OR-13

Resveratrol Trimer Derivative with C7-C14 type of Condensation, an Uncommon Oligostilbenoid type from Dryobalanops Aromatica

N. Ahmat*, A. Wibowo and A. S. Hamzah

Faculty of Applied Sciences, Universiti Teknologi MARA, 40450 Shah Alam, Selangor Darul Ehsan, Malaysia; E-mail: noriz118@salam.uitm.edu.my

The uniqueness and complexity structure of oligostilbenoids in each family or genera has attracted interests from scientists of various disciplines. Based on their carbon-carbon bonding formation, several keys radical species are responsible for the formation of several types of skeleton in the oligostilbenoid. In the Dipterocarpaceae family, the common radical species are resveratrol and ε-viniferin radicals with active sites at carbons C8 or C14, while in other families such as Vitaceae, Cyperaceae, and Gnetaceae the active sites at carbons C5, C12 or at oxygen atom. In this study, the isolation and purification of acetone extract of the stem bark of Dryobalanops aromatica gave an oligostilbenoid trimer derivative malaysianol A (I) with uncommon condensation type in Dipterocarpaceae family, together with eight common oligostilbenoid types ε-viniferin (2), amelopsin E (3), diptoindonesin A (4), laevifonol (5), α-viniferin (6), flexuosol A (7), vaticanol B (8) and C (9). Their structures were established on the basis of their spectroscopic evidences and comparison with published data. The biogenetic route of resveratrol trimer involves oxidative coupling reaction between radicals dimer of ε-viniferin (2) and resveratrol (9). Usually, the dihydrobenzofuran ring in the oligostilbenoid derivatives are formed via oxidative coupling of radical species at C14 with that at C8 (C14-C8 type). However, the biogenetic route of I is formed from the oxidative coupling reaction of oxygen \( ^{1}{\text{O}}_{\text{C}_{13b}} \) at radical a and carbon C8c at radical e, followed by the formation of dihydrobenzofuran ring via intermolecular cyclization reaction of C14b and C7c (C14-C7 type) in the intermediate e (see Fig. 1, route i).

Keywords: Dipterocarpaceae, Dryobalanops aromatica, resveratrol oligomers, malaysianol A and cytotoxic.

REFERENCES