

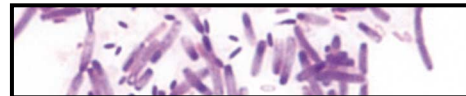
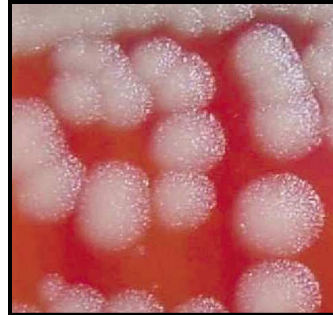
Bacillus anthracis

Colony Morphology

- Grey, flat or slightly convex colonies with irregular borders (2-5 mm in diameter) on SBA at 24 hrs
- “Medusa Head” formation may be present
- Non-hemolytic
- Ground-glass appearance
- Colonies are tenacious and stand up when teased with a loop

Gram Stain

- Large gram-positive rods (1-1.5 μm x 3-5 μm)
- Single, short chains or long chains
- Spores are subterminal or central and do not swell cell (if present)



Francisella tularensis

Colony Morphology

- Tiny, grey-white, opaque colonies (1-2 mm in diameter) on SBA and Chocolate Agar at 48 hrs
- 2-4 mm in diameter and greenish-blue on Cysteine Heart Agar (CHA)
- Colonies are smooth and butyrous
- Grows slowly in broth
(Hold blood cultures up to 3 weeks if *Francisella tularensis* is suspected)

Gram Stain

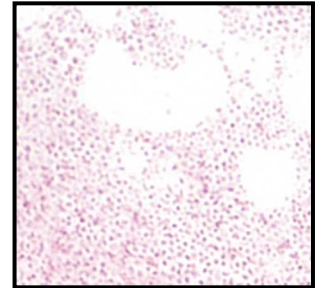
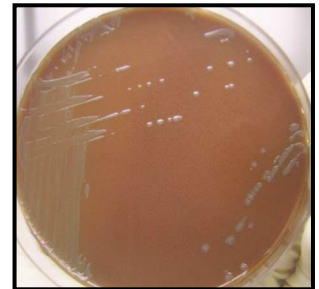
- Tiny, pleomorphic, poorly stained gram-negative coccobacilli (0.2 μm -0.7 μm)
- Mostly single cells

Oxidase

- Negative

Urea

- Negative



Burkholderia pseudomallei

Colony Morphology

- Smooth, creamy, white colonies on SBA at 24 hrs
- Some may be mucoid or become dry and wrinkled at 48 - 72 hrs
- Pink colonies on MAC at 24 - 48 hrs or colorless colonies at 48 hrs

Gram Stain

- Gram-negative slender rods with bipolar staining (1-3 μm x < 2.0 μm)
- Smooth form appears as long parallel bundles and rough form appears more irregularly arranged

Catalase

- Positive

Oxidase

- Positive

Indole

- Negative

Motility

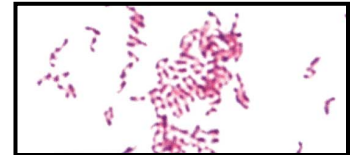
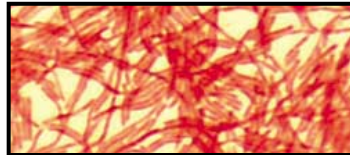
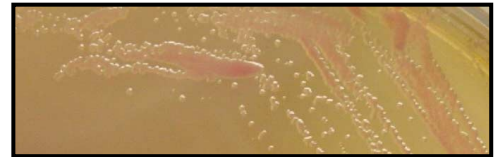
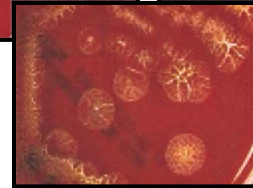
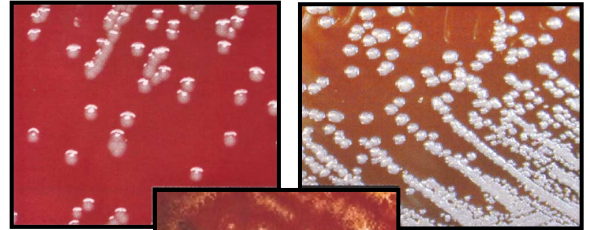
- Positive

Triple Sugar Iron (TSI) Agar Slant

- Slant: variable; Butt: red (no change)

Colistin/Polymyxin B

- Resistant (no zone)



Burkholderia mallei

Colony Morphology

- Smooth, grey, translucent colonies on SBA at 48 hrs
- Light pink colonies on MAC at 72 hrs or no growth

Gram Stain

- Faintly stained gram-negative straight or slightly curved coccobacilli with rounded ends or wavy sides
- Cells are arranged in pairs end-to-end, in parallel bundles or Chinese letter form (1-3 μm x 0.3-0.5 μm)

Catalase

- Positive

Oxidase

- Variable

Indole

- Negative

Motility

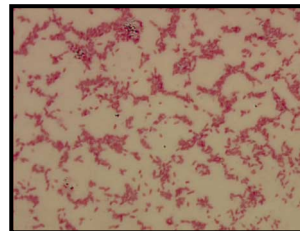
- Negative

Triple Sugar Iron (TSI) Agar Slant

- Slant: red; Butt: red (no change)

Colistin/Polymyxin B

- Resistant (no zone)



Brucella spp.

Colony Morphology

- Punctate colonies (0.6 μm -1.5 μm) on SBA at 48 hrs
- Non-hemolytic and non-pigmented
- Slow growth upon primary isolation (Hold blood cultures up to 3 weeks if *Brucella* species is suspected)

Gram Stain

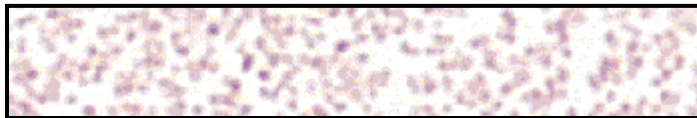
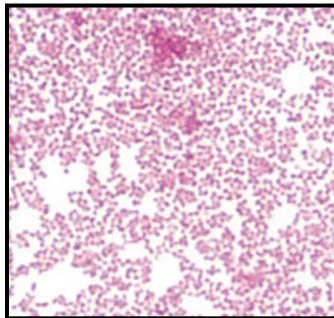
- Tiny, faintly stained gram-negative coccobacilli (0.4 μm x 1.0 μm)
- Organism may stain gram-positive

Oxidase

- Positive

Urea

- Positive (*B. canis* and *B. suis* may start to turn positive in < 5 min)



Yersinia pestis

Colony Morphology

- Grey-white translucent colonies on SBA at 24 hrs
- Colonies turn slightly yellow and opaque (1-2 mm in diameter) at 48 hrs
- Faster growth at 25°C
- Irregular “fried egg” and/or “hammered copper” morphology at 48 - 72 hrs
- Suspended flocculent or stalactite growth in broth (HIB or TSB) incubated at 35°C

Gram Stain

- Fat, gram-negative rods (1.0 µm x 0.5 µm)
- Single or short chains
- Bipolar staining

