Lab Bench Lab 6: Molecular Biology: Bacterial Transformation

Link: http://www.phschool.com/science/biology_place/labbench/lab6/intro.html

Key Concepts I: Bacterial Transformation

1. What is transformation?
2. In the simulation, what does the foreign gene code for?

Bacterial Colonies

3. What has the E. coli been grown in?

E. coli Bacteria

4. What are six characteristics of E. coli?

Plasmids

5. Define plasmids.
6. What is the name of the plasmid in this simulation?
7. If placed onto a nutrient agar plate that has been made with ampicillin, what will happen to bacteria that has the $+amp^R$ gene?
8. If placed onto a nutrient agar plate that has been made with ampicillin, what will happen to bacteria that is $-amp^R$?

Competent Cells

9. What are "competent" cells?
10. How are cells made more "competent"?
11. What are the four phases of growth for a colony of bacteria?

Design Experiment 1

12. What are five sterile safety procedures you should always follow?

Transformation Procedure

13. What is the purpose of the control, which is placed on a petri dish supplemented with ampicillin?
14. Should the control plate grown any E. coli?

Take a Closer Look: Summarize what is done at each step.

15. Step 1:
16. Step 2:
17. Step 3:
18. Step 4:
19. Step 5:
20. Step 6:

Place the Stages of Transformation in Order

21. Write down the correct order.

Analysis

22. Why is there bacterial growth on Control 1, but not Control 2?
23. Why is the bacterial growth so much greater on Experimental Tube 1 compared to Tube 2?

Label the Results of Your Experiment

24. Sketch the four plates and label them correctly. Use the letter (a, b, c, d) and the words as labels.
25. Take Lab Quiz 1: Check Answers: Print Results