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Development of Purification Processing of Angiotensin Converting Enzyme Inhibitors from Compositae Plants

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Angiotensin converting enzyme (ACE) converts angiotensin I into angiotensin II by cleaving C-terminal dipeptide of angiotensin I and inactivates bradykinin. ACE inhibitor acts on the inhibition of ACE and causes to result in decrease of blood pressure and was screened from protein hydrolysates of various food sources. Some of Compositae plants have been used as an oriental medicine for treatment of patients having hypertension in Korea. Crude extracts of 34 Compositae plants were screened for ACE inhibitory activity. Among them, two Compositae plants were selected. Crude extracts of these were filtered using a series of membranes and the membrane-filtered solution was loaded onto Sephadex G-15 column (1.8 cm x 75 cm) equilibrated with 20 mM phosphate buffer (pH 7.0). Using the most ACE inhibitory fraction of gel filtration profile, reversed-phase HPLC using a C₁₈ column was performed on the condition of buffer A (0.1% trifluoroacetic acid, TFA) and buffer B (acetonitrile containing 0.1% TFA), having gradient of 0% of B to 80% and ACE inhibitors were isolated. This processing could be used for development of manufacturing of drink products containing functional materials.

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Effect of Complex Carbohydrates Isolated from Ginseng Fiber on the Growth of *Bifidobacteria*

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This research aimed to investigate the effects of water soluble ginseng fiber on the growth of *Bifidobacteria in vitro*. Red ginseng marc, a fibrous by-product of ginseng extract processing, was destarched by α -amylase and amyloglucosidase treatment, which was treated with commercial polysaccharidases, consisting of cellulase, hemicellulase, pectinase and their mixtures, for enzymatic hydrolysis. Then, the soluble fractions were treated with 80% isopropanol to recover water soluble polysaccharide (WSP). The major sugar constituents of WSP were glucose, galactose, arabinose and galacturonic acid. The bifidogenic effects of water soluble hydrolysates were investigated *in vitro* with 5 strains of *Bifidobacterium adolescentis*, *B. animalis*, *B. bifidum*, *B. longum* and *B. breve*. The hydrolysates promoted significantly the growth of *Bifidobacteria*. Growth pattern, decrease in pH and formation of organic acid (lactate, acetate, formate) were markedly different among *Bifidobacteria*. The results indicated that water soluble polysaccharide isolated from ginseng fiber could be used as a potential prebiotic source for *Bifidobacteria*.