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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<td>Opioid Receptor, mu OPRM1, 1 Variant</td>
</tr>
<tr>
<td>55</td>
<td>3000704</td>
<td>Orotic Acid, Urine</td>
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<td>55</td>
<td>3002929</td>
<td>Paraneoplastic Reflexive Panel</td>
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<tr>
<td>56</td>
<td>2005006</td>
<td>Paroxysmal Nocturnal Hemoglobinuria (PNH), High Sensitivity, RBC and WBC</td>
</tr>
<tr>
<td>57</td>
<td>2004366</td>
<td>Paroxysmal Nocturnal Hemoglobinuria, High Sensitivity, RBC</td>
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<tr>
<td>58</td>
<td>2005003</td>
<td>Paroxysmal Nocturnal Hemoglobinuria, High Sensitivity, WBC</td>
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<tr>
<td>59</td>
<td>3004741</td>
<td>Pharmacogenetics Panel: Psychotropics</td>
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<td>59</td>
<td>2006495</td>
<td>Phosphatidylinerine Antibodies, IgG and IgM</td>
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<td>59</td>
<td>0050905</td>
<td>Phosphatidylinerine Antibodies, IgG, IgM, and IgA</td>
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<td>60</td>
<td>3004813</td>
<td>Phosphorylated TDP43 by Immunohistochemistry</td>
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<td>66</td>
<td>3001170</td>
<td>Platelet Antigen 1 Genotyping (HPA-1)</td>
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<td>60</td>
<td>2002871</td>
<td>PML-RARA Detection by RT-PCR, Quantitative</td>
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<tr>
<td>61</td>
<td>2011156</td>
<td>Primary Antibody Deficiency Panel, Sequencing and Deletion/Duplication</td>
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<tr>
<td>61</td>
<td>2002109</td>
<td>Protein Electrophoresis with Reflex to Immunofixation, Serum</td>
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<td>61</td>
<td>0050640</td>
<td>Protein Electrophoresis, Serum</td>
</tr>
<tr>
<td>61</td>
<td>2009345</td>
<td>Pulmonary Arterial Hypertension (PAH) Panel, Sequencing and Deletion/Duplication</td>
</tr>
<tr>
<td>61</td>
<td>2010138</td>
<td>RUNXI-RUNXITI (AML1-ETO) t(8;21) Detection, Quantitative</td>
</tr>
<tr>
<td>62</td>
<td>2012015</td>
<td>Skeletal Dysplasia Panel, Sequencing and Deletion/Duplication</td>
</tr>
<tr>
<td>62</td>
<td>201201G</td>
<td>Skeletal Dysplasia Panel, Sequencing and Deletion/Duplication, Fetal</td>
</tr>
<tr>
<td>Hotline Page #</td>
<td>Test Number</td>
<td>Summary of Changes by Test Name</td>
</tr>
<tr>
<td>---------------</td>
<td>-------------</td>
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<tr>
<td>62</td>
<td>0055567</td>
<td>T-Cell Clonality Screening by PCR</td>
</tr>
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<td>63</td>
<td>3002100</td>
<td>Tuberculous Sclerosis Complex Panel, Sequencing and Deletion/Duplication</td>
</tr>
<tr>
<td>63</td>
<td>3002096</td>
<td>Tuberculous Sclerosis Complex Panel, Sequencing and Deletion/Duplication, Fetal</td>
</tr>
<tr>
<td>64</td>
<td>2007384</td>
<td>Vascular Malformations Panel, Sequencing and Deletion/Duplication</td>
</tr>
<tr>
<td>64</td>
<td>2009463</td>
<td>Voltage-Gated Potassium Channel (VGKC) Antibody with Reflex to LGI1 and CASPR2 Screen and Titer, Serum</td>
</tr>
<tr>
<td>64</td>
<td>3001996</td>
<td>Voltage-Gated Potassium Channel (VGKC) Complex Antibody Panel with Reflex to Titer, CSF</td>
</tr>
<tr>
<td>65</td>
<td>0050228</td>
<td>West Nile Virus Antibodies, IgG and IgM by ELISA, CSF</td>
</tr>
<tr>
<td>65</td>
<td>0050238</td>
<td>West Nile Virus Antibody, IgG by ELISA, CSF</td>
</tr>
<tr>
<td>65</td>
<td>0050239</td>
<td>West Nile Virus Antibody, IgM by ELISA, CSF</td>
</tr>
</tbody>
</table>

**Alpha-Amino-3-hydroxy-5-methyl-4-isoxazolopropionic Acid (AMPA) Receptor Antibody, IgG by CBA-IFA with Reflex to Titer, CSF (3001257)**

**Methodology:** Semi-Quantitative Cell-Based Indirect Fluorescent Antibody

**Alpha-3-hydroxy-5-methyl-4-isoxazolopropionic Acid (AMPA) Receptor Antibody, IgG by CBA-IFA with Reflex to Titer, CSF (3001260)**

**Methodology:** Semi-Quantitative Cell-Based Indirect Fluorescent Antibody
Methodology: Culture/Identification

Note: Identification and susceptibility tests are billed separately from culture.

Indicate if Actinomyces is suspected.

Contact the laboratory prior to collection of the specimen if consultation on collection containers or transport is needed.

If gram stain is required, order Gram Stain (ARUP test #0060101).

For University of Utah Hospital and affiliated clinics, anaerobic cultures must be paired with an aerobic culture. Please order appropriate aerobic culture. If aerobic culture is not ordered, the laboratory will order it.

**HOTLINE NOTE:** There is a clinically significant charting name change associated with this test.
Change the charting name for component 0060143, Anaerobe Culture and Gram Stain from Anaerobe Culture and Gram Stain to Anaerobe Culture.
**0060217**  Antimicrobial Susceptibility, AFB/Mycobacteria  MA AFB

<table>
<thead>
<tr>
<th>Performed:</th>
<th>Mon-Sun</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reported:</td>
<td>Varies</td>
</tr>
</tbody>
</table>

Reference Interval:
<table>
<thead>
<tr>
<th>Available Separately</th>
<th>Test Name</th>
<th>Methodology</th>
<th>Reference Interval/Drugs Tested</th>
<th>CPT Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>0060347</td>
<td>Antimicrobial Susceptibility - AFB/Mycobacterium tuberculosis Primary Panel</td>
<td>MGIT960</td>
<td>The interpretation provided is based on results for the following drugs at the stated concentrations: <strong>Drugs tested:</strong> Ethambutol: 5.0 µg/mL; Isoniazid: 0.1 µg/mL (0.4 µg/mL if resistant to 0.1 µg/mL); Pyrazinamide: 100 µg/mL; Rifampin: 1.0 µg/mL. This procedure screens isolates of <em>M. tuberculosis</em> complex for drug resistance. The procedure does not use serial dilutions to provide quantitative MIC values. Single critical concentrations for each antimycobacterial agent used have been defined by the United States Public Health Service.</td>
<td>87188 x4</td>
</tr>
<tr>
<td></td>
<td>Antimicrobial Susceptibility - AFB/Mycobacterium tuberculosis Secondary Panel</td>
<td>Agar proportion and Broth dilution</td>
<td>Effective February 21, 2012 <strong>Note:</strong> If <em>M. tuberculosis</em> isolate is resistant to rifampin or any two primary drugs, a secondary panel will be performed as a send-out test. The interpretation provided is based on testing for the following drugs at the stated concentrations: <strong>Drugs tested:</strong> Amikacin: 6 µg/mL; capreomycin: 10 µg/mL; cycloserine: 60 µg/mL; ethionamide: 10 µg/mL; kanamycin: 6 µg/mL; PAS: 8 µg/mL; streptomycin at a low level (2.0 µg/mL) and a high level (4.0 µg/mL). Levofloxacin and moxifloxacin are tested at 2, 4 and 8 µg/mL.</td>
<td>87190 x6, 87188 x3</td>
</tr>
<tr>
<td></td>
<td>Antimicrobial Susceptibility - AFB/Mycobacteria</td>
<td>Broth Microdilution</td>
<td>See organism-specific panels below.</td>
<td>87186</td>
</tr>
<tr>
<td></td>
<td>Mycobacterium avium-intracellulare Complex</td>
<td>Broth Microdilution</td>
<td>Effective April 1, 2022 <strong>Drugs tested:</strong> Amikacin, clarithromycin, linezolid, moxifloxacin. Clarithromycin results predict azithromycin. Because MIC results do not predict clinical response and may be misleading, rifampin, rifabutin, and ethambutol MICs are not tested.</td>
<td>87186</td>
</tr>
<tr>
<td></td>
<td>Rapid Growing Mycobacteria</td>
<td>Broth Microdilution</td>
<td>Effective April 1, 2022 <strong>Drugs tested:</strong> Amikacin, cefoxitin, ciprofloxacin, clarithromycin, doxycycline, imipenem, linezolid, moxifloxacin, tigecycline, tobramycin (M. chelonae only), and trimethoprim/sulfamethoxazole (TMP/SMX). Extended 14-day incubation is performed on isolates initially susceptible to clarithromycin to detect Erm(41)-dependent inducible macrolide resistance except <em>Mycobacterium</em> species with a nonfunctional Erm(41) gene.</td>
<td>87186</td>
</tr>
</tbody>
</table>
Other Slowly-Growing Non-tuberculosis Mycobacteria (NTM) | Broth Microdilution | Effective April 1, 2022
---|---|---
**Drugs tested:** Amikacin, ciprofloxacin, clarithromycin, doxycycline, linezolid, moxifloxacin, rifabutin, rifampin, streptomycin and trimethoprim/sulfamethoxazole (TMP/SXT). Selective reporting by organism.
CLSI recommends that isolates of *M. kansasii* be tested against rifampin and clarithromycin only. Rifampin-susceptible isolates are also susceptible to rifabutin. If the isolate is rifampin-resistant, the following secondary drugs will also be reported: Amikacin, ciprofloxacin, linezolid, moxifloxacin, rifabutin, streptomycin and trimethoprim-sulfamethoxazole.
*M. marinum* isolates are tested against amikacin, ciprofloxacin, clarithromycin, doxycycline, moxifloxacin, rifabutin, rifampin, and trimethoprim-sulfamethoxazole.
Slow-growing NTM other than *M. kansasii* and *M. marinum* are tested against amikacin, ciprofloxacin, clarithromycin, linezolid, moxifloxacin, rifabutin, rifampin, streptomycin, and trimethoprim-sulfamethoxazole.

### 2006540 Aortopathy Panel, Sequencing and Deletion/Duplication

**Methodology:** Massively Parallel Sequencing  
**Performed:** Varies  
**Reported:** 3 weeks  
**Specimen Required:** Collect: Lavender or pink (EDTA) or yellow (ACD solution A or B).  
Specimen Preparation: Transport 3 mL whole blood. (Min: 2 mL)  
Storage/Transport Temperature: Refrigerated  
Unacceptable Conditions: Serum or plasma; grossly hemolyzed or frozen specimens; saliva, buccal brush, or swab; FFPE tissue.  
Stability (collection to initiation of testing): Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable  

**Note:** Genes tested: ACTA2, BGN, CBS,* COL1A1, COL1A2,* COL3A1, COL5A1,* COL5A2, EFEMP2, FBNI, FB2, FLNA, FOXE3,* LOX, MFAP5, MYH11, MYLK,* NOTCH1,* PLOD1, PRKG1, S1, SLC2A10, SMAD2, SMAD3, SMAD4, TGFB2, TGFB3,** TGFBR1, TGFBR2  
*One or more exons are not covered by sequencing and/or deletion/duplication analysis for the indicated gene; see Additional Technical Information.  
**Deletion/duplication detection is not available for this gene.  

**CPT Code(s):** 81410; 81411  

**HOTLINE NOTE:** Remove information found in the Remarks field.

### 2013320 Aquaporin-4 Antibody, IgG by CBA-IFA with Reflex to Titer, Serum

**Methodology:** Semi-Quantitative Cell-Based Indirect Fluorescent Antibody
HOTLINE: Effective August 15, 2022

<table>
<thead>
<tr>
<th>Code</th>
<th>Test Description</th>
<th>Methodology</th>
<th>2011699 Aquaporin-4 Antibody, IgG by CBA-IFA, CSF with Reflex to Titer</th>
<th>AQP4 CSF</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>- Semi-Quantitative Cell-Based Indirect Fluorescent Antibody</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Code</th>
<th>Test Description</th>
<th>Methodology</th>
<th>0051415 Ashkenazi Jewish Diseases, 16 Genes</th>
<th>AJP</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>- Semi-Quantitative Cell-Based Indirect Fluorescent Antibody</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Code</th>
<th>Test Description</th>
<th>Methodology</th>
<th>0050100 Aspergillus Antibodies by Complement Fixation</th>
<th>ASPER</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>- Semi-Quantitative Cell-Based Indirect Fluorescent Antibody</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**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) 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)

**Interpretive Data:**
- A titer of 1:8 or greater suggests Aspergillus infection or allergy. Cross-reactions with dimorphic fungi are not unusual within the genus Aspergillus.

**HOTLINE NOTE:** There is a clinically significant charting name change associated with this test.
- Change the charting name for component 0050100, Aspergillus Antibody by CF from Aspergillus Antibody by CR to Aspergillus Antibodies by CF.
- Remove information found in the Note field.
**0050101**  
*Aspergillus Antibodies by Complement Fixation and Immunodiffusion*  
**ASPER PRO**

**Methodology:** Semi-Quantitative Complement Fixation/Immunodiffusion  
**Performed:** Sun-Sat  
**Reported:** 3-6 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) Parallel testing is preferred and convalescent specimens must be received within 30 days from receipt of the acute specimen. Mark specimens plainly as "acute" or "convalescent."  
**Storage/Transport Temperature:** Refrigerated.  
**Unacceptable Conditions:** Contaminated, 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)

**Reference Interval:**

<table>
<thead>
<tr>
<th>Test Number</th>
<th>Components</th>
<th>Reference Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>0050100</td>
<td><em>Aspergillus Antibodies by Complement Fixation</em></td>
<td>Less than 1:8</td>
</tr>
<tr>
<td>0050171</td>
<td><em>Aspergillus Antibodies by Immunodiffusion</em></td>
<td>Not Detected</td>
</tr>
</tbody>
</table>

**Interpretive Data:**  
Refer to report.

**Note:** The immunodiffusion component of this test uses pooled mycelial-phase culture filtrates of *Aspergillus fumigatus*, *Aspergillus flavus*, *Aspergillus niger*, and *Aspergillus terreus*.

**HOTLINE NOTE:** There is a clinically significant charting name change associated with this test.  
Change the charting name for component 0050100, *Aspergillus Antibody by CF* from *Aspergillus Antibody by CF* to *Aspergillus Antibodies by CF*.  
Change the charting name for component 0050171, *Aspergillus spp. Abs, Precipitin* from *Aspergillus spp. Abs, Precipitin* to *Aspergillus Antibodies by ID*.

**0050171**  
*Aspergillus Antibodies by Immunodiffusion*  
**ASPER PPT**

**Methodology:** Immunodiffusion  
**Performed:** Sun-Sat  
**Reported:** 3-6 days

**Specimen Required:** Collect: Serum separator tube.  
**Specimen Preparation:** Separate serum from cells ASAP or within 2 hours of collection. Transfer 0.5 mL serum to an ARUP Standard Transport Tube. (Min: 0.15 mL) 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)

**Reference Interval:**  
Not Detected

**Interpretive Data:**  
Refer to Report.

**Note:** This immunodiffusion test uses pooled mycelial-phase culture filtrates of *Aspergillus fumigatus*, *Aspergillus flavus*, *Aspergillus niger*, and *Aspergillus terreus*.

**HOTLINE NOTE:** There is a clinically significant charting name change associated with this test.  
Change the charting name for component 0050171, *Aspergillus spp. Abs, Precipitin* from *Aspergillus spp. Abs, Precipitin* to *Aspergillus Antibodies by ID*.
### Autoimmune CNS Demyelinating Disease Reflexive Panel (CNS PAN)

**Methodology:** Semi-Quantitative Cell-Based Indirect Fluorescent Antibody

**Reference Interval:**

<table>
<thead>
<tr>
<th>Test Number</th>
<th>Components</th>
<th>Reference Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013320</td>
<td>Aquaporin-4 Receptor Antibody, IgG by CBA-IFA with Reflex to Titer, Serum</td>
<td>Less than 1:10</td>
</tr>
<tr>
<td>3001277</td>
<td>Myelin Oligodendrocyte Glycoprotein (MOG) Antibody, IgG by CBA-IFA with Reflex to Titer, Serum</td>
<td>Less than 1:10</td>
</tr>
</tbody>
</table>

### Autoimmune Encephalitis Extended Panel, Serum (ENCEPH EXT)

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

**Reference Interval:**

<table>
<thead>
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<th>Test Number</th>
<th>Components</th>
<th>Reference Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004221</td>
<td>N-methyl-D-Aspartate Receptor Antibody, IgG CBA-IFA, Serum with Reflex to Titer</td>
<td>Less than 1:10</td>
</tr>
<tr>
<td>2001771</td>
<td>Glutamic Acid Decarboxylase Antibody</td>
<td>0.0-5.0 IU/mL</td>
</tr>
<tr>
<td>2004890</td>
<td>Voltage-Gated Potassium Channel (VGKC) Antibody, Serum</td>
<td>Negative 31 pmol/L or less</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Indeterminate 32-87 pmol/L</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Positive 88 pmol/L or greater</td>
</tr>
<tr>
<td>2003036</td>
<td>Aquaporin-4 Receptor Antibody</td>
<td>Effective October 3, 2016</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Negative 2.9 U/mL or less</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Positive 3.0 U/mL or greater</td>
</tr>
<tr>
<td>2013320</td>
<td>Aquaporin-4 Receptor Antibody, IgG by CBA-IFA with Reflex to Titer, Serum</td>
<td>Less than 1:10</td>
</tr>
<tr>
<td>2001771</td>
<td>Leucine-Rich, Glioma-Inactivated Protein 1 Antibody, IgG CBA-IFA with Reflex to Titer, Serum</td>
<td>Less than 1:10</td>
</tr>
<tr>
<td>2004890</td>
<td>Contactin-Associated Protein-2 Antibody, IgG CBA-IFA with Reflex to Titer, Serum</td>
<td>Less than 1:10</td>
</tr>
<tr>
<td>3001270</td>
<td>Alpha-Amino-3-hydroxy-5-methyl-4-isoxazolepropionic Acid (AMPA) Receptor Antibody, IgG by CBA-IFA with Reflex to Titer, Serum</td>
<td>Less than 1:10</td>
</tr>
<tr>
<td>3001277</td>
<td>Myelin Oligodendrocyte Glycoprotein (MOG) Antibody, IgG by CBA-IFA with Reflex to Titer, Serum</td>
<td>Less than 1:10</td>
</tr>
</tbody>
</table>

