

Phytochemical analysis and Antioxidant Activity of Methanolic Extract from Fruit of *Abelmoschus esculentus*

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ABSTRACT

Many studies supported consuming diet rich in phytochemicals and antioxidants from plants will provide a health -protective benefit. *Abelmoschus esculentus* (okra) is a flowering plant and cultivated through out the tropical and temperate region in the world. Okra is known for its nutritional value and has been acclaimed to have various health benefits. The present investigation deals with qualitative phytochemical analysis for various phytoconstituents and the crude methanolic extract were purified by HPLC to fractionate major antioxidants and characterized by GC-MS. Quantitative estimation of total phenol, total flavonoid content and antioxidant activity of methanolic extract were carried out. Phytochemical analysis revealed the presences of tannins, saponins, terpenoids, flavonoids, anthraquinone, reducing sugar and steroids. The results of HPLC analysis provides peaks determining the presence of antioxidant compounds all of them were confirmed through GC-MS analysis. To our knowledge three major bioactive compounds were identified and quantified which includes quercetin (1.19 mg/g), rutin (0.313 mg/g) and luteolin (0.063mg/g). Total phenol and flavonoids content was estimated to be 21.8±2.0mg gallic acid equivalents/g and 3.05±2.0mg quercetinequivalents/g.

The enzymatic antioxidants such as SOD, CAT and GPX and non-enzymatic antioxidants such as ascorbic acid and reduced glutathione activities were measured using standard method. The results showed significant quantity of enzymatic and non enzymatic antioxidants. The present study confirmed that the methanolic extract of *Abelmoschus Esculentus* has strong antioxidant activity and its usage can be encouraged in human nutrition and in disease treatment.