Biochem & Pharmacol 2013, 2:4
http://dx.doi.org/10.4172/2167-0501.S1.004

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International Conference and Exhibition on
Pharmacognosy, Phytochemistry & Natural Products
October 21-23, 2013 Radisson Blu Plaza Hotel, Hyderabad, India

A comparative study of total phenolic content and antioxidant activity in Zimbabwean indigenous and exotic herbal teas

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A vast majority of Zimbabwean plant materials and foods have not yet received much attention as sources of antioxidant phenols probably due to limited popularity or lack of commercial applications. The aim of this study was to determine phenolic content and antioxidant properties in Zimbabwean indigenous herbal teas and comparing them with at least one popular commercial exotic herbal tea Rooibos™. A total of six indigenous plants namely resurrection plant *Myrothamnus flabellifolius, Fadogia ancylantha, Lippia javanica, Ficus sycamore, Moringa oleifera leaves* and *Adansonia digitata* fruit pulp which are consumed as herbal teas in Zimbabwe were chosen for analysis. Ultrasound solvent extraction with 50 % methanol was used to extract the phenolic compounds. Total phenolic content was determined using the Folin-Ciocalteau method. The antioxidant properties were determined through the reducing power, 2, 2 diphenyl-1-picryl hydrazyl (DPPH) antiradical scavenging activity and inhibition of phospholipid peroxidation assays. The Butanol - HCl assay was used to determine tannin content. All plant extracts exhibited *in-vitro* antioxidant activity. *Ficus sycamore* had the highest total phenolic content (14.08 g / 100 g) as gallic acid equivalents (GAE) while the lowest was recorded in *Adansonia digitata* (0.80 g / 100 g). The highest tannin content was found in Baobab pulp (*Adansonia digitata*) 1.69 g / 100 g and Ficus sycamore (1.04 g / 100 g). Total phenolic content and antioxidant activity of indigenous herbal plants in Zimbabwe is competitive to the well known commercial exotic herbal tea Rooibos™ from the plant *Aspalathus linearis*.

Study of hypotensive activity of *Artemisia herba alba* in normal rats

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This study aims to evaluate the effect of *Artemisia herba alba* (Ah) intravenous injection on cardiovascular and renal function in normal rats. Intravenous bolus injection of Ah at the different doses of 50, 100 an 200 mg/kg produced a dose dependent reduction in arterial blood pressure ($p<0.001$). A significant reduction in heart frequency was observed after Ah injection at the doses of 100 and 200 mg/kg ($p<0.001$). Perfusion of aqueous Ah extract at a dose of 200 mg/kg/h caused a significant increase in urine output after three hours of perfusion ($p<0.001$). In addition, a significant increase in urinary sodium and potassium excretion was observed from the first ($p<0.05$) to the third hour ($p<0.001$) of Ah perfusion. Urinary chlorure excretion was increased after two hours of perfusion ($p<0.001$). However, glomerular filtration rate remained unchanged after Ah perfusion ($p<0.05$). We conclude that the aqueous Ah extract possess a potent acute hypotensive effect in normal rats. In addition, Ah perfusion may affect renal function to increase urine and electrolytes excretion.

Biography

Mohamed Eddouks is Professor at Moulay Ismail University, Morocco. After his post-doctoral fellowship at Department of Physiology, Faculty of Medicine of Montreal, Canada, he is working for the last 12 years on medicinal plants. His contribution to this field includes 3 international books and more than 70 peer-reviewed articles and book chapters of international repute. His is serving as editorial member of some prestigious journals. He has been the Dean of Polydisciplinary Faculty of Errachidia from 2008 to 2012.