

Methyl-3,4-Dihydroxybenzoate and 9-10-Dihydrophenanthrene-2,4,7-Triol Two Phenolic Compounds from *Dioscorea alata* L. and Their Antioxidant Activity

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Abstract. Two phenolic compounds namely: methyl-3,4-dihydroxybenzoate (**1**) and 9,10-dihydrophenanthrene-2,4,7-triol (**2**) had been isolated for the first time from the tuber of *Dioscorea alata* L. The extraction of two compounds were done by maceration method using methanol as solvent, followed by partition with n-hexane and ethyl acetate. The ethyl acetate extract was separated and purified using various chromatographic techniques yielded pure compounds. The structure of isolated compounds were determined based on spectroscopic data, including UV-Vis, 1D and 2D NMR spectra. Compounds (**1**), (**2**) and ascorbic acid as a comparator were evaluated for their antioxidant properties against DPPH, showing their IC₅₀ were 9,41 ± 0,08; 23,52 ± 0,05; and 10,95 ± 0,08 ppm, respectively.

INTRODUCTION

Dioscorea alata L. is a plant used as an alternative food for produce carbohydrates which grow throughout the Indonesian archipelago ^[1]. *Dioscorea* is one genus of the family Dioscoreaceae which has 600 species which spread in China, Taiwan and in the tropical countries ^[2]. *Dioscorea* plants produce secondary metabolites include saponins, steroids, terpenoids, arilpropanoid, alkaloids and stilbenoid ^[3] ^[4]. Secondary metabolites of *Dioscorea* show activity as antimicrobial, anti-inflammatory, anti-cancer, allergy, antineoplastic and antioxidant ^[5] ^[6] ^[7] ^[8] ^[9] ^[10] ^[11].

Based on literature, research of phytochemical compounds that contained in *Dioscorea alata* L. until now has not been reported as well as an antioxidant activity, and on this occasion will be reported the discovery of two phenolic compounds are methyl-3,4-dihydroxybenzoate (**1**) and 9,10-dihydrophenanthrene-2,4,7-triol (**2**). The two compounds has not been reported yet from this species. It will also be reported to the antioxidant activities of the two compounds toward the reagent DPPH (2,2-diphenyl-1-picrylhydrazyl).