

Report Option Three - Antibiotic Discovery and Microarray Techniques

Paper: Menzel *et al.*, "Mode-of-Action Studies of the Novel Bisquaternary Bisnaphthalamide MT02 against Staphylococcus aureus," in *Antimicrobial Agents and Chemotherapy*, 2011, p. 311-320.

Section One – Basic Testing

- a. Name and briefly describe the antibacterial drug under review, its prior history and "relatives," its structure, and modifications/derivations.
- b. Explain what MIC's and kill curves are, how the experiments were carried out (including controls), and what the data show – including which table and/or figure summarize/s data.

Section Two – Radio-Labeling Experiments

- a. Explain the concept and purpose of the radio-labeling experiment. Which labels were chosen and for what purpose? This experiment employs THREE important "control" antibacterial drugs. Name each, describe their specificity, and explain precisely why they were chosen.
- b. Which table and/or figure is about radio-label-related methods/results and what is the take-home message about the "test" antimicrobial drug being analyzed?

Section Three – Microarray Experiments

- a. Using your textbook, explain what microarrays are and how they work. Relate this information to methods described in this paper.
- b. Which table and/or figure is about microarray-related methods/results and what is the take-home message about the "test" antimicrobial drug being analyzed? Name and describe FIVE known gene products that are affected by the "test" antimicrobial drug being analyzed.