



**CALIFORNIA STATE SCIENCE FAIR  
2015 PROJECT SUMMARY**

<b>Name(s)</b> <b>Mirna H. El-khalily</b>	<b>Project Number</b> <b>S2202</b>
<b>Project Title</b> <b>Abscisic Acid Effects on Cell Proliferation</b>	
<b>Abstract</b> <b>Objectives/Goals</b> In accordance with the research I have gathered, Abscisic Acid, a plant hormone, has been shown to inhibit seed germination, or uncontrolled cell growth in plants. The objective of this experiment was to see if different concentrations of Abscisic Acid would inhibit uncontrolled cell growth in earthworms. My hypothesis was: If different concentrations of 1, 10 and 100 micromolar Abscisic Acid solutions are applied to 15 millimeter cuts on Lumbricus terrestris epidermis, then the 100 micromolar Abscisic Acid solution will have the greatest degree of proliferation inhibition, or largest cut length after a total of 4 days. <b>Methods/Materials</b> Measure out 0.004 grams of Abscisic Acid and dilute in 151.3 milliliters of distilled water to create a 100 micromolar solution. Increase the volume by 10-fold to obtain a 10 micromolar solution and by 100-fold obtain a 1 micromolar solution. Using a ruler, Dino Light microscope camera, and surgical scalpel, cut the earthworm about 15 millimeters (20 millimeters away from the anus). Using an eyedropper, place five drops of solution on the cut. Measure the cut length after 2 and 4 days. <b>Results</b> The 100 micromolar solution was shown to have the greatest average cut length of 11.8 millimeters after a total of four days, followed by the 10 micromolar solution, with an average cut length of 9.5 millimeters. The 1 micromolar solution had an average length of 8.2 millimeters and the control had the smallest average cut length of 6.0 millimeters after four days. <b>Conclusions/Discussion</b> In conclusion, my hypothesis was supported. The 100 micromolar solution had the greatest cut length, or degree of inhibition of epidermal cell proliferation in earthworms. With further research, I hope that we can apply Abscisic Acid as a potential solution to tumor formation.	
<b>Summary Statement</b> My project applies Abscisic Acid, a plant hormone, that has been shown to inhibit seed germination, or uncontrolled cell growth, to epidermal cuts in earthworms in hopes of utilizing this hormone as a potential solution to tumor formation.	
<b>Help Received</b> Mrs. De La Cruz provided supervision and guidance; Mother bought supplies and helped with display board	