ISBN 978-979-98938-5-7

CRISU - CUPT CONFERENCE
2011

PROCEEDINGS
of the International Seminar

The Council of Rector of Indonesian State University (CRISU)
and The Council of University President of Thailand (CUPT)

"EXPLORING RESEARCH POTENTIALS"

Editors:
A. Muslim (Indonesia); Siti Herlinda (Indonesia); Nurly Gofar (Malaysia);
Melanie Boursnell (Australia); K.T. Tantrakarnapa (Thailand);
Judhiastuty Februhartanty (Indonesia); Misnaniarti (Indonesia);
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Published by Sriwijaya University
Cooperation with
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SRIWIJAYA UNIVERSITY
PALEMBANG, INDONESIA, 20-22 OCTOBER 2011

ISBN 978-979-98938-5-7

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FOREWORD

Dear special guests:

Minister for National Education, Ambassadors of Thailand for Indonesia, Ambassadors of Indonesia for Thailand, all delegates from The Council of Rector of Indonesian State University (CRISU) and The Council of University President of Thailand (CUPT), Government of South Sumatra and Palembang City, and all The 6th CRISU-CUPT Conference, International Seminar and Exhibition participants

On behalf of the Sriwijaya University as Host University, I would like to extend my warmest welcome to all of the participant of The 6th CRISU-CUPT Conference, International Seminar and Exhibition, held on 20th-22nd October 2011 at Sriwijaya University Palembang with the join theme "Exploring Research Potentials".

There will be many challenges and opportunities in higher education in the Asean Community in the next decade. This is, therefore, considerable significant will arise from the The 6th CRISU-CUPT Conference, International Seminar and Exhibition. The previous five CRISU-CUPT conferences have been sigficantly deepening the relationships and come up with very fruitfull discussion in various subjects of collaboration and cooperation, for example, global warming, global mobility, academic interaction and cross-fertilization. The 5th conference was held in Chiang Mai, Thailand on July 7th-9th 2010 and appointed Sriwijaya University as a host for the 6th conference.

The 6th CRISO-CUPT conference will include many agenda, with not only include the meeting of the President Forum, the Dean Forum, and the Student Forum, but also will include international Seminar and Exhibition. This conference, therefore, might come up with more fruitfull conclusion and deepest commitment among participants.

With regard to considerable conference agenda, we greatly appreciate any support and sponshorship derived from any govermental as well as private institutions for the success of the conference. Great appreciation is also handed to organizing committe of the conference for any voluntarily effort that bring to the succes of the conference.

The 6th CRISU-CUPT Conference, International Seminar and Exhibition is being attended by about 600 participants. I hope you enjoy the beauty of Palembang City as one of the oldest city in Indonesia which is 1318 years old, established during the glory of the vast Sriwijaya Kingdom. The city also have variety of interesting culture and places.

Palembang, October 2011
Chairperson,

Prof. Dr. Badia Perizade, M.B.A
Rector of Sriwijaya University

ISBN 978-979-98938-5-7

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CONCLUSION

One organic salt has been isolated from endophytic fungi *Penicillium sp* of kandis gajah used in treatment of gout. This compound contain is one methyl, two methylene sp^3, one methylene sp^2, three methyne sp^3 and one methoxy proton. This compound also contain is four carbon sp^2 and heteroatom.

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EO 07

3-OXO FRIEDELIN COMPOUND FROM THE STEM BARK OF MANGGU LEUWEUNG (*Garcinia cornea*)

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ABSTRACT

The tropical family Guttiferae is well known to be rich source of isoprenylated xanthones and biflavonoids as mayor compound and triterpenoid as minor compound with variety of biologically active such antioxidant, anti malaria, anticancer, and antibachterial activity. *Garcinia cornea* commonly known as manggu leuweung, As part of a phytochemical studi in Guttiferae we

ISBN 978-979-98938-5-7

have previously reported the presence chemical constituent of a triterpenoid 3-oxo friedelin (1) and now describe the isolation and structure elucidation of further constituent of the stem bark of G. cornea collected in Bogor. Isolation and purification have been carried out by vacuum liquid chromatography and open column chromatography by using silica gel adsorbent and gradient eluting system of n-hexane, ethyl acetate, and methanol. The structure of this compound was deduced on basis of spectroscopic data ^{1}H NMR, ^{13}C NMR, and DEPT and comparison with the reported data.This compound has been reported from others species.

