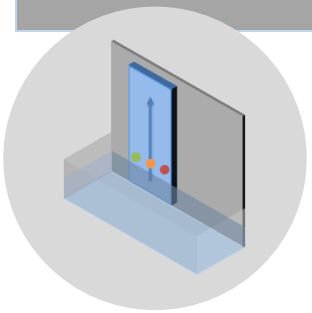


Chromatography with Sweets

www.davids-bio.com (Custom Antibodies)
www.davids-science.de (Lab Material)

- 1 - Introduction

In this experiment, we will use chromatography to separate the colors found in various sweets. Chromatography is a technique used to separate different components from a solution into their individual components. It is widely used in chemistry for analyzing complex mixtures.

By dissolving the color from the sweets and applying it to a piece of chromatography paper, we can observe how different colors travel at different rates, revealing the various dyes used in the sweets.

Science Behind the Experiment:

Chromatography works on the principle of differential solubility and capillary action. The dyes in the sweets are soluble in water, allowing them to move with the water as it travels up the chromatography paper. Different dyes have different affinities for the paper and different solubilities in water. As a result, they travel at different rates and separate from one another. This technique allows us to see the various components that make up the colors in the sweets. You may want to try different solutions like Ethanol, Aceton or Acetic acid to try which dye flows differently with each solution.

Conclusion:

By performing this chromatography experiment, we can visually observe the separation of dyes in colored sweets. This helps us understand the complexity of color mixtures and the effectiveness of chromatography in separating and analyzing components of a mixture

Let's get started and have some fun with science!

- 2 - Materials

Material
Various colored sweets (e.g. dragees, gummy bears)
Chromatography paper or coffee filters
Small beakers or cups
Water
Pipettes or droppers

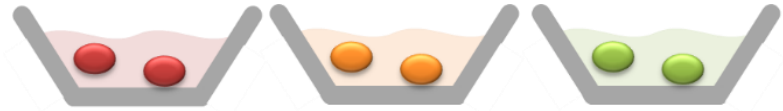
- 3 - Experiment

Preparation:

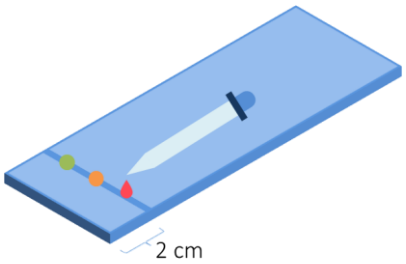
- Cut the chromatography paper or coffee filters into strips about 10 cm wide and 10 cm long.
- Use a pencil to lightly draw a line across the paper strip about 2 cm from one end. This will be the baseline where you apply the colors.

Dissolve the Colors:

- Place each colored sweet in a small beaker or cup.
- Add a few drops of water to each sweet and let it sit for a few minutes to dissolve the color. Stir gently with a stirring rod or toothpick to help the color dissolve.

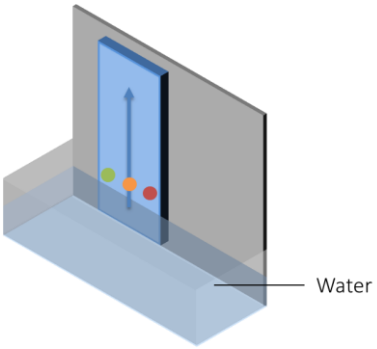


Apply the Colors:



- Use a pipette or dropper to collect a small amount of the dissolved color from each sweet.
- Carefully place a small drop of each color on the baseline of the chromatography paper. Make sure the drops are spaced evenly apart and labeled if necessary.
- Allow the drops to dry completely.
- Repeat this step 3 times and pipet multiple times on the same color spot on the paper

Set Up the Chromatography:



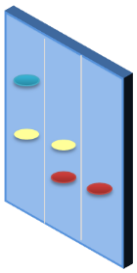
- Fill a beaker or cup with a small amount of water (about 1 cm deep).
- Suspend the chromatography paper strip in the beaker so that the end with the colored spots is just above the water. The water should not touch the spots directly.

Develop the Chromatogram:

- Allow the water to travel up the paper by capillary action. As it moves, it will carry the different dyes with it.
- Observe how the colors begin to separate and travel at different rates up the paper.

- Once the water has nearly reached the top of the paper, remove it from the beaker and place it on a flat surface to dry.

Analyze the Results:



- Examine the separated colors on the paper. Notice how each color from the sweets has been divided into its component dyes.
- Measure the distance each color has traveled from the baseline to the farthest point of each dye spot. Record your observations.

- 4 - Additional Information & Safety Instructions

All individuals conducting the experiments outlined in this protocol must thoroughly review and adhere to all safety instructions and guidelines. It is imperative that each person reads the Material Safety Data Sheets (MSDS) for every chemical involved prior to commencing any experiment. Failure to follow proper safety procedures can result in serious injury or harm. The responsibility for ensuring a safe working environment lies with each individual participant. The author and distributor of this protocol assume no liability for accidents, injuries or damages resulting from the misuse of the information provided.

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