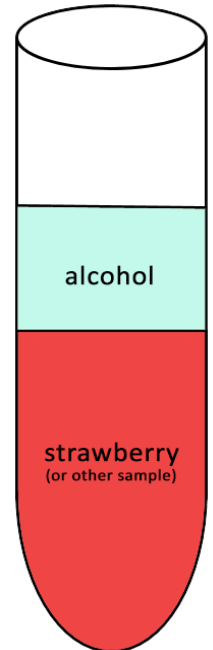


Name(s): _____

DNA Extraction - Strawberry

Strawberries are **octoploid**, which means they have eight sets of chromosomes. The procedure for extracting DNA from a strawberry is simple, and the results are usually obvious, it is easy to see the white strands of DNA within the pink solution of strawberry juice.

In this procedure, you will crush a strawberry and add detergent and salt to break down the cell walls to release the DNA within the nucleus. You will then filter the liquid from this crushed strawberry into a beaker, the substance is called the **filtrate**. The filtrate is then poured into a test tube and a layer of alcohol is poured over the top. The DNA will then **precipitate** into the alcohol layer in a test tube.



Objectives:

- Extract DNA from a strawberry using household products
- Identify the role of chemicals in the process of extracting DNA
- Observe a large sample of DNA

Materials Needed:

- DNA Extraction Buffer: 1000 ml of deionized water, 50 ml of clear dish detergent, 1 teaspoon of salt
- Strawberry (other fruits also work)
- Ziploc bag, Coffee filters and funnels
- Test tubes, beakers, or cups to collect filtrate
- Ethanol or 91% isopropyl alcohol (chilled)

Procedure:

1. Add a strawberry (or half) to a Ziploc storage bag.
2. Add 10 ml of the DNA extraction buffer and mash the strawberry and buffer for about one minute.
3. Use a funnel and coffee filters to filter the strawberry juice into a beaker.
4. Transfer the **filtrate** to a test tube, you should only fill the test tube about half full and avoid transferring any foam.
5. Slowly pour or drip cold alcohol over the top of the strawberry mixture. You want a single layer on top of the strawberry mixture.
6. White strands will form in the ethanol layer, use a stirring rod or toothpick to spool the strands.

Discussion

1. What does DNA from the strawberry look like?
2. Why is it important for scientists to be able to remove DNA from cells?
3. What is the role of detergent, ethanol, and salt in the extraction process?
4. What is the difference between the filtrate and the precipitate?
5. Is there DNA in your food? How do you know? Why are you not harmed (or altered) by ingesting the DNA of another organism?