

silica gel adsorption column chromatography, ODS column chromatography, Sephadex LH-20 column chromatography로 순차 정제한 후 Shodex Asahipak column을 이용한 GPC-HPLC에 의해 활성 물질을 분리하였다. 분리된 물질들은  $^1\text{H-NMR}$ ,  $^{13}\text{C-NMR}$ , COSY, HSQC, HMBC, FAB-MS 등의 기기분석을 통해 당 관련 화합물인 것으로 판명되었다.

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#### Effect of gamma-irradiation on the Physicochemical Properties of Hemoglobin

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To elucidate the effect of gamma-irradiation on the molecular properties of hemoglobin, the secondary, tertiary structure, and the molecular weight size of the protein were examined after irradiation at 0.5, 1, 5, and 10 kGy. Gamma-irradiation of hemoglobin solutions caused the disruption of the ordered structure of the protein molecules, as well as degradation, cross-linking, and aggregation of the polypeptide chains. A SDS-PAGE study indicated that irradiation caused initial fragmentation of the proteins and subsequent aggregation due to cross-linking of the protein molecules. The effect of irradiation on the protein was more significant at lower protein concentrations. Ascorbic acid decreased the degradation and aggregation of proteins by scavenging oxygen radicals that were produced by irradiation. A circular dichroism study showed that irradiation decreased the helical content of hemoglobin with a concurrent increase of the aperiodic structure content. Fluorescence spectroscopy indicated that irradiation decreased the emission intensity that was excited at 280 nm.

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#### Purification and Characterization of an Angiotensin Converting Enzyme Inhibitor from Squid Ink

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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 inhibitors have been screened from various food sources since the inhibitors decrease blood pressure. Therefore, in this study, an ACE inhibitor was isolated and purified from squid ink using membrane filtration, gel permeation chromatography, normal phase HPLC, and fast protein liquid chromatography. The purified inhibitor was identified to be a molecular mass of 294 by mass spectrometry, and to have  $\text{IC}_{50}$  value of  $4.9 \mu\text{g/mL}$ .