CHEMICAL CONSTITUENTS FROM THE STEMS OF *Cinnamomum insulari-montanum*

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Cinnamomum insulari-montanum Hayata (Lauraceae) is an endemic tree that grows in Taiwan′s natural hardwood forest at elevations between 400 and 1500 m [1]. In the course of screening for biologically and chemically novel agents from Formosan Lauraceous plants [2–15], *C. insulari-montanum* Hayata was chosen for further phytochemical investigation. In this paper, we reinvestigated the constituents in the stems of *C. insulari-montanum* Hayata [16–21]. The MeOH extract of its stems was subjected to solvent partitioning and chromatographic separation to afford eight pure substances. The chemical constituents in the stems of *C. insulari-montanum* Hayata were separated with column chromatography. Seven compounds, including a mixture of *β*-sitosterol (**1**) and stigmasterol (**2**) [22], coumarin (**3**) [14], cinnamyl alcohol (**4**) [14], cinnamic acid (**5**) [14], *p*-hydroxybenzoic acid (**6**) [14], kaempferol (**7**) [15], and kaempferitrin (**8**) [15], were isolated from the stems of *C. insulari-montanum* Hayata. All of these compounds were found for the first time in this plant.

The specimen of *C. insulari-montanum* Hayata was collected from Pingtung County, Taiwan, March 2003. A voucher specimen (Cinnamo. 3) was identified by Dr. Fu-Yuan Lu (Department of Forestry and Natural Resources College of Agriculture, National Chiayi University) and was deposited in the School of Medical and Health Science, The Fooyin University, Kaohsiung County, Taiwan. The stems (7.0 kg) of *C. insulari-montanum* Hayata were extracted repeatedly with MeOH at room temperature for 24–48 h. The MeOH extract was dried and evaporated to leave a viscous residue (82.4 g). The residue was placed on a silica gel column and eluted with $CHCl_3$ gradually enriched with MeOH to afford 17 fractions. Fraction 3 was rechromatographed on silica gel (*n*-hexane–EtOAc, (18:1)) and recrystallized from EtOAc to give coumarin (**3**) and a mixture of *β*-sitosterol (**1**) and stigmasterol (**2**) (200.0 mg). Fraction 6, eluted from *n*-hexane–EtOAc (1:2), was further chromatographed on silica gel eluting with EtOAc–MeOH (15:1) and recrystallized from acetone to give cinnamic acid (**5**) (50 mg) and cinnamyl alcohol (**4**) (50 mg), respectively. Fraction 11 was purified by silica gel chromatography (EtOAc–MeOH, 10:1) to give colorless needles of kaempferol (**7**). Fraction 14 was purified by silica gel chromatography (EtOAc–MeOH, 8:1) to give colorless needles of *p*-hydroxybenzoic acid (**6**) (52.0 mg). Fraction 18 was rechromatographed on silica gel (EtOAc–MeOH, (5:1)) and recrystallized from MeOH to give kaempferitrin (**8**) (780.0 mg).

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