INVESTIGATION ON ANTIBACTERIAL AND ANTI-INFLAMMATORY ACTIVITIES OF *Vitex trifolia*

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This Final Year Project Report entitled **"Investigation on Antibacterial and Anti-inflammatory Activities of *Vitex trifolia"*** was submitted by Siti Nasirah Binti Mohd Abd Nasir in partial fulfillment 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

INVESTIGATION ON ANTIBACTERIAL AND ANTI-INFLAMMATORY ACTIVITIES OF (*Vitex trifolia*).

Nowadays, the uses of the same antibiotic or medicine can regulate a resistant of microorganism. In order to encounter these problems, a new research on *Vitex trifolia* or known as "daun lemuni" in Malaysia was made to investigate antibacterial activity of *V. trifolia* leaf extract toward *Bacillus licheniformis* and *Escherichia coli*. Besides, the study also is to evaluate the anti-inflammatory potential and also to identify the phytochemical compound in the *V. trifolia* leaf extract. Maceration extraction method was used to extract the *V. trifolia* leaf using two different concentrations which are 70% and 95% of ethanol. The antibacterial activity was tested by disc diffusion method based on three different concentrations, 50 mg/ml, 25 mg/ml and 12.5 mg/ml of 70% and 95% ethanol *V. trifolia* extract respectively. The results showed that *E. coli* was resistance towards the extract as there was no inhibition zone for all the test while *B. licheniformis* are resistant (8 mm and less) and intermediate (14-15 mm) towards the *V. trifolia* leaf extract. Meanwhile, anti-inflammatory test was determined by the denaturation of protein using white egg (albumin) and it shows that *V. trifolia* extract do have a slight potential to be as an anti-inflammatory agent as the reading are 8.920%, 12.68%, and 23% for 70% ethanol extract while for 95% ethanol extract it was at 16.9%, 24.41% and 35.21% compare to the standard, diclofenac sodium (26.29%, 33.80% and 44.13%). The positive results for phytochemical test of flavonoid, saponin and tannin might contribute to the antibacterial and anti-inflammatory activities shown by *V. trifolia* leaves. In conclusion, *V. trifolia* was proven that it has a very small potential to be as an antibacterial and anti-inflammatory agent in this study.

TABLE OF CONTENTS