Simulation and Optimization of *E. coli* based Succinic Acid Production

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In order to overcome the lack of kinetic information, flux balance analysis (FBA) has attracted attentions due to its requirements which are only the stoichiometric mass balances of metabolic network and cellular composition information. FBA is commonly used to investigate the metabolic network of microorganisms. In this study, we developed a novel multiobjective linear programming (MOLP) strategy based on the noninferior set estimation (NISE) method (Solanki et al., 1993), whereby Pareto solutions for the given set of conflicting objectives and corresponding flux distribution profiles are generated to understand how the internal fluxes are changed in the metabolic system. These results can provide new insight into the relationship among the measurements, the objective criteria and the possible solutions.

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