### Autoimmune Encephalitis Reflexive Panel, CSF (AENCEPHCSF)

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

**Reference Interval:**

<table>
<thead>
<tr>
<th>Test Number</th>
<th>Components</th>
<th>Reference Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>3002788</td>
<td>Glutamic Acid Decarboxylase Antibody, CSF</td>
<td>0.0-5.0 IU/mL</td>
</tr>
<tr>
<td>2005164</td>
<td>N-methyl-D-Aspartate Receptor Antibody, IgG CBA-IFA, CSF with Reflex to Titer</td>
<td>Effective May 21, 2012</td>
</tr>
<tr>
<td></td>
<td></td>
<td>≤ 1:1</td>
</tr>
<tr>
<td>2011699</td>
<td>Aquaporin-4 Receptor Antibody, IgG by CBA-IFA, CSF with Reflex to Titer</td>
<td>less than 1:1</td>
</tr>
<tr>
<td>3001257</td>
<td>Alpha-Amino-3-hydroxy-5-methyl-4-isoxazolepropionic Acid (AMPA) Receptor Antibody, IgG by CBA-IFA with Reflex to Titer, CSF</td>
<td>Less than 1:1</td>
</tr>
<tr>
<td>3001267</td>
<td>Gamma Aminobutyric Acid Receptor, Type B (GABA-BR) Antibody, IgG by CBA-IFA with Reflex to Titer, CSF</td>
<td>Less than 1:1</td>
</tr>
<tr>
<td>3001387</td>
<td>Voltage-Gated Potassium Channel (VGKC) Antibody, CSF</td>
<td>Negative 0.0-1.1 pmol/L</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Positive 1.2 pmol/L or greater</td>
</tr>
<tr>
<td>3001986</td>
<td>Contactin-Associated Protein-2 Antibody, IgG CBA-IFA with Reflex to Titer, CSF</td>
<td>Less than 1:1</td>
</tr>
<tr>
<td>3001992</td>
<td>Leucine-Rich, Glioma-Inactivated Protein 1 Antibody, IgG CBA-IFA with Reflex to Titer, CSF</td>
<td>Less than 1:1</td>
</tr>
<tr>
<td>3004512</td>
<td>Dipeptidyl Aminopeptidase-Like Protein 6 (DPPX) Antibody, IgG by CBA-IFA With Reflex to Titer, CSF</td>
<td>Less than 1:1</td>
</tr>
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</table>
**HOTLINE: Effective August 15, 2022**

**Methodology:**
Semi-Quantitative Cell-Based Indirect Fluorescent Antibody/Qualitative Immunoblot/Quantitative Radioimmunoassay/Semi-quantitative Enzyme-Linked Immunosorbent Assay

### Reference Interval:

<table>
<thead>
<tr>
<th>Test Number</th>
<th>Components</th>
<th>Reference Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005164</td>
<td>N-methyl-D-Aspartate Receptor Antibody, IgG CBA-IFA, CSF with Reflex to Titer</td>
<td>Effective May 21, 2012 (&lt; 1:1)</td>
</tr>
<tr>
<td>3001257</td>
<td>Alpha-Amino-3-hydroxy-5-methyl-4-isoxazolepropionic Acid (AMPA) Receptor Antibody, IgG by CBA-IFA with Reflex to Titer, CSF</td>
<td>Less than 1:1</td>
</tr>
<tr>
<td>3001267</td>
<td>Gamma Aminobutyric Acid Receptor, Type B (GABA-BR) Antibody, IgG by CBA-IFA with Reflex to Titer, CSF</td>
<td>Less than 1:1</td>
</tr>
<tr>
<td>3001986</td>
<td>Contactin-Associated Protein-2 Antibody, IgG CBA-IFA with Reflex to Titer, CSF</td>
<td>Less than 1:1</td>
</tr>
<tr>
<td>3001387</td>
<td>Voltage-Gated Potassium Channel (VGKC) Antibody, CSF</td>
<td>Refer to report</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Test Number</th>
<th>Components</th>
<th>Reference Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010841</td>
<td>Paraneoplastic Antibodies (PCCA/ANNA) by IFA with Reflex to Titer and Immunoblot, CSF</td>
<td>Refer to report</td>
</tr>
<tr>
<td>3001992</td>
<td>Leucine-Rich, Glioma-Inactivated Protein 1 Antibody, IgG CBA-IFA with Reflex to Titer, CSF</td>
<td>Less than 1:1</td>
</tr>
<tr>
<td>3002257</td>
<td>CV2.1 Screen by CBA-IFA with Reflex to Titer, CSF</td>
<td>Less than 1:1</td>
</tr>
<tr>
<td>3002788</td>
<td>Glutamic Acid Decarboxylase Antibody, CSF</td>
<td>0.0-5.0 IU/mL</td>
</tr>
<tr>
<td>3002886</td>
<td>SOX1 Antibody, IgG by Immunoblot, CSF</td>
<td>Negative</td>
</tr>
<tr>
<td>3004512</td>
<td>Dipeptidyl Aminopeptidase-Like Protein 6 (DPPX) Antibody, IgG by CBA-IFA with Reflex to Titer, CSF</td>
<td>Less than 1:1</td>
</tr>
<tr>
<td>3004510</td>
<td>Amphiphysin Antibody IgG, CSF</td>
<td>Negative</td>
</tr>
</tbody>
</table>
**3004070**  
**Autoimmune Neurologic Disease Reflexive Panel, Serum**  
**NEURO R3**

**Methodology:**  
Semi-Quantitative **Cell-Based** Indirect Fluorescent Antibody/Qualitative Immunoblot/Quantitative Radioimmunoassay/Semi-Quantitative Enzyme-Linked Immunosorbent Assay

**Reference Interval:**

<table>
<thead>
<tr>
<th>Test Number</th>
<th>Components</th>
<th>Reference Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004221</td>
<td>N-methyl-D-Aspartate Receptor Antibody, IgG CBA-IFA, Serum with Reflex to Titer</td>
<td>Less than 1:10</td>
</tr>
<tr>
<td>2001771</td>
<td>Glutamate Decarboxylase Antibody</td>
<td>0.0-5.0 IU/mL</td>
</tr>
<tr>
<td>2013956</td>
<td>CV2.1 Screen by CBA-IFA with Reflex to Titer</td>
<td>Less than 1:10</td>
</tr>
</tbody>
</table>
| 2004890     | Voltage-Gated Potassium Channel (VGKC) Antibody, Serum | Negative 31 pmol/L or less  
Indeterminate 32-87 pmol/L  
Positive 88 pmol/L or greater |
| 2007961     | PCCA/ANNA by IFA with Reflex to Titer and Immunoblot | Effective August 17, 2020 |
| 2008893     | Amphiphysin Antibody, IgG | Negative |
| 2013320     | Aquaporin-4 Receptor Antibody, IgG by CBA-IFA with Reflex to Titer, Serum | Less than 1:10 |
| 2009456     | Leucine-Rich, Glioma-Inactivated Protein 1 Antibody, IgG CBA-IFA with Reflex to Titer, Serum | Less than 1:10 |
| 2009452     | Contactin-Associated Protein-2 Antibody, IgG CBA-IFA with Reflex to Titer, Serum | Less than 1:10 |
| 0080009     | Acetylcholine Receptor Binding Antibody | Negative 0.0-0.4 nmol/L  
Positive 0.5 nmol/L or greater |
| 3001260     | Alpha-amino-3-hydroxy-5-methyl-4-isoxazolepropionic Acid (AMPA) Receptor Antibody, IgG by CBA-IFA with Reflex to Titer, Serum | Less than 1:10 |
| 3001270     | GABA Type B (GABA-BR) Antibody, IgG by CBA-IFA with Reflex to Titer, Serum | Less than 1:10 |
| 3001277     | Myelin Oligodendrocyte Glycoprotein (MOG) Antibody, IgG by CBA-IFA with Reflex to Titer, Serum | Less than 1:10 |
| 3002885     | SOX1 Antibody, IgG by Immunoblot, Serum | Negative |
| 0092628     | PIQ-Type Voltage-Gated Calcium Channel (VGCC) Antibody | Effective November 14, 2011  
Negative 0.0 to 24.5 pmol/L  
Indeterminate 24.6 to 45.6 pmol/L  
Positive 45.7 pmol/L or greater |
| 3003020     | Ganglionic Acetylcholine Receptor Antibody | Negative 0.0 - 8.4 pmol/L  
Indeterminate 8.5 - 11.6 pmol/L  
Positive 11.7 pmol/L or greater |
| 3004359     | Dipeptidyl Aminopeptidase-Like Protein 6 (DPPX) Antibody, IgG by CBA-IFA with Reflex to Titer, Serum | Effective November 15, 2021  
Less than 1:10 |

**2006193**  
**B-Cell Clonality Screening (IgH and IgK) by PCR**  
**BCELL SCRN**

**Performed:** DNA isolation: Sun-Sat; Assay: Varies  
**Reported:** 5-9 days
### New Test

**Available Now Click for Pricing**

**New Test**

<table>
<thead>
<tr>
<th>Test Code</th>
<th>Description</th>
<th>Methodology</th>
<th>Performed</th>
<th>Reported</th>
</tr>
</thead>
<tbody>
<tr>
<td>3004827</td>
<td>BCOR by Immunohistochemistry</td>
<td>Immunohistochemistry</td>
<td>Mon-Fri</td>
<td>1-3 days</td>
</tr>
</tbody>
</table>

**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 highly recommended (but not required) 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.  
**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 nonrepresentative tissue type. Depleted specimens.  
**Stability (collection to initiation of testing):** Ambient: Indefinitely; Refrigerated: Indefinitely; Frozen: Unacceptable

**Interpretive Data:**  
This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the U.S. Food and Drug Administration. This test was performed in a CLIA-certified laboratory and is intended for clinical purposes.

**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.

<table>
<thead>
<tr>
<th>Test Code</th>
<th>Description</th>
<th>Performed</th>
<th>Reported</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005017</td>
<td><strong>BCR-ABL1</strong>, Major (p210), Quantitative</td>
<td>RNA isolation: Sun-Sat</td>
<td>3-9 days</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Assay: Varies</td>
<td></td>
</tr>
<tr>
<td>2005016</td>
<td><strong>BCR-ABL1</strong>, Minor (p190), Quantitative</td>
<td>RNA isolation: Sun-Sat</td>
<td>5-9 days</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Assay: Sun, Tue, Thu</td>
<td></td>
</tr>
<tr>
<td>2005010</td>
<td><strong>BCR-ABL1</strong>, Qualitative with Reflex to <strong>BCR-ABL1</strong> Quantitative</td>
<td>RNA isolation: Sun-Sat</td>
<td>4-10 days</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Assay: Varies</td>
<td></td>
</tr>
</tbody>
</table>
**3000231**  
**Blastomyces dermatitidis** Antibodies by **Immonoassay** with Reflex to **Immunodiffusion**, CSF  

**Methodology:** Semi-Quantitative Enzyme-Linked Immunosorbent Assay/Immunodiffusion

**Reference Interval:**

<table>
<thead>
<tr>
<th>Range</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.9 IV or less</td>
<td>Negative</td>
</tr>
<tr>
<td>1.0-1.4 IV</td>
<td>Equivocal</td>
</tr>
<tr>
<td>1.5 IV or greater</td>
<td>Positive</td>
</tr>
</tbody>
</table>

**Interpretive Data:**  
Refer to report.

**Note:** This immunoassay detects total antibodies against yeast-phase antigens from *Blastomyces dermatitidis*. If *Blastomyces* antibodies are equivocal or positive by immunoassay then *Blastomyces dermatitidis* Antibodies by Immunodiffusion will be added. Additional charges apply.

**HOTLINE NOTE:** There is a clinically significant charting name change associated with this test. Change the charting name for component 3000233, Blastomyces Antibody by EIA, CSF from Blastomyces Antibody by EIA, CSF to Blastomyces Antibodies EIA, CSF.

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**3000236**  
**Blastomyces dermatitidis** Antibodies by **Immonoassay** with Reflex to **Immunodiffusion**, Serum  

**Methodology:** Semi-Quantitative Enzyme-Linked Immunosorbent Assay/Immunodiffusion

**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)  
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)

**Reference Interval:**

<table>
<thead>
<tr>
<th>Range</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.9 IV or less</td>
<td>Negative</td>
</tr>
<tr>
<td>1.0-1.4 IV</td>
<td>Equivocal</td>
</tr>
<tr>
<td>1.5 IV or greater</td>
<td>Positive</td>
</tr>
</tbody>
</table>

**Note:** This immunoassay detects total antibodies against yeast-phase antigens from *Blastomyces dermatitidis*. If *Blastomyces* antibodies are equivocal or positive by immunoassay then *Blastomyces dermatitidis* Antibodies by Immunodiffusion will be added. Additional charges apply.

**HOTLINE NOTE:** There is a clinically significant charting name change associated with this test. Change the charting name for component 3000237, Blastomyces Antibody by EIA, SER from Blastomyces Antibody by EIA, SER to Blastomyces Antibodies EIA, SER.
**Methodology:** Immunodiffusion  
**Performed:** Sun-Sat  
**Reported:** 3-6 days

**Specimen Required:** Collect: Serum separator tube.  
Specimen Preparation: Separate serum from cells ASAP or within 2 hours of collection. Transfer 0.5 mL serum to an ARUP Standard Transport Tube. (Min: 0.15 mL)  
Storage/Transport Temperature: Refrigerated.  
Unacceptable Conditions: 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)

**Reference Interval:** Not Detected

**Interpretive Data:** Refer to report.

**Note:** This immunodiffusion test detects total antibodies to the ‘A’ antigen of *Blastomyces dermatitidis*.

**HOTLINE NOTE:** There is a clinically significant charting name change associated with this test.  
Change the charting name for component 0050172, Blastomyces dermatitidis Abs, Precipitin from Blastomyces dermatitidis Abs, Precipitin to Blastomyces Antibodies by ID.

---

**CALR (Calreticulin) Exon 9 Mutation Analysis by PCR**  
**Performed:** DNA isolation: Sun-Sat  
**Assay:** Varies  
**Reported:** 2-9 days

---

**Candida albicans Antibodies IgA, IgG, and IgM by ELISA**  
**Performed:** Sun-Sat  
**Reported:** 1-2 days

---

**Cardiolipin Antibodies, IgG and IgM**  
**Performed:** Sun-Sat  
**Reported:** 1-2 days

---

**Cardiolipin Antibodies, IgG, IgM, and IgA**  
**Performed:** Sun-Sat  
**Reported:** 1-2 days

---

**Cardiolipin Antibody, IgA**  
**Performed:** Sun-Sat  
**Reported:** 1-2 days
### Cardiolipin Antibody, IgG (AC-IGG)

<table>
<thead>
<tr>
<th>Code</th>
<th>Test Description</th>
<th>Performed</th>
<th>Reported</th>
</tr>
</thead>
<tbody>
<tr>
<td>0050901</td>
<td>Cardiolipin Antibody, IgG</td>
<td>Sun-Sat</td>
<td>1-2 days</td>
</tr>
</tbody>
</table>

### Cardiolipin Antibody, IgM (AC-IGM)

<table>
<thead>
<tr>
<th>Code</th>
<th>Test Description</th>
<th>Performed</th>
<th>Reported</th>
</tr>
</thead>
<tbody>
<tr>
<td>0050902</td>
<td>Cardiolipin Antibody, IgM</td>
<td>Sun-Sat</td>
<td>1-2 days</td>
</tr>
</tbody>
</table>

### Cardiomyopathy and Arrhythmia Panel, Sequencing and Deletion/Duplication (CARDIACPAN)

<table>
<thead>
<tr>
<th>Code</th>
<th>Test Description</th>
<th>Performed</th>
<th>Reported</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010183</td>
<td>Cardiomyopathy and Arrhythmia Panel, Sequencing and Deletion/Duplication</td>
<td>Varies</td>
<td>3 weeks</td>
</tr>
</tbody>
</table>

**Specimen Required:**
- Collect: Lavender or pink (EDTA) or yellow (ACD solution A or B).
- Specimen Preparation: Transport 3 mL whole blood. (Min: 3 mL)
- Storage/Transport Temperature: Refrigerated.
- Unacceptable Conditions: Serum or plasma; grossly hemolyzed or frozen specimens; saliva, buccal brush, or swab; FFPE tissue.

**Stability (collection to initiation of testing):**
- Ambient: 72 hours;
- Refrigerated: 1 week;
- Frozen: Unacceptable

**Note:**
- Genes Tested: ABCC9, ACTC1, ACTN2, AGL, ALMS1, ALPK3, BAG3, BRAF*, CACNA1C, CALM1*, CALM2, CALM3, CASQ2, CRYAB, CSRIP3*, DES*, DMD, DOLK, DSC2, DSG2, DSP, EMD, FH1L*, FKTN*, FLNC*, GAA, GLA, HCN4, HRAS, JPH2, JUP, KCNE1, KCNE2, KCNH2*, KCNJ2, KCNJ1, KRAS, LAMP2, LDB3, LMNA, MAP2K1, MAP2K2*, MYBPC3, MYH6*, MYH7*; MYL2, MYL3, NEXN, NX2-5, NRAS, PKP2*; PLN, PRDM16; PRKAG2*; PTEN11*; RAF1*; RBM20, RIT1*, RYR2, SCN5A, SOSI*, TAFazzin, TCAP, TECRL*; TMEM43, TNNC1, TNNI3, TNNI3K, TNNT2, TPM1*; TRIDN*; TTN*; TRIT; VCL

*One or more exons are not covered by sequencing and/or deletion/duplication analysis for the indicated gene; see Additional Technical Information.

**CPT Code(s):**
- 81403; 81404; 81405; 81406; 81407; 81408; 81414

### CBFB-MYH11 inv(16) Detection, Quantitative (INV 16 QNT)

<table>
<thead>
<tr>
<th>Code</th>
<th>Test Description</th>
<th>Performed</th>
<th>Reported</th>
</tr>
</thead>
<tbody>
<tr>
<td>201114</td>
<td>CBFB-MYH11 inv(16) Detection, Quantitative</td>
<td>RNA isolation: Sun-Sat</td>
<td>5-9 days</td>
</tr>
</tbody>
</table>

**Specimen Required:**
- Collect: Lavender or pink (EDTA) or yellow (ACD solution A or B).
- Specimen Preparation: Transport 5 mL whole blood. (Min: 3 mL)
- Storage/Transport Temperature: Refrigerated.

**Unacceptable Conditions:**
- Serum or plasma; grossly hemolyzed or frozen specimens; saliva, buccal brush, or swab; FFPE tissue.

**Stability (collection to initiation of testing):**
- Ambient: 72 hours;
- Refrigerated: 1 week;
- Frozen: Unacceptable

### Cerebral Autosomal Dominant Arteriopathy with Subcortical Infarcts and Leukoencephalopathy, CADASIL (NOTCH3), Sequencing (NOTCH3 NGS)

<table>
<thead>
<tr>
<th>Code</th>
<th>Test Description</th>
<th>Performed</th>
<th>Reported</th>
</tr>
</thead>
<tbody>
<tr>
<td>3004383</td>
<td>Cerebral Autosomal Dominant Arteriopathy with Subcortical Infarcts and Leukoencephalopathy, CADASIL (NOTCH3), Sequencing</td>
<td>Sun-Sat</td>
<td>1-2 days</td>
</tr>
</tbody>
</table>

**Specimen Required:**
- Collect: Lavender or pink (EDTA) or yellow (ACD solution A or B).
- Specimen Preparation: Transport 5 mL whole blood. (Min: 3 mL)
- Storage/Transport Temperature: Refrigerated.

**Unacceptable Conditions:**
- Serum or plasma; grossly hemolyzed or frozen specimens; saliva, buccal brush, or swab; FFPE tissue.

**Stability (collection to initiation of testing):**
- Ambient: 72 hours;
- Refrigerated: 1 week;
- Frozen: Unacceptable
<table>
<thead>
<tr>
<th>Methodology: Massively Parallel Sequencing</th>
<th>CCM NGS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performed: Varies</td>
<td></td>
</tr>
<tr>
<td>Reported: 3 weeks</td>
<td></td>
</tr>
</tbody>
</table>

**Specimen Required:**
- **Collect:** Lavender or pink (EDTA) or yellow (ACD solution A or B)
- **Specimen Preparation:** Transport 3 mL whole blood. (Min: 3 mL)
- **Storage/Transport Temperature:** Refrigerated.
- **Unacceptable Conditions:** Serum or plasma; grossly hemolyzed or frozen specimens; saliva, buccal brush, or swab; FFPE tissue.
- **Stability (collection to initiation of testing):** Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable

**Note:** Genes tested: CCM2*, KRIT1, PDCD10
* - One or more exons are not covered by deletion/duplication analysis; see additional technical information.

