

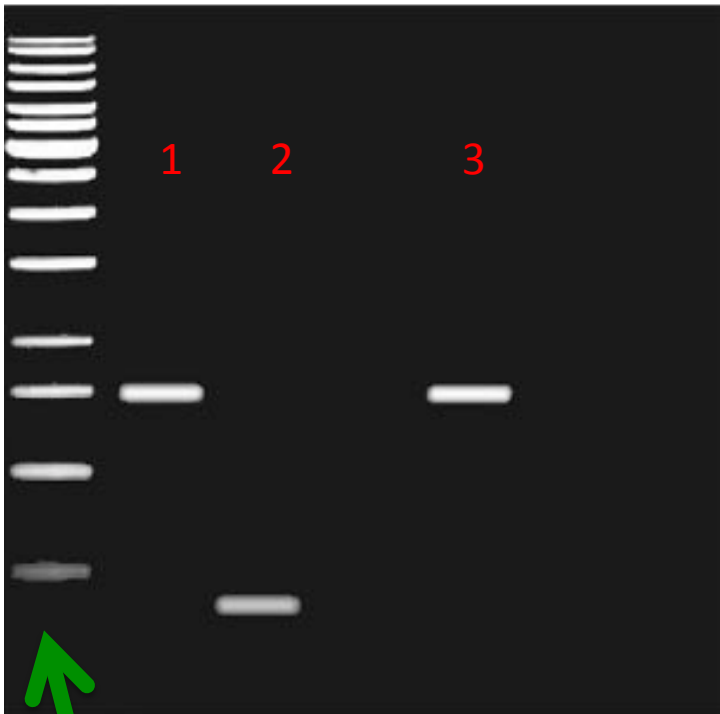
Intoduction to sizing DNA on Agarose Gel

HC70AL
Summer2014
8/5/14

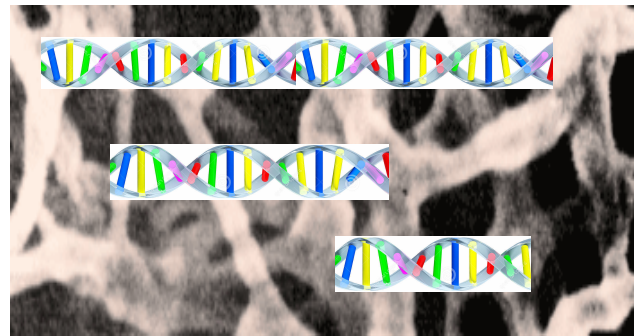
By Mike Lyons

How can we determine the size of a DNA fragment?

1) What is gel electrophoresis?

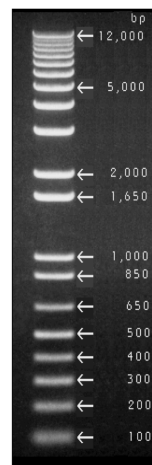


2) What causes the different DNA pieces to move at different rates?

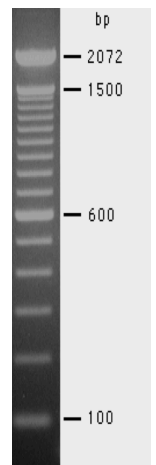


Close up of agarose gel matrix

3) How do we know the sizes of DNA fragments 1, 2, and 3?

