**Lab Exercise #4 - REPORT**

**Identification of Unknown Bacteria**

**Bacterial Growth Media and Culture** Lab Day and Time:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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

1. Identification of your unknown bacteria: Look back at the information from Labs 2 & 3 and complete the following table:
   1. Unknown number:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   2. Record the following:

|  |  |
| --- | --- |
| Cell morphology |  |
| Gram stain results |  |
| Acid Fast Stain results |  |
| Endospore stain results |  |
| MacConkey media results |  |
| Mannitol Salt media results |  |

* 1. Do these results make sense? Why or why not?
  2. Given a list of the stock cultures in this lab and using the dichotomous key for these cultures (found on the VMC main lab page for this lab), what is the most precise statement you can make regarding your findings?

2. Which would be a better **all-purpose** medium, a medium containing blood or a medium similar to the surface of your skin? Support your choice by explaining specifically why one medium would be better and one would be worse.

3. What does it mean that MacConkey’s media is selective? What does it mean that this media is also differential. *Your answer should specifically relate to MacConkeys, not just the general definition of selective and differential media.*

4. What does it mean that Mannitol Salt media is selective? What does it mean that this media is also differential? What types of organisms grow on Mannitol Salt media? *Your answer should specifically relate to Mannitol Salt, not just the general definition of selective and differential media.*

1. Describe your results from the TSY touch plates and ‘arm’ plate in the table below. Did anything surprise you? Are your results what you might have expected?

|  |  |  |  |
| --- | --- | --- | --- |
|  | Total Colonies \*  *< 10*  *10 – 100*  *>100* | Number of Different Types of Colonies | Comments and observations |
| Arm plate | Type 1:  Type 2:  Type 3:  Type 4:  Type 5: |  | Type 1:  Type 2:  Type 3:  Type 4:  Type 5: |
| Touch plate #1 | Type 1:  Type 2:  Type 3:  Type 4:  Type 5: |  | Type 1:  Type 2:  Type 3:  Type 4:  Type 5: |
| Touch Plate #2 | Type 1:  Type 2:  Type 3:  Type 4:  Type 5: |  | Type 1:  Type 2:  Type 3:  Type 4:  Type 5: |
| Touch Plate #3 | Type 1:  Type 2:  Type 3:  Type 4:  Type 5: |  | Type 1:  Type 2:  Type 3:  Type 4:  Type 5: |

*\* If you have more than 5 bacterial types, add that information to the table (Type 6:, Type 7: etc.). If you run out of room, you can either print out an additional copy of this page to include the remaining types, or use other open space on this lab report.*

6. Describe the results of your nasal swab plate. Why was the nasal sample plated onto Mannitol Salt?

7. Describe the results of your throat swab plates (BAP). Why was the throat culture plated on blood agar? What type of hemolysis pattern did your sample result in?

8. Describe the results of the controls:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Media | Is the media differential or selective? | Bacteria | Results | What does this tell you about the bacteria or the media? |
| TSY |  | *Staphylococcus epidermidis* |  |  |
| *Staphylococcus aureus* |  |  |
| *Escherichia coli* |  |  |
| *Salmonella pulloram* |  |  |
| Negative control |  |  |
| MacConkey’s |  | *Staphylococcus epidermidis* |  |  |
| *Staphylococcus aureus* |  |  |
| *Escherichia coli* |  |  |
| *Salmonella pulloram* |  |  |
| Negative control |  |  |
| Mannitol Salt |  | *Staphylococcus epidermidis* |  |  |
| *Staphylococcus aureus* |  |  |
| *Escherichia coli* |  |  |
| *Salmonella pulloram* |  |  |
| Negative control |  |  |
| Blood agar |  | *Staphylococcus epidermidis* |  |  |
| *Staphylococcus aureus* |  |  |
| *Escherichia coli* |  |  |
| *Salmonella pulloram* |  |  |
| Negative control |  |  |

9. Describe how to properly label and store a media plate.

10. Come up with a dichotomous key for your favorite collection or hobby. Draw the key below, keeping in mind that at each step in the key, there must be two choices (***di*** - chotemous).

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.