

DNA Isolation from Strawberries

Student Directions

Materials per student group

- 1-3 strawberries (about the volume of a golf ball). Frozen strawberries should be thawed at room temperature.
- 10 ml DNA Extraction Buffer (100 ml shampoo (without conditioner) or 50 ml dishwasher detergent + 15 grams sodium chloride + water to 1 liter)
- about 20 ml ice cold 91% or 100% isopropyl alcohol (or 95% ethanol)
- 1 Ziploc™ bag
- 1 clear test tube
- 1 funnel lined with a moistened paper towel
- 1 coffee stirrer or transfer pipet

Directions

1. Remove the green sepals from the strawberries.
2. Place strawberries into a Ziploc™ bag and seal shut.
3. Squish for a few minutes to completely squash the fruit.
4. Add 10 ml DNA Extraction Buffer (soapy salty water) and squish for a few more minutes. Try not to make a lot of soap bubbles.
5. Filter through a moistened paper towel set in a funnel, and collect the liquid in a clear tube. *Do not* squeeze the paper towel. Collect about 3 ml liquid.
6. Add 2 volumes ice cold isopropyl alcohol to the strawberry liquid in the tube. Pour the isopropyl alcohol carefully down the side of the tube so that it forms a separate layer on top of the strawberry liquid.
7. Watch for about a minute. What do you see? You should see a white fluffy cloud at the interface between the two liquids. That's DNA!
8. Spin and stir the coffee stirrer or transfer pipet in the tangle of DNA, wrapping the DNA around the stirrer.
9. Pull out the stirrer and transfer the DNA to a piece of saran wrap or clean tube. The fibers are thousands and millions of DNA strands.
10. To view in a microscope, put the glob on a clean slide and gently tease/stretch apart using 2 toothpicks or dissecting pins. The fibers will be easier to see in the teased-apart area. Examine under the microscope.
11. Rinse your funnel. Put the Ziploc™ bag and paper towel in the garbage.