

อินโดลแอลคาลอยด์จากใบมะลิไล่ไก่ดอกเหลือง



นายสนั่น บุญพิทักษ์

วิทยานิพนธ์นี้เป็นส่วนหนึ่งของการศึกษาตามหลักสูตรปริญญา วิทยาศาสตรมหาบัณฑิต

ภาควิชาเภสัชเวท

บัณฑิตวิทยาลัย จุฬาลงกรณ์มหาวิทยาลัย

พ.ศ. ๒๕๓๐

ISBN 974-567-462-1

ลิขสิทธิ์ของบัณฑิตวิทยาลัย จุฬาลงกรณ์มหาวิทยาลัย

012434

i 1026177

INDOLE ALKALOIDS FROM THE LEAVES OF *GELSEMIUM ELEGANS* BENTH.

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

Department of Pharmacognosy

Graduate School

Chulalongkorn University

1987

ISBN 974-567-462-1

Thesis Title INDOLE ALKALOIDS FROM THE LEAVES OF *GELSEMIUM*
 ELEGANS BENTH.

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หัวข้อวิทยานิพนธ์ อินโดลแอลคาลอยด์จากโบมะลิไล่ไก่ดอกเหลือง
ชื่อนิสิต นายสนั่น บุญพิทักษ์
อาจารย์ที่ปรึกษา รองศาสตราจารย์ ดร. ธาวดี ผ่องลักษณ์
รองศาสตราจารย์สัมพันธ์ วงศ์เสรีพัฒนา
ภาควิชา เกษัชเวช
ปีการศึกษา ๒๕๒๔



บทคัดย่อ

สามารถแยกแอลคาลอยด์ ๕ ชนิด จากโบมะลิไล่ไก่ดอกเหลือง คือ 16-*epi*-voacarpine, 19-oxogelsenicine, 19-(*Z*)-akuammidine, gelsemine และ koumine ได้ศึกษาคุณสมบัติทางกายภาพและทางเคมีของแอลคาลอยด์ที่แยกได้พร้อมทั้งบรรยายการกำหนดโครงสร้างเคมีของ 16-*epi*-voacarpine, 19-oxogelsenicine, และ 19-(*Z*)-akuammidine ซึ่งเป็นแอลคาลอยด์ใหม่ทั้ง ๓ ชนิด ที่ยังไม่เคยมีรายงานมาก่อน ทั้งในธรรมชาติ และโดยการสังเคราะห์



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Academic Year 1986

ABSTRACT

Five alkaloids, 16-epi-voacarpine, 19-oxogelsenicine, 19-(Z)-akuammidine, gelsemine and koumine were isolated from the leaves of *Gelsemium elegans* Benth.. 16-Epi-voacarpine, 19-oxogelsenicine and 19-(Z)-akuammidine have not previously been reported elsewhere neither naturally nor synthetically. The physical and chemical properties of these alkaloids were studied, and detailed discussions on the elucidations of chemical structures are included.



ACKNOWLEDGEMENTS

The author wishes to express his sincere gratitude to the followings :-

Associate Professor Dr. Dhavadee Ponglux of the Department of Pharmacognosy, Faculty of Pharmaceutical Sciences, Chulalongkorn University, for her supervision of the research, ideas, keen interest, kindness, continual encouragement and understanding during the course of practical work and presentation of the thesis.

Associate Professor Sumphan Wongseripipatana of the Department of Pharmacognosy, Faculty of Pharmaceutical Sciences, Chulalongkorn University, for his encouragement, helpful guidance, kindness, keen interest and suggestions throughout the course of this work; also for the gift of authentic alkaloids.

Professor Shin-ichiro Sakai, Department of Pharmaceutical Chemistry, Faculty of Pharmaceutical Sciences, Chiba University, Chiba, Japan, for his kindness in determining the ultraviolet, infrared, ^1H and ^{13}C nuclear magnetic resonance and mass spectra, and also for his invaluable discussion on the characterization and identification of the isolated alkaloids.

