

Contributors	xvii
Preface to the 1st Edition: Abba J. Kastin	li
Preface to the 2nd Edition: Abba J. Kastin	liii

Section I Plant Peptides

Yoshikatsu Matsubayashi

1. CLAVATA3	1
<i>Shinichiro Sawa</i>	
2. Defense Signal Peptides	5
<i>Yube Yamaguchi, Gregory Pearce and Alisa Huffaker</i>	
3. DVL/RTFL	15
<i>Elene R. Valdivia, Kate L. Hertweck, Sung Ki Cho and John C Walker</i>	
4. EPF	20
<i>Tatsuo Kakimoto</i>	
5. IDA/IDL	24
<i>Melinka A. Butenko, Robert Kumpf and Reidunn B. Aalen</i>	
6. LUREs	31
<i>Tetsuya Higashiyama</i>	
7. Phytosulfokine	35
<i>Yoshikatsu Matsubayashi</i>	
8. POLARIS	40
<i>Keith Lindsey, Saher Mehdi, Stuart A. Casson, Anna J. Mudge, Jennifer F. Topping and Junli Liu</i>	

9. RALF Peptides	46
<i>Juliano R. Guerreiro, Gregory Pearce, Marcio C. Silva-Filho and Daniel S. Moura</i>	
10. Root Meristem Growth Factor	50
<i>Yoshikatsu Matsubayashi</i>	
11. ROTUNDIFOLIA4	53
<i>Takahiro Yamaguchi, Momoko Ikeuchi and Hirokazu Tsukaya</i>	
12. SCR	58
<i>Sushma Naithani, Palitha Dharmawardhana and June B. Nasrallah</i>	
13. Stomagen/EPFL9	67
<i>Tomoo Shimada, Shigeo S. Sugano and Ikuko Hara-Nishimura</i>	
14. TDIF	71
<i>Yuki Kondo, Yuki Hirakawa and Hiroo Fukuda</i>	

Section II Bacterial/Antibiotic Peptides

Robert E.W. Hancock

15. Cathelicidins	77
<i>Neeloffer Mookherjee, Kelly L. Brown and Robert E.W. Hancock</i>	
16. Class II Non-Lantibiotic Bacteriocins	85
<i>Ingolf F. Nes, Dag A. Brede and Dzong B. Diep</i>	
17. Colicins	93
<i>O. Sharma, S.D. Zakharov, M.V. Zhelnina, E. Yamashita and W.A. Cramer</i>	

18. **Defensins** 101
*Nikolinka Antcheva, Filomena Guida
and Alessandro Tossi*
19. **Lantibiotics** 119
*Jasmin Dischinger, Imke Wiedemann,
Gabriele Bierbaum
and Hans-Georg Sahl*
20. **Microcins** 129
Sylvie Rebuffat
21. **Nonribosomal Peptide Synthesis** 138
*Jan Grünewald
and Mohamed A. Marahiel*
22. **Peptaibols** 150
*César de la Fuente-Núñez, L. Whitmore
and B.A. Wallace*

Section III Fungal Peptides

Tzi Bun Ng

23. **Antifungal and Antibacterial Peptides of Fungal Origin** 157
Tzi Bun Ng
24. **Fungal Peptides with Ribonuclease and Ribosome Inactivating Activities** 162
Tzi Bun Ng
25. **Fungal Toxins** 166
Jack Ho Wong
26. **Plant Antifungal Peptides** 169
*Suzana Meira Ribeiro, William Farias Porto,
Osmar Nascimento Silva,
Marcelo de Oliveira Santos,
Simoni Campos Dias and Octávio Luiz
Franco*
27. **Polysaccharide Krestin (PSK) and Polysaccharopeptide PSP** 180
Jennifer Man-Fan Wan

