

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

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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* ($510 \pm 26.927 \mu\text{g GAE/g extract}$) while the highest ascorbic content was found in ethanolic extract of *U. rufa* ($234.727 \pm 30.356 \mu\text{g AAE/g extract}$). 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 $34.434 \pm 6.377 \%$, 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 $1.472 \mu\text{g/ml}$. 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

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