

OR formalin-fixed, paraffin-embedded tissue: Room temperature or refrigerated. Ship in cooled container during summer months.
Unacceptable Conditions: Specimens fixed/processed in alternative fixatives (alcohol, Prefer®) or heavy metal fixatives (B-4 or B-5). Slides. Decalcified tissue.

Stability: **Fresh tissue:** Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen at -70°C: 48 hours

Formalin-fixed, paraffin-embedded tissue: Ambient: Indefinitely; Refrigerated: Indefinitely; Frozen: Unacceptable
83891 Isolation; 83902 Reverse transcription; 83898 x3 Amplification; 83894 Gel separation; 83912 Interpretation and report -
Additional CPT code modifiers may be required for procedures performed to test for oncologic or inherited disorders.

CPT Code(s):

0099478 Bismuth, Blood BS B
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

0099410 Bismuth, Urine BS 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): 83018

0090067 BK Virus, Quantitative PCR BK QNT
Methodology: Quantitative Real-Time Polymerase Chain Reaction
Specimen Required: Collect: Lavender (EDTA), pink (K₂EDTA), or serum separator tube Also acceptable: Random urine.
Specimen Preparation: **CRITICAL STERILE.** Do not freeze whole blood specimens. Transport 1 mL whole blood, serum, plasma, or urine. (Min: 0.5 mL)
Storage/Transport Temperature: Refrigerated. Submit specimen according to Biological Substance, Category B, shipping guidelines.
Remarks: Specimen source required.
Unacceptable Conditions: Heparinized specimens. Clotted specimens.
Stability: Ambient: 8 hours; Refrigerated: 72 hours; Frozen: 1 month
CPT Code(s): 87799

2002304 BK Virus, Quantitative PCR, Blood BK QNT BLD
Methodology: Quantitative Real-Time Polymerase Chain Reaction
Specimen Required: Collect: Lavender (EDTA), pink (K₂EDTA), or serum separator tube
Specimen Preparation: **CRITICAL STERILE.** Do not freeze whole blood specimens. Transport 1 mL whole blood, serum, or plasma . (Min: 0.5 mL)
Storage/Transport Temperature: Refrigerated. Submit specimen according to Biological Substance, Category B, shipping guidelines.
Remarks: Specimen source required.
Unacceptable Conditions: Clotted specimens. Heparinized specimens.
Stability: Ambient: 8 hours; Refrigerated: 72 hours; Frozen: 1 month
CPT Code(s): 87799

2002310 BK Virus, Quantitative PCR, Urine BK QNT URN
Methodology: Quantitative Real-Time Polymerase Chain Reaction
Specimen Required: Collect: Urine.
Specimen Preparation: **CRITICAL STERILE.** Transport 1 mL urine. (Min: 0.5 mL)
Storage/Transport Temperature: Frozen. Submit specimen according to Biological Substance, Category B, shipping guidelines.
Remarks: Specimen source required.
Stability: Ambient: 8 hours; Refrigerated: 72 hours; Frozen: 1 month
CPT Code(s): 87799

8100500 Bladder Tumor Associated Antigen BT REPORT
Methodology: Qualitative Immunoassay
Specimen Required: Collect: Urine.
Specimen Preparation: Transport 2 mL urine.
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Bladder washings, plasma, serum, or whole blood.
Stability: Ambient: 48 hours; Refrigerated: 1 week; Frozen: 6 months
CPT Code(s): 86294

0050626 Blastomyces Antibodies by CF & ID BLASTO PAN

Methodology:	Semi-Quantitative Complement Fixation/Qualitative 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: 0.25 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 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):	86612 <i>Blastomyces</i> Ab (CF); 86612 <i>Blastomyces</i> Ab (ID)	
0050130	<i>Blastomyces</i> Antibody by CF	BLASTO
Methodology:	Semi-Quantitative Complement Fixation	
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> Contaminated 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):	86612	
0050172	<i>Blastomyces</i> Antibody by ID	BLASTO PPT
Methodology:	Qualitative 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 0.5 mL serum to an ARUP Standard Transport Tube. (Min: 0.1 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> 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):	86612	
2002926	<i>Blastomyces dermatitidis</i> Antigen EIA	BLAST DERM
Methodology:	Quantitative Enzyme Immunoassay	
Specimen Required:	<u>Collect:</u> Random urine. OR plain red, serum separator tube, or green (sodium or lithium heparin). Also acceptable: CSF or BAL. <u>Specimen Preparation:</u> Transfer 2 mL urine, serum, or plasma to an ARUP Standard Transport Tube. (Min: 1.5 mL) <u>Storage/Transport Temperature:</u> Refrigerated. Also acceptable: Room temperature or frozen. <u>Unacceptable Conditions:</u> EDTA plasma. <u>Stability:</u> Ambient: 1 week; Refrigerated: 1 month; Frozen: Indefinitely	
CPT Code(s):	87449-90	
0062224	<i>Blastomyces dermatitidis</i> Identification by DNA Probe	MC BP
Methodology:	Nucleic Acid Probe	
Specimen Required:	<u>Collect:</u> Actively growing fungal isolate in pure culture. <u>Specimen Preparation:</u> Transport sealed container with pure culture on non-blood containing fungal medium. <u>Storage/Transport Temperature:</u> Room temperature. Submit specimen according to Biological Substance, Category B, shipping guidelines. Remarks: Specimen source required. Indicate isolate identification. Results may be delayed if growth of the organism is inadequate. <u>Unacceptable Conditions:</u> Mixed or non-viable organisms. Agar plate. Frozen specimens. <u>Stability:</u> Ambient: 2 weeks; Refrigerated: 2 weeks; Frozen: Unacceptable	
CPT Code(s):	87149	
2003417	Bleeding Disorders (Common)	BLEED COM
Methodology:	Microlatex Particle-Mediated Immunoassay, Platelet Agglutination, Electromagnetic Mechanical Clot Detection	
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 4 mL platelet-poor plasma to an ARUP Standard Transport Tube. (Min: 2 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> Serum. Non-frozen or hemolyzed specimens. <u>Stability:</u> Ambient: 4 hours; Refrigerated: Unacceptable; Frozen: 2 weeks	
CPT Code(s):	85240 F8; 85246 vWF/AG; 85245 vWF/RCF; 85250 Factor IX ; 85270 Factor XI; 85610 PT; 85730 PTT	
2003947	Bleeding Disorders (Uncommon) with Reflex to Factor XIII 1:1 Mix and/or Fibrinogen Antigen	BLEED UCOM
Methodology:	Electromagnetic Mechanical Clot Detection, Solubility, Radial Immunodiffusion	
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 8 mL platelet-poor plasma to ARUP Standard Transport Tubes. (Min: 6 mL) <u>Storage/Transport Temperature:</u> CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered. <u>Unacceptable Conditions:</u> Serum. Non-frozen or hemolyzed specimens. <u>Stability:</u> Ambient: 4 hours; Refrigerated: Unacceptable; Frozen: 2 weeks	
CPT Code(s):	85610 PT; 85730 PTT; 85210 Factor II; 85220 Factor V; 85230 Factor VII; 85260 Factor X; 85291 Factor XIII: if reflexed add factor 13 1:1 mix 85291; 85384 Fibrinogen; if reflexed add 85385 Fibrinogen Antigen	
0060102	Blood Culture	MC BLD
Methodology:	Bactec® continuous monitoring system. Standard reference procedures for identification of aerobic and anaerobic microorganisms	
Specimen Required:	<u>Patient Preparation:</u> Aseptic draw. <u>Collect:</u> Bactec® aerobic resin bottle and standard anaerobic bottle. For infants, use pediatric bottle. <u>Specimen Preparation:</u> Transfer blood to a Bactec® aerobic resin bottle and standard anaerobic bottle using aseptic techniques, as defined for blood culture collection. Site of specimen draw is required (e.g. left antecubital, A-line, etc). Adult minimum: 3 mL blood (aerobic: 8-10 mL recommended, anaerobic: 5-7 mL recommended).	

Pediatric minimum: 1 mL blood (1-3 mL recommended).

*Low volume will result in decreased recovery of pathogens.

Storage/Transport Temperature: **CRITICAL ROOM TEMPERATURE.** Submit specimen according to Biological Substance, Category B, shipping guidelines.

Remarks: Clients will be notified of positive cultures. Note in the order if the patient is suspected of having *Bartonella*, *Brucella*, or any other unusual organism. Refer to *Brucella* Culture (ARUP test code 0060159) or *Legionella* Species Culture (ARUP test code 0060113) for additional information.

Unacceptable Conditions: More than 4 blood culture sets per 24 hours.

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

CPT Code(s): 87040

0060060 Blood Culture, AFB MC BAFB

Methodology: BACTEC® Continuous Monitoring System.
Standard reference procedures for identification and/or DNA Sequencing

Specimen Required: Patient Preparation: Aseptic draw.
Collect: Whole blood in yellow (SPS) (ARUP Supply #24964) in Bactec® Myco/F Lytic bottle (ARUP Supply # 31916).
OR bone marrow in yellow (SPS) (ARUP Supply # 24964).
Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787.

Specimen Preparation: Whole Blood: Transport 7 mL in tube or 5 mL bottle. (Min: 1 mL)

OR Bone Marrow: Transport 7 mL in tube. (Min: 0.5 mL)

Storage/Transport Temperature: **CRITICAL ROOM TEMPERATURE.** Submit specimen according to Biological Substance, Category B, shipping guidelines.

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

CPT Code(s): 87116

0060024 Blood Culture, AFB & Fungal MC BLDAF

Methodology: BACTEC® Continuous Monitoring System.
Standard reference procedures for identification and/or DNA Sequencing

Specimen Required: Patient Preparation: Aseptic draw.
Collect: Whole blood in yellow (SPS) (ARUP Supply #24964) in Bactec® Myco/F Lytic bottle (ARUP Supply # 31916).
OR bone marrow in yellow (SPS) (ARUP Supply # 24964).
Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787.

Specimen Preparation: Whole Blood: Transport 7 mL in tube or 5 mL bottle. (Min: 1 mL)

OR Bone Marrow: Transport 7 mL in tube. (Min: 0.5 mL)

Storage/Transport Temperature: **CRITICAL ROOM TEMPERATURE.** Submit specimen according to Biological Substance, Category B, shipping guidelines.

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

CPT Code(s): 87103 Fungal culture, blood; 87116 AFB culture

0060070 Blood Culture, Fungal MC BFUNG

Methodology: BACTEC® Continuous Monitoring System.
Standard reference procedures for identification and/or DNA Sequencing

Specimen Required: Patient Preparation: Aseptic draw.
Collect: Whole blood in yellow (SPS) (ARUP Supply #24964) in Bactec® Myco/F Lytic bottle (ARUP Supply # 31916).
OR bone marrow in yellow (SPS) (ARUP Supply # 24964).
Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787.

Specimen Preparation: Whole Blood: Transport 7 mL in tube or 5 mL bottle. (Min: 1 mL)

OR Bone Marrow: Transport 7 mL in tube. (Min: 0.5 mL)

Storage/Transport Temperature: **CRITICAL ROOM TEMPERATURE.** Submit specimen according to Biological Substance, Category B, shipping guidelines.

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

CPT Code(s): 87103

2004741 Blood Group (5 Minor Antigens) Genotyping by Bead Array BLD GROUP5

Methodology: Polymerase Chain Reaction/Bead Array

Specimen Required: Collect: Lavender (EDTA).
Specimen Preparation: Transfer 7 mL whole blood to ARUP Standard Transport Tubes. (Min: 2 mL) Specimen must be labeled with patient's name, date of birth, and the date and time of draw.

Storage/Transport Temperature: Refrigerated.

Unacceptable Conditions: Frozen specimens.

Stability: Ambient: 72 hours; Refrigerated: 2 weeks; Frozen: Unacceptable

CPT Code(s): 83891 Isolation; 83892 Digestion; 83900 Multiplex amplification; 83901 x16 Additional amplification; 83914 x25 Mutation identification; 83909 Separation and identification; 83912 Interpretation and report - Additional CPT code modifiers 4H (Kell) or 4Z (blood typing) may be required.

2004743 Blood Group (9 Minor Antigens) Genotyping by Bead Array BLD GROUP9

Methodology: Polymerase Chain Reaction/Bead Array

Specimen Required: Collect: Lavender (EDTA).
Specimen Preparation: Transfer 7 mL whole blood to ARUP Standard Transport Tubes. (Min: 2 mL) Specimen must be labeled with patient's name, date of birth, and the date and time of draw.

Storage/Transport Temperature: Refrigerated.

Unacceptable Conditions: Frozen specimens.

Stability: Ambient: 72 hours; Refrigerated: 2 weeks; Frozen: Unacceptable

CPT Code(s): 83891 Isolation; 83892 Digestion; 83900 x2 Multiplex amplification; 83901 x21 Additional amplification; 83914 x31 Mutation identification; 83909 Separation and identification; 83912 Interpretation and report - Additional CPT code modifiers 4H (Kell) or 4Z (blood typing) may be required.

2004739 Blood Group (ABO & 8 Minor Antigens) Genotyping by Microarray BLD GROUP8

Methodology:	Polymerase Chain Reaction/ASH Microarray	
Specimen Required:	<u>Collect:</u> Lavender (EDTA). <u>Specimen Preparation:</u> Transfer 7 mL whole blood to ARUP Standard Transport Tubes. (Min: 2 mL) Specimen must be labeled with patient's name, date of birth, and date and time of draw. <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Frozen specimens. <u>Stability:</u> Ambient: 72 hours; Refrigerated: 2 weeks; Frozen: Unacceptable	
CPT Code(s):	83890 Isolation; 83892 Digestion; 83898 Amplification; 83900 x2 Multiplex amplification; 83901 x30 Additional amplification; 88386 Microarray, 250-500 probes; 83912 Interpretation and report	
0051433	Bloom (BLM) 2281del6/ins7 Mutation	BLM
Methodology:	Polymerase Chain Reaction/ASPE Bead Array	
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; 83892 x2 Enzymatic digestion; 83898 Amplification; 83914 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.	
0051434	Bloom (BLM) 2281del6/ins7 Mutation, Fetal	BLM FE
Methodology:	Polymerase Chain Reaction/ASPE Bead Array	
Specimen Required:	<u>Collect:</u> 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 (K ₂ EDTA), or yellow (ACD Solution A or B). <u>Specimen Preparation:</u> 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) <u>Storage/Transport Temperature:</u> 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. <u>Stability:</u> Fetal Specimen: Ambient: 48 hours; Refrigerated: Unacceptable; Frozen: Unacceptable Maternal Cell Contamination Specimen: Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable	
CPT Code(s):	83891 Isolation; 83892 x2 Digestion; 83898 Amplification; 83914 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.	
0060108	Body Fluid Culture (Includes Gram Stain 0060101)	MC BF
Methodology:	Standard reference procedures for bacterial stain, aerobic culture, and identification. Anaerobe culture performed on properly collected specimens	
Specimen Required:	<u>Collect:</u> Aspirate of amniotic, culdocentesis, pericardial, peritoneal, synovial, thoracentesis, or fluid. Also acceptable: Body fluid collected in blood culture bottle(s), accompanied by original fluid (if possible). <u>Specimen Preparation:</u> Transfer aspirate to a sterile-capped syringe (needle removed), sterile tube, sterile container, or anaerobe gel transport tube. Place each specimen in an individual sealed bag. <u>Storage/Transport Temperature:</u> Room temperature. Send to ARUP immediately. Submit specimen according to Biological Substance, Category B, shipping guidelines. Remarks: Specimen source required. Client will be notified of positive stain/culture. Anaerobe Culture (ARUP test code 0060143) will be performed on properly collected and transported specimens. <u>Unacceptable Conditions:</u> Specimens submitted in anticoagulant other than SPS. Syringes with needle attached. <u>Stability:</u> Ambient: 24 hours; Refrigerated: Unacceptable; Frozen: Unacceptable	
CPT Code(s):	87070	
0060103	Bone Culture	MC BONE
Methodology:	Standard reference procedures for aerobic bacterial culture and identification	
Specimen Required:	<u>Collect:</u> Bone. <u>Specimen Preparation:</u> Avoid complete drying of specimen. Transfer bone to a sterile container and moist, sterile gauze. <u>Storage/Transport Temperature:</u> Room temperature. Send to ARUP immediately. Submit specimen according to Biological Substance, Category B, shipping guidelines. Remarks: Specimen source preferred. <u>Unacceptable Conditions:</u> Dry specimens. <u>Stability:</u> Ambient: 24 hours; Refrigerated: Unacceptable; Frozen: Unacceptable	
CPT Code(s):	87070	
0060104	Bone Marrow Culture	MC BM
Methodology:	Standard reference procedures for aerobic bacterial culture and identification	
Specimen Required:	<u>Collect:</u> Aspirate in sterile SPS Vacutainer® tube (ARUP Supply #24964). Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787. OR biopsy. <u>Specimen Preparation:</u> Aspirate: Transport 1 mL. (Min: 0.5 mL) OR Biopsy: Transfer to a sterile container. <u>Storage/Transport Temperature:</u> Room temperature. Send to ARUP immediately. Submit specimen according to Biological Substance, Category B, shipping guidelines.	

Remarks: Specimen source required.
For AFB and fungal culture order Blood Culture, AFB & Fungal (ARUP test code 0060024).
Unacceptable Conditions: Specimens submitted in anticoagulant other than SPS. Dry specimens.
Stability: Ambient: 24 hours; Refrigerated: Unacceptable; Frozen: Unacceptable

CPT Code(s): 87070

Bone Marrow Services

Methodology: Microscopic Exam

Specimen Required: Collect: Contact your ARUP Business Development Manager or the Hematopathology Department at (800) 242-2787 for more information.

Bone marrow in lavender (EDTA) or pink (K₂EDTA).

Specimen Preparation: Transport 5 mL bone marrow (Min: 5 mL).

AND transport 2 unfixed bone marrow aspirate slides for each stain requested (Min: 2 slides/stain).

Storage/Transport Temperature: Room temperature.

Remarks: Collection/Submission instructions must be followed. Submit clinical history and a preliminary report. If special studies are anticipated such as cytogenetics, flow cytometry, etc., submit additional specimens in appropriate anticoagulant/fixative if required.

Unacceptable Conditions: Specimens older than 24 hours. Clotted or hemolyzed specimens.

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

CPT Code(s): Varies, depending upon actual testing performed.

0070053

Bone Specific Alkaline Phosphatase

BSAP

Methodology: Quantitative 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: Frozen.

Unacceptable Conditions: Grossly hemolyzed specimens.

Stability: After separation from cells: Ambient: 2 hours; Refrigerated: 48 hours; Frozen: 2 months

CPT Code(s): 84080

2001774

***Bordetella pertussis* Antibodies, IgA & IgG by ELISA with Reflex to Immunoblot**

BORDPAN2

Methodology: Semi-Quantitative Enzyme-Linked Immunosorbent Assay/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: 0.3 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, 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): 86615 x2 *Bordetella* IgA and IgG; if reflexed, add 86615 for each *Bordetella* Immunoblot

2001775

***Bordetella pertussis* Antibodies, IgA, IgG, and IgM by ELISA with Reflex to Immunoblot**

BORDPAN3

Methodology: Semi-Quantitative Enzyme-Linked Immunosorbent Assay/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: 0.3 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, or severely lipemic specimens.

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

CPT Code(s): 86615 x3 *Bordetella* (IgA, IgG, & IgM); if reflexed, add 86615 for each *Bordetella* Immunoblot

2004328

***Bordetella pertussis* Antibodies, IgA, IgG, & IgM by Immunoblot**

BORD BLOTS

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)

Storage/Transport Temperature: Refrigerated.

Unacceptable Conditions: Heat-inactivated specimens.

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

CPT Code(s): 86615 x3

2001784

***Bordetella pertussis* Antibodies, IgG and IgM by ELISA with Reflex to Immunoblot**

BORDPAN

Methodology: Semi-Quantitative Enzyme-Linked Immunosorbent Assay/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: 0.3 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, or severely lipemic specimens.

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

CPT Code(s): 86615 x2 *Bordetella* (IgG & IgM); if reflexed add 86615 for each *Bordetella* Immunoblot

2004316

***Bordetella pertussis* Antibody, IgA by Immunoblot**

BORDA BLOT

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: Contaminated or heat-inactivated specimens.
Stability: After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year
86615

CPT Code(s):

2005268 *Bordetella pertussis* Antibody, IgG by ELISA **BORDIGG**
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: 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): 86615

2001768 *Bordetella pertussis* Antibody, IgG by ELISA with Reflex to Immunoblot **BORDG**
Methodology: Semi-Quantitative Enzyme-Linked Immunosorbent Assay/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, 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): 86615 *Bordetella* IgG; if reflexed add 86615 *Bordetella* IgG Immunoblot

2004327 *Bordetella pertussis* Antibody, IgG by Immunoblot **BORDG BLOT**
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: Heat-inactivated specimens.
Stability: After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year
CPT Code(s): 86615

2001769 *Bordetella pertussis* Antibody, IgM by ELISA with Reflex to Immunoblot **BORDM**
Methodology: Semi-Quantitative Enzyme-Linked Immunosorbent Assay/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, 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): 86615 *Bordetella* IgM; if reflexed add 86615 for *Bordetella* IgM Immunoblot

2004326 *Bordetella pertussis* Antibody, IgM by Immunoblot **BORDM BLOT**
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: Heat-inactivated specimens.
Stability: After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year
CPT Code(s): 86615

0065078 *Bordetella pertussis* by PCR **BPRT**
Methodology: Polymerase Chain Reaction
Specimen Required: Collect: Respiratory specimens on rayon or Dacron® swab, or direct respiratory specimen such as BAL, respiratory aspirate, or sputum. Specimen source is required.
Storage/Transport Temperature: 2 mL respiratory specimen on swab or direct respiratory specimen should be sent in sterile container, or in viral transport media (Microtest M4 or UTM) (ARUP supply #12884), frozen. (Min: 0.5 mL) Submit specimen according to Biological Substance, Category B, shipping guidelines.
Unacceptable Conditions: Calcium-alginate swabs (shown to inhibit PCR). Respiratory aspirates in collection containers with tubing.
Stability: Ambient: 4 hours; Refrigerated: 2 days; Frozen: 2 weeks
CPT Code(s): 87798

0060117 *Bordetella pertussis* Culture **MC PERT**
Methodology: Standard reference procedures for *Bordetella pertussis* culture and identification
Specimen Required: Collect: Nasopharyngeal swab, nasal aspirate or washing.
DFA is suggested in addition to culture. If both culture and DFA are ordered, two swabs or swab plus slides are required.
Specimen Preparation: **Nasopharyngeal Swab:** Place swab in Regan-Lowe transport media and incubate for 24-48 hours at 35°C (ARUP Supply# 24962). Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787 or send directly without incubation. Also acceptable: Place swab in Amies with charcoal media.
OR Aspirate or Washing: Transfer to a sterile container.
Storage/Transport Temperature: Room temperature or refrigerated. Submit specimen according to Biological Substance, Category B, shipping guidelines.

	<p>Remarks: Specimen source preferred. Unacceptable Conditions: Sputum. Stability: Incubated Regan-Lowe: Ambient: 4 days; Refrigerated: 4 days; Frozen: Unacceptable Unincubated Regan-Lowe, Amies swab, Aspirate or Washing: Ambient: 48 hours; Refrigerated: 48 hours; Frozen: Unacceptable</p>	
CPT Code(s):	87081 presumptive identification. If definitive identification required, add 87077.	
2004667	Bordetella pertussis DFA	PERTFA
Methodology:	Direct Fluorescent Antibody Stain	
Specimen Required:	<p><u>Collect:</u> Nasopharyngeal swab in Regan-Lowe transport media (ARUP Supply# 24962) or Amies with charcoal. Also acceptable: Nasal washing or aspirate in sterile container or two prepared slides from nasopharyngeal swab. Source of specimen is preferred. <u>Specimen Preparation:</u> Leave swab in Regan-Lowe, incubate 24-48 hours at 35°C or send without incubation. OR prepare duplicate slides and label SLIDE with patient name and identifying number. OR transport media or washings. If both culture and DFA are ordered, two swabs or swab plus slides are required. <u>Storage/Transport Temperature:</u> Room temperature or refrigerated. Submit specimen according to Biological Substance, Category B, shipping guidelines. <u>Unacceptable Conditions:</u> Sputum. Dry swabs. Improper labeling of slide for DFA. <u>Stability:</u> Washings/aspirate: Ambient: 48 hours; Refrigerated: 48 hours; Frozen: Unacceptable. Regan-Lowe: Ambient: 4 days; Refrigerated: 4 days; Frozen: Unacceptable. Slides: Ambient: 1 week; Refrigerated: 1 week; Frozen: 1 month</p>	
CPT Code(s):	87265	
0065080	Bordetella pertussis/parapertussis by PCR	BORD PCR
Methodology:	Qualitative Polymerase Chain Reaction	
Specimen Required:	<p><u>Collect:</u> Respiratory specimen: aspirate, bronchoalveolar lavage (BAL), swab or sputum. <u>Specimen Preparation:</u> Fluid: Transfer 2 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. Swabs: Place in viral transport media. <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> Calcium-alginate swabs. Respiratory aspirates in collection containers with tubing. <u>Stability:</u> Ambient: 4 hours; Refrigerated: 5 days; Frozen: 2 weeks</p>	
CPT Code(s):	87801	
0091330	Boron, Serum or Plasma	BORON SP
Methodology:	Quantitative Inductively Coupled Plasma/Optical Emission Spectrometry	
Specimen Required:	<p><u>Collect:</u> Royal blue, plastic (trace metal-free; EDTA) or royal blue, plastic (trace metal-free; no additive). <u>Specimen Preparation:</u> Separate from cells within 2 hours of draw. 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: 0.7 mL) <u>Storage/Transport Temperature:</u> Refrigerated. Also acceptable: Room temperature or frozen. <u>Unacceptable Conditions:</u> Glass containers or separator tubes. <u>Stability:</u> Ambient: 1 month; Refrigerated: 1 month; Frozen: 1 month</p>	
CPT Code(s):	83018	
0091331	Boron, Urine	BORON URN
Methodology:	Quantitative Inductively Coupled Plasma /Optical Emission Spectrometry	
Specimen Required:	<p><u>Patient Preparation:</u> High concentrations of gadolinium are known to interfere with most metals tests. If gadolinium-containing contrast media has been administered, a specimen cannot be collected for 48 hours. <u>Collect:</u> Random urine in a plastic trace metal-free or acid-washed container. <u>Specimen Preparation:</u> Transfer 6 mL urine to ARUP Trace Element-Free Transport Tubes (ARUP supply #43116). Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787. (Min: 2.7 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Glass containers. <u>Stability:</u> Ambient: 1 month; Refrigerated: 1 month; Frozen: 1 month</p>	
CPT Code(s):	83018	
0050254	Borrelia burgdorferi Antibodies, IgG & IgM by Western Blot	LYME WB
Methodology:	Qualitative Western Blot	
Specimen Required:	<p><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> CSF or 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)</p>	
CPT Code(s):	86617 Lyme IgG; 86617 Lyme IgM	
0055260	Borrelia burgdorferi Antibodies, IgG & IgM by Western Blot (CSF)	LYME WBCSF
Methodology:	Qualitative Western Blot	
Specimen Required:	<p><u>Collect:</u> CSF. <u>Specimen Preparation:</u> Transfer 3 mL CSF to an ARUP Standard Transport Tube. (Min: 2 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)</p>	
CPT Code(s):	86617 <i>B. burgdorferi</i> IgG WB; 86617 <i>B. burgdorferi</i> IgM WB	
0050216	Borrelia burgdorferi Antibodies, Total by ELISA	LYME EIA

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 2 mL serum to an ARUP Standard Transport Tube. (Min: 0.1 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> CSF. 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):	86618	
0099483	<i>Borrelia burgdorferi</i> Antibodies, Total by ELISA (CSF)	LYME CSF
Methodology:	Semi-Quantitative Enzyme-Linked Immunosorbent Assay	
Specimen Required:	<u>Collect:</u> CSF. <u>Specimen Preparation:</u> Transfer 3 mL CSF to an ARUP Standard Transport Tube. (Min: 0.5 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):	86618	
0050267	<i>Borrelia burgdorferi</i> Antibodies, Total by ELISA with Reflex to IgG & IgM by Western Blot (Early Disease)	LYME ACUTE
Methodology:	Semi-Quantitative Enzyme-Linked Immunosorbent Assay/Qualitative Western Blot	
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> CSF or 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):	86618 <i>B. burgdorferi</i> total Ab. IgG/IgM; if reflexed, add 86617 <i>B. burgdorferi</i> Western blot IgG and 86617 <i>B. burgdorferi</i> Western blot IgM	
0050255	<i>Borrelia burgdorferi</i> Antibody, IgG by Western Blot	LYME G WB
Methodology:	Qualitative Western Blot	
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> CSF or plasma. Contaminated, heat-inactivated, hemolyzed, 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):	86617	
0055259	<i>Borrelia burgdorferi</i> Antibody, IgG by Western Blot (CSF)	LYMEGWBCSF
Methodology:	Qualitative Western Blot	
Specimen Required:	<u>Collect:</u> CSF. <u>Specimen Preparation:</u> Transfer 3 mL CSF to an ARUP Standard Transport Tube. (Min: 2 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):	86617	
0050253	<i>Borrelia burgdorferi</i> Antibody, IgM by Western Blot	LYME M WB
Methodology:	Qualitative Western Blot	
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> CSF or 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):	86617	
0055258	<i>Borrelia burgdorferi</i> Antibody, IgM by Western Blot (CSF)	LYMEMWBCSF
Methodology:	Qualitative Western Blot	
Specimen Required:	<u>Collect:</u> CSF. <u>Specimen Preparation:</u> Transfer 3 mL CSF to an ARUP Standard Transport Tube. (Min: 2 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):	86617	
0051044	<i>Borrelia burgdorferi</i> C6 Peptide Antibodies, Total by ELISA	C6 PEP
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: 0.1 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> CSF. 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):	86618	

0051046	<i>Borrelia burgdorferi</i> C6 Peptide Antibodies, Total by ELISA (CSF)	C6 PEP CSF
Methodology:	Semi-Quantitative Enzyme-Linked Immunosorbent Assay	
Specimen Required:	Collect: CSF. Specimen Preparation: Transfer 3 mL CSF to an ARUP Standard Transport Tube. (Min: 0.3 mL) Storage/Transport Temperature: Refrigerated. Remarks: Indicate source on test requisition. 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):	86618	
0051043	<i>Borrelia burgdorferi</i> C6 Peptide Antibodies, Total by ELISA with Reflex to IgG & IgM by Western Blot	C6 ACUTE R
Methodology:	Semi-Quantitative Enzyme-Linked Immunosorbent Assay/Qualitative Western Blot	
Specimen Required:	Collect: Serum separator tube. Specimen Preparation: Transfer 2 mL serum to an ARUP Standard Transport Tube. (Min: 0.1 mL) Storage/Transport Temperature: Refrigerated. Unacceptable Conditions: CSF. Contaminated, heat-inactivated, hemolyzed or lipemic specimens. Stability: After separation from cells: Ambient 48 hours; Refrigerated: 2 weeks; Frozen: 1 year	
CPT Code(s):	86618 C6 Peptide; if positive add, 86617 x2 Lyme IgG/IgM	
0051045	<i>Borrelia burgdorferi</i> C6 Peptide Antibodies, Total by ELISA with Reflex to IgG by Western Blot	C6 CHRON R
Methodology:	Semi-Quantitative Enzyme-Linked Immunosorbent Assay/Qualitative Western Blot	
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: 0.2 mL) Storage/Transport Temperature: Refrigerated. Unacceptable Conditions: CSF. Contaminated, heat-inactivated, hemolyzed or lipemic specimens. Stability: After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year	
CPT Code(s):	86618 C6 Peptide; if positive, add 86617 Lyme IgG	
0050268	<i>Borrelia burgdorferi</i> Total Antibodies, IgG and/or IgM by ELISA with Reflex to IgG by Western Blot (Late Disease)	LYME CHRO
Methodology:	Semi-Quantitative Enzyme-Linked Immunosorbent Assay/Qualitative Western Blot	
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: 0.1 mL) Storage/Transport Temperature: Refrigerated. Unacceptable Conditions: CSF or 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):	86618 <i>B. burgdorferi</i> total Ab. IgG/IgM; if reflexed, add 86617 <i>Borrelia burgdorferi</i> Western blot IgG	
0093170	<i>Borrelia hermsii</i> Antibody Panel, IFA	BORRELIA
Methodology:	Immunofluorescence Assay	
Specimen Required:	Collect: Plain red. Specimen Preparation: Transport 1 mL serum. (Min: 0.25 mL) Storage/Transport Temperature: Refrigerated. Unacceptable Conditions: CSF. Stability: Ambient: 1 week; Refrigerated: 2 months; Frozen: 3 years	
CPT Code(s):	86619 IgG; 86619 IgM	
0055570	<i>Borrelia</i> species DNA Detection by PCR (Lyme Disease)	LYMEPCR
Methodology:	Qualitative Polymerase Chain Reaction	
Specimen Required:	Collect: Lavender (EDTA). OR CSF, synovial fluid, or skin punch biopsy. Specimen Preparation: Separate serum or plasma from cells. Transfer 1 mL serum, plasma, CSF or synovial fluid to a sterile container. (Min: 0.5 mL) Skin Punch: Snap freeze immediately and transport on dry ice. Storage/Transport Temperature: Frozen. Submit specimen according to Biological Substance, Category B, shipping guidelines. Remarks: Specimen source required. Unacceptable Conditions: Heparinized specimens. Frozen whole blood. Clotted or severely lipemic specimens. Stability: Tissue: Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen: 1 year All Others: Ambient: 8 hours; Refrigerated: 72 hours; Frozen: 1 year	
CPT Code(s):	87476	
2002498	BRAF codon 600 Mutation Detection by Pyrosequencing	BRAF PCR
Methodology:	Polymerase Chain Reaction/Pyrosequencing	
Specimen Required:	Collect: Tumor tissue. Specimen Preparation: Formalin fix (10% neutral buffered formalin) and paraffin embed tissue. Protect from excessive heat. Transport tissue block or 5 unstained 5 microns slides. (Min: 3 slides). Storage/Transport Temperature: Room temperature. Ship in cooled container during summer months. Remarks: Include surgical pathology report. Unacceptable Conditions: No tumor in tissue. Specimens fixed/processed in alternative fixatives (alcohol, Prefer®). Frozen specimens. Decalcified specimens. Stability: Ambient: Indefinitely; Refrigerated: Indefinitely; Frozen: Unacceptable	
CPT Code(s):	88381 Microdissection; 83907 Lysis; 83898 Amplification; 83904 Sequencing; 83912 Interpretation and report. Additional CPT code modifiers may be required for procedures performed to test oncologic or inherited disorders.	
0051750	BRAF Codon 600 Mutation Detection with Reflex to <i>MLH1</i> Promoter Methylation	BRAF RFLX
Methodology:	Polymerase Chain Reaction/Pyrosequencing	

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

CPT Code(s): 83907 Lysis; 83831 Microdissection; 83904 Sequencing; 83898 Amplification; 83912 Interpretation and report; if reflexed, add 83896 x2 Nucleic Acid Probes; 83898 x2 Amplification; 83912 Interpretation and report. Additional CPT code modifiers may be required for procedures performed to test oncologic or inherited disorders.

2003472 Breast 2 (GCDFP-15) by Immunohistochemistry BRST2 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

2005451 Breast Cancer Biomarkers Profile, Quantitative by PCR BRST MARK

Methodology: Reverse Transcription/Quantitative Polymerase Chain Reaction

Specimen Required: Collect: Tumor tissue.
Specimen Preparation: Formalin fix (10% neutral buffered formalin) and paraffin embed tissue. Protect from excessive heat.
Storage/Transport Temperature: Room temperature or refrigerated. Ship in cooled container during summer months.
Remarks: Surgical report requested. Direct punches may be required to complete testing. Client will be contacted for permission if a direct punch is required. Tissue block will be returned after testing.
Unacceptable Conditions: Specimens with less than 75 percent tumor. Frozen specimens. Specimens fixed/processed in alternative fixatives (alcohol, Prefer®) or heavy metal fixatives (B-4 or B-5). Decalcified specimens.
Stability: Ambient: Indefinitely; Refrigerated: Indefinitely; Frozen: Unacceptable

CPT Code(s): 83907 Lysis; 83891 Isolation; 83902 Reverse transcription; 83898 x18 Amplification; 83912 Interpretation and report - Additional CPT code modifiers may be required for procedures performed to test for oncologic or inherited disorders.

2003445 Breast Carcinoma b72.3 by Immunohistochemistry B72.3 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

0091291 Bretylium, Serum or Plasma BRETYLIUM

Methodology: High Performance Liquid 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 20-25°C. (Min: 0.5 mL) Submit sample in an ARUP Standard Transport Tube.
Unacceptable Conditions: Serum separator tubes.
Stability: Ambient: 2 weeks; Refrigerated: 2 weeks; Frozen: 2 months

CPT Code(s): 80299

0096065 Bretylium, Urine BRETYLIUM

Methodology: High Performance Liquid Chromatography

Specimen Required: Collect: Random urine.
Storage/Transport Temperature: 2 mL urine at 20-25 (Min: 1.0 mL) Submit sample in an ARUP Standard Transport Tube.
Stability: Ambient: 2 weeks; Refrigerated: 2 weeks; Frozen: 2 months

CPT Code(s): 80299

0090035 Bromide BR

Methodology: Quantitative Spectrophotometry

Specimen Required: Collect: Plain red. Also acceptable: Lavender (EDTA) or green (sodium or lithium heparin).
Specimen Preparation: 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: 1 week; Refrigerated: 1 week; Frozen: Indefinitely

CPT Code(s): 80299

0060700 Bronchoscopy Culture MC BAL

Methodology: Quantitative culture. Standard reference procedures for identification.

