CALIFORNIA STATE SCIENCE FAIR
2014 PROJECT SUMMARY

Name(s)

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Project Number

34856

Project Title

Artificial Sweeteners: The Effects of Sucralose and Saccharin on the Dietary and Metabolic Habits of Mus musculus

Abstract

Objectives/Goals

To record and observe the dietary and metabolic affects of artificial sweeteners such as Saccharin and Sucralose on the common mouse (Mus Musculus).

Methods/Materials

Materials: For this experiment you need to have laboratory mice, polycarbonate mouse tubs, hanging water bottles, artificial sweeteners (Acesulfame potassium, aspartame, sucralose, or saccharin), paper pulp bedding, rodent pellets, a digital postal or food scale, a graduated cylinder, recording equipment, gloves, and safety goggles.

Methods: Prepare each enclosure for the mice with the correct temperature, mark each one with a specific pattern of stripes on its tail or number on the container of each mouse, Weigh each mouse daily and record all data starting the day the project begins, Measure the amount of water that each individual mouse consumes for a period between on or one-half week(s), After recording the daily amount of water that each mouse consumes for about a week, add the variant of artificial sweeteners to each of the mouse's water each mouse should receive the average amount of water that they consumed the prior week, record the amount of food that they are consuming daily.

Results

Mice given artificial sweeteners are inclined to have diets that vary from day to day and maintain relatively consistent weight and Mice given no artificial sweeteners show regular diet over a longer period of time as well as high fluctuations in weight gain that are not relatively consistent.

Conclusions/Discussion

According to the data, the artificial sweeteners caused the mice to become unaware of their environment and uncontrollably consume food unlike in the control group where they ate to maintain their weights. Although the data seems insignificant, the simultaneous changes in weight and food consumption means that artificial sweeteners do effect the metabolism. This can be further researched upon to prevent national rates of obesity while at the same time be used to improve the status on world hunger by manipulating the body's ability to process and store energy.

Summary Statement

The effects of sucralose and saccharin on the metabolic and dietary habits of mice was tested

Help Received

professor Kimberly Hammond from UCR helped plan enclosures and gave advice on original plans for expirament

Preliminary