CALIFORNIA STATE SCIENCE FAIR
2010 PROJECT SUMMARY

Name(s)
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Project Number
S1805

Project Title
White Tea's Effects on Osteoblast Proliferation

Abstract

Objectives/Goals
The purpose of this investigation was to observe whether white tea's nutrients could increase bone growth and thus have a possibility to decrease bone loss caused by side effects of radiation.

Methods/Materials
The 7F2 rat osteoblast cells were divided evenly into six petri dishes. Four dishes had different amounts of white tea added while two dishes contained no white tea. The 7F2 rat osteoblast cells were cultured over a 12 day period and were counted twice on the 12th day to find the total amount of cells. A second count was used to calculate the approximate number of viable vs. nonviable cells in each dish. Finally, the data was averaged and a chi squared goodness of fit test was used to determine whether or not the results were statistically significant.

Results
The total amount of cells given the variable white tea almost doubled the average amount of cells found in the controls. The cultures total number of bone cells increased with every larger amount of white tea added. The chi squared goodness of fit test had a chi squared equaling 423965116.279 and a P value less than 0.0001. All dishes, except for dish A, had a viability percentage ranging from 80-90. Dish A contained the lowest viability percentage (34%).

Conclusions/Discussion
The dishes given the variable white tea consistently had a greater number of cells in each dish when compared to the controls. In addition, as the white tea supplements increased, so did the total amount of cells in the dish, thus deducing that white tea is capable of significantly increasing osteoblast proliferation. The viability of the cells varied in the six dishes. This could be the result of many issues (i.e. contamination, dehydration, etc.) With the two-tailed P value equaling less than 0.0001, the data was proven to be statistically significant. In the end, the total number of cells given the variable white tea nearly doubled that of the cells without white tea, thus making white tea a strong candidate for the reduction of bone loss caused by radiation.

Summary Statement
Testing the effects of white tea on bone growth

Help Received
Mother and Father helped put glue on the poster; Used school lab equipment under the supervision of Mrs. Acquistapace