## MEDICARE COVERAGE OF LABORATORY TESTING

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

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

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

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

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**2011431**  
ALK (D5F3) by Immunohistochemistry with Reflex to ALK Gene Rearrangements by FISH

**ALK REFLEX**

**Performed:** Mon-Fri

**Reported:** 1-5 days; add 3-5 days if reflexed

**Specimen Required:** Collect: Tumor tissue.

**Specimen Preparation:** Formalin fix (10 percent neutral buffered formalin) and paraffin embed specimen. Protect paraffin block and/or slides from excessive heat. Transport tissue block or 7 unstained (4-micron thick sections), positively charged slides in a tissue transport kit (ARUP supply #47808 recommended but not required) available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787. (Min. 4 slides). If sending precut slides, do not oven bake.

**Storage/Transport Temperature:** Room temperature. Also acceptable: Refrigerated. Ship in cooled container during summer months.

**Remarks:** Include surgical pathology report.

**Unacceptable Conditions:** Paraffin block with no tumor tissue remaining; specimens fixed in any fixative other than 10 percent neutral buffered formalin. Decalcified specimens.

**Stability (collection to initiation of testing):** Ambient: Indefinitely; Refrigerated: Indefinitely; Frozen: Unacceptable.
### ALK (D5F3) with Interpretation by Immunohistochemistry

**ALKD5F3 IP**

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

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<td>3001717</td>
<td>Allergen, Region 7 Respiratory Panel IgE, Northern Midwest (MI, WI, MN)</td>
<td>REG7PANEL</td>
</tr>
<tr>
<td></td>
<td><strong>HOTLINE NOTE:</strong> Name change only.</td>
<td></td>
</tr>
<tr>
<td>3001718</td>
<td>Allergen, Region 8 Respiratory Panel IgE, Central Midwest (IL, MO, IA)</td>
<td>REG8PANEL</td>
</tr>
<tr>
<td></td>
<td><strong>HOTLINE NOTE:</strong> Name change only.</td>
<td></td>
</tr>
<tr>
<td>3001719</td>
<td>Allergen, Region 9 Respiratory Panel IgE, Great Plains (KS, NE, ND, SD)</td>
<td>REG9PANEL</td>
</tr>
<tr>
<td></td>
<td><strong>HOTLINE NOTE:</strong> Name change only.</td>
<td></td>
</tr>
</tbody>
</table>
Specimen Required: Collect: Serum Separator Tube (SST). Also acceptable: Lavender (K<sub>2</sub>EDTA), or Pink (K<sub>2</sub>EDTA). Multiple specimen tubes should be avoided.

Specimen Preparation: Separate from cells ASAP or within 2 hours of collection. Transfer 1.3 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.8 mL.)

Storage/Transport Temperature: Refrigerated.

Unacceptable Conditions: Hemolyzed, icteric, or lipemic specimens.

Stability (collection to initiation of testing): After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year

---

Specimen Required: Collect: CSF.

Specimen Preparation: Separate from cells within 1 hour of collection. Transfer 1 mL CSF to an ARUP Standard Transport Tube. (Min: 0.5 mL)

Storage/Transport Temperature: Frozen.

Unacceptable Conditions: CSF containing gadolinium-based contrast agents. Hemolyzed or xanthochromic specimens.

Stability (collection to initiation of testing): Ambient: 4 hours; Refrigerated: 1 week; Frozen: 6 months

Note: Gadolinium contrast agents have been reported to inhibit ACE activity. Therefore, CSF containing gadolinium-based contrast agents should not be submitted to the laboratory for evaluation

---

Specimen Required: Collect: Serum Separator Tube (SST).

Methodology: Semi-Quantitative Enzyme-Linked Immunosorbent Assay

Performed: Wed

Reported: 1-8 days

Specimen Preparation: Separate from cells 2-8°C. (Min: 0.1 mL) Submit specimen in an ARUP Standard Transport Tube.

Unacceptable Conditions: Contaminated or heat-inactivated specimens.

Stability (collection to initiation of testing): After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 month

Reference Interval:

<table>
<thead>
<tr>
<th>Levels</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>20.0 Units or less</td>
<td>Negative</td>
</tr>
<tr>
<td>20.1-24.9 Units</td>
<td>Equivocal</td>
</tr>
<tr>
<td>25.0 Units or greater</td>
<td>Positive</td>
</tr>
</tbody>
</table>

Interpretive Data: GP210 IgG antibodies can be detected in patients with primary biliary cholangitis (PBC) and may be of diagnostic relevance in a subset of patients with PBC who are negative for anti-mitochondrial antibodies (AMA). These antibodies have a relatively low sensitivity with excellent specificity for PBC. A negative result does not rule out PBC.

CPT Code(s): 83516

New York DOH Approved.

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

---

Specimen Required: Antimicrobial Susceptibility - MIC, Individual

CPT Code(s): CPT codes vary based on method.
New Test

3002482 Anti-sp100 and anti-gp210 Antibodies, IgG

SP100GP210

Click for Pricing

Additional Technical Information

Methodology:

Semi-Quantitative Enzyme-Linked Immunosorbent Assay

Performed:

Wed

Reported:

1-8 days

Specimen Required:

Collect: Serum Separator Tube (SST).

Specimen Preparation: Separate 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: Non-serum, heat-inactivated, contaminated, grossly icteric, severely lipemic, grossly hemolyzed specimens or inclusion of fibrin clot.

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

Reference Interval:

<table>
<thead>
<tr>
<th>Test Number</th>
<th>Components</th>
<th>Reference Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Anti-sp100 Antibodies, IgG</td>
<td>20.0 Units or less</td>
</tr>
<tr>
<td></td>
<td></td>
<td>20.1-24.9 Units</td>
</tr>
<tr>
<td></td>
<td></td>
<td>25.0 Units or greater</td>
</tr>
<tr>
<td>3002477</td>
<td>Anti-gp210 Antibodies, IgG</td>
<td>20.0 Units or less</td>
</tr>
<tr>
<td></td>
<td></td>
<td>20.1-24.9 Units</td>
</tr>
<tr>
<td></td>
<td></td>
<td>25.0 Units or greater</td>
</tr>
</tbody>
</table>

Interpretive Data:

Refer to report

CPT Code(s): 83516 x2

New York DOH Approved.

HOTLINE NOTE: Refer to the Test Mix Addendum for interface build information.
New Test 3002478 Anti-sp100 Antibody, IgG SP100 AB

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

Specimen Required: Collect: Serum Separator Tube (SST).
Storage/Transport Temperature: 1 mL serum at 2-8°C. (Min: 0.1 mL) Submit specimen in an ARUP Standard Transport Tube.
Remarks: Remove serum from cells ASAP.
Unacceptable Conditions: Contaminated or heat-inactivated specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year

Reference Interval:

<table>
<thead>
<tr>
<th>Units</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>20.0 Units or less</td>
<td>Negative</td>
</tr>
<tr>
<td>20.1-24.9 Units</td>
<td>Equivocal</td>
</tr>
<tr>
<td>25.0 Units or greater</td>
<td>Positive</td>
</tr>
</tbody>
</table>

Interpretive Data: SP100 IgG antibodies can be detected in patients with primary biliary cholangitis (PBC) and may be of diagnostic relevance in a subset of patients with PBC who are negative for anti-mitochondrial antibodies (AMA). These antibodies have a relatively low sensitivity with excellent specificity for PBC. A negative result does not rule out PBC.

CPT Code(s): 83516

New York DOH Approved.

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

2001594 Arbovirus Antibodies, IgG and IgM, Serum ARBOSER GM

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

2001593 Arbovirus Antibodies, IgG, Serum ARBO SER G

Specimen Required: Collect: Serum separator tube. Also acceptable: Plain red.
Specimen Preparation: Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.4 mL) Parallel testing is preferred and convalescent specimens must be received within 30 days from receipt of acute specimens. Mark specimens plainly as "acute" or "convalescent."
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Contaminated, hemolyzed, or severely lipemic specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)

2001592 Arbovirus Antibodies, IgM, Serum ARBO SER M

Specimen Required: Collect: Serum separator tube. Also acceptable: Plain red.
Specimen Preparation: Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.4 mL) Parallel testing is preferred and convalescent specimens must be received within 30 days from receipt of acute specimens. Mark specimens plainly as "acute" or "convalescent."
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Plasma. Contaminated, heat-inactivated, hemolyzed, or severely lipemic specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)
**New Test 3002479 Autoimmune Liver Disease Reflexive Panel**

**Additional Technical Information**

**Methodology:** Semi-Quantitative Enzyme-Linked Immunosorbent Assay/Semi-Quantitative Indirect Fluorescent Antibody

**Performed:** Sun-Sat

**Reported:** 1-8 days

**Specimen Required:** Collect: Serum Separator Tube (SST).

**Specimen Preparation:** Separate from cells ASAP or within 2 h of collection. Transfer 0.5 mL serum to an ARUP Standard Transport Tube. (Min: 0.3 mL)

**Storage/Transport Temperature:** Refrigerated.

**Unacceptable Conditions:** Non-serum, heat-inactivated, contaminated, grossly icteric, severely lipemic, grossly hemolyzed specimens or inclusion of fibrin clot.

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

### Reference Interval:

<table>
<thead>
<tr>
<th>Test Number</th>
<th>Components</th>
<th>Reference Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>0050065</td>
<td>Mitochondrial M2 Antibody, IgG (ELISA)</td>
<td>20.0 Units or less Negative; 20.1-24.9 Units Equivocal; 25.0 Units or greater Positive</td>
</tr>
<tr>
<td>0051174</td>
<td>F-Actin (Smooth Muscle) Antibody, IgG by ELISA with Reflex to Smooth Muscle Antibody, IgG Titer</td>
<td>F-Actin (Smooth Muscle) Antibody, IgG Titer</td>
</tr>
<tr>
<td></td>
<td></td>
<td>19 Units or less Negative; 20-30 Units Weak Positive; Suggest repeat testing in two to three weeks with fresh specimen; 31 Units or greater Positive – Suggestive of autoimmune hepatitis or chronic active hepatitis</td>
</tr>
<tr>
<td>0055235</td>
<td>Soluble Liver Antigen Antibody, IgG</td>
<td>20.0 Units or less Negative; 20.1-24.9 Units Equivocal; 25.0 Units or greater Positive</td>
</tr>
<tr>
<td>0055241</td>
<td>Liver-Kidney Microsome - 1 Antibody, IgG</td>
<td>20.0 Units or less Negative; 20.1-24.9 Units Equivocal; 25.0 Units or greater Positive</td>
</tr>
<tr>
<td>3000082</td>
<td>Antinuclear Antibody (ANA) with HEp-2 Substrate, IgG by IFA</td>
<td>Less than 1:20</td>
</tr>
</tbody>
</table>

### CPT Code(s): 86039, 86376, 83516 x3; if reflexed, add 86256

New York DOH Approved.

**HOTLINE NOTE:** Refer to the Test Mix Addendum for interface build information.
Bacterial Vaginosis by TMA

**Specimen Collection and Handling**

**Methodology:** Qualitative Transcription-Mediated Amplification

**Performed:** Tue, Thu, Sat

**Reported:** 1-4 days

**Specimen Required:**
- **Patient Prep:** Patient must be 14 years of age or older.
- **Collect:** Vaginal specimen collected with pink swab from Aptima MultiTest Swab Collection kit (ARUP supply #55224 PK/50 or #55229 PK/10) available online through eSupply using ARUP Connect or contact Client Services at (800) 522-2787.
- **Specimen Preparation:** Place swab in MultiTest Swab Specimen Transport Tube, break shaft at scoreline then recap tube.
- **Storage/Transport Temperature:** Refrigerated.
- **Unacceptable Conditions:** Specimens in any transport media other than indicated above. Specimen in MultiTest swab transport media without a swab.

**Reference Interval:** Negative.

**Interpretive Data:**
A negative result does not preclude a possible infection.

A single qualitative result is determined based on relative amounts of the following target organisms: *Lactobacillus* (*L. gasseri, L. crispatus, and L. jensenii*), *Gardnerella vaginalis,* and *Atopobium vaginae.* This assay does not report individual organisms.

Results should be interpreted in conjunction with other clinical data. This test has not been validated for use with specimens collected by patients at home.

This test is intended for medical purposes only and is not valid for the evaluation of suspected sexual abuse or for other forensic purposes.

**CPT Code(s):** 87801

New York DOH Approved.

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

Bartonella quintana Antibodies, IgG & IgM by IFA

**Specimen Required:**
- **Collect:** Serum separator tube.
- **Specimen Preparation:** Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.3 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, hemolyzed, or severely lipemic specimens.
- **Stability (collection to initiation of testing):** After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)
**Bartonella quintana Antibody, IgG by IFA**

**QUINT G**

**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, hemolyzed, or severely lipemic specimens.

**Stability (collection to initiation of testing):**
- After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)

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**Bartonella quintana Antibody, IgM by IFA**

**QUINT M**

**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, hemolyzed, or severely lipemic specimens.

**Stability (collection to initiation of testing):**
- After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)

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**Blastomyces Antigen Quantitative by EIA, Urine**

**BLASTOAG U**

**Specimen Required:** Collect: Urine.

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

**Storage/Transport Temperature:** Refrigerated.

**Unacceptable Conditions:** Specimens preserved in boric acid.

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

---

**Blastomyces dermatitidis Antibodies by EIA with Reflex to Immunodiffusion, CSF**

**BLST R CSF**

**Specimen Required:** Collect: CSF.

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

**Storage/Transport Temperature:** Refrigerated.

**Unacceptable Conditions:** Other body fluids. Contaminated, hemolyzed, xanthochromic, or severely lipemic specimens.

**Stability (collection to initiation of testing):**
- Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)

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**Blastomyces dermatitidis Antibodies by EIA with Reflex to Immunodiffusion, Serum**

**BLST R SER**

**Specimen Required:** Collect: Serum Separator Tube (SST).

**Specimen Preparation:** Separate from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.3 mL) 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:** Contaminated, hemolyzed, or severely lipemic specimens.

**Stability (collection to initiation of testing):**
- After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)
**0060108**  
**Body Fluid Culture and Gram Stain**  
MC BF  

**Performed:** Sun-Sat  
**Reported:** Negative at 6 days  
Positives as soon as detected  

**Note:** Gram stain, identification, and susceptibility tests are billed separately from culture. Anaerobes culture is NOT included with this order. Anaerobe culture is recommended for body fluids, tissue, and deep wound/surgical cultures. If anaerobe culture is needed, please order Anaerobe Culture (ARUP test code 0060143) and use anaerobic collection device for transportation. Testing is limited to the university of Utah Health Science Center only.

For CSF, order Cerebrospinal Fluid (CSF) Culture and Gram Stain (ARUP test code 0060106). For blood, order Blood Culture (ARUP test code 0060102) or Blood Culture, AFB and Fungal (ARUP test code 0060024).

**0060103**  
**Bone Culture and Gram Stain**  
MC BONE  

**Performed:** Sun-Sat  
**Reported:** Negative at 8 days  
Positives as soon as detected  

**Note:** Identification and susceptibility tests are billed separately from culture. Testing is limited to the university of Utah Health Science Center only.

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

HOTLINE NOTE: There is a component change associated with this test.  
Add component 2002148, Block ID

**0060700**  
**Bronchoscopy Culture and Gram Stain**  
MC BAL  

**Performed:** Sun-Sat  
**Reported:** Negative at 3 days  
Positives as soon as detected  

**Note:** Gram stain, identification and susceptibility tests are billed separately from culture. Testing is limited to the university of Utah Health Science Center only.

**0050135**  
**Brucella Antibody (Total) by Agglutination**  
BRUC  

**Specimen Required:** Collect: Serum Separator Tube (SST).  
**Specimen Preparation:** Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.3 mL) Parallel testing is preferred and convalescent specimens must be received within 30 days from receipt of the acute specimens.  
**Storage/Transport Temperature:** Refrigerated.  
**Remarks:** Mark specimens plainly as “acute” or “convalescent.”  
**Unacceptable Conditions:** Contaminated, heat-inactivated, hemolyzed, or severely lipemic specimens.  
**Stability (collection to initiation of testing):** Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 6 months (avoid repeated freeze/thaw cycles)

**0060159**  
**Brucella Culture**  
MC BRUC  

**Performed:** Sun-Sat  
**Reported:** Negative at 22 days  
Positives as soon as detected
New Test 3002583 Candida glabrata, Candida species, and Trichomonas vaginalis by CVTV TMA

Specimen Collection and Handling

Methodology: Qualitative Transcription-Mediated Amplification
Performed: Tue, Thu, Sat
Reported: 1-4 days

Specimen Required: Patient Prep: Patient must be 14 years of age or older.
Collect: Vaginal specimen collected with pink swab from Aptima MultiTest Swab Collection kit (ARUP supply #55224 PK/50 or #55229 PK/10) available online through eSupply using ARUP Connect or contact Client Services at (800) 522-2787.
Specimen Preparation: Place swab in MultiTest Swab Specimen Transport Tube, break shaft at scoreline then recap tube.
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Specimens in any transport media other than indicated above. Specimen in MultiTest swab transport media without a swab.
Stability (collection to initiation of testing): Ambient: 30 days; Refrigerated: 30 days; Frozen: 90 days

Reference Interval: Negative.

Interpretive Data:
A negative result does not preclude a possible infection.

This test detects Trichomonas vaginalis, Candida glabrata, and other Candida species (C. albicans, C. parapsilosis, C. dubliniensis, and C. tropicalis). The assay does not differentiate among organisms in the Candida species group.

Results should be interpreted in conjunction with other clinical data. This test has not been validated for use with specimens collected by patients at home.

This test is intended for medical purposes only and is not valid for the evaluation of suspected sexual abuse or for other forensic purposes.

CPT Code(s): 87481, 87661

New York DOH Approved.

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

0060106 Cerebrospinal Fluid (CSF) Culture and Gram Stain MC CSF

Performed: Sun-Sat
Reported: Negative at 6 days
Positives as soon as detected

Note: Gram stain, identification, and susceptibility tests are billed separately from culture. Testing is limited to the university of Utah Health Science Center only.
**HOTLINE: Effective May 18, 2020**

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**2011164**  
*Chlamydia trachomatis* and *Neisseria gonorrhoeae* (CTNG) by Transcription-Mediated Amplification (TMA) with Reflex to CT/NG Confirmation

**Specimen Required:** Patient Prep: MultiTest Swab or ThinPrep Collection: Patient must be 14 years of age or older.  
Collect: Vaginal specimen collected with pink swab from Aptima MultiTest Swab Specimen Collection kit (ARUP supply #55224 PK/50 or #55229 PK/10) available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787.  
Also acceptable: Cervical or male urethral specimen collected with blue swab from Aptima Unisex Swab Specimen Collection kit (ARUP supply #28907 PK/50 or #54555 PK/10), first catch urine in sterile container or cervical brush in ThinPrep Pap test collection kit. Refer to "Sample Collection for the Diagnosis of STD" under Specimen Handling at www.aruplab.com for specific specimen collection and transport instructions.  
Specimen Preparation: Swab: Place swab in Swab Specimen Transport Tube, break shaft off at scoreline then recap tube.  
Urine: Transfer 2 mL urine within 24 hours to Aptima Urine Specimen Transport Tube (ARUP supply #28908 PK/50 or #54556 PK/10) available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787. Liquid level must be between fill lines on tube.  
ThinPrep: Vortex ThinPrep PreservCyt solution and transfer 1 mL to an Aptima Specimen Transfer Tube (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, ThinPrep specimens should be poured off, using sterile technique, into the Aptima Specimen Transfer Tube prior to Cytology Testing.  
Storage/Transport Temperature: Refrigerated  
Remarks: Specimen source is required.  
Unacceptable Conditions: Large white swab included in Aptima Unisex Swab Specimen Collection kit is for preparatory cleaning of the endocervix and is unacceptable for testing. Specimens in any transport media other than indicated above. Specimens in swab transport media without a swab.  
Stability (collection to initiation of testing): MultiTest or Unisex Swab: Ambient: 2 months; Refrigerated: 2 months; Frozen: 1 year  
Aptima Urine Specimen Transport Tube: Ambient: 1 month; Refrigerated: 1 month; Frozen: 3 months  
Aptima Specimen Transfer Tube: Ambient: 1 month; Refrigerated: 1 month; Frozen: Unacceptable

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**0060241**  
*Chlamydia trachomatis* and *Neisseria gonorrhoeae* by Transcription-Mediated Amplification (TMA)  

**Specimen Required:** Patient Prep: MultiTest Swab: Patient must be 14 years of age or older.  
Collect: Vaginal, throat, or rectal specimen collected with pink swab from Aptima MultiTest Swab Specimen Collection kit (ARUP supply #55224 PK/50 or #55229 PK/10) available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787.  
Also acceptable: Cervical, eye or male urethral specimen collected with blue swab from Aptima Unisex Swab Specimen Collection kit (ARUP supply #28907 PK/50 or #54555 PK/10) or first catch urine in sterile container. Refer to "Sample Collection for the Diagnosis of STD" under Specimen Handling at www.aruplab.com for specific specimen collection and transport instructions.  
Specimen Preparation: Swab: Place swab in Swab Specimen Transport Tube, break shaft off at scoreline then recap tube.  
Urine: Transfer 2 mL urine within 24 hours to an Aptima Urine Specimen Transport Tube (ARUP supply #28908 PK/50 or #54556 PK/10). Liquid level must be between fill lines on tube.  
Storage/Transport Temperature: Refrigerated  
Remarks: Specimen source is required.  
Unacceptable Conditions: Large white swab included in Aptima Unisex Swab Specimen Collection kit is for preparatory cleaning of the endocervix and is unacceptable for testing. Specimens in any transport media other than indicated above. Specimens in swab transport media without a swab.  
Stability (collection to initiation of testing): MultiTest Swab or Unisex Swab: Ambient: 2 months; Refrigerated: 2 months; Frozen: 1 year  
Aptima Urine Specimen Transport Tube: Ambient: 1 month; Refrigerated: 1 month; Frozen: 3 months
Chlamydia trachomatis by Transcription-Mediated Amplification (TMA)

Specimen Required: Patient must be 14 years of age or older.

