



**CALIFORNIA STATE SCIENCE FAIR
2010 PROJECT SUMMARY**

Name(s) Monica Bach Le	Project Number J2117
Project Title Examining the Sanitary Rates of Antibacterial Cleaners through the Use of Bacillus subtilis	
Objectives/Goals My objective is to examine which antibacterial cleaner has the highest sanitation rate as measured by exposing the antibacterial cleaners to Bacillus subtilis.	
Abstract Methods/Materials All the needed materials for my experiment is agar plates, a graduated cylinder, pipettes, flasks, a beaker, a glass bent rod, a lighter, a culture dish, a pair of gloves, an agar plate of Bacillus subtilis, Methanol, Formula 409, Windex, Lysol, Distilled water, a cotton swab, a pair of scissors, a Sharpie, and an incubator. The methods for my experiment are to first pour 600 mL of Distilled water into a beaker and then pour 150 mL into four (4) flasks. Second, pour ten (10) mL of the correct chemical into the correct flask. Next, label all the agar plates with the correct trial number and chemical name. After, take a glass pipette to measure the substance and then release the substance onto the center of the agar plate. Then sanitize the glass bent rod with a lighter and then use the rod to spread the liquid evenly on the agar. Last, place all the finished agar plates in the incubator. After 24 hours, take the agar plates out to count the colonies and record the results.	
Results The results of my investigation on which antibacterial cleaner has the highest sanitation rate indicates that Formula 409 was the most sanitary cleaner, and Distilled water was the least sanitary cleaner. In order of most sanitary to least sanitary is Formula 409, Lysol, Windex, then Distilled water. Formula 409: least-0, greatest-23, and average-8.68 Lysol: least-19, greatest-98, and average-60.9 Windex: least-48, greatest-185, and average-87.13 Distilled water: least-53, greatest-294, and average-153.68	
Conclusions/Discussion In conclusion, I successfully found the results of my investigation. I also learned several things along the way of creating this project such as: learning how to spread bacteria on agar plates, sanitation methods, and how to properly grow colonies. Although there are positive aspects of my project, others may ask, how does my project help others? Having the knowledge of which antibacterial cleaner actually works will help families and others to keep their surroundings sanitized. With properly sanitized surroundings, it will help children, adults, and elders to stay away from harmful bacteria and stay healthy.	
Summary Statement I am investigating how sanitary a variety of antibacterial cleaners are by exposing them to Bacillus subtilis.	
Help Received Mother provided transportation to needed destinations and putting the board together; Mr. Whittington taught sanitizing methods.	