CALIFORNIA STATE SCIENCE FAIR
2017 PROJECT SUMMARY

Name(s)

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Project Number

J1707

Project Title

Methods to Inhibit the Growth of the Acne Causing Bacteria Propionibacterium acnes

Abstract

Objectives/Goals

The objective of this project was to determine the most effective method of inhibiting the growth of the acne causing bacteria Propionibacterium acnes.

Methods/Materials

Propionibacterium acnes was spread as a uniform film onto blood agar plates. Five sterilized filter paper disks (6 mm in diameter) were saturated with 30 ul of select treatment and placed upon each plate. Plates were incubated for two days, after which the diameter of the zone of inhibition (where there was no bacterial growth) was measured for each disk. The five measures were averaged and compared amongst each different treatment. Treatments used in the experiment included commercial, home, and other miscellaneous acne remedies.

Results

Of all the treatments, tea tree oil was the most effective at killing P. acnes, as determined by the size of the zone of inhibition. One surprising result was the discovery of a bacterium that inhibited the growth of P. acnes.

Conclusions/Discussion

Repeated testing has led to several interesting findings, including the best way to treat acne (tea tree oil), and the effect of several common acne treatments on P. acnes. A bacterium was also discovered to inhibit the growth of P. acnes. Further research into this bacterium could yield evidence of the processes going into this result, as well as other bacterium capable of the same thing.

Summary Statement

By measuring the zones of inhibition produced by several different treatments I was able to determine the most effective method of treating acne.

Help Received

I used lab equipment provided by Taft College, under the supervision of Dr. Greg Golling, and received advice and mentoring from school teachers. Project setup and testing was done by myself.