Specimen Required:	<u>Collect:</u> Lower respiratory material by bronchoscopy (brushings, BAL secretions, or washings). <u>Specimen Preparation:</u> Transfer fluids to a sterile container. 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 required. <u>Stability:</u> Ambient: Unacceptable; Refrigerated: 24 hours; Frozen: Unacceptable	
CPT Code(s):	87071	
2002853	<i>Brucella</i> Antibodies, IgG & IgM by ELISA and Bacterial Agglutination	BRUCELLA
Methodology:	Semi-Quantitative Enzyme-Linked Immunosorbent Assay/Semi-Quantitative Bacterial Agglutination	
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: 0.5 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, hemolyzed, or lipemic specimens. <u>Stability:</u> After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 6 months (avoid repeated freeze/thaw cycles)	
CPT Code(s):	86622 <i>Brucella</i> IgG; 86622 <i>Brucella</i> IgM; 86622 <i>Brucella</i> Antibody	
0050135	<i>Brucella</i> Antibody (Total) by Agglutination	BRUC
Methodology:	Semi-Quantitative Bacterial Agglutination	
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> Contaminated, heat-inactivated, hemolyzed, or severely lipemic specimens. <u>Stability:</u> After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 6 months (avoid repeated freeze/thaw cycles)	
CPT Code(s):	86622	
0060159	<i>Brucella</i> Culture	MC BRUC
Methodology:	Standard reference procedures for <i>Brucella</i> culture and identification	
Specimen Required:	<u>Collect:</u> Blood in sterile SPS Vacutainer® tube for microbiology (ARUP Supply #24964) or Bactec® Blood Culture bottles. Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787. Also acceptable: Abscess, aspirate, body fluid, CSF, or tissues. <u>Specimen Preparation:</u> Adult Blood: Transport 7 mL whole blood. (Min: 3 mL)* Pediatric Blood: Transport 3 mL whole blood. (Min: 1 mL)* OR Abscess, Aspirate, Body fluid, CSF: Transfer to a sterile container. Place each specimen in an individually sealed bag. OR Tissue: Transfer tissue to a sterile container and place on gauze moistened with sterile non-bacteriostatic saline to prevent drying. *Low volume will result in decreased recovery of pathogens. <u>Storage/Transport Temperature:</u> Room temperature. Submit specimen according to Biological Substance, Category B, shipping guidelines. <u>Remarks:</u> Specimen source preferred. <u>Unacceptable Conditions:</u> Swabs. Specimens submitted in anticoagulant other than SPS. Clotted blood specimens. <u>Stability:</u> Ambient: 48 hours; Refrigerated: Unacceptable; Frozen: Unacceptable	
CPT Code(s):	87081 presumptive identification. If definitive identification required, add 87077.	
0092566	Bullous Pemphigoid (180 kDa & 230 kDa) Antigens, IgG	BP180 230G
Methodology:	Enzyme Linked Immunosorbent Assay	
Specimen Required:	<u>Collect:</u> Plain red or serum separator tube. <u>Specimen Preparation:</u> Transfer 2 mL serum to an ARUP Standard Transport Tube. (Min: 0.5 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Hemolyzed or lipemic specimens. <u>Stability:</u> After separation from cells: Ambient: 72 hours; Refrigerated: 3 months; Frozen: Indefinitely	
CPT Code(s):	83516 x2	
2002742	Buprenorphine & Metabolites - Confirmation/Quantitation - Serum/Plasma	BUPREN 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	
2002749	Buprenorphine & Metabolites - Confirmation/Quantitation - Urine	BUPREN 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 to 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	
0099184	Bupropion	BUPROPION

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). <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. Specimen must remain frozen. (Min: 1.5 mL) <u>Storage/Transport Temperature:</u> CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered <u>Remarks:</u> Avoid use of separator tubes and gels. <u>Unacceptable Conditions:</u> Whole blood. Refrigerated or room temperature specimens. <u>Stability:</u> After separation from cells: Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen: 1 month	
CPT Code(s):	80299	
0090193	Bupropion and Metabolite	BUPROP
Methodology:	Quantitative High Performance Liquid Chromatography/Ultraviolet Detection	
Specimen Required:	<u>Collect:</u> Plain red. Also acceptable: Green (sodium heparin). <u>Specimen Preparation:</u> Transfer 3 mL serum or plasma to an ARUP Standard Transport Tube and freeze immediately. (Min: 0.6 mL) <u>Storage/Transport Temperature:</u> CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered. <u>Unacceptable Conditions:</u> Serum separator tubes. <u>Stability:</u> Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen: 6 months	
CPT Code(s):	80299	
0091299	Buspirone Quantitation, Serum or Plasma	BUSPIRON
Methodology:	Quantitative Gas Chromatography	
Specimen Required:	<u>Patient Preparation:</u> Recommended peak draw 40-90 minutes post dose. <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: 1 week; Refrigerated: 2 weeks; Frozen: 17 months	
CPT Code(s):	80299	
0091164	Buspirone, Urine	BUSPIRO U
Methodology:	Gas Chromatography	
Specimen Required:	<u>Collect:</u> Urine, 40-90 minutes post dose. <u>Storage/Transport Temperature:</u> 4 mL urine at 20-25 (Min: 2 mL) Submit sample in an ARUP Standard Transport Tube. <u>Remarks:</u> Recommended peak occurs at 40 to 90 minutes post dose. <u>Stability:</u> Ambient: 7 days; Refrigerated: 14 days; Frozen: 17 months	
CPT Code(s):	82491	
0090980	Butabarbital, Serum or Plasma	BUTABAR SP
Methodology:	Gas Chromatography/Mass Spectrometry	
Specimen Required:	<u>Collect:</u> One 7 mL plain red or lavender (EDTA). <u>Storage/Transport Temperature:</u> 2 mL serum or plasma at 2-8°C. (Min: 1 mL) Submit sample in an ARUP Standard Transport Tube. <u>Unacceptable Conditions:</u> Serum separator tubes. <u>Stability:</u> Ambient: 2 weeks; Refrigerated: 2 weeks; Frozen: 1 year	
CPT Code(s):	82205	
0091170	Butabarbital, Urine	BUTABA UR
Methodology:	Gas Chromatography/Mass Spectrometry	
Specimen Required:	<u>Collect:</u> Urine. <u>Storage/Transport Temperature:</u> 2 mL urine at 2-8°C. (Min: 0.5 mL) Submit sample in an ARUP Standard Transport Tube. <u>Stability:</u> Ambient: 2 weeks; Refrigerated: 2 weeks; Frozen: 1 year	
CPT Code(s):	82205	
0090045	Butalbital	BUTAL
Methodology:	Quantitative Gas Chromatography-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: 0.5 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. <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: 3 months; Refrigerated: 3 months; Frozen: 1 year	
CPT Code(s):	82205	
0091521	Butorphanol, Serum or Plasma - Screen with Reflex to Confirmation/Quantitation	STADOL SP
Methodology:	Qualitative High Performance Liquid Chromatography-Tandem Mass Spectrometry/Quantitative High Performance Liquid Chromatography-Tandem Mass Spectrometry	
Specimen Required:	<u>Collect:</u> Plain red or lavender (EDTA). <u>Specimen Preparation:</u> Separate from cells within 2 hours. Transfer 4 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 1.4 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Separator tubes. <u>Stability:</u> Ambient: 1 week; Refrigerated: 10 days; Frozen: 1 month	
CPT Code(s):	80101 Drug screen, if positive, add 83925	

0091520	Butorphanol, Urine - Screen with Reflex to Confirmation/Quantitation	STADOL UR
Methodology:	Qualitative High Performance Liquid Chromatography-Tandem Mass Spectrometry/Quantitative High Performance Liquid Chromatography-Tandem Mass Spectrometry	
Specimen Required:	<u>Collect:</u> Random urine. <u>Specimen Preparation:</u> Transfer 2 mL urine to an ARUP Standard Transport Tube. (Min: 0.6 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Stability:</u> Ambient: 1 week; Refrigerated: 10 days; Frozen: 1 month	
CPT Code(s):	80101 Drug screen; if positive, add 83925	
0050139	C-1-Esterase Inhibitor Panel	C1 INH PAN
Methodology:	Immunoturbidimetric/Semi-Quantitative Enzyme-Linked Immunosorbent Assay/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 three 1 mL aliquots of serum to individual ARUP Standard Transport Tubes and freeze immediately. (Min: 0.5 mL/tube) <u>Storage/Transport Temperature:</u> CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered. <u>Unacceptable Conditions:</u> Non-frozen specimens. <u>Stability:</u> Refer to individual components.	
CPT Code(s):	86160 Complement C4; 86160 C-1-Esterase inhibitor; 86161 C-1 Esterase inhibitor functional	
0081121	C-Peptide, 24-Hour Urine	CPEP UR
Methodology:	Quantitative Chemiluminescent Immunoassay	
Specimen Required:	<u>Collect:</u> 24-hour urine. Refrigerate during collection. Also acceptable: Random urine (no reference intervals). <u>Specimen Preparation:</u> Transfer 2 mL aliquot from a well-mixed 24-hour urine to an ARUP Standard Transport Tube. (Min: 0.5 mL) <u>Storage/Transport Temperature:</u> Frozen. <u>Stability:</u> Ambient: 2 hours; Refrigerated: 24 hours; Frozen: 1 month	
CPT Code(s):	84681	
0070103	C-Peptide, Serum or Plasma	C PEP
Methodology:	Quantitative Chemiluminescent Immunoassay	
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), 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. Submit specimen in an ARUP Standard Transport Tube. <u>Storage/Transport Temperature:</u> Transport 1 mL serum or plasma, frozen. (Min: 0.5 mL) <u>Unacceptable Conditions:</u> Grossly hemolyzed specimens. <u>Stability:</u> After separation from cells: Ambient: 8 hours; Refrigerated: 2 days; Frozen: 1 month	
CPT Code(s):	84681	
0050180	C-Reactive Protein	CRP
Methodology:	Quantitative Immunoturbidimetric	
Specimen Required:	<u>Collect:</u> Serum separator tube. Also acceptable: Plasma separator tube, green (lithium heparin), lavender (EDTA), or pink (K ₂ EDTA). <u>Specimen Preparation:</u> Allow serum tube to clot completely at room temperature. Separate serum or plasma from cells 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> Hemolyzed specimens. <u>Stability:</u> After separation from cells: Ambient: 8 hours; Refrigerated: 8 days; Frozen: 3 years (if frozen within 24 hours)	
CPT Code(s):	86140	
0050182	C-Reactive Protein, High Sensitivity	HSCRIP
Methodology:	Quantitative Immunoturbidimetric	
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 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: 0.3 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Hemolyzed specimens. <u>Stability:</u> After separation from cells: Ambient: 48 hours; Refrigerated: 2 months; Frozen: 1 year	
CPT Code(s):	86141	
0050181	C-Reactive Protein, Neonatal	CRPN
Methodology:	Immunoassay	
Specimen Required:	<u>Collect:</u> Pediatric tube. <u>Specimen Preparation:</u> Allow specimen to clot completely at room temperature. Separate serum from cells within 2 hours of collection. Transport 0.2 mL serum. (Min: 0.1 mL) <u>Storage/Transport Temperature:</u> Refrigerated or frozen. <u>Unacceptable Conditions:</u> Specimens left at room temperature for more than two hours. Samples exposed to repeated freeze/thaw cycles. Specimens not separated from cells. Lipemic or hemolyzed specimens. <u>Stability:</u> After separation from cells: Ambient: 72 hours; Refrigerated: 8 days; Frozen: 3 years	
CPT Code(s):	86140	
0070416	C-Telopeptide, Beta-Cross-Linked, Serum	CTX
Methodology:	Quantitative Electrochemiluminescent Immunoassay	
Specimen Required:	<u>Patient Preparation:</u> In patients receiving therapy with high biotin doses (i.e. Greater than 5 mg/day), no specimen should be taken until at least 8 hours after the last biotin administration. <u>Collect:</u> Serum separator tube, pink (K ₂ EDTA), or green (sodium heparin). <u>Specimen Preparation:</u> Allow specimen to sit for 15-20 minutes at room temperature for proper clot formation. Centrifuge and separate serum or plasma from cells. 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> Hemolyzed specimens. <u>Stability:</u> After separation from cells: Ambient: 8 hours; Refrigerated: 8 hours; Frozen: 3 months	
CPT Code(s):	82523	
0050140	C1-Esterase Inhibitor	C1ESTER
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> CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered. <u>Unacceptable Conditions:</u> Non-frozen specimens. <u>Stability:</u> After separation from cells: Ambient: 2 hours; Refrigerated: Unacceptable; Frozen: 2 weeks	
CPT Code(s):	86160	
0050141	C1-Esterase Inhibitor Functional	C1 INH F
Methodology:	Semi-Quantitative Enzyme-Linked Immunosorbent Assay	
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 0.5 mL serum or plasma to an ARUP Standard Transport Tube and freeze immediately. (Min: 0.1 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. <u>Stability:</u> After separation from cells: Ambient: 2 hours; Refrigerated: Unacceptable; Frozen: 2 weeks	
CPT Code(s):	86161	
0050301	C1q Binding Assay	C1Q
Methodology:	Semi-Quantitative Enzyme-Linked Immunosorbent Assay	
Specimen Required:	<u>Collect:</u> Plain red. <u>Specimen Preparation:</u> Let stand on clot for two hours. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.3 mL) If ordered in conjunction with a Raji Cell Assay, transfer two 1 mL aliquots of serum 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> Non-frozen specimens. <u>Stability:</u> After separation from cells: Ambient: 2 hours; Refrigerated: Unacceptable; Frozen: 2 weeks (avoid repeated freeze/thaw cycles)	
CPT Code(s):	86332	
2003475	C4D by Immunohistochemistry	C4D 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	
0099675	Cadmium, Blood	CADMIUM B
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, non-essential over-the-counter medications (upon the advice of their physician). <u>Collect:</u> Royal blue (K ₂ EDTA or Na ₂ EDTA). <u>Specimen Preparation:</u> Transport 7 mL whole blood in the original collection tube. (Min: 0.5 mL) <u>Storage/Transport Temperature:</u> Room temperature. <u>Unacceptable Conditions:</u> Heparin anticoagulant. <u>Stability:</u> If the specimen is drawn and stored in the appropriate container, the trace element values do not change with time.	
CPT Code(s):	82300	
0025013	Cadmium Exposure Panel - OSHA	CD EXP
Methodology:	Cadmium, Urine & Blood: Quantitative Inductively Coupled Plasma-Mass Spectrometry/Creatinine Urine: Spectrophotometryβ ₂ Microglobulin Urine: Chemiluminescent Immunoassay	
Specimen Required:	<u>Collect:</u> Royal blue (K ₂ EDTA or Na ₂ EDTA) AND minimum 40 mL urine using spot technique (single void) in an open-top urine collection cup. To avoid contamination, please collect specimens at the beginning of work shift. Blood and urine should be collected the same day. <u>Specimen Preparation:</u> Blood: Transport 7 mL whole blood. Urine for β-2-Microglobulin: Transfer aliquot from original urine collection to an ARUP Standard Transport Tube. Adjust the pH of this specimen immediately after pouring off collection so that the pH is between 6 and 8. Use 1M HCl or 5% NaOH to adjust the urine pH. Label tube as β-2-Microglobulin. Freeze within one hour of collection. Urine for Cadmium: Transfer aliquot from original urine collection to an ARUP Standard Transport Tube. Add 0.1 mL of the 12M HNO ₃ to the aliquot. Label tube as Cadmium. Urine for Creatinine: Transfer aliquot from original urine collection to an ARUP Standard Transport Tube. Label tube as Creatinine. <u>Storage/Transport Temperature:</u> Blood: Refrigerated.	

Urine for β -2-Microglobulin: Frozen.

Urine for Cadmium: Refrigerated.

Urine for Creatinine: Refrigerated.

Unacceptable Conditions: Urine collected within 48 hours after administration of a gadolinium (Gd) containing contrast media (may occur with MRI studies).

Stability: Refer to individual components.

CPT Code(s): 82300 Cadmium, blood; 82300 Cadmium, urine; 82232 β_2 Microglobulin; 82570 Creatinine, Urine

0025040	Cadmium, Urine	CADMIUM 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):	82300	
0090050	Caffeine	CAF
Methodology:	Quantitative EMIT Immunoassay	
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 0.5 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.2 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: 1 week; Refrigerated: 1 week; Frozen: 2 months	
CPT Code(s):	80299	
2002282	CAH 11-Beta Hydroxylase Deficiency Panel	CAH 11-B HYDROX
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). Also acceptable: 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: 0.7 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Stability:</u> Ambient: 24 hours; Refrigerated: 1 week; Frozen: 6 months	
CPT Code(s):	82157 Androstenedione; 83498 17-Hydroxyprogesterone; 84403 Testosterone; 82634 11-Deoxycortisol; 82626 Dehydroepiandrosterone.	
2002283	CAH 21 Hydroxylase Deficiency Panel	CAH 21 HYDROX
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). Also acceptable: 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 and freeze immediately. (Min: 0.6 mL) <u>Storage/Transport Temperature:</u> CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered. <u>Unacceptable Conditions:</u> Refrigerated or room temperature specimens. <u>Stability:</u> After separation from cells: Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen: 6 months	
CPT Code(s):	82157 Androstenedione; 83498 17-Hydroxyprogesterone; 84143 17-Hydroxyprogesterone; 82626 Dehydroepiandrosterone	
0070006	Calcitonin	CALCI
Methodology:	Quantitative Chemiluminescent Immunoassay	
Specimen Required:	<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 2 mL serum or plasma to an ARUP Standard Transport Tube and freeze immediately. (Min: 1 mL) <u>Storage/Transport Temperature:</u> CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered. <u>Unacceptable Conditions:</u> EDTA plasma. Grossly hemolyzed or lipemic specimens. <u>Stability:</u> After separation from cells: Ambient: 2 hours; Refrigerated: Unacceptable; Frozen: 3 months	
CPT Code(s):	82308	
2003481	Calcitonin by Immunohistochemistry	CALCIT 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.	

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

0020135 Calcium, Ionized, Serum IONCA-S
Methodology: Ion-Selective Electrode/pH-Electrode
Specimen Required: Collect: Serum separator tube.
Specimen Preparation: **Do not open the tube or split the specimen. Do not freeze separator tube. Do not expose specimen to air at any time during collection or transport process.** Centrifuge with stopper in place within one hour of collection. Transport 5 mL serum in original serum separator tube. (Min: 0.5 mL)
Place the original serum separator tube into a pressure container for shipping (ARUP Supply #19815). Available online through eSupply using ARUP Connector contact ARUP Client Services at (800) 522-2787. (Container, Infectious Shipping, Small, w/ absorbent material).
Instruction for use: Wrap the primary container that holds the specimen in the absorbent material. Place the primary container and absorbent material in the pressure container. Tighten the screw-cap lid until it engages the tamper seal. Mark the shipping temperature, located on the outside of the pressure container. Place the secondary container in the outer packaging.
Storage/Transport Temperature: Refrigerated. Ship upright in original collection tube. Do not ship on dry ice.
Stability: Ambient: 24 hours; Refrigerated: 1 week; Frozen: Unacceptable

CPT Code(s): 82330

0020140 Calcium, Ionized, Whole Blood IONCA-WB
Methodology: Ion-Selective Electrode/pH-Electrode
Specimen Required: Collect: **Testing available to UUHC clients only.**
Green (sodium or lithium heparin). Collect on ice.
Pediatric Collect: 2 full heparinized capillary tubes (call lab for tube).
Specimen Preparation: **Do not freeze.** Transport minimum 0.5 mL specimen.
Pediatric Specimen Preparation: Transport 2 full heparinized capillary tubes.
Storage/Transport Temperature: Deliver to lab within 10 minutes on wet ice.
Unacceptable Conditions: Frozen or room temperature specimens.
Stability: Ambient: Unacceptable; Refrigerated: 4 hours; Frozen: Unacceptable

CPT Code(s): 82330

0020027 Calcium, Serum or Plasma CA
Methodology: Quantitative Spectrophotometry
Specimen Required: Collect: Serum separator tube or plasma separator tube. Do not use powdered gloves during collection.
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 from patients receiving EDTA therapy or Hypaque. EDTA, citrate, or oxalate.
Stability: After separation from cells: Ambient: 4 hours; Refrigerated: 3 weeks; Frozen: 8 months

CPT Code(s): 82310

0020472 Calcium, Urine UCA
Methodology: Quantitative Spectrophotometry
Specimen Required: Collect: 24-hour urine specimen. Urine **must** be refrigerated during collection. Also acceptable: Random urine.
Specimen Preparation: Adjust pH to 1.5-2.0 by adding 6M HCl in 1 mL increments. 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 and test request form.
Storage/Transport Temperature: Refrigerated.
Stability: Ambient: 48 hours; Refrigerated: 4 days; Frozen: 3 weeks

CPT Code(s): 82340

0099460 Calculi (Stone) Analysis CALCULI
Methodology: Quantitative Reflectance Fourier Transform Infrared Spectroscopy (FTIR)/Quantitative Polarizing Microscopy
Specimen Required: Collect: Calculi specimen.
Specimen Preparation: Air-dry calculi and **transfer to an ARUP Standard Transport Tube.** Larger calculi specimens may be transferred to a clean, empty urine cup (150 mL) or similar container.
Storage/Transport Temperature: Room temperature. Also acceptable: Frozen or refrigerated.
Remarks: Calculi specimens transported in liquid or contaminated with blood require special handling which will delay analysis. Specimens that are wrapped in tape or embedded in wax will delay or prevent analysis and should not be submitted.
Unacceptable Conditions: Any collection or shipping container with a needle attached.
Stability: Ambient: Indefinitely; Refrigerated: Indefinitely; Frozen: Indefinitely

CPT Code(s): 82365

2005231 Calculi (Stone) Analysis with Photo CALCPHOTO
Methodology: Quantitative Reflectance Fourier Transform Infrared Spectroscopy (FTIR)/Quantitative Polarizing Microscopy
Specimen Required: Collect: Calculi specimen greater than 2 mg.
Specimen Preparation: Air dry calculi and **transfer to an ARUP Standard Transport Tube.** Larger calculi specimens may be transported in a clean, empty urine cup (150 mL) or similar container.
Storage/Transport Temperature: Room temperature.
Remarks: Calculi specimens that are transported in liquid and received wet or bloody will be dried for 48-72 hours, which will cause a delay in processing.
Unacceptable Conditions: Specimens that are wrapped in tape or embedded in wax will delay or prevent analysis and should not be submitted.
Stability: Ambient: Indefinitely; Refrigerated: Indefinitely; Frozen: Indefinitely

CPT Code(s): 82365

2003484 Caldesmon by Immunohistochemistry CALDES 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

0098893 California Encephalitis Antibody, IgG by IFA, CSF CAL 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, heat-inactivated, or hemolyzed specimens.
Stability: Ambient: 8 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)

CPT Code(s): 86651

0050508 California Encephalitis Antibody, IgG by IFA, Serum CALIF
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. **Please mark specimens plainly as acute or convalescent.**
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Contaminated, hemolyzed, 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): 86651

0098898 California Encephalitis Antibody, IgM by IFA, CSF CAL 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, heat-inactivated, or hemolyzed specimens.
Stability: Ambient: 8 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)

CPT Code(s): 86651

0098731 California Encephalitis Antibody, IgM by IFA, Serum CAL M SER
Methodology: Semi-Quantitative Indirect Fluorescent Antibody
Specimen Required: Collect: Serum separator tube.
Specimen Preparation: Remove from 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. Heparinized specimens. Contaminated, 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): 86651

2003487 Calponin by Immunohistochemistry CALPON 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

0092303 Calprotectin, Fecal CALPRO
Methodology: Quantitative Enzyme-Linked Immunosorbent Assay
Specimen Required: Collect: Random stool. Collect in a clean unpreserved stool transport vial (ARUP Supply #40910). Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787.
Specimen Preparation: Transport 20 g stool. (Min: 10 g)
Storage/Transport Temperature: Room temperature.
Stability: Ambient: 5 days; Refrigerated: 5 days; Frozen: 1 year

CPT Code(s): 83993

2003490	Calretinin by Immunohistochemistry	CALRET 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	
0058002	Campylobacter Antigen	CAMPY
Methodology:	Qualitative Immunochromatographic Assay	
Specimen Required:	<u>Collect:</u> Stool. <u>Specimen Preparation:</u> Transfer 5 g stool to an unpreserved stool transport vial (ARUP Supply #40910). OR place 5 g stool in enteric transport media (Cary-Blair) within one hour of collection. (ARUP Supply #29799). (Min: 1 g) Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787. <u>Storage/Transport Temperature:</u> Unpreserved Stool: Frozen. Preserved Stool: Refrigerated. Submit specimen according to Biological Substance, Category B, shipping guidelines. <u>Unacceptable Conditions:</u> Specimens in any transport media other than indicated above. <u>Stability:</u> Ambient: Unacceptable; Refrigerated: 4 days; Frozen: 2 weeks	
CPT Code(s):	87899	
0098841	Campylobacter jejuni Antibody, IgG	CAMP JEJ
Methodology:	Semi-Quantitative Indirect Fluorescent Antibody	
Specimen Required:	<u>Collect:</u> Serum separator tube. <u>Specimen Preparation:</u> Separate serum or plasma from cells ASAP or within 2 hours of collection. Transport 1 mL serum. (Min: 0.15 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Stability:</u> Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)	
CPT Code(s):	86625	
0051454	Canavan (ASPA) 4 Mutations, Fetal	ASPA FE
Methodology:	Polymerase Chain Reaction/ASPE Bead Array	
Specimen Required:	<u>Collect:</u> 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 (K ₂ EDTA), or yellow (ACD Solution A or B). <u>Specimen Preparation:</u> 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) <u>Storage/Transport Temperature:</u> 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. <u>Remarks:</u> 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. <u>Stability:</u> Fetal Specimen: Ambient: 48 hours; Refrigerated: Unacceptable; Frozen: Unacceptable Maternal Cell Contamination Specimen: Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable	
CPT Code(s):	83891 Isolation; 83892 x2 Digestion; 83900 Multiplex amplification (first two amplifications); 83901 Additional amplification; 83914 x5 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.	
0051453	Canavan Disease (ASPA) 4 Mutations	ASPA
Methodology:	Polymerase Chain Reaction/ASPE Bead Array	
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; 83892 x2 Enzymatic digestion; 83900 Amplification multiplex (first two amplifications); 83901 Amplification multiplex (each additional amplification) 83914 x5 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.	
0080392	Cancer Antigen 27.29	CA27.29
Methodology:	Quantitative Chemiluminescent Immunoassay	
Specimen Required:	<u>Collect:</u> Plain red or 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) <u>Storage/Transport Temperature:</u> Frozen. <u>Unacceptable Conditions:</u> Plasma. <u>Stability:</u> After separation from cells: Ambient: 8 hours; Refrigerated: 48 hours; Frozen: 3 months	

CPT Code(s): 86300

0080462 **Cancer Antigen 125** **CA125**
Methodology: Quantitative Electrochemiluminescent Immunoassay
Specimen Required: Collect: Plasma separator tube or serum separator tube. Also acceptable: Green (sodium or lithium heparin), lavender (EDTA), or pink (K₂EDTA).
Specimen Preparation: Allow specimen to clot completely at room temperature. Separate serum or plasma from cells ASAP or within 2 hours of collection. Transfer 1 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.5 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Grossly hemolyzed specimens.
Stability: After separation from cells: Ambient: 8 hours; Refrigerated: 5 days; Frozen: 3 months
CPT Code(s): 86304

2003478 **Cancer Antigen 125 by Immunohistochemistry** **CA125 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

0080464 **Cancer Antigen-Breast (CA 15-3)** **CA-BREAST**
Methodology: Quantitative Electrochemiluminescent Immunoassay
Specimen Required: Collect: Serum separator tube or plasma separator tube. Also acceptable: Green (sodium or lithium heparin), lavender (EDTA), or pink (K₂EDTA).
Specimen Preparation: Allow specimen to clot completely at room temperature. Separate serum or plasma from cells ASAP or within 2 hours of collection. Transfer 1 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.5 mL)
Storage/Transport Temperature: Refrigerated.
Stability: After separation from cells: Ambient: 8 hours; Refrigerated: 5 days; Frozen: 3 months
CPT Code(s): 86300

0080461 **Cancer Antigen-GI (CA 19-9)** **CA-GI**
Methodology: Quantitative Electrochemiluminescent Immunoassay
Specimen Required: Collect: Serum separator tube or plasma separator tube. Also acceptable: Green (sodium or lithium heparin), lavender (EDTA), or pink (K₂EDTA).
Specimen Preparation: Allow specimen to clot completely at room temperature. Separate serum or plasma from cells ASAP or within 2 hours of collection. Transfer 1 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.5 mL)
Storage/Transport Temperature: Frozen.
Unacceptable Conditions: Specimens collected in sodium citrate.
Stability: After separation from cells: Ambient: 8 hours; Refrigerated: 5 days; Frozen: 3 months
CPT Code(s): 86301

0020746 **Cancer Antigen-GI (CA 19-9), Body Fluid** **CA-GI FL**
Methodology: Quantitative Electrochemiluminescent Immunoassay
Specimen Required: Collect: Body fluid.
Specimen Preparation: Transport 1 mL body fluid. (Min: 0.5 mL)
Storage/Transport Temperature: Refrigerated.
Remarks: Indicate source on test request form.
Stability: Ambient: 8 hours; Refrigerated: 5 days; Frozen: 3 months
CPT Code(s): 86301

0095200 **Candida albicans Antibodies, IgA, IgG, & IgM by ELISA** **CANDIDA AB**
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
Stability: After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 6 months
CPT Code(s): 86628 x3

0055565 **Candida Antibody by ID** **CAN PPT**
Methodology: Qualitative Immunodiffusion
Specimen Required: Collect: Serum separator tube.
Specimen Preparation: Separate serum from cells ASAP or within 2 hours of collection. Transfer 0.5 mL serum to an ARUP Standard Transport Tube. (Min: 0.15 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Body fluids.
Stability: After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)
CPT Code(s): 86628

0091339 **Canrenone, Serum or Plasma** **CANRENON**
Methodology: Spectrofluorometry

Specimen Required:	<u>Collect:</u> One 7 mL plain red, lavender (EDTA), or pink (K ₂ EDTA). <u>Storage/Transport Temperature:</u> 1 mL serum or plasma at 2-8°C. Protect from light. Submit specimen in an ARUP Amber Transport Tube. <u>Remarks:</u> Sample must be protected from light. <u>Unacceptable Conditions:</u> Specimens not protected from light. <u>Stability:</u> No stabilities are available at this time.	
CPT Code(s):	80299	
0091502	Canrenone, Urine	CANREN UR
Methodology:	Spectrofluorometry	
Specimen Required:	<u>Collect:</u> Random urine. <u>Storage/Transport Temperature:</u> 2 mL urine at 2-8°C. Submit sample in an ARUP Standard Transport Tube. <u>Stability:</u> No stability available at this time.	
CPT Code(s):	80299	
0091166	Carbamazepine - 10,11 Epoxide, Urine	CARB EP U
Methodology:	High Performance Liquid Chromatography	
Specimen Required:	<u>Collect:</u> Random urine. <u>Storage/Transport Temperature:</u> 2 mL urine at 2-8°C. (Min: 0.5 mL) Submit sample in an ARUP Standard Transport Tube. <u>Stability:</u> Ambient: 2 weeks; Refrigerated: 2 weeks; Frozen: 10 months	
CPT Code(s):	80156	
0092211	Carbamazepine Epoxide and Total	CARB EPOXT
Methodology:	Quantitative Liquid Chromatography-Tandem Mass Spectrometry/Quantitative EMIT Immunoassay	
Specimen Required:	<u>Patient Preparation:</u> Obtain trough specimen after steady-state is achieved (3-5 days). Draw within one hour prior to next dose. The epoxide half-life is 6-10 hours. <u>Collect:</u> Plain red. Also acceptable: Lavender (EDTA), pink (K ₂ EDTA or K ₃ EDTA), or green (sodium or lithium heparin). 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 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. <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: 48 hours; Refrigerated: 6 days; Frozen: 1 month	
CPT Code(s):	80156; Carbamazepine, total; 80299 Carbamazepine, Epoxide	
0090615	Carbamazepine, Free and Total	FCARB
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>Storage/Transport Temperature:</u> Refrigerated. <u>Remarks:</u> Separate serum from cells ASAP. <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: 4 months	
CPT Code(s):	80156 Carbamazepine, total; 80157 Carbamazepine, free	
0090260	Carbamazepine, Total	TEG
Methodology:	Fluorescence Polarization Immunoassay	
Specimen Required:	<u>Collect:</u> Plain red. <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) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Separator tubes or potassium oxalate/sodium fluoride tubes. EDTA plasma. <u>Stability:</u> After separation from cells: Ambient: 5 days; Refrigerated: 5 days; Frozen: 6 months	
CPT Code(s):	80156	
0091352	Carbidopa and Levodopa Quantitation, Serum or Plasma	SINEMET 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 serum or plasma from cells within 2 hours of draw. Transfer 2 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.7 mL) <u>Storage/Transport Temperature:</u> CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered. <u>Unacceptable Conditions:</u> Separator tubes. <u>Stability:</u> Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen: 1 week	
CPT Code(s):	80299	
0070412	Carbohydrate Deficient Transferrin for Alcohol Use	CDT
Methodology:	Quantitative Electrophoresis	
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: 0.2 mL) <u>Storage/Transport Temperature:</u> Frozen. <u>Unacceptable Conditions:</u> Plasma. Hemolyzed specimens. <u>Stability:</u> After separation from cells: Ambient: Unacceptable; Refrigerated: 10 days; Frozen: 1 month	
CPT Code(s):	82373	
2002918	Carbohydrate Deficient Transferrin for Congenital Disorders of Glycosylation	CARBOH-CDG

Methodology:	Affinity Chromatography/Mass Spectrometry	
Specimen Required:	<u>Collect:</u> Plain red or serum separator tube. <u>Specimen Preparation:</u> Transfer 0.1 mL serum to an ARUP Standard Transport Tube. (Min: 0.05 mL) <u>Storage/Transport Temperature:</u> Frozen. <u>Remarks:</u> Patient age is required on the test request form. Provide reason (eg, diagnosis) for referral with each specimen. <u>Stability:</u> Ambient: Unacceptable; Refrigerated: 1 week; Frozen: 1 month	
CPT Code(s):	82373	
002004	Carbon Dioxide, Serum or Plasma	CO2
Methodology:	Quantitative Enzymatic	
Specimen Required:	<u>Collect:</u> Plasma separator tube or serum separator tube. <u>Specimen Preparation:</u> Allow serum tube to clot completely at room temperature. Separate serum or plasma from cells within 2 hours of collection. Transport 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> Other body fluids. Specimens containing citrate as anticoagulant. <u>Stability:</u> After separation from cells: Ambient: 4 hours; Refrigerated: 1 week (in a closed container); Frozen: 1 month (in a closed container)	
CPT Code(s):	82374	
2005295	Carboxyhemoglobin Quantitation, Whole Blood	CARBOXY WB
Methodology:	Quantitative Spectrophotometric	
Specimen Required:	<u>Collect:</u> Lavender (EDTA). Also acceptable: Green (sodium or lithium heparin) or gray (sodium fluoride). <u>Specimen Preparation:</u> Transport 5 mL whole blood in original collection tube. (Min: 0.5 mL) <u>Storage/Transport Temperature:</u> Room temperature. Also acceptable: Refrigerated. <u>Stability:</u> Ambient: 5 days; Refrigerated: 10 days; Frozen: Unacceptable	
CPT Code(s):	82375	
0080080	Carcinoembryonic Antigen	CEA
Methodology:	Quantitative Electrochemiluminescent 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: 0.6 mL) <u>Storage/Transport Temperature:</u> Refrigerated. Also acceptable: Frozen. <u>Unacceptable Conditions:</u> Plasma. <u>Stability:</u> After separation from cells: Ambient: 8 hours; Refrigerated: 1 week; Frozen: 6 months	
CPT Code(s):	82378	
0020742	Carcinoembryonic Antigen, Fluid	CEA FL
Methodology:	Quantitative Electrochemiluminescent Immunoassay	
Specimen Required:	<u>Collect:</u> Body fluid. <u>Specimen Preparation:</u> Transfer 1 mL body fluid to an ARUP Standard Transport Tube. (Min: 0.5 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Remarks:</u> Indicate a source on test request form. <u>Stability:</u> Ambient: 8 hours; Refrigerated: 1 week; Frozen: 6 months	
CPT Code(s):	82378	
2003824	Carcinoembryonic Antigen, Monoclonal (CEA M) by Immunohistochemistry	CEA M 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	
2003827	Carcinoembryonic Antigen, Polyclonal (CEA P) by Immunohistochemistry	CEA P 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	
0051600	Cardiolipin and Non-Criteria Anti-Phospholipid Syndrome (APS) Antibody Panel	PHOS 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 2 mL serum to an ARUP Standard	

	Transport Tube. (Min: 1.2 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Urine or plasma. Contaminated, heat-inactivated, grossly hemolyzed, icteric, or 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):	86147 x3 aCL IgG, IgM, & IgA; 86148 x3 aPS IgG, IgM, & IgA; 83520 x9 aPE, aPG, aPI IgG, IgM, & IgA	
0099344	Cardiolipin Antibodies, IgG & IgM	ANTI-CARD
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, heat-inactivated, hemolyzed, or 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):	86147 x2	
0051162	Cardiolipin Antibodies, IgG, IgM, & IgA	CARD 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: 0.3 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Plasma or other body fluids. 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):	86147 AC-IgG; 86147 AC-IgM; 86147 AC-IgA	
0098358	Cardiolipin Antibody, IgA	CARDIO IGA
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, heat-inactivated, hemolyzed, or 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):	86147	
0050901	Cardiolipin Antibody, IgG	AC-IGG
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, 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):	86147	
0050902	Cardiolipin Antibody, IgM	AC-IGM
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, 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):	86147	
0090600	Carisoprodol and Meprobamate	CARIS
Methodology:	Gas Chromatography-Mass Spectrometry	
Specimen Required:	<u>Collect:</u> Plain red. Also acceptable: Lavender (EDTA), pink (K ₂ EDTA or K ₃ EDTA), or green (sodium or lithium heparin). 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>Unacceptable Conditions:</u> Citrated plasma. Tubes that contain liquid anticoagulant. <u>Stability:</u> After separation from cells: Ambient: 1 week; Refrigerated: 1 month; Frozen: 3 months	
CPT Code(s):	83805 Meprobamate; 80299 Carisoprodol	
0080065	Carnitine, Free	CARN
Methodology:	Tandem Mass Spectrometry	
Specimen Required:	<u>Collect:</u> Green (sodium or lithium heparin). Also acceptable: Plain red. <u>Specimen Preparation:</u> Separate serum or plasma from cells and freeze ASAP or within 2 hours of collection. Transfer 0.5 mL serum or plasma to an ARUP Standard Transport Tube and freeze immediately. (Min: 0.2 mL) Avoid hemolysis. <u>Storage/Transport Temperature:</u> CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered. <u>Unacceptable Conditions:</u> Room temperature specimens. Specimens that have been refrigerated for greater than 12 hours. <u>Stability:</u> After separation from cells: Ambient: Unacceptable; Refrigerated: 12 hours; Frozen: 1 month (avoid repeated freeze/thaw cycles)	

CPT Code(s): 83789

0080068 Carnitine, Free & Total (Includes Carnitine, Esterified) CARN F&T
Methodology: Tandem Mass Spectrometry
Specimen Required: Collect: Green (sodium or lithium heparin). Also acceptable: Plain red.
Specimen Preparation: Separate serum or plasma from cells ASAP or within 2 hours of collection. Transfer 0.5 mL serum or plasma to an ARUP Standard Transport Tube and freeze immediately. (Min: 0.2 mL) Avoid hemolysis.
Storage/Transport Temperature: **CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.**
Unacceptable Conditions: Room temperature specimens. Specimens refrigerated greater than 12 hours.
Stability: After separation from cells: Ambient: Unacceptable; Refrigerated: 12 hours; Frozen: 1 month (avoid repeated freeze/thaw cycles)
CPT Code(s): 82379

0081308 Carnitine, Free & Total, Urine CARN URINE
Methodology: Tandem Mass Spectrometry
Specimen Required: Collect: Random urine.
Specimen Preparation: Freeze specimen immediately after collection. Transport 5 mL urine. (Min: 2 mL)
Storage/Transport Temperature: **CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.**
Unacceptable Conditions: Refrigerated or room temperature specimens.
Stability: Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen: 1 month
CPT Code(s): 82379

0081309 Carnitine, Free, Urine CARNU FREE
Methodology: Tandem Mass Spectrometry
Specimen Required: Collect: Random urine.
Specimen Preparation: Freeze specimen immediately after collection. Transport 5 mL urine. (Min: 2 mL)
Storage/Transport Temperature: **CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.**
Unacceptable Conditions: Refrigerated or room temperature specimens.
Stability: Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen: 1 month
CPT Code(s): 83789

0081110 Carnitine Panel CARNPAN
Methodology: Tandem Mass Spectrometry
Specimen Required: Collect: Green (sodium or lithium heparin). Also acceptable: Plain red.
Specimen Preparation: Separate plasma or serum from cells ASAP or within 2 hours of collection. Transfer 0.5 mL serum or plasma to an ARUP Standard Transport Tube and freeze immediately. (Min: 0.2 mL) Avoid hemolysis.
Storage/Transport Temperature: **CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.**
Remarks: **Clinical information is needed for appropriate interpretation.** Additional required information includes age, gender, diet (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.**
Unacceptable Conditions: Room temperature specimens. Specimens that have been refrigerated for greater than 12 hours.
Stability: After separation from cells: Ambient: Unacceptable; Refrigerated: 12 hours; Frozen: 1 month
CPT Code(s): 82017 Acylcarn; 82379 Carnitine

0080067 Carnitine, Total CARN TOTAL
Methodology: Tandem Mass Spectrometry
Specimen Required: Collect: Green (sodium or lithium heparin). Also acceptable: Plain red.
Specimen Preparation: Separate serum or plasma from cells ASAP or within 2 hours of collection. Transfer 0.5 mL serum or plasma to an ARUP Standard Transport Tube and freeze immediately. (Min: 0.2 mL) Avoid hemolysis.
Storage/Transport Temperature: **CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.**
Unacceptable Conditions: Room temperature specimens. Specimens that have been refrigerated for greater than 12 hours.
Stability: Ambient: Unacceptable; Refrigerated: 12 hours; Frozen: 1 month (avoid repeated freeze thaw cycles)
CPT Code(s): 83789

0081307 Carnitine, Total, Urine CARNU TOT
Methodology: Tandem Mass Spectrometry
Specimen Required: Collect: Random urine.
Specimen Preparation: Freeze specimen immediately after collection. Transport 5 mL urine. (Min: 2 mL)
Storage/Transport Temperature: **CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.**
Unacceptable Conditions: Refrigerated or room temperature specimens.
Stability: Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen: 1 month
CPT Code(s): 83789

0080512 Carnitine Transport, Fibroblasts CARNIFIBRO
Methodology: Radioassay
Specimen Required: Collect: Fibroblasts from skin biopsy.
Specimen Preparation: Cells should be kept in 37°C incubator until shipped. Transport **two T-25 flasks** of fibroblasts from skin biopsy.
Storage/Transport Temperature: **CRITICAL ROOM TEMPERATURE. Call lab before shipping.** Ship Monday-Thursday only.
Remarks: **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.**
Unacceptable Conditions: Frozen or refrigerated specimens. Specimens in improper media. Dead cells.
Stability: Ambient: 4 days; Refrigerated: Unacceptable; Frozen: Unacceptable
CPT Code(s): 84238

0080055 Carotene, Serum Total CARO
Methodology: Quantitative Spectrophotometry
Specimen Required: Patient Preparation: Fasting specimens preferred.

Collect: Serum separator tube.
Specimen Preparation: **CRITICAL:** Protect from light immediately after collection and during storage and shipment. Transfer 3 mL serum to ARUP Amber Transport Tube. (Min: 1.1 mL)
Storage/Transport Temperature: Frozen. **Separate specimens must be submitted when multiple tests are ordered.**
Unacceptable Conditions: Any specimen other than serum. Refrigerated or room temperature specimens. Hemolyzed or icteric specimens.
Stability: After separation from cells: Ambient: Unacceptable; Refrigerated: 4 hours; Frozen: 1 month

CPT Code(s):

82380

0021021 Carotenes, Fractionated, Plasma or Serum CARO FRAC

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

Specimen Preparation: **CRITICAL:** Protect from light within one hour of collection and during storage and shipment. Transfer 1 mL serum or plasma to an ARUP Amber Transport Tube ASAP or within 2 hours of collection. (Min: 0.3 mL)

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

Unacceptable Conditions: EDTA plasma, whole blood, or body fluids. Room temperature specimens. Hemolyzed specimens.

Stability: After separation from cells: Ambient: Unacceptable; Refrigerated: 72 hours; Frozen: 1 year

CPT Code(s):

82380

2003496 Caspase-3 by Immunohistochemistry CASPA3 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

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

Methodology: Quantitative High Performance Liquid Chromatography-Tandem Mass Spectrometry

Specimen Required: Patient Preparation: Abstain from medications for 72 hours prior to collection.

Collect: 24-hour or random urine. Refrigerate 24-hour specimen during collection.

Specimen Preparation: Transfer a 4 mL aliquot from a well-mixed 24-hour or random collection to an ARUP Standard Transport Tube. (Min: 2.5 mL) Preservation can be enhanced by adjusting the pH to 2-3 by adding an acid such as 6 mol/L HCl. Catecholamines are not stable above pH 7. The pH of such specimens must be adjusted by the addition of acid prior to transport. A pH less than 2 can cause assay interference. Record total volume and collection time interval on transport tube and test request form.

Storage/Transport Temperature: Refrigerated.

Unacceptable Conditions: Room temperature specimens.

Stability: Ambient: Unacceptable; Refrigerated: 1 month; Frozen: 6 months

CPT Code(s):

82384

0080957 Catecholamines Fractionated (Epinephrine, Norepinephrine), Plasma CATE PF,EN

Methodology: Quantitative High Performance Liquid Chromatography

Specimen Required: Patient Preparation: Patient should be calm and supine for 30 minutes prior to collection.

Collect: Green (sodium or lithium heparin). Collect on ice.

Specimen Preparation: Specimen should be centrifuged and frozen within one hour (refrigerated centrifuge is preferred but not required). Transfer 4 mL plasma to an ARUP Standard Transport Tube. (Min: 2.1 mL)

Storage/Transport Temperature: Frozen.

Unacceptable Conditions: EDTA plasma, serum, or urine.

Stability: After separation from cells: Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen at -20°C: 1 month; Frozen at -70°C: 1 year

CPT Code(s):

82384

0080216 Catecholamines Fractionated, Plasma CATE PF

Methodology: Quantitative High Performance Liquid Chromatography

Specimen Required: Patient Preparation: Patient should be calm and supine for 30 minutes prior to collection.

Collect: Green (sodium or lithium heparin). Collect on ice.

Specimen Preparation: Specimen should be centrifuged and frozen within one hour (refrigerated centrifuge is preferred but not required). Transfer 4 mL plasma to an ARUP Standard Transport Tube. (Min: 2.1 mL)

Storage/Transport Temperature: Frozen.

Unacceptable Conditions: EDTA plasma, serum, or urine.

Stability: After separation from cells: Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen at -20°C: 1 month; Frozen at -70°C: 1 year

CPT Code(s):

82384

0040002 CBC with Platelet Count CBC

Methodology: Automated Cell Count

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

Specimen Preparation: Transport 3 mL whole blood. (Min: 0.5 mL)

Storage/Transport Temperature: Refrigerated.

Unacceptable Conditions: Frozen specimens. Clotted or hemolyzed specimens.

CPT Code(s): Stability: Ambient: 8 hours; Refrigerated: MPV: 8 hours, All Others: 24 hours; Frozen: Unacceptable
85027

0040003 **CBC with Platelet Count & Automated Differential** **CBCAD**
Methodology: Automated Cell Count with Flow Cell Differential
Specimen Required: Collect: Lavender (EDTA) or pink (K₂EDTA) **AND** unstained whole blood smears.
Specimen Preparation: Transport 3 mL whole blood **AND** 2 unstained whole blood smears. (Min: 0.5 mL. Tube must contain at least 0.25 mL of specimen **AND** two unstained blood smears.)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Frozen specimens. Clotted or grossly hemolyzed specimens.
Stability: Ambient: 8 hours (without smears); Refrigerated: MPV: 8 hours, All others: 24 hours; Frozen: Unacceptable
CPT Code(s): 85025

0092209 **CBFB-MYH1, inv(16) by RT-PCR** **INV(16)**
Methodology: Reverse Transcription Polymerase Chain Reaction
Specimen Required: Collect: Lavender (EDTA) or bone marrow (EDTA).
Specimen Preparation: Transport 5 mL whole blood or 3 mL bone marrow. (Min: 1 mL whole blood or 1 mL bone marrow) **Specimens must be received within 48 hours of collection due to lability of RNA.**
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Serum or plasma. Specimens collected in preservatives other than EDTA. Frozen specimens. Clotted or severely hemolyzed specimens.
Stability: Ambient: 1 hour; Refrigerated: 48 hours; Frozen: Unacceptable
CPT Code(s): 83891 Isolation; 83902 Reverse transcription; 83898 x5 Amplification; 83894 x3 Gel separation; 83912 Interpretation and report - Additional CPT code modifiers may be required for procedures performed to test for oncologic or inherited disorders.

2003502 **CD1a by Immunohistochemistry** **CD1A 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

2003505 **CD2 by Immunohistochemistry** **CD2 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

2003508 **CD3 by Immunohistochemistry** **CD3 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

2003511 **CD4 by Immunohistochemistry** **CD4 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.

CPT Code(s): Stability: Ambient: Indefinite; Refrigerated: Indefinite; Frozen: Indefinite
88342

2003514 CD5 by Immunohistochemistry CD5 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

2003517 CD7 by Immunohistochemistry CD7 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

2003520 CD8 by Immunohistochemistry CD8 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

2003523 CD10 (CALLA) by Immunohistochemistry CD10 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

2003526 CD14 by Immunohistochemistry CD14 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

2003529 CD15, Leu M1 by Immunohistochemistry CD15 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

2005114 **CD19 by Immunohistochemistry** **CD19 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

2003532 **CD20, L26 by Immunohistochemistry** **CD20 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

2003535 **CD21 (Dendritic Cell) by Immunohistochemistry** **CD21 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

2003541 **CD23 by Immunohistochemistry** **CD23 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

2003544 **CD25 by Immunohistochemistry** **CD25 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. Ship in cooled container during summer months.

