8. Antioxidant and Anti-Inflammatory Activities of Apium Graveolens: An in Vitro Study

Bhaskara Reddy Nallamilli
Research Scholar, Shri J.J.T., University, Jhunjhunu, Rajasthan.

Abstract

The present study was intended to estimate the invitro antioxidant and anti-inflammatory activity of aqueous leaf extract of Apium graveolens (ALAG). Antioxidant activity of the ALAGwas resolute by using the well recognized methods for free radical scavenging activities, such as superoxide (O$_2^-$) hydroxyl (OH$^-$), hydrogen peroxide (H$_2$O$_2$), nitric oxide (NO$^-$) and DPPH radical scavenging activities using ascorbic acid (AA) as standard drug. The anti-inflammatory activity was estimated by using HRBC membrane stabilization assay and albumin denaturation assay using diclofenac as standard drug. Treatment with ALAG showed dose dependent activity against superoxide, hydroxyl, hydrogen peroxide, nitric oxide and DPPH radicals. The ALAGshowed significantly stabilization of membrane and denaturation of protein at a concentration range of 50-500µg/ml. The antioxidant and anti-inflammatory activity of Apium graveolensmight be due to the presence of flavonoids, alkaloids, steroids, glycosides, phenols and furocoumarins. Furocoumarins contained celerin, bergapten, apiumoside, apiumetin, apigravrin, osthenol, isopimpinellin, isoimperatorin, celereoside, and 5 and 8- hydroxy methoxypsoralen. It also contains volatile oils, sesquiterpene alcohols and fatty acids (Khare CP., 2008).

Key words Apium graveolens, Antioxidant, Anti-inflammatory activity, In Vitro study

Introduction

Researchers indentified that the production of free radicals (reactive oxygen species (ROS) and nitrogen species), in uncontrolled way is the primary cause of numerous disorder conditions. Oxidative stress is caused by these free radicals produceinequity between antioxidant defense mechanisms and cellular production of ROS. ROS (e.g., superoxide radical, peroxynitril, hydroxyl radical, and hydrogen peroxide) are chief signaling molecules in the development of inflammatory disorders.
13. Antioxidant and Anti-Inflammatory Activities of Allium Ampeloprasum: An in Vitro Study

Bhaskara Reddy Nallamilli
Research Scholar, Shri JJT University, Jhunjhunu, Rajasthan.

Abstract
The present study was designed to evaluate the in vitro antioxidant and anti-inflammatory activity of aqueous leaf extract of Allium ampeloprasum (ALAA). Antioxidant activity of the ALAA was determined by following well established methods for free radical scavenging activities, such as superoxide (O$_2^-$), hydroxyl (OH$^-$), hydrogen peroxide (H$_2$O$_2$), nitric oxide (NO$^-$) and DPPH radical scavenging activities using ascorbic acid (AA) as standard. The anti-inflammatory activity was evaluated by using HRBC membrane stabilization assay and albumin denaturation assay using diclofenac as standard. Treatment with ALAA showed dose dependent activity against superoxide, hydroxyl, hydrogen peroxide, nitric oxide and DPPH radicals. The ALAA showed significantly stabilization of membrane and denaturation of protein at a concentration range of 50-500μg/ml. The antioxidant and anti-inflammatory activity of Allium ampeloprasum might be due to the presence of diallyl disulphide, trisulphide, diallyl sulphide and tetrasulfide and methyl disulphide. It also contains dipropyl disulphide and trisulphide and methyl propyl trisulphide and propenyl propyl disulphide. It also contains Eugenol, Geranyl acetate and Nonanol.

Key words: Allium ampeloprasum, Antioxidant, Anti-inflammatory activity, In Vitro study

Introduction
In normal cells the production of reactive oxygen and nitrogen species (free radicals) is a steady-state event, and recognized that the production of these reactive species in uncontrolled manner is the primary cause for numerous disease conditions. Oxidative stress is defined as an inequity between antioxidant defense mechanisms and cellular production of ROS. ROS (e.g.,