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Bio 125: Physiology

September 14, 2023

Lab 3 Report

Purpose: Determine how emulsifying agents aide in proper digestion of lipids and breakdown of fats into smaller pieces for easier absorption.

Procedures: Use 4 test tubes and places different mixtures of different products to determine what mixture success best with the emulsifying factor. In one test tube, add 3mL of dairy cream and 3mL of pancreatin. In a second test tube, add 3mL of dairy cream and 3mL of distilled water. In a third test tube, add 3mL of dairy cream, 3mL of pancreatin, and a pinch of bile salts. In a fourth and final test tube, add 3mL of dairy cream, 3mL of distilled water, and a pinch of bile salts. Gently shake each tube for 30 seconds and then place in 37 degree Celsius water for 30 mintues. Checking first at the 5-minute mark then every 10 minutes for color change. After the 30 minutes, remove the tubes from the water and check pH of each tube using pH paper.

Results:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Tube #** | **Color change at 5 minute mark** | **Color change at 10 minute mark** | **Color change at 20 minute mark** | **Color change at 30 minute mark** | **pH @ 30 minute mark** |
| Tube #1 | Light color on top with noticeable dark color on bottom | Mixed color with visible line dividing light and dark color | Light purple on top with noticeable color change from bottom | Same | 8 |
| Tube #2 | Same color as the start | Blueish hue | Light blue | Same | 8.5 |
| Tube #3 | Purple | Light purple | Light purple throughout with a whitish hue to the color | Lighter in color with purple/whitish hue | 6.5 |
| Tube #4 | Significant gradient of purple to light purple to almost a pinkish hue | Light blue/gray | Light blue/gray | Same | 8 |

Discussion: The results are most likely slightly altered as the original experiment asked us to perform this in one hour rather than 30 minutes and checking the color differences every 15 minutes than every 10 minutes.

Conclusion: We need emulsifying agents in our digestive system to help our bodies breakdown and help lipids become absorbed or excreted if not needed by our bodies. Otherwise we wouldn’t be able to breakdown lipids small enough for them to be utilized in our cells and because they would be too large to move and enter the cell membrane.