Agrobacterium: From Biology to Biotechnology

From Tzfira Tzvi Citovsky Vitaly
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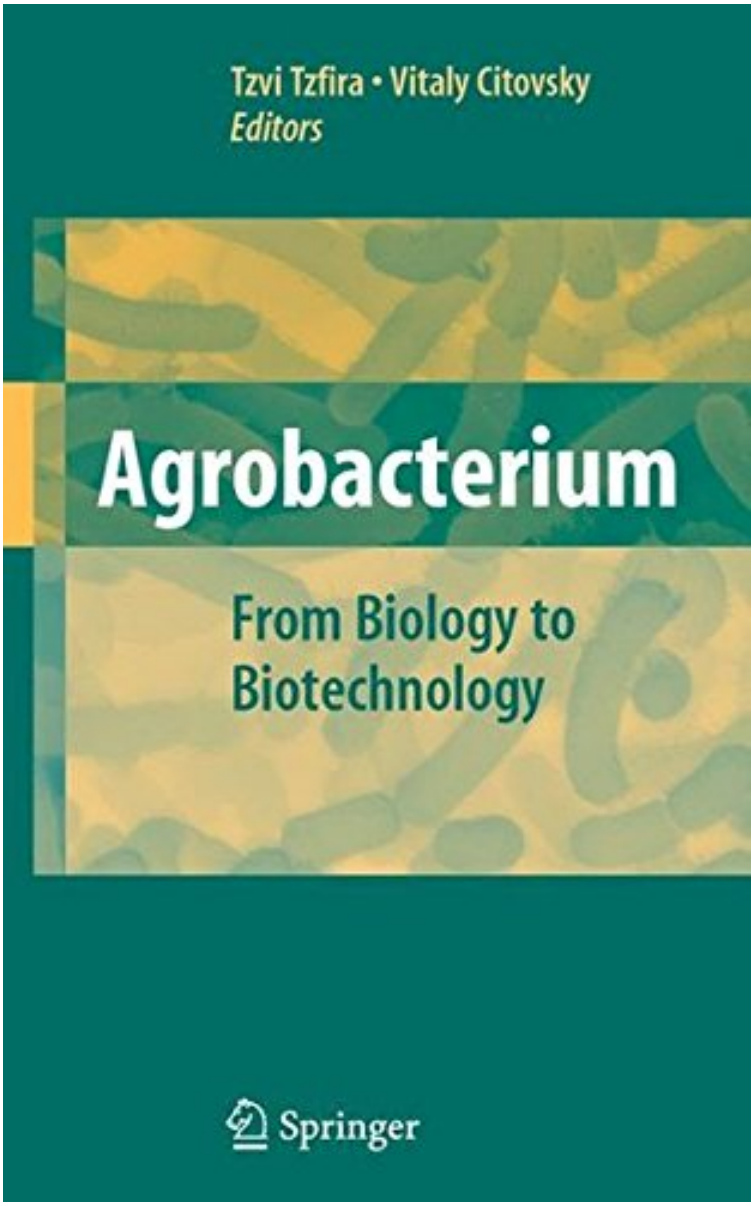

#5566121 in Books Tzfira Tzvi Citovsky Vitaly 2008-02-01Original language:EnglishPDF # 1 9.21 x 1.63 x 6.14l, 2.72 #File Name: 0387722890750 pagesAgrobacterium From Biology to Biotechnology | File size: 57.Mb

From Tzfira Tzvi Citovsky Vitaly : Agrobacterium: From Biology to Biotechnology before purchasing it in order to gage whether or not it would be worth my time, and all praised Agrobacterium: From Biology to Biotechnology:

Agrobacterium is a plant pathogen which causes the crown-gall disease, a neoplastic growth that results from the transfer of a well-defined DNA segment (transferred DNA, or T-DNA) from the bacterial Ti (tumor-inducing) plasmid to the host cell, its integration into the host genome, and the expression of oncogenes contained on the T-DNA. The molecular machinery, needed for T-DNA generation and transport into the host cell and encoded by a series of chromosomal (chv) and Ti-plasmid virulence (vir) genes, has been the subject of numerous studies over the past several decades. Today, Agrobacterium is the tool of choice for plant genetic engineering with an ever expanding host range that includes many commercially important crops, flowers, and tree species. Furthermore, its recent application for the genetic transformation of non-plant species, from yeast to cultivated mushrooms and even to human cells, promises this bacterium a unique place in the future of biotechnological applications. The book is a comprehensive volume describing Agrobacterium's biology, interactions with host species, and uses for genetic engineering.

From the reviews: "A compilation of many aspects of Agrobacterium research, with each chapter authored by experts in the field. Though the book is heavily oriented toward the genetic/molecular basis of the gene transfer process, it includes the history of Agrobacterium research, nomenclature, and basic biology of the bacterial/plant interaction. The final chapters review bioethics and legal aspects of Agrobacterium-mediated gene transfer. Summing Up: Recommended. Graduate students and researchers/faculty." (L. M. Baird, CHOICE, Vol. 45 (11), August, 2008)From the Back CoverAgrobacterium is the only cellular organism on Earth that is naturally capable of transferring genetic material between the kingdoms of life, from prokaryotes to eukaryotes. Studies have uncovered a wealth of information on the process of Agrobacterium-mediated genetic transformation and on the bacterial and host cell factors involved in the infection. Agrobacterium has been shown to genetically transform, under laboratory conditions a large number of plant species and numerous non-plant organisms, indicating the truly basic nature of the transformation process. It is therefore not surprising that Agrobacterium and the genetic transformation itself have also become the focus of numerous ethical and legal debates. Agrobacterium is a comprehensive book on Agrobacterium research, including its history, application, basic biology discoveries, and effects on human society. Although the book largely focuses on providing a detailed review of virtually all molecular events of the genetic transformation process, it also provides coverage of ethical and legal issues relevant to the use of Agrobacterium as a "genetic transformation machine". The result is an all-inclusive text which readersincluding scientists and students involved in plant genetic engineeringwill find useful as a reference source for all major aspects of the Agrobacterium-mediated genetic transformation of plant and non-plant organisms. About the Editors: Dr. Tzvi Tzfira is an Assistant Professor in the Department of Molecular, Cellular, and Developmental Biology at the University of Michigan. Dr. Vitaly Citovsky is a Professor in the Department of Biochemistry and Cell Biology at Stony Brook University.About the AuthorDr. Tzvi Tzfira is an Assistant Professor in the Department of Molecular, Cellular, and Developmental Biology at the University of Michigan. Dr. Vitaly Citovsky is a Professor in the Department of Biochemistry and Cell Biology at Stony Brook University.