

Metabolic Engineering of *E. coli* for the Production of Bulk Chemicals

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Metabolic Explorer is a leading company in the development of efficient microorganisms for the production of bulk chemicals by fermentation or bioconversion. The different and complementary Metabolic Explorer platforms enable the construction of genetically optimized microorganism based on a rational metabolic engineering approach.

Metabolic Explorer has recently reinvestigated and developed several efficient biological processes that employ engineered microorganism and utilizes renewable starting materials (corn sugar or sugar cane juice) as its feedstock and convert them into Bulk Chemicals. We will describe (a) the general schemes for the engineering of the host organisms and (b) the general approaches to maximize carbon and electron fluxes toward the production of the chemicals of interest. To highlight this effort, we will present through several examples the approach to develop new bio-processes by combining metabolic flux analysis, enzyme engineering, molecular biology and fermentation optimization.