ABSTRACT

Fractionation of crude petroleum ether extract of the leaves of *Bauhinia variegata* Linn (Leguminosae) led to the isolation of dotetracont-8, 16,21-triene-13-ol (1), 12,17,18,23,24-pentamethyl dotetracont-13, 17,23-triene-12-ol (2), hexacos-11-en-15, 20-diol (3) and lupeol (4). Their structures were elucidated by spectroscopic methods such as UV, IR, NMR and LCMS. All the compounds were isolated for the first time from this plant.

**Keywords:** *Bauhinia variegata* Linn; isolation; dotetracont-8, 16,21-triene-13-ol; 12,17,18,23,24-pentamethyl dotetracont-13, 17,23-triene-12-ol; hexacos-11-en-15, 20-diol; lupeol; spectroscopic method.

INTRODUCTION

*Bauhinia variegata* Linn (leguminosae) is known as Kanchanar in Hindi is a medium sized tree abundant in Sub-Himalayan tract extending eastwards to Assam, Eastern, Central and South India (The Ayurvedic Pharmacopoeia, 2001). The various parts of the plants viz., leaves, flower buds, flower, stem, stem bark, seeds and roots are used in fever, as tonic, astringent, diarrhoea, dysentery, hemorrhoids, piles, edema, laxative, anthelminthic, antiplague, in skin diseases, wound healing, antioxcigenic, antitumor, in obesity, stomatitis, antidote for snake poisoning, dyspepsia, flatulence and as carminative (Mali et al., 2007). The chemical constituents isolated so far from the plant are β-sitosterol, kaempferol-3-glucoside, tannins (Wealth of India, 1998), carbohydrates, amides, reducing sugars, vitamin C, crude protein, fibers (Sharma et al., 1966), calcium, phosphorus (Sharma et al., 1968), quercetin, rutin, quercitrin, apigenin, apigenin-7-O-glucoside (Spilkova et al., 1992), heptatriacontan-12, 13-diol and dotetracontan-15-en-9-ol (Singh et al., 2006).

In the present work, we have isolated dotetracont-8, 16,21-triene-13-ol (1), 12,17,18,23,24-pentamethyl dotetracont-13, 17,23-triene-12-ol (2), hexacos-11-en-15, 20-diol (3) and lupeol (4) from the petroleum ether extract of dried leaves of *Bauhinia variegata*. All the compounds were isolated for the first time from this plant.

MATERIAL and METHODS

**Plant material**

Fresh leaves of *Bauhinia variegata* were collected, shade dried and authenticated by Dr. Shiddamallayya N, Central Council for Research in Ayurveda and Siddha, Bangalore. A voucher specimen (RRI/BNG/SMP/Drug Authentication/2007-08/15) of the plant is deposited in the Department of Pharmacognosy, The Oxford College of Pharmacy, Bangalore.

**General instrument details**

UV: Shimadzu UV VIS-1700; IR: JASCO FTIR 5300; LCMS: Agilent 1100 LC-MSD APCI; ¹H-NMR (500 MHz): Bruker Avance 500.

**Extraction and isolation procedure**

Coarsely powdered leaves (750 gm) were extracted with petroleum ether followed by chloroform by the process of continuous extraction (soxhlation). The crude extract was evaporated to dryness in a rotary film evaporator, with the percentage yield being 4.20 % and 0.71 % w/w in term of dry plant material. Crude petroleum ether extract was subjected to column chromatography over silica gel (60-120 mesh) using petroleum ether: benzene ratio (different ratio), petroleum ether (100 %) and benzene: chloroform (different ratio), taking 250 ml fraction each time. From petroleum ether (100 %), fractions 9-13 (BV-1); petroleum ether (100 %), fraction 21-30 (BV-2); petroleum ether : benzene : 1:0.2, fraction 42-45 (BV-3); petroleum ether : benzene : 1:2, fraction 142-145 (BV-4) were obtained which on further purification by fractional crystallization yielded compound 1 (25 mg), compound 2 (10 mg), compound 3 (25 mg) and compound 4 (07 mg) respectively.

RESULTS and DISCUSSION

The structures of compound isolated were elucidated on the basis of spectral data.

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Compound 4 was isolated as colorless powder. Positive test for Liebermann Burchardt test indicated the presence of tetracyclic triterpenoid compound. Its IR spectrum exhibited characteristic bands at 3288 cm⁻¹ for hydroxyl group. The ¹H-NMR as well as ¹³C-NMR data were found to be identical with the spectrum of those already reported earlier for lupeol (Lakshmi et al., 1975). It was further confirmed by TLC and CO-TLC method with the reference standard of lupeol. All the compounds were isolated for the first time from this plant.

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