



## DNA Extraction: Strawberry



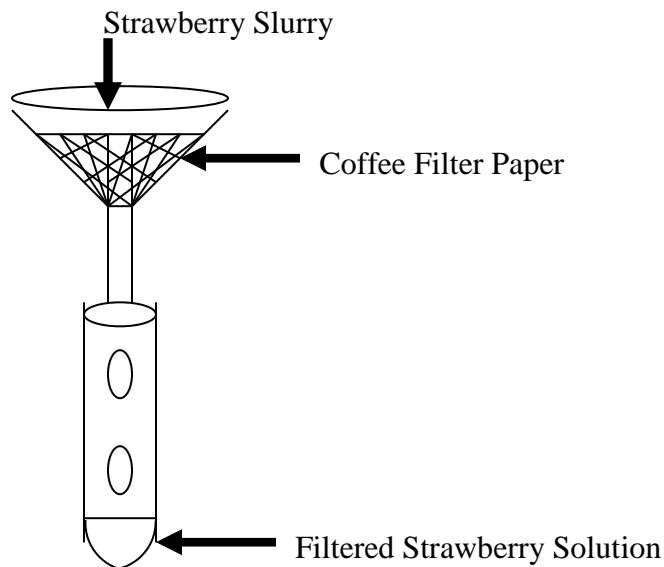
**Background:** All organisms contain unique DNA, either in their nuclei (eukaryotes) or in a plasmid (prokaryotes). Simple techniques can allow us to break apart cells and extract large amounts of DNA to be seen... we will be using the following procedure to extract DNA from a banana...

### Materials & Equipment per group:

2 pieces of strawberry, 1 plastic Ziploc® bag, 20 ml of buffer solution (soap and salt), filter paper, 1 plastic funnel, ice cold 95% ethanol, 1 test tube, 1 test tube rack, and 1 nichrome wire loop.

### Procedure

1. Add 2 pieces of strawberry into a plastic Ziploc bag. Mash thoroughly with your hand until the solution is in a slurry (1-2 minutes).
2. Open the Ziploc bag and add 20 ml of buffer solution. Continue to mash the bag for 1-2 minutes.
3. Fold a piece of coffee filter paper into a cone shape, and place into a plastic funnel. Push and pull it with your fingers to create a filtration barrier in the funnel. Place the funnel into the neck of a test tube in a test tube holder.



4. Slowly pour the strawberry slurry into the filter funnel and allow the solution to separate. A clear liquid will drip into the test tube as it filters through the funnel. This solution contains the strawberry's DNA.

Name \_\_\_\_\_

Date \_\_\_\_\_ Hour \_\_\_\_\_

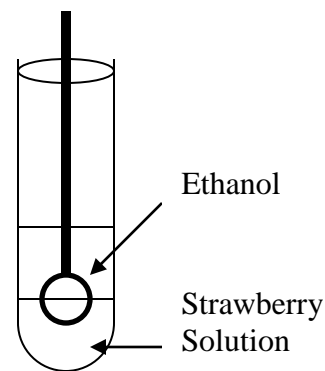
5. Allow about 5 ml of solution to collect in the test tube (about  $\frac{1}{2}$  inch).

6. Obtain a wash bottle containing ice cold ethanol.

7. Remove the test tube containing the liquid and carefully squeeze about 5 ml of ice cold ethanol into the test tube, being sure to allow the ethanol to run down the sides of the test tube and carefully settle on top of the strawberry solution.

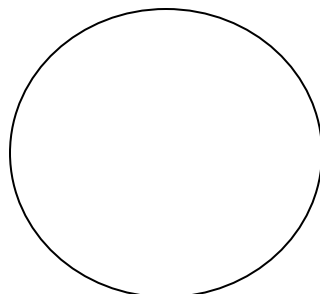
8. Let the solution sit for 2 to 3 minutes without disturbing it. DO NOT shake the tube. You can watch the white DNA precipitate out into the alcohol layer (between the solution and ethanol).

\* DNA has the appearance of white, stringy mucus.

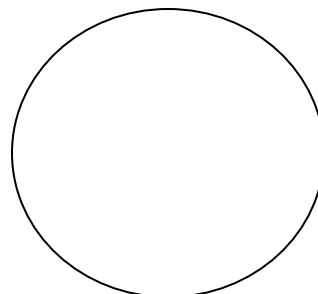


9. To lift the DNA from the solution: use a nichrome wire loop and carefully lower the loop into the place where both solvents meet. Carefully stir the solution until and collect of white strings appear to collect on the loop. Carefully lift the loop and observe the "strings." Any ethanol that drips off will quickly evaporate!

10. Take a few minutes to observe the DNA you have collected. You may want to attempt to make a slide of a small portion of the DNA and observe under a microscope.



100X



400X

11. Discard the DNA by washing it down the sink. Throw away the cheesecloth and wash all items.