

# Characteristics of biothreat agents



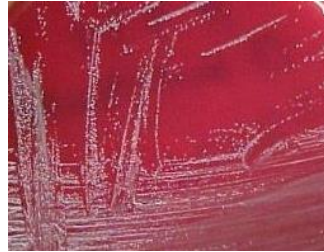
Complete information, algorithms, and protocols can be found on the ASM website:

## Remember:

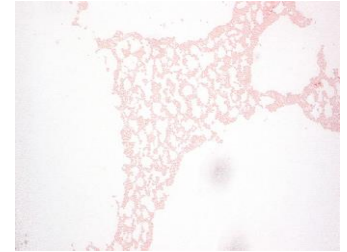
- Handle any potential biothreat agents in a biosafety cabinet.
  - Automated ID systems may not identify biothreat agents correctly.
- If the potential biothreat agent cannot be ruled out, call UPHL to submit samples for further testing.
- Office: 801-965-2561
  - After hours: 801-560-6586
  - DHHS Epi: 1-888-374-8824
- Report any possible lab exposures at the time of call.

## *Brucella* species

72 h on SBA



Gram stain



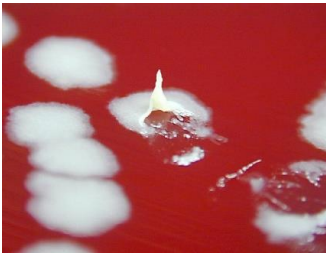
Specimen types: bone marrow, blood culture, joint/body fluid, spleen or liver abscess, serum

Colony characteristics:

- Slow growth on SBA and CHOC
- No growth on MAC
- Non-pigmented, non-hemolytic, tiny colonies
- Catalase, oxidase, and urease positive
- Satellite negative, X & V factors not required

## *Bacillus anthracis*

24 h on SBA



Gram stain



Specimen types: lesions, blood culture, stool, sputum, tissues, CSF

Colony characteristics:

- Rapid growth
- Non-pigmented, non-hemolytic, ground-glass, tenacious, irregular shaped colonies
- Catalase positive
- Non-motile
- Spores not often seen in direct clinical smears

## *Francisella tularensis*

48 h on CHOC



Gram stain



Specimen types: tissue, lesion, bone marrow, lymph node/aspirate, blood culture, respiratory secretions

Colony characteristics:

- Slow growth
- Better growth on CHOC than SBA
- No growth on MAC
- Small, non-hemolytic, flat, smooth, shiny, white or gray colonies
- Oxidase negative
- Catalase negative/weak positive
- Beta-lactamase positive
- Satellite negative, X & V factors not required

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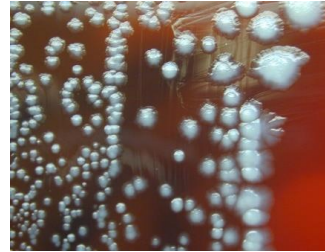
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## *Yersinia pestis*

72 h on SBA



Gram stain



Specimen types: lower respiratory tract specimens, aspirates, tissue, blood culture

Colony characteristics:

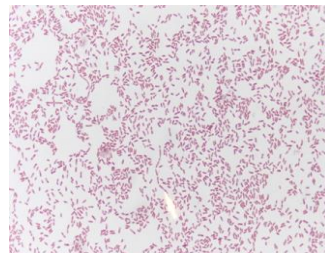
- Slow growing
- Non-hemolytic, gray-white/yellowish colonies
- Lactose negative on MAC
- Oxidase, indole, and urease negative
- Catalase positive

## *Burkholderia pseudomallei*

48 h on SBA



Gram stain



Specimen types: bone marrow, blood culture, lower respiratory specimens, tissue, abscesses, aspirates, wound swabs, urine

Colony characteristics:

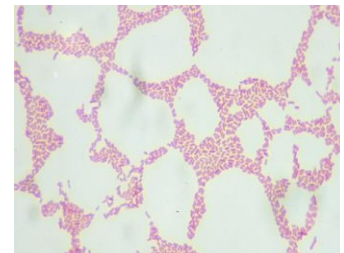
- Smooth, creamy white colonies
- May be dry/mucoid and wrinkled after 48 hours
- Growth on MAC
- Musty/earthy odor in incubator
- Colistin, polymyxin B, and penicillin resistant
- Amoxicillin-clavulanate susceptible
- Motile
- Non-hemolytic
- Growth at 42°C
- Oxidase and catalase positive
- Indole negative

## *Burkholderia mallei*

48 h on SBA



Gram stain



Specimen types: bone marrow, blood culture, lower respiratory specimens, tissue, abscesses, aspirates, wound swabs, urine

Colony characteristics:

- Slow growing
- Pinpoint, gray or translucent colonies on SBA
- No or poor growth on *B. cepacia* agar
- No growth or colorless/light pink on MAC
- Colistin, polymyxin B, and penicillin resistant
- Amoxicillin-clavulanate susceptible
- Non-motile
- Non-hemolytic
- No growth at 42°C
- Oxidase variable
- Catalase positive
- Indole negative