

BIOL 3702L:
Bacterial Unknowns (Skills Test IV)

Y and proud.

http://www.aviano.af.mil/News/Article-Display/Article/0743705/mid-atlantic-ensure-success-through-support/

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Skills Test IV

- Students will be provided a **MIXED** culture of two unknown bacteria:
 - Two Gram-positive bacteria; OR
 - One Gram-positive bacterium and one Gram-negative bacterium; OR
 - Two Gram-negative bacteria
- Can be two bacilli, two cocci, or one of each
- **Purpose:** Use a *minimal number* of diagnostic tests to identify both bacteria

https://www.livestrong.com/article/121176-bacteria-cell-functions/

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Skills Test IV (cont.)

- Every student performs this Skills Test which is worth a total of 30 points
- **NO OVERT COLLABORATION!** Each individual is to perform his/her own work.
- To earn these points, you **MUST**
 - Follow the instructions previously distributed;
 - Complete the laboratory report sheets as assigned; and
 - Submit your final report by **12:30 PM on Friday, April 15th NO EXTENSIONS!!!!**

https://www.livestrong.com/article/121176-bacteria-cell-functions/

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Skills Test IV (cont.)

- By the established deadline, submit the following as one document:
 - “Unknown Answer Sheet and Flow Chart”
 - “Skills Test Log Sheet”
- Be prepared to perform work outside your assigned laboratory session
 - Only enter the laboratory during **Open Sessions**
 - Plan accordingly – the lab is not open on weekends

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Skills Test Procedure

Day 1

- Obtain a mixed unknown culture and **RECORD** the number
- Immediately streak the contents onto one (1) Tryptic Soy Agar (TSA) plate, one (1) MacConkey’s (MAC) agar plate, and one (1) Mannitol Salt Agar (MSA) plate.
- Incubate the plates for 18-24 hours at 37°C
- **OPTIONAL:** Gram stain a sample of your mixed unknown and record the results

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Skills Test Procedure (cont.)

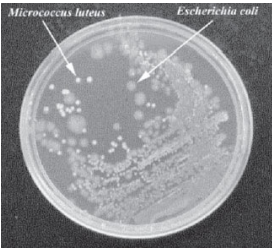
Day 2

- Observe the various streaked plates and record the results

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Skills Test Procedure (cont.)



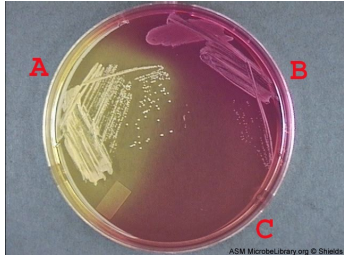
Two different bacterial species streaked on a TSA plate

http://www.eplantscience.com/index/biotechnology_methods/microbiology/isolation_of_pure_cultures_from_a_mixed_population.php


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Skills Test Procedure (cont.)

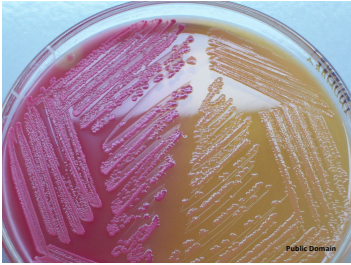


Staphylococcus aureus (A), *Staphylococcus epidermidis* (B) and *Escherichia coli* (C) streaked onto a MSA plate


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Skills Test Procedure (cont.)



Different halves of a MAC plate streaked with two different bacterial species


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Skills Test Procedure (cont.)

Day 2

- Observe the various streaked plates and record the results
- Select two distinct colonies representing *different* species and transfer them to TSA slants. Incubate at 37°C for 18-24 hours.
- Gram stain your isolates either off the plates from the colonies you selected or wait until Day 3 after they grow on the TSA slants. Record the results.


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Skills Test Procedure (cont.)

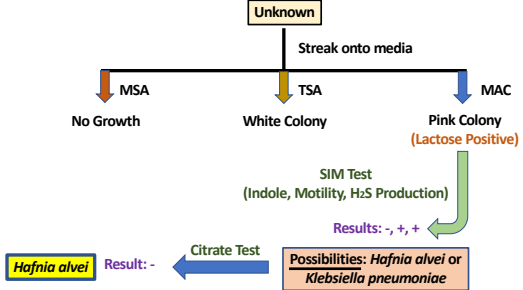
Day 3 and beyond


- Gram stain your unknown isolates and record the results
- From your data, select one or two appropriate diagnostic tests to perform.
- Be sure to develop a flow chart of your activity

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Skills Test Procedure (cont.)



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Lab Report Expectations

Submit the following via Blackboard no later than 12:30 PM on FRIDAY, APRIL 15th as a single report:

- "Unknown Answer Sheet and Flow Chart"
- "Skills Test Log Sheet"
- A flow chart of your work must be submitted on the appropriate report sheet.

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