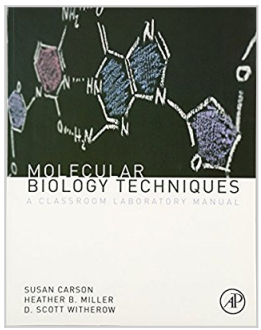

Molecular Biology Techniques, Third Edition: A Classroom Laboratory Manual

By Heather Miller, D. Scott Witherow, Sue Carson

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This manual is an indispensable tool for introducing advanced undergraduates and beginning graduate students to the techniques of recombinant DNA technology, or gene cloning and expression. The techniques used in basic research and biotechnology laboratories are covered in detail. Students gain hands-on experience from start to finish in subcloning a gene into an expression vector, through purification of the recombinant protein.

The third edition has been completely re-written, with new laboratory exercises and all new illustrations and text, designed for a typical 15-week semester, rather than a 4-week intensive course. The “project” approach to experiments was maintained: students still follow a cloning project through to completion, culminating in the purification of recombinant protein. It takes advantage of the enhanced green fluorescent protein - students can actually visualize positive clones following IPTG induction.

- Cover basic concepts and techniques used in molecular biology research labs
- Student-tested labs proven successful in a real classroom laboratories
- Exercises simulate a cloning project that would be performed in a real research lab
- "Project" approach to experiments gives students an overview of the entire process
- Prep-list appendix contains necessary recipes and catalog numbers, providing staff with detailed instructions

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Editorial Review

Review

"Overall, this manual represents an invaluable training material on practical molecular biology for undergraduates, graduates, and inexperienced researchers. It could also introduce more experienced researchers to experiments that they have not considered previously." **--Science Progress, 2012**

"Whilst molecular biology has been the focus of course curricula in various bioscience educational programmes, there has been a lack of well-designed laboratory manuals to recommend for the practical sessions of these courses. The third edition of ‘Molecular Biology Techniques’ is one such excellent classroom laboratory manual. It encompasses experiments for 19 laboratory sessions presented as a semester-long project that gets students involved in a comprehensive experimental story from gene cloning to protein purification. The authors have employed the versatility of the PCR technique in various experiments and have also taken advantage of the enhanced green fluorescent protein in visualising positive clones. A new section involving five laboratory sessions on measuring mRNA levels has been added to this third edition. Overall, this manual represents an invaluable training material on practical molecular biology for undergraduates, graduates, and inexperienced researchers. It could also introduce more experienced researchers to experiments that they have not considered previously." **--Science Progress**

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