

Development of an improved electroporation protocol for solvent producing *Clostridia*

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Clostridium beijerinckii is a gram positive, rod shaped, motile bacterium of genus *clostridium*. This strict anaerobic *clostridium* has become industrially interesting for its solvent, regarded as an alternative biofuel, producing ability such as acetone, butanol and ethanol (ABE). Although there has been considerable efforts to make solvents more economical, neither titer nor productivity reached high enough to be commercialized. Recently, whole genome sequence of *C. beijerinckii* NCIMB 8052 was revealed by DOE Joint Genome Institute and this makes metabolic engineering of biosynthetic pathways easier. In this study, we have focused on development of effective gene-transfer protocol for *C. beijerinckii* by electro-transformation. Factors that have effects on the efficiency of electroporation, including electric pulse, resistance, buffer concentration, and amount of DNA were investigated.