**CPT Code(s):** 81479

---

**New Test**

<table>
<thead>
<tr>
<th>3005468</th>
<th>Chimerism, Additional Donor</th>
<th>STR AD DON</th>
</tr>
</thead>
</table>

**Methodology:** Polymerase Chain Reaction/Fragment Analysis

**Performed:** Sun-Sat

**Reported:** 5-9 days after receipt of corresponding Chimerism, Recipient, Pretransplant (3005449) specimen

**Specimen Required:**
- **Collect:** Lavender (EDTA), pink (K2EDTA), or yellow (ACD solution A or B). OR Bone marrow in lavender (EDTA). OR Buccal brushes from donor.
- **Specimen Preparation:** Transport 2 mL whole blood. (Min: 1 mL) OR Transport 1 mL bone marrow. (Min: 1 mL) OR Transport 2 buccal brushes in a sterile, dry tube. (Min: 2 brushes)
- **Storage/Transport Temperature:** Refrigerated. Also acceptable: Ambient.

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

**Stability (collection to initiation of testing):** Room Temperature: 1 week; Refrigerated: 1 month; Frozen: Unacceptable

**Interpretive Data:**

**Background Information:** Chimerism, Additional Donor

**Indication:** Monitoring for bone marrow transplant patients; interval between bone marrow transplantation and testing is necessary for proper interpretation of results.

**Methodology:** PCR followed by capillary electrophoresis. Specimens are analyzed using 15 autosomal markers (D8S1179, D21S11, D7S820, CSF1PO, D3S1358, THO1, D13S317, D16S539, D2S1338, D19S433, vWa, TPOX, D18S51, D5S818 and FGA) and one gender marker (amelogenin).

**Limitations:** Diagnostic errors can occur due to rare sequence variations.

This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the US Food and Drug Administration. This test was performed in a CLIA certified laboratory and is intended for clinical purposes.

**CPT Code(s):** 81266

New York DOH Approved.

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

Methodology: Polymerase Chain Reaction/Fragment Analysis
Performed: Sun-Sat
Reported: 5-9 days after receipt of corresponding Chimerism, Recipient, Pretransplant (3005449) specimen

Specimen Required: Collect: Lavender (EDTA), pink (K2EDTA), or yellow (ACD solution A or B) OR bone marrow in lavender (EDTA) OR buccal brushes from donor. Specimen Preparation: Transport 2 mL whole blood (Min: 1 mL) OR 1 mL bone marrow (Min: 1 mL) OR 2 buccal brushes in a sterile, dry tube. (Min: 2 brushes) Storage/Transport Temperature: Refrigerated. Also acceptable: Ambient.
Remarks: Posttransplant results will be compared to pretransplant recipient and donor genotypes, therefore, donor and recipient samples must be obtained and genotyped before the transplant event occurs.
Stability (collection to initiation of testing): Room temperature: 1 week; Refrigerated: 1 month; Frozen: Unacceptable

Interpretive Data:
Background Information: Chimerism, Donor
Indication: Monitoring for bone marrow transplant patients; interval between bone marrow transplantation and testing is necessary for proper interpretation of results.
Methodology: PCR followed by capillary electrophoresis. Specimens are analyzed using 15 autosomal markers (D8S1179, D21S11, D7S820, CSF1PO, D3S1358, THO1, D13S317, D16S539, D2S1338, D19S433, vWA, TPOX, D18S51, D5S818 and FGA) and one gender marker (amelogenin).
Limitations: Diagnostic errors can occur due to rare sequence variations.

This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the US Food and Drug Administration. This test was performed in a CLIA certified laboratory and is intended for clinical purposes.

CPT Code(s): See CPT codes under Chimerism, Recipient, Pretransplant (3005449)

New York DOH Approved.

HOTLINE NOTE: Refer to the Test Mix Addendum for interface build information.
**Methodology:** Polymerase Chain Reaction/Fragment Analysis  
**Performed:** Sun-Sat  
**Reported:** 5-10 days

**Specimen Required:**  
- **Collect:** Lavender (EDTA), pink (K2EDTA), or yellow (ACD solution A or B). **OR** bone marrow in lavender (EDTA).  
- **Specimen Preparation:** Transport 2 mL whole blood (Min: 1 mL) **OR** 1 mL bone marrow (Min: 1 mL).  
- **Storage/Transport Temperature:** Refrigerated. Also acceptable: Ambient.  
- **Remarks:** Posttransplant results will be compared to pretransplant recipient and donor genotypes, therefore, donor and recipient specimens must be obtained and genotyped before the transplant event occurs.

If cell sorting is required, refer to:  
- Chimerism, Posttransplant, Sorted Cells (T Cells) (3005393)  
- Chimerism, Posttransplant, Sorted Cells (B Cells) (3005401)  
- Chimerism, Posttransplant, Sorted Cells (Granulocytes) (3005409)  
- Chimerism, Posttransplant, Sorted Cells (Monocytes) (3005425)  
- Chimerism, Posttransplant, Sorted Cells (CD34+ Cells) (3005433)  
- Chimerism, Posttransplant, Sorted Cells (56+ Cells) (3005441)

**Stability (collection to initiation of testing):** Room temperature: 1 week; Refrigerated: 1 month; Frozen: Unacceptable

**Interpretive Data:**  
**Background Information:** Chimerism, Posttransplant  
**Indication:** Monitoring for bone marrow transplant patients; correlation with clinical status and consideration of the interval between bone marrow transplantation and testing is necessary for proper interpretation of results.

**Methodology:** PCR followed by capillary electrophoresis. Specimens are analyzed using 15 autosomal markers (D8S1179, D21S11, D7S820, CSF1PO, D3S1358, THO1, D13S317, D16S539, D2S1338, D19S433, vWa, TPOX, D18S51, D5S818, and FGA) and one gender marker (amelogenin).  
**Limit of Detection:** 2 percent of minor cell population.  
**Limitations:** Diagnostic errors can occur due to rare sequence variations.

This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the US Food and Drug Administration. This test was performed in a CLIA certified laboratory and is intended for clinical purposes.

**Note:**  
- Type Donor: Donor cells only.  
- Type Recipient: Recipient cells only.  
- Mixed: Donor and recipient cells present. Semiquantitative results of percentage of donor and recipient cells will be reported.

**CPT Code(s):** 81267

New York DOH Approved.

**HOTLINE NOTE:** Refer to the Test Mix Addendum for interface build information.
**Cell Isolation Request for Chimerism, Posttransplant, Sorted Cells**

**Methodology:** Polymerase Chain Reaction/Fragment Analysis/Immunomagnetic Cell Separation, Positive Selection

**Performed:** Sun-Sat

**Reported:** 5-10 days

**Specimen Required:**
- **Collect:** Lavender (EDTA), pink (K2EDTA), or yellow (ACD solution A or B). OR bone marrow in lavender (EDTA).
- **Specimen Preparation:** Transport 2 mL whole blood. (Min: 2 mL) OR 1 mL bone marrow (Min: 1 mL). Ship overnight. If cell sorting is required, specimens should be received within 24 hours of collection for optimal isolation of the requested cell line(s).
- **Storage/Transport Temperature:** Refrigerated. Also acceptable: Ambient.
- **Remarks:** Posttransplant genotypes will be compared to pretransplant recipient and donor genotypes. Therefore, donor and recipient specimens must be obtained and genotyped before the transplant event occurs. Please provide the results and date of the patient's most recent WBC and differential counts.
- **Unacceptable Conditions:** Clotted or hemolyzed specimens.

**Interpretive Data:**

**Background Information:** Chimerism, Posttransplant, Sorted Cells (B Cells)

**Indication:** Monitoring for bone marrow transplant patients; correlation with clinical status and consideration of the interval between bone marrow transplantation and testing is necessary for proper interpretation of results.

**Methodology:** PCR followed by capillary electrophoresis. Specimens are analyzed using 15 autosomal markers (D8S1179, D21S11, D7S820, CSF1PO, D3S1358, THO1, D13S317, D16S539, D2S1338, D19S433, vWa, TPOX, D18S51, D5S818, and FGA) and one gender marker (amelogenin).

**Limit of Detection:** 2 percent of minor cell population.

**Limitations:** Diagnostic errors can occur due to rare sequence variations.

This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the US Food and Drug Administration. This test was performed in a CLIA certified laboratory and is intended for clinical purposes.

**Note:**
- Type Donor: Donor cells only.
- Type Recipient: Recipient cells only.
- Mixed: Donor and recipient cells present. Semiquantitative results of percentage of donor and recipient cells will be reported.

**CPT Code(s):** 81268; 88184

New York DOH Approved.

**HOTLINE NOTE:** Refer to the Test Mix Addendum for interface build information.
New Test 3005441 Chimerism, Posttransplant, Sorted Cells (CD 56+ Cells) STRPOST-56

Click for Pricing

Cell Isolation Request for Chimerism, Post-Transplant, Sorted Cells Additional Technical Information

Methodology: Polymerase Chain Reaction/Fragment Analysis/Fluorescence-activated Cell Sorting
Performed: Sun-Sat
Reported: 5-12 days

Specimen Required: Collect: Lavender (EDTA), pink (K2EDTA), or yellow (ACD solution A or B). OR bone marrow in lavender (EDTA). Specimen Preparation: Transport 2 mL whole blood. (Min: 2 mL) OR 1 mL bone marrow (Min: 1 mL). Ship overnight. If cell sorting is required, specimens should be received within 24 hours of collection for optimal isolation of the requested cell line(s). Storage/Transport Temperature: Refrigerated. Also acceptable: Ambient.
Remarks: Posttransplant genotypes will be compared to pretransplant recipient and donor genotypes. Therefore, donor and recipient specimens must be obtained and genotyped before the transplant event occurs. Please provide the results and date of the patient's most recent WBC and differential counts. When submitting bone marrow specimens for cell sorting, please provide information regarding the general cellularity of the patient's bone marrow. See Cell Isolation Request for Chimerism, Posttransplant, Sorted Cells.
Unacceptable Conditions: Clotted or hemolyzed specimens.
Stability (collection to initiation of testing): Room temperature: 72 hours; Refrigerated: 72 hours; Frozen: Unacceptable

Interpretive Data:
Background Information: Chimerism, Posttransplant, Sorted Cells (CD56+ Cells)
Indication: Monitoring for bone marrow transplant patients; correlation with clinical status and consideration of the interval between bone marrow transplantation and testing is necessary for proper interpretation of results.
Methodology: PCR followed by capillary electrophoresis. Specimens are analyzed using 15 autosomal markers (D8S1179, D21S11, D7S820, CSF1PO, D3S1358, THO1, D13S317, D16S539, D2S1338, D19S433, vWA, TPOX, D18S51, D5S818, and FGA) and one gender marker (amelogenin).
Limit of Detection: 2 percent of minor cell population.
Limitations: Diagnostic errors can occur due to rare sequence variations.

This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the US Food and Drug Administration. This test was performed in a CLIA certified laboratory and is intended for clinical purposes.

Note: Type Donor: Donor cells only.
Type Recipient: Recipient cells only.
Mixed: Donor and recipient cells present. Semiquantitative results of percentage of donor and recipient cells will be reported.

CPT Code(s): 81268; 88184; 88185

New York DOH Approved.

HOTLINE NOTE: Refer to the Test Mix Addendum for interface build information.
New Test 3005409 Chimerism, Posttransplant, Sorted Cells (CD33+ Cells) STRPOST-33

Click for Pricing

Cell Isolation Request for Chimerism, Post-Transplant, Sorted Cells

Additional Technical Information

Methodology: Polymerase Chain Reaction/Fragment Analysis/Immunomagnetic Cell Separation, Positive Selection
Performed: Sun-Sat
Reported: 5-10 days

Specimen Required: Collect: Lavender (EDTA), pink (K2EDTA), or yellow (ACD solution A or B). OR bone marrow in lavender (EDTA).
Specimen Preparation: Transport 2 mL whole blood. (Min: 2 mL) OR 1 mL bone marrow (Min: 1 mL). Ship overnight. If cell sorting is required, specimens should be received within 24 hours of collection for optimal isolation of the requested cell line(s).
Storage/Transport Temperature: Refrigerated. Also acceptable: Ambient.

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

Unacceptable Conditions: Clotted or hemolyzed specimens.

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

Interpretive Data:

Background Information: Chimerism, Posttransplant, Sorted Cells (CD33+ Cells)
Indication: Monitoring for bone marrow transplant patients; correlation with clinical status and consideration of the interval between bone marrow transplantation and testing is necessary for proper interpretation of results.
Methodology: PCR followed by capillary electrophoresis. Specimens are analyzed using 15 autosomal markers (D8S1179, D21S11, D7S820, CSF1PO, D3S1358, THO1, D13S317, D16S539, D2S1338, D19S433, vWa, TPOX, D18S51, D5S818, and FGA) and one gender marker (amelogenin).
Limit of Detection: 2 percent of minor cell population.
Limitations: Diagnostic errors can occur due to rare sequence variations.

This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the US Food and Drug Administration. This test was performed in a CLIA certified laboratory and is intended for clinical purposes.

Note: Type Donor: Donor cells only.
Type Recipient: Recipient cells only.
Mixed: Donor and recipient cells present. Semiquantitative results of percentage of donor and recipient cells will be reported.

CPT Code(s): 81268; 88184

New York DOH Approved.

HOTLINE NOTE: Refer to the Test Mix Addendum for interface build information.
Methodology: Polymerase Chain Reaction/Fragment Analysis/Fluorescence-activated Cell Sorting
Performed: Sun-Sat
Reported: 5-12 days

Specimen Required: Collect: Lavender (EDTA), pink (K2EDTA), or yellow (ACD solution A or B). OR bone marrow in lavender (EDTA).
Specimen Preparation: Transport 2 mL whole blood. (Min: 2 mL) OR 1 mL bone marrow (Min: 1 mL). Ship overnight. If cell sorting is required, specimens should be received within 24 hours of collection for optimal isolation of the requested cell line(s).
Storage/Transport Temperature: Refrigerated. Also acceptable: Ambient.
Remarks: Posttransplant genotypes will be compared to pretransplant recipient and donor genotypes. Therefore, donor and recipient specimens must be obtained and genotyped before the transplant event occurs. Please provide the results and date of the patient's most recent WBC and differential counts. When submitting bone marrow specimens for cell sorting, please provide information regarding the general cellularity of the patient's bone marrow. See Cell Isolation Request for Chimerism, Posttransplant, Sorted Cells.

Unacceptable Conditions: Clotted or hemolyzed specimens.

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

Interpretive Data:
Background Information: Chimerism, Posttransplant, Sorted Cells (CD34+ Cells)
Indication: Monitoring for bone marrow transplant patients; correlation with clinical status and consideration of the interval between bone marrow transplantation and testing is necessary for proper interpretation of results.
Methodology: PCR followed by capillary electrophoresis. Specimens are analyzed using 15 autosomal markers (D8S1179, D21S11, D7S820, CSF1PO, D3S1358, THO1, D13S317, D16S539, D2S1338, D19S433, vWa, TPOX, D18S51, D5S818, and FGA) and one gender marker (amelogenin).
Limit of Detection: 2 percent of minor cell population.
Limitations: Diagnostic errors can occur due to rare sequence variations.

This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the US Food and Drug Administration. This test was performed in a CLIA certified laboratory and is intended for clinical purposes.

Note: Type Donor: Donor cells only.
Type Recipient: Recipient cells only.
Mixed: Donor and recipient cells present. Semiquantitative results of percentage of donor and recipient cells will be reported.

CPT Code(s): 81268; 88184; 88185

New York DOH Approved.

HOTLINE NOTE: Refer to the Test Mix Addendum for interface build information.
Cell Isolation Request for Chimerism, Post-Transplant, Sorted Cells

Additional Technical Information

Methodology: Polymerase Chain Reaction/Fragment Analysis/Immunomagnetic Cell Separation, Positive Selection
Performed: Sun-Sat
Reported: 5-10 days

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

Specimen Preparation: Transport 2 mL whole blood. (Min: 2 mL) OR 1 mL bone marrow (Min: 1 mL). Ship overnight. If cell sorting is required, specimens should be received within 24 hours of collection for optimal isolation of the requested cell line(s).

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

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

Unacceptable Conditions: Clotted or hemolyzed specimens.

Interpretive Data:
Background Information: Chimerism, Posttransplant, Sorted Cells (Granulocytes)
Indication: Monitoring for bone marrow transplant patients; correlation with clinical status and consideration of the interval between bone marrow transplantation and testing is necessary for proper interpretation of results.
Methodology: PCR followed by capillary electrophoresis. Specimens are analyzed using 15 autosomal markers (D8S1179, D21S11, D7S820, CSF1PO, D3S1358, THO1, D13S317, D16S539, D2S1338, D19S433, vWA, TPOX, D18S51, D5S818, and FGA) and one gender marker (amelogenin).
Limit of Detection: 2 percent of minor cell population.
Limitations: Diagnostic errors can occur due to rare sequence variations.

This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the US Food and Drug Administration. This test was performed in a CLIA certified laboratory and is intended for clinical purposes.

Note: Type Donor: Donor cells only.
Type Recipient: Recipient cells only.
Mixed: Donor and recipient cells present. Semiquantitative results of percentage of donor and recipient cells will be reported.

CPT Code(s): 81268; 88184

New York DOH Approved.

HOTLINE NOTE: Refer to the Test Mix Addendum for interface build information.
Cell Isolation Request for Chimerism, Post-Transplant, Sorted Cells

Methodology: Polymerase Chain Reaction/Fragment Analysis/Fluorescence-activated Cell Sorting

Performed: Sun-Sat

Reported: 5-12 days

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

Specimen Preparation: Transport 2 mL whole blood. (Min: 2 mL) OR 1 mL bone marrow (Min: 1 mL). Ship overnight. If cell sorting is required, specimens should be received within 24 hours of collection for optimal isolation of the requested cell line(s).

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

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

Unacceptable Conditions: Clotted or hemolyzed specimens.

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

Interpretive Data:

Background Information: Chimerism, Posttransplant, Sorted Cells (Monocytes)

Indication: Monitoring for bone marrow transplant patients; correlation with clinical status and consideration of the interval between bone marrow transplantation and testing is necessary for proper interpretation of results.

Methodology: PCR followed by capillary electrophoresis. Specimens are analyzed using 15 autosomal markers (D8S1179, D21S11, D7S820, CSF1PO, D3S1358, THO1, D13S317, D16S539, D2S1338, D19S433, vWa, TPOX, D18S51, D5S818, and FGA) and one gender marker (amelogenin).

Limit of Detection: 2 percent of minor cell population.

Limitations: Diagnostic errors can occur due to rare sequence variations.

This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the US Food and Drug Administration. This test was performed in a CLIA certified laboratory and is intended for clinical purposes.

Note: Type Donor: Donor cells only.
Type Recipient: Recipient cells only.
Mixed: Donor and recipient cells present. Semiquantitative results of percentage of donor and recipient cells will be reported.

CPT Code(s): 81268; 88184; 88185

New York DOH Approved.

HOTLINE NOTE: Refer to the Test Mix Addendum for interface build information.
Methodology: Polymerase Chain Reaction/Fragment Analysis/Immunomagnetic Cell Separation, Positive Selection
Performed: Sun-Sat
Reported: 5-10 days

Specimen Required: Collect: Lavender (EDTA), pink (K2EDTA), or yellow (ACD solution A or B). OR bone marrow in lavender (EDTA).
Specimen Preparation: Transport 2 mL whole blood. (Min: 2 mL) OR 1 mL bone marrow (Min: 1 mL). Ship overnight. If cell sorting is required, specimens should be received within 24 hours of collection for optimal isolation of the requested cell line(s).
Storage/Transport Temperature: Refrigerated. Also acceptable: Ambient.
Remarks: Posttransplant genotypes will be compared to pretransplant recipient and donor genotypes. Therefore, donor and recipient specimens must be obtained and genotyped before the transplant event occurs. Please provide the results and date of the patient's most recent WBC and differential counts. When submitting bone marrow specimens for cell sorting, please provide information regarding the general cellularity of the patient's bone marrow. See Cell Isolation Request for Chimerism, Posttransplant, Sorted Cells.
Specimen Preparation: Transport 2 mL whole blood. (Min: 2 mL) OR 1 mL bone marrow (Min: 1 mL). Ship overnight. If cell sorting is required, specimens should be received within 24 hours of collection for optimal isolation of the requested cell line(s).