**Collect**: Vaginal, throat, or rectal specimen collected with pink swab from Aptima MultiTest Swab Specimen Collection kit (ARUP supply #55224 PK/50 or #55229 PK/10) available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787.

**Also acceptable**: Cervical, eye, or male urethral specimen collected with blue swab from Aptima Unisex Swab Specimen Collection kit (ARUP supply #28907 PK/50 or #54555 PK/10), first catch urine in sterile container or cervical brush in ThinPrep Pap test collection kit. Refer to "Sample Collection for the Diagnosis of STD" under Specimen Handling at www.aruplab.com for specific specimen collection and transport instructions.

**Specimen Preparation; Swab**: Place swab in Swab Specimen Transport Tube, break shaft off at scoreline then recap tube.

**Urine**: Transfer 2 mL urine within 24 hours to Aptima Urine Specimen Transport Tube (ARUP supply #28908 PK/50 or #54556 PK/10). Liquid level must be between fill lines on tube.

**ThinPrep**: Vortex ThinPrep PreservCyt solution and transfer 1 mL to an Aptima Specimen Transfer Tube (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, ThinPrep specimens should be poured off, using sterile technique, into the Aptima Specimen Transfer Tube prior to Cytology Testing.

**Remarks; Specimen source is required.**

**Unacceptable Conditions**: Large white swab included in Aptima Unisex Swab Specimen Collection kit is for preparatory cleaning of the endocervix and is unacceptable for testing. Specimens in any transport media other than indicated above. Specimens in swab transport media without a swab.

**Stability (collection to initiation of testing)**: MultiTest or Unisex Swab: Ambient: 2 months; Refrigerated: 2 months; Frozen: 1 year

**Aptima Urine Specimen Transport Tube**: Ambient: 1 month; Refrigerated: 1 month; Frozen: 3 months

**Aptima Specimen Transfer Tube**: Ambient: 2 weeks; Refrigerated: 1 month; Frozen: 1 year

**ThinPrep**: Ambient: 1 month; Refrigerated: 1 month; Frozen: Unacceptable
New Test 3001858 Chronic Lymphocytic Leukemia (CLL) Mutation Panel by Next Generation Sequencing

Available Now
Click for Pricing

Additional Technical Information

Methodology: Massively Parallel Sequencing
Performed: Varies
Reported: 12-14 days

Specimen Required:
- **Collect:** Lavender (K₂ or K₃ EDTA). Also acceptable: Bone Marrow (K₂ or K₃ EDTA) or Fresh-frozen tissue.
- **Specimen Preparation:** Whole Blood: Do not freeze. Transport 3 mL whole blood. (Min: 1.5 mL)
- **Bone Marrow:** Do not freeze. Transport 3 mL bone marrow. (Min: 1.5 mL)
- **Fresh-frozen Tissue:** Transport 5 mg fresh-frozen tissue. (Min: 5 mg)
- Separate specimens must be submitted when multiple tests are ordered.
- **Storage/Transport Temperature:** Whole Blood or Bone Marrow: Refrigerated.
- **Fresh-frozen Tissue:** Frozen.
- Unacceptable Conditions: Serum, plasma.
- **Whole Blood or Bone Marrow:** Specimens collected in anticoagulants other than EDTA. Clotted or grossly hemolyzed specimens.
- **Stability (collection to initiation of testing):**
  - Whole Blood or Bone Marrow: Ambient: 24 hours; Refrigerated: 5 days; Frozen: Unacceptable
  - Fresh-frozen Tissue: Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen: 1 month

Reference Interval: By report

Interpretive Data:
Refer to report.
See Compliance Statement B: www.aruplab.com/CS

Note: Genes tested: ATM, BCL2, BIRC3*, BRAF, BTG1, BTK, CARD11, CD79B, CXCR4, DDX3X, FBXW7, IKZF3, KRAS, MAP2K1, MED12, MGA, MYD88, NOTCH1, NRAS, PLCG2, POT1, RPS15*, SAMHD1, SF3B1, TP53, XPO1, ZMYM3

* - One or more exons are not covered by sequencing for the indicated gene; see Additional Technical Information test fact sheet.

CPT Code(s): 81450

New York DOH approval pending. Call for status update.

HOTLINE NOTE: Refer to the Test Mix Addendum for interface build information.
**New Test**  
**3002508** Clobazam and Metabolite, Quantitative, Serum or Plasma  
CLOBAZAM

**Methodology:** Quantitative High Performance Liquid Chromatography/Tandem Mass Spectrometry

**Performed:** Mon, Wed, Sat

**Reported:** 1-4 days

**Specimen Required:**
- **Collect:** Plain Red, Lavender (K$_2$ or K$_3$EDTA) or Pink (K$_2$EDTA).
- **Specimen Preparation:** Separate from cells ASAP or within two hours of collection. Transfer 2 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.3 mL)
- **Storage/Transport Temperature:** Refrigerated. Also acceptable: Room temperature or frozen.
- **Unacceptable Conditions:** Gel separator tubes. Hemolyzed specimens.
- **Stability (collection to initiation of testing):** Ambient: 3 days; Refrigerated: 2 weeks; Frozen: 2 months (Avoid repeated freeze thaw cycles)

**Reference Interval:** By report

<table>
<thead>
<tr>
<th>Available Separately</th>
<th>Components</th>
<th>Therapeutic and Toxic Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>Clobazam</td>
<td>Therapeutic Range: 30 – 300 ng/mL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Toxic: Greater than 500 ng/mL</td>
</tr>
<tr>
<td>No</td>
<td>N-Desmethylclobazam</td>
<td>Therapeutic Range: 300 – 3000 ng/mL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Toxic: Greater than 5000 ng/mL</td>
</tr>
</tbody>
</table>

**Interpretive Data:** Clobazam is a benzodiazepine drug indicated for adjunctive treatment for seizures associated with Lennox-Gastaut syndrome in patients 2 years and older. The therapeutic range is based on serum, pre-dose (trough) draw collection at steady-state concentration. The pharmacokinetics of clobazam are influenced by drug-drug interactions and by poor CYP2C19 metabolism. Adverse effects may include constipation, somnolence, sedation, and skin rash. The concomitant use of clobazam with other central nervous system (CNS) depressants may increase the risk of somnolence and sedation. See Compliance Statement B: www.aruplab.com/CS

**CPT Code(s):** 80339 (Alt code: G0480)

New York DOH Approved.

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

---

**0050137 Coccioides Antibodies, IgG and IgM by ELISA**  
COCCI G/M

**Specimen Required:**
- **Collect:** Serum Separator Tube (SST).
- **Specimen Preparation:** Separate from cells ASAP or within 2 hours of collection. Transfer 2 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.
- **Storage/Transport Temperature:** Refrigerated.
- **Remarks:** Please mark specimens plainly as "acute" or "convalescent."
- **Unacceptable Conditions:** Contaminated, hemolyzed, or severely lipemic specimens.
- **Stability (collection to initiation of testing):** Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)

**3000057 Coccioides Antibodies, IgG and IgM by ELISA, CSF**  
COCCIGMCSF

**Specimen Required:**
- **Collect:** CSF.
- **Specimen Preparation:** Transfer 2 mL 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 the acute specimens.
- **Storage/Transport Temperature:** Refrigerated.
- **Remarks:** Please Mark specimens plainly as "acute" or "convalescent."
- **Unacceptable Conditions:** Contaminated, hemolyzed, xanthochromic, or severely lipemic specimens.
- **Stability (collection to initiation of testing):** Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)
### Coccidioides Antibody by CF (COCCI)

**Specimen Required:** Collect: Serum Separator Tube (SST).

Specimen Preparation: Separate from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.4 mL) Parallel testing is preferred and convalescent specimens must be received within 30 days from receipt of acute specimens.

Storage/Transport Temperature: Refrigerated.

Remarks: Mark specimens plainly as "acute" or "convalescent."

Unacceptable Conditions: Hemolyzed, icteric, or lipemic specimens.

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

### Coccidioides Antibody IgG ELISA, CSF (COCCIG CSF)

**Specimen Required:** Collect: CSF

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

Storage/Transport Temperature: Refrigerated.

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

Stability (collection to initiation of testing): Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)

### Coccidioides Antibody IgM ELISA, CSF (COCCIM CSF)

**Specimen Required:** Collect: CSF

Specimen Preparation: Transfer 1 mL 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 the acute specimens.

Storage/Transport Temperature: Refrigerated.

Remarks: Mark specimens plainly as "acute" or "convalescent."

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

Stability (collection to initiation of testing): Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)

### Coccidioides Antibody, IgG by ELISA (COCCI G)

**Specimen Required:** Collect: Serum Separator Tube (SST).

Specimen Preparation: Separate from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.3 mL) 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: Contaminated, hemolyzed, or severely lipemic specimens.

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

### Coccidioides Antibody, IgM by ELISA (COCCI M)

**Specimen Required:** Collect: Serum Separator Tube (SST).

Specimen Preparation: Separate from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.3 mL) Parallel testing is preferred and convalescent specimens must be received within 30 days from receipt of the acute specimens.

Storage/Transport Temperature: Refrigerated.

Remarks: Mark specimens plainly as "acute" or "convalescent."

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

Stability (collection to initiation of testing): After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)
**Coccidioides immitis Antibodies by Immunodiffusion**

**Specimen Required:**
- **Collect:** Serum Separator Tube (SST).
- **Specimen Preparation:** Transfer 0.5 mL serum to an ARUP Standard Transport Tube (Min: 0.3 mL).
- **Storage/Transport Temperature:** Refrigerated.
- **Unacceptable Conditions:** Contaminated, hemolyzed, or severely lipemic specimens.
- **Stability (collection to initiation of testing):** Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles).

**New Test**

**0050183**

**Specimen Required:**
- **Collect:** Serum Separator Tube (SST).
- **Specimen Preparation:** Transfer 0.5 mL serum to an ARUP Standard Transport Tube (Min: 0.3 mL).
- **Storage/Transport Temperature:** Refrigerated.
- **Unacceptable Conditions:** Contaminated, hemolyzed, or severely lipemic specimens.
- **Stability (collection to initiation of testing):** Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles).

**0099073**

**Specimen Required:**
- **Collect:** Plain red. Also acceptable: Lavender (K₂ EDTA) or Plasma Preparation Tube (PPT).
- **Specimen Preparation:** Transfer 1 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.1 mL)
- **Storage/Transport Temperature:** Room temperature. Also acceptable: Refrigerated or frozen.
- **Stability (collection to initiation of testing):** Ambient: 3 weeks; Refrigerated: 3 weeks; Frozen: 3 weeks.

<table>
<thead>
<tr>
<th>Low</th>
<th>38.6 U/mL or less</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>38.7-89.9 U/mL</td>
</tr>
<tr>
<td>High</td>
<td>90.0 U/mL or greater</td>
</tr>
</tbody>
</table>

**CPT Code(s):** 86162

New York DOH Approved.

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

**HOTLINE: Effective May 18, 2020**

**Complement Activity Total, (CH50)**

**Specimen Required:**
- **Collect:** Plain red.
- **Specimen Preparation:** Allow specimen to clot for one hour at room temperature. Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.5 mL)
- **Storage/Transport Temperature:** CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered. Non-frozen specimens. Grossly hemolyzed or severely lipemic specimens.
- **Stability (collection to initiation of testing):** After separation from cells: Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen: 1 month.

**Reference Interval:**

<table>
<thead>
<tr>
<th>Low</th>
<th>38.6 U/mL or less</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
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</tr>
<tr>
<td>High</td>
<td>90.0 U/mL or greater</td>
</tr>
</tbody>
</table>

**CPT Code(s):** 86162

New York DOH Approved.

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

**Complement Component 7**

**Specimen Required:**
- **Collect:** Plain Red. Also acceptable: Lavender (K₂ EDTA) or Plasma Preparation Tube (PPT).
- **Specimen Preparation:** Transfer 1 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.1 mL)
- **Storage/Transport Temperature:** Room temperature. Also acceptable: Refrigerated or frozen.
- **Stability (collection to initiation of testing):** Ambient: 3 weeks; Refrigerated: 3 weeks; Frozen: 3 weeks.

**HOTLINE NOTE:** Remove information found in the Unacceptable Conditions field.
New Test 3002463 Connective Tissue Disease First Line Panel with Reflex CTD PAN

Click for Pricing

Additional Technical Information

Methodology: Qualitative Enzyme-Linked Immunosorbent Assay/Semi-Quantitative Indirect Fluorescent Antibody (IFA)/Semi-Quantitative Multiplex Bead Assay

Performed: Sun-Sat

Reported: 1-5 days

Specimen Required: Collect: Serum Separator Tube (SST).
Specimen Preparation: Separate from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.6 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Specimen types other than those listed. Specimens containing fibrin clots. Contaminated, grossly hemolyzed, heat-inactivated, or severely lipemic specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)

Reference Interval:

<table>
<thead>
<tr>
<th>Test Number</th>
<th>Components</th>
<th>Reference Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>0050215</td>
<td>Double-Stranded DNA (dsDNA) Antibody, IgG by ELISA</td>
<td>None Detected</td>
</tr>
<tr>
<td>2002693</td>
<td>Double-Stranded DNA (dsDNA) Antibody, IgG by IFA (using Crithidia luciliae)</td>
<td>Less than 1:10</td>
</tr>
<tr>
<td>0050470</td>
<td>Smith/RNP (ENA) Antibody, IgG</td>
<td>29 AU/mL or less Negative</td>
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<td>30-40 AU/mL: Equivocal</td>
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<tr>
<td></td>
<td></td>
<td>41 AU/mL or greater Positive</td>
</tr>
<tr>
<td>0050085</td>
<td>Smith (ENA) Antibody, IgG</td>
<td>29 AU/mL or less Negative</td>
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<tr>
<td></td>
<td></td>
<td>30-40 AU/mL: Equivocal</td>
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<tr>
<td></td>
<td></td>
<td>41 AU/mL or greater Positive</td>
</tr>
<tr>
<td>2012074</td>
<td>SSA 52 and 60 (Ro) (ENA) Antibodies, IgG</td>
<td>SSA-52 (Ro52) (ENA) Antibody, IgG</td>
</tr>
<tr>
<td></td>
<td></td>
<td>29 AU/mL or Less: Negative</td>
</tr>
<tr>
<td></td>
<td></td>
<td>30-40 AU/mL: Equivocal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>41 AU/mL or greater: Positive</td>
</tr>
<tr>
<td>0050692</td>
<td>SSB (La) (ENA) Antibody, IgG</td>
<td>SSA-60 (Ro60) (ENA) Antibody, IgG</td>
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<tr>
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<td>41 AU/mL or greater: Positive</td>
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<td>0099592</td>
<td>Jo-1 Antibody, IgG</td>
<td>29 AU/mL or less Negative</td>
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<td></td>
<td></td>
<td>30-40 AU/mL: Equivocal</td>
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<td></td>
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<td>41 AU/mL or greater Positive</td>
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<tr>
<td>0050599</td>
<td>Scleroderma (Scl-70) (ENA) Antibody, IgG</td>
<td>29 AU/mL or less Negative</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>41 AU/mL or greater Positive</td>
</tr>
</tbody>
</table>

Interpretive Data: Refer to report.

Note: If Double-Stranded DNA (dsDNA) Antibody, IgG by ELISA is detected, then Double-Stranded DNA (dsDNA) Antibody, IgG by IFA (using Crithidia luciliae) will be added. Additional charges apply.

CPT Code(s): 86235 x7 and 86225; if reflexed, add 86256

New York DOH Approved.

HOTLINE NOTE: Refer to the Test Mix Addendum for interface build information.
<table>
<thead>
<tr>
<th>Code</th>
<th>Test Description</th>
<th>Reference Panel</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012634</td>
<td>Coxiella burnetii (Q-Fever) Antibodies, IgG and IgM, Phase I and II with Reflex to Titer</td>
<td>Q-F GM</td>
</tr>
<tr>
<td><strong>Specimen Required:</strong></td>
<td>Collect: Serum separator tube (SST). Specimen Preparation: Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.3 mL) Parallel testing is preferred and convalescent specimens must be received within 30 days from receipt of the acute specimens. Mark specimens plainly as &quot;acute&quot; and &quot;convalescent.&quot; Storage/Transport Temperature: Refrigerated. Unacceptable Conditions: Contaminated, hemolyzed, or severely lipemic specimens. Stability (collection to initiation of testing): After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)</td>
<td></td>
</tr>
<tr>
<td>2012625</td>
<td>Coxiella burnetii (Q-Fever) Antibody IgG, Phase I and II with Reflex to Titer</td>
<td>QF G 1/2</td>
</tr>
<tr>
<td><strong>Specimen Required:</strong></td>
<td>Collect: Serum separator tube (SST). Specimen Preparation: Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.3 mL) Parallel testing is preferred and convalescent specimens must be received within 30 days from receipt of the acute specimens. Mark specimens plainly as &quot;acute&quot; and &quot;convalescent.&quot; Storage/Transport Temperature: Refrigerated. Unacceptable Conditions: Contaminated, hemolyzed, or severely lipemic specimens. Stability (collection to initiation of testing): After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)</td>
<td></td>
</tr>
<tr>
<td>0050181</td>
<td>C-Reactive Protein, Neonatal</td>
<td>CRPN</td>
</tr>
<tr>
<td><strong>Specimen Required:</strong></td>
<td>Collect: Plasma Separator Tube (PST) microtainer. Also acceptable: Serum Separator Tube (SST). Specimen Preparation: Separate from cells ASAP or within 2 hours of collection. If serum is used, allow specimen to clot completely at room temperature. Transfer 0.2 mL plasma or serum to an ARUP Standard Transport Tube. (Min: 0.1 mL) Storage/Transport Temperature: Refrigerated. Also acceptable: Frozen. Unacceptable Conditions: EDTA plasma. Hemolyzed specimens. Stability (collection to initiation of testing): After separation from cells: Ambient: 15 days; Refrigerated: 2 months; Frozen: 3 years</td>
<td></td>
</tr>
<tr>
<td>2013664</td>
<td>Cystic Fibrosis (CFTR) 165 Pathogenic Variants with Reflex to Sequencing and Reflex to Deletion/Duplication</td>
<td>CFVAR COMP</td>
</tr>
<tr>
<td><strong>Specimen Required:</strong></td>
<td>Collect: Lavender (K₂EDTA), pink (K₂EDTA), or yellow (ACD Solution A or B). Specimen Preparation: Transport 5 mL whole blood. (Min: 3 mL) Storage/Transport Temperature: Refrigerated. Unacceptable Conditions: Plasma or serum. Specimens collected in sodium heparin or lithium heparin tubes. Stability (collection to initiation of testing): Ambient: 72 hours; Refrigerated: 2 weeks; Frozen: 1 month</td>
<td></td>
</tr>
</tbody>
</table>
Cytochrome P450 Genotyping Panel

**Performed:** Varies  
**Reported:** 5-10 days

**Specimen Required:**  
**Patient Prep:**  
- **Collect:** Lavender (K$_2$EDTA), Pink (K$_2$EDTA), or Yellow (ACD Solution A or B).  
- **Specimen Preparation:** Transport 3 mL whole blood. (Min: 1 mL)  
- **Storage/Transport Temperature:** Refrigerated.  
- **Unacceptable Conditions:** Plasma or serum. Specimens collected in sodium heparin or lithium heparin.  
- **Stability (collection to initiation of testing):** Ambient: 72 hours; Refrigerated: 1 week; Frozen: 1 month

**Interpretive Data:**

**Background Information for Cytochrome P450 Genotyping Panel:**

**Characteristics:** The cytochrome P450 (CYP) isozymes 2C19, 2C8, 2C9, 2D6 and the CYP3A subfamily are involved in the metabolism of many drugs. Variants in the genes that code for CYP2C19, CYP2C8, CYP2C9, CYP2D6, CYP3A4, and CYP3A5 will influence pharmacokinetics of respective substrates, and may predict or explain non-standard dose requirements, therapeutic failure, or adverse reactions.

