

องค์ประกอบทางเคมีในรากของต้นเหงือกปลาหมอ
(Acanthus illicifolius (Linn.))



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วิทยานิพนธ์นี้ เป็นส่วนหนึ่งของการศึกษาตามหลักสูตรปริญญาวิทยาศาสตรมหาบัณฑิต

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CHEMICAL CONSTITUENTS IN THE ROOT OF

ACANTHUS ILLICIFOLIUS (LINN.)

Miss Vallapa Chittawong

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บทคัดย่อ

สกัดรากเหงือกปลาหมอที่บดแห้งด้วยตัวทำละลายต่าง ๆ แยกสารได้หลายชนิด การวิเคราะห์สูตรโครงสร้างของสารเหล่านี้ได้ใช้วิธีทางสเปกโตรสโคปี และปฏิกิริยาเคมี ส่วนที่สกัดด้วยปิโตรเลียมอีเทอร์ แยกได้กำมะถัน (S_8), octacosyl alcohol และ Stigmasterol ส่วนที่ละลายในคลอโรฟอร์ม แยกได้สารบริสุทธิ์ 4 สาร คือ benzoxazoline-2-one, Stigmasteryl- β -D-glucopyranoside และสารอีกสองชนิดซึ่งมีจุดหลอมเหลว 114° - 115° และ 146° - 147° ส่วนที่ละลายในน้ำ พบเกลือคลอไรด์ของโลหะโซเดียม, โพแทสเซียม, แมกนีเซียม, แอมโมเนียม และแคลเซียม และพบสารบริสุทธิ์อีกสองชนิด ซึ่งมีจุดหลอมเหลว 170° - 172° และ 250° - 251° แต่มีปริมาณน้อย ปรากฏว่า S_8 , octacosyl alcohol, benzoxazoline-2-one และ Stigmasteryl- β -D-glucopyranoside เป็นสารประกอบที่พบในพืชชนิดนี้เป็นครั้งแรก สำหรับสารที่สามารถสรุปว่ามีคุณค่าทางยาของพืชนี้ คือ S_8 และ benzoxazoline-2-one และโดยเฉพาะ derivative ของตัวหลังนี้มีผู้ทดลองพบว่าแสดงฤทธิ์ต่อต้านมะเร็งได้

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Thesis Title Chemical Constituents in the Root of
 Acanthus illicifolius (Linn.)

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Abstract

The dried powdered roots of A. illicifolius Linn. were extracted with various solvents. Several compounds were isolated and their structural formulars were analyzed by means of spectroscopic and chemical methods. Sulfur (S₈), octacosyl alcohol and stigmasterol were isolated from the petroleum ether extract. Four compounds were isolated from the chloroform soluble fraction, two of which were characterized as benzoxazoline-2-one and stigmasteryl-β-D-glucopyranoside. The other two compounds, m.p. 114°-115° and 146°-147°, were isolated in small quantities which were insufficient for definit identification. The aqueous fraction contained mainly chloride salts of sodium, potassium, manganese, magnesium and calcium together with of two other pure compounds, m.p. 170°-172° and 250°-251°. Octacosyl alcohol, stigmasteryl-β-D-glucopyranoside, S₈ and benzoxazoline-2-one have never been reported to be the constituents of this plant. The last two compounds were claimed to be active in principle of this plants and the derivative of benzoxazoline-2-one was found to be active in antitumor by serveral investigators.

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LIST OF ABBREVIATIONS

A	Acanthus
b	broad
°C	degree Celsius
Cpd.	compound
cm ⁻¹	unit of wave numbers
CHCl ₃	chloroform
d	doublet (NMR)
DMF	dimethyl formamide
EtOH	ethanol
g	gram (s)
GC	gas chromatography
hrs	hours
Hz	Hertz
J	coupling constant
kg	kilogram
l	liter (s)
m	multiplet (NMR)
m/e	mass to charge ratio
mg	milligram (s)
min	minute
ml	milliliters
m.p.	melting point
M ⁺	Molecular ion in mass spectrum
M _D	Molecular rotation
MW.	molecular weight
MeOH	methanol

nm	nanometer
ppm.	part per million
P.E.	petroleum ether
Rf	Rate of flow in chromatography
Rt	Retention time
s	singlet (NMR)
wt	weight