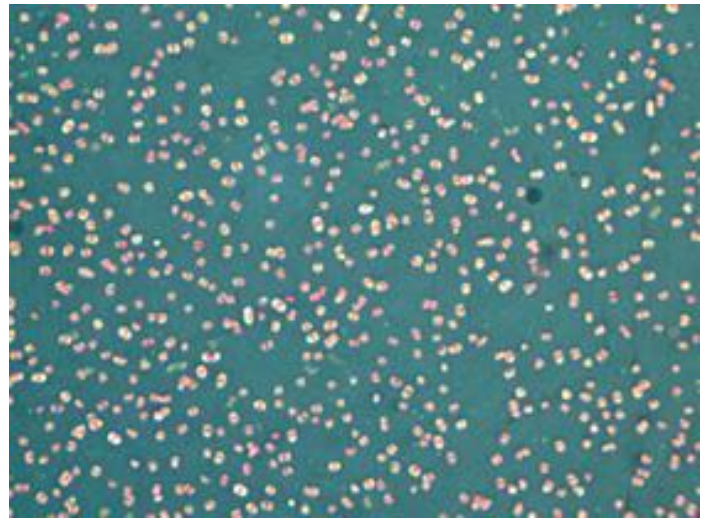


Congo Red Capsule Stain

The Congo Red Capsule stain is a modification of the nigrosin negative stain you may have done previously. The bacteria take up the congo red dye and the background is stained then with acid fuchsin dye. The capsule or slime layers, highly hydrated polymers, exclude both dyes. The background will appear blue, the bacterial cells will appear pink, and the clear halos are the capsules.

Clinically, the capsules of some highly pathogenic bacteria (ie: pneumococci, *Haemophilis influenzae*, and meningococci), can be distinguished with the use of antisera specific for that type of capsule. The bacteria are suspended in the antisera and then

mixed with methylene blue. In the antisera staining procedure, the bacteria will appear blue surrounded by a clear halo and then surrounded by a thin blue line where the antisera have attached to the capsule.



Materials

- Congo Red stain
- Acid fuchsin stain
- Acid alcohol
- *Klebsiella pneumoniae* culture
- *Enterobacter aerogenes* culture

Congo Red Capsule Stain Procedure

1. Place a loop-full of Congo Red on a slide
2. Mix a small amount of your organism into the drop of Congo Red.
 - Spread the organism/dye suspension well on the slide
3. Let the slide thoroughly air dry.
 - **DO NOT METHANOL FIX!**
4. Fix the dried slide with acid alcohol for 15 seconds.
5. Rinse with distilled water and cover the slide with acid fuchsin for 1-5 minutes.
6. Rinse with water and allow to air dry.
7. Examine the slide under oil immersion.
 - Cells stain red/pink, and the capsules appear as colorless halos against a dark blue background.