

Vitex agnus-castus Anti-Inflammatory, Antioxidants Characters and Anti-Tumor Effect in Ehrlich Ascites Carcinoma Model

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Abstract : Objective: Appreciation of in-vitro anti-inflammatory and antioxidant characters of Vitex agnus-castus berries alcoholic extract and fractions, as well as in-vivo antitumor ability of alcoholic extract and chloroform fraction against Ehrlich ascites carcinoma is the aim of this study. Material and methods: Antioxidant properties of crude alcoholic extract of vitex berries as well as petroleum ether, chloroform, ethyl acetate and butanol fractions were evaluated, in-vitro assessments, as compared with standard materials, l-ascorbic acid (vitamin C) and butylated hydroxyl toluene(BHT). The anti-inflammatory activity was investigated in cyclooxygenase (COX)-1 and COX-2 inhibition assays. Moreover, in-vivo antitumor effect of vitex berries alcoholic and chloroform extracts were evaluated using Ehrlich ascites carcinoma model. Data were presented as mean \pm SE, and data were analyzed by one-way analysis of variance test. Results and conclusion: Berries crude extract showed potent antioxidant activity followed with its fractions ethyl acetate and chloroform as compared with standard (V.C and BHT). Ethyl acetate fraction showed good reduction capability, metal ion chelation, hydrogen peroxide scavenging, nitric oxide scavenging and superoxide anion scavenging. Meanwhile, chloroform fraction produced the highest free radical scavenging activity and total antioxidant capacity. In respect of lipid peroxidation inhibition, crude alcoholic extract and its fractions cleared weak inhibition in comparing with standard materials. Anti-inflammatory activity of V. agnus-castus berries chloroform fraction of vitex was best COX-2 inhibitor (IC₅₀, 135.41 μ g/ ml) as compared to vitex alcoholic extract or ethyl acetate fraction with weak inhibitory effect on COX-1 (IC₅₀, 778.432 μ g/ ml), where the lowest effect on COX-1 was recorded with alcoholic extract. Alcoholic extract and its fractions showed weak COX-1 inhibition activity, whereas COX-2 was inhibited (100%), compared with celecoxib drug (72% at 1000ppm). The crude alcoholic and chloroform extracts of V. agnus-castus berries significantly reduced the viable Ehrlich cell count and increased nonviable count with amelioration of all hematological parameters. This amelioration was reflected on increasing median survival time and significant increase (P < 0.05) in lifespan.

Keywords : anti-inflammatory, antioxidants, ehrlich ascites carcinoma, Vitex agnus-castus

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