**Inheritance:** Autosomal codominant.

**Cause:** Gene variants affect enzyme expression or activity.

**Variants Tested:** See the Additional Technical Information document.

**Clinical Sensitivity:** Drug-dependent.

**Methodology:** Polymerase chain reaction (PCR) and fluorescence monitoring.

**Analytical Sensitivity and Specificity:** Greater than 99 percent.

**Limitations:** Only the targeted variants will be detected by this panel, and assumptions about phase and content are made to assign alleles. Publically available sources such as the www.pharmvar.org or www.pharmgkb.org provide guidance on phenotype predictions and allele frequencies. A combination of the CYP2D6*5 (gene deletion) and a CYP2D6 gene duplication cannot be specifically identified; however, this combination is not expected to adversely affect the phenotype prediction. Diagnostic errors can occur due to rare sequence variations. Risk of therapeutic failure or adverse reactions with gene substrates may be affected by genetic and non-genetic factors that are not detected by this test. This result does not replace the need for therapeutic drug or clinical monitoring.

Please note the information contained in this report does not contain medication recommendations, and should not be interpreted as recommending any specific medications. Any dosage adjustments or other changes to medications should be evaluated in consultation with a medical provider.

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

**HOTLINE NOTE:** There is a component change associated with this test.  
Add component 3002511, CYP PANEL, GeneDose Link  
Remove component 3001528, EER Cytochrome P450 Genotyping Panel
**Methodology:** Quantitative Multiplex Bead Assay

**Performed:** Sun-Sat

**Reported:** 1-4 days

**Specimen Required:**
- **Collect:** Green (lithium heparin).
- **Specimen Preparation:** Separate plasma from cells ASAP or within 2 hours of collection. Transfer 1 mL plasma to an ARUP Standard Transport Tube. (Min: 0.4 mL)
- **Storage/Transport Temperature:** CRITICAL FROZEN. Additional specimens must be submitted when multiple tests are ordered. Ship in an ARUP Standard Transport Tube.
- **Unacceptable Conditions:** Refrigerated specimens. Contaminated or heat inactivated specimens.
- **Stability (collection to initiation of testing):** After separation from cells: Ambient: 30 minutes; Refrigerated: Unacceptable; Frozen: 1 year

**Reference Interval:**

<table>
<thead>
<tr>
<th>Test Number</th>
<th>Components</th>
<th>Reference Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>3002631</td>
<td>Interleukin 2 Receptor, Soluble, Plasma</td>
<td>266.5 – 1410.4 pg/mL</td>
</tr>
<tr>
<td>3002624</td>
<td>Interleukin 12, Plasma</td>
<td>4.7 pg/mL, or less</td>
</tr>
<tr>
<td>3002628</td>
<td>Interferon gamma, Plasma</td>
<td>10.4 pg/mL, or less</td>
</tr>
<tr>
<td>3002622</td>
<td>Interleukin 4, Plasma</td>
<td>2.5 pg/mL, or less</td>
</tr>
<tr>
<td>3002621</td>
<td>Interleukin 5, Plasma</td>
<td>2.1 pg/mL, or less</td>
</tr>
<tr>
<td>3002623</td>
<td>Interleukin 10, Plasma</td>
<td>5.3 pg/mL, or less</td>
</tr>
<tr>
<td>3002625</td>
<td>Interleukin 13, Plasma</td>
<td>5.3 pg/mL, or less</td>
</tr>
<tr>
<td>3002629</td>
<td>Interleukin 1 beta, Plasma</td>
<td>7.4 pg/mL, or less</td>
</tr>
<tr>
<td>3002620</td>
<td>Interleukin 6, Plasma</td>
<td>2.5 pg/mL, or less</td>
</tr>
<tr>
<td>3002619</td>
<td>Interleukin 8, Plasma</td>
<td>9.4 pg/mL, or less</td>
</tr>
<tr>
<td>3002618</td>
<td>Tumor Necrosis Factor – alpha, Plasma</td>
<td>14.5 pg/mL, or less</td>
</tr>
<tr>
<td>3002630</td>
<td>Interleukin 2, Plasma</td>
<td>2.1 pg/mL, or less</td>
</tr>
<tr>
<td>3002626</td>
<td>Interleukin 17, Plasma</td>
<td>2.2 pg/mL, or less</td>
</tr>
</tbody>
</table>

**Interpretive Data:**
Results are used to understand the pathophysiology of immune, infectious, or inflammatory disorders, or may be used for research purposes. See Compliance Statement B: www.aruplab.com/CS

**Note:** Cytokine levels may demonstrate diurnal variation. For longitudinal comparison, it is recommended that cytokine levels be determined at the same time of day.

**CPT Code(s):** 83520 x13

New York DOH Approved.

**HOTLINE NOTE:** Refer to the Test Mix Addendum for interface build information.
HOTLINE: Effective May 18, 2020

0051394 Cytokine Panel 13, Serum CYT 12 SE

Specimen Required:
- Collect: Serum separator tube, or plain red
- Specimen Preparation: Separate serum cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.4 mL)
- Storage/Transport Temperature: CRITICAL FROZEN. Additional specimens must be submitted when multiple tests are ordered. Ship in an ARUP Standard Transport Tube
- Unacceptable Conditions: Refrigerated specimens. Contaminated or heat inactivated specimens
- Stability (collection to initiation of testing): After separation from cells: Ambient: 30 minutes; Refrigerated: Unacceptable; Frozen: 1 year

Reference Interval:
Effective May 18, 2020

<table>
<thead>
<tr>
<th>Test Number</th>
<th>Components</th>
<th>Reference Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>0051529</td>
<td>Interleukin 2 Receptor, Soluble, Serum</td>
<td>Effective May 18, 2020 175.3 pg/mL to 858.2 pg/mL</td>
</tr>
<tr>
<td>0051530</td>
<td>Interleukin 12, Serum</td>
<td>Effective May 18, 2020 1.9 pg/mL or less</td>
</tr>
<tr>
<td>0051531</td>
<td>Interferon gamma, Serum</td>
<td>Effective May 18, 2020 4.2 pg/mL or less</td>
</tr>
<tr>
<td>0051532</td>
<td>Interleukin 4, Serum</td>
<td>Effective May 18, 2020 2.2 pg/mL or less</td>
</tr>
<tr>
<td>0051533</td>
<td>Interleukin 5, Serum</td>
<td>Effective May 18, 2020 2.1 pg/mL or less</td>
</tr>
<tr>
<td>0051534</td>
<td>Interleukin 10, Serum</td>
<td>Effective May 18, 2020 2.8 pg/mL or less</td>
</tr>
<tr>
<td>0051535</td>
<td>Interleukin 13, Serum</td>
<td>Effective May 18, 2020 2.1 pg/mL or less</td>
</tr>
<tr>
<td>0051536</td>
<td>Interleukin 1 beta, Serum</td>
<td>Effective May 18, 2020 6.7 pg/mL or less</td>
</tr>
<tr>
<td>0051537</td>
<td>Interleukin 6, Serum</td>
<td>Effective May 18, 2020 2.0 pg/mL or less</td>
</tr>
<tr>
<td>0051538</td>
<td>Interleukin 8, Serum</td>
<td>Effective May 18, 2020 3.0 pg/mL or less</td>
</tr>
<tr>
<td>0051539</td>
<td>Tumor Necrosis Factor – alpha, Serum</td>
<td>Effective May 18, 2020 7.2 pg/mL or less</td>
</tr>
<tr>
<td>0051588</td>
<td>Interleukin 2, Serum</td>
<td>Effective May 18, 2020 2.1 pg/mL or less</td>
</tr>
<tr>
<td>2013115</td>
<td>Interleukin 17, Serum</td>
<td>1.4 pg/mL or less</td>
</tr>
</tbody>
</table>

Note: Cytokine levels may demonstrate diurnal variation. For longitudinal comparison, it is recommended that cytokine levels be determined at the same time of day.

HOTLINE NOTE: There is a clinically significant charting name change associated with this test.
- Change the charting name for component 0051529, Interleukin 2 Receptor (CD25), Soluble from Interleukin 2 Receptor (CD25), Soluble to Interleukin 2 Receptor, Soluble, Serum.
- Change the charting name for component 0051530, Interleukin 12 from Interleukin 12 to Interleukin 12, Serum.
- Change the charting name for component 0051531, Interferon gamma from Interferon gamma to Interferon gamma, Serum.
- Change the charting name for component 0051532, Interleukin 4 from Interleukin 4 to Interleukin 4, Serum.
- Change the charting name for component 0051533, Interleukin 5 from Interleukin 5 to Interleukin 5, Serum.
- Change the charting name for component 0051534, Interleukin 10 from Interleukin 10 to Interleukin 10, Serum.
- Change the charting name for component 0051535, Interleukin 13 from Interleukin 13 to Interleukin 13, Serum.
- Change the charting name for component 0051536, Interleukin 1 beta from Interleukin 1 beta to Interleukin 1 beta, Serum.
- Change the charting name for component 0051537, Interleukin 6 from Interleukin 6 to Interleukin 6, Serum.
- Change the charting name for component 0051538, Interleukin 8 from Interleukin 8 to Interleukin 8, Serum.
- Change the charting name for component 0051539, Tumor Necrosis Factor – alpha from Tumor Necrosis Factor – alpha to Tumor Necrosis Factor – alpha, Serum.
- Change the charting name for component 0051588, Interleukin 2 from Interleukin 2 to Interleukin 2, Serum.
- Change the charting name for component 2013113, Interleukin 17 from Interleukin 17 to Interleukin 17, Serum.
- Change the numeric map for component 0051529, Interleukin 2 Receptor, Soluble, Serum from XXXXXX to XXXXXXX.X.
- Change the numeric map for component 0051530, Interleukin 12, Serum from XXXXXX to XXXXXXX.X.
- Change the numeric map for component 0051531, Interferon gamma, Serum from XXXXXX to XXXXXXX.X.
- Change the numeric map for component 0051532, Interleukin 4, Serum from XXXXXX to XXXXXXX.X.
- Change the numeric map for component 0051533, Interleukin 5, Serum from XXXXXX to XXXXXXX.X.
- Change the numeric map for component 0051534, Interleukin 10, Serum from XXXXXX to XXXXXXX.X.
- Change the numeric map for component 0051535, Interleukin 13, Serum from XXXXXX to XXXXXXX.X.
- Change the numeric map for component 0051536, Interleukin 1 beta, Serum from XXXXXX to XXXXXXX.X.
- Change the numeric map for component 0051537, Interleukin 6, Serum from XXXXXX to XXXXXXX.X.
- Change the numeric map for component 0051538, Interleukin 8, Serum from XXXXXX to XXXXXXX.X.
- Change the numeric map for component 0051539, Tumor Necrosis Factor – alpha, Serum from XXXXXX to XXXXXXX.X.
- Change the numeric map for component 0051588, Interleukin 2, Serum from XXXXXX to XXXXXXX.X.
- Change the numeric map for component 2013113, Interleukin 17, Serum from XXXXXXXX to XXXXXXX.X.
New Test 3002616 Cytokine Panel, Monokines, Plasma CYT MON P

**Methodology:** Quantitative Multiplex Bead Assay

**Performed:** Sun-Sat

**Reported:** 1-4 days

**Specimen Required:**
- **Collect:** Green (lithium heparin).
- **Specimen Preparation:** Separate plasma from cells ASAP or within 2 hours of collection. Transfer 1 mL plasma to an ARUP Standard Transport Tube. (Min: 0.4 mL)
- **Storage/Transport Temperature:** CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered. Ship in ARUP Standard Transport Tube.
- **Unacceptable Conditions:** Refrigerated specimens. Contaminated or heat-inactivated specimens.

**Stability (collection to initiation of testing):** After separation from cells: Ambient: 30 minutes; Refrigerated: Unacceptable; Frozen: 1 year

**Reference Interval:**

<table>
<thead>
<tr>
<th>Test Number</th>
<th>Components</th>
<th>Reference Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>3002629</td>
<td>Interleukin 1 beta, Plasma</td>
<td>7.4 pg/mL or less</td>
</tr>
<tr>
<td>3002620</td>
<td>Interleukin 6, Plasma</td>
<td>2.5 pg/mL or less</td>
</tr>
<tr>
<td>3002619</td>
<td>Interleukin 8, Plasma</td>
<td>9.4 pg/mL or less</td>
</tr>
<tr>
<td>3002618</td>
<td>Tumor Necrosis Factor – alpha, Plasma</td>
<td>14.5 pg/mL or less</td>
</tr>
</tbody>
</table>

**Interpretive Data:**
Results are used to understand the pathophysiology of immune, infectious, or inflammatory disorders, or may be used for research purposes. See Compliance Statement B: www.aruplab.com/CS

**Note:** Cytokine levels may demonstrate diurnal variation. For longitudinal comparison, it is recommended that cytokine levels be determined at the same time of day.

**CPT Code(s):** 83520 x4

New York DOH Approved.

**HOTLINE NOTE:** Refer to the Test Mix Addendum for interface build information.
Specimen Required: Collect: Serum separator tube, or plain red.
Specimen Preparation: Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.4 mL)
Storage/Transport Temperature: CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.
Ship in an ARUP Standard Transport Tube.
Unacceptable Conditions: Refrigerated specimens. Contaminated or heat-inactivated specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: 30 minutes; Refrigerated: Unacceptable; Frozen: 1 year

Reference Interval:

<table>
<thead>
<tr>
<th>Test Number</th>
<th>Components</th>
<th>Reference Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>0051536</td>
<td>Interleukin 1 beta, Serum</td>
<td>Effective May 18, 2020 6.7 pg/mL or less</td>
</tr>
<tr>
<td>0051537</td>
<td>Interleukin 6, Serum</td>
<td>Effective May 18, 2020 2.0 pg/mL or less</td>
</tr>
<tr>
<td>0051538</td>
<td>Interleukin 8, Serum</td>
<td>Effective May 18, 2020 3.0 pg/mL or less</td>
</tr>
<tr>
<td>0051539</td>
<td>Tumor Necrosis Factor – alpha, Serum</td>
<td>Effective May 18, 2020 7.2 pg/mL or less</td>
</tr>
</tbody>
</table>

Note: Cytokine levels may demonstrate diurnal variation. For longitudinal comparison, it is recommended that cytokine levels be determined at the same time of day.

HOTLINE NOTE: There is a clinically significant charting name change associated with this test.
Change the charting name for component 0051536, Interleukin 1 beta from Interleukin 1 beta to Interleukin 1 beta, Serum.
Change the charting name for component 0051537, Interleukin 6 from Interleukin 6 to Interleukin 6, Serum.
Change the charting name for component 0051538, Interleukin 8 from Interleukin 8 to Interleukin 8, Serum.
Change the charting name for component 0051539, Tumor Necrosis Factor – alpha from Tumor Necrosis Factor – alpha to Tumor Necrosis Factor – alpha, Serum.
There is a numeric map change associated with this test.
Change the numeric map for component 0051536, Interleukin 1 beta, Serum from XXXXXX to XXXXXX.X.
Change the numeric map for component 0051537, Interleukin 6, Serum from XXXXXX to XXXXXX.X.
Change the numeric map for component 0051538, Interleukin 8, Serum from XXXXXX to XXXXXX.X.
Change the numeric map for component 0051539, Tumor Necrosis Factor – alpha, Serum from XXXXXX to XXXXXX.X.
New Test 3002617 Cytokine Panel, TH1, Plasma CYT TH1 P

Methodology: Quantitative Multiplex Bead Assay
Performed: Sun-Sat
Reported: 1-4 days

Specimen Required: Collect: Green (lithium heparin).
Specimen Preparation: Separate plasma from cells ASAP or within 2 hours of collection. Transfer 1 mL plasma to an ARUP Standard Transport Tube. (Min: 0.4 mL)
Storage/Transport Temperature: CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.
Ship in an ARUP Standard Transport Tube.
Unacceptable Conditions: Refrigerated specimens. Contaminated or heat-inactivated specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: 30 minutes; Refrigerated: Unacceptable; Frozen: 1 year

Reference Interval:

<table>
<thead>
<tr>
<th>Test Number</th>
<th>Components</th>
<th>Reference Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>3002630</td>
<td>Interleukin 2, Plasma</td>
<td>2.1 pg/mL or less</td>
</tr>
<tr>
<td>3002631</td>
<td>Interleukin 2 Receptor, Soluble, Plasma</td>
<td>266.5 pg/mL to 1410.4 pg/mL</td>
</tr>
<tr>
<td>3002624</td>
<td>Interleukin 12, Plasma</td>
<td>4.7 pg/mL or less</td>
</tr>
<tr>
<td>3002628</td>
<td>Interferon gamma, Plasma</td>
<td>10.4 pg/mL or less</td>
</tr>
</tbody>
</table>

Interpretive Data:
Results are used to understand the pathophysiology of immune, infectious, or inflammatory disorders, or may be used for research purposes.
See Compliance Statement B: www.aruplab.com/CS

Note: Cytokine levels may demonstrate diurnal variation. For longitudinal comparison, it is recommended that cytokine levels be determined at the same time of day.

CPT Code(s): 83520 x4

New York DOH Approved.

HOTLINE NOTE: Refer to the Test Mix Addendum for interface build information.
HOTLINE: Effective May 18, 2020

**0051408**  Cytokine Panel, TH1, Serum  CYT TH1 SE

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

**Specimen Preparation:** Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.4 mL)

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

**Ship in an ARUP Standard Transport Tube.**

**Unacceptable Conditions:** Refrigerated specimens. Contaminated or heat-inactivated specimens.

**Stability (collection to initiation of testing):** After separation from cells: Ambient: 30 minutes; Refrigerated: Unacceptable; Frozen: 1 year

**Reference Interval:**

<table>
<thead>
<tr>
<th>Test Number</th>
<th>Components</th>
<th>Reference Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>0051588</td>
<td>Interleukin 2, Serum</td>
<td>Effective May 18, 2020 2.1 pg/mL or less</td>
</tr>
<tr>
<td>0051529</td>
<td>Interleukin 2 Receptor, Soluble, Serum</td>
<td>Effective May 18, 2020 175.3 pg/mL - 858.2 pg/mL</td>
</tr>
<tr>
<td>0051530</td>
<td>Interleukin 12, Serum</td>
<td>Effective May 18, 2020 1.9 pg/mL or less</td>
</tr>
<tr>
<td>0051531</td>
<td>Interferon gamma, Serum</td>
<td>Effective May 18, 2020 4.2 pg/mL or less</td>
</tr>
</tbody>
</table>

**Note:** Cytokine levels may demonstrate diurnal variation. For longitudinal comparison, it is recommended that cytokine levels be determined at the same time of day.

**HOTLINE NOTE:** There is a clinically significant charting name change associated with this test.

Change the charting name for component 0051588, Interleukin 2 from Interleukin 2 to Interleukin 2, Serum.

Change the charting name for component 0051529, Interleukin 2 Receptor (CD25), Soluble from Interleukin 2 Receptor (CD25), Soluble to Interleukin 2 Receptor, Soluble, Serum.

Change the charting name for component 0051530, Interleukin 12 from Interleukin 12 to Interleukin 12, Serum.

Change the charting name for component 0051531, Interferon gamma from Interferon gamma to Interferon gamma, Serum.

There is a numeric map change associated with this test:

Change the numeric map for component 0051529, Interleukin 2 Receptor, Soluble from XXXXXXX to XXXXXXX.X.

Change the numeric map for component 0051530, Interleukin 12, Serum from XXXXXXX to XXXXXXX.X.

Change the numeric map for component 0051531, Interferon gamma, Serum from XXXXXXX to XXXXXXX.X.

Change the numeric map for component 0051588, Interleukin 2, Serum from XXXXXXX to XXXXXXX.X.
New Test 3002627 Cytokine Panel, TH2, Plasma CYT TH2 P

Methodology: Quantitative Multiplex Bead Assay
Performed: Sun-Sat
Reported: 1-4 days

Specimen Required: Collect: Green (lithium heparin).
Specimen Preparation: Separate plasma from cells ASAP or within 2 hours of collection. Transfer 1 mL plasma to an ARUP Standard Transport Tube. (Min: 0.4 mL)
Storage/Transport Temperature: CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.
Ship in ARUP Standard Transport Tube.
Unacceptable Conditions: Refrigerated specimens. Contaminated or heat-inactivated specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: 30 minutes; Refrigerated: Unacceptable; Frozen: 1 year

Reference Interval:

<table>
<thead>
<tr>
<th>Test Number</th>
<th>Components</th>
<th>Reference Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>3002622</td>
<td>Interleukin 4, Plasma</td>
<td>2.5 pg/mL or less</td>
</tr>
<tr>
<td>3002621</td>
<td>Interleukin 5, Plasma</td>
<td>2.1 pg/mL or less</td>
</tr>
<tr>
<td>3002623</td>
<td>Interleukin 10, Plasma</td>
<td>5.3 pg/mL or less</td>
</tr>
<tr>
<td>3002625</td>
<td>Interleukin 13, Plasma</td>
<td>5.3 pg/mL or less</td>
</tr>
</tbody>
</table>

Interpretive Data:
Results are used to understand the pathophysiology of immune, infectious, or inflammatory disorders, or may be used for research purposes.
See Compliance Statement B: www.aruplab.com/CS

Note: Cytokine levels may demonstrate diurnal variation. For longitudinal comparison, it is recommended that cytokine levels be determined at the same time of day.