Remarks: **IMMUNOHISTOCHEMISTRY ORDERING AND SUBMISSION DETAILS:** Submit electronic request. If you do not have electronic ordering capability, use an ARUP Immunohistochemistry Stain Form (#32978) with an ARUP client number. For additional technical details, 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

2003547	CD30 (Ki-1) by Immunohistochemistry	CD30 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	
2003550	CD31 by Immunohistochemistry	CD31 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	
2003553	CD33 by Immunohistochemistry	CD33 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	
2003556	CD34, QBEnd/10 by Immunohistochemistry	CD34 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	
2003559	CD35 by Immunohistochemistry	CD35 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	
2003565	CD42b by Immunohistochemistry	CD42b 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.	

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

2003568 CD43, L60 (Leu 22) by Immunohistochemistry CD43 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

2003571 CD44 by Immunohistochemistry CD44 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

2003574 CD45 by Immunohistochemistry CD45 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

2003586 CD52 (CAMPATH-1) by Immunohistochemistry CD52 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

2003589 CD56 (NCAM) by Immunohistochemistry CD56 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

2003592 CD57 by Immunohistochemistry CD57 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	
2003595	CD61 (Platelet Glycoprotein IIIA) by Immunohistochemistry	CD61 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	
2003598	CD68, KP1 by Immunohistochemistry	CD68 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	
2003800	CD79A by Immunohistochemistry	CD79A 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	
2003806	CD117 (c-Kit) by Immunohistochemistry	CD117 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	
2003809	CD123 by Immunohistochemistry	CD123 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	

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

2003812 **CD138 (Syndecan-1) by Immunohistochemistry** **CD138 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

2003815 **CD163 by Immunohistochemistry** **CD163 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

2005534 **CDK4 by Immunohistochemistry** **CDK4 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. 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.
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: Specimens submitted with non-representative tissue type. Depleted specimens.
Stability: Ambient: Indefinite; Refrigerated: Indefinite; Frozen: Indefinite

CPT Code(s):

88342

2004927 **CDKL5-Related Disorders (CDKL5) Deletion/Duplication** **CDKL5 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 x21 Nucleic acid probes; 83898 x21 Amplification; 83914 x21 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.

2004931 **CDKL5-Related Disorders (CDKL5) Sequencing** **CDKL5 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 x26 Amplification; 83904 x26 Sequencing; 83909 Capillary electrophoresis; 83912 Interpretation and report - Additional CPT code modifiers may be required for procedures performed to test for oncologic or inherited disorders.

2004935 **CDKL5-Related Disorders (CDKL5) Sequencing and Deletion/Duplication** **CDKL5 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 x26 Amplification; 83904 x26 Sequencing; 83909 Capillary electrophoresis; 83912 Interpretation and report. **DelDup:** 83896 x21 Nucleic Acid Probes; 83898 x21 Amplification; 83914 x21 Extension; 83909 Capillary Electrophoresis - Additional CPT code modifiers may be required for procedures performed to test for oncologic or inherited disorders.

2003821 **CDX2 by Immunohistochemistry** **CDX2 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

2004247 **CEBPA Mutation Detection** **CEBPA MUT**
Methodology: Polymerase Chain Reaction/Sequencing
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: Frozen specimens. Clotted specimens.
Stability: Ambient: 24 hours; Refrigerated: 5 days; Frozen: Unacceptable
CPT Code(s): 83891 Isolation; 83898 x2 Amplification; 83894 Gel separation; 83904 x2 Sequencing, 83912 Interpretation and report - Additional CPT code modifiers may be required for procedures performed to test for oncologic or inherited disorders.

0051689 **Celiac Disease Dual Antigen Screen** **TTG DGP**
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: Plasma or other body fluids. Contaminated, heat-inactivated, hemolyzed, icteric, or lipemic specimens.
Stability: After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year
CPT Code(s): 83516

2002026 **Celiac Disease Dual Antigen Screen with Reflex** **CELIAC SCRIN**
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 2 mL serum to an ARUP Standard Transport Tube. (Min: 1 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Plasma. Contaminated, hemolyzed, or grossly lipemic specimens.
Stability: After separation from cells: Ambient: 8 hours; Refrigerated: 8 days; Frozen: 1 year (if frozen within 24 hours)
CPT Code(s): 83516 Dual antigen screen. If Dual antigen screen is 20 Units or greater, add 83516 tTG IgA and 83516 Gliadin IgA. If tTG IgA and Gliadin IgA are negative, add 83516 tTG IgG and 83516 Gliadin IgG.

2005018 **Celiac Disease (HLA-DQA1*05, HLA-DQB1*02, and HLA-DQB1*03:02) Genotyping** **HLA CELIAC**
Methodology: Polymerase Chain Reaction/Fluorescence Monitoring
Specimen Required: Collect: Lavender (EDTA), pink (K₂EDTA), or yellow (ACD Solution A or B).
Specimen Preparation: Transport 3 mL whole blood. (Min: 1 mL)
Storage/Transport Temperature: Room temperature or refrigerated.
Stability: Ambient: 1 week; Refrigerated: 1 week; Frozen: Unacceptable
CPT Code(s): 83891 Isolation; 83898 Amplification; 83900 Multiplex amplification; 83912 Interpretation and report - Additional CPT code modifiers may be required for procedures performed to test for oncologic or inherited disorders.

0051065 **Celiac Disease Reflexive Panel** **CELIAC TTG**
Methodology: Quantitative Nephelometry/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 2 mL serum to an ARUP Standard Transport Tube. (Min: 0.5 mL)
Storage/Transport Temperature: Refrigerated.
Remarks: Specify age of patient on test request form.
Unacceptable Conditions: Plasma. Contaminated, hemolyzed, or grossly lipemic specimens.
Stability: After separation from cells: Ambient: 8 hours; Refrigerated: 8 days; Frozen: 1 year (if frozen within 24 hours)
CPT Code(s): 82784 IgA; if less than 7 mg/dL, add 83516 tTG IgG and 83516 Gliadin IgG. If IgA is greater than or equal to 7 mg/dL, add 83516 tTG IgA and 83516 Gliadin IgA

0095019 **Cell Count, Body Fluid** **FLD**
Methodology: Cell Count/Differential
Specimen Required: Collect: Body fluid in liquid EDTA or sodium heparin.
Specimen Preparation: **Do not freeze.** Transport 3 mL body fluid. (Min: 0.5 mL)
Storage/Transport Temperature: Refrigerated.
Remarks: Indicate source on test request form.
Unacceptable Conditions: BAL fluid, gastric fluid, or seminal fluid. Synovial fluids collected in powdered EDTA or powdered lithium heparin. Specimens sent with needle. Frozen specimens. Clotted specimens.
Stability: Ambient: 4 hours; Refrigerated: Crystal Analysis: 12 hours, All Others: 24 hours; Frozen: Unacceptable
CPT Code(s): 89051

0095018 **Cell Count, CSF** **CSF**
Methodology: Cell Count/Differential
Specimen Required: Collect: CSF.

Specimen Preparation: **Do not freeze.** Transport 0.5 mL CSF.
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Frozen specimens. Clotted specimens.
Stability: Ambient: 4 hours; Refrigerated: 24 hours; Frozen: Unacceptable

CPT Code(s):

89051

0051273 Cell-Mediated Immune Function Screen LMPS

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

CPT Code(s):

86352

0050714 Centromere Antibody, IgG ANTICENT

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: 0.25 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):

83516

2003172 Cerebral Caverosus Malformation (CCM1, CCM2 and CCM3) Deletion/Duplication CCM 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 x2 Nucleic Acid Probes; 83898 x2 Amplification; 83914 x2 Extension; 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.

2003152 Cerebral Caverosus Malformation (CCM1) Sequencing CCM1 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 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.

2003164 Cerebral Caverosus Malformation (CCM1) Sequencing with Reflex to (CCM1, CCM2 and CCM3) Deletion/Duplication with Reflex to (CCM2) Sequencing with Reflex to (CCM3) Sequencing CCM COMP

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: 2 mL)
Storage/Transport Temperature: Refrigerated.
Stability: Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable
CPT Code(s): CCM1 Sequencing: 83891 Isolation; 83898 x16 Amplification; 83904 x16 Sequencing; 83909 Capillary electrophoresis; 83912 Interpretation and report.
 If reflexed to Del/Dup: 83896 x2 Nucleic Acid Probes; 83898 x2 Amplification; 83914 x2 Extension; 83909 x2 Capillary electrophoresis. If reflexed to CCM2 Sequencing, add 83898 x10 Amplification; 83904 x10 Sequencing; 83909 Capillary electrophoresis. If reflexed to CCM3 Sequencing, add 83898 x7 Amplification; 83904 x7 Sequencing; 83909 Capillary electrophoresis.
 - Additional CPT code modifiers may be required for procedures performed to test for oncologic or inherited disorders.

2003156 Cerebral Caverosus Malformation (CCM2) Sequencing CCM2 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 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.

2003160 Cerebral Caverosus Malformation (CCM3) Sequencing CCM3 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 x7 Amplification; 83904 x7 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.

0050160 Ceruloplasmin CERU

Methodology: Quantitative Immunoturbidimetric

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

CPT Code(s): 82390

2002067 Chimerism, Donor STR-DONOR

Methodology: Polymerase Chain Reaction/Fragment Analysis

Specimen Required: Collect: Lavender (EDTA), pink (K₂EDTA), or yellow (ACD Solution A or B). **OR** bone marrow in lavender (EDTA). **OR** buccal brushes from donor.

Specimen Preparation: Transport 3 mL whole blood (Min: 1 mL) **OR** 1 mL bone marrow **OR** 2 buccal brushes in a sterile, dry tube.

Storage/Transport Temperature: Refrigerated.

Remarks: **Post-transplantation results will be compared to pre-transplant recipient and donor genotypes, therefore, donor and recipient samples must be obtained and genotyped before the transplant event occurs.**

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

CPT Code(s): 83891 Isolation; 83900 Multiplex amplification; 83901 x14 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.

2002066 Chimerism, Post-Transplant STR-POST

Methodology: Polymerase Chain Reaction/Fragment Analysis

Specimen Required: Collect: Lavender (EDTA), pink (K₂EDTA), or yellow (ACD Solution A or B). **OR** bone marrow in lavender (EDTA).

Specimen Preparation: Transport 3 mL whole blood **OR** 1 mL bone marrow.

Storage/Transport Temperature: Refrigerated.

Remarks: **Post-transplantation results will be compared to pre-transplant recipient and donor genotypes, therefore, donor and recipient specimens must be obtained and genotyped before the transplant event occurs.**

If cell sorting is required, refer to Chimerism, Post-Transplant, Sorted Cells (ARUP test code 2002064).

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

CPT Code(s): 83891 Isolation; 83900 Multiplex amplification; 83901 x14 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.

2002064 Chimerism, Post-Transplant, Sorted Cells STR-POSTSC

Methodology: Polymerase Chain Reaction/Fragment Analysis

Specimen Required: Collect: Lavender (EDTA), pink (K₂EDTA), or yellow (ACD Solution A or B). **OR** bone marrow.

Specimen Preparation: Transport 3 mL whole blood. (Min: 3 mL) **OR** 1 mL bone marrow. Ship overnight. Specimens should be received within 24 hours of collection for **optimal** isolation of the requested cell line(s).

Storage/Transport Temperature: Refrigerated.

Remarks: **Post-transplantation genotypes will be compared to pre-transplant recipient and donor genotypes. Therefore, donor and recipient specimens must be obtained and genotyped before the transplant event occurs.** Please provide the results and date of the patient's most recent WBC and differential counts. When submitting bone marrow specimens for cell sorting, please provide information regarding the general cellularity of the patient's bone marrow. See Cell Isolation Request for Chimerism, Post-Transplant, Sorted Cells.

Unacceptable Conditions: Frozen specimens. Clotted or hemolyzed specimens.

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

CPT Code(s): 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.

2002065 Chimerism, Recipient Pre-Transplant STR-PRE

Methodology: Polymerase Chain Reaction/Fragment Analysis

Specimen Required: Collect: Lavender (EDTA), pink (K₂EDTA), or yellow (ACD Solution A or B). **OR** bone marrow in lavender (EDTA). **OR** buccal brushes from recipient.

Specimen Preparation: Transport 3 mL whole blood (Min: 1 mL) **OR** 1 mL bone marrow **OR** 2 buccal brushes in a sterile, dry tube.

Storage/Transport Temperature: Refrigerated.

Remarks: **Post-transplantation results will be compared to pre-transplant recipient and donor genotypes, therefore, donor and recipient specimens must be obtained and genotyped before the transplant event occurs.**

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

CPT Code(s): 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.

0065100 Chlamydia Antibody Panel, IgG & IgM by IFA V CHLM PAN

Methodology: Semi-Quantitative Indirect Fluorescent Antibody

Specimen Required: Collect: Plain red or 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 acute specimens. **Mark specimens plainly as "acute" or "convalescent."**

Storage/Transport Temperature: Refrigerated.

Unacceptable Conditions: Contaminated, hemolyzed, or hyperlipemic sera.

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

CPT Code(s): 86631 *C. trachomatis* IgG; 86631 *C. pneumoniae* IgG; 86631 *C. psittaci* IgG; 86632 *C. trachomatis* IgM; 86632 *C. pneumoniae* IgM; 86632 *C. psittaci* IgM

0065139 Chlamydia Antibody Panel, IgG by IFA CHLAM G

Methodology: Semi-Quantitative Indirect Fluorescent Antibody
Specimen Required: Collect: Plain red or 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: Contaminated, hemolyzed, or hyperlipemic sera.
Stability: After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)
CPT Code(s): 86631 *C. trachomatis* IgG; 86631 *C. pneumoniae* IgG; 86631 *C. psittaci*

0065105 *Chlamydia Antibody Panel, IgM by IFA* **V CHLAM M**
Methodology: Semi-Quantitative Indirect Fluorescent Antibody
Specimen Required: Collect: Plain red or 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: Contaminated, hemolyzed, or hyperlipemic sera.
Stability: After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)
CPT Code(s): 86632 *C. trachomatis* IgM; 86632 *C. pneumoniae* IgM; 86632 *C. psittaci* IgM

0060715 *Chlamydia pneumoniae by PCR* **CPNEUMOPCR**
Methodology: Qualitative Polymerase Chain Reaction
Specimen Required: Collect: Respiratory specimen: Bronchoalveolar lavage (BAL), nasal wash, nasopharyngeal swab, or pleural fluid.
Specimen Preparation: **Fluid:** Transfer 2 mL respiratory specimen to a sterile container. (Min: 0.5 mL) Also acceptable: Transfer to viral transport media (Microtest M4 or UTM) (ARUP supply #12884). Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787. Place each specimen in a separate, individually sealed bag.
Storage/Transport Temperature: Frozen. Submit specimen according to Biological Substance, Category B, shipping guidelines.
Remarks: Specimen source required.
Unacceptable Conditions: Respiratory aspirates in collection containers with tubing. Dry swabs.
Stability: Ambient: 8 hours; Refrigerated: 72 hours; Frozen: 1 month
CPT Code(s): 87486

0060774 *Chlamydia trachomatis & Neisseria gonorrhoeae by Amplified Detection (APTIMA®), M4/UTM specimens* **CTNG M4**
Methodology: Qualitative Target Amplification Nucleic Acid Probe
Specimen Required: Collect: Endocervical or urethral swab in viral transport media (M4) or UTM (ARUP supply #12884). Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787.
Specimen Preparation: Transport swab in 3 mL viral transport media (M4 or UTM). (Min: 1 mL)
Storage/Transport Temperature: Refrigerated.
Remarks: Specimen source required.
Unacceptable Conditions: Specimens in any transport media other than indicated above. Wood swabs.
Stability: Ambient: Unacceptable; Refrigerated: 1 week; Frozen: Unacceptable
CPT Code(s): 87801

2001551 *Chlamydia trachomatis & Neisseria gonorrhoea by Amplified Detection (APTIMA®) on SurePath™* **CTNG SP**
Methodology: Qualitative Target Amplification Nucleic Acid Probe
Specimen Required: Patient Preparation: This test is not recommended for patients under age 13.
Collect: Cervical brush in SurePath™ liquid-based Pap test Media.
Specimen Preparation: Vortex SurePath™ media and transfer a 1 mL aliquot to APTIMA® Combo 2 transport media (ARUP Supply #42711) within 24 hours of collection. Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787. To reduce the potential for contamination SurePath® specimens should be poured off, using sterile technique, into the APTIMA® Specimen Transfer Tube prior to Cytology Testing.
Storage/Transport Temperature: Refrigerated.
Stability: **SurePath™ Media:** Ambient: 24 hours; Refrigerated: 48 hours; Frozen: 1 week
APTIMA® Media: Ambient: 2 weeks; Refrigerated: 1 month; Frozen: 1 month
CPT Code(s): 87801

0060241 *Chlamydia trachomatis & Neisseria gonorrhoeae by Amplified Detection (APTIMA®)* **CGAMD**
Methodology: Qualitative Target Amplification Nucleic Acid Probe
Specimen Required: Collect: Endocervical or vaginal swab, first catch urine, or male urethral swabs. Collect in APTIMA® Combo 2 Assay transport media (ARUP Supply: Swabs #28907, Urine #28908). Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787.
Specimen Preparation: Transfer swab or urine to APTIMA® Combo 2 Assay transport media. (Min: 2 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Large white swab is for preparatory cleaning of the endocervix and is unacceptable for testing. Specimens in any transport media other than indicated above. Specimen in swab transport media without a swab.
Stability: **Unpreserved Urine:** Ambient: 24 hours; Refrigerated: Unacceptable; Frozen: Unacceptable
APTIMA® Transport Media: Ambient: 1 month; Refrigerated: 1 month; Frozen: 3 months
CPT Code(s): 87801

0060734 *Chlamydia trachomatis & Neisseria gonorrhoeae by Amplified Detection (APTIMA®), ThinPrep™* **CG MATP**
Methodology: Qualitative Target Amplification Nucleic Acid Probe
Specimen Required: Collect: Cervical brush in ThinPrep® transport Pap Test™ Media.
Specimen Preparation: Vortex Pap Test™ media and transfer a 1 mL aliquot to APTIMA® Combo 2 transport media (ARUP Supply #42711). Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787. To reduce the potential for contamination PreservCyt ThinPrep® specimens should be poured off, using sterile technique, into the APTIMA® Specimen Transfer Tube prior to Cytology Testing.
Storage/Transport Temperature: Refrigerated.

CPT Code(s): Stability: Ambient: 2 weeks; Refrigerated: 1 month; Frozen: 3 months
87801

0060224 *Chlamydia trachomatis & Neisseria gonorrhoeae* DNA Probe **GCCHP**
Methodology: Qualitative DNA Probe
Specimen Required: Patient Preparation: For urethral swab specimens, patients should not have urinated for at least 1 hour prior to collection.
Collect: Female endocervical or male urethral swabs. Collect in Gen-Probe® Pace 2 collection and transport kit (ARUP Supply: Female kit: #12575, Male kit: #12576). Use test-specific kits provided by the manufacturer for each specimen type. Closely follow kit instructions for specimen collection and transport. Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787.
Specimen Preparation: Transport swab in Gen-Probe® Pace 2 transport media.
Storage/Transport Temperature: Refrigerated.
Remarks: Gross presence of blood in the specimen may interfere with the test performance. This test is not recommended for pediatric patients.
Unacceptable Conditions: Specimens in any transport media other than indicated above. Specimen in swab transport media without a swab.
Stability: In Gen-Probe® Pace 2 media: Ambient: 1 week; Refrigerated: 1 week; Frozen: 1 week
CPT Code(s): 87800

0060243 *Chlamydia trachomatis* by Amplified Detection (APTIMA®) **CTAMD**
Methodology: Qualitative Target Amplification Nucleic Acid Probe
Specimen Required: Collect: Endocervical or vaginal swab, first catch urine, or male urethral swabs. Collect in APTIMA® Combo 2 Assay transport media (ARUP Supply: Swabs #28907, Urine #28908). Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787.
Specimen Preparation: Transfer swab or urine to APTIMA® Combo 2 Assay transport media. (Min: 2 mL urine)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Large white swab is for preparatory cleaning of the endocervix and is unacceptable for testing. Specimens in any transport media other than indicated above. Specimen in swab transport media without a swab.
Stability: **Unpreserved Urine:** Ambient: 24 hours; Refrigerated: Unacceptable; Frozen: Unacceptable
APTIMA® Transport Media: Ambient: 1 month; Refrigerated: 1 month; Frozen: 3 months
CPT Code(s): 87491

0060850 *Chlamydia trachomatis* Culture **CHLAM**
Methodology: Cell Culture/Immunofluorescence
Specimen Required: Collect: Cervical, eye, rectal, urethral swab, or peritoneal fluid. Also acceptable for newborns: Nasopharyngeal aspirate, swab or washing.
Specimen Preparation: Transfer specimen to *Chlamydia* transport media (ARUP supply #12884) immediately. Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787.
Storage/Transport Temperature: Frozen on dry ice. Submit specimen according to Biological Substance, Category B, shipping guidelines.
Remarks: **Specimen source preferred.**
Unacceptable Conditions: Urine. Specimens not preserved in *Chlamydia* culture transport media. Calcium alginate, dry, or wood swabs.
Stability: Ambient: 1 hour; Refrigerated: 48 hours; Frozen at -70°C: 1 month
CPT Code(s): 87110 Culture; 87140 Stain

0060287 *Chlamydia trachomatis* DFA **CHLAF**
Methodology: Direct Fluorescent Antibody Stain
Specimen Required: Collect: Eye, genital, nasopharyngeal, or rectal swab.
For *Chlamydia* DFA only, collection kits with fixative are available (ARUP Supply #16578). Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787.
Specimen Preparation: Fix slide as directed by collection kit. Transport fixed slide.
Storage/Transport Temperature: Room temperature. Submit specimen according to Biological Substance, Category B, shipping guidelines.
Remarks: **Specimen source preferred.**
Unacceptable Conditions: Swabs in gel. Transport systems designed for use with other methodologies (Aptima, Digene, EIA, etc.). Dry swabs.
Stability: Fixed Slide: Ambient: 1 week; Refrigerated: 1 week; Frozen: 1 week
CPT Code(s): 87270

0065059 *Chlamydia trachomatis* DNA Probe **CHLDNAP**
Methodology: Qualitative DNA Probe
Specimen Required: Patient Preparation: For urethral swab specimens, patients should not have urinated for at least 1 hour prior to collection.
Collect: Conjunctival, endocervical or male urethral swabs. Collect in Gen-Probe® Pace 2 collection and transport media (ARUP Supply: Female kit: #12575, Male kit: #12576). Use test-specific kits provided by the manufacturer for each specimen type. Closely follow kit instructions for specimen collection and transport. Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787.
Specimen Preparation: Transport swab in Gen-Probe® Pace 2 transport media.
Storage/Transport Temperature: Refrigerated.
Remarks: Gross presence of blood in the specimen may interfere with the test performance. This test is not recommended for pediatric patients.
Unacceptable Conditions: Specimens not in Gen-Probe® Pace 2 transport.
Stability: In Gen-Probe® Pace 2 transport media: Ambient: 1 week; Refrigerated: 1 week; Frozen: 1 week
CPT Code(s): 87490

0091267 Chloral Hydrate, Serum or Plasma **TRICHLOROE**
Methodology: Gas Chromatography
Specimen Required: Collect: One 7 mL plain red or gray (sodium fluoride/potassium oxalate).
Storage/Transport Temperature: 2 mL serum or plasma at 20-25°C. (Min: 1 mL) Submit sample in an ARUP Standard Transport Tube.

CPT Code(s): Stability: Ambient: 1 week; Refrigerated: 2 weeks; Frozen: 14 months
82491

0090346 Chloramphenicol CHLORAM
Methodology: High Performance Liquid Chromatography
Specimen Required: Collect: Plain red. Also acceptable: Lavender (EDTA), pink (K₂EDTA), green (sodium heparin), gray (sodium fluoride/potassium oxalate).
Specimen Preparation: Separate serum or plasma from cells ASAP or within 2 hours of collection. Transport 1 mL serum or plasma.
Storage/Transport Temperature: Refrigerated.
Stability: After separation from cells: Ambient: 48 hours; Refrigerated: 3 weeks; Frozen: 3 weeks
CPT Code(s): 82415

0020381 Chloride, Fecal FE-CL
Methodology: Quantitative Ion-Selective Electrode
Specimen Required: Collect: Liquid random stool.
Specimen Preparation: Transfer 5 g aliquot of liquid random stool to an unpreserved stool transport vial (ARUP Supply #40910). (Min: 1 g) Do not add saline or water to liquefy specimen.
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Formed or viscous stool.
Stability: Ambient: Unacceptable; Refrigerated: 1 week; Frozen: 1 month
CPT Code(s): 82438

0020163 Chloride, Fluid CL 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 containing sodium fluoride/potassium oxalate as anticoagulants. Contaminated or hemolyzed specimens.
Stability: After separation from cells: Ambient: 24 hours; Refrigerated: 1 week; Frozen: 6 months
CPT Code(s): 82438

0020003 Chloride, Serum or Plasma CL
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 containing sodium fluoride/potassium oxalate as anticoagulants. Hemolyzed specimens.
Stability: After separation from cells: Ambient: 24 hours; Refrigerated: 1 week; Frozen: 6 months
CPT Code(s): 82435

0020850 Chloride, Urine U CL
Methodology: **UUHC Clients:** Chloride Titration
All other clients: Quantitative Ion-Selective Electrode
Specimen Required: Collect: 24-hour urine (without additives). Refrigerate during collection. Also acceptable: Random urine.
Specimen Preparation: Transfer 1 mL aliquot of urine from a well-mixed 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.
Stability: Ambient: 24 hours; Refrigerated: 1 week; Frozen: 6 months
CPT Code(s): 82436

0091310 Chloroquine, Serum or Plasma CHLOROQUI
Methodology: Quantitative High Performance Liquid Chromatography/Tandem Mass Spectrometry
Specimen Required: Collect: Lavender (EDTA), pink (K₂EDTA), or plain red.
Specimen Preparation: Separate serum or plasma from cells within 2 hours of draw. 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: 1 month; Refrigerated: 1 month; Frozen: 1 month
CPT Code(s): 82101

0090870 Chlorpromazine CHLORP
Methodology: Quantitative Liquid Chromatography-Tandem Mass Spectrometry
Specimen Required: Collect: Plain red. Also acceptable: Lavender (EDTA), pink (K₂EDTA or K₃EDTA), 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 2 hours of collection. Transfer 2 mL serum or plasma to an ARUP Amber 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.
Storage/Transport Temperature: Refrigerated.
Remarks: After separation from cells: Ambient: 12 hours; Refrigerated: 72 hours; Frozen: 5 days
Unacceptable Conditions: Citrated plasma. Tubes that contain liquid anticoagulant.
Stability: After separation from cells: Ambient: 12 hours; Refrigerated: 72 hours; Frozen: 5 days
CPT Code(s): 84022

0091216	Chlorpropamide, Serum or Plasma	CHLORPRO S
Methodology:	High Performance Liquid Chromatography	
Specimen Required:	<u>Collect:</u> One 7 mL plain red, gray (sodium fluoride/potassium oxalate), green (sodium heparin), 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>Unacceptable Conditions:</u> Serum separator tubes. <u>Stability:</u> Ambient: 2 weeks; Refrigerated: 2 weeks; Frozen: 4 months	
CPT Code(s):	80299	
0091494	Chlorpropamide, Urine	CHLORPR 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: 1 mL) Submit sample in an ARUP Standard Transport Tube. <u>Stability:</u> Ambient: 2 weeks; Refrigerated: 2 weeks; Frozen: 4 months	
CPT Code(s):	80299	
0020714	Cholesterol, Fluid	CHOL 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> Refrigerated. <u>Remarks:</u> Indicate source on test request form. <u>Stability:</u> Ambient: 24 hours; Refrigerated: 1 week; Frozen: 3 months	
CPT Code(s):	84311	
0020031	Cholesterol, Serum or Plasma	CHOL
Methodology:	Quantitative Enzymatic	
Specimen Required:	<u>Collect:</u> Plasma separator tube or serum separator tube. <u>Specimen Preparation:</u> 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) <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):	82465	
0020174	Cholinesterase, RBC/Hb Ratio	CHE-RBC
Methodology:	Quantitative Enzymatic	
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: 1 mL) <u>Storage/Transport Temperature:</u> Refrigerated. Do not place whole blood directly on cool packs when shipping. <u>Unacceptable Conditions:</u> Green (sodium or lithium heparin). Frozen specimens. Clotted or hemolyzed specimens. <u>Stability:</u> Ambient: 4 hours; Refrigerated: 1 week; Frozen: Unacceptable	
CPT Code(s):	82482	
0040203	Chorionic Villus, FISH	FISHCVS
Methodology:	Fluorescence in situ Hybridization	
Specimen Required:	<u>Collect:</u> Thaw media prior to collection. Chorionic villus in a sterile, screw-top container filled with tissue culture transport medium (ARUP Supply #32788). Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787. <u>Specimen Preparation:</u> DO NOT FREEZE. Do not place in formalin. Transport chorionic villus (CVS) specimen in a sterile, screw-top container filled with tissue culture transport medium. <u>Storage/Transport Temperature:</u> Room temperature. <u>Unacceptable Conditions:</u> Frozen specimens. Specimens preserved in formalin. <u>Stability:</u> Ambient: 48 hours; Refrigerated: Unacceptable; Frozen: Unacceptable	
CPT Code(s):	88271 x5 DNA probe; 88275 Chromosomal in situ hybridization, 100-300 cells; 88291 Interpretation and report	
2005287	Chromatin Antibody, IgG	CHROMATIN
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: 0.15 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Urine or plasma. Contaminated, heat-inactivated, severely hemolyzed, icteric, or lipemic specimens. <u>Stability:</u> After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year	
CPT Code(s):	83516	
2005548	Chromium, Joint Fluid	CR F
Methodology:	Quantitative Inductively Coupled Plasma-Mass Spectrometry	
Specimen Required:	<u>Patient Preparation:</u> High concentrations of iodine may interfere with elemental testing. Patients should abstain from iodine-containing medications or contrast agents for at least 1 month prior to specimen collection for elemental testing. <u>Collect:</u> Joint fluid. The use of betadine-like topical antiseptics should be avoided during specimen collection. <u>Specimen Preparation:</u> Transfer 1 mL joint fluid 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) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Separator tubes or gels. Fluid collected after administration of a gadolinium (Gd) containing contrast media (may occur with MRI studies). <u>Stability:</u> Ambient: 1 week; Refrigerated: 2 weeks; Frozen: 1 year	
CPT Code(s):	82495	
0098830	Chromium, Serum	CR 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).
Specimen Preparation: Centrifuge; do not allow serum to remain on cells. Transfer 2 mL serum 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): 82495

0025068 **Chromium, Urine** **CR-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): 82495

0080469 **Chromogranin A** **CGA SERUM**
Methodology: Quantitative Enzyme Immunoassay
Specimen Required: Collect: Serum separator tube or plain red.
Specimen Preparation: Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.5 mL)
Storage/Transport Temperature: Frozen.
Unacceptable Conditions: Plasma. Icteric or lipemic specimens.
Stability: After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 6 weeks
CPT Code(s): 86316

2003830 **Chromogranin A by Immunohistochemistry** **CHROMO 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

2002293 **Chromosome Analysis, Amniotic Fluid** **CHR AF**
Methodology: Giemsa-Band Analysis
Specimen Required: Collect: Amniotic fluid.
Specimen Preparation: **Do not freeze or expose to extreme temperatures.** Transport 30 mL amniotic fluid in sterile centrifuge tubes. (Min: 15 mL) Specimen and completed test request form, including clinical indication, must be received within 48 hours of collection.
Storage/Transport Temperature: Room temperature.
Remarks: This test must be ordered using Cytogenetic test request form #43097 or through your ARUP interface. Submit the Patient History for Prenatal Cytogenetics form (available at <http://www.aruplab.com/genetics/forms.php>).
Unacceptable Conditions: Frozen specimens. Bloody specimens.
Stability: Ambient: 48 hours; Refrigerated: Unacceptable; Frozen: Unacceptable
CPT Code(s): 88269 Chromosome analysis in situ; 88235 Tissue culture; 88280 Additional karyotypes; 88291 Interpretation and report - Additional CPT code modifiers may be required for procedures performed to test for oncologic or inherited disorders.

2002292 **Chromosome Analysis, Bone Marrow** **CHR BM**
Methodology: Giemsa-Band Analysis
Specimen Required: Collect: Non-diluted bone marrow aspirate. Collect in a heparinized syringe.
Specimen Preparation: **Do not freeze or expose to extreme temperatures.** Transfer 3 mL bone marrow to a green (sodium heparin). (Min: 0.5 mL)
Storage/Transport Temperature: Room temperature.
Remarks: Although bone marrow is the recommended specimen type for hematological disorder studies, blood can be substituted if bone marrow cannot be obtained. Refer to Chromosome Analysis, Leukemic Blood (ARUP test code 2002290). This test must be ordered using Cytogenetic test request form #43099 or through your ARUP interface. Submit the Patient History for Cytogenetic (Chromosome) Studies with the electronic packing list (available at <http://www.aruplab.com/genetics/forms.php>).
Unacceptable Conditions: Frozen specimens. Clotted specimens.
Stability: Ambient: 24 hours; Refrigerated: Unacceptable; Frozen: Unacceptable

CPT Code(s): 88237 Tissue culture; 88264 Analyze 20-25 cells; 88291 Interpretation and report - Additional CPT code modifiers may be required for procedures performed to test for oncologic or inherited disorders.

0097688 Chromosome Analysis, Breakage Syndrome Analysis **BREAKAGE**
Methodology: Giemsa-Band and Special Stain Analysis
Specimen Required: Collect: Green (sodium heparin).
Specimen Preparation: Transport 10 mL whole blood.
Storage/Transport Temperature: Room temperature.
Unacceptable Conditions: Frozen specimens. Clotted specimens.
Stability: Ambient: 48 hours; Refrigerated: Unacceptable; Frozen: Unacceptable
CPT Code(s): 88230 x2 Tissue culture, nonneoplastic; 88248 Baseline breakage; 88249 Score 100 clastogens stress; 88280 Additional karyotypes; 88291 Interpretation and report

2002291 Chromosome Analysis, Chorionic Villus **CHR CVS**
Methodology: Giemsa-Band Analysis
Specimen Required: Collect: Thaw media prior to collection. Chorionic villus in a sterile, screw-top container filled with tissue culture transport medium (ARUP Supply #32788). Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787. If cytogenetics tissue media is not available, collect in plain RPMI, Hanks solution, saline, or ringers.
Specimen Preparation: DO NOT FREEZE. **Do not place in formalin.** Transport chorionic villus (CVS) specimen in a sterile, screw-top container filled with tissue culture transport medium. If specimen size is too large for a normal collection tube, a larger sterile container can be used such as a sterile urine cup and can be flooded with several tubes of cytogenetic tissue media.
Storage/Transport Temperature: Room temperature
Remarks: This test must be ordered using Cytogenetic test request form #43097 or through your ARUP interface. Submit the Patient History for Prenatal Cytogenetics form with the electronic packing list (available at <http://www.aruplab.com/genetics/forms.php>).
Unacceptable Conditions: Frozen specimens. Specimens preserved in formalin.
Stability: Ambient: 24 hours; Refrigerated: Unacceptable; Frozen: Unacceptable
CPT Code(s): 88269 Chromosome analysis in situ; 88235 Tissue culture; 88280 Additional karyotype; 88291 Interpretation and report - Additional CPT code modifiers may be required for procedures performed to test for oncologic or inherited disorders.

2002290 Chromosome Analysis, Leukemic Blood **CHR LKB**
Methodology: Giemsa-Band Analysis
Specimen Required: Collect: Green (sodium heparin).
Specimen Preparation: Transport 10 mL whole blood. (Min: 0.5 mL)
Storage/Transport Temperature: Room temperature.
Remarks: This test must be ordered using Cytogenetic test request form #43099 or through your ARUP interface. Submit the Patient History for Cytogenetic (Chromosome) Studies form with the electronic packing list (available at <http://www.aruplab.com/genetics/forms.php>).
Unacceptable Conditions: Frozen specimens. Clotted specimens.
Stability: Ambient: 48 hours; Refrigerated: Unacceptable; Frozen: Unacceptable
CPT Code(s): 88237 Tissue culture; 88264 Analyze 20-25 cells; 88291 Interpretation and report - Additional CPT code modifiers may be required for procedures performed to test for oncologic or inherited disorders.

2002300 Chromosome Analysis, Lymph Node **CHR ONC**
Methodology: Giemsa-Band Analysis
Specimen Required: Collect: Any specimen type for oncology studies other than peripheral blood, bone marrow, and solid tumors. Thaw media prior to tissue inoculation. Collect tissue in a sterile, screw-top container filled with tissue culture transport medium (ARUP Supply #32788). Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787. If no transport media is available, collect in plain RPMI, Hanks solution, saline, or ringers. Collect pleural or other body fluids in a green (sodium heparin). Contact ARUP Genetics Processing for other specimen types or information and transportation instructions.
Specimen Preparation: DO NOT FREEZE. Do not place in formalin.
Tissues: Transport 10 mm biopsy in a sterile, screw-top container filled with tissue culture transport media.
Fluid: Transport 5 mL fluid in original collection tube.
Storage/Transport Temperature: Room temperature.
Remarks: This test must be ordered using Cytogenetic test request form #43099 or through your ARUP interface. Submit the Patient History for Cytogenetic (Chromosome) Studies form with the electronic packing list (available at <http://www.aruplab.com/genetics/forms.php>).
Unacceptable Conditions: Frozen specimens. Tissue submitted in formalin.
Stability: Ambient: 48 hours; Refrigerated: Unacceptable; Frozen: Unacceptable
CPT Code(s): 88237 Tissue culture; 88264 Analyze 20-25 cells; 88291 Interpretation and report - Additional CPT code modifiers may be required for procedures performed to test for oncologic or inherited disorders.

2002289 Chromosome Analysis, Peripheral Blood **CHR PB**
Methodology: Giemsa-Band Analysis
Specimen Required: Collect: Green (sodium heparin).
Specimen Preparation: **Do not freeze or expose to extreme temperatures.** Transport 10 mL whole blood. (Min: 2 mL) Specimen and completed test request form, including clinical indication, must be received within 48 hours of collection.
Storage/Transport Temperature: Room temperature.
Remarks: This test must be ordered using Cytogenetic test request form #43097 or through your ARUP interface. Please submit the Patient History for Cytogenetic (Chromosome) Studies form with the electronic packing list (available at <http://www.aruplab.com/genetics/forms.php>).
Unacceptable Conditions: Frozen specimens. Clotted specimens.
Stability: Ambient: 48 hours; Refrigerated: Unacceptable; Frozen: Unacceptable
CPT Code(s): 88262 Chromosome analysis count 15-20 cells; 88230 Tissue culture; 88291 Interpretation and report - Additional CPT code modifiers may be required for procedures performed to test for oncologic or inherited disorders.

2005763 Chromosome Analysis, Peripheral Blood, with Reflex to Genomic Microarray **PB REFLEX**
Methodology: Giemsa-Band Analysis and Cytogenomic Microarray SNP (Oligo-based array)

Specimen Required: Collect: Green (sodium heparin).
Specimen Preparation: **Do not freeze or expose to extreme temperatures.** Transport 5 mL whole blood. (Min: 2 mL) Specimen and completed test request form, including clinical indication, must be received within 48 hours of collection.
Storage/Transport Temperature: Room temperature.
Remarks: This test must be ordered using Cytogenetic test request form #43097 or through your ARUP interface. Please submit the Patient History for Cytogenetic (Chromosome) Studies form with the electronic packing list (available at <http://www.aruplab.com/genetics/forms.php>).
Unacceptable Conditions: Frozen specimens. Clotted specimens.
Stability: Ambient: 48 hours; Refrigerated: 48 hours; Frozen: Unacceptable
CPT Code(s): 88262 Chromosome analysis count 15-20 cells; 88230 Tissue culture; 88291 Interpretation and report; if reflexed, add 83891 Isolation; 88386 x6 Array-based evaluation of multiple molecular probes, 251-500 - Additional CPT code modifiers may be required for procedures performed to test for oncologic or inherited disorders.

2002288 **Chromosome Analysis, Products of Conception** **CHR POC**
Methodology: Giemsa-Band Analysis
Specimen Required: Collect: Thaw media prior to tissue inoculation. Products of conception in a sterile, screw-top container (Wide mouth containers: ARUP supply #42710) filled with tissue culture transport medium (ARUP Supply # 32788). Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787. If cytogenetics tissue media is not available, collect in plain RPMI, Hanks solution, saline, or ringers.
If autopsy is performed: Chest wall cartilage (particularly if macerated), gonad, spleen, kidney, or other internal organs.
If no autopsy is performed: Placenta from fetal side is preferred (e.g. villi).
Also acceptable: Umbilical cord or achilles tendon.
Specimen Preparation: **DO NOT FREEZE. Do not place in formalin.** Transport products of conception in sterile, screw-top container filled with tissue transport medium. If specimen size is too large for a normal collection tube, a larger sterile container can be used such as a sterile urine cup and can be flooded with several tubes of cytogenetic tissue media.
Storage/Transport Temperature: Room temperature.
Remarks: This test must be ordered using Cytogenetic test request form #43097 or through your ARUP interface. Submit the Patient History for Prenatal Cytogenetics with the electronic packing list (available at <http://www.aruplab.com/genetics/forms.php>).
Unacceptable Conditions: Intact fetus. Frozen specimens. Specimens preserved in formalin.
Stability: Ambient: 48 hours; Refrigerated: Unacceptable; Frozen: Unacceptable
CPT Code(s): 88262 Chromosome analysis count 15-20 cells; 88233 Tissue culture; 88291 Interpretation and report - Additional CPT code modifiers may be required for procedures performed to test for oncologic or inherited disorders.

2005762 **Chromosome Analysis, Products of Conception, with Reflex to Genomic Microarray** **POC REFLEX**
Methodology: Giemsa-Band Analysis and Cytogenomic Microarray SNP (Oligo-based Array)
Specimen Required: Collect: Thaw media prior to tissue inoculation. Products of conception in a sterile, screw-top container (Wide mouth containers: ARUP supply #42710) filled with tissue culture transport medium (ARUP Supply # 32788). Available online through eSupply using ARUP Connector contact ARUP Client Services at (800) 522-2787. If cytogenetics tissue media is not available, collect in plain RPMI, Hanks solution, saline, or ringers.
If autopsy is performed: Chest wall cartilage (particularly if macerated), gonad, spleen, kidney, or other internal organs.
If no autopsy is performed: Placenta from fetal side is preferred (e.g. villi).
Also acceptable: Umbilical cord or achilles tendon.
Specimen Preparation: **DO NOT FREEZE. Do not place in formalin.** Transport products of conception in sterile, screw-top container filled with tissue transport medium. If specimen size is too large for a normal collection tube, a larger sterile container can be used such as a sterile urine cup and can be flooded with several tubes of cytogenetic tissue media.
Storage/Transport Temperature: Refrigerated.
Remarks: This test must be ordered using Cytogenetic test request form #43097 or through your ARUP interface. Submit the Patient History for Prenatal Cytogenetics with the electronic packing list (available at <http://www.aruplab.com/genetics/forms.php>).
Unacceptable Conditions: Frozen specimens. Intact fetus. Specimens preserved in formalin.
Stability: Ambient: 48 hours; Refrigerated: Unacceptable; Frozen: Unacceptable
CPT Code(s): 88262 Chromosome analysis count 15-20 cells; 88233 Tissue culture; 88291 Interpretation and report; if reflexed, add 83891 Isolation; 88386 x6 Array-based evaluation of multiple molecular probes, 251-500 - Additional CPT code modifiers may be required for procedures performed to test for oncologic or inherited disorders.

