

Expecting of gene targets for system biotechnology of various products biosynthesis

최형석, 김태용, 우한민, 이동엽, 이상엽*
한국과학기술원
(leesy@kaist.ac.kr*)

System biotechnology has given us promising methodology and perspective. Strain optimization is very important object carrying out system biology. To increase ones productivity, generally we should select modified gene target on the host genome based on qualitative biological knowledge. But there are immeasurable experimental conditions to verify difference in the diverse characteristics and our experimental perspective should be not sufficient to make best optimized cell. Although someone use common in silico tools with no particular strategy for the increasing productivity, it should be exhaustive computational work and their result is too hard to solve and understand. Also, considering complicated cellular property, our experimental perspective should be not sufficient to make best optimized cell. Because of this, strain optimization using methods of system biotechnology, is very attractive and novel approach in biotech and industrial field. Based on metabolic flux analysis, we made various in silico strategies which were able to predict cell physiology and productivity in specific disruption condition of interested gene for increasing product yield. (Supported by the Korean Systems Biology Research program of the MOST)