Keyword: *Garcinia cornea*, triterpenoid, 3-oxo friedeline(+)-morelloflavon.

INTRODUCTION

Garcinia is the most numerous genus of the clusiaceae family with about 400 species widely distributed in tropical Asia, Africa, New caledonia and Polynesia (Waterman, 1986). *Garcinia* are known to produce a variety of biologically active metabolites such isoprenylated xanthones, benzophenones, and biflavonoids (Gustafson *et al*, 1992; Hay *et al*, 2004). *G. cornea* commonly known as manggu leuweung is a medium sized tree found in South east Asia (Whitmore, 1972). No medicinal uses are recorded for this species althought it has been used as fruit tree. Previous phytochemical studies of *G. cornea* have been reported the presence of 3-oxo-23-hydroxycycloart-24-en-oic acid, 3-oxocycloart-24-en-23-ol, and (-)- epicatechin (Darwati dkk, 2008) .In continuation of our study of species G. cornea we have previously reported the presence chemical constituent of a triterpenoid 3-oxo friedeline and now describe the isolation and structure elucidation of further constituent of the stem bark of G. cornea collected in Bogor. Isolation and purification have been carried out by vacuum liquid chromatography and open column chromatography by using silica gel adsorbent and gradient eluting system of n-hexane, ethyl acetate, and methanol. The structure of this compound was deduced on basis of spectroscopic data ^{1}H NMR, ^{13}C NMR, and DEPT and comparison with the reported data.This compound has been reported from others species.

MATERIAL AND METHODS

Material

Vacuum liquid chromatography (VLC) and column chromatography were carried using Merck silica gel 60 GF_{254} (230-400 mesh)), column chromatography using Si gel 60 (70 -230 mesh.). Analytical thin layer chromatography (TLC) was carried out using Merck (Art.5554) silica gel 60 F_{254}, pre-coated alumunium sheets 20x 20 and solvents for chromatography were technical grade and distilled before use.

Instrumentation

Melting point was determined on a micromelting point apparatus NMR spectra were recorded at 500 MHz (^{1}H) and 125 MHz (^{13}C) on JEOL JNM ECA-500 spectrometer. .Organic materials were detected by first viewing the plate under UV light at 254 nm and 365 nm. The extracts were organic mixture samples were applied in the pre-adsorbed form on silica gel 60 (70 - 230 mesh.)

Plant material

Sample of the stem bark of *G. cornea* was collected on April 2010 from Hutan Raya Bogor, west Java, Indonesia.. The plant was identified by the staff at the Herbarium Bogoreiensis Bogor and a voucher spesiment had been deposited at the herbarium.

METHOD

Extraction and isolation

The powdered of the stem bark *G .cornea* (1 kg) was extracted by maceration technique three times with hexane, EtOAc and methanol respectively for 5 days at room temperature. Evaporation of each extract (n-hexane, EtOAc and methanol) to dryness in vacuo, afford n-hexana extract (12 g), EtOAc (25 g) ad methanol (400 g). Methanol extract was further fractionated by vacum liquid chromatography (VLC) eluted with a gradient system (n-hexana, n-heksana 100%, n-heksana : etil asetat (9:1 -7:3, 5:5 dan 3:7) The based of thin layer chromatography (TLC) analyze afforded 5 fractions F1- F5. Fraction 1 was further purified column chromatography (eluted with gradient system , n-hexane : EtOAc = 9:1 – 1:9) to afford 6 subfraction. Subfraction 2 after purification with recrystalization gave a pure compound (80 mg). This compound, obtained as a white crystal, ^{1}H NMR (chloroform- d_1, 500 MHz) δ_H ppm , ^{13}C NMR (chloroform-d_1, 125 MHz) δ_C ppm and DEPT can see Table 1.