Interpretive Data:
Background Information: Chimerism, Posttransplant, Sorted Cells (T Cells)
Indication: Monitoring for bone marrow transplant patients; correlation with clinical status and consideration of the interval between bone marrow transplantation and testing is necessary for proper interpretation of results.
Methodology: PCR followed by capillary electrophoresis. Specimens are analyzed using 15 autosomal markers (D8S1179, D21S11, D7S820, CSF1PO, D3S1358, THO1, D13S317, D16S539, D2S1338, D19S433, vWa, TPOX, D18S51, D5S818, and FGA) and one gender marker (amelogenin).
Limit of Detection: 2 percent of minor cell population.
Limitations: Diagnostic errors can occur due to rare sequence variations.

This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the US Food and Drug Administration. This test was performed in a CLIA certified laboratory and is intended for clinical purposes.

Note: Type Donor: Donor cells only.
Type Recipient: Recipient cells only.
Mixed: Donor and recipient cells present. Semiquantitative results of percentage of donor and recipient cells will be reported.

CPT Code(s): 81268; 88184

New York DOH Approved.

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

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<th>Description</th>
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<tbody>
<tr>
<td>3005449</td>
<td>Chimerism, Recipient, Pretransplant</td>
<td></td>
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</tbody>
</table>

**HOTLINE: Effective August 15, 2022**

**Additional Technical Information**

**Methodology:** Polymerase Chain Reaction/Fragment Analysis

**Performed:** Sun-Sat

**Reported:** varies

**Specimen Required:**
- **Collect:** Lavender (EDTA), pink (K2EDTA), or yellow (ACD solution A or B). **OR** bone marrow in lavender (EDTA). **OR** buccal brushes from recipient.
- **Specimen Preparation:** Transport 2 mL whole blood (Min: 1 mL) **OR** 1 mL bone marrow (Min: 1 mL) **OR** 2 buccal brushes in a sterile, dry tube. (Min: 2 brushes)
- **Storage/Transport Temperature:** Refrigerated. Also acceptable: Ambient.

**Remarks:** Posttransplant results will be compared to pretransplant recipient and donor genotypes, therefore, donor and recipient specimens must be obtained and genotyped before the transplant event occurs. If transplant event occurred prior to specimen collection, dry buccal brushes (not bloody) are acceptable.

**Stability (collection to initiation of testing):** Room temperature: 1 week; Refrigerated: 1 month; Frozen: Unacceptable

**Interpretive Data:**

**Background Information:** Chimerism, Recipient Pretransplant

**Indication:** Monitoring for bone marrow transplant patients; correlation with clinical status and consideration of the interval between bone marrow transplantation and testing is necessary for proper interpretation of results.

**Methodology:** PCR followed by capillary electrophoresis. Specimens are analyzed using 15 autosomal markers (D8S1179, D21S11, D7S820, CSF1PO, D3S1358, THO1, D13S317, D16S539, D2S1338, D19S433, vWa, TPOX, D18S51, D5S818 and FGA) and one gender marker (amelogenin).

**Limitations:** Diagnostic errors can occur due to rare sequence variations.

This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the US Food and Drug Administration. This test was performed in a CLIA certified laboratory and is intended for clinical purposes.

**CPT Code(s):** 81265

New York DOH Approved.

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

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<tr>
<td>81265</td>
<td>Chimerism, Recipient, Pretransplant</td>
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</tbody>
</table>

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### 2011157

Cobalamin/Propionate/Homocysteine Metabolism Related Disorders Panel, Sequencing and Deletion/Duplication

**VB12 PANEL**

**Methodology:** Massively Parallel Sequencing

**Performed:** Varies

**Reported:** 3 weeks

**Specimen Required:**
- **Collect:** Lavender or pink (EDTA) or yellow (ACD solution A or B).
- **Specimen Preparation:** Transport 3 mL whole blood. (Min: 2 mL)
- **Storage/Transport Temperature:** Refrigerated.
- **Unacceptable Conditions:** Serum or plasma; grossly hemolyzed or frozen specimens; saliva, buccal brush, or swab; FFPE tissue.

**Stability (collection to initiation of testing):** Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable

**Note:** Genes Tested: ABCD4*; ACSF3; ADEK; AHCY; AMN*; CBLIF; CBS*; CD320; CTH; CUBN; HCFC1; JVD*; LMBRD1; MAT1A; MCEE; MLYCD; MMAA; MMAB; MMACHC; MMADHC; MMUT; MTHFR; MTR; MTRR; PCCA*; PCCB; SUCLA2; SUCLG1; TCN2

*One or more exons are not covered by sequencing and/or deletion/duplication analysis for the indicated gene; see additional technical information

**CPT Code(s):** 81404; 81405; 81406; 81479
HOTLINE: Effective August 15, 2022

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<th>Code</th>
<th>Test Description</th>
<th>Methodology</th>
<th>Note</th>
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<tbody>
<tr>
<td>3001986</td>
<td>Contactin-Associated Protein-2 Antibody, IgG CBA-IFA with Reflex to Titer, CSF</td>
<td>Semi-Quantitative Cell-Based Indirect Fluorescent Antibody</td>
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<tr>
<td>2009452</td>
<td>Contactin-Associated Protein-2 Antibody, IgG CBA-IFA with Reflex to Titer, Serum</td>
<td>Semi-Quantitative Cell-Based Indirect Fluorescent Antibody</td>
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<tr>
<td>2012849</td>
<td>Critically Ill Rapid Genetic Diagnosis Panel, ~5000 Genes</td>
<td>RAPID SEQ</td>
<td>HOTLINE NOTE: There is a component change associated with this test. Remove component 2012850, Rapid Sequencing Specimen There is a clinically significant charting name change associated with this test. Change the charting name for component 2012851, Rapid Sequencing Interpretation from Rapid Sequencing Interpretation to Rapid Panel Interpretation.</td>
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<tr>
<td>2013956</td>
<td>CV2.1 Screen by CBA-IFA with Reflex to Titer</td>
<td>CV2.1 SCRN</td>
<td></td>
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<tr>
<td>3002257</td>
<td>CV2.1 Screen by CBA-IFA with Reflex to Titer, CSF</td>
<td>CV2.1 CSF</td>
<td></td>
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<tr>
<td>3001513</td>
<td>CYP2D6</td>
<td>2D6GENO</td>
<td>Interpretive Data: Refer to report. Note: Whole blood is the preferred specimen type. Saliva samples that yield inadequate DNA quality and/or quantity will be reported as inconclusive if test performance does not meet laboratory-determined criteria for reporting. Saliva is only validated for the OpenArray and CNV portions of testing and not the long-range PCR/duplication testing. Long-range PCR/duplication testing will not be performed for saliva samples. If long-range PCR/duplication testing is performed, additional charges will apply. Approximately less than 5% of samples require 2D6 copy number determination. CPT Code(s): 81226; if reflexed, add 81479</td>
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<tr>
<td>3001524</td>
<td>Cytochrome P450 Genotyping Panel</td>
<td>CYP PANEL</td>
<td>Interpretive Data: Refer to report. Note: Whole blood is the preferred specimen type. Saliva samples that yield inadequate DNA quality and/or quantity will be reported as inconclusive if test performance does not meet laboratory-determined criteria for reporting. Saliva is only validated for the OpenArray and CNV portions of testing and not the long-range PCR/duplication testing. Long-range PCR/duplication testing will not be performed for saliva samples. If long-range PCR/duplication testing is performed, additional charges will apply. Approximately less than 5% of samples require 2D6 copy number determination. CPT Code(s): 81225; 81226; 81227; 81230; 81231; 81479; if reflexed, add 81479</td>
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## Cytochrome P450 Genotyping Panel, with GeneDose Access

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<tr>
<th>Code</th>
<th>Description</th>
<th>Methodology</th>
<th>CPT Code(s)</th>
<th>Notes</th>
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</thead>
<tbody>
<tr>
<td>3004255</td>
<td>Cytochrome P450 Genotyping Panel, with GeneDose Access</td>
<td>Interpretive Data: Refer to report.</td>
<td>81225; 81226; 81227; 81230; 81231; 81479; if reflexed, add 81479</td>
<td>Whole blood is the preferred specimen type. Saliva samples that yield inadequate DNA quality and/or quantity will be reported as inconclusive if test performance does not meet laboratory-determined criteria for reporting. Saliva is only validated for the OpenArray and CNV portions of testing and not the long-range PCR/duplication testing. Long-range PCR/duplication testing will not be performed for saliva samples. If long-range PCR/duplication testing is performed, additional charges will apply. Approximately less than 5% of samples require 2D6 copy number determination.</td>
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</tbody>
</table>

## Deletion/Duplication Analysis by MLPA

<table>
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<th>Methodology</th>
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<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>3003144</td>
<td>Deletion/Duplication Analysis by MLPA</td>
<td>Deletion/duplication analysis by MLPA is offered for the following genes: F8, HBB, MLH1/MSH2, MSH6, SDHB, SDHC, SDHD, SHOX</td>
<td></td>
<td>HOTLINE NOTE: There is a reflexive pattern change associated with this test. Remove reflex from 0051735, CFTR Deletion/Duplication Bill Remove reflex from 3003147, ABCD1 Deletion/Duplication BILL Remove reflex from 3003149, ALPORT Del/Dup BILL (COL4A5) Remove reflex from 3003151, APC Deletion/Duplication BILL Remove reflex from 3003153, ATP7A Deletion/Duplication BILL Remove reflex from 3003155, BMPRA1 Deletion/Duplication BILL Remove reflex from 3003157, BRCA1 Deletion/Duplication BILL (BRCA1) Remove reflex from 3003159, BRCA2 Deletion/Duplication BILL (BRCA2) Remove reflex from 3003161, EDS-VI Deletion/Duplication BILL (PLOD1) Remove reflex from 3003163, F9 Deletion/Duplication BILL Remove reflex from 3003165, FBN1 Deletion/Duplication BILL Remove reflex from 3003167, HHT Del/Dup BILL (ACVR1L and ENG) Remove reflex from 3003169, LS Deletion/Duplication BILL (SPRED1) Remove reflex from 3003171, MEN1 Deletion/Duplication BILL Remove reflex from 3003181, NF1 Deletion/Duplication BILL Remove reflex from 3003183, OTC Deletion/Duplication BILL Remove reflex from 3003185, PCD Deletion/Duplication BILL (SLC22A5) Remove reflex from 3003191, PRSS1 Deletion/Duplication BILL Remove reflex from 3003193, PTEN Deletion/Duplication BILL Remove reflex from 3003195, RASA1 Deletion/Duplication BILL Remove reflex from 3003197, RETT Deletion/Duplication BILL (MECP2) Remove reflex from 3003203, SMAD4 Deletion/Duplication BILL Remove reflex from 3003205, SPINK1 Deletion/Duplication BILL Remove reflex from 3003207, STK11 Deletion/Duplication BILL Remove reflex from 3003209, TP53 Deletion/Duplication BILL Remove reflex from 3003211, VHL Deletion/Duplication BILL Remove reflex from 3003213, VHL Deletion/Duplication BILL (ACADVL)</td>
</tr>
</tbody>
</table>

## Dipeptidyl Aminopeptidase-Like Protein 6 (DPPX) Antibody, IgG by Cell-Based Indirect Fluorescent Antibody

<table>
<thead>
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<th>Code</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>3004512</td>
<td>Dipeptidyl Aminopeptidase-Like Protein 6 (DPPX) Antibody, IgG by Cell-Based Indirect Fluorescent Antibody</td>
<td>Semi-Quantitative Cell-Based Indirect Fluorescent Antibody</td>
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<th>Code</th>
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<th>Notes</th>
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<tr>
<td>3004359</td>
<td>Dipeptidyl Aminopeptidase-Like Protein 6 (DPPX) Antibody, IgG by Cell-Based Indirect Fluorescent Antibody</td>
<td>Semi-Quantitative Cell-Based Indirect Fluorescent Antibody</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Diphtheria & Tetanus Antibodies, IgG

Performed: Sun-Sat
Reported: 1-3 days

Double-Stranded DNA (dsDNA) Antibody, IgG by ELISA with Reflex to dsDNA Antibody, IgG 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: 0.5 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Plasma. Contaminated, hemolyzed, or severely lipemic specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 month (avoid repeated freeze/thaw cycles)

Double-Stranded DNA (dsDNA) Antibody, IgG by IFA (using Crithidia luciliae)

Specimen Required: Collect: Serum separator tube.
Specimen Preparation: Separate serum from cells ASAP or within 2 hours of collection. Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.15 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Plasma. Cerebral spinal fluid. Contaminated, hemolyzed, or severely lipemic specimens.
Stability (collection to initiation of testing): After separation from cells: Ambient: 48 hours; Refrigerated: 2 weeks; Frozen: 1 month (avoid repeated freeze/thaw cycles)

Drug Profile, Expanded Targeted Panel by LC-MS/MS, Urine

New Test

Methodology: Qualitative Liquid Chromatography-Tandem Mass Spectrometry
Performed: Mon., Fri.
Reported: 1-7 days

Specimen Required: Collect: Random urine with no additives. Fresh morning catch if possible. If an acute ingestion has taken place, collecting the specimen too early after the ingestion may produce negative results. It is suggested to wait at least 4 to 6 hours post ingestion to obtain the specimen for best results.
Specimen Preparation: Transport 4 mL urine. (Min: 2 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Specimens exposed to repeated freeze/thaw cycles.
Stability (collection to initiation of testing): Ambient: 1 days; Refrigerated: 2 weeks; Frozen: 2 months

Reference Interval: By report

Interpretive Data:
The drug screen panel can detect 127 drugs and drug metabolites by LC-MS/MS. The absence of expected drug(s) and/or drug metabolite(s) may indicate non-compliance, inappropriate timing of specimen collection relative to drug administration, poor drug absorption, diluted/adulterated urine, or limitations of testing. The concentration at which the screening test can detect a drug or metabolite varies within a drug class. The concentration value must be greater than or equal to the cutoff to be reported as positive. Interpretive questions should be directed to the laboratory.

For medical purposes only; not valid for forensic use

This test was developed, and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the US Food and Drug Administration. This test was performed in a CLIA certified laboratory and is intended for clinical purposes.

CPT Code(s): 80323; 80325; 80329; 80334; 80337; 80338; 80341; 80344; 80347; 80353; 80354; 80355; 80356; 80357; 80359; 80360; 80361; 80363; 80365; 80366; 80368; 80370; 80371; 80372; 80373; 80377; 83992 (Alt code: GO482)

New York DOH Approved.

HOTLINE NOTE: Refer to the Test Mix Addendum for interface build information.
**New Test** 3004833 Drug Profile, Expanded Targeted Panel by LC-MS/MS, Serum/Plasma

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

**Performed:** Mon, Fri

**Reported:** 1-8 days

**Specimen Required:** Collect: Plain red (no additives). If an acute ingestion has taken place, it is preferable to obtain the specimen between 2 and 6 hours after ingestion or when the patient is symptomatic. Samples collected in plain red, grey-top, sodium/potassium heparin (lavender), or pink (K2EDTA) are acceptable.

**Specimen Preparation:** Remove plasma from cells ASAP or within 2 hours of collection. Transfer 4 mL plasma to an ARUP Standard Transport Tube. (Min: 2 mL) Also acceptable: Serum. Separator tubes or light blue (sodium citrate). Specimens exposed to repeated freeze/thaw cycles. Post-mortem specimens.

**Storage/Transport Temperature:** Refrigerated.

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

**Reference Interval:** By report

**Interpretive Data:**
(Serum/Plasma)

The drug screen panel can detect 127 drugs and drug metabolites by LC-MS/MS. The absence of expected drug(s) and/or drug metabolite(s) may indicate non-compliance, inappropriate timing of specimen collection relative to drug administration, poor drug absorption, or limitations of testing. The concentration at which the screening test can detect a drug or metabolite varies within a drug class. The concentration value must be greater than or equal to the cutoff to be reported as positive. Interpretive questions should be directed to the laboratory.

For medical purposes only; not valid for forensic use

This test was developed, and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the US Food and Drug Administration. This test was performed in a CLIA certified laboratory and is intended for clinical purposes.

**CPT Code(s):** 80323; 80325; 80329; 80334; 80337; 80338; 80341; 80344; 80347; 80348; 80353; 80354; 80355; 80356; 80357; 80359; 80360; 80361; 80363; 80365; 80366; 80368; 80370; 80371; 80372; 80373; 80377; 83992 (Alt code: GO482)

New York DOH Approved.

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

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**Early-Onset Alzheimer's Panel, Sequencing**

**3001585**

**Performed:** Varies

**Reported:** 3 weeks

**Specimen Required:** Collect: Lavender or pink (EDTA) or yellow (ACD solution A or B).

**Specimen Preparation:** Transport 3 mL whole blood. (Min: 2 mL)

**Storage/Transport Temperature:** Refrigerated.

**Unacceptable Conditions:** Serum or plasma; grossly hemolyzed or frozen specimens; saliva, buccal brush, or swab; FFPE tissue.

**Stability (collection to initiation of testing):** Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable
### New Test 3004764 Fetal Aneuploidy Screening FAS

<table>
<thead>
<tr>
<th>History Form for Fetal Aneuploidy Screening - REQUIRED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Optional Informed Consent Form for Fetal Aneuploidy Screening</td>
</tr>
</tbody>
</table>

**Methodology:** Targeted Sequencing with SNPs  
**Performed:** Varies  
**Reported:** 12-14 days  
**Specimen Required:**  
- **Collect:** Maternal whole blood in Cell-Free DNA BCT tube. A kit must be ordered prior to specimen collection (ARUP Supply #50223) available online through eSupply using ARUP Connect™ or by contacting ARUP Client Services at (800) 522-2787.  
- **Specimen Preparation:** Transport 20 mL maternal blood in Cell-Free DNA BCT tube. (Min: 16 mL)  
- **Storage/Transport Temperature:** Room temperature.  
- **Remarks:** A patient history form is required prior to testing.  
- **Stability (collection to initiation of testing):** Ambient: 5 days; Refrigerated: Unacceptable; Frozen: Unacceptable  

**Reference Interval:** By report  

**Interpretive Data:** Refer to report.  

**Note:** Testing utilizes a single-nucleotide polymorphism (SNP)/informatics-based approach to detect fetal copy number for the five chromosomes responsible for most live-birth aneuploidies (chromosomes 13, 18, 21, X, Y, and triploidy). This is a screening test to help identify fetuses at risk for Down Syndrome, trisomy 18, trisomy 13, and Turner Syndrome. Test should not be considered diagnostic. It is recommended that any positive result be confirmed by amniocentesis or CVS.  

**CPT Code(s):** 81420  

New York DOH Approved.  

**HOTLINE NOTE:** Refer to the Test Mix Addendum for interface build information.
Methodology: Targeted Sequencing with SNPs
Performed: Sun-Sat: Varies
Reported: 12-14 days

Specimen Required: Collect: Maternal whole blood in Cell-Free DNA BCT tube. A kit must be ordered prior to specimen collection (ARUP Supply #50223) available online through eSupply using ARUP Connect™ or by contacting ARUP Client Services at (800) 522-2787.
Storage/Transport Temperature: Room temperature.
Remarks: Patient history form is required prior to testing.
Stability (collection to initiation of testing): Ambient: 5 days; Refrigerated: Unacceptable; Frozen: Unacceptable

Reference Interval: By report

Interpretive Data: Refer to report.

