

Production of biobutanol by glycerol fermentation

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Development of glycerol based fermentation process can highly improve the economic viability of biofuel industry. In the present work, bio butanol production by glycerol fermentation were undertaken. Chemical mutagenesis of *C. pasteurianum* were performed to obtain a mutant strain MBEL_GLY2. Under the optimized condition of operational parameters, MBEL_GLY2 strain could produce an average of 17.8 g/l butanol. Corresponding average butanol yield was found to be 0.30 g/g. The maximum butanol productivity obtained during present study was found to be 0.43 g/l/h. Acetone, acetate and butyrate were not detected in the fermentation broth while ethanol was produced in trace amount. PDO was never produced. An average of 27.4 g/l total solvent (Butanol, Ethanol and PDO) was produced under optimized conditions. A maximum butanol selectivity of 0.65 g butanol per g of total solvent was obtained. [This work was supported by the Advanced Biomass R&D Center (ABC) of Global Frontier Project funded by the Ministry of Education, Science and Technology. Further support by GS Caltex, BioFuelChem, EEWS program of KAIST, and the World Class University program (R32-2008-000-10142-0) of the MEST are appreciated.]