

Antioxidant property for lipophilic extract of *Strobilanthes kunthiana* flowers

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ABSTRACT

Strobilanthes kunthiana flowers are found on the hill slopes of the Western Ghats at an altitude of 6000 to 7000 feet. It is a bright blue bell shaped flower. The uniqueness of the flower is that it blooms once in 12 years. *S. kunthiana* flower belong to family Acanthaceae. The main objective of our research work is to isolate the phytochemical constituents from the flower by subjecting successive extraction, to perform the phytochemical screening of the extract and to evaluate its antioxidant activities. The antioxidant property was evaluated for all extract by H₂O₂ and D.P.P.H. method. Our experimental results revealed ethyl acetate extractive IC₅₀ value was about 34.4 µg/mL and 94.6 µg/ml. All the extracts showed positive reaction for phytosterols. The ethyl acetate extract, n-Butanol extract exhibit promising significant antioxidant activity and the n-hexane extract was devoid of any activity.

Keywords: *Strobilanthes kunthiana*, antioxidant, DPPH, H₂O₂

1. INTRODUCTION

In living systems, free radicals are generated as part of the body's normal metabolic process, and the free radical chain reactions are usually produced in the mitochondrial respiratory chain, liver mixed function oxidases, through xanthine oxi-dase activity, atmospheric pollutants and from transitional metal catalysts, drugs and xenobiotics. In addition, chemical mobilization of fat stores under various conditions such as lactation, exercise, fever, infection and even fasting, can result in increased radical activity and damage. Free radical oxidative injury now appears the fundamental mechanism underlying a number of human neurologic and other disorders. Oxygen free radical can initiate peroxidation of lipids, which in turn stimulates glycation of protein, inactivation of enzymes and alteration in the structure and function of collagen basement and other membranes, and play a role in the long-term complication of diabetes (Saha, 2008; Poalterait, 1997; Prior, 2003; Lee, 2003). Antioxidants may be defined as radical scavengers which protect the human body against free radicals that may cause pathological conditions such as ischemia, anaemia, asthma, arthritis, inflammation, neurodegeneration, Parkinson's diseases, mongolism, ageing process and perhaps dementias. Flavonoids and flavones are widely distributed secondary metabolites with antioxidant and antiradical properties (Makari, 2008; Augustin, 2005; Lu, 2000; Lee, 2003). Plants are potent biochemical factories and have been components of phytomedicine since times immemorial; man is able to obtain from them a wondrous assortment of industrial chemicals. Plants based natural constituents can be derived from any part of plant like bark, leaves, flowers, roots, fruits,

seeds, etc i.e. any part of the plant may contain active components (Makari, 2008). The beneficial medicinal effects of plant materials typically result from the combinations of secondary products present in the plant.

The medicinal actions of plants are unique to particular plant species or groups are consistent with this concept as the combination of secondary products in a particular plant is taxonomically distinct. Antioxidant based drugs/formulations for the prevention and treatment of complex diseases like atherosclerosis, stroke, diabetes, Alzheimer's disease, and cancer have appeared during the last 3 decades (Hennebelle, 2006; Zetola, 2002; Augustin, 2005; Prior, 2003). This has attracted a great deal of research interest in natural antioxidants. Subsequently, a worldwide trend towards the use of natural phytochemicals present in berry crops, tea, herbs, oilseeds, beans, fruits, and vegetables have increased. Several herbs and spices have been reported to exhibit antioxidant activity, including rosemary, sage, thyme, nutmeg, turmeric, white pepper, chili pepper, ginger, and several Chinese medicinal plants extracts. The majority of the active antioxidant compounds are flavonoids, isoflavones, flavones, anthocyanins, coumarins, lignans, catechins, and isocatechins. In addition to the above compounds found in natural foods, vitamins C and E, betacarotene, and tocopherol are known to possess antioxidant potential. The systematic record of the relative antioxidant activity in selected Iranian medicinal plant species extracts was recorded by Ourmorad et al in 2006. With this background and abundant source of unique active components harbored in plants, the present study was taken up on the medicinal plant namely *Strobilanthes*