

1. Record Nr.	UNINA9910825812403321
Titolo	Analysis and function of amino acids and peptides // edited by Andrew B. Hughes
Pubbl/distr/stampa	Weinheim, Germany, : Wiley-VCH, 2012
ISBN	9781299241190 1299241190 9783527631858 3527631852 9783527631841 3527631844
Edizione	[1st ed.]
Descrizione fisica	1 online resource (510 p.)
Collana	Amino acids, peptides and proteins in organic chemistry ; ; v. 5
Altri autori (Persone)	HughesAndrew B
Disciplina	547.7
Soggetti	Amino acids - Analysis Peptides - Analysis Proteins - Analysis
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Amino Acids, Peptides and Proteins in Organic Chemistry:Volume 5 - Analysis and Function of Amino Acids and Peptides; Contents; List of Contributors; 1 Mass Spectrometry of Amino Acids and Proteins; 1.1 Introduction; 1.1.1 Mass Terminology; 1.1.2 Components of a Mass Spectrometer; 1.1.3 Resolution and Mass Accuracy; 1.1.4 Accurate Analysis of ESI Multiply Charged Ions; 1.1.5 Fragment Ions; 1.2 Basic Protein Chemistry and How it Relates to MS; 1.2.1 Mass Properties of the Polypeptide Chain; 1.2.2 In Vivo Protein Modifications; 1.2.3 Ex Vivo Protein Modifications 1.3 Sample Preparation and Data Acquisition 1.3.1 Top-Down Versus Bottom-Up Proteomics; 1.3.2 Shotgun Versus Targeted Proteomics; 1.3.3 Enzymatic Digestion for Bottom-Up Proteomics; 1.3.4 Liquid Chromatography and Capillary Electrophoresis for Mixtures in Bottom-Up; 1.4 Data Analysis of LC-MS/MS (or CE-MS/MS) of Mixtures; 1.4.1 Identification of Proteins from MS/MS Spectra of Peptides; 1.4.2 De Novo Sequencing; 1.5 MS of Protein Structure, Folding, and

Interactions; 1.5.1 Methods to Mass-Tag Structural Features; 1.6 Conclusions and Perspectives; References

2 X-Ray Structure Determination of Proteins and Peptides 2.1 Introduction; 2.1.1 Light Microscopy; 2.1.2 X-Rays and Crystallography at the Start; 2.1.3 X-Ray Crystallography Today; 2.1.4 Limitations of X-Ray Crystallography; 2.2 Growing Crystals; 2.2.1 Why Crystals?; 2.2.2 Basic Methods of Growing Protein Crystals; 2.2.3 Protein Sample; 2.2.4 Preliminary Crystal Analysis; 2.2.5 Mounting Crystals for X-Ray Analysis; 2.3 Symmetry and Space Groups; 2.3.1 Crystals and the Unit Cell; 2.3.2 Point Groups; 2.3.3 Space Groups; 2.3.4 Asymmetric Unit; 2.4 X-Ray Scattering and Diffraction

2.4.1 X-Rays and Mathematical Representation of Waves 2.4.2 Interaction of X-Rays with Matter; 2.4.3 Crystal Lattice, Miller Indices, and the Reciprocal Space; 2.4.4 X-Ray Diffraction from a Crystal: Bragg's Law; 2.4.5 Bragg's Law in Reciprocal Space; 2.4.6 Fourier Transform Equation from a Lattice; 2.4.7 Friedel's Law and the Electron Density Equation; 2.5 Collecting and Processing Diffraction Data; 2.5.1 Data Collection Strategy; 2.5.2 Symmetry and Scaling Data; 2.6 Solving the Structure (Determining Phases); 2.6.1 Molecular Replacement; 2.6.2 Isomorphous Replacement; 2.6.3 MAD

2.7 Analyzing and Refining the Structure 2.7.1 Electron Density Interpretation and Model Building; 2.7.2 Protein Structure Refinement; 2.7.3 Protein Structure Validation; References; 3 Nuclear Magnetic Resonance of Amino Acids, Peptides, and Proteins; 3.1 Introduction; 3.1.1 Active Nuclei in NMR; 3.1.2 Energy Levels and Spin States; 3.1.3 Main NMR Parameters (Glossary); 3.1.3.1 Chemical Shift; 3.1.3.2 Scalar Coupling Constants; 3.1.3.3 NOE; 3.1.3.4 RDC; 3.2 Amino Acids; 3.2.1 Historical Significance; 3.2.2 Amino Acids Structure; 3.2.3 Random Coil Chemical Shift; 3.2.4 Spin Systems

3.2.5 Labile Protons

Sommario/riassunto

This is the last of five books in the Amino Acids, Peptides and Proteins in Organic Synthesis series. Closing a gap in the literature, this is the only series to cover this important topic in organic and biochemistry. Drawing upon the combined expertise of the international "who's who" in amino acid research, these volumes represent a real benchmark for amino acid chemistry, providing a comprehensive discussion of the occurrence, uses and applications of amino acids and, by extension, their polymeric forms, peptides and proteins. The practical value of each volume is
