

Batatasin III a derivative of dihydrostilbene compound from Yam Peel of Uwi Tuban and Its Antioxidant Activity

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Abstract A dihydrostilbene derivative compound, namely 3,3-dihydroxy-5-methoxybibenzyl or batatasin III (**1**) was isolated from the yam peel of *Dioscorea alata* L. The structure of compound **1** has been elucidated based on spectroscopy UV-Vis, 1D and 2D NMR Analysis. The IC₅₀ of DPPH radical scavenging of this compound (206.82 µg/mL) lower than ethyl acetate extract (109.99 µg/mL), but higher than methanol extract (893.59 µg/mL).

1. Introduction

The genus *Dioscorea* (Dioscoreaceae) comprises more than 600 species that are widely distributed in tropical and subtropical region such as Indonesia. Wild yam or *Dioscorea alata* occur in several part of Indonesia and the plants is commonly known as Uwi tuban. Many of these species are used local food crop rich in starch of Indonesia but the bioactivity of this species is still poorly understood. This genus has been shown to produce a number of secondary metabolite such as terpenoid [1], saponin [2], steroid [3] and phenolic compounds [4]. Previous research from other country reported that *Dioscorea* are used indigenously as traditional medicines to leprosy, tumor in Bangladesh [5], inflammatory diseases such as asthma, rhemathoid arthritis and bronchitis in Taiwan [6].

In continuation of the research of the phenolic compounds in this medicinal plant, our research group already reported from two species: *D. esculenta* L. successfully isolated two phenanthrene derivatives namely confusarin and nudol [7], methyl-3,4-dihydroxybenzoate and 9,10-dihydrophenanthrene from *D. alata* L.[8]. In this research, reported of 3,3-dihydroxy-5-methoxybibenzyl or batatasin III is a phenolic compound isolated from the methanol extract of the yam peel of *Dioscorea alata* L.(uwi tuban). Uwi Tuban is one of *D. alata* species which mostly cultivated in Tuban, East Java. The chemical structure of compound **1** was established by UV, IR, 1D and 2D NMR. The antioxidant activity against DPPH radical scavenging the isolated compound **1**, methanol and ethyl acetate extract are also briefly described.

2. Materials and Methods

2.1 General experimental

NMR spectra were recorded on JEOL 600 ECA spectrometer using CDCL₃ at 600 (¹H) and 125 (¹³C) MHz. UV and FTIR spectrum recorded in KBr powder with Shimadzu series 1800 spectrophotometer.

