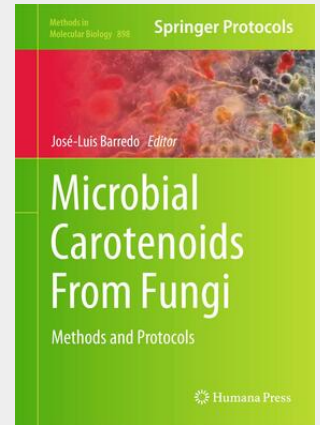


## Microbial Carotenoids From Fungi

Methods and Protocols

Carotenoids are a family of yellow to orange-red terpenoid pigments synthesized by photosynthetic organisms and many bacteria and fungi. They have beneficial health effects protecting against oxidative damage, and may be responsible for the colours associated with plants and animals. In *Microbial Carotenoids From Fungi: Methods and Protocols*, expert researchers in the field detail many of the most up-to-date methods which are now commonly used to study carotenoids. These include methods for the manipulation and metabolic engineering of the Beta-carotene producing fungi *Blakeslea trispora* and *Mucor circinelloides*, lycopene production with the yeast *Yarrowia lipolytica*, peroxisome targeting of lycopene pathway enzymes in *Pichia pastoris*, and the manipulation of the heterobasidiomycetous yeast *Xanthophyllomyces dendrorhous*, which produces astaxanthin, a red xanthophyll with large importance in the aquaculture, pharmaceutical, and food industries. Additionally, the book includes a DNA assembler method for construction of zeaxanthin-producing strains of *Saccharomyces cerevisiae*, production of neurosporaxanthin by *Neurospora* and *Fusarium*, and production of torularhodin, torulene and b-carotene by *Rhodotorula* yeasts. Written in the highly successful *Methods in Molecular Biology*<sup>™</sup> series format, chapters include introductions to their respective topics, lists of the necessary materials and reagents, step-by-step, readily reproducible laboratory protocols, and key tips on troubleshooting and avoiding known pitfalls. Authoritative and practical, *Microbial Carotenoids From Fungi: Methods and Protocols*, provides practical experimental laboratory procedures for a wide range of carotenoids producing microorganisms.

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