Bio 510 Pop Quiz
Nov. 1 2002

In the past week's lab, you wanted to visualize after electrophoresis the products of the concatamerization reaction.

a. How did you the products and how is it that the method you used enables you to see the products. Be sure to describe the chemical details of the reason that the method works.

b. What alternative method could you have used?

c. What experimental problems might arise by the method you used, and what steps could you take to reduce those problems?

d. By what procedure did you recover the concatamerized products from the gel?

BIO 510 POP QUIZ
Nov. 15, 2002

1. Diagram the general structure of a reporter gene: (2 pts)

2. List different functional uses of reporter genes. (2 pts)

3. Name the reporter gene used in the mini-project of our class. (2 pts).

4. We observed in the lab this week that on some cases, the plates of 'vector plus insert' had many more colonies than the 'vector only'. In other cases, there were very few colonies in both the 'vector plus insert' and 'vector only' and in still other cases there could have been many colonies on both the 'vector plus insert' and 'vector only.' Discuss reasons why

   A) you might get back few colonies on both. (2 pts)

   B) you might get back many colonies on both.(2 pts)

Third Pop Quiz
Bio 510
Dr. Grace Jones Section
Nov. 22, 2002

1. By what specific method did you remove the ethidium bromide from the DNA purified by the CsCl procedure? (2 pts)

2. On the CsCl gradients, there were at least two bands of DNA visible. Why did these two bands migrate to different places in the CsCl gradient? (2 pts)

3. What is the purpose of the dialysis step that is now going on?(2 pts)

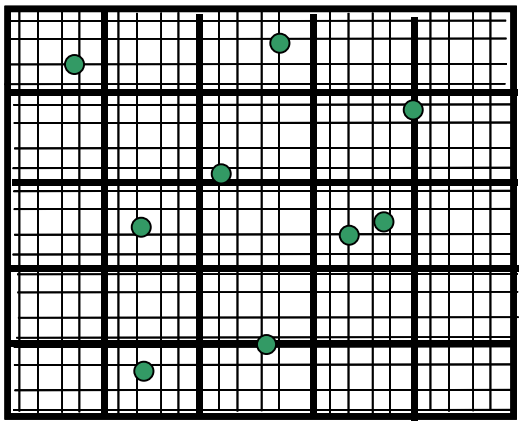
4. In the sequencing of the constructs you made in which you inserted DR1 elements in front of a reporter gene, the sequencing of the various constructs showed that some constructs had different numbers of DR1 elements inserted, and that not all the DR1 elements were in the same orientation.

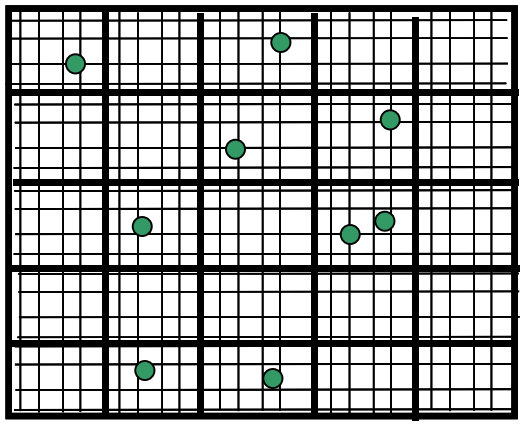
a. Would you have expected the constructs to have the same number of DR1 elements? Why or why not? (2 pts)

b. Would you have expected the DR1 elements to be in the same orientation? Why or why not? (2 pts)

4th Pop Quiz
Dec 1, 2002
Dr. Grace Jones Section
Bio 510

1. Assume that you have done two experiments in which you needed to know the density of cells/ml in you cell culture medium. For each of the two hemocytometer representations below (green circles are cells), provide the estimated number of cells per ml using the calculation method we went over in class. (2.5 points each)





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(2 points)

3. Describe three different biochemical methods for getting DNA into cells. (3 points)

Bio 510
5th Pop Quiz
Dr. Grace Jones Section

1. In the lab, you performed steps to determine the 'region of linearity' in the kinetics of the luciferase reaction. Describe two independent reasons why the kinetics might depart from linearity. Be specific as to the biochemical basis for the nonlinearity. (4 points)

2. Describe the **functional** difference between transformation of DNA into an organism and DNA transfection into an organism.

3. Describe three different levels of experimental system at which we might conduct a "promoter analysis." (3 points)