2002287 **Chromosome Analysis, Rule Out Mosaicism** **CHR R/OM**
Methodology: Giemsa-Band Analysis
Specimen Required: Collect: Green (sodium heparin).
Specimen Preparation: **Do not freeze or expose to extreme temperatures.** Transport 10 mL whole blood. (Min: 2 mL) Specimen and completed test request form, including clinical indication, must be received within 48 hours of collection.
Storage/Transport Temperature: Room temperature.
Remarks: This test must be ordered using Cytogenetic test request form #43097 or through your ARUP interface. Submit the Patient History for Cytogenetic (Chromosome) Studies with the electronic packing list (available at <http://www.aruplab.com/guides/ug/tests/2002287.jsp>).
Unacceptable Conditions: Frozen specimens. Clotted specimens.
Stability: Ambient: 48 hours; Refrigerated: Unacceptable; Frozen: Unacceptable
CPT Code(s): 88230 Tissue culture; 88263 Chromosome analysis count 45 cells; 88280 Additional karyotypes; 88285 Chromosome analysis, additional cells counted; 88291 Interpretation and report

0097677 **Chromosome Analysis, Sister Chromatid Exchange** **SCE**
Methodology: Giemsa Band and Special Stain Analysis
Specimen Required: Collect: Green (sodium heparin).
Specimen Preparation: Transport 10 mL whole blood. (Min: 6 mL)
Storage/Transport Temperature: Room temperature.
Unacceptable Conditions: Frozen specimens. Clotted specimens.
Stability: Ambient: 48 hours; Refrigerated: Unacceptable; Frozen: Unacceptable
CPT Code(s): 88230 x2 Tissue culture; 88245 Chromosome analysis breakage syndrome, baseline SCE; 88262 Chromosome analysis count 15-20 cells; 88280 Additional karyotypes; 88291 Interpretation and report

2002286	Chromosome Analysis, Skin Biopsy	CHR SKIN
Methodology:	Giemsa-Band Analysis	
Specimen Required:	<p>Collect: Thaw media prior to tissue inoculation. Skin biopsy in a sterile, screw-top container filled with tissue culture transport medium (ARUP Supply # 32788) Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787. If cytogenetics tissue media is not available, collect in plain RPMI, Hanks solution, saline, or ringers.</p> <p>Specimen Preparation: DO NOT FREEZE. Do not place in formalin. Transport a 4 mm skin biopsy in a sterile, screw-top container filled with tissue transport medium. If specimen size is too large for a normal collection tube, a larger sterile container can be used such as a sterile urine cup and can be flooded with several tubes of cytogenetic tissue media.</p> <p>Storage/Transport Temperature: Room temperature.</p> <p>Remarks: This test must be ordered using Cytogenetic test request form #43097 or through your ARUP interface. Submit the Patient History for Cytogenetic (Chromosome) Studies form with the electronic packing list (available at http://www.aruplab.com/genetics/forms.php).</p> <p>Unacceptable Conditions: Frozen specimens. Specimens preserved in formalin.</p> <p>Stability: Ambient: 48 hours; Refrigerated: Unacceptable; Frozen: Unacceptable</p>	
CPT Code(s):	88262 Chromosome analysis count 15-20 cells; 88233 Tissue culture; 88291 Interpretation and report	
2002296	Chromosome Analysis, Solid Tumor	CHR ST
Methodology:	Giemsa-Band Analysis	
Specimen Required:	<p>Collect: Thaw media prior to tissue inoculation. Solid tumor biopsy in a sterile, screw-top container filled with tissue culture transport medium (ARUP Supply #32788). Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787. If cytogenetics tissue media is not available, collect in plain RPMI, Hanks solution, saline, or ringers.</p> <p>Specimen Preparation: DO NOT FREEZE. Do not place in formalin. Transport a 10 mm biopsy in a sterile, screw-top container filled with tissue culture transport medium. (Min: 5 mm) If specimen size is too large for a normal collection tube, a larger sterile container can be used such as a sterile urine cup and can be flooded with several tubes of cytogenetic tissue media.</p> <p>Storage/Transport Temperature: Room temperature.</p> <p>Remarks: This test must be ordered using Cytogenetic test request form #43097 or through your ARUP interface. Submit the Patient History for Cytogenetic (Chromosome) Studies form with the electronic packing list (available at http://www.aruplab.com/genetics/forms.php).</p> <p>Unacceptable Conditions: Frozen specimens. Specimens preserved in formalin.</p> <p>Stability: Ambient: 48 hours; Refrigerated: Unacceptable; Frozen: Unacceptable</p>	
CPT Code(s):	88239 Tissue culture; 88264 Analyze 20-25 cells; 88291 Interpretation and report - Additional CPT code modifiers may be required for procedures performed to test for oncologic or inherited disorders.	
2002295	Chromosome FISH, CLL Panel	FISH CLLP
Methodology:	Fluorescence in situ Hybridization	
Specimen Required:	<p>Collect: Green (sodium heparin). Also acceptable: Non-diluted bone marrow aspirate collected in a heparinized syringe.</p> <p>Specimen Preparation: Transport 10 mL whole blood (Min: 2 mL). OR Transfer 3 mL bone marrow to a green (sodium heparin) (Min: 1 mL)</p> <p>Storage/Transport Temperature: Room temperature.</p> <p>Remarks: It is recommended that all FISH studies be done in conjunction with routine cytogenetic analysis. (Refer to appropriate Chromosome Analysis test for order instructions). If FISH only is requested, please submit a copy of previous cytogenetics report. If cell pellets or dropped cytogenetic slides are submitted, processing fee will not apply. This test must be ordered using Cytogenetic test request form #43099 or through your ARUP interface. Submit the Patient History for Cytogenetic (Chromosome) Studies form with the electronic packing list (available at http://www.aruplab.com/genetics/forms.php).</p> <p>Unacceptable Conditions: Frozen specimens. Paraffin-embedded specimens. Clotted specimens.</p> <p>Stability: Ambient: Whole Blood: 48 hours, Bone Marrow: 24 hours; Refrigerated: Unacceptable; Frozen: Unacceptable</p>	
CPT Code(s):	88271 x4 DNA probe each; 88275 x4 Chromosomal in situ hybridization 100-300 cells each; 88291 Interpretation and report - Additional CPT code modifiers may be required for procedures performed to test for oncologic or inherited disorders	
2002298	Chromosome FISH, Interphase	CHR FISHI
Methodology:	Fluorescence in situ Hybridization	
Specimen Required:	<p>Collect: Non-diluted bone marrow aspirate collected in a heparinized syringe. Also acceptable: Green (sodium heparin). Other specimen types may be acceptable, contact the Cytogenetics Laboratory for specific specimen collection and transportation instructions.</p> <p>Specimen Preparation: Transfer 3 mL bone marrow to a green (sodium heparin) (Min: 1 mL). OR transport 10 mL whole blood (Min: 2 mL)</p> <p>Storage/Transport Temperature: Room temperature.</p> <p>Remarks: It is recommended that all FISH studies be done in conjunction with routine cytogenetic analysis. (Refer to appropriate Chromosome Analysis test for order instructions). If FISH only is requested, please submit a copy of previous cytogenetics report. If cell pellets or dropped cytogenetic slides are submitted, processing fee will not apply. This test must be ordered using Cytogenetic test request form #43097 or through your ARUP interface. Submit the Patient History for Cytogenetic (Chromosome) Studies form with the electronic packing list (available at http://www.aruplab.com/genetics/forms.php).</p> <p>Unacceptable Conditions: Frozen specimens. Paraffin-embedded specimens. Clotted specimens.</p> <p>Stability: Ambient: 48 hours; Refrigerated: Unacceptable; Frozen: Unacceptable</p>	
CPT Code(s):	88271 DNA probe each; 88275 Interphase in situ hybridization 100-300 each; 88291 Interpretation and report - Additional CPT codes modifiers may be required for procedures performed to test for oncologic or inherited disorders	
2002299	Chromosome FISH, Metaphase	CHR FISHM
Methodology:	Fluorescence in situ Hybridization	
Specimen Required:	<p>Collect: Green (sodium heparin). Also acceptable: Non-diluted bone marrow aspirate collected in a heparinized syringe. Other specimen types may be acceptable, contact the Cytogenetics Laboratory for specific specimen collection and transportation instructions.</p> <p>Specimen Preparation: Transport 10 mL whole blood (Min: 2 mL). OR transfer 3 mL bone marrow to a green (sodium heparin) (Min: 1 mL).</p> <p>Storage/Transport Temperature: Room temperature.</p> <p>Remarks: It is recommended that all FISH studies be done in conjunction with routine cytogenetic analysis. (Refer to appropriate Chromosome Analysis test for order instructions). If FISH only is requested, please submit a copy of previous cytogenetics report. If cell pellets or dropped cytogenetic slides are submitted, processing fee will not apply.</p>	

This test must be ordered using Cytogenetic test request form #43097 or through your ARUP interface. Submit the Patient History for Cytogenetic (Chromosome) Studies form with the electronic packing list (available at <http://www.aruplab.com/genetics/forms.php>).
Unacceptable Conditions: Frozen specimens. Paraffin-embedded specimens. Clotted specimens.

CPT Code(s): 88271 DNA probe each; 88273 Chromosomal in situ hybridization 10-30 cells each; 88291 Interpretation and report - Additional CPT code modifiers may be required for procedures performed to test for oncologic or inherited disorders.

2002297 Chromosome FISH, Prenatal **CHR FISHP**

Methodology: Fluorescence in situ Hybridization

Specimen Required: Collect: Amniotic fluid.

Specimen Preparation: **Do not freeze or expose to extreme temperatures.** Transport 30 mL amniotic fluid in sterile centrifuge tubes. (Min: 15 mL)

Storage/Transport Temperature: Room temperature.

Remarks: Specimen and completed test request form, including clinical indication, must be received within 48 hours of collection.

It is recommended that FISH be performed in conjunction with routine cytogenetic analysis.

This test must be ordered using Cytogenetic test request form #43097 or through your ARUP interface. Submit the Patient History for Cytogenetic (Chromosome) Studies form with the electronic packing list (available at <http://www.aruplab.com/genetics/forms.php>).

Unacceptable Conditions: Frozen specimens. Bloody specimens.

CPT Code(s): 88271 x5 DNA probe; 88275 Interphase in situ hybridization 100-300 each; 88291 Interpretation and report - Additional CPT code modifiers may be required for procedures performed to test for oncologic or inherited disorders.

0093194 Chronic Lymphocytic Leukemia Follow up Phenotyping by Flow Cytometry **CLL FLOW**

Methodology: Flow Cytometry

Specimen Required: Collect: Green (sodium heparin), lavender (EDTA), or pink (K₂EDTA).

Specimen Preparation: Transport 5 mL whole blood.

Storage/Transport Temperature: Room temperature. Specimen should be received within 24 hours of collection for optimal viable testing.

Remarks: This assay is for follow up after the diagnosis of CLL has been established by previous flow cytometry immunophenotyping. If prior studies were not performed at ARUP, the outside flow cytometry report and histograms must accompany the specimen. In addition, please provide CBC, Wright's stained smear, clinical history, and any relevant pathology reports.

Unacceptable Conditions: Frozen specimens. Specimens greater than 48 hours old. Clotted or hemolyzed specimens.

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

CPT Code(s): 88184 First marker, 88185 x7 Each additional marker, 88187 Interpretation

0098457 Chylomicron Screen, Body Fluid **CHYLO FL**

Methodology: Qualitative Electrophoresis

Specimen Required: Collect: Body fluid.

Specimen Preparation: Do not freeze. Transport 1 mL body fluid. (Min: 0.2 mL)

Storage/Transport Temperature: Refrigerated.

Remarks: Specify type of body fluid.

Unacceptable Conditions: Frozen specimens. Heparinized plasma.

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

CPT Code(s): 82664

2005160 Chymotrypsin, Fecal **CHYMOTRYP**

Methodology: Quantitative Enzymatic/Spectrophotometric

Specimen Required: Patient Preparation: Patients receiving pancreatic enzymes should discontinue taking the enzymes at least 5 days prior to stool collection.

Collect: Random stool.

Specimen Preparation: Transfer 1 g stool to a clean, unpreserved stool transport vial (ARUP Supply #40910). (Min: 0.5 g)

Storage/Transport Temperature: Refrigerated. Also acceptable: Frozen.

Stability: Ambient: Unacceptable; Refrigerated: 2 weeks; Frozen: 1 month

CPT Code(s): 84311

0091337 Cimetidine, Serum or Plasma **CIMETIDINE**

Methodology: High Performance Liquid Chromatography

Specimen Required: Collect: One 7 mL plain red.

Storage/Transport Temperature: 3 mL serum or plasma at 2-8°C. (Min: 1 mL) Submit sample in an ARUP Standard Transport Tube.

Unacceptable Conditions: Serum separator tubes.

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

CPT Code(s): 80299

0091422 Cimetidine, Urine **CIMETID U**

Methodology: High Performance Liquid Chromatography

Specimen Required: Collect: Random urine.

Storage/Transport Temperature: 1 mL urine at 2-8°C. (Min: 1 mL) Submit sample in an ARUP Standard Transport Tube.

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

CPT Code(s): 80299

0093399 Circulating Tumor Cell Count (Cell Search™) **CTC COUNT**

Methodology: Immunomagnetic separation/Immunofluorescence staining/Computer assisted analysis

Specimen Required: Patient Preparation: If the patient is on doxorubicin therapy, allow at least 7 days following administration of a dose of doxorubicin before blood draw.

Collect: CellSave® Preservative tube (ARUP Supply # 44867). Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787. Due to stability, do not collect Fri-Sun.

Specimen Preparation: Transport 20 mL whole blood. (Min: 10 mL) The minimum collection amount will not allow for repeat testing.

Storage/Transport Temperature: Room temperature. **Do not refrigerate or freeze.**

Remarks: Specify type of metastatic cancer (breast, colorectal, or prostate).

Unacceptable Conditions: Frozen or refrigerated specimens. Specimens not collected in the CellSave® tube or collected in expired CellSave® tubes. Short draws.

Stability: Ambient: 4 days; Refrigerated: Unacceptable; Frozen: Unacceptable

CPT Code(s): 88361 x2

2003302 Citalopram, Serum or Plasma CITALO
Methodology: Quantitative Liquid Chromatography-Tandem Mass Spectrometry
Specimen Required: Collect: Plain red, lavender (EDTA), or pink (K₂EDTA).
Specimen Preparation: Separate from cells within 2 hours of draw. Transfer 1 mL serum or plasma into an ARUP Standard Transport Tube. (Min: 0.4 mL)
Storage/Transport Temperature: Refrigerated. Also acceptable: Room temperature or frozen.
Unacceptable Conditions: Separator tubes.
Stability: Ambient: 1 month; Refrigerated: 1 month; Frozen: 1 month
CPT Code(s): 82491

0080011 Citric Acid, Serum CITRIC S
Methodology: Spectrophotometry/Enzymatic
Specimen Required: Collect: Plain red.
Specimen Preparation: Transfer 2 mL serum to an ARUP Standard Transport Tube. (Min: 1 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Room temperature specimens.
Stability: Ambient: 8 hours; Refrigerated: 18 days; Frozen: 1 month
CPT Code(s): 82507

0020852 Citric Acid, Urine CITRIC U
Methodology: Quantitative Enzymatic
Specimen Required: Collect: 24-hour urine. Refrigerate during collection. Also acceptable: Random urine.
Specimen Preparation: **Adjust pH to less than or equal to 2 by adding 6M HCl.** Transfer a 4 mL aliquot of urine to an ARUP Standard Transport Tube. (Min: 0.5 mL) Record total volume, collection time interval, and pH on transport tube and test request form. Also acceptable: Specimens previously preserved with boric acid.
Storage/Transport Temperature: Refrigerated.
Remarks:
Stability: Ambient: 8 hours; Refrigerated: 1 week; Frozen: Indefinitely
CPT Code(s): 82507

0099336 Clomipramine & Metabolite CLOMIP
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: Separate serum or plasma from cells. Transfer 2 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.8 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Gel separator tubes left at room temperature for more than 2 hours or refrigerated for more than 30 minutes.
Stability: After separation from cells: Ambient: 5 days; Refrigerated: 2 weeks; Frozen: 6 months
CPT Code(s): 80299 x2

0090055 Clonazepam CLON
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: 0.5 mL)
Storage/Transport Temperature: Refrigerated.
Stability: After separation from cells: Ambient: 6 weeks; Refrigerated: 6 weeks; Frozen: 2 months
CPT Code(s): 80154

0091362 Clonidine, Serum or Plasma CLONIDI SP
Methodology: Quantitative High Performance Liquid Chromatography/Tandem Mass Spectrometry
Specimen Required: Collect: Plain red, lavender (EDTA), or pink (K₂EDTA).
Specimen Preparation: Transfer 2 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.7 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Separator tubes.
Stability: Ambient: 1 month; Refrigerated: 1 month; Frozen: 1 month
CPT Code(s): 80299

0091223 Clonidine, Urine CLONID UR
Methodology: Quantitative High Performance Liquid Chromatography/Tandem Mass Spectrometry
Specimen Required: Collect: Random urine.
Specimen Preparation: Transfer 1 mL urine to an ARUP Standard Transport Tube. (Min: 0.25 mL)
Storage/Transport Temperature: Refrigerated.
Stability: Ambient: 1 month; Refrigerated: 1 month; Frozen: 1 month
CPT Code(s): 80299

0090196 Clorazepate (Assayed as Nordiazepam) CLORAZ
Methodology: Quantitative Gas Chromatography
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 1.5 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.5 mL)

Storage/Transport Temperature: Refrigerated.

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

CPT Code(s): 80154

0060140 *Clostridium difficile* Culture with Reflex to Cytotoxin Cell Assay **MC CDIF**
Methodology: Standard reference procedures for anaerobic bacterial culture and identification
Specimen Required: Collect: Stool or other intestinal source (i.e. tissue) from patient with symptoms of *C. difficile*-associated disease.
Specimen Preparation: Transfer 5 mL stool in a clean stool transport vial (ARUP supply #40910).
OR transport in enteric transport media (ARUP supply #29799). (Min: 1 mL) Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787.
Storage/Transport Temperature: Frozen. Submit specimen according to Biological Substance, Category B, shipping guidelines.
Unacceptable Conditions: Dry specimens, multiple specimens (more than one in 24 hours), formed stools, or stool in PVA or formalin.
Stability: Unpreserved or preserved: Ambient: 2 hours; Refrigerated: 48 hours; Frozen: 1 week
CPT Code(s): 87075; if reflexed add 87230

2002552 *Clostridium difficile* Cytotoxin Antibody **CDIFF AB**
Methodology: Antibody Neutralization
Specimen Required: Collect: Plain red.
Specimen Preparation: Separate serum from cells. Transfer 2 mL serum to an ARUP Standard Transport Tube. (Min: 1 mL)
Storage/Transport Temperature: Refrigerated.
Stability: Ambient: Unacceptable; Refrigerated: 2 weeks; Frozen: 1 month
CPT Code(s): 87230

0060851 *Clostridium difficile* Cytotoxin Cell Assay **CDIFTX**
Methodology: Cell Culture Assay/Confirmation by Anti-Toxin Neutralization
Specimen Required: Collect: Stool.
Specimen Preparation: Do not add preservative. Transfer 1 g stool to a clean, leak-proof vial (ARUP Supply#40910). 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.
Unacceptable Conditions: Specimens in formalin or other preservatives. Specimens submitted on swabs.
Stability: Ambient: 2 hours; Refrigerated: 72 hours; Frozen at -20°C: 72 hours; Frozen at -70°C: 1 week
CPT Code(s): 87230

2002838 *Clostridium difficile* toxin B gene (tdB) by PCR **CDIFF PCR**
Methodology: Qualitative Polymerase Chain Reaction
Specimen Required: Collect: Soft or liquid stool.
Specimen Preparation: Transfer stool to a clean, unpreserved transport vial (ARUP Supply# 40910). 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.
Unacceptable Conditions: Formed stool. Specimens other than liquid or soft stool. Stool collected in containers containing preservatives.
Stability: Ambient: 48 hours; Refrigerated: 5 days; Frozen: 1 month
CPT Code(s): 87493

0065146 *Clostridium difficile* Toxins (A & B) by EIA **CDIFF**
Methodology: Qualitative Enzyme Immunoassay
Specimen Required: Collect: Stool.
Specimen Preparation: Transfer 5 mL 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 mL)
Storage/Transport Temperature: Frozen. Submit specimen according to Biological Substance, Category B, shipping guidelines.
Unacceptable Conditions: Formed stool. Specimens in media or preservatives.
Stability: Unpreserved: Ambient: 2 hours; Refrigerated: 72 hours; Frozen: 1 week
CPT Code(s): 87324

0098930 Clozapine **CLOZAPINE**
Methodology: Quantitative Liquid Chromatography-Tandem Mass Spectrometry
Specimen Required: Collect: Plain red. Also acceptable: Lavender (EDTA), pink (K₂EDTA or K₃EDTA), or green (sodium or lithium heparin). Also acceptable (avoid if possible): 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
Specimen Preparation: Separate serum or plasma from cells within 2 hours of collection. Transfer 1 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.5 mL)
Storage/Transport Temperature: 1 mL serum or plasma at 2-8°C. (Min: 0.6 mL) Submit specimen in an ARUP Standard Transport Tube.
Remarks: Avoid use of separator tubes and gels.
Stability: After separation from cells: Ambient: 5 weeks; Refrigerated: 2 months; Frozen: 2 months
CPT Code(s): 80299

0099231 Cobalt, Blood **COBALT B**
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

2005549	Cobalt, Joint Fluid	CO F
Methodology:	Quantitative Inductively Coupled Plasma-Mass Spectrometry	
Specimen Required:	Patient Preparation: High concentrations of iodine may interfere with elemental testing. Patients should abstain from iodine-containing medications or contrast agents for at least 1 month prior to specimen collection for elemental testing. Collect: Joint fluid. The use of betadine-like topical antiseptics should be avoided during specimen collection. Specimen Preparation: Transfer 1 mL joint fluid 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: Refrigerated. Unacceptable Conditions: Separator tubes and gels. Fluid collected after administration of a gadolinium (Gd) containing contrast media (may occur with MRI studies). Stability: Ambient: 1 week; Refrigerated: 2 weeks; Frozen: 1 year	
CPT Code(s):	83018	
0025037	Cobalt, Serum or Plasma	COBALT 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 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):	83018	
0025032	Cobalt, Urine	COBALT 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):	83018	
0050137	Coccidioides Antibodies, IgG & IgM by ELISA	COCCI G/M
Methodology:	Semi-Quantitative Enzyme-Linked Immunosorbent Assay	
Specimen Required:	Collect: Serum separator tube OR CSF. Specimen Preparation: Separate serum from cells ASAP or within 2 hours of collection. Transfer 2 mL serum OR CSF 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. Please Mark specimens plainly as "acute" or "convalescent." Storage/Transport Temperature: Refrigerated. Unacceptable Conditions: Contaminated, hemolyzed, or severely lipemic specimens. Stability: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)	
CPT Code(s):	86635 Cocci IgM; 86635 Cocci IgG	
0050710	Coccidioides Antibodies Panel, CSF by CF, ID, ELISA	COCCI CSF
Methodology:	Semi-Quantitative Complement Fixation/Qualitative Immunodiffusion/Semi-Quantitative Enzyme-Linked Immunosorbent Assay	
Specimen Required:	Collect: CSF. Specimen Preparation: Transfer two 1 mL aliquots of CSF to individual ARUP Standard Transport Tubes. (Min: 0.3 mL per aliquot) Storage/Transport Temperature: Refrigerated. Unacceptable Conditions: Grossly bloody or hemolyzed specimens. Stability: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)	
CPT Code(s):	86635 Cocci Ab (CF); 86635 Cocci Ab (ID); 86635 Cocci IgG (EIA); 86635 Cocci IgM (EIA)	
0050588	Coccidioides Antibodies Panel, Serum by CF, ID, ELISA	COCCI PAN
Methodology:	Semi-Quantitative Complement Fixation/Qualitative Immunodiffusion/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 two 1 mL aliquots of serum to individual ARUP Standard Transport Tube. (Min: 0.3 mL per aliquot) 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: 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):	86635 Cocci Ab (CF); 86635 Cocci Ab (ID); 86635 Cocci Ab, IgG (EIA); 86635 Cocci Ab, IgM (EIA)	
0050170	Coccidioides Antibody by CF	COCCI
Methodology:	Semi-Quantitative Complement Fixation	

Specimen Required:	<u>Collect:</u> Serum separator tube OR CSF. <u>Specimen Preparation:</u> Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum OR CSF 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 acute specimens. Mark specimens plainly as acute or convalescent. <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Contaminated 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):	86635	
0050183	<i>Coccidioides</i> Antibody by ID	COCCHI-PPT
Methodology:	Qualitative Immunodiffusion	
Specimen Required:	<u>Collect:</u> Serum separator tube OR CSF. <u>Specimen Preparation:</u> Transfer 0.5 mL serum OR CSF to an ARUP Standard Transport Tube (Min: 0.15 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Bloody or grossly hemolyzed specimens. <u>Stability:</u> Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)	
CPT Code(s):	86635	
0050179	<i>Coccidioides</i> Antibody, IgG by ELISA	COCCHI G
Methodology:	Semi-Quantitative Enzyme-Linked Immunosorbent Assay	
Specimen Required:	<u>Collect:</u> Serum separator tube OR CSF. <u>Specimen Preparation:</u> Transfer 1 mL serum OR CSF to an ARUP Standard Transport Tube. (Min: 0.15 mL) <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):	86635	
0050178	<i>Coccidioides</i> Antibody, IgM by ELISA	COCCHIM
Methodology:	Semi-Quantitative Enzyme-Linked Immunosorbent Assay	
Specimen Required:	<u>Collect:</u> Serum separator tube OR CSF. <u>Specimen Preparation:</u> Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum OR CSF 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> 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):	86635	
0062225	<i>Coccidioides immitis</i> Identification by DNA Probe	MC CP
Methodology:	Nucleic Acid Probe	
Specimen Required:	<u>Collect:</u> Actively growing fungal isolate in pure culture. <u>Specimen Preparation:</u> Transport sealed container pure culture on non-blood containing fungal medium. <u>Storage/Transport Temperature:</u> Room temperature. Submit specimen according to Infectious Substance, Category A, shipping guidelines. <u>Remarks:</u> Specimen source required. Indicate isolate identification. Results may be delayed if growth of the organism is inadequate. <u>Unacceptable Conditions:</u> Mixed or non-viable organisms. Agar plate. Frozen specimens. <u>Stability:</u> Ambient: 2 weeks; Refrigerated: 2 weeks; Frozen: Unacceptable	
CPT Code(s):	87149	
0081119	Coenzyme Q10, Total	COENZ Q10
Methodology:	Quantitative High Performance Liquid Chromatography	
Specimen Required:	<u>Patient Preparation:</u> Patient should fast overnight prior to specimen collection. Patient may have water. It is not necessary to discontinue nutritional supplements prior to this test. <u>Collect:</u> Plasma separator tube, green (sodium or lithium heparin), serum separator tube, or plain red. <u>Specimen Preparation:</u> Protect from light within one hour of collection and during storage and shipment. Transfer 1 mL serum or plasma to an ARUP Amber Transport Tube. (Min: 0.3 mL) <u>Storage/Transport Temperature:</u> Frozen. <u>Unacceptable Conditions:</u> Specimens other than heparinized plasma or serum. Hemolyzed specimens. Specimens exposed to repeated freeze/thaw cycles. <u>Stability:</u> After separation from cells: Ambient: Unacceptable; Refrigerated: 3 weeks; Frozen: 1 month	
CPT Code(s):	82491	
0050175	Cold Agglutinins	COLD
Methodology:	Semi-Quantitative Hemagglutination	
Specimen Required:	<u>Collect:</u> Serum separator tube or plain red. <u>Specimen Preparation:</u> Keep in warm water (37°C) until processed for transport by laboratory; refrigeration of specimen before separation of serum from cells will adversely affect test results. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.25 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Plasma or CSF. Refrigerated whole blood. Contaminated, severely hemolyzed, or 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):	86157	
2003839	Collagen IV by Immunohistochemistry	COLL 4 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.

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

0093167 **Colorado Tick Fever Antibodies, IgG & IgM, IFA** **COLOR TICK**
Methodology: Immunofluorescence Assay
Specimen Required: Collect: Plain red.
Specimen Preparation: Transport 1 mL serum. (Min: 0.25 mL)
Storage/Transport Temperature: Refrigerated.
Stability: Ambient: 1 week; Refrigerated: 2 months; Frozen: 3 years
CPT Code(s): 86790 IgG; 86790 IgM

2005373 **Complement Activity, Alternative Pathway (AH50)** **AH50**
Methodology: Semi-Quantitative Radial Immunodiffusion
Specimen Required: Collect: Serum separator tube or plain red.
Specimen Preparation: Allow specimen to clot for one hour at room temperature. Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube and freeze. (Min: 0.3 mL)
Storage/Transport Temperature: **CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.**
Unacceptable Conditions: Specimen types other than serum. Refrigerated or room temperature specimens. Specimens left to clot at refrigerated temperature. Specimens exposed to repeated freeze/thaw cycles.
Stability: After separation from cells: Ambient: 2 hours; Refrigerated: Unacceptable; Frozen: 2 weeks
CPT Code(s): 86162

0050198 **Complement Activity Enzyme Immunoassay, Total** **CH50**
Methodology: Semi-Quantitative Enzyme-Linked Immunosorbent Assay
Specimen Required: Collect: Plain red.
Specimen Preparation: Allow specimen to clot for one hour at room temperature. Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.3 mL)
Storage/Transport Temperature: **CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.**
Unacceptable Conditions: Separator tubes. Specimens left to clot at 2-8°C. Specimens exposed to repeated freeze/thaw cycles. Non-frozen specimens.
Stability: After separation from cells: Ambient: 2 hours; Refrigerated: Unacceptable; Frozen: 2 weeks
CPT Code(s): 86162

0099078 **Complement Component 1, Functional** **C1**
Methodology: Quantitative Hemolytic Assay
Specimen Required: Collect: Plain red.
Specimen Preparation: Allow blood to clot at room temperature for 20-60 minutes. Separate serum from cells and freeze on dry ice or at -70°C within 2 hours. Transfer 1 mL serum 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: **CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.** Allow blood to clot at room temperature for 60 minutes. Separate serum from cells and freeze on dry ice or at -70°C within 10 minutes.
Stability: Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen: 3 months
CPT Code(s): 86161

0099130 **Complement Component 1Q Level** **COMP 1Q**
Methodology: Radial Immunodiffusion
Specimen Required: Collect: Lavender (EDTA) or pink (K₂EDTA).
Specimen Preparation: Separate plasma from cells ASAP or within 2 hours of collection. Transfer 1 mL plasma to an ARUP Standard Transport Tube and freeze immediately. (Min: 0.1 mL)
Storage/Transport Temperature: **CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.**
Unacceptable Conditions: Grossly hemolyzed, hyperlipemic, or room temperature specimens. Serum or non-EDTA plasma.
Stability: Ambient: Unacceptable; Refrigerated: 48 hours; Frozen: 1 month
CPT Code(s): 86160

0050148 **Complement Component 2** **C2**
Methodology: Quantitative Radial Immunodiffusion
Specimen Required: Collect: Serum separator tube.
Specimen Preparation: Allow specimen to clot for one hour at room temperature. Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube and freeze immediately. (Min: 0.3 mL)
Storage/Transport Temperature: **CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.**
Unacceptable Conditions: Non-frozen specimens. Specimens exposed to repeated freeze/thaw cycles. Specimens left to clot at refrigerated temperature.
Stability: After separation from cells: Ambient: 2 hours; Refrigerated: Unacceptable; Frozen: 2 weeks
CPT Code(s): 86160

0050150 **Complement Component 3** **C3**
Methodology: Quantitative Immunospectrometric
Specimen Required: Collect: Serum separator tube.
Specimen Preparation: Allow specimen to clot at room temperature. Separate serum from cells ASAP or within 2 hours of collection. Transfer 0.5 mL serum to an ARUP Standard Transport Tube and freeze. (Min: 0.3 mL)
Storage/Transport Temperature: Frozen.
Unacceptable Conditions: Specimens left to clot at refrigerated temperature. Specimens exposed to repeated freeze/thaw cycles.

CPT Code(s): Stability: Ambient: 8 hours; Refrigerated: 24 hours; Frozen: 2 weeks
86160

2003304 **Complement Component 3A** **COMP 3A**
Methodology: Radioimmunoassay
Specimen Required: Collect: Lavender (EDTA).
Specimen Preparation: Separate from cells within 1 hour of draw. Transfer 1 mL plasma to an ARUP Standard Transport Tube. Freeze at -70°C or on dry ice immediately. (Min: 1 mL)
Storage/Transport Temperature: **CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.**
Unacceptable Conditions: Refrigerated or room temperature specimens.
Stability: Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen at -70°C: 1 month
CPT Code(s): 86160

0050155 **Complement Component 4** **C4**
Methodology: Quantitative Immunoturbidimetric
Specimen Required: Collect: Serum separator tube. Also acceptable: Lavender (EDTA), pink (K₂EDTA), or green (sodium or lithium heparin).
Specimen Preparation: Allow specimen to clot at room temperature. Separate serum from cells ASAP or within 2 hours of collection and freeze. Transport 0.5 mL serum. (Min: 0.3 mL)
Storage/Transport Temperature: Frozen.
Unacceptable Conditions: Specimens left to clot at refrigerated temperature.
Stability: Ambient: 48 hours; Refrigerated: 48 hours; Frozen: 2 weeks (avoid repeated freeze/thaw cycles)
CPT Code(s): 86160

2003180 **Complement Component 4A** **COMP 4A**
Methodology: Radioimmunoassay
Specimen Required: Collect: Lavender (EDTA).
Specimen Preparation: Separate from cells within 1 hour of draw. Transfer 1 mL plasma to an ARUP Standard Transport Tube. Freeze at -70°C or on dry ice immediately. (Min: 1 mL)
Storage/Transport Temperature: **CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.**
Unacceptable Conditions: Refrigerated or room temperature specimens.
Stability: Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen: Frozen at -70°C: 1 year
CPT Code(s): 86160

0050156 **Complement Component 5** **C5**
Methodology: Quantitative Radial Immunodiffusion
Specimen Required: Collect: Serum separator tube.
Specimen Preparation: Allow specimen to clot for one hour at room temperature. Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube and freeze immediately. (Min: 0.3 mL) Plasma is not recommended.
Storage/Transport Temperature: **CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.**
Unacceptable Conditions: Non-frozen specimens. Specimens exposed to repeated freeze/thaw cycles. Specimens left to clot at refrigerated temperature.
Stability: After separation from cells: Ambient: 2 hours; Refrigerated: Unacceptable; Frozen: 2 weeks
CPT Code(s): 86160

0099072 **Complement Component 6** **COMP 6**
Methodology: Quantitative Radial Immunodiffusion
Specimen Required: Collect: Lavender (EDTA).
Specimen Preparation: Separate plasma from cells within 1 hour. Transfer 1 mL plasma to an ARUP Standard Transport Tube and freeze on dry ice or at -70°C (Min: 1 mL)
Storage/Transport Temperature: **CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.**
Remarks: **CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.** Separate plasma from cells within 10 minutes and freeze on dry ice or at -70°C
Stability: After separation from cells: Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen: 1 month
CPT Code(s): 86160

0099131 **Complement Component 6 Functional** **COMP 6 F**
Methodology: Quantitative Hemolytic Assay
Specimen Required: Collect: Plain red.
Specimen Preparation: Allow to clot at room temperature for 20-60 minutes. Transfer 1 mL serum to an ARUP Standard Transport Tube. Separate from clot and freeze at -70°C or on dry ice within 2 hours of draw. (Min: 1 mL)
Storage/Transport Temperature: **CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.**
Unacceptable Conditions: Serum separator tubes.
Stability: Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen: 3 months
CPT Code(s): 86161

0099073 **Complement Component 7** **COMP 7**
Methodology: Quantitative Radial Immunodiffusion
Specimen Required: Collect: Plain red. Also acceptable: Lavender (EDTA).
Specimen Preparation: Transfer 1 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.1 mL)
Storage/Transport Temperature: Refrigerated.
Stability: Ambient: Unacceptable; Refrigerated: 2 weeks; Frozen: 1 month
CPT Code(s): 86160

0099121 **Complement Component 7 Functional** **COMP 7 F**
Methodology: Quantitative Hemolytic Assay
Specimen Required: Collect: Plain red.
Specimen Preparation: Allow blood to clot at room temperature for 20-60 minutes. Separate from clot. Transfer 1 mL serum to an ARUP

Standard Transport Tube and freeze at -70°C or on dry ice within 2 hours of draw. (Min: 1 mL)
Storage/Transport Temperature: **CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.**
Remarks: CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered. Allow blood to clot at room temperature for 20 to 60 minutes. Must be separated from clot and frozen at -70° C or on dry ice within 2 hours of draw.
Unacceptable Conditions: Serum separator tubes.
Stability: Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen: 3 months

CPT Code(s): 86161

0099074 Complement Component 8 COMP 8

Methodology: Quantitative Radial Immunodiffusion

Specimen Required: Collect: Plain red. Also acceptable: Lavender (EDTA).

Specimen Preparation: Transfer 1 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.1 mL)

Storage/Transport Temperature: Refrigerated.

Stability: Ambient: 1 week; Refrigerated: 2 weeks; Frozen: 3 weeks

CPT Code(s): 86160

0099133 Complement Component 8 Functional COMP 8 F

Methodology: Hemolytic Assay

Specimen Required: Collect: Plain red.

Specimen Preparation: Allow blood to clot at room temperature for 20-60 minutes. Separate from clot. Transfer 1 mL serum to an ARUP Standard Transport Tube and freeze at -70°C or on dry ice within 2 hours of draw. (Min: 1 mL)

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

Unacceptable Conditions: Serum separator tubes.

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

CPT Code(s): 86161

0099076 Complement Component 9 COMP 9

Methodology: Quantitative Radial Immunodiffusion

Specimen Required: Collect: Plain red. Also acceptable: Lavender (EDTA).

Specimen Preparation: Transfer 1 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.1 mL)

Storage/Transport Temperature: Refrigerated. Also acceptable: Frozen.

Stability: Ambient: Unacceptable; Refrigerated: 2 weeks; Frozen: 1 month

CPT Code(s): 86160

0099120 Complement Component 9 Functional COMP 9 F

Methodology: Quantitative Hemolytic Assay

Specimen Required: Collect: Plain red.

Specimen Preparation: Allow blood to clot at room temperature for 20-60 minutes. Separate from clot. Transfer 1 mL serum to an ARUP Standard Transport Tube and freeze at -70°C or on dry ice within 2 hours of draw. (Min: 1 mL)

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

Remarks: CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered. Allow blood to clot at room temperature for 20 to 60 minutes. Must be separated from clot and frozen at -70°C or on dry ice within 2 hours of draw.

Unacceptable Conditions: Serum separator tubes.

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

CPT Code(s): 86161

2003499 Complement Component C9 (CCC9) by Immunohistochemistry CCC9 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

0050149 Complement Components 3 & 4 C3C4

Methodology: Quantitative Immunospectrometric

Specimen Required: Collect: Serum separator tube.

Specimen Preparation: Allow specimen to clot at room temperature. Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube and freeze. (Min: 0.6 mL)

Storage/Transport Temperature: Frozen.

Unacceptable Conditions: Specimens left to clot at refrigerated temperature.

Stability: Ambient: 8 hours; Refrigerated: 24 hours; Frozen: 2 weeks (avoid repeated freeze/thaw cycles)

CPT Code(s): 86160 C3; 86160 C4

0051720 Complement Factor B COMP FAC B

Methodology: Quantitative Radial Immunodiffusion

Specimen Required: Collect: Serum separator tube.

Specimen Preparation: Allow specimen to clot for 30 minutes to one hour at refrigerated temperature. Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube and place on refrigerant pack or freeze immediately. (Min: 0.3 mL)

Storage/Transport Temperature: Frozen.

Unacceptable Conditions: Room temperature specimens. Specimens exposed to repeated freeze/thaw cycles.

CPT Code(s): Stability: After separation from cells: Ambient: Unacceptable, Refrigerated: 48 hours; Frozen: 1 year
86160

2003042 Complement Factor Bb **FACTOR BB**
Methodology: Semi-Quantitative Enzyme-Linked Immunosorbent Assay
Specimen Required: Collect: Lavender (EDTA).
Specimen Preparation: Separate plasma from cells ASAP or within 2 hours of collection. Transfer 1 mL plasma to an ARUP Standard Transport Tube and freeze immediately. (Min: 0.3 mL)
Storage/Transport Temperature: **CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.**
Unacceptable Conditions: Refrigerated or room temperature specimens.
Stability: After separation from cells: Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen: 1 year
CPT Code(s): 86160

0020408 Comprehensive Metabolic Panel **CMP**
Methodology: Refer to individual components
Specimen Required: Collect: Plasma separator tube or serum separator tube.
Specimen Preparation: Protect from light. Allow serum tube 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 Amber Transport Tube. (Min: 0.5 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: EDTA, citrate, oxalate, or sodium fluoride/potassium 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): 80053

2002029 Congenital Adrenal Hyperplasia Treatment Panel **CAH RX PANEL**
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: Transfer 1 mL serum or plasma to an ARUP Standard Transport Tube. (Min 0.5 mL)
Storage/Transport Temperature: Refrigerated.
Stability: Ambient: 24 hours; Refrigerated: 1 week; Frozen: 6 months
CPT Code(s): 82157 Androstenedione; 83498 17-Hydroxyprogesterone; 84403 Total Testosterone

0051668 Connective Tissue Diseases Profile **CONN**
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: 0.3 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Plasma or other body fluids. Bacterially contaminated specimens.
Stability: After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year
CPT Code(s): 86235 x6 ENAs; 83516 Centromere; 83516 RIBPP

0051374 Connexin 26 (GJB2), Sequencing **CX26SEQ**
Methodology: DNA Probe/Fluorescence Signal Amplification/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 x2 Amplification; 83904 x3 Sequencing; 83909 Capillary electrophoresis; 83912 Interpretation and report.

Consultation, Cytopathology
Methodology: Microscopic Exam
Specimen Required: Specimen Preparation: Submit pap slides, nongynecological slide preparations, any special slides, paraffin-embedded block if applicable, copy of preliminary cytopathology report, clinical history and a brief explanatory note. If special studies are anticipated such as cytogenetics, flow cytometry, PCR, FISH, EM, IHC, IF, etc., submit additional tissue in appropriate fixative if required.
Contact your ARUP Business Development Manager or the Anatomic Pathology Business Development Manager (800) 584-2787 for more information.
CPT Code(s): 88321 Basic, consultation and report on referred material; or 88323 Moderate, consultation and report on referred material requiring slide preparation; or 88325 Complex, consultation, with review of records and specimens, and report on referred material. Additional billing may apply if special studies are indicated.

Consultation, Dermatopathology
Methodology: Microscopic Exam
Specimen Required: Specimen Preparation: Submit hematoxylin and eosin slides, any special stain slides, paraffin-embedded block if applicable, copy of preliminary cytopathology report, clinical history and a brief explanatory note. If special studies are anticipated such as cytogenetics, flow cytometry, PCR, FISH, EM, IHC, IF, etc., submit additional tissue in appropriate fixative if required.
Contact your ARUP Business Development Manager or the Anatomic Pathology Business Development Manager (800) 584-2787 for more information.
CPT Code(s): 88321 Basic, consultation and report on referred material; or 88323 Moderate, consultation and report on referred material requiring slide preparation; or 88325 Complex, consultation, with review of records and specimens, and report on referred material. Additional billing may apply if special studies are indicated.

Consultation, Head and Neck
Methodology: Microscopic Exam
Specimen Required: Specimen Preparation: Submit hematoxylin and eosin slides, any special stain slides, paraffin-embedded block, copy of preliminary pathology report, clinical history and a brief explanatory note. If special studies are anticipated such as cytogenetics, flow cytometry, PCR, FISH, EM, IHC, IF, etc., submit additional tissue in appropriate fixative if required.
Contact your ARUP Business Development Manager or the Anatomic Pathology Business Development Manager (800) 584-2787

for more information.
CPT Code(s): 88321 Basic, consultation and report on referred material; or 88323 Moderate, consultation and report on referred material requiring slide preparation; or 88325 Complex, consultation, with review of records and specimens, and report on referred material. Additional billing may apply if special studies are indicated.

Consultation, Hematopathology

Methodology: Microscopic Exam
Specimen Required: Specimen Preparation: Transport prepared slides (Hematoxylin and eosin, Wright stained, etc.) any special stain slides, paraffin-embedded block, copy of preliminary pathology report, clinical history and a brief explanatory note. If special studies are anticipated such as cytogenetics, flow cytometry, PCR, FISH, EM, IHC, IF, etc., submit additional tissue in appropriate fixative if required.
Contact your ARUP Business Development Manager at (800) 242-2787 for more information.
CPT Code(s): 88321 Basic, consultation and report on referred material; or 88323 Moderate, consultation and report on referred material requiring slide preparation; or 88325 Complex, consultation, with review of records and specimens, and report on referred material. Additional billing may apply if special studies are indicated.

