



Calotetrapterins A-C, three new pyranoxanthenes and their cytotoxicity from the stem bark of *Calophyllum tetrapterum* Miq

Mulyadi Tanjung^a, Tjitjik Srie Tjahjandarie^a, Ratih Dewi Saputri^a, Baharrani Dwi Kurnia^a, Muhammad Faisal Rachman^a and Yana Maolana Syah^b

^aNatural Products Chemistry Research Group, Organic Chemistry Division, Department of Chemistry, Faculty of Science and Technology, Universitas Airlangga, Surabaya, Indonesia; ^bNatural Products Chemistry Research Group, Organic Chemistry Division, Bandung Institute of Technology, Bandung, Indonesia

ABSTRACT

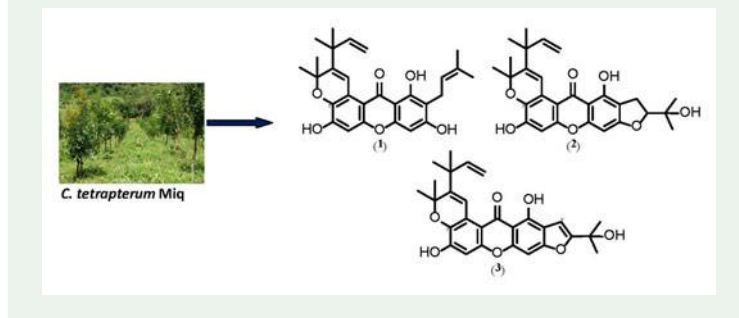
Three new pyranoxanthenes, calotetrapterins A-C (**1-3**) were isolated from the stem bark of *Calophyllum tetrapterum* Miq along with three known xanthenes, α -mangostin (**4**), garciniafuran (**5**), and pyranojacareubin (**6**). All structures were elucidated based on their IR, UV, HRESIMS, 1D (¹H, ¹³C) and 2D (HMBC, HMQC) NMR spectral data. Compounds **1-6** were tested to P-388 cells for cytotoxic activity, compound **2** exhibited high activity with IC₅₀ value 1.0 μ M.

ARTICLE HISTORY

Received 9 April 2019
Accepted 18 June 2019

KEYWORDS


Calotetrapterins A-C;
pyranoxanthone;
Calophyllum tetrapterum;
P-388 cell



1. Introduction

The genus *Calophyllum* (Calophyllaceae) comprises about 198 species found mainly in the restrictive area of Southeast Asia. *Calophyllum* plants are source of phenolic compounds especially xanthenes (Ferchichi et al. 2012; Daud et al. 2016), benzofurans (Tanjung et al. 2018) and 4-phenylcoumarins (Zhong et al. 2010) containing isoprenyl as side chain. Isoprenylation of phenolic compounds displays as a major chromophore to increase their cytotoxicity activities against various human cancer cells (Mah et al.

CONTACT Mulyadi Tanjung  mulyadi-t@fst.unair.ac.id

 Supplemental data for this article can be accessed at <https://doi.org/10.1080/14786419.2019.1634714>.

© 2019 Informa UK Limited, trading as Taylor & Francis Group