

# DNA Extraction

## Answer pre-lab questions:

1. What do you think DNA Extraction is?
2. In order to test your DNA a sample must be taken, where could a sample come from?
3. What must you do to the sample before you could test your DNA?
4. Predict what DNA would look like to the naked eye
5. Predict what DNA would look like using a compound light microscope
6. Predict what DNA would look like using an electron microscope
7. What are the four main basic building components to a cell?
8. How could you isolate just DNA (nucleic acids)?
9. Why is a DNA extraction (isolation) an important and useful procedure?
10. Is your DNA different from everyone else's in the class?

## Procedure

1. Use the scale (grams) zero scale and measure out .8g Salt and put into cup, then add .9g Baking soda, and .4 grams Meat tenderizer putting each into the cup. Add w
2. Add water to fill cup no more than  $\frac{1}{4}$  full and stir to dissolve salt etc.
3. Swish solution in your mouth and use the stirring stick to scrape (carefully) your cheek to get more cells, then spit back into the cup.
4. Fill a small micro centrifuge tube almost completely full with spit solution and add 5 drops of detergent and invert (don't shake just turn upside down 8-10 times to mix.
5. Bring tube to Mr. Cabbage to centrifuge to force the cell parts to the bottom of the tube for 5 min.
6. Pour off carefully  $\frac{1}{2}$  of the solution without disturbing the pellet (stuff stuck to the side of the tube). Use a toothpick to scrape the pellet off the side and mix it into the liquid.
7. Now add 10-20 drops of Ethanol (in ice bucket so it stays very cold). Tilt tube a little and let the drops roll down into the solution rather than violently dropping on the spit solution and wait a few minutes to see the layer of DNA come out of solution and be visible between the layers of liquid.
8. Use a tooth pick to carefully wind up the DNA onto the stick until you have a nice bunch and drop it into the tiny tube and add one drop methylene blue and two drops alcohol and cap the tube. You can continue to wind DNA for several minutes and add more to the tube.

## Post Lab questions:

1. Did your DNA look different than your prediction with the naked eye?
2. Is your DNA different from your partner's DNA?
3. Did your DNA look any different than your partner's DNA?
4. How is the technique of DNA extraction useful?
5. What did the solution and detergent do to the cells?
6. Create at least two legitimate questions that arise from this lab