Consultation, Neuropathology

Methodology: Microscopic Exam
Specimen Required: Specimen Preparation: Submit hematoxylin and eosin slides, any special stain slides, paraffin-embedded block, copy of preliminary pathology report, clinical history and brief explanatory note. If special studies are anticipated such as cytogenetics, flow cytometry, PCR, FISH, EM, IHC, IF, etc., submit additional tissue in appropriate fixative if required.
Contact your ARUP Business Development Manager or the Anatomic Pathology Business Development Manager (800) 584-2787 for more information.
CPT Code(s): 88321 Basic, consultation and report on referred material; or 88323 Moderate, consultation and report on referred material requiring slide preparation; or 88325 Complex, consultation, with review of records and specimens, and report on referred material. Additional billing may apply if special studies are indicated.

Consultation, Surgical Pathology

Methodology: Microscopic Exam
Specimen Required: Specimen Preparation: Transport hematoxylin and eosin slides, any special stain slides, and paraffin-embedded block. Include copy of preliminary pathology report, clinical history and brief explanatory note. If special studies are anticipated such as cytogenetics, flow cytometry, PCR, FISH, EM, IHC, IF, etc., submit additional tissue in appropriate fixative if required.
Contact your ARUP Business Development Manager or the Anatomic Pathology Business Development Manager (800) 584-2787 for more information.
CPT Code(s): 88321 Basic, consultation and report on referred material; or 88323 Moderate, consultation and report on referred material requiring slide preparation; or 88325 Complex, consultation, with review of records and specimens, and report on referred material. Additional billing may apply if special studies are included.

0020694

Copper, Liver

CU-LIVER

Methodology: Quantitative Inductively Coupled Plasma-Mass Spectrometry
Specimen Required: Collect: Liver tissue obtained with an 18 gauge needle.
Specimen Preparation: Transport at least a 1 cm long specimen. Tissue can be fresh, paraffin-embedded, or dried. Also acceptable: Formalin-fixed. Specimens other than paraffin-embedded should be stored and transported in a metal-free container such as a royal blue (no additive).
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Specimens less than 0.25 mg (dry weight). Paraffin blocks that have been processed with Hollandes or other copper-containing stain.
Stability: **Paraffin block, preserved (formalin), or dried:** Ambient: Indefinitely; Refrigerated: Indefinitely; Frozen: Indefinitely
Fresh tissue: Ambient: Unacceptable; Refrigerated: 1 week; Frozen: Indefinitely
CPT Code(s): 82525

0020096

Copper, Serum

COPPER

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 and 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): 82525

0020596

Copper, Serum Free (Direct)

COPPER F

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).
Specimen Preparation: Centrifuge. Transfer 2.5 mL serum to an ARUP Trace Element-Free Transport Tube. (Min: 1.5 mL) Do not allow serum to remain on cells.
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: 1 week; Frozen: 1 month
CPT Code(s): 82525

0020461

Copper, Urine

COPPER 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):	82525	
2003292	CordStatSM 12 Reflexive Panel	CORD 12
Methodology:	Qualitative Enzyme-Linked Immunosorbent Assay/Quantitative Gas Chromatography-Mass Spectrometry/Liquid Chromatography-Tandem Mass Spectrometry	
Specimen Required:	<u>Collect:</u> Umbilical cord. Collection instructions are provided with kit (ARUP Supply #46990). Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787. <u>Specimen Preparation:</u> Avoid any contact of ethanol liquid or vapor with the umbilical cord. Do not place in formalin. Transport 6-inch to 8-inch segment of umbilical cord. <u>Storage/Transport Temperature:</u> Refrigerated. Also acceptable: Room temperature or frozen. <u>Stability:</u> Ambient: 1 week; Refrigerated: 3 weeks; Frozen: 1 year	
CPT Code(s):	80101 x12 Drug screen; 80103 Tissue preparation; if positive, add 80102 Drug confirmation and 80103 Tissue preparation for each procedure	
0098513	Corticosteroid Binding Globulin (CBG)	CORTICO BG
Methodology:	Radioimmunoassay	
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> <u>Stability:</u> Ambient: Unacceptable; Refrigerated: 1 week; Frozen: 2 years	
CPT Code(s):	84449	
0097646	Corticotropin Releasing Hormone	CORT REL
Methodology:	Extraction Radioimmunoassay	
Specimen Required:	<u>Collect:</u> Green (sodium or lithium heparin). <u>Specimen Preparation:</u> Transport 3 mL plasma. (Min: 1.1 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Refrigerated specimens greater than 8 days or room temperature specimens greater than 4 days. <u>Stability:</u> Ambient: 4 days; Refrigerated: 8 days; Frozen: 3 months	
CPT Code(s):	83519	
2003250	Cortisol by LC-MS/MS, Serum or Plasma	CORT TMS
Methodology:	Quantitative High Performance Liquid Chromatography-Tandem Mass Spectrometry	
Specimen Required:	<u>Patient Preparation:</u> It is recommended that the specimen be collected between 6-11 a.m. <u>Collect:</u> Serum separator tube, lavender (EDTA), pink (K ₂ EDTA), 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: 0.5 mL) <u>Storage/Transport Temperature:</u> Frozen. <u>Unacceptable Conditions:</u> Room temperature specimens. <u>Stability:</u> After separation from cells: Ambient: Unacceptable; Refrigerated: 1 week; Frozen: 6 months	
CPT Code(s):	82533	
0092100	Cortisol/Cortisone Urine Free by LC-MS/MS	CORTURATIO
Methodology:	Quantitative High Performance Liquid Chromatography-Tandem Mass Spectrometry	
Specimen Required:	<u>Collect:</u> 24-hour or random urine. Refrigerate 24-hour specimen during collection. <u>Specimen Preparation:</u> Transport one 4 mL aliquot of urine. (Min: 1 mL) Record total volume and collection time interval on transport tube and test request form. <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Room temperature specimens. Acidified specimens or specimens with preservatives. <u>Stability:</u> Ambient: Unacceptable; Refrigerated: 1 week; Frozen: 1 month	
CPT Code(s):	82530 Cortisol; 83789 LC-MS/MS	
0098391	Cortisol, Free	FCORTS
Methodology:	Equilibrium Dialysis/Quantitative Electrochemiluminescent Immunoassay	
Specimen Required:	<u>Collect:</u> Plain red or serum separator tube. Also acceptable: Lavender (EDTA) or pink (K ₂ EDTA). <u>Specimen Preparation:</u> Centrifuge specimen. Separate serum or plasma from cells within 2 hours of collection. Transfer 1 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.6 mL) Label plainly as a.m. or p.m. collection. <u>Storage/Transport Temperature:</u> Frozen. <u>Unacceptable Conditions:</u> Specimens collected in plasma separator tubes containing heparin. Grossly hemolyzed or heparinized specimens. <u>Stability:</u> After separation from cells: Ambient: 4 hours; Refrigerated: 5 days; Frozen: 3 months	
CPT Code(s):	82530	

0081117	Cortisol, Saliva	CORT SAL
Methodology:	Quantitative Enzyme Immunoassay	
Specimen Required:	<u>Patient Preparation:</u> Do not collect specimen within 60 minutes after eating a meal, within 12 hours after consuming alcohol, immediately after brushing teeth or after any activity that may cause gums to bleed. Rinse mouth thoroughly with water 10 minutes before specimen collection. Recommended collection time is between 11:00 p.m. - 1:00 a.m. <u>Collect:</u> Saliva. Swab must be completely saturated to ensure sufficient volume for testing. <u>Specimen Preparation:</u> Transfer saturated swab to plain (non-citric acid) cotton Salivette® collection device (ARUP Supply #41252). Record the time of collection on the test request form, and on Salivette® transport container. <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Specimens not collected using the Salivette® collection device. Sodium azide preservative. Specimens with pH values greater than 9.0 or less than 3.5 must be recollected. Specimens visibly contaminated with blood, cellular debris, food particles, or mucus. <u>Stability:</u> Ambient: 1 week; Refrigerated: 3 weeks; Frozen: 6 months	
CPT Code(s):	82533	
0070030	Cortisol, Serum or Plasma	CORTISOL
Methodology:	Quantitative Chemiluminescent Immunoassay	
Specimen Required:	<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 1 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.6 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Stability:</u> After separation from cells: Ambient: 1 week; Refrigerated: 1 week; Frozen: 3 months	
CPT Code(s):	82533	
0097222	Cortisol Urine Free by LC-MS/MS	CORT UF
Methodology:	Quantitative Liquid Chromatography-Tandem Mass Spectrometry	
Specimen Required:	<u>Collect:</u> 24-hour or random urine. Refrigerate 24-hour specimen during collection. <u>Specimen Preparation:</u> Transport one 4 mL aliquot of urine. (Min: 1 mL) Record total volume and collection time interval on transport tube and test request form. <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Room temperature specimens. Acidified specimens or specimens with preservatives. <u>Stability:</u> Ambient: Unacceptable; Refrigerated: 2 weeks; Frozen: 6 months	
CPT Code(s):	82530	
2003252	Cortisone by LC-MS/MS, Serum or Plasma	CONE TMS
Methodology:	Quantitative High Performance Liquid Chromatography-Tandem Mass Spectrometry	
Specimen Required:	<u>Patient Preparation:</u> It is recommended that the specimen be collected between 6-11 a.m. <u>Collect:</u> Serum separator tube, lavender (EDTA), pink (K ₂ EDTA), 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: 0.5 mL) <u>Storage/Transport Temperature:</u> Frozen. <u>Unacceptable Conditions:</u> Room temperature specimens. <u>Stability:</u> After separation from cells: Ambient: Unacceptable; Refrigerated: 1 week; Frozen: 6 months	
CPT Code(s):	83491	
0060360	<i>Corynebacterium diphtheriae</i> Culture	MC DIPH
Methodology:	Standard reference procedures for <i>C. diphtheriae</i> culture and identification	
Specimen Required:	<u>Collect:</u> Nasopharynx, throat, or wound swab. Swab nasopharynx and throat at the site of membrane or inflammation to significantly increases recovery. Swab base of cleansed wound, if present. <u>Specimen Preparation:</u> Place swab 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. <u>Stability:</u> Ambient: 48 hours; Refrigerated: Unacceptable; Frozen: Unacceptable	
CPT Code(s):	87081 presumptive identification. If definitive identification required, add 87077.	
2003102	<i>Coxiella burnetii</i> (Q-Fever) Antibodies, IgG & IgM by IFA with Reflex to Titer	C BURNETHI
Methodology:	Immunofluorescence Assay	
Specimen Required:	<u>Collect:</u> Plain red or 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. Also acceptable: Frozen. <u>Stability:</u> Ambient: 4 days; Refrigerated: 1 week; Frozen: 1 month	
CPT Code(s):	86638 x4; if reflexed add 86638 per titer performed	
0050462	<i>Coxiella burnetii</i> (Q-Fever) Antibody IgG, Phase I & II by IFA	Q-F 1,2
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: 0.1 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" and "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):	86638 Q-Fever Phase I; 86638 Q-Fever Phase II	
0050463	<i>Coxiella burnetii</i> (Q-Fever) Antibody IgG, Phase I by IFA	Q-F I
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: Urine. Contaminated, hemolyzed, or severely lipemic specimens.
Stability: After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year

CPT Code(s): 86638

0050464 *Coxiella burnetii* (Q-Fever) Antibody IgG, Phase II by IFA **Q-F II**

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: Urine. Contaminated, hemolyzed, or severely lipemic specimens.

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

CPT Code(s): 86638

2003097 *Coxiella burnetii* (Q-Fever) Antibody, IgM by IFA with Reflex to Titer **COXIELLA B**

Methodology: Semi-Quantitative Immunofluorescence Assay

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

Specimen Preparation: Transfer 0.5 mL serum to an ARUP Standard Transport Tube. (Min: 0.2 mL)

Storage/Transport Temperature: Refrigerated. Also acceptable: Frozen.

Stability: Ambient: 4 days; Refrigerated: 1 week; Frozen: 1 month

CPT Code(s): 86638 x2; if reflexed add 86638 per titer performed

2002932 Coxsackie A Antibodies (A-2, 4, 7, 9, 10 & 16 Serotypes) **COX A AB**

Methodology: Complement Fixation

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

Specimen Preparation: Transfer 2 mL serum to an ARUP standard transport tube. (Min: 1 mL)

Storage/Transport Temperature: Room temperature.

Stability: Ambient: 1 week; Refrigerated: 2 weeks; Frozen: 1 month

CPT Code(s): 86658 x6 A-2, 4, 7, 9, 10 and 16 serotypes

0050503 Coxsackie A9 Virus Antibodies by CF **COX A9**

Methodology: Semi-Quantitative Complement Fixation

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: 0.25 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): 86658

0060055 Coxsackie B Virus Antibodies **COX B**

Methodology: Semi-Quantitative Serum Neutralization Assay

Specimen Required: Collect: Serum separator tube or plain red. Also acceptable: CSF.

Specimen Preparation: Separate serum from cells ASAP or within 2 hours of collection. Transfer 3 mL serum or CSF to an ARUP Standard Transport Tube. (Min: 0.3 mL) Parallel testing is preferred and convalescent specimens must be received within 30 days from receipt of acute specimens. Mark specimens plainly as "acute" or "convalescent."

Storage/Transport Temperature: Refrigerated.

Unacceptable Conditions: Plasma.

Stability: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year

CPT Code(s): 86658 x6 Coxsackie (B1, B2, B3, B4, B5, and B6)

2002328 Creatine Disorders Panel, Plasma or Serum **CRTN DIS P**

Methodology: Liquid Chromatography/Tandem Mass Spectrometry

Specimen Required: Collect: Green (sodium or lithium heparin), lavender (EDTA), plain red, or serum separator tube.

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

Storage/Transport Temperature: Frozen.

Remarks: **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.**

Unacceptable Conditions: Specimens exposed to more than one freeze/thaw cycle.

Stability: Ambient: Unacceptable; Refrigerated: 1 week; Frozen: 2 weeks

CPT Code(s): 82540 Creatine; 83789 Guanidinoacetic acid

2002333 Creatine Disorders Panel, Urine **CRTN DIS U**

Methodology: Liquid Chromatography/Tandem Mass Spectrometry

Specimen Required: Collect: Random or timed urine.

Specimen Preparation: Transfer 2 mL urine to an ARUP Standard Transport Tube and freeze immediately. (Min: 0.5 mL)

Storage/Transport Temperature: Frozen.

Remarks: **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.

Unacceptable Conditions: Specimens exposed to more than one freeze/thaw cycle.

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

CPT Code(s): 82540 Creatine, 82570 Creatinine, 83789 Guanidinoacetic acid

0020414 **Creatine Kinase Isoenzymes** **CKISO**
Methodology: Quantitative Enzymatic/Electrophoresis
Specimen Required: Collect: Serum separator tube.
Specimen Preparation: Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.5 mL) CK-MB and CK-BB are quite labile; specimens should be frozen if the assay cannot be performed within 24 hours.
Storage/Transport Temperature: Frozen.
Remarks: This test will detect CK macroenzymes.
Unacceptable Conditions: Specimens preserved in citrate, EDTA, fluoride, heparin, or iodoacetate. Room temperature specimens.
Stability: After separation from cells: Ambient: Unacceptable; Refrigerated: 24 hours; Frozen: 2 weeks (avoid repeated freeze/thaw cycles)
CPT Code(s): 82552 Creatine kinase isoenzymes; 82550 Creatine kinase, total

0080480 **Creatine Kinase, MB** **CK MB**
Methodology: Chemiluminescent Immunoassay
Specimen Required: Collect: Green (sodium or lithium heparin), plasma separator tube, serum separator tube.
Specimen Preparation: SST needs to sit for 15-20 minutes for proper clot formation and to assure the absence of fibrin in the serum which can interfere with this assay. Centrifuge and remove from cells ASAP or within 2 hours of collection. Specimens must be free of all particulate matter which can interfere with the assay. Transfer 2 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.5 mL)
Storage/Transport Temperature: Frozen.
Remarks: CK-MB is quite labile. **CK-MB relative percent will be calculated only if Creatine Kinase, Total, Serum or Plasma (ARUP test code 0020010) is ordered.**
Unacceptable Conditions: Specimens exposed to repeated freeze/thaw cycles.
Stability: After separation from cells: Ambient: 8 hours; Refrigerated: 48 hours; Frozen: 6 months
CPT Code(s): 82553

0020010 **Creatine Kinase, Total, Serum or Plasma** **CK**
Methodology: Quantitative Enzymatic
Specimen Required: Collect: Plasma preparation tube or serum separator tube.
Specimen Preparation: Allow specimen to clot completely at room temperature. Separate serum or plasma from cells ASAP. 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 or sodium fluoride. Grossly hemolyzed specimens.
Stability: After separation from cells: Ambient: 48 hours; Refrigerated: 1 week; Frozen: 1 month
CPT Code(s): 82550

2002340 **Creatine, Serum or Plasma** **CRTN SP**
Methodology: Liquid Chromatography/Tandem Mass Spectrometry
Specimen Required: Collect: Plain red, serum separator tube, green (sodium or lithium heparin), or 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 and freeze immediately. (Min: 0.2 mL)
Storage/Transport Temperature: Frozen.
Unacceptable Conditions: Specimens exposed to more than one freeze/thaw cycle.
Stability: Ambient: Unacceptable; Refrigerated: 1 week; Frozen: 2 weeks
CPT Code(s): 82540

2001875 **Creatine Transport, Fibroblasts** **CRTN FIBRO**
Methodology: Radioassay
Specimen Required: Collect: Fibroblasts from skin biopsy.
Specimen Preparation: Transport **two T-25 flasks** of fibroblasts from skin biopsy. Cells should be kept in 37°C incubator until shipped.
Storage/Transport Temperature: **CRITICAL ROOM TEMPERATURE. Must call lab before shipping.** Ship Monday-Thursday only.
Remarks: **Clinical information is needed for appropriate interpretation. Biochemical Genetics Patient History Form is available on the ARUP Web site at <http://www.aruplab.com/patienthistory> or by contacting ARUP Client Services.**
Unacceptable Conditions: Frozen or refrigerated specimens. Specimens in improper media. Dead cells.
Stability: Ambient: 4 days; Refrigerated: Unacceptable; Frozen: Unacceptable
CPT Code(s): 84238

2002343 **Creatine, Urine** **CRTN URINE**
Methodology: Liquid Chromatography/Tandem Mass Spectrometry
Specimen Required: Collect: Random urine.
Specimen Preparation: Transfer 2 mL urine to an ARUP Standard Transport Tube and freeze immediately. (Min: 0.5 mL)
Storage/Transport Temperature: Frozen.
Unacceptable Conditions: Specimens exposed to more than one freeze/thaw cycle.
Stability: Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen: 2 weeks
CPT Code(s): 82540

0020473 **Creatinine, 24-Hour Urine** **UCRT**
Methodology: Quantitative Spectrophotometry
Specimen Required: Collect: 24-hour urine. Specimen **must** be refrigerated during collection. Also acceptable: Random urine (no reference intervals).
Specimen Preparation: Transfer one 3 mL aliquot to an ARUP Standard Transport Tube. (Min: 0.5 mL) Record total volume and collection time interval on transport tube and test request form. Also acceptable: Specimens previously preserved with 6M HCl, boric acid, or 5% NaOH.
Storage/Transport Temperature: Refrigerated.

CPT Code(s): Stability: Ambient: 24 hours; Refrigerated: 4 days; Frozen: 6 months
82570

0020509 Creatinine, Body Fluid CRT-FL
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 the test request form.
Stability: Ambient: 5 days; Refrigerated: 1 month; Frozen: 6 months
CPT Code(s): 82570

0020474 Creatinine Clearance, Urine CRTCL
Methodology: Quantitative Spectrophotometry/Enzymatic/Calculation
Specimen Required: Collect: 24-hour urine. Specimen must be refrigerated during collection. **AND** plasma separator tube or serum separator tube, collected within 48 hours of initiating urine collection.
Specimen Preparation: Transfer one 3 mL aliquot from a well-mixed 24-hour collection (Min: 0.5 mL) **AND** 1 mL serum or plasma (Min: 0.2 mL) to individual ARUP Standard Transport Tubes. Record total volume and collection time interval on transport tube and test request form.
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Random urine collections.
Stability: **Serum:** (after separation from cells) Ambient: 4 hours; Refrigerated: 1 week; Frozen: 6 months
Urine: Ambient: 24 hours; Refrigerated: 4 days; Frozen: 6 months.
CPT Code(s): 82575

0020025 Creatinine, Serum or Plasma CRT
Methodology: Quantitative Enzymatic
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 plasma or serum or plasma to an ARUP Standard Transport Tube. (Min: 0.2 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Specimens obtained through catheters used to infuse hyperalimentation fluid. Specimens with potassium oxalate/sodium fluoride, citrate, or EDTA as anticoagulants.
Stability: After separation from cells: Ambient: 4 hours; Refrigerated: 1 week; Frozen: 6 months
CPT Code(s): 82565

0091485 Cresols, Urine CRESOL URN
Methodology: Gas Chromatography
Specimen Required: Collect: Random urine. Collect in a preservative-free container.
Storage/Transport Temperature: 4 mL urine at 20-25°C. (Min: 1 mL) Submit sample in an ARUP Standard Transport Tube.
Unacceptable Conditions: Sample preserved with benzoic acid.
Stability: Ambient: 1 week; Refrigerated: 2 weeks; Frozen: 6 months
CPT Code(s): 84600

2001613 Crohn Disease Prognostic Panel CROHN PAN
Methodology: Semi-Quantitative Enzyme-Linked Immunosorbent Assay
Specimen Required: Collect: Serum separator tube, lavender (EDTA), pink (K2EDTA), or 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: 0.25 mL)
Storage/Transport Temperature: Refrigerated.
Stability: After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year
CPT Code(s): 86671 ASCA IgG; 83516 Lam Ag IgG; 83516 Man Ag IgG; 83516 Chito Ag IgA

0050190 Cryofibrinogen CRYO FIB
Methodology: Qualitative Cold Precipitation
Specimen Required: Patient Preparation: Fasting specimen preferred.
Collect: **Whole blood drawn in a pre-warmed (37°C) syringe.** Specimen may be drawn directly into a pre-warmed lt. blue (sodium citrate) or black (sodium citrate).
Specimen Preparation: **Maintain whole blood at 37°C from collection to transport; do not refrigerate or freeze at any time.** Immediately after blood has been obtained, transfer specimen to a pre-warmed blue (sodium citrate) or black (sodium citrate) (if not used for collection). Separate plasma from cells using a 37°C centrifuge, if possible. Transfer 3 mL plasma to an ARUP Standard Transport Tube. (Min: 1 mL)
Storage/Transport Temperature: Room temperature.
Remarks: Proper collection and transport of specimen is critical to the outcome of the assay. Quantities less than 3 mL may affect the sensitivity of the assay.
Unacceptable Conditions: Refrigerated or frozen specimens. Heparinized specimens. Grossly hemolyzed or lipemic specimens.
Stability: After separation from cells: Ambient: 1 week; Refrigerated: Unacceptable; Frozen: Unacceptable
CPT Code(s): 82585

0050185 Cryoglobulin, Qualitative CRYGB
Methodology: Qualitative Cold Precipitation
Specimen Required: Patient Preparation: Fasting specimen preferred.
Collect: **Whole blood drawn in a pre-warmed (37°C) syringe.** Specimen may be drawn directly into a pre-warmed plain red.
Specimen Preparation: **Maintain whole blood at 37°C until clotting is complete; do not refrigerate or freeze at any time.** Immediately after blood has been obtained, transfer specimen to a pre-warmed plain red (if not used for collection). Separate plasma from cells using a 37°C centrifuge, if possible. Transfer 3 mL serum to an ARUP Standard Transport Tube. (Min: 1 mL)
Storage/Transport Temperature: Room temperature.
Remarks: Proper collection and transport of specimen is critical to the outcome of the assay. Quantities less than 3 mL may affect the

sensitivity of the assay.

Unacceptable Conditions: Refrigerated or frozen specimens. Separator tubes. Grossly hemolyzed or lipemic specimens.

Stability: After separation from cells: Ambient: 1 week; Refrigerated: Unacceptable; Frozen: Unacceptable

CPT Code(s):

82595

2002403 **Cryoglobulin, Qualitative with Reflex to IFE Typing and Quantitative IgA, IgG, and IgM** **CRYO TYPING**
Methodology: Qualitative Cold Precipitation/ Qualitative IFE/Quantitative Nephelometry
Specimen Required: Patient Preparation: Fasting specimen preferred.
Collect: **Whole blood drawn in a pre-warmed (37°C) syringe.** Specimen may be drawn directly into a pre-warmed plain red.
Specimen Preparation: **Maintain whole blood at 37°C until clotting is complete; do not refrigerate or freeze at any time.**
Immediately after blood has been obtained, transfer specimen to a pre-warmed plain red (if not used for collection). Separate plasma from cells using a 37°C centrifuge, if possible. Transfer 3 mL serum to an ARUP Standard Transport Tube. (Min: 3 mL)
Storage/Transport Temperature: Room temperature.
Remarks: Proper collection and transport of specimen is critical to the outcome of the assay. Quantities less than 3 mL may affect the sensitivity of the assay.
Unacceptable Conditions: Plasma. Refrigerated or frozen specimens. Separator tubes. Grossly hemolyzed or lipemic specimens.
Stability: After separation from cells: Ambient: 1 week; Refrigerated: Unacceptable; Frozen: Unacceptable

CPT Code(s): 82595 Cryoglobulin; if reflexed, add 86334 IFE and 82784 x3 (IgA, IgG, IgM)

2002063 **Cryoglobulin, Qualitative with Reflex to Quantitative IgA, IgG, & IgM** **CRYGB QNT**
Methodology: Qualitative Cold Precipitation/Quantitative Nephelometry
Specimen Required: Patient Preparation: Fasting specimen preferred.
Collect: **Whole blood drawn in a pre-warmed (37°C) syringe.** Specimen may be drawn directly into a pre-warmed plain red.
Specimen Preparation: **Maintain whole blood at 37°C until clotting is complete; do not refrigerate or freeze at any time.**
Immediately after blood has been obtained, transfer specimen to a pre-warmed plain red (if not used for collection). Separate plasma from cells using a 37°C centrifuge, if possible. Transfer 3 mL serum to an ARUP Standard Transport Tube. (Min: 1 mL)
Storage/Transport Temperature: Room temperature.
Remarks: Proper collection and transport of specimen is critical to the outcome of the assay. Quantities less than 3 mL may affect the sensitivity of the assay.
Unacceptable Conditions: Plasma. Refrigerated or frozen specimens. Separator tubes. Grossly hemolyzed or lipemic specimens.
Stability: After separation from cells: Ambient: 1 week; Refrigerated: Unacceptable; Frozen: Unacceptable

CPT Code(s): 82595 Cryoglobulin; if reflexed, add 82784 x3 (IgA, IgG, IgM)

0098947 **Cryptococcus Antibody** **CRYPTO AB**
Methodology: Immunofluorescence Assay
Specimen Required: Collect: Plain red or serum separator tube.
Specimen Preparation: Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.3 mL)
Storage/Transport Temperature: Refrigerated.
Stability: Ambient: 1 week; Refrigerated: 2 weeks; Frozen: 1 month

CPT Code(s): 86641

0050195 **Cryptococcus Antigen, CSF** **CRY CSF**
Methodology: Semi-quantitative Enzyme Immunoassay
Specimen Required: Collect: CSF.
Specimen Preparation: Transport 1 mL CSF. (Min: 0.25 mL)
Storage/Transport Temperature: Refrigerated. Submit specimen according to Biological Substance, Category B, shipping guidelines.
Stability: Ambient: 1 hour; Refrigerated: 72 hours; Frozen: Indefinitely

CPT Code(s): 87327

0050196 **Cryptococcus Antigen, Serum** **CRY BLD**
Methodology: Semi-quantitative Enzyme Immunoassay
Specimen Required: Collect: Plain red or serum separator tube.
Specimen Preparation: Transport 1 mL serum. (Min: 0.25 mL)
Storage/Transport Temperature: Refrigerated. Submit specimen according to Biological Substance, Category B, shipping guidelines.
Unacceptable Conditions: Specimens collected in anticoagulants.
Stability: Ambient: 1 hour; Refrigerated: 72 hours; Frozen: Indefinitely

CPT Code(s): 87327

0060045 **Cryptosporidium Antigen by EIA** **CRYSPOB**
Methodology: Qualitative Enzyme Immunoassay
Specimen Required: Collect: Stool.
Specimen Preparation: Preserve stool in 10% formalin within one hour of collection (ARUP Supply #16355). Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787. (Min: 1 g)
Storage/Transport Temperature: Room temperature. Submit specimen according to Biological Substance, Category B, shipping guidelines.
Unacceptable Conditions: Stool in Ecofix, MIF, Protifix, PVA, Total Fix, Unafix, or any preservative containing alcohol.
Stability: Ambient: 9 months; Refrigerated: 9 months; Frozen: Unacceptable

CPT Code(s): 87328

0009500 **Crystals (Local Clients Only)** **CRYSTALS**
Methodology: Manual/Polarized Microscopy
Specimen Required: Collect: Synovial or bile fluid in liquid EDTA or sodium heparin.
Specimen Preparation: Transport 1 mL synovial or bile fluid. (Min: 0.5 mL)
Storage/Transport Temperature: Refrigerated.
Remarks: Indicate source on the test request form.
Unacceptable Conditions: Any fluid other than synovial or bile. Synovial or bile fluids collected in powdered EDTA or powdered lithium heparin. Specimens sent with needle. Frozen specimens.
Stability: Ambient: 4 hours; Refrigerated: 12 hours; Frozen: Unacceptable

CPT Code(s): 89060

0060106 CSF Bacterial Culture (Includes Gram Stain 0060101) MC CSF
Methodology: Standard reference procedures for bacterial stain, aerobic culture, and identification
Specimen Required: Collect: CSF.
Specimen Preparation: **Do not refrigerate for bacterial culture.** Transfer 1 mL CSF to a sterile container.
Storage/Transport Temperature: Room temperature. Submit specimen according to Biological Substance, Category B, shipping guidelines.
Stability: Ambient: 24 hours; Refrigerated: Unacceptable; Frozen: Unacceptable
CPT Code(s): 87070

0092572 Cutaneous Direct Immunofluorescence, Biopsy CUTDIF
Methodology: Direct Immunofluorescence
Specimen Required: Collect: Tissue, skin, or mucous membrane.
Specimen Preparation: Transport epidermis/epithelium and dermis tissue (optimal 4-5 mm) in Michel's (or Zeus) medium.
Storage/Transport Temperature: Room temperature.
Unacceptable Conditions: Formalin-fixed tissue.
Stability: Ambient: 10 days; Refrigerated: 10 days; Frozen: Unacceptable
CPT Code(s): 88346 x5 IgG, IgM, IgA, C3, & fibrinogen

0090060 Cyanide CYAN
Methodology: Quantitative Colorimetric
Specimen Required: Collect: Green (sodium or lithium heparin). Also acceptable: Lavender (EDTA) or pink (K₂EDTA or K₃EDTA).
Specimen Preparation: **Do not freeze.** Transport 4 mL whole blood in original collection container. (Min: 3 mL) Also acceptable: Transfer specimen to an ARUP Standard Transport Tube.
Storage/Transport Temperature: Room temperature.
Unacceptable Conditions: Serum or plasma. Frozen or refrigerated specimens. Clotted or hemolyzed specimens.
Stability: Ambient: 72 hours (if tightly capped); Refrigerated: Unacceptable; Frozen: Unacceptable
CPT Code(s): 82600

0070181 Cyclic AMP, Nephrogenous CAMP-NEPH
Methodology: Quantitative Radioimmunoassay
Specimen Required: Patient Preparation: Refer to individual components.
Collect: Lavender (EDTA) or pink (K₂EDTA) **AND** urine, timed or random.
Specimen Preparation: Separate plasma from cells and freeze ASAP or within 2 hours of collection. Transfer 1 mL plasma to an ARUP Standard Transport Tube and freeze immediately. (Min: 0.1 mL) **AND** transfer 5 mL urine to ARUP Standard Transport Tubes. (Min: 0.1 mL)
Storage/Transport Temperature: Frozen.
Stability: Refer to individual components.
CPT Code(s): 82030 Cyclic AMP, urine; 82030 Cyclic AMP, plasma

0070180 Cyclic AMP, Plasma CAMP
Methodology: Quantitative Radioimmunoassay
Specimen Required: Collect: Lavender (EDTA) or pink (K₂EDTA).
Specimen Preparation: Separate plasma from cells ASAP or within 2 hours of collection. Transfer 1 mL plasma to an ARUP Standard Transport Tube and freeze immediately. (Min: 0.1 mL)
Storage/Transport Temperature: Frozen.
Stability: After separation from cells: Ambient: Unacceptable; Refrigerated: 1 hour; Frozen: 3 months
CPT Code(s): 82030

0070485 Cyclic AMP, Urine CAMP-U
Methodology: Quantitative Radioimmunoassay
Specimen Required: Collect: Random urine (unpreserved). Also acceptable: 24-hour urine. Collect in container with 10 mL 6M HCl.
Specimen Preparation: Transfer 5 mL aliquot of urine to ARUP Standard Transport Tubes. (Min: 1 mL) Record total volume and collection time interval on transport tube and test request form.
Storage/Transport Temperature: Frozen.
Stability: Ambient: 2 hours; Refrigerated: 24 hours; Frozen: 3 months
CPT Code(s): 82030

0055256 Cyclic Citrullinated Peptide (CCP) Antibody, IgG CCP 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 0.5 mL serum to an ARUP Standard Transport Tube. (Min: 0.3 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Urine or plasma. Contaminated, hemolyzed, grossly icteric, 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): 86200

2003842 Cyclin D1, SP4 by Immunohistochemistry CYCSP4 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

0091303 **Cyclobenzaprine (Flexeril), Serum or Plasma** **CYCLOBENZA**
Methodology: Gas Chromatography
Specimen Required: Collect: Plain red or lavender (EDTA).
Specimen Preparation: Transfer 4 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 2.2 mL)
Storage/Transport Temperature: Room temperature.
Unacceptable Conditions: Serum separator tubes.
Stability: Ambient: 1 week; Refrigerated: 16 days; Frozen: 1 year
CPT Code(s): 80299

0091155 **Cyclobenzaprine (Flexeril), Urine** **CYCLOBEN U**
Methodology: Gas Chromatography/Mass Spectrometry
Specimen Required: Collect: Random urine.
Specimen Preparation: Transfer 4 mL urine to an ARUP Standard Transport Tube. (Min: 2 mL)
Storage/Transport Temperature: Room temperature.
Stability: Ambient: 1 week; Refrigerated: 16 days; Frozen: 1 year
CPT Code(s): 82491

0070035 **Cyclosporine A by Tandem Mass Spectrometry** **CYA**
Methodology: Quantitative Liquid Chromatography-Tandem Mass Spectrometry
Specimen Required: Patient Preparation: Pre-dose (trough) levels should be drawn.
Collect: Lavender (EDTA) or pink (K₂EDTA).
Specimen Preparation: Transfer 1 mL well-mixed whole blood to a plastic vial. (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): 80158

0058902 **Cyclosporine A, C2 by Tandem Mass Spectrometry** **C2CYA**
Methodology: Quantitative Liquid Chromatography-Tandem Mass Spectrometry
Specimen Required: 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: 2 weeks; Frozen: 2 months
CPT Code(s): 80158

0095229 **Cystatin C, Serum** **CYSTAT C**
Methodology: Quantitative Nephelometry
Specimen Required: Collect: Serum separator tube or plasma 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: 0.4 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Grossly hemolyzed specimens.
Stability: After separation from cells: Ambient: 48 hours; Refrigerated: 1 week; Frozen: 2 months
CPT Code(s): 82610

0056003 **Cystic Fibrosis (CFTR) 5T Mutation** **IVS-8**
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: 5 days; Frozen: Unacceptable
CPT Code(s): 83891 Isolation; 83900 Multiplex amplification; 83901 x31 Additional amplification; 83914 x2 OLA; 83909 Capillary electrophoresis; 83912 Interpretation and report

0050098 **Cystic Fibrosis (CFTR) 3199del6 Mutation** **CF3199DEL6**
Methodology: Polymerase Chain Reaction/Fluorescence Monitoring
Specimen Required: Collect: Lavender (EDTA), pink (K₂EDTA), or yellow (ACD Solution A or B).
Specimen Preparation: Do not freeze. Transport 3 mL whole blood. (Min: 1 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Frozen specimens.
Stability: Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable
CPT Code(s): 83891 Isolation; 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.

2001933 **Cystic Fibrosis (CFTR) 32 Mutations** **CF PAN**
Methodology: Polymerase Chain Reaction/Oligonucleotide Ligation/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.
Remarks: **Patient History Form is available on the ARUP Web site or by contacting Client Services at (800) 522-2787.**
Unacceptable Conditions: Frozen
Stability: Ambient: 3 days; Refrigerated: 1 week; Frozen: Unacceptable

CPT Code(s): 83891 Isolation; 83900 Amplification; 83901 x30 Multiplex amplification; 83914 x32 OLA; 83909 Capillary electrophoresis; 83912 Interpretation and report - Additional CPT code modifiers may be required for procedures performed to test for oncologic or inherited disorders.

2001969 Cystic Fibrosis (CFTR) 32 Mutations, Atypical CF PAN 5T
Methodology: Polymerase Chain Reaction/Oligonucleotide Ligation/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: 3 days; Refrigerated: 1 week; Frozen: Unacceptable
CPT Code(s): 83891 Isolation; 83900 Amplification; 83901 x30 Multiplex amplification; 83914 x33 OLA; 83909 Capillary electrophoresis; 83912 Interpretation and report - Additional CPT code modifiers may be required for procedures performed to test for oncologic or inherited disorders.

2001970 Cystic Fibrosis (CFTR) 32 Mutations, Fetal CF PAN FE
Methodology: Polymerase Chain Reaction/Oligonucleotide Ligation/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) 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 x30 Additional amplification; 83914 x32 Mutation identification by OLA; 83909 Capillary electrophoresis; 83912 Interpretation and report. FCC: 83900 Multiplex amplification; 83901 x14 Additional amplification; 83909 Capillary electrophoresis. If MCC Maternal Cell (0050608) is performed, add: 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.

2001968 Cystic Fibrosis (CFTR) 32 Mutations with Reflex to Sequencing CF PAN-SEQ
Methodology: Polymerase Chain Reaction/Oligonucleotide Ligation/Fragment Analysis/Sequencing
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): 83891 Isolation; 83900 Multiplex amplification; 83901 x30 Additional amplification; 83914 x32 OLA; 83909 Capillary electrophoresis; 83912 Interpretation and report. If reflexed to sequencing, add 83891 Isolation; 83898 x32 Amplification; 83904 x32 Sequencing; 83909 Capillary electrophoresis - Additional CPT code modifiers may be required for procedures performed to test for oncologic or inherited disorders.

2001967 Cystic Fibrosis (CFTR) 32 Mutations with Reflex to Sequencing and Reflex to Deletion/Duplication CF COMPR
Methodology: Polymerase Chain Reaction/Oligonucleotide Ligation/Fragment Analysis/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): 83891 Isolation; 83900 Multiplex amplification; 83901 x30 Additional amplification; 83914 x32 OLA; 83909 Capillary electrophoresis; 83912 Interpretation and report. If reflexed to sequencing, add 83891 Isolation; 83898 x32 Amplification; 83904 x32 Sequencing; 83909 Capillary electrophoresis. If reflexed to Deletion/Duplication, add 83896 Nucleic acid probes; 83898 Amplification; 83914 Extension; 83909 Capillary electrophoresis - Additional CPT code modifiers may be required for procedures performed to test for oncologic or inherited disorders.

0051642 Cystic Fibrosis (CFTR) Deletion/Duplication CFTRDELDP
Methodology: Multiplex Ligation 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.
Remarks: **Patient History Form is available on the ARUP Web site or by contacting ARUP Client Services at (800) 522-2787.**
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.

0051110 Cystic Fibrosis (CFTR) Sequencing CF-CFTR
Methodology: Polymerase Chain Reaction/Scanning/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.
Remarks: **Patient History Form is available on the ARUP Web site or by contacting ARUP Client Services at (800) 522-2787.**
Stability: Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable
CPT Code(s): 83891 Isolation; 83898 x32 Amplification; 83904 x32 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.

0051640	Cystic Fibrosis (CFTR) Sequencing with Reflex to Deletion/Duplication	CFTR FGA
Methodology:	Polymerase Chain Reaction/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: 2 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Remarks:</u> Patient History Form is available on the ARUP Web site or by contacting ARUP Client Services at (800) 522-2787. <u>Stability:</u> Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable	
CPT Code(s):	Sequencing: 83891 Isolation; 83898 x32 Amplification; 83904 x32 Sequencing; 83909 Capillary electrophoresis; 83912 Interpretation and report. If reflexed to Deletion/Duplication, add 83896 Nucleic Acid Probes; 83898 Amplification; 83914 Extension; 83909 Capillary electrophoresis. Additional CPT code modifiers may be required for procedures performed to test for oncologic or inherited disorders.	
0056006	Cystic Fibrosis Cis-Trans (CFTR) R117H & 5T Mutations	CFCIS-TRAN
Methodology:	Polymerase Chain Reaction/Oligonucleotide Ligation	
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: 5 days; Frozen: Unacceptable	
CPT Code(s):	83891 Isolation; 83900 Amplification; 83901 Multiplex amplification; 83914 x4 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.	
0060130	Cystic Respiratory Culture	MC CYST
Methodology:	Standard reference procedure for aerobic bacterial culture and identification	
Specimen Required:	<u>Collect:</u> Sputum from cystic fibrosis patient. <u>Specimen Preparation:</u> Transfer sputum to a sterile container. <u>Storage/Transport Temperature:</u> Refrigerated. Send to ARUP immediately. Submit specimen according to Biological Substance, Category B, shipping guidelines. <u>Unacceptable Conditions:</u> Multiple specimens (more than one in 24 hours). <u>Stability:</u> Ambient: 2 hours; Refrigerated: 24 hours; Frozen: Unacceptable	
CPT Code(s):	87070	
0055284	Cysticercosis Antibody, IgG by ELISA	CYST SER
Methodology:	Semi-Quantitative Enzyme-Linked Immunosorbent Assay	
Specimen Required:	<u>Collect:</u> Serum separator tube. <u>Specimen Preparation:</u> 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> CSF. Contaminated, heat-inactivated, hemolyzed, icteric, or 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):	86682	
0055285	Cysticercosis Antibody, IgG by ELISA (CSF)	CYST CSF
Methodology:	Semi-Quantitative Enzyme-Linked Immunosorbent Assay	
Specimen Required:	<u>Collect:</u> CSF. <u>Specimen Preparation:</u> Transfer 1 mL CSF to an ARUP Standard Transport Tube. (Min: 0.2 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Serum. Contaminated, heat-inactivated, hemolyzed, icteric, or lipemic specimens. <u>Stability:</u> Ambient: 24 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)	
CPT Code(s):	86682	
0055283	Cysticercosis Antibody, IgG by Western Blot	CYST WB
Methodology:	Qualitative Western Blot	
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> CSF. 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):	86682	
0055282	Cysticercosis Antibody, IgG by Western Blot (CSF)	CYSTCSF WB
Methodology:	Qualitative Western Blot	
Specimen Required:	<u>Collect:</u> CSF. <u>Specimen Preparation:</u> Transfer 3 mL CSF to an ARUP Standard Transport Tube. (Min: 0.4 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Specimen types other than CSF. 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):	86682	
0081106	Cystine Quantitative, Urine	QNT CYS U
Methodology:	Liquid Chromatography/Tandem Mass Spectrometry	
Specimen Required:	<u>Collect:</u> 24-hour or other timed urine collection. Avoid dilute urine when possible. Refrigerate 24-hour/timed specimens during collection. <u>Specimen Preparation:</u> Mix urine well. Transfer 8 mL aliquot urine to ARUP Standard Transport Tubes and freeze immediately. (Min: 3 mL) Record total volume and collection time interval on transport tube and test request form. <u>Storage/Transport Temperature:</u> CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.	

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

Unacceptable Conditions: Refrigerated or room temperature specimens.

Stability: Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen: 1 month

CPT Code(s): 82131

0081105 Cystinuria Panel **CYS PAN**

Methodology: Ion Exchange Chromatography

Specimen Required: **Collect:** Random urine. Avoid dilute urine when possible.

