

FORENSIC BIOLOGY: Extracting DNA from a Banana

Materials:

Blender (optional)
3 paper cups (at least 16 oz. each)
Plastic spoon
Half a peeled banana
1 cup plus 4 teaspoons water
2 teaspoons liquid soap
2 pinches salt
2 teaspoons rubbing alcohol (99% works best)
Strainer
Toothpicks

Directions:

- 1 About 30 minutes before you start the experiment, place the alcohol in the refrigerator.
- 2 Cut a banana into small pieces and place into a blender with 1 cup of water. Blend for 15–20 seconds, until well mixed. Pour the mixture into the first paper cup. If you don't have a blender, place the banana in a bowl, add 1 cup of water, and mash with a fork. Then transfer to the first cup.
- 3 In a second paper cup, add 2 teaspoons liquid soap, 2 pinches of table salt, and 4 teaspoons of water.
- 4 Slowly stir the soap/salt/water mixture with a plastic spoon to dissolve the salt and soap.
- 5 Pour the soap solution into the cup containing the banana mixture, and stir continuously with the plastic spoon for 5–10 minutes.
- 6 Place the strainer over the third paper cup, and pour the banana/soap mixture through the strainer into the third cup. Let the mixture drain for several minutes.
- 7 Add 2 teaspoons of cold rubbing alcohol to the solution in the cup. Gently swirl the solution to mix the rubbing alcohol with the banana/soap solution. Look at the top layer and see if you can see the DNA appear. It has the appearance of white, stringy mucus.
- 8 After about 5 minutes, use a toothpick to remove the DNA from the top layer, or remove the DNA with a spoon, slowly tipping out the excess liquid.