CPT Code(s): 83520 x4
New York DOH Approved.

HOTLINE NOTE: Refer to the Test Mix Addendum for interface build information.
Specimen Required: Collect: Serum separator tube, or plain red.
Specimen Preparation: Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.4 mL)
Storage/Transport Temperature: CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.

Specimen Preparation: Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.4 mL)

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

Ship in an ARUP Standard Transport Tube.

Unacceptable Conditions: Refrigerated specimens. Contaminated or heat-inactivated specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: 30 minutes; Refrigerated: Unacceptable; Frozen: 1 year

Reference Interval:

<table>
<thead>
<tr>
<th>Test Number</th>
<th>Components</th>
<th>Reference Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>0051532</td>
<td>Interleukin 4, Serum</td>
<td>Effective May 18, 2020 2.2 pg/mL or less</td>
</tr>
<tr>
<td>0051533</td>
<td>Interleukin 5, Serum</td>
<td>Effective May 18, 2020 2.1 pg/mL or less</td>
</tr>
<tr>
<td>0051534</td>
<td>Interleukin 10, Serum</td>
<td>Effective May 18, 2020 2.8 pg/mL or less</td>
</tr>
<tr>
<td>0051535</td>
<td>Interleukin 13, Serum</td>
<td>Effective May 18, 2020 2.3 pg/mL or less</td>
</tr>
</tbody>
</table>

Note: Cytokine levels may demonstrate diurnal variation. For longitudinal comparison, it is recommended that cytokine levels be determined at the same time of day.

HOTLINE NOTE: There is a clinically significant charting name change associated with this test.
Change the charting name for component 0051532, Interleukin 4 from Interleukin 4 to Interleukin 4, Serum.
Change the charting name for component 0051533, Interleukin 5 from Interleukin 5 to Interleukin 5, Serum.
Change the charting name for component 0051534, Interleukin 10 from Interleukin 10 to Interleukin 10, Serum.
Change the charting name for component 0051535, Interleukin 13 from Interleukin 13 to Interleukin 13, Serum.
There is a numeric map change associated with this test.
Change the numeric map for component 0051532, Interleukin 4, Serum from XXXXXX to XXXXX.X.
Change the numeric map for component 0051533, Interleukin 5, Serum from XXXXXX to XXXXXX.X.
Change the numeric map for component 0051534, Interleukin 10, Serum from XXXXXX to XXXXXX.X.
Change the numeric map for component 0051535, Interleukin 13, Serum from XXXXXX to XXXXXX.X.

Cytology, SurePath Liquid-Based Pap Test and Human Papillomavirus (HPV), High Risk with 16 and 18 Genotype by PCR, SurePath. (for routine co-testing in women over 30)

Note: If the SurePath Pap Test is interpreted as atypical squamous cells of undetermined significance (ASC-US), then Human Papillomavirus (HPV), High Risk with 16 and 18 Genotype by PCR, SurePath (ARUP test code 2011933) will be added. Additional charges apply.

Cytology, SurePath Liquid-Based Pap Test with Reflex to Human Papillomavirus (HPV), High Risk with 16 and 18 Genotype by PCR, SurePath

Note: In addition to the SurePath Pap Test, Human Papillomavirus (HPV), High Risk with 16 and 18 Genotype by PCR, SurePath (ARUP test code 2011933) will be performed and reported under a separate accession. The Pap Test is a screening test for cervical cancer and its precursors with an inherent false-negative rate.

HOTLINE NOTE: There is a reflexive pattern change associated with this test.
Remove reflex to 2011942, Human Papillomavirus (HPV), High Risk by PCR, SurePath
Add reflex to 2011933, Human Papillomavirus (HPV), High Risk with 16 and 18 Genotype by PCR, SurePath
**2000136**  
**Cytology, ThinPrep Pap Test and Human Papillomavirus (HPV), High Risk by Transcription-Mediated Amplification (TMA) with Reflex to HPV Genotypes 16 and 18/45 by TMA, ThinPrep (for routine co-testing in women over 30)**

**Note:** In addition to the ThinPrep Pap Test, Human Papillomavirus (HPV), High Risk by Transcription-Mediated Amplification (TMA) with Reflex to HPV Genotypes 16 and 18/45 by TMA, ThinPrep (ARUP test code 2007890) will be performed and reported under a separate accession. Additional charges apply. The Pap Test is a screening test for cervical cancer and its precursors with an inherent false-negative rate.

**CPT Code(s):**  88142; if reviewed by pathologist add 88141; 87624; if reflexed, add 87625

**HOTLINE NOTE:** There is a reflexive pattern change associated with this test.

Remove reflex to 2007893, Human Papillomavirus (HPV), High Risk by Transcription-Mediated Amplification (TMA), ThinPrep

Add reflex to 2007890, Human Papillomavirus (HPV), High Risk by Transcription-Mediated Amplification (TMA) with Reflex to HPV Genotypes 16 and 18/45 by TMA, ThinPrep

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**2000138**  
**Cytology, ThinPrep Pap Test with Reflex to Human Papillomavirus (HPV), High Risk by Transcription-Mediated Amplification (TMA) with Reflex to HPV Genotypes 16 and 18/45 by TMA, ThinPrep**

**Note:** In addition to the ThinPrep Pap Test, Human Papillomavirus (HPV), High Risk by Transcription-Mediated Amplification (TMA) with Reflex to HPV Genotypes 16 and 18/45 by TMA, ThinPrep (ARUP test code 2007890) will be performed and reported under a separate accession. Additional charges apply. The Pap Test is a screening test for cervical cancer and its precursors with an inherent false-negative rate.

**CPT Code(s):**  88142; if reviewed by pathologist add 88141. If reflexed, add 87624; if further reflexed, add 87625

**HOTLINE NOTE:** There is a reflexive pattern change associated with this test.

Remove reflex to 2007893, Human Papillomavirus (HPV), High Risk by Transcription-Mediated Amplification (TMA), ThinPrep

Add reflex to 2007890, Human Papillomavirus (HPV), High Risk by Transcription-Mediated Amplification (TMA) with Reflex to HPV Genotypes 16 and 18/45 by TMA, ThinPrep

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**New Test**  
**3002537**  
**Digitoxin Quantitative, Serum or Plasma**

**Methodology:**  Quantitative Immunoassay
**Performed:**  Varies
**Reported:**  5-8 days

**Specimen Required:**  
**Collect:**  Plain Red or Lavender (K3EDTA or K2EDTA).  
**Specimen Preparation:**  Separate from cells ASAP or within 2 hours of collection. Transfer 1 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.4 mL).  
**Test is not performed at ARUP; separate specimens must be submitted when multiple tests are ordered.**  
**Storage/Transport Temperature:**  Refrigerated. Also acceptable: Frozen.  
**Unacceptable Conditions:**  Separator tubes.  
**Stability (collection to initiation of testing):**  Ambient: Undetermined; Refrigerated: 1 week; Frozen: 3 months

**Reference Interval:**  By report

**CPT Code(s):**  80375 (Alt code: G0480)

New York DOH Approved.

**HOTLINE NOTE:** Refer to the Test Mix Addendum for interface build information.
**Ear Culture and Gram Stain**

**Performed:** Sun-Sat  
**Reported:** Negative at 3 days  
Positives as soon as detected

**Note:** Identification and susceptibility tests are billed separately from culture. Testing is limited to the university of Utah Health Science Center only.

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**Ehrlichia chaffeensis Antibodies, IgG & IgM by IFA**

**Specimen Required:** Collect: Serum Separator Tube.  
Specimen Preparation: Separate from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.3 mL) Parallel testing is preferred and convalescent specimens must be received within 30 days from receipt of the acute specimens.  
Stability (collection to initiation of testing): After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)

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

**Ehrlichia chaffeensis Antibody, IgG by IFA**

**Specimen Required:** Collect: Serum Separator Tube.  
Specimen Preparation: Separate from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.3 mL) Parallel testing is preferred and convalescent specimens must be received within 30 days from receipt of the acute specimens.  
Stability (collection to initiation of testing): After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)

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

**Ehrlichia chaffeensis Antibody, IgM by IFA**

**Specimen Required:** Collect: Serum Separator Tube.  
Specimen Preparation: Separate from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.3 mL) Parallel testing is preferred and convalescent specimens must be received within 30 days from receipt of the acute specimens.  
Stability (collection to initiation of testing): After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)

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

**ERBB2 (HER2) (HercepTest)™ by Immunohistochemistry**

**Specimen Required:** Collect: Tissue or cells.  
Specimen Preparation: Formalin fix (10 percent neutral buffered formalin) and paraffin embed specimen (cells must be prepared into a cellblock). Protect paraffin block and/or slides from excessive heat. Transport tissue block or 5 unstained (3- to 5- micron thick sections), positively charged slides in a tissue transport kit (ARUP supply #47808) available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800)522-2787. (Min: 2 slides) If sending precut slides, do not oven bake.  
Stability (collection to initiation of testing): Ambient: Indefinitely; Refrigerated: Indefinitely; Frozen: Unacceptable

**Unacceptable Conditions:** Specimens submitted with non-representative tissue type. Depleted specimens. Decalcified specimens.

**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 at (800)522-2787.
0049178  
**ERBB2 (HER2/neu) (HercepTest) by Immunohistochemistry, Tissue with Reflex to HERCEP2IP FISH if 2+**

**Performed:** Mon-Fri  
**Reported:** 1-5 days, add 3-7 days if reflexed

**Specimen Required:**  
**Collect:** Tumor tissue  
**Specimen Preparation:** Formalin fix (10 percent neutral buffered formalin) and paraffin embed tissue within 30 minutes of removal from patient. Fixative duration: 6-72 hours. Transport tissue block or 10 unstained (3-to 5-micron thick sections), positively charged slides in a tissue transport kit (ARUP supply #47808) available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787. (Min: 6 slides) If sending precut slides, do not oven bake.  
**Storage/Transport Temperature:** Room temperature or refrigerated. Ship in cooled container during summer months.  
**Remarks:** Pathology report including tissue source and tumor origin must be submitted. Document time from tissue acquisition to fixation and fixation duration on requisition or enter at time of order.  
**IMMUNOHISTOCHEMISTRY ORDERING AND SUBMISSION DETAILS:** Submit electronic request. If you do not have electronic ordering capability, use an ARUP Immunohistochemistry form (#32978) with an ARUP client number. For additional technical details, please contact ARUP Client Services at (800) 522-2787.  
**Unacceptable Conditions:** Paraffin block with no tumor tissue remaining. Specimens with fixation delayed for more than 30 minutes. Specimens fixed in any other fixative other than 10 percent neutral buffered formalin. Tissue fixed for less than 6 hours or greater than 72 hours. Cytology specimens fixed in alcohol. **Decalcified specimens.**  
**Stability (collection to initiation of testing):** Ambient: Indefinitely; Refrigerated: Indefinitely; Frozen: Unacceptable

0049174  
**ERBB2 (HER2/neu) (HercepTest) with Interpretation by Immunohistochemistry, Tissue**

**Specimen Required:**  
**Collect:** Tumor tissue  
**Specimen Preparation:** Formalin fix (10 percent neutral buffered formalin) and paraffin embed tissue within 30 minutes of removal from patient. Fixative duration: 6-72 hours. Transport tissue block or 10 unstained (3-to 5-micron thick sections), positively charged slides in a tissue transport kit (ARUP supply #47808) available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787. (Min: 3 slides) If sending precut slides, do not oven bake.  
**Storage/Transport Temperature:** Room temperature or refrigerated. Ship in cooled container during summer months.  
**Remarks:** Pathology report including tissue source and tumor origin must be submitted. Document time from tissue acquisition to fixation and fixation duration on requisition or enter at time of order.  
**IMMUNOHISTOCHEMISTRY ORDERING AND SUBMISSION DETAILS:** Submit electronic request. If you do not have electronic ordering capability, use an ARUP Immunohistochemistry form (#32978) with an ARUP client number. For additional technical details, please contact ARUP Client Services at (800) 522-2787.  
**Unacceptable Conditions:** Paraffin block with no tumor tissue remaining. Specimens with fixation delayed for more than 30 minutes. Specimens fixed in any other fixative other than 10 percent neutral buffered formalin. Tissue fixed for less than 6 hours or greater than 72 hours. Cytology specimens fixed in alcohol. **Decalcified specimens.**  
**Stability (collection to initiation of testing):** Ambient: Indefinitely; Refrigerated: Indefinitely; Frozen: Unacceptable

2004516  
**Estrogen Receptor (ER) by Immunohistochemistry**

**Specimen Required:**  
**Collect:** Tissue or cells.  
**Specimen Preparation:** Formalin fix (10 percent neutral buffered formalin) and paraffin embed specimen (cells must be prepared into a cellblock). Protect paraffin block and/or slides from excessive heat. Transport tissue block or 5 unstained (3- to 5-micron thick sections), positively charged slides in a tissue transport kit (ARUP supply #47808). Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787. (Min: 2 slides). If sending precut slides, do not oven bake.  
**Storage/Transport Temperature:** Room temperature 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, contact ARUP Client Services at (800) 522-2787.  
**Unacceptable Conditions:** Specimens submitted with non-representative tissue type. Depleted specimens. **Decalcified specimens.**  
**Stability (collection to initiation of testing):** Ambient: Indefinitely; Refrigerated: Indefinitely; Frozen: Unacceptable

**Interpretive Data:**

See Compliance Statement A: www.aruplab.com/CS
### Estrogen/Progesterone Receptor with Interpretation by Immunohistochemistry

**Specimen Required:** Collect: Tumor tissue.  
**Specimen Preparation:** Formalin fix (10 percent neutral buffered formalin) and paraffin embed tissue no later than 1 hour after removal from patient. Fixative duration: 6-72 hours. If sending precut slides, do not oven bake. Transport tissue block or 5 unstained (3-5 micron thick sections), positively charged slides in a tissue transport kit (ARUP supply #47808) available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800)522-2787. (Min: 4 slides). If sending precut slides, do not oven bake.  
**Storage/Transport Temperature:** Room temperature or refrigerated. Ship in cooled container during summer months.  
**Remarks:** Document time from tissue acquisition to fixation and fixation duration on submitting requisition or enter at time of order. Include surgical pathology report.  
**Unacceptable Conditions:** Paraffin block with no tumor tissue remaining. Specimens with fixation delayed for more than one hour. Specimens fixed in any fixative other than 10 percent neutral buffered formalin. Biopsies fixed for less than 6 hours and greater than 72 hours. Cytology specimens fixed in alcohol. Decalcified specimens.  
**Stability (collection to initiation of testing):** Ambient: Indefinitely; Refrigerated: Indefinitely; Frozen: Unacceptable

### Eye Culture and Gram Stain

**Performed:** Sun-Sat  
**Reported:** Negative at 8 days  
**Positives as soon as detected**

**Note:** Identification and susceptibility tests are billed separately from culture. **Testing is limited to the university of Utah Health Science Center only.**

### Fluoroquinolone-Resistant Organism, Culture

**Performed:** Sun-Sat  
**Reported:** Negative at 4 days  
**Positives as soon as detected**
### Comprehensive Heart Biopsy Workup

**New Test**  
**3001981**

**HOTLINE: Effective May 18, 2020**

**Time Sensitive**

**Methodology:** Microscopy/Histochemistry/Immunofluorescence/Electron Microscopy

**Performed:** Sun-Sat

**Reported:** 1-5 days

**Specimen Required:**
- **Collect:** Two transplant heart biopsies OR three native heart biopsies. Obtain Renal/Heart Biopsy Collection Kit prior to collection procedure (ARUP supply #40460) available online through eSupply using ARUP Connect™ or contact Client Services at (800) 522-2787.
- **Specimen Preparation:** Special fixatives are required; collection instructions are provided with the kit. One biopsy placed in 10 percent formalin, one placed in Zeus fixative, and one placed in glutaraldehyde.
- **Storage/Transport Temperature:** Room temperature. Also acceptable: Refrigerated. Ship in cooled container during summer months.
- **Remarks:** Submit electronic request. If you do not have electronic ordering capability, use an ARUP Anatomic Pathology Form (#32960) with an ARUP client number. For additional technical details, contact ARUP Client Services at (800) 522-2787. Submit clinical history.
- **Unacceptable Conditions:** Specimens submitted with non-representative tissue type.

**Interpretive Data:** Refer to report.

**Note:** Detailed collection instructions are available in the Renal/Heart Biopsy Collection Kit (#40460) or can be requested by contacting ARUP Client Services at (800) 522-2787. Use of a different collection kit could result in suboptimal biopsy fixation and delays in diagnosis. All vials must be labeled with the patient's full name and unique identifier. Avoid drying of specimens; make sure the specimens are completely submerged into the fixative and not caught on vial sides or in the threads of the cap.

Testing is ordered at the discretion of the ARUP pathologist; charges vary by individual patient.

**CPT Code(s):** CPT codes vary by individual patient

New York DOH Approved.

**HOTLINE NOTE:** Refer to the Test Mix Addendum for interface build information.
New Test 3002061 HLA Class I and II Panel (A,B,C,DRB1, DQA1, DQB1, DPB1) by HLA 7LOC

Methodology: Polymerase Chain Reaction (PCR)/Massively Parallel Sequencing
Performed: Varies
Reported: 8-15 days

Specimen Required: Collect: Lavender (K2 EDTA). Also acceptable: Yellow (ACD Solution A).
Specimen Preparation: Transfer 4 mL whole blood to an ARUP Standard Transport Tube. (Min: 1 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Specimens collected in Yellow (ACD Solution B). Clotted, grossly hemolyzed, or heparinized specimens.
Stability (collection to initiation of testing): Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable

Reference Interval: By report

Interpretive Data:
Purpose: To identify HLA-A, -B, -C, -DRB1, -DQA1, -DQB1 and -DPB1 allelic polymorphisms on specimens for transplant candidates and their donors.
Methodology: PCR followed by next generation sequencing of HLA-A, -B, -C, -DRB1, -DQA1, -DQB1, and -DPB1 loci.
Analytical Sensitivity & Specificity: >99 percent.
Limitations: Rare diagnostic errors can occur due to primer site mutations.
Test Results: Results are reported as HLA locus (A, B, C, DRB1, DQA1, DQB1, DPB1)* followed by the two-field (four digit) assigned allele.

Disclaimer Information:
HLA typing is performed by one or more of the following methodologies: next generation sequencing (NGS) and/or sequence specific probe hybridization (SSOP). The NMDP code provides possible rare alleles that cannot be ruled out. Additional unknown DNA polymorphisms could exist outside of the regions analyzed, the significance of which is not known.

This test was developed and its performance characteristics determined by the Histocompatibility& Immunogenetics laboratory at the University of Utah Health, and has not been cleared or approved by the U.S. Food and Drug Administration (FDA). The FDA has determined that such clearance or approval is not necessary. This test is used for clinical purposes; it should not be regarded as investigational or for research. The University of Utah Histocompatibility& Immunogenetics laboratory is certified under the Clinical Laboratory Improvement Amendments of 1988 (CLIA-88) as qualified to perform high complexity clinical laboratory testing. Performed at: Histocompatibility& Immunogenetics laboratory, University of Utah Health, 417 Wakara Way, Suite 3220, Salt Lake City, UT 84108.

CPT Code(s): 81378; 81382 x3

New York DOH approval pending. Call for status update.

HOTLINE NOTE: Refer to the Test Mix Addendum for interface build information.
New Test 3002062  HLA Class I and II Panel (A,B,C,DRB1, DRB345, DQA1, DQB1, DPA1, DPB1) by Next Generation Sequencing

**Methodology:** Polymerase Chain Reaction (PCR)/Massively Parallel Sequencing  
**Performed:** Varies  
**Reported:** 8-15 days

**Specimen Required:** Collect: Lavender (K₂ EDTA). Also acceptable: Yellow (ACD Solution A).  
**Specimen Preparation:** Transfer 4 mL whole blood to an ARUP Standard Transport Tube. (Min: 1 mL)  
**Storage/Transport Temperature:** Refrigerated.  
**Unacceptable Conditions:** Specimens collected in Yellow (ACD Solution B). Clotted, grossly hemolyzed, or heparinized specimens.  
**Stability (collection to initiation of testing):** Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable

**Reference Interval:** By report

**Interpretive Data:**

**Purpose:** To identify HLA-A, -B, -C, -DRB1, -DRB345, -DQA1, -DQB1, -DPA1, and -DPB1 allelic polymorphisms on specimens for transplant candidates and their donors.  
**Methodology:** PCR followed by next generation sequencing of HLA-A, -B, -C, -DRB1, -DRB345, -DQA1, -DQB1, -DPA1 and -DPB1 loci.  
**Analytical Sensitivity & Specificity:** >99 percent.  
**Limitations:** Rare diagnostic errors can occur due to primer site mutations.

