

IMBBR Quiz #3: Feb. 17, 2004

Name: \_\_\_\_\_

Section day: \_\_\_\_\_

1. (3 pts) What is an isoschizomer?

different restriction enzyme that cuts the same DNA sequence

2. (3 pts ) How do bacteria protect their DNA from the restriction enzymes that they produce?

each restriction enzyme has a corresponding methylase that protects the DNA

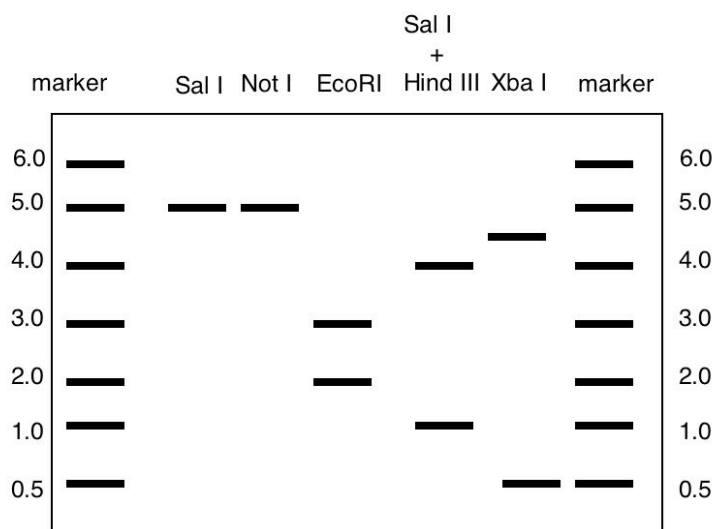
3. (3 pts) How do you make a 100-ml solution that consists of 0.5M NaOH and 10% SDS? You are given an SDS solution of 20%. The molecular weight of NaOH is 40.

NaOH            2 grams

20% SDS       50 ml

dH<sub>2</sub>O           50 ml  
                     = 100ml

4) (not graded) A 2-Kb fragment is ligated into the unique BamHI site of a 3-Kb plasmid vector to generate a recombinant plasmid or clone. You digest the clone with the following restriction enzyme sites as shown below, and you run the digested samples on an agarose gel to determine the sizes the fragments. (The sizes of the DNA bands in the marker lanes are given in Kb.)



a. (1 pt) What is the size of the clone?

b. (2 pts) Where is the Not I site in the clone? (In the vector or in the insert? Explain)

c. (1 pt) How many EcoRI sites are there in the clone?

2 sites

d. (5 pts) Draw a circular map of the clone:

Label the insert and vector regions of the clone.

Indicate the positions of all of the restriction sites that you can determine from the gel.

Indicate the distances between the restriction sites.