

CALIFORNIA STATE SCIENCE FAIR**2001 PROJECT SUMMARY**

California Science Center

Your Name (List all student names if multiple authors.)**Brent W. Merrill****Science Fair Use Only****J1220****Project Title** (Limit: 120 characters. Those beyond 120 will be ignored. See pg. 9)**UV Radiation Extermination****Division** **Junior (6-8)** **Senior (9-12)****Preferred Category** (See page 5 for descriptions.)**3 - Biochemistry / Molecular Biology****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.

Ultra violet radiation is a common danger in our modern society. People all over the world suffer from skin cancers and other diseases caused by UV exposure. In some places in the world there are holes in the ozone layer that let through enormous amounts of UV light to the earth's surface every day. This experiment using E. coli and common tanning products (Cocoa butter, Baby oil, Water) and UV protectent agents (Sunglasses, Suntan lotion Spf 4, and Spf 45, and UV fabric) investigates the dangers of UV light and how to protect ourselves from it. Using sterile technique a tenth of an ml of E. coli bacteria was placed on agar media. Control A was grown with no exposure to UV light. Control B was exposed to two seconds of UV light with no protective agents and enhancers. The protective and tanning products were placed on saran wrap above bacteria and exposed for two seconds to UV light. All of the plates were then placed in room temperature incubator for 48 hours. The colonies were then counted using a grid.

The UV blocking agents protected extremely well. The best protective agent was the UV fabric. The tanning products didn't enhance the kill rate, except by very little enhancement from Water. However control B showed how much damage UV light does even though it was only a two second exposure. This experiment showed that just a little bit of sunscreen can protect so much, and how dangerous UV light can be.

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

A test of UV light on E. coli bacteria exposed to UV protective products and tanning products.

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.
used lab equipment at ventura community college under the supervision of Dr.deJesus and Dr.Shelly