

The proteome of *Mannheimia succiniciproducens*, a capnophilic rumen bacterium and its strain improvement

이정옥¹, 이상엽^{1,1,*}, 송효학¹, 유종신²
¹한국과학기술원; ²한국기초과학지원연구원
(leesy@kaist.ac.kr*)

Mannheimia succiniciproducens MBEL55E isolated from bovine rumen is an industrially important bacterium as an efficient succinic acid producer. In the present study, we analyzed the *M. succiniciproducens* proteome based on the genome information using two-dimensional gel electrophoresis (2-DE) and mass spectrometry. We established proteome reference map of *M. succiniciproducens* by analyzing whole cellular proteins, membrane proteins and secreted proteins. More than 200 proteins were identified and characterized. Based on the proteome reference map, cells in the different growth phases were analyzed. Comparative proteome profiling revealed valuable information to understand physiological changes during growth, and subsequently suggested target genes to be manipulated for the strain improvement. [This work was supported by the Genome-based Integrated Bioprocess Project of the MOST. Further supports by the LG Chem Chair Professorship, IBM SUR program, Microsoft, BK 21 project, and by the KOSEF through the Center for Ultramicrochemical Process Systems are appreciated.]