Microbiology Lab Experiment Changes

Experiment #: **4-1, 4-2, 4-4, 4-6**

Title: Selective and Differential Media

Live Organisms: *Enterobacter aerogenes, Escherichia coli, Bacillus subtilis, Staphylococcus aureus, Staphylococcus epidermidis, Providencia rettgeri*

Changes:

Procedure:

Work in groups (2-3 students). Each person in your group should do at least one plate.

1. Inoculate 4 different bacteria onto each kind of medium.

 **MSA**	 **PEA**	 **MAC**	 **EMB**
1. S. aureus *2. S. epidermidis* *3. B. subtilis* ***4.** E. coli **or** E. aerogenes* **or** *P. rettgeri*	*1. S. aureus* *2. S. epidermidis* *3. B. subtilis* ***4.** E. coli **or** E. aerogenes* **or** *P. rettgeri*	*1. E. coli* *2. E. aerogenes* *3. P. rettgeri* ***4.** S. aureus **or** S. epidermidis **or** B. subtilis*	*1. E. coli* *2. E. aerogenes* *3. P. rettgeri* ***4.** S. aureus **or** S. epidermidis **or** B. subtilis*

2. The above combinations demonstrate the selective and / or differential nature of each plate.

3. For the sake of conformity and reducing color confusion, we have adopted the following color conventions for bacterial growth on the following agar plates:

<u>On MacConkey agar:</u>
lactose fermenters (LF) = “pink/magenta”
non-lactose fermenters (NLF) = “colorless” (i.e., greyish, whiteish)

<u>On EMB agar:</u>
LF = “dark purple”
NLF = “purplish-blue”

4. Next lab period record and draw results. Note color of medium, color of bacterial growth, presence of precipitate, and the absence or inhibition of growth.

Take Home Lesson: Know the principles described in the lab manual for each type of medium. Distinguish between selective and differential media. Understand that a particular medium may be both selective and differential. Describe the selective and differential nature of: EMB, MAC, PEA and MSA. What are the components in each medium and what is each component’s function with respect to the medium’s selective and / or differential properties?

Print and study the Selective and Differential Media handout from the web site.