

DNA Isolation from just about anything, including 'yourself'

Materials

- 15ml conical tubes
- Dixie™ cups
- Plastic bulb Pasteur pipettes
- Dish soap
- Ethanol (Everclear = best) or isopropanol (rubbing alcohol)
- NaCl (table salt)

Recipes

- 1% NaCl is 1g of salt dissolved into 100ml water
- 25% dish soap is 25ml dish soap mixed with 75ml water

1. Place 5ml of 1% salt solution into a Dixie™ cup.
2. Put the salt solution in your mouth and swish it around for at least a minute.
3. Spit it back into the cup and then pour it into the conical tube.
4. Add 1ml of 25% dish soap solution to the tube, cap and mix by inversion for 1min.

5. Tilt the tube 45° and **GENTLY** overlay the sample by **CAREFULLY** filling the tube with **ice-cold** alcohol.

6. Cap tube, turn upright and wait for the DNA to make an appearance in the upper phase, carried by bubbles!

7. (optional) 'Hook' the DNA with a pipette tip or toothpick and transfer to a microfuge tube as a souvenir.

The Magic: The salt solution works to disrupt skin cells in the mouth for collection - and is critical for DNA precipitation.*

The detergent works to lyse the cells collected into the tube.

The alcohol works to precipitate nucleic acids out of solution.

**Although the intent is to isolate nucleic acid from the human, the majority of nucleic acid comes from the multitude of bacteria that reside in the mouth! (You'll notice poor results from learners who have just brushed their teeth). If you don't want to keep this little secret, please extend the lesson to the human microbiome 😊*