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Titolo	Methanotrophs : Microbiology Fundamentals and Biotechnological Applications / / edited by Eun Yeol Lee
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Descrizione fisica	1 online resource (X, 278 p. 53 illus., 40 illus. in color.)
Collana	Microbiology Monographs, , 1862-5576 ; ; 32
Disciplina	579.3 572.45
Soggetti	Bacteriology Microbiology Metabolism Plant biochemistry Applied Microbiology Metabolomics Plant Biochemistry
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Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Methanotroph Ecology, Environmental Distribution and Functioning -- Enrichment and Isolation of Aerobic and Anaerobic Methanotrophs -- The Biochemistry of Methane Monooxygenases -- Multi-omics Understanding of Methanotrophs -- Diversity, Physiology, and Biotechnological Potential of Halo(alkali)philic Methane-Consuming Bacteria -- Metabolic Engineering of Methanotrophs for the Production of Chemicals and Fuels -- Methanobactin: A Novel Copper-Binding Compound Produced by Methanotrophs -- Environmental Applications of Methanotrophs.
Sommario/riassunto	This book offers a comprehensive overview of the microbiological fundamentals and biotechnological applications of methanotrophs: aerobic proteobacteria that can utilize methane as their sole carbon and energy source. It highlights methanotrophs' pivotal role in the global carbon cycle, in which they remove methane generated geothermally and by methanogens. Readers will learn how

methanotrophs have been employed as biocatalysts for mitigating methane gas and remediating halogenated hydrocarbons in soil and underground water. Recently, methane has also attracted considerable attention as a potential next-generation carbon feedstock for industrial biotechnology, because of its abundance and low price. Methanotrophs can be used as biocatalysts for the production of fuels, chemicals and biomaterials including methanobactin from methane under environmentally benign production conditions. Sharing these and other cutting-edge insights, the book offers a fascinating read for all scientists and students of microbiology and biotechnology.