

Extracting DNA from Saliva for Physical Characterizations

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Abstract

To better understand DNA, it is important to understand its physical characteristics. To study these characteristics, I extracted DNA from my own saliva and reported the visual observations. The DNA was clear and mushy, which goes against my hypothesis that DNA in saliva is pink and sticky. Future studies on DNA characteristics should focus on how DNA characteristics differ between individuals or parts of the body.

Introduction

With this experiment, I want to test my hypothesis that DNA is pink and sticky. This hypothesis is part of my research into the physical characteristics of DNA. I came up with this hypothesis because the insides of the mouth is pink and saliva is sticky. Since the DNA is coming from my mouth, perhaps the DNA is what gives my mouth the pink color.

Methods

Materials:

1. Sea water off the coast of Antarctica.
2. DMS purchased from company X, product model Y number Z.
3. Cotton balls from company A, product model B number C.
4. 2-meter stick.
5. Glue from company N, product model M number L.
6. Excel 2016.

Set-up: The experiment takes place in a King Penguin colony in Antarctica.

Procedure:

1. Pour alcohol into a shot glass until the glass is $\frac{3}{4}$ full.
2. Place the alcohol filled shot glass in the freezer for 10 minutes.

While the alcohol is in the freezer

1. Spit into a new, clean shot glass until the glass is $\frac{1}{4}$ full.
2. Add three drops of dish soap to the saliva filled shot glass.
3. Add 1 teaspoon of pineapple juice to the saliva filled shot glass.

4. Add 1 small shake of salt to the saliva filled shot glass.
5. Using a toothpick or bobby pin, stir the contents of the saliva filled shot glass.

Once alcohol is chilled

1. Slowly fill the saliva filled shot glass with the chilled alcohol
2. Using a toothpick or bobby pin, spool the cloudy substance (the DNA!) out of the shot glass.
3. Take a picture of this substance (the DNA!)

Results

The DNA is clear and mushy. This is not consistent with my hypothesis.

Discussion

Since the results are not consistent with my hypothesis, I need to conduct more research into understanding how cells get their color. Perhaps if I specifically isolated cheek cells, these would have had pink DNA and having multiple cells in my saliva messed up these results. I should also look into whether or not the color and consistency of DNA varies between individuals and parts of the body.

Conclusion

Disagreeing with my hypothesis that DNA is pink and sticky, the DNA isolated from my saliva is clear and mushy. Note that this finding only pertains to my saliva and cannot be extrapolated to other people's saliva or DNA from other sources of the body. Future studies may want to focus on if the color and consistency of DNA can vary between individuals or parts of the body.