Caister Academic Press www.caister.com

Prions

Current Progress in Advanced Research (Second Edition)



Edited by: Akikazu Sakudo and Takashi Onodera

Faculty of Veterinary Medicine, Okayama University of Science, Imabari, Japan. School of Health Sciences, University of the Ryukyus, Okinawa, Japan. Research Center for Food Safety, Graduate School of Agricultural and Life Sciences, University of Tokyo, Japan.

Published: April 2019. Pages: vi + 154

ISBN: Book: 978-1-910190-95-1. Ebook: 978-1-910190-96-8 £159, \$319

Published by: Caister Academic Press www.caister.com

Prion diseases or transmissible spongiform encephalopathies (TSEs) are fatal neurological diseases that include, for example, Creutzfeldt-Jakob Disease (CJD) in humans and bovine spongiform encephalopathy (BSE) in cattle. Since the publication of the first edition of this book in 2013 significant progress has been made in advanced prion research creating a need for this timely revised and updated edition.

The book opens with an introductory chapter that provides an overview. This is followed by four chapters (chapters 2-5) dealing with fundamental aspects of prion biology, including functions of the cellular isoform of prion protein (PrPC) and molecular mechanisms of prion diseases. The next two chapters (chapters 6-7) focus on clinical aspects of human prion diseases and current approaches for effective inactivation methods. The last part of the book (chapters 8-9) summarizes animal prion diseases, including BSE, scrapie and chronic wasting disease (CWD). In the final chapter, Professor Onodera discusses the likely future direction of research.

This book is essential reading for everyone working with prions from the PhD student to the experienced scientist, in academia, the pharmaceutical or biotechnology industries and for those working in clinical environments.

Chapter 1. Introduction to Current Progress in Advanced Research on Prions (*Takashi Onodera and Akikazu Sakudo*) **Chapter 2**. Function of Prion Protein and the Family Member, Shadoo (*Takashi Onodera, Takuya Nishimura, Katsuaki Sugiura and Akikazu Sakudo*)

Chapter 3. Effect of Microglial Inflammation in Prion Disease (Yasuhisa Ano, Akikazu Sakudo and Takashi Onodera) Chapter 4. Prion Propagation, Its Neurotoxicity, and Protein Trafficking (Suehiro Sakaguchi and Keiji Uchiyama) Chapter 5. Molecular Mechanisms of Prion Diseases (Hermann C. Altmeppen, Berta Puig, Susanne Krasemann and Markus Glatzel)

Chapter 6. Clinical Aspects of Human Prion Diseases (Richard Knight and Graeme Mackenzie)

Chapter 7. Inactivation Methods for Prions (Akikazu Sakudo)

Chapter 8. Bovine Spongiform Encephalopathy and Scrapie (Takashi Yokoyama and Yoshifumi Iwamaru)

Chapter 9. Chronic Wasting Disease: Current Assessment of Transmissibility (Akikazu Sakudo)

Chapter 10. Future Perspectives in Prion Research (Takashi Onodera, Takuya Nishimura and Katsuaki Sugiura)

Order from:

Caister Academic Press https://www.caister.com/order

CURRENT BOOKS OF INTEREST

www.caister.com

Microbial Biofilms: Current Research and Practical Implications

Edited by: Arindam Mitra (Published: 2020)

Astrobiology: Current, Evolving and Emerging Perspectives

Edited by: André Antunes (Published: 2020)

Chlamydia Biology: From Genome to Disease

Edited by: Ming Tan, Johannes H. Hegemann and Christine Sütterlin (Published: 2020)

Microbial Exopolysaccharides: Current Research and Developments

Edited by: Özlem Ates Duru (Published: 2019)

of immense value for PhD students, postdoctorate students, microbiologists, and experienced scientists" (Doodys)

Polymerase Chain Reaction: Theory and Technology

Author: Mark A. Behlke, Kornelia Berghof-Jäger, Tom Brown, et al. (Published: 2019)

Pathogenic Streptococci: From Genomics to Systems Biology and Control

Edited by: Yuqing Li and Xuedong Zhou (Published: 2019)

Bats and Viruses: Current Research and Future Trends

Edited by: Eugenia Corrales-Aguilar and Martin Schwemmle (Published: 2020)

SUMOylation and Ubiquitination: Current and Emerging Concepts

Edited by: Van G. Wilson (Published: 2019)

"a comprehensive, in-depth resource ... intensive and technically detailed descriptions of the latest advances ... densely packed with information ... a valuable reference for any laboratory group working in this field" (Doodys)

Avian Virology: Current Research and Future Trends

Edited by: Siba K. Samal (Published: 2019) "a nice introduction to avian virology" (Doodys)

Insect Molecular Virology: Advances and Emerging Trends

Edited by: Bryony C. Bonning (Published: 2019)

"essential reading for students and scholars of insect virology" (Biotechnol. Agron. Soc. Environ.)

The Prion Protein

Edited by: Jörg Tatzelt (Published: 2010)

Plant Genomics

Edited by: Hany A. El-Shemy (Published: 2009)

Methylotrophs and Methylotroph Communities

Edited by: Ludmila Chistoserdova (Published: 2019)

Microbial Ecology: Current Advances from Genomics, Metagenomics and Other Omics

Edited by: Diana Marco (Published: 2019)

"easy to read ... applicable to teaching faculty as well as advanced undergraduate students, graduate students, and researchers" (SIMB News); "concise and well written" (Quarterly Rev. Biol.)

Plant-Microbe Interactions in the Rhizosphere

Edited by: Adam Schikora (Published: 2018)

"recommended for anyone involved in plant science or environmental microbiology" (Biotechnol. Agron. Soc. Environ.); "an authoritative overview" (Eur. J. Soil Sci.)

Prions: Current Progress in Advanced Research (Second Edition)

Edited by: Akikazu Sakudo and Takashi Onodera (Published: 2019)

Microbiota: Current Research and Emerging Trends

Edited by: Takashi Matsumoto and Yoshio Yamaoka, (Published: 2019)

Porcine Viruses: From Pathogenesis to Strategies for Control

Edited by: Hovakim Zakaryan (Published: 2019)

"This is a well-written book" (Doodys)