1. Record Nr. UNINA9910483570903321

Titolo	Enzyme Cascade Design and Modelling / / edited by Selin Kara, Florian Rudroff
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2021
ISBN	3-030-65718-3
Edizione	[1st ed. 2021.]
Descrizione fisica	1 online resource (VII, 181 p. 103 illus., 61 illus. in color.)
Disciplina	572.6
Soggetti	Proteins Biotechnology Enzymology Bioorganic chemistry Protein Biochemistry Chemical Bioengineering Bioorganic Chemistry Enzims Compostos orgànics Química biorgànica Llibres electrònics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Preface -- Chapter 1: Introduction -- Chapter 2: Enzyme Cascade Design – Retrosynthesis Approach -- Chapter 3 : Multi-Enzymatic Cascades in vitro -- Chapter 4: Multi-Enzymatic Cascades in vivo -- Chapter 5: Chemo-Enzymatic Cascades -- Chapter 6: Enzyme Cascade Kinetic Modelling -- Chapter 7: Enzyme Cascade Reaction Engineering -- Chapter 8: Enzyme Cascade Process Design and Modelling -- Chapter 9: Enzyme Cascade Reaction Monitoring And Control -- Chapter 10: Cascade reactions in non-conventional media -- Chapter 11: Perspectives.
Sommario/riassunto	This book provides a comprehensive overview of the recent developments achieved in the field of chemo/enzymatic cascades with

topics spanning from design (in vitro and in vivo) to kinetic- and process modelling as well as process control. Opportunities and challenges of building multi-step chemo/enzymatic reactions are discussed, whereby the latter are critically assessed in each chapter and methods to ease the implementation are explored. Both, multi-enzymatic cascades and chemo-enzymatic cascades are presented with the motivation of combining the strengths of these two worlds (e.g. selectivity, activity and robustness) not neglecting the obstacles and challenges of such endeavour. Furthermore, the use of non-conventional media for catalytic cascade reactions, recent achievements and potential for future developments in a technical environment are addressed.