

DNA extraction from strawberries

This is a classroom friendly DNA extraction from strawberries. It is safe, cheap and fun.

Materials for one extraction:

- Zip lock plastic bag
- 1 strawberry (fresh or defrosted)
- 10mL DNA extraction buffer
- Gauze, cut into squares
- Funnel
- Ice cold ethanol
- Plastic transfer pipette
- Clear test tube, plastic/glass
- Long wooden skewer



<http://commons.wikimedia.org/wiki/Image:FraiseFruitPhoto.jpg>

DNA extraction buffer:

Makes 50mL (enough for 5 extractions)

- 5 mL liquid dish washing detergent or shampoo
- 0.75g salt
- 45mL water

To make: Measure detergent and water in a measuring cylinder, weigh out the salt and combine ingredients into a labelled bottle or beaker.

http://commons.wikimedia.org/wiki/Image:Measuring_cylinder_hg.jpg



What to do:

1. Make the DNA extraction buffer following the method above.
2. Wash the strawberry, remove the sepals (the green leaves) and put it into a zip lock plastic bag. Add 10mL of the extraction buffer and seal the bag tightly, making sure any air bubbles are pushed out and crush the strawberries with your fingers on the bench surface for 1 minute.
Note: Do not crush the strawberries too much as this will cause the DNA to shear/degrade.

What is happening?



Crushing the strawberries breaks open many of the strawberry cells, releasing the nuclei where the DNA is.

The soap in the detergent or shampoo in the extraction buffer breaks down the fatty membranes of the cells, breaks open the nuclear membrane and releases the DNA into solution.

The salt makes the DNA molecules stick together, and separate from the proteins that are also released from the cells.

3. Place the funnel lined with gauze into the test tube.
4. Pour the strawberry DNA extraction buffer mixture into the gauze and filter the mixture into the tube through the gauze.

