**Lab REPORT #2**

**Identification of Unknown Bacteria**

**Gram Stain & Isolation Streak Plate Technique**

### Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Lab Partner: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

### Lab Day and Time:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

### HOW TO DOCUMENT WHAT YOU SEE THROUGH THE MICROSCOPE

### *If your classroom has microscope cameras:* You will be obtaining micrographs (pictures taken with a microscope) for all specimens that you are asked to document below. For any micrograph photos that you take, make sure that the scope camera is set to capture the image as the smallest file size possible. If you don’t, the file size of your Word .doc will be huge, possibly too big to upload. Also, make sure the photos you import into this document are large enough on the page to make the cell part labels legible.

### *If your classroom does not have microscope cameras:* Draw what you see.

### 1. a. Unknown Number \_\_\_\_\_

b. What shape is your unknown? ­­­­­­­­­­­­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

c. What is the Gram stain reaction? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Take micrograph photos of your **Gram stain** observations viewed with the oil immersion lens. Make sure your photo is large enough, and detailed enough so that I can see cell shape and arrangement. If it is not, use the draw function in Word to also draw what it looks like.

Insert photo of the **Gram positive control** below.

1. Name of genus and species: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
2. Color of stain retained: \_\_\_\_\_\_\_\_\_\_\_\_\_.
3. What is the cell morphology and Gram stain reaction of this control?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Insert photo of the **Gram negative** control below.

1. Name of genus and species: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
2. Color of stain retained: \_\_\_\_\_\_\_\_\_\_\_\_\_.
3. What is the cell morphology and Gram stain reaction of this control?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Insert photo of Gram stained **unknown** below.

1. Color of stain retained: \_\_\_\_\_\_\_\_\_\_\_\_\_.
2. What is the cell morphology and Gram stain reaction of your unknown?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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1. What genus and species did we use as the Gram positive control in the Gram stain? Why could we use this organism as the positive control?
2. What genus species did we use as the negative control in the Gram stain? Why could we use this organism as the negative control?
3. Describe the theory of the Gram stain procedure *(Very specifically WHY do some calls turn pink and other purple? In other words, HOW does the stain work?).*
4. Why is the Gram stain important?
5. In this lab we performed an aseptic transfer of bacteria onto TSY media in a Petri plate. What does aseptic transfer mean and why was it important?
6. What is the purpose of preparing an isolation streak plate?
7. Robert Koch discovered that agar (derived from sea weed) was a very good bacterial growth surface because the microbes don’t eat it up, like they did when he tried gelatin. If agar cannot be broken down, where are the microbes growing on TSY getting their nutrients from?
8. a. What are the parameters for autoclaving?
9. What is the result of autoclaving?

1. Provide an example of a process done in homes that is similar to autoclaving.

This material is adapted from the Applied Microbiology Laboratory Manual by Cynthia Schauer. For Power Point slides that correspond to this lab material, see the Virtual Microbiology Classroom of the [Science Prof Online](http://www.scienceprofonline.com) website.