

Pharmacology and Ethnopharmacology

May 02-04, 2016 Chicago, USA

Preliminary phytochemical analysis, total phenolics and antioxidant activity of selected species of the genus *Tulbaghia*

Samkeliso Takaidza, M Pillay and F Mtunzi
Vaal University of Technology, South Africa

Medicinal plants are known to produce a wide variety of bioactive compounds with therapeutic properties such as anticancer, anti-inflammatory and antimicrobial activity. Phytochemicals such as phenolics, vitamins and terpenoids are known to have free radical scavenging (antioxidant) properties. Antioxidants scavenge free radicals or reactive oxygen species and can be extremely important in inhibiting oxidative mechanisms that lead to degenerative diseases. Although almost all organisms possess antioxidant and repair systems to protect them against oxidative damage, the systems are insufficient to prevent it entirely. Therefore attention has been drawn to plant produced antioxidants which can counter free radical induced oxidative stress and overcome side effects of synthetic antioxidants. The aim of this study was to assess the phytochemicals, total content of phenolics and antioxidant activity of crude extracts from selected species in the genus *Tulbaghia*. Standard methods according to Harbone (1956) were used for preliminary phytochemical analysis. The total phenolic content of the plant extracts was determined using the folinciocalteu method whereas the total flavonoids were determined using the aluminium chloride colorimetric method. DPPH and ABTS assays were used to assess the antioxidant activity. Phytochemical screening of selected *Tulbaghia* species demonstrated the presence of flavonoids, glycosides, tannins, terpenoids, saponins and steroids. The amount of total phenols and flavonoids varied in the different plant extracts ranging from 63.65 to 85.45 milligrams gallic acid equivalent per gram of sample (mg GAE/g) of fresh material and 58 to 90.36 milligrams quercetin equivalent per gram of sample (mg QE/g) of fresh material respectively. The crude plant extracts exhibited low antioxidant activity. There is therefore further need to isolate and examine individual compounds from *Tulbaghia* species for antioxidant activity as some compounds work best as single entities.

Biography

Samkeliso Takaidza is currently doing her first year of PhD in Biotechnology and works as a Research Technician at Vaal University of Technology, where she completed MTech in Biotechnology in 2012. She graduated in 2005 with a BSc in Microbiology from University of Limpopo, South Africa. Her first degree was a BSc in Science with Education at Bindura University of Science and Technology, Zimbabwe.

samkelisot@vut.ac.za

Notes: