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THE DETECTION OF PYROGALLOL IN DIFFERENT TYPES OF TEA

NOR IDHA LIANA BINTI ISHAK

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ABSTRACT

Next to water, tea has become one of the most consumed beverages in the world. Many researches performed the antioxidant tests of the tea extract. Mainly, phenolics compound in the tea are responsible towards all the health benefits. The major phenolicsin the tea are catechins. These compounds were targeted by the researchers as they are predominant in tea. The role of antioxidant activities are basically played by this compound. However, its quantity decreases along with the fermentation process. This research will evaluate the amount of pyrogallol (the moiety in catechins) that present in different types of tea. Pyrogallol showed to have the highest antioxidant and antitumor properties in previous studies. The methods involved were Thin Layer Chromatography (TLC) and chemiluminescence assay. Therefore, qualitative observation was applied, instead of quantitative measurement. From the results, pyrogallol could be detected using TLC in Twinning Lotus Green Tea. In addition, chemiluminescence reaction showed very weak luminescence intensity of red color solution in green tea.

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1.0 INTRODUCTION

1.1 History of Tea

Tea has become one of the consumed beverages after water. It was widely cultivated in the Southeast Asia(Y.-L. Lin, Juan, Chen, Liang, & Lin, 1996; Wu, Xu, Héritier& Andlauer, 2012). People have been drinking tea because of its advantages towards health as well as its unique taste and aroma (Zhang *et al.*, 2013). The 'tea' word itself brings several meaning such as a plant, a drink, a meal service, an agricultural good, an art or a dedicated pastime(Joliffe, 2003).

In this context, tea is referred as herb that is consumed in the form of tea by infusion. The infusion can be made by extraction of the plant parts such as leaves, seeds, fruits, flowers and roots. The extraction can be prepared either by brewing into hot or cold water (Aoshima, Hirata, & Ayabe, 2007; Oh, Jo, Cho, Kim,& Han, 2013). There are many types of plants that can be considered as tea that came from different species or family. For example common tea that people usually consume came from family Theaceae (*Camellia sinensis*). Other types of tea from different species and family that have been consumed are stated in **Table 1.1**.

Table 1.1: Different types of tea from different species and family (United States Department of Agriculture, 2013).

Tea	Family	Species
Common tea	Theaceae	*Camellia sinensis*
Lemongrass	Poaceae	*Cymbopogoncitratus*
Chamomile	Asteraceae	*Matricariaretutica* *Chamaemelumnobile*
Screwpine (Pandan leaves)	Pandanaceae	*Pandanusamaryllifolius*