



**GUAM PUBLIC HEALTH LABORATORY GUIDELINES  
SPECIMEN REQUIREMENTS FOR ADENOVIRUS  
IN CLINICAL SAMPLES**

<b>Methodology</b>	<ol style="list-style-type: none"><li>1. bioMérieux BioFire FilmArray Multiplex PCR System Respiratory Panel 2.1 (RP2.1) is a real-time RT-PCR test for the qualitative detection of nucleic acids from Adenovirus in respiratory specimens</li><li>2. bioMérieux BioFire FilmArray Multiplex PCR System Gastrointestinal (GI) Panel is a real-time RT-PCR test for the qualitative detection of nucleic acids from Adenovirus F 40/41 in stool specimens</li><li>3. U.S. Centers for Disease Control and Prevention Adenovirus Specimen Collection Instructions, Handling, and Shipping</li></ol>
<b>Performed at:</b>	
<b>Guam Public Health Central Laboratory (GPHL)</b>	<ol style="list-style-type: none"><li>1. BioFire Respiratory Panel 2.1 (RP2.1) is a <b>United States Food and Drug Administration (FDA) authorized</b>, multiplexed nucleic acid test for the detection and identification of various respiratory viral and bacterial nucleic acid targets<ol style="list-style-type: none"><li>a. An <i>in vitro</i> diagnostic test for the detection of Adenovirus in the respiratory tract</li></ol></li><li>2. BioFire Gastrointestinal (GI) Panel is an <b>FDA authorized</b>, multiplexed nucleic acid test for the detection and identification of multiple gastrointestinal viral, parasitic, and bacterial nucleic acid targets<ol style="list-style-type: none"><li>a. An <i>in vitro</i> diagnostic test for the detection of Adenovirus F 40/41 in the gastrointestinal tract</li></ol></li></ol>
<b>U.S. Centers for Disease Control and Prevention (CDC)</b>	<p>CDC will perform any of the following tests for Adenovirus if requested and if the patient specimen requirements are met:</p> <ol style="list-style-type: none"><li>1. Molecular detection (e.g. PCR)</li><li>2. Partial or full genome sequencing</li><li>3. Antigen detection</li><li>4. Virus isolation</li><li>5. Virus neutralization with type-specific antisera</li></ol>
<b>Criteria for Testing</b>	<p>Testing for Adenovirus should not be performed unless the patient meets clinical signs and/or symptoms compatible with Adenovirus infection.</p> <p>Symptoms for Adenovirus include cold or flu-like symptoms, fever, sore throat, acute bronchitis, pneumonia, conjunctivitis, and acute gastroenteritis. Other, less common symptoms include bladder inflammation or infection and neurological disease.</p>