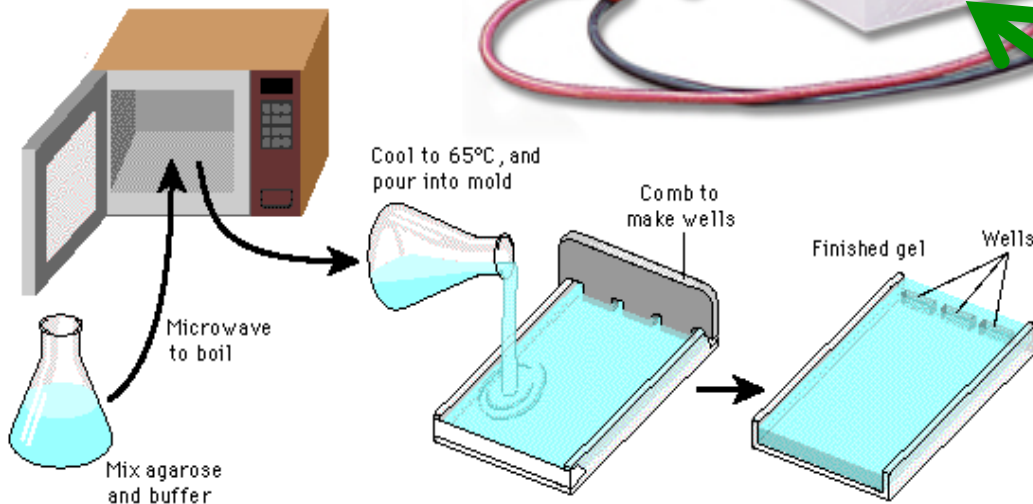


1Kb plus ladder

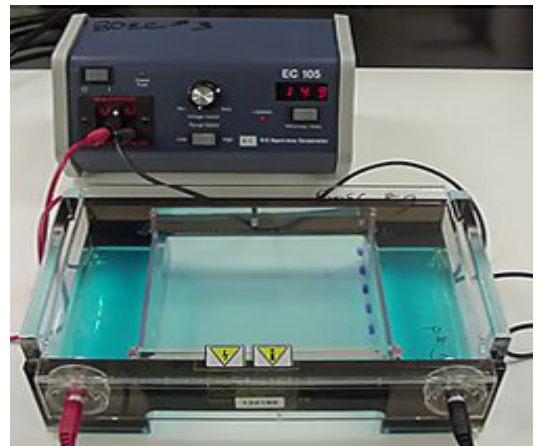
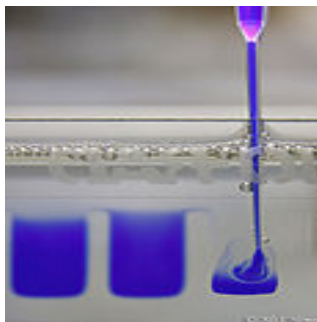


100bp ladder

How is a gel made?

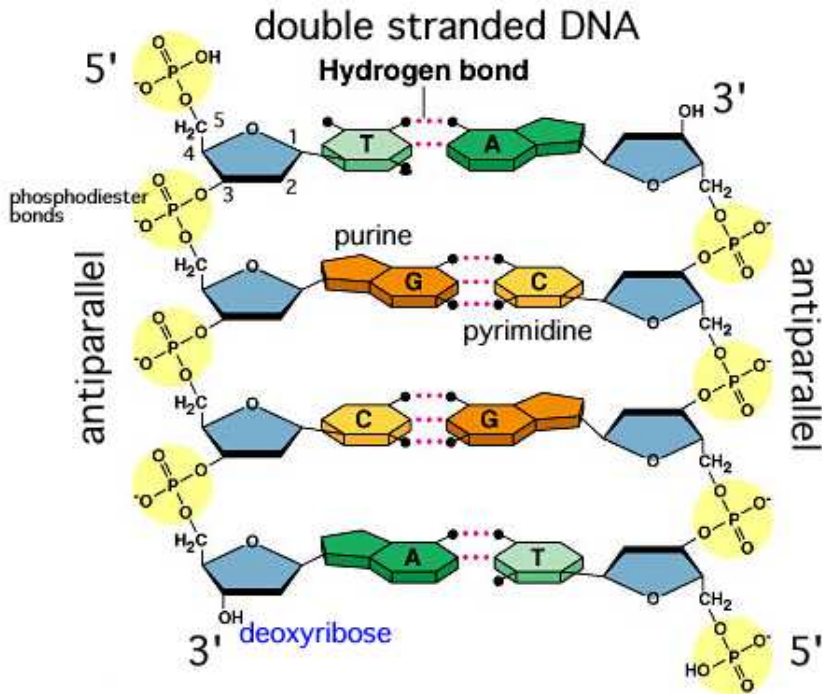


3) How do we get the DNA into the gel?

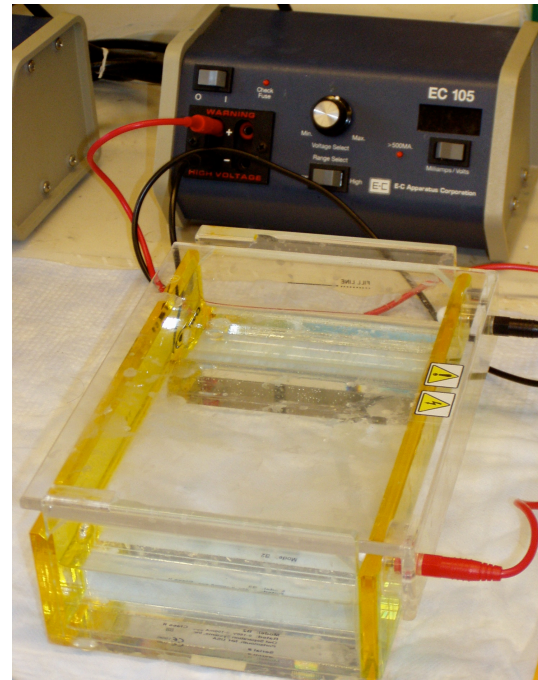


How does the DNA move across the gel?

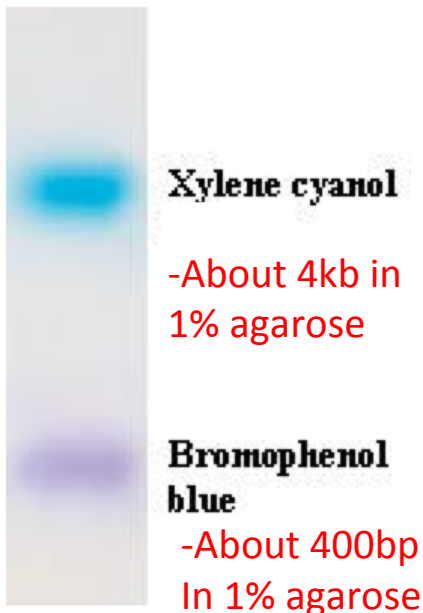
1) What is the structure of DNA?



