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จุฬาลงกรณ์มหาวิทยาลัย

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PHYTOCHEMICAL STUDY OF *SIPHONODON CELASTRINEUS* GRIFF. ROOT

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จากรากของมะดูก ( *Siphonodon celastrineus* Griff. วงศ์ Celastraceae ) สามารถสกัดแยกสารชนิดใหม่ในกลุ่ม oleanane triterpene ได้ 1 ชนิด คือ  $3\beta$ -acetoxy- $11\alpha$ -benzoyl- $13\beta$ -hydroxyolean-12-one ซึ่งได้ตั้งชื่อว่า siphonodone กับสารที่เคยมีรายงานแล้ว 2 ชนิด คือ  $\beta$ -sitosterol และ pristimerin การพิสูจน์เอกลักษณ์และการหาสูตรโครงสร้างทางเคมีของสารเหล่านี้ทำโดยการวิเคราะห์ข้อมูลทางสเปกโตรสโคปีชนิดต่างๆ ร่วมกับการเปรียบเทียบข้อมูลกับสารอื่นที่มีสูตรโครงสร้างทางเคมีที่สัมพันธ์กัน

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ลายมือชื่อนิสิต .....  
ลายมือชื่ออาจารย์ที่ปรึกษา .....  
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KEY WORD: *SIPHONODON CELASTRINEUS* GRIFF./ CELASTRACEAE / SIPHONODONE / OLEANANE / TRITERPENE

CHOKCHAI NIAMPOKA : THESIS TITLE. PHYTOCHEMICAL STUDY OF *SIPHONODON CELASTRINEUS* GRIFF. ROOT. THESIS ADVISOR : ASSOCIATE PROFESSOR RAPEPOL BAVOVADA , Ph.D. 132 pp. ISBN 974-03-1666-2.

From the root of *Siphonodon celastrineus* Griff. ( family Celastraceae ), a new oleanane triterpene , 3 $\beta$ -acetoxy-11 $\alpha$ -benzoyl-13 $\beta$ -hydroxyolean-12-one , named siphonodone , was isolated together with two known compounds,  $\beta$ - sitosterol and pristimerin. The identification and structure elucidation of the isolated compounds were established by analysis of the spectroscopic data , as well as comparison with the data of other structurally related compounds.

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## ABBREVIATIONS

|                         |  |
|-------------------------|--|
| br                      | = broad ( for NMR spectra )                                  |
| c                       | = concentration ( mg / 100 ml )                              |
| $^{\circ}\text{C}$      | = degree Celsius   |
| CC                      | = column chromatography                                      |
| $\text{CDCl}_3$         | = deuteriochloroform   |
| $\text{CHCl}_3$         | = chloroform   |
| cm                      | = centimeter   |
| $^{13}\text{C}$ -NMR    | = carbon- 13 nuclear magnetic resonance                      |
| COSY                    | = correlation spectroscopy                                   |
| d                       | = doublet ( for NMR spectra )                                |
| dt                      | = doublet of triplets ( for NMR spectra )                    |
| DEPT                    | = distortionless enhancement by polarization transfer        |
| EI – MS                 | = electron impact mass spectrum                              |
| EtOAc                   | = ethyl acetate  |
| eV                      | = electron volt  |
| FAB – MS                | = fast atom bombardment mass spectrometry                    |
| frs                     | = fractions  |
| g                       | = gram   |
| HMBC                    | = proton – detected heteronuclear multiple bond connectivity |
| HMQC                    | = proton – detected heteronuclear quantum coherence          |
| $^1\text{H}$ – NMR      | = proton nuclear magnetic resonance                          |
| $\text{H}_2\text{SO}_4$ | = sulfuric acid  |
| Hz                      | = hertz  |
| IR                      | = infrared   |
| <i>J</i>                | = coupling constant  |
| KBr                     | = potassium bromide  |
| m                       | = meter  |
| <i>m</i>                | = multiplet ( for NMR spectra )                              |
| $[\text{M}]^+$          | = molecular ion  |

|                  |   |
|------------------|---|
| MeOH             | = methanol                                |
| MHz              | = megahertz                               |
| mg               | = milligram                               |
| ml               | = milliliter                              |
| mm               | = millimeter                              |
| MS               | = mass spectrum                           |
| $m/z$            | = mass per charge ratio                   |
| Na               | = sodium                                  |
| NBA              | = <i>m</i> -nitrobenzyl alcohol           |
| nm               | = nanometer                               |
| NMR              | = nuclear magnetic resonance              |
| No.              | = number                                  |
| NOE              | = nuclear Overhauser effect               |
| ppm              | = part per million                        |
| rel. int.        | = relative intensity ( for MS spectra )   |
| <i>s</i>         | = singlet ( for NMR spectra )             |
| <i>td</i>        | = triplet of doublets ( for NMR spectra ) |
| TLC              | = thin layer chromatography               |
| TMS              | = tetramethylsilane                       |
| UV               | = ultraviolet                             |
| $[\alpha]_D$     | = specific rotation at 589 nm             |
| $\epsilon$       | = molar absorptivity                      |
| $\delta$         | = chemical shift                          |
| $\lambda_{\max}$ | = wave length at maximum absorption       |
| $\nu_{\max}$     | = wave number at maximum absorption       |