Section IV Invertebrate Peptides

Ronald J. Nachman

28. **AKH/RPCH Peptides** 185
Gerd Gäde and Heather G. Marco
29. **Allatostatins** 191
Stephen S. Tobe and William G. Bendena
30. **Allatotropin** 197
Frank M. Horodyski
31. **B-Type Allatostatins and Sex Peptides** 203
*Hans Peter Vandersmissen,
Ronald J. Nachman
and Jozef Vanden Broeck*
32. **Crustacean Bioactive Peptides** 209
H. Dirksen
33. **Developmental Peptides: ETH, Corazonin, and PTTH** 222
*Michael E. Adams, Young-Joon Kim,
Yoonseong Park and Dusan Zitnan*
34. **Diuretic/Antidiuretic** 229
Geoffrey M. Coast and David A. Schooley
35. **FMRFamide-Like Peptides (FLPs)** 237
Ian Orchard and Angela B. Lange
36. **Free-Living Nematodes** 247
E.P. Masler
37. **FXPRLamide (Pyrokinin/PBAN) Family** 255
*Miriam Altstein, Aliza Hariton
and Ronald J. Nachman*
38. **Insulin-Like Peptides** 267
*Yevgeniya Antonova-Koch,
Michael A. Riehle, Anam J. Arik
and Mark R. Brown*

- 39. Molluscan Bioactive Peptides** 276
Anna Di Cosmo and Gianluca Polese
- 40. Parasitic Nematode Peptides** 287
Nikki J. Marks and Aaron G. Maule
- 41. Pigment Dispersing Factor** 298
*Liesbet Temmerman, Ellen Meelkop
and Liliane Schoofs*
- 42. Proctolin** 304
Angela B. Lange and Ian Orchard
- 43. Sulfakinins** 310
*Liliane Schoofs, Tom Janssen
and Ronald J. Nachman*
- 44. Tachykinin Peptides** 315
Dick R. Nässel
- Section V
Amphibian/Skin Peptides**
J. Michael Conlon
- 45. Bradykinin Peptides** 321
J. Michael Conlon
- 46. Bombesin Peptides** 326
Eliot R. Spindel
- 47. Bombinins** 331
*Vincenzo Luca,
Donatella Barra
and Maria Luisa Mangoni*
- 48. Caeruleins** 338
John H. Bowie
- 49. Chromogranins/Secretogranins** 342
*Maité Montero-Hadjadje,
Charlène Delestre, Maité Courel
and Youssef Anouar*
- 50. Dermaseptins** 350
Pierre Nicolas and Ali Ladram
- 51. Insulin-Releasing Peptides** 364
*Opeolu O. Ojo, Peter R Flatt,
Yasser H.A. Abdel-Wahab
and J. Michael Conlon*
- 52. Neurohypophysial Peptides** 371
Sunny K. Boyd
- 53. Opioid and Bv8 Peptides** 376
*Lucia Negri, Pietro Melchiorri
and Roberta Lattanzi*
- 54. Sodefrin and Related Pheromones** 384
*Sakae Kikuyama, Fumiyo Toyoda,
Kazutoshi Yamamoto, Takeo Iwata,
Tomoaki Nakada and Itaru Hasunuma*
- 55. Tachykinins** 391
Cinzia Severini and Giovanna Improta
- 56. Temporins** 400
Andrea C. Rinaldi and J. Michael Conlon
- Section VI
Venom Peptides**
Jean-Marc Sabatier
- 57. Animal Toxins** 407
Jean-Marc Sabatier and Michel De Waard
- 58. Hymenoptera Insect Peptides** 416
Mario Sergio Palma
- 59. Scorpion Peptides** 423
*Ricardo C. Rodríguez de la Vega,
Nicolas Vidal and Lourival D. Possani*
- 60. Sea Anemone Peptides** 430
Raymond S. Norton
- 61. Snail Peptides** 437
*Baldomero M. Olivera,
Julita S. Imperial and Gisela P. Concepcion*
- 62. Snake Peptides** 451
Alan L. Harvey

