

**PHYTOCHEMICAL SCREENING AND ANTIOXIDANT ACTIVITY  
OF *Pogostemon cablin* USING FTC AND TBA METHODS**

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## ABSTRACT

### PHYTOCHEMICAL SCREENING AND ANTIOXIDANT ACTIVITY OF *Pogostemon cablin* USING FTC AND TBA METHODS

Antioxidants play an important role in inhibiting and scavenging radicals, thus providing protection to humans against infections and degenerative disease. Literature shows that the antioxidant activity is high on herbal and vegetable plants. Realizing the fact, this research was carried out to detect the presence of alkaloids, flavonoids, saponins and terpene from the leaves of *Pogostemon cablin* and to evaluate the antioxidant activity in three different solvent polarity extracts (hexane, chloroform, and methanol). The results from Dragendoff's and Meyer's test found that alkaloid present in the sample. Test of flavonoids were positive in chloroform and methanol extracts. Saponins slightly present in methanol extracts. Terpene give negative results in all solvent extraction. The antioxidant activity was measured using FTC and TBA methods and all extracts showed strong antioxidant activity within the range 76% to 84% and 71% to 81% respectively. The result obtained showed that both methods have similar pattern of antioxidant. In conclusion, the antioxidant activities of three different polarity of solvent were higher than vitamin E and vitamin A. This study also suggested that *Pogostemon cablin* have potential as an anticancer agent against certain breast cancer.

## CHAPTER 1

### INTRODUCTION

#### 1.1 Background

Most of natural plant contains of chemical contents. The chemical contents in plant can give advantages and disadvantages to human. Natural product chemistry is the study of natural product including plant and living organism in the world. Natural product researcher examine active compound in plant and herbs through isolation and using certain technique.

Recently, *Pogostemon cablin* has been investigated by researchers due to their specialty as raw material for the perfume and cosmetics industries as well as being used as a natural additive for food flavoring. In Malaysia it is known as 'nilam'. *Pogostemon cablin* belongs to the family of *Lamiaceae*. It has characteristic of pleasant and long lasting woody fragrance. It is suitable for use in soaps, textile, and cosmetic product. In Chinese medicine it is use to treat headaches, cold, diarrhea and abdominal pain (Donelian *et al.*, 2009).

Most of plants have antioxidant properties. Antioxidants work by donating an electron to free radicals to convert them to harmless molecules before they do