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Antioxidative Effect of Trapa japonica flerov. in Db/db Mice

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Diabetes mellitus is the fourth leading cause of death among Koreans and the major cause of death of diabetic patients is diabetic complications. Since oxidative stress could be one of the major factors to aggravate diabetic complications, compounds with antioxidant activity could improve diabetic complications. We investigated antioxidative effects of chronic feeding of methanol extract of Trapa japonica flerov. in animal model of type 2 diabetes mellitus, db/db mice (C57BL/Ks). Four week-old db/db mice (n=12) were fed AIN-93G semipurified diet or diet containing 10% Trapa japonica flerov. for 6wk. Hepatic thiobarbituric acid reactive substances (TBARS) was measured by the method described by Ohkawa et al. Hepatic catalase, superoxide dismutase (SOD) and glutathione peroxidase (GSH-px) were determined according to Abei, Markulund, and Lawrence method, respectively. TBARS level of Trapa japonica flerov. group was significantly lower than the control group. Feeding of Trapa japonica flerov. extract significantly increased hepatic SOD activity and catalase activity compared with the control group. These results demonstrated that chronic feeding of Trapa japonica flerov. extract could have a protective effect against diabetics complications in animal model of type 2 diabetes.