63. Spider Peptides	461
<i>Graham M. Nicholson</i>	
64. Targets and Therapeutic Properties	473
<i>Christine Beeton</i>	
65. Worm Peptides	483
<i>William R. Kem</i>	
Section VII	
Cancer/Anticancer Peptides	
<i>Terry Moody</i>	
66. Adrenomedullin	489
<i>Frank Cuttitta and Alfredo Martínez</i>	
67. Angiotensin II/Angiotensin-(1-7)	494
<i>Patricia E. Gallagher, Alison L. Arter, Bhavani Krishnan, Maria A. Garcia-Espinosa and E. Ann Tallant</i>	
68. Apelin	502
<i>Frank Cuttitta and David S. Salomon</i>	
69. Bombesin Peptides	506
<i>Robert T. Jensen and Terry W. Moody</i>	
70. Endothelin-1	512
<i>Samer-ul Haque, Hazel Welch and Marilena Loizidou</i>	
71. Gastrin	519
<i>Jens F. Rehfeld and Jens P. Goetze</i>	
72. Leptin/Adiponectin	524
<i>Hong Tu</i>	
73. LHRH Analogs	531
<i>Andrew V. Schally, Jorg B. Engel, Jacek Pinski and Norman L. Block</i>	
74. Orexins (Hypocretins)	541
<i>Marc Laburthe and Thierry Voisin</i>	
75. Somatostatin/NPY	548
<i>Meike Körner and Jean Claude Reubi</i>	
76. VIP/PACAP Receptors	556
<i>Terry W. Moody and Robert T. Jensen</i>	

Section VIII Vaccine Peptides

Pravin T.P. Kaumaya

77. Antiadhesin Peptide-Based Vaccines for <i>Pseudomonas aeruginosa</i>	563
<i>Wendy J. Hartsock, Clifton Hackbarth and Robert S. Hodges</i>	
78. Lipo-Peptides/Saccharides for Peptide Vaccine Delivery	571
<i>Mariusz Skwarczynski, Mehruz Zaman and Istvan Toth</i>	
79. Novel Tumor Derived Peptides in Vaccines	580
<i>Anthony W. Purcell, Nathan P. Croft and Nadine L. Dudek</i>	
80. Peptide Vaccine for Alzheimer's Disease	590
<i>Beka Solomon</i>	
81. Peptide Vaccines for Myeloid Leukemias	596
<i>Pratap Neelakantan and Katayoun Rezvani</i>	
82. Peptide Vaccines for Otitis Media	603
<i>Laura A. Novotny and Lauren O. Bakaletz</i>	
83. Therapeutic Peptides Targeting HER-2/neu and VEGF Signaling Pathways in Breast Cancer	612
<i>Kevin Chu Foy, Daniele Vicari and Pravin T.P. Kaumaya</i>	
84. Use of Positional Scanning Libraries to Identify Immunologically Relevant Peptides	617
<i>Mireia Sospedra, Valeria Judkowski, Jon R. Appel and Clemencia Pinilla</i>	