Specimen Preparation: Mix urine well. Transfer 8 mL urine to ARUP Standard Transport Tubes and freeze immediately. (Min: 3 mL)

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

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

Unacceptable Conditions: Refrigerated or room temperature specimens.

Stability: Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen: 1 month

CPT Code(s): 82136

0051103 Cytochrome P450 2C9 (CYP2C9) 2 Mutations **CYP2C9**

Methodology: Polymerase Chain Reaction/Fluorescence Monitoring

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 x2 Amplification; 83896 x2 Nucleic acid probes; 83912 Interpretation and report - Additional CPT code modifiers may be required for procedures performed to test for oncologic or inherited disorders.

0051104 Cytochrome P450 2C19 (CYP2C19) 9 Mutations **CYP2C19**

Methodology: Polymerase Chain Reaction/Detection Primer Extension

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

0051232 Cytochrome P450 2D6 (CYP2D6) 14 Mutations & Gene Duplication **CYP 2D6**

Methodology: Polymerase Chain Reaction/Primer Extension

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 Amplification multiplex; 83901 x6 Amplification; 83914 x12 Mutation identification; 83912 Interpretation and report - Additional CPT code modifiers may be required for procedures performed to test for oncologic or inherited disorders.

2003414 Cytogenomic SNP Microarray **CMA SNP**

Methodology: Cytogenomic Microarray SNP (Oligo-based array)

Specimen Required: **Collect:** Green (sodium heparin). Peripheral blood required.

Specimen Preparation: Transport 5 mL whole blood. (Min: 1 mL)

Storage/Transport Temperature: Room temperature.

Unacceptable Conditions: Frozen specimens. Clotted specimens.

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

CPT Code(s): 83891 Isolation; 88386 x 6, Array-based evaluation of multiple molecular probes, 251-500

2003851 Cytokeratin 5,6 (CK 5,6) by Immunohistochemistry **CYTO56 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

2003854 Cytokeratin 7 (CK 7) by Immunohistochemistry **CYTO 7 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

2003493 **Cytokeratin 8,18 Low Molecular Weight (CAM 5.2) by Immunohistochemistry** **CAM5.2 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

2003845 **Cytokeratin 19 (CK 19) by Immunohistochemistry** **CYTO19 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

0081344 **Cytokeratin 19 Fragment (CYFRA 21-1), Serum** **CYFRA**
Methodology: Quantitative Enzyme-linked Immunosorbent Assay
Specimen Required: Collect: Plain red or serum separator tube.
Specimen Preparation: Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.5 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Plasma. Icteric, lipemic, or hemolyzed specimens.
Stability: After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 2 months (avoid repeated freeze/thaw cycles)

CPT Code(s): 86316

2003848 **Cytokeratin 20 (CK 20) by Immunohistochemistry** **CYTO20 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

0051394 **Cytokine Panel 12 by MAFD** **CYT 12 SE**
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 x 12

0051524 **Cytokine Panel, Monokines by MAFD** **CYT MON SE**
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. Separate 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 x 4

0051408	Cytokine Panel, TH1 by MAFD	CYT TH1 SE
Methodology:	Quantitative Multi-Analyte Fluorescent Detection	
Specimen Required:	<u>Collect:</u> Serum separator tube, plain red, or green (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: 0.3 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 x 4	
0051518	Cytokine Panel, TH2 by MAFD	CYT TH2 SE
Methodology:	Quantitative Multi-Analyte Fluorescent Detection	
Specimen Required:	<u>Collect:</u> Serum separator tube, plain red, or green (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: 0.3 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 x 4	
0051540	Cytokine Production by Mononuclear Cells in Response to Mitogen Stimulation, 12 Cytokines	CYT 12 LY
Methodology:	Cell Culture/Quantitative Multi-Analyte Fluorescence Detection	
Specimen Required:	<u>Patient Preparation:</u> A control specimen needs to be sent with the patient specimen. The control specimen needs to be drawn from a normal, healthy individual who is not biologically related to the patient, and drawn at approximately the same time as and under similar conditions to the patient specimen. <u>Collect:</u> Yellow (ACD Solution A) (patient) AND yellow (ACD Solution A) (control). Patient and control samples must be collected within 48 hours of test performance. <u>Specimen Preparation:</u> Transport 10 mL whole blood (patient) AND 10 mL whole blood (control) in original collection tubes. (Min: 7 mL whole blood (patient) AND 7 mL whole blood (control)). LIVE CELLS REQUIRED. Do not refrigerate or freeze. <u>Infant Minimum:</u> 3 mL whole blood (patient) AND 7 mL whole blood (control). <u>Storage/Transport Temperature:</u> CRITICAL ROOM TEMPERATURE. <u>Remarks:</u> <u>Unacceptable Conditions:</u> Frozen or refrigerated specimens. Specimens in transport longer than 48 hours. <u>Stability:</u> Ambient: 48 hours; Refrigerated: Unacceptable; Frozen: Unacceptable	
CPT Code(s):	86353 x3 Lymphocyte transformation; 83520 x12 Cytokines	
0051574	Cytokine Production by Mononuclear Cells in Response to Mitogen Stimulation, Interferon gamma	IFNG L DO
Methodology:	Cell Culture/Quantitative Multi-Analyte Fluorescence Detection	
Specimen Required:	<u>Patient Preparation:</u> A control specimen needs to be sent with the patient specimen. The control specimen needs to be drawn from a normal, healthy individual who is not biologically related to the patient, and drawn at approximately the same time as and under similar conditions to the patient specimen. <u>Collect:</u> Yellow (ACD Solution A) (patient) AND yellow (ACD Solution A) (control). Patient and control samples must be collected within 48 hours of test performance. <u>Specimen Preparation:</u> Transport 10 mL whole blood (patient) AND 10 mL whole blood (control) in original collection tubes. (Min: 7 mL whole blood (patient) AND 7 mL whole blood (control)). LIVE CELLS REQUIRED. Do not refrigerate or freeze. <u>Infant Minimum:</u> 3 mL whole blood (patient) AND 7 mL whole blood (control). <u>Storage/Transport Temperature:</u> CRITICAL ROOM TEMPERATURE. <u>Remarks:</u> <u>Unacceptable Conditions:</u> Frozen or refrigerated specimens. Specimens in transport longer than 48 hours. <u>Stability:</u> Ambient: 48 hours; Refrigerated: Unacceptable; Frozen: Unacceptable	
CPT Code(s):	86353 x3 Lymphocyte transformation; 83520 Cytokine	
0051580	Cytokine Production by Mononuclear Cells in Response to Mitogen Stimulation, Interleukin 1 beta	IL1B L DO
Methodology:	Cell Culture/Quantitative Multi-Analyte Fluorescence Detection	
Specimen Required:	<u>Patient Preparation:</u> A control specimen needs to be sent with the patient specimen. The control specimen needs to be drawn from a normal, healthy individual who is not biologically related to the patient, and drawn at approximately the same time as and under similar conditions to the patient specimen. <u>Collect:</u> Yellow (ACD Solution A) (patient) AND yellow (ACD Solution A) (control). Patient and control samples must be collected within 48 hours of test performance. <u>Specimen Preparation:</u> Transport 10 mL whole blood (patient) AND 10 mL whole blood (control) in original collection tubes. (Min: 7 mL whole blood (patient) AND 7 mL whole blood (control)). LIVE CELLS REQUIRED. Do not refrigerate or freeze. <u>Infant Minimum:</u> 3 mL whole blood (patient) AND 7 mL whole blood (control). <u>Storage/Transport Temperature:</u> CRITICAL ROOM TEMPERATURE. <u>Remarks:</u> <u>Unacceptable Conditions:</u> Frozen or refrigerated specimens. Specimens in transport longer than 48 hours. <u>Stability:</u> Ambient: 48 hours; Refrigerated: Unacceptable; Frozen: Unacceptable	
CPT Code(s):	86353 x3 Lymphocyte transformation; 83520 Cytokine	
0051571	Cytokine Production by Mononuclear Cells in Response to Mitogen Stimulation, Interleukin 2	IL2 L DO
Methodology:	Cell Culture/Quantitative Multi-Analyte Fluorescence Detection	
Specimen Required:	<u>Patient Preparation:</u> A control specimen needs to be sent with the patient specimen. The control specimen needs to be drawn from a normal, healthy individual who is not biologically related to the patient, and drawn at approximately the same time as and under similar conditions to the patient specimen. <u>Collect:</u> Yellow (ACD Solution A) (patient) AND yellow (ACD Solution A) (control). Patient and control samples must be collected within 48 hours of test performance. <u>Specimen Preparation:</u> Transport 10 mL whole blood (patient) AND 10 mL whole blood (control) in original collection tubes. (Min: 7	

mL whole blood (patient) AND 7 mL whole blood (control)). **LIVE CELLS REQUIRED. Do not refrigerate or freeze.**

Infant Minimum: 3 mL whole blood (patient) AND 7 mL whole blood (control).

Storage/Transport Temperature: CRITICAL ROOM TEMPERATURE.

Remarks:

Unacceptable Conditions: Frozen or refrigerated specimens. Specimens in transport longer than 48 hours.

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

CPT Code(s): 86353 x3 Lymphocyte transformation; 83520 Cytokine

0051572 **Cytokine Production by Mononuclear Cells in Response to Mitogen Stimulation, Interleukin 2 Receptor (Soluble)** **IL2R L DO**

Methodology: Cell Culture/Quantitative Multi-Analyte Fluorescence Detection

Specimen Required: **Patient Preparation:** A control specimen needs to be sent with the patient specimen. The control specimen needs to be drawn from a normal, healthy individual who is not biologically related to the patient, and drawn at approximately the same time as and under similar conditions to the patient specimen.

Collect: Yellow (ACD Solution A) (patient) AND yellow (ACD Solution A) (control). **Patient and control samples 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 whole blood (patient) AND 7 mL whole blood (control)). **LIVE CELLS REQUIRED. Do not refrigerate or freeze.**

Infant Minimum: 3 mL whole blood (patient) AND 7 mL whole blood (control).

Storage/Transport Temperature: CRITICAL ROOM TEMPERATURE.

Unacceptable Conditions: Frozen or refrigerated specimens. Specimens in transport longer than 48 hours.

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

CPT Code(s): 86353 x3 Lymphocyte transformation; 83520 Cytokine

0051576 **Cytokine Production by Mononuclear Cells in Response to Mitogen Stimulation, Interleukin 4** **IL4 L DO**

Methodology: Cell Culture/Quantitative Multi-Analyte Fluorescence Detection

Specimen Required: **Patient Preparation:** A control specimen needs to be sent with the patient specimen. The control specimen needs to be drawn from a normal, healthy individual who is not biologically related to the patient, and drawn at approximately the same time as and under similar conditions to the patient specimen.

Collect: Yellow (ACD Solution A) (patient) AND yellow (ACD Solution A) (control). **Patient and control samples 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 whole blood (patient) AND 7 mL whole blood (control)). **LIVE CELLS REQUIRED. Do not refrigerate or freeze.**

Infant Minimum: 3 mL whole blood (patient) AND 7 mL whole blood (control).

Storage/Transport Temperature: CRITICAL ROOM TEMPERATURE.

Remarks:

Unacceptable Conditions: Frozen or refrigerated specimens. Specimens in transport longer than 48 hours.

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

CPT Code(s): 86353 x3 Lymphocyte transformation; 83520 Cytokine

0051577 **Cytokine Production by Mononuclear Cells in Response to Mitogen Stimulation, Interleukin 5** **IL5 L DO**

Methodology: Cell Culture/Quantitative Multi-Analyte Fluorescence Detection

Specimen Required: **Patient Preparation:** A control specimen needs to be sent with the patient specimen. The control specimen needs to be drawn from a normal, healthy individual who is not biologically related to the patient, and drawn at approximately the same time as and under similar conditions to the patient specimen.

Collect: Yellow (ACD Solution A) (patient) AND yellow (ACD Solution A) (control). **Patient and control samples 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 whole blood (patient) AND 7 mL whole blood (control)). **LIVE CELLS REQUIRED. Do not refrigerate or freeze.**

Infant Minimum: 3 mL whole blood (patient) AND 7 mL whole blood (control).

Storage/Transport Temperature: CRITICAL ROOM TEMPERATURE.

Remarks:

Unacceptable Conditions: Frozen or refrigerated specimens. Specimens in transport longer than 48 hours.

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

CPT Code(s): 86353 x3 Lymphocyte transformation; 83520 Cytokine

0051581 **Cytokine Production by Mononuclear Cells in Response to Mitogen Stimulation, Interleukin 6** **IL6 L DO**

Methodology: Cell Culture/Quantitative Multi-Analyte Fluorescence Detection

Specimen Required: **Patient Preparation:** A control specimen needs to be sent with the patient specimen. The control specimen needs to be drawn from a normal, healthy individual who is not biologically related to the patient, and drawn at approximately the same time as and under similar conditions to the patient specimen.

Collect: Yellow (ACD Solution A) (patient) AND yellow (ACD Solution A) (control). **Patient and control samples 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 whole blood (patient) AND 7 mL whole blood (control)). **LIVE CELLS REQUIRED. Do not refrigerate or freeze.**

Infant Minimum: 3 mL whole blood (patient) AND 7 mL whole blood (control).

Storage/Transport Temperature: CRITICAL ROOM TEMPERATURE.

Unacceptable Conditions: Frozen or refrigerated specimens. Specimens in transport longer than 48 hours.

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

CPT Code(s): 86353 x3 Lymphocyte transformation; 83520 Cytokine

0051582 **Cytokine Production by Mononuclear Cells in Response to Mitogen Stimulation, Interleukin 8** **IL8 L DO**

Methodology: Cell Culture/Quantitative Multi-Analyte Fluorescence Detection

Specimen Required: **Patient Preparation:** A control specimen needs to be sent with the patient specimen. The control specimen needs to be drawn from a normal, healthy individual who is not biologically related to the patient, and drawn at approximately the same time as and under similar conditions to the patient specimen.

Collect: Yellow (ACD Solution A) (patient) AND yellow (ACD Solution A) (control). **Patient and control samples 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 whole blood (patient) AND 7 mL whole blood (control)). **LIVE CELLS REQUIRED. Do not refrigerate or freeze.**
Infant Minimum: 3 mL whole blood (patient) AND 7 mL whole blood (control).
Storage/Transport Temperature: **CRITICAL ROOM TEMPERATURE.**
Remarks:
Unacceptable Conditions: Frozen or refrigerated specimens. Specimens in transport longer than 48 hours.
Stability: Ambient: 48 hours; Refrigerated: Unacceptable; Frozen: Unacceptable

CPT Code(s):

86353 x3 Lymphocyte transformation; 83520 Cytokine

0051578 **Cytokine Production by Mononuclear Cells in Response to Mitogen Stimulation, Interleukin 10** **IL10 L DO**
Methodology: Cell Culture/Quantitative Multi-Analyte Fluorescence Detection
Patient Preparation: A control specimen needs to be sent with the patient specimen. The control specimen needs to be drawn from a normal, healthy individual who is not biologically related to the patient, and drawn at approximately the same time as and under similar conditions to the patient specimen.
Collect: Yellow (ACD Solution A) (patient) AND yellow (ACD Solution A) (control). **Patient and control samples 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 whole blood (patient) AND 7 mL whole blood (control)). **LIVE CELLS REQUIRED. Do not refrigerate or freeze.**
Infant Minimum: 3 mL whole blood (patient) AND 7 mL whole blood (control).
Storage/Transport Temperature: **CRITICAL ROOM TEMPERATURE.**
Remarks:
Unacceptable Conditions: Frozen or refrigerated specimens. Specimens in transport longer than 48 hours.
Stability: Ambient: 48 hours; Refrigerated: Unacceptable; Frozen: Unacceptable

CPT Code(s):

86353 x3 Lymphocyte transformation; 83520 Cytokine

0051573 **Cytokine Production by Mononuclear Cells in Response to Mitogen Stimulation, Interleukin 12** **IL12 L DO**
Methodology: Cell Culture/Quantitative Multi-Analyte Fluorescence Detection
Specimen Required: Patient Preparation: A control specimen needs to be sent with the patient specimen. The control specimen needs to be drawn from a normal, healthy individual who is not biologically related to the patient, and drawn at approximately the same time as and under similar conditions to the patient specimen.
Collect: Yellow (ACD Solution A) (patient) AND yellow (ACD Solution A) (control). **Patient and control samples 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 whole blood (patient) AND 7 mL whole blood (control)). **LIVE CELLS REQUIRED. Do not refrigerate or freeze.**
Infant Minimum: 3 mL whole blood (patient) AND 7 mL whole blood (control).
Storage/Transport Temperature: **CRITICAL ROOM TEMPERATURE.**
Remarks:
Unacceptable Conditions: Frozen or refrigerated specimens. Specimens in transport longer than 48 hours.
Stability: Ambient: 48 hours; Refrigerated: Unacceptable; Frozen: Unacceptable

CPT Code(s):

86353 x3 Lymphocyte transformation; 83520 Cytokine

0051579 **Cytokine Production by Mononuclear Cells in Response to Mitogen Stimulation, Interleukin 13** **IL13 L DO**
Methodology: Cell Culture/Quantitative Multi-Analyte Fluorescence Detection
Specimen Required: Patient Preparation: A control specimen needs to be sent with the patient specimen. The control specimen needs to be drawn from a normal, healthy individual who is not biologically related to the patient, and drawn at approximately the same time as and under similar conditions to the patient specimen.
Collect: Yellow (ACD Solution A) (patient) AND yellow (ACD Solution A) (control). **Patient and control samples 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 whole blood (patient) AND 7 mL whole blood (control)). **LIVE CELLS REQUIRED. Do not refrigerate or freeze.**
Infant Minimum: 3 mL whole blood (patient) AND 7 mL whole blood (control).
Storage/Transport Temperature: **CRITICAL ROOM TEMPERATURE.**
Remarks:
Unacceptable Conditions: Frozen or refrigerated specimens. Specimens in transport longer than 48 hours.
Stability: Ambient: 48 hours; Refrigerated: Unacceptable; Frozen: Unacceptable

CPT Code(s):

86353 x3 Lymphocyte transformation; 83520 Cytokine

0051566 **Cytokine Production by Mononuclear Cells in Response to Mitogen Stimulation, Monokines** **CYT MON LY**
Methodology: Cell Culture/Quantitative Multi-Analyte Fluorescence Detection
Specimen Required: Patient Preparation: A control specimen needs to be sent with the patient specimen. The control specimen needs to be drawn from a normal, healthy individual who is not biologically related to the patient, and drawn at approximately the same time as and under similar conditions to the patient specimen.
Collect: Yellow (ACD Solution A) (patient) AND yellow (ACD Solution A) (control). **Patient and control samples 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 whole blood (patient) AND 7 mL whole blood (control)). **LIVE CELLS REQUIRED. Do not refrigerate or freeze.**
Infant Minimum: 3 mL whole blood (patient) AND 7 mL whole blood (control).
Storage/Transport Temperature: **CRITICAL ROOM TEMPERATURE.**
Remarks:
Unacceptable Conditions: Frozen or refrigerated specimens. Specimens in transport longer than 48 hours.
Stability: Ambient: 48 hours; Refrigerated: Unacceptable; Frozen: Unacceptable

CPT Code(s):

86353 x3 Lymphocyte transformation; 83520 x4 Cytokines

0051558 **Cytokine Production by Mononuclear Cells in Response to Mitogen Stimulation, TH1 Cytokines** **CYT TH1 LY**
Methodology: Cell Culture/Quantitative Multi-Analyte Fluorescence Detection
Specimen Required: Patient Preparation: A control specimen needs to be sent with the patient specimen. The control specimen needs to be drawn from a normal, healthy individual who is not biologically related to the patient, and drawn at approximately the same time as and under similar

conditions to the patient specimen.

Collect: Yellow (ACD Solution A) (patient) AND yellow (ACD Solution A) (control). **Patient and control samples 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 whole blood (patient) AND 7 mL whole blood (control)). **LIVE CELLS REQUIRED. Do not refrigerate or freeze.**

Infant Minimum: 3 mL whole blood (patient) AND 7 mL whole blood (control).

Storage/Transport Temperature: CRITICAL ROOM TEMPERATURE.

Remarks:

Unacceptable Conditions: Frozen or refrigerated specimens. Specimens in transport longer than 48 hours.

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

CPT Code(s): 86353 x3 Lymphocyte transformation; 83520 x4 Cytokines

0051562 Cytokine Production by Mononuclear Cells in Response to Mitogen Stimulation, TH2 Cytokines CYT TH2 LY

Methodology: Cell Culture/Quantitative Multi-Analyte Fluorescence Detection

Specimen Required: **Patient Preparation:** A control specimen needs to be sent with the patient specimen. The control specimen needs to be drawn from a normal, healthy individual who is not biologically related to the patient, and drawn at approximately the same time as and under similar conditions to the patient specimen.

Collect: Yellow (ACD Solution A) (patient) AND yellow (ACD Solution A) (control). **Patient and control samples 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 whole blood (patient) AND 7 mL whole blood (control)). **LIVE CELLS REQUIRED. Do not refrigerate or freeze.**

Infant Minimum: 3 mL whole blood (patient) AND 7 mL whole blood (control).

Storage/Transport Temperature: CRITICAL ROOM TEMPERATURE.

Remarks:

Unacceptable Conditions: Frozen or refrigerated specimens. Specimens in transport longer than 48 hours.

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

CPT Code(s): 86353 x3 Lymphocyte transformation; 83520 x4 Cytokines

0051583 Cytokine Production by Mononuclear Cells in Response to Mitogen Stimulation, Tumor Necrosis Factor alpha TNFA L DO

Methodology: Cell Culture/Quantitative Multi-Analyte Fluorescence Detection

Specimen Required: **Patient Preparation:** A control specimen needs to be sent with the patient specimen. The control specimen needs to be drawn from a normal, healthy individual who is not biologically related to the patient, and drawn at approximately the same time as and under similar conditions to the patient specimen.

Collect: Yellow (ACD Solution A) (patient) AND yellow (ACD Solution A) (control). **Patient and control samples 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 whole blood (patient) AND 7 mL whole blood (control)). **LIVE CELLS REQUIRED. Do not refrigerate or freeze.**

Infant Minimum: 3 mL whole blood (patient) AND 7 mL whole blood (control).

Storage/Transport Temperature: CRITICAL ROOM TEMPERATURE.

Remarks:

Unacceptable Conditions: Frozen or refrigerated specimens. Specimens in transport longer than 48 hours.

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

CPT Code(s): 86353 x3 Lymphocyte transformation; 83520 Cytokine

8290122 Cytology, Anal AN

Methodology: Routine Cytopathologic Evaluation

Patient Preparation: **Indications:** Cytologic screening for anal squamous intraepithelial lesions (ASIL).

Specimen Required: **Collect:** Anal sampling.

Supplies: Glass microscope slide for smears or, preferably, collected in SurePath™ or PreservCyt® collection fluid. Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787.

Also required: ARUP Cytology test request form and a black lead lab pencil.

Collection Procedure: To obtain an anal sampling, moisten the Dacron® swab with water, not lubricant. The Dacron® swab should be inserted approximately 1.5 to 2 inches into the anal canal. It is important to use Dacron® and not a cotton swab, as cells tend to cling to cotton and do not release easily into cytology collection fluids. Once inserted deep enough into the anus (necessary in order to collect both rectal columnar and anal squamous cells) the swab should be pulled out, applying some pressure to the wall of the anus, rotating the swab in a spiral motion along the way. The cells collected can be placed in a cytology collection fluid (preferred) or spread on a glass slide and immediately spray-fixed. The preferred method of collection is in SurePath™ collection fluid. The collection device should be thoroughly rinsed and swirled in the vial. The vial should be labeled with the patient's first and last name and collection date, placed in a specimen bag, and shipped to the Cytology Lab. The specimen must be accompanied by an ARUP Cytology test request form with the requested test marked.

Storage/Transport Temperature: If collected in SurePath™, CytoLyte®, or CytoRich™: Submit specimen according to Biological Substance, Category B, shipping guidelines.

Unacceptable Conditions: Specimens submitted in expired reagents. Refer to the Specimen Rejection section of the Specimen Transport Guide.

Stability: SurePath™: Ambient: 4 weeks

PreservCyt®: Ambient: 3 weeks

CPT Code(s): Depending on collection method: 88112 Selective cellular enhancement with interpretation or 88160 Smear with interpretation - Additional CPT codes may apply if special studies are required.

8209701 Cytology, Body Cavity Fluid CF

Methodology: Routine Cytopathologic Evaluation

Specimen Required: **Collect:** Refer to Cytology, Body Cavity Fluid Collection for specific collection and transportation guidelines.

CPT Code(s): 88108 Concentration and interpretation and/or 88106 Cytopathology, filter; 88305 Cell block. Additional CPT codes may apply if special studies are required.

Cytology, Body Cavity Fluid Collection

Specimen Required: **Patient Preparation:** Body cavity fluids are commonly evaluated for the presence of malignant cells from metastatic disease. Body cavity fluids in general are relatively easy to obtain and are relatively difficult to compromise. However, in some instances, due to a large

number of inflammatory cells, specimens may degenerate rapidly. In addition, if large amounts of protein are present, the specimen may clot, trapping diagnostic cells within the clot. These fluids include pleural, peritoneal, pericardial, synovial, and pelvic washing.

Collect: **Body Cavity Fluids**

Indications: Detection and characterization of malignant cells in body cavity fluids.

Specimen Required: 10 mL (or more) of fluid obtained from an appropriately performed paracentesis.

Supplies: Standard paracentesis equipment. Clean collection container of appropriate size. Fixative (50% ethyl alcohol).

Collection Procedure: Using standard paracentesis technique, obtain a fluid specimen from the desired body cavity. If necessary, move the patient into multiple positions to suspend cellular material in the fluid. A minimum of 10 mL of specimen is desirable for optimal cytologic evaluation. If other studies are required, withdraw a fraction of the specimen and submit it to the appropriate laboratory separately, following their guidelines for specimen collection. Heparin may be added to the specimen to reduce clotting. Place 3 units of heparin per mL capacity of the collection container. Agitate the container to coat the sides with heparin. Rinse the paracentesis instrument with a small amount of heparin to prevent clotting of specimen before it is put into the collection container. Add specimen to the heparinized container. Gently agitate to thoroughly mix the specimen and heparin. Label the container with the patient's first and last name, date of birth, specimen type, and collection date. Submit the specimen to the Cytopathology Laboratory along with the completed Cytology test request form. If transport of the specimen will be delayed more than 24 hours, add an equal volume of 50% ethyl alcohol (if sample size is too large to accommodate this volume, a well mixed aliquot of the specimen with an equal volume of fixative may be utilized). If transport time will be less than 24 hours, or fixative is not available, the specimen should be refrigerated or kept on wet ice until transport to the lab.

Pelvic Washing

Indications: Detection and characterization of malignant cells in pelvic washing.

Specimen Required: 10 mL (or more) of fluid obtained from an appropriately performed washing.

Supplies: Standard suction equipment. Clean collection container of appropriate size. Fixative (50% ethyl alcohol).

Collection Procedure: Using appropriate sterile technique during intra-abdominal surgery, instill a physiologic solution into the pelvic cavity. Lavage the area of interest. Aspirate the solution and place in a clean container. Label the container with the patient's first and last name, date of birth, specimen type and collection date. Submit the specimen and completed Cytology test request form to the Cytopathology Laboratory. If transport of the specimen will be delayed more than 24 hours, add an equal volume of 50% ethyl alcohol. If transport time will be less than 24 hours, or fixative is not available, the specimen should be refrigerated or kept on wet ice until transport to the lab.

8209730	Cytology, Breast Ductal Lavage	I-DL
Methodology:	Routine Cytopathologic Evaluation	
Specimen Required:	Patient Preparation: Indications: Breast ductal lavage is intended as a cytologic screening evaluation for premalignant and malignant changes in women with high risk of breast carcinoma. Collect: Breast ductal lavage fluid. Supplies: Ductal lavage collection system and transport tube, cytologic fixative, and ARUP Cytology test request form. Collection Procedure: Ductal lavage is performed at the clinician's office. Portions of the breast duct system are infused with a small amount of saline. A total of 10-20 mL of saline is introduced in 2-4 mL increments. Saline rinses the ducts and collects epithelial cells. The fluid in the collection syringe is transferred to a vial containing cell fixative (CytoLyt, CytoRich™ Red, or 50% alcohol). Mix ductal lavage fluid with an equal volume (1:1) of cytologic fixative. The specimen should be labeled with the patient's first and last name, date of birth, sample type, left or right breast designation, ductal orifice identification number (fluid from each duct must be kept separate (i.e. not pooled)), medical record number (or other unique identifier), and collection date, placed in a specimen bag, and shipped to the Cytopathology Laboratory at ARUP. The specimen should be stored and transported refrigerated, and must be accompanied by an ARUP Cytology test request form with the requested test marked, left or right breast designation, ductal orifice identification number, and pertinent clinical history. Storage/Transport Temperature: If collected in Surepath™, CytoLyt, or CytoRich: Submit specimen according to Biological Substance, Category B, shipping guidelines. Unacceptable Conditions: Refer to the Specimen Rejection section in the Specimen Transport Guide. Stability: Refrigerated: 5 days	
CPT Code(s):	88108 Cyto centrifugation and interpretation or 88112 Selective cellular enhancement with interpretation and/or 88106 Cytopathology, filter. Additional CPT codes may apply if special studies are required.	

8209700	Cytology, Breast Nipple Secretion	BN
Methodology:	Routine Cytopathologic Evaluation	
Specimen Required:	Patient Preparation: Indications: Detection of malignant cells in nipple discharge specimens. Collect: Direct smear of nipple discharge. Supplies: Two clean glass slides (single-end frosted), fixative (spray fixative or 95% ethanol), test request form. Collection Procedure: Label the two slides with the patient's first and last name, date of birth and specimen site in pencil on the frosted end. Collect a small amount of nipple secretion directly onto one of the slides. Oppose a second glass slide onto the first, allowing the collected material to provide surface tension between the two slides, and then gently and quickly pull the two slides apart in a horizontal motion to distribute the material in a thin film over both slides. The smears should be immediately fixed either by spray fixative or in 95% ethyl alcohol to prevent air-drying. Submit the specimen and the completed test request form to the Cytopathology Laboratory. Unacceptable Conditions: Refer to the Specimen Rejection section in the Specimen Transport Guide. Stability: Fixed slides: Indefinitely	
CPT Code(s):	88104	

8280005	Cytology, Bronchoalveolar Lavage, Malignancy	BAL 2
Methodology:	Routine Cytopathologic Evaluation	
Specimen Required:	Patient Preparation: Use this for all nonopportunistic infection indications (e.g., malignancy). Collect: Refer to Cytology, Bronchoalveolar Lavage Specimen Collection for specific collection and transportation guidelines.	
CPT Code(s):	88108 Concentration and interpretation or 88112 Selective cellular enhancement with interpretation and/or 88106 Cytopathology, filter. Additional CPT codes may apply if special studies are required.	

Cytology, Bronchoalveolar Lavage Specimen Collection

Specimen Required: **Patient Preparation:** **Indications:** For the detection and characterization of microbiologic pathogens (primarily *Pneumocystis*, viral, fungal, and bacterial) in immunocompromised patients; for detection and characterization of malignancy.

Collect: Bronchoscopically-obtained lavage (preferably at least 20 mL) of the distal airways and alveoli.

Supplies: Standard bronchoscopy equipment. 120 mL clean plastic specimen containers.

Collection Procedure: Using standard bronchoscopy BAL technique, lavage the lung distribution in question with sterile, normal saline

(or other physiologic solution). Collect the lavage specimen in a clean specimen container. Label the container with the patient's first and last name, date of birth, and specimen type. Submit the specimen, along with the completed Cytology test request form, to the Cytopathology Laboratory. If transport will be delayed, refrigerate the specimen. Do not add fixative to the specimen.

Note: BAL specimens sent for culture MUST be split from the main specimen prior to transport. The Cytopathology Laboratory does not have facilities for the sterile handling of BAL specimens necessary for culture procedures.

For the interpretation of BAL specimens, relevant clinical information must be provided. The primary diagnosis of *Pneumocystis* is made on Pap stained material. GMS stains, performed on all BAL specimens, are used as confirmatory tests only.

8209703	Cytology, Cerebrospinal Fluid	CS
Methodology:	Routine Cytopathologic Evaluation	
Specimen Required:	Patient Preparation: Indications: Detection and characterization of malignant cells in the central nervous system. In cytology, cerebrospinal fluid is most commonly evaluated to detect and characterize malignancy which may have gained access to the central nervous system. While in most individuals, CSF specimens are relatively easy to obtain, in some individuals collection may require radiographic guidance. In addition, due to lack of nutrients in this fluid, cells may rapidly degenerate rendering morphologic evaluation less than optimal if adequate care is not taken. Collect: Minimum of 3 mL cerebrospinal fluid (CSF). (10 mL CSF minimum required for immunologic marker studies) Supplies: Standard cerebrospinal fluid collection equipment. Clean, clear 10 mL collection container for CSF. Fixative (50% ethyl alcohol). Collection Procedure: Using standard CSF procedure, collect 3 mL of CSF. In general, morphology of cells within the CSF can be adequately maintained with prompt refrigeration for 24 hours. Although a fresh specimen is preferred, if a longer time period between collection and processing is anticipated, the specimen may be preserved by adding an equal volume of 50% ethyl alcohol to the specimen. Label the container with the patient's first and last name, date of birth, specimen type and collection date. Submit the specimen to the Cytopathology Laboratory along with the completed Cytology test request form. Note: Specimens submitted for immunocytochemical testing must be submitted fresh. Unacceptable Conditions: Refer to the Specimen Rejection section in the Specimen Transport Guide. Stability: Refrigerated: 72 hours	
CPT Code(s):	88108 Concentration and interpretation or 88112 Selective cellular enhancement with interpretation and/or 88106 Cytopathology, filter. Additional CPT codes may apply if special studies are required.	

8209713	Cytology, Conjunctival Scraping	OS
Methodology:	Routine Cytopathologic Evaluation	
Specimen Required:	Patient Preparation: Indications: Detection and characterization of inflammatory/infectious processes of the conjunctiva. Collect: Direct smear of material collected from the conjunctival surface. Supplies: Two clean glass slides, fixative (95% ethyl alcohol), conjunctival scraping spatula, test request form. Collection Procedure: Label the slides with the patient's first and last name, date of birth, and specimen source in pencil on the frosted end and place in a container filled with 95% ethyl alcohol so that the slides are completely covered. Gently scrape the area of abnormality. Remove one of the slides from the fixative. Quickly and evenly smear the collected material on one of the glass slides. Immediately re-immerses the slide in fixative. Repeat the process with the second slide, if necessary, for better diagnostic yield. Submit the specimen and the completed request form to the Cytopathology Laboratory. Unacceptable Conditions: Refer to the Specimen Rejection in the Specimen Transport Guide. Stability: Fixed slides: Indefinitely	
CPT Code(s):	88160	

8209706	Cytology, Fine Needle Aspirate	FA
Methodology:	Routine Cytopathologic Evaluation	
Specimen Required:	Collect: Refer to Cytology, Fine Needle Aspiration Collection for specific collection and transportation guidelines.	
CPT Code(s):	88173 This CPT code may also be reported in conjunction with aspiration of the specimen (10021) and/or evaluation of fine needle aspirate, immediate cytohistologic study to determine adequacy for diagnosis (88172, 88177). Additional CPT codes may be reported depending on the preparation methods, such as: 88106, 88108, and/or 88305.	

Specimen Required:	Cytology, Fine Needle Aspiration Collection Patient Preparation: For superficial aspirates, clean technique suffices for cleansing of the skin surface. Local anesthetic may or may not be used. If more than two or three attempts are anticipated, anesthetic is recommended. However, be certain not to contaminate the lesion with a large volume of anesthetic. Also, make attempts not to directly interfere with the ability to palpate and localize the lesion. For deep aspirates, sterile technique is required for cleansing of the skin, and local anesthetic is usually required. Fine needle aspiration of mass lesions is commonly utilized in the detection and characterization of a variety of malignant diseases. Obtaining an adequate specimen requires attention to good aspiration technique as well as processing of material obtained. It is highly desirable that several direct smears be prepared (preferably air-dried) for all fine needle aspiration specimens submitted to Cytopathology. Indications: To determine benignity or malignancy of mass lesions, and to characterize the type of malignancy or benign disease, which is present. Collect: FNA Specimens Specimen Required: Adequate cellular material for cytologic evaluation obtained from an appropriately performed fine needle aspiration. This will depend on the specimen site and character of the lesion being aspirated. In general, this requires that there be enough material for the examiner to at least determine that the aspirating needle sampled a mass lesion. Supplies: 10 mL syringe. Syringe pistol (optional). 23 to 27 gauge needle of appropriate length. Single-end frosted glass slides labeled with the patient's first and last name, date of birth, and specimen source (for preparation of direct smears). Fixative (either Saccomanno fixative or 95% ethyl alcohol). Collection Procedure: Please note that the following collection procedure is a suggested guideline. Aspiration techniques vary widely based on personal preferences, and specific clinical circumstances must be taken into account when deciding on the method of aspiration utilized. Identification and Localization of a Mass Lesion Mass lesions usually come to attention either by simple identification of the development of a mass (usually superficially) or by the development of symptoms directly or indirectly caused by the mass. In order to be able to sample the identified lesion, some means of accurate localization must be available. If the mass is superficial, simple isolation of the mass between the thumb and index finger of the nonaspirating hand is usually sufficient. For deeper masses, ultrasound or radiographic techniques are usually required for accurate guidance and localization of the aspirating needle. Aspiration (Superficial Masses)	
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Assemble the aspirating equipment. If direct smears are to be made, label the slides prior to the aspiration. With the target of aspiration fixed with the nondominant hand between the thumb and index finger, and the syringe or syringe pistol in the dominant hand, the needle is placed against the skin. If the lesion is very superficial, the needle should approach the skin at approximately a 30-degree angle. If the mass is deep, it should approach the skin at a perpendicular angle. A quick motion should be used in passing the needle through the skin. The needle is then advanced through the subcutaneous tissue into the mass. If the mass is small, the needle should be aimed toward the center; if it is large, the needle should be aimed toward the periphery, as the center of larger masses may be necrotic. A noticeable difference in the consistency of the tissue should be noted when the needle penetrates the mass. With the needle in the mass, the needle tip should be moved in short motions, initially, to loosen cells within the mass. Negative pressure is then applied by pulling back on the plunger of the syringe. When blood or material appears in the hub of the needle, the aspiration should be stopped. Prior to withdrawal of the needle, negative pressure must be released to prevent suction of the material into the barrel of the syringe when the needle exits the skin.

Aspiration (Deep Lesions)

While the basic aspiration procedure is similar for deep lesions, specialized equipment for imaging, specialized needles and set-ups for aspiration, and emergency equipment for handling major complications are required. Specific techniques are highly variable, according to personal preferences.

Preparation of Direct Smears

For preparation of smears, single-end frosted slides should be utilized. Slides should be labeled with patient's first and last name, date of birth, and specimen source in pencil prior to aspiration. Some author investigators recommend gently expressing a drop of aspirated fluid onto a slide, while others recommend forcefully expelling the material onto the slide. The actual method will be determined in part by the nature of the material present. If the aspirated material is abundant and fluid, a drop may be easily expressed without force. If the material is scant or more viscous or solid, the material must often be forcefully expelled. The latter method can result in splattering of material off of the slide, and will utilize most of the specimen in the preparation of a minimal number of smears, necessitating more passes if additional material is required for additional studies. The former method allows for better control of the smear process.

Once the specimen is on the slide, it must be smeared. The simplest way to accomplish this is to oppose a second glass slide onto the first, allowing the aspirated material to provide surface tension between the two slides, and then gently and quickly pulling the two slides apart in a horizontal motion to distribute the material in a thin film over both slides.

The smears should be: 1) immediately fixed in either Saccomanno fixative or 95% ethyl alcohol for Papanicolaou staining (delineate with an "F" on the frosted end of the slide) or 2) air-dried for Diff-Quick staining (delineate with an "A" on the frosted end of the slide).

If material remains in the hub of the needle, additional smears may be prepared or the material may be rinsed into a tube containing either fixative (CytoRich™ Red, CytoLyt, Saccomanno, etc.) or a physiologic solution such as normal saline, or RPMI. If smears are not prepared, all of the aspirated material should be flushed into a physiologic solution.

Submit the specimen (smears and/or material rinsed into solution) to the Cytopathology Laboratory along with the completed Cytology test request form. If transport of specimen in fluid will be delayed more than 24 hours, the specimen should be submitted in fixative. If transport time of fluid specimen will be less than 24 hours, or fixative is not available, the specimen should be refrigerated or kept on wet ice until transport to the lab.

8209709	Cytology, Gastrointestinal	GI
Methodology:	Routine Cytopathologic Evaluation	
Specimen Required:	<u>Collect:</u> Refer to Cytology, Gastrointestinal Specimen Collection specific collection and transportation guidelines.	
CPT Code(s):	88108 Concentration and interpretation, 88112 Selective cellular enhancement with interpretation and/or 88106 Cytopathology, filter.	

Cytology, Gastrointestinal Specimen Collection

Specimen Required: Patient Preparation: The adequacy of a gastrointestinal specimen is determined primarily by the presence of well-preserved epithelial cells indicative of the type of epithelium present at the gastrointestinal site sampled. All GI specimens tend to deteriorate rapidly in the fresh state due to enzymatic activity which is present throughout much of the GI tract. If the specimen cannot be transported to the Cytopathology Laboratory within four hours, collection of the specimen in Saccomanno fixative is recommended. The specimen should be refrigerated or placed on wet ice until transport even if for a shorter period of time. In addition, these specimens are easily contaminated by epithelia from sites proximal to that being sampled.

Collect: Brushings (Esophageal, GI Junction, Gastric, Duodenal, Bile Duct, Other)

Indications: For detection and characterization of endoscopically visible gastrointestinal lesions; for the identification of some microbiologic pathogens (primarily herpes, CMV, and *Candida*).

Specimen Required: Endoscopically-directed brushing sample of the identified lesion.

Supplies: Standard endoscopy equipment. One (or more if necessary) 5 to 10 mL vial or tube of sterile normal saline or fixative (either Saccomanno fixative or 50% ethyl alcohol).

Collection Procedure: Instruct the patient to fast overnight or for a minimum of six hours prior to the procedure. Using standard endoscopy technique, identify the lesion in question and obtain a brushing sample of the lesion.

Note: It is important to brush the edges of an ulcer, as well as the floor, in order to obtain diagnostic material.

Upon withdrawing the brush, agitate the brush vigorously in a 5 to 10 mL vial of saline or fixative. **DO NOT APPLY THE BRUSH DIRECTLY TO SLIDES.** If possible, detach the brush and leave it in the vial. Label the vial with the patient's first and last name, date of birth, and specimen source. Submit the specimen along with the completed Cytology test request form to the Cytopathology Laboratory. If transport of the specimen will be delayed more than four hours, the specimen should be submitted in Saccomanno fixative or 50% ethyl alcohol. If transport time will be less than four hours, or fixative is not available, the specimen should be refrigerated or kept on wet ice until transport to the lab.

Washings (Esophageal, Gastric, Other)

Indications: For detection and characterization of endoscopically ill-defined or invisible gastrointestinal lesions; for the identification of some microbiologic pathogens (primarily herpes, CMV, and *Candida*).

Specimen Required: Endoscopically obtained washing (preferably at least 10 mL) of the region of the suspected lesion.

Supplies: Standard endoscopy equipment. 120 mL clean plastic specimen container(s). Fixative (either Saccomanno fixative or 50% ethyl alcohol).

Collection Procedure: Instruct the patient to fast overnight or for a minimum of six hours prior to the procedure. Using standard endoscopy technique, lavage the area of interest using a physiologic solution. Aspirate the solution and place in a clean specimen container. Label the container with the patient's first and last name, date of birth, and specimen source. Submit the specimen and the completed Cytology test request form to the Cytopathology Lab. If transport of the specimen will be delayed more than four hours, add 50 mL of Saccomanno fixative or 50% ethyl alcohol. If transport time will be less than four hours, or fixative is not available, the specimen should be refrigerated or kept on wet ice until transport to the lab.

Bile Drainage

Indications: For the detection of malignant cells arising within the hepatobiliary system.

