

การศึกษาทางพุทธเคมีของเปลือกต้นมะพูด

นางสาว วิไลณี จันทร์มหเสถียร



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PHYTOCHEMICAL STUDY
OF
***GARCINIA DULCIS* (ROXB.) KURZ BARK**

Miss Wisinee Chanmahasathien

**A Thesis Submitted in Partial Fulfillment of the Requirements
for the Degree of Master of Science in Pharmacy**

Department of Pharmacognosy

Graduate School

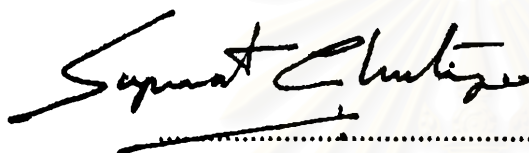
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By **Miss Wisinee Chanmahasathien**
Department **Pharmacognosy**
Thesis Advisor **Assistant Professor Kittisak Likhitwitayawuid, Ph.D.**
Thesis Co-Advisor **Associate Professor Nijsiri Ruangrunsi, Ph.D.**

Accepted by the Graduate School, Chulalongkorn University in Partial
Fulfilment of the Requirements for the Master's Degree.



.....Acting Dean of Graduate School
(Professor Supawat Chutivongse, M.D.)

Thesis committee



.....Chairman
(Associate Professor Chairyo Chaichantipyuth, M.Sc. in Pharm.)



.....Thesis Advisor
(Assistant Professor Kittisak Likhitwitayawuid, Ph.D.)



.....Thesis Co-Advisor
(Associate Professor Nijsiri Ruangrunsi, Ph.D.)

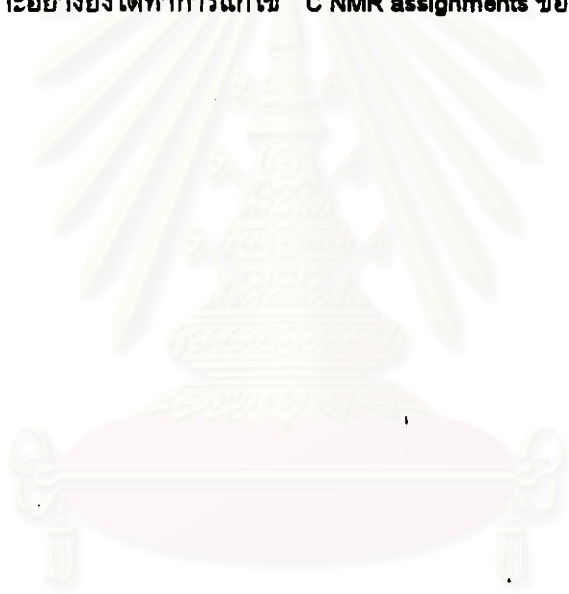


.....Member
(Associate Professor Sumphan Wongseripipatana, Ph.D.)

พิมพ์ต้นฉบับบทความวิจัยวิทยานิพนธ์ภายในกรอบสี่เหลี่ยมนี้เพียงแผ่นเดียว

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การศึกษาทางพฤกษเคมีของเปลือกต้นมะพูด โดยใช้วิธีการทางโครมาโตกราฟี สามารถแยกองค์ประกอบทางเคมีจากสิ่งสกัดในชั้นคลอโรฟอร์มได้เป็นสารกลุ่มแซนโธน 5 ชนิด คือ 1,7-dihydroxyxanthone, 12b-hydroxy-des-o-garcigerrin A, 1-O-methylsymphoxanthone, symphoxanthone และ garciniaxanthone E, สารกลุ่มไตรเทอร์ปีนอยด์ 1 ชนิด คือ oleanolic acid, และสารผสมกลุ่มสเตอรอยด์ คือ β -sitosterol และ stigmasterol การพิสูจน์เอกลักษณ์ทางกายภาพ และหาสูตรโครงสร้างทางเคมีของสารทั้งหมดนี้ทำโดยวิเคราะห์ข้อมูลจากสเปกตรัมของ UV, IR, MS และ NMR ร่วมกับการเปรียบเทียบข้อมูลของสารที่ทราบสูตรโครงสร้างทางเคมีแล้ว นอกจากนี้ยังได้ศึกษาคุณสมบัติทาง NMR ของคาร์บอนทุกอะตอมในสารกลุ่มแซนโธนที่แยกได้ทุกชนิด โดยเฉพาะอย่างยิ่งได้ทำการแก้ไข ^{13}C NMR assignments ของ 1-O-methylsymphoxanthone