Note: Testing utilizes a single-nucleotide polymorphism (SNP)/informatics-based approach to detect fetal copy number for the five chromosomes responsible for most live-birth aneuploidies (chromosomes 13, 18, 21, X, Y, and triploidy) and certain specific microdeletion syndromes (see current list of microdeletion syndromes listed under "Ordering Recommendations"). This is a screening test to help identify fetuses at risk for Down syndrome, trisomy 18, trisomy 13, and Turner syndrome, as well as fetuses affected with the specified microdeletion syndromes listed. Test should not be considered diagnostic. All positive results should be confirmed by amniocentesis or CVS.

CPT Code(s): 81420; 81422

New York DOH Approved.

HOTLINE NOTE: Refer to the Test Mix Addendum for interface build information.
HOTLINE: Effective August 15, 2022

New Test 3004781 Fetal Aneuploidy Screening with Microdeletions FAS MD

Click for Pricing

History Form for Fetal Aneuploidy Screening

Additional Technical Information

Optional Informed Consent Form for Fetal Aneuploidy Screening

Methodology: Targeted Sequencing with SNPs

Performed: Varies

Reported: 12-14 days

Specimen Required: Collect: Maternal whole blood in Cell-Free DNA BCT tube. A kit must be ordered prior to specimen collection (ARUP Supply #50223) available online through eSupply using ARUP Connect™ or by contacting ARUP Client Services at (800) 522-2787. Specimen Preparation: Transport 20 mL maternal blood in Cell-Free DNA BCT tube. (Min: 16 mL) Storage/Transport Temperature: Room temperature. Remarks: Patient history form is required prior to testing. Stability (collection to initiation of testing): Ambient: 5 days; Refrigerated: Unacceptable; Frozen: Unacceptable

Reference Interval: By report

Interpretive Data:

Refer to report.

Note: Testing utilizes a single-nucleotide polymorphism (SNP)/informatics-based approach to detect fetal copy number for the five chromosomes responsible for most live-birth aneuploidies (chromosomes 13, 18, 21, X, Y, and triploidy) and certain specific microdeletion syndromes (see current list of microdeletion syndromes listed under "Ordering Recommendations"). This is a screening test to help identify fetuses at risk for Down syndrome, trisomy 18, trisomy 13, and Turner syndrome, as well as fetuses affected with the specified microdeletion syndromes listed. Test should not be considered diagnostic. All positive results should be confirmed by amniocentesis or CVS.

CPT Code(s): 81420; 81422

New York DOH Approved.

HOTLINE NOTE: Refer to the Test Mix Addendum for interface build information.
**0050164**  Fungal Antibodies by Immunodiffusion

**Performed:** Sun-Sat  
**Reported:** 3-6 days

**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) 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)

**Reference Interval:**

<table>
<thead>
<tr>
<th>Test Number</th>
<th>Components</th>
<th>Reference Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>0050171</td>
<td>Aspergillus Antibodies by Immunodiffusion</td>
<td>Not Detected</td>
</tr>
<tr>
<td>0050172</td>
<td>Blastomyces dermatitidis Antibodies by Immunodiffusion, Serum</td>
<td>Not Detected</td>
</tr>
<tr>
<td>0050174</td>
<td>Coccidioides Antibody by ID</td>
<td>Not Detected</td>
</tr>
<tr>
<td></td>
<td>Histoplasma Antibodies by Immunodiffusion</td>
<td>Not Detected</td>
</tr>
</tbody>
</table>

**Interpretive Data:**  
Refer to report.

**Note:** This immunodiffusion test detects antibodies to *Aspergillus, Coccidioides, Histoplasma,* and *Blastomyces.*

**HOTLINE NOTE:** There is a clinically significant charting name change associated with this test.  
Change the charting name for component 0050171, Aspergillus spp. Abs, Precipitin from Aspergillus spp. Abs, Precipitin to Aspergillus Antibodies by ID.  
Change the charting name for component 0050172, Blastomyces dermatitidis Abs, Precipitin from Blastomyces dermatitidis Abs, Precipitin to Blastomyces Antibodies by ID.  
Change the charting name for component 0050174, Histoplasma spp. Abs, Precipitin from Histoplasma spp. Abs, Precipitin to Histoplasma Antibodies by ID.
### Fungal Antibodies with Reflex to *Blastomyces dermatitidis* Antibodies by Immunodiffusion, CSF

**Methodology:** Semi-Quantitative Complement Fixation/Semi-Quantitative Enzyme-Linked Immunosorbent Assay/Immunodiffusion

**Reference Interval:**

<table>
<thead>
<tr>
<th>Test Number</th>
<th>Components</th>
<th>Reference Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>3000231</td>
<td>Aspergillus Antibodies, CSF by CF</td>
<td>Less than 1:2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Test Number</th>
<th>Components</th>
<th>Reference Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>3000231</td>
<td><em>Blastomyces dermatitidis</em> Antibodies by Immunoassay with Reflex to Immunodiffusion, CSF</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Test Number</th>
<th>Components</th>
<th>Reference Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>3000233</td>
<td><em>Blastomyces dermatitidis</em> Antibodies by Immunodiffusion, CSF</td>
<td>0.9 IV or less: Negative 1.0-1.4 IV: Equivocal 1.5 IV or greater: Positive</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Test Number</th>
<th>Components</th>
<th>Reference Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>3000059</td>
<td>Coccidioides Antibodies by Complement Fixation, CSF</td>
<td>Less than 1:2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Test Number</th>
<th>Components</th>
<th>Reference Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>3000059</td>
<td><em>Histoplasma</em> Mycelia by CF</td>
<td>Less than 1:2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Test Number</th>
<th>Components</th>
<th>Reference Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>3000059</td>
<td><em>Histoplasma</em> Yeast by CF</td>
<td>Less than 1:2</td>
</tr>
</tbody>
</table>

**Note:** This test detects antibodies to *Aspergillus*, *Coccidioides*, and *Histoplasma* by complement fixation and *Blastomyces* by immunoassay. If *Blastomyces* antibodies are equivocal or positive by immunoassay then *Blastomyces dermatitidis* Antibodies by Immunodiffusion, CSF will be added. Additional charges apply.

**HOTLINE NOTE:** There is a clinically significant charting name change associated with this test. Change the charting name for component 3000233, Blastomyces Antibody by EIA, CSF from Blastomyces Antibody by EIA, CSF to *Blastomyces* Antibodies EIA, CSF.
**3000235**  
**Fungal Antibodies with Reflex to Blastomyces dermatitidis Antibodies by Immunodiffusion, Serum**

**Methodology:** Semi-Quantitative Complement Fixation/Semi-Quantitative Enzyme-Linked Immunosorbent Assay/Immunodiffusion

**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: 0.6 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)

**Reference Interval:**

<table>
<thead>
<tr>
<th>Test Number</th>
<th>Components</th>
<th>Reference Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>0050100</td>
<td>Aspergillus Antibodies by Complement Fixation</td>
<td>Less than 1:8</td>
</tr>
<tr>
<td>0050170</td>
<td>Coccidioides Antibodies by Complement Fixation</td>
<td>Less than 1:2</td>
</tr>
<tr>
<td>0050625</td>
<td>Histoplasma Antibodies by Complement Fixation</td>
<td></td>
</tr>
<tr>
<td>3000236</td>
<td>Blastomyces dermatitidis Antibodies by Immunoassay with Reflex to Immunodiffusion, Serum</td>
<td></td>
</tr>
</tbody>
</table>

**Test Number** | **Components** | **Reference Interval** |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>3000236</td>
<td>Blastomyces dermatitidis Antibodies by Immunoassay with Reflex to Immunodiffusion, Serum</td>
<td>0.9 IV or less: Negative 1.0-1.4 IV: Equivocal 1.5 IV or greater: Positive</td>
</tr>
<tr>
<td>0050172</td>
<td>Blastomyces dermatitidis Antibodies by Immunodiffusion, Serum</td>
<td>Not Detected</td>
</tr>
</tbody>
</table>

**Note:** This test detects antibodies to Aspergillus, Coccidioides, and Histoplasma by complement fixation and Blastomyces by immunoassay. If Blastomyces antibodies are equivocal or positive by immunoassay, then Blastomyces dermatitidis Antibodies by Immunodiffusion will be added. Additional charges apply.

**HOTLINE NOTE:** There is a clinically significant charting name change associated with this test.
Change the charting name for component 0050100, Aspergillus Antibody by CF from Aspergillus Antibody by CF to Aspergillus Antibodies by CF.
Change the charting name for component 0050330, Histoplasma Mycelia, CF to Histoplasma Mycelia Antibodies by CF.
Change the charting name for component 0050335, Histoplasma Yeast, CF to Histoplasma Yeast Antibodies by CF.
Change the charting name for component 3000237, Blastomyces Antibody by EIA, SER from Blastomyces Antibody by EIA, SER to Blastomyces Antibodies EIA, SER.

**3001267**  
**Gamma Aminobutyric Acid Receptor, Type B (GABA-BR) Antibody, IgG by CBA-IFA with Reflex to Titer, CSF**

**Methodology:** Semi-Quantitative Cell-Based Indirect Fluorescent Antibody

**3001270**  
**Gamma Aminobutyric Acid Receptor, Type B (GABA-BR) Antibody, IgG by CBA-IFA with Reflex to Titer, Serum**

**Methodology:** Semi-Quantitative Cell-Based Indirect Fluorescent Antibody
New Test 3005478  Glomerular Filtration Rate (Estimated)  GFR EST

Click for Pricing

Methodology: Quantitative Enzymatic
Performed: Sun-Sat
Reported: Within 24 hours

Specimen Required: Collect: Plasma separator tube or serum separator tube.
Specimen Preparation: Allow specimen to clot completely at room temperature. Separate serum or plasma from cells ASAP or within 2 hours of collection. Transfer 1 mL serum or plasma to an ARUP Standard Transport Tube. (Min: 0.2 mL)
Storage/Transport Temperature: Refrigerated.
Remarks: Patient age and sex are required for calculation.
Unacceptable Conditions: Specimens obtained through catheters used to infuse hyperalimentation fluid. Specimens collected with potassium oxalate/sodium fluoride or sodium citrate.
Stability (collection to initiation of testing): After separation from cells: Ambient: 1 week; Refrigerated: 1 week; Frozen: 3 months

Reference Interval: Calculated GFR >= 60 mL/min / 1.73 square meters

<table>
<thead>
<tr>
<th>Age</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-30 days</td>
<td>0.50-1.20 mg/dL</td>
<td>0.50-0.90 mg/dL</td>
</tr>
<tr>
<td>31-364 days</td>
<td>0.40-0.70 mg/dL</td>
<td>0.40-0.60 mg/dL</td>
</tr>
<tr>
<td>1-3 years</td>
<td>0.40-0.70 mg/dL</td>
<td>0.40-0.70 mg/dL</td>
</tr>
<tr>
<td>4-6 years</td>
<td>0.50-0.80 mg/dL</td>
<td>0.50-0.80 mg/dL</td>
</tr>
<tr>
<td>7-9 years</td>
<td>0.30-0.60 mg/dL</td>
<td>0.30-0.70 mg/dL</td>
</tr>
<tr>
<td>10-11 years</td>
<td>0.30-0.70 mg/dL</td>
<td>0.40-0.80 mg/dL</td>
</tr>
<tr>
<td>12-13 years</td>
<td>0.40-0.80 mg/dL</td>
<td>0.40-0.80 mg/dL</td>
</tr>
<tr>
<td>14-15 years</td>
<td>0.40-1.10 mg/dL</td>
<td>0.30-0.90 mg/dL</td>
</tr>
<tr>
<td>16-18 years</td>
<td>0.60-1.20 mg/dL</td>
<td>0.50-1.00 mg/dL</td>
</tr>
<tr>
<td>19 years and older</td>
<td>0.69-1.22 mg/dL</td>
<td>0.59-1.01 mg/dL</td>
</tr>
</tbody>
</table>

Interpretive Data:
The estimated glomerular filtration rate (eGFR) was calculated using the 2021 CKD-EPI eGFR creatinine equation, which does not include race as a factor. This equation is validated in individuals 18 years of age and older. Accurate estimation of GFR requires stable day-to-day creatinine. Creatinine-based eGFR is less accurate in patients with extremes of muscle mass, restriction of dietary protein, ingestion of creatine, extra-renal metabolism of creatinine, or treatment with medications that affect renal tubular creatinine secretion. The eGFR is normalized to a body surface area of 1.73 square meters.

GFR Categories in Chronic Kidney Disease (CKD)

<table>
<thead>
<tr>
<th>GFR Category</th>
<th>GFR (mL/min / 1.73 square meters)</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>G1</td>
<td>90 or greater</td>
<td>Normal to high*</td>
</tr>
<tr>
<td>G2</td>
<td>60-89</td>
<td>Mild decrease*</td>
</tr>
<tr>
<td>G3a</td>
<td>45-59</td>
<td>Mild to moderate decrease</td>
</tr>
<tr>
<td>G3b</td>
<td>30-44</td>
<td>Moderate to severe decrease</td>
</tr>
<tr>
<td>G4</td>
<td>15-29</td>
<td>Severe decrease</td>
</tr>
<tr>
<td>G5</td>
<td>14 or less</td>
<td>Kidney failure</td>
</tr>
</tbody>
</table>

*In the absence of evidence of kidney damage, neither GFR category G1 nor G2 fulfill the criteria for CKD (Kidney Int Suppl 2013;3:1-150).

CPT Code(s): 82565

New York DOH Approved.

HOTLINE NOTE: Refer to the Test Mix Addendum for interface build information.
New Test 3005011 H3.3 G34W Mutant by Immunohistochemistry H3G34W IHC

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Immunohistochemistry Stain Form
Recommended (ARUP form #32978)

Methodology: Immunohistochemistry
Performed: Mon-Fri
Reported: 1-3 days

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 highly recommended 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.
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.

Interpretive Data:
This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the U.S. Food and Drug Administration. This test was performed in a CLIA-certified laboratory and is intended for clinical purposes.

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.

2012026 Hereditary Breast and Gynecological Cancers Panel, Sequencing and Deletion/Duplication BOCAPAN

Methodology: Massively Parallel Sequencing/Sequencing/Multiplex Ligation-dependent Probe Amplification
Performed: Varies
Reported: 3-6 weeks

Specimen Required: Collect: Lavender or pink (EDTA) or yellow (ACD solution A or B).
Specimen Preparation: Transport 3 mL whole blood. (Min: 3 mL)
Storage/Transport Temperature: Refrigerated.
Unacceptable Conditions: Serum or plasma; grossly hemolyzed or frozen specimens; saliva, buccal brush, or swab; FFPE tissue; DNA.
Stability (collection to initiation of testing): Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable

Note: Genes tested: ATM; BARD1; BRCA1*; BRCA2; BRIP1; CDH1*; CHEK2*; DICER1; EPCAM**; MLH1; MSH2; MSH6; NBN; NF1; PALB2; PMS2; PTEN*; RAD51C; RAD51D; RECQL; SMARCA4; STK11; TP53

*One or more exons are not covered by sequencing and/or deletion/duplication analysis for the indicated gene; see Additional Technical Information.
**Deletion/duplication analysis of EPCAM (NM_002354) exon 9 only, sequencing is not available for this gene.

CPT Code(s): 81432; 81433
### 2012032  Hereditary Cancer Panel, Sequencing and Deletion/Duplication  CANCER PAN

**Methodology:** Massively Parallel Sequencing/Sequencing/Multiplex Ligation-dependent Probe Amplification

**Specimen Required:**
- **Collect:** Lavender or pink (EDTA) or yellow (ACD solution A or B).
- **Specimen Preparation:** Transport 3 mL whole blood. (Min: 2 mL)
- **Storage/Transport Temperature:** Refrigerated
- **Unacceptable Conditions:**
  - Serum or plasma; grossly hemolyzed or frozen specimens; saliva, buccal brush, or swab; FFPE tissue; DNA
  - Stability (collection to initiation of testing): Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable

**Note:** Genes Tested: ALK, APC*, ATM, AXIN2, BAP1, BARD1, BMPR1A*, BRCA1*, BRCA2, BRIP1, CDC73, CDH1*, CDK4, CDKN1B, CDKN2A*, CHEK2*, CTNNA1*, DICER1, EFGF, EPCAM**, FH, FLCN*, HOXB13, HRAS, KIT, LZTR1, MAX, MCM4, MEN1*, MET, MIF*, MLH1, MLH3*, MSH2, MSH3, MSH6, MUTYH, NBN, NF1, NF2, NTHL1, PALB2, PDGFA*, PMS2, POLD1, POLE, POT1, PRKAR1A, PTCH1, PTEN*, RAD51C, RAD51D, RB1*, RECL*, RET, SDHA*, SDHAF2, SDHB, SDHC*, SDHD*, SMAD4, SMARCA4, SMARCB1, SMARCE1*, STK11, SUFU, TERT, TMEM127, TP53, TSC1, TSC2, VHL*, WT1

* - One or more exons are not covered by sequencing and/or deletion/duplication analysis for the indicated gene; see Additional Technical Information.
** - Deletion/duplication analysis of EPCAM (NM_002354) exon 9 only, sequencing is not available for this gene.

**CPT Code(s):** 81432; 81433; 81435; 81436; 81437; 81438

### 2013449  Hereditary Gastrointestinal Cancer Panel, Sequencing and Deletion/Duplication  GICAN PAN

**Methodology:** Massively Parallel Sequencing/Sequencing/Multiplex Ligation-dependent Probe Amplification

**Specimen Required:**
- **Collect:** Lavender or pink (EDTA) or yellow (ACD solution A or B).
- **Specimen Preparation:** Transport 3 mL whole blood. (Min: 3 mL)
- **Storage/Transport Temperature:** Refrigerated
- **Unacceptable Conditions:**
  - Serum or plasma; grossly hemolyzed or frozen specimens; saliva, buccal brush, or swab; FFPE tissue; DNA
  - Stability (collection to initiation of testing): Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable

**Note:** Genes Tested: APC*, AXIN2, BMPR1A*, CDH1*, CHEK2*, EPCAM**, KIT, MLH1, MLH3*, MSH2, MSH3, MSH6, MUTYH, NTHL1, PDGFA*, PMS2, POLD1, POLE, PTEN*, SDHA*, SDHAF2, SDHB, SDHC*, SDHD*, SMAD4, SMARCA4, SMARCB1, SMARCE1*, STK11, TP53

*One or more exons are not covered by sequencing and/or deletion/duplication analysis for the indicated gene; see Additional Technical Information.
**Deletion/duplication analysis of EPCAM (NM_002354) exon 9 only, sequencing is not available for this gene.

**CPT Code(s):** 81435; 81436

### 2009337  Hereditary Hemorrhagic Telangiectasia (HHT) Panel, Sequencing and Deletion/Duplication  HHT PANEL

**Methodology:** Massively Parallel Sequencing

**Performed:**Varies

**Reported:** 3 weeks

**Specimen Required:**
- **Collect:** Lavender or pink (EDTA) or yellow (ACD solution A or B).
- **Specimen Preparation:** Transport 3 mL whole blood. (Min: 3 mL)
- **Storage/Transport Temperature:** Refrigerated.
- **Unacceptable Conditions:**
  - Serum or plasma; grossly hemolyzed or frozen specimens; saliva, buccal brush, or swab; FFPE tissue.
  - Stability (collection to initiation of testing): Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable

**Note:** GENES TESTED: ACVR1L1, BMPR2, ENG,* EPHB4, GDF2, RASA1, SMAD4

*One or more exons are not covered by deletion/duplication analysis for the indicated gene; see Additional Technical Information.

