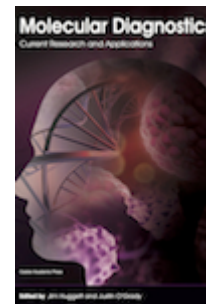


Molecular Diagnostics

Current Research and Applications



Edited by: Jim Huggett and Justin O'Grady

LGC, Teddington, UK and Norwich Medical School, University of East Anglia, Norwich, UK; respectively

Published: May 2014 (book); April 2014 (ebook). **Pages:** xii + 248

Book: ISBN 978-1-908230-41-6 £159, \$319. **Ebook:** ISBN 978-1-908230-64-5 £159, \$319

Published by: Caister Academic Press www.caister.com

The application of molecular technology in clinical diagnosis is a rapidly developing area and is predicted to greatly improve the speed, efficiency and accuracy of diagnostic medicine.

The editors of this book have commissioned an excellent series of chapters representing two key molecular diagnostic areas: cancer and infectious diseases. The cancer section deals with the challenges in identifying genetic, epigenetic and transcriptomic biomarkers. The infectious disease section describes the current clinical applications of molecular diagnostics for the detection of viral, bacterial and fungal pathogens as well as an example of the use of molecular diagnostics outside the clinic environment. A cautionary tale describing what can go wrong when molecular methods are applied incorrectly is also provided and makes fascinating reading. A substantial component of the book is dedicated to the process of translating a preclinical test to the bedside and describes the progress in the near patient point-of-care molecular diagnostics market. This is a fundamental consideration for successful translation of diagnostics tests from bench to bedside and is crucial for molecular diagnostics to have an impact on patient care. The final chapter offers a prediction of future trends in the molecular diagnostics of infectious diseases.

This volume is essential reading for anyone involved in the development or application of molecular diagnostics and is recommended for all clinical diagnostics laboratories.

Chapter 1. Molecular Diagnostics: An Introduction. *Jim F. Huggett, Siobhan Dorai-Raj, Agnieszka M. Falinska and Justin O'Grady*

Chapter 2. Transcriptome-based Biomarkers: A Road Map Exemplified for Peripheral Blood-based Biomarker Discovery, Development and Clinical Use. *Joachim L. Schultze*

Chapter 3. Development of Methylation Biomarkers for Clinical Applications and Methylation-sensitive High-resolution Melting (MS-HRM) Technology. *Tomasz K. Wojdacz*

Chapter 4. Genetic and Epigenetic Biomarkers of Colorectal Cancer. *Stephen A. Bustin and Jamie Murphy*

Chapter 5. Molecular Diagnosis in Medical Microbiology: The Horizon Draws Near. *G.L. Vanstone, R. Gorton, B.M. Charalambous and Tim McHugh*

Chapter 6. Molecular Diagnostics: Current Research and Applications. *Sophie Collot-Teixeira, Philip Minor and Robert Anderson*

Chapter 7. XMRV: A Cautionary Tale. *Jeremy Garson*

Chapter 8. Ancient DNA and the Fingerprints of Disease: Retrieving Human Pathogen Genomic Sequences from Archaeological Remains Using Real-time Quantitative Polymerase Chain Reaction. *G. Michael Taylor*

Chapter 9. Point-of-Care Nucleic Acid Testing: User Requirements, Regulatory Affairs, and Quality Assurance. *Angelika Niemz, Tanya M. Ferguson and David S. Boyle*

Chapter 10. Point-of-Care Nucleic Acid Testing: Clinical Applications and Current Technologies. *Angelika Niemz, Tanya M. Ferguson and David S. Boyle*

Chapter 11. From Bench to Bedside: Development of Polymerase Chain Reaction Integrated Systems in the Regulated Markets. *Martin Lee, Diane Lee and Phillip Evans*

Chapter 12. Future of Molecular Diagnostics: The Example of Infectious Diseases. *Eoin Clancy, Kate Reddington, Thomas Barry, Jim Huggett and Justin O'Grady*

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)