

2nd International Conference and Exhibition on Pharmacognosy, Phytochemistry & Natural Products

August 25-27, 2014 DoubleTree by Hilton Beijing, China

Proanthocyanidins are effective in preventing distant organ damage against ischemia/reperfusion injury

Ahmet Guven

Gulhane Military Medical Academy, Turkey

Ischemia/reperfusion injury (IRI) of the organs are complex and multifactorial pathophysiological process that involves the actions of reactive oxygen species (ROS), reactive nitrogen species (RNS), inflammatory cytokines, nitric oxide (NO), and polymorphonuclear lymphocytes (PMNL). Reperfusion of the organs after ischemia causes the activation and adhesion of PMNL, with the release of proinflammatory substances and the formation of free radicals. Circulating proinflammatory substances may cause further damage in distant organs. For example, intestinal IRI induces a systemic inflammatory response, and the release of harmful substances like ROS and RNS may affect the function and integrity of distant organs such as respiratory system, liver, heart, and kidney. There is growing interest in natural products as agents to manage health, particularly from the perspective of prevention. Proanthocyanidins (PA) are powerful polyphenolic antioxidants that have been classified according to their hydroxylation pattern into several subgroups, including procyanidins, prodelphinidins, propelargonidins, proflisetinidins, prorobinetinidins, proguibourtinidins, proteracacinidins, and promelacacinidins. Procyanidins are the most common group of naturally occurring PA. Predominant food sources are red wine, tea, chocolate, vegetables, and fruits like grapes, apples, pears, and cranberries. Proanthocyanidins have been demonstrated to exert a novel spectrum of biological, pharmacological, and therapeutic defenses against ROS and oxidative stress. Besides their free radical scavenging and antioxidant activity, PA exhibit anticarcinogenic, anti-inflammatory, antibacterial, antiviral, immune-stimulating, and cardioprotective features, and they inhibit the enzymes phospholipase A2, cyclo-oxygenase and lipo-oxygenase. Hence, we conducted a couple of studies and showed that PA has effective in prevention of distant organ damage against IRI.

Biography

Ahmet Guven has graduated from Gulhane Military Medical Faculty and completed his residence in pediatric surgery at the same faculty. He has published more than 50 papers in reputed journals and continuing his teaching and research program.

aguven@gata.edu.tr