Ultrasonic Extraction of Phenolic Compounds from Laminaria japonica Aresch using Ionic Liquid as Extraction Solvent

노경호*, 한단단
인하대학교 화학공학과
(rowkho@inha.ac.kr*)

A fast and novel sample preparation procedure was developed using ionic liquid as extraction solvent combined with ultrasonic extraction for determination of 3, 4-dihydroxybenzaldehyde, p-hydroxybenzaldehyde, p-hydroxybenzoic acid salicylic acid, and 2, 3-dihydroxybenzoic acid in Laminaria japonica Aresch. The factors affecting the extraction efficiency such as the types of ionic liquids, the concentration of ionic liquid, the solid/liquid ratio, the ultrasonic power and extraction time were investigated. In combination with HPLC-UV, the five phenolic compounds exhibited a good linear range 0.3-500 μg/mL. Using optimal extraction conditions, the extraction amount of the phenolic compounds were in the range of 73.6-800.7 ng/g, and meanwhile the recoveries were in the range of 85.2-103% with relative standard deviations (RSDs) lower than 4.6%. Compared to conventional extraction procedures, the results suggested that the proposed method was effective and alternative for the extraction of phenolic compounds from marine plants.