CALIFORNIA STATE SCIENCE FAIR
2002 PROJECT SUMMARY

Name(s)
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Project Number
S1432

Project Title
Researching the Future: Bionic Humans

Abstract

Objectives/Goals
It seems inevitable that the widespread availability of more powerful computer chips will lead to their incorporation into the human body. Scientists should figure out what negative effects this might have on the human body before such experiments are done. This set of experiments tested whether or not the presence of two types of silicon affected a key biological process.

Methods/Materials
Every cell moves using cytoplasmic flow. A slime mold was used as the model organism for cytoplasmic flow. Physarum plasmodia were exposed to two types of silicon. Effects of this exposure on regular oscillations in cytoplasmic strands and gross plasmodial migration were measured by microscopy, digital movies, and comparison of areas of growth.

Results
These measures indicated that the presence of silicon does not inhibit cytoplasmic flow or plasmodial migration.

Conclusions/Discussion
The initial results suggest that the use of silicon chips in human tissue wouldn#t have a negative effect on human health.

Summary Statement
Testing the effects of silicon on a key biological process called cytoplasmic flow.

Help Received
Used lab equipment at Cal Poly Pomona University under supervision of Dr. Len Troncale; Microinjection help by Dr. Sep Eskandari; Digital movie editing aid by Kevin Frank