

Do-It-Yourself Strawberry DNA

Strawberries, bacteria, humans—all living things have genes, and all of these genes are made of DNA. That's why scientists can take a gene from one living thing and put it into another. For example, they can put human genes into bacteria to make new medicines.

How do scientists take DNA out of a living thing? It's not that hard—you can do it, too! Follow the steps below to extract DNA from strawberries.

What you need:

- ∞ measuring cup
- ∞ measuring spoons
- ∞ rubbing alcohol

- ∞ 1/2 teaspoon salt
- ∞ 1/3 cup water
- ∞ 1 tablespoon Dawn dishwashing detergent
- ∞ small bowl

- ∞ coffee filter
- ∞ funnel
- ∞ 1 strawberry (de-capped)
- ∞ reclosable plastic sandwich bags
- ∞ test tube
- ∞ bamboo skewer

What to do:

1. Chill the rubbing alcohol in the freezer. (You'll need it later.)
2. Mix the salt, water, and Dawn detergent in a small bowl. Set the mixture aside. This is your extraction liquid.
3. Line the funnel with the coffee filter, and put the funnel's tube into the test tubes.
4. Put the strawberries in the plastic bag and push out all the extra air. Seal it tightly.
5. With your fingers, squeeze and smash the strawberry mixture for 2 minutes.
6. Add 3 tablespoons of the extraction liquid you made in Step 2 to the strawberries in the bag. Push out all the extra air and reseal the bag.
7. Squeeze the strawberry mixture with your fingers for 1 minute.
8. Pour the strawberry mixture from the bag into the funnel. Let it drip from the funnel into the test tube until it is $\frac{1}{4}$ full.

9. Throw away the coffee filter and the strawberry pulp inside. Pour the contents of the bowl into the test tube until it is $\frac{1}{2}$ full.
10. Tilt the test tube and **VERY SLOWLY** pour the cold rubbing alcohol down the side until the test tube is $\frac{3}{4}$ full. The alcohol should form a layer on top of the strawberry liquid. (Don't let the alcohol and strawberry liquid mix. The DNA collects between the two layers!)
11. Dip the bamboo skewer into the test tube where the alcohol and strawberry layers meet. Pull up the skewer. The whitish, stringy stuff is DNA containing strawberry genes!