Section IX Immune/Inflammatory Peptides

Joost Oppenheim

85. Anaphylatoxins	625
<i>De Yang</i>	

86. Annexin-A1 Peptide Ac2-26	631	100. CGRP/Adrenomedullin	744
<i>M Perretti, F D'Acquisto and R.J. Flower</i>		<i>Denise Wootten, Nanda Tilakaratne, Arthur Christopoulos and Patrick M. Sexton</i>	
87. Immunoregulatory Neuropeptides	640	101. CRH Family	752
<i>Mario Delgado</i>		<i>David A. Lovejoy</i>	
88. Chemerin	649	102. Endozepines	760
<i>Marc Parmentier</i>		<i>Marie-Christine Tonon, Jerome Leprince, Fabrice Morin, Pierrick Gandolfo, Vincent Compere, Georges Pelletier, Maria M. Malagon and Hubert Vaudry</i>	
89. Chemokines	656	103. Galanin and GALP	766
<i>Sunny C. Yung and Joshua M. Farber</i>		<i>Andrew L. Gundlach and Philip J. Ryan</i>	
90. DP IV/CD26 Effector Peptides	664	104. Ghrelin	776
<i>Siegfried Ansorge and Dirk Reinhold</i>		<i>Masayasu Kojima, Yuki Nakamura, Takahiro Sato and Kenji Kangawa</i>	
91. FPR Ligands	671	105. GHRH	784
<i>Ying Liu, Keqiang Chen and Ji Ming Wang</i>		<i>Maria M. Malagon, Rafael Vazquez-Martinez, Antonio J. Martinez-Fuentes, Francisco Gracia-Navarro and Justo P. Castaño</i>	
92. Neuroimmune Peptides	681	106. GnRH (LHRH)	792
<i>Ning Zhang, Hua Geng and Joost J. Oppenheim</i>		<i>R.P. Millar</i>	
93. Peptide Loading of MHC	687	107. Gonadotropin-Inhibitory Hormone	802
<i>Melissa J. Call</i>		<i>Kazuyoshi Tsutsui and Takayoshi Ubuka</i>	
94. Peptide Recognition by T Cells	697	108. Hypocretins (Orexins)	812
<i>Malte Mohme and Roland Martin</i>		<i>Luis de Lecea and J. Gregor Sutcliffe</i>	
95. RGD Peptides	705	109. Kisspeptins	819
<i>Ignacy Z. Siemion, Alicja Kluczyk and Marek Cebrat</i>		<i>Manuel Tena-Sempere</i>	
Section X		110. MCH	828
Brain Peptides		<i>Françoise Presse and Jean-Louis Nahon</i>	
<i>Hubert Vaudry</i>		111. Melanocortins	838
96. Apelin	715	<i>Sylvie Jégou, Roger D. Cone, Alex N. Eberlé and Hubert Vaudry</i>	
<i>Xavier Iturrioz and Catherine Llorens-Cortes</i>		112. MIF-1/Tyr-MIF-1	845
97. BNP/CNP	724	<i>Abba J. Kastin and Weihong Pan</i>	
<i>Yoshio Takei</i>			
98. CART	732		
<i>Csaba Fekete and Ronald M. Lechan</i>			
99. CCK	738		
<i>Margery C. Beinfeld</i>			

[illegible]

136. Neuropeptide B/W	1025	148. Ghrelin	1104
<i>Fumiko Takenoya, Haruaki Kageyama, Ki Sung Kang and Seiji Shioda</i>		<i>Omar Al-massadi, Kristy M. Heppner, Rubén Nogueiras, Diego Pérez-Tilve and Matthias H. Tschöp</i>	
137. Orexins	1032	149. GLP-1	1111
<i>Naima Ahmed, Harman S. Mattu and Harpal S. Randeva</i>		<i>Gustavo Pacheco-López and Wolfgang Langhans</i>	
138. PACAP	1038	150. Glucagon	1118
<i>David Vaudry, Delphine Burel, Ludovic Galas, Hélène Lacaille, Dominique Duterte-Boucher, David Chatenet, Alain Fournier and Hubert Vaudry</i>		<i>Nori Geary</i>	
Section XII		151. Insulin	1123
Ingestive Peptides		<i>Bernadette E. Grayson and Stephen C. Woods</i>	
<i>Stephen C. Woods</i>		152. Leptin	1129
139. Adiponectin/Resistin	1045	<i>Martin G. Myers Jr. and Megan Greenwald-Yarnell</i>	
<i>Rexford S. Ahima</i>		153. Melanocortins	1135
140. Amylin/CGRP	1049	<i>Joram D. Mul and Roger A.H. Adan</i>	
<i>Thomas A. Lutz</i>		154. NPY	1143
141. Apolipoprotein (apo) A-IV/apoE	1057	<i>Simona Perboni, Marzia Vignoni and Akio Inui</i>	
<i>Patrick Tso and Min Liu</i>		155. Opioids	1149
142. Bombesin	1064	<i>Blake A. Gosnell, Catherine M. Kotz, Charles J. Billington and Allen S. Levine</i>	
<i>Ellen E. Ladenheim</i>		156. Orexin	1154
143. CART	1071	<i>Jon F. Davis and Stephen C. Benoit</i>	
<i>Graham J. Dockray and Guillaume de Lartigue</i>		157. PYY	1160
144. CCK	1077	<i>Rachel Troke, Tricia Tan and Stephen R. Bloom</i>	
<i>Claire Barbier de La Serre and Timothy H. Moran</i>		Section XIII	
145. CRH	1084	Gastrointestinal Peptides	
<i>D. Richard and C. Lopez</i>		<i>Yvette Taché</i>	
146. Enterostatin	1089	158. Adrenomedullin	1167
<i>Charlotte Erlanson-Albertsson</i>		<i>Mitchell L. Schubert and Shijian Chu</i>	
147. Galanin	1097		
<i>Jessica R. Barson, Irene Morganstern and Sarah F. Leibowitz</i>			

