



CALIFORNIA SCIENCE & ENGINEERING FAIR 2019 PROJECT SUMMARY

Name(s) Danna Bundogji	Project Number J2201
Project Title Is Biotin the Answer? Planaria and Nervous Tissue Regeneration	
<p style="text-align: center;">Abstract</p> <p>Objectives The objective of my study is to see whether Planarian flatworms can demonstrate nervous tissue regeneration under the influence of the natural supplements: Biotin, Vitamin D, Vitamin E, and Aloe Vera following a physical injury.</p> <p>Methods 50 Planarian flatworms, 100 Petri Dishes, 10mg Biotin liquid, 10mg Vitamin D liquid, 10mg Vitamin E liquid, 10mg Aloe Vera, and digital microscope. I tested each natural supplement on the planarian flatworms that I gave a physical injury to. Then, I measured and recorded their growth each week.</p> <p>Results The average growth for planarians living in water grew at an average growth percentage of 29.73%. Planaria living in Biotin grew at 9.51%, Vitamin D at 44%, and Vitamin E at 30.19%. Lastly, planarians that lived in the Aloe Vera environment 69.41% growth rate.</p> <p>Conclusions Injured planarian placed in all solutions completely regenerated after 3-4 weeks. Aloe vera ended up doing the best and helped the planarians grow the fastest when compared to the other natural supplements tested in this experiment. When ranking all the other supplements, Vitamin D did the second best followed by Vitamin E, and lastly Biotin.</p>	
Summary Statement In an effort to find a cure to neurodegenerative diseases, I tested to see whether planarian flatworms can demonstrate nervous tissue regeneration under the influence of various natural supplements.	
Help Received I received approval from my mentor on the natural supplements that I chose to work on during this experiment. After learning the protocol from my mentor, I conducted the experiment and statistical analysis independently.	