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Fitoterapia 79 (2008) 474–475

FITOTERAPIA

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Phytochemical communication

A new ellagic acid glycoside from *Paeonia delavayi*

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Received 19 October 2007; accepted 31 January 2008
Available online 5 June 2008

Abstract

A new ellagic acid glycoside, 4′-*O*-methylellagic acid 4-*O*-β-D-glucopyranoside (**1**), was isolated from the root cortex of *Paeonia delavayi*. The structure was elucidated on the basis of spectroscopic methods.

Keywords: *Paeonia delavayi*; 4′-*O*-Methylellagic acid 4-*O*-β-D-glucopyranoside; Spectroscopic methods

1. Plant

Paeonia delavayi Franch (Paeoniaceae), roots collected from Lijiang County of Yunnan Province, PR China in August 1998, and identified by Mr. Zheng-Wei Lu, Kunming Institute of Botany, The Chinese Academy of Sciences, Kunming, Yunnan, where a voucher specimen is deposited.

2. Uses in traditional medicine

The root cortex, as one of the most important crude drugs in Chinese traditional medicine, is an analgesic, sedative and antiinflammatory agent. It is also frequently used as a remedy for cardiovascular, extravasated blood, stagnated blood and female diseases in traditional oriental medicine [1–3].

3. Previously isolated classes of constituents

Monoterpenoids [4–6] and triterpenoids [7].

4. New-isolated constituent

4′-*O*-methylellagic acid 4-*O*-β-D-glucopyranoside (**1**, Fig. 1) (12 mg from 5 kg of dried material): white amorphous powder; mp 293–295 °C; UV max (MeOH): 254, 276, 359 nm; IR bands (KBr): 3444, 1723, 1622, 1573, 1496, 1450,

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doi:10.1016/j.fitote.2008.01.010

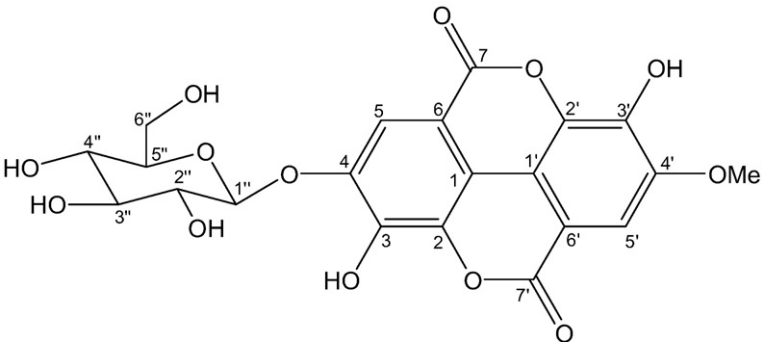

Fig. 1. Structure of compound **1**.

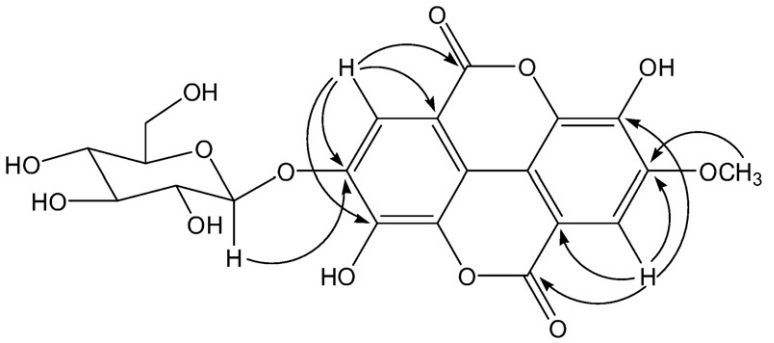

Fig. 2. Some HMBC correlations of compound **1**.

1348, 1087, 1046, 918, 757 cm^{-1}; ^{1}H-NMR (500 MHz, pyridine-d_5): δ 8.45 (1H, *s*, H-5), 7.82 (1H, *s*, H-5′), 5.90 (1H, *d*, *J* 7.7 Hz, H-1″), 4.36 (1H, *m*, H-2″), 4.28 (1H, *m*, H-3″), 4.13 (1H, *m*, H-4″), 4.40 (1H, *m*, H-5″), 4.53 (1H, *m*, H-6″a), 4.42 (1H, *m*, H-6″b), 3.84 (3H, *s*, 4′−OMe); ^{13}C-NMR (125 MHz, pyridine-d_5): δ 108.4 (C-1), 137.6 (C-2), 138.0 (C-3), 149.2 (C-4), 113.6 (C-5), 115.2 (C-6), 160.2 (C-7), 108.4 (C-1′), 142.7 (C-2′), 143.9 (C-3′), 151.4 (C-4′), 107.5 (C-5′), 114.5 (C-6′), 160.0 (C-7′), 103.7 (C-1″), 74.9 (C-2″), 78.4 (C-3″), 71.1 (C-4″), 79.2 (C-5″), 62.2 (C-6″), 56.5 (4′−OMe); long-range C−H connectivities: C-4 with H-1″ (δ 5.90); C-3, C-4, C-6 and C-7 with H-5 (δ 8.45); C-3′, C-4′, C-6′ and C-7′ with H-5′ (δ 7.82); C-4′ with 4′−OMe (δ 3.84) (Fig. 2); Negative FAB-MS: *m/z* 477 $[M-1]^-$ (100%), 447 (6), 315 (12), 297 (5), 229 (8); Negative HRFAB-MS: *m/z* $[M-1]^-$ 477.0843 (calcd. for $C_{21}H_{18}O_{13}$, 478.0859).

Acknowledgement

This work was supported by the National Natural Science Foundation of China (grant No. 20772105 and 20502021).

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