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Bioactivity of compounds from *Diploclisia glaucescens*

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Background: *Diploclisia glaucescens* ("Ata thiththa wel") belongs to the family Menispermaceae, is a creeper which grows in the mid-country regions of South India and Sri Lanka. The leaves have been used in the treatment of biliousness and venereal diseases.

Objectives: To study the chemistry and bioactivity of secondary metabolites isolated from the stem of *D. glaucescens.*

Methods: 50g of Methanol extract of dry mature stem of *D. glaucescens* was chromatographed over silica gel (*n*-hexane-EtOAc-MeOH) followed by HPLC. All the isolates were screened for antioxidant activity using DPPH, antifungal activity against *Cladosporium cladosporioides*, phytotoxicity (lettuce seed germination assay), brine shrimp toxicity (*Artemia salina*) and enzyme inhibitory assays on α-amylase, α-glucosidase, acetylcholinesterase and lipase.

Results: The methanol extract furnished six compounds 3-deoxy-1β-20-hydroxyecdysone (**1**), abutasterone (**2**), 20-hydroxyecdysone (**3**), makisterone (**4**), diploclisin (**5**), 20-hydroxyecdysone 2,3,22-triacetate (**6**). Compounds **1**, **2** and **3** showed moderate brine shrimp lethality at 98.69 ppm, 46.39 ppm and 54.94 ppm, respectively. Strong antioxidant activity was observed for compounds **1** and **6** against DPPH at 30.18 ppm and 0.12 ppm, respectively. Compound **3** showed shoot inhibition of lettuce seedlings at 135.65 ppm while compound **2** showed root inhibition of lettuce seedlings at 330.29 ppm. Moderate α-glucosidase inhibitory activity was observed for compounds **3** at 16.19 ppm and **6** at 9.69 ppm. None of the compounds exhibited α-amylase, lipase and acetylcholinesterase inhibitory activities and antifungal activity against *C. cladosporioedes*.

Conclusion: *Diploclisia glaucescens* can be considered as a potential source for the isolation of new therapeutic agents.

Keywords: *Antioxidant, Brine shrimp lethality, Diploclisia glaucescens, Enzyme inhibitory activities*