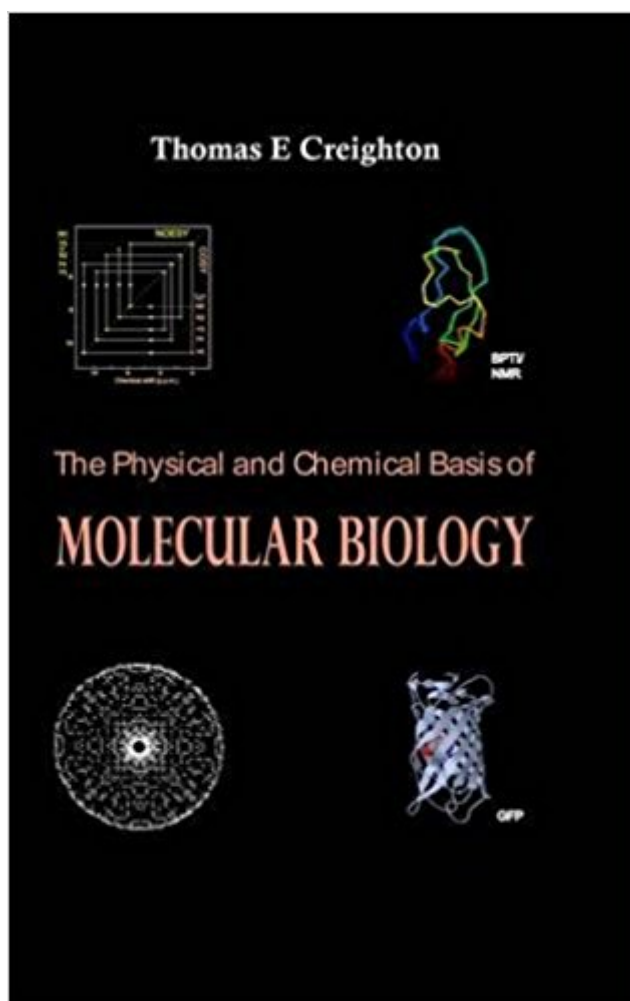


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The Physical And Chemical Basis Of Molecular Biology



Synopsis

The twenty-one chapters of this volume present a comprehensive description of the fundamental physical and chemical phenomena that form the basis of molecular biology. The topics include the fundamental thermodynamic and kinetic properties of biochemical reactions in solution; the physical properties of aqueous solutions, including the hydrophobic effect; both individual and cooperative noncovalent interactions between atoms and molecules; mass spectrometry; and radioactivity. Methods for observing the structures of nucleic acids and proteins, including microscopy, scanning probes, crystallography and NMR, are explained in detail. The interactions of macromolecules with radiation of various types are described in terms of the information that they yield. The hydrodynamic properties of proteins and nucleic acids in aqueous solution and in molecular sieves are described to explain centrifugation and electrophoresis. The interactions of macromolecules with other molecules in solution and when attached to solid supports are described, explaining chromatography, blotting, affinity labeling, and cross-linking.

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Customer Reviews

Thomas E. Creighton is retired, after a career in academia at Caltech, Stanford and Yale Universities, the MRC Laboratory of Molecular Biology at Cambridge, England, and the European Molecular Biology Laboratory at Heidelberg, Germany. He is the author of two editions of *Proteins: Structures and Molecular Properties* published by W. H. Freeman and has edited the four-volume *Encyclopedia of Molecular Biology* and the five-volume *Encyclopedia of Molecular Medicine* for Wiley-Interscience, two editions of *Protein Structure: A Practical Approach* and *Protein Function: A*

Practical Approach for IRL Press at Oxford University Press, and the volume Protein Folding for W. H. Freeman.

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