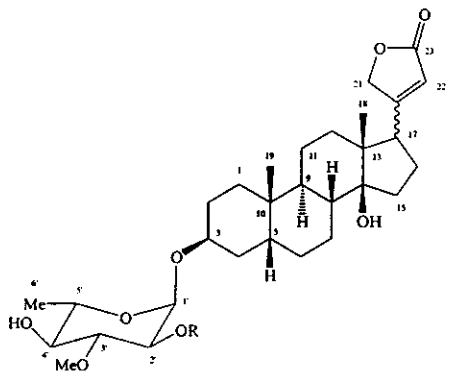
ชื่อวิทยานิพนธ์	องค์ประกอบทางเคมีของตีนเป็ดทะเล
ผู้เขียน	นายสุรัตน์ ละภูเขียว
สาขาวิชา	เคมีอินทรีย์
ปีการศึกษา	2544

บทคัดย่อ

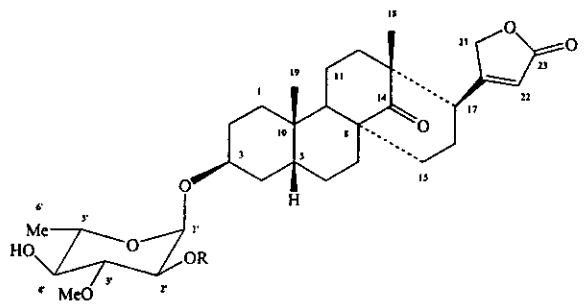
จากส่วนสกัดหยาบของเมล็ดสดของต้นตีนเป็ดทะเลสามารถแยกสารประกอบคาร์ดิโนไลด์ไกลโคไซด์ใหม่ 1 สาร [3β-*O*-(L-2′-*O*-acetyl thevetosyl)-15(8⟶14)-*abeo*-5β-(8R)-14-oxo-card-20(22)-enolide (**SCO5**)] และเป็นสารที่มีการรายงานแล้ว 4 สาร [3β-*O*-(L-thevetosyl)-14β-hydroxy-5β-card-20(22)-enolide (**SCO1**), 3β-*O*-(L-2′-*O*-acetyl thevetosyl) -14β-hydroxy-5β-card-20(22)-enolide (**SCO2**), 3β-*O*-(L-thevetosyl)-14β-hydroxy-5β-17β-card-20(22)-enolide (**SCO3**), 3β-*O*-(L-thevetosyl)-15(8⟶14)-*abeo*-5β-(8R)-14-oxo-card-20(22)-enolide (**SCO4**)] จากน้ำยางสดสามารถแยกสารที่มีการรายงานแล้ว 7 สาร เป็นสารประกอบไตรเทอร์พีน 5 สาร [Urs-12-ene-3β-acetate (**LCO1**), Olean-12-ene-3β-acetate (**LCO2**), Lup-20(29)-ene-3β-acetate (**LCO3**), Lanosta-7-24-dien-3β-ol (**LCO4**) และ Ergosta-8,24(28)-dien-3β-ol (**LCO5**)] และเป็นสารประกอบ สเตียรอยด์ 2 สาร [(5, 24(28)-Stigmastadien-3β-ol (**LCO6**) และ 7, 24(28)-Stigmastadien-3β-ol (**LCO7**)] และจากส่วนสกัดหยาบของเปลือกสามารถแยกสารที่มีการรายงานแล้ว 4 สาร คือ Cerbinal (**BCO1**)] 3β-Sitosterol (**BCO2**) 2,6-Simethoxybenzoquinone (**BCO3**) 3,5-Dimethoxy-4-hydroxy benzaldehyde (**BCO4**) โครงสร้างของสารประกอบเหล่านี้วิเคราะห์โดยใช้ข้อมูลทางสเปกโทรสโกปี สำหรับสารประกอบ **SCO1 SCO2 LCO1 LCO2** และ **BCO1** มีข้อมูลทางเอกซ์เรย์ในการพิสูจน์โครงสร้างด้วย



