

Analysis characteristics of producing bacterial cellulose, using glucuronic acid monomer and glucuronic acid oligomer produced as byproduct during *Acetobacters* cultivation

하정환, Nasrullah Shah, Mazhar Ul Islam, 박중곤\*  
경북대학교 화학공학과  
(parkjk@knu.ac.kr\*)

Bacterial cellulose (BC) has a large specific surface area, higher water retention value, moldability, and higher tensile strength than plant origin cellulose. Thus BC has a high potential for commercialization. BC production strain *Acetobacters* also produce glucuronic acid monomers and glucuronic acid oligomers as by products. According to previous study, putting of these by products at initial stage of *Acetobacters* cultivation resulted in the increased BC productivity and improvement of tensile strength. In this study, cultivation was performed on time courses, using different amounts of glucuronic acid and glucuronic acid oligomers (0.5~4%), at different culture modes (shaking, static and agitation). BC, WSOS, glucose, pH, CFU, Cells and Acetic acid were measured and studied. As a result of this study, a relation between glucose consumption, BC, WSOS, and pH factor was found. After glucose exhausted stage, *Acetobacters* nutrient consumption pattern and other factors relation was also found. This whole study can build several BC synthesis principles which can be employed for overall high BC production by *Acetobacters* strains.