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Effects of Buthanol Fraction from Pine Needle on Lipid Metabolism and Oxidative stress in Serum of SD Rats

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This study was designed to investigate the effects of buthanol fraction of pine needle (*Pinus densiflora* Sieb et Zucc.) on lipid metaboilsm and oxidative stress in serum of Sprague-Dawley (SD). Male SD rats were fed basic diets (control group), and experimental diets (BuOH-25, BuOH-50, BuOH-100 groups : buthanol fraction of 25, 50 and 100 mg/kg BW/day added to basic diet) for 45 days. Body weights almost did not change in these groups. Total and LDL-cholesterol levels were markedly decreased (12.8%, 19.1% and 21.6%, 10.2%, 15.6% and 23.7% respectively) in these three groups, but HDL-cholesterol level was markedly increased about 20% in BuOH-100 group only compared with control group. Atherogenic indices were also markedly decreased (24.8%, 30.4% and 36.2%, respectively) in these three groups compared with control group. Hydroxyl radical (·OH) and lipid peroxide (LPO) formations were significantly inhibited (9.8%, 19.7% and 21.2%, 13.3%, 13.3% and 16.7%, respectively) in these three groups compared with control group. Superoxide dismutase (SOD) and catalase (CAT) activities were significantly increased (12.1% and 23.3%, 24.7% and 29.2%, respectively) in BuOH-50 and BuOH-100 groups compared with control group. These results suggest that buthanol fraction of pine needle may be inhibit chronic degenerative disease by improving a lipid metabolism, but may also effectively modulate aging process by attenuating an oxidative stress.