

BURKHOLDERIA MALLEI RULE-OUT EVALUATION

General Sample Information

Evaluator(s):

Evaluation date(s):

Submitting Sentinel Clinical Laboratory:

Laboratorian being evaluated (if known):

Initial sample source:

Within Clinical Lab

Initial sample accessioning date/time:

Initial sample processing date/time:

Initial sample work-up complete date/time:

Notification to LRN Reference Laboratory

Notification sent Date:

Time:

No notification provided

Sample sent to LRN Ref. Lab:

Primary specimen

Isolate

Other:

Date shipped to LRN Ref. Lab:

Date received:

Sample shipped to LRN Ref. Lab as:

Category B

Category A

Unsure

Other:

Was sample shipped appropriately?

Yes

No

Unsure

Rule-out test requested:

Microscopy

Was a Gram stain performed?

No

Yes

If yes, from:

Primary specimen

Culture

Result:

Gram positive

Gram negative

Undetermined

Gram stain characteristics:

Is the Gram stain result consistent with the rule-out organism?

Yes

No

Was another stain performed?

No

Yes

If yes, from:

Primary specimen

Culture

What type of other stain:

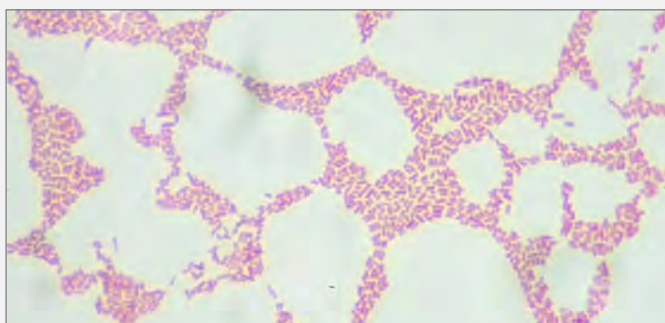
Describe characteristics:

Is the other stain result consistent with the rule-out organism?

Yes

No

B. mallei: Small straight or slightly curved Gram negative coccobacilli (1.5 μm -3 μm x 0.5-1 μm) with rounded ends. Cells arranged in pairs, parallel bundles, or the Chinese letter form.



Gram Stain

Culture Characteristics/Description

SBA/BAP (Sheep Blood Agar/Blood Agar Plate)

Growth:	Hemolysis:	Temperature:	Set up	Not Setup
24h growth	Alpha	25°C	Colony description and other notes:	
48h growth	Beta	37°C		
72h growth	Gamma	42°C		
No growth	(non-hemolytic)			

CHOC (Chocolate Agar)

Growth:	Temperature:	Set up	Not Setup
24h growth	25°C	Colony description and other notes:	
48h growth	37°C		
72h growth	42°C		
No growth			

MAC (MacConkey Agar)

Growth:	Temperature:	Set up	OR	EMB (Eosin Methylene Blue Agar)	Set up	Neither Setup
24h growth	25°C	Colony description and other notes:				
48h growth	37°C					
72h growth	42°C					
No growth						

Ashdown Agar

Growth:	Temperature:	Set up	Not Setup
24h growth	25°C	Colony description and other notes:	
48h growth	37°C		
72h growth	42°C		
No growth			

Burkholderia cepacia Selective Agar

Growth:	Temperature:	Set up	Not Setup
24h growth	25°C	Colony description and other notes:	
48h growth	37°C		
72h growth	42°C		
No growth			

Other:

Growth:	Temperature:	Set up	Not Setup
24h growth	25°C	Colony description and other notes:	
48h growth	37°C		
72h growth	42°C		
No growth			

Is the culture consistent with the rule-out organism?

Yes

No

No cultures performed

Burkholderia mallei Rule-out Evaluation

***B. mallei*:** Aerobic. Poor growth at 24h on all media. No pigment, even on Mueller Hinton Agar. No distinctive odor (from closed plate).

On BAP: Pinpoint to small grey colonies at 24h that may become smooth, grey and translucent at 48h. Non-hemolytic.

On MAC: No growth at 42°C. Poor or no growth at 48h. No growth or pinpoint colorless colonies after 48h.



