

## Isolation and Characterization of Angiotensin I Converting Enzyme Inhibitory Peptides from Yellowfin Sole Frame ( *Limanda aspera* ) Protein

Eresha P. Mendis, 정원교, 제재영, 김세권

Department of Chemistry, Pukyong National University, Busan, 608-737, Korea

Tel.: (051) 620-6375, Fax.: (051) 628-8147

### ABSTRACT

Angiotensin I converting enzyme (ACE; EC 3.4.15.1) is a metallopeptidase that acts on converting angiotensin I to the potent vasoconstrictor angiotensin II and inactivates bradykinin, a powerful vasodilator. Anti-ACE peptides work towards lowering blood pressure by inhibiting ACE in a safe and effective manner. In this research, yellowfin frame discarded after filleting was used for the isolation of ACE inhibitory peptides. Yellowfin sole frame protein was hydrolyzed using alcalase, neutrase, pepsin, papain,  $\alpha$ -chymotrypsin, trypsin, mackerel intestine crude enzyme (MICE) and tuna pyloric caeca crude proteinase (TPCCP). Hydrolysate obtained from  $\alpha$ -chymotrypsin exhibited the highest ACE inhibitory activity among them. Consecutive chromatographic methods were performed for the purification of the hydrolysate, ion exchange chromatography on SP-Sephadex C-25 column, gel filtration on GF-250 HPLC column and reverse phase HPLC on C18 column. Finally the N-terminal amino acid sequence was determined. Purified peptides exerted a higher inhibition with the ACE IC<sub>50</sub> value of 63.69  $\mu$ g/ml, proving it a potential natural anti-hypertensive biomaterial.