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Effect of Acute Feeding of Extracts of Mushroom Mycelia of *Agaricus Blazei Murill* on Postprandial Glucose in Normal Subjects and Patients with Type II Diabetes Mellitus

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Hypoglycemic effect of Extracts of Mushroom Mycelia of *Agaricus Blazei Murill* (Agaricus A *plus*, HK Biotech) was studied in vitro and in vivo. Effect of Agaricus A *plus* on α-glucosidase activity was measured using ρ-nitrophenyl-α-glucopyranoside as substrate. Agaricus A *plus*inhibited α-glucosidase activity by 26.9% at the concentration of 0.5mg/ml compared with acarbose(29.9%). The effect of acute feeding of Agaricus A *plus*,(200ml) was studied in 10 patients with type 2 diabetes mellitus (4 men and 6 women, mean age 60.7±1.8 yr, duration of diabetes 2.9±0.8 yr, BMI 24.0±0.8kg/m^2, glycated hemoglobin 7.2±0.3%, fasting capillary glucose 146.1±6.9mg/dL, mean±SEM) and in 7 normal subject(7 women, mean age 26.0±3.4 yr, BMI 19.8±1.2kg/m^2, fasting capillary glucose 93.3±1.9mg/dL). Each subject ingested cooked rice containing 50g available carbohydrates with or without Agaricus A *plus*,(200ml) after an overnight fast and capillary glucose level was measured using glucometer(Glucotrend, Roche Diagnostics, UK) at 0-240min. Agaricus A *plus*, significantly decreased postprandial increase of capillary glucose level at 60, 90 and 120 min($P < 0.05$) and incremental area under the glucose response curve(AUC) in normal subjects. Agaricus A *plus*, significantly decreased postprandial increase of capillary glucose at 60, 90, 120 and 180 min($P < 0.05$). AUC of glucose responses to rice and extracts from Mycelia of Agaricus(14,537±1,847mg · min/dL) was significantly lower than that to rice (19,327±1329mg · min/dL, $P<0.05$). We concluded that Agaricus A *plus*, could be effective in controlling postprandial hyperglycemia in diabetic patients.