**Test Results:** Results are reported as HLA locus (A, B, C, DRB1, DRB345, DQA1, DQB1, DPA1, DPB1)* followed by the two-field (four digit) assigned allele.

**Disclaimer Information:**  
HLA typing is performed by one or more of the following methodologies: next generation sequencing (NGS) and/or sequence specific probe hybridization (SSOP). The NMDP code provides possible rare alleles that cannot be ruled out. Additional unknown DNA polymorphisms could exist outside of the regions analyzed, the significance of which is not known.

This test was developed and its performance characteristics determined by the Histocompatibility& Immunogenetics laboratory at the University of Utah Health, and has not been cleared or approved by the U.S. Food and Drug Administration (FDA). The FDA has determined that such clearance or approval is not necessary. This test is used for clinical purposes; it should not be regarded as investigational or for research. The University of Utah Histocompatibility& Immunogenetics laboratory is certified under the Clinical Laboratory Improvement Amendments of 1988 (CLIA-88) as qualified to perform high complexity clinical laboratory testing. Performed at: Histocompatibility& Immunogenetics laboratory, University of Utah Health, 417 Wakara Way, Suite 3220, Salt Lake City, UT 84108.

**CPT Code(s):** 81382

New York DOH approval pending. Call for status update.

**HOTLINE NOTE:** Refer to the Test Mix Addendum for interface build information.
Methodology: Polymerase Chain Reaction (PCR)/Massively Parallel Sequencing
Performed: Varies
Reported: 8-15 days

Specimen Required: Collect: Lavender (K$_2$ EDTA). Also acceptable: Yellow (ACD Solution A).
Specimen Preparation: Transfer 4 mL whole blood to an ARUP Standard Transport Tube. (Min: 1 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Specimens collected in Yellow (ACD Solution B). Clotted, grossly hemolyzed, or heparinized specimens.
Stability (collection to initiation of testing): Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable

Reference Interval: By report

Interpretive Data:
Purpose: To identify HLA-A, -B, and -C allelic polymorphisms on specimens for transplant candidates and their donors.
Methodology: PCR followed by next generation sequencing of HLA-A, -B and -C loci.
Analytical Sensitivity & Specificity: >99 percent.
Limitations: Rare diagnostic errors can occur due to primer site mutations.
Test Results: Results are reported as HLA locus (A, B, or C)* followed by the two-field (four digit) assigned allele.

Disclaimer Information:
HLA typing is performed by one or more of the following methodologies: next generation sequencing (NGS) and/or sequence specific probe hybridization (SSOP). The NMDP code provides possible rare alleles that cannot be ruled out. Additional unknown DNA polymorphisms could exist outside of the regions analyzed, the significance of which is not known.

This test was developed and its performance characteristics determined by the Histocompatibility & Immunogenetics laboratory at the University of Utah Health, and has not been cleared or approved by the U.S. Food and Drug Administration (FDA). The FDA has determined that such clearance or approval is not necessary. This test is used for clinical purposes; it should not be regarded as investigational or for research. The University of Utah Histocompatibility & Immunogenetics laboratory is certified under the Clinical Laboratory Improvement Amendments of 1988 (CLIA-88) as qualified to perform high complexity clinical laboratory testing. Performed at: Histocompatibility & Immunogenetics laboratory, University of Utah Health, 417 Wakara Way, Suite 3220, Salt Lake City, UT 84108.

CPT Code(s): 81379

New York DOH approval pending. Call for status update.

HOTLINE NOTE: Refer to the Test Mix Addendum for interface build information.
New Test 3002308  
HLA Class II Panel (DRB1, DQA1 and DQB1) by Next Generation Sequencing

Click for Pricing

Methodology: Polymerase Chain Reaction (PCR)/Massively Parallel Sequencing
Performed: Varies
Reported: 8-15 days

Specimen Required: Collect: Lavender (K3 EDTA). Also acceptable: Yellow (ACD Solution A).
Specimen Preparation: Transfer 4 mL whole blood to an ARUP Standard Transport Tube. (Min: 1 mL).
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Specimens collected in Yellow (ACD Solution B). Clotted, grossly hemolyzed, or heparinized specimens.
Stability (collection to initiation of testing): Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable

Reference Interval: By report

Interpretive Data:
Purpose: To identify HLA-DRB1, DQA1 and DQB1 allelic polymorphisms on specimens for transplant candidates and their donors.
Methodology: PCR followed by next generation sequencing of HLA-DRB1, DQA1 and DQB1 loci.
Analytical Sensitivity & Specificity: >99 percent.
Limitations: Rare diagnostic errors can occur due to primer site mutations.
Test Results: Results are reported as HLA locus (DRB1, DQA1 or DQB1)* followed by the two-field (four digit) assigned allele.

Disclaimer Information:
HLA typing is performed by one or more of the following methodologies: next generation sequencing (NGS) and/or sequence specific probe hybridization (SSOP). The NMDP code provides possible rare alleles that cannot be ruled out. Additional unknown DNA polymorphisms could exist outside of the regions analyzed, the significance of which is not known.

This test was developed and its performance characteristics determined by the Histocompatibility & Immunogenetics laboratory at the University of Utah Health, and has not been cleared or approved by the U.S. Food and Drug Administration (FDA). The FDA has determined that such clearance or approval is not necessary. This test is used for clinical purposes; it should not be regarded as investigational or for research. The University of Utah Histocompatibility & Immunogenetics laboratory is certified under the Clinical Laboratory Improvement Amendments of 1988 (CLIA-88) as qualified to perform high complexity clinical laboratory testing. Performed at: Histocompatibility & Immunogenetics laboratory, University of Utah Health, 417 Wakara Way, Suite 3220, Salt Lake City, UT 84108.

CPT Code(s): 81382 x3

New York DOH approval pending. Call for status update.

HOTLINE NOTE: Refer to the Test Mix Addendum for interface build information.
**New Test** | **3002503** | Human Immunodeficiency Virus Type 1 (HIV-1) GenoSure Archive
---|---|---
Available Now
Click for Pricing

**Methodology:** Polymerase Chain Reaction (PCR)/Sequencing
**Performed:** Varies
**Reported:** 10-17 days

**Specimen Required:**
- **Collect:** Lavender (K$_2$ or K$_3$ EDTA).  
- **Storage/Transport Temperature:** CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.
- **Unacceptable Conditions:** Thawed specimens.

**Reference Interval:** By Report

**Note:** Procedure should be used for patients with documented HIV-1 infection and undetectable viral load or low level viremia.

**CPT Code(s):** 87900; 87901; 87906

New York DOH Approved.

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

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**New Test** | **3001242** | Human Immunodeficiency Virus Type 1 (HIV-1) GenoSure MG
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**Click for Pricing**

**Methodology:** Polymerase Chain Reaction/Sequencing
**Performed:** Varies
**Reported:** 9-18 days

**Specimen Required:**
- **Collect:** Lavender (EDTA) or plasma preparation tube (PPT).  
- **Specimen Preparation:** Separate from cells within 6 hours of collection. Transfer 5 mL plasma 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.
- **Unacceptable Conditions:** Thawed specimens.

**Reference Interval:** By report

**Note:** Procedure should be used for patients with documented HIV-1 infection and viral loads greater than 500 copies/mL.

**CPT Code(s):** 87900; 87901

New York DOH Approved.

**HOTLINE NOTE:** Refer to the Test Mix Addendum for interface build information.
New Test 3000882 Human Immunodeficiency Virus Type 1 (HIV-1) PhenoSense HIV PHENO

Methodology: Polymerase chain reaction (PCR) amplification and viral culture
Performed: Varies
Reported: 19-26 days

Specimen Required: Collect: Lavender (K₂ EDTA) or Plasma Preparation Tube (PPT).
Specimen Preparation: Separate from cells within 6 hours of collection. Transfer 3 mL plasma to an ARUP Standard Transport Tube and freeze immediately. (Min: 3 mL)
Storage/Transport Temperature: CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.
Unacceptable Conditions: Thawed specimens.
Stability (collection to initiation of testing): Ambient: 6 hours; Refrigerated: 24 hours; Frozen: 2 weeks

Reference Interval: By report
CPT Code(s): 87903; 87904 x11

New York DOH Approved.

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

New Test 3001186 Human Immunodeficiency Virus Type 1 (HIV-1) PhenoSense GT HIVPS PLUS

Methodology: Phenotyping/Genotyping
Performed: Varies
Reported: 17-21 days

Specimen Required: Collect: Lavender (EDTA) or Plasma Preparation Tube (PPT).
Specimen Preparation: Separate from cells within 6 hours of collection. Transfer 5 mL plasma 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.
Unacceptable Conditions: Thawed specimens.
Stability (collection to initiation of testing): Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen: 2 weeks

Reference Interval: By report
Note: Procedure should be used for patients with documented HIV-1 infection and viral loads greater than 500 copies/mL.
CPT Code(s): 87900; 87901; 87903; 87904 x14; 87906

New York DOH Approved.

HOTLINE NOTE: Refer to the Test Mix Addendum for interface build information.
**3002008**  Human Papillomavirus (HPV) High Risk by in situ Hybridization, Paraffin  
HPVHR ISH

**Specimen Required:**
- Collect: Tissue.

**Specimen Preparation:**
- Formalin fix (10 percent neutral buffered formalin) and paraffin-embed tissue. Transport tissue block or 5 unstained 5-micron slides in a tissue transport kit (recommended but not required) (ARUP supply #47808). Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787. (Min: 4 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: Specimens fixed or processed in alternative fixatives (alcohol, Prefer) or heavy metal fixatives (B-4 or B-5). Frozen specimens. Decalcified specimens.

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

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**3002009**  Human Papillomavirus (HPV) Low Risk by in situ Hybridization, Paraffin  
HPVLR ISH

**Specimen Required:**
- Collect: Tissue.

**Specimen Preparation:**
- Formalin fix (10 percent neutral buffered formalin) and paraffin embed tissue. Transport tissue block or 5 unstained positively charged, 5-micron slides in a tissue transport kit (recommended but not required) (ARUP supply #47808) available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787. (Min: 4 slides) Protect paraffin block and/or slides from excessive heat.

**Storage/Transport Temperature:** Room temperature. Also acceptable: Refrigerated. Ship in cooled container during summer months.

**Remarks:**
- Include surgical pathology report.
- Unacceptable Conditions: Specimens fixed or processed in alternative fixatives (alcohol, Prefer) or heavy metal fixatives (B-4 or B-5). Frozen specimens. Decalcified specimens.

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

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**2011933**  Human Papillomavirus (HPV), High Risk with 16 and 18 Genotype by PCR, 
SurePath  
SP HPV1618

**HOTLINE NOTE:** There is a price change associated with this test. Please contact ARUP Client Services at (800) 522-2787 for additional information.

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**2011940**  Human Papillomavirus (HPV), High Risk with 16 and 18 Genotype by PCR, 
ThinPrep  
TP HPV1618

**HOTLINE NOTE:** There is a price change associated with this test. Please contact ARUP Client Services at (800) 522-2787 for additional information.

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**3000201**  5-Hydroxyindoleacetic acid (5-HIAA), Plasma  
5 HIAA PLA

**Performed:** Varies

**Reported:** 14-21 days

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**0050049**  Immunofixation Electrophoresis, Immunoglobulin D and Immunoglobulin E, 
Serum  
IFE D/E

**Performed:** Sun-Sat

**Reported:** 1-5 days

**Specimen Required:**
- Collect: Serum separator tube.

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

**Storage/Transport Temperature:** Refrigerated.

**Unacceptable Conditions:** Plasma.

**Stability (collection to initiation of testing):**
- After separation from cells: Ambient: Unacceptable; Refrigerated: 1 week; Frozen: 1 month
**2012572**  
**Immunofixation Electrophoresis, Serum**  
**IFE Q GEL**

**Performed:** Sun-Sat  
**Reported:** 1-5 days

**Specimen Required:**  
Collect: Serum separator tube.  
Specimen Preparation: Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.5 mL)  
Storage/Transport Temperature: Refrigerated.  
Unacceptable Conditions: Plasma.  
Stability (collection to initiation of testing): After separation from cells: Ambient: Unacceptable; Refrigerated: 1 week; Frozen: 1 month

**HOTLINE NOTE:** There is a clinically significant charting name change associated with this test.  
Change the charting name for component 0050272, Immunofix Electrophoresis Gel from Immunofix Electrophoresis Gel to Immunofix Electrophoresis Serum.  
Change the charting name for component 2012601, EER Immunofix Electrophoresis Gel from EER Immunofix Electrophoresis Gel to EER Immunofix Electrophoresis Serum.

**New Test**  
**3002628**  
**Interferon gamma, Plasma**  
**IFNG PLA**

**Performed:** Sun-Sat  
**Reported:** 1-4 days

**Specimen Required:**  
Collect: Green (lithium heparin).  
Specimen Preparation: Separate plasma from cells ASAP or within 2 hours of collection. Transfer 1 mL plasma to an ARUP Standard Transport Tube. (Min: 0.4 mL)  
Storage/Transport Temperature: CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered. Ship in an ARUP Standard Transport Tube.  
Unacceptable Conditions: Refrigerated specimens. Contaminated or heat-inactivated specimens.  
Stability (collection to initiation of testing): After separation from cells: Ambient: 30 minutes; Refrigerated: Unacceptable; Frozen: 1 year

**Reference Interval:**  
10.4 pg/mL or less

**Interpretive Data:**  
Results are used to understand the pathophysiology of immune, infectious, or inflammatory disorders, or may be used for research purposes.  
See Compliance Statement B: www.aruplab.com/CS

**Note:** Cytokine levels may demonstrate diurnal variation. For longitudinal comparison, it is recommended that cytokine levels be determined at the same time of day.

**CPT Code(s):** 83520

New York DOH Approved.

**HOTLINE NOTE:** Refer to the Test Mix Addendum for interface build information.
**HOTLINE: Effective May 18, 2020**

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**0051531  Interferon gamma, Serum**

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

**Specimen Preparation:** Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.4 mL)

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

**Ship in an ARUP Standard Transport Tube.**

**Unacceptable Conditions:** Refrigerated specimens. Contaminated or heat-inactivated specimens.

**Stability (collection to initiation of testing):** After separation from cells: Ambient: 30 minutes; Refrigerated: Unacceptable; Frozen: 1 year

**Reference Interval:**

Effective May 18, 2020

4.2 pg/mL or less

**Note:** Cytokine levels may demonstrate diurnal variation. For longitudinal comparison, it is recommended that cytokine levels be determined at the same time of day.

**HOTLINE NOTE:** There is a clinically significant charting name change associated with this test.

Change the charting name for component 0051531, Interferon gamma from Interferon gamma to Interferon gamma, Serum.

There is a numeric map change associated with this test.

Change the numeric map for component 0051531, Interferon gamma, Serum from XXXXXXX to XXXXXX.X.

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**New Test**

**3002629  Interleukin 1 beta, Plasma**

**Methodology:** Quantitative Multiplex Bead Assay

**Performed:** Sun-Sat

**Reported:** 1-4 days

**Specimen Required:** Collect: Green (lithium heparin).

**Specimen Preparation:** Separate plasma from cells ASAP or within 2 hours of collection. Transfer 1 mL plasma to an ARUP Standard Transport Tube. (Min: 0.4 mL)

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

**Ship in an ARUP Standard Transport Tube.**

**Unacceptable Conditions:** Refrigerated specimens. Contaminated or heat-inactivated specimens.

**Stability (collection to initiation of testing):** After separation from cells: Ambient: 30 minutes; Refrigerated: Unacceptable; Frozen: 1 year

**Reference Interval:**

7.4 pg/mL or less

**Interpretive Data:**

Results are used to understand the pathophysiology of immune, infectious, or inflammatory disorders, or may be used for research purposes.

See Compliance Statement B: [www.aruplab.com/CS](http://www.aruplab.com/CS)

**Note:** Cytokine levels may demonstrate diurnal variation. For longitudinal comparison, it is recommended that cytokine levels be determined at the same time of day.

**CPT Code(s):** 83520

New York DOH Approved.

**HOTLINE NOTE:** Refer to the Test Mix Addendum for interface build information.
**0051536**  
Interleukin 1 beta, Serum

**Specimen Required:**  
Collect: Serum separator tube (SST), or plain red.  
Specimen Preparation: Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.4 mL)  
Storage/Transport Temperature: CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.  
**Ship in an ARUP Standard Transport Tube.**

Unacceptable Conditions: Refrigerated specimens. Contaminated or heat-inactivated specimens.  
Stability (collection to initiation of testing): After separation from cells: Ambient: 30 minutes; Refrigerated: Unacceptable; Frozen: 1 year

**Reference Interval:**  
Effective May 18, 2020  
6.7 pg/mL or less

**Note:** Cytokine levels may demonstrate diurnal variation. For longitudinal comparison, it is recommended that cytokine levels be determined at the same time of day.

**HOTLINE NOTE:** There is a clinically significant charting name change associated with this test. 
Change the charting name for component 0051536, Interleukin 1 beta from Interleukin 1 beta to Interleukin 1 beta, Serum. 
There is a numeric map change associated with this test. 
Change the numeric map for component 0051536, Interleukin 1 beta, Serum from XXXXXX to XXXXXX.X.

**New Test**  
3002623  
Interleukin 10, Plasma

**Methodology:** Quantitative Multiplex Bead Assay

**Performed:** Sun-Sat

**Reported:** 1-4 days

**Specimen Required:**  
Collect: Green (lithium heparin).  
Specimen Preparation: Separate plasma from cells ASAP or within 2 hours of collection. Transfer 1 mL plasma to an ARUP Standard Transport Tube. (Min: 0.4 mL)  
Storage/Transport Temperature: CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.  
**Ship in an ARUP Standard Transport Tube.**

Unacceptable Conditions: Refrigerated specimens. Contaminated or heat-inactivated specimens.  
Stability (collection to initiation of testing): After separation from cells: Ambient: 30 minutes; Refrigerated: Unacceptable; Frozen: 1 year

**Reference Interval:**  
5.3 pg/mL or less

**Interpretive Data:**  
Results are used to understand the pathophysiology of immune, infectious, or inflammatory disorders, or may be used for research purposes.  
See Compliance Statement B: www.aruplab.com/CS

**Note:** Cytokine levels may demonstrate diurnal variation. For longitudinal comparison, it is recommended that cytokine levels be determined at the same time of day.

**CPT Code(s):** 83520

New York DOH Approved.

**HOTLINE NOTE:** Refer to the Test Mix Addendum for interface build information.
### Interleukin 10, Serum

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

**Specimen Preparation:** Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.4 mL)

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

**Ship in an ARUP Standard Transport Tube:**

**Unacceptable Conditions:** Refrigerated specimens. Contaminated or heat-inactivated specimens.

**Stability (collection to initiation of testing):** After separation from cells: Ambient: 30 minutes; Refrigerated: Unacceptable; Frozen: 1 year

**Reference Interval:**

Effective May 18, 2020

2.8 pg/mL or less

**Note:** Cytokine levels may demonstrate diurnal variation. For longitudinal comparison, it is recommended that cytokine levels be determined at the same time of day.

**HOTLINE NOTE:** There is a clinically significant charting name change associated with this test.

Change the charting name for component 0051534, Interleukin 10 from Interleukin 10 to Interleukin 10, Serum.

There is a numeric map change associated with this test.

Change the numeric map for component 0051534, Interleukin 10, Serum from XXXXXX to XXXXXX.X.

### Interleukin 12, Plasma

**New Test 3002624 Interleukin 12, Plasma IL12 PLA**

**Methodology:** Quantitative Multiplex Bead Assay

**Performed:** Sun-Sat

**Reported:** 1-4 days

**Specimen Required:** Collect: Green (lithium heparin).

**Specimen Preparation:** Separate plasma from cells ASAP or within 2 hours of collection. Transfer 1 mL plasma to an ARUP Standard Transport Tube. (Min: 0.4 mL)

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

**Ship in ARUP Standard Transport Tube:**

**Unacceptable Conditions:** Refrigerated specimens. Contaminated or heat-inactivated specimens.

**Stability (collection to initiation of testing):** After separation from cells: Ambient: 30 minutes; Refrigerated: Unacceptable; Frozen: 1 year

**Reference Interval:**

4.7 pg/mL or less

**Interpretive Data:**

Results are used to understand the pathophysiology of immune, infectious, or inflammatory disorders, or may be used for research purposes.

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

**Note:** Cytokine levels may demonstrate diurnal variation. For longitudinal comparison, it is recommended that cytokine levels be determined at the same time of day.

**CPT Code(s):** 83520

New York DOH Approved.

**HOTLINE NOTE:** Refer to the Test Mix Addendum for interface build information.
Interleukin 12, Serum

**Specimen Required:** Collect: Serum separator tube, or plain red.
Specimen Preparation: Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.4 mL)
Storage/Transport Temperature: CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.
Ship in an ARUP Standard Transport Tube.
Unacceptable Conditions: Refrigerated specimens. Contaminated or heat-inactivated specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: 30 minutes; Refrigerated: Unacceptable; Frozen: 1 year

**Reference Interval:**
Effective May 18, 2020
1.9 pg/mL or less

**Note:** Cytokine levels may demonstrate diurnal variation. For longitudinal comparison, it is recommended that cytokine levels be determined at the same time of day.

