



A REVIEW: EXTRACT OF DIPLOCYCLOS PALMATUS AND ITS BIOLOGICAL ACTIVITY.

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ABSTRACT: Natural products a secondary metabolite is the constituent compounds prepared by plants during growth. It is stored in the leaves, stems, roots, and seeds throughout the life cycle of plants. The extract of each part of the plant by different solvents encounters the specific secondary metabolites constituents using different extraction techniques. Thus, it is important to explore the traditional medicinal plant parts and especially the extract of the active ingredients. It is reported that Tannins, diterpenes, glycosides, Alkaloids, triterpenoids, flavonoids, saponins, steroids, β -carotene, and proteins are phytochemical constituents of leaves and seeds extracts of *Diplocyclos palmatus*. Owing to this part we have dealt with a report of a review extract of *Diplocyclos palmatus* belonging to the family Cucurbitaceae.

KEYWORDS: *Diplocyclos palmatus*, Extract, Phytochemicals, Biological Activity.

INTRODUCTION

The medicinal plants are widely used by the traditional medicinal practitioners for curing various diseases in their day to day practice. In traditional system of medicine, different parts (Leaves, stem, flower, seeds and even whole plant) of *Diplocyclos palmatus*.



Figure. 1

Diplocyclos palmatus (L.) C. Jeffrey commonly known as shivalingi is a lesser heard and perennial climber having various biological activity of extract. The preliminary phytochemical constituents of leaves and seeds extracts. [1] The plant is found to be useful in several

disorders. [2] Phytochemicals, antioxidant potential and phenolic profiling of leaf and fruit extracts of *Diplocyclos palmatus*. [3] *Diplocyclos palmatus* (L.) C. Jeffrey fruit containing bioactive components extracted by continuous shaking extraction (CSE) and showed the highest cucurbitacin content in this plants [4] it is commonly found in the warmer rainforests of Australia, Malaysia, Africa, India, and South China. The seeds are being used for promoting the conception in women and sperm production in men. Their seeds are utilized in the remedial of cough, asthma, flatulence, skin diseases, and snakes bite. Further, their leaves are also used for inflammation and asthma. The data confirm that the component conjugated fatty acid in *D. palmatus* seed oil is octadeca cis-9, trans-11, cis-13-trienoic acid (punicic). [5] The results showed that *D. palmatus* methanolic leaf extract (DPME) effectively inhibited the quorum sensing (QS) regulated virulence factor production as well as biofilm formation in *Serratia marcescens* and it also evidenced that the lifespan extension of photoaged *C. elegans* was accomplished by the actions of antioxidants such as tocopherols and phytol in *D. palmatus* methanolic leaf extract (DPME). [6] The antioxidant activity of the medicinal plants *Diplocyclos palmatus* were estimated by using 2, 2-Diphenyl 1-Picryl Hydrazyl (DPPH) assay. The present study aims at evaluating therapeutic potential of these medicinal plants due to their high free radical scavenging activity [7] the pharmacognostical characteristics and in vivo anticonvulsant activity of chloroform extracts of *Diplocyclos palmatus* leaves found no significant changes in average body weight of animals, up to tested oral dose of 3000 mg/kg, during acute toxicity study and suspension having good stability on storage. The in vivo study reveals the anticonvulsant activity of chloroform extract against MES and PTZ induced convulsions. The chloroform extract is found to be more potent, similar to Phenytoin [8]. The present study was carried out to determine and compare anthelmintic efficacies of these plants against the commercially available anthelmintic drug, nitazoxamide [9] the simultaneous HPLC-quantification of phenolic acid(s) in the aerial parts of *Diplocyclos palmatus* and evaluation of their bioactivity potential through in vitro antioxidant assay's [10] The chloroform and methanolic extracts of aerial parts of *Diplocyclos palmatus* contained alkaloids, flavonoids, tannins, saponins, diterpenes, triterpenoids, glycosides and steroids. Phenols were present in methanolic extract only. Petroleum ether extract contained tannins, triterpenoids, glycosides and steroids. Anthraquinones were totally absent in all the three extracts [11] *Diplocyclos palmatus* Seeds of Aqueous extract contains Glycosides, Tannin, Phenolic compounds [12] The seed of *Diplocyclos palmatus* (L.) C. Jeffrey contained 12 % oil and 40 % protein [13]

