiratory specimen to a sterile container. (Min: 0.5 mL) Also acceptable: Transfer to viral transport media (ARUP Supply #12884). Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787.
OR transport swabs.
Storage/Transport Temperature: Refrigerated. Submit specimen according to Biological Substance, Category B, shipping guidelines.
Remarks: Specimen source required.
Unacceptable Conditions: Respiratory aspirates in collection containers with tubing. Leaking or non-sterile containers. Dry swabs.
Stability: Ambient: 2 hours; Refrigerated: 72 hours; Frozen: 2 months
CPT Code(s): 87502 Influenza A & B; 87798 RSV

0060289 Respiratory Viruses DFA RSPFA
Methodology: Direct Fluorescent Antibody Stain
Specimen Required: Collect: Respiratory specimen: Bronchoalveolar lavage (BAL), nasopharyngeal aspirate, swab, or washing, or tracheal aspirate.
Specimen Preparation: **Do not freeze.**
Fluid: Transfer specimen to a sterile container. Also acceptable: Transfer to viral transport media (ARUP Supply #12884). Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787.
Swab: Place in viral transport media.
Place each specimen in an individually sealed bag.
Storage/Transport Temperature: Refrigerated. Submit specimen according to Biological Substance, Category B, shipping guidelines.
Remarks: **Specimen source preferred.**
Unacceptable Conditions: Dry swabs.
Stability: Ambient: 2 hours; Refrigerated: 72 hours; Frozen: Unacceptable
CPT Code(s): 87276 Influenza A; 87275 Influenza B; 87279 x3 Parainfluenza (1,2,3); 87280 RSV; 87260 Adenovirus; 87299 Human Metapneumovirus

2002565 Respiratory Viruses DFA with Reflex to Respiratory Virus Mini Panel by RT-PCR RSPFAPCR
Methodology: Direct Fluorescent Antibody Stain
Specimen Required: Collect: Nasal aspirate or nasopharyngeal swab.
Specimen Preparation: Do not freeze.
Fluid: Transfer specimen to a sterile container. Also acceptable: Transfer to viral transport media (ARUP Supply #12884). Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787.
Swab: Place in viral transport media.
Place each specimen in a separate, individually sealed bag.
Storage/Transport Temperature: Refrigerated. Submit specimen according to Biological Substance, Category B, shipping guidelines.
Remarks: Specimen source required.
Unacceptable Conditions: Dry swabs.
Stability: Ambient: 2 hours; Refrigerated: 72 hours; Frozen: Unacceptable
CPT Code(s): 87276 Influenza A; 87275 Influenza B; 87279 x3 Parainfluenza (1,2,3); 87280 RSV; 87260 Adenovirus; 87299 Human Metapneumovirus; if reflexed add 87502 Influenza A & B; 87798 RSV

0060281 Respiratory Viruses DFA with Reflex to Viral Culture RSPFAC
Methodology: Direct Fluorescent Antibody Stain
Specimen Required: Collect: Respiratory specimen: Bronchoalveolar lavage (BAL), nasopharyngeal aspirate, swab, or washing, or tracheal aspirate.
Specimen Preparation: Do not freeze.
Fluid: Transfer specimen to a sterile container. Also acceptable: Transfer to viral transport media (ARUP Supply #12884). Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787.
Swab: Place in viral transport media.
Place each specimen in a separate, individually sealed bag.
Storage/Transport Temperature: Refrigerated. Submit specimen according to Biological Substance, Category B, shipping guidelines.
Remarks: Specimen source required.
Unacceptable Conditions: Dry swabs.
Stability: Ambient: 2 hours; Refrigerated: 72 hours; Frozen: Unacceptable
CPT Code(s): 87276 Influenza A; 87275 Influenza B; 87279 x3 Parainfluenza (1,2,3); 87280 RSV; 87260 Adenovirus; 87299 Human Metapneumovirus; if reflexed add 87252 Tissue culture.

2001504 Respiratory Viruses Rapid Culture V RESPC
Methodology: Cell Culture/Immunofluorescence
Specimen Required: Collect: Respiratory specimen: Bronchoalveolar lavage (BAL), nasopharyngeal aspirate, swab, or washing, or tracheal aspirate.
Specimen Preparation: **Do not freeze.**
Fluid: Transfer specimen to a sterile container. Also acceptable: Transfer to viral transport media (ARUP Supply #12884). Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787.
OR Swab: Place in viral transport media.
Place each specimen in a separate, individually sealed bag.
Storage/Transport Temperature: Refrigerated. Submit specimen according to Biological Substance, Category B, shipping guidelines.
Remarks: Specimen source preferred.
Unacceptable Conditions: Calcium alginate, dry, or wood swabs.
Stability: Ambient: 2 hours; Refrigerated: 72 hours; Frozen: Unacceptable
CPT Code(s): 87254

0050698 Reticulin Antibody, IgA with Reflex to Titer RETIC R
Methodology: Semi-Quantitative Indirect Fluorescent Antibody
Specimen Required: Collect: Serum separator tube.
Specimen Preparation: Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.15 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Plasma. Contaminated, hemolyzed, or severely lipemic specimens.

CPT Code(s):	<u>Stability:</u> After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles) 86255 Reticulin; if reflexed add 86256 Reticulin titer	
0098878	Reticulin Antibody, IgG with Reflex to Titer	RETIC IGG
Methodology:	Semi-Quantitative Immunofluorescence Assay	
Specimen Required:	<u>Collect:</u> Plain red or serum separator tube. <u>Specimen Preparation:</u> Transfer 0.5 mL serum to an ARUP Standard Transport Tube. (Min: 0.1 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Stability:</u> Ambient: 4 days; Refrigerated: 1 week; Frozen: 1 month	
CPT Code(s):	86255; if reflexed add 86256	
0040263	Reticulocytes, Cellular Hb	CHR
Methodology:	Flow Cytometry	
Specimen Required:	<u>Collect:</u> Lavender (EDTA) or pink (K ₂ EDTA). <u>Specimen Preparation:</u> Do not freeze. Transport 3 mL whole blood. (Min: 0.5 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Frozen specimens. Clotted or hemolyzed specimens. <u>Stability:</u> Ambient: 24 hours; Refrigerated: 72 hours; Frozen: Unacceptable	
CPT Code(s):	85046	
0040022	Reticulocytes, Percent & Number	RETICULOCY
Methodology:	Flow Cytometry	
Specimen Required:	<u>Collect:</u> Lavender (EDTA) or pink (K ₂ EDTA). <u>Specimen Preparation:</u> Do not freeze. Transport 3 mL whole blood . (Min: 0.5 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Frozen specimens. Clotted or hemolyzed specimens. <u>Stability:</u> Ambient: 24 hours; Refrigerated: 72 hours; Frozen: Unacceptable	
CPT Code(s):	85045	
0050467	Retinol Binding Protein	RBP
Methodology:	Quantitative Nephelometry	
Specimen Required:	<u>Collect:</u> Serum separator tube. <u>Specimen Preparation:</u> 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) Plasma is not recommended. <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Contaminated, hemolyzed, or severely lipemic specimens. <u>Stability:</u> After separation from cells: Ambient: 4 hours; Refrigerated: 1 week; Frozen: 2 months	
CPT Code(s):	83883	
0051618	Rett Syndrome (MECP2), Deletion and Duplication	RETTDELDUP
Methodology:	Multiplex Ligation Probe Amplification	
Specimen Required:	<u>Collect:</u> Lavender (EDTA), pink (K ₂ EDTA), or yellow (ACD Solution A or B). <u>Specimen Preparation:</u> Transport 3 mL whole blood. (Min: 1 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Stability:</u> Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable	
CPT Code(s):	83891 Isolation; 83896 Nucleic acid probes; 83914 Extension; 83898 Amplification; 83909 Capillary electrophoresis; 83912 Interpretation and report.	
0051614	Rett Syndrome (MECP2), Full Gene Analysis	RETT FGA
Methodology:	Full Gene Sequencing/Multiplex Ligation Probe Amplification	
Specimen Required:	<u>Collect:</u> Lavender (EDTA), pink (K ₂ EDTA), or yellow (ACD Solution A or B). <u>Specimen Preparation:</u> Transport 3 mL whole blood. (Min: 1 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Stability:</u> Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable	
CPT Code(s):	Rett sequencing: 83891 Isolation; 83898 x7 Amplification; 83904 x6 Sequencing; 83909 Capillary electrophoresis; 83912 Interpretation and report. RETT MLPA: 83896 Nucleic acid probe; 83914 Extension; 83898 Amplification; 83909 Capillary electrophoresis.	
0051378	Rett Syndrome (MECP2), Full Gene Sequencing	RETT FGS
Methodology:	Polymerase Chain Reaction/Sequencing	
Specimen Required:	<u>Collect:</u> Lavender (EDTA), pink (K ₂ EDTA), or yellow (ACD Solution A or B). <u>Specimen Preparation:</u> Transport 3 mL whole blood. (Min: 1 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Stability:</u> Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable	
CPT Code(s):	83891 Isolation; 83898 x7 Amplification; 83904 x6 Sequencing; 83909 Capillary electrophoresis; 83912 Interpretation and report.	
0013014	Rh Type Only	IRL-RH
Methodology:	Hemagglutination	
Specimen Required:	<u>Collect:</u> Plain red, lavender (EDTA), or pink (K ₂ EDTA). <u>Specimen Preparation:</u> Do not freeze red cells. Transport 7 mL whole blood. (Min: 5 mL) Pediatric: Transport 0.5 mL whole blood. <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Separator or gel tubes. <u>Stability:</u> Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable	
CPT Code(s):	86901	
0050421	RhCc Antigen (RHCE) Genotyping	RH C
Methodology:	Polymerase Chain Reaction/Fluorescent Monitoring	

Specimen Required: Collect: **Fetal Specimen:** Two T-25 flasks at 80% confluency of cultured amniocytes. **If the client is unable to culture amniocytes, this can be arranged by contacting ARUP Client Services at (800) 522-2787.** Or amniotic fluid.
AND Maternal Cell Contamination Specimen: Lavender (EDTA), pink (K₂EDTA), or yellow (ACD Solution A or B).

OR Whole Blood in lavender (EDTA), pink(K₂EDTA), or yellow (ACD Solution A or B).

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

OR Amniotic Fluid: Transport 10 mL unspun fluid. (Min: 5 mL)

AND Maternal Cell Contamination Specimen: Transport 3 mL whole blood (Min: 1 mL)

OR Whole Blood: Transport 3 mL whole blood (Min: 1 mL)

Storage/Transport Temperature: **Cultured Amniocytes: CRITICAL ROOM TEMPERATURE.** Must be received within 48 hours of shipment due to liability of cells.

Amniotic fluid: Room temperature.

Whole Blood or Maternal Cell Contamination 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: **Fetal Specimen:** Ambient: 48 hours; Refrigerated: Unacceptable; Frozen: Unacceptable

Whole Blood or Maternal Cell contamination Specimen: Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable

CPT Code(s): 83891 Isolation; 83896 x4 Nucleic acid probes; 83898 x2 Amplification; 83912 Interpretation and report Additional CPT code modifiers may be required for procedures performed to test for oncologic or inherited disorders.

0051368 RhD Antigen (*RhD*) Genotyping RHD
Methodology: Polymerase Chain Reaction/Fluorescence Monitoring
Specimen Required: Collect: **Fetal Specimen:** Two T-25 flasks at 80% confluency of cultured amniocytes. **If the client is unable to culture amniocytes, this can be arranged by contacting ARUP Client Services at (800) 522-2787.** Or amniotic fluid.
AND Maternal Cell Contamination Specimen: Lavender (EDTA), pink (K₂EDTA), or yellow (ACD Solution A or B).
OR Whole Blood in lavender (EDTA), pink (K₂EDTA), or yellow (ACD Solution A or B).
Specimen Preparation: **Cultured Amniocytes:** Fill flasks with culture media. Transport two T-25 flasks at 80% confluency of cultured amniocytes filled with culture media. Backup cultures must be retained the client's institution until testing is complete.
OR Amniotic Fluid: Transport 10 mL unspun fluid. (Min: 5 mL)
AND Maternal Cell Contamination Specimen: Transport 3 mL whole blood (Min: 1 mL)
OR Whole Blood: Transport 3 mL whole blood (Min: 1 mL)
Storage/Transport Temperature: **Cultured Amniocytes: CRITICAL ROOM TEMPERATURE.** Must be received within 48 hours of shipment due to liability of cells.
Amniotic fluid: Room temperature.
Whole Blood or Maternal Cell Contamination 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: **Fetal Specimen:** Ambient: 48 hours; Refrigerated: Unacceptable; Frozen: Unacceptable
Whole Blood or Maternal Cell contamination Specimen: Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable
CPT Code(s): 83891 Isolation; 83898 x3 Amplification; 83896 x6 Nucleic acid probes; 83912 Interpretation and report Additional CPT code modifiers may be required for procedures performed to test for oncologic or inherited disorders.

0050423 RhEe Antigen (*RHCE*) Genotyping RHE
Methodology: Polymerase Chain Reaction/Fluorescent Monitoring
Specimen Required: Collect: **Fetal Specimen:** Two T-25 flasks at 80% confluency of cultured amniocytes. **If the client is unable to culture amniocytes, this can be arranged by contacting ARUP Client Services at (800) 522-2787.** Or amniotic fluid.
AND Maternal Cell Contamination Specimen: Lavender (EDTA), pink (K₂EDTA), or yellow (ACD Solution A or B).
OR Whole Blood in lavender (EDTA), pink (K₂EDTA), or yellow (ACD Solution A or B).
Specimen Preparation: **Cultured Amniocytes:** Fill flasks with culture media. Transport two T-25 flasks at 80% confluency of cultured amniocytes filled with culture media. Backup cultures must be retained the client's institution until testing is complete.
OR Amniotic Fluid: Transport 10 mL unspun fluid. (Min: 5 mL)
AND Maternal Cell Contamination Specimen: Transport 3 mL whole blood (Min: 1 mL)
OR Whole Blood: Transport 3 mL whole blood (Min: 1 mL)
Storage/Transport Temperature: **Cultured Amniocytes: CRITICAL ROOM TEMPERATURE.** Must be received within 48 hours of shipment due to liability of cells.
Amniotic fluid: Room temperature.
Whole Blood or Maternal Cell Contamination 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: **Fetal Specimen:** Ambient: 48 hours; Refrigerated: Unacceptable; Frozen: Unacceptable
Whole Blood or Maternal Cell contamination Specimen: Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable
CPT Code(s): 83891 Isolation; 83896 x2 Nucleic acid probes; 83898 Amplification; 83912 Interpretation and report - Additional CPT code modifiers may be required for procedures performed to test for oncologic or inherited disorders.

2003277 Rheumatoid Arthritis Panel RA PAN
Methodology: Semi-Quantitative Enzyme-Linked Immunosorbent Assay/Immunoturbidimetric
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: After separation from cells: Ambient: 24 hours; Refrigerated: 1 week; Frozen: 2 weeks (avoid repeated freeze/thaw cycles)
CPT Code(s): 86200 CCP IgG; 86431 Rheumatoid Factor

2003278 Rheumatoid Arthritis Panel with Reflex to Rheumatoid Factor, IgM, IgG, & IgA by EIA RA PAN R
Methodology: Semi-Quantitative Enzyme-Linked Immunosorbent Assay/Immunoturbidimetric

Specimen Required:	Patient Preparation: Fasting specimen preferred. Collect: Serum separator tube. Specimen Preparation: Allow serum to clot completely at room temperature before centrifuging. Do not freeze. 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. Remarks: Unacceptable Conditions: Plasma. Frozen specimens. Contaminated, hemolyzed, or severely lipemic specimens. Stability: After separation from cells: Ambient: 24 hours; Refrigerated: 1 week; Frozen: Unacceptable	
CPT Code(s):	86200 CCP IgG; 86431 Rheumatoid Factor; if reflexed, add 86430 x2 RF IgG/IgA and 86431 RF IgM	
0050465	Rheumatoid Factor	RA
Methodology:	Quantitative Immunoturbidimetric	
Specimen Required:	Patient Preparation: Fasting specimen preferred. Collect: Serum separator tube or plasma separator tube. Also acceptable: Green (sodium or lithium heparin), lavender (EDTA), or pink (K ₂ EDTA). Specimen Preparation: Allow specimen to clot completely at room temperature. Transfer 0.5 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.5 mL) Storage/Transport Temperature: Refrigerated. Unacceptable Conditions: Hemolyzed specimens. Stability: After separation from cells: Ambient: 24 hours; Refrigerated: 1 week; Frozen: 2 weeks (should not be thawed more than once)	
CPT Code(s):	86431	
2003347	Rheumatoid Factor, Body Fluid	RA-FL
Methodology:	Quantitative Immunoturbidimetric	
Specimen Required:	Collect: Body fluid. Specimen Preparation: Centrifuge to remove cellular material. Transfer 1 mL body fluid to an ARUP Standard Transport Tube. (Min: 0.5 mL) Storage/Transport Temperature: Refrigerated. Remarks: Indicate source on the test request form. Stability: After separation from cells: Ambient: 24 hours; Refrigerated: 1 week; Frozen: 2 weeks (should not be thawed more than once)	
CPT Code(s):	86431	
0051298	Rheumatoid Factor, IgM, IgG, & IgA by EIA	RF PAN
Methodology:	Semi-Quantitative Enzyme-Linked Immunosorbent Assay	
Specimen Required:	Collect: Serum separator tube. Specimen Preparation: Do not freeze. Transport 1 mL serum. (Min: 0.5 mL) Storage/Transport Temperature: Refrigerated. Unacceptable Conditions: Frozen specimens. Contaminated, hemolyzed, or lipemic specimens. Stability: After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: Unacceptable	
CPT Code(s):	86430 x2 RF IgG/IgA; 86431 RF IgM	
0099249	Ribosomal P Protein Antibody	RIBPP
Methodology:	Semi-Quantitative Multi-Analyte Fluorescent Detection	
Specimen Required:	Collect: Serum separator tube. Specimen Preparation: Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.2 mL) Storage/Transport Temperature: Refrigerated. Unacceptable Conditions: Plasma or other body fluids. Bacterially contaminated or severely lipemic specimens. Stability: After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)	
CPT Code(s):	83516	
0050371	Rickettsia rickettsii (Rocky Mountain Spotted Fever) Antibodies, IgG & IgM by IFA	RMSF G/M
Methodology:	Semi-Quantitative Indirect Fluorescent Antibody	
Specimen Required:	Collect: Serum separator tube. Specimen Preparation: Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.1 mL) Parallel testing is preferred and convalescent specimens must be received within 30 days from receipt of the acute specimens. Mark specimens plainly as acute or convalescent. Storage/Transport Temperature: Refrigerated. Unacceptable Conditions: Contaminated, hemolyzed, or severely lipemic specimens. Stability: After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)	
CPT Code(s):	86757 RMSF IgG; 86757 RMSF IgM	
0050369	Rickettsia rickettsii (Rocky Mountain Spotted Fever) Antibody, IgG	RMSF G
Methodology:	Semi-Quantitative Indirect Fluorescent Antibody	
Specimen Required:	Collect: Serum separator tube. Specimen Preparation: Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.05 mL) Parallel testing is preferred and convalescent specimens must be received within 30 days from receipt of the acute specimens. Mark specimens plainly as acute or convalescent. Storage/Transport Temperature: Refrigerated. Unacceptable Conditions: Contaminated, hemolyzed, or severely lipemic specimens. Stability: After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)	
CPT Code(s):	86757	
0050372	Rickettsia rickettsii (Rocky Mountain Spotted Fever) Antibody, IgM	RMSF M
Methodology:	Semi-Quantitative Indirect Fluorescent Antibody	
Specimen Required:	Collect: Serum separator tube. Specimen Preparation: Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.1 mL) Parallel testing is preferred and convalescent specimens must be received within 30 days from receipt of	

the acute specimens. **Mark specimens plainly as acute or convalescent.**

Storage/Transport Temperature: Refrigerated.

Unacceptable Conditions: Contaminated, hemolyzed, or severely lipemic specimens.

Stability: After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)

CPT Code(s): 86757

0050384 *Rickettsia typhi* (Typhus Fever) Antibodies, IgG & IgM by IFA **TYPHU G/M**
Methodology: Semi-Quantitative Indirect Fluorescent Antibody
Specimen Required: Collect: Serum separator tube.
Specimen Preparation: Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.1 mL) Parallel testing is preferred and convalescent specimens **must** be received within 30 days from receipt of the acute specimens. **Mark specimens plainly as acute or convalescent.**
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Contaminated, hemolyzed, or severely lipemic specimens.
Stability: After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)

CPT Code(s): 86757 Typhus fever IgG; 86757 Typhus fever IgM

0050381 *Rickettsia typhi* (Typhus Fever) Antibody, IgG by IFA **TYPHU G**
Methodology: Semi-Quantitative Indirect Fluorescent Antibody
Specimen Required: Collect: Serum separator tube.
Specimen Preparation: Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.05 mL) Parallel testing is preferred and convalescent specimens **must** be received within 30 days from receipt of the acute specimens. **Mark specimens plainly as acute or convalescent.**
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Contaminated, hemolyzed, or severely lipemic specimens.
Stability: After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)

CPT Code(s): 86757

0050383 *Rickettsia typhi* (Typhus Fever) Antibody, IgM by IFA **TYPHU M**
Methodology: Semi-Quantitative Indirect Fluorescent Antibody
Specimen Required: Collect: Serum separator tube.
Specimen Preparation: Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.1 mL) Parallel testing is preferred and convalescent specimens **must** be received within 30 days from receipt of the acute specimens. **Mark specimens plainly as acute or convalescent.**
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Contaminated, hemolyzed, or severely lipemic, specimens.
Stability: After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)

CPT Code(s): 86757

0092055 **Risperidone & Metabolite, Serum or Plasma** **RISPERIDO**
Methodology: High Performance Liquid Chromatography/Tandem Mass Spectrometry
Specimen Required: Collect: Plain red, lavender (EDTA), pink (K₂EDTA), or green (sodium heparin).
Specimen Preparation: Separate serum or plasma from cells within 2 hours. Transfer 1 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.4 mL)
Storage/Transport Temperature: Refrigerated. Also acceptable: Room temperature or frozen.
Unacceptable Conditions: Separator tubes.
Stability: Ambient: 2 weeks; Refrigerated: 2 weeks; Frozen: 7 months

CPT Code(s): 80299

2003382 **Ristocetin-Induced Platelet Aggregation** **RIPA**
Methodology: Qualitative Aggregation
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: Ambient: 1 hour; Refrigerated: Unacceptable; Frozen: Unacceptable

CPT Code(s): 85576

2001601 **RNA Polymerase III Antibody, IgG** **RNA POL 3**
Methodology: Semi-Quantitative Enzyme-Linked Immunosorbent Assay
Specimen Required: Collect: Serum separator tube.
Specimen Preparation: Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.2 mL)
Storage/Transport Temperature: Refrigerated.
Stability: After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year

CPT Code(s): 83516

0050470 **RNP (U1) (Ribonucleic Protein) (ENA) Antibody, IgG** **RNP**
Methodology: Semi-Quantitative Multi-Analyte Fluorescent Detection
Specimen Required: Collect: Serum separator tube.
Specimen Preparation: Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.2 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Plasma or other body fluids. Contaminated, hemolyzed, or severely lipemic specimens.

CPT Code(s):	<u>Stability:</u> After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles) 86235	
0065067	Rotavirus & Adenovirus 40-41 Antigens	ROTAD
Methodology:	Qualitative Enzyme Immunoassay	
Specimen Required:	<u>Collect:</u> Stool. <u>Specimen Preparation:</u> Transfer 5 g stool to an unpreserved stool transport vial (ARUP Supply #40910). Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787. <u>Storage/Transport Temperature:</u> Frozen. Submit specimen according to Biological Substance, Category B, shipping guidelines. <u>Unacceptable Conditions:</u> Diapers. Specimens in preservatives. <u>Stability:</u> Ambient: 2 hours; Refrigerated: 72 hours; Frozen: 1 week	
CPT Code(s):	87425 Rota; 87301 Adeno	
0065088	Rotavirus Antigen by EIA	ROTA
Methodology:	Qualitative Enzyme Immunoassay	
Specimen Required:	<u>Collect:</u> Stool. <u>Specimen Preparation:</u> Transfer 5 g stool to an unpreserved stool transport vial (ARUP Supply #40910). Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787. <u>Storage/Transport Temperature:</u> Frozen. Submit specimen according to Biological Substance, Category B, shipping guidelines. <u>Unacceptable Conditions:</u> Diapers. Specimens in preservatives. <u>Stability:</u> Ambient: 2 hours; Refrigerated: 72 hours; Frozen: 1 week	
CPT Code(s):	87425	
0050552	Rubella Antibodies, IgG & IgM	RUBE G/M
Methodology:	Chemiluminescent Immunoassay	
Specimen Required:	<u>Collect:</u> Serum separator tube. <u>Specimen Preparation:</u> Allow specimen to clot completely at room temperature. Separate serum from cells ASAP or within 2 hours of collection. Transfer 2 mL serum to an ARUP Standard Transport Tube. (Min: 0.5 mL) Parallel testing is preferred and convalescent specimens must be received within 30 days from receipt of the acute specimens. Mark specimens plainly as "acute" or "convalescent." <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Refer to individual components. <u>Stability:</u> After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)	
CPT Code(s):	86317 Rubella, IgG; 86762 Rubella, IgM	
0050771	Rubella Antibody, IgG	RUBEIGG
Methodology:	Chemiluminescent Immunoassay	
Specimen Required:	<u>Collect:</u> Serum separator tube. Also acceptable: Serum from umbilical cord blood. <u>Specimen Preparation:</u> 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) Parallel testing is preferred and convalescent specimens must be received within 30 days from receipt of the acute specimens. Mark specimens plainly as "acute" or "convalescent." <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Contaminated, heat-inactivated, or hemolyzed specimens. <u>Stability:</u> After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)	
CPT Code(s):	86317	
0050551	Rubella Antibody, IgM	RUBEIGM
Methodology:	Chemiluminescent Immunoassay	
Specimen Required:	<u>Collect:</u> Serum separator tube. <u>Specimen Preparation:</u> 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) Parallel testing is preferred and convalescent specimens must be received within 30 days from receipt of acute specimens. Mark specimens plainly as "acute" or "convalescent." <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Contaminated, heat-inactivated, or hemolyzed specimens. <u>Stability:</u> After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)	
CPT Code(s):	86762	
2003176	Rufinamide, Serum or Plasma	RUFIN SP
Methodology:	Quantitative High Performance Liquid Chromatography	
Specimen Required:	<u>Collect:</u> Plain red, lavender (EDTA), or pink (K ₂ EDTA). <u>Specimen Preparation:</u> Separate from cells within 2 hours. Transfer 2 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.4 mL) <u>Storage/Transport Temperature:</u> Refrigerated. Also acceptable: Room temperature or frozen . <u>Unacceptable Conditions:</u> Separator tubes. <u>Stability:</u> Ambient: 2 weeks; Refrigerated: 2 weeks; Frozen: 2 weeks	
CPT Code(s):	80299	
0050444	RUNX1-RUNX1T1 (AML1-ETO) Translocation, t(8;21) by RT-PCR	AML1-ETO
Methodology:	Reverse Transcription Polymerase Chain Reaction	
Specimen Required:	<u>Collect:</u> Lavender (EDTA) or bone marrow (EDTA). <u>Specimen Preparation:</u> Transport 5 mL whole blood (Min: 1 mL). OR 3 mL bone marrow (Min: 1 mL). Specimens must be received within 48 hours of collection due to lability of RNA... <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Serum or plasma. Specimens collected in preservatives other than EDTA. Clotted or severely hemolyzed specimens. Frozen specimens. <u>Stability:</u> Ambient: 1 hour; Refrigerated: 48 hours; Frozen: Unacceptable	
CPT Code(s):	83891 Isolation; 83902 Reverse transcription; 83898 x2 Amplification; 83896 x4 Nucleic acid probes; 83912 Interpretation and report -	

Additional CPT code modifiers may be required for procedures performed to test for oncologic or inherited disorders.

2004127	S-100 Protein by Immunohistochemistry	S100 IHC
Methodology:	Immunohistochemistry	
Specimen Required:	<u>Collect:</u> Tissue or cells. <u>Specimen Preparation:</u> 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. <u>Storage/Transport Temperature:</u> Room temperature or refrigerated. <u>Remarks:</u> 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. <u>Unacceptable Conditions:</u> Depleted specimens. Specimens submitted with non-representative tissue type. <u>Stability:</u> Ambient: Indefinite; Refrigerated: Indefinite; Frozen: Indefinite	
CPT Code(s):	88342	
2001766	S-100B Protein, Serum	S 100B
Methodology:	Quantitative Enzyme-Linked Immunosorbent Assay	
Specimen Required:	<u>Collect:</u> Serum separator tube or plain red. <u>Specimen Preparation:</u> Separate serum from cells ASAP or within 2 hours of collection. Transfer 2 mL serum to an ARUP Standard Transport Tube. (Min: 0.5 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Stability:</u> After separation from cells: Ambient: 24 hours; Refrigerated: 1 week; Frozen: 3 months	
CPT Code(s):	86316	
0050564	Saccharomyces cerevisiae Antibodies, IgG & IgA	SC PAN
Methodology:	Semi-Quantitative Enzyme-Linked Immunosorbent Assay	
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> Contaminated, heat-inactivated, hemolyzed, or severely lipemic specimens. <u>Stability:</u> After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)	
CPT Code(s):	86671 x2	
0090251	Salicylate Assay	SALIC
Methodology:	Spectrophotometry	
Specimen Required:	<u>Collect:</u> Plain red. <u>Specimen Preparation:</u> Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.2 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> EDTA, separator tubes, potassium oxalate, or sodium fluoride. <u>Stability:</u> After separation from cells: Ambient: 1 week; Refrigerated: 1 week; Frozen: 6 months	
CPT Code(s):	80196	
2005432	Sal-like 4 (SALL4) by Immunohistochemistry	SALL4 IHC
Methodology:	Immunohistochemistry	
Specimen Required:	<u>Collect:</u> Tissue or cells. <u>Specimen Preparation:</u> 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. Transport tissue block or 5 unstained (3-5 micron thick sections), positively charged slides (min. 2 slides). Protect paraffin block and/or slides from excessive heat. Ship in cooled container during summer months. <u>Storage/Transport Temperature:</u> Room temperature or refrigerated. <u>Remarks:</u> IMMUNOHISTOCHEMISTRY ORDERING AND SUBMISSION DETAILS: Submit electronic request. If you do not have electronic ordering capability, use an ARUP Immunohistochemistry Stain Form (form #32978) with an ARUP client number. For additional technical details, please contact ARUP Client Services at (800) 522-2787. <u>Unacceptable Conditions:</u> Specimens submitted with non-representative tissue type. Depleted specimens. <u>Stability:</u> Ambient: Indefinitely; Refrigerated: Indefinitely; Frozen: Indefinitely	
CPT Code(s):	88342	
2001586	Salmonella typhi Antibodies	SALMONELLA
Methodology:	Qualitative ImmunoDOT	
Specimen Required:	<u>Collect:</u> Serum separator tube. <u>Specimen Preparation:</u> Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.2 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Contaminated, heat-inactivated, hemolytic, icteric, lipemic, or turbid specimens. <u>Stability:</u> After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)	
CPT Code(s):	86768 x5	
0099113	Saquinavir Antiretroviral Serum Level, HPLC	SAQUINAVIR
Methodology:	High Performance Liquid Chromatography	
Specimen Required:	<u>Patient Preparation:</u> Specimens collected just before or within 15 minutes of the next dose represent the trough levels. Specimens collected 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 levels. Interactions of this drug with other drugs administered concurrently can markedly alter the level of this protease inhibitor drug. <u>Collect:</u> Plain red. <u>Specimen Preparation:</u> Transfer 2 mL serum 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> Room temperature or refrigerated specimens. Serum separator tubes. <u>Stability:</u> Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen: 2 weeks	

CPT Code(s): 80299

0099411 Schistosoma Antibody, IgG SCHIS
Methodology: Semi-Quantitative Enzyme-Linked Immunosorbent Assay
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: 0.1 mL).
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Bacterially contaminated, heat-inactivated, hemolyzed, icteric, lipemic, or turbid specimens.
Stability: After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year
CPT Code(s): 86682

0050599 Scleroderma (Scl-70) (ENA) Antibody, IgG SCLER
Methodology: Semi-Quantitative Multi-Analyte Fluorescent Detection
Specimen Required: Collect: Serum separator tube.
Specimen Preparation: Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.2 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Plasma or other body fluids. Contaminated, hemolyzed, or severely lipemic specimens.
Stability: After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)
CPT Code(s): 86235

0091559 Scopolamine, Serum or Plasma SCOPOLAM
Methodology: High Performance Liquid Chromatography/Tandem Mass Spectrometry
Specimen Required: Collect: Plain red, lavender (EDTA), or pink (K₂EDTA).
Specimen Preparation: Separate serum from cells within 2 hours. Transfer 3 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 1.5 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Separator tubes.
Stability: Ambient: 1 week; Refrigerated: 1 month; Frozen: 1 month
CPT Code(s): 80299

0091389 Secobarbital, Serum or Plasma SECOBARBIT
Methodology: Gas Chromatography/Mass Spectrometry
Specimen Required: Collect: Plain red or lavender (EDTA).
Specimen Preparation: 2 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 1 mL)
Storage/Transport Temperature: Room temperature.
Stability: Ambient: 2 weeks; Refrigerated: 2 weeks; Frozen: 6 months
CPT Code(s): 82205

0091437 Secobarbital, Urine SECOBA URN
Methodology: Gas Chromatography/Mass Spectrometry
Specimen Required: Collect: Random urine.
Specimen Preparation: Transfer 2 mL urine to an ARUP Standard Transport Tube. (Min: 0.5 mL)
Storage/Transport Temperature: Room temperature.
Stability: Ambient: 2 weeks; Refrigerated: 2 weeks; Frozen: 6 months
CPT Code(s): 82205

0099772 Secretin SECRETIN
Methodology: Quantitative Radioimmunoassay
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: Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen: 6 months
CPT Code(s): 83519

0040325 Sedimentation Rate, Westergren (ESR) WEST
Methodology: Westergren
Specimen Required: Collect: Black (sodium citrate).
Specimen Preparation: Transport 7 mL whole blood.
Storage/Transport Temperature: Room temperature. Deliver to lab immediately. Specimen should be run within four hours of collection.
Unacceptable Conditions: Frozen specimens. Hemolyzed or clotted specimens.
Stability: Ambient: 4 hours; Refrigerated: 24 hours; Frozen: Unacceptable
CPT Code(s): 85651

0025023 Selenium, Serum SE S
Methodology: Quantitative Inductively Coupled Plasma-Mass Spectrometry
Specimen Required: Patient Preparation: Diet, medication, and nutritional supplements may introduce interfering substances. Patients should be encouraged to discontinue nutritional supplements, vitamins, minerals, and non-essential over-the-counter medications (upon the advice of their physician).
Collect: Royal blue (no additive or EDTA).
Specimen Preparation: Centrifuge; do not allow serum or plasma to remain on cells. Transfer 2 mL serum or plasma to an ARUP Trace Element-Free Transport Tube (ARUP supply #43116). Available online through eSupply using ARUP Connect™ or contact ARUP

Client Services at (800) 522-2787. (Min: 0.5 mL)
Storage/Transport Temperature: Room temperature.
Unacceptable Conditions: Separator tubes. Specimens that are not separated from the red cells or clot within 6 hours.
Stability: If the specimen is drawn and stored in the appropriate container, the trace element values do not change with time.

