Inhibition of Staphylococcus epidermidis: Correlation between Mode of Action and Gram Stain

Ackroyd, Madison (School: Aiken Scholar's Academy)

In this study, the effectiveness of various antibiotics for inhibiting the growth of Staphylococcus epidermidis is tested. This topic of study is significant as staph infections are very dangerous and include many medical implications; finding the most effective antibiotic could be helpful for prescribing an effective antibiotic for the infection. The three antibiotics tested in this study are rifampin, cephalothin, and vancomycin, to which rifampin was significantly the most effective. I hypothesized that the rifampin would work best because of its unique mode of action. My hypothesis was proved correct through an experimental procedure measuring the zones of inhibition. This is significant because rifampin was the only antibiotic tested whose mode of action was not attacking the cell wall. This experiment explores the correlation between gram-positive and gram-negative bacteria and the mode of action of the antibiotics used against them. The findings suggest antibiotics with a mode of action aside from attacking the cell wall will be more effective at inhibiting the bacterial growth of Staphylococcus epidermidis compared to antibiotics whose mode of action is attacking the cell wall.

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