Mohammed S. Microbiology Identification of Unknown Bacteria 3/13/18

In order to determine the unknown bacteria, we initially used gram staining to determine whether or not it was a negatively or positively stained bacteria. Upon the completion of the staining process, my stain was lighter than I wanted it to be. Although the color wasn't as prominent as I wanted, it was clearly visible to me that my bacteria was Gram negative because of the pink counterstain from the Safrinin(1).

Based on the gram staining, I was able to eliminate all of the gram positive bacteria's and was left with a choice between *E. coli, Serratia marcescens, Proteus vulgaris*. The use of selective media helped me finalize my decision as to what my unknown was. Phenylethyl Alcohol Agar (2) confirmed that my bacteria is gram negative as it shows inhibited growth. Blood Agar (3) presented with gamma hemolysis which is a characteristic of my bacteria. The final confirmation of my bacteria came from MacConkey Agar.

MacConkey Agar (4) contains the sugar Lactose and pH indicator neutral red. This allows for the differentiation between lactose fermenting and non-fermenting bacteria. When lactose is fermented, acid is released into the medium. The change in pH causes neutral red to turn from pink to red. Lactose fermenters will appear pink. Based on this test alone, I could clearly see that my bacteria is *Eschericha coli*.

