

Improvement of Resveratrol Production in E. coli with ^{13}C -MFA and Co-culture

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^{13}C -MFA (Metabolic Flux Analysis) is a technique for decoding fluxes of central carbon metabolism using a C source marked ^{13}C . C source, marked ^{13}C , is provided in strain and the label information of the metabolite is measured. It is then possible to track label information based on a model that decodes flux using specific enzymes in the strain. Resveratrol is a beneficial compound found in plants. It has various effects such as cancer, antioxidants and life extension. Resveratrol can be created using acyl-CoA in the EMP pathway and tyrosine in the PP pathway. However, the road has a different temper and is difficult to turn into a single strain. Thus, an attempt was made to produce resveratrol using co-culture. In this study, two E. coli were designed to supply more resveratrol precursor based on previous studies. Then resveratrol will be produced with co-culture. Finally, using ^{13}C -MFA, the metabolic rate of co-culture will be analyzed, and ways to increase resveratrol will be discussed.