

## Efficient Succinic acid Production through Deletion of Lactate Dehydrogenase of *Mannheimia succiniciproducens* MBEL55E

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A novel succinic acid producing bacterium *Mannheimia succiniciproducens* MBEL55E was isolated from the rumen of Korean bovine, and its full genome sequence was reported. The production of by-products such as acetic, lactic, formic acids and ethanol was commonly observed in anaerobic fermentations. Therefore, a *ldhA* gene responsible for the formation of lactic acid in *M. succiniciproducens* MBEL55E was deleted in order to prevent the accumulation of lactic acid. Batch fermentation was performed at 39°C in a 5-L reactor containing 2.25 l of MM1 medium plus 20 g/l glucose. Anaerobic condition was maintained by flushing the reactor with CO<sub>2</sub> at a flow rate of 0.25 vvm throughout the fermentation. The fermentation of the recombinant strain showed no lactic 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, IBMSUR program, Brain Korea 21 project, and by the KOSEF through the Center for Ultramicrochemical Process Systems are appreciated].