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RARE NATURAL PRODUCTS FROM THE WOOD OF *Magnolia grandiflora*

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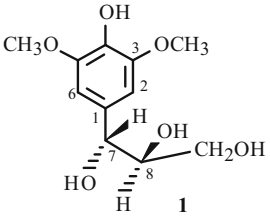
Magnolia grandiflora L. (Magnoliaceae) is used in traditional Chinese medicine for the treatment of colds, headaches, and stomachache [1]. The plant has also been used for the treatment of fever, diarrhea, rheumatism and arthritis [2]. Various class of compounds such as sesquiterpenoids [3–5], coumarins [4], phenylpropanoids [6], lignans [7], glycosides [7, 8], alkaloids [9], and other compounds [10] have been reported from this plant. The present study describes the isolation and structure determination of seven compounds **1**–**7** from the wood of *M. grandiflora*.

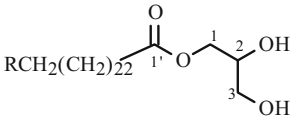
Shade air-dried and powdered wood of *M. grandiflora* (22.0 kg) was extracted with 95% ethanol. The EtOH extract was concentrated under vacuum until EtOH was completely removed. The dried EtOH extract (170.17 g) was dissolved in distilled water and successively partitioned with *n*-hexane, dichloromethane, ethyl acetate, and *n*-butanol saturated with water. The dichloromethane-soluble fraction (27.40 g) was chromatographed on a silica gel column with increasing polarity of *n*-hexane–EtOAc (80:20→70:30→60:40→50:50→40:60→30:70→20:80, v/v). Elution by 70: 30 gave compound **2** (227 mg), 60:40 gave compounds **6** (7.3 mg) and **7** (2.1 mg), 50:50 gave compound **3** (200 mg), and 20:80 gave compound **5** (89 mg). The *n*-butanol soluble fraction (47.74 g) was chromatographed on a silica column with increasing polarity of *n*-hexane–ethyl acetate (70:30→10:90→0:100, v/v). Elution by 0:100 yielded compound **4** (19.0 mg). On the other hand, fractions eluted by *n*-hexane:ethyl acetate (10:90, v/v) were further chromatographed twice on silica gel columns using $CHCl_3$–MeOH (90:10, 94:6, v/v) as an eluent to give compound **1** (24.5 mg).

***Erythro*-1-C-syringylglycerol (1).** White powder, mp 105–107°C. $C_{11}H_{16}O_6$, EI-MS *m/z* 244 $[M]^+$, PMR (500 MHz, MeOD, δ, ppm, J/Hz): 3.37 (1H, dd, J = 6.2, 11.3, H-9b), 3.49 (1H, dd, J = 4.0, 11.3, H-9a), 3.66 (1H, ddd, J = 2.1, 4.0, 6.2, H-8), 3.83 (6H, s, 3-OCH_3, 5-OCH_3), 4.51 (1H, d, J = 6.1, H-7), 6.67 (2H, s, H-2, H-6). ^{13}C NMR (125 MHz, MeOD, δ, ppm): 56.75 (3-OCH_3, 5-OCH_3), 64.25 (C-9), 75.60 (C-7), 77.55 (C-8), 105.21 (C-2, C-6), 134.05 (C-1), 136.01 (C-4), 149.11 (C-3, C-5) [11].

2,3-Dihydroxypropyltetracosanoate (2). White amorphous powder, mp 86–88°C. $C_{27}H_{54}O_4$, EI-MS *m/z* 442 $[M]^+$, PMR (500 MHz, C_5D_5N, δ, ppm, J/Hz): 0.87 (3H, t, J = 6.2, H-24′), 1.22–1.32 (40H, brs, H-4′–H-23′), 1.64 (2H, m, H-3′), 2.36 (2H, t, J = 7.4, H-2′), 4.11 (2H, d, J = 5.4, H-3), 4.43 (1H, m, H-2), 4.62 (1H, dd, J = 4.6, 6.5, H-1b), 4.69 (1H, dd, J = 4.5, 6.5, H-1a). ^{13}C NMR (125 MHz, C_5D_5N, δ, ppm): 14.3 (C-24′), 23.0 (C-23′), 25.4 (C-3′), 29.4–30.1 (C-4′–C-21′), 32.2 (C-22′), 34.5 (C-2′), 64.3 (C-3), 66.8 (C-1), 71.0 (C-2), 173.8 (C-1′) [12].



1



2, 3

2: R = H; **3:** R = OH

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