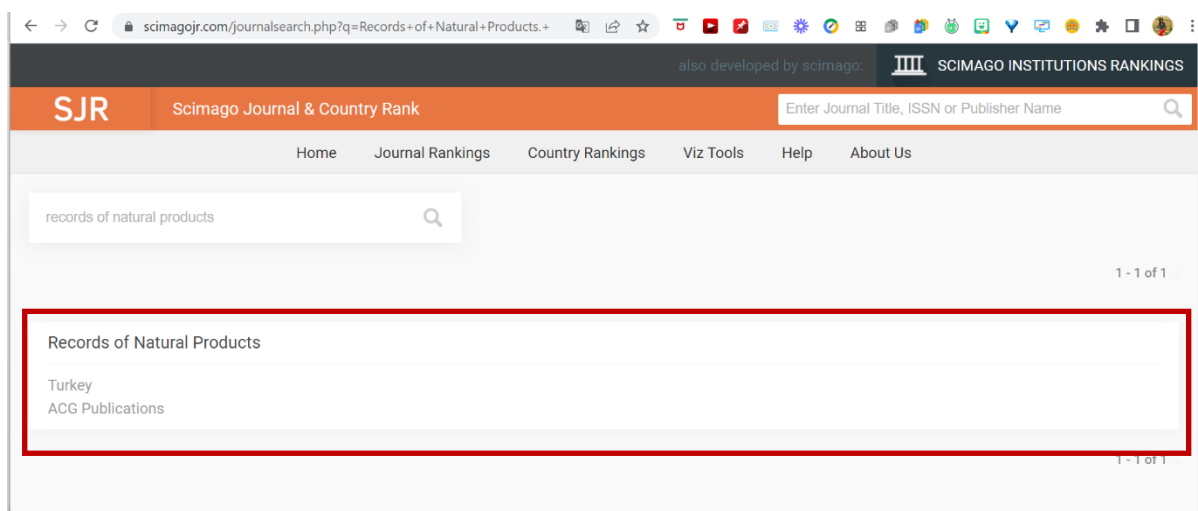


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“A new bisanthraquinone and cytotoxic xanthones from *Cratoxylum cochinchinense*”

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1. Chemical Constituents from the Roots of *Calophyllum pisiferum* Planch. & Triana and Their Cytotoxic and Antioxidant Activities. **Records of Natural Products.** (2022). 16(1) 58-65 (Jan-feb 2022)



Natural Product Research, 2014
Vol. 28, No. 9, 606–610, <http://dx.doi.org/10.1080/14786419.2014.886212>



A new bisanthraquinone and cytotoxic xanthones from *Cratoxylum cochinchinense*

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(Received 3 December 2013; final version received 19 January 2014)

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22
References

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Chemical Constituents from the Roots of *Calophyllum pisiferum* Planch. & Triana and Their Cytotoxic and Antioxidant Activities

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(Received April 20, 2021; Revised May 27, 2021; Accepted May 31, 2021)

Abstract: This is the first phytochemical investigation of the roots of *Calophyllum pisiferum* Planch. & Triana. A new 4-phenyl coumarin, calopisifuran (**1**), and a new xanthone, 1-hydroxy-4,5-dimethoxyxanthone (**2**), were isolated and identified, together with 11 known compounds, including 4-phenyl coumarin (**3–7**) and xanthones (**8–13**). Their structures were elucidated by 1D- and 2D-NMR spectra and by HR-ESI-QTOF mass spectra and were compared with the literature data for known compounds. The isolated compounds exhibited significant cytotoxic activity in the MDA-MB-231, MCF-7 and A-549 cell lines, with IC₅₀ values of 14.87, 23.56 and 43.34 µg/mL, respectively, for **10** and IC₅₀ values of 17.15, 45.76 and 85.17 µg/mL, respectively, for **1**, while the DPPH assay revealed weak antioxidant activity.

Keywords: Clusiaceae; *Calophyllum pisiferum*; 4-phenyl coumarin; xanthone; cytotoxic. © 2021 ACG Publications. All rights reserved.

1. Introduction

Calophyllum is one of the largest genera of the Clusiaceae family. The members of this genus are widely distributed throughout Asia, and some species exist in Africa, the Americas, Australasia, and the Pacific Islands [1]. This genus includes approximately 187 species, of which 17 occur in Thailand [2]. *Calophyllum* is a rich source of secondary metabolites and has been reported to contain many bioactive compounds, such as coumarins, xanthones, flavonoids, triterpenes, benzofuran, acylphloroglucinol and chromanone; in particular, coumarins and xanthones [3] are found in almost all species and are well recognized as phytochemical markers for this genus. The biological activities of these types of compounds have been reported in some of the extracted pathways, and some of the isolated compounds have also shown good pharmaceutical activities, including cytotoxic activity [4], anti-HIV activity [5], antiviral activity, antitumor-promoting activity, antimalarial activity, antibacterial activity [3], anti-inflammatory activity [6] and central nervous system (CNS) activity [7]. *Calophyllum pisiferum* Planch. & Triana, locally known as “Tung hon-bailek” in Thailand, is found only in lowland and swamp forests in southern Thailand [8], Cambodia, Indonesia, Malaysia, Myanmar and Vietnam. [9]. The wood of *C. pisiferum* has been used for the construction of dwellings, and there is no evidence for the utilization of this plant for folk medicine in Thailand.

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Acknowledgments

Suratthani Rajabhat University (SRU) is acknowledged for providing laboratory facilities. We are grateful to the Laboratory of Natural Products Chemistry, Faculty of Science and Technology, Phuket Rajabhat University, for providing instruments. The Department of Chemistry, Prince of Songkla University, provided the facilities used in this research. We acknowledge Assoc. Prof. Chanita Ponglimanont for helpful suggestions and Dr. Abdul-Wahab Salae for recording the NMR spectra.

Supporting Information

Supporting information accompanies this paper at <http://www.acgpubs.org/journal/records-of-natural-products>

Disclosure Statement

The authors declare that we have no conflicts of interest in this paper.

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