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Polyphenols: Isolation, purification, characterization and evaluation of various biological activities**Abdullah Ijaz Hussain**

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The aim of the present study was to investigate the cardioprotective and anti-inflammatory potentials of polyphenol-rich fractions of cucurbitaceae species including *Cucurbita pepo*, *C. Moschata* and *C. Maxima* against rats models. Crude cucurbita extracts were fractionated in hexane, chloroform, ethyl acetate, butanol and aqueous ethanol to get HEF, CHF, EAF, BUF and AEF fractions, respectively. The AEF represented the maximum yield followed by BUF, HEF, EAF and CHF. The EAF contained the highest total phenolic contents, total flavonoid contents and flavonol contents. Among all the cucurbita fractions, EAF showed highest DPPH radical scavenging activity followed by CHF, BUF, AEF and HEF. Among all the cucurbita fractions, best reducing potential was also observed from EAF. The RP-HPLC analysis of all the cucurbita fractions revealed the presence of ferulic acid, vanillic acid, p-coumeric acid, gallic acid, p-hydroxy benzoic acid and chlorogenic acid, catechin, rutin, quercetin, myricetin and kaempferol. Cucurbita fractions of 250 and 500 mg kg⁻¹ body weight were given to male WKY rats daily for 21 days through oral gavage. Rats body weight, heart rate, blood pressure were monitored twice a week. The oxidative status of the animals was determined by conducting a series of tests from collected plasma including measurements of malondialdehyde (MDA), superoxide dismutase (SOD), reduced glutathione (GSH), nitric oxide (NO) and total antioxidant capacity (TAC) levels. Surgery was performed at the end of the study and blood pressure, pulse wave velocity (PWV) and echocardiogram (ECG) were recorded. It was concluded that EAF of CC possessed significant antihypertensive and antioxidant activity in the SHR group.

Biography

In 2009, Abdullah Ijaz Hussain managed to obtain my doctoral degree in Analytical Chemistry from the University of Agriculture Faisalabad and the University of Ulster Coleraine, UK (Split Program). Availing TWAS-USM Postdoc Fellowship, He completed his one year Post-doctorate research at the School of Pharmaceutical Sciences, University Sains Malaysia, and Penang, Malaysia in 2012. Currently and working as Professor of Chemistry and Director Hi-Tech Lab, GC University Faisalabad. He has so far supervising eight phd thirty mphil and 40 master students. His PI of some research projects. He has published more than 120 research papers and secured > 190 IF, 36 H-Index.