

Name _____ Lab Section (day) _____

1. (4 points) For RNAi on *C. elegans*, name two ways to deliver dsRNA to the worm.

1. Injection
2. Feeding
3. Soaking

2. The National Center for Biotechnology Information (NCBI) provides on line resources for doing sequence analysis of DNA and proteins.

A. (2 points) What is the search engine that you would use to compare the translated amino acid sequence of your DNA sequence against the protein database?

Blastx or blastp

B. (2 points) In IMBBR you need to find papers that are relevant to the gene you will be reporting on. Name the NCBI resource that you would use to find papers.

PubMed

3. (4 points) Describe two major differences between a northern blot and a western blot.

1. Northern blot is for assaying RNA molecules and western blot is for assaying proteins.
2. RNA on northern blot is detected by a nucleic acid probe and protein on a western blot is detected by an antibody.

4. (4 points) How do you make two liters of a 0.5M NaCl, 1X TBE solution starting with powdered NaCl (assume MW of 60) and a 10X solution of TBE?

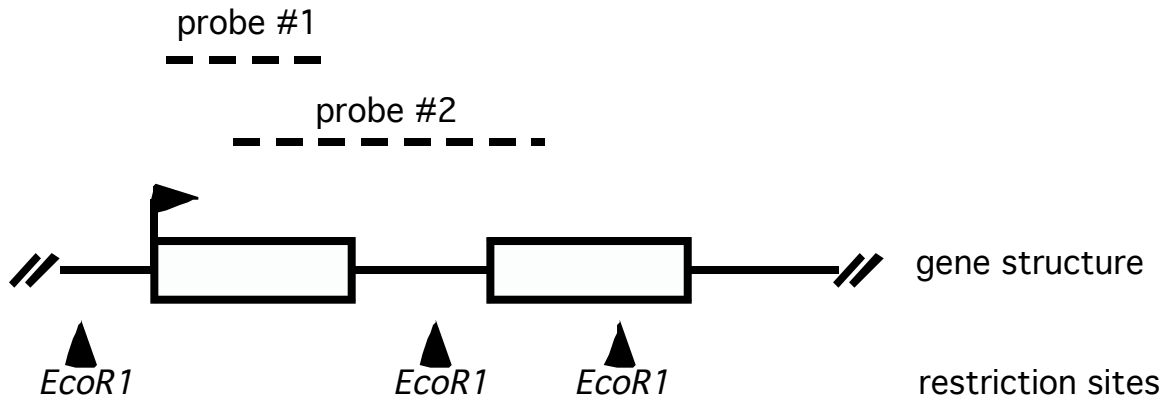
Mix the following:

60g NaCl

200ml of 10X TBE

Water to a total volume of 2 liters

5. (4 points) A student discovers a new gene. She decides to examine the structure of the gene with a southern blot. The student has two probes that are indicated by the dashed lines in the figure. The probes are drawn above their corresponding sequence in the gene structure. The student digests genomic DNA to completion with *EcoR*I, runs it on a gel, blots it to nitrocellulose, and probes the blot as described below:



A. How many bands would the student see on a southern blot using probe #1?

One

B. How many bands would the student see on a southern blot using probe #2?

Two