

Phytochemical communication

**Eudesmane sesquiterpene glycosides from
*Parepigynum funingense***

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Abstract

A new eudesmane sesquiterpene glycoside, pterodotriol D-6-O-β-D-glucopyranoside (**1**), together with a known compound, ainsliaside E (**2**), was isolated from the roots of *Parepigynum funingense*. The structure of **1** was determined by 1D and 2D-NMR spectroscopy. Compound **2** was isolated from this plant for the first time.

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Keywords: *Parepigynum funingense*; Pterodotriol D-6-O-β-D-glucopyranoside

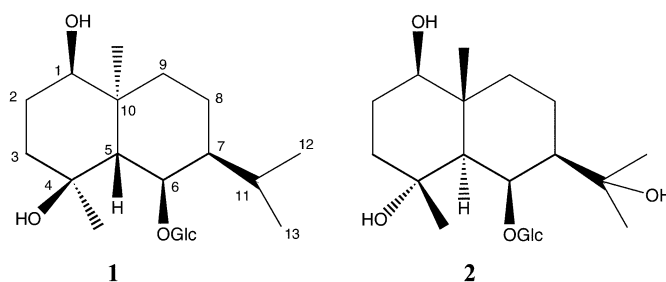
Plant. *Parepigynum funingense* (Apocynaceae) roots, collected from Malipo County of Yunnan Province, PR China, in April 2000 and identified by Prof. X. Gong. A voucher specimen (No. 0774313) is deposited at the herbarium of Kunming Institute of Botany, Academia Sinica.

Previously isolated constituents. Cardenolides [1], steroidal glycosides [2].

New isolated constituents. Pterodotriol D-6-O-β-D-glucopyranoside (**1**) (0.018%), ainsliaside E (**2**) (0.024%).

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Pterodontriol D-6-O-β-D-glucopyranoside (1). White powder; $C_{21}H_{38}O_8$; $[\alpha]_D^{23} -64^\circ$ (c 0.60 MeOH); IR bands (KBr): 3428, 2936, 1634, 1390, 1178, 1149, 1080, 1050, 903 and 863 cm^{-1} ; 1H -NMR (400 MHz, C_5D_5N): δ 5.16 (1H, *d*, *J* 7.5 Hz, H-1'), 5.05 (1H, *dd*, *J* 11.2, 4.3 Hz, H-6), 4.60 (1H, *dd*, *J* 11.8, 2.0 Hz, H-6'a), 4.37 (1H, *dd*, *J* 11.8, 5.5 Hz, H-6'b), 4.24 (1H, *t*, *J* 9.0 Hz, H-3'), 4.16 (1H, *t*, *J* 9.0 Hz, H-4'), 4.04 (1H, *m*, H-5'), 4.01 (1H, *m*, H-2'), 3.65 (1H, *m*, H-1), 2.48 (1H, *m*, H-11), 2.33 (1H, *d*, *J* 11.2 Hz, H-5), 2.20 (1H, *m*, H-7), 1.96 (1H, *m*, H-9a), 1.94 (1H, *m*, H-2a), 1.90 (1H, *m*, H-3a), 1.85 (1H, *m*, H-8a), 1.83 (1H, *m*, H-3b), 1.81 (1H, *m*, H-2b), 1.73 (3H, *s*, Me-15), 1.61 (1H, *m*, H-8b), 1.57 (1H, *m*, H-9b), 1.42 (3H, *d*, *J* 6.5 Hz, Me-13), 1.22 (3H, *s*, Me-14), 0.98 (3H, *d*, *J* 6.5 Hz, Me-12); ^{13}C -NMR (125 MHz, C_5D_5N): 100.3 (C-1'), 79.3 (C-1), 78.9 (C-3'), 78.6 (C-6), 78.6 (C-5'), 75.7 (C-2'), 72.3 (C-4), 72.1 (C-4'), 63.2 (C-6'), 51.3 (C-5), 42.3 (C-10), 41.7 (C-7), 41.0 (C-3), 36.5 (C-9), 29.3 (C-2), 25.9 (C-11), 24.5 (C-15), 23.6 (C-13), 23.3 (C-8), 22.9 (C-12), 14.5 (C-14); HRFABMS *m/z*: 417.2481 $[M-H]^-$ (calcd. for $C_{21}H_{37}O_8$ 417.2488).

In the product (**1**), the 1H - and ^{13}C -NMR spectra showed two methyl doublets at δ_H 1.42 and 0.98, and one highfield methine signal at δ_C 25.9, implying the presence of an isopropenyl group. Also, typically observed were two other methyl singlets (δ_H 1.22, 1.73), two oxygenated methine signals (δ_C 79.3, 78.6), one oxygenated quarternary carbon (δ_C 72.3) as well as signals of a β -D-glucopyranosyl unit. Acid hydrolysis of **1** with 1 N HCl gave D-glucose pterodontriol D [3]. A long-range coupling (HMBC) was observed between H-1' (δ_H 5.16) of the glucosyl unit and C-6 (δ_C 78.6) of the aglycone suggesting that the sugar unit was connected to C-6 of the aglycone. Based on the above results, compound **1** could be elucidated as pterodontriol D-6-O-β-D-glucopyranoside.

Acknowledgments

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