



STRAWBERRY DNA EXTRACTION

MATERIALS:

- A PIECE OF A STRAWBERRY (A BANANA MAY ALSO BE USED)
- A ZIP-TOP BAG
- 10 ML. SALTY WATER (ABOUT 1 TABLESPOON)
- 2-3 DROPS OF DISH DETERGENT
- COFFEE FILTER
- SMALL FUNNEL
- 50 ML. TUBE (OR REGULAR CUP)
- 15 ML. TUBE (OR SMALL CLEAR CUP)
- 2 ML. ISOPROPANOL (91% ISOPROPYL RUBBING ALCOHOL)
- SMALL WOODEN STICK (NEEDS TO FIT IN THE 50 ML. TUBE, A COTTON SWAB WILL WORK)

PROCEDURE:

1. Put the piece of strawberry in a zip-top bag.
2. Push air out, close bag, mash for two minutes.
3. Add 10 ml. salty water plus 2-3 drops detergent into the bag. Mash two more minutes.
4. Take coffee filter, and place in funnel on top of 50 ml. tube. Pour fruit paste into filter – let liquid pass through.
5. Pour 2 ml. of filtered contents into clean 15 ml. tube.
6. Add 2 ml. of isopropanol by running gently down side of tube (1 volume isopropanol to 1 volume fruit juice).
7. Insert small wooden stick into tube, and gently turn (do not stir) the contents to extract the DNA from the solution.

WHAT THIS MEANS:

After the isopropanol is poured into the tube, you are looking for the separation of material that begins to come to the surface. This white-looking goo is the DNA of the strawberry.

Each ingredient plays a part in releasing the DNA from the strawberry. The soap helps dissolve the cell membranes by pulling apart lipids and proteins, while the salty water releases the DNA strands by breaking up the protein chains. DNA is not soluble in isopropanol; therefore, the DNA separates, and you are able to extract it.

Making Science Make Sense[®] is Bayer's award-winning, company-wide initiative that advances science literacy through hands-on, inquiry-based science learning, employee volunteerism and public education.



For more information,
please visit MakingScienceMakeSense.com



Facebook facebook.com/Bayer



Twitter [@BayerUS](https://twitter.com/BayerUS)



Instagram [@BayerUS](https://instagram.com/BayerUS)



YouTube youtube.com/user/BayerChannel



Pinterest pinterest.com/BayerUS