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Phytochemical communication

Constituents from the roots of *Semiaquilegia adoxoides*

QuanBin Han^a, Bei Jiang^b, ShuangXi Mei^b, Gang Ding^a,
HanDong Sun^b, JingXi Xie^c, YanZe Liu^{a,*}

^aDepartment of Phytochemistry, Henan College of Traditional Chinese Medicine, Zhengzhou
450003, PR China

^bLaboratory of Phytochemistry, Kunming Institute of Botany, Academia Sinica, Kunming 650204,
PR China

^cInstitute of Materia Medica, Chinese Academy of Medical Sciences, Beijing 100050, PR China

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Abstract

The isolation of griffonilide (**1**), lithospermaside (**2**) and magnoflorine (**3**) from the roots of *Semiaquilegia adoxoides* is reported. © 2001 Elsevier Science B.V. All rights reserved.

Keywords: *Semiaquilegia adoxoides*; Griffonilide; Lithospermaside; Magnoflorine; Steroids

Plant material. *Semiaquilegia adoxoides* (DC.) Makino (Ranunculaceae), roots (8 kg) were collected in Guilin City, Guangxi Province, China in November 1998 and identified by Prof R.Y. Liu. A voucher specimen was deposited in the Henan College of Traditional Chinese Medicine.

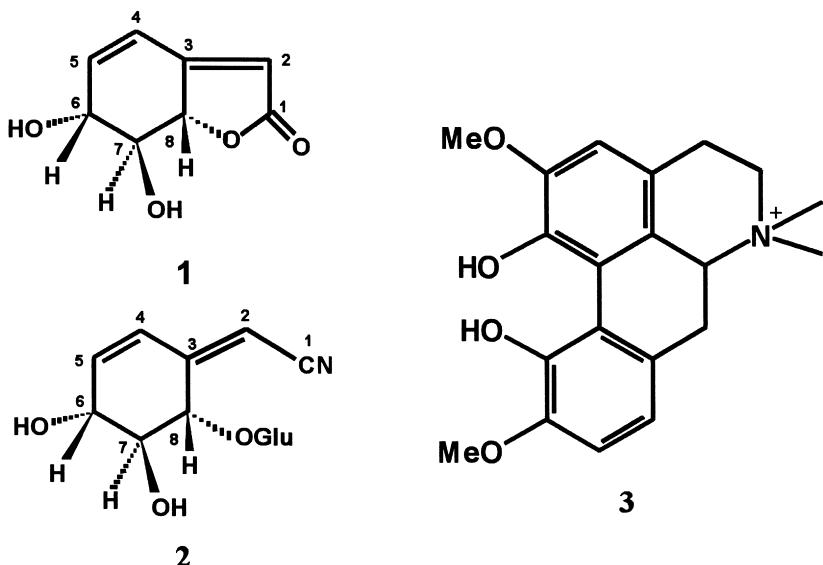
Uses in traditional medicine. To induce diuresis for treating stranguria and subdue swelling, as cooling and detoxicating [1].

Previously isolated constituent. Semiaquilinoside [2].

*Corresponding author.

E-mail address: yxl30@psu.edu (Y.Z. Liu).

New-isolated constituents. β -Sitosterol [3] (200 mg), diosgenin [4] (120 mg), griffonilide (**1**) [5] (250 mg), lithospermoside (**2**) [5] (95 mg) and magnoflorine (**3**) [6] (30 mg).



Griffonilide (1). Colorless prismatic crystals (MeOH), $C_8H_8O_4$; EIMS m/z : 168 (M^+ , 55), 150 (14), 139 (50), 122 (45), 111 (100), 94 (32), 81 (39), 77 (12), 65 (73), 55 (85); $[\alpha]_D^{19.1} = -13.30$ (c 0.009, CHCl₃); ¹H-NMR (400 MHz, CD₃OD): δ 6.55 (1H, br d, *J* 10.0, H-4), 6.18 (1H, dd, *J* 2.0, 10.0, H-5), 5.85 (1H, br s, H-2), 4.92 (1H, d, *J* 10.4, H-8), 4.33 (1H, br d, *J* 8.0, H-6), 3.58 (1H, dd, *J* 8.0, 10.4, H-7); ¹³C-NMR (100 MHz, CD₃OD): 173.5 (C-1), 111.1 (C-2), 163.6 (C-3), 119.3 (C-4), 144.7 (C-5), 72.0 (C-6), 78.6 (C-7), 83.5 (C-8).

