NMR OF PROTEINS

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Topics in Molecular and Structural Biology

NMR of Proteins

Edited by

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Preface

The last few years have witnessed great advances in the application of nuclear magnetic resonance techniques in molecular biology. Significant strides have been made with respect to studying both structural and dynamical properties of proteins. Methods are now in place to determine three-dimensional structures of proteins up to molecular weights of 30–40 kDa in solution. Thus, NMR now stands side by side with X-ray crystallography as a technique providing the atomic details of important proteins. NMR, however, is not solely limited to structure determination; indeed, it can be used to effectively study important aspects of protein dynamics over a wide range of time-scales, both in solution and in the solid state, and may also be applied to investigate questions pertinent to the protein folding problem.

The present book is not intended to provide a comprehensive overview of all the NMR studies that have been carried out over the last few years, but rather serves to highlight some of the recent advances with respect to both methodology and applications. The different chapters collected here reflect some of the variety and different emphasis found among the NMR laboratories engaged in biological NMR, and as such constitute only a few examples of the application of NMR to proteins. We nevertheless hope that, in addition to providing up-to-date results, this book may stimulate the more biochemically inclined reader to follow the field more closely with respect to possible applications of these techniques in his or her area of research.

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