159. Angiogenic Growth Factors	1172	171. Neurotensin	1265
<i>Sandor Szabo, Xiaoming Deng, Tetyana Khomenko, Ganna Tolstanova, Brankica Paunovic, Longchuan Chen, Ximing Xiong and Zsuzsanna Sandor</i>		<i>James M. Bugni and Charalabos Pothoulakis</i>	
160. Apelin	1182	172. Nesfatin-1	1271
<i>Song Han, George H. Greeley Jr. and Ella W. Englander</i>		<i>Shinsuke Oh-I, Hiroyuki Shimizu and Masatomo Mori</i>	
161. Bombesin-Related Peptides	1188	173. Obestatin	1275
<i>Robert T. Jensen and Terry W. Moody</i>		<i>Guillaume Gourcerol</i>	
162. CCK	1197	174. Opioids	1283
<i>Travis E. Solomon, Ayman I. Sayegh and Joseph R. Reeve, Jr</i>		<i>Catia Sternini, Celine Durauffourd and Laura Anselmi</i>	
163. CGRP	1204	175. PACAP	1289
<i>S. Evangelista</i>		<i>John P. Vu, Patrizia M. Germano and Joseph R. Pisegna</i>	
164. Galanin	1210	176. Pancreatic Polypeptide	1294
<i>Duan Chen, Yosuke Kodama, Bård Kulseng, Helene Johannessen and Chun-Mei Zhao</i>		<i>Tricia M. Tan and Stephen R. Bloom</i>	
165. Gastrin	1219	177. Paneth Cell α-Defensins	1300
<i>Arthur Shulkes and Graham S. Baldwin</i>		<i>André J. Ouellette and Michael E. Selsted</i>	
166. GIP	1227	178. PYY	1307
<i>Nigel Irwin and Peter R. Flatt</i>		<i>Louise Purtell and Herbert Herzog</i>	
167. Ghrelin	1236	179. Secretin	1314
<i>Theo L. Peeters</i>		<i>Laurence J. Miller</i>	
168. GLP 1/2, Enteroglucagon, Glicentin, and Oxyntomodulin	1241	180. Somatostatin	1320
<i>Jens Juul Holst, Carolyn F. Deacon Bolette Hartmann and Jens Pedersen</i>		<i>Vicente Martinez</i>	
169. Leptin	1251	181. Tachykinins	1330
<i>Sandra Guilmeau, Robert Ducroc and André Bado</i>		<i>Peter Holzer</i>	
170. Motilin	1257	182. TFF Peptides	1338
<i>Pierre Poitras</i>		<i>Werner Hoffmann</i>	
		183. Urocortins	1346
		<i>Vincent Wu, Pu-Qing Yuan, Muriel Larauche, Lixin Wang and Mulugeta Million</i>	

