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## Identification and quantification of polyphenols in *Sorghum bicolor* (L) Moench leaves extract using reverse-phase HPLC-DAD

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Plants are used traditionally, as medicine due to their antioxidant activity which is due to their ability to form secondary metabolites which are used to restore health and play important role in treatment of many diseases. The use of the plants, plant extracts and isolated bioactive compounds from natural sources has been a lead that provided the foundation to modern medicine. In Nigeria, extracts from the leaves of *S. bicolor* is commonly used in traditional medicine for treatment of ailments and as blood supplement. The phytochemicals screening of the aqueous, methanol and ethanol extracts of the *Sorghum bicolor* showed the presence of some bioactive compounds. The aqueous extract indicated flavonoids and terpenoids and absence of alkaloid, saponin, tannin, steroid, anthraquinone and phlobatannin. However, saponin, tannin, flavonoid and terpenoid were found in the methanol extract while alkaloid, steroid, anthraquinone and phlobatanin were absent. The flavonoids and phenolic acids contained in the extract were investigated using Reverse-Phase HPLC-DAD and the concentrations of the identified phenolic compounds in mg/g were: Gallic acid ( $13.54 \pm 0.02$ ), catechin ( $9.29 \pm 0.01$ ), chlorogenic acid ( $13.48 \pm 0.01$ ), caffeic acid ( $52.17 \pm 0.03$ ), ellagic acid ( $32.64 \pm 0.02$ ), rutin ( $41.28 \pm 0.01$ ), isoquercitrin ( $16.71 \pm 0.02$ ), quercitrin ( $83.52 \pm 0.03$ ) quercetin ( $70.49 \pm 0.01$ ) and kaempferol ( $71.16 \pm 0.01$ ). The result in this study shows that the extract is rich in polyphenols with antioxidant potential and may validate the traditional medicinal use of the *S. bicolor* leaves extract.

### Biography

F B Borokini is a Chemistry Lecturer and Researcher with over 16 years of postgraduate teaching and research experience in both secondary and tertiary institutions in Nigeria. She currently teaches Chemistry in the Science Laboratory Technology Department, Rufus Giwa Polytechnic, Owo, Ondo State, Nigeria. She had her Master of Technology in Analytical Chemistry and PhD in Food Chemistry from the Federal University of Technology, Akure, Ondo State, Nigeria. She has served as the Departmental Course Adviser and the Faculty of Applied Science Representative in her institution. She is very resourceful and has some scientific publications in reputable journals.

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