CPT Code(s):

84255

0025067 Selenium, Urine **SE-U**
Methodology: Quantitative Inductively Coupled Plasma-Mass Spectrometry
Specimen Required: Patient Preparation: Diet, medication, and nutritional supplements may introduce interfering substances. Patients should be encouraged to discontinue nutritional supplements, vitamins, minerals, and non-essential 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: Ambient: 1 week; Refrigerated: 2 weeks; Frozen: 1 year

CPT Code(s): 84255

0028325 Semen Analysis, Post Vasectomy **SEMEN PV**
Methodology: Qualitative Microscopic
Specimen Required: Collect: Semen.
Specimen Preparation: Transport entire specimen.
Storage/Transport Temperature: Room temperature.
Stability: Ambient: 24 hours; Refrigerated: 24 hours; Frozen: Unacceptable

CPT Code(s): 89310

0051222 Sensory Neuropathy Antibody Panel with Reflex to PCCA Titer, ANNA Titer & Neuronal Immunoblot **SENSORY**
Methodology: Refer to individual components
Specimen Required: Collect: Serum separator tube.
Specimen Preparation: Separate serum from cells ASAP or within 2 hours of collection. Transfer 2 mL serum to an ARUP Standard Transport Tube. (Min: 1 mL)
Storage/Transport Temperature: Frozen.
Unacceptable Conditions: Other body fluids. Contaminated, heat-inactivated, hemolyzed, or lipemic specimens.
Stability: After separation from cells: Ambient: 24 hours; Refrigerated: 2 weeks; Frozen: 1 year

CPT Code(s): 86255 Purkinje cell screen; if reflexed, add 86256 Purkinje titer; 83516 MAG IgM ELISA; 83516 SGPG IgM; 86255 ANNA; if reflexed, add 86256 ANNA titer and 83516 Immunoblot

2003243 Septin 9 (SEPT9), Methylated DNA Detection by Real-Time PCR **SEPTIN 9**
Methodology: Polymerase Chain Reaction
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: Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen: Indefinitely

CPT Code(s): 83891 Extraction; 83892 Enzyme digestion; 83896 x3 Nucleic Acid Probes; 83900 Amplification, multiplex; 83912 Interpretation and report - Additional CPT code modifiers may be required for procedures performed to test oncologic or inherited disorders.

0050527 Serine Protease 3 Antibody **PR3**
Methodology: Semi-Quantitative Multi-Analyte Fluorescent Detection
Specimen Required: Collect: Serum separator tube.
Specimen Preparation: Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.2 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Plasma, urine, or other body fluids. Contaminated, hemolyzed, or severely lipemic specimens.
Stability: After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)

CPT Code(s): 83516

2005629 Serotonin Release Assay (Heparin Dependent Platelet Antibody), Low Molecular Weight Heparin **SRA LMWH**
Methodology: Qualitative Serotonin Release Assay
Specimen Required: Collect: Serum separator tube.
Specimen Preparation: Transfer 5 mL serum to ARUP Standard Transport Tubes. (Min: 1 mL)
Storage/Transport Temperature: Frozen. Also acceptable: Refrigerated.
Stability: Ambient: Unacceptable; Refrigerated: 1 week; Frozen: Indefinite

CPT Code(s): 86022 x2

2005631 Serotonin Release Assay (Heparin Dependent Platelet Antibody), Unfractionated Heparin **SRA UFH**
Methodology: Qualitative Serotonin Release Assay
Specimen Required: Collect: Serum separator tube.
Specimen Preparation: Transfer 5 mL serum to ARUP Standard Transport Tubes. (Min: 1 mL)

Storage/Transport Temperature: Frozen. Also acceptable: Refrigerated.
Stability: Ambient: Unacceptable; Refrigerated: 1 week; Frozen: Indefinite
86022 x2

CPT Code(s):

0080397 Serotonin, Serum **SEROT-SER**
Methodology: Quantitative High Performance Liquid Chromatography
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: After separation from cells: Ambient: Unacceptable; Refrigerated: 24 hours; Frozen: 1 month
CPT Code(s): 84260

0080395 Serotonin, Whole Blood **SEROT-WB**
Methodology: Quantitative High Performance Liquid Chromatography
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: After transfer to Serotonin Transport Tube: Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen: 1 month
CPT Code(s): 84260

0098745 Sertraline **SERTRALINE**
Methodology: Quantitative Liquid Chromatography-Tandem Mass Spectrometry
Specimen Required: Collect: Plain red. Also acceptable: Lavender (EDTA), pink (K₂EDTA), green (sodium heparin), gray (sodium fluoride/potassium oxalate). Avoid use of separator tubes and gels.
Specimen Preparation: Transfer 2 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 1.5 mL)
Storage/Transport Temperature: Refrigerated.
Stability: After separation from cells: Ambient: 12 hours; Refrigerated: 4 days; Frozen: 1 month
CPT Code(s): 80299

0099375 Sex Hormone Binding Globulin **SHBG**
Methodology: Quantitative Electrochemiluminescent Immunoassay
Specimen Required: Collect: Serum separator tube. Also acceptable: Green (sodium or 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: 0.4 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Specimens collected in lavender (EDTA) or pink (K₂EDTA).
Stability: After separation from cells: Ambient: 48 hours; Refrigerated: 1 week; Frozen: 2 months
CPT Code(s): 84270

0049180 Sezary Cell Exam **SEZARY**
Methodology: Stain
Specimen Required: Collect: Lavender (EDTA) or pink (K₂EDTA).
Specimen Preparation: Transport 5 mL whole blood (Min: 1 mL) **AND** 6 unfixd smears (Min: 6 smears). Whole blood EDTA slides preferred.
Storage/Transport Temperature: Room temperature. Send Sunday-Thursday only. Specimens must be **received** within 24 hours of collection. Testing must be **performed** within 48 hours of collection.
Stability: Ambient: 24 hours
CPT Code(s): 85060

2002098 Signal Recognition Particle (SRP) **SRP**
Methodology: Immunoprecipitation
Specimen Required: Collect: Plain red or lavender (EDTA).
Specimen Preparation: Transfer 1 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.5 mL)
Storage/Transport Temperature: Refrigerated.
Stability: Ambient: 1 week; Refrigerated: 2 weeks; Frozen: Indefinitely
CPT Code(s): 83516

0091539 Silicon, Serum or Plasma **SILICON SP**
Methodology: Quantitative Inductively Coupled Plasma/Atomic Emission Spectrometry
Specimen Required: Collect: Royal blue top tube, plastic (EDTA, no additive).
Specimen Preparation: Separate serum or plasma from cells within 2 hours. Transfer 2 mL serum or plasma to an ARUP Trace Element-Free Transport Tube (ARUP supply #43116). (Min: 0.7 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Separator tubes.
Stability: Ambient: 2 weeks; Refrigerated: 2 weeks; Frozen: 2 weeks
CPT Code(s): 84285

0091077 Silicon, Urine **SILICON UR**
Methodology: Quantitative Inductively Coupled Plasma/Optical Emission Spectrometry
Specimen Required: Patient Preparation: Avoid exposure to gadolinium-based contrast media for 48 hours prior to specimen collection
Collect: Random urine in a trace metal-free or acid-washed container.

Specimen Preparation: Transport 6 mL urine. (Min: 2.7 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Glass containers.
Stability: Ambient: 2 weeks; Refrigerated: 2 weeks; Frozen: 2 weeks

CPT Code(s):

0091222 Silver, Serum or Plasma

SILVER SP

Methodology: Inductively Coupled Plasma/Mass Spectrometry

Specimen Required: Collect: One 5 mL royal blue (no additive) or one 7 mL royal blue (Na₂EDTA).

Storage/Transport Temperature: 1 mL serum or plasma at 2-8°C. (Min: 0.5 mL) Submit specimen in a foil-wrapped ARUP Trace Element-Free Transport Tube (ARUP supply #43116).

Remarks: CRITICAL - Protect from light during collection, storage, and shipment. Pour off serum or plasma into an ARUP Trace Element-Free Transport Tube and wrap in foil ASAP to protect from light.

Unacceptable Conditions: Specimens not protected from light. Avoid use of separator tubes and gels.

Stability: Ambient: 2 weeks (when foil-wrapped); Refrigerated: 2 weeks; Frozen: 2 weeks

CPT Code(s):

83789

0091228 Silver, Urine

SILVER URN

Methodology: Inductively Coupled Plasma/Mass Spectrometry

Specimen Required: Patient Preparation: Avoid exposure to gadolinium-based contrast media for 48 hours prior to specimen collection.

Collect: Random urine in a trace metal-free container.

Specimen Preparation: Transfer 1 mL urine to a foil-wrapped ARUP Trace Element-Free Transport Tube (ARUP supply #43116). (Min: 0.5 mL) Protect from light.

Storage/Transport Temperature: Refrigerated.

Unacceptable Conditions: Specimens not protected from light.

Stability: Ambient: 2 weeks; Refrigerated: 2 weeks; Frozen: 2 weeks

CPT Code(s):

83789

0091229 Silver, Whole Blood

SILVER BLD

Methodology: Inductively Coupled Plasma/Mass Spectrometry

Specimen Required: Collect: One 5 mL royal blue (EDTA).

Storage/Transport Temperature: 1 mL whole blood at 2-8°C. (Min: 0.5 mL) Protect from light.

Unacceptable Conditions: Samples not protected from light. Heparinized specimens.

Stability: Ambient: 2 weeks; Refrigerated: 2 weeks; Frozen: 2 weeks

CPT Code(s):

83789

2004137 Simian Virus 40 (SV-40) by Immunohistochemistry

SV40 IHC

Methodology: Immunohistochemistry

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: Ambient: Indefinite; Refrigerated: Indefinite; Frozen: Indefinite

CPT Code(s):

88342

0098467 Sirolimus by Tandem Mass Spectrometry

RAPAMUNE

Methodology: Quantitative High Performance Liquid Chromatography-Tandem Mass Spectrometry

Specimen Required: Patient Preparation: Pre-dose (trough) levels should be drawn.

Collect: Lavender (EDTA) or pink (K₂EDTA).

Specimen Preparation: Transport 1 mL whole blood. (Min: 0.25 mL)

Storage/Transport Temperature: Refrigerated.

Unacceptable Conditions: Serum or plasma. Specimens left at room temperature for longer than 24 hours. Clotted specimens.

Stability: Ambient: 24 hours; Refrigerated: 1 week; Frozen: 2 months

CPT Code(s):

80195

0050085 Smith (ENA) Antibody, IgG

SMITH

Methodology: Semi-Quantitative Multi-Analyte Fluorescent Detection

Specimen Required: Collect: Serum separator tube.

Specimen Preparation: Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.2 mL)

Storage/Transport Temperature: Refrigerated.

Unacceptable Conditions: Plasma or other body fluids. Contaminated, hemolyzed, or severely lipemic specimens.

Stability: After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)

CPT Code(s):

86235

2004130 Smooth Muscle Actin (SMA) by Immunohistochemistry

SMA IHC

Methodology: Immunohistochemistry

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: Ambient: Indefinite; Refrigerated: Indefinite; Frozen: Indefinite

CPT Code(s): 88342

0020379 Sodium, Fecal **FE-NA**

Methodology: Quantitative Ion-Selective Electrode

Specimen Required: Collect: Liquid random stool.

Specimen Preparation: Transfer a 5 g stool to an unpreserved stool transport vial (ARUP Supply #40910). Available online through eSupply using ARUP Connector contact Client Services at (800) 522-2787. (Min: 1 g) Do not add saline or water to liquefy specimen.

Storage/Transport Temperature: Refrigerated.

Unacceptable Conditions: Formed or viscous stool.

Stability: Ambient: 1 hour; Refrigerated: 2 weeks; Frozen: 6 months

CPT Code(s): 84302

0020154 Sodium, Fluid **NA FL**

Methodology: Quantitative Ion-Selective Electrode

Specimen Required: Collect: Body fluid.

Specimen Preparation: Centrifuge to remove cellular material. Transfer 1 mL body fluid to an ARUP Standard Transport Tube. (Min: 0.2 mL)

Storage/Transport Temperature: Refrigerated.

Remarks: Indicate source on test request form.

Unacceptable Conditions: Specimens collected in sodium citrate or sodium fluoride. Contaminated or hemolyzed specimens.

Stability: After separation from cellular material: Ambient: 4 days; Refrigerated: 2 weeks; Frozen: 6 months

CPT Code(s): 84302

0020001 Sodium, Plasma or Serum **NA**

Methodology: Quantitative Ion-Selective Electrode

Specimen Required: Collect: Plasma separator tube or serum separator tube.

Specimen Preparation: Allow serum tube to clot completely at room temperature. Separate serum or plasma from cells within 2 hours of collection. Transfer 1 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.2 mL)

Storage/Transport Temperature: Refrigerated.

Unacceptable Conditions: Specimens collected in potassium oxalate, sodium citrate, or sodium fluoride.

Stability: After separation from cells: Ambient: 4 days; Refrigerated: 2 weeks; Frozen: 6 months

CPT Code(s): 84295

0020851 Sodium, Urine **U NA**

Methodology: Quantitative Ion-Selective Electrode

Specimen Required: Collect: 24-hour urine with no additive. Refrigerate during collection. Also acceptable: Random urine.

Specimen Preparation: Transport 1 mL aliquot of urine from a well-mixed collection. (Min: 0.2 mL) Record total volume and collection time interval on transport tube and test request form.

Storage/Transport Temperature: Refrigerated.

Unacceptable Conditions: pH adjusted urine specimens.

Stability: Ambient: 8 hours; Refrigerated: 1 week; Frozen: 3 months

CPT Code(s): 84300

2001573 Soluble CD30 **SCD30**

Methodology: Quantitative Multi-Analyte Fluorescence Detection

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: Refrigerated specimens. Contaminated or heat-inactivated specimens.

Stability: After separation from cells: Ambient: 30 minutes; Refrigerated: Unacceptable; Frozen: 1 year

CPT Code(s): 83520

0030126 Soluble Fibrin Monomer **SFM**

Methodology: Qualitative Hemagglutination

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

Specimen Preparation: Transfer 1.5 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.**

Remarks: Activation of specimen due to poor venipuncture technique may cause false-positive results.

Unacceptable Conditions: Serum. Hemolyzed or heat-inactivated specimens.

Stability: Ambient: 2 hours; Refrigerated: 4 hours; Frozen: 2 weeks

CPT Code(s): 85366

0055235 Soluble Liver Antigen Antibody, IgG **SLA**

Methodology: Semi-Quantitative Enzyme-Linked Immunosorbent Assay

Specimen Required: Collect: Serum separator tube.

Specimen Preparation: Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.3 mL)

Storage/Transport Temperature: Refrigerated.

Unacceptable Conditions: Contaminated, heat-inactivated, hemolyzed, or lipemic specimens.

Stability: After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)

CPT Code(s): 83516

0081284 Soluble Mesothelin Related Peptides (MESOMARK®) **MESO**

Methodology: Quantitative Enzyme-Linked Immunosorbent Assay

Specimen Required:	<u>Collect:</u> Because MESOMARK® is a test approved by the FDA as a Humanitarian Use Device, testing should be ordered using the following procedure(s): 1. The ordering physician must register with the Internal Review Board (IRB) for MESOMARK® testing. Go to www.fdi.com/mesomark to obtain IRB certification online. 2. The test should be ordered using the ARUP requisition form. The full name of the ordering physician must be included on the ARUP form to ensure timely testing of the specimen. Specimens submitted with incomplete information may delay specimen testing. 3. Physicians are instructed as follows: ARUP does not accept specimens directly from physician offices. ARUP only accepts specimens from established clients. To send a specimen to ARUP, contact your local hospital/reference lab to determine if they are an ARUP client and can send the specimen. If they cannot send the specimens to ARUP, contact ARUP Client Services at (800) 522-2787 to find an ARUP client in your area. 4. Forms and information about MESOMARK® testing, and IRB registration, may be accessed at www.fdi.com/mesomark . 5. ARUP will receive specimens via usual shipping routes, from designated clients. When the specimen arrives, with an accompanying requisition, the physician's full name will be logged in, if present. If the ordering physician's full name is not present, the specimen is placed on EXCEPT after evaluation by the Special Chemistry department. The Special Chemistry lab will then contact Fujirebio Diagnostics, Inc. (FDI), who will then contact the physician for certification. FDI will then notify ARUP in Special Chemistry of completed certification. Special Chemistry will proceed with testing after certification is completed by the physician. <u>Collect:</u> Serum separator tube or plain red. <u>Specimen Preparation:</u> Transport 0.2 mL serum. (Min: 0.1 mL) <u>Storage/Transport Temperature:</u> Frozen. <u>Stability:</u> After separation from cells: Ambient: Unacceptable; Refrigerated: 24 hours; Frozen: 3 months	
CPT Code(s):	86316	
0070283	Soluble Transferrin Receptor	STR
Methodology:	Quantitative Immunoturbidimetric	
Specimen Required:	<u>Collect:</u> Serum separator tube or green (sodium or lithium heparin). <u>Specimen Preparation:</u> Transfer 1 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.3 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Contaminated, severely hemolyzed, icteric, or lipemic specimens. <u>Stability:</u> After separation from cells: Ambient: 72 hours; Refrigerated: 1 week; Frozen: 1 month (avoid repeated freeze/thaw cycles)	
CPT Code(s):	84238	
0098192	Somatostatin	SOMAT
Methodology:	Quantitative Extraction/Radioimmunoassay	
Specimen Required:	<u>Collect:</u> Lavender (EDTA) or pink (K ₂ EDTA). Collect in a pre-chilled tube. <u>Specimen Preparation:</u> Separate plasma from cells ASAP or within 2 hours of collection. Transfer 1.8 mL plasma to an ARUP Standard Transport Tube and freeze immediately. (Min: 0.6 mL) <u>Storage/Transport Temperature:</u> CRITICAL FROZEN. Additional specimens must be submitted when multiple tests are ordered. <u>Remarks:</u> CRITICAL FROZEN. Additional specimens must be submitted when multiple tests are ordered. Spin, separate, and freeze plasma immediately. Do not thaw. <u>Unacceptable Conditions:</u> Thawed specimens. Grossly hemolyzed or lipemic specimens. <u>Stability:</u> Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen: 28 days	
CPT Code(s):	84307	
2004133	Somatostatin by Immunohistochemistry	SOMATO IHC
Methodology:	Immunohistochemistry	
Specimen Required:	<u>Collect:</u> Tissue or cells. <u>Specimen Preparation:</u> 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. <u>Storage/Transport Temperature:</u> Room temperature or refrigerated. <u>Remarks:</u> 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. <u>Unacceptable Conditions:</u> Depleted specimens. Specimens submitted with non-representative tissue type. <u>Stability:</u> Ambient: Indefinite; Refrigerated: Indefinite; Frozen: Indefinite	
CPT Code(s):	88342	
0090301	Sotalol	SOT
Methodology:	Quantitative Liquid Chromatography-Tandem Mass Spectrometry	
Specimen Required:	<u>Collect:</u> Plain red. Also acceptable: Lavender (EDTA), pink (K ₂ EDTA or K ₃ EDTA), green (sodium or lithium heparin), or gray (sodium fluoride/potassium oxalate). Also acceptable (avoid if possible): Serum separator tube or plasma separator tube (follow preparation instructions below). <u>Specimen Preparation:</u> Separate serum or plasma from cells within 6 hours of collection. Transfer 2 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.8 mL) SST or PST: Serum or plasma in a gel separator tube stored at room temperature is acceptable if separated from the gel within 6 hours. Serum or plasma in a gel separator tube stored refrigerated is acceptable if separated from the gel within 2 hours. <u>Storage/Transport Temperature:</u> 2 mL serum or plasma at 2-8°C. (Min: 0.8 mL) Submit specimen in an ARUP Standard Transport Tube. <u>Remarks:</u> Avoid use of separator tubes and gels. <u>Unacceptable Conditions:</u> Citrated plasma. Tubes that contain liquid anticoagulant. <u>Stability:</u> After separation from cells: Ambient: 8 hours; Refrigerated: 1 month; Frozen: 1 month	
CPT Code(s):	80299	
0020304	Specific Gravity, Urine	UA SP GR
Methodology:	Refractometer/Reflective Photometry	
Specimen Required:	<u>Collect:</u> Random urine. <u>Specimen Preparation:</u> Transport 10 mL aliquot from a well-mixed urine collection. (Min: 1 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Stability:</u> Ambient: 1 hour; Refrigerated: 24 hours; Frozen: 6 months	

CPT Code(s): 81002

Specimen Identity Testing

Specimen Required: Collect: Specimen identity testing is available by consultation only. Contact ARUP Genetics Processing at (800) 242-2787 extension 3301 to discuss the case and instructions for ordering. ARUP prohibits use of this test for forensic testing. Specimen identity testing is used for clarification of specimen mix-up, specimen identification, and specimen contamination (tissue floater).

0099542 Sperm Antibodies, IgA & IgG SPERM AB
Methodology: Immunobead
Specimen Required: Collect: Plain red.
Specimen Preparation: Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.3 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Room temperature specimens. Seminal fluid.
Stability: Ambient: Unacceptable; Refrigerated: 2 weeks; Frozen: 2 weeks
CPT Code(s): 89325 IgA; 89325 IgG

0098359 Sporothrix Antibody, Serum SPORO AB
Methodology: Latex Agglutination
Specimen Required: Collect: Serum separator tube or plain red.
Specimen Preparation: Transport 1 mL serum. (Min: 0.2 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Room temperature specimens. Hemolyzed or lipemic specimens.
Stability: Ambient: Unacceptable; Refrigerated: 2 months; Frozen: 3 years
CPT Code(s): 86671

0081054 Squamous Cell Carcinoma Antigen, Serum SCC
Methodology: Quantitative Enzyme-Linked Immunosorbent Assay
Specimen Required: Collect: Serum separator tube or plain red.
Specimen Preparation: Allow specimen to clot completely at room temperature. Separate serum from cells ASAP or within 2 hours of collection. Transfer 2 mL serum to an ARUP Standard Transport Tube. (Min: 0.3 mL)
Storage/Transport Temperature: Frozen.
Unacceptable Conditions: Specimens exposed to repeated freeze/thaw cycles.
Stability: After separation from cells: Ambient: 48 hours; Refrigerated: 4 months; Frozen: 4 months
CPT Code(s): 86316

0049380 SSI8 (SYT) (18q11) Gene Rearrangement by FISH SYTFISH
Methodology: Fluorescence in situ Hybridization
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.
Storage/Transport Temperature: Room temperature or refrigerated. Ship in cooled container during summer months.
Remarks: Include surgical pathology report.
Unacceptable Conditions: Frozen specimens. Specimens fixed or processed in alternative fixatives (alcohol, Prefer®) or heavy metal fixatives (B-4 or B-5). No tumor in tissue. Decalcified specimens.
Stability: Ambient: Indefinitely; Refrigerated: Indefinitely; Frozen: Unacceptable
CPT Code(s): 88368 x2

0050691 SSA (Ro) (ENA) Antibody, IgG SSA
Methodology: Semi-Quantitative Multi-Analyte Fluorescent Detection
Specimen Required: Collect: Serum separator tube.
Specimen Preparation: Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.2 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Plasma or other body fluids. Contaminated, hemolyzed, or severely lipemic specimens.
Stability: After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)
CPT Code(s): 86235

0050692 SSB (La) (ENA) Antibody, IgG SSB
Methodology: Semi-Quantitative Multi-Analyte Fluorescent Detection
Specimen Required: Collect: Serum separator tube.
Specimen Preparation: Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.2 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Plasma or other body fluids. Contaminated, hemolyzed, or severely lipemic specimens.
Stability: After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)
CPT Code(s): 86235

0099528 ssDNA Antibody, IgG DNA SS
Methodology: Semi-Quantitative Enzyme-Linked Immunosorbent Assay
Specimen Required: Collect: Serum separator tube.
Specimen Preparation: Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum an ARUP Standard Transport Tube. (Min: 0.1 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Plasma. Contaminated, hemolyzed, or severely lipemic specimens.
Stability: After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)
CPT Code(s): 86226

0098895	St. Louis Encephalitis Antibody, IgG by IFA, CSF	STL G CSF
Methodology:	Semi-Quantitative Indirect Fluorescent Antibody	
Specimen Required:	Collect: CSF. <u>Specimen Preparation:</u> Transfer 2 mL CSF to an ARUP Standard Transport Tube. (Min: 0.15 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Contaminated or heat-inactivated specimens. <u>Stability:</u> Ambient: 8 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)	
CPT Code(s):	86653	
0050507	St. Louis Encephalitis Antibody, IgG by IFA, Serum	ST LOUIS
Methodology:	Semi-Quantitative Indirect Fluorescent Antibody	
Specimen Required:	Collect: Serum separator tube. <u>Specimen Preparation:</u> Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.05 mL) Parallel testing is preferred and convalescent specimens must be received within 30 days from receipt of the acute specimens. Mark specimens plainly as acute or convalescent. <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Contaminated, hemolyzed, or severely lipemic specimens. <u>Stability:</u> After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)	
CPT Code(s):	86653	
0098899	St. Louis Encephalitis Antibody, IgM by IFA, CSF	STL M CSF
Methodology:	Semi-Quantitative Indirect Fluorescent Antibody	
Specimen Required:	Collect: CSF. <u>Specimen Preparation:</u> Transfer 2 mL CSF to an ARUP Standard Transport Tube. (Min: 0.15 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Contaminated or heat-inactivated specimens. <u>Stability:</u> Ambient: 8 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)	
CPT Code(s):	86653	
0098732	St. Louis Encephalitis Antibody, IgM by IFA, Serum	STL M SER
Methodology:	Semi-Quantitative Indirect Fluorescent Antibody	
Specimen Required:	Collect: Serum separator tube. <u>Specimen Preparation:</u> Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.15 mL) Parallel testing is preferred and convalescent specimens must be received within 30 days from receipt of the acute specimens. Mark specimens plainly as acute or convalescent. <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Plasma. Contaminated, heat-inactivated, hemolyzed, or severely lipemic specimens. <u>Stability:</u> After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)	
CPT Code(s):	86653	
2002270	ST2, Soluble	ST2
Methodology:	Quantitative Enzyme Immunoassay	
Specimen Required:	Collect: Serum separator tube, plain red, lavender (EDTA) or pink (K ₂ EDTA). <u>Specimen Preparation:</u> Allow specimen to clot completely at room temperature. Separate serum or plasma from cells ASAP or within 2 hours of collection. Transport 1 mL serum or plasma. (Min: 0.2 mL) Avoid repeated freeze/thaws.) <u>Storage/Transport Temperature:</u> Frozen. <u>Unacceptable Conditions:</u> Specimen types other than serum or plasma. Specimens stored or transported at room temperature for more than 48 hours. <u>Stability:</u> After separation from cells: Ambient: 48 hours; Refrigerated: 10 days; Frozen: 1 year	
CPT Code(s):	83520	
0092582	Stachybotrys chartarum/ATRA Panel II	STACHPANII
Methodology:	Quantitative Fluorescent Enzyme Immunoassay	
Specimen Required:	Collect: Plain red or serum separator tube. <u>Specimen Preparation:</u> Transfer 1.5 mL serum to an ARUP Standard Transport Tube. (Min: 1 mL) <u>Storage/Transport Temperature:</u> Room temperature. <u>Unacceptable Conditions:</u> <u>Stability:</u> After separation from cells: Ambient: 3 weeks; Refrigerated: 3 weeks; Frozen: Indefinitely	
CPT Code(s):	86003; 86671 x2	
0092584	Staphylococcal aureus IgE Panel II	STAPHPANII
Methodology:	Quantitative Fluorescent Enzyme Immunoassay	
Specimen Required:	Collect: Plain red or serum separator tube. <u>Specimen Preparation:</u> Transfer 1.5 mL serum to an ARUP Standard Transport Tube. (Min: 1 mL) <u>Storage/Transport Temperature:</u> Room temperature. <u>Stability:</u> After separation from cells: Ambient: 4 weeks; Refrigerated: 4 weeks; Frozen: Indefinitely	
CPT Code(s):	86003-90 x2; 82785-90	
0060124	Staphylococcus Surveillance Culture	MC STAPH
Methodology:	Standard reference procedures for aerobic bacterial culture and identification	
Specimen Required:	Collect: Any site or fluid. <u>Specimen Preparation:</u> Fluid: Transfer specimen to a sterile container. OR Swab: Place in bacterial transport media. <u>Storage/Transport Temperature:</u> Room temperature. Submit specimen according to Biological Substance, Category B, shipping guidelines. <u>Remarks:</u> Specimen source preferred. All <i>Staphylococcus aureus</i> isolates are screened for methicillin susceptibility. <u>Unacceptable Conditions:</u> Dry specimens. <u>Stability:</u> Ambient: 48 hours; Refrigerated: Unacceptable; Frozen: Unacceptable	

CPT Code(s): 87081 presumptive identification. If definitive identification required, add 87077.

0060135 **Stool Culture, *Campylobacter*** **MC CAMP**
Methodology: Standard reference procedures for *Campylobacter* culture and identification
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: Dry specimens or multiple specimens (more than one in 24 hours). Delayed transport without use of appropriate preservative.
Stability: **Unpreserved:** Ambient: 2 hours; Refrigerated: Unacceptable; Frozen: Unacceptable
Preserved: Ambient: 72 hours; Refrigerated: 72 hours; Frozen: Unacceptable
CPT Code(s): 87046

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 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: Dry specimens, multiple specimens (more than one in 24 hours). Delayed transport without use of appropriate preservative.
Stability: **Unpreserved:** Ambient: 2 hours; Refrigerated: Unacceptable; Frozen: Unacceptable
Preserved: Ambient: 72 hours; Refrigerated: 72 hours; Frozen: Unacceptable
CPT Code(s): 87045 *Salmonella/Shigella* culture; 87046 *Campylobacter* culture; 87427 *E.coli* Shiga-like toxin

0060136 **Stool Culture, *Vibrio*** **MC VIB**
Methodology: Standard reference procedures for *Vibrio* culture and identification
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: Dry specimens or multiple specimens (more than one in 24 hours). Delayed transport without use of appropriate preservative.
Stability: **Unpreserved:** Ambient: 2 hours; Refrigerated: Unacceptable; Frozen: Unacceptable
Preserved: Ambient: 72 hours; Refrigerated: 72 hours; Frozen: Unacceptable
CPT Code(s): 87046

0060137 **Stool Culture, *Yersinia*** **MC YERS**
Methodology: Standard reference procedures for *Yersinia* culture and identification
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: Dry specimens or multiple specimens (more than one in 24 hours). Delayed transport without use of appropriate preservative.
Stability: **Unpreserved:** Ambient: 2 hours; Refrigerated: Unacceptable; Frozen: Unacceptable
Preserved: Ambient: 72 hours; Refrigerated: 72 hours; Frozen: Unacceptable
CPT Code(s): 87046

0060126 ***Streptococcus* (Group A) Culture** **MC STREP**
Methodology: Standard reference procedures for aerobic bacterial culture and identification
Specimen Required: Collect: Throat swab.
Specimen Preparation: Place swab in bacterial transport media.
Storage/Transport Temperature: Room temperature or refrigerated. Submit specimen according to Biological Substance, Category B, shipping guidelines.
Remarks: Specimen source required.
Stability: Ambient: 72 hours; Refrigerated: 72 hours; Frozen: Unacceptable
CPT Code(s): 87081 presumptive identification. If definitive identification is required, add 87077.

0028903 ***Streptococcus* (Group A) Rapid with Reflex to Culture** **STREP SCN**
Methodology: Immunoassay with Direct Observation/Culture
Specimen Required: Collect: Throat swabs using a Rayon or Dacron® swab with a plastic shaft.
Specimen Preparation: Transport two throat swabs, either dry or in a liquid transport system containing Modified Stuart's Medium (e.g., culturette or culturette II).
Storage/Transport Temperature: Room temperature. Submit specimen according to Biological Substance, Category B, shipping guidelines.
Unacceptable Conditions: Calcium alginate swabs or swabs with a wooden shaft. Frozen specimens.
Stability: Ambient: 24 hours; Refrigerated: 24 hours; Frozen: Unacceptable
CPT Code(s): 87880 Direct test; if reflexed, add 87081 Culture

0060705 ***Streptococcus* Group B by PCR** **GBS PCR**
Methodology: Qualitative Polymerase Chain Reaction
Specimen Required: Collect: Rectal or vaginal swab.
Specimen Preparation: Transfer swab to bacterial transport media.
Storage/Transport Temperature: Refrigerated. Submit specimen according to Biological Substance, Category B, shipping guidelines.
Remarks: Specimen source required.
Unacceptable Conditions: Specimens sources other than vaginal or rectal.