- 184. VIP** 1354
*Karnam S. Murthy
 and John R. Grider*
- Section XIV
 Cardiovascular Peptides**
Kazuhiro Takahashi
- 185. Adrenomedullin Peptides** 1361
Johji Kato and Kazuo Kitamura
- 186. Angiotensin II Peptides** 1369
Yasukatsu Izumi and Hiroshi Iwao
- 187. Apelin** 1377
*Ábel Perjés, Klára Farkasfalvi,
 Heikki Ruskoaho and István Szokodi*
- 188. Bradykinin Peptides** 1386
Duncan John Campbell
- 189. CGRP** 1394
Ross King and Susan D. Brain
- 190. Endothelins** 1402
Takashi Miyauchi and Katsutoshi Goto
- 191. Ghrelin** 1408
*Ichiro Kishimoto, Takeshi Tokudome,
 Hiroshi Hosoda, Mikiya Miyazato
 and Kenji Kangawa*
- 192. Natriuretic Peptides** 1415
*Naoto Minamino
 and Toshio Nishikimi*
- 193. Salusins** 1423
*Masayoshi Shichiri, Hajime Izumiyama
 and Takuya Watanabe*
- 194. Urocortins** 1428
*Mark Richards
 and Miriam Rademaker*
- 195. Urotensin Peptides** 1437
*Kazuhiro Takahashi
 and Kazuhito Totsune*
- 196. VIP** 1443
Robert J. Henning
- 197. VP/OT** 1450
*Jolanta Gutkowska
 and Marek Jankowski*
- Section XV
 Renal Peptides**
Willis K. Samson
- 198. Adrenomedullin 2/Intermedin** 1459
Yoshio Takei
- 199. ANP** 1467
*Jochen R. Hirsch
 and Wolf-Georg Forssmann*
- 200. Endothelin** 1473
David M. Pollock
- 201. Neurohypophyseal Peptides** 1481
Joseph G. Verbalis
- 202. Peptides, Sex, Diabetes,
 and the Kidney** 1487
*Michaele B. Manigrasso
 and Christine Maric-Bilkan*
- 203. Prolactin** 1494
Willis K. Samson
- 204. Renin-Angiotensin System** 1499
*Minolfa C. Prieto, Alexis A Gonzalez,
 Ryousuke Satou, Hiroyuki Kobori
 and L. Gabriel Navar*
- Section XVI
 Respiratory Peptides**
Sami Said
- 205. Adrenomedullin** 1507
*Stefan Hippenstiel,
 Andreas C. Hocke, Norbert Suttrop
 and Bettina Temmesfeld-Wollbrück*

206. **Endothelin-1** 1513
Karen A. Fagan, Natalie N. Bauer and Ivan F. McMurtry
207. **Kinin Receptors** 1519
Sébastien Talbot, James Chi-Jen Lin and Réjean Couture
208. **PACAP** 1527
Mario Delgado
209. **VIP** 1535
Sami I. Said, Valerie Chappe and Sayyed A. Hamidi
- Section XVII
Opiate Peptides**
Fred Nyberg
210. **Antiopioid Peptides** 1543
Ji-Sheng Han
211. **Casomorphins/Hemorphins** 1550
Fred Nyberg, Anna Carlsson and Mathias Hallberg
212. **Endomorphins** 1556
Hirokazu Mizoguchi, Tsukasa Sakurada and Shinobu Sakurada
213. **Evolution of the Opioid System** 1562
Dan Larhammar, Görel Sundström and Robert M. Dores
214. **Exorphins** 1570
Masaaki Yoshikawa
215. **Nociceptin/Orphanin FQ** 1577
Girolamo Calò, David G. Lambert and Remo Guerrini
216. **Opioid-Substance P Chimeric Peptides** 1586
Andrzej W. Lipkowski, Daniel B. Carr, Iwona Bonney and Piotr Kosson
217. **POMC-Derived Opioid Peptides** 1592
Patricia J. McLaughlin and Ian S. Zagon
218. **Prodynorphin-Derived Peptides** 1596
Santi Spampinato, Andrea Bedini and Monica Baiula
219. **Proenkephalin-Derived Peptides** 1602
Patricia J. McLaughlin
- Section XVIII
Neurotrophic Peptides**
Illana Gozes
220. **Activity-Dependent Neuroprotective Protein (ADNP) and Davunetide (NAP)** 1611
I. Gozes and P.W. Baas
221. **Erythropoietin** 1619
Y. Haim Ohana, T. Liron, S. Prutchi-Sagiv, M. Mittelman, M.C. Souroujon and D. Neumann
222. **Insulin-Like Growth Factor-1** 1627
Itay Bentov and Haim Werner
223. **Neuregulins** 1633
Kim B. Seroogy, Jonathan W. Dickerson, Sarah N. Cassella and Lixin Zhang-Auberson
224. **Neurotrophins** 1639
Ljubica Ivanisevic and H. Uri Saragovi
225. **TGF- β** 1647
Veronica Lifshitz and Dan Frenkel
- Section XIX
Blood-Brain Peptides**
Weihong Pan
226. **Augurin and *Ecrg4*-derived Neuropeptides** 1655
Conrad Johanson, Ana Gonzalez, Miles Miller, Sonia Podvin, Edward Stopa and Andrew Baird

