PHYTOCHEMICAL CONSTITUENTS AND ANTIBACTERIAL ACTIVITY OF *CLITORIA TERNATEA* L. FLOWERS EXTRACT

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ABSTRACT

PHYTOCHEMICAL CONSTITUENTS AND ANTIBACTERIAL ACTIVITY OF *CLITORIA TERNATEA* L. FLOWERS EXTRACT

Clitoria ternate L. widely found in Asia, Caribbean and South America which usually experiences tropical zones. Nowadays, these plants were widely used as medical plant for health purpose. The aims of this study are to analyzed the chemical compounds of crude flowers extract by phytochemical screening and to evaluated the antibacterial activity by using disc diffusion method. In this study, *Clitoria ternatea* L. flowers was extracted by using Soxhlet extraction method and ethanol was used as a solvent. From the extraction, the percentage yield of crude extract is 5.14%. The result for phytochemical screening shows that tannins, glycosides and saponin were found in *Clitoria ternate* L. flowers. The extracted crude extract was tested against two types of bacteria which are *B. lichen* and *E. coli* with three different concentrations. The average inhibition zone of *Clitoria ternate* L. flowers extract for 30 ppm, 20 ppm and 10 ppm against B. *lichen* are 13.3 ± 0.6 mm, 10.3 ± 1.5 mm and 8.3 ± 0.6 mm, respectively while for *E. coli* are 10.3 ± 1.5 mm, 8.3 ± 1.5 mm and 8.3 ± 1.2 mm, respectively. Different concentration shows different inhibition zone and 30 ppm shows the highest inhibition zone followed by 20 ppm and 10 ppm of extract**.** All concentrations of flowers extract showed less effective against both bacteria.

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CHAPTER 1

INTRODUCTION

1.1 Background of study

In many regions of the world, *Clitoria ternatea* L. or butterfly pea have widely used in traditional medicine and popular in nation like Taiwan and Thailand and these plants originated from South East Asia (Kumar *et al.,* 2019). Other than butterfly pea, *C. ternatea* flowers also known as blue-pea, cordafan-pea and Darwin-pea in English. *Clitoria ternatea* L. plants are classify under Fabaceae family. Butterfly pea consist of five petals which are one large petal that rounded with two wrinkled and two white keels inside the larger petals. This plant is a creeping type plant and in Malaysia, *Clitoria ternatea* L. usually planted near at home as a accessories flower due to the brighten purple colors of their flowers. There are variety colors of the flowers including blue flower, white with blue tinge flower and white flower. The extract of *Clitoria ternatea* L. flowers have extensive range in pharmacological activities such as anti-inflammatory, anti-diabetic, anti-microbial and as well as antioxidant activities due to the higher content of flavonoid and phenolic compound (Gupta *et al.*, 2010). In addition, according to Kamilla *et al.* (2009), the antibacterial activity of several parts of *C. ternatea* plants including leaf, steam, flower, seed and root against 12 bacterial species shows that the leaf and root extracts were found to have strong antibacterial effects against bacterial tested compare to flowers extract. Besides, *Clitoria ternatea*