

Catalytic hydrolysis of *Gelidium amansii* for 3,6-anhydro-D-galactose production

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3,6-anhydro-D-galactose (L-AHG) is a major component of agarose in red algae with important biological functions in apoptosis induction, anti-allergy and anti-inflammation. Generally, L-AHG is produced by enzymatic hydrolysis to avoid 5-hydroxymethylfurfural (5-HMF) formation. Herein, L-AHG was extracted from *Gelidium amansii* using acid catalysts. Reaction conditions which maximized L-AHG production and minimized 5-HMF formation were determined using a statistical approach: 1.18% v/v catalyst concentration, 100°C and 15 min. Glucose and galactose in *G. amansii* were also extractable at higher temperatures with the latter being extracted first. Increase in catalyst concentration decreased the L-AHG yield and promoted 5-HMF formation. This study demonstrated an economical route for the production of valuable chemicals from red algae. This work was supported by the National Research Foundation of Korea (NRF) grant funded by the Ministry of Science, ICT & Future Planning (No. 2012R1A2A1A01009683) and the Ministry of Education (No. 2009-0093816).