

EXTRACT YOUR OWN DNA AT HOME

Grade Levels: Middle /High School

What Is DNA?

Deoxyribonucleic acid (DNA) is a chemical found in the nucleus of cells and carries the 'instructions' for the development and functioning of living organisms. It is often compared to a set of blueprints since it contains the instructions needed to build cells.

These instructions are divided into segments along a strand of DNA and are called genes. Genes are a DNA sequence that code for the production of a protein and control hereditary characteristics such as eye color or personality behaviors. Proteins determine the type and function of a cell, so a cell knows whether it is a skin cell, a blood cell, a bone cell, etc., and how to perform its appropriate tasks. Other DNA sequences are responsible for structural purposes or are involved in the regulation and use of genetic information.

Materials

- Powerade Power Water
- Plastic cup
- 20-mL syringe
- Dish soap
- Mini cordial glass
- Rubbing alcohol (91% isopropyl alcohol for best results)
- Eye dropper
- Wooden skewer
- Small vial

Procedure

1. Store the rubbing alcohol in your freezer overnight for best results.
2. Use the syringe to transfer 10 mL of Power Water to the plastic cup.
3. Swish the Power Water in your mouth for 30 seconds, then spit the water back into the cup. Gently scrape your teeth along the inside of your cheeks while swishing to collect cheek cells.
4. Add two drops of dish soap to the swished Power Water in the cup. Gently mix the solution in the cup without forming too many bubbles.
5. Transfer the solution from the plastic cup to the mini cordial glass.
6. Use the eye dropper to transfer a dropperful of rubbing alcohol to the glass. Transfer slowly alongside the side of the glass to avoid disturbing the solution. The alcohol will sit on the surface of the solution due to its lower density.
7. After a few minutes, a milky white precipitate will form near the surface of the solution. This is your DNA.
8. Use the wooden skewer to spool and observe your DNA.
9. You can also store your DNA in a small vial with a dropperful of rubbing alcohol. It will last indefinitely if kept in your freezer.



Inspiration from <http://thelearning-center.homesciencetools.com/article/how-to-extract-dna-at-home>



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