Name: JacksonTini Section: MW600 Unknown: 1 R S

Assignment 2A: EB Unknown Identification – 8 points

Enter your strain code everywhere requested with ***. For EMB through Oxidase, simply include your observations and conclusions, since we did the explanations in class. For FTM and Nitrate reduction, also explain how you made that conclusion from that observation – why you see what you see. If a result is inconclusive (which the instructor would have to verify as inconclusive), state what the test *would have* revealed and that you are uncertain of your unknown's result.

1. Eosin-Methylene Blue agar (EMB) – 0.5 pt

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Observation (growth relative to LBA)	Conclusion (growth)
approx. equal to LBA	Gram-negative
Colony color: translucent/pink	Conclusion (color): Negative for: Lactose Fermentation

2. Phenyl Ethyl Alcohol agar (PEA) – 0.25 pt

Observation (growth relative to LBA)	Conclusion
less than LBA	Gram-negative

3. 3% KOH Gram Reaction Test – 0.25 pt

Observation	Conclusion
goopy, mucoid, string	Gram-negative

4. Catalase – 0.25 pt

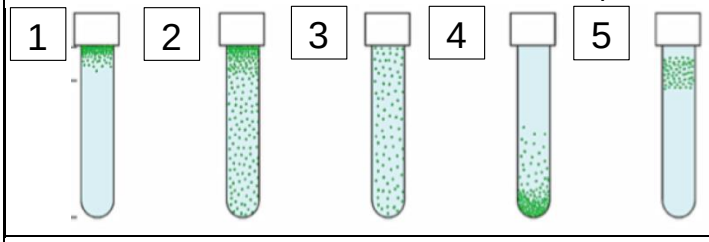
Observation	Conclusion
bubbles	Positive for: Catalase

5. Oxidase – 0.25 pt

Observation	Conclusion
not blue or >15 seconds	Negative for: Cytochrome C Oxidase

6. Fluid Thioglycollate Medium (FTM) – 2 pts

Observation — *Growth pattern? (number to left of tube)* Tube 2



Conclusion
Positive for aerobic respiration
Positive for fermentation
Specify aerotolerance category: Facultative Anaerobe

Explanation (why does the growth pattern lead to the above conclusions?)

Oxic Zone:	Increased density of growth in oxic zone and film on surface, indicating aerobic respiration
Anoxic Zone:	Growth in anoxic zone indicates the organism must undergo fermentation of Dextrose, as there is no O2 availible and no FEA for anaerobic resp.

Assignment 2A: EB Unknown Preliminary Results

7. Nitrate Reduction – 1.5 pts

Observation (1)	Observation (2)	Observation (3)
no gas in Durham tube	Red after reagents A+B	Reagent C (zinc) not added
Conclusion (enzyme) Positive for: Nitrogen Reductase		
Explanation (what color was the tube after reacting with which reagents, A+B or C; what does that indicate was present or absent; what does that let you conclude about the bacteria? Red color after the addition of A+B provides evidence of Nitrogen Reductase, as the reagent turn red in the presence of NO2, which is the product of the Nitrogen Reductase rxn		

8. (2 pts) Were your Fluid Thioglycollate Medium results in agreement with (**consistent**), contrary to what you would predict (**inconsistent**), or not related or informative (**unconnected**) to the results of other tests? For each test below, re-select your conclusion, identify the relationship, and explain why you chose what you did.

Test	Result	Relationship to FTM	Explanation
Catalase	Pos.	consistent	Catalase needed for Aerobic respiration in the oxic zone
Oxidase	Neg.	unconnected	Organism may use a different Cytochrome in the electron transport chain, and therefore does not rule out FTM findings
EMB (ferm.)	Neg.	unconnected	Only tests organisms ability to ferment lactose, unlike the dextrose of FTM
Nitrate	Pos.	unconnected	FTM is unable to test for Anaerobic Respiration

9. (1 pt) Check for each method of energy production ONLY if the test provided direct evidence FOR the Unknown's ability to do perform that pathway (positive result).

1 R S

Tests providing evidence FOR:	Aerobic respiration	Fermentation	Anaerobic Respiration
PEA	☐	☐	☐
EMB	☐	✔	☐
3% KOH	☐	☐	☐
Catalase	✔	☐	☐
Oxidase	✔	☐	☐
FTM	✔	✔	☐
Nitrate Reduction	☐	☐	✔