World Academy of Science, Engineering and Technology
International Journal of Bioengineering and Life Sciences
Vol:8, No:12, 2014

Antioxidant and Anti-Lipid Peroxidation Activities of Some Thai Medicinal Plants Traditionally Used for the Treatment of Benign Prostatic Hyperplasia

Authors : Wararut Buncharoen, Kanokporn Saenphet, Supap Saenphet

Abstract : Benign prostatic hyperplasia (BPH) is a reproductive problem, affecting elderly men worldwide. Several factors particularly free radical reaction and oxidative damage have been contributed to be key factors leading to the development of BPH. A number of medicinal plants with high antioxidant properties are extensively constituted in Thai herbal pharmacopoeia for treating BPH. These plants may prevent or delay the progression of BPH through an antioxidant mechanism. Thus, this study was to prove the antioxidant and anti-lipid peroxidation potential of medicinal plants traditionally used for the treatment of BPH such as Artabotrys harmandii Finet & Gagnep. Miq., Uvaria rufa Blume, Anomianthus dulcis (Dunal) J. Sinclair and Caesalpinia sappan Linn. Antioxidant parameters including free radical (2, 2-azino-bis-(3-ethyl-benzothiazoline-6-sulfonic acid) (ABTS•+), 2, 2-diphenyl-1-picrylhydrazyl (DPPH•) and superoxide) scavenging, ferric reducing power and anti-lipid peroxidation activity were determined in different crude extracts from the stem of these four plants. Total phenolic and ascorbic contents were also investigated. The highest total phenolic content was shown in ethyl acetate crude extract of A. dulcis (510 ± 26.927 µg GAE/g extract) while the highest ascorbic content was found in ethanolic extract of U. rufa (234.727 ± 30.356 µg AAE/g extract). The strongest scavenging activity of ABTS•+ and DPPH• was found in ethyl acetate extract of C. sappan with the IC50 values of 0.469 and 0.255 mg/ml, respectively. The petroleum ether extracts of C. sappan and U. rufa at concentration of 1 mg/ml exhibited high scavenging activity toward superoxide radicals with the inhibition of 37.264 ± 8.672 and 34.434 ± 6.377 %, respectively. Ethyl acetate crude extract of C. sappan displayed the greatest reducing power. The IC50 value of water extract of A. dulcis was 1.326 mg/ml which indicated the strongest activity in the inhibition of lipid-peroxidation among all plant extracts whereas the IC50 value of the standard, butyl hydroxyl toluene was 1.472 µg/ml. Regarding all the obtained results, it can be concluded that the stem of A. dulcis, U. rufa and C. sappan are the potential natural antioxidants and could have an importance as therapeutic agents in the preventing free radicals and oxidative damage related diseases including BPH.

Keywords : anti-lipid peroxidation, antioxidant, benign prostatic hyperplasia, Thai medicinal plants
Conference Title : ICMAP 2014 : International Conference on Medicinal and Aromatic Plants
Conference Location : Penang, Malaysia
Conference Dates : December 04-05, 2014