IN VITRO STUDIES OF FERMENTED KOREAN CHUNG-YANG PEPPER EXTRACT USING WATER AS INHIBITORS OF KEY ENZYMES RELEVANT TO HYPERTENSION AND DIABETES

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Abstract - The goal of this study was to investigate and evaluate the antioxidant activity, the angiotensin I-converting enzyme (ACE) inhibition effect, and the α-amylase and α-glucosidase inhibition activities of pepper extracts both before and after their fermentation. Raw pepper extract by water was used as RP group, and water extract of fermented pepper was expressed as FP group. FP group showed significantly higher amount of total phenol content, 1,1-diphenyl-2-picrylhydrazyl (DPPH) radical inhibition effect, metal chelating activity and ACE inhibition activity comparing to RP group ($p < 0.05$). Meanwhile, α-amylase and α-glucosidase inhibitory activities in FP group were exhibited as being significantly lower than those of both RP group and standard sample (acarbose) within the same concentration with extract. Taken together, these results suggested that fermented pepper water extract should be expected to have potentially inhibitory effects against both hypertension and hyperglycemia.

Index Terms - fermented pepper, hyperglycemia, angiotensin I–converting enzyme (ACE) inhibition, antioxidant