INTRODUCTION TO
PROTEIN SCIENCE

Architecture, Function, and Genomics

- Establishes a sequence of topics in a clear, fresh, and original way.
- Presents an integrated treatment of experimental and computational methods.
- Exercises and Problems consolidate understanding of the subject. 'Weblems' develop skills in the use of databases and computational servers.
- Boxes throughout provide links between sections, as well as insights summarizing and illuminating key concepts.
- Companion volume to related titles, *Introduction to Bioinformatics* and *Introduction to Genomics*, by the same author.

Proteins are essential to life, having a great variety of roles in all organisms. They are the ultimate micro-machines: some are building blocks, joining with other substances to make the cells from which we are formed; some are catalysts, speeding up biochemical reactions to keep our cells active and alive; yet others help cells to communicate, to move, to build up the complex mix of tissues that make up our bodies, and to regulate unfolding programmes of development.

Introduction to Protein Science relates the contemporary study of proteins in health and disease to the context of high-throughput data streams of genomics and proteomics. Integrating the treatment of bioinformatics, databases, and computational methods of determining and predicting protein structure and function, with classical and modern experimental work, the book demonstrates how these methods are paving the way for the ability to design novel proteins with specific desired characteristics.

'This is a wonderful text. I learn more every time I read it.'

Dr Melisenda J. McDonald, University of Massachusetts, Lowell

'This is a lively and engaging text, which provides an up-to-date introductory view of protein science with plenty of interesting examples.'

Dr Gail Hutchinson, University of Reading

NEW TO THIS EDITION:

- Detailed treatment of enzyme kinetics and mechanism.
- Extended coverage of special topics including protein evolution, and the immune system.
- Key points in boxes throughout the text, and case studies of 'Proteins in health and disease' which emphasize the growing clinical applications of protein science.

The **cover image** shows the structure of the *E. coli* F1 ATP synthase, the membrane enzyme that generates much of the ATP required by the cell for its survival. Structure by A.G. Hausrath, R.A. Capaldi, B.W.Matthews; picture by J. Crowe.

online resource centre

www.oxfordtextbooks.co.uk/orc/leskprotein2e/

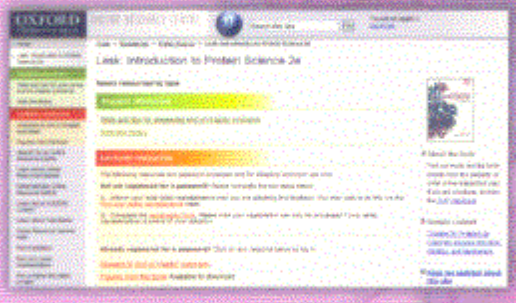
The Online Resource Centre to accompany *Introduction to Protein Science* features the following resources:

FOR REGISTERED ADOPTERS

- Selection of figures from the book available to download
- Answers to end-of-chapter Exercises

FOR STUDENTS

- Links to useful websites to aid further research into protein science
- Helpful hints for answering end-of-chapter Problems



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