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In-Vitro Antioxidant Activities of *Amukkirai chooranam*, a Siddha Herbal Preparation

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Abstract

"*Amukkirai Chooranam*" is a Siddha herbal fine powder preparation which is used for the treatment of various ill health conditions including rheumatism, sleeping disorders, gastric ulcer, and anaemia. The main component of this preparation is root of *Withania somnifera* Dunal. This study focused on assessing in-vitro antioxidant activities of hot aqueous and methanol extracts of the "*Amukkirai Chooranam*" based on the total phenolic contents, total flavonoid contents, 2, 2-diphenyl-1-picrylhydrazyl (DPPH) activity, Ferric-reducing antioxidant power (FRAP) assay, 2, 2' - azinobis-(3-ethyl-benzothiazoline- 6-sulphonic acid) (ABTS) activity, and iron chelating activities. The assays were carried out using High-throughput 96-well Micro-plate reader. Data were analysed by simple statistical method. The total phenolic and total flavonoid contents were determined as Gallic acid equivalents (mg GAE/g), and Quercetin equivalents (mg QE/g) per gram of plant material on dry basis respectively. The highest extraction yield (weight basis) of "*Amukkirai Chooranam*" (29.1%) was obtained for the hot aqueous extract compared with the hot methanol extract (13.5%). The total phenolic and total flavonoid contents (mean \pm standard deviation) in the methanol extract of "*Amukkirai Chooranam*" were found to be higher (20.56 ± 0.67 mg GAE/g; 7.21 ± 0.85 mg QE/g) than in the aqueous extract (9.90 ± 0.42 mg GAE/g; 2.74 ± 0.35 mg QE/g). Iron chelating activity was not found at the highest possible concentration of both extracts of "*Amukkirai Chooranam*". Although the total phenolic and flavonoid components were detected in this preparation, overall results of antioxidant assays (ABTS, FRAP and DPPH) indicated that in comparison to the standard trolox, "*Amukkirai Chooranam*" has low antioxidant activity.

Key words: *Amukkirai Chooranam* In-vitro antioxidant activities, Herbal preparation, Siddha Medicine