CPT Code(s):	<u>Stability:</u> Ambient: 24 hours; Refrigerated: 6 days; Frozen: Unacceptable 87653	
0050725	<i>Streptococcus pneumoniae</i> Antibodies, IgG (14 serotypes)	PNEUMO AB
Methodology:	Quantitative Multi-Analyte Fluorescent Detection	
Specimen Required:	<u>Collect:</u> Serum separator tube. "Post" specimen should be drawn 30 days after immunization. <u>Specimen Preparation:</u> Separate serum from cells ASAP or within 2 hours of collection. Transfer 1.5 mL serum to an ARUP Standard Transport Tube. (Min: 0.25 mL) "Pre" and "post" pneumococcal vaccine specimens can be submitted separately or together for testing; if shipped separately, "post" specimen must be received within 60 days of "pre" specimen. Mark specimens clearly as "Pre-Vaccine" or "Post-vaccine" . <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Plasma or other body fluids. Contaminated, hemolyzed, or severely lipemic specimens. <u>Stability:</u> After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)	
CPT Code(s):	86317 x14	
0060228	<i>Streptococcus pneumoniae</i> Antigen, Urine	SPN AG
Methodology:	Qualitative Immunochromatographic Assay	
Specimen Required:	<u>Collect:</u> Random urine. <u>Specimen Preparation:</u> Mix specimen well. Transfer 4 mL urine to an ARUP Standard Transport Tube. (Min: 1 mL) <u>Storage/Transport Temperature:</u> Refrigerated. Also acceptable: Frozen. Submit specimen according to Biological Substance, Category B, shipping guidelines. <u>Unacceptable Conditions:</u> Specimen types other than urine. <u>Stability:</u> Stability: Ambient: 24 hours; Refrigerated: 2 weeks; Frozen: 2 weeks	
CPT Code(s):	87899	
0061162	<i>Streptococcus pneumoniae</i> Antigen, CSF	SPN CSF
Methodology:	Qualitative Immunochromatographic Assay	
Specimen Required:	<u>Collect:</u> CSF. <u>Specimen Preparation:</u> Transfer 1 mL CSF to an ARUP Standard Transport Tube. (Min: 0.5 mL). <u>Storage/Transport Temperature:</u> Refrigerated. Also acceptable: Frozen. Submit specimen according to Biological Substance, Category B, shipping guidelines. <u>Unacceptable Conditions:</u> Specimen types other than CSF. <u>Stability:</u> Stability: Ambient: 24 hours; Refrigerated: 1 week; Frozen: 1 week	
CPT Code(s):	87899	
0050642	<i>Streptococcus pyogenes</i>, Group A Antibody (Streptozyne®) with Reflex to Titer	STZ R
Methodology:	Semi-Quantitative Hemagglutination	
Specimen Required:	<u>Collect:</u> Serum separator tube, lavender (EDTA), or pink (K ₂ EDTA). <u>Specimen Preparation:</u> 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: 0.05 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Stability:</u> After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)	
CPT Code(s):	86403 <i>Streptococcus</i> screen; if reflexed add 86406 <i>Streptococcus</i> titer	
0050095	Streptolysin O Antibody (ASO)	ASO
Methodology:	Quantitative Nephelometry	
Specimen Required:	<u>Collect:</u> Serum separator tube. <u>Specimen Preparation:</u> Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.4 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Heparinized plasma. Hemolyzed specimens. <u>Stability:</u> After separation from cells: Ambient: 8 hours; Refrigerated: 8 days; Frozen: 3 months	
CPT Code(s):	86060	
0050746	Striated Muscle Antibody, IgG with Reflex to Titer	STM R
Methodology:	Semi-Quantitative Indirect Fluorescent Antibody	
Specimen Required:	<u>Collect:</u> Serum separator tube. <u>Specimen Preparation:</u> Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.15 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Plasma. Contaminated, hemolyzed, or severely lipemic specimens. <u>Stability:</u> After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)	
CPT Code(s):	86255 Striated muscle; if reflexed, add 86256 Striated muscle titer	
0099564	<i>Strongyloides</i> Antibody, IgG by ELISA, Serum	STRONGY
Methodology:	Semi-Quantitative Enzyme-Linked Immunosorbent Assay	
Specimen Required:	<u>Collect:</u> Serum separator tube or plain red. <u>Specimen Preparation:</u> Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.05 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Bacterially contaminated, heat-inactivated, hemolyzed, icteric, or lipemic specimens. <u>Stability:</u> After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year	
CPT Code(s):	86682	
0091574	Strychnine	STRYCHNI S
Methodology:	Quantitative Gas Chromatography	
Specimen Required:	<u>Collect:</u> Plain red or lavender (EDTA). <u>Specimen Preparation:</u> Transfer 5 mL serum or plasma to ARUP Standard Transport Tubes. (Min: 2.2 mL) <u>Storage/Transport Temperature:</u> Refrigerated.	

	<u>Unacceptable Conditions:</u> Separator tubes. <u>Stability:</u> Ambient: Undetermined; Refrigerated: Undetermined; Frozen: Undetermined	
CPT Code(s):	82101	
0091075	Strychnine, Quantitative, Urine	STRYCH UR
Methodology:	Gas Chromatography	
Specimen Required:	<u>Collect:</u> Random urine. <u>Storage/Transport Temperature:</u> 4 mL urine at 20-25°C. (Min: 1.2 mL) Submit sample in an ARUP Standard Transport Tube. <u>Stability:</u> No stability limits available at this time.	
CPT Code(s):	82101	
0098275	Substance P, EIA	SUB P
Methodology:	Enzyme Immunoassay	
Specimen Required:	<u>Collect:</u> Plain red or serum separator tube. <u>Specimen Preparation:</u> Separate serum from cells within 10 minutes. Transfer two 1 mL aliquots of serum into ARUP Standard Transport Tubes and freeze immediately. (Min: 0.5 mL per aliquot) <u>Storage/Transport Temperature:</u> CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered. <u>Unacceptable Conditions:</u> Room temperature or refrigerated specimens. <u>Stability:</u> Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen: Indefinitely	
CPT Code(s):	83520	
0049040	Sudan Black B Stain	SUDAN
Methodology:	Stain	
Specimen Required:	<u>Collect:</u> Whole Blood: Lavender (EDTA), pink (K2 EDTA), or green (sodium or lithium heparin). OR Bone Marrow: Heparinized aspirate. <u>Specimen Preparation:</u> Whole Blood: Transport 5 mL whole blood (Min: 1 mL) AND 6 well-prepared unfixed smears (Min: 6 smears). OR Bone Marrow: Transport 1 mL heparinized aspirate (Min: 1 mL) AND 6 unfixed smears (Min: 6 smears). <u>Storage/Transport Temperature:</u> Room temperature. Send Sunday-Thursday only. Specimens must be received within 24 hours of collection; testing must be performed within 48 hours of collection. <u>Unacceptable Conditions:</u> Stool. Fixed blood or bone marrow smears. <u>Stability:</u> Ambient: 24 hours	
CPT Code(s):	88313	
0049005	Sugar Water Test	SUGAR
Methodology:	Visual Identification of Hemolysis	
Specimen Required:	<u>Collect:</u> Lt. blue (sodium citrate). <u>Specimen Preparation:</u> Transport 5 mL whole blood. (Min: 2 mL) <u>Storage/Transport Temperature:</u> Room temperature. Send Sunday-Thursday only. Specimens must be received within 24 hours of collection; testing must be performed within 48 hours of collection. <u>Unacceptable Conditions:</u> EDTA or heparinized specimens. <u>Stability:</u> Ambient: 24 hours	
CPT Code(s):	86941	
0081102	Sulfate, Urine	U SO4
Methodology:	Quantitative Spectrophotometric	
Specimen Required:	<u>Collect:</u> 24-hour urine. Acceptable to refrigerate during collection. <u>Specimen Preparation:</u> Transfer 4 mL urine to an ARUP Standard Transport Tube. (Min: 2 mL) Record total volume and collection time on tube and test request form. <u>Storage/Transport Temperature:</u> CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered. <u>Unacceptable Conditions:</u> Room temperature specimens. Any sample except urine. <u>Stability:</u> Ambient: Unacceptable; Refrigerated: Unacceptable unless pH is less than 2, then 1 week; Frozen: 1 month	
CPT Code(s):	84392	
0051284	Sulfate-3-Glucuronyl Paragloboside (SGPG) Antibody, IgM	SGPG
Methodology:	Semi-Quantitative Enzyme-Linked Immunosorbent Assay	
Specimen Required:	<u>Collect:</u> Serum separator tube. <u>Specimen Preparation:</u> Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.1 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Plasma or urine. Contaminated, heat-inactivated, hemolyzed, icteric, or severely lipemic specimens. <u>Stability:</u> After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year	
CPT Code(s):	83516	
0091568	Sulfhemoglobin, Whole Blood	SULFHEMOGL
Methodology:	Spectrophotometry	
Specimen Required:	<u>Collect:</u> One 7 mL Lavender (EDTA). <u>Specimen Preparation:</u> Collect blood during or at end of work shift. DO NOT FREEZE. Chill and ship with a cold pack. <u>Storage/Transport Temperature:</u> 1 mL blood at 2-8°C. (Min: 0.5 mL) Submit specimen in an ARUP Standard Transport Tube. <u>Remarks:</u> <u>Unacceptable Conditions:</u> Ambient or frozen specimens. <u>Stability:</u> Ambient: Undetermined; Refrigerated: 2 weeks; Frozen: Unacceptable	
CPT Code(s):	83060	
0020044	Sulfonamides (Sulfas)	SULFA
Methodology:	Quantitative Colorimetric	
Specimen Required:	<u>Patient Preparation:</u> Draw peak specimen 2 hours post dose. <u>Collect:</u> Plain red. Also acceptable: Lavender (EDTA), pink (K ₂ EDTA or K ₃ EDTA), green (sodium or lithium heparin), or gray (sodium fluoride/potassium oxalate). Also acceptable (avoid if possible): Serum separator tube or plasma separator tube (follow preparation	

instructions below).

Specimen Preparation: Separate serum or plasma from cells within 6 hours of collection. Transfer 1 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.5 mL)

SST or PST: Serum or plasma in a gel separator tube stored at room temperature is acceptable if separated from the gel within 6 hours. Serum or plasma in a gel separator tube stored refrigerated is acceptable if separated from the gel within 2 hours.

Storage/Transport Temperature: Refrigerated.

Remarks: Indicate which sulfa drug is being administered.

Unacceptable Conditions: Citrated plasma. Tubes that contain liquid anticoagulant.

Stability: After separation from cells: Ambient: 2 weeks; Refrigerated: 2 weeks; Frozen: 2 weeks

CPT Code(s): 80299

2004279 **Sulfonylurea Hypoglycemics Panel (Qualitative), Serum or Plasma** **SULFON PAN**

Methodology: High Performance Liquid Chromatography-Tandem Mass Spectrometry

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

Specimen Preparation: Separate from cells within 2 hours of draw and transfer 1 mL serum or plasma (Min: 0.4 mL) into an ARUP Standard Transport Tube.

Storage/Transport Temperature: Frozen; refrigerated and ambient also acceptable.

Unacceptable Conditions: Separator tubes.

Stability: Ambient: 1 week; Refrigerated: 1 week; Frozen: 4 months

CPT Code(s): 83788

0091100 **Sulfonylurea Hypoglycemics Panel (Quantitative), Urine** **SULFON UR**

Methodology: Quantitative Liquid Chromatography/Tandem Mass Spectrometry

Specimen Required: Collect: Random urine.

Specimen Preparation: Transfer 5 mL urine to ARUP Standard Transport Tubes. (Min: 1.2 mL)

Storage/Transport Temperature: Refrigerated. Also acceptable: Frozen

Unacceptable Conditions:

Stability: Ambient: 72 hours; Refrigerated: 2 weeks; Frozen: 6 months

CPT Code(s): 82542

2004139 **Synaptophysin by Immunohistochemistry** **SYNAPT IHC**

Methodology: Immunohistochemistry

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: Ambient: Indefinite; Refrigerated: Indefinite; Frozen: Indefinite

CPT Code(s): 88342

0040114 **SYT-SSX t(X;18) Translocations by RT-PCR** **SYT-SSX**

Methodology: Reverse Transcription Polymerase Chain Reaction/Fluorescence Monitoring

Specimen Required: Collect: Tumor tissue.

Specimen Preparation: Formalin fix and paraffin embed tissue. Protect from excessive heat. Transport 4 ten micron shavings. Also acceptable: Tissue block; will be returned after testing..

Storage/Transport Temperature: Room temperature.

Unacceptable Conditions: Specimens fixed/processed in heavy metal based (B-4 or B-5) fixatives.

Stability: Ambient: Indefinitely; Refrigerated: Indefinitely; Frozen: Indefinitely

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

0055596 **T-Cell Clonality Assessment by Restriction Fragment-Southern Blot Hybridization, Fluid** **TCRFSBHF**

Methodology: Restriction Fragment Southern Blot Hybridization

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

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

Storage/Transport Temperature: Refrigerated.

Unacceptable Conditions: Specimens collected in anticoagulants other than EDTA. Frozen specimens. Clotted or grossly hemolyzed specimens.

Stability: Ambient: 24 hours; Refrigerated: 5 days; Frozen: Unacceptable

CPT Code(s): 83891 Isolation; 83892 x3 Digestion; 83894 Gel Electrophoresis; 83897 Southern transfer; 83896 Nucleic acid probe; 83912 Interpretation and report - Additional CPT code modifiers may be required for procedures performed to test for oncologic or inherited disorders.

0055594 **T-Cell Clonality Assessment by Restriction Fragment-Southern Blot Hybridization, Tissue** **TCRFSBHT**

Methodology: Restriction Fragment Southern Blot Hybridization

Specimen Required: Collect: Fresh tissue.

Specimen Preparation: Freeze immediately. Transport 100 mg or 0.5-2.0 cm³ tissue..

Storage/Transport Temperature: Frozen on dry ice.

Unacceptable Conditions: Paraffin-embedded specimens.

Stability: Ambient: Unacceptable; Refrigerated: 2 hours; Frozen: 1 year

CPT Code(s): 83907 Lysis; 83891 Isolation; 83892 x3 Digestion; 83894 Gel electrophoresis; 83897 Southern transfer; 83896 Nucleic acid probe; 83912 Interpretation and report - Additional CPT code modifiers may be required for procedures performed to test for oncologic or inherited disorders.

0093199	T-Cell Clonality by Flow Cytometry Analysis of TCR V-Beta	TCR V-BETA
Methodology:	Flow Cytometry	
Specimen Required:	<u>Collect:</u> Green (sodium heparin). <u>Specimen Preparation:</u> Transport 5 mL whole blood. <u>Storage/Transport Temperature:</u> Room temperature. Specimen should be received within 24 hours of collection for optimal viability. <u>Remarks:</u> Previous leukemia/lymphoma phenotyping is required. If prior studies were not performed at ARUP, the outside flow cytometry report and histograms must accompany the specimen. If outside reports and histograms are not provided, a Neoplastic T-cell Evaluation test (ARUP test code 0093000) will be added, at an additional cost. In addition, please provide CBC, Wright's stained smear, clinical history, differential diagnosis, and any relevant pathology reports. <u>Unacceptable Conditions:</u> <u>Stability:</u> Ambient: 48 hours; Refrigerated 48 hours; Frozen: Unacceptable	
CPT Code(s):	88184 First marker; 88185 x23 Each additional marker; 88189 Interpretation for 16 or more markers.	
005567	T-Cell Clonality Screening Assay by PCR, Fluid	T CELL-F
Methodology:	Polymerase Chain Reaction/Fragment Analysis	
Specimen Required:	<u>Collect:</u> Lavender (EDTA) or bone marrow (EDTA). <u>Specimen Preparation:</u> Transport 5 mL whole blood (Min: 1 mL) OR 3 mL bone marrow (Min: 1 mL). <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Specimens collected in anticoagulants other than EDTA. Frozen specimens. Clotted or grossly hemolyzed specimens.	
CPT Code(s):	<u>Stability:</u> Ambient: 24 hours; Refrigerated: 5 days; Frozen: Unacceptable 83891 Isolation; 83898 x4 Amplification; 83896 x3 Nucleic acid probes; 83909 x4 Capillary electrophoresis; 83912 Interpretation and report - Additional CPT code modifiers may be required for procedures performed to test for oncologic or inherited disorders.	
0055631	T-Cell Clonality Screening Assay by PCR, Paraffin	T CELL-P
Methodology:	Polymerase Chain Reaction/Fragment Analysis	
Specimen Required:	<u>Collect:</u> Tumor tissue. <u>Specimen Preparation:</u> Formalin fix (10% neutral buffered formalin) and paraffin embed tissue. Protect from excessive heat. Transport tissue block or four 10 micron shavings. Tissue block will be returned after testing. <u>Storage/Transport Temperature:</u> Room temperature or refrigerated. Ship in cooled container during summer months. <u>Unacceptable Conditions:</u> Specimens fixed/processed in alternative fixatives or heavy metal fixatives (B-4 or B-5) or tissue sections on slides. Frozen specimens. Decalcified specimens.	
CPT Code(s):	<u>Stability:</u> Ambient: Indefinitely; Refrigerated: Indefinitely; Frozen: Unacceptable 83907 Lysis; 83891 Isolation; 83898 x4 Amplification; 83896 x3 Nucleic acid probes; 83909 x4 Capillary electrophoresis; 83912 Interpretation and report - Additional CPT code modifiers may be required for procedures performed to test for oncologic or inherited disorders.	
005568	T-Cell Clonality Screening Assay by PCR, Tissue	T CELL-T
Methodology:	Polymerase Chain Reaction/Fragment Analysis	
Specimen Required:	<u>Collect:</u> Fresh tissue. <u>Specimen Preparation:</u> Freeze immediately. Transport 100 mg or 0.5-2.0 cm ³ tissue.. <u>Storage/Transport Temperature:</u> Frozen on dry ice. <u>Unacceptable Conditions:</u> <u>Stability:</u> Ambient: Unacceptable; Refrigerated: 2 hours; Frozen: 1 year	
CPT Code(s):	83907 Lysis; 83891 Isolation; 83898 x4 Amplification; 83896 x3 Nucleic Acid Probes; 83909 x4 Capillary electrophoresis; 83912 Interpretation and report - Additional CPT code modifiers may be required for procedures performed to test for oncologic or inherited disorders.	
2004148	T-cell Intracytoplasmic Antigen (TIA-1) by Immunohistochemistry	TIA1 IHC
Methodology:	Immunohistochemistry	
Specimen Required:	<u>Collect:</u> Tissue or cells. <u>Specimen Preparation:</u> 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. <u>Storage/Transport Temperature:</u> Room temperature or refrigerated. <u>Remarks:</u> 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. <u>Unacceptable Conditions:</u> Depleted specimens. Specimens submitted with non-representative tissue type. <u>Stability:</u> Ambient: Indefinite; Refrigerated: Indefinite; Frozen: Indefinite	
CPT Code(s):	88342	
0070135	T3 Uptake	T3 UP
Methodology:	Quantitative Electrochemiluminescent Immunoassay	
Specimen Required:	<u>Collect:</u> Serum separator tube. Also acceptable: Plasma separator tube, lavender (EDTA), pink (K ₂ EDTA), or green (sodium or lithium heparin). <u>Specimen Preparation:</u> Allow serum to clot completely at room temperature. Separate serum or plasma from cells ASAP or within 2 hours of collection. Transfer 1 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.5 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Grossly hemolyzed specimens. <u>Stability:</u> After separation of cells: Ambient: 24 hours; Refrigerated: 8 days; Frozen: 3 months	
CPT Code(s):	84479	
0090612	Tacrolimus by Tandem Mass Spectrometry	TACRO
Methodology:	Quantitative Liquid Chromatography-Tandem Mass Spectrometry	
Specimen Required:	<u>Patient Preparation:</u> Pre-dose (trough) levels should be drawn. <u>Collect:</u> Lavender (EDTA) or pink (K ₂ EDTA). <u>Specimen Preparation:</u> Transport 1 mL whole blood. (Min: 0.25 mL)	

Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Serum or plasma. Specimens left at room temperature for longer than 24 hours. Clotted specimens.
Stability: Ambient: 24 hours; Refrigerated: 2 weeks; Frozen: 2 months

CPT Code(s):

80197

2003133 **Tapentadol and Metabolite, Serum or Plasma** **TAPENTA SP**
Methodology: Quantitative Liquid Chromatography-Tandem Mass Spectrometry
Specimen Required: Collect: Gray (sodium fluoride/potassium oxalate). Also acceptable: Plain red, green (sodium heparin), lavender (EDTA), or pink (K₂EDTA).
Specimen Preparation: Separate serum or plasma 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: Refrigerated.
Unacceptable Conditions: Separator tubes. Plasma or whole blood collected in lt. blue (sodium citrate). Specimens exposed to repeated freeze/thaw cycles.
Stability: After separation from cells: Ambient: 1 week; Refrigerated: 2 weeks; Frozen: 3 years

CPT Code(s): 83925

2003128 **Tapentadol and Metabolite, Urine** **TAPENTA UR**
Methodology: Quantitative Liquid Chromatography-Tandem Mass Spectrometry
Specimen Required: Collect: Random urine.
Specimen Preparation: Transfer 2 mL urine with no additives or preservatives to an ARUP Standard Transport Tube. (Min: 1 mL)
Storage/Transport Temperature: Room temperature.
Unacceptable Conditions: Specimens exposed to repeated freeze/thaw cycles.
Stability: Ambient: 1 week; Refrigerated: 1 month; Frozen: 3 years.

CPT Code(s): 83925

0049060 **Tartrate Resistant Acid Phosphatase Stain** **TRAP**
Methodology: Cytochemical Stain
Specimen Required: Collect: Lavender (EDTA) or green (sodium or lithium heparin) or heparinized aspirate of bone marrow.
Specimen Preparation: Transport 6 unfixed, air-dried, and unstained push smears **AND** 5 mL whole blood (smears should be made from the blood submitted). **OR** transport 6 unfixed, air-dried, and unstained bone marrow aspirate smears.
Storage/Transport Temperature: Room temperature.
Remarks: Blood specimens must be **received** within 24 hours of collection; testing must be **performed** within 48 hours of collection.
Unacceptable Conditions: Frozen specimens. Peripheral blood smears older than one year. Anticoagulated blood or bone marrow sent without well-prepared unfixed smears if greater than 48 hours.
Stability: Ambient: 24 hours; Refrigerated: Unacceptable; Frozen: Unacceptable

CPT Code(s): 88319

2004160 **Tartrate-Resistant Acid Phosphatase (TRAP) by Immunohistochemistry** **TRAP IHC**
Methodology: Immunohistochemistry
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: Ambient: Indefinite; Refrigerated: Indefinite; Frozen: Indefinite

CPT Code(s): 88342

0051428 **Tay-Sachs (HEXA) 7 Mutations** **HEXA**
Methodology: Polymerase Chain Reaction/ASPE Bead Array
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: Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable

CPT Code(s): 83891 Isolation; 83892 x2 Enzymatic digestion; 83900 Amplification multiplex (first two amplifications); 83901 x3 Amplification multiplex (each additional amplification); 83914 x7 Mutation identification; 83909 Separation and identification; 83912 Interpretation and report - Additional CPT code modifiers may be required for procedures performed to test for oncologic or inherited disorders.

0051429 **Tay-Sachs (HEXA) 7 Mutations, Fetal** **HEXA FE**
Methodology: Polymerase Chain Reaction/ASPE Bead Array
Specimen Required: Collect: **Fetal Specimen:** Two T-25 flasks at 80% confluency of cultured amniocytes. **If the client is unable to culture amniocytes, this can be arranged by contacting ARUP Client Services at (800) 522-2787.** Or amniotic fluid.
AND Maternal Cell Contamination Specimen: Lavender (EDTA), pink (K₂EDTA), or yellow (ACD Solution A or B).
Specimen Preparation: **Cultured Amniocytes:** Fill flasks with culture media. Transport two T-25 flasks at 80% confluency of cultured amniocytes. Backup cultures must be retained at the client's institution until testing is complete.
OR Amniotic Fluid: Transport 10 mL unspun fluid. (Min: 5 mL)
AND Maternal Cell Contamination Specimen: Transport 3 mL whole blood. (Min: 1 mL)
Storage/Transport Temperature: **Cultured Amniocytes: CRITICAL ROOM TEMPERATURE.** Must be received within 48 hours of shipment due to liability of cells.
Amniotic fluid: Room temperature.
Maternal Cell Contamination 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: **Fetal Specimen:** Ambient: 48 hours; Refrigerated: Unacceptable; Frozen: Unacceptable

CPT Code(s):	Maternal Cell Contamination Specimen: Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable 83891 Isolation; 83892 x2 Digestion; 83900 Multiplex amplification (first two amplifications); 83901 x3 Additional amplification; 83914 x7 Extension; 83909 Capillary electrophoresis; 83912 Interpretation and report. FCC: 83900 Multiplex amplification (first two sequences); 83901 x14 Additional amplification; 83909 Capillary electrophoresis. If MCC MAT (0050608) is performed: 83891 Isolation; 83900 Multiplex amplification; 83901 x14 Additional amplification; 83909 Capillary electrophoresis; 83912 Interpretation and report - Additional CPT code modifiers may be required for procedures performed to test for oncologic or inherited disorders.	
0055346	TCF3-PBX1 (E2A-PBX1) Translocation, t(1;19) by RT-PCR	E2A PBX1
Methodology:	Reverse Transcription Polymer/Polymerase Chain Reaction	
Specimen Required:	<u>Collect:</u> Lavender (EDTA) or bone marrow (EDTA). <u>Specimen Preparation:</u> Transport 5 mL whole blood (Min: 1 mL). OR 3 mL bone marrow (Min: 1 mL). Specimens must be received within 48 hours of collection due to lability of RNA..... <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Serum or plasma. Specimens collected in preservatives other than EDTA. Frozen specimens. Clotted or severely hemolyzed specimens. <u>Stability:</u> Ambient: 1 hour; Refrigerated: 48 hours; Frozen: Unacceptable	
CPT Code(s):	83891 Isolation; 83902 Reverse transcription; ; 83898 x2 Amplification; 83896 x4 Nucleic acid probes; 83912 Interpretation and report - Additional CPT code modifiers may be required for procedures performed to test for oncologic or inherited disorders.	
2004142	TdT by Immunohistochemistry	TDT IHC
Methodology:	Immunohistochemistry	
Specimen Required:	<u>Collect:</u> Tissue or cells. <u>Specimen Preparation:</u> 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. <u>Storage/Transport Temperature:</u> Room temperature or refrigerated. <u>Remarks:</u> 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. <u>Unacceptable Conditions:</u> Depleted specimens. Specimens submitted with non-representative tissue type. <u>Stability:</u> Ambient: Indefinite; Refrigerated: Indefinite; Frozen: Indefinite	
CPT Code(s):	88342	
0050775	Teichoic Acid Antibodies	TEICHOIC
Methodology:	Semi-Quantitative Immunodiffusion	
Specimen Required:	<u>Collect:</u> Serum separator tube. <u>Specimen Preparation:</u> Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.4 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Plasma. <u>Stability:</u> After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year	
CPT Code(s):	86329	
0025009	Tellurium, Urine	TE U
Methodology:	Quantitative Inductively Coupled Plasma-Mass Spectrometry	
Specimen Required:	<u>Patient Preparation:</u> Diet, medication, and nutritional supplements may introduce interfering substances. Patients should be encouraged to discontinue nutritional supplements, vitamins, minerals, and non-essential 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. <u>Collect:</u> 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. <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: 1 mL) Record total volume and collection time interval on transport tube and on test request form. <u>Storage/Transport Temperature:</u> Refrigerated. <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. <u>Stability:</u> Ambient: 1 week; Refrigerated: 2 weeks; Frozen: 1 year	
CPT Code(s):	83018	
0091386	Temazepam	TEMAZEPAM
Methodology:	LC-MS/MS	
Specimen Required:	<u>Collect:</u> One 5 mL plain red or lavender (EDTA). <u>Storage/Transport Temperature:</u> 1 mL serum or plasma at 2-8°C. (Min: 1.0 mL) Submit specimen in an ARUP Standard Transport Tube. <u>Unacceptable Conditions:</u> Serum separator tubes. <u>Stability:</u> Ambient: 2 weeks; Refrigerated: 2 weeks; Frozen: 2 weeks	
CPT Code(s):	80154	
0091561	Terbutaline, Serum or Plasma	TERBUTALIN
Methodology:	Quantitative High Performance Liquid Chromatography/Tandem Mass Spectrometry	
Specimen Required:	<u>Collect:</u> Plain red or lavender (EDTA). <u>Specimen Preparation:</u> Separate serum or plasma from cells within 2 hours. Transfer 8 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 4 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Separator tubes. <u>Stability:</u> Ambient: 2 weeks; Refrigerated: 1 month; Frozen: 1 month	
CPT Code(s):	80299	

0070130	Testosterone, Adult Male	TESTOS
Methodology:	Quantitative Electrochemiluminescent Immunoassay	
Specimen Required:	<u>Patient Preparation:</u> Collect specimen between 6-10 a.m. <u>Collect:</u> Serum separator tube or green (lithium heparin). <u>Specimen Preparation:</u> Transport 1 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.5 mL) Also acceptable: EDTA plasma. <u>Storage/Transport Temperature:</u> Refrigerated. <u>Stability:</u> After separation from cells: Ambient: 48 hours; Refrigerated: 1 week; Frozen: 6 months	
CPT Code(s):	84403	
0070102	Testosterone, Bioavailable & Sex Hormone Binding Globulin (Includes Total Testosterone), Adult Male	BIO T
Methodology:	Quantitative Electrochemiluminescent Immunoassay The concentrations of free and bioavailable testosterone are derived from mathematical expressions based on constants for the binding of testosterone to albumin and/or sex hormone binding globulin.	
Specimen Required:	<u>Patient Preparation:</u> Collect specimen between 6-10 a.m. <u>Collect:</u> Serum separator tube or green (lithium heparin). <u>Specimen Preparation:</u> Transfer 2 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.6 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> EDTA plasma. <u>Stability:</u> After separation from cells: Ambient: 48 hours; Refrigerated: 1 week; Frozen: 2 months	
CPT Code(s):	84403 Total testosterone; 84270 SHBG	
0081057	Testosterone, Bioavailable & Sex Hormone Binding Globulin (Includes Total Testosterone), Females or Children	BIO T MASS
Methodology:	Quantitative High Performance Liquid Chromatography-Tandem Mass Spectrometry/Electrochemiluminescent Immunoassay The concentrations of free and bioavailable testosterone are derived from mathematical expressions based on constants for the binding of testosterone to albumin and/or sex hormone binding globulin.	
Specimen Required:	<u>Patient Preparation:</u> Collect between 6-10 a.m. <u>Collect:</u> Serum separator tube or green (sodium or lithium heparin). <u>Specimen Preparation:</u> 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) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Remarks:</u> This test is suggested for women and children due to an improved sensitivity of testosterone by LC-MS/MS. <u>Unacceptable Conditions:</u> EDTA plasma. <u>Stability:</u> After separation from cells: Ambient: 24 hours; Refrigerated: 1 week; Frozen: 6 months	
CPT Code(s):	84403 Total testosterone; 84270 SHBG	
0081058	Testosterone, Females or Children	TESTOS MAS
Methodology:	Quantitative High Performance Liquid Chromatography-Tandem Mass Spectrometry	
Specimen Required:	<u>Patient Preparation:</u> Collect between 6-10 a.m. <u>Collect:</u> Serum separator tube or green (sodium or lithium heparin). <u>Specimen Preparation:</u> 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) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Remarks:</u> This test is suggested for women and children due to an improved sensitivity of testosterone by LC-MS/MS. <u>Unacceptable Conditions:</u> EDTA plasma. <u>Stability:</u> After separation from cells: Ambient: 24 hours; Refrigerated: 1 week; Frozen: 6 months	
CPT Code(s):	84403	
0070111	Testosterone Free, Adult Male	FREE T2
Methodology:	Quantitative Electrochemiluminescent Immunoassay The concentration of free testosterone is derived from a mathematical expression based on the constant for the binding of testosterone to sex hormone binding globulin.	
Specimen Required:	<u>Patient Preparation:</u> Collect specimen between 6-10 a.m. <u>Collect:</u> Serum separator tube or green (lithium heparin). <u>Specimen Preparation:</u> 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) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> EDTA plasma. <u>Stability:</u> After separation from cells: Ambient: 48 hours; Refrigerated: 1 week; Frozen: 2 months	
CPT Code(s):	84402	
2003246	Testosterone, Free, Adult Males by ED/LC-MS/MS	FREE T TMS
Methodology:	Quantitative Equilibrium Dialysis/High Performance Liquid Chromatography-Tandem Mass Spectrometry	
Specimen Required:	<u>Patient Preparation:</u> Collect between 6-10 a.m. <u>Collect:</u> Serum separator tube or green (sodium or lithium heparin). <u>Specimen Preparation:</u> Separate from cells ASAP or within 2 hours of collection. Transport 1 mL serum or plasma. (Min: 0.4 mL) <u>Storage/Transport Temperature:</u> Frozen. <u>Unacceptable Conditions:</u> EDTA plasma. <u>Stability:</u> After separation from cells: Ambient: 24 hours; Refrigerated: 1 week; Frozen: 2 months	
CPT Code(s):	84402	
2004246	Testosterone Free & Total by ED/LC-MS/MS (Free) and LC-MS/MS (Total), Adult Males	TE F&T ED
Methodology:	Quantitative Equilibrium Dialysis/High Performance Liquid Chromatography-Tandem Mass Spectrometry	
Specimen Required:	<u>Patient Preparation:</u> Collect between 6-10 a.m. <u>Collect:</u> Serum separator tube or green (sodium or lithium heparin). <u>Specimen Preparation:</u> Separate serum or plasma from cells ASAP or within 2 hours of collection. Transport 1 mL serum or plasma. (Min: 0.4 mL)	

	<u>Storage/Transport Temperature:</u> Frozen. <u>Unacceptable Conditions:</u> EDTA plasma. <u>Stability:</u> After separation from cells: Ambient: 24 hours; Refrigerated: 1 week; Frozen: 2 months	
CPT Code(s):	84402 Testosterone Free, 84403 Testosterone Total	
0070109	Testosterone, Free & Total (Includes Sex Hormone Binding Globulin), Adult Male	FREE T
Methodology:	Quantitative Electrochemiluminescent Immunoassay The concentration of free testosterone is derived from a mathematical expression based on the constant for the binding of testosterone to sex hormone binding globulin.	
Specimen Required:	<u>Patient Preparation:</u> Collect specimen between 6-10 a.m. <u>Collect:</u> Serum separator tube or green (lithium heparin). <u>Specimen Preparation:</u> Separate serum or plasma from cells immediately after collection. Transfer 1 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.6 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> EDTA plasma. <u>Stability:</u> After separation from cells: Ambient: 48 hours; Refrigerated: 1 week; Frozen: 2 months	
CPT Code(s):	84403 Total testosterone, 84270 SHBG	
0081056	Testosterone, Free & Total (Includes Sex Hormone Binding Globulin), Females or Children	TESTOS F&T
Methodology:	Quantitative High Performance Liquid Chromatography-Tandem Mass Spectrometry/Electrochemiluminescent Immunoassay The concentration of free testosterone is derived from a mathematical expression based on the constant for the binding of testosterone to sex hormone binding globulin.	
Specimen Required:	<u>Patient Preparation:</u> Collect between 6-10 a.m. <u>Collect:</u> Serum separator tube or green (sodium or lithium heparin). <u>Specimen Preparation:</u> 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) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Remarks:</u> This test is suggested for women and children due to an improved sensitivity of testosterone by LC-MS/MS. <u>Unacceptable Conditions:</u> EDTA plasma. <u>Stability:</u> After separation from cells: Ambient: 24 hours; Refrigerated: 1 week; Frozen: 6 months	
CPT Code(s):	84403 Total testosterone, 84270 SHBG	
0081059	Testosterone Free, Females or Children	TESTOS FR
Methodology:	Quantitative High Performance Liquid Chromatography-Tandem Mass Spectrometry/Electrochemiluminescent Immunoassay The concentration of free testosterone is derived from a mathematical expression based on the constant for the binding of testosterone to sex hormone binding globulin.	
Specimen Required:	<u>Patient Preparation:</u> Collect between 6-10 a.m. <u>Collect:</u> Serum separator tube or green (sodium or lithium heparin). <u>Specimen Preparation:</u> 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) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Remarks:</u> This test is suggested for women and children due to an improved sensitivity of testosterone by LC-MS/MS. <u>Unacceptable Conditions:</u> EDTA plasma. <u>Stability:</u> After separation from cells: Ambient: 24 hours; Refrigerated: 1 week; Frozen: 6 months	
CPT Code(s):	84402	
2004772	Testosterone, Urine	TESTOS UR
Methodology:	Quantitative Gas Chromatography Mass Spectrometry	
Specimen Required:	<u>Collect:</u> 24-hour urine. Specimen must be refrigerated during collection. <u>Specimen Preparation:</u> Do not use additives or preservatives. Transfer one 5 mL aliquot from a well-mixed 24-hour collection to ARUP Standard Transport Tubes. (Min: 2.1 mL) Record total volume on transport tube and test request form. <u>Storage/Transport Temperature:</u> CRITICAL FROZEN. Additional specimens must be submitted when multiple tests are ordered. <u>Unacceptable Conditions:</u> Thawed specimens. <u>Stability:</u> Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen: 1 month	
CPT Code(s):	84403	
0050535	Tetanus Antibody, IgG	TETANUS
Methodology:	Quantitative Multi-Analyte Fluorescent Detection	
Specimen Required:	<u>Collect:</u> Serum separator tube. "Post" specimen should be drawn 30 days after immunization. <u>Specimen Preparation:</u> 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) "Pre" and "post" vaccine specimens can be submitted separately or together for testing; if shipped separately, "post" specimen must be received within 60 days of "pre" specimen. Mark specimens clearly as "Pre-Vaccine" or "Post-Vaccine". <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Plasma or other body fluids. Contaminated, hemolyzed, or severely lipemic specimens. <u>Stability:</u> After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)	
CPT Code(s):	86317	
0025019	Thallium, Urine	THALU
Methodology:	Quantitative Inductively Coupled Plasma-Mass Spectrometry	
Specimen Required:	<u>Patient Preparation:</u> Diet, medication, and nutritional supplements may introduce interfering substances. Patients should be encouraged to discontinue nutritional supplements, vitamins, minerals, and non-essential 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. <u>Collect:</u> 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. <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: 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: Ambient: 1 week; Refrigerated: 2 weeks; Frozen: 1 year

CPT Code(s): 83018

0099610 **Thallium, Whole Blood** **THALB**

Methodology: Quantitative Inductively Coupled Plasma-Mass Spectrometry

Specimen Required: Patient Preparation: Diet, medication, and nutritional supplements may introduce interfering substances. Patients should be encouraged to discontinue nutritional supplements, vitamins, minerals, and non-essential over-the-counter medications (upon the advice of their physician).

