

Collect Your Own DNA In A Water Glass

You will need:

- 3 small 6 to 8 ounce water glasses
- 6% salt solution (1 teaspoon of salt to 8 ounces of water)
- 10% liquid soap solution (1 part soap to 9 parts of water)
- 70% rubbing alcohol – standard over the counter concentration

Procedure

1. Swirl one teaspoon of 6% salt solution around in your mouth for 45 seconds. (Remember more vigorous swirling collects more cheek cells)
2. Spit the salt water/cheek cell solution back into an empty glass.
3. Add 1 teaspoon of salt solution and 1teaspoon soap solution.
4. Mix by swirling very gently two or three times.
5. Gently add1 tablespoon of rubbing alcohol. Try to pour it along the side of the glass so that it forms a layer on top of the saltwater/soap solution.
6. Wait one minute.
7. Hold the glass up to the light and look for the cloudy, stringy substance forming at the bottom of the alcohol layer. You may see a cloud of bubbles. As the bubbles rise to the surface you will begin to see white strings being drawn up with the bubbles. These strings are clumps containing thousands of DNA molecules.
8. Take a glass, plastic or wooden rod (A long matchstick or toothpick works fine). Put it all the way down to the bottom of the glass and gently turn it in one direction. Do not stir. The DNA will rap around the rod and you can transfer it to a small container.

How it works.

Cells contain water, protein, and nucleic acids (DNA and RNA) within a membrane made of lipids (fat). When you add soap, it breaks the membranes open and the contents of the cell spill out. The salt changes the ionic concentration of the water and makes it easier for DNA and RNA to separate. DNA will not dissolve in alcohol, so when you add it to the solution, the DNA collects where the two layers meet.