

Changes of Molecular Structure of Fucoïdan by Gamma Irradiation

최종일[†], 김현도¹

전남대학교; ¹전남대학교 생물공학과

(choiji01@jnu.ac.kr[†])

The change of molecular structure of fucoïdan by gamma irradiation was analyzed by spectral and chemical methods. Fucoïdan samples with different molecular weights of 85, 30, 15, and 7 kDa, were prepared by radiation degradation of 217 kDa fucoïdan. In the molecular weight analysis, the polydispersity decreased by gamma radiation because of further degradation of higher weight molecules. Ultraviolet absorption and Fourier-transform infrared spectroscopy analyses were carried out to define the changes of the functional groups in fucoïdan by gamma irradiation. Carboxyl groups and carbon double bonds increased by gamma irradiation; however, sulfate content remained unchanged. The granular fissures were observed from scanning electron microscopy in gamma-irradiated fucoïdan.