

# Example of biology report

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## **Effectiveness and action of different antibiotics on bacterial cells**

### Introduction

Antibiotics are used to kill microorganism or inhibit their ability to multiply (DIANE Publishing Company 73). Different antibiotics kill bacteria and other microorganisms with varied effectiveness. A simple mechanism of determining the effectiveness and action of antibiotics on bacteria is using the zone of inhibition method (DIANE Publishing Company 112). This experiment requires application of an antibiotic chemical to an inoculated plate. The culture in which bacteria are to grow and reproduce is then incubated after which observations are made to identify the zone of inhibition. A clear zone on the plate is an indication that the bacterial cells have been killed or their growth is being inhibited. Different antibiotics have different effects on bacteria. While bacteriostatic inhibits the growth and reproduction of bacteria, bactericidal kills the bacteria (Lorian 150).

### **Procedure**

A disk with a given chemical was placed on a surface with bacteria. The chemical began to evaporate resulting into higher concentration of the chemical near the disk and lower concentration away from the disk. Bacteria were added on to the plate. The bacteria near the disk failed to grow and form colonies but as showed relative growth with gradual distance away from the antibiotic. This revealed the strength of the tested antibiotic to the bacterial cells. The bacterial strains used in this experiment were *Escherichia coli*, *Staphylococcus aureus* against various antibiotics.

## **Results**

The bacterial cells near the antibiotics circular disk died or ceased to grow while those relatively far from the antibiotics reproduced in varied proportions. The zone of inhibition of Escherichia coli was 8mm, 8mm and 8mm while that of Staphylococcus aureus was 29mm, 28mm and 27mm.

## **Discussion**

The experiment revealed the concentration to which the antibiotics should be administered on the bacteria to effectively kill the bacteria. The different bacterial strains revealed different reactions to the antibiotic revealing that some bacterial cells are more resistant to antibiotics than others. In this case the antibiotic was more effective on the bacteria Staphylococcus aureus.

## **Works cited**

DIANE Publishing Company. Impacts of Antibiotic-Resistant Bacteria. New York: DIANE

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