
Preface

The aim of *E. coli Gene Expression Protocols* is to familiarize and instruct the reader with currently popular and newly emerging methodologies that exploit the advantages of using *E. coli* as a host organism for expressing recombinant proteins. The chapters generally fall within two categories: (1) the use of *E. coli* vectors and strains for production of pure, functional protein, and (2) the use of *E. coli* as host for the functional screening of large collections of proteins or peptides. These methods and protocols should be of use to researchers over a wide range of disciplines. Chapters that fall within the latter category describe protocols that will be particularly relevant for functional genomics studies.

The chapters of *E. coli Gene Expression Protocols* are written by experts who have hands-on experience with the particular method. Each article is written in sufficient detail so that researchers familiar with basic molecular techniques and experienced with handling *E. coli* and its bacteriophages should be able to carry out the procedures successfully. As in all volumes of the *Methods in Molecular Biology* series, each chapter includes an extensive Notes section, in which practical details peculiar to the particular method are described.

E. coli Gene Expression Protocols is not intended to be all inclusive, but is focused on new tools and techniques—or new twists on old techniques—that will likely be widely used in the coming decade. There are several well-established *E. coli* expression systems (e.g., the original T7 RNA polymerase expression strains and vectors developed by William F. Studier and colleagues; the use of GST and polyhistidine fusion tags for protein purification) that have been extensively described in other methods volumes and peer-reviewed journal articles and are thus not included in this volume, with the exception of a few contributions in which certain of these systems have been adapted for novel applications or otherwise improved upon.

It is my sincerest hope that both novice and seasoned molecular biologists will find *E. coli Gene Expression Protocols* a useful lab companion for years to come. I wish to thank all the authors for their excellent contributions and Prof. John M. Walker for sound advice and assistance throughout the editorial process.

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