Preface

The study of the pathogenesis of Shiga toxin-producing *Escherichia coli* (STEC) infections encompasses many different disciplines, including clinical microbiology, diagnostics, animal ecology, and food safety, as well as the cellular microbiology of both bacterial pathogenesis and the mechanisms of toxin action. *E. coli: Shiga Toxin Methods and Protocols* aims to bring together a number of experts from each of these varied fields in order to outline some of the basic protocols for the diagnosis and study of STEC pathogenesis. We hope that our book will prove a valuable resource for the clinical microbiologist as well as the cellular microbiologist.

For the clinical microbiologist, our aim is to detail a number of current protocols for the detection of STEC in patient samples, each of which have their own advantages. Chapter 1 provides an introduction into the medical significance of STEC infections. Chapters 2–7 follow with protocols for the diagnosis and detection of STEC bacteria in patient and animal samples.

For the cellular microbiologist, we have brought together a number of experts from basic microbiologists to cell biologists to provide different protocols useful in studying the varied aspects of STEC pathogenesis. Chapters 8–13 concentrate on the cellular microbiology of STEC infections, describing protocols to study host–pathogen interactions as well as studies on the hemolysin of STEC. In Chapters 14–22, various protocols are described for studying the details of Shiga toxin (Stx) biology, from the purification of the toxin to studies of the effects of Stx on various host cell functions. Finally Chapters 23–25 provide detailed protocols for the study of STEC-mediated disease in various animal models.

The format of the chapters will be familiar to those who have used other volumes in the Methods in Molecular Medicine series. The Notes section at the end of each chapter pays particular attention to detailing the potential problems that may be encountered, as well as providing alternate methods for the protocols described.

Finally, we hope *E. coli: Shiga Toxin Methods and Protocols* will benefit those interested in both the clinical and pathological aspects of STEC infections, as well as provide a number of valuable protocols for those

researchers studying host–pathogen interactions. We would like to thank the contributing authors as well as John Walker and the staff at Humana Press for their assistance in putting this volume together.

Dana Philpott
Frank Ebel