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Nota di contenuto	INSTRUMENTAL ANALYSIS OF INTRINSICALLY DISORDERED PROTEINS: Assessing Structure and Conformation; CONTENTS; PREFACE; INTRODUCTION TO THE WILEY SERIES ON PROTEIN AND PEPTIDE SCIENCE; LIST OF CONTRIBUTORS; LIST OF ABBREVIATIONS; PART I: ASSESSING IDPs IN THE LIVING CELL; 1: IDPs AND PROTEIN DEGRADATION IN THE CELL; 2: THE STRUCTURAL BIOLOGY OF IDPs INSIDE CELLS; PART II: SPECTROSCOPIC TECHNIQUES; 3: NUCLEAR MAGNETIC RESONANCE SPECTROSCOPY APPLIED TO (INTRINSICALLY) DISORDERED PROTEINS; 4: ATOMIC-LEVEL CHARACTERIZATION OF DISORDERED PROTEIN ENSEMBLES USING NMR RESIDUAL DIPOLAR COUPLINGS 5: DETERMINING STRUCTURAL ENSEMBLES FOR INTRINSICALLY DISORDERED PROTEINS6: SITE-DIRECTED SPIN LABELING EPR

SPECTROSCOPY; 7: THE STRUCTURE OF UNFOLDED PEPTIDES AND PROTEINS EXPLORED BY VIBRATIONAL SPECTROSCOPY; 8: INTRINSICALLY DISORDERED PROTEINS AND INDUCED FOLDING STUDIED BY FOURIER TRANSFORM INFRARED SPECTROSCOPY; 9: GENETICALLY ENGINEERED POLYPEPTIDES AS A MODEL OF INTRINSICALLY DISORDERED FIBRILLOGENIC PROTEINS: DEEP UV RESONANCE RAMAN SPECTROSCOPIC STUDY; 10: CIRCULAR DICHROISM OF INTRINSICALLY DISORDERED PROTEINS; 11: FLUORESCENCE SPECTROSCOPY OF INTRINSICALLY DISORDERED PROTEINS 12: HYDRATION OF INTRINSICALLY DISORDERED PROTEINS FROM WIDE-LINE NMR PART III: SINGLE-MOLECULE TECHNIQUES; 13: SINGLE-MOLECULE SPECTROSCOPY OF UNFOLDED PROTEINS; 14: MONITORING THE CONFORMATIONAL EQUILIBRIA OF MONOMERIC INTRINSICALLY DISORDERED PROTEINS BY SINGLE-MOLECULE FORCE SPECTROSCOPY; PART IV: METHODS TO ASSESS PROTEIN SIZE AND SHAPE; 15: ANALYTICAL ULTRACENTRIFUGATION, A USEFUL TOOL TO PROBE INTRINSICALLY DISORDERED PROTEINS; 16: STRUCTURAL INSIGHTS INTO INTRINSICALLY DISORDERED PROTEINS BY SMALL-ANGLE X-RAY SCATTERING; 17: DYNAMIC AND STATIC LIGHT SCATTERING 18: ANALYZING INTRINSICALLY DISORDERED PROTEINS BY SIZE EXCLUSION CHROMATOGRAPHY PART V: CONFORMATIONAL STABILITY; 19: CONFORMATIONAL BEHAVIOR OF INTRINSICALLY DISORDERED PROTEINS: EFFECTS OF STRONG DENATURANTS, TEMPERATURE, PH , COUNTERIONS, AND MACROMOLECULAR CROWDING; 20: DETECTING DISORDERED REGIONS IN PROTEINS BY LIMITED PROTEOLYSIS; PART VI: MASS SPECTROMETRY; 21: MASS SPECTROMETRY TOOLS FOR THE INVESTIGATION OF STRUCTURAL DISORDER AND CONFORMATIONAL TRANSITIONS IN PROTEINS; PART VII: EXPRESSION AND PURIFICATION OF IDPS 22: RECOMBINANT PRODUCTION OF INTRINSICALLY DISORDERED PROTEINS FOR BIOPHYSICAL AND STRUCTURAL CHARACTERIZATION 23: LARGE-SCALE IDENTIFICATION OF INTRINSICALLY DISORDERED PROTEINS; 24: PURIFICATION OF INTRINSICALLY DISORDERED PROTEINS; INDEX; Colour plates

Sommario/riassunto

Instrumental techniques for analyzing intrinsically disordered proteins
The recently recognized phenomenon of protein intrinsic disorder is gaining significant interest among researchers, especially as the number of proteins and protein domains that have been shown to be intrinsically disordered rapidly grows. The first reference to tackle this little-documented area, Instrumental Analysis of Intrinsically Disordered Proteins: Assessing Structure and Conformation provides researchers with a much-needed, comprehensive summary of recent achievements in the methods for structural