Collect: Royal blue (K₂EDTA or Na₂EDTA).

Specimen Preparation: Transport 7 mL whole blood in the original collection tube. (Min: 0.5 mL)

Storage/Transport Temperature: Room temperature.

Unacceptable Conditions: Heparin anticoagulant.

Stability: If the specimen is drawn and stored in the appropriate container, the trace element values do not change with time.

CPT Code(s): 83018

0051506 **Thanatophoric Dysplasia, Types 1 & 2 (FGFR3) 13 Mutations** **TD PAN**

Methodology: Polymerase Chain Reaction/Fragment Analysis

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

CPT Code(s): 83891 Isolation; 83900 Multiplex amplification; 83901 x2 Additional amplification; 83914 x9 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.

0051508 **Thanatophoric Dysplasia, Types 1 & 2 (FGFR3) 13 Mutations, Fetal** **TD PAN FE**

Methodology: Polymerase Chain Reaction/Fragment Analysis

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

Maternal Specimen: Transport 3 mL whole blood.

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

Maternal Specimen: Room temperature. Ship with the fetal specimen.

Remarks: **Maternal sample 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: Fetal: Ambient: 48 hours; Refrigerated: Unacceptable; Frozen: Unacceptable

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

CPT Code(s): 83891 Isolation; 83900 Multiplex amplification; 83901 x2 Additional amplification; 83914 x9 Extension; 83909 Capillary electrophoresis; 83912 Interpretation and report. FCC: 83900 Multiplex amplification; 83901 x14 Additional amplification; 83909 Capillary electrophoresis. For MCC Maternal cell (0050608) add: 83891 Isolation; 83900 Multiplex amplification; 83901 x14 Additional amplification; 83909 Capillary electrophoresis; 83912 Interpretation and report - Additional CPT Codes may be required for procedures performed to test for oncologic or inherited disorders.

0090265 **Theophylline** **THEO**

Methodology: Reflectance Spectrophotometry

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

Specimen Preparation: Separate serum from cells within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.2 mL)

Storage/Transport Temperature: Refrigerated.

Unacceptable Conditions: Citrate, EDTA, or oxalate anticoagulants.

Stability: After separation from cells: Ambient: 4 hours; Refrigerated: 1 week; Frozen: 2 months

CPT Code(s): 80198

0090064 **Thiocyanate, 24-Hour Urine** **THIO-U 24**

Methodology: Quantitative Colorimetric

Specimen Required: Collect: 24-hour urine. Specimen must be refrigerated during collection.

Specimen Preparation: Transport 25 mL aliquot from a well-mixed, 24-hour urine. (Min: 2 mL) Record total volume and collection time on transport tube and test request form.

Storage/Transport Temperature: Refrigerated.

Unacceptable Conditions: Collection time less than 6 hours.

Stability: Ambient: 5 days; Refrigerated: 5 days; Frozen: 5 days

CPT Code(s): 84430

0090063 **Thiocyanate, Random Urine** **THIO-U**

Methodology: Quantitative Colorimetric

Specimen Required: Collect: Random urine.

Specimen Preparation: Mix specimen well. Transport 20 mL aliquot of urine. (Min: 2 mL)

Storage/Transport Temperature: Refrigerated.

Stability: Ambient: 5 days; Refrigerated: 5 days; Frozen: 5 days

CPT Code(s): 84430

0090061	Thiocyanate, Serum	THIO
Methodology:	Quantitative Colorimetric	
Specimen Required:	<u>Collect:</u> Plain red. Also acceptable: Lavender (EDTA), pink (K ₂ EDTA or K ₃ EDTA), green (sodium or lithium heparin), or gray (sodium fluoride/potassium oxalate). Also acceptable (avoid if possible): Serum separator tube or plasma separator tube (follow preparation instructions below). <u>Specimen Preparation:</u> Separate serum or plasma from cells within 2 hours of collection. Transfer 1 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.3 mL) SST or PST: Serum or plasma in a gel separator tube stored at room temperature is acceptable if separated from the gel within 6 hours. Serum or plasma in a gel separator tube stored refrigerated is acceptable if separated from the gel within 2 hours. <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Citrated plasma. Tubes that contain liquid anticoagulant. <u>Stability:</u> After separation from cells: Ambient: 5 days; Refrigerated: 5 days; Frozen: 5 days	
CPT Code(s):	84430	
2002575	Thiopurine Metabolites	THIOP MET
Methodology:	High Pressure Liquid Chromatography	
Specimen Required:	<u>Collect:</u> Lavender (EDTA). <u>Specimen Preparation:</u> Transport 5 mL whole blood. <u>Storage/Transport Temperature:</u> Refrigerated. <u>Stability:</u> Ambient: Unacceptable; Refrigerated: 1 week; Frozen: Unacceptable	
CPT Code(s):	82491 x2	
0092066	Thiopurine Methyltransferase, RBC	TPMT RBC
Methodology:	Enzymatic/High Performance Liquid Chromatography	
Specimen Required:	<u>Collect:</u> Lavender (EDTA), pink (K ₂ EDTA), or green (sodium or lithium heparin). <u>Specimen Preparation:</u> Transport 5 mL whole blood. (Min: 3 mL) <u>Storage/Transport Temperature:</u> Refrigerated. Submit specimen according to Biological Substance, Category B, shipping guidelines. <u>Unacceptable Conditions:</u> Specimens collected in sodium fluoride/potassium oxalate (gray). Hemolyzed, frozen, or room temperature specimens. <u>Stability:</u> Ambient: 3 hours; Refrigerated: 6 days; Frozen: Unacceptable	
CPT Code(s):	82657 Enzymatic	
0099904	Thiothixene	THIOT
Methodology:	Quantitative Liquid Chromatography-Tandem Mass Spectrometry	
Specimen Required:	<u>Collect:</u> Plain red. Also acceptable: Lavender (EDTA), pink (K ₂ EDTA or K ₃ EDTA), green (sodium or lithium heparin), or gray (sodium fluoride/potassium oxalate). Also acceptable (avoid if possible): Serum separator tube or plasma separator tube (follow preparation instructions below). <u>Specimen Preparation:</u> Separate serum or plasma from cells within 2 hours of collection. Transfer 2 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 1 mL) SST or PST: Serum or plasma in a gel separator tube stored at room temperature is acceptable if separated from the gel within 6 hours. Serum or plasma in a gel separator tube stored refrigerated is acceptable if separated from the gel within 2 hours. <u>Storage/Transport Temperature:</u> Refrigerated. <u>Remarks:</u> Separate serum or plasma from cells ASAP. Avoid use of separator tubes and gels. <u>Unacceptable Conditions:</u> Citrated plasma. All tubes that contain liquid anticoagulant. <u>Stability:</u> After separation from cells: Ambient: 24 hours; Refrigerated: 5 days; Frozen: 1 month (avoid freeze/thaw cycles)	
CPT Code(s):	80299	
0030260	Thrombin Time with Reflex to Thrombin Time 1:1 Mix	TT
Methodology:	Clotting	
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. Hemolyzed or non-frozen specimens. <u>Stability:</u> Ambient: 2 hours; Refrigerated: 4 hours; Frozen: 2 weeks	
CPT Code(s):	85670 Thrombin time; if reflexed, add 85670 Thrombin time 1:1 mix	
0030268	Thrombotic Risk (Acquired) Reflexive Panel	HYPERCOAG
Methodology:	Refer to individual components	
Specimen Required:	<u>Collect:</u> Lt. blue (sodium citrate) for lupus and d-dimer. AND serum separator tube for cardioliipin. AND serum separator tube OR green (sodium or lithium heparin) for homocysteine. <u>Specimen Preparation:</u> Transfer two 2 mL aliquots of platelet-poor plasma. AND 2 mL serum. AND 1 mL plasma to individual ARUP Standard Transport Tubes. <u>Storage/Transport Temperature:</u> CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered. <u>Unacceptable Conditions:</u> Refer to individual components. <u>Stability:</u> Refer to individual components.	
CPT Code(s):	85610 PT-D; 85730 PTT-D; 85613 dRVVT; 86147 X2 Cardioliipin G/M; 85379 D-dimer; 83090 Homocysteine. If PTT is abnormal, add 85670 Thrombin Time. If Thrombin time is abnormal, add 85635 Reptilase Time. If Reptilase Time is normal, add PTT Heparin Neutralization 85730 and 85525. If PTT Heparin Neutralization is abnormal, add 85732 PTT 1:1 mix. If PTT 1:1 mix is abnormal, add 85597 Platelet neutralization procedure (PNP). If dRVVT is abnormal, add 85613 dRVVT 1:1 mix. If dRVVT 1:1 mix is abnormal, perform 85613 dRVVT confirmation. If PNP and dRVVT conf are normal, add 85598 Hexagonal Phospholipid Neutralization.	
0056200	Thrombotic Risk, DNA Panel	THROMDNA
Methodology:	Polymerase Chain Reaction	
Specimen Required:	<u>Collect:</u> Lavender (EDTA) or pink (K ₂ EDTA). Also acceptable: Yellow (ACD Solution A), Lt. blue (sodium citrate), or green (sodium or lithium heparin). <u>Specimen Preparation:</u> Do not freeze. Transport 5 mL whole blood. (Min: 3 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Serum. Frozen specimens. Clotted or severely hemolyzed specimens.	

CPT Code(s): Stability: Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable
Refer to individual components.

0030133 **Thrombotic Risk, Inherited Etiologies (Most Common) with Reflex to Factor V Leiden** **THROM COM**
Methodology: Refer to individual components
Specimen Required: Patient Preparation: Fasting specimen preferred for homocysteine (green, sodium or lithium heparin).
Collect: Lt. blue (sodium citrate) **AND** lavender (EDTA) or pink (K₂EDTA) **AND** green (sodium or lithium heparin).
Specimen Preparation: Transport two 2 mL aliquots platelet-poor plasma (sodium citrate) (Min: 1 mL/aliquot) **AND** 1 mL plasma (sodium or lithium heparin) (Min: 0.4 mL) **AND** 5 mL whole blood (EDTA).
Storage/Transport Temperature: Platelet-poor Plasma: **CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.**
Plasma: Frozen.
Whole Blood: Refrigerated.
Unacceptable Conditions: Refer to individual components.
Stability: Refer to individual components.
CPT Code(s): 85730 PTT; 85240 F8; 83090 tHcy; 83891 Isolation; 83898 Amplification; 83896 Nucleic acid probes; 83912 Int/report; 85307 APC; if reflexed, add 83891 Isolation; 83898 Amplification; 83896 Nucleic acid probes; 83912 Int/report - Additional CPT code modifiers may be required for procedures performed to test for oncologic or inherited disorders.

0030177 **Thrombotic Risk, Inherited Etiologies (Uncommon)** **THROMUNCOM**
Methodology: Refer to individual components
Specimen Required: Collect: Lt. blue (sodium citrate). Refer to Specimen Handling at aruplab.com for hemostasis/thrombosis specimen handling guidelines.
Specimen Preparation: Transfer two 2 mL aliquots of platelet-poor plasma to ARUP Standard Transport Tubes. (Min: 1 mL/aliquot)
Storage/Transport Temperature: **CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.**
Unacceptable Conditions: Serum or non-sodium citrate plasma. Room temperature specimens.
Stability: Ambient: Unacceptable; Refrigerated: 4 hours; Frozen: 1 month
CPT Code(s): 85610 PT; 85730 PTT; 85303 Protein CF; 85306 Protein S free; 85300 Antithrombin

0050105 **Thyroglobulin Antibody** **ATHYG**
Methodology: Quantitative Chemiluminescent Immunoassay
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: EDTA plasma. Grossly hemolyzed or lipemic specimens.
Stability: After separation from cells: Ambient 48 hours; Refrigerated: 1 week; Frozen: 6 months
CPT Code(s): 86800

2004145 **Thyroglobulin by Immunohistochemistry** **THYRO IHC**
Methodology: Immunohistochemistry
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: Ambient: Indefinite; Refrigerated: Indefinite; Frozen: Indefinite
CPT Code(s): 88342

0020753 **Thyroglobulin, Fine Needle Aspiration (FNA)** **THYROG FNA**
Methodology: Quantitative Chemiluminescent Immunoassay
Specimen Required: Collect: Fine needle aspiration in saline. Also acceptable: Non-viscous body fluids.
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: Specimens containing EDTA. Viscous specimens.
Stability: Ambient: 8 hours; Refrigerated: 48 hours; Frozen: 6 months
CPT Code(s): 84432

0070421 **Thyroglobulin, Serum or Plasma** **THYROG**
Methodology: Quantitative Chemiluminescent Immunoassay
Specimen Required: Collect: Serum separator tube. Also acceptable: Green (sodium or lithium heparin).
Specimen Preparation: Transfer 1 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.8 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: EDTA Plasma. Any fluid other than noted above. (See Thyroglobulin, Fine Needle Aspiration (FNA) (ARUP test code 0020753) for ordering alternate fluids.)
Stability: After separation from cells: Ambient: 8 hours; Refrigerated: 48 hours; Frozen: 6 months
CPT Code(s): 84432 Thyroglobulin; 86800 Thyroglobulin antibody

0050645 **Thyroid Antibodies** **THYRO**
Methodology: Chemiluminescent Immunoassay
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: After separation from cells: Ambient: 8 hours; Refrigerated: 1 week; Frozen: 6 months
86376 Thyroid peroxidase antibody; 86800 Thyroglobulin antibody

CPT Code(s):

0070141 **Thyroid Panel** **T7**
Methodology: Quantitative Electrochemiluminescent Immunoassay/calculation
Specimen Required: Collect: Serum separator tube or plasma 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 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.
Unacceptable Conditions: Grossly hemolyzed specimens.
Stability: After separation of cells: Ambient: 24 hours; Refrigerated: 1 week; Frozen: 1 month
CPT Code(s): 84479 T3 Uptake; 84436 Thyroxine

0050075 **Thyroid Peroxidase (TPO) Antibody** **AMICR**
Methodology: Quantitative Chemiluminescent Immunoassay
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: After separation from cells: Ambient: 8 hours; Refrigerated: 1 week; Frozen: 6 months
CPT Code(s): 86376

0070116 **Thyroid Releasing Hormone (TRH) Stimulation of Prolactin, 0 Minutes** **PROLAC 0**
Methodology: Quantitative Chemiluminescent Immunoassay
Specimen Required: Collect: Serum separator tube or plasma separator tube. Also acceptable: Green (sodium or lithium heparin). Collect separate tube for each timed specimen.
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 per timed specimen to an ARUP Standard Transport Tube. (Min: 0.5 mL)
Storage/Transport Temperature: Frozen.
Unacceptable Conditions: EDTA plasma.
Stability: After separation of cells: Ambient: 8 hours; Refrigerated: 48 hours; Frozen: 3 months
CPT Code(s): 84146

0070117 **Thyroid Releasing Hormone (TRH) Stimulation of Prolactin, 30 Minutes** **PROLAC 30**
Methodology: Quantitative Chemiluminescent Immunoassay
Specimen Required: Collect: Serum separator tube or plasma separator tube. Also acceptable: Green (sodium or lithium heparin). Collect separate tube for each timed specimen.
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 per timed specimen to an ARUP Standard Transport Tube. (Min: 0.5 mL)
Storage/Transport Temperature: Frozen.
Unacceptable Conditions: EDTA plasma.
Stability: After separation of cells: Ambient: 8 hours; Refrigerated: 48 hours; Frozen: 3 months
CPT Code(s): 84146

0070118 **Thyroid Releasing Hormone (TRH) Stimulation of Prolactin, 60 Minutes** **PROLAC 60**
Methodology: Quantitative Chemiluminescent Immunoassay
Specimen Required: Collect: Serum separator tube or plasma separator tube. Also acceptable: Green (sodium or lithium heparin). Collect separate tube for each timed specimen.
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 per timed specimen to an ARUP Standard Transport Tube. (Min: 0.5 mL)
Storage/Transport Temperature: Frozen.
Unacceptable Conditions: EDTA plasma.
Stability: After separation of cells: Ambient: 8 hours; Refrigerated: 48 hours; Frozen: 3 months
CPT Code(s): 84146

0070119 **Thyroid Releasing Hormone (TRH) Stimulation of Prolactin, 90 Minutes** **PROLAC 90**
Methodology: Quantitative Chemiluminescent Immunoassay
Specimen Required: Collect: Serum separator tube or plasma separator tube. Also acceptable: Green (sodium or lithium heparin). Collect separate tube for each timed specimen.
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 per timed specimen to an ARUP Standard Transport Tube. (Min: 0.5 mL)
Storage/Transport Temperature: Frozen.
Unacceptable Conditions: EDTA plasma.
Stability: After separation of cells: Ambient: 8 hours; Refrigerated: 48 hours; Frozen: 3 months
CPT Code(s): 84146

0070269 **Thyroid Releasing Hormone (TRH) Stimulation of TSH, Panel** **TSH STIM**
Methodology: Quantitative Electrochemiluminescent Immunoassay
Specimen Required: Patient Preparation: Collect specimens at 0, 30, and 60-minute intervals, post TRH administration (three timed specimens).
Collect: Serum separator tube or plasma separator tube. Collect separate tube for each time point. Also acceptable: Lavender (EDTA) or green (sodium or lithium heparin).
Specimen Preparation: Allow specimen to clot completely at room temperature. Separate serum or plasma from cells ASAP or within 2 hours of collection. Transfer 1 mL serum or plasma per interval to individual ARUP Standard Transport Tubes. (Min: 0.5 mL/interval)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Grossly hemolyzed specimens.
Stability: After separation of cells: Ambient: 24 hours; Refrigerated: 1 week; Frozen: 1 month

CPT Code(s): 80438

0070145 Thyroid Stimulating Hormone TSH
Methodology: Quantitative Electrochemiluminescent Immunoassay
Specimen Required: Collect: Serum separator tube or plasma separator tube. Also acceptable: Lavender (EDTA) or green (sodium or lithium heparin).
Specimen Preparation: Allow specimen to clot completely at room temperature. Separate serum or plasma from cells ASAP or within 2 hours of collection. Transfer 1 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.5 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Grossly hemolyzed specimens.
Stability: After separation of cells: Ambient: 24 hours; Refrigerated: 1 week; Frozen: 1 month
CPT Code(s): 84443

0070225 Thyroid Stimulating Hormone 3rd Generation TSH 3
Methodology: Quantitative Electrochemiluminescent Immunoassay
Specimen Required: Collect: Serum separator tube or plasma separator tube. Also acceptable: Lavender (EDTA) or green (sodium or lithium heparin).
Specimen Preparation: Allow specimen to clot completely at room temperature. Separate serum or plasma from cells ASAP or within 2 hours of collection. Transfer 1 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.5 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Grossly hemolyzed specimens.
Stability: After separation of cells: Ambient: 24 hours; Refrigerated: 1 week; Frozen: 1 month
CPT Code(s): 84443

2002734 Thyroid Stimulating Hormone Receptor Antibody (TRAb) TR AB
Methodology: Quantitative Electrochemiluminescent Immunoassay
Specimen Required: Collect: Serum separator tube.
Specimen Preparation: Transfer 1 mL serum to 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: Plasma. Grossly hemolyzed or lipemic specimens.
Stability: Ambient: 24 hours; Refrigerated: 72 hours; Frozen: 1 month
CPT Code(s): 83520

2006108 Thyroid Stimulating Hormone with reflex to Free Thyroxine TSHREFLEX
Methodology: Quantitative Electrochemiluminescent Immunoassay
Specimen Required: Collect: Serum separator tube or plasma separator tube. Also acceptable: Lavender (EDTA) or green (sodium or lithium heparin).
Specimen Preparation: Allow specimen to clot completely at room temperature. Separate serum or plasma from cells ASAP or within 2 hours of collection. Transfer 1 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.5 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Grossly hemolyzed specimens.
Stability: After separation of cells: Ambient: 24 hours; Refrigerated: 1 week; Frozen: 1 month
CPT Code(s): 84443; if reflexed 84439

0099430 Thyroid Stimulating Immunoglobulin TSI
Methodology: Quantitative Bioassay/Quantitative Chemiluminescence
Specimen Required: Collect: Serum separator tube.
Specimen Preparation: Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.7 mL)
Storage/Transport Temperature: Frozen.
Unacceptable Conditions: Plasma.
Stability: After separation from cells: Ambient: 2 hours; Refrigerated: 6 days; Frozen: 3 months
CPT Code(s): 84445

2004166 Thyroid Transcription Factor (TTF-1) by Immunohistochemistry TTF1 IHC
Methodology: Immunohistochemistry
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: Ambient: Indefinite; Refrigerated: Indefinite; Frozen: Indefinite
CPT Code(s): 88342

0070140 Thyroxine T4
Methodology: Quantitative Electrochemiluminescent Immunoassay
Specimen Required: Collect: Serum separator tube or plasma separator tube. Also acceptable: Lavender (EDTA).
Specimen Preparation: Allow specimen to clot completely at room temperature. Separate serum or plasma from cells ASAP or within 2 hours of collection. Transfer 1 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.5 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Grossly hemolyzed specimens.
Stability: After separation from cells: Ambient: 24 hours; Refrigerated: 1 week; Frozen: 1 month
CPT Code(s): 84436

0099728 Thyroxine Antibody ANTI-T4
Methodology: Quantitative Radiobinding Assay
Specimen Required: Collect: Plain red. Also acceptable: Serum separator tube.
Specimen Preparation: Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.5 mL)

Storage/Transport Temperature: Room temperature. Also acceptable: Refrigerated or frozen.
Unacceptable Conditions: Glass containers. Grossly hemolyzed or lipemic specimens.

Stability: Ambient: 2 weeks; Refrigerated: 2 weeks; Frozen: 4 weeks

CPT Code(s): 83519

0070410 Thyroxine Binding Globulin TBG
Methodology: Quantitative Chemiluminescent Immunoassay
Specimen Required: Collect: Serum separator tube.
Specimen Preparation: Transfer 0.5 mL serum to an ARUP Standard Transport Tube. (Min: 0.4 mL)
Storage/Transport Temperature: Frozen.
Unacceptable Conditions: Plasma. Grossly hemolyzed or lipemic specimens.
Stability: Ambient: 8 hours; Refrigerated: 48 hours; Frozen: 1 month
CPT Code(s): 84442

0093244 Thyroxine, Free by Equilibrium Dialysis/HPLC-Tandem Mass Spectrometry FT4 ED-TMS
Methodology: Quantitative Equilibrium Dialysis/High Performance Liquid Chromatography-Tandem Mass Spectrometry
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: After separation from cells: Ambient: 4 days; Refrigerated: 2 weeks; Frozen: 1 month
CPT Code(s): 84439

0070138 Thyroxine, Free (Free T4) FT4
Methodology: Quantitative Electrochemiluminescent Immunoassay
Specimen Required: Collect: Serum separator tube or plasma separator tube. Also acceptable: Green (sodium or lithium heparin) or lavender (EDTA).
Specimen Preparation: Allow specimen to clot completely at room temperature. Separate serum or plasma from cells ASAP or within 2 hours of collection. Transfer 1 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.5 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Grossly hemolyzed specimens.
Stability: After separation of cells: Ambient: 24 hours; Refrigerated: 1 week; Frozen: 1 month
CPT Code(s): 84439

0091541 Tiagabine (Gabitril®), Serum or Plasma TIAGABIN S
Methodology: High Performance Liquid Chromatography/Tandem Mass Spectrometry
Specimen Required: Patient Preparation: Trough collection.
Collect: Plain red, lavender (EDTA), or pink (K₂EDTA).
Specimen Preparation: Transfer 3 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 1 mL)
Storage/Transport Temperature: Room temperature.
Unacceptable Conditions: Separator tubes.
Stability: Ambient: 2 weeks; Refrigerated: 2 weeks; Frozen: 7 months
CPT Code(s): 80299

0091585 Tin, Serum or Plasma TIN SP
Methodology: Inductively Coupled Plasma/Mass Spectrometry
Specimen Required: Collect: Two 7 mL royal blue (no additive) or royal blue (Na₂EDTA).
Storage/Transport Temperature: 4 mL serum or plasma at 20-25°C. (Min: 0.7 mL) Submit specimen in an ARUP Standard Transport Tube.
Stability: Ambient: 2 weeks; Refrigerated: 2 weeks; Frozen: 2 weeks
CPT Code(s): 83018

0091423 Tin Total, Urine TIN UR
Methodology: Inductive Coupled Plasma/Mass Spectrometry
Specimen Required: Collect: Random urine.
Storage/Transport Temperature: 4 mL urine at 20-25°C. (Min: 0.5 mL)
Remarks: Collect urine in trace metal free or acid washed plastic container.
Stability: Ambient: 2 weeks; Refrigerated: 2 weeks; Frozen: 2 weeks
CPT Code(s): 83018

0091555 Tin, Whole Blood TIN BLD
Methodology: Inductively Coupled Plasma/Mass Spectrometry
Specimen Required: Collect: One 10 mL plain red or two 7 mL dark blue (EDTA).
Storage/Transport Temperature: 4 mL whole blood at 20-25°C. (Min: 0.5 mL) Submit sample in an ARUP Standard Transport Tube
Stability: Ambient: 2 weeks; Refrigerated: 2 weeks; Frozen: 2 weeks
CPT Code(s): 83018

0060127 Tissue Culture (Includes Gram Stain 0060101) MC TIS
Methodology: Standard reference procedures for bacterial stain, aerobic culture, and identification. Anaerobe culture performed on properly collected specimens.
Specimen Required: Collect: Tissue or biopsy.
Specimen Preparation: Transfer specimen to sterile container or Anaerobic Gel Transport Tube. Use sterile non-bacteriostatic saline to prevent drying.
Storage/Transport Temperature: Room temperature. Submit specimen according to Biological Substance, Category B, shipping guidelines.
Remarks: Specimen source required.
Unacceptable Conditions: Formalinized specimens. Dry specimens.
Stability: Ambient: 24 hours; Refrigerated: Unacceptable; Frozen: Unacceptable
CPT Code(s): 87070 Aerobic culture, 87176 Homogenization

0099187	Tissue Plasminogen Activator, Antigen	TPA AG
Methodology:	Enzyme-Linked Immunosorbent Assay	
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> Separate plasma from cells and freeze ASAP. Transfer 1 mL platelet-poor plasma to an ARUP Standard Transport Tube. (Min: 0.5 mL) <u>Storage/Transport Temperature:</u> Frozen. <u>Unacceptable Conditions:</u> Serum. Specimens collected in sodium fluoride or heparin. <u>Stability:</u> Ambient: 4 hours; Refrigerated: 4 hours; Frozen: 2 months	
CPT Code(s):	85415	
0097772	Tissue Thromboplastin Inhibition Test	TTIT
Methodology:	Clot	
Specimen Required:	<u>Collect:</u> Lt. blue (sodium citrate). <u>Specimen Preparation:</u> Transfer 1 mL plasma to an ARUP Standard Transport Tube. (Min: 0.5 mL) <u>Storage/Transport Temperature:</u> Frozen. Separate specimens must be submitted when multiple tests are ordered. <u>Stability:</u> Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen: 2 months	
CPT Code(s):	85705	
0097709	Tissue Transglutaminase Antibody (tTG), IgA	TTG
Methodology:	Semi-Quantitative Enzyme-Linked Immunosorbent Assay	
Specimen Required:	<u>Collect:</u> Serum separator tube. <u>Specimen Preparation:</u> 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) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Plasma or other body fluids. Contaminated, hemolyzed, or severely lipemic specimens. <u>Stability:</u> After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)	
CPT Code(s):	83516	
0056009	Tissue Transglutaminase Antibody, IgG	TTG G
Methodology:	Semi-Quantitative Enzyme-Linked Immunosorbent Assay	
Specimen Required:	<u>Collect:</u> Serum separator tube. <u>Specimen Preparation:</u> Remove serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.5 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Plasma. Hemolyzed or severely lipemic specimens. <u>Stability:</u> After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year	
CPT Code(s):	83516	
0050734	Tissue Transglutaminase (tTG) Antibody, IgA with Reflex to Endomysial Antibody, IgA Titer by IFA	EMA R
Methodology:	Semi-Quantitative Enzyme-Linked Immunosorbent Assay/Semi-Quantitative Indirect Fluorescent Antibody	
Specimen Required:	<u>Collect:</u> Serum separator tube. <u>Specimen Preparation:</u> 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) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Plasma. Contaminated, hemolyzed, or severely lipemic specimens. <u>Stability:</u> After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid freeze/thaw cycles)	
CPT Code(s):	83516 tTG IgA; if reflexed, add 86256 EMA titer	
0091434	Titanium, Serum or Plasma	TITANIU SP
Methodology:	Quantitative Inductively Coupled Plasma/Mass Spectrometry	
Specimen Required:	<u>Collect:</u> Royal blue top tube (EDTA or no additive). <u>Specimen Preparation:</u> Separate serum or plasma from cells within 2 hours. Transfer 1 mL serum or plasma to an ARUP Trace Element-Free Transport Tube (ARUP supply #43116). (Min: 0.5 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Separator tubes. <u>Stability:</u> Ambient: 2 weeks; Refrigerated: 2 weeks; Frozen: 2 weeks	
CPT Code(s):	83018	
0091433	Titanium, Urine	TITANIU UR
Methodology:	Inductive Coupled Plasma/Mass Spectrometry	
Specimen Required:	<u>Collect:</u> Random urine. Collect urine in a trace metal free or acid washed plastic container. <u>Storage/Transport Temperature:</u> 1.0 mL urine at 2-8°C. (Min: 0.5 mL) <u>Stability:</u> Ambient: 2 weeks; Refrigerated: 2 weeks; Frozen: 2 weeks	
CPT Code(s):	83018	
0090315	Tobramycin, Peak Level	TOBRAP
Methodology:	Fluorescence Polarization Immunoassay	
Specimen Required:	<u>Collect:</u> Draw 30 minutes following completion of infusion. <u>Specimen Preparation:</u> Plain red. Also acceptable: Green (sodium or lithium heparin). <u>Storage/Transport Temperature:</u> Refrigerated. If transport is prolonged: Frozen. <u>Unacceptable Conditions:</u> Specimens collected in citrate or oxalate/fluoride anticoagulants, or separator tubes. Hemolyzed specimens. <u>Stability:</u> After separation from cells: Ambient: 4 hours; Refrigerated: 1 week; Frozen: 1 month	
CPT Code(s):	80200	
0090270	Tobramycin, Random Level	TOBRA
Methodology:	Fluorescence Polarization Immunoassay	
Specimen Required:	<u>Collect:</u> Plain red. Also acceptable: Green (sodium or lithium heparin). <u>Specimen Preparation:</u> Separate serum or plasma from cells. Transfer 1 mL serum or plasma to an ARUP Standard Transport Tube.	

