

Extracting DNA from Bananas

For something to be considered living, it must be able to reproduce. Cells reproduce in part by passing deoxyribonucleic acid (DNA) from parent cells to offspring cells. DNA provides a blueprint for an organism's growth and development. Studying DNA is one way scientists learn about what is necessary for life. In this activity, you will extract and observe DNA from bananas.

Procedure

1. Put 1/2 cup of distilled water and one banana into the blender. Blend for 25 seconds, making sure the banana is completely pulverized. Pour the mixture into a beaker.
2. Mix 1 teaspoon of soap with 1/4 teaspoon of salt in a plastic cup. Add 2 tablespoons of distilled water. Stir gently to avoid creating a foam. Continue for a few minutes until the soap and salt are dissolved.
3. Add 2 tablespoons of the banana mixture to the cup containing the soap solution. Use a spoon to stir the mixture for at least 10 minutes.
4. Insert a filter into a clean plastic cup so it does not touch the bottom of the cup. If necessary, tape the sides of the filter to the cup.
5. Pour the mixture from step 3 into the filter. After 10 minutes, some liquid, called the filtrate, should have collected in the bottom of the cup. Gently stir the mixture in the filter and let it sit for another minute. Remove the filter and set it aside.
6. Get a test tube of cold alcohol. Use a pipette or eyedropper to collect your filtrate. Add it to the alcohol.
7. Place the test tube with the alcohol and filtrate in a beaker or test tube holder. Let it sit undisturbed for about four minutes. Do not shake. The white material coming out of solution as a precipitate is DNA.
8. Dip the glass rod into the tube, slowly rotating it to spool out the banana's DNA.

Questions

1. Describe the appearance of the DNA you extracted. _____

2. Summarize the main steps involved in extracting DNA from bananas. _____

3. Do you think your results would be different if you were to use a fruit or vegetable other than bananas? Explain. _____

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