

Optimization of Dilute acid Fractionation of *Laminaria japonica* to Enhance Glucan Content

이지예, 류현진, 오경근*
단국대학교
(kkoh@dankook.ac.kr*)

In this study, in order to raise glucan content of *Laminaria japonica*, reaction conditions were optimized by using the response surface methodology (RSM) based on a Central Composite Design (CCD) considering reaction temperature, time, and catalyst concentration as factors. The obtained optimized conditions were the reaction temperature of 147.14°C, reaction time of 27 min 51 sec, and sulfuric acid concentration of 0.30%. The predicted glucan content was 32.83% and actually observed glucan content was 32.67% at the optimum conditions. Compared with 6.95% of glucan content in raw material, glucan content of fractionated *Laminaria japonica* increased about five times. Additionally, the enzyme saccharification was conducted with fractionation of *Laminaria japonica* to assess the enzymatic digestibility. The enzymatic digestibility of fractionated *Laminaria japonica* showed 92% after 48 hr at 45FPU/g glucan.