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<b>Specimen Requirements</b>	GPHL requires Nasopharyngeal swab (NPS), Stool in Cary Blair Media, or blood specimens collected within a week of symptom onset with a GPHL Specimen Submission Form (GPHL DPHSS_FRM_05/18/16) for each specimen.
<b>Specimen Processing, Shipping, and Handling</b>	<p>If patient specimen meets the requirements for further testing off-island, Guam Public Health Laboratory (GPHL) will process, ship, and handle as follows:</p> <ul style="list-style-type: none"> <li>• Contact the Division of Viral Hepatitis   CDC in advance to confirm patient specimen requirements are met and request further testing (Email CDC at <a href="mailto:ncirddvdgast@cdc.gov">ncirddvdgast@cdc.gov</a> )</li> <li>• Frozen samples at -20°C;</li> <li>• Arrangements to ship the samples overnight to CDC, frozen on dry ice;</li> <li>• Completed hard copies of GPHL Specimen Forms and the CDC Specimen Submission Forms (CDC Form 50.34) for each specimen submitted.</li> <li>• If submitting ten (10) or more patient specimens, providing an electronic line listing by email, using the following headers in this order: Patient ID Number, Date of Birth, Onset Date, Fatal Y/N (Yes or No), Specimen ID Number, Specimen Collected Date, and Specimen Type.</li> </ul>
<b>Specimen Collection</b>	<p>Collect the appropriate amount of at least one of the following specimen types:</p> <ul style="list-style-type: none"> <li>• Nasopharyngeal Swab (NPS) in Viral Transport Media (VTM) <ul style="list-style-type: none"> <li>• Minimum sample volume: 0.3 mL (300 uL)</li> </ul> </li> <li>• Stool in Cary Blair transport media <ul style="list-style-type: none"> <li>• Minimum sample volume: 0.2 mL (200 uL)</li> </ul> </li> <li>• Serum <ul style="list-style-type: none"> <li>• Minimum sample volume: 0.5 mL (500 uL)</li> </ul> </li> </ul>
<b>Specimen Submission</b>	<ul style="list-style-type: none"> <li>• Submitting clinics will ensure that when transporting human blood, stool, or nasopharyngeal swab, all applicable regulations for transport of potentially infectious biological specimens are met with proper documentation.</li> </ul>
<b>Rejection Criteria</b>	<ul style="list-style-type: none"> <li>• Specimen is not collected in a proper container or special handling instruction is not followed;</li> <li>• Specimen quantity is insufficient to perform the test;</li> <li>• Specimen received in a container that is leaking;</li> <li>• Frozen specimen is not received at -20°C or packed in dry ice;</li> <li>• Frozen specimen not shipped in dry ice;</li> <li>• Unlabeled specimens;</li> <li>• Illegible/ incomplete labeling/documentation.</li> </ul>
<b>Submission Form</b>	<ul style="list-style-type: none"> <li>• Each specimen submitted to GPHL must be labeled with the assigned patient identification number, type of specimen, date and time of collection, submitter, and other applicable and pertinent information.</li> <li>• Submission forms that are not consistent with the specimen submitted will be rejected and requesting facility will be asked to re-submit.</li> </ul>

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	<ul style="list-style-type: none"> <li>• Submission forms must not be in direct contact with the specimen(s).</li> <li>• Fill out required form(s) <b>COMPLETELY</b>. Incomplete forms will be rejected.</li> </ul>
<b>Result Notification</b>	Laboratory reports will be forwarded to the submitting healthcare facility and/or provider, DPHSS Territorial Epidemiologist (TE), Chief Public Health Officer (CPHO) and/or designees.
<b>Laboratory Contact Information</b>	<p>Alan Mallari, Microbiologist III, GPHL Phone: (671) 300-9080 <a href="mailto:Alan.mallari@dphss.guam.gov">Alan.mallari@dphss.guam.gov</a></p> <p>Lea Nisay, Microbiologist I, GPHL (Alternate) Phone: (671) 300-9088 <a href="mailto:Lea.nisay@dphss.guam.gov">Lea.nisay@dphss.guam.gov</a></p> <p>Anne Marie Santos, Laboratory Administrator, GPHL Phone: (671) 300-9082 <a href="mailto:Annemarie.santos@dphss.guam.gov">Annemarie.santos@dphss.guam.gov</a></p>

**Table - Specimens to Collect and Transport for Testing Suspect Adenovirus Cases**

Specimen Type	Minimum Amount	Collection	Storage	Transport
Nasopharyngeal Swab (NPS) in Viral Transport Media (VTM)	0.3 mL	Collect in Viral Transport Medium (VTM) required.	Refrigerate at 2-8°C up to 72 hours from the time of specimen collection.  Freeze at -20°C, if more than 72 hours from the time of specimen collection.	Transport at 2-8°C.  Ship on dry ice.
Stool in Cary Blair transport media	0.2 mL	Collect in Cary Blair transport medium required. Please do not send a rectal swab.	Refrigerate at 2-8°C up to 72 hours from the time of specimen collection.  Freeze at -20°C, if more than 72 hours from the time of specimen collection.	Transport at 2-8°C.  Ship on dry ice.
Serum	0.5 mL	Collect in SST/Red top tube, spun, separated and aliquoted in sterile transport dry tube.	Refrigerate at 2-8°C up to 72 hours from the time of specimen collection.  Freeze at -20°C, if more than 72 hours from the time of specimen collection.	Transport at 2-8°C.  Ship on dry ice.

References:

1. BioFire Respiratory Panel 2.1 (RP2.1) SOP
2. BioFire Gastrointestinal (GI) Panel SOP
3. Adenovirus | CDC: <https://www.cdc.gov/adenovirus/index.html>