

CALIFORNIA STATE SCIENCE FAIR

2001 PROJECT SUMMARY

Your Name (List all student names if multiple authors.)**Christine M. Concho****Science Fair Use Only****S1308****Project Title** (Limit: 120 characters. Those beyond 120 will be ignored. See pg. 9)**The Effects of Chromium VI on Planaria****Division****_ Junior (6-8) X Senior (9-12)****Preferred Category** (See page 5 for descriptions.)**13 - Pharmacology / Toxicology****Abstract** (Include Objective, Methods, Results, Conclusion. See samples on page 14.)

Use no attachments. Only text inside these boxes will be used for category assignment or given to your judges.

The purpose the research was to test the effects of an addition of formulated amounts of Hexavalent Chromium on planaria (*Dugesia dorotocephala*) environment, observing changes in their morphology and physiology. First, thirteen serial dilutions were made, with varying amounts Chromium VI. Two uncut planaria were added to each dilution. Second, two sets of the dilutions ranging from 1/10,000,000 ppm to 1/10,000,000,000 ppb of Chromium VI were made. One cut planaria was added to each dilution. The third test was conducted using a greater volume of solution. Planaria were cut. Digital pictures of magnified planaria were compared to note morphological changes. In each test, observations were made and the death rate, mutations, movements, location, inflammation, size, color and regeneration of the planaria were recorded. Data was collected, analyzed, and conclusions made.

It was found that with increasing amounts of Chromium VI in water, the more movement the planaria exhibited upon entering the dilutions and the faster they died. When cut, the planaria had a higher tendency to die faster, though no death pattern was found.

The stated hypothesis was correct. The addition of Chromium VI to a planarian's environment does have an affect on its morphology and physiology. Presently statistical analysis favors rejection of the null hypothesis.

Chromium VI is a carcinogen known to cause health problems in humans and animals. There have been numerous debates about how dangerous Chromium VI is and the health problems it can cause. This is one of the few studies done in this area.

Summary Statement (In one sentence, state what your project is about.)

This project tested the effects of Chromium VI on the morphology and physiology of the growth patterns of planaria.

Help Received in Doing Project (e.g. Mother helped type report; Neighbor helped wire board; Used lab equipment at university X under the supervision of Dr. Y; Participant in NSF Young Scholars Program) See Display Regulation #8 on page 4.

Mother helped put paperwork on board and proofed typing.