

GEN Day 3 Interpretation Questions

Experiment III-A: Phenotypic Characterization of Ara⁻ Colonies

1. What is the difference between “LacZ inducible” and “LacZ constitutive”? What do these phenotypes tell you about the location of the transposon in the *ara* operon? (Hint: see pages 64 and 65 in the manual appendix!)
2. When group Q2 gets back their patching results, they find that one of their "white" mutants failed to grow on both the M9 Ara Leu Kan and M9 Glu Leu Kan plates. Can you say for sure that this mutant is Ara⁻? Why or why not?

Experiment II-C: Demographics of the Mutant Hunt

1. Interpret your data.
 - a. What is the expected ratio of Ara⁻ to Kan^R colonies on the Mac Ara Kan plates? Is the ratio for your plates different?
 - b. What is the expected ratio of blue colonies to Kan^R colonies on the LB X-gal Kan plates? Why is this different from the ratio of Ara⁻ to Kan^R colonies on Mac Ara Kan?

Experiment II-D: Titration of lambda1205 phage

1. You decide to repeat the transposon mutagenesis experiment from Day 2, but instead use pNK/LE392 cells as your starting strain. Do you expect to get more or less total colonies on your Mac Ara Kan plates? Explain your answer briefly.