RESULTS AND DISCUSSION

The n-hexane extract from the dried stem bark of *G. cornea* has been isolated a. triterpenoid as 3-oxo frieledin (1) as white crystal, m.p 237 - 239°C. The H-NMR spectra of compound 1 showed characteristic signals for triterpenoid the presence of many signal at δ_H 0.7 - 02.4 ppm as signal to methyl, methylen and methine proton in performent SP^{3} (Shashi *et al.*, 1994). At the spectrum no showed signal at aromatic proton ((δ_H 6-8 ppm) and indicated the compound is triterpenoid. Signal-signal characteristic with hight intencity with integration proton 3.0 – 6.0 is signal from methyl proton showed at chemical shifts δ_H .,72 (3H, s); 0.87 (3H, s); 0.88; 0.95; 0.99; 1.00 ; 1.05; and 1.187 ppm. Four signal observed in this spectrum at chemical shifts δ_H 1.6 -2.4 ppm (Figure 1) is signal for proton methylene which located biside C carbonyl. Signal at 2.39 dan 2.30 each (1H, dd) is signal for proton methylene at C-2 and ortho coupled with two proton as showed as doublet-doublet signal. In spectrum also observed signal at chemical shifts1.96 dan 1.68 (1H, td) to methylene proton at C-1 and showed ortho coupled with one proton at C-10 and another coupling ortho proton with two proton at C-2 and showed as doublet triplet (multiplet) signal. Signal at 2.25 to prediction as signal to proton at C-4 be which located biside C carbonyl and showed as signal more deshelding.

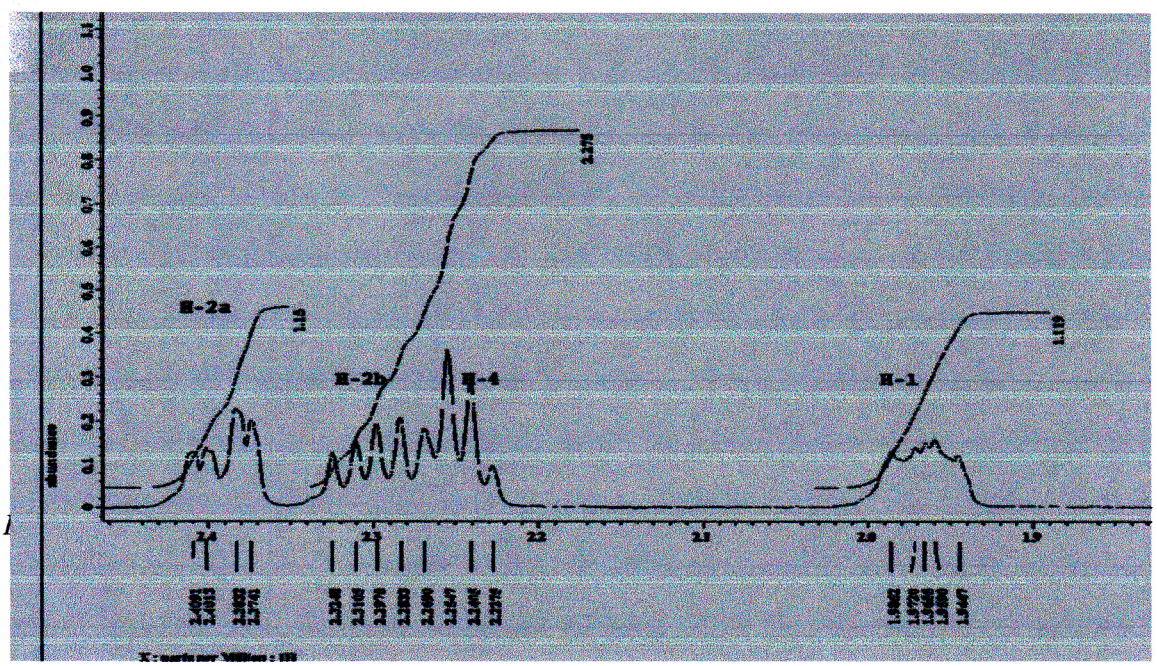

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Figure 1. ^{1}H- NMR Spectrum at δ_H 1,9 – 2,4 ppm

