PHYTOCHEMICAL STUDY OF CHEMICAL CONSTITUENTS FROM *QUASSIA INDICA*

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By

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2005

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PENGAKUAN DAN PENGESAHAN LAPORAN PROJEK PENYELIDIKAN I DAN II

Adalah ini diakui dan disahkan bahawa laporan penyelidik bertajuk:
Phytochemical Study of Chemical Constituents from *Quassia indica*
oleh **Zalilawati Mat Rashid** No. Matrik **UK6379** telah diperiksa dan semua pembetulan yang disarankan telah dilakukan. Laporan ini telah dikemukakan kepada Jabatan Sains Kimia sebagai memenuhi sebahagian daripada keperluan memperolehi Ijazah **Sm. Sn (Sains Kimia)** Fakulti Sains dan Teknologi, Kolej Universiti Sains Dan Teknologi Malaysia.

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ASEAN	-	Association of South East Asia Nation
CEOC	-	Crude Extract of Chloroform
CEOM	-	Crude Extract of Methanol
UV-VIS	-	Ultra Violet and Visible
IR	-	Infrared
GC-MS	-	Gas Chromatography-Mass Spectrometry
GC-FID	-	Gas Chromatography-'Flame Ionization Detector'
TLC	-	Thin Layer Chromatography
M	-	Molar
MeOH	-	Methanol
µL	-	Microliter
cm^{-1}	-	Per Centimeter
ml	-	Mililiter
mm	-	Milimeter
mg	-	Miligram
g	-	Gram
kg	-	Kilogram
ml	-	Mililiter

ABSTRACT

Quassia Indica is from Simaroubaceae family. The purpose of this study is to isolate and determine the chemical constituents from *Quassia indica.* Petroleum ether, chloroform and methanol were used in extraction processes. However, only chloroform extract was isolated and further purified. The preliminary tests, which were alkaloid test and cardiac glycoside test that performed to CEOC showed positive results. In this study, thin layer chromatography (TLC) and column chromatography (CC) were used for isolation and purification of CEOC. According to the chromatograms of GC-FID, two fractions were successfully purified and labeled as C3CE 3 and C3CE 25. The fractionates were characterized and identified using spectroscopic methods, which were Ultra Violet-Visible (UV-Vis) Spectroscopy, Infrared (IR) Spectroscopy and Gas Chromatography-Mass Spectrometry (GC-MS). The suggested compound for C3CE 3 and C3CE 25 were benzoic acid derivative and phenolic derivative compound respectively.

ABSTRAK

Quassia Indica adalah daripada famili Simaroubaceae. Tujuan kajian ini dilakukan adalah untuk mengasingkan dan menentukan komposisi kimia dalam *Quassia indica*. Petroleum ether, kloroform dan metanol telah digunakan dalam proses pengekstrakan. Walaubagaimanapun, hanya kloroform ekstrak telah digunakan dalam proses pemisahan dan seterusnya ditulenkan. Ujian awal yang telah dilakukan iaitu ujian alkaloid dan ujian glikosida kardiak terhadap ekstrak kasar menunjukkan keputusan positif. Dalam kajian ini, teknik kromatografi lapisan nipis (KLN) dan kromatografi turus diaplikasikan untuk proses pengasingan dan penulenan ekstrak kasar. Berpandukan kromatogram GC-FID, dua fraksi telah berjaya ditulenkan dan dilabel sebagai C3CE 3 dan C3CE 25. Fraksi-fraksi tersebut dianalisis dan dicirikan dengan menggunakan kaedah spektoskopik iaitu spektroskopi ultra-lembayung (UL), Spektroskopi Infra Merah dan Spektrometri Jisim-Kromatografi Gas. Komponen C3CE 3 dan C3CE 25 yang dicadangkan masing-masing adalah komponen terbitan asid benzoik dan komponen terbitan fenol.