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CHEMICAL CONSTITUENTS OF THE ROOTS OF *Macaranga denticulata*

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In Chinese Materia Medica, the root and Bark of *Macaranga denticulata* was used to treat icterohepatitis and epigastric pain. However, literature studies on the chemical constituents of *M. denticulata* are scarce. As part of our ongoing search for secondary metabolites from tropical plants, a careful investigation of the root of *M. denticulata* led to the isolation and identification of nine compounds (**1–9**). Their structures were identified on the basis of spectroscopic analysis (MS and NMR) and chemical evidence. All compounds were isolated from the plants for the first time.

The root of *M. denticulata* was collected at Xishuangbanna, Yunnan Province, P. R. China, in July 2010, and authenticated by Professor Guo-Da Tao, Xishuangbanna Tropical Botanical Garden. A voucher specimen (No. 20120719) was deposited with the Ethnobotany Research Group of Xishuangbanna Tropical Botanical Garden, Chinese Academy of Sciences.

β-Sitosteryl-3-*O*-β-D-glucopyranoside-2′-*O*-palmitate (1), colorless grease, $C_{51}H_{90}O_7$. ESI-MS *m/z* 815 $[M + H]^+$ [1].

α-Onocerin (3), white amorphous powder, $C_{30}H_{50}O_2$. ESI-MS *m/z* 443 $[M + H]^+$ [2].

Taraxerone (4), white amorphous powder, $C_{30}H_{48}O$. ESI-MS *m/z* 425 $[M + H]^+$ [3].

Aleuritolic acid 3-*p*-hydroxybenzoate (5), white amorphous powder, $C_{37}H_{52}O_5$. ESI-MS *m/z* 575 $[M + H]^+$ [4].

Cleomiscosin B (6), white amorphous powder, $C_{20}H_{18}O_8$. ESI-MS *m/z* 387 $[M + H]^+$ [5].

3,3′-Di-*O*-methylellagic acid (7), white needle crystals, $C_{16}H_{10}O_8$. ESI-MS *m/z* 331 $[M + H]^+$ [6].

Mulberrin (8), yellow amorphous powder, $C_{25}H_{26}O_6$. ESI-MS *m/z* 423 $[M + H]^+$ [7].

β-D-Glucopyranoside of methyl salicylate (9), colorless grease, $C_{14}H_{18}O_8$. ESI-MS *m/z* 369 $[M + H]^+$ [8].

Compounds **1**, **3–5**, **7**, and **9** showed antimicrobial activity against ATCC25923, ATCCY0109, ATCC25922, and ATCC27853 strains [9, 10]. Compounds **1** and **3** showed weak antibacterial activity against ATCC25923 microbial strains. Compounds **7** and **9** showed weak antibacterial activity against ATCCY0109 microbial strains.

The air-dried and powdered stem bark of *M. denticulata* (10 kg) was extracted with 90% aqueous methanol and filtered at room temperature for 12 h. The filtrate was concentrated under vacuum to give 515 g of crude residue. The filtrate was concentrated and extracted with ethyl acetate. The ethyl acetate extract (105 g) was subjected to silica gel column chromatography eluted with a petroleum ether–EtOAc–methanol (90:10:0, 80:20:0, 60:40:0, 50:50:0, 0:100:0, 0:90:10, 0:80:20) gradient system to furnish seven fractions (M1–M7). All fractions were collected and combined by monitoring with TLC. Compounds **2** (β-sitosterol, 123 mg), **3** (30 mg), and **5** (77 mg) were obtained from M1 by silica gel column chromatography and Sephadex column chromatograph. Similarly, we obtained compounds **1** (90 mg), **4** (60 mg), **6** (30 mg), **7** (26 mg), **8** (12 mg), and **9** (20 mg) from the other fractions.

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