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Purification and Characterization of Angiotensin Converting Enzyme Inhibitors from *Oenanthe javanica*

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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. *Oenanthe javanica* has been known as an oriental medicine for treatment of patients having hypertension in Korea. Crude extracts of *Oenanthe javanica* were obtained after disrupting the cells using a homogenizer, followed by centrifugation at 5000 x g for 30 min. Crude extracts were filtered using PM-10 membrane. 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). The eluate was monitored by measuring absorbance at 214 nm. 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%. ACE inhibitors were isolated from crude extracts of *Oenanthe javanica* using membrane filtration, gel permeation chromatography, and reversed-phase HPLC. Among the six fractions of gel permeation chromatography, the sixth fraction had the highest inhibitory activity of 53%. Further purification of the fraction using reversed-phase HPLC produced an ACE inhibitor having 120 μ M as IC₅₀, which was identified as a molecular mass of 181 by Tandem ESI mass spectrometer.

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Screening and Characterizing of Quinone Reductase Inducers from Korean Wild Vegetables

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It is increasingly obvious that high consumption of fruits and vegetables may provide some protection against human cancers. A potential mechanism of dietary anticarcinogenesis involves the induction of detoxifying phase II enzyme, such as quinone reductase (QR). Anticarcinogenic enzyme inducers are of two types: (1) bifunctional inducers that elevate QR as well as cytochrome p-450, (2) monofunctional inducers that elevate primarily QR without affecting phase I enzyme. The purpose of this study is to evaluate the ability of QR induction from methanol extracts of 52 Korean wild vegetables and to characterize it as monofunctional or bifunctional inducer in a wild-type (Hepalcl7) and in a mutant-type (bprc1) cell line. The results showed that 30 wild vegetables of the 52 tested induced QR activity in the wild-type cells. Among them, *Angelica polymorpha* (213%), *Ostericum grosseserrata* (199%), *Pimpinella koreana* (175%), *Erigeron annuus* (175%), *Ainsliaea acerifolia* (165%) showed significant induction of QR activity. But only 8 vegetables of the 52 tested induced QR activity in the mutant-type cell. Among them, *Erigeron annuus* and *Lindera obtusiloba* induced QR activity 175% and 148%, respectively. The results suggest that methanol extracts of *Erigeron annuus* and *Lindera obtusiloba* act as monofunctional inducers, which are considered to be more promising as anticarcinogenic vegetables.