**HOTLINE NOTE:** Remove information found in the Remarks field.

**CPT Code(s):** 81405; 81406; 81479
### Hereditary Renal Cancer Panel, Sequencing and Deletion/Duplication

**Methodology:** Massively Parallel Sequencing/Sequencing/Multiplex Ligation-dependent Probe Amplification

**Specimen Required:**
- **Collect:** Lavender or pink (EDTA) or yellow (ACD solution A or B)
- **Specimen Preparation:** Transport 3 mL whole blood. (Min: 2 mL)
- **Storage/Transport Temperature:** Refrigerated.
- **Unacceptable Conditions:** Serum or plasma; grossly hemolyzed or frozen specimens; saliva, buccal brush, or swab; FFPE tissue; DNA
- **Stability (collection to initiation of testing):** Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable

**Note:** Genes Tested: BAP1; DICER1; EPCAM**; FH; FLCN*; MET; MLH1; MSH2; MSH6; PMS2; PTEN*; SDHA*; SDHB; SDHC*; SDHD*; SMARCA4; SMARCB1; TP53; TSC1; TSC2; VHL*

*One or more exons are not covered by sequencing and/or deletion/duplication analysis for the indicated gene; see Additional Technical Information.

**Deletion/duplication analysis of EPCAM (NM_002354) exon 9 only, sequencing is not available for this gene.

**CPT Code(s):**
- 81292; 81294; 81295; 81297; 81298; 81300; 81317; 81319; 81321; 81323; 81351

### Herpes Simplex Virus Culture

**Methodology:** Cell Culture/Microscopy

**Performed:** Sun-Sat

**Reported:** 1-5 days

**Specimen Required:**
- **Collect:** Buccal mucosa, eye, genital, rectal, throat or vesicle swab, neonatal surface swab, bronchoalveolar lavage (BAL), tissue, or vesicle fluid.
- **Specimen Preparation: Fluid:** Transfer 3 mL specimen to a sterile container. (Min: 0.5 mL) Also acceptable: Transfer to 3 mL viral transport media (ARUP Supply #12884) available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787.
- **Swab or Tissue:** Place in 3 mL viral transport media (ARUP Supply #12884) available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787.
- **Storage/Transport Temperature:** Refrigerated.
- **Remarks:** Specimen source preferred.
- **Unacceptable Conditions:** Blood, CSF, plasma, or serum. Bacterial transport systems; molecular transport systems; blood, dry, or wood swabs.
- **Stability (collection to initiation of testing):** Ambient: 2 hours; Refrigerated: 72 hours; Frozen: Unacceptable

**CPT Code(s):** 87255

### Herpes Simplex Virus Culture with Reflex to HSV Typing

**Methodology:** Cell Culture/Microscopy/Immunofluorescent Stain

**Performed:** Sun-Sat

**Reported:** 1-5 days

**Specimen Required:**
- **Collect:** Buccal mucosa, eye, genital, rectal, throat or vesicle swab, neonatal surface swab, bronchoalveolar lavage, tissue, or vesicle fluid.
- **Specimen Preparation: Fluid:** Transfer 3 mL specimen to a sterile container. (Min: 0.5 mL) Also acceptable: Transfer to 3 mL viral transport media (ARUP Supply #12884) available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787.
- **Swab or Tissue:** Place in 3 mL viral transport media (ARUP Supply #12884) available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787.
- **Storage/Transport Temperature:** Refrigerated.
- **Remarks:** Specimen source preferred.
- **Unacceptable Conditions:** Blood, CSF, plasma, or serum. Bacterial transport systems; molecular transport systems; calcium alginate, dry, or wood swabs.
- **Stability (collection to initiation of testing):** Ambient: 2 hours; Refrigerated: 72 hours; Frozen: Unacceptable

**CPT Code(s):** 87255; if reflexed, add 87140 x2
**0050625  Histoplasma Antibodies by Complement Fixation**

Specimen Required: Collect: Serum separator tube.

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

Reference Interval:

<table>
<thead>
<tr>
<th>Test Number</th>
<th>Components</th>
<th>Reference Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Histoplasma Mycelia Antibodies by CF</td>
<td>Less than 1:8</td>
</tr>
<tr>
<td></td>
<td>Histoplasma Yeast Antibodies by CF</td>
<td>Less than 1:8</td>
</tr>
</tbody>
</table>

Interpretive Data:

A titer of 1:8 or greater is generally considered presumptive evidence of histoplasmosis. A titer of 1:32 or greater or rising titers indicate strong presumptive evidence of histoplasmosis. Cross-reactions, usually at lower titers, may occur with other fungal disease.

Note: This complement fixation test detects total antibodies to mycelial and yeast antigens of Histoplasma.

**HOTLINE NOTE:** There is a clinically significant charting name change associated with this test.
Change the charting name for component 0050330, Histoplasma Mycelia, CF from Histoplasma Mycelia, CF to Histoplasma Mycelia Antibodies by CF.
Change the charting name for component 0050335, Histoplasma Yeast, CF from Histoplasma Yeast, CF to Histoplasma Yeast Antibodies by CF.

**0050627  Histoplasma Antibodies by Complement Fixation and Immunodiffusion**

Methodology: Semi-Quantitative Complement Fixation/Immunodiffusion

Performed: Sun-Sat

Reported: 3-6 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) 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)

Reference Interval:

<table>
<thead>
<tr>
<th>Test Number</th>
<th>Components</th>
<th>Reference Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>0050174</td>
<td>Histoplasma Antibodies by Immunodiffusion</td>
<td>Not Detected</td>
</tr>
<tr>
<td></td>
<td>Histoplasma Yeast Antibodies by CF</td>
<td>Less than 1:8</td>
</tr>
<tr>
<td></td>
<td>Histoplasma Mycelia Antibodies by CF</td>
<td>Less than 1:8</td>
</tr>
</tbody>
</table>

Interpretive Data:

Refer to report.

Note: The immunodiffusion component of this test detects total antibodies against the H and M antigens of Histoplasma capsulatum. The complement fixation component of this test detects total antibodies to mycelial and yeast antigens of Histoplasma.

**HOTLINE NOTE:** There is a clinically significant charting name change associated with this test.
Change the charting name for component 0050174, Histoplasma spp. Abs, Precipitin from Histoplasma spp. Abs, Precipitin to Histoplasma Antibodies by ID.
Change the charting name for component 0050330, Histoplasma Mycelia, CF from Histoplasma Mycelia, CF to Histoplasma Mycelia Antibodies by CF.
Change the charting name for component 0050335, Histoplasma Yeast, CF from Histoplasma Yeast, CF to Histoplasma Yeast Antibodies by CF.
### Histoplasma Antibodies by Immunodiffusion

<table>
<thead>
<tr>
<th>Methodology</th>
<th>Immunodiffusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performed</td>
<td>Sun-Sat</td>
</tr>
<tr>
<td>Reported</td>
<td>3-6 days</td>
</tr>
</tbody>
</table>

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

**Specimen Preparation:** Separate serum from cells ASAP or within 2 hours of collection. Transfer 0.5 mL serum to an ARUP Standard Transport Tube. (Min 0.15 mL) Parallel testing is preferred and convalescent specimens must be received within 30 days from receipt of the acute specimen. Mark specimens plainly as "acute" or "convalescent."  

**Storage/Transport Temperature:** Refrigerated.  
**Unacceptable Conditions:** Contaminated, 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)

**Reference Interval:**  
Not Detected

**Interpretive Data:**  
Refer to report.

**Note:** This immunodiffusion test detects total antibodies against the H and M antigens of *Histoplasma capsulatum.*

---

### Holoprosencephaly Panel, Sequencing and Deletion/Duplication

<table>
<thead>
<tr>
<th>Methodology</th>
<th>Massively Parallel Sequencing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performed</td>
<td>Varies</td>
</tr>
<tr>
<td>Reported</td>
<td>3 weeks</td>
</tr>
</tbody>
</table>

**Specimen Required:** Collect: Lavender or pink (EDTA) or yellow (ACD Solution A or B)

**Specimen Preparation:** Transport 3 mL whole blood. (Min: 2 mL)  
**Storage/Transport Temperature:** Refrigerated.  
**Unacceptable Conditions:** Serum or plasma; grossly hemolyzed or frozen specimens; saliva, buccal brush, or swab; FFPE tissue.  
**Stability (collection to initiation of testing):** Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable

**Note:** GENES TESTED:  
- **CDON**  
- **FGFR1**  
- **GLI2**  
- **PTCH1**  
- **SHH**  
- **SIX3**  
- **TGIF1**  
- **ZIC2**

* One or more exons are not covered by sequencing and/or deletion/duplication analysis for the indicated gene; see Additional Technical Information.

**CPT Code(s):**  
81479

**HOTLINE NOTE:** Remove information found in the Remarks field.
Methodology: Massively Parallel Sequencing

Specimen Required: Collect: Fetal Specimen: Four (4) T-25 flasks at 80% confluent of cultured amniocytes or cultured chorionic villus sampling (CVS). AND Maternal Whole Blood Specimen: Lavender (EDTA), pink (K<sub>2</sub>EDTA), or yellow (ACD Solution A or B).

Specimen Preparation: Cultured Amniocytes or Cultured CVS: Fill flasks with culture media. Transport four (4) T-25 flasks at 80 percent confluent of cultured amniocytes or cultured CVS filled with culture media. Backup cultures must be retained at the client's institution until testing is complete. If the client is unable to culture amniocytes, this can be arranged by contacting ARUP Client Services at (800) 522-2787 ext. 2141 prior to test submission.

Maternal Whole Blood Specimen: Transport 3 mL whole blood. (Min: 3 mL)

Storage/Transport Temperature: Cultured Amniocytes or Cultured CVS: CRITICAL ROOM TEMPERATURE. Must be received within 48 hours of shipment due to viability of cells. Maternal Whole Blood Specimen: Room Temperature

Stability (collection to initiation of testing): Cultured Amniocytes or Cultured CVS: Room temperature: 48 hours; Refrigerated: Unacceptable; Frozen: Unacceptable

Maternal Whole Blood Specimen: Room temperature: 7 days, Refrigerated: 1 month, Frozen: Unacceptable

Note: Determine the etiology of holoprosencephaly in an affected pregnancy or determine if parents of an affected pregnancy are carriers. Chromosome analysis should be performed in an affected pregnancy before ordering this test.

Genes tested: CDON, FGFR1*, GLI2, PTCH1, SHH, SIX3, TGIF1, ZIC2*

* One or more exons are not covered by sequencing and/or deletion/duplication analysis for the indicated gene; see Additional Technical Information.

Reported times are based on receiving the four (4) T-25 flasks at 80 percent confluent. Cell culture time is independent of testing turnaround time. Maternal specimen is recommended for proper test interpretation. Order Maternal Cell Contamination.

CPT Code(s): 81479; 81265 Fetal Cell Contamination (FCC)

HOTLINE NOTE: Remove information found in the Remarks field.

3004046 JAK2 (V617F) Mutation by ddPCR, Qualitative JAK2 QUAL

Performed: DNA Isolation: Sun-Sat
Assay: Varies
Reported: 2-9 days

3003751 JAK2 (V617F) Mutation by ddPCR, Quantitative JAK2V617FQ

Performed: DNA Isolation: Sun-Sat
Assay: Varies
Reported: 2-9 days

2002357 JAK2 Exon 12 Mutation Analysis by PCR JAK2 EX12

Performed: DNA isolation: Sun-Sat
Assay: Varies
Reported: 3-9 days

2012259 Keratan Sulfate, Quantitative by LC-MS/MS, Urine KS U MS

HOTLINE NOTE: There is a component change associated with this test. Add component 3005207, EER Keratan Sulfate, Urine
**HOTLINE: Effective August 15, 2022**

### 3002956 KIT (D816V) Mutation by ddPCR, Quantitative

**Performed:**
- DNA isolation: Sun-Sat
- Assay: Varies

**Reported:**
- 2-9 days

### New Test 3005200 Legionella pneumophila Antibodies (Types 1-6), IgG, IgM, and IgA by ELISA

**Available Now**
**Click for Pricing**

**Methodology:**
- Semi-Quantitative Enzyme-Linked Immunosorbent Assay

**Performed:**
- Mon-Fri

**Reported:**
- 1-4 days

**Specimen Required:**
- Collect: Serum separator tube (SST) or plain red.
- Specimen Preparation: Transfer 1 mL serum to an ARUP Standard Transport Tube. (Min: 0.3 mL)
- Storage/Transport Temperature: Preferred transport temp: Refrigerated. Also acceptable: Frozen
- Unacceptable Conditions: Contaminated, heat-inactivated, hemolyzed, icteric, or lipemic 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>Level</th>
<th>Reference Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;0.90 IV</td>
<td>Negative: No significant amount of IgG/IgM/IgA antibodies to L. pneumophila detected.</td>
</tr>
<tr>
<td>0.91 to 1.09 IV</td>
<td>Equivocal: Recommend repeat testing in 1-3 weeks with fresh sample.</td>
</tr>
<tr>
<td>≥1.10 IV</td>
<td>Positive: IgG/IgM/IgA antibodies specific to L. pneumophila were detected suggesting current or prior infection. A positive result cannot distinguish between previous or active infection, therefore this result alone cannot be used to establish a diagnosis.</td>
</tr>
</tbody>
</table>

**Note:** N/A

**CPT Code(s):**
- 86713

**New York DOH Approved.**

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

### 2009460 Leucine-Rich, Glioma-Inactivated Protein 1 Antibody, IgG CBA-IFA and Contactin-Associated Protein-2 Antibody, IgG CBA-IFA with Reflex to Titers, Serum

**Methodology:**
- Semi-Quantitative Cell-Based Indirect Fluorescent Antibody

**Reference Interval:**

<table>
<thead>
<tr>
<th>Test Number</th>
<th>Components</th>
<th>Reference Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009456</td>
<td>Leucine-Rich, Glioma-Inactivated Protein 1 Antibody, IgG CBA-IFA with Reflex to Titer, Serum</td>
<td>Less than 1:10</td>
</tr>
<tr>
<td>2009452</td>
<td>Contactin-Associated Protein-2 Antibody, IgG CBA-IFA with Reflex to Titer, Serum</td>
<td>Less than 1:10</td>
</tr>
</tbody>
</table>

### 3001992 Leucine-Rich, Glioma-Inactivated Protein 1 Antibody, IgG CBA-IFA with Reflex to Titer, CSF

**Methodology:**
- Semi-Quantitative Cell-Based Indirect Fluorescent Antibody
**HOTLINE: Effective August 15, 2022**

<table>
<thead>
<tr>
<th>Code</th>
<th>Test Description</th>
<th>Methodology</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009456</td>
<td>Leucine-Rich, Glioma-Inactivated Protein 1 Antibody, IgG CBA-IFA with Reflex LGII IGG to Titer, Serum</td>
<td>Semi-Quantitative Cell-Based Indirect Fluorescent Antibody</td>
</tr>
<tr>
<td>3001603</td>
<td>Long QT Panel, Sequencing and Deletion/Duplication LQT NGS</td>
<td>Massively Parallel Sequencing</td>
</tr>
<tr>
<td></td>
<td>Specimen Required: Collect: Lavender or pink (EDTA) or yellow (ACD) solution A or B. Specimen Preparation: Transport 3 mL whole blood. (Min: 2 mL.) Storage/Transport Temperature: Refrigerated. Unacceptable Conditions: Serum or plasma; grossly hemolyzed or frozen specimens; saliva, buccal brush, or swab; FFPE tissue. Stability (collection to initiation of testing): Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Note: CACNA1C; CALM1; CALM2; CALM3; KCNE1; KCNE2; KCNH2; KCNJ1; SCN5A; TRDN</td>
<td></td>
</tr>
<tr>
<td></td>
<td>*One or more exons are not covered by sequencing and/or deletion/duplication analysis for the indicated gene; see additional technical information.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Specimen Required: Collect: Lavender or pink (EDTA) or yellow (ACD) solution A or B. Specimen Preparation: Transport 3 mL whole blood. (Min: 2 mL.) Storage/Transport Temperature: Refrigerated. Unacceptable Conditions: Serum or plasma; grossly hemolyzed or frozen specimens; saliva, buccal brush, or swab; FFPE tissue. Stability (collection to initiation of testing): Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable</td>
<td></td>
</tr>
<tr>
<td>0055655</td>
<td>Methylene tetrahydrofolate Reductase (MTHFR) 2 Variants MTHFR PCR</td>
<td></td>
</tr>
<tr>
<td>2002715</td>
<td>Monoclonal Protein Study, Expanded Panel, Serum IFE FLC</td>
<td>HOTLINE NOTE: There is a clinically significant charting name change associated with this test. Change the charting name for component 0055657, MTHFR Mutation: c.665C&gt;T from MTHFR Mutation: c.665C&gt;T to MTHFR Variant: c.665C&gt;T. Change the charting name for component 0055658, MTHFR Mutation: c.1286A&gt;C from MTHFR Mutation: c.1286A&gt;C to MTHFR Variant: c.1286A&gt;C. Add component 2011827, Monoclonal Protein</td>
</tr>
<tr>
<td>3002568</td>
<td>Monoclonal Protein Study, Serum IFE SPEP</td>
<td>HOTLINE NOTE: There is a component change associated with this test. Add component 2011827, Monoclonal Protein</td>
</tr>
<tr>
<td>2007967</td>
<td>Motor and Sensory Neuropathy Evaluation with Immunofixation Electrophoresis and Reflex to Titer and Neuronal Immunoblot MSNCR</td>
<td>HOTLINE NOTE: There is a component change associated with this test. Add component 2011827, Monoclonal Protein</td>
</tr>
<tr>
<td>0051225</td>
<td>Motor Neuropathy Panel MSN PAN</td>
<td>HOTLINE NOTE: There is a component change associated with this test. Add component 2011827, Monoclonal Protein</td>
</tr>
</tbody>
</table>
3003566 Mucopolysaccharidoses Type 1/2, Total Heparan Sulfate and NRE (Sensi-Pro®) Quantitative, Serum or Plasma MPS 1/2 SP

HOTLINE NOTE: There is a component change associated with this test.
Add component 3005211, EER MPS 1/2 Serum/Plasma

3003552 Mucopolysaccharidoses Type 1/2, Total Heparan Sulfate and NRE (Sensi-Pro®) Quantitative, Urine MPS 1/2 U

HOTLINE NOTE: There is a component change associated with this test.
Add component 3005210, EER MPS 1/2 Urine

3003487 Mucopolysaccharidoses Type 4A/6 Total Chondroitin Sulfate and Dermatan Sulfate with NRE (Sensi-Pro®) Quantitative, Serum MPS 4A/6 S

HOTLINE NOTE: There is a component change associated with this test.
Add component 3005208, EER MPS 4A/6 Serum

3003539 Mucopolysaccharidoses Type 4A/6 Total Chondroitin Sulfate and Dermatan Sulfate with NRE (Sensi-Pro®) Quantitative, Urine MPS 4A/6 U

HOTLINE NOTE: There is a component change associated with this test.
Add component 3005209, EER MPS 4A/6 Urine

3001277 Myelin Oligodendrocyte Glycoprotein (MOG) Antibody, IgG by CBA-IFA with Reflex to Titer, Serum MOG SER

Methodology: Semi-Quantitative Cell-Based Indirect Fluorescent Antibody

0092361 Nicotine and Metabolites, Serum or Plasma, Quantitative NICOTINESP

Reference Interval:
Effective August 15, 2022

<table>
<thead>
<tr>
<th>Drugs Covered</th>
<th>Cutoff Concentrations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nicotine</td>
<td>5 ng/mL</td>
</tr>
<tr>
<td>Cotinine (metabolite)</td>
<td>5 ng/mL</td>
</tr>
</tbody>
</table>

Interpretive Data:
Methodology: Quantitative Liquid Chromatography-Tandem Mass Spectrometry

Positive cutoff: 5 ng/mL

For medical purposes only; not valid for forensic use.

