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α -Glucosidase inhibitory activity and sensory evaluation of *Chongkukjang* with various fermentation period

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To control postprandial hyperglycemia is one of the major goals for the treatment of diabetes mellitus. α -Glucosidase is the enzyme to digest carbohydrate in small intestine and inhibition of α -glucosidase could suppress postprandial hyperglycemia. It has been reported that *Chongkukjang*, Korean traditional fermented soybean product exert α -glucosidase inhibitory activity *in vitro* and *in vivo*. However, strong flavor of *Chongkukjang* could limit its application. We evaluated α -Glucosidase inhibitory activity and sensory quality of *Chongkukjang* with various fermentation period. To prepare *Chongkukjang* soybean was soaked with water for 12 hr, autoclaved at 121°C for 15 min, and fermented with *Bacillus Subtilis* at 37°C for 24hr(A), 36hr(B), and 72 hr(C). Inhibitory activity against α -glucosidase was measured using *p*-nitrophenyl- α -glucopyranoside as substrate. *Chongkukjang* A, B and C inhibited yeast α -glucosidase by 40.6%, 44.1% and 46.6% at the concentration of 0.5 mg/mL, respectively. Acarbose, an α -glucosidase inhibitor, which is used for the treatment of diabetes mellitus, inhibited the enzyme activity by 24.5%. Sensory panelists (n=10) scored *Chongkukjang* A, B and C for 5 categories(flavor, taste, color, texture, and overall) on 5-point scales and statistical differences were tested by ANOVA using Tukey's test as follow-up test(α =0.05). Sensory panel ratings for flavor, taste, and overall of *Chongkukjang* C were significantly lower than those of *Chongkukjang* A and B. Thus *Chongkukjang* fermented for 48 hr could be the product which shows relatively high α -glucosidase inhibitory activity and good sensory quality.