Lithospermoside (2). White amorphous powder, $C_{14}H_9O_8N$; EIMS m/z : 329 (M^+ , 2), 298 (2), 268 (4), 196 (10), 78 (17), 168 (12), 150 (42), 149 (100), 132 (40), 122 (26), 104 (45), 103 (38), 85 (37), 73 (78), 60 (60), 43 (49); ¹H-NMR (400 MHz, CD₃OD): δ 6.18 (1H, br d, *J* 10.0, H-4), 5.97 (1H, dd, *J* 3.2, 10.0, H-5), 5.47 (1H, br s, H-2), 4.70 (1H, overlap, H-8), 4.14 (1H, m, H-6), 3.78 (1H, m, H-7), 4.74 (1H, overlap, Glu-1'), 3.35 (1H, overlap, Glu-2'), 3.26 (1H, overlap, Glu-3'), 3.28 (1H, m, Glu-4'), 3.36 (1H, overlap, Glu-5'), 3.75 (1H, d, *J* 12.4, Glu-6a'), 3.58 (1H dd, *J* 4.8, 12.4, Glu-NMR 6b'); ¹³C-NMR (100 MHz, CD₃OD): 117.2 (C-1), 96.7 (C-2), 155.0 (C-3), 126.4 (C-4), 135.8 (C-5), 69.6 (C-6), 73.6 (C-7), 75.3 (C-8), 102.2 (Glu-1'), 72.3 (Glu-2'), 75.7 (Glu-3'), 69.3 (Glu-4'), 75.5 (Glu-5'), 60.4 (Glu-6').

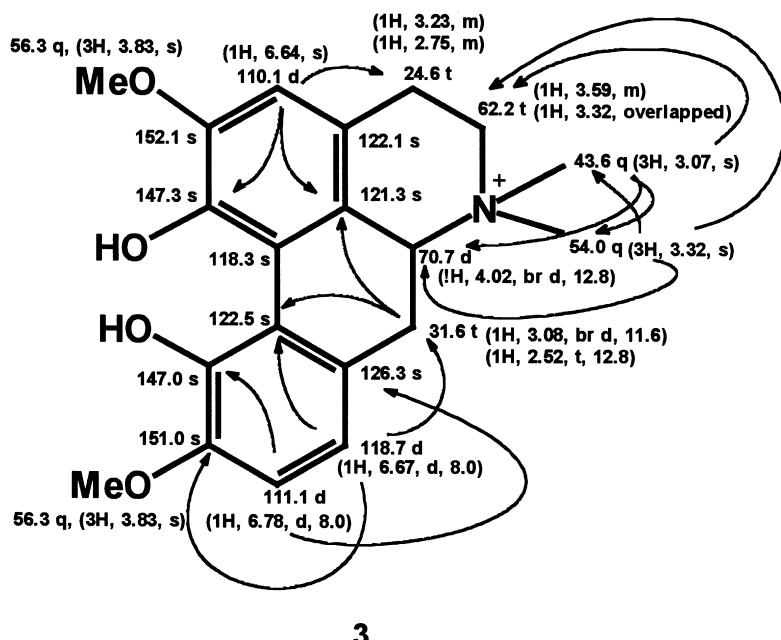


Fig. 1. NMR spectral data and HMBC correlations of magnoflorine (3).

Magnoflorine (3). Yellow amorphous powder, $C_{20}H_{24}NO_4$, FABMS (negative): 341 (M-1) $^-$; UV max (MeOH): 308.6, 270.2, 226.2 nm; 1H -NMR (400 MHz, CD_3OD) and ^{13}C -NMR (100 MHz, CD_3OD): see Fig. 1.

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