Development of succinic acid-tolerant *Mannheimia succiniciproducens* based on transcriptome analysis

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A genetically engineered *M. succiniciproducens* strain for succinic production was adaptively evolved for improved succinic acid tolerance. Immediate and delayed responses of the parent strain and the mutant strain to succinic acid shock were analyzed in transcriptome level by DNA microarray. Gene expression levels of the mutant strain were compared with a parent strain and the gene expression patterns were classified refer to function of genes. Overexpression of gene encoding the carboxylic acid transporter selected based on the transcriptome analysis increased growth rate of the parent strain in the medium with succinic acid of high concentration. [This work was supported by the Korean Systems Biology Research Project (20100002164) of the Ministry of Education, Science and Technology (MEST) through the National Research Foundation of Korea. Further support by the World Class University Program (R32-2008-000-10142-0) through the National Research Foundation of Korea funded by the MEST is appreciated.]