

Chemical biology is a rapidly growing and exciting interdisciplinary science, combining chemical tools for the study of biological problems and the development of innovative solutions that would not be possible by applying methodology from one field only.

This first book to adopt a problem-based approach teaches the true basics of the subject by way of illustrated case studies. The editors' extensive experience in chemical biology education and their close relationship to the authors ensure that the contributions here are presented in a pedagogically uniform and highly motivating fashion.

From the contents:

- Ras Proteins, Synthesis, Ras Cycle, Biochemistry
- Proteases, Proteasome
- Activity-Based Proteomics
- FK506
- Regulation of Gene Expression, Transcription
- Protein Synthesis, Native Chemical Ligation
- Expressed Protein Ligation
- Microarray Technologies
- APTi, Ras Palmitoylation
- Carbohydrates
- Yeast Based Chemical Genomics
- Target Identification
- BIOS, PSSC, Natural Products
- Alzheimer
- Diversity Oriented Synthesis
- Kinases, Orthogonal Chemical Genetics

Each chapter introduces a different biological problem, so that students learn how to think in order to solve problems in biology by using powerful techniques and tools taken from chemistry.



Herbert Waldmann obtained his PhD in organic chemistry from the University of Mainz in 1985 working with Professor Horst Kunz, after which he completed a postdoctoral appointment with Professor C. Whitesides at Harvard University. He was appointed as Professor of Organic Chemistry at the University of Bonn (1991), full Professor of Organic Chemistry at the University of Karlsruhe (1993), and Director at the MPI of Molecular Physiology Dortmund and Professor of Organic Chemistry at the University of Dortmund (1999). His research interests lie in the synthesis and use of small molecules in chemical biology research, the chemical biology of protein lipidation and protein microarrays.



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