



CALIFORNIA STATE SCIENCE FAIR 2014 PROJECT SUMMARY

Name(s) Riyaz S. Razi	Project Number 34930
Project Title Soybean Polyamines: A Possible Cure for Parkinson's Disease	
Abstract Objectives/Goals The purpose of my experiment is to see whether or not soybean polyamines, found in soybean extract, play a role in stopping the breakdown of mitochondrial DNA, which could lead to a possible cure for Parkinson's disease. Methods/Materials Procedure: 1. Take 12 grams of yeast and add 1 1/2 cups of warm water. 2. Dip a cotton swab completely into the yeast mixture and gently swab onto the nutrient agar plates. 3. Repeat this process 5 times for each of the different percentages of soybean extract. 4. Add .1mL of MPP+ and .2mL of the different percentages of soybean extract. 5. Make the percentages of soybean extract 0%, 25%, 50%, 75%, and 100%. 6. Streak the mixture of soybean extract and MPP+ onto each designated agar plate. 7. In addition, create one agar plate that just has yeast without any MPP+ or soybean extract. 8. Let the yeast on each agar plate incubate for 48 hours in front of heat dish at 75o Fahrenheit. 9. Take 1 mL of yeast and dilute with water until there is a 10 mL solution, a 10 fold dilution. 10. Take .1 mL of the solution, add .05 mL of Methylene blue dye, and place under a hemacytometer counting slide in order to count the yeast. 11. Find the square etched onto the hemacytometer counting slide under 40x power, and then use the 100x power on the microscope to count the yeast. 12. Record the number of live yeast by counting 3 out of the nine smaller squares on the hemacytometer counting slide and then multiplying by 3 to get the amount of all the yeast on the larger square. 13. Repeat with the dead yeast cells. The dead yeast cells should be blue because of the Methylene blue dye. 14. Repeat the process for each of the five different yeast mixtures, and the one solution with nothing added. 15. Graph and compare the results. Results 0% Concentration: 138 live yeast 74 dead yeast 25% Concentration: 149 live yeast 66 dead yeast 50% Concentration: 161 live yeast 59 dead yeast 75% Concentration: 175 live yeast 51 dead yeast 100% Concentration: 188 live yeast 45 dead yeast Conclusions/Discussion My results prove that my hypothesis was correct because at the beginning of my experiment I hypothesized that by adding soybean polyamines to yeast, the breakdown of mitochondrial DNA will be stopped significantly, and that the significance of the effects will have a direct correlation with the concentration of the soybean extract. My results prove this, so my experiment was a success.	
Summary Statement My project uses soybean polyamines to try and find a cure for Parkinson's disease by using yeast as a representation of mitochondrial DNA.	
Help Received My parents helped me order the supplies; Science teacher let me use a microscope and some tools and helped with supplies	