SCB260: General Microbiology
Labs 10-11-12

UNKNOWN CULTURE

PURPOSE:

Identifying an unknown will provide the opportunity not only to apply previously learned skills but requires that you make judgments, critically analyze data, and make logical conclusions.

PROCEDURES:

1) Choose one numbered test tube, containing your "unknown culture."

2) Write your name and the number of your culture on the sheet provided by the instructor.

Once you choose your specimen, it is your responsibility. Strict adherence to aseptic technique is crucial to identification.

POINTS TO REMEMBER:

1) Before you begin to work, carefully think through a sequential plan you wish to follow. Reviewing all previous lab data will help.

2) Before you perform each procedure, Read and Reread all instructions in your manual carefully. If you have procedural questions, ask.

3) Perform only those tests that aid in confirming the identity of your specimen.

4) Be sure to allow for appropriate incubation times.

5) Always keep a viable stock culture on hand. Remember the bacterial growth curve!! Once the organisms deplete their sources of nutrients and waste products accumulate, they will die.

6) Cultures that you wish to save are always stored in the refrigerator – not in your incubator.

7) Record your data on the unknown report sheet as soon as you obtain them.

8) Your laboratory technique will be evaluated during these labs.

9) Report is due at the end of Lab 12.

RESOURCES:

Laboratory Manual

Bergey's Manual

Laboratory Incubators and Refrigerators

Culture Media and Antibiotic Discs*

Test Reagents

*Be sure you inoculate correctly and use the correct reagents to test for end products. Media supplies are limited.

*In addition to the materials used in class, the following are available:

- 6.5% broth sodium chloride broth
- Phenol red mannitol broth
- Phenol red fructose broth
- Bile Esculin Slants
- Novobiocin Discs

LIST OF POSSIBLE UNKNOWNS

Alcalignes faecalis
Bacillus cereus
Bacillus megaterium
Bacillus subtilis
Bacillus stearothermophilus
Citrobacter freundi
Clostridium perfringens
Clostridium sporogenes
Enterobacter aerogenes
Enterococcus faecalis
Escherichia coli
Lactobacillus brevis
Lactococcus lactis
Micrococcus luteus
Micrococcus roseus
Micrococcus varians
Mycobacterium phlei
Proteus vulgaris
Proteus mirabilis
Pseudomonas aeruginosa
Pseudomonas fluorescens
Serratia marcescens
Staphylococcus aureus
Staphylococcus epidermidis
Staphylococcus saprophyticus
Streptococcus faecalis
Streptococcus agalactiae
Streptococcus salivarius

UNKNOWN REPORT

Student Name_____

Unknown #_____ Due Date_____

1) Morphology
(shape and arrangement)_____

2) Gram Stain Reaction_____
(organisms)

3) Endospore Formation_____

4) Temperature Optimum_____

5) Oxygen Requirement_____

6) Culture Characteristics

- TSA Broth_____
- TSA Slant_____
- Streak Plate
(Colony Morphology)_____
_____

Based on These Data:

Genera and Species
Eliminated

Genera and Species
Probable or Possible

Biochemical characteristics (indicate your results using a flow chart/dichotomous key; start flow chart with the results of your gram stain reaction and morphology).

Genus species name of unknown_____

EVALUATION OF UNKNOWN PROJECT

Inclusion of essential data	25%
Correct/logical interpretation of observation/data*	25%
Correct genus identification	20%
Correct species identification	10%
Correct flow chart format	10%
Grammar/spelling	5%
Clear, clean copy – overall neatness	5%
Penalties: Late submission of report	-20%

*Reduction in grade is proportional to error made (i.e., an incorrect gram stain interpretation is considered more serious than an error made due to an unstable genetic trait).