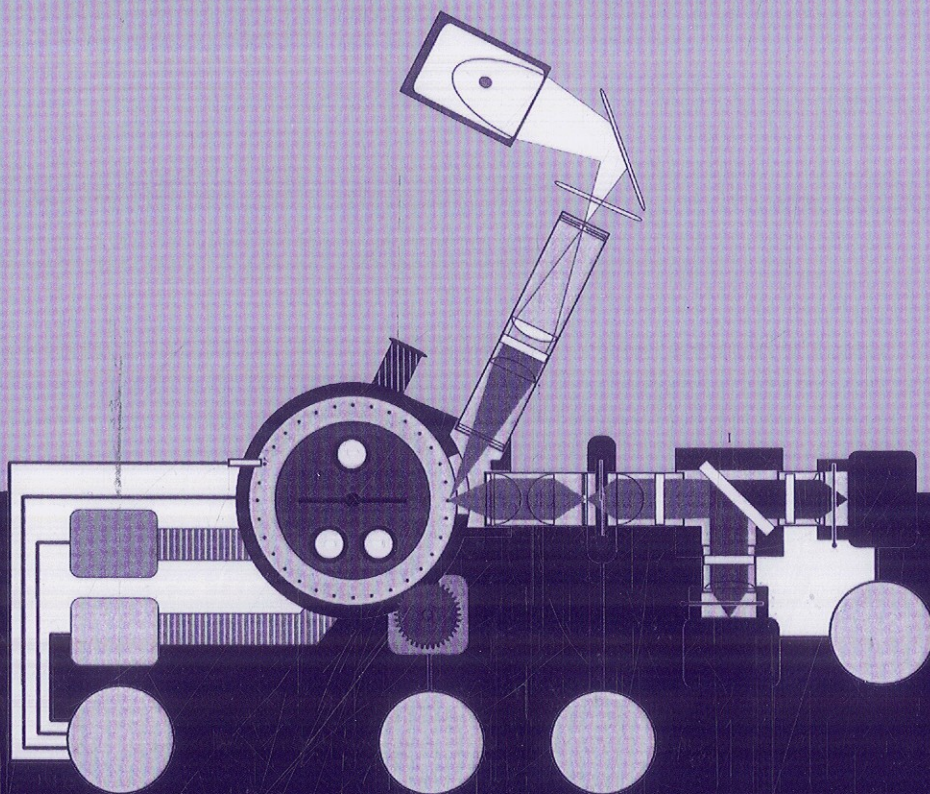


# PCR Troubleshooting and Optimization

The Essential Guide



Edited by  
**Suzanne Kennedy and  
Nick Oswald**

Caister Academic Press

# Contents

List of Contributors v

1	Magic in Solution: an Introduction and Brief History of PCR Carl T. Wittwer and Jared S. Farrar	1
2	qPCR Inhibition and Amplification of Difficult Templates Jack M. Gallup	23
3	Significance of Controls and Standard Curves in PCR Ian Kavanagh, Gerwyn Jones and Saima N. Nayab	67
4	Obtaining Maximum PCR Sensitivity and Specificity Cameron N. Gundry and Matthew D. Poulson	79
5	RT-PCR Optimization Strategies Martina Reiter and Michael W. Pfaffl	97
6	Real-Time PCR Instrumentation: an Instrument Selection Guide Sandrine Javorschi-Miller and Ivan Delgado Orlic	119
7	Quantitative PCR Data Analysis – Unlocking the Secret to Successful Results Jan Hellemans and Jo Vandesorpele	139
8	The MIQE Guidelines Uncloaked Greg Shipley	151
9	PCR Applications for Epigenetics Research Gavin Meredith, Miroslav Dudas, Mark Landers, Vasiliki Anest, Jonathan Wang, Caifu Chen, Peter Jozsi and Christopher Adams	167
10	High-Resolution Melting Analysis John F. Mackay and Carl T. Wittwer	201
11	Microfluidic Emulsion PCR N. Reginald Beer and John H. Leamon	217
	Index	233
	Colour plates	A1