SCO1: R= H: 17α-H; 3β-*O*-(L-thevetosyl)-14β-hydroxy-5β-card-20(22)-enolide

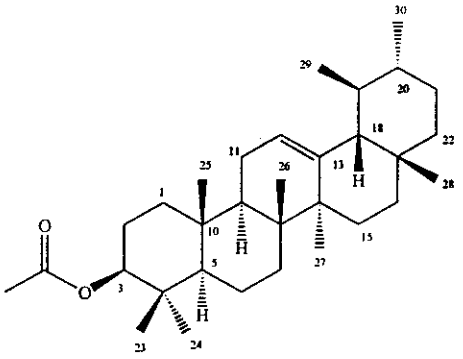
SCO2: R= Ac: 17α-H; 3β-*O*-(L-2$'$-*O*-acetyl thevetosyl)-14β-hydroxy-5β-card-20(22)-enolide

SCO3: R= H: 17β-H; 3β-*O*-(L-thevetosyl)-14β-hydroxy-5β-card-20(22)-enolide

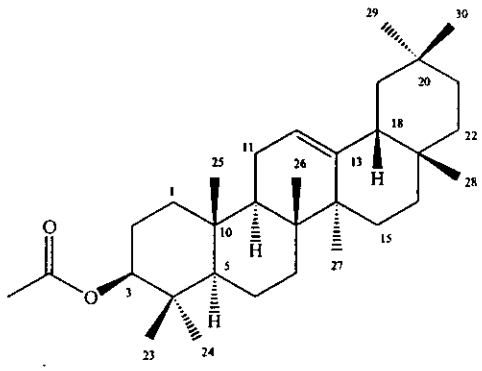


SCO4: R= H; 3β-*O*-(L- thevetosyl)-15(8⟶14)-*abeo*-5β-(8R)-14-oxo-card-20(22)-enolide

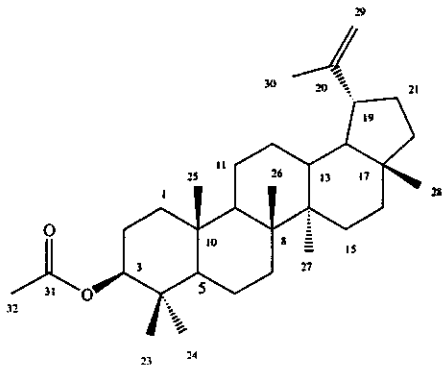
SCO5: R= Ac; 3β-*O*-(L-2$'$-*O*-acetylthevetosyl)-15(8⟶14)-*abeo*-5β-(8R)-14-oxo-card-20(22)-enolide



