

Preface

This book is written for students enrolled in an undergraduate- or graduate-level biochemical laboratory course. The students participating in such a course should have completed lecture and laboratory courses in both general and organic chemistry. In addition to being a laboratory manual, this book is also a source of knowledge pertaining to the theoretical basis of microbiological and biochemical techniques. Discussion of the current knowledge of the structure and biological function of the metabolites to be studied in these exercises is also included. This aspect of the book is supported by an extensive bibliography.

The early chapters provide guidance in the methods for the growth of microbial cultures and purification of secreted secondary metabolites. The theoretical basis is presented for methods to quantify the concentration, assay the intermolecular interactions, and elucidate the structures of metabolites. Later chapters consist of exercises in which secondary metabolites from three species of bacteria are purified and their structures characterized. These exercises include detailed protocols that help students who are just beginning to learn biochemical skills to acquire quality data. The bacteria from which the metabolites are derived represent a wide range of microbial characteristics. All of the procedures in the exercises have been tested and been found to be reliable. The final chapter provides suggestions for the design of original experiments in which a previously uncharacterized fluorescent metabolite is purified from a bacterial culture. Guidance in designing experiments to characterize the structure of this fluorescent metabolite is also included in this chapter.

A Instructor's Guide website for this book is available at: <https://www.elsevier.com/books-and-journals/book-companion/9780128139424>.