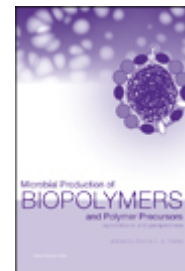


Microbial Production of Biopolymers and Polymer Precursors

Applications and Perspectives



Edited by: **Bernd H. A. Rehm**

Institute of Molecular BioSciences, Massey University, New Zealand

Published: January 2009. **Pages:** x + 294

Hardback: ISBN 978-1-904455-36-3 £159, \$319

Published by: Caister Academic Press www.caister.com

A huge variety of biopolymers, such as polysaccharides, polyesters, and polyamides, are naturally produced by microorganisms. These range from viscous solutions to plastics and their physical properties are dependent on the composition and molecular weight of the polymer. The genetic manipulation of microorganisms opens up an enormous potential for the biotechnological production of biopolymers with tailored properties suitable for high-value medical application such as tissue engineering and drug delivery.

Written by expert, internationally renowned scientists, this comprehensive volume describes in detail the use of microorganisms for the production of the most important biopolymers and polymer precursors. The authors describe, in depth, the biosynthetic pathways, physical properties and industrial production processes and discuss in detail the genetic and metabolic engineering of microorganisms for biopolymer production. Also highlighted are the applications and potential applications of the biopolymers and microbial biotechnology.

Topics include the biochemistry and genetics of biosynthesis of xanthan, alginate, cellulose, cyanophycin, poly(γ -glutamic acid), levan, hyaluronic acid, organic acids, oligosaccharides and polysaccharides, and polyhydroxyalkanoates. A recommended book for all biotechnology and microbiology laboratories.

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