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Titolo	Aerobic Utilization of Hydrocarbons, Oils, and Lipids // edited by Fernando Rojo
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Descrizione fisica	1 online resource (149 illus., 43 illus. in color. eReference.)
Collana	Handbook of Hydrocarbon and Lipid Microbiology
Disciplina	547.83
Soggetti	Microbiology Industrial microbiology Environmental engineering Biotechnology Bioremediation Biochemistry Microbial ecology Industrial Microbiology Environmental Engineering/Biotechnology Microbial Ecology
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
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Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	A Genomic View of the Catabolism of Aromatic Compounds in Pseudomonas -- A Genomic View of the Catabolism of Short Chain Alkanes -- Aerobic Degradation of Aromatic Hydrocarbons -- Aerobic Degradation of Aromatic Hydrocarbons: Enzyme Structures and Catalytic Mechanisms -- Aerobic Degradation of Chloroaromatics -- Aerobic Degradation of Gasoline Ether Oxygenates -- Aerobic Degradation of Halogenated Aliphatics -- Biochemistry and Molecular Biology of Methane Monooxygenase -- Biosynthesis, Insertion and Function of Fe-S Cofactors -- Biosynthesis, Insertion and Function of Flavin Cofactors -- Biosynthesis, Insertion and Function of haem-iron Prosthetic Groups -- Computational Framework for Integration of Lipidomics Data into Metabolic Pathways -- Degradation of Dimethylsulfoniopropionate (DMSP) and Dimethylsulfide (DMS) --

Degradation of Rubber/Polyisoprene -- Diversity and Common Principles in Enzymatic Activation of Hydrocarbons: An Introduction -- Energetic and Other Quantitative Aspects of Microbial Hydrocarbon Utilization: An Introduction: -- Enzymes for Aerobic Degradation of Alkanes in Bacteria -- Enzymes for Aerobic Degradation of Alkanes in Yeasts -- Evolution of New Catabolic Functions Through Gene Assembly by Mobile Genetic Elements -- Experimental Evolution of Novel Regulatory Activities in Response to Hydrocarbons and Related Chemicals -- Functional Gene Diversity, Biogeography, Dynamics -- Genetic Features and Regulation of n-Alkane Metabolism in Bacteria -- Genetic Features and Regulation of n-Alkane Metabolism in Yeasts -- Genetic Features of Methylophs -- Genetics and Functional Genomics of Aerobic Degradation of Hydrocarbons: An Introduction -- Genetics and Molecular Features of Bacterial Dimethylsulfoniopropionate (DMSP) and Dimethylsulfide (DMS) Transformations -- Genetics of Biphenyl Biodegradation and Co-Metabolism of PCBs -- Genetics of Rubber/Polyisoprene Degradation -- Genetics and Ecology of Isoprene Degradation -- Genomic View of Mycobacterial High Molecular Weight Polycyclic Aromatic Hydrocarbon Degradation -- Global Aerobic Degradation of Hydrocarbons in Aquatic Systems -- Global Aerobic Degradation of Hydrocarbons in Terrestrial Systems -- Global Consequences of the Microbial Production and Consumption of Inorganic and Organic Sulfur Compounds -- Key Features of Aerobic Hydrocarbon Biodegrader Genomes -- Lipid Degradation - Lipid Cycles -- Lipolytic Enzymes from Bacteria -- Lipolytic Enzymes from Yeasts -- Metabolism of Steroids -- Oxidative Inactivation of Ring-Cleavage Extradiol Dioxygenases: Mechanism and Ferredoxin-Mediated Reactivation -- Pathways for the Degradation of Fatty Acids in Bacteria -- Phylogenomics of Aerobic Bacterial Degradation of Aromatics -- Physiology and Biochemistry of the Aerobic Methane Oxidizing Bacteria -- Potential for Microbial Interventions to Reduce Global Warming -- Rational Construction of Bacterial Strains with New/Improved Catabolic Capabilities for the Efficient Breakdown of Environmental Pollutants -- Regulation of the Degradation of Fatty Acids in Bacteria -- Regulation of the Degradation of Fatty Acids in Yeast -- Stereochemistry of Hydrocarbon-transforming Enzyme Reactions -- Structure-Function Relationships and Engineering of Haloalkane Dehalogenases -- Transcriptional Control of the TOL Plasmid Pathways.

Sommario/riassunto

This book describes the biochemistry and genetics of aerobic degradation of hydrocarbons and lipids by bacteria and yeasts, as well as the functional genomics of the best-known microorganisms involved in these processes. It forms part of the Handbook of Hydrocarbon and Lipid Microbiology Series, a definitive resource of current knowledge on the diverse aspects of the interactions of microbes with hydrocarbons and lipids. Chapters are mainly focused on the new discoveries of recent years. It is aimed to scientists and others interested in different aspects of the microbiology of hydrocarbons.
