



**CALIFORNIA STATE SCIENCE FAIR
2012 PROJECT SUMMARY**

Name(s) Opal B. Pandya	Project Number J2015
Project Title Hand Sanitizers: Germbusters? Alcohol-Based vs. Non-alcohol Based	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The purpose of this project is to compare the effectiveness of alcohol-based sanitizers and non-alcohol based sanitizers to kill the bacteria, Staphylococcus epidermidis.</p> <p>Methods/Materials I conducted this experiment in the Memorial Hospital Lab with my designated scientist and supervisor, Mrs. Tracy Langenfeld. The first thing we did was take on colony of Staphylococcus epidermidis bacteria and mix it thoroughly into 3 ml of saline. Then, we placed 0.1ml 0.2ml of each antiseptic into the solution. After allowing the solution to settle for five minutes, we took a 0.01ml calibrated loop and dipped it into the concentration. We made an inoculation in the Petri dish for each of the sanitizers. Once this was done, we put all the dishes into an incubator at 35-37 degrees Celsius for 48 hours.</p> <p>Results My results were that the alcohol-based sanitizers did not work that well against the Staphylococcus epidermidis bacteria. Purell and Rite-Aid had moderate to heavy growth, while Veripur had mild, and Gold Bond had no bacterial growth at all.</p> <p>Conclusions/Discussion My conclusion is that my hypotheses were incorrect. The non-alcohol based sanitizers worked a lot better than the alcohol-based sanitizers to kill the bacteria, Staphylococcus epidermidis. My second hypothesis was also wrong because the Rite-Aid brand sanitizer worked slightly better than Purell.</p>	
Summary Statement Comparing the effectiveness of alcohol-based versus non-alcohol based sanitizers to kill a bacteria.	
Help Received Mrs. Tracy Langenfeld handled the bacteria and inoculating the Petri dishes.	