**HOTLINE NOTE:** There is a clinically significant charting name change associated with this test.
Change the charting name for component 0051530, Interleukin 12 from Interleukin 12 to Interleukin 12, Serum.
Change the numeric map for component 0051530, Interleukin 12, Serum from XXXXXXX to XXXXX.X.

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Interleukin 13, Plasma

**Specimen Required:** Collect: Green (lithium heparin).
Specimen Preparation: Separate plasma from cells ASAP or within 2 hours of collection. Transfer 1 mL plasma to an ARUP Standard Transport Tube. (Min: 0.4 mL)
Storage/Transport Temperature: CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.
Ship in ARUP Standard Transport Tube.
Unacceptable Conditions: Refrigerated specimens. Contaminated or heat-inactivated specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: 30 minutes; Refrigerated: Unacceptable; Frozen: 1 year

**Reference Interval:**
5.3 pg/mL or less

**Interpretive Data:**
Results are used to understand the pathophysiology of immune, infectious, or inflammatory disorders, or may be used for research purposes.
See Compliance Statement B: www.aruplab.com/CS

**Note:** Cytokine levels may demonstrate diurnal variation. For longitudinal comparison, it is recommended that cytokine levels be determined at the same time of day.

**CPT Code(s):** 83520

New York DOH Approved.

**HOTLINE NOTE:** Refer to the Test Mix Addendum for interface build information.
0051535  Interleukin 13, Serum  IL13 DO

**Specimen Required:**
Collect: Serum separator tube, or plain red.
Specimen Preparation: Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.4 mL)
Storage/Transport Temperature: CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.

**Ship in an ARUP Standard Transport Tube.**
Unacceptable Conditions: Refrigerated specimens. Contaminated or heat-inactivated specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: 30 minutes; Refrigerated: Unacceptable; Frozen: 1 year

**Reference Interval:**
Effective May 18, 2020
2.3 pg/mL or less

**Note:** Cytokine levels may demonstrate diurnal variation. For longitudinal comparison, it is recommended that cytokine levels be determined at the same time of day.

**HOTLINE NOTE:** There is a clinically significant charting name change associated with this test.
Change the charting name for component 0051535, Interleukin 13 from Interleukin 13 to Interleukin 13, Serum.
Change the numeric map for component 0051535, Interleukin 13, Serum from XXXXXXX to XXXXXXX.X.

**New Test  3002626  Interleukin 17, Plasma  IL17 PLA**

**Click for Pricing**

**Methodology:**  Quantitative Multiplex Bead Assay
**Performed:**  Sun-Sat
** Reported:**  1-4 days

**Specimen Required:**
Collect: Green (Lithium Heparin).
Specimen Preparation: Separate plasma from cells ASAP or within 2 hours of collection. Transfer 1 mL plasma to an ARUP Standard Transport Tube. (Min: 0.4 mL)
Storage/Transport Temperature: CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.

**Ship sample in an ARUP Standard Transport Tube.**
Unacceptable Conditions: Contaminated or heat-inactivated specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: 30 minutes; Refrigerated: Unacceptable; Frozen: 1 year

**Reference Interval:**
2.2 pg/mL or less

**Interpretive Data:**
Results are used to understand the pathophysiology of immune, infectious, or inflammatory disorders, or may be used for research purposes.
See Compliance Statement B: www.aruplab.com/CS

**Note:** Cytokine levels may demonstrate diurnal variation. For longitudinal comparison, it is recommended that cytokine levels be determined at the same time of day.

**CPT Code(s):**  83520

New York DOH Approved.

**HOTLINE NOTE:** Refer to the Test Mix Addendum for interface build information.
**Specimen Required:** Collect: Serum Separator Tube (SST), or Plain Red.

- **Specimen Preparation:** Separate from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.4 mL)
- **Storage/Transport Temperature:** CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.
- **Ship in an ARUP Standard Transport Tube.**
- **Unacceptable Conditions:** Contaminated or heat-inactivated specimens.
- **Stability (collection to initiation of testing):** After separation from cells: Ambient: 30 minutes; Refrigerated: Unacceptable; Frozen: 1 year

**Reference Interval:**

Effective May 18, 2020

1.4 pg/mL or less

**Note:** Cytokine levels may demonstrate diurnal variation. For longitudinal comparison, it is recommended that cytokine levels be determined at the same time of day.

**HOTLINE NOTE:** There is a clinically significant charting name change associated with this test.

- Change the charting name for component 2013113, Interleukin 17 from Interleukin 17 to Interleukin 17, Serum.
- There is a numeric map change associated with this test.
- Change the numeric map for component 2013113, Interleukin 17, Serum from XXXXXXXX to XXXXXX.X.

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**New Test**

**3002631** Interleukin 2 Receptor, Soluble, Plasma

**Methodology:** Quantitative Multiplex Bead Assay

**Performed:** Sun-Sat

**Reported:** 1-4 days

**Specimen Required:** Collect: Green (lithium heparin).

- **Specimen Preparation:** Separate plasma from cells ASAP or within 2 hours of collection. Transfer 1 mL plasma to an ARUP Standard Transport Tube. (Min: 0.4 mL)
- **Storage/Transport Temperature:** CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.
- **Ship in an ARUP Standard Transport Tube.**
- **Unacceptable Conditions:** Refrigerated specimens. Contaminated or heat-inactivated specimens.
- **Stability (collection to initiation of testing):** After separation from cells: Ambient: 30 minutes; Refrigerated: Unacceptable; Frozen: 1 year

**Reference Interval:**

266.5 pg/mL - 1410.4 pg/mL

**Interpretive Data:**

Results are used to understand the pathophysiology of immune, infectious, or inflammatory disorders, or may be used for research purposes.

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

**Note:** Cytokine levels may demonstrate diurnal variation. For longitudinal comparison, it is recommended that cytokine levels be determined at the same time of day.

**CPT Code(s):** 83520

New York DOH Approved.

**HOTLINE NOTE:** Refer to the Test Mix Addendum for interface build information.
**0051529**  
Interleukin 2 Receptor, Soluble, Serum

**Specimen Required:** Collect: Serum separator tube, or plain red.  
**Specimen Preparation:** Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.4 mL) 
**Storage/Transport Temperature:** CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered. 
**Ship in an ARUP Standard Transport Tube.** 
**Unacceptable Conditions:** Refrigerated specimens. Contaminated or heat-inactivated specimens. 
**Stability (collection to initiation of testing):** After separation from cells: Ambient: 30 minutes; Refrigerated: Unacceptable; Frozen: 1 year

**Reference Interval:** 
Effective May 18, 2020 
175.3 pg/mL - 858.2 pg/mL

**Note:** Cytokine levels may demonstrate diurnal variation. For longitudinal comparison, it is recommended that cytokine levels be determined at the same time of day.

**HOTLINE NOTE:** There is a clinically significant charting name change associated with this test. 
Change the charting name for component 0051529, Interleukin 2 Receptor (CD25), Soluble from Interleukin 2 Receptor (CD25), Soluble, Serum. 
There is a numeric map change associated with this test. 
Change the numeric map for component 0051529, Interleukin 2 Receptor, Soluble, Serum from XXXXXX to XXXXXXX.X.

**New Test**  
**3002630**  
Interleukin 2, Plasma

**Methodology:** Quantitative Multiplex Bead Assay

**Performed:** Sun-Sat

**Reported:** 1-4 days

**Specimen Required:** Collect: Green (lithium heparin).  
**Specimen Preparation:** Separate plasma from cells ASAP or within 2 hours of collection. Transfer 1 mL plasma to an ARUP Standard Transport Tube. (Min: 0.4 mL) 
**Storage/Transport Temperature:** CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered. 
**Ship in an ARUP Standard Transport Tube.** 
**Unacceptable Conditions:** Refrigerated specimens. Contaminated or heat-inactivated specimens.

**Stability (collection to initiation of testing):** After separation from cells: Ambient: 30 minutes; Refrigerated: Unacceptable; Frozen: 1 year

**Reference Interval:** 
2.1 pg/mL or less

**Interpretive Data:** 
Results are used to understand the pathophysiology of immune, infectious, or inflammatory disorders, or may be used for research purposes. 
See Compliance Statement B: www.aruplab.com/CS

**Note:** Cytokine levels may demonstrate diurnal variation. For longitudinal comparison, it is recommended that cytokine levels be determined at the same time of day.

**CPT Code(s):** 83520

New York DOH Approved.

**HOTLINE NOTE:** Refer to the Test Mix Addendum for interface build information.
Specimen Required: Collect: Serum separator tube, or plain red.
Specimen Preparation: Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.4 mL)
Storage/Transport Temperature: CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.
Ship in an ARUP Standard Transport Tube.
Unacceptable Conditions: Refrigerated specimens. Contaminated or heat-inactivated specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: 30 minutes; Refrigerated: Unacceptable; Frozen: 1 year

Reference Interval:
Effective May 18, 2020
2.1 pg/mL or less

Note: Cytokine levels may demonstrate diurnal variation. For longitudinal comparison, it is recommended that cytokine levels be determined at the same time of day.

HOTLINE NOTE: There is a clinically significant charting name change associated with this test.
Change the charting name for component 0051588, Interleukin 2 from Interleukin 2 to Interleukin 2, Serum.
There is a numeric map change associated with this test.
Change the numeric map for component 0051588, Interleukin 2, Serum from XXXXXX to XXXXX.X.

New Test 3002622 Interleukin 4, Plasma

Methodology: Quantitative Multiplex Bead Assay
Performed: Sun-Sat
Reported: 1-4 days

Specimen Required: Collect: Green (lithium heparin).
Specimen Preparation: Separate plasma from cells ASAP or within 2 hours of collection. Transfer 1 mL plasma to an ARUP Standard Transport Tube. (Min: 0.4 mL)
Storage/Transport Temperature: CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.
Ship in an ARUP Standard Transport Tube.
Unacceptable Conditions: Refrigerated specimens. Contaminated or heat-inactivated specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: 30 minutes; Refrigerated: Unacceptable; Frozen: 1 year

Reference Interval:
2.5 pg/mL or less

Interpretive Data:
Results are used to understand the pathophysiology of immune, infectious, or inflammatory disorders, or may be used for research purposes.
See Compliance Statement B: www.aruplab.com/CS

Note: Cytokine levels may demonstrate diurnal variation. For longitudinal comparison, it is recommended that cytokine levels be determined at the same time of day.

CPT Code(s): 83520

New York DOH Approved.

HOTLINE NOTE: Refer to the Test Mix Addendum for interface build information.
### 0051532 Interleukin 4, Serum

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

**Specimen Preparation:** Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.4 mL)

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

**Ship in an ARUP Standard Transport Tube.**

**Unacceptable Conditions:** Refrigerated specimens. Contaminated or heat-inactivated specimens.

**Stability (collection to initiation of testing):** After separation from cells: Ambient: 30 minutes; Refrigerated: Unacceptable; Frozen: 1 year

### Reference Interval:

- Effective May 18, 2020
- 2.2 pg/mL or less

**Note:** Cytokine levels may demonstrate diurnal variation. For longitudinal comparison, it is recommended that cytokine levels be determined at the same time of day.

**HOTLINE NOTE:** There is a clinically significant charting name change associated with this test.

Change the charting name for component 0051532, Interleukin 4 from Interleukin 4 to Interleukin 4, Serum.

There is a numeric map change associated with this test.

Change the numeric map for component 0051532, Interleukin 4, Serum from XXXXXX to XXXXXXX X.

### New Test 3002621 Interleukin 5, Plasma

**Methodology:** Quantitative Multiplex Bead Assay

**Performed:** Sun-Sat

**Reported:** 1-4 days

**Specimen Required:** Collect: Green (lithium heparin).

**Specimen Preparation:** Separate plasma from cells ASAP or within 2 hours of collection. Transfer 1 mL plasma to an ARUP Standard Transport Tube. (Min: 0.4 mL)

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

**Ship sample in ARUP Standard Transport Tube.**

**Unacceptable Conditions:** Refrigerated specimens. Contaminated or heat-inactivated specimens.

**Stability (collection to initiation of testing):** After separation from cells: Ambient: 30 minutes; Refrigerated: Unacceptable; Frozen: 1 year

### Reference Interval:

- 2.1 pg/mL or less

### Interpretive Data:

Results are used to understand the pathophysiology of immune, infectious, or inflammatory disorders, or may be used for research purposes.

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

**Note:** Cytokine levels may demonstrate diurnal variation. For longitudinal comparison, it is recommended that cytokine levels be determined at the same time of day.

**CPT Code(s):** 83520

New York DOH Approved.

**HOTLINE NOTE:** Refer to the Test Mix Addendum for interface build information.
0051533  Interleukin 5, Serum

Specimen Required: Collect: Serum separator tube, or plain red. Specimen Preparation: Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.4 mL) Storage/Transport Temperature: CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered. Ship in an ARUP Standard Transport Tube.

Specimen Preparation: Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.4 mL)

Reference Interval: Effective May 18, 2020
2.1 pg/mL or less

Note: Cytokine levels may demonstrate diurnal variation. For longitudinal comparison, it is recommended that cytokine levels be determined at the same time of day.

HOTLINE NOTE: There is a clinically significant charting name change associated with this test.
Change the charting name for component 0051533, Interleukin 5 from Interleukin 5 to Interleukin 5, Serum.
Change the numeric map for component 0051533, Interleukin 5, Serum from XXXXXX to XXXXXX.X.

New Test 3002620 Interleukin 6, Plasma

Methodology: Quantitative Multiplex Bead Assay
Performed: Sun-Sat
Reported: 1-4 days

Specimen Required: Collect: Green (lithium heparin). Specimen Preparation: Separate plasma from cells ASAP or within 2 hours of collection. Transfer 1 mL plasma to an ARUP Standard Transport Tube. (Min: 0.4 mL)
Storage/Transport Temperature: CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered. Ship in an ARUP Standard Transport Tube.

Specimen Preparation: Separate plasma from cells ASAP or within 2 hours of collection. Transfer 1 mL plasma to an ARUP Standard Transport Tube. (Min: 0.4 mL)

Reference Interval: 2.5 pg/mL or less

Interpretive Data:
Results are used to understand the pathophysiology of immune, infectious, or inflammatory disorders, or may be used for research purposes.
See Compliance Statement B: www.aruplab.com/CS

Note: Cytokine levels may demonstrate diurnal variation. For longitudinal comparison, it is recommended that cytokine levels be determined at the same time of day.

CPT Code(s): 83520

New York DOH Approved.

HOTLINE NOTE: Refer to the Test Mix Addendum for interface build information.
**Interleukin 6, Serum**

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

**Specimen Preparation:** Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.4 mL)

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

**Ship in an ARUP Standard Transport Tube.**

**Unacceptable Conditions:** Refrigerated specimens. Contaminated or heat-inactivated specimens.

**Stability (collection to initiation of testing):** After separation from cells: Ambient: 30 minutes; Refrigerated: Unacceptable; Frozen: 1 year

**Reference Interval:**

- Effective May 18, 2020
- 2.0 pg/mL or less

**Note:** Cytokine levels may demonstrate diurnal variation. For longitudinal comparison, it is recommended that cytokine levels be determined at the same time of day.

**HOTLINE NOTE:** There is a clinically significant charting name change associated with this test.

- Change the charting name for component 0051537, Interleukin 6 from Interleukin 6 to Interleukin 6, Serum.
- There is a numeric map change associated with this test.
  - Change the numeric map for component 0051537, Interleukin 6, Serum from XXXXXX to XXXXX.X.

**New Test 3002619 Interleukin 8, Plasma**

**Methodology:** Quantitative Multiplex Bead Assay

**Performed:** Sun-Sat

**Reported:** 1-4 days

**Specimen Required:** Collect: Green (lithium heparin).

**Specimen Preparation:** Separate plasma from cells ASAP or within 2 hours of collection. Transfer 1 mL plasma to an ARUP Standard Transport Tube. (Min: 0.4 mL)

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

**Ship in an ARUP Standard Transport Tube.**

**Unacceptable Conditions:** Refrigerated specimens. Contaminated or heat-inactivated specimens.

**Stability (collection to initiation of testing):** After separation from cells: Ambient: 30 minutes; Refrigerated: Unacceptable; Frozen: 1 year

**Reference Interval:** 9.4 pg/mL or less

**Interpretive Data:** Results are used to understand the pathophysiology of immune, infectious, or inflammatory disorders, or may be used for research purposes.

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

**Note:** Cytokine levels may demonstrate diurnal variation. For longitudinal comparison, it is recommended that cytokine levels be determined at the same time of day.

**CPT Code(s):** 83520

New York DOH Approved.

**HOTLINE NOTE:** Refer to the Test Mix Addendum for interface build information.
**Specimen Required:**
Collect: Serum separator tube, or plain red.

**Specimen Preparation:** Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.4 mL)

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

**Ship in an ARUP Standard Transport Tube.**

**Unacceptable Conditions:** Refrigerated specimens. Contaminated or heat-inactivated specimens.

**Stability (collection to initiation of testing):**
- After separation from cells: Ambient: 30 minutes; Refrigerated: Unacceptable; Frozen: 1 year

**Reference Interval:**
Effective May 18, 2020
3.0 pg/mL or less

**Note:** Cytokine levels may demonstrate diurnal variation. For longitudinal comparison, it is recommended that cytokine levels be determined at the same time of day.

**HOTLINE NOTE:** There is a clinically significant charting name change associated with this test.
Change the charting name for component 0051538, Interleukin 8 from Interleukin 8 to Interleukin 8, Serum.
There is a numeric map change associated with this test.
Change the numeric map for component 0051538, Interleukin 8, Serum from XXXXXX to XXXXXX.X.

**3001866**  
**Krebs von den Lungen-6**  
**Performed:** Thu  
**Reported:** 1-8 days

**3001780**  
**Leukemia/Lymphoma Phenotyping Evaluation by Flow Cytometry**  
**LL PANEL**

**Note:** Flow cytometric leukemia and lymphoma analysis may aid in identifying the tumor lineage for diagnostic and prognostic purposes. After review of the clinical history and morphology, a panel of markers is selected for each case by a board-certified hematopathologist. In most cases, the lineage can be identified as T-cell, B-cell, or myeloid and a diagnosis or differential diagnosis can be made.

**Available Markers:**
- T-cell: CD1, CD2, CD3, CD4, CD5, CD7, CD8, TCR alpha-beta, TCR gamma-delta, Cytoplasmic CD3
- B-cell: CD10, CD19, CD20, CD22, CD23, CD103, surface Kappa, surface Lambda, FMC7, Cytoplasmic Kappa, Cytoplasmic Lambda
- Myelo/Mono: CD11b, CD13, CD14 (Mo2), CD14 (MY4), CD15, CD33, CD64, CD117, myeloperoxidase

*Not all markers will be reported in all cases.* Requests for specific markers to be run must be listed on manual requisition or by footnote for electronic orders. We do not offer individual marker identification separately outside of the markers in this panel.

The report will include a pathologist interpretation and a marker interpretation range corresponding to CPT codes of 2-8 markers, 9-15 markers, and 16+ markers interpreted. Charges apply per marker.

**3001321**  
**Lymphocyte Proliferation, Mitogen Induced, by Flow Cytometry (48-Hr Critical Room Temp)**  
**LPM FLOW**

**HOTLINE NOTE:** Name change only.
New Test
Available Now
Click for Pricing

**3002539**
Lymphoid Enhancing Factor 1 by Immunohistochemistry (LEF1 IHC)

**Methodology:**
Immunohistochemistry

**Performed:**
Mon-Fri

**Reported:**
1-3 days

**Specimen Required:**
Collect: Tissue. 
Specimen Preparation: Formalin fix (10 percent neutral buffered formalin) and paraffin embed specimen (cells must be prepared into a cellblock). Protect paraffin block and/or slides from excessive heat. Transport tissue block or 5 unstained (3- to 5-micron thick sections), positively charged slides in a tissue transport kit (recommended but not required). (ARUP supply #47808) available online through eSupply using ARUP Connect or contact ARUP Client Services at (800) 522-2787. (Min: 2 slides) If sending precut slides, do not oven bake.

Storage/Transport Temperature: Room temperature. Also acceptable: Refrigerated. Ship in cooled container during summer months.

**Unacceptable Conditions:** Specimens submitted with non-representative tissue type. Depleted specimens. 

**Interpretative Data:**
See Compliance Statement B: www.aruplab.com/CS

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

**CPT Code(s):**
88342

New York DOH Approved.