Specimen Required: 10 mL or more of collected bile drainage.

Supplies: Standard transcutaneous or endoscopic biliary drainage equipment. Clean plastic specimen container of an appropriate size.
Collection Procedure: Using appropriate sterile technique, collect as much bile drainage through the drainage apparatus as possible, into a clean plastic specimen container. Label the container with the patient's first and last name, date of birth, and specimen source. Submit the specimen and the completed Cytology test request form to the Cytopathology Laboratory. If transport will be delayed for more than one hour, add 50 mL of Saccomanno fixative or 50% ethyl alcohol. If transport time will be less than one hour, or fixative is not available, the specimen should be refrigerated or kept on wet ice until transport to the lab.
Note: Bile specimens will degenerate very rapidly due to enzymatic activity and bile salts. Therefore, a 24-hour bile collection is not suitable for cytologic evaluation.

8209710	Cytology, Oral	GO
Methodology:	Routine Cytopathologic Evaluation	
Specimen Required:	Collect: Refer to Cytology, Oral Scraping or Brushing Specimen Collection for specific collection and transportation guidelines.	
CPT Code(s):	Depending on collection method: 88108 Concentration and interpretation or 88112 Selective cellular enhancement with interpretation or 88104 Smears with interpretation. Additional CPT codes may apply if special studies are required.	

Specimen Required: **Cytology, Oral Scraping or Brushing Specimen Collection**
Collect: **Scrapings**
Indications: Detection and characterization of malignancy and infectious processes in the oral cavity.
Specimen Required: Direct smear of material collected from the oral mucosa.
Supplies: Two (or more) clean glass slides, fixative (95% ethyl alcohol, PreservCyt®), oral scraping spatula, lead pencil, and test request form.
Collection Procedure: Label the frosted end of the slides or vial with the patient's first and last name, date of birth, and specimen source in pencil. If slides are used, place in a container filled with 95% ethyl alcohol so that the slides are completely covered. Gently scrape the area of abnormality. Remove one of the slides from the fixative. Quickly and evenly smear the collected material on one of the glass slides. Immediately re-immerses the slide in fixative. Repeat the process with the second slide if necessary for better diagnostic yield. Repeat the process for additional areas if necessary. If PreservCyt® is used, gently scrape the area of abnormality. Thoroughly rinse the spatula in PreservCyt®. Repeat the process with a second spatula if necessary for better diagnostic yield. Repeat the process for additional areas if necessary. Submit the specimen and the completed request form to the Cytopathology Laboratory.
Brushings
Indications: Detection and characterization of malignancy and infectious processes in the oral cavity.
Specimen Required: Brushing sample of the identified lesion.
Supplies: One 5 to 10 mL vial or tube of sterile normal saline or fixative (either PreservCyt®, Saccomanno fixative or 50% ethyl alcohol).
Collection Procedure: Identify the lesion in question and obtain a brushing sample of the lesion.
Note: It is important to brush the edges of an ulcer, as well as the floor, in order to obtain diagnostic material. Agitate the brush vigorously in a 5 to 10 mL vial of saline or fixative. DO NOT APPLY THE BRUSH DIRECTLY TO SLIDES. If possible, detach the brush and leave it in the vial. Label the vial with patient's first and last name, date of birth and specimen source. Submit specimen along with the completed Cytology test request form to the Cytopathology Laboratory. If transport of the specimen will be delayed more than four hours, the specimen should be submitted in fixative. If transport time will be less than four hours or if fixative is not available, the specimen should be refrigerated or kept on wet ice until transport to the lab.

8100200	Cytology, Pap 1 Slide	ZZI-CY ConvPap
Methodology:	Routine Cytopathologic Evaluation	
Specimen Required:	Collect: Refer to Cytology, PAP Smear Specimen Collection for specific collection and transportation guidelines.	
CPT Code(s):	CPT codes vary based on testing performed. Refer to the Cytopathology section in the front of this User's Guide.	

8100205	Cytology, Pap 2 Slides	GX
Methodology:	Routine Cytopathologic Evaluation	
Specimen Required:	Collect: Refer to Cytology, PAP Smear Specimen Collection for specific collection and transportation guidelines.	
CPT Code(s):	CPT codes vary based on testing performed. Refer to the Cytopathology section in the front of this User's Guide.	

8100210	Cytology, Pap 3 Slides	GD
Methodology:	Routine Cytopathologic Evaluation	
Specimen Required:	Collect: Refer to Cytology, PAP Smear Specimen Collection for specific collection and transportation guidelines.	
CPT Code(s):	CPT codes vary based on testing performed. Refer to the Cytopathology section in the front of this User's Guide.	

Specimen Required: **Cytology, Pap Smear Specimen Collection**
Patient Preparation: The conventional pap smear is used as a screening test for the evaluation of the lower female genital tract to detect the presence of inflammatory/infectious or benign proliferative conditions; screening of unsuspected or confirmation of suspected atypia, premalignant, or malignant changes; follow-up of patients with known and/or treated premalignant or malignant lesions (if a vaginal component is also desired, refer to procedure for procurement of routine vaginal smears).
General patient instructions:
1. In premenopausal patients, obtain specimens during the second half of the menstrual period to avoid contamination by obscuring blood.
2. Instruct the patient not to douche or engage in sexual intercourse within 24 hours of the procedure.
General procedural instructions: (See below for specific instructions)
1. Label the slide(s) with the patient's first and last name, date of birth, and specimen source directly on the frosted end of the glass, in pencil, before beginning the procedure. THE LABORATORY WILL NOT ACCEPT UNLABELED SLIDES. Please note that a PAP smear folder labeled with the patient's name is not adequate for patient identification. The patient information must appear on the slide.
2. Obtain all specimens prior to bimanual examination.
3. Place the patient in the lithotomy position. Using an unlubricated vaginal speculum (saline may be used as a lubricant) visualize the cervix as fully as possible.
4. After collection and proper fixation of specific specimens as outlined below, place slide(s) in a cardboard slide folder and submit to the Cytopathology Laboratory, along with the completed Cytology test request form.
Collect: **Routine Cervical/Endocervical (Pap) Smear (1 slide)***
Specimens Required: Unstained cervical or cervical/endocervical slides.
Supplies: Vaginal speculum, plastic extended-tip spatula, cytobrush**, fixative** (spray fixative or bottle of 95% ethyl alcohol), clean glass slide (single-end frosted), black lead lab pencil, and test request form. PAP kits are available from ARUP.

Collection Procedure: Label one slide with the patient's first and last name, date of birth, and specimen source (prior to obtaining the specimen). Obtain specimen prior to bimanual examination. Use an unlubricated speculum (saline or warm water may be used). After visualization of the cervix is accomplished insert the cytobrush*** into the endocervical canal and rotate half a turn. Withdraw the cytobrush and spread the collected material quickly and evenly onto the half of the slide opposite the frosted end. The endocervical mucus will prevent air-drying during collection of the subsequent cervical component. Using the extended-tip spatula, scrape material with the spatula from the whole circumference of the cervix. Withdraw the spatula and spread the collected material quickly and evenly onto the half of the slide adjacent to the frosted end. Fix immediately (drop slide into fixative or spray with fixative, holding the spray bottle approximately 8 to 12 inches from the slide). Complete the Cytology test request form, including relevant clinical information. Submit the specimen to the Cytopathology Laboratory.

Routine Vaginal Smear - 1 or More Slides

Indications: Can be used in conjunction with routine cervical/endocervical smears in individuals with a uterus, or alone in hysterectomized patients.

Specimen Required: Lateral vaginal wall smear or smear of sample from a clinically concerning area.

Supplies: Vaginal speculum, one or more plastic cervical spatulas, fixative** (spray fixative or 95% ethyl alcohol), one or more clean glass slides (single-end frosted), black lab pencil, and test request form. PAP kits are available from ARUP.

Collection Procedure: If only a routine lateral vaginal wall sample will be obtained, label one slide with the patient's first and last name, date of birth, and specimen source. If vaginal sample will be obtained in conjunction with a cervical and endocervical component, make sure that the slides are also appropriately labeled according to site. If smears from separate vaginal areas are also to be obtained, label the sites accordingly as to specific site (e.g., left lateral vaginal wall, posterior vaginal wall, etc.). Obtain specimens prior to bimanual evaluation. Use an unlubricated speculum (saline or warm water may be used). Scrape the desired region of the vaginal mucosa with the spatula. Withdraw the spatula and spread the material quickly and evenly onto the glass slide (if cervical/endocervical smears are also obtained, or smears from other areas of the vagina are obtained, make certain that each smear is performed on the correspondingly labeled slide). Fix immediately (drop slide into fixative or spray with fixative, holding the spray bottle approximately 8 to 12 inches from the slide). Scrape additional areas of the vagina that appear abnormal and spread and fix as above. Complete the Cytology test request form, including relevant history. Submit the specimen to the Cytopathology Laboratory.

Routine Cervical/Endocervical (PAP) Smear (2 or More Slides)*

Specimens Required: Unstained cervical or endocervical slides.

Supplies: Vaginal speculum, plastic extended-tip spatula, cytobrush***, fixative** (spray fixative or bottle of 95% ethyl alcohol), two clean glass slides (single end frosted), black lead lab pencil, and test request form. PAP kits are available from ARUP.

Collection Specimen: Label two slides with the patient's first and last name, date of birth, and specimen source (prior to obtaining the specimen). Obtain specimens prior to bimanual examination. Use an unlubricated speculum (saline or warm water may be used). After visualization of the cervix is accomplished, scrape material with the spatula from the whole circumference of the cervix. Withdraw the spatula and spread the collected material quickly and evenly onto the glass slide. Fix immediately (drop slide into fixative or spray with fixative, holding the spray bottle approximately 8 to 12 inches from the slide). Insert the cytobrush*** into the endocervical canal and rotate half a turn. Withdraw the cytobrush and spread the collected material quickly and evenly onto the second slide. Fix immediately (drop slide into fixative or spray with fixative, holding the spray bottle approximately 8 to 12 inches from the slide). Complete the Cytology test request form, including relevant clinical information. Submit the specimen to the Cytopathology Laboratory.

Vaginal Smear, DES Exposure - 2 or more slides

Indications: Evaluation of potential changes associated with in utero DES exposure.

Specimens Required: Lateral vaginal wall sample, cervical sample, endocervical sample.

Supplies: Vaginal speculum, one or more cervical spatulas, one extended-tip spatula, cytobrush***, fixative** (spray fixative or 95% ethyl alcohol), two or more clean glass slides (single end frosted), black lead lab pencil, and test request form. PAP kits are available from ARUP.

Collection Procedure: Label two or more slides with patient's first and last name, date of birth, and specimen source. Label one slide "C" and one "LVW." Label others as necessary (see below). Obtain specimens prior to bimanual examination. Use an unlubricated speculum (saline or warm water may be used). After visualization of the upper 1/3 of the vagina is accomplished, with the spatula scrape the upper 1/3 of either lateral vaginal wall. Withdraw the spatula and spread the material quickly and evenly onto the slide clearly marked "LVW." Fix immediately (drop slide into fixative or spray with fixative, holding the spray bottle approximately 8 to 12 inches from the slide). Scrape additional areas of the vagina that appear abnormal. Label slides accordingly (prior to sampling) and spread and fix as above. Obtain routine cervical and endocervical specimens as outlined in the respective procedures. These smears should be collected on the slide labeled "C." Complete the Cytology test request form, including relevant history. Submit the specimen to the Cytopathology Laboratory.

* Procedures for collection of the cervical and endocervical components on either one or two slides are provided.

**Most hair sprays no longer contain adequate amounts of alcohol for appropriate fixation.

***Endocervical sampling devices other than a cytobrush may be used. Refer to specific specimen collection procedures provided with these devices for more information.

8209702	Cytology, Pulmonary	CP
Methodology:	Routine Cytopathologic Evaluation	
Specimen Required:	<u>Collect:</u> Refer to Cytology, Pulmonary Specimen Collection for specific collection and transportation guidelines.	
CPT Code(s):	Depending on methodology: 88112 Selective cellular enhancement with interpretation or 88108 Concentration and interpretation or 88104 Smears with interpretation or 88106 Cytopathology, filter. Additional CPT codes may apply if special studies are required.	

Cytology, Pulmonary Specimen Collection

Specimen Required: Patient Preparation: The adequacy of a sputum specimen is determined primarily by the presence of alveolar macrophages indicating that the specimen obtained is a deep cough specimen producing material from the lower airways. In addition, the specimen should not be obscured by oral or upper airway contaminants. Adequate bronchial brushing and washing specimens should contain large numbers of well-preserved bronchial lining cells with as little contaminating oral and upper airway material as possible. For bronchoalveolar lavage specimens, refer to Cytology, Bronchoalveolar Lavage Specimen Collection.

Collect: **Sputum**

Indications: For the detection and characterization of premalignant/malignant pulmonary lesions.

Specimen Required: 5 mL (about one teaspoon) or more if possible, of sputum obtained from a deep cough specimen.

Supplies: 120 mL clean plastic specimen container; fixative (either Saccomanno fixative or 50% ethyl alcohol).

Collection Procedure: When clinically feasible, sputum specimens should be obtained as follows. The optimum time for specimen collection is within 15 to 30 minutes after waking and before eating breakfast. Brushing of teeth or rinsing of the mouth thoroughly with water will reduce contamination by saliva. Instruct the patient to inhale and exhale deeply, forcing air from the lungs using the diaphragm. Repeat until the patient coughs and is able to produce a sputum specimen. Collect the specimen in the container, attempting to obtain at least one teaspoon of sputum. Specimen should be a deep cough specimen and not saliva. Saliva is of no diagnostic value. If

transport of the specimen will be delayed more than 24 hours, add 50 mL of Saccomanno fixative or 50% ethyl alcohol. If transport time will be less than 24 hours, or fixative is not available, the specimen should be refrigerated or kept on wet ice until transport to the lab. Greater diagnostic yield may be obtained if specimens are submitted on three to five successive mornings. Label the container with the patient's first and last name, date of birth, and specimen source. Submit the specimen, along with the completed test request form to the Cytopathology Laboratory.

Note: If a good specimen is not obtainable by this method, or if the patient is unable to comply, obtain an induced sputum or tracheal aspirate. The Cytopathology Laboratory will not accept induced or any other sputum samples for the cytologic detection of *Pneumocystis*, fungi or acid-fast bacilli. If a bronchoalveolar lavage cannot be obtained, the preferred methodology for detection of *Pneumocystis* is by fluorescent antibody testing performed in the ARUP Infectious Disease Laboratory. Sputum specimens for fungi and acid-fast bacilli may also be submitted to the Infectious Disease Laboratory for rapid detection procedures of these organisms.

Post-Bronchoscopy Sputum

Collect one good, deep cough specimen at any time during the 24-hour period following bronchoscopy, as outlined above. Submit the specimen to the Cytopathology Laboratory, along with the completed Cytology test request form.

Bronchial Brushings

Indications: For the detection and characterization of bronchoscopically visible premalignant/malignant pulmonary lesions; for the identification of some microbiologic pathogens (primarily viral and fungal).

Specimen Required: Bronchoscopically-directed brushing of the identified lesion.

Supplies: Standard bronchoscopy equipment. One (or more if necessary) 5 to 10 mL vial or tube of sterile normal saline or fixative (either Saccomanno fixative or 50% ethyl alcohol).

Collection Procedure: Using standard bronchoscopy technique, identify the lesion in question and obtain a brushing sample of the lesion. Upon withdrawing the brush, agitate the brush vigorously in a 5 to 10 mL vial of sterile saline or fixative. **DO NOT APPLY THE BRUSH DIRECTLY TO SLIDES.** If possible, detach the brush and leave it in the vial. Label the vial with patient's first and last name, date of birth, and specimen source. Submit the specimen along with the completed Cytology test request form to the Cytopathology Laboratory. If transport of the specimen will be delayed more than four hours, the specimen should be submitted in Saccomanno fixative or 50% ethyl alcohol. If transport time will be less than four hours, or fixative is not available, the specimen should be refrigerated or kept on wet ice until transport to the lab.

Bronchial Washings

Indications: For the detection and characterization of bronchoscopically ill-defined or invisible premalignant/malignant pulmonary lesions; for the identification of some microbiologic pathogens (primarily viral or *Pneumocystis*).

Specimen Required: Bronchoscopically-obtained washing (10 mL is preferred) of the bronchi in the region of the suspected lesion.

Supplies: Standard bronchoscopy equipment. 120 mL clean plastic specimen container(s). Fixative (either Saccomanno fixative or 50% ethyl alcohol).

Collection Procedure: Using standard bronchoscopy technique, lavage the distribution of the bronchus to be sampled. Collect the wash in a clean container. Label the container with patient's first and last name, date of birth, and specimen source. Submit the specimen, along with the completed Cytology test request form to the Cytopathology Lab. If transport of the specimen will be delayed more than 24 hours, add 50 mL of Saccomanno fixative or 50% ethyl alcohol. If transport time will be less than 24 hours, or fixative is not available, the specimen should be refrigerated or kept on wet ice until transport to the lab.

8209712	Cytology, Skin Scraping	SS
Methodology:	Routine Cytopathologic Evaluation	
Specimen Required:	Patient Preparation: Indications: Detection and characterization of inflammatory/infectious processes of the skin, especially herpetic infections (Tzanck smear). Collect: Direct smear of material collected from a skin lesion, usually a vesicle. Supplies: Two (or more) clean glass slides (fully frosted), fixative (95% ethyl alcohol), skin scraping spatula, test request form. Collection Procedure: Label the slides with the patient's first and last name, date of birth, and specimen source in pencil on the frosted end and place in a container filled with 95% ethyl alcohol so the slides are completely covered. Gently scrape the area of abnormality. If the abnormality is a vesicle, remove the covering and scrape both at the base of the vesicle and around the rim. Remove one of the slides from the fixative. Quickly and evenly smear the collected material on one of the glass slides. Immediately re-immerses the slide in fixative. Repeat the process with the second slide, if necessary, for better diagnostic yield. Repeat the process for additional areas if necessary. After collection, leave the slides in the 95% alcohol for 10 minutes and then air dry. Submit the specimen and the completed request form to the Cytopathology Laboratory. Unacceptable Conditions: Refer to the Specimen Rejection section in the Specimen Transport Guide. Stability: Fixed slides: Indefinitely	
CPT Code(s):	88160	

8100400	Cytology, SurePath™ Liquid-Based Pap Test (AutoCyte PREP™ System)	GA REPORT
Methodology:	PrepStain™ Slide Processor/Routine Cytopathologic Evaluation	
Specimen Required:	Collect: Refer to Cytology, SurePath™ Liquid-Based Pap Test (AutoCyte PREP™ System) Specimen Collection for collection guidelines. This test requires a SurePath™ special collection kit that is available by contacting ARUP Client Services at (800) 522-2787. Storage/Transport Temperature: Submit specimen according to Biological Substance, Category B, shipping guidelines. Unacceptable Conditions: Specimens not collected in a SurePath™ special collection kit provided by ARUP. Expired SurePath™ vials or vials received without the collection devices will not be processed. Refer to Specimen Rejection in the Specimen Transport Guide. Stability: Ambient: 1 month; Refrigerated: 1 month; Frozen: Unacceptable	
CPT Code(s):	Refer to the Cytopathology section in front of this User's Guide.	

Specimen Required:	Cytology, SurePath™ Liquid-Based Pap Test (AutoCyte PREP™ System) Specimen Collection Patient Preparation: Indications: The SurePath™ (formerly AutoCyte PREP™ System) liquid-based Pap test produces slides that are intended as replacements for conventional gynecologic Pap smears for use in the screening and detection of cervical cancer, precancerous lesions, atypical cells, and all other cytologic categories as defined by the Bethesda System for Reporting Cervical Cytology. Collect: Cervical and endocervical sampling.
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Supplies: This test requires a SurePath™ special collection kit, which includes a SurePath™ preservative fluid collection vial and the sampling device(s). Kits may be ordered separately through ARUP Client Services at (800) 522-2787 or (801) 583-2787. Also required: ARUP Cytology test request form, permanent marker.

Collection Procedure: Obtain cervical specimen prior to bimanual examination. Use an unlubricated speculum (saline or warm water may be used). Vaginal discharge or secretion, when present in large amounts, should be removed before obtaining the cervical sample so as not to disturb the epithelium (i.e., cellulose swab). Small amounts of blood will not interfere with the cytologic evaluation; however,

large amounts of blood as present during menses may interfere with cytologic evaluation because cells may be obscured by blood. Use of liquid-based specimen collection minimizes the interference from these factors. If testing for sexually transmitted disease is indicated, the cervical cytology sample should be taken first. After visualization of the cervix is accomplished, collect the sample. Obtain an adequate sampling from the cervix using the Rovers Cervex-Brush™ or the Pap Perfect® plastic spatula and Cytobrush® Plus GT.

ROVER'S CERVEX-BRUSH™ Collection: Insert the central long tines into the cervical os/ectocervical canal applying gentle pressure. As these are being inserted the device should be twisted slowly. Maintaining gentle pressure, hold the stem between the thumb and the forefinger and rotate the brush five times in a clockwise direction. Direction must be consistent. Do not alter or vary the direction of the broom during sampling. Transfer the entire sample by placing your thumb against the back of the brush pad, and simply disconnect the entire brush from the stem into the SurePath™ preservative vial.

PAP PERFECT® PLASTIC SPATULA AND CYTOBRUSH® PLUS GT Collection: Obtain an adequate sampling from the ectocervix using the Pap Perfect® plastic spatula. Disconnect the spatula head into the SurePath™ Preservative vial. Insert the Cytobrush® Plus GT into the cervix until only the bottom most fibers are exposed. Slowly rotate or turn one half turn in one direction. DO NOT OVER-ROTATE. Disconnect the brush head and place in the SurePath™ preservative vial.

Recap the vial and tighten. Record the patient's first and last name, date of birth, specimen source, and date collected on the vial.

Record the patient's information and medical history on the ARUP Cytology test request form. Place the vial and test request form in a specimen bag for transport to the laboratory. **ARUP Laboratories cannot accept samples in expired SurePath™ preservative or samples received without the collection devices in the vial.**

8100214	Cytology, SurePath™ Liquid-Based Pap Test (AutoCyte PREP™ System) with Reflex to Human Papillomavirus (HPV) DNA Probe, High Risk	GR REPORT
Methodology:	PrepStain™ Slide Processor/Routine Cytopathologic Evaluation/Nucleic Acid Probe	
Specimen Required:	Collect: Refer to Cytology, SurePath™ Liquid-Based Pap Test (AutoCyte PREP™ System) Specimen Collection for collection guidelines. Storage/Transport Temperature: Submit specimen according to Biological Substance, Category B, shipping guidelines. Remarks: This test includes a Cytology, SurePath™ Liquid-Based Pap Test (AutoCyte PREP™ System) (ARUP test code 8100400) and a Human Papillomavirus (HPV) DNA Probe, SurePath® (Autocyte™) (ARUP test code 0060744), ONLY if the SurePath™ Liquid-Based Pap Test is interpreted as atypical squamous cells of undetermined significance (ASC-US). Unacceptable Conditions: Refer to Unacceptable Conditions for Human Papillomavirus (HPV) DNA Probe, High Risk, SurePath® (Autocyte™) (ARUP test code 0060744) and Cytology, SurePath™ Liquid-Based Pap Test (AutoCyte PREP™ System) (ARUP test code 8100400). Stability: Ambient: 1 month; Refrigerated: 1 month; Frozen: Unacceptable	
CPT Code(s):	CPT Codes vary based on testing performed. If reflexed to HPV add 87621 High Risk HPV	
8100211	Cytology, ThinPrep® Pap Test™	GT REPORT
Methodology:	ThinPrep® 2000 System	
Specimen Required:	Collect: Refer to Cytology, Thin Prep® Pap Test™ Specimen Collection for specific collection guidelines. Discard collection device. This test requires a ThinPrep® Pap Test™ special collection kit that is by contacting ARUP Client Services at (800) 522-2787. Storage/Transport Temperature: Submit specimen according to Biological Substance, Category B, shipping guidelines. Remarks: Human Papillomavirus (HPV) DNA Probe testing can be performed on the PreservCyt® Solution vial, refer to Human Papillomavirus (HPV) DNA Probe, High Risk (ARUP test code 0065999), or Cytology, ThinPrep® Pap with Reflex to Human Papillomavirus (HPV) DNA Probe, High Risk (ARUP test code 8100212). Unacceptable Conditions: Specimens not collected in a ThinPrep® Pap Test™ special collection kit or specimens submitted in an expired collection kit. Refer to Specimen Rejection in the Specimen Transport Guide. Stability: PreservCyt® Solution preserves cells for up to three weeks refrigerated or room temperature.	
CPT Code(s):	CPT codes vary based on testing performed. Refer to the Cytopathology section in front of this User's Guide.	
Specimen Required:	Cytology, ThinPrep® Pap Test™ Specimen Collection Patient Preparation: Indications: The ThinPrep® 2000 System is intended as a replacement for the conventional method of Pap smear preparation for use in screening for the presence of atypical cells, cervical cancer, or precursor lesions (LSIL, HSIL) as well as other cytologic categories as defined by the Bethesda System for Reporting Cervical Cytology. Collect: Cervical and endocervical sampling. Supplies: This test requires a ThinPrep® Pap Test™ special collection kit that may be ordered separately through ARUP Client Services (800) 522-2787 or (801) 583-2787. Also required: ARUP Cytology test request form and a permanent marker. Collection Procedure: Obtain specimen prior to bimanual examination. Use an unlubricated speculum (saline or warm water may be used). After visualization of the cervix is accomplished, collect the sample. Obtain an adequate sampling from the cervix using a broom-type (e.g., Wallach) collection device or endocervical brush/plastic spatula combination. BROOM Collection: Insert the central bristles of the broom into the endocervical canal deep enough to allow the shorter bristles to fully contact the ectocervix. Push gently, and rotate the broom in a clockwise direction five times. Rinse the broom-type collection device into the PreservCyt® Solution vial by pushing the broom into the bottom of the vial 10 times, forcing the bristles apart. As a final step, swirl the collection device vigorously to further release material. Discard the collection device. BRUSH/SPATULA Collection: Obtain an adequate sampling from the ectocervix using a plastic spatula. Rinse the spatula into the PreservCyt® Solution vial by swirling the spatula vigorously in the vial 10 times. Discard the spatula. Insert the brush into the cervix until only the bottom most fibers are exposed. Slowly rotate or turn one-half turn in one direction. DO NOT OVER-ROTATE. Rinse the brush in the PreservCyt® Solution by rotating the device in the solution while pushing against the vial wall. Swirl the brush vigorously to further release material. Discard the brush. Tighten the cap so that the torque line on the cap passes the torque line on the vial. Record the patient's first and last name, date of birth, and specimen source, and ID number on the vial. Record the patient's information and medical history on the ARUP Cytology test request form. Place the vial and test request form in a specimen bag for transport to the laboratory. ARUP Laboratories cannot accept samples in expired PreservCyt® Solution.	
8100212	Cytology, ThinPrep® Pap with Reflex to Human Papillomavirus (HPV) DNA Probe, High Risk	TR REPORT
Methodology:	ThinPrep® 2000 System/Routine Cytopathologic Evaluation/Nucleic Acid Probe	
Specimen Required:	Collect: Refer to Cytology, ThinPrep® Pap Test™ Specimen Collection for collection guidelines. Remarks: This test includes a Cytology, ThinPrep® Pap Test™ (ARUP test code 8100211), and an Human Papillomavirus (HPV) DNA Probe, High Risk, ThinPrep® (ARUP test code 0060750) ONLY if the ThinPrep® PapTest™ is interpreted as atypical squamous cells of undetermined significance (ASC-US). Unacceptable Conditions: Refer to unacceptable conditions for Human Papillomavirus (HPV) DNA Probe, High Risk, ThinPrep® (ARUP test code 0060750) and Cytology, ThinPrep® PapTest™ (ARUP test code 8100211).	

CPT Code(s): Stability: Ambient: 3 weeks; Refrigerated: 3 weeks; Frozen: Unacceptable
CPT codes vary based on testing performed. If reflexed to HPV add: 87621 High-risk HPV

8209714 Cytology, Tzanck Smear SZ
Methodology: Routine Cytopathologic Evaluation
Specimen Required: Patient Preparation: **Indications:** Detection and characterization of inflammatory/infectious processes of the skin, especially herpetic infections.
Collect: Direct smear of material collected from a skin lesion, usually a vesicle.
Supplies: Two (or more) clean glass slides fixative (95% ethyl alcohol), skin scraping spatula, and Cytology test request form.
Collection Procedure: Label the slides with the patient's first and last name, date of birth, and specimen source in pencil on the frosted end and place in a container filled with 95% ethyl alcohol so the slides are completely covered. Gently scrape the area of abnormality. If the abnormality is a vesicle, remove the covering and scrape both at the base of the vesicle and around the rim. Remove one of the slides from the fixative. Quickly and evenly smear the collected material on one of the glass slides. Immediately re-immerses the slide in fixative. Repeat the process with the second slide, if necessary, for better diagnostic yield. Repeat the process for additional areas if necessary. After collection, leave the slides in the 95% alcohol for 10 minutes and then air dry. Submit the specimen and the completed test request form to the Cytopathology Laboratory.
Unacceptable Conditions: Air dried smears. Refer to the Specimen Rejection section Specimen Transport Guide.
Stability: Fixed slides: Indefinitely

CPT Code(s): 88160

8209704 Cytology, Urologic CU
Methodology: Routine Cytopathologic Evaluation
Specimen Required: Collect: Refer to Cytology, Urologic Specimen Collection for collection and transport guidelines.
CPT Code(s): 88108 Concentration and interpretation or 88112 Selective cellular enhancement with interpretation and/or 88106 Cytopathology, filter. - Additional CPT codes may apply if special studies are required.

Cytology, Urologic Specimen Collection
Specimen Required: Patient Preparation: Urine is commonly evaluated cytologically for the presence of malignant cells in the detection of urologic malignancies. Urine may also be evaluated cytologically in the detection and characterization of some renal diseases. Method of specimen collection as well as time of collection will affect the cytologic evaluation in many instances.
Collect: **Voided/Catheterized Urine**
Indications: Detection and characterization of malignant cells and other urologic abnormalities in symptomatic (usually hematuria) patients; screening for malignancy in selected individuals at high risk for the development of urologic malignancy; detection and characterization of some nonneoplastic renal diseases in symptomatic (usually hematuria) patients.
Specimen Required: 50 mL of an appropriately-collected voided or catheterized urine specimen.
Supplies: Clean collection container of appropriate size. Standard catheterization equipment (for catheterized urine). Fixative (50% ethyl alcohol).
Collection Procedure: For purposes of obtaining the greatest yield of diagnostic material, a second-morning voided urine specimen should be obtained, if possible. A midstream, clean-catch specimen is recommended to avoid vaginal contamination in female patients. A midstream specimen, not necessarily clean catch, is recommended for male patients. If the patient must be catheterized to obtain the specimen, this should be noted on the test request form as catheterization can lead to artifacts which may be misinterpreted without the knowledge that the specimen was catheterized. Label the vial with the patient's first and last name, date of birth, and specimen source. Submit the specimen to the Cytopathology Laboratory along with the completed Cytology test request form. If transport of the specimen will be delayed more than 24 hours, add an equal volume of 50% ethyl alcohol (if sample size is too large to accommodate this volume, a well mixed aliquot of the specimen with an equal volume of fixative may be utilized). If transport time will be less than 24 hours, or fixative is not available, the specimen should be refrigerated or kept on wet ice until transport to the lab.
Other Urologic Specimens
Indications: Detection of suspected malignancy utilizing lavage and brushing specimens obtained cystoscopically (bladder washing, renal pelvis washing/brushing, ureteral washing/brushing or urethral washing); staging of urologic malignancies.
Specimen Required: 10 mL (or more) of an appropriately-collected, cystoscopically-derived specimen.
Supplies: Standard cystoscopy equipment. Clean collection container of appropriate size. Fixative (50% ethyl alcohol).
Collection Procedure
Washing: Using standard cystoscopy technique, obtain washing specimens, carefully denoting specific specimen sites for each specimen on the test request form. Submit the specimen fresh to the Cytopathology Laboratory along with the completed Cytology test request form. If transport of the specimen will be delayed more than 24 hours, add an equal volume of 50% ethyl alcohol. If transport time will be less than 24 hours, or fixative is not available, the specimen should be refrigerated or kept on wet ice until transport to the lab.
Brushing: Using standard cystoscopy technique, identify the lesion in question and obtain a brushing sample of the lesion.
Note: It is important to brush the edges of an ulcer, as well as the floor, in order to obtain diagnostic material. Upon withdrawing the brush, agitate the brush vigorously in a 5 to 10 mL vial of saline or fixative. **DO NOT APPLY THE BRUSH DIRECTLY TO SLIDES.** If possible, detach the brush and leave it in the vial. Label the vial with the patient's first and last name, date of birth and specimen source. Submit the specimen along with the completed Cytology test request form to the Cytopathology Laboratory. If transport of the specimen will be delayed more than four hours, the specimen should be submitted in Saccomanno fixative or 50% ethyl alcohol. If transport time will be less than four hours, or fixative is not available, the specimen should be refrigerated or kept on wet ice until transport to the lab.

8209715 Cytology, Vitreous Fluid VF
Methodology: Routine Cytopathologic Evaluation
Specimen Required: Patient Preparation: **Indications:** Detection and characterization of malignant cells in the eye. In cytology, vitreous fluid is most commonly evaluated to detect and characterize malignancy which may have gained access to the eye. Vitreous fluid specimens require special collection procedures under the direction of an ophthalmologist. In addition, due to lack of nutrients in this fluid, cells may rapidly degenerate rendering morphologic evaluation less than optimal if adequate care is not taken.
Collect: For vitreous fluids, there is no minimum amount, but collect as much as possible.
Supplies: Standard vitreous aspiration equipment. Standard vitreous aspirate collection container for vitreous fluid. Fixative (50% ethyl alcohol).
Collection Procedure: Using standard vitreous collection procedures, collect an appropriate amount of vitreous fluid. In general, morphology of cells within vitreous fluid can be adequately maintained with prompt refrigeration for 24 hours. Although a fresh specimen is preferred, if a longer time period between collection and processing is anticipated, the specimen may be preserved by adding an equal volume of 50% ethyl alcohol to the specimen. Label the specimen with patient's first and last name, date of birth and specimen source. Submit the specimen to the Cytopathology Laboratory along with the completed Cytology request form.

Note: Specimens submitted for immunocytochemical testing must be submitted fresh. If necessary, on-call personnel can be utilized during the evenings or on weekends for processing of urgent specimens or those which need to be processed rapidly to avoid degeneration.

Unacceptable Conditions: Refer to the Specimen Rejection section in the Specimen Transport Guide.

Stability: Refrigerated: 72 hours

CPT Code(s): 88108 Concentration and interpretation or 88112 Selective cellular enhancement with interpretation and/or 88106 Cytopathology, filter - Additional CPT codes may apply if special studies are required.

0050622 Cytomegalovirus Antibodies, IgG & IgM CMV PAN

Methodology: Refer to individual components.

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: 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; 86645 CMV IgM

0050166 Cytomegalovirus Antibodies (Total) CMV SCN

Methodology: Solid Phase Agglutination

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

Specimen Preparation: Transport 4 mL whole blood. (Min: 2 mL)

Storage/Transport Temperature: Refrigerated.

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

CPT Code(s): 86644

0050165 Cytomegalovirus Antibody, IgG CMV IGG

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 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.5 mL) Acute and convalescent specimens must be labeled as such; parallel testing is preferred and convalescent specimens **must** be received within 30 days from receipt of the acute specimens. **Mark specimens plainly as "acute" or "convalescent."** Also acceptable: Serum from umbilical cord blood.

Storage/Transport Temperature: Refrigerated.

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

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

CPT Code(s): 86644

0050553 Cytomegalovirus Antibody, IgM CMV 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 in 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, 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): 86645

2004760 Cytomegalovirus Antiviral Drug Resistance by Sequencing CMV RESIST

Methodology: Polymerase Chain Reaction/Sequencing

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

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

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

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

Stability: Ambient: 8 hours; Refrigerated: 72 hours; Frozen: 1 month

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

0060040 Cytomegalovirus by PCR CMVPCR

Methodology: Qualitative Polymerase Chain Reaction

Specimen Required: Collect: Lavender (EDTA) or pink (K₂EDTA). OR amniotic fluid, bronchoalveolar lavage (BAL), CSF, ocular fluid, tissue, or neonatal urine.

Specimen Preparation: Separate plasma or serum from cells. Transfer 1 mL plasma, serum, amniotic fluid, BAL, CSF, ocular fluid, or urine to a sterile container. (Min: 0.5 mL)

OR Tissue: Snap freeze immediately. OR transfer to viral transport media (Microtest M4 or UTM) (ARUP supply #12884). Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787.

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

Remarks: **Specimen source required.**

Unacceptable Conditions: Whole blood or bone marrow (refer to ARUP test code 0060031).

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

All others: Ambient: 8 hours; Refrigerated: 72 hours; Frozen: 3 months

CPT Code(s): 87496

0060031 Cytomegalovirus by PCR, Whole Blood or Bone Marrow CMVPCR B

Methodology: Qualitative Polymerase Chain Reaction
Specimen Required: Collect: Lavender (EDTA) or bone marrow (EDTA). Also acceptable: Pink (K₂EDTA).
Specimen Preparation: Transport 3 mL whole blood **OR** 1 mL bone marrow. (Min: 0.5 mL)
Storage/Transport Temperature: Refrigerated. Submit specimen according to Biological Substance, Category B, shipping guidelines.
Remarks: **Specimen source required.**
Unacceptable Conditions: Plasma (refer to ARUP test code 0060040). Heparinized specimens. Frozen specimens. Clotted or hemolyzed specimens.
Stability: Ambient: 8 hours; Refrigerated: 72 hours; Frozen: Unacceptable
CPT Code(s): 87496

2003833 Cytomegalovirus (CMV) by Immunohistochemistry CMV 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

2003044 Cytomegalovirus IgG Avidity (Avidx™), ELISA CMV AVID
Methodology: Enzyme Linked Immunosorbent Assay
Specimen Required: Collect: Serum separator tube.
Specimen Preparation: Transfer 0.5 mL serum to an ARUP Standard Transport Tube. (Min: 0.25 mL)
Storage/Transport Temperature: Refrigerated.
Stability: Ambient: 5 days; Refrigerated: 2 weeks; Frozen: 1 month
CPT Code(s): 86644x2

0051813 Cytomegalovirus, Quantitative PCR CMV QNT
Methodology: Quantitative Polymerase Chain Reaction
Specimen Required: Collect: Lavender (EDTA) or pink (K₂EDTA).
Specimen Preparation: Separate plasma from cells within 24 hours. Transfer 1 mL plasma in a sterile polypropylene tube.
Storage/Transport Temperature: Frozen. Submit specimen according to Biological Substance, Category B, shipping guidelines.
Unacceptable Conditions: Serum. Heparinized specimens.
Stability: Ambient: 8 hours; Refrigerated: 72 hours; Frozen: 1 year
CPT Code(s): 87497

0065004 Cytomegalovirus Rapid Culture V CMVC
Methodology: Cell Culture/Immunofluorescence
Specimen Required: Collect: Lavender (EDTA) or pink (K₂EDTA). Or bronchoalveolar lavage (BAL), throat swab, tissue, colon biopsy, or urine.
Specimen Preparation: **Do not freeze.**
Blood: Transport 5 mL whole blood. (Min: 1 mL)
Fluid specimen: 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 or tissue: Place in viral transport media.
Storage/Transport Temperature: Refrigerated. Submit specimen according to Biological Substance, Category B, shipping guidelines.
Remarks: **Specimen source required.**
Unacceptable Conditions: CSF, rectal swab, or stool. Whole blood in viral transport media. Calcium alginate, dry, or wood swabs. Frozen specimens.
Stability: Ambient: 48 hours; Refrigerated: 72 hours; Frozen: Unacceptable
CPT Code(s): 87254 Shell vial

0030057 D-Dimer D-DI
Methodology: Immunoturbidimetric
Specimen Required: Collect: Light blue (sodium citrate). Refer to Specimen Handling at aruplab.com for hemostasis/thrombosis specimen handling guidelines.
Specimen Preparation: Transfer 2 mL platelet poor plasma 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. Non-frozen or hemolyzed specimens.
Stability: After separation from cells: Ambient: 8 hours; Refrigerated: 8 hours; Frozen: 1 month
CPT Code(s): 85379

2003857 D2-40 by Immunohistochemistry D240 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

0091356 Dantrolene, Serum or Plasma DANTROLENE
Methodology: Spectrofluorometry
Specimen Required: Collect: Plain red. Also acceptable: Lavender (EDTA) or pink (K₂EDTA).
Specimen Preparation: Protect from light. Transfer 2 mL serum or plasma to an ARUP Amber Transport Tube. (Min: 0.3 mL)
Storage/Transport Temperature: Refrigerated.
Remarks: Protect from light.
Unacceptable Conditions: Separator tubes. Specimens not protected from light.
Stability: No stabilities are available at this time.
CPT Code(s): 80299

0091361 Dapsone, Serum or Plasma DAPSONE SP
Methodology: High Performance Liquid Chromatography
Specimen Required: Collect: Plain red or lavender (EDTA).
Specimen Preparation: Transfer 2 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: 2 weeks; Frozen: 2 weeks
CPT Code(s): 82491

0091576 Darvocet, Serum or Plasma DARVOCET S
Methodology: Quantitative Gas Chromatography/Mass Spectrometry/High Performance Liquid Chromatography
Specimen Required: Collect: Plain red, gray (sodium fluoride/potassium oxalate), green (sodium heparin), or lavender (EDTA).
Specimen Preparation: Transfer 3 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 1.1 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Separator tubes.
Stability: Ambient: Undetermined; Refrigerated: Undetermined; Frozen: Undetermined
CPT Code(s): 80299; 82003

0091589 Darvocet, Urine DARVO URN
Methodology: Quantitative Gas Chromatography/Mass Spectrometry/High Performance Liquid Chromatography
Specimen Required: Collect: Random urine.
Specimen Preparation: Transfer 2 mL urine to an ARUP Standard Transport Tube. (Min: 1 mL)
Storage/Transport Temperature: Refrigerated.
Stability: Ambient: Undetermined; Refrigerated: Undetermined; Frozen: Undetermined
CPT Code(s): 80299; 82003

0049378 DDIT3 (CHOP) (12q13) Gene Rearrangement by FISH CHOPFISH
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

0051358 Deamidated Gliadin Peptide (DGP) Antibodies, IgA & IgG GLIAD PAN
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. Transport 1 mL serum. (Min: 0.3 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Plasma or other body fluids. Contaminated, hemolyzed, or grossly lipemic specimens.
Stability: After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year
CPT Code(s): 83516 x2

0051357 Deamidated Gliadin Peptide (DGP) Antibody, IgA GLIADPEP A
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. Transport 0.5 mL serum. (Min: 0.3 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Plasma or other body fluids. Contaminated, hemolyzed, grossly icteric, or grossly lipemic specimens.
Stability: After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year
CPT Code(s): 83516

0051359 Deamidated Gliadin Peptide (DGP) Antibody, IgG GLIADPEP 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. Transport 0.5 mL serum. (Min: 0.3 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Plasma or other body fluids. Contaminated, hemolyzed, grossly icteric, or grossly lipemic specimens.
Stability: After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year
CPT Code(s): 83516

2003326 deCODE ProstateCancer™ (Genetic Risk Assessment) PROST CAN

Methodology: Polymerase Chain Reaction/Fluorescent Primer/Probe Hybridization
Specimen Required: Collect: All specimens must be collected using the Buccal DNA Collector Kit (ARUP Supply #47080). Available online through eSupply using ARUP Connector contact ARUP Client Services at (800) 522-2787.
 1. Use gloves to protect the specimen from contamination.
 2. Remove the Buccal DNA Collector from the pouch, holding the handle at the base.
 3. Move slider cover back if necessary to fully expose the collection paper. Press the collection paper flat against cheek and drag across at least 7 times.
Specimen Preparation: Push cover forward towards the tip of the collector, covering the collection paper. Transport 2 buccal swabs.
Storage/Transport Temperature: Room temperature.
Unacceptable Conditions: This test was validated for patients of European Caucasian descent only; specimens from patients of other ethnicities will be rejected. Swabs other than those provided in the Buccal DNA Collector Kit.
Stability: Ambient: 30 days; Refrigerated: Unacceptable; Frozen: Unacceptable
CPT Code(s): 83891 Isolation; 83892 Enzymatic digestion; 83898 x25 Amplification; 83896 x25 Nucleic acid probes; 83914 x25 Extension; 83912 Interpretation and report - Additional CPT code modifiers may be required for procedures performed to test for oncologic or inherited disorders.

