PROTECTIVE EFFECT OF EDIBLE CUCURBITACEAE SEED EXTRACT FROM CAMEROON AGAINST OXIDATIVE STRESS

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Abstract

Among foods that possess potent medicinal properties, Cucurbitaceae seeds stand as a promising source, since they are assumed to have a protective effect against oxidative stress. In order to analyze the antioxidant compounds of the seeds of Citrullus lanatus, Lagenaria siceraria, Telfaria occidentalis, Cucurbita maxima, Cucumis sativus, Cucumeropsis mannii, and Cucurbita moschata, the dried seeds were extracted in MeOH-H2O (50 %; v/v) mixture at constant mixing rate. Qualitative phytochemical analyses were done followed by quantitative analyses. Total phenolic and flavonoid contents were determined using the Folin-Ciocalteu reagent and the aluminium chloride colorimetric method respectively. The alkaline precipitation method was used for alkaloid analysis, while the tannin content was evaluated using Butanol-HCl. The gravimetric method was used to determine saponin content. The antioxidant properties were found in all the seeds. The content in alkaloids (669 mg/100 g fw), flavonoids (881 mg CE/100 g fw) and phenols (303.858 mg GAE/100 g fw) were significantly higher in the seeds of T. occidentalis. C. sativus had significantly higher amounts of saponins (8.5 mg/100 g fw) and also higher amounts of tannins (145 mg LCE/100 g fw), while C. maxima showed higher anthocyanin concentration (222 mg c-3-gE/100 g fw). Condensed tannins (93.78 mg LCE gE/100 g fw) were most present in the seeds of C. sativus. The Friedman test allowed us to classify the seeds according to their content in phenolics, (p <0.001): T. occidentalis >C. maxima > C. mannii. These results show that our seeds have potential protective effect against oxidative stress.

Key words: antioxidative property, Cucurbitaceae seeds, oxidative stress, phytochemical compounds, classification

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