

60

**International Conference on Multidisciplinary  
Approaches - 2014**

**“Harnessing Knowledge and Harmonizing Diversities”**

**Conference Proceedings**

**13<sup>th</sup> and 14<sup>th</sup> August 2014**

**Faculty of Graduate Studies  
University of Sri Jayewardenepura  
Nugegoda, Sri Lanka**

## Comparative phytochemical screening and anti-arthritic potential in different extracts of *Enicostemma littorale* and *Withania somnifera*

V Sanmugarajah<sup>1</sup>, I Thabrew<sup>2</sup>, S R Sivapalan<sup>1</sup>

<sup>1</sup>Unit of Siddha Medicine, University of Jaffna

<sup>2</sup>Institute of Biochemistry, Molecular Biology and Biotechnology,

University of Colombo

*vsanmuga07@gmail.com*

Most of the phytoconstituents such as phenolics, glycosides, tannins, alkaloids, sterols and triterpenoids present in medicinal plants have natural anti-arthritic potential in human body. *Enicostemma littorale* Blume (EL) and *Withania somnifera* (L) Dunal (WS) are the local medicinal plants which have been widely used for treatment of arthritis conditions in Sri Lanka. Aim of this study was to compare the phytochemical constituents in different extracts and estimate quantitatively the active constituents related to anti-arthritic potential such as total phenolic, flavonoid, alkaloid, and saponin contents of these plants. The phytochemical screening of different (hot and cold ethanol, methanol, and aqueous) extracts of whole plant of EL and root of WS were carried out using standard laboratory procedures. The total flavonoid and total phenolic contents of hot methanol and aqueous extracts of both samples were estimated using the Folin-Ciocalteu and Aluminium-chloride method respectively. Although the alkaloids, flavonoids, steroids, tannins, coumarins, and phenols were high in all the extracts of each sample, the total phenolic and flavonoid contents in methanol extract of EL ( $44.4 \pm 1.3$  mg GAE/g;  $174.4 \pm 9.3$  mg QE/g) were relatively higher than in methanol extract of WS ( $20.6 \pm 0.7$  mg GAE/g;  $7.2 \pm 0.9$  mg QE/g). Higher content of total alkaloid compounds were found in the EL ( $2.3 \pm 0.01\%$  w/w) when compared to the WS ( $0.8 \pm 0.01\%$  w/w). It is noted that the anti-arthritic potential of EL was higher than WS. Further work should include the separation of active components and determination of anti-arthritic activities by recommended methods.

**Keywords:** Anti-arthritic, *Enicostemma littorale*, different extracts, medicinal plants, phytochemical screening, *Withania somnifera*