Assignment 5

Session 7: Lab 1

Week 7 - Week 8

Section 7.1: Introduction

While studying the interaction of a number of different bacteria against antibiotic-resistant bacteria, you observed the following:

1. A mixture of two types of bacteria, A and B, each at a concentration of 10^6 cells/mL.
2. The growth rate of bacteria A is twice that of bacteria B.
3. The interaction between bacteria A and B results in a decrease in the growth rate of both types.

You are tasked with determining the optimal concentration of an antibiotic to inhibit the growth of bacteria B. The antibiotic has a growth inhibitory effect on bacteria A at a concentration of 10 micromolar, but it is lethal at a concentration of 50 micromolar.

Question:

What is the optimal concentration of the antibiotic to inhibit the growth of bacteria B? Explain your reasoning.

Section 7.2: Discussion

1. How does the presence of antibiotic-resistant bacteria affect the effectiveness of antibiotics in treating infections?
2. What are the potential side effects of using antibiotics indiscriminately?

Section 7.3: Conclusion

1. Summarize your findings on the interaction between bacteria A and B.
2. Suggest possible strategies to combat antibiotic resistance.

Section 7.4: References

1. Provide a list of at least three references related to the topic of antibiotic resistance and its impact on public health.