

Total phenolic content and antioxidant activities of corchorus capsularis and stevia rebaudiana extracts

ABSTRACT

The purposes of this study were to determine total phenolic content (TPC) and antioxidant activities of *C.capsularis* and *S.rebaudiana*. Methodology: *C.capsularis* was extracted successively with methanol and chloroform methanol separately while *S.rebaudiana* was extracted using methanol and chloroform solvent. The plant extracts were used to conduct various antioxidant assays. TPC assay using Folin-Ciocalteu method was used to assess the presence of phenolic compounds in each sample. The extracts samples were also subjected to assess their potential antioxidant activities through DPPH, ABTS and FRAP assay. The present study showed that both methanol extract of *C.capsularis* and *S.rebaudiana* had highest TPC, followed by chloroform extract of *S.rebaudiana* and chloroform methanol extract of *C.capsularis*. Next, the DPPH radical scavenging assay was found to be higher in the methanol extract of *S.rebaudiana* at the concentration of 154.67 μ g/ml. The cation radical scavenging activity, measured by ABTS assay was shown that methanol extract of *S.rebaudiana* (278 μ g/ml) had the lowest EC₅₀ as compared to the other samples. Interestingly, among the various samples, the methanol extract of *S.rebaudiana* demonstrated a very significant antioxidant activity in FRAP assay ($p < 0.05$). The results of the present study showed that all the extract samples contain significantly high phenolic compounds with superior antioxidant activity as evidence by scavenging of free radical including DPPH and ABTS. In conclusion, it is conceivable that the *C.capsularis* and *S.rebaudiana* have shown potential as sources of natural antioxidants.

Keyword: *C.capsularis*, *S.rebaudiana*; TPC; Antioxidant activity