Bacterial Transformation

Student Post-Lab Worksheet

Name: _____ **Date:**_____

1. Observe the plates, and record number of colonies on each box in the matrix below. If cell growth is too dense to count individual colonies, record "lawn."

	Transformed cells +plasmid	Nontransformed cells –plasmid
LB/amp		
LB		

Were results as expected? Explain possible reasons for variations from expected results.

2. Compare and contrast the number of colonies on each of the following pairs of plates. What does each pair of results tell you about the experiment?

   a. +LB and –LB

   b. –LB/amp and –LB

   c. +LB/amp and –LB/amp

   d. +LB/amp and +LB

3. Transformation efficiency is expressed as the number of antibiotic resistant colonies per μg of pGFP DNA. The object is to determine the mass of pGFP that was spread on the experimental plate, and was responsible for the transformants observed.

   a. Determine total mass (in μg) of pGFP used in Step 9.
   Concentration x Volume = Mass.

   b. Determine fraction of cell suspension spread onto +LB/amp plate (Step 18).
   Volume Suspension Spread/Total Volume Suspension = Fraction Spread.

c. Determine mass of pGFP in cell suspension spread onto +LB/amp plate.
Total Mass of pGFP (a) x Fraction Spread (b) = Mass of pGFP Spread.

d. Determine number of colonies per μg of pGFP. Express answer in scientific notation.
Colonies Observed / Mass of pGFP Spread (c) = Transformation Efficiency.

4. What factors might influence transformation efficiency?