

Evaluation of Certain Medicinal Plants for in vitro Anti-Oxidant and Anti-Glycation Activities

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Abstract : The advanced glycation end products (AGEs) formed between the reducing sugar and protein as a result of Oxidative stress and non-enzymatic glycosylation play an important role in pathogenesis of diabetes and aging complication. Glycation results in the production of free radicals. The oxidation process is believed to play an important role in AGEs formation. Thus agents with antioxidative property and antiglycation activity may retard the process of AGEs formation. Selected medicinal plants for the present study include Catharanthus roseus, Bougainvillea spectabilis (pink flowers), Cinnamomum tamala, Cinnamomum zeylanica, Abutilon indicum, Asparagus racemosus, and Sapindus emarginatus. The crude ethanolic extracts of the selected medicinal plants at varying concentrations ranging from 1-100 mg/ml were evaluated for in vitro antioxidant and protein glycation activities by FRAP and glucose-BSA assay respectively. Among all the plants tested, Bougainvillea spectabilis, Catharanthus roseus and Abutilon indicum showed strong antioxidant activity. The antioxidant activity was expressed as mg of Gallic acid/ gm sample which was found to be 4.3 mg, 1.3mg, and 1.3mg respectively for Bougainvillea spectabilis, Catharanthus roseus and Abutilon indicum. The results of inhibition of the initial glycation product i.e., fructosamine was found to be 35% for Asparagus racemosus, Cinnamomum tamala and Abutilon indicum followed by the other plant extracts. The results indicate that these plants are potential sources of natural antioxidants which have free radical scavenging activity and might be used not only for reducing oxidative stress in diabetes but also open a new research avenues in the field of Natural Products.

Keywords : in vitro antioxidant activity, anti-glycation activity, ethanol extracts, polyphenols, Catharanthus roseus, Cinnamomum tamala

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