

DNA Isolation from Strawberries

Student Directions

DNA Extraction Buffer

Put the following three items into a one liter bottle that can be sealed. Mix well.

- 100 ml (3/8 cup) shampoo (without conditioner) or 50 ml dishwasher detergent
- 15 grams (~2 teaspoons) table salt (NaCl - sodium chloride)
- Fill the bottle with water to one 1 liter

Materials per group

- 1 strawberry (about the size of a golf ball)
- 10 ml (~2 teaspoons) DNA Extraction Buffer (soapy salty water)
- 15 ml (~3 teaspoons) 70% or 99% Isopropyl alcohol (rubbing alcohol) – cooled on ice
- 1 Ziploc bag
- 1 small clear container
- 1 coffee filter
- 1 toothpick or wooden coffee stir stick

Directions

1. Remove the green sepals from the strawberry.
2. Place strawberry into a Ziploc bag, but don't seal shut.
3. Squish for a few minutes to completely squash the fruit.
4. Add 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 coffee filter, and collect the liquid in a clear tube. Do not squeeze the coffee filter firmly.
6. Slowly pour cold isopropyl alcohol (rubbing alcohol) into solution.
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. Wrap the DNA around a toothpick.
9. Inspect your DNA. The fibers are thousands and millions of DNA strands.
10. Put the Ziploc bag and coffee filter in the garbage.

Must See Videos: 1) https://www.youtube.com/watch?v=usaE_XZx-a8
2) <https://www.youtube.com/watch?v=zwibgNGe4aY>

Reference: 1) DNA isolation from strawberries. (n.d.). Retrieved from http://www.gs.washington.edu/outreach/dhillon_dnaprocedure.pdf

- 2) YouTube Video 1 (Strawberry Extraction) – NC Community Colleges BioNetwork - <http://ncbionetwork.org>
- YouTube Video 2 (What is DNA and How does it work) – Stated Clearly