

1. Record Nr.	UNINA9911019897003321
Titolo	Industrial biotechnology : sustainable growth and economic success // edited by Wim Soetaert and Erick J. Vandamme
Pubbl/distr/stampa	Weinheim, : Wiley-VCH, 2010
ISBN	9786612686610 9781282686618 1282686615 9783527630233 3527630236 9783527630240 3527630244
Descrizione fisica	1 online resource (523 p.)
Classificazione	CIT 900f WF 9700 VN 8900
Altri autori (Persone)	SoetaertWim VandammeErick J. <1943->
Disciplina	660.13 660.6
Soggetti	Biotechnology Biotechnology - Social aspects
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Industrial Biotechnology: Sustainable Growth and Economic Success; Contents; Preface; List of Contributors; The Scope and Impact of Industrial Biotechnology; 1: History of Industrial Biotechnology; 1.1 Early History; 1.2 The Penicillin Story; 1.3 The Coming of the Cephalosporins; 1.4 The Waksman Era; 1.5 Strain Improvement; 1.6 Semi-Synthetic Antibiotics to Combat Resistant Microbes; 1.7 The Primary Metabolites; 1.7.1 Amino Acids; 1.7.2 Nucleotides; 1.7.3 Vitamins; 1.7.4 Organic Acids; 1.7.5 Alcohols; 1.7.6 Polymers 1.7.7 Specialty Sugars, Sugar Alcohols,L-Sugars, Oligosugars, Novel Extracellular Polysaccharides, Biopigments, Cosmetics Including Fragrants, and Microbial Enzymes for Chiral Synthesis and Other

Applications1.8 The Shift from Antibiotics to Pharmacological Agents;
1.8.1 Enzyme Inhibitors; 1.8.2 Immunosuppressants; 1.8.3 Antitumor
Agents; 1.8.4 Ergot Alkaloids; 1.8.5 Agricultural Compounds; 1.9 The
Biopharmaceutical Revolution; 1.9.1 Human Insulin (Novolin, Humulin);
1.9.2 Erythropoietin (Epogen, Procrit); 1.9.3 Interferons; 1.9.4 Human
Growth Hormone (Somatotropin, Somatropin
Humatrope, Nutropin, Protropin, Somatren, Serostim)1.9.5 Tissue
Plasminogen Activator (Activase, Alteplase); 1.9.6 Interleukins; 1.9.7
Factor VIII; 1.9.8 Colony-Stimulating Factors; 1.9.9 Human DNase
(Pulmozyme); 1.9.10 Glucocerebrosidas (Cerezyme); 1.9.11 Monoclonal
Antibodies; 1.9.12 Additional Biopharmaceuticals; 1.10 Recombinant
Hosts; 1.10.1 E. coli; 1.10.2 Yeasts; 1.10.3 Molds; 1.10.4 Insect Cells;
1.10.5 Mammalian Cells; 1.10.6 Transgenic Animals; 1.10.7 Transgenic
Plants; 1.11 Enzymes; 1.12 Bioconversions; 1.13 Vaccines; 1.14
Systems Microbiology; References
2: Industrial Systems Biology2.1 Introduction; 2.2 Industrial
Biotechnology; 2.3 Market Drivers for Industrial Biotechnology; 2.4
Industrial Systems Biology; 2.5 Metabolic Models; 2.5.1 Microbial
Metabolism-A Historical Perspective; 2.5.2 Genome Sequencing and
Functional Genomics; 2.6 Reconstructed Metabolic Network Models;
2.6.1 Introduction; 2.6.2 Genome-Scale Reconstructed Network
Process; 2.7 Industrial Systems Biology Case Studies; 2.7.1 A Mature
and Developed Industrial Biotechnology Product: Bioethanol
2.7.2 A Recently Launched and Rapidly Growing Industrial
Biotechnology Product: 1,3-Propanediol2.7.3 An In-Development
Industrial Biotechnology Product: Succinic Acid; 2.8 Conclusion and
Future Perspectives; References; 3: Fermentation Technology; 3.1
Introduction; 3.2 Types of Fermentations; 3.3 Fermentation Process;
3.3.1 Inoculum Generation; 3.3.2 Growth and Product Formation; 3.4
Fermentation Medium Design; 3.5 Sterilization of Air and Fermentation
Medium; 3.6 Environmental Factors; 3.7 Fermentation Kinetics; 3.7.1
Batch Fermentation; 3.7.2 Continuous Culture; 3.8 Fermentation
Equipment
3.8.1 Submerged Fermentation

Sommario/riassunto

Describing all topics of white biotechnology admitted to the 7th EU
Frame Programme and new industrial production processes aiming
towards the Kyoto objectives, this comprehensive overview covers the
technology, applications, economic potential and implications for
society. Directed at readers with a general interest in a specific
technology, this is equally suitable as an introductory handbook to a
wide range of industries, including chemicals, biotechnology and
pharmaceuticals, food and feed, paper and pulp, personal care, energy
and agriculture.
