

1. **Introduction**  
 The purpose of this study is to investigate the effects of various factors on the growth of *Escherichia coli* bacteria. The study was conducted over a period of 24 hours, with data collected at 6-hour intervals. The results show that the growth rate of *E. coli* is significantly affected by the concentration of nutrients and the presence of antibiotics.

2. **Materials and Methods**  
 The experiment was carried out using a series of test tubes containing a nutrient broth. The concentration of nutrients was varied, and the growth of *E. coli* was monitored using a spectrophotometer. The results were then compared to a control group.

3. **Results**  
 The results of the experiment show that the growth rate of *E. coli* is highest in the presence of high concentrations of nutrients. The growth rate is significantly lower in the presence of antibiotics, and this effect is more pronounced at lower concentrations of nutrients.

4. **Conclusion**  
 The study concludes that the growth of *E. coli* is highly dependent on the concentration of nutrients and the presence of antibiotics. The results suggest that the use of antibiotics in the presence of high concentrations of nutrients may be more effective in inhibiting bacterial growth.

| Concentration of Nutrients | Growth Rate (OD <sub>600</sub> ) | Effect of Antibiotics  |
|----------------------------|----------------------------------|------------------------|
| High                       | 1.2                              | Significant inhibition |
| Medium                     | 0.8                              | Significant inhibition |
| Low                        | 0.4                              | Significant inhibition |
| Control                    | 0.1                              | No inhibition          |

## 1. Introduction



| Step | Description |
|------|-------------|
| 1    | Start       |
| 2    | Process     |
| 3    | End         |