CALIFORNIA STATE SCIENCE FAIR
2017 PROJECT SUMMARY

Name(s)
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Project Number
J2016

Project Title
Death Rays: Testing the Effectiveness of Different Sunscreen SPFs at Different UV Time Exposures

Abstract

Objectives/Goals
The objective of this study is to determine the effective ability of different sunscreen SPFs under different ultraviolet light time exposures.

Methods/Materials
Sunscreens with SPF 30, 45, 100, E. Coli bacteria, agar plates, 97 degrees Fahrenheit incubator. Tested the effectiveness of sunscreen SPFs by applying sunscreen on agar plates. Applied 2 microliters of the bacterial solution on the agar plates. Agar plates were placed under the UV source for a certain amount of time and were placed in an incubator.

Results
The number of bacterial colonies that grew was counted to determine the effectiveness of different sunscreen SPFs at different UV time exposures. Several trials were conducted for accurate results. The greater the number of bacterial colonies, the more effective the sunscreen SPF was. SPF 30 was best able to protect the bacteria from the UV source at a UV time exposure of 30 minutes because SPF 30 had the largest number of bacterial colonies.

Conclusions/Discussion
SPF 30 was most effective in protecting the bacteria from the UV source at a UV time exposure of 30 minutes. It is concluded that consumers should use a sunscreen with SPF 30 to protect themselves from the sun's harmful UV rays in order to prevent unnecessary health issues such as skin cancer from occurring.

Summary Statement
I showed that a sunscreen with SPF 30 is more effective in protecting bacteria than a sunscreen with SPF 100.

Help Received
I performed the experiments myself. My Science teacher provided supervision during the experimentation process and reviewed my results.