248/D

An *in vitro* assessment of antioxidant potential of *Trichosanthes cucumerina*

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Trichosanthes cucumerina Linn. (Family:Cucurbitaceae), locally known as Dummella is commonly found in Asian countries including Sri Lanka. The aerial parts of *T. cucumerina* are widely used in combination with other plants in the traditional medicinal systems as a remedy for fever, dropsy, acute bronchitis, boils, inflammation, skin diseases, jaundice, diabetes and gastric lesions. The antioxidant properties of aerial parts have not been scientifically investigated so far. However, a close relative of the *T. cucumerina* such as, *T. kirilowii* have shown antioxidant properties. Therefore, this study was undertaken to investigate the antioxidant potential of cold ethanolic extract (CEE) and hot water extract (HWE) of *T. cucumerina* aerial parts using 3 *in vitro* assays: (1) TBARS (thiobarbaturic acid reactive substances) assay, (2) $DPPH^{\cdot}$ (2, 2 – diphenyl – 1 – picrylhydrazyl) scavenging assay and (3) β - carotene – linoleic acid model. In addition, total polyphenolic content of CEE and HWE were determined according to the Folin – Ciocalteu colorimetric method.

In TBARS assay, CEE (AI%; Antioxidant Index Percentage 30.2 $\pm$ 0.6) showed the higher antioxidant potential than that of HWE (AI%: 26.5 $\pm$ 0.2). Interestingly, in this assay, both CEE and synthetic antioxidant BHT (AI%: 32.4 $\pm$ 0.8) had same ability of delaying the lipid peroxidation. The scavenging effects of *T. cucumerina* extracts on $DPPH^{\cdot}$ radicals decreased in the following order: CEE (EC_{50}:15.7 $\pm$ 0.4 μg/mL) > HWE (EC_{50}:39.2 $\pm$ 0.2 μg/mL). However, the synthetic antioxidants, BHT (EC_{50}: 10.6 $\pm$ 0.6 μg/mL) posses higher ability of scavenging $DPPH^{\cdot}$ In the β - carotene – linoleic acid model the AA% (Antioxidant percentage) of CEE (81.2 $\pm$ 1.8) was comparable with the synthetic antioxidant, BHT (84.2$\pm$1.2). However, the AA% of the HWE (76.9$\pm$ 0.9) was lower than that of BHT. The total polyphenolic content present in HWE and CEE were 45.4 $\pm$ 0.76 and 62.3 $\pm$ 0.30 mg gallic acid/g extract). According to the results the extracts obtained from aerial parts of *T. cucumerina* had *in vitro* antioxidant activity as judged by TBARS assay, $DPPH^{\cdot}$ scavenging assay and β - carotene – linoleic acid model.

In conclusion, these results demonstrate, for the first time, *in vitro* antioxidant activity of *T. cucumerina* aerial parts.

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