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# High-Throughput Protein Production and Purification

## Methods and Protocols

Edited by

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## Preface

In the last decade, the data generated by genome sequencing programs, together with the proliferation of flexible cloning strategies and structural genomics programs, have been instrumental in the development of high-throughput methods for protein production and purification. This book compiles protocols that have been refined and simplified over the years and that are now ready to be transferred to any laboratory. The vast majority of these protocols can be implemented manually, without the need of investing in any particular equipment. However, to be able to reach the maximum throughput, some protocols will require commercial or customized robotic systems.

The chapters of this book are grouped in three parts: Part I describes general procedures for high-throughput protein production, Part II describes high-throughput protocols adapted to the production of specific protein families, and Part III describes protocols combining high-throughput protein production and their micro-characterization.

I have purposefully chosen to dedicate half of this book to the third part. With the possibility to express and purify hundreds of proteins in parallel (*see* Part I and Part II), the importance of identifying the best behaving proteins at this early scale becomes paramount. In general, the choice of the expression strategy for scaling up production is based on the basic criteria of the highest soluble yield and rarely considers other functional, biochemical, or biophysical aspects of the sample. But nowadays, the combination of high-throughput protein production and the recent developments on protein micro-characterization allows in some cases for the inclusion of quality criteria in the selection process.

This book is mainly addressed to biochemists ranging from engineers, PhD students, and postdoctoral fellows to the heads of protein expression facilities and researchers.

*Marseille, France*

*Renaud Vincentelli*

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