Protocol for DNA isolation
Leiden 2019 iGEM team

At various events, we invited visitors for the first time to isolate their DNA. This activity was very popular and especially by children, some of which had never heard of DNA before. The protocol for DNA isolation is very simple and inexpensive.

Materials
- Eppendorf tube
- Dish soap
- Pineapple juice
- Isopropanol
- Table salt

Procedure
1. Scrape with your teeth against the side of your cheek and spit in a small collection tube, such as an Eppendorf tube. Within the spit, cells from the oral mucosa (cheek cells) are present.
2. Add soap to the solution. This will cause the cell membranes to break open.
3. Add pineapple juice. Enzymes from the pineapple juice will degrade proteins in the solution.
4. Add isopropanol. Since DNA is insoluble in isopropanol, this will cause the DNA proteins to come out of the solution.
5. Add salt. Salt will neutralize the charge of the DNA’s sugar-phosphate backbone. This will make the DNA less hydrophilic thus less soluble in water.