

Every Contact Leaves a Trace

DR. EDMOND LOCARD (1877-1966) was known as the Sherlock Holmes of France. He formulated the basic principle of forensic science, "every contact leaves a trace," which is also known as **Locard's Exchange Principle**.

TRACK YOUR TRACE

We all "exchange evidence" with our environments every day. When you get home today, use transparent tape to "lift" trace evidence from your clothes and the bottoms of your shoes. Use a magnifying glass to see what evidence—dirt, fibers, hairs—you find.



VERY BERRY DNA

Since DNA fingerprinting was first used for solving crimes in the mid 1980s, it has proven to be a powerful tool in forensics.

Want to see strands of DNA with your own eyes? Try this simple technique with household chemicals and strawberry cells.

WHAT YOU NEED:

- Strawberries—fresh or frozen
- 1/8 teaspoon salt
- 1 cup cold water
- 2 tablespoons liquid detergent
- toothpick
- 1 tablespoon rubbing alcohol (chilled in freezer)
- strainer
- 2 small transparent containers with lids (i.e., baby food jars or food storage containers)



WHAT TO DO

1. Place 1 large strawberry, 1/8 teaspoon of salt and 1 cup cold water in a jar and shake for 3 minutes.
2. Pour the strawberry/salt/water mixture through a strainer into another transparent container.
3. Add 2 tablespoons detergent and mix gently. Let the solution stand for 10 minutes.
4. Tilt the container. Slowly pour 1 tablespoon of chilled alcohol down the side so that it forms a layer on top of the strawberry solution. Be careful not to mix the alcohol and strawberry solution or the DNA extraction will not work.
5. Let the strawberry/alcohol solution sit for a few minutes. White, stringy, filmy stuff that looks like cotton candy will begin to appear where the strawberry solution and alcohol meet. After 5 – 10 minutes, use a toothpick to collect the strands around the toothpick.

WHAT HAPPENED?

Why did you have to shake the strawberry solution?
Why do you think you needed to add the soap?
What was the purpose of the cold alcohol?

Find these answers and more at:

<http://learn.genetics.utah.edu/units/activities/extraction>

Those are DNA strands!