

# Quantitative Real-time PCR in Applied Microbiology

Edited by

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Caister Academic Press  
Norfolk, UK

[www.caister.com](http://www.caister.com)

British Library Cataloguing-in-Publication Data  
A catalogue record for this book is available from the British Library

ISBN: 978-1-908230-01-0

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Cover design adapted from Figure 1.3

Printed and bound in Great Britain

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# Preface

Since its introduction in the mid-1990s, quantitative real-time PCR (qPCR) has revolutionized almost all areas of microbiology. It has become a common technique used in most laboratories interested in clinical, environmental, food and industrial microbiology. This versatile technology keeps evolving, and new platforms, chemistries, approaches and software are becoming available, making qPCR more sensitive, faster and affordable than ever before.

This book aims to provide all microbiologists, both novice and experienced users, with the latest information available on qPCR technology. The initial chapters cover the main technical aspects of qPCR, from a thorough description of the technique to choosing an instrument, fluorescent chemistries, experimental approaches,

controls, validation and software. In the second part of the book, the focus is put on how to design qPCR assays for quantifying microorganisms from different substrates and conditions in a culture-independent manner. Finally, the final chapters focus on microbial gene expression and describe the use of RT-qPCR for quantifying transcripts from complex environmental conditions and for validating microbial microarray data. Future trends in RT-qPCR are also discussed, as well as their implication in applied microbiology. I hope that this book will find its place on the bench in microbiology laboratories, so that users will come back to it from time to time, perhaps stimulating the development of novel innovative qPCR approaches to address their specific needs.

Martin Filion

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