

Acetone-Butanol-Ethanol Production with High Productivity Using *Clostridium acetobutylicum*

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The aim of the present study was to establish a continuous fermentation process for a metabolically engineered *C. acetobutylicum* strain which can result in high butanol and ABE productivities. In the present work, high cell density was achieved by applying the multiple cell recycling bioreactor (MCRB) using a hollow fiber column. A maximum OD at 600 nm of 374 could be achieved at this dilution rate as compared to 21.4 achieved during batch mode. The maximum obtained ABE productivities was 15.7 g l⁻¹ h⁻¹ respectively. Further optimization of the fermentation parameters and dilution rates are in progress, which will also be presented during presentation. [This work was supported by the Technology Development Program to Solve Climate Changes (systems metabolic engineering for biorefineries) from the Ministry of Education, Science and Technology (MEST) through the National Research Foundation of Korea (NRF-2012-C1AAA001-2012M1A2A2026556) and by the Advanced Biomass R&D Center of Korea (2011-0028386) through the Global Frontier Research Program of the MEST. Further support by BioFuelChem and EEWS program of KAIST are appreciated.]