สถาบันวิทยบริการ
จุฬาลงกรณ์มหาวิทยาลัย

ภาควิชา เกษัตริย์
สาขาวิชา เกษัตริย์
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WISINEE CHANMAHASATHIEN : PHYTOCHEMICAL STUDY OF GARCINIA DULCIS
(ROXB.) KURZ BARK. THESIS ADVISOR : ASSISTANT PROFESSOR KITTISAK
LIKHITWITAYAWUID, Ph.D., THESIS CO-ADVISOR : ASSOCIATE PROFESSOR
NIJSIRI RUANGRUNGSI, Ph.D. 259 pp. ISBN 974-635-183-4

From the bark of *Garcinia dulcis* (Roxb.) Kurz (Guttiferae), five xanthenes, namely 1,7-dihydroxyxanthone, 12b-hydroxy-des-D-garcigerrin A, 1-O-methylsymphoxanthone, symphoxanthone and garciniaxanthone E were isolated along with the triterpenoid oleanolic acid. In addition, the presence of β -sitosterol and stigmasterol was detected. The structure identifications of all the isolates were achieved by analysis of the UV, IR, MS and NMR data. The unequivocal ^{13}C NMR assignments of all the xanthenes, including the revision of the ^{13}C NMR assignments of 1-O-methylsymphoxanthone, were reported.



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ลายมือชื่อนิสิต..... วิสิณี ฉันทภวนนธ์ธีร

ลายมือชื่ออาจารย์ที่ปรึกษา..... Kittisak Likhitw...

ลายมือชื่ออาจารย์ที่ปรึกษาร่วม..... Nij Siri Ruangrun...



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ABBREVIATIONS

br	= Broad (for NMR spectra)
°C	= Degree Celsius
CDCl ₃	= Deuterated chloroform
CHCl ₃	= Chloroform
cm	= Centimeter
¹³ C NMR	= Carbon-13 nuclear magnetic resonance
COSY	= Correlation spectroscopy
1-D	= One dimensional
2-D	= Two dimensional
d	= doublet (for NMR spectra)
dd	= doublet of doublets (for NMR spectra)
DEPT	= Distortionless Enhancement by Polarization Transfer
DMSO- <i>d</i> ₆	= Deuterated dimethylsulfoxide
δ	= Chemical shift
EIMS	= Electron Impact Mass Spectrum
g	= Gram
¹ H NMR	= Proton nuclear magnetic resonance
HMBC	= ¹ H-detected Heteronuclear Multiple Bond Coherence
HMQC	= ¹ H-detected Heteronuclear Multiple Quantum Coherence
Hz	= Hertz
IR	= Infrared spectrum
<i>J</i>	= Coupling constant
kg	= Kilogram
L	= Liter
λ _{max}	= Wavelength at maxima absorption
M ⁺	= Molecular ion
m	= multiplet (for NMR spectra)

MeOH	= Methanol
mg	= Milligram
MHz	= MegaHertz
min	= minute
ml	= Milliter
mm	= Millimeter
m/z	= Mass to charge ratio
MS	= Mass spectrometry
No.	= Number
nm	= Nanometer
NMR	= Nuclear magnetic resonance
NOE	= Nuclear Overhauser Effect
NOESY	= Nuclear Overhauser Effect Correlation Spectroscopy
ppm	= part per million
ν_{\max}	= Wave number at maxima absorption
s	= Singlet (for NMR spectra)
t	= Triplet (for NMR spectra)
td	= Triplet of doublet (for NMR spectra)
TLC	= Thin layer chromatography
UV	= Ultraviolet

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