**Flowchart for Identification of Unknown Bacterial Culture**

Is the bacteria Gram positive or Gram negative?

What is the morphology (shape)?

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**POSITIVE**

**NEGATIVE**

Is it Acid-Fast Positive or Negative?

Is it motile?

(SIM motility agar)

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**POSITIVE**

**NEGATIVE**

Does it have catalase activity?

Is it motile?

(SIM motility agar)

Does it form endospores? (UV sensitivity)

**Yes**

Is it expressing Protein A? (Staphyloside Test)

**Yes**

**No**

*M. smegmatis*

**Yes**

*S. aureus*

*S. epidermidis*

**Yes**

**No**

Does it have catalase activity?

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What metabolic pathways does it have?

(Enteropluri Tube)

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(Enteropluri Tube)

*E. coli*

*S. marcescens*

*K. pneumoniae*

**Yes**

**No**

**Yes**

**Yes**

You will perform four tests, according to the following flowchart, to identify an unknown bacterial culture. You will then fill out the assignment where you identify what morphological, immunological, or biochemical feature of bacterial cells the tests distinguish between, the results of each test, an analysis of the results, and finally, the identification of your bacterial culture.

These are the following tests you could perform: refer to the flowchart to determine if you need to do them and in what order. Refer to the handout AND to your lab manual for important information about these tests.

* Gram stain (pg 45)
* Acid-fast stain (pg 51)
* SIM motility assay (pg 23)
* Catalase activity (class handout)
* UV sensitivity (pg 61– DEMO: only the 2 min exposure was performed)
* Staphyloside test (pg 107)
* Enteropluri Tube (pg 93 – DEMO)

**Yes**

*B. subtillis*

**START HERE**