

Proteome analyses of solvent-producing *clostridia* during phase transition

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Solventogenic *clostridia* are a model organism for the production of butanol. *Clostridium acetobutylicum* M5 is a degenerate derivative of *C. acetobutylicum* ATCC 824. Loss of solvent production in this strain can be complemented by over-expression of adhE1-ctfAB. This strain, M5(pIMP1E1AB), produced butanol with reduced amounts of other solvents relative to the wild-type strain *C. acetobutylicum* ATCC 824. A high butanol selectivity of 0.84 was achieved. In this study, we used a proteomics approach to examine changes in global protein expression between solventogenic *C. acetobutylicum* ATCC 824 and degenerate non-solventogenic *C. acetobutylicum* M5. In order to further understand M5(pIMP1E1AB) strain, we also compared protein expression patterns to those in the wild type ATCC 824 strain, both in acidogenic and solventogenic phases. [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.]