



IN-VITRO ANTIOXIDANT POTENTIAL OF STEM AND ROOT BARK OF *OROXYLUM INDICUM*

Zaveri Maitreyi* and Dhru Bhavita

K.B. Institute of Pharmaceutical Education and Research, Sector-23, GH-6, Gandhinagar, Gujarat, India

*For correspondence: E-mail: khandharmaitreyi@gmail.com

Abstract: *Oroxylum indicum* is a medicinal plant species known in Gujarat by the common name Syonakh. The free radical scavenging potential of the *Oroxylum indicum* was studied by using different antioxidant models of screening. *In-vitro* antioxidant activity of petroleum ether, ethyl acetate and *n*-butanol extract of stem and root bark of *Oroxylum indicum* was determined by ABTS radical cation decolorization assay, Scavenging of nitric oxide radical, Reduction of ferric ions by ortho-phenanthroline colour method, inhibition of lipid peroxide formation. Ascorbic acid was used as standard and positive control for both the analysis. All the analysis was made with the use of UV-Visible Spectrophotometer (Systronics 117, Japan). The *n*-butanol extracts of stem and root bark of *Oroxylum indicum* shown very significant scavenging activity as compared to standard. Hence, it is suggested that *Oroxylum indicum* showed significant antioxidant activity.

Keywords: Stem bark, root bark, *Oroxylum indicum*, Antioxidant, Free radicals

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 oxidase activity, atmospheric pollutants and from transitional metal catalysts, drugs and xenobiotics [1]. 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 radicals or oxidative injury now appears the fundamental mechanism underlying a number of human neurologic and other disorders [2]. 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 [3]. 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 [4]. It is increasingly being realized that a majority of the disease of today are due to the shift if the balance of the pro-oxidant and the antioxidant homeostatic phenomenon in the body. Pro-oxidant conditions dominate either due to the increased generation of the free radicals or due to the excessive oxidative stress of the depletion of the dietary antioxidant [5]. Free radicals have been implicated in causation of ailments such as cancer, inflammation, diabetes, liver cirrhosis, nephrotoxicity etc [6]. Together with other derivatives of oxygen they are inevitable by products of biological redox