

Production of Bacterial Cellulose and Water-Soluble Oligosaccharides in a Fermenter Equipped with a Spin Filter: Effect of pH

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Bacterial cellulose(BC) and microbial extracellular polysaccharides have various possible applications as new functional materials in industrial, food, and biomedical fields. In our previous studies, we discovered that *Gluconacetobacter hansenii* PJK, isolated from the rotten apples, can produce BC[1] and single sugar α -linked glucuronic acid-based water-soluble oligosaccharides (WSOS)[2]. In the current study *G. hansenii* PJK was tested for BC and WSOS production in a new fermenter equipped with a spin filter using periodical perfusion culture at various pH ranges. Out of the tested pH ranges, pH 5.0 ± 0.5 was found to be optimum for BC production while at pH 6.0 ± 0.2 , maximum production of WSOS was achieved. The live cells population remained nearly constant during the course of cultivation time at comparatively lower pHs but in almost all cases the population ratio of Cel- mutants to total cells increased with the culture time. pH 7.0 ± 0.2 did not support cell growth and therefore was not suitable for both BC and WSOS production.