

## Ionic Liquids Modified MCM-41 Materials and Their Adsorption to Polysaccharides

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Mesoporous materials such as Mesoporous Mobil catalytic materials of number 41 silica materials (MCM-41) are attractive for applications in the adsorption and isolation of natural products. In this paper, a new kind of MCM-41 material was synthesized by the surface modification with ionic liquid. The new materials were characterized by Fourier-transform infrared spectroscopy (FTIR) and Thermogravimetric analysis (TGA). Separate alginate and fucoidan to evaluate the adsorption performance on polysaccharides by High performance size-exclusion chromatography. The amino-MCM-41 material showed preferable adsorption potency to polysaccharides. Under the optimal adsorption conditions, namely pH 7.0, and a time 30 min and 60 min for alginate and fucoidan respectively, 68.50 mg/g alginate and 43.07 mg/g fucoidan were extracted. And Langmuir-Freundlich isotherm was found to be optimal isotherm for this study. Because of regression coefficient ( $r^2$ ) of the competitive Langmuir-Freundlich isotherm for alginate and fucoidan was 0.9887 and 0.9908.