Genetic engineering of *Escherichia coli* for enhanced cell surface display system based on comparative transcriptome analysis

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The efficiency of cell surface display system is various depending on the used target proteins, anchoring motifs and host strains. In this study, *Escherichia coli* was improved for efficient cell surface display by rationally manipulating several genes identified by comparative transcriptome analysis. The transcriptome profiles were compared according to the efficiencies of lipase cell surface display systems, and target genes, which is important for lipase cell surface display, were selected and manipulated. From this study, it could be understood that the effect of cell surface display system on cellular physiology at transcriptome level and the roles of some important genes in cell surface display. [This work was supported by the Korea Science and Engineering Foundation (KOSEF) grant funded by the Korea government (MOST) (No. M10309020000-03B5002-00000). Further supports by LG Chem Chair Professorship, Microsoft and IBM SUR program are appreciated.]