

Dynamic Control Analysis of the Central Carbon Metabolism of *Escherichia coli*

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Central carbon metabolic pathway is the most important among metabolic pathways in all microorganisms because it produces energy and precursors for biosynthesis. In this research, dynamic model for central carbon metabolism of *Escherichia coli* (*E. coli*) was constructed by combining phosphotransferase (PTS) system, glycolysis, pentose-phosphate pathway (PPP), and storage material. The mathematical model and parameters in enzyme kinetic equations are based on the information from published literatures. Through dynamic metabolic control analysis (MCA), the key parameters and enzyme kinetics which affect productivity of desired metabolites most were found, and the tendency of the metabolic fluxes at branch points was investigated.