

Step by step DIY DNA Extraction

What you need for this experiment...

- 1 large glass
- Salt
- Water



- Teaspoon
- Liquid soap
- Half a banana
- Sandwich bag

- 1 coffee filter
- 1 toothpick
- Methylated spirits (available in chemists!)

Experiment Steps 1-5

Why do we do it?

Step 1

Add 1 teaspoon of salt to ¼ large glass of water (160mL). Mix for 30s and add 1 teaspoon of liquid soap. Mix again for 30s.

Why do we prepare this solution?

To isolate banana cells and extract DNA from the cell. The salt will clump DNA strands together so that they can be observed in Step 5. The soap breaks down the fats in the cell membranes so that the DNA is released.

Step 2

Put half a banana in a bag and mash until it looks like a smoothie. Then add the solution prepared in step 1 and mix again for 30s.

Why do we mash the banana in solution?

To break down the cell wall and membrane and allow the solution to set the DNA free.

Step 3

Place the coffee filter in the pint glass and carefully filter the contents of the plastic sandwich bag into the glass.

Why do we filter the solution?

To remove the biggest debris and keep a clear cell/DNA suspension.

Step 4 – Get an adult to help you

Pour ¼ cup (60ml) of methylated spirits at a 45° angle slowly down the side of the large glass. Let rest for 2 mins.

Why do we add the methylated spirits to the filtrate?

DNA is insoluble in alcohol (it will not mix with it). After this step, DNA will float to the top, separating it from the rest of the suspension.

Step 5

Gather the DNA with a toothpick and observe the fruity DNA!

SAFETY NOTICE

To use and discard methylated spirits, follow the safety notice on the container. Tubes containing methylated spirits (alcohol) should be kept away from sources of heat, sparks and flames. Do not drink or smell the contents of the tube.



Extracted Banana DNA!



YouTube™

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