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

**0049302**
Mismatch Repair by Immunohistochemistry (MSI)

**Specimen Required:**
Collect: Tumor tissue.
Specimen Preparation: Formalin fix (10 percent neutral buffered formalin is preferred) and paraffin embed specimen. If sending precut slides, do not oven bake. Transport tissue block or 10 unstained (3-5 micron thick sections), positively charged slides in a tissue transport kit (ARUP supply #47808) available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787. (Min: 5 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:** Only tissue that is clearly carcinoma (established by histological criteria) should be tested. Include surgical pathology report. Submit electronic request. If you do not have electronic ordering capability, use an ARUP requisition form complete with an ARUP client number. For additional technical details, please contact ARUP Client Services at (800) 522-2787.

**Unacceptable Conditions:** Frozen specimens. Specimens fixed or processed in alternative fixatives (alcohol, Prefer) or heavy metal fixatives (B-4 or B-5). Depleted or no tumor in tissue. Specimens submitted with non-representative tissue type. Decalcified specimens.

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

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

**Specimen Required:**
Collect: Serum Separator Tube (SST).
Specimen Preparation: Separate 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. Room temperature specimens.

**Stability (collection to initiation of testing):** After separation from cells: Ambient: Unacceptable; Refrigerated: 1 week; Frozen: 1 month
New Test 3002568 Monoclonal Protein Study, Serum IFE SPEP

Methodology: Qualitative Immunofixation Electrophoresis/Quantitative Capillary Electrophoresis/Quantitative Spectrophotometry
Performed: Sun-Sat
Reported: 1-5 days

Specimen Required: Collect: Serum Separator Tube (SST).
Specimen Preparation: Separate from cells ASAP or within 2 hours of collection. Transfer 1.5 mL serum to an ARUP Standard Transport Tube. (Min: 1 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Plasma.
Stability (collection to initiation of testing): After separation from cells: Ambient: Unacceptable; Refrigerated: 1 week; Frozen: 1 month

Reference Interval:

<table>
<thead>
<tr>
<th>Test Number</th>
<th>Components</th>
<th>Reference Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>0050640</td>
<td>Protein Electrophoresis, Serum</td>
<td>Effective August 19, 2019</td>
</tr>
<tr>
<td></td>
<td>Total Protein, Serum</td>
<td>Refer to report</td>
</tr>
<tr>
<td></td>
<td>Albumin</td>
<td>Refer to report</td>
</tr>
<tr>
<td></td>
<td>Alpha-1 Globulins</td>
<td>Refer to report</td>
</tr>
<tr>
<td></td>
<td>Alpha-2 Globulins</td>
<td>Refer to report</td>
</tr>
<tr>
<td></td>
<td>Beta Globulins</td>
<td>Refer to report</td>
</tr>
<tr>
<td></td>
<td>Gamma</td>
<td>Refer to report</td>
</tr>
</tbody>
</table>

Note: A copy of the graph will follow the final report.

CPT Code(s): 84155; 84165; 86334

New York DOH Approved.

HOTLINE NOTE: Refer to the Test Mix Addendum for interface build information.
New Test  3002063  Multiple Myeloma Panel by FISH  FISHMMP

Time Sensitive  Oncology Test Request Form Recommended (ARUP form #43099)

Additional Technical Information

Methodology:  Fluorescence in situ Hybridization
Performed:  Sun-Sat
Reported:  5-14 days

Specimen Required:
- **Collect:** Non-diluted bone marrow collected in a heparinized syringe. Also acceptable: Green (sodium heparin).
- **Specimen Preparation:** Transfer 3 mL bone marrow to a green (sodium heparin) (Min: 1 mL). OR transport 5 mL whole blood (Min: 2 mL).
- **Storage/Transport Temperature:** Room temperature.
- **Unacceptable Conditions:** Frozen specimens. Paraffin-embedded specimens. Clotted specimens.
- **Stability (collection to initiation of testing):** Ambient: 48 hours; Refrigerated: 48 hours; Frozen: Unacceptable

Reference Interval:  By report

Interpretive Data:

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

**Note:** Fluorescence in situ hybridization (FISH) panel is performed on CD138+ sorted cells (assuming specimen is sufficient for sorting) for multiple myeloma prognosis-specific genomic abnormalities: 1q (CKS1B) gain/amplification/17p (TP53) loss/deletion, t(4;14) (IGH/FGFR3 and MMSET fusion)/+9/9q (ASS1) trisomy/gain, t(11;14) (IGH/CCND1 fusion and/or +11), t(14;16) (IGH/MAF fusion), t(14;20) (IGH/MAFB fusion).

When this test is ordered in conjunction with a chromosome analysis, specimen prioritization will be given to FISH for the sorting of CD138+ cells. This could impact the successful completion of the chromosome analysis.

If sorting fails to yield sufficient CD138+ cells, testing will be performed using unsorted cells, if available.

A processing fee will be charged if this procedure is canceled at the client's request, after the test has been set up, or if the specimen integrity is inadequate to allow a complete analysis.

This test must be ordered using Oncology test request form #43099 or through your ARUP interface.

Contact ARUP Genetics Processing for other specimen types or information and specific collection and transportation instructions.

**CPT Code(s):**  88271 x7; 88275 x7; 88291

New York DOH Approved.

**HOTLINE NOTE:** Refer to the Test Mix Addendum for interface build information.
**Neisseria gonorrhoeae** by Transcription-Mediated Amplification (TMA)

**Specimen Required:** Patient Prep: MultiTest Swab or ThinPrep Collection: Patient must be 14 years of age or older. Collect: Vaginal, throat, or rectal specimen collected with pink swab from Aptima MultiTest Swab Specimen Collection kit (ARUP supply #55224 PK/50 or #55229 PK/10) available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787. Also acceptable: Cervical, eye, or male urethral specimen collected with blue swab from Aptima Unisex Swab Specimen Collection kit (ARUP supply #28907 PK/50 or #54555 PK/10), first catch urine in sterile container or cervical brush in ThinPrep Pap test collection kit. Refer to "Sample Collection for the Diagnosis of STD" under Specimen Handling at www.aruplab.com for specific specimen collection and transport instructions.

**Specimen Preparation: Swab:** Place swab in Swab Specimen Transport Tube, break shaft off at scoreline then recap tube.

**Urine:** Transfer 2 mL urine within 24 hours to Aptima Urine Specimen Transport Tube (ARUP supply #28908 PK/50 or #54556 PK/10). Liquid level must be between fill lines on tube.

**ThinPrep:** Vortex ThinPrep PreservCyt solution and transfer 1 mL to an Aptima Specimen Transfer Tube (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, ThinPrep specimens should be poured off, using sterile technique, into the Aptima Specimen Transfer Tube prior to Cytology Testing.

**Storage/Transport Temperature:** Refrigerated.

**Remarks:** Specimen source is required.

**Unacceptable Conditions:** Large white swab included in Aptima Unisex Swab Specimen Collection kit is for preparatory cleaning of the endocervix and is unacceptable for testing. Specimens in any transport media other than indicated above. Specimens in swab transport media without a swab.

**Stability (collection to initiation of testing):**

- **MultiTest or Unisex Swab:** Ambient: 2 months; Refrigerated: 2 months; Frozen: 1 year
- **Aptima Urine Specimen Transport Tube:** Ambient: 1 month; Refrigerated: 1 month; Frozen: 3 months
- **Aptima Specimen Transfer Tube:** Ambient: 2 weeks; Refrigerated: 1 month; Frozen: 1 year
- **ThinPrep:** Ambient: 1 month; Refrigerated: 1 month; Frozen: Unacceptable

---

**Parvovirus B 19 Antibody, IgM**

**Specimen Required:** Collect: Serum Separator Tube (SST).

**Specimen Preparation:** Separate from cells ASAP or within 2 hours of collection. Transfer 0.5 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.

**Storage/Transport Temperature:** Refrigerated.

**Remarks:** Mark specimens plainly as "acute" or "convalescent."

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

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

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**Reference Interval:** Effective May 18, 2020

<table>
<thead>
<tr>
<th>Component</th>
<th>Reference Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parvovirus B 19 Antibody, IgM</td>
<td>0.90 IV or less: Negative - No significant level of detectable Parvovirus B19 IgM antibody.</td>
</tr>
<tr>
<td></td>
<td>0.91-1.09 IV: Equivocal - Repeat testing in 7-21 days may be helpful.</td>
</tr>
<tr>
<td></td>
<td>1.10 IV or greater: Positive - IgM antibody to Parvovirus B19 detected, which may indicate a current or recent infection. However, low levels of IgM antibodies may occasionally persist for more than 12 months post-infection.</td>
</tr>
</tbody>
</table>
**0065120** Parvovirus B19 Antibodies, IgG and IgM

Specimen Required: Collect: Serum Separator Tube (SST).  
Specimen Preparation: Separate from cells ASAP or within 2 hours of collection. Transfer 0.5 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.  
Storage/Transport Temperature: Refrigerated.  
Remarks: Mark specimens plainly as “acute” or "convalescent."  
Unacceptable Conditions: Contaminated, heat-inactivated, hemolyzed, lipemic, or icteric specimens.  
Stability (collection to initiation of testing): After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)

Reference Interval: Effective May 18, 2020

<table>
<thead>
<tr>
<th>Test Number</th>
<th>Components</th>
<th>Reference Interval</th>
</tr>
</thead>
</table>
| 0065121     | Parvovirus B19 Antibody, IgG | 0.90 IV or less: Negative - No significant level of detectable Parvovirus B19 IgG antibody.  
              |            | 0.91-1.09 IV: Equivocal - Repeat testing in 7-21 days may be helpful.  
              |            | 1.10 IV or greater: Positive - IgG antibody to Parvovirus B19 detected, which may indicate a current or past infection. |

<table>
<thead>
<tr>
<th>Test Number</th>
<th>Components</th>
<th>Reference Interval</th>
</tr>
</thead>
</table>
| 0065122     | Parvovirus B 19 Antibody, IgM | 0.90 IV or less: Negative - No significant level of detectable Parvovirus B19 IgM antibody.  
              |            | 0.91-1.09 IV: Equivocal - Repeat testing in 7-21 days may be helpful.  
              |            | 1.10 IV or greater: Positive - IgM antibody to Parvovirus B19 detected, which may indicate a current or recent infection. However, low levels of IgM antibodies may occasionally persist for more than 12 months post-infection. |

**0065121** Parvovirus B19 Antibody, IgG

Specimen Required: Collect: Serum Separator Tube (SST).  
Specimen Preparation: Separate from cells ASAP or within 2 hours of collection. Transfer 0.5 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.  
Storage/Transport Temperature: Refrigerated.  
Remarks: Mark specimens plainly as “acute” or "convalescent."  
Unacceptable Conditions: Contaminated, heat-inactivated, hemolyzed, lipemic, or icteric specimens.  
Stability (collection to initiation of testing): After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)

Reference Interval: Effective May 18, 2020

<table>
<thead>
<tr>
<th>Component</th>
<th>Reference Interval</th>
</tr>
</thead>
</table>
| Parvovirus B19 Antibody, IgG | 0.90 IV or less: Negative - No significant level of detectable Parvovirus B19 IgG antibody.  
                                  | 0.91-1.09 IV: Equivocal - Repeat testing in 7-21 days may be helpful.  
                                  | 1.10 IV or greater: Positive - IgG antibody to Parvovirus B19 detected, which may indicate a current or past infection. |
New Test  3002598  Phosphatidylethanol (PEth), Whole Blood, Quantitative
Click for Pricing

Additional Technical Information

Methodology:  Quantitative Liquid Chromatography/Tandem Mass Spectrometry
Performed:  Sun-Sat
Reported:  1-4 days

Specimen Required:  Collect:  Lavender (K2 or K3 EDTA), Pink (K2EDTA), Green (Lithium Heparin), Gray (Potassium Oxalate).
Specimen Preparation:  Transport 1 mL whole blood. (Min: 0.5 mL)
Storage/Transport Temperature:  Refrigerated. Also acceptable: Frozen.
Unacceptable Conditions: Gel separator tubes, Plain Red, light blue (citrate), or yellow (SPS or ACD solution).
Stability (collection to initiation of testing): Ambient: Unacceptable; Refrigerated: 2 weeks; Frozen: 1 month (-20°C)

Reference Interval:  Less than 10 ng/mL

Interpretive Data:

<table>
<thead>
<tr>
<th>Phosphatidylethanol (PEth) homologues</th>
<th>Result Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEth 16:0/18.1 (POPEth)</td>
<td>Less than 10 ng/mL</td>
</tr>
<tr>
<td></td>
<td>Not detected</td>
</tr>
<tr>
<td></td>
<td>Less than 20 ng/mL</td>
</tr>
<tr>
<td></td>
<td>Abstinence or light alcohol consumption</td>
</tr>
<tr>
<td></td>
<td>20 – 200 ng/mL</td>
</tr>
<tr>
<td></td>
<td>Moderate alcohol consumption</td>
</tr>
<tr>
<td></td>
<td>Greater than 200 ng/mL</td>
</tr>
<tr>
<td></td>
<td>Heavy alcohol consumption or chronic alcohol use</td>
</tr>
<tr>
<td>PEth 16:0/18.2 (PLPEth)</td>
<td>Reference ranges are not well established</td>
</tr>
</tbody>
</table>

Phosphatidylethanol (PEth) is a group of phospholipids formed in the presence of ethanol, phospholipase D and phosphatidylcholine. PEth is known to be a direct alcohol biomarker. The predominant PEth homologues are PEth 16:0/18:1 (POPEth) and PEth 16:0/18:2 (PLPEth), which account for 37-46% and 26-28% of the total PEth homologues, respectively. PEth is incorporated into the phospholipid membrane of red blood cells and has a general half-life of 4 – 10 days and a window of detection of 2 – 4 weeks. However, the window of detection is longer in individuals who chronically or excessively consume alcohol. The limit of quantification is 10 ng/mL. Serial monitoring of PEth may be helpful in monitoring alcohol abstinence over time. PEth results should be interpreted in the context of the patient’s clinical and behavioral history. Patients with advanced liver disease may have falsely elevated PEth concentrations (Nguyen VL et al 2018, Alcoholism Clinical & Experimental Research).
See Compliance Statement B: www.aruplab.com/CS

CPT Code(s):  80321 (Alt code: G0480)

New York DOH approval pending. Call for status update.

HOTLINE NOTE: Refer to the Test Mix Addendum for interface build information.
### Additional Technical Information

**Methodology:** Semi-Quantitative Enzyme-Linked Immunosorbent Assay/Semi-Quantitative Indirect Fluorescent Antibody

**Performed:** Sun-Sat

**Reported:** 1-8 days

**Specimen Required:**
- **Collect:** Serum Separator Tube (SST).
- **Specimen Preparation:** Separate 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:** Non-serum, heat-inactivated, contaminated, grossly icteric, severely lipemic, gossly hemolyzed specimens or inclusion of fibrin clot.

**Stability (collection to initiation of testing):**
- After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 month

### Reference Interval:

<table>
<thead>
<tr>
<th>Test Number</th>
<th>Components</th>
<th>Reference Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>0050065</td>
<td>Mitochondrial M2 Antibody, IgG (ELISA)</td>
<td>20.0 Units or less Negative</td>
</tr>
<tr>
<td></td>
<td></td>
<td>20.1-24.9 Units Equivocal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>25.0 Units or greater Positive</td>
</tr>
<tr>
<td>3000082</td>
<td>Antinuclear Antibody (ANA) with HEp-2 Substrate, IgG by IFA</td>
<td>Less than 1:80</td>
</tr>
<tr>
<td>3002478</td>
<td>Anti-sp100 Antibodies, IgG</td>
<td>20.0 Units or less Negative</td>
</tr>
<tr>
<td></td>
<td></td>
<td>20.1-24.9 Units Equivocal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>25.0 Units or greater Positive</td>
</tr>
<tr>
<td>3002477</td>
<td>Anti-gp210 Antibodies, IgG</td>
<td>20.0 Units or less Negative</td>
</tr>
<tr>
<td></td>
<td></td>
<td>20.1-24.9 Units Equivocal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>25.0 Units or greater Positive</td>
</tr>
</tbody>
</table>

### Interpretive Data:

Refer to report.

**Note:** ANA are determined by indirect fluorescence assay (IFA) using HEp-2 substrate and IgG-specific conjugate at a screening dilution of 1:80. If positive, patterns reported include homogeneous, speckled, centromere, nucleolar, nuclear dots, or cytoplasmic. All positive results are reported with endpoint titers, at no additional charge.

**CPT Code(s):** 83516 x3, 86039

New York DOH Approved.

**HOTLINE NOTE:** Refer to the Test Mix Addendum for interface build information.
**HOTLINE: Effective May 18, 2020**

### 2004525  Progesterone Receptor (PR) by Immunohistochemistry

**Specimen Required:** Collect: Tissue or cells.

**Specimen Preparation:** Formalin fix (10 percent neutral buffered formalin) and paraffin embed specimen (cells must be prepared into a cellblock). Protect paraffin block and/or slides from excessive heat. Transport tissue block or 5 unstained (3- to 5-micron thick sections), positively charged slides in a tissue transport kit (ARUP supply #47808). Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787. (Min: 2 slides). If sending precut slides, do not oven bake.

**Storage/Transport Temperature:** Room temperature 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, contact ARUP Client Services at (800) 522-2787.

**Unacceptable Conditions:** Specimens submitted with non-representative tissue type. Decalcified specimens.

**Interpretive Data:**

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

### 0070112  Proinsulin, Intact

**Specimen Required:** Patient Prep: Patient must fast for 12-15 hours prior to collection.

**Collect:** Serum Separator Tube (SST) or Plain Red. Also acceptable: Lavender (K<sub>2</sub>EDTA) or Pink (K<sub>2</sub>EDTA).

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

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

**Unacceptable Conditions:** Grossly hemolyzed specimens.

**Stability (collection to initiation of testing):** After separation from cells: Ambient: Unacceptable; Refrigerated: 48 hours; Frozen: 2 months

### 0070256  Proinsulin, Intact/Insulin Ratio

**Specimen Required:** Patient Prep: Patient must be fasting for 12-15 hours prior to collection.

**Collect:** Serum Separator Tube (SST). Also acceptable: Lavender (K<sub>2</sub>EDTA) or Pink (K<sub>2</sub>EDTA).

**Specimen Preparation:** Separate from cells ASAP or within 2 hours of collection. Transfer 1 mL serum or plasma to an ARUP Standard Transport Tube and freeze immediately. (Min: 0.8 mL)

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

**Unacceptable Conditions:** Heparinized plasma. Vitreous or I.V. fluids. Hemolyzed specimens.

**Stability (collection to initiation of testing):** After separation from cells: Ambient: Unacceptable; Refrigerated: 48 hours; Frozen: 2 months (avoid repeated freeze/thaw cycles)

### 2002109  Protein Electrophoresis with Reflex to Immunofixation, Serum

**Performed:** Sun-Sat

**Reported:** 1-5 days

**Specimen Required:** Collect: Serum Separator Tube (SST).

**Specimen Preparation:** Separate from cells ASAP or within 2 hours of collection. Transfer 1.5 mL serum to an ARUP Standard Transport Tube. (Min: 1.5 mL)

**Storage/Transport Temperature:** Refrigerated.

**Unacceptable Conditions:** Plasma.

**Stability (collection to initiation of testing):** After separation from cells: Ambient: Unacceptable; Refrigerated: 1 week; Frozen: 1 month
**0050640**  
**Protein Electrophoresis, Serum**  
**SPEP**

**Performed:** Sun-Sat  
**Reported:** 1-3 days

**Specimen Required:**  
Collect: Serum Separator Tube (SST).  
**Specimen Preparation:** Separate from cells ASAP or within 2 hours of collection. Transfer 1.5 mL serum to an ARUP Standard Transport Tube. (Min: 1 mL)  
**Storage/Transport Temperature:** Refrigerated.  
**Unacceptable Conditions:** Plasma.  
**Stability (collection to initiation of testing):** After separation from cells: Ambient: Unacceptable; Refrigerated: 1 week; Frozen: 1 month

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**2007443**  
**Rapid Plasma Reagin (RPR) with Reflex to RPR Titer or *T. pallidum* Antibody by Particle Agglutination**  
**RPR REV**

**Specimen Required:**  
Collect: Serum separator tube (SST).  
**Specimen Preparation:** Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.4 mL). Avoid freezing if possible.  
**Storage/Transport Temperature:** Refrigerated.  
**Unacceptable Conditions:** Plasma, CSF, or other body fluids.  
**Stability (collection to initiation of testing):** After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)

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**0050741**  
**Rapid Plasma Reagin (RPR) with Reflex to Titer**  
**RPRT**

**Specimen Required:**  
Collect: Serum separator tube.  
**Specimen Preparation:** Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.4 mL) Avoid freezing if possible.  
**Storage/Transport Temperature:** Refrigerated.  
**Unacceptable Conditions:** Plasma, CSF, or other body fluids.  
**Stability (collection to initiation of testing):** After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)

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**0050478**  
**Rapid Plasma Reagin (RPR) with Reflex to Titer and TP-PA Confirmation**  
**RPR PAN**

**Specimen Required:**  
Collect: Serum Separator Tube  
**Specimen Preparation:** Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.4 mL) Avoid freezing if possible.  
**Storage/Transport Temperature:** Refrigerated.  
**Unacceptable Conditions:** Plasma, CSF, or other body fluids.  
**Stability (collection to initiation of testing):** After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 year (avoid repeated freeze/thaw cycles)
**New Test**  
**3002514** Reducing Substances - Fecal  
**FEC RED**

**Methodology:** Qualitative Colorimetry  
**Performed:** Sun-Sat  
**Reported:** 1-2 days

**Specimen Required:**  
- **Collect:** Stool.  
- **Specimen Preparation:** Transfer 5 g stool to an unpreserved stool transport vial (ARUP Supply #40910) available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787. (Min: 1 g)  
- **Storage/Transport Temperature:** Frozen.  
- **Unacceptable Conditions:** Diapers. Stool containing barium. Specimens in media or preservatives.  
- **Stability (collection to initiation of testing):** Ambient: Unacceptable; Refrigerated: 1 week; Frozen: 2 week

**Reference Interval:** Normal  
**Note:** Normal= negative or trace. Abnormal= 1+ through 4+

**CPT Code(s):** 84376

New York DOH Approved.  