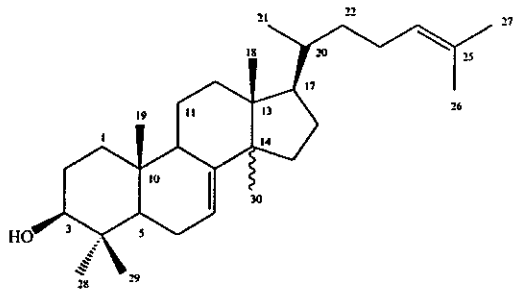
LCO1: Urs-12-ene-3β-acetate



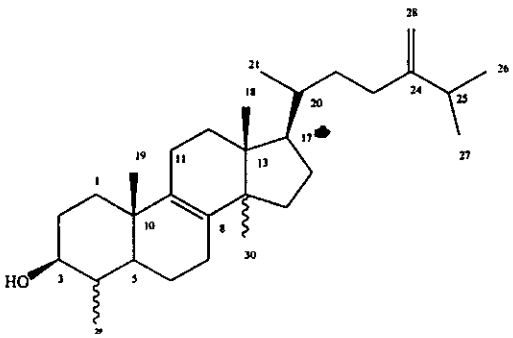
LCO2: Olean-12-ene-3β-acetate



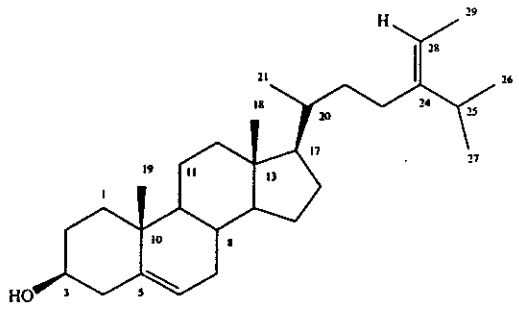
LCO3: Lup-20(29)-ene-3β-acetate



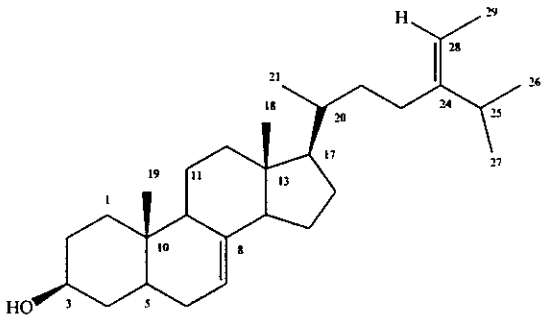
LCO4: Lanosta-7, 24-dien-3β-ol



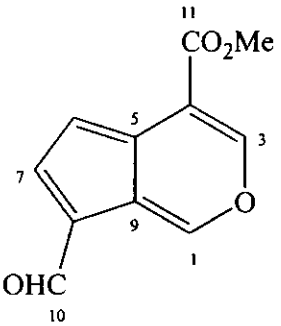
LCO5: Eergosta-8, 24(28)-dien-3β-ol



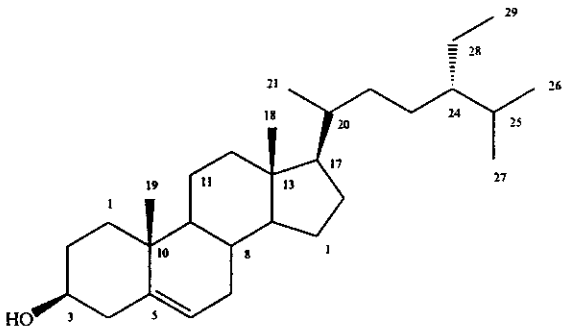
LCO6: 5, 24(28)-Stigmastadien-3β-ol



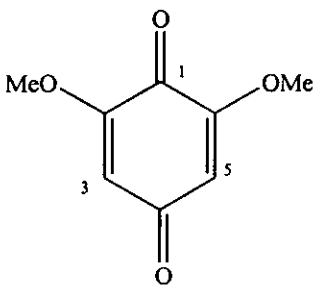
LCO7: 7, 24(28)-Stigmastadien-3β-ol



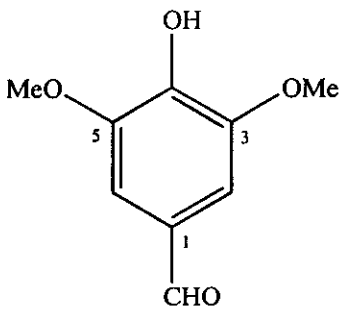
BCO1: Cerbinal



BCO2: β-Sitosterol



BCO3: 2, 6-Dimethoxybenzoquinone

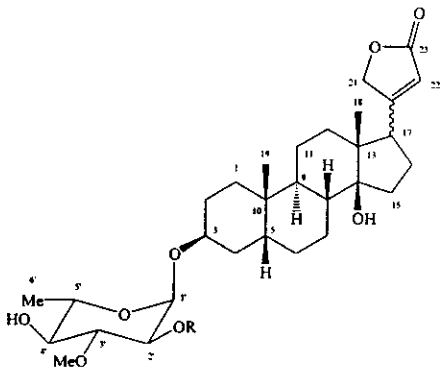


BCO4: 3,5-Dimethoxy-4-hydroxybenzaldehyde

Thesis Title	Chemical Constituents from *Cerbera odollam*
Author	Mr. Surat Laphoohkieo
Major Program	Organic Chemistry
Academic Year	2001

