อินโดลแอลคาลอยด์จากใบมะลิไส้ไก่ดอกเหลือง

นายสนั่น บุญพิทักษ์

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

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หัวข้อวิทยานิพนธ์ อินโดลแอลคาลอยด์จากใบมะลิไส้ไก่ดอกเหลือง

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ปีการศึกษา ๒๕๒๙

บทคัดย่อ

สามารถแยกแอลคาลอยด์ ๕ ชนิด จากใบมะลิไส้ไก่ดอกเหลือง 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

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

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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.

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ABBREVIATIONS

AcOH	=	acetic acid
Ac_2O	=	acetic anhydride
br	=	broad
t-BuOCl	=	*tertiary*-butoxyl chloride
°C	=	degree Celsius
m-Cl-PBA	=	*meta*-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	=	$\frac{\text{distance of spot centre from start point X 100}}{\text{distance of solvent front from start point}}$
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	=	*para*-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