Potential antioxidant and cytotoxic properties of secondary metabolite extracts from Carica Papaya fruits and seeds

Abstract

Objective: This study was done to examine antioxidant and cytotoxic potential in the extracts of fruits and seeds from the traditionally used medicinal plant, Carica papaya. Methods: Antioxidant and cytotoxic potential of crude methanol, hexane fraction and ethyl acetate fraction from both fruits and seeds of Carica papaya were compared and assessed by DPPH free-radical scavenging assay and brine shrimp lethality assay. Total phenolic and flavonoid contents were determined by Folin-Ciocalteu and aluminium chloride colorimetric methods respectively. Bioactive fractions were then characterized and analyzed by silica thin layer chromatography. Results: Results showed that both ethyl acetate fractions from the fruits and seeds of Carica papaya are high in their antioxidant activities (IC50 values of 30.61 µg/ml and 25.97 µg/ml respectively) as well as cytotoxic (LC50of 163.96 µg/ml and 142.27 µg/ml respectively). High antioxidant activities of ethyl acetate fractions obtained from fruits and seeds are strongly correlated to the total phenolic contents and moderately correlated to the total flavonoid contents. Conclusion: This study suggested that both ethyl acetate fractions from fruits and seeds of Carica papaya may have the potential to be further developed into therapeutic option for treating cancer, of which the ethyl acetate fraction from seeds raises a slightly higher prospect.