

# METHODS IN MOLECULAR BIOLOGY

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# Quantitative Real-Time PCR

**Methods and Protocols**

**Second Edition**

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 **Humana Press**

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## **Dedication**

With great sadness, we have learned that Kary Mullis, the inventor of the PCR technique and the Chemistry Nobel Prize winner for this discovery, passed away on August 7th during the editing phase of this volume. His contribution to the molecular biology field, thanks to this technique and its modifications, has obviously been immense not only as a research technique but later on for countless clinical diagnostics, forensic, and industrial applications. He will be missed.

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## **Preface**

Polymerase chain reaction (PCR) and, later on, its quantitative evolution (qPCR) have been initially used in scientific research only, but qPCR's flexibility, sensitivity, and velocity made it a suitable technique to be used in a wide range of applications.

From the first description of qPCR 25 years ago, nonprofit researchers and private companies have developed a huge number of its applications in different disciplines, leading to significant improvements even in the diagnostics field. Under this point of view, qPCR has needed a change in the instrumentation that was possible, thanks to the technological implementation and the development of new reagents in order to also fulfill ethical and legal issues. So, qPCR is now an up-to-date technology widely used in research and clinical diagnostics.

Five years ago, we edited the first volume about qPCR in the Methods in Molecular Biology series that was not monothematic but regarded different fields and applications. In the time since its publication, the first edition of the book seems to have inspired a fairly good amount of interest, so we followed the same idea in this second edition of the qPCR book. Thanks to the contribution of experts in the field, we tried as much as possible to integrate new methodological applications of qPCR developed since the first edition.

We would like to thank all the colleagues who have contributed to the book and have helped us during the editing process. Moreover, we hope to arouse interest in the qPCR community once again.

*Genova, Italy*

*Roberto Biassoni  
Alessandro Raso*

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