| Louisiana Office of Public Health Laboratories | |
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| Test Name | Rule out *Burkholderia mallei* and *pseudomallei* |
| PHL Location | Office of Public Health Laboratory Baton Rouge |
| CPT Code | N/A |
| Synonyms | BT Test, Bioterrorism Test, Clinical Rule Out |
| Brief Description of Test | **Prior notification requested. Contact Infectious Disease Epidemiology at 800-256-2748 or BT Program Advisor at 225-219-5241.**<br><br>To rule out or confirm bacterial isolates as *Burkholderia mallei* or *pseudomallei* or to rule out or confirm presence/absence of *Burkholderia mallei* or *pseudomallei* in direct patient specimens.<br><br>A. *Burkholderia mallei* is suspected and cannot be ruled out if the isolate fulfills the following characteristics:<br>• Gram negative coccobacillus<br>• Growing on BAP as gray, translucent colonies that are non-hemolytic, nonpigmented, and odorless.<br>• Not growing or growing poorly on MAC in 48 h<br>• Oxidase-variable, catalase-positive, and indole-negative.<br>• Resistant to polymyxin B or colistin, resistant to penicillin and susceptible to<br>amoxicillin-clavulanate<br>• No growth at 42°C<br>• Non-motile<br><br>B. *Burkholderia pseudomallei* is suspected and cannot be ruled out if the isolate fulfills the following characteristics:<br>• Gram negative rod that may demonstrate bipolar staining<br>• Growing on BAP as greyish-white colonies that are non-hemolytic and may be wrinkled.<br>• Growing on MAC in 48 h<br>• Oxidase-positive, catalase-positive, and indole-negative.<br>• Resistant to polymyxin B or colistin or growing on Selective agar<br>• Colonies are non-hemolytic, non-pigmented on Mueller Hinton agar<br>• May have musty odor. Not all *B. pseudomallei* have the characteristic odor,<br>which cannot be used to rule out the organism. |
| Possible Results | **Direct Sample Testing**<br>Presumptive Positive<br>Inconclusive<br>Negative<br><br>**Culture Isolate Testing** |

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<tr><td></td><td>Presumptive Positive. Note: isolate will be sent to LRN for speciation confirmation<br>egative</td></tr>
<tr><td>Reference Range</td><td>Negative</td></tr>
<tr><td>Specimen Type</td><td>Direct Sample – clinical specimens require prior approval
<table>
<tr><th colspan="2">A. Collection and Transport of Clinical Specimens for Laboratory Rule-Out Testing</th></tr>
<tr><td>Bone marrow or whole blood</td><td>• Considered the best specimen for culture.<br>• Collect directly into an appropriate blood culture bottle<br>• Transport bottles at room temperature as soon as possible to obtain the diagnosis</td></tr>
<tr><td>Sputum or bronchoscopically obtained specimens</td><td>• Collect expectorated specimen into sterile transport cup or collect during bronchoscopy procedure.<br>• Transport at room temperature up to 2 h<br>• If it is known that material will be transported from 2-24 h after collection, then store and transport at 2-8°C.</td></tr>
<tr><td>Tissue specimens (biopsies, abscess aspirates) and wound swabs</td><td>• Tissue pieces (at least the size of a pea) should be collected and kept moist<br>• Transport in sterile container at room temperature within 1 hour of collection<br>• Alternatively a swab from a tissue sample can be submitted in hospital transport tube with medium to stabilize specimen (e.g. Amies charcoal).</td></tr>
<tr><td>Urine</td><td>• Collect at least 1 ml into leak-proof container<br>• Transport at room temperature up to 2 h<br>• Refrigerate 2 up to 24 h until culture inoculation</td></tr>
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Refrigeration temperature is considered 2-8°C.<br><br>Culture Isolate<br>Actively growing, pure culture inoculated in/on unexpired media</td></tr>
<tr><td>Specimen Container(s):</td><td>Specimen must be transported in “triple” packaging (primary receptacle, water tight secondary packaging and durable outer packaging) required for a biological agent of human disease.</td></tr>
<tr><td>Minimum volume accepted:</td><td>1mL of liquid specimens<br>Pea size piece of tissue</td></tr>
<tr><td>Collection Instructions</td><td>BSL-3 practices, containment equipment, and facilities are recommended, for all manipulations of cultures of B. mallei or B. pseudomallei.<br><br>Package such that each sample is kept separate and is individually labeled, contained in its own bag/container and labeled with a unique identifier.<br><br>Decontamination of laboratory surfaces is easily accomplished using a fresh solution of 10% bleach.<br><br>Label specimen with Patient Name and a 2nd Unique Identifier such as a chart number or medical record number. DOB is not considered unique.<br><br>Complete a LAB Form 93 to accompany the sample. Lab submission form must be thoroughly completed with patient’s first and last name, 2nd patient identifier, gender, date of birth, date and time of collection, specimen source, test requested, submitter’s name, address, fax and contact number. Additional information regarding patients’ address is requested.</td></tr>
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| | The same two unique identifiers **MUST** be recorded on the tube **AND** the Lab 93 form.<br><br>Transport specimen to laboratory as soon as possible after collection/incubation. Keep submission forms insulated from specimens. |
| Storage and Transport Instructions | Culture may be shipped ambient. For storage and transport of clinical samples, contact **BT Program Advisor at 225-219-5241.**<br><br>Send sample to the Office of Public Health Laboratory Baton Rouge, 1209 Leesville Avenue, Baton Rouge, LA 70802<br><br>LRN (Laboratory Response Network) guidance for the packaging and shipping of infectious substances and biological agents should be consulted for recent changes. IATA and DOT publications continue to be revised frequently. Submitters should frequently and regularly consult IATA publications, the Federal Register, and the publications of other governing agencies for more complete instructions. It is the shipper's responsibility to ensure adherence to the most current regulations.<br><br>Useful web sites that address the shipping of infectious substances and biological agents:<br>International Air Transport Association: https://www.iata.org<br>Department of Transportation: http://phmsa.dot.gov<br>American Society for Microbiology: http://www.asm.org<br>American Biological Safety Association: http://www.absa.org/<br>Animal and Plant Health Inspection Service: http://www.aphis.usda.gov/<br>Centers for Disease Control and Prevention: http://www.cdc.gov/od/ohs/ |
| Causes for Rejection | • Incorrect source<br>• Incorrect labeling<br>• Expired collection tubes<br>• Not approved for testing by Infectious Disease Epidemiology |
| Limitations of the Procedure | If inhibitors are present in a DNA extraction, PCR assays may produce a false negative result.<br><br>A false negative result may occur if a sample is improperly collected, transported or handled. False negative results may occur if inadequate numbers of organisms are present in the sample. |
| Interfering Substances | N/A for direct culture testing |
| References | Sentinel Level Clinical Laboratory Guidelines for Suspected Agents of Bioterrorism and Emerging Infectious Diseases – *Burkholderia spp.* https://www.asm.org/images/PSAB/LRN/Burkholderia316.pdf<br><br>Laboratory Response Network |
| Additional Information | If *Burkholderia mallei* or *pseudomallei*. is suspected, contact Infectious Disease Epidemiology at 1-800-256-2748 or BT Program Advisor at 225-219-5241. |

| Release Date | 05/18/2018 |
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