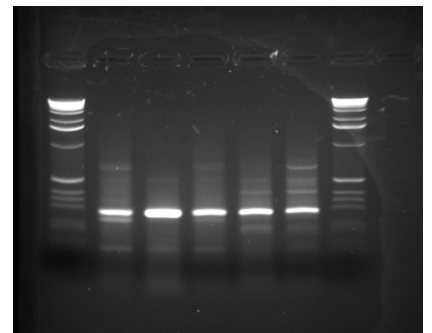
2) How can an electric current cause DNA to move?



3) How do we know how far the DNA has traveled?



4) How do we visualize the DNA in the gel?



What factors affect the rate of DNA migration in agarose gels?

1. Size of DNA fragment

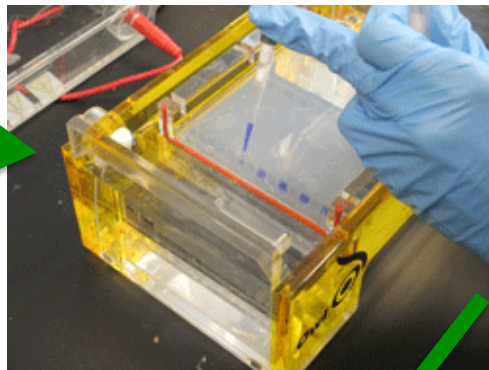
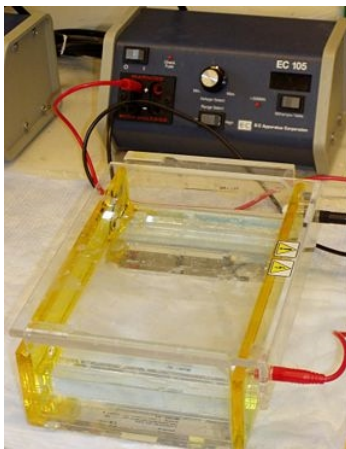
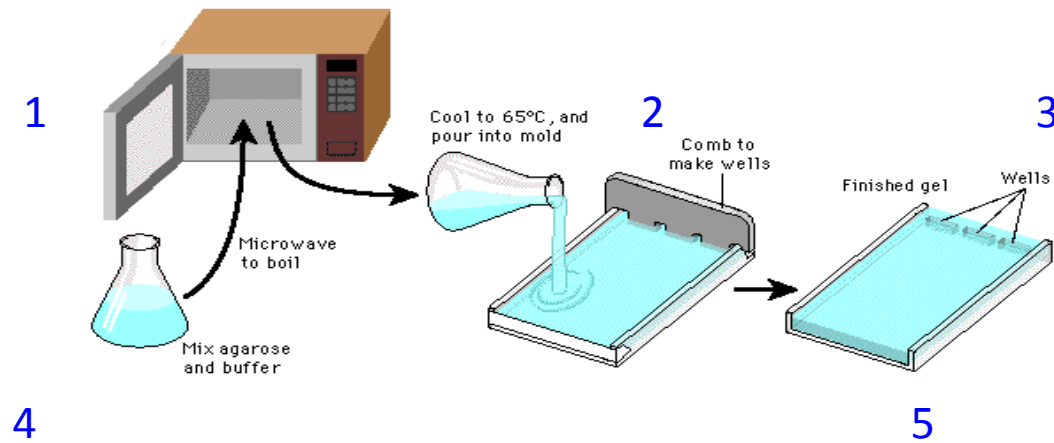
2. Agarose concentration

- The higher the concentration, the denser the gel, and the better the gel can separate small molecules

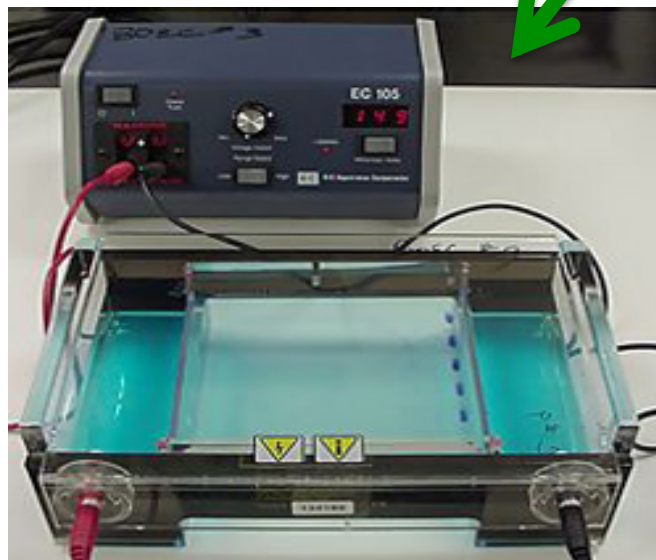
3. Applied voltage

- Rate of migration is proportional to applied voltage

What are the steps in the gel electrophoresis process?



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What are the steps in the gel electrophoresis process? (continued)

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