

Solvent 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 an engineered *C. acetobutylicum* strain which can result in high ABE productivities. In the present work, high cell density was achieved by applying the multiple cell recycling bioreactor (MCRB). Experiment was started with batch mode which was converted to continuous mode when the residual glucose concentration in medium reached to approximately 20 g/l. Continuous fermentation was started with 0.7 h<sup>-1</sup> dilution rate. The maximum obtained ABE productivities was 15.7 g l<sup>-1</sup> h<sup>-1</sup> respectively. Further optimization of the fermentation parameters and dilution rates are in progress. [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.]