Support for the structure **1** were obtained from ^{13}C NMR, and DEPT data (Table 1). ^{13}C NMR spectrum revealed the presences of 30 carbon resonances and no signal above δ_C 100 ppm for SP^2 carbons. One carbonyl group observated at δ_C 213.5 ppm, Signal others showed at δ_H 7 - 50 ppm characteristic for carbon SP^3.The carbonyl at triterpenoid usually at position C-3. The spectrum data supported that compound triterpenoid. DEPT spectrum (Figure 2) showed 30 signal carbon to identified as 8 C primary (CH3) at chemical shifts δ_C 7.0 (C-23); 14.8 (C-24); (18.1 (C-25); 18.8 (C-27); 20.4 (C-26), 32.2 (C-28); 35.0 (C-29); and 32.0 ppm (C-30), 11 C secondary (CH_2) at δ_C 22.4 (C-1); 41.5 (C-2); 42.3 (C-5); 41.7 (C-6); 35.8 (C-11); 30.7 (C-12); 32.6 (C-15); 36.7 (C-16); 35.5 (C-19); 32.9 (C-21); and 39.4 ppm (C-22), 4 signal C tertiary (CH) at$_C$ 18.4 (C-7); 37.6 (C-9); 42.9 ppm (C-18); and 58.4 (C-4), and 7 signal for C quaternary (C) at δ_C 231.4 (C-3); 53.2 (C-8); 59.6 (C-10); 3.,8 (C-13); 38.4 (C-14); 30.1 (C-17); dan 2.3 (C-20).

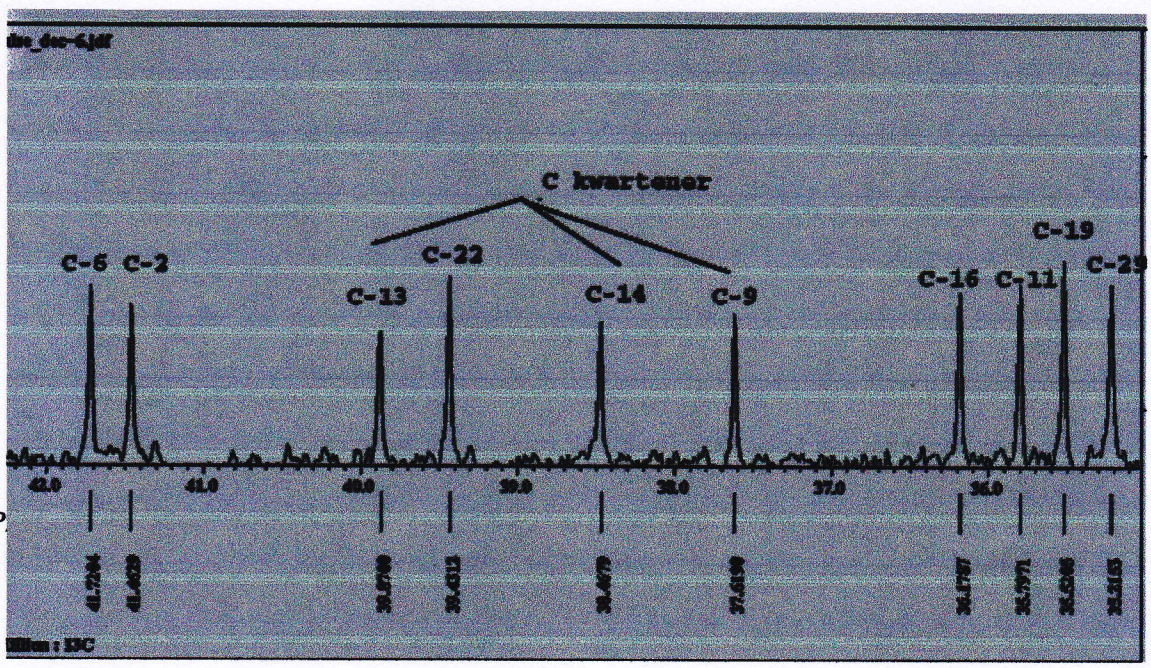

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Figure 2. DEPT Spectrum at δ_C 35 -42 ppm

