

Deletion of *pflB* gene in *Mannheimia succiniciproducens* MBEL55E for succinic acid production

박종명, 김지만, 송효학, 이상준, 이상엽*
한국과학기술원
(leesy@kaist.ac.kr*)

Mannheimia succiniciproducens MBEL55E is a novel rumen bacterium isolated from the Korean bovine, which produces succinic acid during anaerobic fermentation. The production of by-products such as acetic, lactic, formic acids and ethanol was also observed. In order to prevent the accumulation of formic acid, the *pflB* gene of *M. succiniciproducens* MBEL55E was deleted. To confirm the effect of gene deletion, batch fermentation was performed anaerobically at 39°C in a 5-l reactor containing 2.25 l of MMH3 medium plus 22.5 g/l glucose. The fermentation of the recombinant strain showed no formic acid formation. Furthermore, the increase in the final concentration of succinic acid compared to that of the wild type was observed. This work gives a possibility that the elimination of by-products can be achieved by a genetic manipulation of *M. succiniciproducens* MBEL55E. [This work was supported by the Genome-based Integrated Bioprocess Project of the Ministry of Science and Technology. Further supports by the LG Chem Chair Professorship, IBM SUR program, Brain Korea 21 project, and by the KOSEF through the Center for Ultramicrochemical Process Systems are appreciated].