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## Isolation of phytoconstituents from the flowers of Couroupita guianensis

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*Couroupita guianensis* is used extensively as an ingredient in many Ayurveda preparations which cure gastritis, scabies, bleeding piles, dysentery, and scorpion poison. The flower has been subjected to sequential extraction using petroleum ether, chloroform, ethyl acetate and methanol solvents. A new compound I Cycloart-24-en-3-ol-4'-exomethylene heptadeconate along with stigmasterol II, *p*-coumaric acid III, *o*-coumaric acid IV, caffeic acid V and quercetin VI have been isolated by column chromatography and characterised using IR, <sup>1</sup>H and <sup>13</sup>C NMR and MS spectral data. Compound I, III, IV and V are reported for the first time from *C. guianensis*.

Keywords: Couroupita guianensis, Lecythidaceae, flower, cycloart-24-en-3-ol-4'-exo methylene heptadeconate

During the past decade, the indigenous or traditional system of medicine has gained importance in the field of medicine. In most of the developing countries, a large number of populations still depend on traditional practitioners, who in turn are dependent on medicinal plants, to meet their primary health care needs. Thus, it is clear that herbal medicine plays a pivotal role in therapeutic strategies in the modern world. One such plant that has been used widely in traditional medicine is Couroupita guianensis Aubl. belonging to the family Lecythidaceae. It is grown in Indian gardens as an ornamental tree. C. guianensis, also called as Cannonball tree is native to South India and Malaysia and is commonly known as nagalinga pushpam in Tamil. In Ayurveda, it is called as ayahuma, it is used extensively as an ingredient in many preparations which cure gastritis, scabies, bleeding piles, dysentery, scorpion poison and many other<sup>1,2</sup> applications. The fruit pulp is used as a cure for headache. In folk medicine, the flowers are used to cure cold, intestinal gas formation and stomach ache, and also for treating diarrhoea, and when dried and powdered, used as a snuff. The fragrance of flowers is used for curing asthma. The shell of the fruit is used as a utensil. The flowers of C. guianensis showed analgesic and anti-inflammatory, immunomodulatory, anthelmintic, antimicrobial, wound healing, antioxidant and antinociceptive activities<sup>3-8</sup>. Previous work on C. guianensis has showed that the plant consists of several chemical constituents with novel structures and possesses bio-active moieties. This includes eugenol, linalool, farnesol, nerol, tryptanthrine, indigo, indirubin, isatin, linoleic acid,  $\alpha,\beta$ -amyrins, carotenoids and sterols<sup>9-12</sup>. Even though the uses of the plant parts and their extracts are well known in various disorders, especially those against microbial infections, none of the studies aimed at isolation and identification of the constituents from the flowers of *C. guianensis*. This prompted us to undertake the present work and we have isolated and identified six compounds (I) to (VI) from *C. guianensis* by chromatographic and spectral methods.

## **Results and Discussion**

Fresh flowers of C. guianensis were collected from Palakkad district in Kerala and extracted with petroleum ether under cold percolation and concentrated in vacuo to yield 6.3 g of the residue (% on w/w basis). It was further subjected to sequential extraction with chloroform, ethyl acetate and methanol to yield 11.6, 12.2 and 18.2 g of residue respectively. The obtained residues were subjected to coloumn chromatography separately which led to the isolation of compounds I to VI. From the petroleum ether extract, compounds I and II were isolated and identified as cycloart-24-en-3-ol-4'-exo methylene hepta deconate and stigmasterol respectively by spectral methods. Compound I was isolated from C. guianensis for the first time. Compounds III, IV and V were also isolated for the first time from the