ABSTRACT

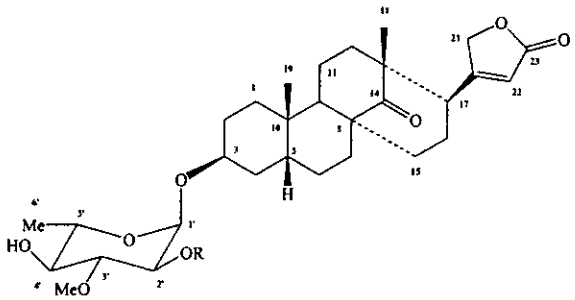
One new cardenolide glycoside [3β-*O*-(L-2$'$-*O*-acetyl thevetosyl)-15(8$\rightarrow$14)-*abeo*-5β-(8R)-14-oxo-card-20(22)-enolide (**SCO5**)] together with four known cardenolide glycosides [3β-*O*-(L-thevetosyl)-14β-hydroxy-5β-card-20(22)-enolide (**SCO1**), 3β-*O*-(L-2$'$-*O*-acetyl thevetosyl)-14β-hydroxy-5β-card-20(22)-enolide (**SCO2**), 3β-*O*-(L-thevetosyl)-14β-hydroxy-5β-17β-card-20(22)-enolide (**SCO3**) and 3β-*O*-(L-thevetosyl)-15(8$\rightarrow$14)-*abeo*-5β-(8R)-14-oxo-card-20(22)-enolide (**SCO4**)] were isolated from the fresh seeds of *Cerbera odollam*. Fresh latex of this plant yielded seven known compounds: five triterpenes [Urs-12-ene-3β-acetate (**LCO1**), Olean-12-ene-3β-acetate (**LCO2**), Lup-20(29)-ene-3β-acetate (**LCO3**), Lanosta-7-24-dien-3β-ol. (**LCO4**) and Ergosta-8,24(28)-dien-3β-ol (**LCO5**)] and two steroids [5,24(28)-Stigmastadien-3β-ol (**LCO6**) and 7,24(28)-Stigmastadiene-3β-ol (**LCO7**)]. Four known compounds were isolated from the barks of *C.odollam*: Cerbinal (**BCO1**), 3β-Sitosterol (**BCO2**), 2,6-Dimethoxybenzoquinone (**BCO3**) and 3, 5-dimethoxy-4-hydroxybenzaldehyde (**BCO4**). Their structures were elucidated by spectroscopic methods. In addition, the structures of **SCO1**, **SCO2**, **LCO1**, **LCO2** and **BCO1** were confirmed by X-ray diffraction.



SCO1: R= H: 17α-H; 3β-*O*-(L-thevetosyl)-14β-hydroxy-5β-card-20(22)-enolide

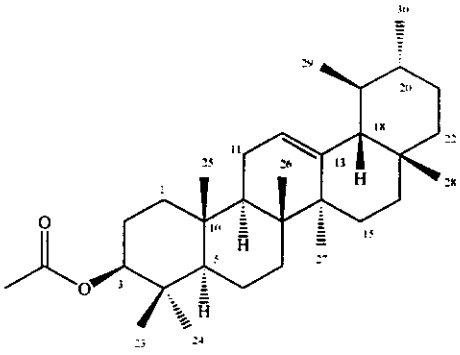
SCO2: R= Ac: 17α-H; 3β-*O*-(L-2$'$-*O*-acetyl thevetosyl) -14β-hydroxy-5β-card-20(22)-enolide

SCO3: R= H: 17β-H; 3β-*O*-(L-thevetosyl)-14β-hydroxy-5β-card-20(22)-enolide

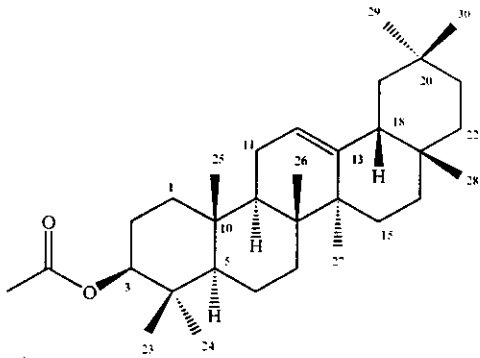


SCO4: R= H; 3β-*O*-(L- thevetosyl)-15(8$\rightarrow$14)-*abeo*-5β-(8R)-14-oxo-card-20(22)-enolide

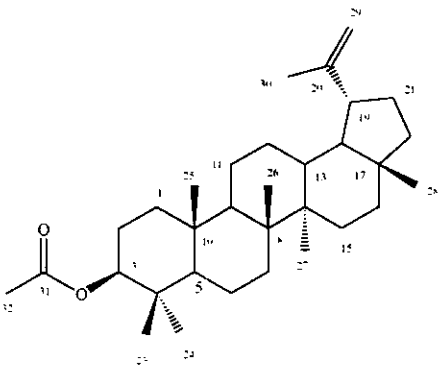
SCO5: R= Ac; 3β-*O*-(L-2$'$-*O*-acetyl thevetosyl)-15(8$\rightarrow$14)-*abeo*-5β-(8R)-14-oxo-card-20(22)-enolide