(Min: 0.5 mL)
Storage/Transport Temperature: Refrigerated. If transport is prolonged: Frozen.
Unacceptable Conditions: Citrate, oxalate/fluoride, or separator tubes. Hemolyzed specimens.
Stability: After separation from cells: Ambient: 4 hours; Refrigerated: 1 week; Frozen: 1 month

CPT Code(s):

80200

0090320 Tobramycin, Trough Level TOBRAT
Methodology: Fluorescence Polarization Immunoassay
Specimen Required: Patient Preparation: Draw 5-90 minutes before next infusion.
Collect: Plain red. Also acceptable: Green (sodium or lithium heparin).
Specimen Preparation: Separate serum or plasma from cells. Transfer 1 mL serum or plasma to an ARUP Standard Transport Tube.
(Min: 0.5 mL)
Storage/Transport Temperature: Refrigerated. If transport is prolonged: Frozen.
Unacceptable Conditions: Citrate, oxalate/fluoride, or separator tubes. Hemolyzed specimens.
Stability: After separation from cells: Ambient: 4 hours; Refrigerated: 1 week; Frozen: 1 month

CPT Code(s):

80200

0091112 Tocainide Quantitation, Serum or Plasma TOCAIN SP
Methodology: Gas Chromatography
Specimen Required: Collect: One 7 mL plain red, gray (sodium fluoride/potassium oxalate), green (sodium heparin), or lavender (EDTA).
Storage/Transport Temperature: 2 mL serum or plasma at 2-8°C. (Min: 1 mL) Submit specimen in an ARUP Standard Transport Tube.
Remarks: Remove serum or plasma from cells ASAP.
Unacceptable Conditions: Separator tubes.
Stability: Ambient: 1 week; Refrigerated: 2 weeks; Frozen: 4 months

CPT Code(s):

80299

0091218 Tocainide Quantitation, Urine TOCA URN
Methodology: Gas Chromatography
Specimen Required: Collect: Random urine.
Storage/Transport Temperature: 2 mL urine at 20-25°C. (Min: 1 mL) Submit specimen in an ARUP Standard Transport Tube.
Stability: Ambient: 1 week; Refrigerated: 2 weeks; Frozen: 4 months

CPT Code(s):

80299

0091534 Tolbutamide, Serum or Plasma TOLBUTAM S
Methodology: High Performance Liquid Chromatography
Specimen Required: Collect: One 7 mL plain red or lavender (EDTA).
Storage/Transport Temperature: 2 mL serum or plasma at 20-25°C. (Min: 1 mL) Submit sample in an ARUP Standard Transport Tube.
Unacceptable Conditions: Serum separator tubes.
Stability: Ambient: 1 week; Refrigerated: 2 weeks; Frozen: 4 months

CPT Code(s):

80299

0051589 Toll-Like Receptor Function Assay TLR
Methodology: Cell Culture/Quantitative Multi-Analyte Fluorescence Detection
Specimen Required: Patient Preparation: Collect control specimen from a healthy individual unrelated to patient at approximately the same time as and under similar conditions to the patient.
Collect: Yellow (ACD Solution A) (patient) AND yellow (ACD Solution A) (control). **Patient and control specimens must be collected within 48 hours of test performance.**
Specimen Preparation: Transport 10 mL whole blood (patient) AND 10 mL whole blood (control) in original collection tubes. (Min: 7 mL (patient) AND 7 mL (control)) **Do not refrigerate or freeze. LIVE CELLS REQUIRED.**
Infant Minimum: 3 mL whole blood (patient) AND 7 mL whole blood (control).
Storage/Transport Temperature: CRITICAL ROOM TEMPERATURE.
Remarks:
Unacceptable Conditions: Refrigerated or frozen specimens. Specimens in transport longer than 48 hours.
Stability: Ambient: 48 hours; Refrigerated: Unacceptable; Frozen: Unacceptable

CPT Code(s):

86353 x6 Lymphocyte transformation; 83520 x3 Cytokines

0091536 Toluene TOLUENE SP
Methodology: Gas Chromatography
Specimen Required: Collect: Plain red, gray (sodium fluoride/potassium oxalate), green (sodium heparin), or lavender (EDTA).
Specimen Preparation: Transfer 2 mL serum or plasma to an ARUP Standard Transport Tube. (Min 0.7 mL)
Storage/Transport Temperature: Frozen.
Unacceptable Conditions: Separator tubes.
Stability: Ambient: 5 days; Refrigerated: 5 days; Frozen: 6 months

CPT Code(s):

84600

0091535 Toluene Quantitation, Whole Blood TOLUEN BLD
Methodology: Quantitative Gas Chromatography
Specimen Required: Collect: Lavender (EDTA).
Specimen Preparation: Transfer 2 mL whole blood to an ARUP Standard Transport Tube. (Min: 0.7 mL)
Storage/Transport Temperature: Frozen.
Stability: Ambient: 5 days; Refrigerated: 5 days; Frozen: 6 months

CPT Code(s):

84600

0070390 Topiramate TOPIR
Methodology: Enzyme Immunoassay
Specimen Required: Collect: Plain red. Also acceptable: Lavender (EDTA), pink (K₂EDTA), or green (sodium or lithium heparin). Avoid use of separator tubes or gels.
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: 0.3 mL)

Storage/Transport Temperature: Refrigerated.

Remarks: Separate serum or plasma from cells ASAP. Avoid use of separator tubes and gels.

Stability: After separation from cells: Ambient: 6 weeks; Refrigerated: 6 weeks; Frozen: 6 weeks

CPT Code(s): 80201

0050772 TORCH Antibodies, IgG TORCH IGG

Methodology: Chemiluminescent Immunoassay

Specimen Required: Collect: Serum separator tube. Also acceptable: Serum from umbilical cord blood.

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

Storage/Transport Temperature: Refrigerated.

Unacceptable Conditions: Refer to individual components.

Stability: After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)

CPT Code(s): 86644 CMV IgG; 86694 HSV IgG; 86317 Rubella IgG; 86317 *Toxoplasma* IgG

0050665 TORCH Antibodies, IgM TORCH M

Methodology: Refer to individual components

Specimen Required: Collect: Serum separator tube.

Specimen Preparation: Transfer 2 mL serum to an ARUP Standard Transport Tube. (Min: 1 mL) Parallel testing is preferred and convalescent specimens **must** be received within 30 days from receipt of the acute specimens. **Mark specimens plainly as "acute" or "convalescent."**

Storage/Transport Temperature: Refrigerated.

Unacceptable Conditions: Refer to individual components.

Stability: After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)

CPT Code(s): 86645 CMV IgM; 86694 HSV IgM; 86762 Rubella IgM; 86778 *Toxoplasma* IgM

2002550 Total Inhibin T INHIBIN

Methodology: Enzyme-Linked Immunosorbent Assay

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

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

Storage/Transport Temperature: Frozen.

Unacceptable Conditions: Grossly hemolyzed specimens.

Stability: Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen: 3 months

CPT Code(s): 83520

0092212 Toxic Shock Syndrome Antibody, MAID TOXSHOCKAB

Methodology: Multi-Analyte Immunodetection

Specimen Required: Collect: Plain red or serum separator tube.

Specimen Preparation: Separate serum from cells ASAP. Transfer 0.5 mL serum to an ARUP Standard Transport Tube. (Min: 0.25 mL)

Storage/Transport Temperature: Refrigerated.

Stability: Ambient: 1 week; Refrigerated: 2 months; Frozen: Indefinitely

CPT Code(s): 86609 x2

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: Ambient: Undetermined; Refrigerated: Undetermined; Frozen: Undetermined

CPT Code(s): 87299 x3

0099090 Toxocara Antibody IgG by ELISA TOXOCARA

Methodology: Semi-Quantitative Enzyme-Linked Immunosorbent Assay

Specimen Required: Collect: Serum separator tube.

Specimen Preparation: Separate serum from cells ASAP. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.15 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. **Please mark specimen plainly as "acute" or "convalescent."**

Storage/Transport Temperature: Refrigerated.

Unacceptable Conditions: Contaminated or heat-inactivated specimens.

Stability: After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)

CPT Code(s): 86682

0050521 Toxoplasma gondii Antibodies, IgG & IgM TOXO PAN

Methodology: Chemiluminescent Immunoassay

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 2 mL serum to an ARUP Standard Transport Tube. (Min: 0.5 mL) Parallel testing is preferred and convalescent specimens **must** be received within 30 days from receipt of the acute specimens. **Mark specimens plainly as "acute" or "convalescent."**

Storage/Transport Temperature: Refrigerated.

Unacceptable Conditions: Contaminated or heat-inactivated specimens.

Stability: After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)

CPT Code(s): 86317 *Toxoplasma* IgG; 86778 *Toxoplasma* IgM

0050770 Toxoplasma gondii Antibody, IgG TOXEIGG

Methodology:	Chemiluminescent Immunoassay	
Specimen Required:	<u>Collect:</u> Serum separator tube. Also acceptable: Serum from umbilical cord blood. <u>Specimen Preparation:</u> 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) Parallel testing is preferred and convalescent specimens must be received within 30 days from receipt of the acute specimens. Mark specimens plainly as "acute" or "convalescent." <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Contaminated, heat-inactivated, or grossly hemolyzed specimens. <u>Stability:</u> After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)	
CPT Code(s):	86317	
0050557	<i>Toxoplasma gondii</i> Antibody, IgM	TOXEIGM
Methodology:	Chemiluminescent Immunoassay	
Specimen Required:	<u>Collect:</u> Serum separator tube. <u>Specimen Preparation:</u> 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) 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." <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Contaminated, heat-inactivated, or grossly hemolyzed specimens. <u>Stability:</u> After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)	
CPT Code(s):	86778	
2004157	<i>Toxoplasma gondii</i> by Immunohistochemistry	TOXOPL IHC
Methodology:	Immunohistochemistry	
Specimen Required:	<u>Collect:</u> Tissue or cells. <u>Specimen Preparation:</u> 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. <u>Storage/Transport Temperature:</u> Room temperature or refrigerated. <u>Remarks:</u> 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. <u>Unacceptable Conditions:</u> Depleted specimens. Specimens submitted with non-representative tissue type. <u>Stability:</u> Ambient: Indefinite; Refrigerated: Indefinite; Frozen: Indefinite	
CPT Code(s):	88342	
0055591	<i>Toxoplasma gondii</i> by PCR	TOXOPCR
Methodology:	Qualitative Polymerase Chain Reaction	
Specimen Required:	<u>Collect:</u> Plain red, lavender (EDTA), or pink (K ₂ EDTA), or serum separator tube. OR amniotic fluid, CSF, or tissue. <u>Specimen Preparation:</u> Separate serum or plasma from cells. Transfer 1 mL serum, plasma, amniotic fluid or CSF to sterile container. (Min: 0.5 mL) OR Tissue: Snap freeze immediately. <u>Storage/Transport Temperature:</u> Frozen. Submit specimen according to Biological Substance, Category B, shipping guidelines. <u>Remarks:</u> Specimen source required. <u>Unacceptable Conditions:</u> Heparinized specimens. Hemolyzed specimens. <u>Stability:</u> Tissue: Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen: 3 months All Others: Ambient: 8 hours; Refrigerated: 72 hours; Frozen: 3 months	
CPT Code(s):	87798	
0092534	<i>Toxoplasma gondii</i> IgG Antibody, ELISA (CSF)	TGONDI IGG
Methodology:	Enzyme-Linked Immunosorbent Assay	
Specimen Required:	<u>Collect:</u> CSF. <u>Specimen Preparation:</u> Transport 0.5 mL CSF. (Min: 0.25 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Stability:</u> Ambient: 1 week; Refrigerated: 2 months; Frozen: Indefinitely	
CPT Code(s):	86777	
2002573	TPMT Genotype	TPMT GENO
Methodology:	Polymerase Chain Reaction	
Specimen Required:	<u>Collect:</u> Lavender (EDTA). <u>Specimen Preparation:</u> Transport 5 mL whole blood. (Min: 3 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Stability:</u> Ambient: 1 week; Refrigerated: 2 weeks; Frozen: Unacceptable	
CPT Code(s):	83891 Isolation; 83898x3 Amplification; 83896x6 Nucleic Acid Probes; 83912 Interpretation and report.	
2002764	Tramadol & Metabolites - Confirmation/Quantitation - Serum or Plasma	TRAMAD SP
Methodology:	Quantitative Liquid Chromatography-Tandem Mass Spectrometry	
Specimen Required:	<u>Collect:</u> Gray (sodium fluoride/potassium oxalate). Also acceptable: Plain red, green (sodium heparin), lavender (EDTA), or pink (K ₂ EDTA). <u>Specimen Preparation:</u> Separate serum or plasma from cells ASAP or within 2 hours of collection. Transfer 2 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 1 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Separator tubes. Plasma or whole blood collected in lt. blue (sodium citrate). Specimens exposed to repeated freeze/thaw cycles. <u>Stability:</u> After separation from cells: Ambient: 1 week; Refrigerated: 2 weeks; Frozen: 3 years	
CPT Code(s):	83925	

2002736	Tramadol & Metabolites - Confirmation/Quantitation - Urine	TRAMAD UR
Methodology:	Quantitative Liquid Chromatography-Tandem Mass Spectrometry	
Specimen Required:	<u>Collect:</u> Random urine. <u>Specimen Preparation:</u> Transfer 2 mL urine with no additives or preservatives an ARUP Standard Transport Tube. (Min: 1 mL) <u>Storage/Transport Temperature:</u> Room temperature. <u>Unacceptable Conditions:</u> Specimens exposed to repeated freeze/thaw cycles. <u>Stability:</u> Ambient: 1 week; Refrigerated: 1 month; Frozen: 3 years	
CPT Code(s):	83925	
0050570	Transferrin, Serum	TRNSF
Methodology:	Quantitative Immunoturbidimetric	
Specimen Required:	<u>Patient Preparation:</u> Fasting specimen preferred. <u>Collect:</u> Serum separator tube or plasma separator tube. Also acceptable: Green (sodium or lithium heparin). <u>Specimen Preparation:</u> 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: 0.5 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Specimens collected in EDTA. Hemolyzed specimens. <u>Stability:</u> After separation from cells: Ambient: 8 days; Refrigerated: 8 days; Frozen: 6 months	
CPT Code(s):	84466	
0051690	Transforming Growth Factor beta, Plasma	TGFB PLA
Methodology:	Quantitative Multi-Analyte Fluorescent Detection	
Specimen Required:	<u>Collect:</u> Green (lithium heparin). <u>Specimen Preparation:</u> Separate plasma from cells ASAP or within 2 hours of collection. Transfer 1 mL plasma to an ARUP Standard Transport Tube. (Min 0.3 mL) <u>Storage/Transport Temperature:</u> CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered. <u>Remarks:</u> <u>Unacceptable Conditions:</u> Refrigerated specimens. Contaminated or heat-inactivated specimens. <u>Stability:</u> After separation from cells: Ambient: 30 minutes; Refrigerated: Unacceptable; Frozen: 1 year	
CPT Code(s):	83520	
0051694	Transforming Growth Factor beta, Serum	TGFB SER
Methodology:	Quantitative Multi-Analyte Fluorescent Detection	
Specimen Required:	<u>Collect:</u> Serum separator tube or plain red. <u>Specimen Preparation:</u> 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) <u>Storage/Transport Temperature:</u> CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered. <u>Remarks:</u> <u>Unacceptable Conditions:</u> Refrigerated specimens. Contaminated or heat-inactivated specimens. <u>Stability:</u> After separation from cells: Ambient: 30 minutes; Refrigerated: Unacceptable; Frozen: 1 year	
CPT Code(s):	83520	
0051272	Transplantation (ImmuKnow®) Immune Cell Function Assay	TICFA
Methodology:	Cell Culture/Quantitative Chemiluminescence	
Specimen Required:	<u>Collect:</u> Green (sodium heparin). Specimen must be collected within 30 hours of test performance. <u>Specimen Preparation:</u> Transport 3 mL whole blood in original collection tube. (Min: 0.5 mL) LIVE LYMPHOCYTES REQUIRED. <u>Storage/Transport Temperature:</u> CRITICAL ROOM TEMPERATURE. Do not refrigerate or freeze. <u>Unacceptable Conditions:</u> Frozen or refrigerated specimens. Specimens in transport longer than 30 hours. <u>Stability:</u> Ambient: 30 hours; Refrigerated: Unacceptable; Frozen: Unacceptable	
CPT Code(s):	86352	
0091432	Tranlycypromine, Serum or Plasma	TRANLYCYP
Methodology:	Gas Chromatography	
Specimen Required:	<u>Collect:</u> One 7 mL plain red or lavender (EDTA). <u>Storage/Transport Temperature:</u> 2 mL serum or plasma at 20-25°C. (Min: 1 mL) Submit sample in an ARUP Standard Transport Tube. <u>Remarks:</u> Separate serum or plasma from cells immediately. <u>Unacceptable Conditions:</u> Serum separator tubes. <u>Stability:</u> Ambient: 1 week; Refrigerated: 2 weeks; Frozen: 6 months	
CPT Code(s):	80299	
0091431	Tranlycypromine, Urine	TRANLYC UR
Methodology:	Gas Chromatography	
Specimen Required:	<u>Collect:</u> Random urine. <u>Specimen Preparation:</u> Transport 2 mL urine. (Min: 1 mL) <u>Storage/Transport Temperature:</u> Room temperature. <u>Stability:</u> Ambient: 1 week; Refrigerated: 2 weeks; Frozen: 6 months	
CPT Code(s):	80299	
0090316	Trazodone	TRAZO
Methodology:	Quantitative Liquid Chromatography-Tandem Mass Spectrometry	
Specimen Required:	<u>Collect:</u> Plain red. Also acceptable: green (sodium or lithium heparin), lavender (EDTA), pink (K ₂ EDTA or K ₃ EDTA), or gray (sodium fluoride/potassium oxalate). Also acceptable (avoid if possible): Serum separator tube or plasma separator tube (follow preparation instructions below). <u>Specimen Preparation:</u> Separate serum or plasma from cells within 6 hours of collection. Transfer 2 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.5 mL) <u>SST or PST:</u> Serum or plasma in a gel separator tube stored at room temperature is acceptable if separated from the gel within 6 hours. Serum or plasma in a gel separator tube stored refrigerated is acceptable if separated from the gel within 2 hours. <u>Storage/Transport Temperature:</u> Refrigerated.	

Unacceptable Conditions: Citrated plasma. Tubes that contain liquid anticoagulant.
Stability: After separation from cells: Ambient: 12 hours; Refrigerated: 1 week; Frozen: 1 week
80299

CPT Code(s):

0050777 *Treponema pallidum* Antibody by TP-PA **MHA**
Methodology: Semi-Quantitative Particle Agglutination
Specimen Required: Collect: Serum separator tube or plasma separator tube.
Specimen Preparation: Separate serum or plasma from cells ASAP or within 2 hours of collection. Transfer 1 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.1 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: CSF or other body fluids.
Stability: After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)
CPT Code(s): 86780

0050477 *Treponema pallidum* Antibody (FTA-ABS), Serum, IgG by IFA with Reflex to *Treponema pallidum* Antibody by TP-PA **FTA**
Methodology: Semi-Quantitative Indirect Fluorescent Antibody/Semi-Quantitative Particle Agglutination
Specimen Required: Collect: Serum separator tube.
Specimen Preparation: Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.2 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: CSF, plasma, or other body fluids. Contaminated, hemolyzed, or severely lipemic specimens.
Stability: After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)
CPT Code(s): 86780; if reflexed, add additional 86780

0050920 *Treponema pallidum* Antibody, IgG by ELISA **SYPH G**
Methodology: Semi-Quantitative Enzyme-Linked Immunosorbent Assay
Specimen Required: Collect: Serum separator tube.
Specimen Preparation: Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.05 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Plasma or other body fluids. Contaminated, hemolyzed, or severely lipemic specimens.
Stability: After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)
CPT Code(s): 86780

0055273 *Treponema pallidum* Antibody, IgG by IFA (CSF) **FTA CSF G**
Methodology: Semi-Quantitative Indirect Fluorescent Antibody
Specimen Required: Collect: CSF.
Specimen Preparation: Transfer 1 mL CSF to an ARUP Standard Transport Tube. (Min: 0.2 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Serum. Contaminated, heat-inactivated, or hemolyzed specimens.
Stability: Ambient: 48 hours; Refrigerated: 5 days; Frozen: 1 year
CPT Code(s): 86780

2003095 *Treponema pallidum* Antibody, IgG by Immunoblot **SYPH G IB**
Methodology: Qualitative Immunoblot
Specimen Required: Collect: Serum separator tube.
Specimen Preparation: Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.15 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Other body fluids.
Stability: After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)
CPT Code(s): 86780

0050921 *Treponema pallidum* Antibody, IgM by ELISA **SYPH M**
Methodology: Semi-Quantitative Enzyme-Linked Immunosorbent Assay
Specimen Required: Collect: Serum separator tube.
Specimen Preparation: Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.05 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Plasma or other body fluids. Contaminated, hemolyzed, or severely lipemic specimens.
Stability: After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)
CPT Code(s): 86780

0093067 *Treponema pallidum* Antibody Panel (FTA-ABS) IgG & IgM **FTA G/M**
Methodology: Qualitative Immunofluorescence Assay
Specimen Required: Patient Preparation: Collect from child less than 12 months of age.
Collect: Plain red or serum separator tube.
Specimen Preparation: Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.1 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Adult specimens or specimens collected from children older than 12 months of age.
Stability: Ambient: 1 week; Refrigerated: 2 weeks; Frozen: 1 month
CPT Code(s): 86780 x2

0050471 *Treponema pallidum* (Rapid Plasma Reagin) with Reflex to Titer **RPRT**
Methodology: Semi-Quantitative Charcoal Agglutination
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: 0.25 mL) Also acceptable: Plasma, if testing is completed within 48 hours of collection. <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> CSF or other body fluids. <u>Stability:</u> After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)	
CPT Code(s):	86592 RPR; if reflexed, add 86593 RPR titer	
0050478	<i>Treponema pallidum</i> (Rapid Plasma Reagin) with Reflex to Titer & TP-PA Confirmation	RPR PAN
Methodology:	Semi-Quantitative Charcoal Agglutination/Semi-Quantitative Particle Agglutination (PA)	
Specimen Required:	<u>Collect:</u> Serum separator tube. <u>Specimen Preparation:</u> Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.25 mL) Do not freeze. Also acceptable: Plasma, if testing is completed within 48 hours of collection. <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> CSF or other body fluids. <u>Stability:</u> After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)	
CPT Code(s):	86592 RPR; if reflexed, add 86593 RPR titer and TP-PA 86780	
0050011	<i>Treponema pallidum</i> (Rapid Plasma Reagin) with Reflex to Titer, FTA-ABS & TP-PA	RPR FTA
Methodology:	Semi-Quantitative Charcoal Agglutination/Semi-Quantitative Indirect Fluorescent Antibody/Semi-Quantitative Particle Agglutination (PA)	
Specimen Required:	<u>Collect:</u> Serum separator tube. <u>Specimen Preparation:</u> 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) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> CSF or plasma. Contaminated, hemolyzed, or severely lipemic specimens. <u>Stability:</u> After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year	
CPT Code(s):	86592 RPR; if reflexed, add 86593 RPR titer; 86780 FTA; if reflexed add TP-PA 86780	
0050206	<i>Treponema pallidum</i> (VDRL), Cerebrospinal Fluid with Reflex to Titer	VDRL CSF
Methodology:	Semi-Quantitative Flocculation	
Specimen Required:	<u>Collect:</u> CSF. <u>Specimen Preparation:</u> Transfer 0.5 mL CSF to an ARUP Standard Transport Tube. (Min: 0.2 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Plasma, serum, or other body fluids. <u>Stability:</u> Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)	
CPT Code(s):	86592 <i>Treponema pallidum</i> screen; if reflexed, add 86593 <i>Treponema pallidum</i> titer	
0093093	<i>Treponema pallidum</i> (VDRL), Serum with Reflex to Titer	VDRL SERU
Methodology:	Semi-Quantitative Flocculation	
Specimen Required:	<u>Collect:</u> Plain red or serum separator tube. <u>Specimen Preparation:</u> Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube (Min: 0.25 mL) <u>Storage/Transport Temperature:</u> Refrigerated <u>Unacceptable Conditions:</u> CSF or other body fluids. Contaminated, heat-inactivated, hemolyzed, or severely lipemic specimens. <u>Stability:</u> After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)	
CPT Code(s):	86592 <i>Treponema pallidum</i> screen; if reflexed, add 86593 <i>Treponema pallidum</i> titer	
0091104	Triazolam & Metabolite Quantitation, Serum or Plasma	TRIAZO SP
Methodology:	LC-MS/MS	
Specimen Required:	<u>Collect:</u> One 5 mL plain red. <u>Storage/Transport Temperature:</u> 1 mL serum or plasma at 2-8°C. (Min: 1 mL) Submit specimen in an ARUP Standard Transport Tube. <u>Unacceptable Conditions:</u> Serum separator tubes. <u>Stability:</u> Ambient: 2 weeks; Refrigerated: 2 weeks; Frozen: 2 weeks	
CPT Code(s):	80154	
0050787	<i>Trichinella</i> Antibody by ELISA	TRICH
Methodology:	Qualitative Enzyme-Linked Immunosorbent Assay	
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: 0.05 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Stability:</u> After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)	
CPT Code(s):	86784	
0091566	Trichloroacetic Acid	TRICHLOR S
Methodology:	Gas Chromatography	
Specimen Required:	<u>Collect:</u> Two 7 mL plain red or lavender (EDTA). <u>Storage/Transport Temperature:</u> 4 mL serum or plasma at 20-25°C. (Min: 0.5 mL) Submit sample in an ARUP Standard Transport Tube. <u>Stability:</u> No stabilities available at this time.	
CPT Code(s):	83918	
0091475	Trichloroacetic Acid, Urine	TRICHLOR U
Methodology:	Colorimetry/Spectrophotometry	
Specimen Required:	<u>Patient Preparation:</u> Collect specimen at end of shift, end of work week. <u>Collect:</u> Random urine. <u>Specimen Preparation:</u> Transfer 4 mL urine to an ARUP Standard Transport Tube. (Min: 2.6 mL) <u>Storage/Transport Temperature:</u> Refrigerated. Also acceptable: Frozen. <u>Stability:</u> Ambient: Undetermined; Refrigerated: Undetermined; Frozen: Undetermined	

CPT Code(s): 82570 Creatinine; 83918 Organic acids

2005506	Trichomonas vaginalis by Amplified Detection	TVAG AMD
Methodology:	Qualitative Target Amplification Nucleic Acid Probe	
Specimen Required:	<u>Collect:</u> First catch female urine, endocervical or vaginal swab, or ThinPrepCervical specimen. (ARUP Supply #: Swabs: 28907; Urine: 28908; Specimen Transfer Tube kit (for ThinPrep collections only): 42711.) Available online through eSupply using ARUP Connector contact Client Services at (800) 522-2787. <u>Specimen Preparation:</u> Urine: Using a sterile pipette (provided in kit) transfer first catch urine to Urine APTIMA® transport tube so the level of urine is visible between the minimum and maximum fill lines on the tube. ThinPrep: Vortex PapTest media and transfer a 1 mL aliquot to APTIMA® Combo 2 transport media. Urine must be transferred to APTIMA® Transport tube within 24 hours of collection. To reduce the potential for contamination PreservCyt ThinPrep® specimens must be poured off, using sterile technique, into the APTIMA® Specimen Transfer Tube prior to Cytology Testing. Swab: Transport in APTIMA® test-specific collection/transport tube. If CT/NG testing is required from a swab specimen in addition to <i>T. vaginalis</i> testing please submit an additional swab specimen. <u>Storage/Transport Temperature:</u> Refrigerated or room temperature. <u>Remarks:</u> This assay is FDA approved for specimens from female patients only. <u>Unacceptable Conditions:</u> Specimens (swabs or urine) not in APTIMA transport media. Large white swab is for preparatory cleaning of the endocervix and is unacceptable for testing. <u>Stability:</u> Unpreserved Urine: Ambient: 24 hours; Refrigerated: 24 hours; Frozen: 24 hours ThinPrep® Media: Ambient: 1 month; Refrigerated: 1 month; Frozen: 6 months APTIMA® Transport Media: Swab: Ambient: 2 months; Refrigerated: 2 months; Frozen: 6 months Urine: Ambient: 1 month; Refrigerated: 1 month; Frozen: 6 months ThinPrep: Ambient: 2 weeks; Refrigerated: 1 month; Frozen: 6 months	
CPT Code(s):	87798	
0090307	Tricyclic Antidepressant Detection	S TAD
Methodology:	Enzyme Immunoassay	
Specimen Required:	<u>Collect:</u> Plain red. <u>Specimen Preparation:</u> Separate serum from cells within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.5 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Separator tubes. <u>Stability:</u> After separation from cells: Ambient: 48 hours; Refrigerated: 48 hours; Frozen: 2 months	
CPT Code(s):	80101	
0090154	Tricyclic Antidepressant Identification Quantitative, Serum	TADID
Methodology:	Quantitative Liquid Chromatography-Tandem Mass Spectrometry	
Specimen Required:	<u>Collect:</u> Plain red. Also acceptable: Lavender (EDTA), pink (K2 EDTA), green (sodium heparin) or gray (sodium fluoride/potassium oxalate). Avoid use of separator tubes and gels. <u>Specimen Preparation:</u> Transfer 2 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.5 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Gel separator tubes left at room temperature for more than 2 hours or refrigerated for more than 30 minutes. <u>Stability:</u> After separation from cells: Ambient: 5 days; Refrigerated: 2 weeks; Frozen: 6 months	
CPT Code(s):	80100 if negative; if positive use the appropriate CPT code(s) for drug identified as follows: 80152 Amitriptyline; 80182 Nortriptyline; 80174 Imipramine; 80160 Desipramine; 80166 Doxepin; 80299 Nordoxepin; 80299 Protriptyline; 80299 Clomipramine; 80299 Norclomipramine.	
0091354	Trifluoperazine, Serum or Plasma	TRIFLUOPER
Methodology:	Quantitative Gas Chromatography	
Specimen Required:	<u>Collect:</u> Gray (sodium fluoride/potassium oxalate), green (sodium heparin), lavender (EDTA) or pink (K ₂ EDTA). <u>Specimen Preparation:</u> Separate serum or plasma from cells within 2 hours. Transfer 5 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 2.2 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Separator tubes <u>Stability:</u> Ambient: 9 days; Refrigerated: 9 days; Frozen: 9 months	
CPT Code(s):	84022	
0091101	Trifluoperazine, Urine	TRIFLU UR
Methodology:	Quantitative Gas Chromatography	
Specimen Required:	<u>Collect:</u> Random urine. <u>Specimen Preparation:</u> Transfer 3 mL urine to an ARUP Standard Transport Tube. (Min: 1.2 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Stability:</u> Ambient: 9 days; Refrigerated: 9 days; Frozen: 9 months	
CPT Code(s):	84022	
0020713	Triglycerides, Fluid	TRG FL
Methodology:	Quantitative Enzymatic	
Specimen Required:	<u>Collect:</u> Body fluid. <u>Specimen Preparation:</u> Transport 1 mL body fluid. (Min: 0.5 mL) <u>Storage/Transport Temperature:</u> Room temperature. <u>Remarks:</u> Indicate source on test request form. <u>Stability:</u> Ambient: 72 hours; Refrigerated: 1 week; Frozen: 3 months	
CPT Code(s):	84478	
0020040	Triglycerides, Plasma or Serum	TRG

Methodology:	Quantitative Enzymatic	
Specimen Required:	<u>Patient Preparation:</u> Fasting specimen is preferred. <u>Collect:</u> Plasma separator tube or serum separator tube. <u>Specimen Preparation:</u> Allow specimen to clot completely at room temperature. Separate serum or plasma from cells ASAP or within 2 hours of collection. Transfer 1 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.2 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Collection tubes with glycerol-lubricated stoppers. <u>Stability:</u> After separation from cells: Ambient: 72 hours; Refrigerated: 1 week; Frozen: 3 months	
CPT Code(s):	84478	
0091399	Trihexyphenidyl, Serum or Plasma	TRIHXPHE
Methodology:	Gas Chromatography	
Specimen Required:	<u>Collect:</u> Two 7 mL plain red, gray (sodium fluoride/potassium oxalate), green (sodium heparin), or lavender (EDTA). <u>Storage/Transport Temperature:</u> 4 mL serum or plasma at 20-25°C. (Min: 2.2 mL). Submit sample in an ARUP Standard Transport Tube. <u>Unacceptable Conditions:</u> Serum separator tubes. <u>Stability:</u> Ambient: 1 week; Refrigerated: 2 weeks; Frozen: 1 year	
CPT Code(s):	80299	
0091398	Trihexyphenidyl, Urine	TRIHURN
Methodology:	Gas Chromatography/Mass Spectrometry	
Specimen Required:	<u>Collect:</u> Urine. <u>Storage/Transport Temperature:</u> 4 mL urine at 20-25°C. (Min: 2 mL) Submit sample in ARUP Standard Transport Tube. <u>Stability:</u> Ambient: 1 week; Refrigerated: 2 weeks; Frozen: 1 year	
CPT Code(s):	80299	
0093243	Triiodothyronine, Free by Equilibrium Dialysis/HPLC-Tandem Mass Spectrometry	FT3 ED-TMS
Methodology:	Quantitative Equilibrium Dialysis/High Performance Liquid Chromatography-Tandem Mass Spectrometry	
Specimen Required:	<u>Collect:</u> Plain red. <u>Specimen Preparation:</u> Transfer 2 mL serum to an ARUP Standard Transport Tube. (Min: 0.3 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Stability:</u> After separation from cells: Ambient: 4 days; Refrigerated: 2 weeks; Frozen: 1 month	
CPT Code(s):	84481	
0070133	Triiodothyronine, Free (Free T3)	FT3
Methodology:	Quantitative Electrochemiluminescent Immunoassay	
Specimen Required:	<u>Collect:</u> Serum separator tube or plasma separator tube. Also acceptable: Lavender (EDTA) or pink (K ₂ EDTA). <u>Specimen Preparation:</u> Allow specimen to clot completely at room temperature. Separate serum or plasma from cells ASAP or within 2 hours of collection. Transfer 1 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.5 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Grossly hemolyzed specimens. <u>Stability:</u> After separation from cells: Ambient: 24 hours; Refrigerated: 1 week; Frozen: 1 month	
CPT Code(s):	84481	
0070188	Triiodothyronine, Reverse	RT3
Methodology:	Quantitative Radioimmunoassay	
Specimen Required:	<u>Collect:</u> Serum separator tube. Also acceptable: Lavender (EDTA) or pink (K ₂ EDTA). <u>Specimen Preparation:</u> Transfer 1 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.3 mL) <u>Storage/Transport Temperature:</u> Frozen. <u>Stability:</u> After separation from cells: Ambient: 24 hours; Refrigerated: 1 week; Frozen: 3 months	
CPT Code(s):	84482	
0070474	Triiodothyronine, Total (Total T3)	T3 TOTAL
Methodology:	Quantitative Electrochemiluminescent Immunoassay	
Specimen Required:	<u>Collect:</u> Plasma separator tube or serum separator tube. Also acceptable: Lavender (EDTA), pink (K ₂ EDTA), or green (sodium or lithium heparin). <u>Specimen Preparation:</u> Allow specimen to clot completely at room temperature. Separate serum or plasma from cells ASAP or within 2 hours of collection. Transfer 1 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.5 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Grossly hemolyzed specimens. <u>Stability:</u> After separation from cells: Ambient: 24 hours; Refrigerated: 1 week; Frozen: 1 month	
CPT Code(s):	84480	
0091421	Trimethadione and Metabolite Quantitation, Serum or Plasma	TRIMETH SP
Methodology:	Quantitative Gas Chromatography	
Specimen Required:	<u>Collect:</u> Plain red or lavender (EDTA). <u>Specimen Preparation:</u> Separate from cells within 2 hours. Transfer 2 mL serum or plasma to an ARUP Standard Transport Tube. (Min 0.5 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Separator tubes. <u>Stability:</u> Ambient: Undetermined; Refrigerated: Undetermined; Frozen: Undetermined	
CPT Code(s):	80299	
0091420	Trimethadione and Metabolite Quantitation, Urine	TRIMETH UR
Methodology:	Quantitative Gas Chromatography	
Specimen Required:	<u>Collect:</u> Random urine. <u>Specimen Preparation:</u> Transfer 1 mL urine to an ARUP Standard Transport Tube. (Min: 0.5 mL) <u>Storage/Transport Temperature:</u> Refrigerated.	

