Strawberry DNA Extraction

Purpose

To extract DNA from the fruit of a strawberry plant

Materials:

• Equipment:

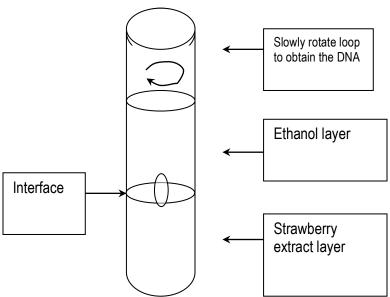
- 1. 1 heavy duty zip-lock baggie
- 2. 1 strawberry (fresh or frozen and thawed)
- 3. cheesecloth
- 4. funnel
- 5. 100 ml beaker
- 6. test tube
- 7. woodedn coffee stirrer

• Reagents:

- 1. DNA extraction buffer (One liter: mix 100 ml of shampoo (without conditioner), 15 g NaCl, 900 ml water **OR** 50 ml liquid dishwashing detergent, 15 g NaCl and 950 ml water)
- 2. Ice -cold 95% ethanol or 95% isopropyl alcohol

Procedure:

- 1. Place one strawberry in a zip lock baggie.
- 2. Smush strawberry with hands for 2 minutes.
- 3. Add 10 ml extraction buffer to the bag.
- 4.Smush again for one minute.
- 5. Filter through cheesecloth in a funnel into beaker.
- 6. Pour filtrate into test tube so that it is 1/8 full.
- 7. Slowly pour the ice-cold alcohol into the tube until the tube is half full.
- 8. At the interface, you will see the DNA precipitate out of solution and float to the top. You may spool the DNA on your glass rod or pipette tip.



Student Questions 1. What did the DNA look like? Relate its chemical structure to how it looks when lots of it is clumped together.
2. DNA is soluble in water, but not in ethanol. What does this fact have to do with our method of extraction? Explain what happened when the ethanol came in contact with the strawberry extract.
3. A person cannot see a single cotton thread 100 feet away, but if you wound thousands of threads together into a rope, it would be visible at some distance. How is this statement an analogy to our DNA extraction?
4. What is the role of the detergent and saline in this experiment?
5. Would the DNA be the same in any cell in the human body?