0001640 Dehydroepiandrosterone, Serum or Plasma DHEA TMS
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: 0.3 mL)
Storage/Transport Temperature: Refrigerated.
Stability: After separation from cells: Ambient: 24 hours; Refrigerated: 1 week; Frozen: 6 months
CPT Code(s): 82626

0070040 Dehydroepiandrosterone Sulfate, Serum DHEAS
Methodology: Quantitative Electrochemiluminescent Immunoassay
Specimen Required: Collect: Serum separator tube or plasma separator tube. Also acceptable: Green (sodium or lithium heparin), lavender (EDTA), or pink (K₂EDTA).
Specimen Preparation: Allow specimen to clot completely at room temperature. Separate serum or plasma from cells ASAP or within 2 hours of collection. Transfer 1 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.5 mL)
Storage/Transport Temperature: Frozen.
Unacceptable Conditions: Hemolyzed specimens.
Stability: After separation from cells: Ambient: 8 hours; Refrigerated: 48 hours; Frozen: 2 months
CPT Code(s): 82627

0093096 Dengue Fever Virus Antibodies, IgG & IgM DENGUE AB
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: 0.1 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, 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): 86790 Dengue fever IgG; 86790 Dengue fever IgM

0093097 Dengue Fever Virus Antibody, IgG DEN 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: 0.1 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 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): 86790

0093098 Dengue Fever Virus Antibody, IgM DEN 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: 0.1 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: 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): 86790

0099731 Deoxycorticosterone DOC
Methodology: Radioimmunoassay/Chromatography
Specimen Required: Collect: Plain red. Also acceptable: Lavender (EDTA).
Specimen Preparation: Transfer 3 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 1.1 mL) Also acceptable: EDTA plasma.
Storage/Transport Temperature: Frozen.
Stability: Ambient: Unacceptable; Refrigerated: 1 week; Frozen: 2 years
CPT Code(s): 82633

0092331	11-Deoxycortisol Quantitative by LC-MS/MS, Serum or Plasma	DEOXYCORT
Methodology:	Quantitative High Performance Liquid Chromatography-Tandem Mass Spectrometry	
Specimen Required:	<u>Collect:</u> Serum separator tube, lavender (EDTA), pink (K ₂ EDTA), or green (sodium or lithium heparin). <u>Specimen Preparation:</u> Transfer 0.5 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.25 mL) <u>Storage/Transport Temperature:</u> Frozen. <u>Stability:</u> After separation from cells: Ambient: Unacceptable; Refrigerated: 1 week; Frozen: 6 months	
CPT Code(s):	82634	
0070212	Deoxyripyridinoline Crosslinks	DPD
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: 1 week; Frozen: 3 months	
CPT Code(s):	82523	
0081312	Des-gamma-carboxy Prothrombin	DCP
Methodology:	Quantitative Liquid-Phase Binding Immunoassay	
Specimen Required:	<u>Collect:</u> Plain red or serum separator tube. <u>Specimen Preparation:</u> Separate 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. <u>Stability:</u> After separation from cells: Ambient: 8 hours; Refrigerated: 1 week; Frozen: 3 months (avoid repeated freeze/thaw cycles)	
CPT Code(s):	83951	
0090072	Desipramine	DESIP HPLC
Methodology:	Quantitative Liquid Chromatography-Tandem Mass Spectrometry	
Specimen Required:	<u>Patient Preparation:</u> If imipramine has been administered, order Imipramine & Desipramine (ARUP test code 0090157). <u>Collect:</u> Plain red. Also acceptable: Lavender (EDTA), pink (K ₂ EDTA), green (sodium heparin), 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: 0.6 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):	80160	
2003863	Desmin by Immunohistochemistry	DESMIN 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	
2003248	Dexamethasone, Serum or Plasma by LC-MS/MS	DEXA TMS
Methodology:	Liquid Chromatography-Tandem Mass Spectrometry	
Specimen Required:	<u>Patient Preparation:</u> It is recommended that the specimen be collected between 6-11 a.m. <u>Collect:</u> Serum separator tube, lavender (EDTA), pink (K ₂ EDTA), or green (sodium 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: 0.5 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Room temperature specimens. <u>Stability:</u> After separation from cells: Ambient: Unacceptable; Refrigerated: 1 week; Frozen: 6 months	
CPT Code(s):	80299	
0090076	Diazepam & Nordiazepam	DIAZ
Methodology:	Quantitative Gas Chromatography	
Specimen Required:	<u>Collect:</u> Plain red. Also acceptable: Lavender (EDTA), pink (K ₂ EDTA), green (sodium heparin), gray (sodium fluoride/potassium oxalate). Avoid use of separator tubes. <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> After separation from cells: Ambient: 1 week; Refrigerated: 1 week; Frozen: 2 months	
CPT Code(s):	80154 x2	
0091301	Diazoxide, Serum or Plasma	DIAZOXID
Methodology:	Quantitative High Performance Liquid Chromatography	
Specimen Required:	<u>Collect:</u> Plain red. <u>Specimen Preparation:</u> Separate from cells within 2 hours. 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> Serum separator tubes. <u>Stability:</u> Ambient: Undetermined; Refrigerated: Undetermined; Frozen: Undetermined	
CPT Code(s):	80299	
0091471	Diazoxide, Urine	DIAZOX UR
Methodology:	High Performance Liquid Chromatography	
Specimen Required:	<u>Collect:</u> Random urine. <u>Specimen Preparation:</u> Transfer 2 mL urine to an ARUP Standard Transport Tube. (Min: 1 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Stability:</u> Undetermined; Refrigerated: Undetermined; Frozen: Undetermined	
CPT Code(s):	80299	
0091324	2,4-Dichlorophenoxyacetic Acid, Serum or Plasma	2-4-DICHL
Methodology:	Gas Chromatography	
Specimen Required:	<u>Collect:</u> Plain red or lavender (EDTA). <u>Specimen Preparation:</u> Transfer 4 mL serum or plasma to an ARUP Standard Transport Tube. <u>Storage/Transport Temperature:</u> Room temperature. <u>Unacceptable Conditions:</u> Serum separator tubes. <u>Stability:</u> No stabilities available at this time.	
CPT Code(s):	83921	
0091379	2,4-Dichlorophenoxyacetic Acid, Urine	2-4-D U
Methodology:	Gas Chromatography	
Specimen Required:	<u>Collect:</u> Random urine. <u>Specimen Preparation:</u> Transfer 4 mL urine to an ARUP Standard Transport Tube. <u>Storage/Transport Temperature:</u> Room temperature. Also acceptable: Refrigerated or frozen. <u>Remarks:</u> Refrigerated and frozen samples are also acceptable. <u>Stability:</u> No stability available at this time.	
CPT Code(s):	83921	
0090085	Digitoxin	DIGT
Methodology:	Quantitative CEDIA Immunoassay	
Specimen Required:	<u>Collect:</u> Plain red. Also acceptable: Lavender (EDTA), pink (K ₂ EDTA or K ₃ EDTA), or green (sodium or lithium heparin) 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: 0.4 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: 2 months	
CPT Code(s):	80299	
0090080	Digoxin	DIG
Methodology:	Enzyme Immunoassay	
Specimen Required:	<u>Patient Preparation:</u> Collect specimen 8-12 hours (no earlier than 6 hours) after administration of oral dose. <u>Collect:</u> Plain red. Also acceptable: Green (sodium or lithium heparin). <u>Specimen Preparation:</u> Remove serum or plasma from cells within 2 hours of collection. Transfer 4 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.2 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Specimens collected in sodium fluoride, potassium oxalate or separator tubes. Hemolyzed specimens. <u>Stability:</u> After separation from cells: Ambient: 8 hours; Refrigerated: 1 week; Frozen: 6 months	
CPT Code(s):	80162	
2002349	5-a-Dihydrotestosterone by Tandem Mass Spectrometry, Serum	DHT TMS
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. <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 and freeze immediately. (Min: 0.6 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: 6 months	
CPT Code(s):	82651	
0091348	Diltiazem, Serum or Plasma	DILTIAZE
Methodology:	Gas Chromatography	
Specimen Required:	<u>Collect:</u> Lavender (EDTA) or plain red. <u>Specimen Preparation:</u> Transfer 2 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.7 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Unacceptable Conditions:</u> Separator tubes. <u>Stability:</u> Ambient: 8 days; Refrigerated: 8 days; Frozen: 1 year	
CPT Code(s):	80299	
0030461	Dilute Russell Viper Venom Time (dRVVT) with Reflex to dRVVT 1:1 Mix & Confirmation	DRV CONF
Methodology:	Clotting	

Specimen Required: Collect: Lt. blue (sodium citrate). Refer to Specimen Handling at aruplab.com for hemostasis/thrombosis specimen handling guidelines.
Specimen Preparation: Transfer 2 mL platelet-poor plasma to an ARUP Standard Transport Tube. (Min: 1 mL)
Storage/Transport Temperature: Frozen.
Unacceptable Conditions: Serum. Hemolyzed specimens.
Stability: Ambient: 4 hours; Refrigerated: 4 hours; Frozen: 2 weeks
CPT Code(s): 85613 dRVVT; if reflexed add 85613 dRVVT 1:1 mix; and 85613 dRVVT confirmation

0091308 Diphenhydramine, Serum or Plasma DIPHENHYDR
Methodology: Gas Chromatography
Specimen Required: Collect: Plain red, gray (sodium fluoride/potassium oxalate), green (sodium heparin), lavender (EDTA), or pink (K₂EDTA).
Specimen Preparation: Transfer 1 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.4 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Serum separator tubes.
Stability: Ambient: 2 weeks; Refrigerated: 25 days; Frozen: 18 months
CPT Code(s): 82491

0091219 Diphenhydramine, Urine DIPHEN UR
Methodology: Gas Chromatography
Specimen Required: Collect: Random urine.
Specimen Preparation: Transfer 2 mL urine to an ARUP Standard Transport Tube. (Min: 1.2 mL)
Storage/Transport Temperature: Room temperature.
Stability: Ambient: 2 weeks; Refrigerated: 25 days; Frozen: 18 months
CPT Code(s): 80299

0050595 Diphtheria & Tetanus Antibodies, IgG D/T
Methodology: Quantitative Multi-Analyte Fluorescent Detection
Specimen Required: Collect: Serum separator tube. "Pre" and "post" vaccination specimens should be submitted for testing. "Post" specimen should be drawn 30 days after immunization.
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) **Mark specimens clearly as "Pre-Vaccine" or "Post-Vaccine"**. If shipped separately, "Post" specimen must be received within 60 days of "Pre" specimen.
Storage/Transport Temperature: Refrigerated
Unacceptable Conditions: Plasma 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): 86317 Diphtheria; 86317 Tetanus

0050210 Diphtheria Antibody, IgG DIP
Methodology: Semi-Quantitative Multi-Analyte Fluorescent Detection
Specimen Required: Collect: Serum separator tube. "Pre" and "post" vaccination specimens should be submitted together for testing. "Post" specimen should be drawn 30 days after immunization.
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) **Mark specimens clearly as "Pre-Vaccine" or "Post-Vaccine"**. If shipped separately, "Post" specimen must be received within 60 days of "Pre" specimen.
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Plasma or other body fluids.
Stability: After separation from the cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)
CPT Code(s): 86317

0050779 Diphtheria, Tetanus, and H. Influenzae b Antibodies, IgG DTH
Methodology: Quantitative Multi-Analyte Fluorescent Detection
Specimen Required: Collect: Serum separator tube.
Specimen Preparation: Transfer 1.5 mL serum to an ARUP Standard Transport Tube. (Min: 0.45 mL) Acute and convalescent specimens must be labeled as such. **Clearly mark specimens as "Pre-Vaccine" or "Post-Vaccine"**. Parallel testing is preferred and convalescent specimens **must** be received within 30 days from receipt of the acute specimens.
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): 86317 Diphtheria; 86317 Tetanus; 86317 *H. influenzae*

0091467 Dipyrindamole, Serum or Plasma DIPYRIDAMO
Methodology: High Performance Liquid Chromatography
Specimen Required: Collect: Plain red. Also acceptable: Lavender (EDTA) or pink (K₂EDTA).
Specimen Preparation: Transfer 2 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.3 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Serum separator tubes.
Stability: Ambient: 2 weeks; Refrigerated: 2 weeks; Frozen: 6 months
CPT Code(s): 80299

0091466 Dipyrindamole, Urine DIPYRIDA U
Methodology: High Performance Liquid Chromatography
Specimen Required: Collect: Random urine.
Specimen Preparation: Transfer 1 mL urine to an ARUP Standard Transport Tube. (Min: 1 mL)
Storage/Transport Temperature: Refrigerated.
Stability: Ambient: 2 weeks; Refrigerated: 2 weeks; Frozen: 6 months
CPT Code(s): 80299

0013008 Direct Coombs (Anti-Human Globulin) IRL-DC
Methodology: Hemagglutination

Specimen Required:	Collect: Lavender (EDTA) or pink (K ₂ EDTA). <u>Specimen Preparation:</u> Do not freeze. Transport 5 mL whole blood. Pediatric: Transport 1 mL whole blood. <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):	86880	
0014008	Direct Coombs (Anti-Human Globulin) with Reflex to Direct Antiglobulin-Mono	DAT
Methodology:	Hemagglutination	
Specimen Required:	Collect: Testing is limited to the University of Utah Health Sciences Center, Primary Children's Medical Center (10432), and Intermountain Shriners Hospital (10367) only. Lavender (EDTA) or pink (K ₂ EDTA). <u>Specimen Preparation:</u> Do not freeze. Transport 5 mL whole blood. <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):	86880 Direct Coombs; if positive, add 86880 x2 DAT-MONO	
2002247	Disaccharidase, Tissue	DISAC
Methodology:	Quantitative Spectrophotometry	
Specimen Required:	Collect: Biopsies of small bowel by endoscopy. <u>Specimen Preparation:</u> Place two 5 mg biopsies of tissue on the wall of a small, tightly-capped plastic tube without any supporting media. A 1 mL flat-bottom microtube is recommended. Freeze within 2 hours of collection. <u>Storage/Transport Temperature:</u> Frozen. Ship on dry ice. <u>Unacceptable Conditions:</u> Room temperature or refrigerated specimens. Specimens placed on gauze, filter paper, or any other type of support media. Tissue preserved in formalin. <u>Stability:</u> Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen: 6 months	
CPT Code(s):	84311 x4	
0090095	Disopyramide	DISO
Methodology:	Quantitative EMIT Immunoassay	
Specimen Required:	Collect: 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 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. <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: 4 days; Refrigerated: 2 months; Frozen: 2 months	
CPT Code(s):	80299	
0091349	Disulfiram (Antabuse) and Metabolite Quantitation, Serum or Plasma	ANTABUS SP
Methodology:	Quantitative Gas Chromatography	
Specimen Required:	Collect: Plain red or lavender EDTA. <u>Specimen Preparation:</u> Separate serum or plasma from cells within 1 hour. Transfer 7 mL serum or plasma to ONE transport container and freeze within one hour of collection. (Min: 3.2 mL) <u>Storage/Transport Temperature:</u> CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered. <u>Unacceptable Conditions:</u> Thawed specimens. Specimens submitted in glass tubes. Separator tubes. <u>Stability:</u> Ambient: Undetermined; Refrigerated: Undetermined; Frozen: Undetermined	
CPT Code(s):	80299	
0091293	Disulfiram (Antabuse) and Metabolite Quantitation, Urine	ANTABUS UR
Methodology:	Quantitative Spectrophotometry	
Specimen Required:	Collect: Urine. <u>Specimen Preparation:</u> Transfer 15 mL urine to ONE transport container and freeze within one hour of collection. (Min: 6.2 mL) <u>Storage/Transport Temperature:</u> CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered. <u>Unacceptable Conditions:</u> Glass containers. Thawed specimens. <u>Stability:</u> Ambient: Undetermined; Refrigerated: Undetermined; Frozen: Undetermined	
CPT Code(s):	84311	
0091320	Diuretic Survey, Serum or Plasma	DIURETIC
Methodology:	High Performance Liquid Chromatography	
Specimen Required:	Collect: Plain red or lavender (EDTA). <u>Specimen Preparation:</u> Protect from light. Transfer 4 mL serum or plasma to an ARUP Amber Transport Tube. (Min: 0.5 mL) <u>Storage/Transport Temperature:</u> Room temperature. <u>Remarks:</u> Protect from light. <u>Unacceptable Conditions:</u> Specimens not protected from light. Serum separator tubes. <u>Stability:</u> Ambient: 1 week; Refrigerated: 2 weeks; Frozen: 1 year	
CPT Code(s):	82492	
0091258	Diuretic Survey, Urine	DIURETIC U

Methodology: High Performance Liquid Chromatography
Specimen Required: Collect: Random urine.
Specimen Preparation: Transfer 10 mL urine to ARUP Standard Transport Tubes. (Min: 1.2 mL)
Storage/Transport Temperature: Room temperature.
Unacceptable Conditions:
Stability: Ambient: 1 week; Refrigerated: 2 weeks; Frozen: 1 year
CPT Code(s): 82492

0095735 **DNA Content/Cell Cycle Analysis, Breast (Paraffin)** **DNA HIST P**
Methodology: Quantitative Flow Cytometry
Specimen Required: Collect: Breast tumor tissue.
Specimen Preparation: Paraffin embed tissue block enriched with breast tumor. If no normal tissue is included in the block, please supply a control tissue block to be processed in parallel.
Storage/Transport Temperature: Room temperature.
Remarks: Please include H&E stained slide and surgical pathology report.
Unacceptable Conditions: No tumor tissue remaining on block. Specimens fixed in Bouin's solution (picric acid), mercuric chloride containing fixatives (e.g., B5, Zenker's solution), or ethanol-based fixatives containing ethylene glycol, acetic acid, or zinc chloride. Decalcified specimens.
Stability: Paraffin block: Ambient: Indefinitely; Refrigerated: Acceptable; Frozen: Unacceptable
CPT Code(s): 88182

0095140 **DNA Content/Cell Cycle Analysis, Colon** **DNA COL**
Methodology: Quantitative Flow Cytometry
Specimen Required: Collect: Colon tumor tissue.
Specimen Preparation: Paraffin embed tissue block enriched with colon tumor. If no normal tissue is included in the block, please supply a control tissue block to be processed in parallel.
Storage/Transport Temperature: Room temperature.
Remarks: Include H&E stained slide and surgical pathology report.
Unacceptable Conditions: No tumor tissue remaining on block. Specimens fixed in Bouin's solution (picric acid), mercuric chloride containing fixatives (e.g., B5, Zenker's solution), or ethanol-based fixatives containing ethylene glycol, acetic acid or zinc chloride. Decalcified specimens.
Stability: Paraffin block: Ambient: Indefinitely; Refrigerated: Acceptable; Frozen: Unacceptable
CPT Code(s): 88182

0095155 **DNA Content/Cell Cycle Analysis, Miscellaneous** **DNA MISC**
Methodology: Quantitative Flow Cytometry
Specimen Required: Collect: Tumor tissue, body fluid, peripheral blood in green (sodium or lithium), bone marrow in green (sodium or lithium), **OR** urine/bladder washings.
Specimen Preparation: **Tissue:** Paraffin embed tissue block enriched with tumor
OR Body Fluid: Transport: 100 mL body fluid. (Min: 10 mL)
OR Peripheral Blood: Transport 5 mL whole blood.
OR Bone Marrow: Transport 2 mL bone marrow (specimens with low mononuclear cell counts may require more volume).
OR Urine/Bladder Washings: Centrifuge and remove supernatant. The cell pellet should then be re-suspended in a cell culture media such as Hank's Balanced Salt Solution or RPMI.
Storage/Transport Temperature: **Tissue (paraffin embedded), Peripheral Blood, or Bone Marrow:** Room temperature.
Body Fluid or Urine/Bladder Washings: Refrigerated.
Remarks: Provide clinical information and specimen source.
Unacceptable Conditions: No tumor tissue remaining on block. Specimens fixed in Bouin's solution (picric acid), mercuric chloride containing fixatives (e.g., B5, Zenker's solution) or ethanol-based fixatives containing ethylene glycol, acetic acid, or zinc chloride. Clotted or hemolyzed blood or bone marrow. Decalcified specimens.
Stability: **Tissue (paraffin embedded):** Ambient: Indefinitely; Refrigerated: Indefinitely; Frozen: Unacceptable
Body Fluid or Urine/Bladder Washings: Ambient: Unacceptable; Refrigerated: 24 hours; Frozen: Unacceptable
Peripheral Blood or Bone Marrow: Ambient: 48 hours; Refrigerated: Unacceptable; Frozen: Unacceptable
CPT Code(s): 88182

0093386 **DNA Content/Cell Cycle Analysis, Products of Conception** **DNA POC**
Methodology: Quantitative Flow Cytometry
Specimen Required: Collect: Products of conception tissue.
Specimen Preparation: Paraffin embed tissue block with products of conception. If no normal tissue is included in the block, please supply a control tissue block to be processed in parallel.
Storage/Transport Temperature: Room temperature.
Remarks: Include H & E stained slide and surgical pathology report.
Unacceptable Conditions: No tissue remaining on the block. Specimens fixed in Bouin's Solution (picric acid), mercuric chloride containing fixatives (e.g. B5, Zenker's solution) or ethanol-based fixatives containing ethylene glycol, acetic acid, or zinc chloride. Decalcified specimens.
Stability: Ambient: Indefinitely; Refrigerated: Indefinitely; Frozen: Unacceptable
CPT Code(s): 88182

0095145 **DNA Content/Cell Cycle Analysis, Prostate** **DNA PROS**
Methodology: Quantitative Flow Cytometry
Specimen Required: Collect: Prostate tumor tissue.
Specimen Preparation: Paraffin embed tissue block enriched with prostate tumor. If no normal tissue is included in the block, please supply a control tissue block to be processed in parallel.
Storage/Transport Temperature: Room temperature.
Remarks: Please include H&E stained slide and surgical pathology report.
Unacceptable Conditions: No tumor tissue remaining on block. Specimens fixed in Bouin's solution (picric acid), mercuric chloride containing fixatives (e.g., B5, Zenker's solution), or ethanol-based fixatives containing ethylene glycol, acetic acid, or zinc chloride. Decalcified specimens.

CPT Code(s):	Stability: Paraffin block: Ambient: Indefinitely; Refrigerated: Acceptable; Frozen: Unacceptable 88182	
0050220	DNase-B Antibody	DNSB
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> Plasma or severely hemolyzed specimens. <u>Stability:</u> After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year	
CPT Code(s):	86215	
0013039	Donath Landsteiner	IRL-DL
Methodology:	Hemolysis	
Specimen Required:	<u>Collect:</u> 7 mL plain red OR 1.5 mL plain red (pediatric). <u>Specimen Preparation:</u> Do not freeze red cells. Maintain specimen at 37 until serum is separated from cells. Transport serum from 7 mL tube. Pediatric: Transport serum from 1.5 mL tube. <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):	86941	
2002693	Double-Stranded DNA (<i>Crithidia luciliae</i>) Antibody, IgG by IFA	DNA IFA
Methodology:	Semi-Quantitative Indirect Fluorescent Antibody	
Specimen Required:	<u>Collect:</u> Serum separator tube. <u>Specimen Preparation:</u> Separate serum from cells ASAP. 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):	86256	
0050215	Double-Stranded DNA (dsDNA) Antibody, IgG by ELISA with Reflex to dsDNA Antibody, IgG by IFA	DNA
Methodology:	Qualitative 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: 0.5 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):	86225 dsDNA; if reflexed, add 86256 dsDNA titer	
0090102	Doxepin & Metabolite	DOXEPIN
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), 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) If gel separator is used, separate serum or plasma from gel within two hours of collection and do not refrigerate. <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):	80166 Doxepin; 80299 Nordoxepin	
0091120	Doxepin, Urine	DOXEPIN U
Methodology:	Gas Chromatography/Nitrogen Phosphorus Detection	
Specimen Required:	<u>Collect:</u> Random urine. <u>Specimen Preparation:</u> Transfer 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: 17 months	
CPT Code(s):	80166	
0090560	Drug Screen (Nonforensic), Comprehensive, Serum & Urine	TOX SCREEN
Methodology:	Immunoassay/Gas Chromatography-Mass Spectrometry	
Specimen Required:	<u>Patient Preparation:</u> First morning catch of urine, if possible. <u>Collect:</u> Plain red AND fresh random urine. <u>Specimen Preparation:</u> Transfer 6 mL serum to ARUP Standard Transport Tubes (Min: 4.5 mL) AND transport 40 mL urine. (Min: 15 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <u>Stability:</u> Serum: After separation from cells: Ambient: 48 hours; Refrigerated: 1 week; Frozen: 2 months Urine: Ambient: 5 days; Refrigerated: 2 weeks; Frozen 2 months	
CPT Code(s):	80101 Serum, immunoassay; 80100 Serum, GC/FID; 80100 Serum, GC/ECD; 80100 Urine, immunoassay; 80101 Urine, GC/MS	
0090701	Drug Screen (Nonforensic), Gastric, Qualitative	GDS
Methodology:	Qualitative Gas Chromatography-Mass Spectrometry	
Specimen Required:	<u>Patient Preparation:</u> Specimen should be obtained within 1-4 hours of ingestion and no longer than 6 hours. <u>Collect:</u> Total volume of emesis/gastric aspirate. Also acceptable: Lavage.	

Specimen Preparation: Transport Total volume of emesis/gastric aspirate. (Min: 6 mL)

If lavage is performed, only the first 30-50 mL of return is acceptable.

Storage/Transport Temperature: Refrigerated.

Unacceptable Conditions: Specimens containing activated charcoal.

Stability: Ambient: 12 hours; Refrigerated: 24 hours; Frozen: Unacceptable

CPT Code(s): 80100

0090499 Drug Screen (Nonforensic), Serum BLD SCREEN

Methodology: Semi-Quantitative Immunoassay/Gas Chromatography-Mass Spectrometry

Specimen Required: Collect: Plain red.

Specimen Preparation: Transfer 6 mL serum to ARUP Standard Transport Tubes. (Min: 4.5 mL)

Storage/Transport Temperature: Refrigerated.

Remarks: Avoid use of separator tubes and gels.

Stability: After separation from cells: Ambient: 48 hours; Refrigerated: 1 week; Frozen: 2 months

CPT Code(s): 80101 Immunoassay; 80100 GC/FID; 80100 GC/ECD; 80100 GC/MS

0090500 Drug Screen (Nonforensic), Urine, Qualitative URN SCREEN

Methodology: Qualitative Immunoassay/Gas Chromatography-Mass Spectrometry

Specimen Required: Collect: Fresh random urine.

Specimen Preparation: Transport 40 mL urine. (Min: 15 mL)

Storage/Transport Temperature: Refrigerated.

Stability: Ambient: 5 days; Refrigerated: 2 weeks; Frozen: 2 months

CPT Code(s): 80101 Immunoassay; 80100 GC/FID; 80100 GC/MS

2003254 Drug Screen, Targeted, Serum or Plasma TOF SCR SP

Methodology: Qualitative Liquid Chromatography Mass Spectrometry/Time of Flight

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

Specimen Preparation: Remove plasma from cells ASAP or within 2 hours of collection. Transfer 4 mL plasma to an ARUP Standard Transport Tube. (Min: 2 mL) Also acceptable: Serum.

Storage/Transport Temperature: Refrigerated.

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

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

Stability: After separation from cells: Ambient: 1 week; Refrigerated: 2 weeks; Frozen: 3 years

CPT Code(s): 80100

2005444 Drug Screen, Targeted with Reflex to Confirmation, Serum or Plasma TOF RFX SP

Methodology: Qualitative Liquid Chromatography-Mass Spectrometry/Time of Flight/Quantitative Gas Chromatography-Mass Spectrometry or Liquid Chromatography-Tandem Mass Spectrometry Confirmation

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

Specimen Preparation: Remove plasma from cells ASAP or within 2 hours of collection. Transfer 4 mL plasma to an ARUP Standard Transport Tube. (Min: 2 mL) Also acceptable: Serum.

Storage/Transport Temperature: Refrigerated.

Unacceptable Conditions: Separator tubes or 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): 80100. If reflexed, refer to individual confirmation components.

0090491 Drugs of Abuse 5 Panel, Urine - Screen Only CDTI5

Methodology: Qualitative Enzyme Multiplied Immunoassay Technique

Specimen Required: Collect: Random urine.

Specimen Preparation: Transfer 4 mL urine with no additives or preservatives to an ARUP Standard Transport Tube. (Min: 2 mL)

Storage/Transport Temperature: Refrigerated.

Unacceptable Conditions: Specimens exposed to repeated freeze/thaw cycles.

Stability: Ambient: 1 week; Refrigerated: 1 month; Frozen: 3 years

CPT Code(s): 80101 x5

0092182 Drugs of Abuse 5 Panel, Urine - Screen with Reflex to Confirmation/Quantitation CDASU 5

Methodology: Qualitative Enzyme Multiplied Immunoassay Technique/ Quantitative Gas Chromatography-Mass Spectrometry/Quantitative Liquid Chromatography-Tandem Mass Spectrometry

Specimen Required: Collect: Random urine.

Specimen Preparation: Transfer 8 mL urine with no additives or preservatives to ARUP Standard Transport Tubes. (Min: 4 mL)

Storage/Transport Temperature: Refrigerated.

Unacceptable Conditions: Specimens exposed to repeated freeze/thaw cycles.

Stability: Ambient: 1 week; Refrigerated: 1 month; Frozen: 3 years

CPT Code(s): 80101 x5 Screen; if positive add appropriate CPT Code for drug confirmed: 82542 Marijuana; 82520 Cocaine; 83925 Opiates; 83992 Phencyclidine; 82145 Amphetamines

0090492 Drugs of Abuse 5A Panel, Urine - Screen Only CDTI5A

Methodology: Qualitative Enzyme Multiplied Immunoassay Technique/Alcohol Dehydrogenase

Specimen Required: Collect: Random urine.

Specimen Preparation: Transfer 4 mL urine with no additives or preservatives to an ARUP Standard Transport Tube. (Min: 2 mL)

Storage/Transport Temperature: Refrigerated.

Unacceptable Conditions: Specimens exposed to repeated freeze/thaw cycles.

Stability: Ambient: 1 week; Refrigerated: 1 month; Frozen: 3 years

CPT Code(s): 80101 x6

0092183	Drugs of Abuse 5A Panel, Urine - Screen with Reflex to Confirmation/Quantitation	CDASU 5A
Methodology:	Enzyme Immunoassay/Gas Chromatography-Flame Ionization Detection/Gas Chromatography-Mass Spectrometry/Liquid Chromatography-Tandem Mass Spectrometry	
Specimen Required:	<u>Collect:</u> Random urine. <u>Specimen Preparation:</u> Transfer 8 mL urine with no additives or preservatives to ARUP Standard Transport Tubes. (Min: 4 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <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):	80101 x6 Screen; if positive add appropriate CPT Code for drug confirmed: 82542 Marijuana; 82520 Cocaine; 83925 Opiates; 83992 Phencyclidine; 82145 Amphetamines; 82055 Alcohol	
0090448	Drugs of Abuse 7 Panel, Urine - Screen Only	CDTI7
Methodology:	Qualitative Enzyme Multiplied Immunoassay Technique	
Specimen Required:	<u>Collect:</u> Random urine. <u>Specimen Preparation:</u> Transfer 4 mL urine with no additives or preservatives to an ARUP Standard Transport Tube. (Min: 2 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <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):	80101 x7	
0092184	Drugs of Abuse 7 Panel, Urine - Screen with Reflex to Confirmation/Quantitation	CDASU 7
Methodology:	Qualitative Enzyme Multiplied Immunoassay Technique/ Quantitative Gas Chromatography-Mass Spectrometry/Quantitative Liquid Chromatography-Tandem Mass Spectrometry	
Specimen Required:	<u>Collect:</u> Random urine. <u>Specimen Preparation:</u> Transfer 8 mL urine with no additives or preservative to ARUP Standard Transport Tubes. (Min: 4 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <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):	80101 x7 Screen; if positive add appropriate CPT Code for drug confirmed: 82542 Marijuana; 82520 Cocaine; 83925 Opiates; 83992 Phencyclidine; 82145 Amphetamines; 82205 Barbiturates; 80154 Benzodiazepines	
0090449	Drugs of Abuse 7A Panel, Urine - Screen Only	CDTI7A
Methodology:	Qualitative Enzyme Multiplied Immunoassay Technique/Alcohol Dehydrogenase	
Specimen Required:	<u>Collect:</u> Random urine. <u>Specimen Preparation:</u> Transfer 4 mL urine with no additives or preservatives to an ARUP Standard Transport Tube. (Min: 2 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <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):	80101 x8	
0092185	Drugs of Abuse 7A Panel, Urine - Screen with Reflex to Confirmation/Quantitation	CDASU 7A
Methodology:	Enzyme Immunoassay/Gas Chromatography-Flame Ionization Detection/Gas Chromatography-Mass Spectrometry/Liquid Chromatography-Tandem Mass Spectrometry	
Specimen Required:	<u>Collect:</u> Random urine. <u>Specimen Preparation:</u> Transfer 8 mL urine with no additives or preservatives to ARUP Standard Transport Tubes. (Min: 4 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <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):	80101 x8 Screen; if positive add appropriate CPT Code for drug confirmed: 82542 Marijuana; 82520 Cocaine; 83925 Opiates; 83992 Phencyclidine; 82145 Amphetamines; 82205 Barbiturates; 80154 Benzodiazepines; 82055 Alcohol	
0092420	Drugs of Abuse 9 Panel, Serum or Plasma - Screen with Reflex to Confirmation/Quantitation	DRUG SCRSP
Methodology:	Qualitative Enzyme-Linked Immunosorbent Assay/ Quantitative Gas Chromatography-Mass Spectrometry/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> Remove plasma from cells ASAP or within 2 hours of collection. Transfer 4 mL plasma to an ARUP Standard Transport Tube. (Min: 3 mL) Also acceptable: Serum. <u>Storage/Transport Temperature:</u> Refrigerated. <u>Remarks:</u> Cocaine and cocaethylene are more stable in fluoride-preserved plasma than serum. <u>Unacceptable Conditions:</u> Specimens exposed to repeated freeze/thaw cycles. Separator tubes. Plasma or whole blood collected in lt. blue (sodium citrate). <u>Stability:</u> After separation from cells: Ambient: 1 week; Refrigerated: 2 weeks; Frozen: 3 years	
CPT Code(s):	80101 x9 Screen; if positive, add appropriate code for drug confirmed: 82542 Marijuana; 82520 Cocaine; 83925 Opiates; 83992 Phencyclidine; 82145 Amphetamines; 82205 Barbiturates; 80154 Benzodiazepines; 83840 Methadone; 83925 Propoxyphene	
0090453	Drugs of Abuse 9 Panel, Urine - Screen Only	CDTI9
Methodology:	Qualitative Enzyme Multiplied Immunoassay Technique	
Specimen Required:	<u>Collect:</u> Random urine. <u>Specimen Preparation:</u> Transfer 4 mL urine with no additives or preservatives to an ARUP Standard Transport Tube. (Min: 2 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <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):	80101 x9	
0092186	Drugs of Abuse 9 Panel, Urine - Screen with Reflex to Confirmation/Quantitation	CDASU 9
Methodology:	Qualitative Enzyme Multiplied Immunoassay Technique/ Quantitative Gas Chromatography-Mass Spectrometry/Quantitative Liquid Chromatography-Tandem Mass Spectrometry	

Specimen Required:	<u>Collect:</u> Random urine. <u>Specimen Preparation:</u> Transfer 8 mL urine with no additives or preservatives to ARUP Standard Transport Tubes. (Min: 4 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <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):	80101 x9 Screen; if positive add appropriate CPT Code for drug confirmed: 82542 Marijuana; 82520 Cocaine; 83925 Opiates; 83992 Phencyclidine; 82145 Amphetamines; 82205 Barbiturates; 80154 Benzodiazepines; 83840 Methadone; 83925 Propoxyphene	
0090454	Drugs of Abuse 9A Panel, Urine - Screen Only	CDTI9A
Methodology:	Qualitative Enzyme Multiplied Immunoassay Technique/Alcohol Dehydrogenase	
Specimen Required:	<u>Collect:</u> Random urine. <u>Specimen Preparation:</u> Transfer 4 mL urine with no additives or preservatives to an ARUP Standard Transport Tube. (Min: 2 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <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):	80101 x10	
0092187	Drugs of Abuse 9A Panel, Urine - Screen with Reflex to Confirmation/Quantitation	CDASU 9A
Methodology:	Enzyme Immunoassay/Gas Chromatography-Flame Ionization Detection/Gas Chromatography-Mass Spectrometry/Liquid Chromatography-Tandem Mass Spectrometry	
Specimen Required:	<u>Collect:</u> Random urine. <u>Specimen Preparation:</u> Transfer 8 mL urine with no additives or preservatives in ARUP Standard Transport Tubes. (Min: 4 mL) <u>Storage/Transport Temperature:</u> Refrigerated. <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):	80101 x10 Screen; if positive add appropriate CPT Code for drug confirmed: 82542 Marijuana; 82520 Cocaine; 83925 Opiates; 83992 Phencyclidine; 82145 Amphetamines; 82205 Barbiturates; 80154 Benzodiazepines; 83840 Methadone; 83925 Propoxyphene; 82055 Alcohol	
0090362	Drugs of Abuse Confirmation/Quantitation - Methadone & Metabolite - Urine	CDCO METH
Methodology:	Quantitative Liquid Chromatography-Tandem Mass Spectrometry	
Specimen Required:	<u>Collect:</u> Random urine. <u>Specimen Preparation:</u> Transfer 4 mL with no additives or preservatives urine to 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):	83840	
0092310	Drugs of Abuse Confirmation/Quantitation - Amphetamines (Amphetamine & Methamphetamine) - Meconium	CONFAMP M
Methodology:	Quantitative High Performance Liquid Chromatography-Tandem Mass Spectrometry	
Specimen Required:	<u>Collect:</u> All meconium (blackish material) excreted until milk/formula based stool (yellow-green) appears. <u>Specimen Preparation:</u> Transport 1 g (equivalent to 1/2 inch cube) for each separate confirmation required. (Min: 0.5 g or 1/4 inch cube) <u>Storage/Transport Temperature:</u> Room temperature. <u>Stability:</u> Ambient: 1 week; Refrigerated: 3 months; Frozen: 1 year	
CPT Code(s):	82145	
0090439	Drugs of Abuse Confirmation/Quantitation - Amphetamines - Urine	CDCO AMPS
Methodology:	Quantitative Liquid Chromatography-Tandem Mass Spectrometry	
Specimen Required:	<u>Collect:</u> Random urine. <u>Specimen Preparation:</u> Transfer 4 mL urine with no additives or preservatives to an ARUP Standard Transport Tube. (Min: 0.5 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):	82145	
0092311	Drugs of Abuse Confirmation/Quantitation - Barbiturates - Meconium	CONFBRB M
Methodology:	Quantitative Gas Chromatography-Mass Spectrometry	
Specimen Required:	<u>Collect:</u> All meconium (blackish material) excreted until milk/formula based stool (yellow-green) appears. <u>Specimen Preparation:</u> Transport 1 g (equivalent to 1/2 inch cube) for each separate confirmation required. (Min: 0.5 g or 1/4 inch cube) <u>Storage/Transport Temperature:</u> Room temperature. <u>Stability:</u> Ambient: 1 week; Refrigerated: 3 months; Frozen: 1 year	
CPT Code(s):	82205	
0093308	Drugs of Abuse Confirmation/Quantitation - Barbiturates - Serum or Plasma	BARB SP
Methodology:	Quantitative Gas Chromatography-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 4 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 2 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):	82205	
0090357	Drugs of Abuse Confirmation/Quantitation - Barbiturates - Urine	CDCO BARB
Methodology:	Quantitative Gas Chromatography-Mass Spectrometry	

Specimen Required:	<u>Collect:</u> Random urine. <u>Specimen Preparation:</u> Transfer 4 mL urine with no additives or preservatives to an ARUP Standard Transport Tube. (Min: 2 mL) <u>Storage/Transport Temperature:</u> Room temperature. <u>Unacceptable Conditions:</u> Specimens exposed to repeated freeze/thaw cycles. <u>Stability:</u> Ambient: 1 week; Refrigerated: 1 month; Frozen: 3 years	
CPT Code(s):	82205	
0092520	Drugs of Abuse Confirmation/Quantitation - Benzodiazepines - Meconium	CONFBENZ M
Methodology:	Quantitative Liquid Chromatography-Tandem Mass Spectrometry	
Specimen Required:	<u>Collect:</u> All meconium (blackish material) excreted until milk/formula based stool (yellow-green) appears. <u>Specimen Preparation:</u> Transport 1 g (equivalent to 1/2 inch cube) for each separate confirmation required. (Min: 0.5 g or 1/4 inch cube) <u>Storage/Transport Temperature:</u> Room temperature. <u>Stability:</u> Ambient: 1 week; Refrigerated: 3 months; Frozen: 1 year	
CPT Code(s):	80154	
0093300	Drugs of Abuse Confirmation/Quantitation - Benzodiazepines - Serum or Plasma	BENZ 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 4 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 2 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):	80154	
0090358	Drugs of Abuse Confirmation/Quantitation - Benzodiazepines - Urine	CDCO BENZ
Methodology:	Quantitative Liquid Chromatography-Tandem Mass Spectrometry	
Specimen Required:	<u>Collect:</u> Random urine. <u>Specimen Preparation:</u> Transfer 4 mL urine with no additives or preservatives to an ARUP Standard Transport Tube. (Min: 2 mL) <u>Storage/Transport Temperature:</u> Room temperature. <u>Unacceptable Conditions:</u> Specimens exposed to repeated freeze/thaw cycles. <u>Stability:</u> Ambient: 1 week; Refrigerated: 1 month; Frozen: 3 years	
CPT Code(s):	80154	
0090676	Drugs of Abuse Confirmation/Quantitation - Cannabinoids (9-carboxy-THC) - Serum or Plasma	CANNAB 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 4 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 2 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):	82542	
0090369	Drugs of Abuse Confirmation/Quantitation - Cannabinoids (9-carboxy-THC) - Urine	CDCO THC
Methodology:	Quantitative Liquid Chromatography-Tandem Mass Spectrometry	
Specimen Required:	<u>Collect:</u> Random urine. <u>Specimen Preparation:</u> Transfer 4 mL urine with no additives or preservatives to an ARUP Standard Transport Tube. (Min: 0.5 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):	82542	
0092316	Drugs of Abuse Confirmation/Quantitation - Cannabinoids (Marijuana) - Meconium	CONFTHC M
Methodology:	Quantitative Liquid Chromatography-Tandem Mass Spectrometry	
Specimen Required:	<u>Collect:</u> All meconium (blackish material) excreted until milk/formula based stool (yellow-green) appears. <u>Specimen Preparation:</u> Transport 1 g (equivalent to 1/2 inch cube) for each separate confirmation required. (Min: 0.5 g or 1/4 inch cube) <u>Storage/Transport Temperature:</u> Room temperature. <u>Stability:</u> Ambient: 1 week; Refrigerated: 3 months; Frozen: 1 year	
CPT Code(s):	82542	
0092312	Drugs of Abuse Confirmation/Quantitation - Cocaine & Metabolites - Meconium	CONFCO M
Methodology:	Quantitative Gas Chromatography-Mass Spectrometry	
Specimen Required:	<u>Collect:</u> All meconium (blackish material) excreted until milk/formula based stool (yellow-green) appears. <u>Specimen Preparation:</u> Transport 1 g (equivalent to 1/2 inch cube) for each separate confirmation required. (Min: 0.5 g or 1/4 inch cube) <u>Storage/Transport Temperature:</u> Room temperature. <u>Stability:</u> Ambient: 1 week; Refrigerated: 3 months; Frozen: 1 year	
CPT Code(s):	82520	
0090684	Drugs of Abuse Confirmation/Quantitation - Cocaine & Metabolites - Serum or Plasma	COC MET SP
Methodology:	Quantitative Gas Chromatography-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 4 mL serum or plasma to an	