CPT Code(s): Stability: Ambient: Undetermined; Refrigerated: Undetermined; Frozen: Undetermined
80299

0091396 **Trimethoprim, Serum or Plasma** **TRIMETHOPR**
Methodology: Quantitative High Performance Thin Layer Chromatography
Specimen Required: Collect: Lavender (EDTA).
Specimen Preparation: Separate serum or plasma from cells within 2 hours. Transfer 3 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 1.2 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Separator tubes.
Stability: Ambient: Undetermined; Refrigerated: Undetermined; Frozen: Undetermined
CPT Code(s): 80299

0091501 **Trimethoprim, Urine** **TRIMETHO U**
Methodology: High Performance Thin Layer Chromatography
Specimen Required: Collect: Random urine.
Storage/Transport Temperature: 3 mL urine at 2-8°C. (Min: 1.2 mL) Submit specimen in an ARUP Standard Transport Tube.
Stability: Ambient: Undetermined; Refrigerated: Undetermined; Frozen: Undetermined
CPT Code(s): 80299

0091107 **Trimipramine & Metabolite Quantitation, Serum or Plasma** **TRIMIP SP**
Methodology: Gas Chromatography
Specimen Required: Collect: One 7 mL plain red, gray (sodium fluoride/potassium oxalate), green (sodium heparin), lavender (EDTA), or pink (K₂ EDTA).
Storage/Transport Temperature: 3 mL serum or plasma at 2-8°C. (Min: 1 mL) Submit sample in an ARUP Standard Transport Tube.
Remarks: Remove serum or plasma from cells ASAP.
Unacceptable Conditions: Serum separator tubes.
Stability: Ambient: 1 week; Refrigerated: 2 weeks; Frozen: 17 months
CPT Code(s): 80299

0091213 **Trimipramine & Metabolite Quantitation, Urine** **TRIMIP UR**
Methodology: Gas Chromatography
Specimen Required: Collect: Random urine.
Storage/Transport Temperature: 2 mL urine at 20-25°C. (Min: 1 mL) Submit sample in an ARUP Standard Transport Tube.
Stability: Ambient: 1 week; Refrigerated: 2 weeks; Frozen: 17 months
CPT Code(s): 80299

0093370 **Trofile Co-Receptor Tropism Assay** **TROFILE**
Methodology: Recombinant virus, single replication
Specimen Required: Collect: Lavender (EDTA) or plasma preparation tube.
Specimen Preparation: Separate PPT plasma from cells within 2 hours of collection. Separate EDTA plasma from cells within 6 hours of collection. Transfer 3 mL plasma to an ARUP Standard Transport Tube and freeze immediately. (Min: 3 mL)
Storage/Transport Temperature: **CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.**
Remarks: Indicate viral load and viral load collection date on the test request form. If viral load is less than 1,000 copies, testing MAY NOT be performed.
Unacceptable Conditions: Thawed specimens.
Stability: Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen at -20°C: 2 weeks; Frozen at -70°C: Indefinitely
CPT Code(s): 87999

2004747 **Trofile™ DNA Co-Receptor Tropism Assay** **TROF DNA**
Methodology: CD4 cell culture assay for phenotypic recombinant-virus co-receptor tropism.
Specimen Required: Collect: Lavender (EDTA).
Specimen Preparation: Transfer 4 mL whole blood to an ARUP Standard Transport Tube and freeze immediately. (Min: 4 mL)
Storage/Transport Temperature: **CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.**
Unacceptable Conditions: Thawed specimens.
Stability: Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen at -20°C: 2 weeks; Frozen at -70°C: Indefinitely.
CPT Code(s): 87999

2002093 **Tropheryma whipplei DNA, Qualitative RT PCR** **T WHIPPLEI**
Methodology: Real-Time Polymerase Chain Reaction
Specimen Required: Collect: Lavender (EDTA), pink (K₂EDTA), or yellow (ACD solution A or B). Also acceptable: CSF.
Specimen Preparation: Transport 0.7 mL whole blood or CSF. (Min: 0.3 mL)
Storage/Transport Temperature: Refrigerated.
Stability: Ambient: 48 hours; Refrigerated: 1 week; Frozen: Whole blood: Unacceptable, CSF: 1 month
CPT Code(s): 87798

0090613 **Troponin I** **TNI**
Methodology: Chemiluminescent Immunoassay
Specimen Required: Collect: Plasma separator tube.
Specimen Preparation: Remove plasma from cells ASAP or within 2 hours of collection. Specimen must be free of particulate matter including fibrin which can interfere with the assay. Avoid transferring material from the white blood cell/platelet layer located just above the red blood cells. Transport 1 mL plasma. (Min: 0.5 mL)
Storage/Transport Temperature: Frozen.
Unacceptable Conditions: Serum. Specimens exposed to repeated freeze/thaw cycles.
Stability: Ambient: 8 hours; Refrigerated: 48 hours; Frozen: 6 months
CPT Code(s): 84484

0098803 **Troponin T** **TROPONIN T**
Methodology: Quantitative Electrochemiluminescent Immunoassay

Specimen Required:	<u>Collect:</u> Serum separator tube, pink (K ₂ EDTA), green (lithium heparin), or lt. blue (sodium citrate). <u>Specimen Preparation:</u> Separate serum or plasma from cells ASAP. Transfer 0.5 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.5 mL) <u>Storage/Transport Temperature:</u> Frozen. Separate specimens must be submitted when multiple tests are ordered. <u>Unacceptable Conditions:</u> Specimens collected in potassium oxalate or sodium fluoride. Grossly hemolyzed specimens. <u>Stability:</u> After separation from cells: Ambient: 4 hours; Refrigerated: 24 hours; Frozen: 1 year	
CPT Code(s):	84484	
0051076	<i>Trypanosoma cruzi</i> Antibody, IgG	CHAGAS G
Methodology:	Semi-Quantitative Rapid Strip Assay	
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: 0.05 mL) Parallel testing is preferred and convalescent specimens must be received within 30 days of the acute specimens. Mark specimens plainly as acute or convalescent. <u>Storage/Transport Temperature:</u> Refrigerated. Also acceptable: Room temperature or frozen. <u>Unacceptable Conditions:</u> Plasma. Bacterially contaminated, heat-inactivated, hemolyzed, icteric, lipemic, or turbid specimens. <u>Stability:</u> After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year	
CPT Code(s):	86753	
0051075	<i>Trypanosoma cruzi</i> Antibody, IgM	CHAGAS M
Methodology:	Semi-Quantitative Indirect Fluorescent Antibody	
Specimen Required:	<u>Collect:</u> Serum separator tube. <u>Specimen Preparation:</u> Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.05 mL) Parallel testing is preferred and convalescent specimens must be received within 30 days of the acute specimens. Mark specimens plainly as acute or convalescent. <u>Storage/Transport Temperature:</u> Refrigerated. Also acceptable: Room temperature or frozen. <u>Unacceptable Conditions:</u> Plasma. Bacterially contaminated, heat-inactivated, hemolyzed, icteric, lipemic, or turbid specimens. <u>Stability:</u> After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year	
CPT Code(s):	86753	
0020383	Trypsin, Fecal	TRYP F
Methodology:	Semi-quantitative Film Digestion	
Specimen Required:	<u>Collect:</u> Stool. <u>Specimen Preparation:</u> Transfer 5 g stool to an unpreserved stool transport vial (ARUP Supply #40910). Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787. <u>Storage/Transport Temperature:</u> CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered. <u>Remarks:</u> <u>Unacceptable Conditions:</u> Specimens in preservatives. <u>Stability:</u> Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen: 1 week	
CPT Code(s):	84488	
0070003	Trypsin-Like Immunoreactivity	TRYPSIN
Methodology:	Quantitative Radioimmunoassay	
Specimen Required:	<u>Collect:</u> Serum separator tube. Also acceptable: lavender (EDTA), pink (K ₂ EDTA), or green (sodium or lithium heparin). <u>Specimen Preparation:</u> Transfer 1 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.3 mL) <u>Storage/Transport Temperature:</u> Frozen. <u>Unacceptable Conditions:</u> Hemolyzed or lipemic specimens. <u>Stability:</u> After separation from cells: Ambient: 2 hours; Refrigerated: 24 hours; Frozen: 3 months	
CPT Code(s):	83519	
0099173	Tryptase	TRYPT
Methodology:	Quantitative Fluorescence Immunoassay	
Specimen Required:	<u>Collect:</u> Serum separator tube. <u>Specimen Preparation:</u> Allow serum 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) <u>Storage/Transport Temperature:</u> Frozen. <u>Stability:</u> After separation from cells: Ambient: 48 hours; Refrigerated: 72 hours; Frozen: 1 month	
CPT Code(s):	83520	
2005771	Tryptase, Mature and Total by ELISA	TRYPT MAT
Methodology:	Semi-Quantitative Enzyme-Linked Immunosorbent Assay	
Specimen Required:	<u>Patient Preparation:</u> For anaphylaxis, specimen should preferably be collected between 15 minutes and four hours after the suspected event causing mast cell activation. For mastocytosis, specimen should be collected during a non-acute time period. <u>Collect:</u> Plain red. <u>Specimen Preparation:</u> Separate serum from cells. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 1 mL) <u>Storage/Transport Temperature:</u> Frozen. Also acceptable: Refrigerated. <u>Unacceptable Conditions:</u> Specimens submitted in glass containers. <u>Stability:</u> Ambient: Unacceptable; Refrigerated: 2 weeks; Frozen: 2 weeks	
CPT Code(s):	83520	
0099590	Tryptophan	TRYPT
Methodology:	Liquid Chromatography Mass Spectrometry	
Specimen Required:	<u>Patient Preparation:</u> Patient should fast overnight prior to collection (or at least 4 hours after a meal). <u>Collect:</u> Green (sodium heparin). <u>Specimen Preparation:</u> Separate plasma from cells ASAP or within 2 hours of collection. Transfer 2 mL plasma to a polypropylene tube and freeze. (Min: 0.3 mL) <u>Storage/Transport Temperature:</u> CRITICAL FROZEN. Separate samples must be submitted when multiple tests are ordered. <u>Remarks:</u>	

Unacceptable Conditions: Serum.
Stability: Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen: 30 days

CPT Code(s):

82131

0051539 **Tumor Necrosis Factor - alpha** **TNFA DO**
Methodology: Quantitative Multi-Analyte Fluorescent Detection
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: 0.3 mL)
Storage/Transport Temperature: **CRITICAL FROZEN. Additional specimens must be submitted when multiple tests are ordered.**
Remarks:
Unacceptable Conditions: Refrigerated specimens. Contaminated or heat-inactivated specimens.
Stability: After separation from cells: Ambient: 30 minutes; Refrigerated: Unacceptable; Frozen: 1 year

CPT Code(s): 83520

0050547 **Twin Zygosity Testing** **TWIN ZYG**
Methodology: Polymerase Chain Reaction/Fragment Analysis
Specimen Required: Collect: **From each twin:** Lavender (EDTA), pink (K₂EDTA), or yellow (ACD Solution A or B). Also acceptable: Buccal brushes.
Specimen Preparation: **From each twin:** Transport 3 mL whole blood (Min: 1 mL) Also acceptable: 2 buccal brushes.
Storage/Transport Temperature: Refrigerated.
Stability: Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable

CPT Code(s): 83891 Isolation; 83909 Separation and identification; 83900 Amplification; 83901 x14 Multiplex amplification; 83912 Interpretation and report

0010847 **Type & Crossmatch** **TX**
Methodology: Hemagglutination
Specimen Required: Patient Preparation: Testing is limited to the University of Utah Health Sciences Center, Primary Children's Medical Center (10432), and Intermountain Shriners Hospital (10367) only.
New specimen required every 72 hours.
Collect: Lavender (EDTA) or pink (K₂EDTA).
Specimen Preparation: **DO NOT FREEZE red cells.** Transport 7 mL whole blood. (Min: 3 mL) Refer to Specimen Handling at www.aruplab.com for additional labeling requirements.
Storage/Transport Temperature: Room temperature.
Remarks:
Unacceptable Conditions: **Separator or gel tubes.**
Stability: Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable

CPT Code(s): 86900 ABO; 86901 Rh; 86850 Antibody screen; 86920 Crossmatch; add 86921 and 86922 if antibody screen is positive

0010672 **Type & Screen** **TS**
Methodology: Hemagglutination
Specimen Required: Patient Preparation: Testing is limited to the University of Utah Health Sciences Center, Primary Children's Medical Center (10432), and Intermountain Shriners Hospital (10367) only.
New specimen required every 72 hours.
Collect: Lavender (EDTA) or pink (K₂EDTA).
Specimen Preparation: **DO NOT FREEZE red cells.** Transport 7 mL whole blood. Refer to Specimen Handling at www.aruplab.com for additional labeling requirements.
Storage/Transport Temperature: Room temperature.
Remarks:
Unacceptable Conditions: **Separator or gel tubes.**
Stability: Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable

CPT Code(s): 86900 ABO; 86901 Rh; 86850 AB screen

0080355 **Tyrosine, Plasma** **TYRO**
Methodology: Ion Exchange Chromatography
Specimen Required: Collect: Green (sodium or lithium heparin).
Specimen Preparation: Separate plasma from cells ASAP or within 2 hours of collection. Transfer 0.5 mL plasma to an ARUP Standard Transport Tube. (Min: 0.25 mL)
Storage/Transport Temperature: Frozen.
Unacceptable Conditions: Hemolyzed specimens.
Stability: After separation from cells: Ambient: Unacceptable; Refrigerated: 24 hours; Frozen: 1 month

CPT Code(s): 84510

2004169 **Ubiquitin by Immunohistochemistry** **UBIQUI IHC**
Methodology: Immunohistochemistry
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: Ambient: Indefinite; Refrigerated: Indefinite; Frozen: Indefinite

CPT Code(s): 88342

0051332 **UDP Glucuronosyltransferase 1A1 (UGT1A1) Genotyping** **UGT1A1**
Methodology: Polymerase Chain Reaction/Fragment Analysis

Specimen Required:	Collect: Lavender (EDTA), pink (K ₂ EDTA), or yellow (ACD Solution A or B). Specimen Preparation: Transport 3 mL whole blood. (Min: 1 mL) Storage/Transport Temperature: Refrigerated. Stability: Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable	
CPT Code(s):	83891 Isolation; 83898 Amplification; 83909 Capillary electrophoresis; 83912 Interpretation and report	
2004172	Ulex Europaeus Agglutinin 1 (UEA-1) by Immunohistochemistry	ULEX IHC
Methodology:	Immunohistochemistry	
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: Ambient: Indefinite; Refrigerated: Indefinite; Frozen: Indefinite	
CPT Code(s):	88342	
2005207	Urea Clearance	UNCL
Methodology:	Quantitative Spectrophotometry	
Specimen Required:	Collect: 24-hour urine (refrigerate during collection). AND plasma preparation tube or serum separator tube, collected within 48 hours of initiating urine collection. Specimen Preparation: Transfer one 3 mL aliquot of urine from a well-mixed 24-hour collection to an ARUP Standard Transport Tube. (Min: 0.5 mL) AND transfer 1 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.2 mL) Record total volume and collection time interval on transport tube and test request form. Storage/Transport Temperature: Refrigerated. Unacceptable Conditions: Random urine collections. Stability: Ambient: 24 hours; Refrigerated: 5 days; Frozen: 1 month	
CPT Code(s):	84545	
0020183	Urea Nitrogen, Fluid	FL UN
Methodology:	Spectrophotometry	
Specimen Required:	Collect: Body fluid. Specimen Preparation: Centrifuge and separate to remove cellular material. Transport 1 mL body fluid. (Min: 0.2 mL) Storage/Transport Temperature: Refrigerated. Remarks: Indicate source on test request form. Stability: Ambient: 24 hours; Refrigerated: 5 days; Frozen: 1 year	
CPT Code(s):	84520	
0020023	Urea Nitrogen, Serum or Plasma	BUN
Methodology:	Quantitative Spectrophotometry	
Specimen Required:	Collect: Plasma separator tube or serum separator tube. Specimen Preparation: Allow specimen to clot completely at room temperature. Separate serum or plasma from cells ASAP or within 2 hours of collection. Transfer 1 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.2 mL) Storage/Transport Temperature: Refrigerated. Unacceptable Conditions: Specimens containing sodium fluoride. Stability: After separation from cells: Ambient: 24 hours; Refrigerated: 5 days; Frozen: 6 months	
CPT Code(s):	84520	
0020480	Urea Nitrogen, Urine	UUN
Methodology:	Quantitative Spectrophotometry	
Specimen Required:	Collect: 24-hour urine with 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: Ambient: 48 hours; Refrigerated: 1 week; Frozen: 1 month	
CPT Code(s):	84540	
0065031	Ureaplasma urealyticum & Mycoplasma hominis Culture	V UREA
Methodology:	Culture	
Specimen Required:	Collect: Body fluid, CSF, cervical or urethral swab, respiratory, semen, urine, or tissue. 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) Also acceptable: Any transport media validated for Mycoplasma/Ureaplasma transport (DO NOT USE M4 RT). Storage/Transport Temperature: Frozen on dry ice. Submit specimen according to Biological Substance, Category B, shipping guidelines. Remarks: Specimen source required. Unacceptable Conditions: M4 RT, swabs in culettes. Non-patient specimens. Dry swabs. Stability: Ambient: 8 hours; Refrigerated: 48 hours in Mycoplasma/Ureaplasma transport media; Frozen at -70°C: 1 month	
CPT Code(s):	87109	
0020513	Uric Acid, Body Fluid	URIC-FL
Methodology:	Quantitative Spectrophotometry	
Specimen Required:	Collect: Body fluid.	

Specimen Preparation: Centrifuge to remove cellular material. Transfer 1 mL body fluid to an ARUP Standard Transport Tube. (Min: 0.2 mL)

Storage/Transport Temperature: Refrigerated.

Remarks: Indicate source on test request form.

Stability: After separation from cellular material: Ambient: 24 hours; Refrigerated: 5 days; Frozen: 6 months

CPT Code(s): 84560

0020026 Uric Acid, Serum or Plasma URIC

Methodology: Quantitative Spectrophotometry

Specimen Required: Collect: Plasma separator tube or serum separator tube.

Specimen Preparation: Allow serum tube to clot completely at room temperature. Separate serum or plasma from cells within 2 hours of collection. Transfer 1 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.2 mL)

Storage/Transport Temperature: Refrigerated.

Stability: After separation from cells: Ambient: 24 hours; Refrigerated: 5 days; Frozen: 6 months

CPT Code(s): 84550

0020481 Uric Acid, Urine UURIC

Methodology: Quantitative Spectrophotometry

Specimen Required: Collect: 24-hour urine. Refrigerate specimen during collection. Also acceptable: Random urine.

Specimen Preparation: Urine pH must be adjusted to greater than 8.0. If pH is less than or equal to 8.0, adjust pH to greater than 8.0 by adding 5 percent NaOH. Mix well and allow entire 24-hour collection to stand for 15 minutes. Recheck pH and readjust if necessary.

Transfer one 3 mL aliquot from a well-mixed 24-hour collection to an ARUP Standard Transport Tube. (Min: 0.5 mL) Record total volume, collection time interval, and pH on transport tube or aliquot tube and on test request form.

Storage/Transport Temperature: Refrigerated.

Unacceptable Conditions: Specimens with pH less than 8.0. Urine collected with acid.

Stability: Ambient: 4 days; Refrigerated: 4 days; Frozen: 2 weeks

CPT Code(s): 84560

0020350 Urinalysis, Complete UA

Methodology: Reflective Photometry/Microscopic by Yellow IRIS

Specimen Required: Collect: Random urine.

Specimen Preparation: Transport 10 mL aliquot from a well-mixed random urine. (Min: 3 mL)

Storage/Transport Temperature: Refrigerated.

Unacceptable Conditions: Gray (boric acid). Frozen specimens.

Stability: Ambient: 1 hour; Refrigerated: 24 hours; Frozen: Unacceptable

CPT Code(s): 81001

0060131 Urine Culture MC U

Methodology: Standard reference procedures for aerobic bacterial culture and identification

Specimen Required: Collect: Midstream urine, catheter, cystoscopic, or suprapubic urine.

Specimen Preparation: Transfer urine to a sterile container or boric acid transport tube.

Also acceptable: Suprapubic aspirates submitted in sterile-capped syringe (needle removed) for anaerobe culture.

Storage/Transport Temperature: **Unpreserved:** Refrigerated.

OR Boric Acid Transport Tube: Room temperature.

Submit specimen according to Biological Substance, Category B, shipping guidelines.

Remarks: Specimen source required. Indicate if specimen was collected by invasive method.

Gram stain is performed by request only.

Results indicate colony count plus identification of significant isolates.

Unacceptable Conditions: Urine from catheter bag. Multiple (more than one in 24 hours), 24-hour, or pooled specimens. Foley catheter tips (syringe with needle attached). Delayed transport to the lab (greater than two hours at room temperature or greater than 24 hours refrigerated).

Stability: **Unpreserved:** Ambient: 2 hours; Refrigerated: 24 hours; Frozen: Unacceptable

Boric Acid Tube: Ambient: 48 hours

CPT Code(s): 87086

0081145 Urine Supersaturation Profile URINE SAT

Methodology: Refer to individual components

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. Refrigerate 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): Transfer 4 mL urine to the sulfamic acid tube. Mix well, then freeze.

2nd aliquot (pH 9): Transfer 4 mL urine to the sodium carbonate tube. Mix well, then freeze.

3rd aliquot: Transfer 4 mL urine to an unpreserved tube. Mix well, then freeze.

4th aliquot: Transfer 4 mL urine to an unpreserved tube. Mix well, then freeze.

If collection kit is unavailable, transport four 4 mL unadjusted aliquots of urine.

Storage/Transport Temperature: Frozen.

Unacceptable Conditions: Any specimen other than 24 hour urine collection.

Stability: Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen: 2 weeks

CPT Code(s): 82340 Calcium; 82436 Chloride; 82507 Citrate; 82570 Creatinine; 84560 Uric; 83735 Magnesium; 83945 Oxalate; 84105 Phosphate; 84133 Potassium; 84300 Sodium; 84392 Sulfate; and 83986 pH.

8100600 UroVysion™ FISH UF

Methodology: Fluorescence in situ Hybridization/Automated Image Analysis or Manual Screening

Specimen Required: Patient Preparation: **Indications:** The UroVysion™ Bladder Cancer Kit (UroVysion™ Kit) is designed to detect aneuploidy for chromosomes 3, 7, 17, and loss of the 9p21 locus via fluorescence in situ hybridization (FISH) in urine specimens from persons with hematuria suspected of having bladder cancer. Results from the UroVysion™ Kit are intended for use, in conjunction with and not in lieu

of current standard diagnostic procedures, as an aid for initial diagnosis of bladder carcinoma in patients with hematuria and subsequent monitoring for tumor recurrence in patients previously diagnosed with bladder cancer.

Collect: A minimum of 35 mL of voided urine specimens.

Supplies: Urine collection system and transport tube, Saccomanno, ThinPrep® UroCyt® Urine Collection Kit or PreservCyt® fixative, and a Cytology test request form. UroVysion™ FISH Collection Kits fixative can be ordered through ARUP Client Services at (800) 522-2787 or (801) 583-2787 extension 2170.

Collection Procedure: For purposes of obtaining the greatest yield of diagnostic material, a second-morning, clean-catch voided urine specimen should be collected, if possible. Mix voided urine 2:1 with Saccomanno or PreservCyt® fixative and transfer to a screw-top transport tube. If there is more than 60 mL of urine, the remaining urine can be submitted in an additional container of Saccomanno or PreservCyt® fixative. The specimen should be labeled with the patient's first and last name, date of birth, specimen source, medical record number (or other unique identifier), and collection date. Submit the specimen along with the completed Cytology request form to the Cytopathology Laboratory. Specimen needs to be stored and transported refrigerated. The specimen must be accompanied by a Cytology test request form with the requested test marked and pertinent clinical history recorded.

Unacceptable Conditions: Refrigerated specimens not fixed in Saccomanno or PreservCyt®. Urine volume less than 35 mL.

Stability: Refrigerated: 72 hours (must be fixed with Saccomanno or PreservCyt® fixative)

CPT Code(s): 88121; If manual: 88120

2005416 Urticaria-Induced Basophil Activation UIBA
Methodology: Semi-Quantitative Flow Cytometry
Specimen Required: **Collect:** Plain red.
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: **CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.**
Unacceptable Conditions: Specimens other than serum. Serum separator tubes. Contaminated, grossly hemolyzed, or lipemic specimens.
Stability: After separation from cells: Ambient: 30 minutes; Refrigerated: Unacceptable; Frozen: 1 year (avoid repeated freeze/thaw cycles)
CPT Code(s): 88184 Flow cytometry; 88185 x2 each additional marker

2005413 Urticaria-Inducing Activity UIA
Methodology: Semi-Quantitative Ex Vivo Challenge/Cell Culture/Quantitative Enzyme-Linked Immunosorbent Assay
Specimen Required: **Patient Preparation:** Patients taking calcineurin inhibitors should stop their medication for 72 hours prior to draw. Patients on prednisone should be off medication for 2 weeks prior to draw.
Collect: Plain red.
Specimen Preparation: Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube and freeze immediately. (Min: 0.5 mL)
Storage/Transport Temperature: **CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.**
Unacceptable Conditions: Specimens other than serum. Serum separator tubes. Contaminated, grossly hemolyzed, or lipemic specimens.
Stability: After separation from cells: Ambient: 30 minutes; Refrigerated: Unacceptable; Frozen: 1 year (avoid repeated freeze/thaw cycles)
CPT Code(s): 86352

2005415 Urticaria-Inducing Activity with Thyroid Antibodies and Stimulating Hormone UIAT
Methodology: Semi-Quantitative Ex Vivo Challenge/Cell Culture/Quantitative Enzyme-Linked Immunosorbent Assay/Quantitative Chemiluminescent Immunoassay
Specimen Required: **Patient Preparation:** Patients taking calcineurin inhibitors should stop their medication 72 hours prior to draw. Patients on prednisone should be off their medication for 2 weeks prior to draw.
Collect: Plain red.
Specimen Preparation: Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport tube and freeze immediately (Min: 0.5 mL) **AND** transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.5 mL)
Storage/Transport Temperature: **First Specimen: CRITICAL FROZEN. Separate specimens must be submitted for this multiple test panel.**
Second Specimen: Refrigerated.
Unacceptable Conditions: Specimens other than serum. Serum separator tubes. Contaminated, grossly hemolyzed, or lipemic specimens.
Stability: **First Specimen:** After separation from cells: Ambient: 30 minutes; Refrigerated: Unacceptable; Frozen: 1 year (avoid repeated freeze/thaw cycles)
Second Specimen: After separation from cells: Ambient: 24 hours; Refrigerated: 1 Week; Frozen: 6 months
CPT Code(s): 86352 Cell function assay with stim; 86800 Thyroglobulin antibody; 84443 Thyroid stimulating hormone; 86376 Thyroid peroxidase antibody

0065153 Vaginal Pathogens DNA Direct Probes VAGP
Methodology: Qualitative Nucleic Acid Probe
Specimen Required: **Collect:** Vaginal fluid. Collect in BD Affirm™ VPIII Ambient Temperature Transport System (ARUP Supply #29624). Available online through eSupply using ARUP Connect™ or contact Client Services at (800) 522-2787.
Specimen Preparation: Transport swab in BD Affirm™ VPIII Ambient Temperature Transport System.
Storage/Transport Temperature: Room temperature. Submit specimen according to Biological Substance, Category B, shipping guidelines.
Unacceptable Conditions: Specimens in any transport media other than indicated above.
Stability: Ambient: 72 hours; Refrigerated: 72 hours; Frozen: Unacceptable
CPT Code(s): 87480 *Candida* species DNA probe; 87510 *Gardnerella vaginalis* DNA probe; 87660 *Trichomonas vaginalis* DNA Probe

0090290 Valproic Acid VPA
Methodology: Fluorescence Polarization Immunoassay
Specimen Required: **Collect:** Plain red. Also acceptable: Green (sodium or 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: 0.5 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: citrate, EDTA, or oxalate anticoagulants or separator tubes.

CPT Code(s):	<u>Stability:</u> After separation from cells: Ambient: 24 hours; Refrigerated: 1 week; Frozen: 4 months 80164	
0099310	Valproic Acid, Free and Total	VPA-F
Methodology:	Quantitative EMIT Immunoassay	
Specimen Required:	<u>Collect:</u> Plain red. Also acceptable (avoid if possible): Serum separator tube (follow preparation instructions below). <u>Specimen Preparation:</u> Separate serum from cells within 2 hours of collection. Transfer 2 mL serum to an ARUP Standard Transport Tube. (Min: 1 mL) <u>SST:</u> Serum in a gel separator tube stored at room temperature is acceptable if separated from the gel within 2 hours. Serum in a gel separator tube stored refrigerated is acceptable if separated from the gel within 1 hour. <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Citrated plasma. Tubes that contain liquid anticoagulant. <u>Stability:</u> After separation from cells: Ambient: 24 hours; Refrigerated: 1 week; Frozen: 4 months	
CPT Code(s):	80164 VPA, total; 80164 VPA, free	
0091286	Vanadium Quantitation, Serum or Plasma	VANADIU SP
Methodology:	Graphite Furnace Atomic Absorption Spectroscopy	
Specimen Required:	<u>Collect:</u> One 5 mL royal blue (trace metal-free; EDTA) or royal blue (trace metal-free; no additive) <u>Storage/Transport Temperature:</u> 1 mL serum or plasma at 2-8°C. (Min: 0.5 mL) Submit specimen in an ARUP Trace Element-Free Transport Tube (ARUP supply #43116). <u>Remarks:</u> Centrifuge and pour off serum or plasma into an ARUP Trace Element-Free Transport Tube ASAP. <u>Unacceptable Conditions:</u> Avoid use of separator tubes and gels. <u>Stability:</u> Ambient: 1 week; Refrigerated: 2 weeks; Frozen: 2 weeks	
CPT Code(s):	83018	
0091592	Vanadium Quantitation, Urine	VANADIU U
Methodology:	Graphite Furnace Atomic Absorption Spectroscopy/Colorimetry	
Specimen Required:	<u>Collect:</u> Urine collected at end of last shift at the end of the work week. Collect in a trace metal-free or acid-washed container. <u>Storage/Transport Temperature:</u> 3 mL urine at 2-8°C. (Min: 1.2 mL). Submit specimen in an ARUP Standard Transport Tube. <u>Remarks:</u> Avoid exposure to gadolinium-based contrast media for 48 hours prior to specimen collection <u>Stability:</u> Ambient: 1 week; Refrigerated: 1 week; Frozen: 2 weeks	
CPT Code(s):	82570 Creatinine, other source; 83018 Heavy metal, quantitative	
0090325	Vancomycin, Peak Level	VANP
Methodology:	Fluorescence Polarization Immunoassay	
Specimen Required:	<u>Patient Preparation:</u> Draw specimen 1-2 hours following completion of infusion. <u>Collect:</u> Plain red. Also acceptable: Green (sodium or lithium heparin). <u>Specimen Preparation:</u> Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.5 mL) <u>Storage/Transport Temperature:</u> Frozen. <u>Unacceptable Conditions:</u> Gray (sodium fluoride/potassium oxalate), lavender (EDTA), lt. blue (sodium citrate), or separator tubes. Grossly hemolyzed, icteric, or lipemic specimens. <u>Stability:</u> After separation from cells: Ambient: 8 hours; Refrigerated: 48 hours; Frozen: 2 weeks	
CPT Code(s):	80202	
0090285	Vancomycin, Random Level	VAN
Methodology:	Fluorescence Polarization Immunoassay	
Specimen Required:	<u>Collect:</u> Plain red. Also acceptable: Green (sodium or lithium heparin). <u>Specimen Preparation:</u> Transfer 1 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.2 mL) <u>Storage/Transport Temperature:</u> Frozen. <u>Unacceptable Conditions:</u> Gray (sodium fluoride/potassium oxalate), Lavender (EDTA), lt. blue (sodium citrate), or separator tubes. Grossly hemolyzed, icteric, or lipemic specimens. <u>Stability:</u> After separation from cells: Ambient: 8 hours; Refrigerated: 48 hours; Frozen: 2 weeks	
CPT Code(s):	80202	
0090330	Vancomycin, Trough Level	VANT
Methodology:	Fluorescence Polarization Immunoassay	
Specimen Required:	<u>Patient Preparation:</u> Draw 10 minutes before next infusion. <u>Collect:</u> Plain red. Also acceptable: Green (sodium or lithium heparin). <u>Specimen Preparation:</u> 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) <u>Storage/Transport Temperature:</u> Frozen. <u>Unacceptable Conditions:</u> Gray (sodium fluoride/potassium oxalate), lavender (EDTA), lt. blue (sodium citrate), or separator tubes. Grossly hemolyzed, icteric, or lipemic specimens. <u>Stability:</u> After separation from cells: Ambient: 8 hours; Refrigerated: 48 hours; Frozen: 2 weeks	
CPT Code(s):	80202	
0060363	Vancomycin-Resistant <i>Enterococcus</i> (VRE) Culture	MC VRE
Methodology:	Standard reference procedures for aerobic bacterial culture and identification	
Specimen Required:	<u>Collect:</u> Rectal swab. <u>Specimen Preparation:</u> Transport swab in bacterial transport media. <u>Storage/Transport Temperature:</u> Refrigerated. Submit specimen according to Biological Substance, Category B, shipping guidelines. <u>Remarks:</u> All <i>Enterococcus</i> isolates are screened for vancomycin resistance. <u>Stability:</u> Ambient: 24 hours; Refrigerated: 72 hours; Frozen: Unacceptable	
CPT Code(s):	87081 presumptive identification. If definitive identification required, add 87077.	
0080470	Vanillylmandelic Acid (VMA) & Homovanillic Acid (HVA), Urine	VH
Methodology:	Quantitative High Performance Liquid Chromatography	

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 4 mL aliquot from a well mixed 24-hour or random collection to an ARUP Standard Transport Tube. (Min: 1 mL) Record total volume and collection time interval on transport tube and test request form.
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Specimen types other than urine.
Stability: Ambient: Unacceptable; Refrigerated: 1 week; Frozen: 2 weeks

CPT Code(s): 83150 HVA; 84585 VMA

0080421 Vanillylmandelic Acid (VMA), Urine VMA U

Methodology: Quantitative High Performance Liquid Chromatography
Specimen Required: Patient Preparation: Abstain from medications for 72 hours prior to collection.
Collect: 24-hour or random urine. Refrigerate 24-hour specimens during collection.
Specimen Preparation: Transfer 4 mL aliquot from a well-mixed 24-hour or random collection to an ARUP Standard Transport Tube. (Min: 1 mL) Record total volume and collection time interval on transport tube and test request form.
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Specimen types other than urine.
Stability: Ambient: Unacceptable; Refrigerated: 1 week; Frozen: 2 weeks

