**Bacillus anthracis**

**Colony Morphology**
- Grows well on Blood Agar (BA); will not grow on MacConkey (MAC) agar
- 2-5 mm on BA at 24 h
- Flat or slightly convex with irregular borders that have comma-shaped protrusions
- Colonies have a ground-glass appearance
- Non-hemolytic on BA
- Tenacious colonies

**Gram Stain**
- Large gram-positive rod (1-1.5 x 3-5 μm)
- Long chains in liquid culture but may include single cells or short chains
- Spores are subterminal or central

**Additional Information**
- Can be misidentified as: *Bacillus megaterium* and other *Bacillus* spp.
- Biosafety Level 2 agent (Use BSL3 for large volume or high titer culture)
- Infectious Dose: <10,000 spores
- Transmission: Inhalation, ingestion, direct contact with skin
- Contagious: No

**Acceptable Specimen Types**
- Swab of vesicular fluid from cutaneous lesion
- Sputum (≥ 1 ml)
- Whole blood: 5-10ml blood in EDTA, and/or inoculated blood culture bottle
- Stool (> 5g)
Sentinel Laboratory Rule-Out of *Bacillus anthracis*

Grey, ground-glass, tenacious colonies at 24 h on BA at 35/37°C Non-hemolytic on BA

Large gram-positive rods (chaining in liquid culture)

Perform all additional work in a certified Class II Biosafety Cabinet

*Motility: Non-Motile*  
(use semi-solid media rather than wet mount; 2,3,5-triphenyltetrazolium chloride indicator)  
*Catalase: Positive*

*Motility and Catalase: Appearances of test results are not agent-specific. Photos represent typical reactions*

**No**

Continue laboratory identification procedures

**Yes**

Immediately notify Wadsworth Center Biodefense/Bacteriology Laboratories if within the 5 boroughs of NYC, please call (212) 447-1091

Motility

B. anthracis colonies at 24 h on BA

Gram stain

Motile

Catalase

Positive

Weak Positive

Negative

Non-Motile