

Investigating Chemical Stress and Antibiotic Sensitivity of *Escherichia coli* and *Staphylococcus epidermidis*

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Previous lab work has investigated the effects of thermal stress and antibiotic sensitivity on bacteria used in microbiology teaching labs concentrating on *Pseudomonas fluorescens*. This investigation, however, focuses on how chemical stress affects the antibiotic sensitivity of two common laboratory strains: *Escherichia coli* and *Staphylococcus epidermidis*. Literature searches revealed that potassium acetate is a common additive in sporulation media. Using the Kirby Bauer procedure – a technique used in clinical labs to characterize antibiotic sensitivity of clinical isolates – we studied how the addition of sodium chloride, potassium chloride, sodium acetate and potassium acetate to growth media affects the sensitivity of *E. coli* and *S. epidermidis*. After measuring zones of inhibition created by the antibiotic disks, we found that sodium and potassium acetate increased the sensitivity of the two bacteria significantly, while sodium and potassium chloride had negligible effects. Further studies will characterize the relationship between acetate and potential antibiotic sensitivity.