CPT Code(s): 84585

0095263 VAP Cholesterol VAP CHOL

Methodology: Ultra Centrifugation
Specimen Required: Collect: Serum separator tube.
Specimen Preparation: Transfer 4 mL serum to an ARUP Standard Transport Tube. (Min: 1.5 mL)
Storage/Transport Temperature: Refrigerated. If transport time is greater than four days from draw, freeze specimen.
Unacceptable Conditions: Frozen serum separator tubes. Thawed specimens.
Stability: Ambient: Unacceptable; Refrigerated: 1 week; Frozen at -20°C: 28 days; Frozen at -70°C: 1 year

CPT Code(s): 83701 Lipoprotein subclasses; 84478 Triglycerides

0060283 Varicella-Zoster Virus & Herpes Simplex Virus DFA with Reflex to Varicella-Zoster Virus Culture & Herpes Simplex Virus Culture VZV HSVFAC

Methodology: Direct Fluorescent Antibody Stain
Specimen Required: Patient Preparation: Collect vesicle specimen during first 3 days of rash.
Collect: Vesicle fluid or swab, tissue, or skin scrapings.
Specimen Preparation: Do not freeze. Immediately transfer specimen to viral transport media (ARUP Supply #12884) and refrigerate (extremely temperature sensitive). Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787.
Storage/Transport Temperature: Refrigerated. Submit specimen according to Biological Substance, Category B, shipping guidelines.
Remarks: Specimen source preferred.
Unacceptable Conditions: Bone marrow, CSF, or whole blood. Calcium alginate, dry, or wood swabs.
Stability: Ambient: Unacceptable; Refrigerated: 48 hours; Frozen: Unacceptable

CPT Code(s): 87290 VZV; 87274 HSV 1; 87273 HSV 2; if reflexed, add 87252 x2 Tissue culture; 87254 Shell vial; 87253 IP stain

0050167 Varicella-Zoster Virus Antibody, IgG VZE

Methodology: Semi-Quantitative Enzyme-Linked Immunosorbent Assay
Specimen Required: Collect: Serum separator tube.
Specimen Preparation: Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum an ARUP Standard Transport Tube. (Min: 0.1 mL) Parallel testing is preferred and convalescent specimens **must** be received within 30 days from receipt of the acute specimens. **Mark specimens plainly as "acute" or "convalescent."**
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Contaminated, heat-inactivated, hemolyzed, or icteric specimens.
Stability: After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)

CPT Code(s): 86787

0054445 Varicella-Zoster Virus Antibody, IgM by ELISA (CSF) VZMCSF

Methodology: Semi-Quantitative Enzyme-Linked Immunosorbent Assay
Specimen Required: Collect: CSF.
Specimen Preparation: Transfer 0.5 mL CSF to an ARUP Standard Transport Tube. (Min: 0.3 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Specimen types other than CSF. Contaminated or heat-inactivated specimens.
Stability: Ambient: 8 hours; Refrigerated: 2 weeks; Frozen: 1 year

CPT Code(s): 86787

0060042 Varicella-Zoster Virus by PCR VZVPCR

Methodology: Qualitative Polymerase Chain Reaction
Specimen Required: Collect: CSF, ocular specimen, tissue, or vesicle fluid.
Specimen Preparation: **CSF or Ocular Fluid:** Transfer 1 mL to a sterile container. (Min: 0.5 mL)
Tissue: Snap freeze immediately.
Vesicle Fluid: Transfer to viral transport media (ARUP supply #12884). Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787.
Storage/Transport Temperature: **Tissue:** Frozen. Transport in viral transport media or on dry ice.
All others: Frozen.
Submit specimen according to Biological Substance, Category B, shipping guidelines.
Remarks: Specimen source required.
Unacceptable Conditions: Tissue in formalin or other preservatives. Heparinized specimens. Hemolyzed specimens.
Stability: **Tissue:** Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen: 3 months

CPT Code(s): Ambient: 8 hours; Refrigerated: 72 hours; Frozen: 3 months
87798

0060290	Varicella-Zoster Virus DFA	VZVFA
Methodology:	Direct Fluorescent Antibody Stain	
Specimen Required:	<u>Patient Preparation:</u> Collect vesicle specimen during first 3 days of rash. <u>Collect:</u> Vesicle swab, tissue, or skin scrapings. Swab should be rolled in base of fresh vesicle to obtain cells. <u>Specimen Preparation:</u> Transfer specimen to viral transport media. <u>Storage/Transport Temperature:</u> Refrigerated. Submit specimen according to Biological Substance, Category B, shipping guidelines. <u>Remarks:</u> Specimen source preferred. <u>Unacceptable Conditions:</u> Bone marrow, CSF, or whole blood. Calcium alginate, dry, or wood swabs. <u>Stability:</u> Ambient: 4 hours; Refrigerated: 72 hours; Frozen: Unacceptable	
CPT Code(s):	87290	
0060282	Varicella-Zoster Virus DFA with Reflex to Varicella-Zoster Virus Culture	VZVFAC
Methodology:	Direct Fluorescent Antibody Stain	
Specimen Required:	<u>Patient Preparation:</u> Collect vesicle specimen during first three days of rash. <u>Collect:</u> Vesicle fluid or swab, tissue, or skin scrapings. <u>Specimen Preparation:</u> Do not freeze. Immediately transfer specimen to viral transport media (ARUP Supply #12884) and refrigerate (extremely temperature sensitive). Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787. <u>Storage/Transport Temperature:</u> Refrigerated. Submit specimen according to Biological Substance, Category B, shipping guidelines. <u>Remarks:</u> Specimen source preferred. <u>Unacceptable Conditions:</u> Bone marrow CSF, or whole blood. Calcium alginate, dry, or wood swabs. <u>Stability:</u> Ambient: Unacceptable; Refrigerated: 48 hours; Frozen: Unacceptable	
CPT Code(s):	87290 DFA if reflexed, add 87252 Tissue culture; 87254 Shell vial	
0050162	Varicella-Zoster Virus Antibodies, IgG & IgM	VZV PAN
Methodology:	Semi-Quantitative Enzyme-Linked Immunosorbent Assay	
Specimen Required:	<u>Collect:</u> Serum separator tube. <u>Specimen Preparation:</u> 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) Parallel testing is preferred and convalescent specimens must be received within 30 days from receipt of the acute specimens. Mark specimens plainly as "acute" or "convalescent." <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> See individual components. <u>Stability:</u> After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)	
CPT Code(s):	86787 VZ IgG; 86787 VZ IgM	
0054444	Varicella-Zoster Virus Antibody, IgG by ELISA (CSF)	VZECSF
Methodology:	Semi-Quantitative Enzyme-Linked Immunosorbent Assay	
Specimen Required:	<u>Collect:</u> CSF. <u>Specimen Preparation:</u> Transfer 0.5 mL CSF to an ARUP Standard Transport Tube. (Min: 0.3 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Specimens other than CSF. Contaminated or heat-inactivated specimens. <u>Stability:</u> Ambient: 8 hours; Refrigerated: 2 weeks; Frozen: 1 year	
CPT Code(s):	86787	
0099314	Varicella-Zoster Virus Antibody, IgM	VZM
Methodology:	Semi-Quantitative Enzyme-Linked Immunosorbent Assay	
Specimen Required:	<u>Collect:</u> Serum separator tube. <u>Specimen Preparation:</u> Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.1 mL) Parallel testing is preferred and convalescent specimens must be received within 30 days from receipt of the acute specimens. Mark specimens plainly as "acute" or "convalescent." <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Contaminated, heat-inactivated, hemolyzed, icteric, or severely lipemic specimens. <u>Stability:</u> After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)	
CPT Code(s):	86787	
0092660	Vascular Endothelial Growth Factor	VEG FACTOR
Methodology:	Quantitative Chemiluminescent Immunoassay	
Specimen Required:	<u>Collect:</u> Lavender (EDTA) or pink (K ₂ EDTA). <u>Specimen Preparation:</u> Separate plasma from cells ASAP or within 2 hours of collection. Transfer 1 mL plasma to an ARUP Standard Transport Tube. (Min: 0.3 mL) <u>Storage/Transport Temperature:</u> CRITICAL FROZEN. Additional specimens must be submitted when multiple tests are ordered. <u>Unacceptable Conditions:</u> Refrigerated or room temperature specimens. Hemolyzed specimens. <u>Stability:</u> After separation from cells: Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen: 6 months	
CPT Code(s):	83520	
2004175	Vascular Endothelial Growth Factor C (VEGF-C) by Immunohistochemistry	VEGFC IHC
Methodology:	Immunohistochemistry	
Specimen Required:	<u>Collect:</u> Tissue or cells. <u>Specimen Preparation:</u> 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. <u>Storage/Transport Temperature:</u> Room temperature or refrigerated. <u>Remarks:</u> 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. <u>Unacceptable Conditions:</u> Depleted specimens. Specimens submitted with non-representative tissue type. <u>Stability:</u> Ambient: Indefinite; Refrigerated: Indefinite; Frozen: Indefinite	

CPT Code(s): 88342

0099435 Vasoactive Intestinal Peptide VIP
Methodology: Quantitative Radioimmunoassay
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: After separation from cells: Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen: 3 months

CPT Code(s): 84586

0090832 Venlafaxine, Serum or Plasma VENLAFAX S
Methodology: Quantitative High Performance Liquid Chromatography
Specimen Required: Collect: Plain red, gray (sodium fluoride/potassium oxalate), green (sodium heparin), lavender (EDTA), or pink (K₂ EDTA).
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: Ambient: 2 weeks; Refrigerated: 2 weeks; Frozen: 2 weeks

CPT Code(s): 80299

0030070 Venous Thromboembolism (VTE), Qualitative VTE
Methodology: Enzyme Immunoassay
Specimen Required: Collect: Lt. blue (sodium citrate).
Specimen Preparation: Separate plasma from cells ASAP or within 2 hours of collection. Transport 3 mL plasma.
Storage/Transport Temperature: Room temperature. **Specimen MUST be received in lab and run within four hours of draw.**
Unacceptable Conditions: Serum.
Stability: After separation from cells: Ambient: 4 hours; Refrigerated: Unacceptable; Frozen: Up to 24 hours

CPT Code(s): 85380

0091429 Verapamil, Serum or Plasma VERAPAMIL
Methodology: High Performance Liquid Chromatography-Fluorescence Detection
Specimen Required: Collect: Plain red or lavender (EDTA).
Specimen Preparation: Transfer 3 mL serum or plasma to an ARUP Standard Transport Tube. (Min 1 mL)
Storage/Transport Temperature: Room temperature.
Unacceptable Conditions: Serum separator tubes.
Stability: Ambient: 2 weeks; Refrigerated: 1 month; Frozen: 18 months

CPT Code(s): 80299

0091430 Verapamil, Urine VERAPA URN
Methodology: Gas Chromatography
Specimen Required: Collect: Random urine.
Storage/Transport Temperature: 2 mL urine at 20-25°C. (Min: 1 mL) Submit sample in an ARUP Standard Transport Tube.
Stability: Ambient: 2 weeks; Refrigerated: 1 month; Frozen: 18 months

CPT Code(s): 80299

2004208 Very Long-Chain Acyl-CoA Dehydrogenase Deficiency (ACADVL) Deletion/Duplication VLCAD DD
Methodology: Polymerase Chain Reaction/Multiplex Ligation-dependent Probe Amplification
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: Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable

CPT Code(s): 83891 Isolation; 83896 Nucleic acid probes; 83898 Amplification; 83914 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.

2002001 Very Long-Chain Acyl-CoA Dehydrogenase Deficiency (ACADVL) Sequencing VLCAD FGS
Methodology: Polymerase Chain Reaction/Sequencing
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: Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable

CPT Code(s): 83891 Isolation; 83898 x11 Amplification; 83904 x11 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.

2004212 Very Long-Chain Acyl-CoA Dehydrogenase Deficiency (ACADVL) Sequencing and Deletion/Duplication VLCAD FGA
Methodology: Polymerase Chain Reaction/Sequencing/Multiplex Ligation-dependent Probe Amplification
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: Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable

CPT Code(s): Sequencing: 83891 Isolation; 83898 x11 Amplification; 83904 x11 Sequencing; 83909 Capillary electrophoresis; DelDup: 83896 Nucleic acid probes; 83898 Amplification; 83914 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.

2004250	Very Long-Chain and Branched-Chain Fatty Acids Profile	VLCFA
Methodology:	Liquid Chromatography-Tandem Mass Spectrometry	
Specimen Required:	<u>Patient Preparation:</u> Adults: Fasting specimen preferred. Infants and children: Draw specimen prior to feeding or 2-3 hours after a meal. <u>Collect:</u> Green (sodium or lithium heparin) or lavender (EDTA). <u>Specimen Preparation:</u> Separate plasma from cells. Transfer 0.5 mL plasma to an ARUP Standard Transport Tube and freeze immediately. (Min: 0.2 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 (e.g.TPN therapy), drug therapy, and family history. Biochemical Genetics Patient History Form is available on the ARUP Web site at http://www.aruplab.com/patienthistory or by contacting ARUP Client Services. <u>Unacceptable Conditions:</u> Room temperature specimens greater than 24 hours. Refrigerated specimens greater than 48 hours. Specimens exposed to more than one freeze/thaw cycle. <u>Stability:</u> After separation from cells: Ambient: 24 hours; Refrigerated: 72 hours; Frozen: 1 month	
CPT Code(s):	82726	
2004178	Villin by Immunohistochemistry	VILLIN IHC
Methodology:	Immunohistochemistry	
Specimen Required:	<u>Collect:</u> Tissue or cells. <u>Specimen Preparation:</u> 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. <u>Storage/Transport Temperature:</u> Room temperature or refrigerated. <u>Remarks:</u> 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. <u>Unacceptable Conditions:</u> Depleted specimens. Specimens submitted with non-representative tissue type. <u>Stability:</u> Ambient: Indefinite; Refrigerated: Indefinite; Frozen: Indefinite	
CPT Code(s):	88342	
2004181	Vimentin by Immunohistochemistry	VIMENT IHC
Methodology:	Immunohistochemistry	
Specimen Required:	<u>Collect:</u> Tissue or cells. <u>Specimen Preparation:</u> 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. <u>Storage/Transport Temperature:</u> Room temperature or refrigerated. <u>Remarks:</u> 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. <u>Unacceptable Conditions:</u> Depleted specimens. Specimens submitted with non-representative tissue type. <u>Stability:</u> Ambient: Indefinite; Refrigerated: Indefinite; Frozen: Indefinite	
CPT Code(s):	88342	
0065008	Viral Culture	V VIRAL
Methodology:	Cell Culture	
Specimen Required:	<u>Collect:</u> Body fluids, eye swab, lesion, respiratory specimen (bronchoalveolar lavage (BAL), nasopharyngeal aspirate, swab, or washing, or tracheal aspirate), stool, tissue biopsy, or urine. <u>Specimen Preparation:</u> Do not freeze. Nasopharyngeal Washing or Aspirate, Urine, Stool, or Tracheal Aspirate: Immediately transfer to sterile, leak-proof container. Swabs or Tissue: Immediately transfer to viral transport media. Place each specimen in a separate, individually sealed bag. <u>Storage/Transport Temperature:</u> Refrigerated. Submit specimen according to Biological Substance, Category B, shipping guidelines. <u>Remarks:</u> Specimen source required. Antigen detection and culture are available for specific viruses. <u>Unacceptable Conditions:</u> Calcium alginate, dry, or wood swabs. <u>Stability:</u> Ambient: 2 hours; Refrigerated: 72 hours; Frozen: Unacceptable	
CPT Code(s):	87252 Tissue culture	
0065034	Viral Culture & Cytomegalovirus Rapid Culture	V VIC
Methodology:	Cell Culture/Immunofluorescence	
Specimen Required:	<u>Collect:</u> Body fluids, eye swab, lesion, respiratory specimen (bronchoalveolar lavage (BAL), nasopharyngeal aspirate, swab, or washing, or tracheal aspirate) tissue biopsy, or urine. <u>Specimen Preparation:</u> Do not freeze. Nasopharyngeal Washing or Aspirate, Urine, or Tracheal Aspirate: Immediately transfer to sterile, leak-proof container. Swabs or Tissue: Immediately transfer to viral transport media. Place each specimen in a separate, individually sealed bag. <u>Storage/Transport Temperature:</u> Refrigerated. Submit specimen according to Biological Substance, Category B, shipping guidelines. <u>Remarks:</u> Specimen source required. Antigen detection and culture are available for specific viruses. <u>Unacceptable Conditions:</u> Calcium alginate, dry, or wood swabs. <u>Stability:</u> Ambient: 2 hours; Refrigerated: 72 hours; Frozen: Unacceptable	
CPT Code(s):	87252 Tissue Culture; 87254 Shell vial	
2002028	Virilization Panel 1	VIRIL PANEL
Methodology:	Quantitative High Performance Liquid Chromatography-Tandem Mass Spectrometry	
Specimen Required:	<u>Collect:</u> Serum separator tube or green (sodium or lithium heparin). Collect between 6-10 a.m. Also acceptable: Lavender (EDTA). <u>Specimen Preparation:</u> Transfer 1 mL serum or plasma to an ARUP Standard Transport Tube. (Min 0.5 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Stability:</u> Ambient: 2 hours; Refrigerated: 1 week; Frozen: 6 months	

CPT Code(s): 82157 Androstenedione; 82626 Dehydroepiandrosterone; 84403 Total Testosterone

2002281 Virilization Panel 2 VIRIL PAN2
Methodology: Quantitative High Performance Liquid Chromatography-Tandem Mass Spectrometry
Specimen Required: Patient Preparation: Collect between 6-10 a.m.
Collect: Serum separator tube or green (sodium or lithium heparin). Also acceptable: Lavender (EDTA).
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: 0.7 mL)
Storage/Transport Temperature: Refrigerated.
Stability: Ambient: 24 hours; Refrigerated: 1 week; Frozen: 6 months
CPT Code(s): 82157 Androstenedione; 83498 17-Hydroxyprogesterone; 84403 Testosterone; 82626 Dehydroepiandrosterone

0020056 Viscosity, Serum VIS-S
Methodology: Quantitative Cone-Plate Viscometer
Specimen Required: Collect: Serum separator tube.
Specimen Preparation: Transfer 3 mL serum to an ARUP Standard Transport Tube. (Min: 0.6 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Clotted or hemolyzed specimens.
Stability: After separation from cells: Ambient: 8 hours; Refrigerated: 4 days; Frozen: 1 month
CPT Code(s): 85810

0020054 Viscosity, Whole Blood VIS
Methodology: Quantitative Cone-Plate Viscometer
Specimen Required: Collect: Lavender (EDTA), pink (K2 EDTA), or green (sodium or lithium heparin).
Specimen Preparation: **DO NOT FREEZE.** Transport 3 mL whole blood. (Min: 0.6 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Frozen specimens. Clotted or hemolyzed specimens.
Stability: Ambient: 8 hours; Refrigerated: 4 days; Frozen: Unacceptable
CPT Code(s): 85810

0080525 Vitamin A (Retinol), Serum or Plasma VIT A
Methodology: Quantitative High Performance Liquid Chromatography
Specimen Required: Patient Preparation: Patient should fast for 12 hours and abstain from alcohol for 24 hours prior to collection.
Collect: Green (sodium or lithium heparin) or serum separator tube. Also acceptable: Lavender (EDTA) or pink (K₂EDTA).
Specimen Preparation: **Protect from light during collection, storage, and shipment.** Spin and pour off within 1 hour of collection. Transfer 1 mL serum or plasma to an ARUP Amber Transport Tube immediately. (Min: 0.2 mL) Avoid hemolysis.
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Whole blood or body fluids other than serum or plasma.
Stability: After separation from cells: Ambient: Unacceptable; Refrigerated: 1 month; Frozen: 1 year
CPT Code(s): 84590

0080389 Vitamin B₁ (Thiamine), Plasma VIT B1 P
Methodology: Quantitative High Performance Liquid Chromatography
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: After separation from cells: Ambient: Unacceptable; Refrigerated: 1 week; Frozen at -20°C: 6 months
CPT Code(s): 84425

0080388 Vitamin B₁ (Thiamine), Whole Blood VIT B1 WB
Methodology: Quantitative High Performance Liquid Chromatography
Specimen Required: Collect: Green (sodium or lithium heparin), lavender (EDTA), or pink (K₂EDTA).
Specimen Preparation: Protect from light within one hour of collection and during storage and shipment. Transfer 3 mL whole blood to an ARUP Amber Transport Tube. (Min: 0.6 mL)
Storage/Transport Temperature: **CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.**
Unacceptable Conditions: Any specimen other than whole blood. Glass tubes. Clotted or non-frozen specimens.
Stability: Ambient: Unacceptable; Refrigerated: 4 hours; Frozen: 6 months
CPT Code(s): 84425

0081123 Vitamin B₂ (Riboflavin) VITA B2
Methodology: Quantitative High Performance Liquid Chromatography
Specimen Required: Collect: Green (sodium or lithium heparin) or plasma separator tube.
Specimen Preparation: Protect from light within one hour of collection, and during storage and shipment. Transfer 1 mL plasma to an ARUP Amber Transport Tube. (Min: 0.5 mL)
Storage/Transport Temperature: **CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are requested.**
Remarks:
Unacceptable Conditions: Specimens collected in EDTA provide a lower value of riboflavin concentration, therefore EDTA is not acceptable. Serum, whole blood, or body fluids. Non-frozen, hemolyzed, or lipemic specimens.
Stability: Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen: 1 month
CPT Code(s): 84252

2003186 Vitamin B₅ (Pantothenic Acid) B5
Methodology: High Performance Liquid Chromatography
Specimen Required: Collect: Lavender (EDTA).
Specimen Preparation: Transfer 4 mL plasma to an ARUP Amber Transport Tube and freeze immediately. **Protect from light.** (Min: 2 mL)

Storage/Transport Temperature: **CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.**
Unacceptable Conditions: Grossly hemolyzed or lipemic specimens. Thawed specimens or specimens not protected from light.
Stability: Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen: 1 month

CPT Code(s):

84591

0080111 **Vitamin B₆ (Pyridoxal 5-Phosphate)** **VIT B6**
Methodology: Quantitative High Performance Liquid Chromatography
Specimen Required: Patient Preparation: Collect specimen after an overnight fast.
Collect: Green (sodium or lithium heparin) or plasma separator tube. Also acceptable: Plain red.
Specimen Preparation: Protect from light during collection, storage, and shipment. Separate plasma from cells ASAP or within 2 hours of collection. Transfer 1 mL plasma to in an ARUP Amber Transport Tube and freeze immediately. (Min: 0.5 mL)
Storage/Transport Temperature: **CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.**
Unacceptable Conditions: Any specimens other than heparinized plasma or serum. Non-frozen specimens. Serum separator tubes. Specimens collected in EDTA yield a higher pyridoxal 5'-phosphate concentration; therefore, EDTA is not acceptable. Hemolyzed specimens.
Stability: After separation from cells: Ambient: Unacceptable; Refrigerated: 4 hours; Frozen: 2 months

CPT Code(s):

84207

2003184 **Vitamin B₇ (Biotin)** **B7**
Methodology: Bioassay
Specimen Required: Collect: Plain red or serum separator tube.
Specimen Preparation: Allow specimen to clot for 30 minutes and separate from cells. Transfer 2 mL serum to an ARUP Amber Transport Tube and freeze immediately. **Protect from light.** (Min: 1 mL)
Storage/Transport Temperature: **CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.**
Unacceptable Conditions: Grossly hemolyzed specimens. Thawed specimens or specimens not protected from light.
Stability: Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen: 1 month

CPT Code(s):

84591

0070150 **Vitamin B₁₂** **B12**
Methodology: Quantitative Chemiluminescent Immunoassay
Specimen Required: Collect: Serum separator tube.
Specimen Preparation: Protect from light during collection, storage, and shipment. Allow specimen to clot completely at room temperature. Transfer 1 mL serum to an ARUP Amber Transport Tube. (Min: 0.5 mL)
Storage/Transport Temperature: Frozen.
Unacceptable Conditions: Hemolyzed specimens.
Stability: After separation from cells: Ambient: 8 hours; Refrigerated: 48 hours; Frozen: 3 months

CPT Code(s):

82607

0070160 **Vitamin B₁₂ & Folate** **B12/FOL**
Methodology: Quantitative Chemiluminescent Immunoassay
Specimen Required: Collect: Serum separator tube.
Specimen Preparation: Protect from light during collection, storage, and shipment. Allow serum to clot completely at room temperature before centrifuging. Transfer 2 mL serum to an ARUP Amber Transport Tube. (Min: 0.5 mL)
Storage/Transport Temperature: Frozen.
Stability: After separation from cells: Ambient: 8 hours; Refrigerated: 48 hours; Frozen: 3 months

CPT Code(s):

82607 Vitamin B₁₂; 82746 Folate, serum

0070260 **Vitamin B₁₂ Binding Capacity** **B12B**
Methodology: Quantitative Radioimmunoassay
Specimen Required: Collect: Serum separator tube.
Specimen Preparation: Protect from light during collection, storage, and shipment. Transfer 1 mL serum to an ARUP Amber Transport Tube. (Min: 0.1 mL)
Storage/Transport Temperature: Refrigerated.
Stability: After separation from cells: Ambient: 6 hours; Refrigerated: 1 week; Frozen: 1 month

CPT Code(s):

82608

0055662 **Vitamin B₁₂ with Reflex to Methylmalonic Acid, Serum (Vitamin B₁₂ Deficiency)** **B12 MMA**
Methodology: Quantitative Chemiluminescent Immunoassay/Quantitative High Performance Liquid Chromatography-Tandem Mass Spectrometry
Specimen Required: Collect: Plain red or serum separator tube.
Specimen Preparation: **Protect from light during collection, storage and shipment.** Centrifuge and remove serum from cells within 2 hours of collection. Transfer 2 mL serum to an ARUP Standard Transport Tube and refrigerate or freeze immediately. (Min: 1.5 mL)
Storage/Transport Temperature: Frozen.
Unacceptable Conditions: Plasma. Room temperature specimens. Grossly hemolyzed or lipemic specimens.
Stability: After separation from cells: Ambient: Unacceptable; Refrigerated: 48 hours; Frozen: 1 month

CPT Code(s):

82607 Vitamin B₁₂; if reflexed, add 83921 MMA

0080380 **Vitamin C, Plasma** **VIT C**
Methodology: Quantitative Spectrophotometry
Specimen Required: Patient Preparation: Fasting specimen preferred.
Collect: Green (sodium or lithium heparin). Also acceptable: Lavender (EDTA).
Specimen Preparation: **Centrifuge immediately.** Transfer two 2 mL aliquots of plasma to each of the two collection tubes containing 40 mg oxalic acid (ARUP Supply #16569). Available online through eSupply using ARUP Connector contact ARUP Client Services at (800) 522-2787. (Min: 1.3 mL/aliquot) **Mix and freeze within 1 hour of collection.** Adequate preservation is 20 mg oxalic acid to 1 mL plasma.
Storage/Transport Temperature: **CRITICAL FROZEN. Separate samples must be submitted when multiple tests are ordered.**
Remarks: **The oxalic acid preservative may interfere with other tests.**
Unacceptable Conditions: Hemolyzed plasma. Body fluids other than plasma. Non-frozen specimens. Specimens not preserved with oxalic acid.

Stability: After separation from cells: Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen (with oxalic acid preservative added): 2 months

CPT Code(s): 82180

0080385 Vitamin D, 1, 25-Dihydroxy **VIT D 1,25**
Methodology: Quantitative Radioimmunoassay
Specimen Required: Collect: Serum separator tube or plain red. Also acceptable: Lavender (EDTA) or pink (K₂EDTA).
Specimen Preparation: Allow serum separator or plain red tube to sit 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 2 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 1 mL)
Storage/Transport Temperature: Refrigerated.
Stability: After separation from cells: Ambient: 72 hours; Refrigerated: 1 week; Frozen: 6 months

CPT Code(s): 82652

0080379 Vitamin D, 25-Hydroxy **VIT D 25**
Methodology: Quantitative Chemiluminescent Immunoassay
Specimen Required: Collect: Serum separator tube. Also acceptable: Lavender (EDTA), pink (K₂EDTA), or green (sodium or lithium heparin).
Specimen Preparation: Transfer 1 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: After separation from cells: Ambient: 72 hours; Refrigerated: 1 week; Frozen: 6 months

CPT Code(s): 82306

0080521 Vitamin E, Serum or Plasma **VIT E**
Methodology: Quantitative High Performance Liquid Chromatography
Specimen Required: Patient Preparation: Patient should fast for 12 hours and abstain from alcohol for 24 hours prior to collection.
Collect: Green (sodium or lithium heparin) or serum separator tube. Also acceptable: Lavender (EDTA) or pink (K₂EDTA).
Specimen Preparation: **Protect from light during collection, storage, and shipment.** Separate serum or plasma from cells within 1 hour of collection. Transfer 1 mL serum or plasma to an ARUP Amber Transport Tube. (Min: 0.2 mL) Avoid hemolysis.
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Whole blood or body fluids other than serum or plasma.
Stability: After separation from cells: Ambient: Unacceptable; Refrigerated: 1 month; Frozen at -20°C: 1 year

CPT Code(s): 84446

0099225 Vitamin K, Serum **VIT K**
Methodology: Quantitative High Performance Liquid Chromatography
Specimen Required: Patient Preparation: Patient should fast overnight for 12 hours and should not consume alcohol for 24 hours prior to blood draw.
Collect: Plain red or serum separator tube. Also acceptable: Lavender (EDTA) or pink (K₂EDTA).
Specimen Preparation: Protect from light within one hour of collection and during storage and shipment. 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.**
Unacceptable Conditions: Any specimen other than serum or EDTA plasma. Hemolyzed specimens.
Stability: After separation from cells: Ambient: Unacceptable; Refrigerated: 1 month; Frozen: 6 months

CPT Code(s): 84597

0092628 Voltage-Gated Calcium Channel (VGCC) Antibody **VGCC AB**
Methodology: Quantitative Radiobinding Assay
Specimen Required: Collect: Plain red.
Specimen Preparation: Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.2 mL)
Storage/Transport Temperature: Frozen.
Unacceptable Conditions: Plasma. Hemolyzed or grossly lipemic specimens.
Stability: After separation from cells: Ambient: 8 hours; Refrigerated: 2 weeks; Frozen: Indefinitely

CPT Code(s): 83519

2004890 Voltage-Gated Potassium Channel (VGKC) Antibody **VGKC AB**
Methodology: Quantitative Radiobinding Assay
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: Plasma. Grossly lipemic or icteric specimens.
Stability: After separation from cells: Ambient: Less than 72 hours; Refrigerated: 2 weeks; Frozen: 1 month (avoid repeated freeze/thaw cycles)

CPT Code(s): 83519

2002988 von Hippel-Lindau (VHL) Deletion/Duplication **VHL DELDUP**
Methodology: Polymerase Chain Reaction/Multiplex Ligation-dependent Probe Amplification
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: Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable

CPT Code(s): 83891 Isolation; 83896 Nucleic Acid Probes; 83898 Amplification; 83914 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.

