Antibacterial Effectiveness of Hand Soaps

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Purpose: To see how effective different types of soaps are against bacteria and to compare Commercial, Natural, and Environmentally Friendly soaps to determine which category of soaps are more effective. Procedure: For Kirby Bauer, I sectioned 3 agar plates into 10 sections for the soaps and 1 for a control for a total of 11 sections. I applied either Staphylococcus epidermidis, Escherichia coli, or Streptococcus salivarius for my chosen bacteria. I sterilized my forceps, placed a sterile disk into a selected product, saturated the disk and applied the saturated disk to my corresponding section of the agar plate. I repeated this with all 10 soaps and my control. I taped my plates and incubated the plates for 24 hours at 37 degrees Celsius in my school's BSL2 lab. Then I took my plates out of the incubator and recorded the size of the inhibition zones and did this process 9 times total with each bacteria. For my human testing, I had 5 participants. I put distilled water on a swab and swabbed the participant's dominant hand and then swabbed the agar plate. I had the participant wash their hands and then swabbed their hand again and then swabbed the agar plate. I taped the plate shut and placed the plate in the incubator for 24 hours at 37 degrees Celsius. Then I removed the plate and counted the colonies present and recorded the results and I repeated for all 10 soaps with all participants. Results: I found out that Commercial soaps work best and Environmentally Friendly soaps worked the worst. Staphylococcus epidermidis has the largest inhibition zones out of the three types of bacteria.