【P4 - 14】

Protective effect of buthanol fraction from methanol extract of Aster scaber on oxidative stress in brain of mice administered with kainic acid

S. H. Oh*, D.-E. Sok[1], Y.-B. Kim[2] and Mee Ree Kim. Department of Food and Nutrition, [1]College of Pharmacy, Chungnam National University, [2]College of Veterinary Science, Chungbuk National University

To find natural products showing a protective action against oxidative stress in the brain, systematic solvent extracts of Asta scaber were administered i.p. with kainic acid via gavage to ICR male mice. Changes in total glutathione, lipid peroxidation(TBARS), glutathione reductase(GR) activity and glutathione peroxidase(GPx) activity in the brain tissue were examined. When compared to the vehicle-treated control, no significant changes in body and brain weight were observed in mice groups administered with either kainic acid or solvent extracts of aster scaber. Administration of kainic acid at 56 mg/kg significantly decreased the level of total glutathione. When solvent fractions extracted from methanol extract of Aster scaber were examined for their neuroprotective action, water or buthanol fraction(1g/kg) showed the most marked action in restoring glutathione level($p<0.05$). Moreover, reduced amount to 400mg/kg of buthanol fraction of Aster scaber exhibited a significant prevention against the kainic acid-induced increase of thiobarbituric acid-reactive substances (TBARS) value and decrease of total glutathion level in the cytosolic portion of brain homogenate ($p<0.05$). Also, among glutathione-related enzymes activities in the cytosolic portion of brain homogenate, GPx activity increased significantly($p<0.05$). Based on these results, buthanol fraction from methanol extract of Aster scaber was suggested as functional agents to prevent against oxidative stress in the brain of mice.