MATERIAL AND METHODS

Successive extract of was carried out using Soxhlet apparatus. 20 gr *Diplocyclos palmatus* L. leaves and seed powder was taken [1] The fruits were oven dried for 72 h at 60 ° C, ground into fine powder (300 µm) and extracts were obtained by continuous shaking of fruit powder 30 min extraction time and 50°C using chloroform in continuous shaking extraction (CSE) and showed the highest cucurbitacin I (CUI) content (2.345±0.1686 mg/g DW). Similarly, the highest yield of cucurbitacin B (CUB) (1.584±0.15 mg/g DW) was recorded at ideal conditions (1:40 g/mL SS ratio and 60 min time and others similar to CUI). Among the tested extraction methods, the highest CUI, CUB, and CUI+B yield were recorded from steam bath assisted extraction. [4] The crushed seeds were repeatedly extracted in a conical flask at room temperature 30°C with n-hexane it founds the conjugated fatty acid in seed oil octadeca cis-9, trans-11, cis-13- trienoic acid [5] leaf powder was extracted using methanol [6] The plant materials were extracted with methanol using soxhlet extraction apparatus continuously for 16 hours [7] The plants were successively extracted using chloroform. The extract was screened for phytochemicals using HPTLC, GCMS techniques [8] the coarse powder (40 mesh) was subjected to cold maceration with 100% methanol. Extracts were

continuously stirred for 6 hrs and kept up to 18 hrs at room temperature. [10] Fresh fruit rind of *Diplocyclos palmatus* Jeff. (1 g) were vortexed extracted with acetone (20 mL) for 10 min. The extract was filtered and subjected to TLC for estimation of β -carotene [14]

BIOASSAY

The fruits of *D. palmatus* were revealed as a potent antioxidant, anti-diabetic and anticancer bio-resource [4]. The ethanolic extract of *D. palmatus* fruits was shown analgesic activity and it was found to be more remarkable. [15] The presence of organic constituents like alkaloids, triterpenoids, flavonoids, saponins, steroids and proteins in the dried fruit. This provides impetus to conduct advanced research on this fruit to uncover its vast medicinal potential. [16] The ethanol extract of *Diplocyclos palmatus* (L) C. Jeffrey seeds possess analgesic, anti-inflammatory and antiarthritic activities in animal model [17] The result indicated β -carotene was detected and amount of β -carotene in fruit rind of were found to $0.0065 \pm 0.0003 \text{ mg g}^{-1}$ in *Diplocyclos palmatus* Jeff [14] the concentration of flavonoids and phenols correlates very well with the anti-oxidant activity as methanol extract also showed the maximum antioxidant activity and methanol is the best extraction solvent for the extraction of various phytochemicals from the *Datura metel* plant leaves [18]

FINDING AND CONCLUSION

Tannins, diterpenes, glycosides, Alkaloids, triterpenoids, flavonoids, saponins, steroids and proteins are phytochemical constituents of leaves and seeds extracts of *Diplocyclos palmatus*. [16] Leaves and seeds extract of *Diplocyclos palmatus* were found and evaluate their antioxidant capacities leaves extracted with water showed significantly higher antioxidant activity. [3] study was undertaken to compare the effect of using different extraction solvents to extract the active components like alkaloids, flavinoids, saponins, steroids and tannins from the dried leaves of the *Datura* plant [18] The conflict of this review that the *Diplocyclos palmatus* extract contains compounds also select for molecular docking study [19] extraction method have significant effects on extraction efficiency, phytochemical profile and biological activity [20] The extraction of bioactive compounds from the plants and their quantitative and qualitative estimation is important for exploration of new biomolecules to be used by pharmaceutical and agrochemical industry directly or can be used as a lead molecule to synthesize more potent molecules. [21]

ACKNOWLEDGEMENTS

The author are very grateful to the Principal, Moreshwar College Bhokardan and Head Department of Chemistry Moreshwar College Bhokardan Providing required facilities. We express our sincere deep gratitude to Dr.B.S.Dobhal sir, Head Dept. of Chemistry Badrinarayan Barwale College Jalna and senate member Dr. Babasaheb Ambedkar Martathwada University Aurangabad for the needful assistance.

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