

RNA Editing

Current Research and Future Trends

Edited by: **Stefan Maas**

Division of Genetics and Developmental Biology, NIGMS, NIH, Bethesda, USA

Published: June 2013 (book); October 2013 (ebook). **Pages:** viii + 240

Book: ISBN 978-1-908230-23-2 £159, \$319. **Ebook:** ISBN 978-1-908230-88-1 £159, \$319

Published by: Caister Academic Press www.caister.com



Cellular editing of RNA can lead to the recoding of expressed sequences before they mature to their functional gene products, such as proteins or regulatory RNAs, and represents a hidden layer of genetic information and regulation. Often, the recoding events are essential for the normal function of the gene product (for example creating an open reading frame), in other cases RNA editing creates additional variation and phenotypic diversity since both the edited and the non-edited versions of the product are functional and co-exist. It is necessary to understand the mechanisms of RNA editing in order to elucidate the overall physiological impact of this phenomenon.

This major new work presents an up-to-date overview of RNA editing. All the chapters here have been written by experts in the various research areas and describe key recent findings as well as exploring current frontiers in the mechanisms and functional roles of RNA editing. The chapters span the editing of protein coding mRNAs, small regulatory RNAs, tRNAs and non-coding sequences. Also included are studies employing bioinformatics to identify and predict RNA editing sites as well as the evolution of RNA modification.

An essential text for anyone interested in RNA editing and modification, RNA structure and function, post-transcriptional regulation, and the regulation of gene expression and a recommended purchase for molecular biology libraries.

Chapter 1. Regulation of Ion Channel and Transporter Function Through RNA Editing. *Miguel Holmgren and Joshua J.C. Rosenthal*

Chapter 2. Mechanisms and Functions of RNA Editing in *Physarum polycephalum*. *Jonatha M. Gott*

Chapter 3. tRNA Modification and Editing. *Bhalchandra S. Rao and Jane E. Jackman*

Chapter 4. Coordination of RNA Editing with Other RNA Processes in Kinetoplastid Mitochondria. *Jorge Cruz-Reyes and Laurie K. Read*

Chapter 5. Structural Studies of U-insertion/deletion RNA Editing in Trypanosomes. *Blaine H. M. Mooers*

Chapter 6. RNA Editing and Small Regulatory RNAs. *Bjorn-Erik Wulff and Kazuko Nishikura*

Chapter 7. Deaminase-Dependent and Deaminase-Independent Functions of APOBEC1 and APOBEC1 Complementation Factor in the Context of the APOBEC Family. *Harold C. Smith*

Chapter 8. Identification of RNA Editing Sites: a Survey of the Past, Present, and Future. *Meng How Tan and Jin Billy Li*

Chapter 9. Regulation of Gene Expression Through Inosine-containing UTRs. *Heather Hundley*

Chapter 10. ADARs and the Viral Life Cycle. *Sara Tomaselli, Federica Galeano, Franco Locatelli and Angela Gallo*

Order from:

Caister Academic Press, c/o Book Systems Plus <http://www.caister.com/order>

☞ **MALDI-TOF Mass Spectrometry in Microbiology**

Edited by: Markus Kostrzewa and Sören Schubert (Published: 2016)

☞ ***Aspergillus* and *Penicillium* in the Post-genomic Era**

Edited by: Ronald P. de Vries, Isabelle Benoit Gelber and Mikael Rørdam Andersen (Published: 2016)

☞ **The Bacteriocins: Current Knowledge and Future Prospects**

Edited by: Robert L. Dorit, Sandra M. Roy and Margaret A. Riley (Published: 2016)

☞ **Omics in Plant Disease Resistance**

Edited by: Vijai Bhadauria (Published: 2016)

☞ **Acidophiles: Life in Extremely Acidic Environments**

Edited by: Raquel Quatrini and D. Barrie Johnson (Published: 2016)

☞ **Climate Change and Microbial Ecology: Current Research and Future Trends**

Edited by: Jürgen Marxsen (Published: 2016)

☞ **Biofilms in Bioremediation: Current Research and Emerging Technologies**

Edited by: Gavin Lear (Published: 2016)

☞ **Microalgae: Current Research and Applications**

Edited by: Maria-Nefeli Tsaloglou (Published: 2016)

☞ **Gas Plasma Sterilization in Microbiology: Theory, Applications, Pitfalls and New Perspectives**

Edited by: Hideharu Shintani and Akikazu Sakudo (Published: 2016)

☞ **Virus Evolution: Current Research and Future Directions**

Edited by: Scott C. Weaver, Mark Denison, Marilyn Roossinck and Marco Vignuzzi (Published: 2016)

☞ **Arboviruses: Molecular Biology, Evolution and Control**

Edited by: Nikos Vasilakis and Duane J. Gubler (Published: 2016)

☞ ***Shigella*: Molecular and Cellular Biology**

Edited by: William D. Picking and Wendy L. Picking (Published: 2016)

☞ **Aquatic Biofilms: Ecology, Water Quality and Wastewater Treatment**

Edited by: Anna M. Romání, Helena Guasch and M. Dolors Balaguer (Published: 2016)

☞ **Alphaviruses: Current Biology**

Edited by: Suresh Mahalingam, Lara Herrero and Belinda Herring (Published: 2016)

☞ **Thermophilic Microorganisms**

Edited by: Fu-Li Li (Published: 2015)

☞ **Flow Cytometry in Microbiology: Technology and Applications**

Edited by: Martin G. Wilkinson (Published: 2015)

"an impressive group of experts" ([ProtoView](#))

☞ **Probiotics and Prebiotics: Current Research and Future Trends**

Edited by: Koen Venema and Ana Paula do Carmo (Published: 2015)

☞ **Epigenetics: Current Research and Emerging Trends**

Edited by: Brian P. Chadwick (Published: 2015)

"this is one text you don't want to miss" ([Epigenie](#)); "up-to-date information" ([ChemMedChem](#))

☞ ***Corynebacterium glutamicum*: From Systems Biology to Biotechnological Applications**

Edited by: Andreas Burkovski (Published: 2015)

"Without question a valuable book" ([BIOSpektrum](#))

☞ **Advanced Vaccine Research Methods for the Decade of Vaccines**

Edited by: Fabio Bagnoli and Rino Rappuoli (Published: 2015)