Associate Professor Kalaya Pharadai, Head of the Department of Pharmacognosy, Faculty of Pharmaceutical Science, Chulalongkorn University, for her helps and kindness to accept him to study in the Department of Pharmacognosy.

Professor Dr. Vichiara A. Jirawongse, the former Head of the Department of Pharmacognosy and the former Dean of the Faculty of Pharmaceutical Sciences, Chulalongkorn University, for his kindness and valuable suggestions.

Professor Dr. Tem Smitinand, the former Deputy Director-General Royal Forest Department, Ministry of Agriculture and Cooperative, Thailand, and Mr. Nipon Sornakorn, Head of Phuu-Luang National Park, Loei, for their kindness in identification and collection of plant material.

Associate Professor Dr. Narong Supavita and Associate Professor Tanomjit Supavita, Head and staff of the Department of Pharmacognocny and Pharmaceutical Botany, respectively, Faculty of Pharmacy, Prince of Songkla University, Songkla, for their kindnesses, understanding and helps.

All staff members of the Department of Pharmacognosy and of the Department of Pharmaceutical Botany, Faculty of Pharmaceutical Sciences, Chulalongkorn University, for their kindnesses and helps.

Finally, the author's grateful thanks are due to Chulalongkorn University Graduate School for granting him partial financial support (of ten thousand and five hundred baht) to conduct this investigation.



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ABBREVIATIONS

AcOH	=	acetic acid
Ac ₂ O	=	acetic anhydride
br	=	broad
t-BuOCl	=	<i>tertiary</i> -butoxyl chloride
°C	=	degree Celsius
m-Cl-PBA	=	<i>meta</i> -chloroperbenzoic acid
¹³ C-NMR	=	carbon-13 nuclear magnetic resonance
cm	=	centimeter
d	=	doublet
DMSO	=	dimethylsulfoxide
DPNH	=	diphosphopyridine nucleotide-reduced
EIMS	=	electron impact mass spectrometry
EtOH	=	ethanol
g	=	gram
Glu	=	glucose
h	=	hour
¹ H-NMR	=	proton nuclear magnetic resonance
hRf	=	$\frac{\text{distance of spot centre from start point} \times 100}{\text{distance of solvent front from start point}}$
IR	=	infrared
kg	=	kilogram
L	=	liter
LAH	=	lithium aluminium hydride
m	=	multiplet

M	=	molarity
M ⁺	=	molecular ion
m/e	=	mass to charge ratio
MeOH	=	methanol
mg	=	milligram
MHz	=	mega hertz
min	=	minute
ml	=	milliliter
mm	=	millimeter
m.p.	=	melting point
NADH	=	nicotinamide adenine dinucleotide-reduced
nm	=	nanometer
Oxid.	=	oxidation
Pb(OAc) ₄	=	lead tetraacetate
ppm	=	parts per million
Py	=	pyridine
q	=	quartet
r.t.	=	room temperature
s	=	singlet
t	=	triplet
THF	=	tetrahydrofuran
TLC	=	thin layer chromatogram
TPNH	=	triphosphopyridine nucleotide-reduced
p-TsOH	=	<i>para</i> -toluenesulfonic acid
wt	=	weight
v	=	volume



CHEMICAL FORMULAE

CDCl_3	=	deuterated chloroform
CD_3OD	=	deuterated methanol
CH_3COCl	=	acetyl chloride
CrO_3	=	chromic acid
HBr	=	hydrobromic acid
HCOOH	=	formic acid
H_2O	=	water
H_2O_2	=	hydrogen peroxide
H_2SO_4	=	sulfuric acid
KOH	=	potassium hydroxide
LiAlH_4	=	lithium aluminium hydride
NaBH_4	=	sodium borohydride
Na_2CO_3	=	sodium carbonate
NaHSO_3	=	sodium bisulfite
Pd°	=	palladium
Se	=	selenium
SeO_2	=	selenium dioxide
Zn	=	zinc