This test is designed to evaluate recent use of nicotine-containing products. Passive and active exposure cannot be discriminated definitively, although a cutoff of 10 ng/mL cotinine is frequently used for surgery qualification purposes. For smoking cessation programs or compliance testing, the absence of expected drug(s) and/or drug metabolite(s) may indicate non-compliance, inappropriate timing of specimen collection relative to drug administration, poor drug absorption, or limitations of testing. This test cannot distinguish between use of tobacco and purified nicotine products. The concentration value must be greater than or equal to the cutoff to be reported as positive.

This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the US Food and Drug Administration. This test was performed in a CLIA certified laboratory and is intended for clinical purposes.

HOTLINE NOTE: There is a component change associated with this test.
Remove component 0092364, 3-OH-Cotinine, S/P, Quant
<table>
<thead>
<tr>
<th>Code</th>
<th>Test Description</th>
<th>Methodology</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005164</td>
<td>N-methyl-D-Aspartate Receptor Antibody, IgG CBA-IFA, CSF with Reflex to Titer</td>
<td>Semi-Quantitative Cell-Based Indirect Fluorescent Antibody</td>
</tr>
<tr>
<td>2004221</td>
<td>N-methyl-D-Aspartate Receptor Antibody, IgG CBA-IFA, Serum with Reflex to Titer</td>
<td>Semi-Quantitative Cell-Based Indirect Fluorescent Antibody</td>
</tr>
</tbody>
</table>
**Non-Invasive Prenatal Aneuploidy Screen by cell-free DNA Sequencing (NIPT/NIPS) Patient History Form**

**Methodology:** Massively Parallel Sequencing

**Performed:** Varies

**Reported:** 5-7 days

**Specimen Required:**
- **Patient Prep:** Specimen must be collected at 10 weeks gestation or greater. Testing will be canceled for specimens collected at less than 10 weeks of gestation.
- **Collect:** Black-and-tan top cell-free DNA BCT (Streck Tube (ARUP Supply #56435) Available online through eSupply using ARUP Connect™ or contact ARUP Client Services at (800) 522-2787.
- **Specimen Preparation:** Transport 10 mL maternal whole blood (Min: 7 mL)
- **Storage/Transport Temperature:** Refrigerated
- **Remarks:** Patient History and Consent Form for Non-Invasive Prenatal Aneuploidy Screening Test (NIPT/NIPS) form is available on the ARUP Web site or by contacting Client Services at (800) 522-2787.
- **Unacceptable Conditions:** Ambient and frozen specimens.
- **Stability (collection to initiation of testing):** Ambient: Unacceptable; Refrigerated: 10 days; Frozen: Unacceptable.

**Reference Interval:** N/A

**Interpretive Data:**

**INTERPRETIVE INFORMATION: Non-Invasive Prenatal Aneuploidy Screen by cell-free DNA Sequencing**

**CHARACTERISTICS:** This assay is a screening test that interrogates chromosomal abnormalities (i.e., aneuploidies) using cell-free DNA (cfDNA) extracted from the blood plasma of any singleton pregnancy. Patient risk for trisomy 13, trisomy 18, trisomy 21, and sex chromosome aneuploidies is reported. Fetal fraction, in conjunction with other data quality metrics, must be met in order for each sample to yield a result. The assay is intended for use as a screen only and is not equivalent to prenatal genetic diagnostic testing.

**METHODOLOGY:** Next Generation Sequencing (NGS) (aka Massively Parallel Sequencing (MPS)) of fetal and maternal cfDNA present in the plasma.

**ANALYTICAL VALIDATION ACCURACY:** The analytical sensitivity was calculated using positive percent agreement compared to established methods to detect fetal aneuploidy. For samples with greater than 5% observed fetal fraction, the positive percent agreements (PPA) are as follows: T13 greater than 99.9%, T18 greater than 99.9%, and T21 is 96.1%. The combined PPA for all aneuploidies is 97.5%. For samples with less than or equal to 5% observed fetal fraction, the positive percent agreements (PPA) are as follows: T13 is 66.7%, T18 is 60%, and T21 is 87.5%. The combined PPA for all aneuploidies is 72.3%. The specificity, as calculated as negative percent agreement, is 99.5% across all observed fetal fraction values.

**CLINICAL PERFORMANCE:** Information on clinical performance for this assay can be found in the following reference: Borth H. Analysis of cell-free DNA in a consecutive series of 13,607 routine cases for the detection of fetal chromosomal aneuploidies in a single center in Germany. *Arch Gynecol Obstet*. 2021;303(6):1407-1414.

**LIMITATIONS:** This is a screening test and should not be considered in isolation from other clinical findings and diagnostic test results. High-risk results must be confirmed by diagnostic testing (amniocentesis, CVS, or postnatal testing) before any clinical decisions are made based on the screening test result. The current iteration of this assay is limited to reporting the following on singleton pregnancies: fetal sex, fetal fraction, risk level for trisomy 13, 18, 21, and risk level for sex chromosome aneuploidies XO, XXX, XXY, and XY. This assay is not meant to detect deletions or duplications within a chromosome, polyploidy, maternal abnormalities, balanced chromosome rearrangements, or chromosomal aneuploidies not listed above. Results may be confounded by the following: recent maternal blood transfusion, organ transplant, surgery, immunotherapy, malignancy, maternal mosaicism, placental mosaicism, fetal demise, disappearing twin, fetal partial aneuploidy, and/or fetal mosaicism. Samples with observed fetal fraction less than 5.0% have lower sensitivity to detect fetal aneuploidy, and the accuracy of the fetal fraction estimate is significantly lower. Fetal demise/miscarriage is not assessed.

This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the U.S. Food and Drug Administration. This test was performed in a CLIA-certified laboratory and is intended for clinical purposes.

Counseling and informed consent are recommended for genetic testing. Consent forms are available online.

**Note:** Results will not be reported without a gestational age greater than or equal to 10 weeks. ARUP only performs testing on singleton pregnancies. Multiple pregnancies will be sent out to Integrated Genetics to perform the MaterniT21 PLUS Core test.

**CPT Code(s):** 81420

New York DOH approval pending. Call for status update.
HOTLINE: Effective August 15, 2022

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

**3000066**  
**NPM1 Mutation Detection by RT-PCR, Quantitative**  
**NPM1 QNT**

**Performed:** RNA isolation: Sun-Sat  
**Assay:** Varies  
**Reported:** 5-9 days

**2008767**  
**Opioid Receptor, mu OPRM1, 1 Variant**  
**OPRM1**

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

**Interpretive Data:** Refer to report

HOTLINE NOTE: There is a component change associated with this test.  
Add component 3005505, OPRM1 Phenotype, Interpretation  
Add component 3005508, OPRM1, Interpretation  
There is a clinically significant charting name change associated with this test.  
Change the charting name for component 2008768 OPRM1 Genotype, Specimen from OPRM1 Genotype, Specimen to OPRM1 Specimen.

**3000704**  
**Orotic Acid, Urine**  
**OROTICACID**

**Reference Interval:**  
**Effective August 15, 2022**

<table>
<thead>
<tr>
<th>Age</th>
<th>Orotic Acid</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-4 years</td>
<td>Less than or equal to 5.1 mmol/mol creatinine</td>
</tr>
<tr>
<td>5 years and older</td>
<td>Less than or equal to 1.5 mmol/mol creatinine</td>
</tr>
</tbody>
</table>

**3002929**  
**Paraneoplastic Reflexive Panel**  
**PNS PAN2**

**Methodology:**  
Semi-Quantitative Cell-Based Indirect Fluorescent Antibody/Qualitative Immunoblot

**Reference Interval:**

<table>
<thead>
<tr>
<th>Test Number</th>
<th>Components</th>
<th>Reference Interval</th>
<th>Reference Interval</th>
<th>Reference Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013956</td>
<td>CV2.1 Screen by CBA-IFA with Reflex to Titer</td>
<td>Less than 1:10</td>
<td>Effective August 17, 2020</td>
<td></td>
</tr>
<tr>
<td>2007961</td>
<td>PCCA/ANNA by IFA with Reflex to Titer and Immunoblot</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3002917</td>
<td>Neuronal Nuclear Antibodies (Hu, Ri, Yo, Tr/DNER) IgG by Immunoblot, Serum</td>
<td>Refer to report</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2008893</td>
<td>Amphiphysin Antibody, IgG</td>
<td>Negative</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3002885</td>
<td>SOX1 Antibody, IgG by Immunoblot, Serum</td>
<td>Negative</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Specimen Required: Collect: Lavender (EDTA), pink (K₂EDTA), or green (sodium or lithium heparin).

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

Storage/Transport Temperature: Refrigerated.

Remarks: Specimens must be analyzed within stability times provided.

Unacceptable Conditions: Clotted or hemolyzed specimens.

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

New York State Clients: Ambient: 24 hours; Refrigerated: 48 hours. Frozen: Unacceptable

Interpretive Data:
This test is preferred for the initial diagnosis of PNH, and was developed according to published guidelines (Cytometry B Clin. Cytom. 2010; 78:211) and as updated in 2018 (Cytometry B Clin. Cytom. 2018; 94B:49). The test includes high-sensitivity WBC and RBC analysis with a lower limit of quantification of 0.02 percent for PNH RBCs and PMNs (based on 250,000 cells analyzed) and 0.5 percent for PNH monocytes (based on 10,000 cells analyzed). The lower limit of detection for PNH RBCs and PMNs is 0.008 percent and for PNH monocytes 0.2 percent. For severely pancytopenic patients, the WBC assay sensitivity will be much lower.

WBC analysis is the most accurate measurement of the PNH clone size. FLAER and CD157 are used as GPI-linked markers; CD15 (PMNs) and CD64 (monocytes) are used as lineage-specific markers. RBC analysis quantifies Type II and Type III RBC clones when the percentage of PNH RBCs is greater than 1 percent. Glycophorin A (CD235a) is used to gate the RBC population, and CD59 is the GPI-linked antigen. Recent RBC transfusions may decrease the percentage of PNH cells measured in RBCs (Cytometry 2000; 42:223). The presence of a subclinical PNH population in myelodysplastic bone marrow disorders, such as aplastic anemia or refractory anemia, may correlate with a positive immunotherapeutic response (Blood 2006; 107, 1308-1314).

Patient Retesting Recommendations: The frequency of testing is dictated by clinical and hematologic parameters; repeat testing is indicated upon any significant change in clinical or laboratory parameters and is suggested at least annually for routine monitoring. In the setting of aplastic anemia, international guidelines recommend screening for PNH at diagnosis, and every 3 to 6 months initially, reducing the frequency of testing if the proportion of GPI-deficient cells has remained stable over an initial two-year period (Int J Lab Hematol 2019;41 Suppl 1:73-81).

This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the U.S. Food and Drug Administration. This test was performed in a CLIA-certified laboratory and is intended for clinical purposes.

Note: If ≥1% PNH RBCs are detected, then PNH RBC TYPE reflex will be added at no additional charge

HOTLINE NOTE: There is a reflexive pattern change associated with this test.
Add reflex to 3005006, RBC PNH TYPE
There is a component change associated with this test.
Add component 3005033, RBC PNH Phenotype
Add component 3005034, Neutrophil PNH Phenotype
Add component 3005035, Monocyte PNH Phenotype
There is a clinically significant charting name change associated with this test.
Change the charting name for component 2004367, % PNH RBC from % PNH RBC to Total (II and III) CD59-deficient RBC.
Change the charting name for component 2005005, % PNH PMN from % PNH PMN to FLAER and CD157-deficient neutrophils.
Change the charting name for component 2005004, % PNH Monocytes from % PNH Monocytes to FLAER and CD157-deficient monocytes.
Paroxysmal Nocturnal Hemoglobinuria, High Sensitivity, RBC

Specimen Required: Specimen Preparation: Transport 4 mL whole blood. (Min: 0.5 mL)

Storage/Transport Temperature: Refrigerated.

Remarks: Specimens must be analyzed within stability times provided.

Unacceptable Conditions: Clotted or hemolyzed specimens.

Stability (collection to initiation of testing): Ambient: 4 days; Refrigerated: 4 days; Frozen: Unacceptable

Interpretive Data:
This high-sensitivity RBC assay tests for CD59 expression on erythrocytes using flow cytometry. It was developed according to published guidelines (Cytometry B Clin. Cytom. 2010; 78:211) and as updated in 2018 (Cytometry B Clin. Cytom. 2018; 94B:49). The lower limit of quantification is 0.02 percent for PNH RBCs (based on 250,000 cells analyzed). The lower limit of detection for PNH RBCs is 0.008 percent.

RBC analysis quantifies Type II and Type III RBC clones when the percentage of PNH RBCs is greater than 1 percent. Glycophorin A (CD235a) is used to gate the RBC population, and CD59 is the GPI-linked antigen. Recent RBC transfusions may decrease the percentage of PNH cells measured in RBCs (Cytometry 2000; 42:223). The presence of a subclinical PNH population in myelodysplastic bone marrow disorders, such as aplastic anemia or refractory anemia, may correlate with a positive immunotherapeutic response (Blood 2006; 107, 1308-1314).

For the most accurate measurement of the PNH clone size, order Paroxysmal Nocturnal Hemoglobinuria, High Sensitivity, WBC (ARUP test code 2005003) to assist with therapeutic decisions in conventional PNH.

For initial diagnosis of PNH and analysis of both RBCs and WBCs, order Paroxysmal Nocturnal Hemoglobinuria (PNH), High Sensitivity, RBC and WBC (ARUP test code 2005006).

Patient Retesting Recommendations: The frequency of testing is dictated by clinical and hematologic parameters. Repeat testing is indicated upon any significant change in clinical or laboratory parameters and is suggested at least annually for routine monitoring. In the setting of aplastic anemia, international guidelines recommend screening for PNH at diagnosis, and every 3 to 6 months initially, reducing the frequency of testing if the proportion of GPI-deficient cells has remained stable over an initial two-year period (Int J Lab Hematol 2019;41 Suppl 1:73-81).

This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the U.S. Food and Drug Administration. This test was performed in a CLIA-certified laboratory and is intended for clinical purposes.

Note: If \( \geq 1\% \) PNH RBCs are detected, then PNH RBC TYPE reflex will be added at no additional charge.

HOTLINE NOTE: There is a reflexive pattern change associated with this test.
Add reflex to 3005006, PNH RBC TYPE
There is a clinically significant charting name change associated with this test.
Change the charting name for component 2004367, % PNH RBC from % PNH RBC to Total (II and III) CD59-deficient RBC.
There is a component change associated with this test.
Add component 2005033, RBC PNH Phenotype
Paroxysmal Nocturnal Hemoglobinuria, High Sensitivity, WBC

Specimen Required: Patient Prep: New York State Clients: Testing is only approved for the Paroxysmal Nocturnal Hemoglobinuria Panel (ARUP test code 2005006) on whole blood specimens.
- Collect: Lavender (EDTA), pink (K$_2$EDTA), or green (sodium or lithium heparin).
- Specimen Preparation: Transport 4 mL whole blood. (Min: 4 mL)
- Storage/Transport Temperature: Refrigerated.
- Remarks: Specimens must be analyzed within stability times provided.
- Unacceptable Conditions: Clotted or hemolyzed specimens.
- Stability (collection to initiation of testing): Ambient: 24 hours; Refrigerated: 72 hours; Frozen: Unacceptable

Interpretive Data:
WBC analysis is the most accurate measurement of the PNH clone size. In this high-sensitivity assay, FLAER and CD157 are used as GPI-linked markers; CD15 (PMNs) and CD64 (monocytes) are used as lineage-specific markers. The assay was developed according to published guidelines (Cytometry B Clin. Cytom. 2010; 78:211) and as updated in 2018 (Cytometry B Clin. Cytom. 2018; 94B:49). The lower limit of quantification is 0.02 percent for PNH PMNs (based on 250,000 cells analyzed) and 0.5 percent for PNH monocytes (based on 10,000 cells analyzed). The lower limit of detection for PNH PMNs is 0.008 percent and for PNH monocytes 0.2 percent. For severely pan-cytopenic patients, the WBC assay sensitivity will be much lower.

The presence of a subclinical PNH population in myelodysplastic bone marrow disorders, such as aplastic anemia or refractory anemia, may correlate with a positive immunotherapeutic response (Blood 2006; 107, 1308-1314).

For initial diagnosis of PNH, order High Sensitivity RBC and WBC Panel (ARUP test code 2005006).

For delineation of RBC Types II and III populations when the RBC clone size is greater than 1 percent, order PNH, High Sensitivity, RBC (ARUP test code 2004366).

Patient Retesting Recommendations: The frequency of testing is dictated by clinical and hematological parameters. Repeat testing is indicated upon any significant change in clinical or laboratory parameters and is suggested at least annually for routine monitoring. In the setting of aplastic anemia, international guidelines recommend screening for PNH at diagnosis, and every 3 to 6 months initially, reducing the frequency of testing if the proportion of GPI-deficient cells has remained stable over an initial two-year period (Int J Lab Hematol 2019;41 Suppl 1:73-81).

This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the U.S. Food and Drug Administration. This test was performed in a CLIA-certified laboratory and is intended for clinical purposes.

HOTLINE NOTE: There is a clinically significant charting name change associated with this test.
Change the charting name for component 2005004, % PNH Monocytes from % PNH Monocytes to FLAER and CD157-deficient monocytes.
Change the charting name for component 2005005, % PNH PMN from % PNH PMN to FLAER and CD157-deficient neutrophils.
There is a component change associated with this test.
Add component 3005034, Neutrophil PNH Phenotype
Add component 3005035, Monocyte PNH Phenotype
New Test 3004471 Pharmacogenetics Panel: Psychotropics PGX PSYCH

Supplemental Resources

**Methodology:** Polymerase Chain Reaction/Fluorescence Monitoring/Sequencing

**Performed:** Varies

**Reported:** 5-10 days

**Specimen Required:**
- **Collect:** Whole Blood: Lavender (EDTA), pink (K2EDTA), or yellow (ACD solution A or B).
- **Specimen Preparation:** Transport 3 mL whole blood. (Min: 1 mL)
- **Storage/Transport Temperature:** Refrigerated.
- **Remarks:** Unacceptable Conditions: Plasma or serum. Specimens collected in sodium heparin or lithium heparin. Frozen specimens in glass collection tubes.
- **Stability (collection to initiation of testing):** Ambient: 72 hours; Refrigerated: 1 week; Frozen: 1 month

**Reference Interval:** By report

**Interpretive Data:** Refer to report

This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the US Food and Drug Administration. This test was performed in a CLIA certified laboratory and is intended for clinical purposes.

Counseling and informed consent are recommended for genetic testing. Consent forms are available online.

**Note:** Whole blood is the preferred specimen type. Saliva samples that yield inadequate DNA quality and/or quantity will be reported as inconclusive if test performance does not meet laboratory-determined criteria for reporting. Saliva is only validated for the OpenArray and CNV portions of testing and not the long-range PCR/duplication testing. Long-range PCR/duplication testing will not be performed for saliva samples.

If long-range PCR/duplication testing is performed, additional charges apply. Approximately less than 5% of samples require 2D6 copy number determination.

**CPT Code(s):** 81225; 81226; 81227; 81230; 81231; 81291; 81479; if reflexed, add 81479

New York DOH approval pending. Call for status update.

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

<table>
<thead>
<tr>
<th>New Test</th>
<th>2006495</th>
<th>Phosphatidylserine Antibodies, IgG and IgM</th>
<th>PHOSER GM</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Performed:</strong></td>
<td>Sun, Tue, Wed, Fri, Sat</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Reported:</strong></td>
<td>1-4 days</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>New Test</th>
<th>0050905</th>
<th>Phosphatidylserine Antibodies, IgG, IgM, and IgA</th>
<th>PHOS AB</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Performed:</strong></td>
<td>Sun, Tue, Wed, Fri, Sat</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Reported:</strong></td>
<td>1-4 days</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### New Test 3004813 Phosphorylated TDP43 by Immunohistochemistry PTDP3 IHC

**Immunohistochemistry Stain Form**
Recommended (ARUP form #32978)

<table>
<thead>
<tr>
<th>Methodology</th>
<th>Immunohistochemistry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Performed</td>
<td>Mon-Fri</td>
</tr>
<tr>
<td>Reported</td>
<td>1-3 days</td>
</tr>
</tbody>
</table>

**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 highly recommended but not required) 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.
- **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 nonrepresentative tissue type. Depleted specimens.

