

**TOTAL PHENOLIC CONTENT AND RADICAL SCAVENGING  
ACTIVITY FROM THE LEAVES OF *Pogostemon cablin***

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## ABSTRACT

### TOTAL PHENOLIC CONTENT AND RADICAL SCAVENGING ACTIVITY FROM THE LEAVES OF *Pogostemon cablin*

*Pogostemon cablin* belongs to Lamiaceae family. It is widely distributed in Malaysia, China, India and Brazil. *Pogostemon cablin* is also known as patchouli. The main objectives of this research were to screen the presence Alkaloids, Flavanoids, Saponins and Terpenes and also to determine Total Phenolic Content (TPC) and radical scavenging activity from the leaves of *Pogostemon cablin* extract. The solvent used for the extraction were methanol, chloroform and hexane. From this study it was found that the leaves of *Pogostemon cablin* contain alkaloids, flavanoids and saponins and the major compound presence was alkaloids. Standard calibration curve of gallic acid was used in order to determine the total phenolic content. There is a linear correlation between concentration and absorbance of gallic acid. As the concentration of the gallic acid increases, the absorbance also increases. In TPC method, result shows that hexane extracts have the highest amount of phenolic content followed by methanol extract. While, chloroform extracts have the least amount of phenolic content. Antioxidant activity of the extract was determined by using DPPH radical scavenging method. Methanol extract shows the highest % scavenging activity while chloroform extract was the least scavenging activity. As the conclusion, hexane and methanol have the highest phenolic content and scavenging activity respectively.

## CHAPTER 1

### INTRODUCTION

#### 1.1 Background

*Pogostemon cablin* belongs to Lamiaceae family. It is widely distributed in Malaysia, China, India and Brazil. *Pogostemon cablin* is also known as patchouli. This plant is widely appreciated for its characteristic pleasant and long lasting woody, earthy and camphoraceous odor, as well as for its diaphoretic properties, being suitable for use in soaps and cosmetic products (Donelian *et al.*, 2009). The plant has been used as Chinese herbal medicine to remove dampness, relieve summer heat, exterior syndrome, stop vomiting and stimulate the appetite (Hu *et al.*, 2006).

This plant is cultivated extensively in Indonesia, Malaysia, China, India and Brazil for its essential oil (patchouli oil), which is important to the perfumery industry. A number of investigations have been carried out on the composition of the essential oil of *Pogostemon cablin* and the presences of some sesquiterpenoids have been reported. Sesquiterpenoids frequently occur as components of plant