- 227. Diseases Mediated by the BBB: Alzheimer's, Obesity, and Beyond** 1667
William A. Banks
- 228. Hypothalamic Neuropeptides** 1672
David J. Begley
- 229. Ingestive Peptides** 1677
William A. Banks
- 230. Neurotrophic Peptides** 1682
Weihong Pan and Abba J. Kastin
- 231. Oligopeptide and Peptide-Like Drug Transport** 1688
Richard F. Keep and David E. Smith
- 232. Opioid Peptides** 1696
Richard D. Egleton, Ken A. Witt and Thomas P. Davis
- 233. Peptide Delivery** 1702
Paul Kiptoo, Marlyn D. Laksitorini and Teruna J. Siahaan
- Section XX**
Peptide Biosynthesis/Processing
Naoto Minamino
- 234. Acetylation** 1711
Qun Li, Iain J. Clarke and A. Ian Smith
- 235. Carboxypeptidases E and D** 1715
Lloyd D. Fricker
- 236. Disulfide Bond Formation** 1721
Gautam Rajpal and Peter Arvan
- 237. Ghrelin O-Acyltransferase (GOAT)** 1730
Masayasu Kojima and Hideko Ohgusu
- 238. Glutaminy Cyclases** 1736
Holger Cynis, Stephan Schilling and Hans-Ulrich Demuth
- 239. In Silico Search for Biologically Active Peptides** 1743
Mariko Nishiyama, Munehiro Ishii, Shuichi Hirose, Hiroyuki Yamazaki and Sadao Kimura
- 240. New Mass Spectrometric Approaches for Uncovering Neuropeptides** 1749
Xiaowen Hou and Jonathan V. Sweedler
- 241. Peptide Degradation (Neprilysin and Other Regulatory Peptidases)** 1757
Anthony J. Turner and Natalia N. Nalivaeva
- 242. Peptidomics of Mice Lacking Peptide Processing Enzymes** 1765
Jonathan H. Wardman and Lloyd D. Fricker
- 243. Peptidomics Strategy for Discovering Endogenous Biologically Active Peptides** 1772
Kazuki Sasaki and Naoto Minamino
- 244. Peptidylglycine-Amidating Monooxygenase (PAM)** 1780
KS Vishwanatha, Richard E. Mains and Betty A. Eipper
- 245. Prohormone Convertase 1/3** 1789
Mirella Vivoli and Iris Lindberg
- 246. Prohormone Convertase 2** 1797
Mirella Vivoli and Iris Lindberg
- 247. Proprotein Convertase Furin and Proprotein Convertase PC5/6** 1803
Nabil G. Seidah
- 248. Proprotein Convertases PC4, PACE4, and PC7** 1812
Nabil G. Seidah
- 249. Proprotein Convertases SKI-1/S1P and PCSK9** 1821
Nabil G. Seidah

250. Tyrosylprotein Sulfotransferases 1829

Jens R. Bundgaard and Jens F. Rehfeld

Section XXI General Peptide Topics

Abba J. Kastin

251. Classical Neurotransmitters and Neuropeptides 1835

Tomas Hökfelt, Sven Ove Ögren and Zhi-Qing David Xu

252. Evolution in Action: Skin Peptides 1842

J.M. Conlon

253. Peptide Chronomics 1850

Franz Halberg, Weihong Pan, Earl E. Bakken and Germaine Cornélissen

254. Peptides and Behavior 1858

Susan Rotzinger

255. Peptides and Sleep 1884

A. Steiger

256. Peptides and Stress 1872

Annika Thorsell

257. Peptides and Temperature 1880

Miklós Székely, Márta Balaskó and Erika Pétervári

258. Pheromone Peptides 1889

Miriam Altstein

259. Prebiotic Peptides 1899

Bernd M. Rode and Kristof Plankensteiner

260. Viral Fusion Peptides 1904

Avraham Ashkenazi and Yechiel Shai

- Index 1913

- Color Plates 1943