2002970 von Hippel-Lindau (VHL) Sequencing **VHL FGS**
Methodology: Polymerase Chain Reaction/Sequencing

Specimen Required:	Collect: Lavender (EDTA), pink (K ₂ EDTA), or yellow (ACD Solution A or B). Specimen Preparation: Transport 3 mL whole blood. (Min: 1 mL) Storage/Transport Temperature: Refrigerated. Stability: Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable	
CPT Code(s):	83891 Isolation; 83898 x3 Amplification; 83904 x3 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.	
2002965	von Hippel-Lindau (VHL) Sequencing and Deletion/Duplication	VHL FGA
Methodology:	Polymerase Chain Reaction/Sequencing/Multiplex Ligation-dependent Probe Amplification	
Specimen Required:	Collect: Lavender (EDTA), pink (K ₂ EDTA), or yellow (ACD Solution A or B). Specimen Preparation: Transport 3 mL whole blood. (Min: 1 mL) Storage/Transport Temperature: Refrigerated. Stability: Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable	
CPT Code(s):	Sequencing: 83891 Isolation; 83898 x3 Amplification; 83904 x3 Sequencing; 83909 capillary electrophoresis. Del/Dup: 83896 Nucleic Acid Probes; 83898 Amplification; 83914 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.	
2005476	von Willebrand Disease, Platelet Type (GPIBA) 4 Mutations	GPIBA SEQ
Methodology:	Polymerase Chain Reaction/Sequencing/Fragment Analysis	
Specimen Required:	Collect: Lavender (EDTA), pink (K ₂ EDTA) or yellow (ACD Solution A or B). Specimen Preparation: Transport 3 mL whole blood. (Min: 1 mL) Storage/Transport Temperature: Refrigerated. Stability: Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable	
CPT Code(s):	83891 Isolation; 83898 x2 Amplification; 83904 Sequencing; 83909 x2 Capillary electrophoresis; 83912 Interpretation and report - Additional CPT code modifiers may be required for procedures performed to test for oncologic or inherited disorders.	
2005480	von Willebrand Disease, Type 2A (VWF) Sequencing Exon 28 with Reflex to 9 Exons	VWF2A SEQ
Methodology:	Polymerase Chain Reaction/Sequencing	
Specimen Required:	Collect: Lavender (EDTA), pink (K ₂ EDTA) or yellow (ACD Solution A or B). Specimen Preparation: Transport 3 mL whole blood. (Min: 1 mL) Storage/Transport Temperature: Refrigerated. Stability: Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable	
CPT Code(s):	83891 Isolation; 83898 x6 Amplification; 83904 Sequencing x6; 83909 Capillary electrophoresis; 83912 Interpretation and report. If reflexed to 9 additional exons, add 83898 x9 Amplification; 83904 x9 Sequencing; 83909 Capillary electrophoresis - Additional CPT code modifiers may be required for procedures performed to test for oncologic or inherited disorders.	
2005486	von Willebrand Disease, Type 2B (VWF) Sequencing	VWF2B SEQ
Methodology:	Polymerase Chain Reaction/Sequencing	
Specimen Required:	Collect: Lavender (EDTA), pink (K ₂ EDTA) or yellow (ACD Solution A or B). Specimen Preparation: Transport 3 mL whole blood. (Min: 1 mL) Storage/Transport Temperature: Refrigerated. Stability: Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable	
CPT Code(s):	83891 Isolation; 83898 x6 Amplification; 83904 x6 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.	
2005490	von Willebrand Disease, Type 2M (VWF) Sequencing	VWF2M SEQ
Methodology:	Polymerase Chain Reaction/Sequencing	
Specimen Required:	Collect: Lavender (EDTA), pink (K ₂ EDTA) or yellow (ACD Solution A or B). Specimen Preparation: Transport 3 mL whole blood. (Min: 1 mL) Storage/Transport Temperature: Refrigerated. Stability: Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable	
CPT Code(s):	83891 Isolation; 83898 x8 Amplification; 83904 x8 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.	
2005494	von Willebrand Disease, Type 2N (VWF) Sequencing	VWF2N SEQ
Methodology:	Polymerase Chain Reaction/Sequencing	
Specimen Required:	Collect: Lavender (EDTA), pink (K ₂ EDTA) or yellow (ACD Solution A or B). Specimen Preparation: Transport 3 mL whole blood. (Min: 1 mL) Storage/Transport Temperature: Refrigerated. Stability: Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable	
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.	
0030250	von Willebrand Factor Activity (Ristocetin Cofactor)	RCF
Methodology:	Platelet Agglutination	
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: Ambient: 4 hours; Refrigerated: Unacceptable; Frozen: 2 weeks	
CPT Code(s):	85245	
0030285	von Willebrand Factor Antigen	VWF/AG
Methodology:	Microlatex Particle-Mediated Immunoassay	
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. Remarks:	

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

Stability: Ambient: 4 hours; Refrigerated: 8 hours; Frozen: 2 weeks

CPT Code(s): 85246

0092281 **von Willebrand Factor Multimers** **VWF MULTI**
Methodology: Qualitative Electrophoresis
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: Serum. Specimens collected in wrong anticoagulant. Clotted, hemolyzed, or non-frozen specimens.
Stability: Ambient: 4 hours; Refrigerated: Unacceptable; Frozen at -70°C: 6 months; Frozen at -20°C: 2 weeks

CPT Code(s): 85247

0030284 **von Willebrand Modified Panel** **VW PANEL 2**
Methodology: Platelet Agglutination/Microlatex Particle-Mediated Immunoassay (LIA)
Specimen Required: Collect: Lt. blue (sodium citrate). Refer to Specimen Handling at aruplab.com for hemostasis/thrombosis specimen handling guidelines.
Specimen Preparation: Transfer 4 mL platelet-poor plasma to an ARUP Standard Transport Tube. (Min: 2 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: Ambient: 4 hours; Refrigerated: Unacceptable; Frozen: 2 weeks

CPT Code(s): 85246 vWF/Ag; 85245 vWF/RCF

0030002 **von Willebrand Multimeric Panel** **VW MUL PAN**
Methodology: Electrophoresis/Western Blot/Clotting/Microlatex Particle-Mediated Immunoassay/Platelet Agglutination
Specimen Required: Collect: Lt. blue (sodium citrate). Refer to Specimen Handling at aruplab.com for hemostasis/thrombosis specimen handling guidelines.
Specimen Preparation: Transfer 4 mL platelet-poor plasma to an ARUP Standard Transport Tube. (Min: 2 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: Ambient: 4 hours; Refrigerated: Unacceptable; Frozen: 2 weeks

CPT Code(s): 85247 VW Mul; 85240 F8; 85246 VWF/AG; 85245 vWF/RCF

0030125 **von Willebrand Panel** **VW PANEL**
Methodology: Clotting/Platelet Agglutination/Microlatex Particle-Mediated Immunoassay
Specimen Required: Collect: Lt. blue (sodium citrate). Refer to Specimen Handling at aruplab.com for hemostasis/thrombosis specimen handling guidelines.
Specimen Preparation: Transfer 4 mL platelet-poor plasma to an ARUP Standard Transport Tube. (Min: 2 mL)
Storage/Transport Temperature: **CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.**
Remarks:
Unacceptable Conditions: Serum. Hemolyzed or non-frozen specimens.
Stability: Ambient: 4 hours; Refrigerated: Unacceptable; Frozen: 2 weeks

CPT Code(s): 85240 F8; 85246 vWF/Ag; 85245 vWF/RCF

2003387 **von Willebrand Panel with Reflex to von Willebrand Multimeric Analysis** **VW PANEL R**
Methodology: Electrophoresis/Western Blot/Clotting/Microlatex Particle-Mediated Immunoassay/Platelet Agglutination
Specimen Required: Collect: Lt. blue (sodium citrate). Refer to Specimen Handling at aruplab.com for hemostasis/thrombosis specimen handling guidelines.
Specimen Preparation: Transfer 4 mL platelet-poor plasma to an ARUP Standard Transport Tube. (Min: 2 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: Ambient: 4 hours; Refrigerated: Unacceptable; Frozen: 2 weeks

CPT Code(s): 85240 F8; 85246 vWF/AG; 85245 RCF; If reflexed add 85247 vW Multi

2001737 **Voriconazole, Quantitation by LC-MS/MS** **VORICON AF**
Methodology: Quantitative High Performance Liquid Chromatography-Tandem Mass Spectrometry
Specimen Required: Patient Preparation: 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.
Collect: Plain red, lavender (EDTA), or green (sodium or lithium heparin).
Specimen Preparation: Transfer 1 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.6 mL)
Storage/Transport Temperature: Frozen.
Unacceptable Conditions: Separator tubes. Hemolyzed or lipemic specimens.
Stability: After separation from cells: Ambient: 48 hours; Refrigerated: 48 hours; Frozen: 6 months

CPT Code(s): 80299

2004358 **Warfarin Genotyping Plus** **WARF PLUS**
Methodology: Polymerase Chain Reaction/Fluorescence Monitoring
Specimen Required: Collect: Lavender (EDTA) or pink (K₂EDTA).
Specimen Preparation: Transport 3 mL whole blood. (Min: 1 mL)
Storage/Transport Temperature: Refrigerated.
Stability: Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable

CPT Code(s): 83891 Isolation; 83898 x3 Amplification; 83896 x3 Nucleic acid probes; 83912 Interpretation and report. Additional CPT code modifiers may be required for procedures performed to test for oncologic or inherited disorders

0051370 **Warfarin Sensitivity (CYP2C9 & VKORC1) 3 Mutations** **WARF GENO**
Methodology: Polymerase Chain Reaction/Fluorescence Monitoring
Specimen Required: Collect: Lavender (EDTA) or pink (K₂EDTA).
Specimen Preparation: Transport 3 mL whole blood. (Min: 1 mL)
Storage/Transport Temperature: Refrigerated.
Stability: Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable

CPT Code(s): 83891 Isolation; 83898 x3 Amplification; 83896 x3 Nucleic acid probes; 83912 Interpretation and report. Additional CPT code modifiers

may be required for procedures performed to test for oncologic or inherited disorders

0090805	Warfarin, Serum or Plasma	WARF SP
Methodology:	High Performance Liquid Chromatography	
Specimen Required:	<u>Collect:</u> Plain red, gray (sodium fluoride/potassium oxalate), green (sodium heparin), lavender (EDTA), or pink (K ₂ EDTA). <u>Specimen Preparation:</u> Separate serum or plasma from cells within two hours of collection. Transfer 2 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.7 mL) <u>Storage/Transport Temperature:</u> Refrigerated. Also acceptable: Room temperature or frozen. <u>Unacceptable Conditions:</u> Separator tubes. <u>Stability:</u> Ambient: 2 weeks; Refrigerated: 2 weeks; Frozen: 2 weeks	
CPT Code(s):	80299	
0091230	Warfarin, Urine	WARFARIN U
Methodology:	High Performance Liquid Chromatography	
Specimen Required:	<u>Collect:</u> Random urine. <u>Storage/Transport Temperature:</u> 2 mL urine at 20-25°C. (Min: 0.5 mL) Submit specimen in an ARUP Standard Transport Tube. <u>Stability:</u> Ambient: 2 weeks; Refrigerated: 2 weeks; Frozen: 18 months	
CPT Code(s):	80299	
0013030	Warm Auto Adsorption	AD-WARM
Methodology:	Hemagglutination	
Specimen Required:	<u>Collect:</u> Plain red AND lavender (EDTA) or pink (K ₂ EDTA). <u>Specimen Preparation:</u> Do not freeze red cells. Transport 10 mL whole blood (plain red) AND 7 mL whole blood (EDTA) in original collection tubes. Pediatric: Transport 3 mL whole blood (plain red) AND 2 mL whole blood (EDTA) in original collection tubes. <u>Storage/Transport Temperature:</u> Refrigerated. <u>Remarks:</u> <u>Unacceptable Conditions:</u> Separator or gel tubes. <u>Stability:</u> Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable	
CPT Code(s):	86970 Pretreatment red cells/drugs/chemicals; 86978 Adsorption	
0013025	Warm Triple Adsorption	AD-TRIPLE
Methodology:	Hemagglutination	
Specimen Required:	<u>Patient Preparation:</u> Test is performed on patients with warm autoantibodies who have been pregnant or transfused within the past 3 months. <u>Collect:</u> Plain red AND lavender (EDTA). <u>Specimen Preparation:</u> Do not freeze red cells. Transport 15 mL whole blood (plain red) AND 7 mL whole blood (EDTA) in original collection tubes. Pediatric: Transport 3 mL whole blood (plain red) AND 2 mL whole blood (EDTA) in original collection tubes. <u>Storage/Transport Temperature:</u> Refrigerated. <u>Remarks:</u> <u>Unacceptable Conditions:</u> Separator or gel tubes. <u>Stability:</u> Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable	
CPT Code(s):	86970 x3 Pretreatment red cells/drugs/chemicals; 86978 x3 Adsorption	
0093143	Weil-Felix Test	WEIL-FELIX
Methodology:	Direct Agglutination	
Specimen Required:	<u>Collect:</u> Plain red. <u>Specimen Preparation:</u> Transport 1 mL serum. (Min: 0.3 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Stability:</u> Ambient: 1 week; Refrigerated: 2 weeks; Frozen: 1 month	
CPT Code(s):	86000 x3	
0050228	West Nile Virus Antibodies, IgG & IgM by ELISA, CSF	WNILE CSF
Methodology:	Semi-Quantitative Enzyme-Linked Immunosorbent Assay	
Specimen Required:	<u>Collect:</u> CSF. <u>Specimen Preparation:</u> Transfer 2 mL CSF to an ARUP Standard Transport Tube. (Min: 0.3 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Contaminated, heat-inactivated, or hemolyzed specimens. <u>Stability:</u> Ambient: 8 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)	
CPT Code(s):	86789 WNV IgG, 86788 WNV IgM	
0050226	West Nile Virus Antibodies, IgG & IgM by ELISA, Serum	WNILE SER
Methodology:	Semi-Quantitative Enzyme-Linked Immunosorbent Assay	
Specimen Required:	<u>Collect:</u> Serum separator tube. <u>Specimen Preparation:</u> Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.15 mL) Parallel testing is preferred and convalescent specimens must be received within 30 days from receipt of the acute specimens. Mark specimens plainly as "acute" or "convalescent." <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Plasma. Contaminated, heat-inactivated, hemolyzed, or severely lipemic specimens. <u>Stability:</u> After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)	
CPT Code(s):	86789 WNV IgG, 86788 WNV IgM	
0050238	West Nile Virus Antibody, IgG by ELISA, CSF	WNIL IGG
Methodology:	Semi-Quantitative Enzyme-Linked Immunosorbent Assay	
Specimen Required:	<u>Collect:</u> CSF. <u>Specimen Preparation:</u> Transfer 2 mL CSF to an ARUP Standard Transport Tube. (Min: 0.15 mL) <u>Storage/Transport Temperature:</u> Refrigerated.	

Unacceptable Conditions: Contaminated, heat-inactivated, or hemolyzed specimens.
Stability: Ambient: 8 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)

CPT Code(s):

86789

0050234 **West Nile Virus Antibody, IgG by ELISA, Serum** **WNILE IGG**
Methodology: Semi-Quantitative Enzyme-Linked Immunosorbent Assay
Specimen Required: Collect: Serum separator tube.
Specimen Preparation: Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.15 mL) 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."**
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Plasma. Contaminated, heat-inactivated, hemolyzed, or severely lipemic specimens.
Stability: After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)

CPT Code(s):

86789

0050239 **West Nile Virus Antibody, IgM by ELISA, CSF** **WNIL IGM**
Methodology: Semi-Quantitative Enzyme-Linked Immunosorbent Assay
Specimen Required: Collect: CSF.
Specimen Preparation: Transfer 2 mL CSF to an ARUP Standard Transport Tube. (Min: 0.15 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Contaminated, heat-inactivated, or hemolyzed specimens.
Stability: Ambient: 8 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)

CPT Code(s):

86788

0050236 **West Nile Virus Antibody, IgM by ELISA, Serum** **WNILE IGM**
Methodology: Semi-Quantitative Enzyme-Linked Immunosorbent Assay
Specimen Required: Collect: Serum separator tube.
Specimen Preparation: Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.15 mL) Parallel testing is preferred and convalescent specimens **must** be received within 30 days from receipt of the acute specimens. **Mark specimens plainly as "acute" or "convalescent."**
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Plasma. Contaminated, hemolyzed, heat-inactivated, or severely lipemic specimens.
Stability: After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)

CPT Code(s):

86788

0050229 **West Nile Virus RNA by RT-PCR** **WNILE PCR**
Methodology: Qualitative Reverse Transcription Polymerase Chain Reaction
Specimen Required: Collect: Plain red or serum separator tube. OR CSF.
Specimen Preparation: Separate serum from cells.
Transfer 1 mL serum or CSF to a sterile container. (Min: 0.5 mL)
Storage/Transport Temperature: Frozen. Submit specimen according to Biological Substance, Category B, shipping guidelines.
Remarks: **Specimen source required.**
Unacceptable Conditions: Heparinized specimens. Hemolyzed specimens.
Stability: Ambient: 1 hour; Refrigerated: 24 hours; Frozen: 3 months (avoid repeated freeze/thaw cycles)

CPT Code(s):

87798

0098897 **Western Equine Encephalitis Antibody, IgG by IFA, CSF** **WEST G CSF**
Methodology: Semi-Quantitative Indirect Fluorescent Antibody
Specimen Required: Collect: CSF.
Specimen Preparation: Transfer 2 mL CSF to an ARUP Standard Transport Tube. (Min: 0.15 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Contaminated or heat-inactivated specimens.
Stability: Ambient: 8 hours; Refrigerated: 2 weeks; Frozen: 1 year

CPT Code(s):

86654

0050514 **Western Equine Encephalitis Antibody, IgG by IFA, Serum** **WESTERN**
Methodology: Semi-Quantitative Indirect Fluorescent Antibody
Specimen Required: Collect: Serum separator tube.
Specimen Preparation: Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.05 mL) Parallel testing is preferred and convalescent specimens **must** be received within 30 days from receipt of the acute specimens. **Mark specimens plainly as acute or convalescent.**
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Contaminated, hemolyzed, or severely lipemic specimens.
Stability: After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)

CPT Code(s):

86654

0098730 **Western Equine Encephalitis, Antibody, IgM by IFA, CSF** **WEST M CSF**
Methodology: Semi-Quantitative Indirect Fluorescent Antibody
Specimen Required: Collect: CSF.
Specimen Preparation: Transfer 2 mL CSF to an ARUP Standard Transport Tube. (Min: 0.15 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Contaminated or heat-inactivated specimens.
Stability: Ambient: 8 hours; Refrigerated: 2 weeks; Frozen: 1 year

CPT Code(s):

86654

0098734 **Western Equine Encephalitis Antibody, IgM by IFA, Serum** **WEST M SER**
Methodology: Semi-Quantitative Indirect Fluorescent Antibody
Specimen Required: Collect: Serum separator tube.

Specimen Preparation: Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.15 mL) Parallel testing is preferred and convalescent specimens **must** be received within 30 days from receipt of the acute specimens. **Mark specimens plainly as "acute" or "convalescent."**

Storage/Transport Temperature: Refrigerated.

Unacceptable Conditions: Plasma. Contaminated, heat-inactivated, hemolyzed, or severely lipemic specimens.

Stability: After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year

CPT Code(s): 86654

0040320 White Blood Cell Count WBC

Methodology: Automated Cell Count

Specimen Required: Collect: One 5 mL lavender (EDTA) or pink (K₂ EDTA).

Specimen Preparation: Mix specimens thoroughly to avoid clotting of specimen.

Storage/Transport Temperature: 5 mL whole blood at 2-8°C. (Min: 0.25 mL of thoroughly mixed whole blood)

Unacceptable Conditions: Frozen or clotted specimens.

Stability: Ambient: 1 day; Refrigerated: 3 days; Frozen: Unacceptable

CPT Code(s): 85048

2004184 Wilms Tumor (WT-1), N-terminus by Immunohistochemistry WT1 IHC

Methodology: Immunohistochemistry

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: Ambient: Indefinite; Refrigerated: Indefinite; Frozen: Indefinite

CPT Code(s): 88342

0020598 Wilson Disease Screening Panel, Serum WILSON D

Methodology: Quantitative Immunoturbidimetric/Quantitative Inductively Coupled Plasma-Mass Spectrometry

Specimen Required: Patient Preparation: Diet, medication, and nutritional supplements may introduce interfering substances. Patient should be encouraged to discontinue nutritional supplements, vitamins, minerals, and non-essential over-the-counter medications (upon the advice of their physician).

Collect: Royal blue (no additive).

Specimen Preparation: Centrifuge and pour off serum ASAP or within 2 hours of collection. Do not allow serum to remain on cells. Transfer 4 mL serum to an ARUP Standard Transport Tube. (Min: 2.5 mL)

Storage/Transport Temperature: Frozen.

Unacceptable Conditions: Separator tubes. Specimens that are not separated from the red cells or clot.

Stability: After separation from cells: Ambient: 8 hours; Refrigerated: 72 hours; Frozen: 1 month

CPT Code(s): 82390 Ceruloplasmin; 82525 Copper; 82525 Copper, free (direct)

0060132 Wound Culture (Includes Gram Stain 0060101) MC W

Methodology: Standard reference procedures for bacterial stain, aerobic culture, and identification. Anaerobe Culture is performed on properly collected specimens (Anaerobe culture 0060143).

Specimen Required: Collect: Aspirate or purulent material. Also acceptable: Swab.

Specimen Preparation: **Aspirate fluid:** Transfer to a sterile, capped syringe.

OR Purulent Material: Transfer to a sterile tube or anaerobe transport media.

OR Swab: Place in bacterial transport media.

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

Remarks: Specimen source required.

Unacceptable Conditions: Syringes with needle attached. Dry materials or swabs.

Stability: Ambient: 24 hours; Refrigerated: Unacceptable; Frozen: Unacceptable

CPT Code(s): 87070

2004434 X Chromosome Ultra-High Density Microarray, 954 Genes X ARRAY

Methodology: Exonic Oligonucleotide-based CGH Microarray

Specimen Required: Collect: **Contact ARUP's genetic counselor at (800) 242-2787, extension 2141 prior to test submission.**

Storage/Transport Temperature: Room temperature.

Remarks: Submit the Patient History Form for X Chromosome Array Studies with the Electronic Packing List. Disease specific patient history forms are available at www.aruplab.com/genetics/forms.php.

Unacceptable Conditions: Frozen specimens. Clotted specimens.

Stability: Ambient: 48 hours; Refrigerated: 72 hours; Frozen: Unacceptable

CPT Code(s): 83891 Isolation; 88386 x4 Array-based evaluation of multiple molecular probes, 251-500

0091383 Xylenes (Total), Serum or Plasma XYLENE PAN

Methodology: Gas Chromatography

Specimen Required: Collect: Lavender (EDTA) or plain red. Also acceptable: Gray (sodium fluoride/potassium oxalate).

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: Ambient: 5 days; Refrigerated: 5 days; Frozen: 5 days

CPT Code(s): 84600

0020609 Xylose Absorption Test (Adult - 25g dose) XYLOSE

Methodology: Quantitative Spectrophotometry
Specimen Required: Patient Preparation: Patient should fast for 8 hours (Min: 4 hours) prior to administration of xylose.
Collect: Fasting serum, five-hour urine, and two-hour serum according to the following instructions.
Specimen Preparation: 1. Just prior xylose administration, patient should empty his or her bladder (DO NOT collect this urine).
2. Just prior to xylose administration, collect first serum specimen (Min: 0.5 mL). Allow serum to clot completely at room temperature. Separate serum from cells ASAP or within 2 hours of collection. Label this specimen as "FASTING SERUM" and prepare for transport.
3. Give adults 25 g D-xylose in 250 mL water. Encourage the patient to drink an additional 250 mL water following the xylose dose. The patient may have water as desired, but no other food or fluids. Smoking should be prohibited. The patient should rest in a chair or on a bed until completion of test. Mild diarrhea is common following xylose ingestion.
4. Immediately following the xylose dose, collect all urine for the next five hours. Measure and record the volume, mix well, and remove a 5 mL aliquot (Min: 3 mL) and prepare for transport. Label this specimen as "FIVE-HOUR URINE." Record the total volume and the xylose dose given on the urine aliquot tube.
5. Two hours after administration of xylose dose, collect the second serum specimen (Min: 0.5 mL). Allow serum to clot completely at room temperature. Separate serum from cells ASAP or within 2 hours of collection. Label this specimen as "TWO-HOUR SERUM" and prepare for transport.
6. Record the xylose dose given and the total volume of the five-hour urine on the test request form.
Failure to include all required information will result in delay of turnaround time.
Storage/Transport Temperature: Refrigerated.
Remarks: The fasting serum specimen does not have a reference interval since it is used as a blank for the two-hour serum sample. For children, refer to Xylose Absorption Test (Child) (ARUP test code 0020612).
Unacceptable Conditions: Non-fasting specimens. Whole blood or unspun clot tubes. Grossly hemolyzed serum.
Stability: Ambient: 4 hours; Refrigerated: 1 week; Frozen: 1 month
CPT Code(s): 84620

0020615 Xylose Absorption Test (Adult - 5g dose) XYL-5G
Methodology: Quantitative Spectrophotometry
Specimen Required: Patient Preparation: Patient should fast for 8 hours (Min: 4 hours) prior to administration of xylose.
Collect: Fasting serum, five-hour urine, and two-hour serum according to the following instructions.
Specimen Preparation: 1. Just prior xylose administration, patient should empty his or her bladder (DO NOT collect this urine).
2. Just prior to xylose administration, collect first serum specimen (Min: 0.5 mL). Allow serum to clot completely at room temperature. Separate serum from cells ASAP or within 2 hours of collection. Label this specimen as "FASTING SERUM" and prepare for transport.
3. Give adults 5 g D-xylose in 250 mL water. Encourage the patient to drink an additional 250 mL water following the xylose dose. The patient may have water as desired, but no other food or fluids. Smoking should be prohibited. The patient should rest in a chair or on a bed until completion of test. Mild diarrhea is common following xylose ingestion.
4. Immediately following the xylose dose, collect all urine for the next five hours. Measure and record the volume, mix well, and remove a 5 mL aliquot (Min: 3 mL) and prepare for transport. Label this specimen as "FIVE-HOUR URINE." Record the total volume and the xylose dose given on the urine aliquot tube.
5. Two hours after administration of xylose dose, collect the second serum specimen (Min: 0.5 mL). Allow serum to clot completely at room temperature. Separate serum from cells ASAP or within 2 hours of collection. Label this specimen as "TWO-HOUR SERUM" and prepare for transport.
6. Record the xylose dose given and the total volume of the five-hour urine on the test request form.
Failure to include all required information will result in delay of turnaround time.
Storage/Transport Temperature: Refrigerated.
Remarks: The fasting serum specimen does not have a reference interval since it is used as a blank for the two-hour serum sample. For children, refer to Xylose Absorption Test (Child) (ARUP test code 0020612).
Unacceptable Conditions: Non-fasting specimens. Whole blood or unspun clot tubes. Grossly hemolyzed serum.
Stability: Ambient: 4 hours; Refrigerated: 1 week; Frozen: 1 month
CPT Code(s): 84620

0020612 Xylose Absorption Test (Child) XYLOSE P
Methodology: Quantitative Spectrophotometry
Specimen Required: Patient Preparation: Children are defined as less than 17 years old for purposes of this test. Patient should fast for 8 hours (Min: 4 hours) prior to administration of xylose.
Collect: Fasting serum, five-hour urine, and one-hour serum according to the following instructions.
Specimen Preparation: 1. Just prior xylose administration, patient should empty his or her bladder (DO NOT collect this urine).
2. Just prior to xylose administration, collect first serum specimen (Min: 0.5 mL). Allow serum to clot completely at room temperature. Separate serum from cells ASAP or within 2 hours of collection. Label this specimen as "FASTING SERUM" and prepare for transport.
3. Give children 0.5 g D-xylose per kilogram of body weight, up to 25 g; give xylose in water (5 mL of water per 0.5 g of xylose, up to 250 mL water). Encourage the patient to drink additional water following the xylose dose. The patient may have water as desired, but no other food or fluids. The patient should rest in a chair or on a bed until completion of test. Mild diarrhea is common following xylose ingestion.
4. Immediately following the xylose dose, collect all urine for the next five hours. Measure and record the volume, mix well, and remove a 5 mL aliquot (Min: 3 mL) and prepare for transport. Label this specimen as "FIVE-HOUR URINE." Record the total volume and the xylose dose given on the urine aliquot tube.
5. One hour after administration of xylose dose, collect the second serum specimen (Min: 0.5 mL). Allow serum to clot completely at room temperature. Separate serum from cells ASAP or within 2 hours of collection. Label this specimen as "ONE-HOUR SERUM" and prepare for transport.
6. Record the xylose dose given and the total volume of the five-hour urine on the test request form.
-If unable to collect pediatric urine samples, testing will be completed with a disclaimer, provided both serum specimens are received.
-Failure to include all required information will result in delay of turnaround time.
Storage/Transport Temperature: Refrigerated.
Remarks: The fasting serum specimen does not have a reference interval since it is used as a blank for the two-hour serum sample.
Unacceptable Conditions: Non-fasting specimens. Whole blood or unspun clot tubes. Grossly hemolyzed serum.
Stability: Ambient: 4 hours; Refrigerated: 1 week; Frozen: 1 month
CPT Code(s): 84620

Methodology: Polymerase Chain Reaction/Electrophoresis
Specimen Required: Collect: Lavender (EDTA) or pink (K₂EDTA). Also acceptable: Yellow (ACD Solution A or B), lt. blue (sodium citrate), green (sodium or lithium heparin).
Specimen Preparation: **Do not freeze.** Transport 3 mL whole blood. (Min: 1 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Serum. Frozen specimens. Severely hemolyzed specimens.
Stability: Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable
CPT Code(s): 83891 Isolation; 83900 Amplification, 83901 x8 Multiplex amplification; 83909 Capillary electrophoresis; 83912 Interpretation and report - Additional CPT code modifiers may be required for procedures performed to test for oncologic or inherited disorders.

0060150 Yeast Culture MC YST
Methodology: Standard reference procedures for yeast culture. Standard reference procedures for identification and/or ITS rDNA Sequencing.
Specimen Required: Collect: Genital, fecal, oral cavity (esophagus, gums, mouth, teeth, throat, tongue, etc) specimens, or urine.
Specimen Preparation: **Swabs:** Transport in bacterial transport media.
Urine: Transfer 10 mL urine to a sterile container (Min: 2 mL)
Storage/Transport Temperature: Refrigerated. Submit specimen according to Biological Substance, Category B, shipping guidelines.
Remarks: Specimen source required.
Unacceptable Conditions: Catheter tips.
Stability: Ambient: 1 week; Refrigerated: 1 week; Frozen: Unacceptable
CPT Code(s): 87102

2004769 Yeast Differentiation by PNA FISH YST FISH
Methodology: Qualitative Peptide Nucleic Acid Fluorescence in situ Hybridization (PNA FISH)
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: Ambient: 48 hours; Refrigerated: Unacceptable; Frozen: Unacceptable
CPT Code(s): 87149

0051230 Yersinia Species Antibodies, IgA & IgG by Immunoblot YER PAN
Methodology: Qualitative Immunoblot
Specimen Required: Collect: Serum separator tube.
Specimen Preparation: Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.2 mL) Parallel testing is preferred and convalescent specimens **must** be received within 30 days from receipt of the acute specimens. **Mark specimens plainly as acute or convalescent.**
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Contaminated, heat-inactivated, hemolyzed, icteric, lipemic, or turbid specimens.
Stability: After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year
CPT Code(s): 86793 *Yersinia* IgG; 86793 *Yersinia* IgA

0051241 Yersinia Species Antibodies, IgA, IgG, & IgM by Immunoblot YER PAN3
Methodology: Qualitative Immunoblot
Specimen Required: Collect: Serum separator tube.
Specimen Preparation: Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.2 mL) Parallel testing is preferred and convalescent specimens **must** be received within 30 days from receipt of acute specimens. **Mark specimens plainly as acute or convalescent.**
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Contaminated, heat-inactivated, hemolyzed, icteric, lipemic, or turbid specimens.
Stability: After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year
CPT Code(s): 86793 *Yersinia* IgA; 86793 *Yersinia* IgG; 86793 *Yersinia* IgM

0051228 Yersinia Species Antibody, IgA by Immunoblot YER IGA
Methodology: Qualitative Immunoblot
Specimen Required: Collect: Serum separator tube.
Specimen Preparation: Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.1 mL) parallel testing is preferred, and convalescent specimens **must** be received within 30 days from receipt of the acute specimens. **Mark specimens plainly as acute or convalescent.**
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Contaminated, heat-inactivated, hemolyzed, icteric, lipemic, or turbid specimens.
Stability: After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year
CPT Code(s): 86793

0051229 Yersinia Species Antibody, IgG by Immunoblot YER IGG
Methodology: Qualitative Immunoblot
Specimen Required: Collect: Serum separator tube.
Specimen Preparation: Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.1 mL) Parallel testing is preferred, and convalescent specimens **must** be received within 30 days from receipt of the acute specimens. **Mark specimens plainly as acute or convalescent.**
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Contaminated, heat-inactivated, hemolyzed, icteric, lipemic, or turbid specimens.
Stability: After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year
CPT Code(s): 86793

0051172 Yersinia Species Antibody, IgM by Immunoblot YER IGM

Methodology: Qualitative Immunoblot
Specimen Required: Collect: Serum separator tube.
Specimen Preparation: Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.1 mL) Parallel testing is preferred and convalescent specimens **must** be received within 30 days from receipt of the acute specimen. **Mark specimens plainly as acute or convalescent.**
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Contaminated, heat-inactivated, hemolyzed, icteric, lipemic, or turbid specimens.
Stability: After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year
CPT Code(s): 86793

0092392 ZAP-70 Analysis by Flow Cytometry ZAP-70
Methodology: Flow Cytometry
Specimen Required: Collect: Green (sodium heparin). Also acceptable: Lavender (EDTA) or pink (K₂EDTA).
Specimen Preparation: Transport 5 mL whole blood.
Storage/Transport Temperature: Room temperature. Also acceptable: Refrigerated. Specimen should be received within 24 hours of collection for optimal viable testing.
Remarks: Prior diagnosis of CLL is required. Provide CBC results and Wright's stained smear.
Unacceptable Conditions: Frozen specimens. Clotted or hemolyzed specimens. Specimens greater than 48 hours old.
Stability: Ambient: 24 hours; Refrigerated: 48 hours; Frozen: Unacceptable
CPT Code(s): 88184 First marker; 88185x2 Additional markers; 88187 Interpretation of 2-8 markers

0020605 Zinc Protoporphyrin (ZPP), Whole Blood ZPP
Methodology: Quantitative Hematofluorometry
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: Ambient: 30 hours; Refrigerated: 5 weeks; Frozen: Unacceptable
CPT Code(s): 84202

0020614 Zinc Protoporphyrin (ZPP), Whole Blood Industrial ZPP IND
Methodology: Quantitative Hematofluorometry
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: Ambient: 30 hours; Refrigerated: 5 weeks; Frozen: Unacceptable
CPT Code(s): 84202

0020097 Zinc, Serum ZINC
Methodology: Quantitative Inductively Coupled Plasma-Mass Spectrometry
Specimen Required: Collect: Royal blue (no additives), or royal blue (EDTA).
Specimen Preparation: Do not allow serum or plasma to remain on cells. Centrifuge and pour off serum or plasma ASAP or within 2 hours of collection. Transfer 2 mL serum or plasma to an ARUP Trace Element-Free Transport Tube (ARUP supply #43116). Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787. (Min: 0.5 mL)
Storage/Transport Temperature: Room temperature.
Unacceptable Conditions: Separator tubes. Specimens that are not separated from the red cells or clot. Hemolyzed specimens.
Stability: If the specimen is drawn and stored in the appropriate container, the trace element values do not change with time.
CPT Code(s): 84630

0020462 Zinc, Urine ZINC U
Methodology: Quantitative Inductively Coupled Plasma-Mass Spectrometry
Specimen Required: Patient Preparation: Diet, medication, and nutritional supplements may introduce interfering substances. Patients should be encouraged to discontinue nutritional supplements, vitamins, minerals, and non-essential 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: Ambient: 1 week; Refrigerated: 2 weeks; Frozen: 1 year
CPT Code(s): 84630

0090667 Zinc, Whole Blood ZINC B
Methodology: Quantitative Flame Atomic Absorption Spectroscopy
Specimen Required: Collect: Royal blue (EDTA).
Specimen Preparation: Transport 2 mL whole blood in the original collection tube. (Min: 0.7 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Heparinized specimens. Clotted specimens.
Stability: Ambient: 2 weeks; Refrigerated: 2 weeks; Frozen: 2 weeks
CPT Code(s): 84630

0091519 Ziprasidone (Geodon®), Serum or Plasma ZIPRASIDON

Methodology: Quantitative Liquid Chromatography/Mass Spectrometry
Specimen Required: Collect: Plain red, lavender (EDTA), or pink (K₂EDTA).
Specimen Preparation: Separate serum or plasma from cells within 2 hours. Transfer 1 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.4 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Separator tubes.
Stability: Ambient: 2 weeks Refrigerated: 2 weeks; Frozen: 1 month
CPT Code(s): 80299

0091232 **Zolpidem Quantitation, Serum or Plasma** **ZOLPIDEM**
Methodology: Quantitative High Performance Liquid Chromatography-Tandem Mass Spectrometry
Specimen Required: Collect: Plain red, 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: 0.25 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Separator tubes.
Stability: Ambient: 1 month; Refrigerated: 1 month; Frozen: 1 month
CPT Code(s): 80299

0091151 **Zolpidem, Urine - Screen with Reflex to Confirmation/Quantitation** **ZOLPIDEM**
Methodology: Qualitative Gas Chromatography/Quantitative Gas Chromatography-Mass Spectrometry
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. Also acceptable: Room temperature or frozen.
Stability: Ambient: 1 week; Refrigerated: 1 week; Frozen 10 months
CPT Code(s): 82491; if positive, add 80299

0097908 **Zonisamide** **ZONI**
Methodology: Quantitative EMIT Immunoassay
Specimen Required: Collect: Plain red, lavender (EDTA), pink (K₂ EDTA or K₃EDTA), or green (sodium or lithium heparin). Also acceptable (avoid if possible): Serum separator tube or plasma separator tube (follow preparation instructions below).
Specimen Preparation: Separate serum or plasma from cells within 2 hours of collection. Transfer 2 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.5 mL)
SST or PST: Serum or plasma in a gel separator tube stored at room temperature is acceptable if separated from the gel within 6 hours. Serum or plasma in a gel separator tube stored refrigerated is acceptable if separated from the gel within 2 hours.
Storage/Transport Temperature: Refrigerated
Unacceptable Conditions: Citrated plasma. Tubes that contain liquid anticoagulant.
Stability: After separation from cells: Ambient: 6 weeks; Refrigerated: 6 weeks; Frozen: 6 weeks
CPT Code(s): 80299