Preface

The *Handbook of Proteins* was conceived as a specialized reference work designed to serve a wide range of researchers and students in the molecular life sciences. The two volumes draw on the rich resources of Wiley's *Encyclopedia of Life Sciences* (ELS). First published online in 2001, ELS now includes over 4,000 articles by eminent scientists in every discipline related to Biology. However, the very breadth and depth of information in ELS can be daunting when the answer to a simple question is needed quickly. This *Handbook* provides a focused and accessible resource that assembles the more than 200 ELS articles dealing with a topic of fundamental importance – the proteins.

Proteins are involved in almost every function in a cell. Every scientist and student interested in the molecular underpinnings of life regularly finds themselves dealing with proteins on some level. Understanding proteins is one of the prerequisites for advanced study in any area of biochemistry and molecular biology. This reference work has been developed with those researchers and students in mind.

There are few aspects of protein structure, function, or chemistry that are not illuminated by one or more articles in this volume. Numerous articles also provide an introduction to almost every method used to purify proteins, determine their structures and properties, and catalogue them in databases. The emphasis placed on methods has led to the inclusion of articles covering topics from chromatography to crystallography to calorimetry to centrifugation to circular dichroism. And that only covers the Cs. Dozens of additional articles detail important aspects of enzymatic catalysis and protein-ligand interactions. Many others deal with protein structure. Our goal has been to create a resource that will command a prominent place on the shelf of students and working scientists, and that will encourage frequent retrieval.

The articles speak for themselves. The authors were commissioned in recognition of their expertise, and all of the articles were peer-reviewed. Many of the articles were already a part of ELS. A few dozen were newly commissioned or updated to make this work as complete a resource as possible. An outstanding editorial staff helped to ensure readability and quality.

The compilation of the *Handbook* before you was a team effort, and would not have been possible without the work and help of the following people. First, we thank the Editorial Advisory Boards for the Biochemistry and Structural Biology sections of ELS, Aseem Ansari, Samuel Butcher, Perry Frey, Joachim Frank, Richard Gourse, James Ntambi, and Olivier Lichtarge. These individuals not only advised us in the selection of topics and potential authors, but also read and reviewed significant numbers of articles. We also thank the editors at John Wiley & Sons, particularly Fionnuala Rose (Project Editor), Andrea Baier (Commissioning Editor), and Kate Osborne (Assistant Editor). We are sure we tested their patience on more than one occasion, but Fionnuala, Andrea and Kate kept the project on track and provided pleasant encouragement and advice at all the right times.

Finally, we thank all of the authors for their splendid contributions. The real joy of this project has come in reading these many articles. They have provided hours of informative inspiration for us, and we anticipate they will do the same for the users of the *Handbook*.

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How to use this book

Articles are divided into two categories indicating their level of complexity: Introductory and Advanced. Introductory articles have been written primarily for undergraduates and non-specialists requiring the basic concepts of a particular subject. Advanced articles provide a more detailed discussion of specialist subjects, equivalent to that found in graduate level texts.