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

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**0060122** Respiratory Culture and Gram Stain  
**MC RESP**

**Performed:** Sun-Sat  
**Reported:** Negative at 3 days  
Positives as soon as detected

**Note:** Gram stain, identification, and susceptibility tests are billed separately from culture. Testing is limited to the university of Utah Health Science Center only.

Refer to Bordetella pertussis Culture (ARUP test code 0060117), Corynebacterium diphtheriae Culture (ARUP test code 0060360), or Legionella Species, Culture (ARUP test code 0060113) for special instructions, if requested.

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**2008414** ROS1 with Interpretation by Immunohistochemistry with Reflex to FISH if Equivocal or Positive  
**ROS1 IP**

**Performed:** Mon-Fri  
**Reported:** 1-5 days, add 3-5 days if reflexed

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**0080397** Serotonin, Serum  
**SEROT-SER**

**Specimen Required:**  
- **Patient Prep:** Abstain from medications for 72 hours prior to collection.  
- **Collect:** Serum Separator Tube (SST).  
- **Specimen Preparation:** Separate from cells within 1 hour of collection. Transfer 0.5 mL serum to an ARUP Amber Transport Tube. (Min: 0.2 mL)  
- **Storage/Transport Temperature:** Frozen. Separate specimens must be submitted when multiple tests are ordered.  
- **Unacceptable Conditions:** Specimens other than serum. Non-frozen specimens.  
- **Stability (collection to initiation of testing):** After separation from cells: Ambient: Unacceptable; Refrigerated: 24 hours; Frozen: 1 month
**STD PANEL1**

**Sexually Transmitted Disease Panel 1 by Transcription-Mediated Amplification**

**Specimen Required:**
- **Patient Prep:** MultiTest Swab or ThinPrep Collection
- **Collect:** Vaginal specimen collected with pink swab from Aptima MultiTest Swab Collection kit (ARUP supply #55224 PK/50 or #55229 PK/10) available online through eSupply using ARUP Connect or contact Client Services at (800) 522-2787.
- **Also acceptable:** Cervical specimen collected with blue swab from Aptima Unisex Swab Specimen Collection kit (ARUP supply #28907 PK/50 or #54555 PK/10), first catch urine in sterile container or cervical brush in ThinPrep Pap test collection kit.
- **Collect:** Vaginal specimen collected with pink swab from Aptima MultiTest Swab Collection kit (ARUP supply #55224 PK/50 or #55229 PK/10) available online through eSupply using ARUP Connect or contact Client Services at (800) 522-2787.
- **Also acceptable:** Cervical specimen collected with blue swab from Aptima Unisex Swab Specimen Collection kit (ARUP supply #28907 PK/50 or #54555 PK/10), first catch urine in sterile container or cervical brush in ThinPrep Pap test collection kit.
- **Collect:** Vaginal specimen collected with pink swab from Aptima MultiTest Swab Collection kit (ARUP supply #55224 PK/50 or #55229 PK/10) available online through eSupply using ARUP Connect or contact Client Services at (800) 522-2787.
- **Also acceptable:** Cervical specimen collected with blue swab from Aptima Unisex Swab Specimen Collection kit (ARUP supply #28907 PK/50 or #54555 PK/10), first catch urine in sterile container or cervical brush in ThinPrep Pap test collection kit.
- Refer to “Sample Collection for the Diagnosis of STD” under Specimen Handling at www.aruplab.com for specific specimen collection and transport instructions.
- **Specimen Preparation:** Swab: Place swab in Swab Specimen Transport Tube, break shaft off at scoreline then recap tube.
- **Urine:** Transfer 2 mL urine within 24 hours to Aptima Urine Specimen Transport Tube (ARUP supply #28908 PK/50 or #54556 PK/10). Liquid level must be between fill lines on tube.
- **ThinPrep:** Vortex ThinPrep PreservCyt solution and transfer 1 mL to an Aptima Specimen Transfer Tube (ARUP supply #42711).
- **Storage/Transport Temperature:** Refrigerated.
- **Remarks:** Specimen source is required.
- **Unacceptable Conditions:** Large white swab included in Aptima Unisex Swab Specimen Collection kit 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 (collection to initiation of testing):** MultiTest or Unisex Swab: Ambient: 2 months; Refrigerated: 2 months; Frozen: 1 year
- **Aptima Urine Specimen Transport Tube:** Ambient: 1 month; Refrigerated: 1 month; Frozen: 3 months
- **Aptima Specimen Transfer Tube:** Ambient: 1 month; Refrigerated: 1 month; Frozen: 1 year
- **ThinPrep:** Ambient: 1 month; Refrigerated: 1 month; Frozen: Unacceptable

### Silver, Whole Blood (SILVER BLD)

**Specimen Required:**
- **Collect:** Royal blue (No additive, K₂ or Na₂EDTA).
- **Specimen Preparation:** Protect from light. Transport 1 mL whole blood foil-wrapped in the original collection tube. (Min: 0.4 mL)
- **Storage/Transport Temperature:** Refrigerated.
- **Remarks:** Specimen source is required.
- **Unacceptable Conditions:** Specimens not protected from light. Heparinized or clotted specimens.
- **Stability (collection to initiation of testing):** Ambient: 2 weeks; Refrigerated: 2 weeks; Frozen: 2 weeks

### Stool Culture and E. coli Shiga-like Toxin by EIA (MC SSC)

**Performed:** Sun-Sat
**Reported:** Negative at 5 days
**Positives as soon as detected**

### Stool Culture, Campylobacter (MC CAMP)

**Performed:** Sun-Sat
**Reported:** Negative at 4 days
**Positives as soon as detected**

### Stool Culture, Vibrio (MC VIB)

**Performed:** Sun-Sat
**Reported:** Negative at 4 days
**Positives as soon as detected**

### Stool Culture, Yersinia (MC YERS)

**Performed:** Sun-Sat
**Reported:** Negative at 5 days
**Positives as soon as detected**
**MC STREP**

**Streptococcus (Group A) Culture**

- **Performed:** Sun-Sat
- **Reported:** Negative at 3 days
- **Positives as soon as detected**

**STREP SCN**

**Streptococcus (Group A) Rapid by NAAT**

- **Specimen Required:**
  - **Collect:** Throat swab: Use swabs provided in the test kit. Also acceptable: Foam, polyester, HydraFlock, nylon flocked throat swabs and BBL CultureSwab Liquid Amies transport media.
  - **Specimen Preparation:** Place throat swab back in the original package, a clean dry plastic tube, or sleeve. Label the swab container and transport to the laboratory inside a specimen bag.
  - **Storage/Transport Temperature:** Room temperature.
  - **Unacceptable Conditions:** Specimens collected using any swab other than those listed. eSwab, or Rayon swabs. Specimens in Modified Stuart media (culturette or culturette II).
  - **Stability (collection to initiation of testing):** Ambient: 72 hours; Refrigerated: 72 hours; Frozen: Unacceptable

**MC SURV**

**Surveillance Culture**

- **Performed:** Sun-Sat
- **Reported:** Negative at 3 days
- **Positives as soon as detected**

**TFE3_FISH**

**TFE3 Gene Rearrangement by FISH**

- **New Test**
- **Methodology:** Fluorescence in situ Hybridization
- **Performed:** Mon-Fri
- **Reported:** 3-7 days

- **Specimen Required:**
  - **Collect:** Tumor tissue.
  - **Specimen Preparation:** Formalin fix (10 percent neutral buffered formalin) and paraffin embed specimen. Protect paraffin block from excessive heat. Transport tissue block or 5 unstained (4-micron thick sections), positively charged slides in a tissue transport kit (ARUP supply #47808), available online through eSupply using ARUP Connector contact ARUP Client Services at (800) 522-2787 (kit recommended but not necessary). (Min: 2 slides)
  - **Storage/Transport Temperature:** Room temperature. Also acceptable: Refrigerated. Ship in cooled container during summer months.
  - **Remarks:** Include surgical pathology report.
  - **Unacceptable Conditions:** 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 (collection to initiation of testing):** Ambient: Indefinitely; Refrigerated: Indefinitely; Frozen: Unacceptable

**Interpretive Data:**

Refer to report.

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

- **CPT Code(s):** 88366

New York DOH approval pending. Call for status update.

**HOTLINE NOTE:** Refer to the Test Mix Addendum for interface build information.
HOTLINE: Effective May 18, 2020

**0060127**  
Tissue Culture and Gram Stain  
MC TIS

**Performed:** Sun-Sat  
**Reported:** Negative at 6 days  
Positives as soon as detected

**Note:** Gram stain, identification, and susceptibility tests are billed separately from culture. Anaerobe culture is NOT included with this order. Anaerobe culture is recommended for body fluids, tissue, and deep wound/surgical cultures. If anaerobe culture is needed, please order Anaerobe Culture (ARUP test code 0060143) and use anaerobic collection device for transportation. **Testing is limited to the university of Utah Health Science Center only.**

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**New Test**  
**3002618**  
**Tumor Necrosis Factor – alpha, Plasma**  
**TNFA PLA**

**Methodology:** Quantitative Multiplex Bead Assay  
**Performed:** Sun-Sat  
**Reported:** 1-4 days

**Specimen Required:** Collect: Green (lithium heparin).  
**Specimen Preparation:** Separate plasma from cells ASAP or within 2 hours of collection. Transfer 1 mL plasma to an ARUP Standard Transport Tube. (Min: 0.4 mL)  
**Storage/Transport Temperature:** CRITICAL FROZEN. Additional specimens must be submitted when multiple tests are ordered. Ship in ARUP Standard Transport Tube.  
**Unacceptable Conditions:** Refrigerated specimens. Contaminated or heat-inactivated specimens.  
**Stability (collection to initiation of testing):** After separation from cells: Ambient: 30 minutes; Refrigerated: Unacceptable; Frozen: 1 year

**Reference Interval:**  
14.5 pg/mL or less

**Interpretive Data:**  
Results are used to understand the pathophysiology of immune, infectious, or inflammatory disorders, or may be used for research purposes.  
See Compliance Statement B: www.aruplab.com/CS

**Note:** Cytokine levels may demonstrate diurnal variation. For longitudinal comparison, it is recommended that cytokine levels be determined at the same time of day.

**CPT Code(s):** 83520

New York DOH Approved.

**HOTLINE NOTE:** Refer to the Test Mix Addendum for interface build information.
### Tumor Necrosis Factor – alpha, Serum (TNFA DO)

**Specimen Required:**
- Collect: Serum separator tube, or plain red.
- Specimen Preparation: Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.4 mL)
- Storage/Transport Temperature: CRITICAL FROZEN. Additional specimens must be submitted when multiple tests are ordered. Ship in an ARUP Standard Transport Tube.
- Unacceptable Conditions: Refrigerated specimens. Contaminated or heat-inactivated specimens.

**Reference Interval:**
Effective May 18, 2020
7.2 pg/mL or less

**Note:**
- Cytokine levels may demonstrate diurnal variation. For longitudinal comparison, it is recommended that cytokine levels be determined at the same time of day.

**HOTLINE NOTE:** There is a clinically significant charting name change associated with this test.
- Change the charting name for component 0051539, Tumor Necrosis Factor – alpha from Tumor Necrosis Factor – alpha, Serum.
- Change the numeric map for component 0051539, Tumor Necrosis Factor – alpha, Serum from XXXXXX to XXXXXX.X.

### Urogenital Ureaplasma and Mycoplasma Species by PCR (UR MYCOPCR)

**HOTLINE NOTE:** There is a prompt change associated with this test.
- Change component 2011173, Ureaplasma and Mycoplasma Source from Resultable to Prompt.

### Urticaria-Induced Basophil Activation (UIBA)

**Performed:** Mon, Fri
**Reported:** 7-10 days

### Vaginal Pathogen Panel by DNA Probe (VAGP)

**Performed:** Sun-Sat
**Reported:** Within 3 days
New Test 3002581 Vaginosis Panel by TMA VPAN TMA

Specimen Collection and Handling

Methodology: Qualitative Transcription-Mediated Amplification

Specimen Required:
- Patient Prep: Patient must be 14 years of age or older.
- Collect: Vaginal specimen collected with pink swab from Aptima MultiTest Swab Collection kit (ARUP supply #55224 PK/50 or #55229 PK/10) available online through eSupply using ARUP Connect or contact Client Services at (800) 522-2787.
- Specimen Preparation: Place swab in MultiTest Swab Specimen Transport Tube, break shaft at scoreline, then recap tube.
- Storage/Transport Temperature: Refrigerated.
- Unacceptable Conditions: Specimens in any transport media other than indicated above. Specimen in MultiTest swab transport media without a swab.

Reference Interval: Negative.

Interpretive Data:
See report

CPT Code(s): 87801, 87481, 87661

New York DOH Approved.

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

<table>
<thead>
<tr>
<th>Code</th>
<th>Test Description</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>0060363</td>
<td>Vancomycin-Resistant Enterococcus (VRE) Culture</td>
<td>MC VRE</td>
</tr>
<tr>
<td></td>
<td>Performed: Sun-Sat</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Reported: Negative at 4 days</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Positives as soon as detected</td>
<td></td>
</tr>
</tbody>
</table>

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<thead>
<tr>
<th>Code</th>
<th>Test Description</th>
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</tr>
</thead>
<tbody>
<tr>
<td>2007136</td>
<td>von Willebrand Factor Collagen Binding</td>
<td>VWF C BIND</td>
</tr>
<tr>
<td></td>
<td>Specimen Required: Collect: Light Blue (CTAD).</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Specimen Preparation: Transfer 0.5 mL citrated plasma to an ARUP Standard Transport Tube. (Min: 0.3 mL)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Storage/Transport Temperature: CRITICAL FROZEN. Separate specimens must be submitted when multiple tests are ordered.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Unacceptable Conditions: Hemolyzed specimens.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Stability (collection to initiation of testing): Ambient: Unacceptable; Refrigerated: Unacceptable; Frozen: 2 weeks</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CPT Code(s): 83520</td>
<td></td>
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</tbody>
</table>

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<thead>
<tr>
<th>Code</th>
<th>Test Description</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>0040320</td>
<td>White Blood Cell Count</td>
<td>WBC</td>
</tr>
<tr>
<td></td>
<td>Specimen Required: Collect: One 5 mL Lavender (K$_2$EDTA) or Pink (K$_2$ EDTA).</td>
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</tr>
<tr>
<td></td>
<td>Specimen Preparation: Mix thoroughly. Transport 5 mL whole blood. (Min 0.25 mL)</td>
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<tr>
<td></td>
<td>Storage/Transport Temperature: Refrigerated.</td>
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</tr>
<tr>
<td></td>
<td>Unacceptable Conditions: Clotted specimens.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Stability (collection to initiation of testing): Ambient: 24 hours; Refrigerated: 48 hours; Frozen: Unacceptable</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Wound Culture and Gram Stain</td>
<td></td>
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<tr>
<td><strong>0060132</strong></td>
<td></td>
<td></td>
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<tr>
<td><strong>Performed:</strong></td>
<td>Sun-Sat</td>
<td></td>
</tr>
<tr>
<td><strong>Reported:</strong></td>
<td>Negative at 5 days</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Positives as soon as detected</td>
<td></td>
</tr>
</tbody>
</table>
The following will be discontinued from ARUP’s test menu on May 18, 2020. Replacement test options are supplied if applicable.

<table>
<thead>
<tr>
<th>Test Number</th>
<th>Test Name</th>
<th>Refer To Replacement</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007210</td>
<td>Autoimmune Liver Disease Evaluation with Reflex to Smooth Muscle Antibody (SMA), IgG by IFA</td>
<td>Autoimmune Liver Disease Reflexive Panel (3002479)</td>
</tr>
<tr>
<td>2008597</td>
<td>Clobazam Quantitative, Serum or Plasma</td>
<td>Clobazam and Metabolite, Quantitative, Serum or Plasma (3002508)</td>
</tr>
<tr>
<td>0050198</td>
<td>Complement Activity Enzyme Immunoassay, Total</td>
<td>Complement Activity Total, (CH50) (3002375)</td>
</tr>
<tr>
<td>0090085</td>
<td>Digoxin</td>
<td>Digoxin Quantitative, Serum or Plasma (3002377)</td>
</tr>
<tr>
<td>2011632</td>
<td>Disopyramide, Serum or Plasma</td>
<td></td>
</tr>
<tr>
<td>2007209</td>
<td>F-Actin and Mitochondrial M2 Antibodies, IgG by ELISA with Reflex to Smooth Muscle Antibody (SMA), IgG by IFA</td>
<td>Autoimmune Liver Disease Reflexive Panel (3002479)</td>
</tr>
<tr>
<td>2004331</td>
<td>HIV GenoSure MG</td>
<td>Human Immunodeficiency Virus Type 1 (HIV-1) GenoSure MG (3001242)</td>
</tr>
<tr>
<td>2011364</td>
<td>HLA Class I Panel (ABC) by Next Generation Sequencing</td>
<td>HLA Class I Panel (ABC) by Next Generation Sequencing (3002307)</td>
</tr>
<tr>
<td>2011227</td>
<td>HLA Class II Panel (DRB1 and DQB1) by Next Generation Sequencing</td>
<td>HLA Class II Panel (DRB1, DQA1 and DQB1) by Next Generation Sequencing (3002308)</td>
</tr>
<tr>
<td>2010808</td>
<td>Human Immunodeficiency Virus Type 1 (HIV-1) Drug Resistance (PhenoSense GT Plus Integrase)</td>
<td>Human Immunodeficiency Virus Type 1 (HIV-1) PhenoSense GT Plus Integrase (3001186)</td>
</tr>
<tr>
<td>2011942</td>
<td>Human Papillomavirus (HPV), High Risk by PCR, SurePath</td>
<td>Human Papillomavirus (HPV), High Risk with 16 and 18 Genotype by PCR, SurePath (2011933)</td>
</tr>
<tr>
<td>2011947</td>
<td>Human Papillomavirus (HPV), High Risk by PCR, ThinPrep</td>
<td>Human Papillomavirus (HPV), High Risk with 16 and 18 Genotype by PCR, ThinPrep (2011949)</td>
</tr>
<tr>
<td>0050615</td>
<td>Monoclonal Protein Detection Quantitation and Characterization, SPEP, IFE, IgA, IgG, IgM, Serum</td>
<td>Monoclonal Protein Study, Serum (3002568)</td>
</tr>
<tr>
<td>2002394</td>
<td>Multiple Myeloma Panel by FISH</td>
<td>Multiple Myeloma Panel by FISH (3007063)</td>
</tr>
<tr>
<td>2012130</td>
<td>Phosphatidylethanol (PEth)</td>
<td>Phosphatidylethanol (PEth), Whole Blood (3002598)</td>
</tr>
<tr>
<td>0020173</td>
<td>Reducing Substances, Fecal</td>
<td>Reducing Substances - Fecal (3002514)</td>
</tr>
<tr>
<td>2007085</td>
<td>Retinitis Pigmentosa/Leber Congenital Amaurosis Panel, Sequencing and Deletion/Duplication</td>
<td></td>
</tr>
<tr>
<td>0050615</td>
<td>T-Cell Clonality by Flow Cytometry Analysis of TCR V-Beta</td>
<td></td>
</tr>
<tr>
<td>2007063</td>
<td>Viral Meningitis Panel by PCR, Cerebrospinal Fluid</td>
<td>Enterovirus by PCR, Parechovirus by PCR, and Herpes Simplex Virus By PCR (0050249, 2005731, 0060041)</td>
</tr>
<tr>
<td>2007062</td>
<td>Viral Meningoencephalitis Panel by PCR, Cerebrospinal Fluid</td>
<td>Epstein-Barr Virus by Qualitative PCR, Cytomegalovirus by Qualitative PCR, Herpes Simplex Virus By PCR, Varicella-Zoster Virus by PCR (0050246, 0060040, 0060042, 0060043)</td>
</tr>
<tr>
<td>2013701</td>
<td>Vulvovaginal Candida Species by PCR</td>
<td>Candida glabrata, Candida species, and Trichomonas vaginalis by TMA (3002583)</td>
</tr>
</tbody>
</table>