

**ANTIOXIDANT AND ANTIBACTERIAL PROPERTIES
OF ALOE VERA EXTRACT AGAINST *E. coli* AND *S.
aureus* BACTERIA**

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This Final Year Project Report entitled “Antioxidant and Antibacterial Properties of Aloe Vera Extract Against *E. Coli* and *S. Aureus*” was submitted by Siti Hawarul Ain binti Kamarudin in partial fulfilment of the requirements for the Degree of Bachelor of Science (Hons.) Biology, in the Faculty of Applied Sciences and was approved by

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ABSTRACT

AN ANTIOXIDANT AND ANTIBACTERIAL PROPERTIES OF ALOE VERA EXTRACT AGAINST *E. COLI* AND *S. AUREUS* BACTERIA

Pathogenic bacterial can give a rise to many affections' disease and these microorganisms' property of being able to develop drug resistance may cause serious global threat to the welfare of people, animals, and the environment Aloe vera has been used as alternative to develop new antibiotics to to treat and cure a number of bacterial infections. Aloe vera also contains a compound that has an antioxidant and antibacterial effect against *Staphylococcus aureus* and *Escherichia coli*. An experiment has been conducted to determine the antibacterial activity of an ethanolic and methanolic extract of Aloe vera in five different concentrations, which are 5%, 25%, 50%, 80% and 100% by using disc diffusion assays. While antioxidant activity of the ethanolic and methanolic aloe vera extract is determine by using DPPH methods. The results show that the ethanolic extract of aloe vera can inhibit the growth of the gram-positive bacteria *S. aureus* at all concentrations. However, ethanolic extract can only inhibit the growth of *E. coli* at concentrations 80% and 100%. Methanolic extract shows inhibitory effects on *S. aureus* but limited inhibition zone for *E. coli*. In conclusion, ethanolic and methanolic extracts of aloe vera are have a potential as antibacterial against *S. aureus* but less effect on *E. coli*. Ascorbic acid shows highest antioxidant activity compared to Ethanolic extract and Methanolic extract of Aloe Vera. However, there were only slightly different of the value between both extract and ascorbic acid.

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