

Contents

Volume 1

Introductory Preface	V
I Humic Substances and Polyisoprenoids	1
1 Medical Aspects and Applications of Humic Substances <i>Renate Klöcking, Björn Helbig</i>	3
2 Melanin <i>Joan M. Henson</i>	17
3 Biochemistry of Natural Rubber and Structure of Latex <i>Dhirayos Wititsuwannakul, Rapepun Wititsuwannakul</i>	35
II Polyesters	87
4 Applications of PHAs in Medicine and Pharmacy <i>Simon F. Williams, David P. Martin</i>	89
5 Polyanhydrides <i>Neeraj Kumar, Ann-Christine Albertsson, Ulrica Edlund, Doron Teomim, Aliza Rasiel, Abraham J. Domb</i>	127
6 Polyglycolide and Copolyesters with Lactide <i>Michel Vert</i>	159
7 Polylactides <i>Hideto Tsuji</i>	183
III Polysaccharides	233
8 Alginates from Algae <i>Kurt Ingar Draget, Olav Smidsrød, Gudmund Skjåk-Bræk</i>	235
9 Alginates from Bacteria <i>Bernd H. A. Rehm</i>	265
10 Carrageenan <i>Fred van de Velde, Gerhard A. De Ruiter</i>	299

XII Contents

11 Bacterial Cellulose	329
<i>Stanislaw Bielecki, Alina Krystynowicz, Marianna Turkiewicz, Halina Kalinowska</i>	
12 Chitin and Chitosan in Fungi	383
<i>Martin G. Peter</i>	
13 Chitin and Chitosan from Animal Sources	419
<i>Martin G. Peter</i>	
14 Curdlan	513
<i>In-Young Lee</i>	
15 Dextran	537
<i>Timothy D. Leathers</i>	
16 Cell-Wall β -Glucans of <i>Saccharomyces cerevisiae</i>	561
<i>Gerrit J. P. Dijkgraaf, Huijuan Li, Howard Bussey</i>	
17 Fungal Cell Wall Glycans	597
<i>Shung-Chang Jong</i>	
18 Hyaluronan	617
<i>eter Prehm</i>	
19 Levan	645
<i>Sang-Ki Rhee, Ki-Bang Song, Chul-Ho Kim, Buem-Seek Park, Eun-Kyung Jang, Ki-Hyo Jang</i>	
20 Proteoglycans (Glycosaminoglycans/Mucopolysaccharides)	673
<i>Takuo Nakano, Walter T. Dixon, Lech Ozimek</i>	
21 Schizophyllan	703
<i>Udo Rau</i>	

Volume 2

IV Polyamides and Complex Proteinaceous Materials	735
22 Ribosomal Protein Synthesis	737
<i>Wolfgang Wintermeyer, Marina V. Rodnina</i>	
23 Modifications of Proteins and Poly(amino acids) by Enzymatic and Chemical Methods	761
<i>Kousaku Ohkawa, Hiroyuki Yamamoto</i>	
24 Collagens and Gelatins	791
<i>Barbara Brodsky, Jerome A. Werkmeister, John A. M. Ramshaw</i>	
25 Poly- γ -glutamic Acid	827
<i>Makoto Ashiuchi, Haruo Misono</i>	
26 ϵ -Poly-L-Lysine	879
<i>Toyokazu Yoshida, Jun Hiraki, Toru Nagasawa</i>	

27	Structure, Function, and Evolution of Vicilin and Legumin Seed Storage Proteins	895
	<i>James Martin Dunwell</i>	
28	Extra-Organismic Adhesive Proteins	927
	<i>Jared M. Lucas, Eleonora Vaccaro, J. Herbert Waite</i>	
29	Self-assembling Protein Cage Systems and Applications in Nanotechnology	951
	<i>Trevor Douglas, Mark Allen, Mark Young</i>	
V	Miscellaneous Biopolymers	973
30	Hemozoin: a Biocrystal Synthesized during the Degradation of Hemoglobin	975
	<i>David J. Sullivan Jr.</i>	
31	Biofilms	1011
	<i>Hans-Curt Flemming, Jost Wingender</i>	
32	Health Issues of Biopolymers: Polyhydroxybutyrate	1049
	<i>Thomas Freier, Katrin Sternberg, Detlef Behrend, Klaus-Peter Schmitz</i>	
	Index	1083