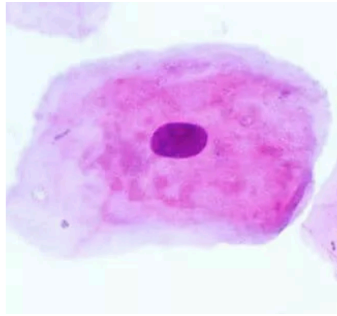


LAB: DNA Extraction: “Genes in a Bottle”



Collect and Break Open the Cells

1. Obtain a 15-ml centrifuge tube and **add 3.0 ml of H₂O**. Write your name on the side of the tube using a sharpie.



2. Pour the water from the 15-ml tube **into your mouth** and swish the water around vigorously for **45 seconds**. **DON'T SWALLOW THE WATER!** While swishing, gently chew the insides of your cheeks.

***WHY?** To collect as many cheek cells as possible, you will gently chew the insides of your mouth. Ample cell collection is critical for success.*

3. SPIT it back into your tube.
4. Pipet 2.0 mL of Lysis Buffer to your tube.

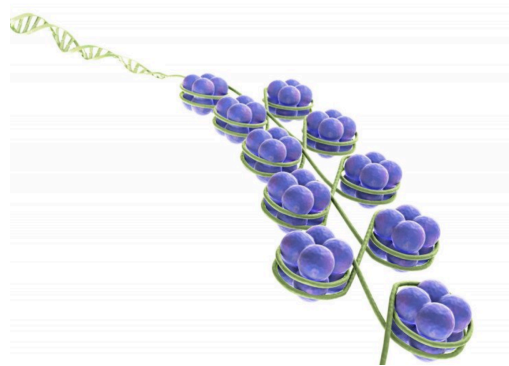
***WHY?** This will dissolve the cell membrane and nuclear membrane, freeing the DNA.*

5. Place the cap on the tube, and gently **Invert the tube** (turn it upside down) 5 times (**DO NOT SHAKE IT**)

Remove the Proteins

6. Using a transfer pipette, **add 5 drops of Protease (enzyme)** to your 15-ml tube. (each member of your group could use the same transfer pipette)

***WHY?** This dissolves the little proteins that the DNA is wrapped around.*



7. Place the cap on your tube, and **gently invert it five times**.
8. Place your tube in a test tube rack in the water bath and incubate at **50°C** for 10 minutes. This will allow the protease to work. Remove the tubes after 10 minutes.

Make Your DNA Visible

9. Obtain a tube of cold ethanol. Hold your tube at a 45° angle. You will add about 10 ml.

10. Replace the cap on your tube, place it in a test tube rack, and let it SIT undisturbed for 2-3 minutes.

11. Then **slowly** invert the tube 3 times to help the DNA precipitate.
The DNA will look stringy and white. **This is Your DNA!**

Make Your Necklace

12. With a transfer pipet, carefully transfer the DNA and enough of the liquid solution into the small glass vial that is your necklace.

13. Slip the black necklace string through the silver cap and tie the cord around your neck.

Congratulations! You have captured your Genetic Essence in a Bottle.