Phytochemical Investigation of *Ochna afzelii* Stem Bark

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Three isomeric biflavonoids, calodenins A and B and trans-α_2, β_2- dihydroderivative of calodenin B were isolated from the stem bark of *Ochna afzelii*. All of these are being reported for the first time from this plant.

Ochna afzelii R. Br. Exoliv (Ochnaceae) is a small tree which grows in the dense dry forest of tropical africa, where the natives use various parts (leaves, roots, wood and bark) to treat different health problems. Prominent medical uses include treatment of jaundice, toothache, female sterility, menstrual complaints and dysentery[1]. Previous chemical studies of members of Ochnaceae family afforded several interesting biflavonoids[2-7] but a survey of literature revealed no report of the chemical study on this plant. In continuation of our phytochemical investigation of the family Ochnaceae, we have examined the MeOH extract of *Ochna afzelii* stem bark. The air-dried and powdered stem bark (1.5 kg) was extracted with cold MeOH in a tank equipped with a mechanical stirrer. After filtration and removal of solvent, the crude extract (400 g) was fractionated by column chromatography on silica gel with a gradient mixture of CH_2Cl_2/MeOH (10/1 and 5/1) to give eight fractions (F1 to F8). Fraction F6 (1.38 g) was purified by column chromatography with the solvent mixture CH_2Cl_2/MeOH (20/1). Further purification was realized by gel permeation chromatography over sephadex LH-20 with MeOH to give compound 1, a known biflavonoid, calodenin A (19 mg) identified by comparing spectral data.

Fraction F1 (1.46 g) was further chromatographed over sephadex LH-20 (MeOH) and purified under the same conditions to yield compound 2, calodenin B and compound 3, trans-α_2,β_2-dihydroderivative of calodenin B.

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Compound 1 (calodenin A) is an amorphous orange solid (19 mg), Rf 0,34 (CH_2Cl_2/MeOH:15/1),IR υ_{max}(KBr pellet): 3337 (OH), 1620 (C=O), 1515 (C=C and Ar) cm^{-1}. EIMS, 70ev, m/z (%): 526 (M^+, 40.02), 378 (35.03), 295 (12.98),268 (20.01), 167 (40.01), 149 (100.00), 137 (42.03), 121 (48.08), 110 (81.99), 107 (62.00), 94 (58.04),81 (49.97), 71 (56.01),69 (88.00), 57 (96.01), 55 (97.99), ^1H NMR δ (300 MHz, Me_2CO-d_6) : 7.20 (2H, m H-2, $6A_1$), 6.83 (2H, m, H-3, $5A_1$), 3.07 (2H, t, J=7. 6Hz, H-β_1)3.65 (2H, t J=7. 6Hz, H-α_1), 6.25 (1H, s, H-5'B_1), 7.51 (2H, m, H-2, $6A_2$, 6.84 (2H, m, H-3, $5A_2$), 6.40 (1H, d, J=2.3Hz, H-3'B_2), 6.24 (1H, dd, J=8.9; 2.3Hz, H-5'B_2), 7.39 (1H, d, J=8.9Hz, H-6'B_2), 13.45 (1H, s, OH), 12.37 (1H,s,OH). A positive response to Shinoda test and the spectral data suggested it to be calodenin A[7].

Compound 2 (calodenin B) is crystallised from acetone as orange needles (10 mg), m.p 251-253°, IR υ_{max} (KBr pellet): 3335 (OH), 1623 (C=O), 1525 (C=C and Ar) cm^{-1}.^1H NMR δ (300MHz, Me_2CO-d_6):7.75 (2H, m, H-2, $6A_1$), 7.00 (2H, m, H-3, $5A_1$), 7.97 (1H, d, J=15.7Hz, H-β_1), 8.28 (1H, d, J=15.7Hz, H-α_1),6.29 (1H, s, H-5'B_1), 7.62 (2H, m H-2, $6A_2$), 6.95 (2H, m, H-3, $5A_2$), 6.40 (1H, d, J=2.3Hz, H-3'B_2), 13.31 (1H, s, OH), 12.37 (1H,s, OH). The spectral data and chemical evidence indicated it to be calodenin B[7-9].

Compound 3 (Trans-α_2,β_2-dihydroderivative of calodenin B) is crystallised from acetone as yellow needles (37 mg), m.p 65°, Rf 0.39 (CH_2Cl_2/MeOH : 15/1) IR υ_{max} (KBr pellet): 3342 (OH), 1631 (C=O), 1520 (C=C

and Ar) cm^{-1}. ^1H NMR δ (300 MHz, Me_2CO-d_6):7.36 (2H,m, H-2, $6A_1$), 6.89 (2H, m, H-3, $5A_1$) 7.99 (1H,d, J=15.5Hz, H-β_1), 7.79 (1H, d, J=15.5Hz, H-α_1), 5.97 (1H, s, H-5'B_1), 7.48 (2H, m, H-2, $6A_2$) 6.84 (2H, m, H-3, $5A_2$), 6.05 (1H,d, J=5.7Hz, H-β_2)5.30 (1H, d, J=5.7Hz, H-α_2), 6.35 (1H, d, J=2.3Hz, H-3, B_2), 6.38 (1H, dd, J=8.8; 2.3Hz, H-5'B_2), 7.77 (1H, d, J=8.8Hz, H-6'B_2), 14.13 (1H, s, OH), 12.03 (1H, s, OH). The spectral data suggested it to be trans - α_2,β_2 - dihydroderivative of calodenin B[8].

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Antiinflammatory Activity of Various extracts of *Pergularia extensa* N. E. Br. (Asclepiadaceae)

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Crude ethanol extract of *Pergularia extensa* leaves was successively fractionated with petroleum ether, solvent ether, ethyl acetate, butanol and butanone. The ethanolic extract and various fractions were investigated for antiinflammatory activity in rats at a dose of 100 mg/kg intraperitoneally. Ethanol extract and its butanol fraction exhibited significant antiinflammatory activity when compared with respective controls and were comparable with that of standard drug aspirin.

Even in this modern era, a large extent of Indian population still relies on the traditional systems of medicine, which are mostly plant based. Hence it is considered necessary to experimental evidence to validate, the traditional use of one such plant *Pergularia extensa* (Asclepiadaceae) syn.: *Pergularia daemia* (Forsk.); *Daemia extensa* R. Br. is a perennial twining herb, foetid when bruised and with much milky juice, stems clothed with spreading hairs[1]. Traditionally the plant is used as a pungent, coolant, anthelmintic, laxative and antipyretic. It is also known to cure biliousness, asthma, ulcers, leucoderma, uterine complaints, facilitates

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