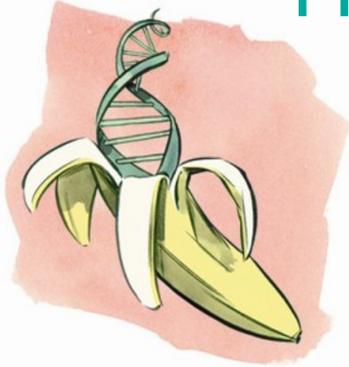


# Banana DNA Extraction PROTOCOL



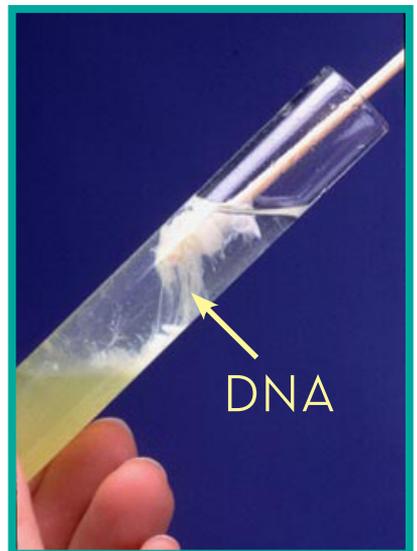
## Materials Needed

- 1/4 of a peeled ripe banana (you can also use strawberries)
- 1/2 tsp. clear liquid dishwashing soap (like Palmolive)
- 1 tsp. table salt
- resealable zip-top bag (quart size)
- very cold rubbing alcohol (isopropyl alcohol) placed in freezer ahead of time
- coffee filter or gauze
- narrow glass

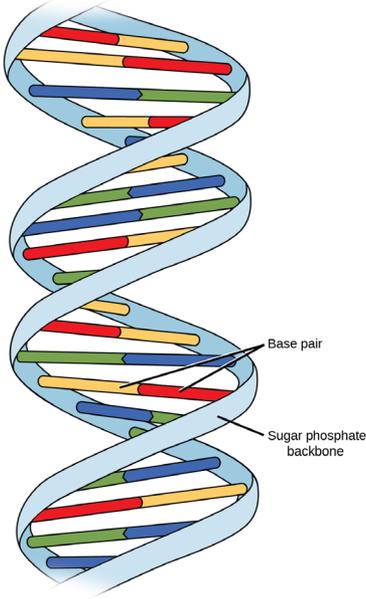
1. Mash a small piece of banana in cell lysis solution (see below for recipe) in a quart size resealable bag.
2. Strain solution through coffee filter or gauze over a cup.
3. Discard filter/gauze and its contents in trash.
4. Transfer liquid from cup (about an ounce) to a narrow glass.
5. Tilt the glass and slowly pour the alcohol down the side of the cup until there is a layer that is about 1 inch thick. You want to keep the alcohol and the liquefied banana as separate as possible, so complete this step slowly.
6. Watch the DNA separate as white strands between the lower cell debris from the banana and the upper clear alcohol layer.

## Recipe for cell lysis solution

Mix 1/2 cup (about 4oz.) warm water with 1 tsp. of salt and 1/2 tsp. clear dish soap prior to adding to the resealable bag containing the banana piece. Try to avoid making bubbles.

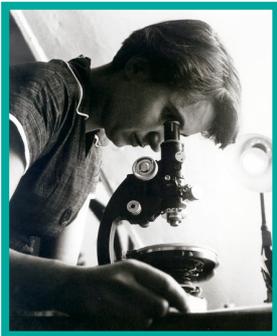


# DNA Facts



Nitrogenous bases:

-  Adenine
-  Thymine
-  Guanine
-  Cytosine



**Rosalind Franklin**

**Pioneer Molecular Biologist**

Franklin was responsible for much of the research and discovery work that led to the understanding of the structure of deoxyribonucleic acid, DNA.

**DNA stands for DeoxyriboNucleic Acid.**

What does DNA do? To put it very simply, specific DNA sequences send messages to proteins with instructions on a task to perform, such as “make a human fingernail.” DNA for each species is unique, which is why humans only create other humans, kangaroos make other kangaroos, and daisies produce only other daisies and not tulips.

**Your DNA could stretch from the earth to the sun and back ~600 times.**

If unwound and linked together, the strands of DNA in each of your cells would be 6 feet long. With 100 trillion cells in your body, that means if all your DNA were put end-to-end, it would stretch over 110 billion miles. That’s hundreds of round trips to the sun!

**If you could type 60 words per minute, eight hours a day, it would take approximately 50 years to type the human genome.**

**We’re all 99.9 percent alike.**

Of the 3 billion base pairs in the human genome, only 0.1% are unique to us. While that 0.1% is still what makes us unique, it means we’re all more similar than we are different.

*Learn more about DNA!*



Scan this QR Code or go to  
<https://youtu.be/zwiBgNGe4aY>

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