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| **Conclusion**  **This is a zone of inhibition at 1% concentration**  **Conclusion**  After close analysis of the data it is apparent that Grape Seed Extract is a deterrent against bacterial growth, specifically Staphylococcus Epidermidis. Not only do Proanthocyanidins function as an effective antioxidant, but also as an antibiotic. With the ongoing studies about natural supplements it is no surprise that another beneficial attribute can be linked to these bioflavonoids.  The data taken after three days reflects that the growth of staphylococcus Epidermidis is significantly inhibited by the presence of the Proanthocyanidin grape seed extract. The research done does not conclude that grape seed extract kills already formed bacteria, but it certainly exhibits evidence as an antibiotic. According to the data, the higher concentrations of Proanthocyanidins seem increase its longevity as an antibiotic. As the concentrations of the grape seed extract increased, the effectiveness also increased. Over a three day period the rate of a zone shrinkage was far greater with the lower concentrations of GSE (figures 1,2,6). Because we diluted the grape seed extract in distilled water, we used distilled water as our control. The control group showed no zones of inhibition after  It is obvious, from looking at the graphical analysis and tables, that there is a difference in the means of the zones of inhibition. To strengthen this claim we performed a statistical ANOVA test to show that the average zones of inhibition are significantly different. The use of an ANOVA test was also documented in previous studies regarding grape seed extract. According to the test, there is a very low probability that the observed values of the zones of inhibition were reached by chance alone. This means that there is some characteristic, within the grape seed extract, that directly affects that growth of the bacteria. Because an active ingredient in grape seeds is the Proanthocyanidins, it can be concluded that Proanthocyanidins are the acting antibiotic.  The use of a 95% confidence interval also adds statistical validity to our study; refer to figures 3-5. The confidence interval states that in future studies 95% of all the averages will be captured in this range. Because the confidence intervals were fairly small, it adds to the strength of our observations. The small confidence intervals suggest that the individual pieces of data did not stray far from the average zone of inhibition. From this, we can conclude that the zones of inhibition were fairly uniform throughout **all** the samples.  Grape seed proanthocyanidin is an antioxidant that has been known to posses cardio-protective, chemo-protective, and now antibacterial properties. From this study, we can conclude that:  1. Grape seed extract is an agent in preventing the growth of staphylococcus Epidermidis,  2. it is most effective at higher concentrations, and  3. the effects of the antioxidant are short lived.  This study has opened the door for further study into the antibiotic properties of grape seed extract, and the effects of bioflavonoids in general. If continuing studies are done on the beneficial characteristics of fruits and vegetables, inexpensive and bio-available cures may by a valuable consequence.    [[Home](http://docs.google.com/home.html)][[Introduction](http://docs.google.com/introduction.html)][[Hypothesis](http://docs.google.com/hypothesis.html)][[Procedure](http://docs.google.com/procedure.html)][[Data](http://docs.google.com/data.html)][[Conclusions](http://docs.google.com/conclusions.html)][[Bilio/Links](http://docs.google.com/biblio.html)]  [[2001 Projects](http://docs.google.com/index.html)][[2000 Projects](http://docs.google.com/AP2000/index.html)][[1999 Projects](http://docs.google.com/AP99/index.html)][[1998 Projects](http://docs.google.com/AP98/index.html)] |