Metabolic Engineering in the Post Genomic Era

This book aims to help the reader understand and deal with the plasticity of living cell factories and to turn this plasticity into a desired rather than an adverse direction. Internationally renowned key scientists review in detail all the most important recent breakthroughs in this exciting field. Topics covered include: Experimental approaches necessary to understand cellular regulation at all of its hierarchical levels, including proteomics [Chapter 2], metabolomics [Chapter 3] and fluxomics [Chapter 4]; new tools that help metabolic engineering [Chapters 5-7]; modeling of living cells, e.g. finding metabolic pathways [Chapter 8] and comparing the actual and predicted use of these in living organisms such as *E. coli* and *Corynebacteria* [Chapters 9, 10]; optimization of cell factories as production organisms (e.g. use of whole cell models, silicon cells, and coordinate manipulation of multiple genes [Chapters 12-15]). A chapter on future perspectives directs further developments of the field.

Essential reading for everyone with an interest in engineering living cells including: Metabolic engineers, bioengineers, biotechnologists, molecular biologists, and pharmaceutical and biotechnology companies.

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