

Maxine Fuchs

Lab 6: Endospore and capsule staining. Negative staining (Pages 91, 71, 67)

The objective of the endospore lab was to learn how to perform a spore stain and be able to identify spores on a bacterial smear. Prior to performing the lab we learned about the importance of endospore production and how it allows some bacteria to resist adverse environmental conditions. The two genera of bacteria that form endospores include *Clostridium* (*anaerobic*) and *Bacillus* (*aerobic*). Due to their tough keratin protein coats, spores are highly resistant to normal staining procedures. The primary stain in the endospore stain procedure, malachite green, is driven into the cells with heat. Since malachite green is water-soluble and does not adhere well to the cell, and because the vegetative cells have been disrupted by heat, the malachite green rinses easily from the vegetative cells, allowing them to readily take up the counterstain.

Each member of our group used a different bacteria culture to smear on their slide choosing from either *Bacillus subtilis*, *Micrococcus luteus*, or *Clostridium sporgensis*. The result was that the endospores will turn a green color, while the vegetative parent cells will turn a pink color due to their walls picking up the counterstain from safranin.

The bacteria I personally used in my smear was *Clostridium sporgensis*, which resulted in a green color. Unfortunately, I put the safranin on a little too late which may have affected the visibility of the bacteria on my slide.

