

WJEC England Biology GCSE

SP7.1: DNA Extraction

Practical Notes



DNA Extraction

Aim

Simple extraction of DNA from living material.

Equipment

- Living material eg. strawberries
- Mortar and pestle
- Washing up liquid
- 1g of salt (sodium chloride)
- 90% ethanol (ice cold)
- 100 cm³ water
- Two 250cm³ beakers.
- Filter funnel
- Filter paper
- Ice
- Glass rod

Method

1. Mash the strawberries in a mortar and pestle (remove the stalk).
2. Make your extraction fluid in one of your beakers: mix together the washing up liquid, the salt and the water. The washing up liquid breaks down lipid membranes and the sodium ions neutralise the negative charge on the phosphate groups of DNA.
3. Add 10cm³ of your extraction fluid to the mashed strawberries. Mix for 1 minute.
4. Into another beaker, filter the strawberry mash mixture using the filter paper and filter funnel.
5. Very carefully, without mixing or stirring, pour 10 cm³ of ice-cold ethanol down the inside of the side of the beaker holding the strawberry mush. The ethanol will act to precipitate the DNA.
6. Wait for a few seconds until a white substance forms at the surface. Use a glass rod to extract the DNA by coiling it.
7. Wash with some ethanol to purify the DNA.¹

Potential Hazards

90% ethanol is an irritant - use in a well ventilated area, wear goggles and gloves.

¹edugas.co.uk

