Strawberry DNA Extraction Lab

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Deoxyribonucleic acid (DNA) is the chemical blueprint of all organisms. It is found in the nucleus of the cell. DNA is composed from 3 parts: A nitrogenous base (A, T, C, G), the sugar deoxyribose, and a phosphate group. Today we will mash the strawberries and treat them with detergents. Mashing the berries breaks down the strawberry tissue, releases the individual cells, separates the seeds from the cells, and breaks the cell walls. DNA is soluble in the aqueous cellular environment and in the present of the extraction buffer, but is insoluble in alcohol (ethanol or isopropanol). Scientists use DNA for a variety of purposes. Scientists can research the genes or segment of DNA and look for cures for diseases, or DNA can be used to catch criminals.

What will DNA look like?

Hypothesis:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(Use complete Sentences)

You will need for this Lab:

-A strawberry.

-A Ziploc Bag

-10 mL of Extraction Buffer

-Centrifuge tube (1)

-1 piece of cheesecloth

-5 mL of ethanol

-One wooden stick

**Procedure**

1. Put on goggles. Then, Get one fresh strawberry.

a. Remove green leaves (sepals)

2. Put strawberry in plastic bag.

3. Seal the bag and begin to smash the strawberry for 2 minutes.

4. Open the bag and ADD 10 mL of extraction buffer.

5. Seal the bag and begin to mix the strawberry and buffer for 1 minute.

6.Get a large centrifuge tube (large blue lid) and put a funnel on top of it.

7. Put a piece of cheesecloth in the funnel.

8. Pour the strawberry mix into the funnel on top of the cheesecloth.

9. Wait 5 minutes for the liquid to go through the funnel into the tube.

10. Get a small centrifuge tube (small blue lid).

11. Add 2 mL of the filtered strawberry juice to the small tube.

12. Add 5 mL of Alcohol (Ethanol) to the small tube. DO NOT MIX the tube.

13. Wait 5 minutes and then begin to spool the DNA in the alcohol.

14. Clean up workstation!

a. Use sink in the front of the room.