**Interpretive Data:**
This test was developed and its performance characteristics determined by ARUP Laboratories. It has not been cleared or approved by the US Food and Drug Administration. This test was performed in a CLIA certified laboratory and is intended for clinical purposes.

**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.

### 2002871 PML-RARA Detection by RT-PCR, Quantitative PML QNT

<table>
<thead>
<tr>
<th>Performed</th>
<th>RNA isolation: Sun-Sat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assay</td>
<td>Varies</td>
</tr>
<tr>
<td>Reported</td>
<td>2-9 days</td>
</tr>
</tbody>
</table>

New York DOH Approved.

**HOTLINE NOTE:** Refer to the Test Mix Addendum for interface build information.
### Primary Antibody Deficiency Panel, Sequencing and Deletion/Duplication (PAD PANEL)

**Methodology:** Massively Parallel Sequencing/Sequencing  
**Performed:** Varies  
**Reported:** 3 weeks

**Specimen Required:**  
- **Collect:** Lavender or pink (EDTA) or yellow (ACD solution A or B).  
- **Specimen Preparation:** Transport 3 mL whole blood. (Min: 3 mL)  
- **Storage/Transport Temperature:** Refrigerated.  
- **Unacceptable Conditions:** Serum or plasma; grossly hemolyzed or frozen specimens; saliva, buccal brush, or swab; FFPE tissue.

**Note:** Genes Tested: ADA; ADA2; AICDA; ATM; ATP6A1; BLNK; BTK; CARD11; CD19; CD27; CD40; CD40LG; CD70; CD79A; CD79B; CDCA7; CR2; CTLA4; CXCR4*; DCLRE1C*; DNM1; GATA2; HELLS; ICOS; IGHD; IGLL1; IKZF1; IL21R; KDM6A; KMT2D; LRBA; MOGS; MS4A1; NBN; NFkB1; NFkB2; NFkBIA**; PIK3CD; PIK3R1; PLAG2; PRKCD; RAC2; RAG1; RAG2; RNF168; SH2D1A; STAT3; TCF3**; TNFRSF13B; TRNT1; TTC37; UNG; XIAP*; ZBTB24

*One or more exons are not covered by sequencing for the indicated gene; see limitations section below.  
**Deletion/duplication analysis is not available for this gene.

**CPT Code(s):** 81403; 81404; 81405; 81406; 81408; 81409

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### Protein Electrophoresis with Reflex to Immunofixation, Serum (SPEP REFLEX)

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

Add component 2011827, Monoclonal Protein

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### Protein Electrophoresis, Serum (SPEP)

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

Add component 2011827, Monoclonal Protein

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### Pulmonary Arterial Hypertension (PAH) Panel, Sequencing and Deletion/Duplication (PAH PANEL)

**Methodology:** Massively Parallel Sequencing  
**Performed:** Varies  
**Reported:** 3 weeks

**Specimen Required:**  
- **Collect:** Lavender or pink (EDTA) or yellow (ACD solution A or B).  
- **Specimen Preparation:** Transport 3 mL whole blood. (Min: 3 mL)  
- **Storage/Transport Temperature:** Refrigerated.  
- **Unacceptable Conditions:** Serum or plasma; grossly hemolyzed or frozen specimens; saliva, buccal brush, or swab; FFPE tissue.

**Note:** Genes tested: ACVRL1, BMPR2, CAV1, EIF2AK4, ENG,* GDF2, KCNA5, KCNKB3, SMAD9, TBX4

*One or more exons are not covered by deletion/duplication analysis for the indicated gene; see Additional Technical Information.

**CPT Code(s):** 81405; 81406; 81407

**HOTLINE NOTE:** Remove information found in the Remarks field.

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### RUNX1-RUNX1T1 (AML1-ETO) t(8;21) Detection, Quantitative (AML1-ETO Q)

**Performed:** RNA isolation: Sun-Sat  
**Assay:** Varies  
**Reported:** 5-9 days
**2012015**  Skeletal Dysplasia Panel, Sequencing and Deletion/Duplication  
**SKEL PANEL**

**Methodology:** Massively Parallel Sequencing  
**Performed:** Varies  
**Reported:** 3 weeks

**Specimen Required:**  
- **Collect:** Lavender or pink (EDTA) or yellow (ACD solution A or B).  
- **Specimen Preparation:** Transport 3 mL whole blood. (Min: 2 mL)  
- **Storage/Transport Temperature:** Refrigerated.  
- **Unacceptable Conditions:** Serum or plasma; grossly hemolyzed or frozen specimens; saliva, buccal brush, or swab; FFPE tissue.  
- **Specimen:** Maternal Whole Blood  

**Note:** GENES TESTED: AGPS; ALPL; ARSL; CANT1; CCN6; CILK1; COL1A1; COL1A2*; COL2A1; COL10A1; COL11A1; COL11A2; COMP; CRTAP; DDR2; DLL3; DYM*; DYNC2H1; EBP; EVC*; EVC2; FGFR1*; FGFR2; FGFR3; FKBP10; FLNA; FLNB; GDF5; GNPAT; HSPG2; IFT80; INPPL1; LBR; LIFR; NEK1*; NPR2; P3H1; PCTN; PEX7; POR*; PP1B; PTH1R; RUNX2; SERPINH1; SLC26A2; SLC35D1; SMARCA1; SOX9; TRIP11; TRPV4; TTC21B; WDR19; WDR35  

*One or more exons are not covered by sequencing and/or deletion/duplication analysis for the indicated gene; see Additional Technical Information.

**CPT Code(s):** 81405; 81408; 81479

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**2012010**  Skeletal Dysplasia Panel, Sequencing and Deletion/Duplication, Fetal  
**SKEL FE**

**Specimen Required:**  
- **Collect:** Fetal Specimen: Four (4) T-25 flasks at 80% confluent of cultured amniocytes or cultured chorionic villus sampling (CVS).  
- **AND Maternal Whole Blood Specimen:** Lavender (EDTA), pink (K,EDTA), or yellow (ACD Solution A or B).  
- **Specimen Preparation:** Cultured Amniocytes or Cultured CVS: Fill flasks with culture media. Transport four (4) T-25 flasks at 80 percent confluent of cultured amniocytes or cultured CVS filled with culture media. Backup cultures must be retained at the client's institution until testing is complete.  
- **If the client is unable to culture amniocytes, this can be arranged by contacting ARUP Client Services at (800) 522-2787 ext. 2141 prior to test submission.**  
- **Maternal Whole Blood Specimen:** Transport 3 mL whole blood (Min: 2 mL)  
- **Storage/Transport Temperature:** Cultured Amniocytes or Cultured CVS: CRITICAL ROOM TEMPERATURE. Must be received within 48 hours of shipment due to viability of cells.  
- **Maternal Specimen:** Room temperature.  
- **Stability (collection to initiation of testing):** Cultured Amniocytes or Cultured CVS: Room temperature: 48 hours; Refrigerated: 1 month; Frozen: Unacceptable  
- **Maternal Whole Blood Specimen:** Room temperature: 7 days; Refrigerated: 1 month; Frozen: Unacceptable

**Note:** Genes Tested: AGPS; ALPL; ARSL; CANT1; CCN6; CILK1; COL1A1; COL1A2*; COL2A1; COL10A1; COL11A1; COL11A2; COMP; CRTAP; DDR2; DLL3; DYM*; DYNC2H1; EBP; EVC*; EVC2; FGFR1*; FGFR2; FGFR3; FKBP10; FLNA; FLNB; GDF5; GNPAT; HSPG2; IFT80; INPPL1; LBR; LIFR; NEK1*; NPR2; P3H1; PCTN; PEX7; POR*; PP1B; PTH1R; RUNX2; SERPINH1; SLC26A2; SLC35D1; SMARCA1; SOX9; TRIP11; TRPV4; TTC21B; WDR19; WDR35  

* One or more exons are not covered by sequencing and/or deletion/duplication analysis for the indicated gene; see Additional Technical Information.

Reported times are based on receiving the four T-25 flasks at 80 percent confluent. Cell culture time is independent of testing turnaround time. Maternal specimen is recommended for proper test interpretation. Order Maternal Cell Contamination.

**CPT Code(s):** 81405; 81408; 81479; 81265 Fetal Cell Contamination (FCC)

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**0055567**  T-Cell Clonality Screening by PCR  
**T CELL-F**

**Performed:** DNA Isolation: Sun-Sat  
**Assay:** Varies  
**Reported:** 5-9 days
### Tuberous Sclerosis Complex Panel, Sequencing and Deletion/Duplication

**Methodology:** Massively Parallel Sequencing  
**Performed:** Varies  
**Reported:** 3 weeks

**Specimen Required:**  
- **Collect:** Lavender or pink (EDTA) or yellow (ACD solution A or B).  
- **Specimen Preparation:** Transport 3 mL whole blood. (Min: 3 mL)  
- **Storage/Transport Temperature:** Refrigerated.  
- **Unacceptable Conditions:** Serum or plasma; grossly hemolyzed or frozen specimens; saliva, buccal brush, or swab; FFPE tissue.  
- **Stability (collection to initiation of testing):** Ambient: 72 hours; Refrigerated: 1 week; Frozen: Unacceptable

**CPT Code(s):** 81405, 81406, 81407

### Tuberous Sclerosis Complex Panel, Sequencing and Deletion/Duplication, Fetal

**Performed:** Varies  
**Reported:** 2-3 weeks; if culture is required an additional 1 to 2 weeks is required for processing time

**Specimen Required:**  
- **Collect:** Fetal Specimen: Four (4) T-25 flasks at 80% confluent of cultured amniocytes or cultured chorionic villus sampling (CVS).  
- **AND Maternal Whole Blood Specimen:** Lavender (EDTA), pink (KEDTA), or yellow (ACD Solution A or B).  
- **Specimen Preparation:** Cultured Amniocytes or Cultured CVS: Fill flasks with culture media. Transport four (4) T-25 flasks at 80 percent confluent of cultured amniocytes or cultured CVS filled with culture media. Backup cultures must be retained at the client's institution until testing is complete. **If the client is unable to culture amniocytes, this can be arranged by contacting ARUP Client Services at (800) 522-2787 prior to test submission.**  
- **Maternal Whole Blood Specimen:** Transport 3 mL whole blood (Min: 2 mL)  
- **Storage/Transport Temperature:** Cultured Amniocytes or Cultured CVS: CRITICAL ROOM TEMPERATURE. Must be received within 48 hours of shipment due to viability of cells.  
- **Maternal Specimen:** Room temperature.  
- **Stability (collection to initiation of testing):** Cultured Amniocytes or Cultured CVS: Ambient: 48 hours; Refrigerated: Unacceptable; Frozen: Unacceptable  
- **Maternal Cell Contamination Specimen:** Room temperature: 7 days; Refrigerated: 1 month; Frozen: Unacceptable

**Interpretive Data:**  
Refer to report.

**Note:** Genes tested: TSC1, TSC2

Reported times are based on receiving the four (4) T-25 flasks at 80 percent confluent. Cell culture time is independent of testing turn-around time. Maternal specimen is recommended for proper test interpretation. Order Maternal Cell Contamination.

**CPT Code(s):** 81405; 81406; 81407; 81265
**Methodology:** Massively Parallel Sequencing

**Performed:** Varies

**Reported:** 3 weeks

**Specimen Required:**
- **Collect:** Lavender or pink (EDTA) or yellow (ACD solution A or B).
- **Specimen Preparation:** Transport 3 mL whole blood. (Min: 2 mL)
- **Storage/Transport Temperature:** Refrigerated.
- **Unacceptable Conditions:** Serum or plasma; grossly hemolyzed or frozen specimens; saliva, buccal brush, or swab; FFPE tissue.

**Stability (collection to initiation of testing):**
- Ambient: 72 hours
- Refrigerated: 1 week
- Frozen: Unacceptable

**Note:** Genes Tested: ACVR1L; AKT1; BMPR2; CBBE1; CCM2*; EIF2AK4; ELMO2; ENG*; EPHB4; FAT4*; FLT4*; FOXC2; GATA2; GDF2; GJC2*; Glmn*; Kcnk3; KRIT1; PDCD10; PIEZO1*; Pten*; Rasal1; Smad4; Smad9; Sox18*; Stambp*; Tek; Vegfc

*One or more exons are not covered by sequencing and/or deletion/duplication analysis for the indicated gene; see Additional Technical Information.

**CPT Code(s):** 81321; 81323; 81405; 81406; 81479

**HOTLINE NOTE:** Remove information found in the Remarks field.

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**Methodology:** Quantitative Radioimmunoassay/Semi-Quantitative Cell-Based Indirect Fluorescent Antibody

**Reference Interval:**

<table>
<thead>
<tr>
<th>Test Number</th>
<th>Components</th>
<th>Reference Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004890</td>
<td>Voltage-Gated Potassium Channel (VGKC) Antibody, Serum</td>
<td>Negative: 31 pmol/L or less, Indeterminate: 32–87 pmol/L, Positive: 88 pmol/L or greater</td>
</tr>
<tr>
<td>2009456</td>
<td>Leucine-Rich, Glioma-Inactivated Protein 1 Antibody, IgG CBA-IFA with Reflex to Titer, Serum</td>
<td>Less than 1:1</td>
</tr>
<tr>
<td>2009452</td>
<td>Contactin-Associated Protein-2 Antibody, IgG CBA-IFA with Reflex to Titer, Serum</td>
<td>Less than 1:1</td>
</tr>
</tbody>
</table>

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**Methodology:** Quantitative Radioimmunoassay/Semi-Quantitative Cell-Based Indirect Fluorescent Antibody

**Reference Interval:**

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<thead>
<tr>
<th>Test Number</th>
<th>Components</th>
<th>Reference Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>3001387</td>
<td>Voltage-Gated Potassium Channel (VGKC) Antibody, CSF</td>
<td>Negative: 0.0–1.1 pmol/L, Positive: 1.2 pmol/L or greater</td>
</tr>
<tr>
<td>3001992</td>
<td>Leucine-Rich, Glioma-Inactivated Protein 1 Antibody, IgG CBA-IFA with Reflex to Titer, CSF</td>
<td>Less than 1:1</td>
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<tr>
<td>3001986</td>
<td>Contactin-Associated Protein-2 Antibody, IgG CBA-IFA with Reflex to Titer, CSF</td>
<td>Less than 1:1</td>
</tr>
<tr>
<td>Test Code</td>
<td>Test Description</td>
<td>Specimen Required</td>
</tr>
<tr>
<td>-----------</td>
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</tr>
<tr>
<td>0050228</td>
<td>West Nile Virus Antibodies, IgG and IgM by ELISA, CSF</td>
<td>Collect: CSF.</td>
</tr>
<tr>
<td>0050238</td>
<td>West Nile Virus Antibody, IgG by ELISA, CSF</td>
<td>Collect: CSF.</td>
</tr>
<tr>
<td>0050239</td>
<td>West Nile Virus Antibody, IgM by ELISA, CSF</td>
<td>Collect: CSF.</td>
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</table>
The following will be discontinued from ARUP’s test menu on August 15, 2022. Replacement test options are supplied if applicable.

<table>
<thead>
<tr>
<th>Test Number</th>
<th>Test Name</th>
<th>Refer To Replacement</th>
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<tbody>
<tr>
<td>0065078</td>
<td>Bordetella pertussis by PCR</td>
<td>Bordetella pertussis/parapertussis by PCR (0065080)</td>
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<tr>
<td>2008190</td>
<td>Chimerism, Additional Donor</td>
<td>Chimerism, Additional Donor (005468)</td>
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<tr>
<td>2002067</td>
<td>Chimerism, Donor</td>
<td>Chimerism, Donor (3005462)</td>
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<tr>
<td>2002066</td>
<td>Chimerism, Post-Transplant (Extended TAT as of 11/20/20-no referral available)</td>
<td>Chimerism, Posttransplant (3005454)</td>
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<tr>
<td>2002064</td>
<td>Chimerism, Post-Transplant, Sorted Cells (Extended TAT as of 11/20/20-no referral available)</td>
<td>STRPOST-T; STRPOST-B; STRPOST-33; STRPOST-GR; STRPOST-MO; STRPOST-34; STRPOST-56 (3005393; 3005401; 3005409; 3005417; 3005425; 3005433; 3005441)</td>
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<tr>
<td>2002065</td>
<td>Chimerism, Recipient Pre-Transplant</td>
<td>Chimerism, Recipient, Pretransplant (3005449)</td>
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<tr>
<td>2001551</td>
<td>Chlamydia trachomatis and Neisseria gonorrhoeae by Transcription-Mediated Amplification (TMA), SurePath</td>
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<tr>
<td>2013663</td>
<td>Cystic Fibrosis (CFTR) 165 Pathogenic Variants with Reflex to Sequencing</td>
<td>Cystic Fibrosis (CFTR) Sequencing and Deletion/Duplication (3004745)</td>
</tr>
<tr>
<td>2013664</td>
<td>Cystic Fibrosis (CFTR) 165 Pathogenic Variants with Reflex to Sequencing and Reflex to Deletion/Duplication</td>
<td>Cystic Fibrosis (CFTR) Sequencing and Deletion/Duplication (3004745)</td>
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<tr>
<td>0090499</td>
<td>Drug Screen (Nonforensic), Serum</td>
<td>Drug Profile, Expanded Targeted Panel by LC-MS/MS, Serum/Plasma (3004833)</td>
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<tr>
<td>0090500</td>
<td>Drug Screen (Nonforensic), Urine, Qualitative</td>
<td>Drug Profile, Expanded Targeted Panel by LC-MS/MS, Urine (3005060)</td>
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<tr>
<td>200803</td>
<td>Expanded Hearing Loss Panel, Sequencing and Deletion/Duplication</td>
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<tr>
<td>0020725</td>
<td>Glomerular Filtration Rate, Estimated</td>
<td>Glomerular Filtration Rate (Estimated) (3005478)</td>
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<tr>
<td>2011148</td>
<td>Herpes Simplex Virus (HSV) by PCR with Reflex to HSV (HSV-1/HSV-2) Subtype by PCR</td>
<td>Herpes Simplex Virus (HSV-1/HSV-2) Subtype by PCR (2010095)</td>
</tr>
<tr>
<td>0060041</td>
<td>Herpes Simplex Virus by PCR</td>
<td>Herpes Simplex Virus (HSV-1/HSV-2) Subtype by PCR (2010095)</td>
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<tr>
<td>3000599</td>
<td>Kidney Profile</td>
<td>Glomerular Filtration Rate (Estimated) (3005478)</td>
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<tr>
<td>2007537</td>
<td>Non-Invasive Prenatal Testing for Fetal Aneuploidy</td>
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<tr>
<td>2013142</td>
<td>Non-Invasive Prenatal Testing for Fetal Aneuploidy with 22q11.2 Microdeletion</td>
<td>Fetal Aneuploidy Screening with 22q11 (3004778)</td>
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<tr>
<td>2010232</td>
<td>Non-Invasive Prenatal Testing for Fetal Aneuploidy with Microdeletions</td>
<td>Fetal Aneuploidy Screening with Microdeletions (3004781)</td>
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<tr>
<td>3001170</td>
<td>Platelet Antigen 1 Genotyping (HPA-1)</td>
<td>Platelet Antigen Genotyping Panel (3000193)</td>
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