Rhodococcus equi

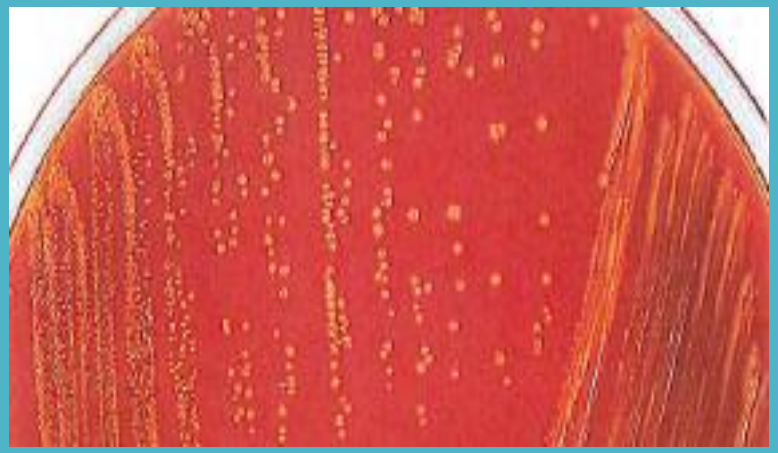
Clinical Picture

- *R. equi* is clinically the most important species of the *Rhodococcus* genus
- May cause granulomatous pneumonia in immunocompromised patients, particularly those infected with HIV type 1
- Cavitating lesions in the lungs frequently occur
- Can disseminate to other organs, including the brain and subcutaneous tissues
- Can be recovered from lung biopsy specimens, sputum, bronchoalveolar lavage, and blood cultures

Colony Morphology

- Salmon or pink pigment after prolong incubation (may take 3-5 days)
- Grows well on sheep blood agar
- Colonies can resemble *Klebsiella*
- Does not grow on MacConkey agar
- Can be rough to smooth or mucoid

Colony Morphology



Pink-orange color on BAP

Gram Stain

- Gram-positive coccobacilli
- May be solidly stained or beaded appearance
- Shape can depend on species, specimen type, and the stage of growth
- Exhibit a rod-to-coccus growth cycle
- Rod forms are best seen in liquid media
- Can easily be misidentified as *Corynebacterium* species

Gram Stain Morphology

Bacillary morphology in a

24 hour old culture

Coccoid morphology in a

72 hour old culture

Modified Acid-Fast Staining

- Has partial acid-fast properties
- Stain must be interpreted with care, as only a tiny fraction of these cells may retain the stain
- Smears prepared from TSA with 5% sheep blood or chocolate agar may appear to be acid-fast stain negative

Identification

- Gram stain
- Colony morphology
- Catalase positive
- Oxidase negative
- Rapid CB
- Unclaimed on MALDI-TOF

Susceptibility Patterns

- No susceptibility performed at MACL, can send to Quest if requested
- Combination of antimicrobials is generally used
- Includes aminoglycosides, erythromycin, imipenem, quinolones, rifampin, and vancomycin

References

- de la Mazza, Luis M., et al, 1997, Color Atlas of Diagnostic Microbiology, Mosby-Year Book, Inc., St. Louis, Missouri

- de la Mazza, Luis M., et al, 2013, Color Atlas of Diagnostic Microbiology, 2nd edition, Mosby-Year Book, Inc., St. Louis, Missouri

- Jorgensen, James H., et al, 2015, Manual of Clinical Microbiology, 11th edition, Americal Society for Microbiology, Washington, DC.