

1. Record Nr.	UNINA9910831034303321
Autore	Zhu Dunming
Titolo	Chemo-enzymatic cascade reactions / / Dunming Zhu
Pubbl/distr/stampa	Weinheim, Germany : , : Wiley-VCH GmbH, , [2021] ©2021
ISBN	3-527-81428-0 1-5231-3668-5 3-527-81427-2
Descrizione fisica	1 online resource
Disciplina	660.634
Soggetti	Biocatalysis
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Cover -- Title Page -- Copyright -- Contents -- Preface -- Chapter 1 Introduction -- 1.1 Advantages of Enzyme Catalysis -- 1.1.1 Chemoselectivity -- 1.1.2 Regioselectivity -- 1.1.3 Stereoselectivity -- 1.1.4 Mild Reaction Conditions -- 1.2 Modes of Chemoenzymatic Transformations -- 1.2.1 "Separate-Pot Two-Step" Mode -- 1.2.2 "One-Pot Two-Step" Mode -- 1.2.3 "One-Pot One-Step" Mode -- References -- Chapter 2 "Separate-pot Two-step" Chemoenzymatic Transformation -- 2.1 Lipases -- 2.2 Nitrilases -- 2.3 Carbonyl Reductases -- 2.4 Ene Reductases -- 2.5 Transaminases -- 2.6 Imine Reductases -- 2.7 Cytochromes P450s -- 2.8 Baeyer-Villiger Monooxygenases (BVMOs) -- 2.9 Aldolases -- 2.10 Epoxide Hydrolases -- 2.11 Other Enzymes -- 2.12 Integration of Multienzyme Cascade with Chemical Transformation -- 2.13 Summary and Outlook -- References -- Chapter 3 One-pot Sequential Chemoenzymatic Reactions -- 3.1 Lipases and Esterases -- 3.2 Carbonyl Reductases -- 3.3 Ene Reductases -- 3.4 Transaminases -- 3.5 Epoxide Hydrolases (EHs) -- 3.6 Other Enzymes -- 3.6.1 Aldolases -- 3.6.2 Halohydrin Dehalogenases -- 3.6.3 Phenylalanine Ammonia Lyases -- 3.6.4 d- Amino Acid Dehydrogenases (DAADHs) -- 3.6.5 Halogenases -- 3.6.6 Imine Reductases -- 3.6.7 Decarboxylases -- 3.6.8 Cytochrome P450s -- 3.6.9 Hydroxynitrile Lyases -- 3.6.10 Nitrilases -- 3.6.11 Laccases

-- 3.6.12 Transglutaminases -- 3.6.13 -Ketoglutarate (-KG)-dependent Non-heme Iron Oxygenases -- 3.6.14 Galactose Oxidases -- 3.6.15 FAD-dependent Monooxygenases -- 3.7 Summary and Outlook -- References -- Chapter 4 Chemoenzymatic Dynamic Kinetic Resolution -- 4.1 Enzymatic Kinetic Resolution -- 4.2 Dynamic Kinetic Resolution -- 4.3 Racemization Techniques -- 4.4 DKR of Chiral Alcohols -- 4.5 DKR of Chiral Amines -- 4.6 DKRs of Other Compounds -- 4.7 Summary and Outlook -- References.

Chapter 5 Chemoenzymatic Concurrent Deracemization -- 5.1 Deracemization of Amino Acids and Amines -- 5.2 Deracemization of Hydroxy Acids and Alcohols -- 5.3 Deracemization of Chiral Sulfoxides -- 5.4 Summary and Outlook -- References -- Chapter 6 One-pot Concurrent Chemoenzymatic Reactions -- 6.1 One-pot Concurrent Chemoenzymatic Cascades -- 6.1.1 Lipases -- 6.1.2 Carbonyl Reductases -- 6.1.3 Enoate Reductases -- 6.1.4 Transaminases -- 6.1.5 Monoamine Oxidases -- 6.1.6 Cytochrome P450s -- 6.1.7 Halohydrin Dehalogenases -- 6.1.8 Vanadium Haloperoxidases -- 6.1.9 Laccases -- 6.2 Integration of Chemical Reaction with Metabolism of Living Organisms -- 6.3 One-pot Concurrent Chemoenzymatic Cascades via Compartmentalization -- 6.4 Summary and Outlook -- References -- Chapter 7 Photocatalytic and Biocatalytic Cascade Transformations -- 7.1 Photoenzymes -- 7.2 Light-Activation of Redox Enzymes Without Cofactor Regeneration -- 7.3 Light-Activated Cofactor Regeneration for Redox Enzymes -- 7.4 Photoinduced Catalytic Promiscuity of Redox Enzymes -- 7.5 Photocatalysis and Biocatalysis Cascades -- 7.6 Summary and Outlook -- References -- Chapter 8 Perspectives -- References -- Index -- EULA.

---