
Evaluation of antioxidant activities of two polyherbal formulations (Desadun Kalka and Buddharaja Kalka) found in Sri Lankan Ayurvedic treatments

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Polyherbal formulations are used in Ayurveda, to treat illnesses, in which various ratios of herbs and other solid and oil constituents are mixed in minute amounts. The two prominent polyherbal formulations utilized by locals for medical ailments are Buddharaja Kalka (BK) and Desadun Kalka (DK). Even though there are published studies analyzing the therapeutic effects of polyherbal formulations, no evidence has been reported regarding their bioactivities. Therefore, this study aims to evaluate the antioxidant activity of BK and DK compared to a positive standard. Both Kalka were purchased from a local Ayurvedic store, extracted with ethyl acetate and the solvent was evaporated using a rotary evaporator. The antioxidant activities were evaluated using phosphomolybdenum assay and DPPH free radical scavenging assay. In addition, total phenolic (TPC) and total flavonoid (TFC) contents were estimated. A higher TPC was observed for DK (34.84 ± 0.72 mg GAE/g extract) than that of the BK (10.22 ± 0.18 mg GAE/g extract), and the highest TFC was present in DK (159.77 ± 0.98 mg GAE/g extract). The total antioxidant capacity based on phosphomolybdenum assay displayed a higher value in DK (303.33 ± 2.07 mg AE/g extract) than in BK (210.00 ± 1.67 mg AE/g extract). Further, higher DPPH free radical scavenging activity was observed in DK. Interestingly, both BK and DK showed higher antioxidant activity than the positive control butylated hydroxytoluene (BHT) with IC_{50} values of 23.082 ± 1.547 mg/mL, 28.308 ± 1.102 mg/mL and 34.044 ± 1.557 mg/mL respectively. Hence, DK and BK could be used as potential free radical scavengers.

Keywords: Polyherbal formulation, Buddharaja Kalka, Dssadun Kalka, Antioxidant activity

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