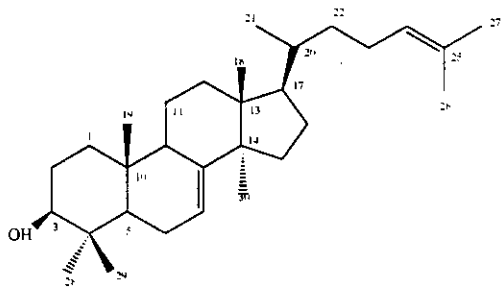
LCO1: Urs-12-en-3β-acetate



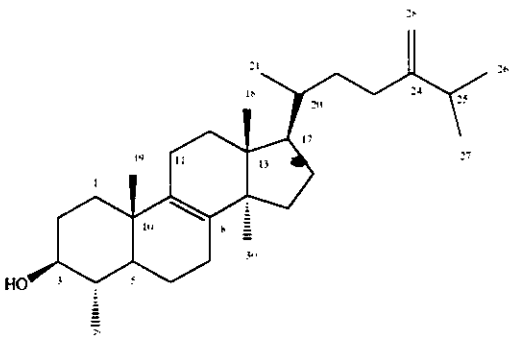
LCO2: Olean-12-en-3β-acetate



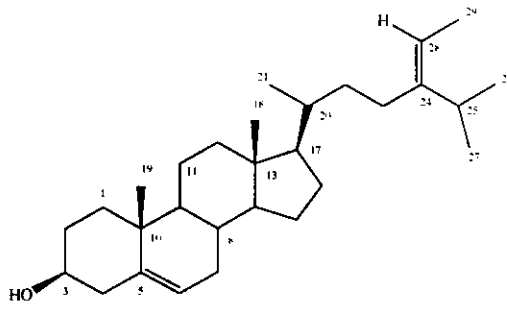
LCO3: Lup-20(29)-en-3β-acetate



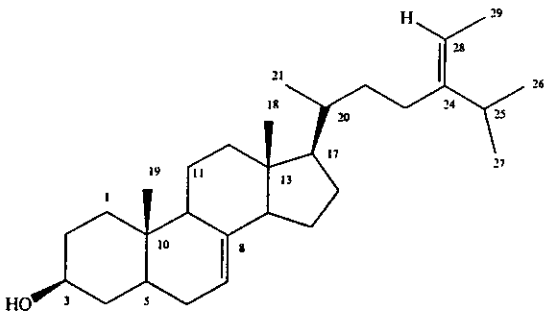
LCO4: Lanosta-7-24-dien-3β-ol



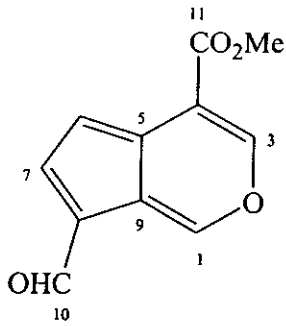
LCO5: 4α, 14α,-Simethyl-5α-ergosta-8,24(28)-dien-3β-ol.



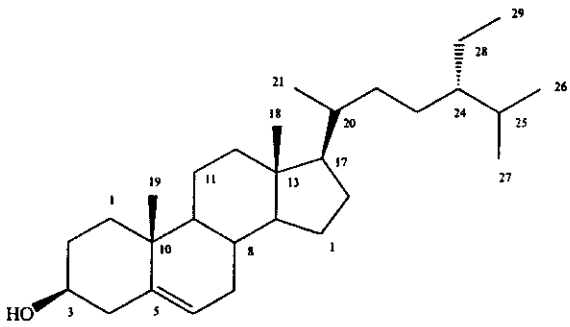
LCO6: 5, 24(28)-Stigmastadien-3β-ol



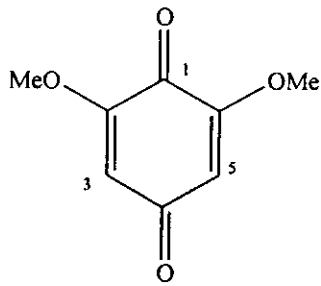
LCO7: 7, 24(28)-Stigmastadien-3β-ol



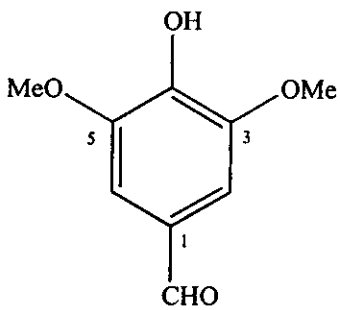
BCO1: Cerbinal



BCO2: β-Sitosterol



BCO3: 2, 6-Dimethoxybenzoquinone



BCO4: 3,5-Dimethoxy-4-hydroxybenzaldehyde