Table 1. Data Spectra ^{1}H NMR, ^{13}C NMR and DEPT from compound 1 at 500 MHz (^{1}H) and 125 MHz (^{13}C) , in methanol-d_4 and comparizon 3-oxo friedelin* has been reported (Klass *et al.*, 1992)

Posisi C	δ_C (ppm) 3-oxo friedelin* *	δ_C (ppm) 1	δ_H 3-oxo friedelin *	δ_H Compound 1	DEPT
1	22,3	22,4	1,96; 1,68	1,96; 1,67 (td)	CH2
2	41,5	41,5	2,39; 2,28	2,39; 2,30 (dd)	CH2
3	213,2	213,4			C
4	58,2	58,4	2,25	2,25	CH
5	42,1	42,3			C
6	41,3	41,7	1,75; 1,28	1,74; 1,28	CH2
7	18,2	18,4	1,49; 1,37	1,48; 1,37	CH2
8	53,1	53,2	1,39	1,38	CH
9	37,4	37,6			C
10	59,4	59,6	1,53	1,57	CH

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11	35,6	35,8	1,46; 1,26	1,45; 1,25	CH2
12	30,5	30,7	1,34; 1,34	1,34; 1,34	CH2
13	39,7	39,8			C
14	38,3	38,4			C
15	32,4	32,6	1,46; 1,27	1,48;1,25	CH2
16	36,0	36,2	1,57; 1,36	1,56;	CH2
17	30,0	30,1			C
18	42,8	42,9	1,56	1,55	CH
19	35,3	35,5	1,38; 1,20	1,22	CH2
20	28,1	28,3			C
21	32,7	32,9	1,51; 1,30	1,57; 1,25	CH2
22	39,2	39,4	1,50; 0,94	1,48; 0,93	CH2
23	6,8	7,0	0,87	0,88	CH3
24	14,6	14,8	0,71	0,72	CH3
25	17,9	18,1	0,86	0,86	CH3
26	20,2	20,4	1,00	1,00	CH3
27	18,6	18,8	1,05	1,05	CH3
28	32,1	32,2	1,17	1,17	CH3
29	35,0	35,2	1,00	0,99	CH3
30	31,8	32,0	0,95	0,95	CH3

Spectrum data for compound I to comparison with the reported data (Table 1). In table showed data spectrum compound 1 have many similarities with data spectrum of 3-oxo friedelin.The base of spectroscopy data analysis compound was identified as 3-oxo friedelin with stucture showed at Figure 3. This compound had been reported from EtOAc extract of *Peritassa compta* (Celastraceae) (Klass *et al.*, 1992).

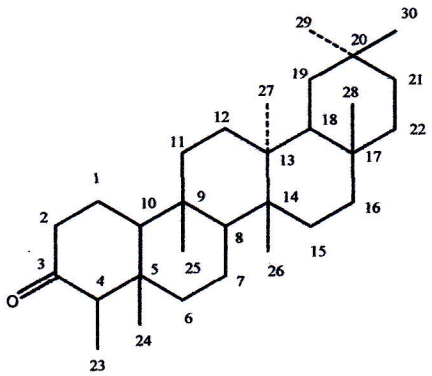

Figure 3. Structure 3-oxofriedelin (1)

CONCLUSION

One triterpenoid pentacyclic has been isolated from n-hexane extract of stem bark G. cornea and the base spectroscopy data analysis and comparized by reported data suggested tsis compound 3-oxo friedelin with formula molecul $C_{30}H_{50}O$. This compound add kinds of phytochemistry studies from the stem bark of *G. cornea.*

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EO 08

ANTIOXIDANT FLAVONOIDS FROM TUNJUK LANGIT (*HELMINTHOSTACYS ZAYLANICA*)

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ABSTRACT

A new flavonoid (compound 2), had been isolated from ethylacetate extract of rhizome of *Helmynthostachys zeylanica*. The structure of this compound was determined on the basis of