Chemical Constituents From the Leaves of

**Callicarpapedunculata**

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INTRODUCTION

*Callicarpapedunculata* R. Brown belongs to the family of Verbenaceae, it is a small shrub widely distributed in Asian countries, and is very common in thickets at low altitudes. The aerial parts were collected from botanical garden, Bhopal University, India in September, 2014 and was identified (voucher specimen No. CP-74) by the taxonomist of the Department of Botany, Bhopal University. Collected leaves were dried and pulverized into a coarse powder and stored into an air-tight container. No previous phytochemical studies on *C. pedunculata* were reported. Crude extracts, major metabolites and their derivatives are also used in several disease like CNS activity, diabetes, analgesic, IBS, anti-rheumatic, excitant, febrifuge and tonic. However, previous studies have revealed that *C. macrophylla* produced diterpenoids such as calliterpenone and its monoacetate, and calliphylline, which is an isopimaradiene derivative.

RESULTS

Five kilograms of dried and powdered leaves of *C. pedunculata* were extracted four times with EtOH under reflux. Removal of solvents under vacuum, gave a brown gummy solid which was extracted with CHCl₃. Forty grams of the CHCl₃ extracts was chromatographed over silica gel (200–300 mesh) and eluted with petrol, and petrol–EtOAc (10:1, 5:1, 2:1, 1:1), EtOAc, MeOH. The elutes were collected as 500ml fractions. The fractionseparated from petrol–EtOAc (5:1) were combined (12.5g) according to TLC and further purified by chromatography over Sephadex LH-20, reverse phase C-18 silica gel and recrystallization to yield compound 1 (40mg), compound 2 (25mg), compound 3 (22mg), compound 4 (35mg), respectively. All these compounds are known compounds, which were identified by spectral analysis (IR, MS, ¹H NMR, ¹³C NMR) and chemical evidence as 14α-hydroxy-7, 15-isopimaradien-18-oic acid; 16α,17-dihydroxy-3-oxophyllocladane (2); 8,11,13,15-abietatetraen-18-oic acid (3); 6α-hydroxyxidorellol (4).

CONCLUSION

Representatives of four classes of diterpenoids were isolated from *C. pedunculata*, whereas, only 2 had been previously isolated from this genus. Compound 1, 3 and 4 have been reported from many other sources, such as 1 from *Salvia greggi* (Labiatae), 3 from *Larix kaempferi* (Pinaceae), 4 from *Stevia monardaefolia* (Compositae). This work is the first example of the occurrence of four types of diterpenoids in a single species of Verbenaceae. The diversity of diterpenoids in *C. pedunculata* is similar to that in some Labiatae species. However, the plants of Verbenaceae usually produce iridoid compounds and often the phenolic glycoside orobanchin but have a low occurrence of diterpenoids. The isolation of the four diterpenoids suggests that genus *Callicarpa* (Subfam. Viticoideae Briq) should be separated from Verbenaceae or be placed in Labiatae.

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REFERENCES