24h BAP



48h BAP

Rule-out Testing

Test	<i>B. mallei</i>	Rule-out Sample			
		Positive	Negative	Undetermined	Not Performed
Arginine	Positive				
Catalase	Positive				
Hemolysis	None (Gamma)				
Indole	Negative				
Motility 35°C	Non-motile				
Growth at 42°C	No growth				
Nitrate	Positive (without gas)				
Oxidase	Variable (most are negative)				
Urease	Variable				
Other:					

Are the test results consistent with the rule-out organism?

Yes

No

No rule-out tests performed

Rapid, Automated and Molecular Testing

Test/Platform	Yes	No	Result
API			
BioFire			
MALDI TOF			
Microscan			
PCR			
Phoenix			
VITEK			
Other:			

Are the test results consistent with the rule-out organism?

Yes

No

None performed

Susceptibility Testing

Note: Routine susceptibility testing is not a recommended sentinel clinical laboratory procedure.

Antibiotic	<i>B. mallei</i>	Zone/ Susceptible	No Zone/ Resistant	Indeterminate	Not Performed
Penicillin (10 U)	No Zone/Resistant				
Amoxicillin clavulanate (20/10 µg)	Zone/Susceptible				
Colistin (10 µg)	No Zone/Resistant				
Polymyxin-B (300 U)	No Zone/Resistant				
Gentamicin	Zone/Susceptible				
Other:					

Are the test results consistent with the rule-out organism?	Yes	No	No susceptibility tests performed
---	-----	----	-----------------------------------

Other Items of Consideration

	Yes	No	Unsure
Were the LRN Sentinel Level Clinical Laboratory Protocols followed?			
Are the patient symptoms / clinical presentation consistent with rule-out organism sent for testing?			
If any samples remained at the submitting clinical laboratory, were they kept secured?			
If any samples remained at the submitting clinical laboratory, were they sealed and marked with a precautionary hazard warning (e.g., brightly colored distinguishing tape)?			
Were all remaining samples transferred from submitting laboratory(ies) to LRN Reference Laboratory?			
Were all remaining samples at submitting laboratory(ies) destroyed?			
Was the related sample waste handled and disposed of properly?			
Are there any safety or exposure concerns at the submitting laboratory(ies)? All potential exposures to a select agent require an APHIS/CDC Form 3 .			
Has the LRN Reference Laboratory completed Sections A and B of the required CDC/APHIS Form 4? All identified select agents require an APHIS/CDC Form 4 .			
Has the submitting laboratory(ies) completed Sections C and D of the required CDC/APHIS Form 4? All identified select agents require an APHIS/CDC Form 4 .			

Possible Misidentifications for *B. mallei*

Organism	Differential Test
<i>Burkholderia cepacia</i>	Resistant to amoxicillin-clavulanic acid, lactose fermenter on MacConkey and EMB, motile, arginine negative.
<i>Chromobacterium violaceum</i>	Hemolysis, violet pigment on BAP, motile
<i>Pseudomonas stutzeri</i>	Growth on MacConkey, arginine negative
<i>Stenotrophomonas maltophilia</i>	Growth on MacConkey, arginine negative
<i>Bacillus</i> spp. may appear Gram negative	Sensitive to penicillin
<i>Pandoraea</i> spp.	Growth on MacConkey
<i>Ralstonia</i> spp.	Growth on MacConkey
<i>Acinetobacter</i> spp.	MAC positive, oxidase negative

Common Misidentifications

May not be identified in common automated ID systems, including MALDI TOF, and possible misidentifications may include: *Burkholderia cepacia*, *Chromobacterium violaceum*, *Pseudomonas stutzeri*, *Bacillus* spp., *Pandoraea* spp., *Ralstonia* spp. other nonfermenting Gram negative bacilli.

Note: *B. pseudomallei* and *B. mallei* are arginine positive, unlike other *Burkholderia*; the arginine test may be in kit or identification systems.

Final Results

LRN Reference Laboratory test result:

LRN Reference Laboratory test result date:

Protocol Adherence

Submitting lab followed LRN Sentinel Level Clinical Laboratory Protocols accordingly

Submitting lab did not follow LRN Sentinel Level Clinical Laboratory Protocols accordingly

Overall Assessment

No follow up needed

Follow up with submitting lab(s) needed. Recommended follow up: