



**CALIFORNIA STATE SCIENCE FAIR  
2015 PROJECT SUMMARY**

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<b>Project Title</b> <b>Toxic Light Exposure on Yeast</b>	
<b>Objectives/Goals</b> THE OBJECTIVE OF THE PROJECT IS TO FIND OUT IF EXPOSURE TO ULTRA VIOLET LIGHT AFFECT YEAST FERMENTATION RATE AND/OR ALTER PROTEINS IN YEAST, THUS INDICATING THAT LIGHT EXPOSURE CAN BE TOXIC TO CELLS. <b>Abstract</b> <b>Methods/Materials</b> THREE TESTS OF 6 JARS OF YEAST AND SUGAR EACH WERE EXPOSED TO UV LIGHTS. EACH TEST HAD 2 CONTROLS PROTECTED FROM EXPOSURE. FERMENTATION RATES WERE OBTAINED WITH A REFRACTOMETER, AND TEMPERATURES WERE RECORDED USING THERMOMETER READINGS. DATA WAS COMPARED TO SEE IF FERMENTATION RATES DIFFERED COMPARED TO CONTROL. PAPER CHROMATOGRAPHY WAS USED TO EXAMINE AND COMPARE PROTEINS IN SAMPLES EXPOSED TO LIGHT VERSUS THE CONTROLS. <b>Results</b> THE SUGAR FERMENTED SLIGHTLY FASTER IN THE EXPOSED SAMPLES OF YEAST OVER TIME. HOWEVER, IN THE BEGINNING OF EXPOSURE, THE CONTROLS WERE FERMENTING FASTER. IN THE PAPER CHROMATOGRAPHY TESTS, THERE WAS A VISIBLE DIFFERENCE IN THE PROTEIN PATTERS BETWEEN THE EXPOSED SAMPLES VS THE CONTROL. <b>Conclusions/Discussion</b> EXPOSURE TO UV LIGHT DID AFFECT YEAST FERMENTATION RATES. THE NON-EXPOSED CONTROLS ENDED UP REACHING IYS FINAL FERMENTATION GRAVITY POINT FASTER THAN THE EXPOSED TEST SAMPLES. THE PROTEIN ALTERATION TESTS DID SHOW A DIFFERENCE IN PROTEINS WHEN EXPOSED TO LIGHT. THE RESULTS DID SHOW A DIFFERENCE CAUSED BY LIGHT EXPOSURE, BUT NOT WHAT TYPE OF PROTEIN CHANGE OCCURRED.	
<b>Summary Statement</b> THE EFFECT OF UV LIGHT EXPOSURE ON YEAST FERMENTATION RATES AND YEAST CELL PROTEINS.	
<b>Help Received</b> REVIEW OF PROCEDURES AND RESULTS BY CLINICAL LABORATORY SCIENTIST	