Microalgal biodiesel cultivation simulation with genome-scale flux balance analysis model of Chlamydmonasreinhardtii

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Recent investigations have focused on microalgal biomass as a promising alternative to depleting fossil fuelreserves as a renewable source of biodiesel.For optimizing biodiesel production system, previous researches have been conducted to analyze the substrate effects on microalgae growth and lipid synthesis. In this presentation, we discuss a dynamic simulation of the algae Chlamydomonasreinhardtii under TAP medium with flux balance analysis (FBA)model which is a tool widely used for predicting the metabolic behavior of a microbial metabolism. This FBA model calculates optimal solution set based on a set of biochemical reactions converted into a stoichiometric representation of the network.Also, using experiment data for previous values of a state, we attempt to decide the objective function of FBA model and predict the next flux distribution statically.Eventually, the model simulation will be extended to a strategy for a maximum cell growth and lipid synthesis.