



**CALIFORNIA STATE SCIENCE FAIR  
2014 PROJECT SUMMARY**

<b>Name(s)</b> Alyah Kanemoto	<b>Project Number</b>  34949
<b>Project Title</b> The Effect of Monosodium Glutamate on Planarian Photoreceptor Regeneration	
<b>Abstract</b> <b>Objectives/Goals</b> The objective of this experiment was to observe the effect of Monosodium glutamate on the rate of planarian photoreceptor regeneration. <b>Methods/Materials</b> 75 planarian were used over the course of three weeks. First, a serial dilution was conducted in order to obtain proper concentrations of Monosodium glutamate. Next, I identified the planarian photoreceptors and auricles prior to decapitating the head of each planarian to stimulate the regenerative process. Lastly, each planarian was subjected to a phototaxis assay where each individual was evaluated on its ability to maneuver to the darker portion of the petri dish over the course of 90 seconds. I used this phototaxis assay in order to confirm the function of the planarian photoreceptors. <b>Results</b> Based on the phototaxis assay, it appears Monosodium glutamate does have an effect on planarian photoreceptor regeneration. The majority of my control planarian demonstrated their innate negative phototaxis response by maneuvering away from the light source. In contrast, the Monosodium glutamate exposed planarian exhibited movement to and from the light source, indicative of a positive and negative phototaxis response. Though an effect was witnessed due to the Monosodium glutamate exposure, the molecular reasoning behind the effect remains unknown. <b>Conclusions/Discussion</b> Monosodium glutamate appears to have an effect on planarian photoreceptor regeneration, although the molecular mechanisms behind this observed effect remains unknown. To further understand the effect of Monosodium glutamate the experiment can be tailored to encourage more refined results.	
<b>Summary Statement</b> The effect of Monosodium glutamate on the rate of planarian photoreceptor regeneration.	
<b>Help Received</b> My uncle for his guidance, my mom and dad for their support, Mr. Center for providing me with materials, and Mrs. Kelly and Mr. Ryan for being my mentors.	