

Phytochemical communication

The major flavonoid of *Dodonaea angustifolia*

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Abstract

The major leaf flavonoid of *Dodonaea angustifolia*, an important South African traditional medicine, has been identified as 5,7,4'-trihydroxy-3,6-dimethoxyflavone (**1**). © 2000 Elsevier Science B.V. All rights reserved.

Keywords: *Dodonaea angustifolia*; Flavonoids; 5,7,4'-Trihydroxy-3,6-dimethoxyflavonone

Plant. African *Dodonaea angustifolia* L.f. (Sapindaceae), previously included in *D. viscosa* Jacq., is now accepted as a distinct species. Young leaves and twigs were collected in August 1997 on the Khamiesberg in South Africa and identified by one of us (BEVW). A voucher specimen (Van Wyk and Viljoen 3695) was deposited in the Rand Afrikaans University Herbarium (JRAU).

Uses in traditional medicine. A decoction of young leaves and twigs, known as *sandolien* or *ysterhouttoppe* in Afrikaans (*toppe* = tips), is an early Cape remedy for fever [1,2]. It is still used for colds, flu, stomach trouble and even measles [3,4].

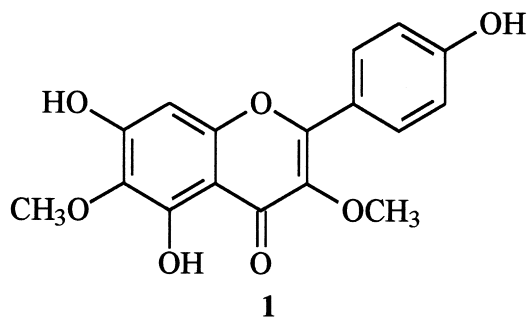
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Other early uses include the treatment of pneumonia, tuberculosis and externally as an antipruritic in skin rashes [3]. Early records and recent field studies all show that the plant is one of the most important traditional medicines of southern Africa [5,6].

Previously isolated constituents. Nothing appears to have been published on the chemical compounds of *D. angustifolia*, although other species have been investigated. Dodonic acid [7], hautriwaic acid [8] and structurally related diterpenoids have been isolated from *Dodonaea* species. Biologically active saponins [9], as well as several flavonoids such as pinocembrin, santin and penduletin [10] are known from *D. viscosa*.

New-isolated constituents. 5,7,4'-Trihydroxy-3,6-dimethoxyflavone (**1**) [11] (0.043% drywt.)



5,7,4'-Trihydroxy-3,6-dimethoxyflavonone (**1**). m.p. 228–230°C (Me₂CO-hexane); ¹H-NMR (300 MHz, CD₃OD): 7.93 (2H, *d*, *J* 9.0, H-2',6'), 6.88 (2H, *d*, *J* 9.00, H-3',5'), 6.45 (1H, *s*, H-8), 3.86 (3H, *s*, OMe), 3.75 (3H, *s*, OMe); ¹³C-NMR (75 MHz, CD₃OD): 180.4 (C-4), 161.8, 158.7, 158.2, 153.8, 153.7 (C-2, 5, 7, 9, 4'), 139.2 (C-3), 132.6 (C-6), 131.5 (C-2',6'), 122.7 (C-1'), 116.6 (C-3',5'), 106.4 (C-10), 95.1 (C-8), 60.9 (OCH₃), 60.6 (OCH₃); EIMS *m/z* 330 (M⁺, 100), 329 (34), 315(42), 312(28), 297(13), 287(33), 269(17), 151(13), 121(20), 111(12), 105(12), 97(18), 95(14), 91(18).

Acknowledgements

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