



**CALIFORNIA STATE SCIENCE FAIR
2014 PROJECT SUMMARY**

Name(s) Tiffany Sae Sato	Project Number 34555
Project Title Can Asparagus Decrease the Growth of Saccharomyces cerevisiae?	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals Based on the previous studies, it has shown that cancer cell count or activity is decreased by the increase of compounds which contain sulfur. It is also known that asparagus produces sulfur compounds during digestion. Thus, it is expected that asparagus will have a significant effect on cancer cells and can prevent cancer cells from growing.</p> <p>Methods/Materials Since cancer cells are not readily available, <i>Saccharomyces cerevisiae</i> is used in my experiment, in lieu of cancer cells as <i>S. cerevisiae</i> cells and cancer cells share a typical eukaryotic cell structure. In addition, <i>S. cerevisiae</i> cells are able to reproduce at a fast rate, like cancer cells. In order to observe the change and transformation of <i>S. cerevisiae</i> cells, asparagus liquid medium and asparagus agar plates are prepared. With using liquid medium, the absorbance of <i>S. cerevisiae</i> activity is measured with a spectrophotometer. From the agar plates, the number of viable <i>S. cerevisiae</i> colonies are counted.</p> <p>Results The results from my experiment with the asparagus liquid medium had the lowest absorbance, compared to my negative and positive control. Also, the results with the asparagus agar plates showed a decrease in viable colony counts.</p> <p>Conclusions/Discussion The results prove to be incredibly appealing as they clearly showed a decrease in activity and viable colony counts of <i>S. cerevisiae</i> when asparagus is added to the specimen, which leads to the presumption that asparagus can have the effect of preventing the progression of cancer cells. To further this experiment, proteins that are involved in cell wall formation will be examined. Additionally, it will be studied if asparagus can inhibit the expression of the proteins involved in spindle formation during cell division.</p>	
Summary Statement Asparagus can help the growth of cancer cell activity to decrease.	
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