EXTRACTION OF ACTIVE COMPONENTFROM ROSELLE'S LEAVES BY SUPERCRITICAL FLUID EXTRACTION AND EVALUATION OF ITS ANTIOXIDANT PROPERTIES

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AUTHOR'S DECLARATION

I declare that the work in the thesis was carried out in accordance with the regulation of Universiti Teknologi MARA. It is original and is the results of my own, unless otherwise indicated or acknowledge as reference work.

I, hereby acknowledge that I have been supplied with the Academic Rules and Regulations, Universiti Teknologi MARA, regulating the conduct of my study and research.

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ABSTRACT

This study is focus on the extraction of active component from roselle's leaves by supercritical fluid extraction (SFE) and evaluation of its antioxidant. The objectives of this experiment are to determine the effect of temperature and sample particle size on extraction yield of roselle's leaves by using SFE and to study the effect of extraction using SFE on antioxidant properties of roselle's leaves. Roselle or *Hibiscus sabdariffa Linn*, which is belong to Malvaceae family has valuable phytochemical constituent. There have been a lot of studies that has been focused on Roselle; however the full ability of the roselle's leaves remains unclear especially on the antioxidant properties. Some of active component such as hibiscine, sabdaretine, rutin, and chlorogenic acid, are the major contribution of roselle antioxidant properties. Therefore, the effect of operating temperature of SFE and sample particle size using co ethanol as co-solvent on yield and antioxidant properties are investigated. The extraction experiment were carried out under different conditions of temperature (40˚C - 80˚C) and sample particle size (125µm -1000µm) at constant pressure 200 bars, and at flow rate 6 g/min. The results show that, SFE operation temperature at 60˚C and sample particle size of 250µm gave the optimum yield of extraction (4.27%) and antioxidant activity (71.27%). As a conclusion, increasing the temperature up to 60˚C will increase the yield of extraction and antioxidant properties. Meanwhile, increasing the sample particle size will decrease the yield of extraction and antioxidant properties.