

## Cytotoxic Steroids from the Bark of *Aglaiia argentea* (Meliaceae)

Kindi Farabi<sup>1</sup>, Desi Harneti<sup>1</sup>, Nurlelasari<sup>1</sup>, Rani Maharani<sup>1,2</sup>,  
Ace Tatang Hidayat<sup>1,2</sup>, Unang Supratman<sup>1,2\*</sup>,  
Khalijah Awang<sup>3</sup> and Yoshihito Shiono<sup>4</sup>

<sup>1</sup>Department of Chemistry, Faculty of Mathematics and Natural Sciences, Universitas Padjadjaran, Jl. Raya Bandung-Sumedang Km 21, Jatinangor 45363, Indonesia

<sup>2</sup>Central Laboratory of Universitas Padjadjaran, Jl. Raya Bandung-Sumedang Km 21, Jatinangor 45363, Indonesia

<sup>3</sup>Department of Chemistry, Faculty of Science, University of Malaya, Kuala Lumpur 59100, Malaysia

<sup>4</sup>Department of Food, Life, and Environmental Science, Faculty of Agriculture, Yamagata University, Tsuruoka, Yamagata 997-8555, Japan

\*Corresponding author. E-mail: unang.supratman@unpad.ac.id

<https://doi.org/10.12982/CMUJNS.2017.0024>

### ABSTRACT

*The study aimed to find a potential anticancer agent by isolating and identifying the chemical structure of compounds from *Aglaiia argentea* and testing their cytotoxic effects against P-388 murine leukimia cells. Five steroids – stigmast-5-en-3 $\beta$ -ol ( $\beta$ -sitosterol) (1), stigmast-5-en-3 $\beta$ -ol-3 $\beta$ -oleate ( $\beta$ -sitosterol oleate) (2), stigmast-5-en-3 $\beta$ -ol-3-O-(6'-O-oleoyl)- $\beta$ -D-glucopyranoside (sitoindoside II) (3), stigmast-5-en-3 $\beta$ -ol-3-O- $\beta$ -D-glucopyranoside ( $\beta$ -sitosterol glucoside) (4), stigmast-5,22-dien-3 $\beta$ -ol-3-O- $\beta$ -D-glucopyranoside (stigmasterol glucoside) (5) – were isolated from the bark of *Aglaiia argentea*. The chemical structures of 1-5 were identified with spectroscopic data, including IR, NMR (<sup>1</sup>H, <sup>13</sup>C, DEPT 135°, HMQC, HMBC, <sup>1</sup>H-<sup>1</sup>H COSY) and HRTOFMS, as well as by comparing with previously reported spectral data. All compounds were evaluated for their cytotoxic effects against P-388 murine leukemia cells. Compounds 1-5 showed cytotoxicity against P-388 murine leukemia cell with IC<sub>50</sub> values of 12.45 ± 0.050, 85.25 ± 0.050, >100, 52.27 ± 0.031 and 62.52 ± 0.076  $\mu$ g/mL, respectively.*

**Keywords:** *Aglaiia argentea*, Cytotoxic activity, Meliaceae, P-388 murine leukemia cells, Sterol

### INTRODUCTION

Sterols, a type of steroid, are an important class of bioorganic molecules similar to cholesterol in structure and found widely in plants, animals, and fungi (Saaidnia et al., 2014). They include  $\beta$ -sitosterol, campesterol, stigmasterol, and