CALIFORNIA STATE SCIENCE FAIR
2014 PROJECT SUMMARY

Name(s)
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Project Number
S1517

Project Title
Can Asparagus Decrease the Growth of Saccharomyces cerevisiae?

Abstract

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.

Methods/Materials
Since cancer cells are not readily available, Saccharomyces cerevisiae is used in my experiment, in lieu of cancer cells as S. cerevisiae cells and cancer cells share a typical eukaryotic cell structure. In addition, S. cerevisiae cells are able to reproduce at a fast rate, like cancer cells.
In order to observe the change and transformation of S. cerevisiae cells, asparagus liquid medium and asparagus agar plates are prepared. With using liquid medium, the absorbance of S. cerevisiae activity is measured with a spectrophotometer. From the agar plates, the number of viable S. cerevisiae colonies are counted.

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.

Conclusions/Discussion
The results prove to be incredibly appealing as they clearly showed a decrease in activity and viable colony counts of S. cerevisiae 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.

Summary Statement
Asparagus can help the growth of cancer cell activity to decrease.

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