

1. Record Nr.	UNINA9910780374003321
Autore	Mikkelsen Susan R. <1960->
Titolo	Bioanalytical chemistry [[electronic resource] /] / Susan R. Mikkelsen, Eduardo Corton
Pubbl/distr/stampa	Hoboken, N.J., : John Wiley & Sons, c2004
ISBN	1-280-36794-6 9786610367948 0-470-23229-3 0-471-62386-5 0-471-62362-8
Descrizione fisica	1 online resource (381 p.)
Altri autori (Persone)	CortonEduardo <1962->
Disciplina	572/.36
Soggetti	Analytical biochemistry
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	BIOANALYTICAL CHEMISTRY; CONTENTS; Preface; Acknowledgments; 1. Spectroscopic Methods for Matrix Characterization; 1.1 Introduction; 1.2 Total Protein; 1.2.1 Lowry Method; 1.2.2 Smith (BCA) Method; 1.2.3 Bradford Method; 1.2.4 Ninhydrin-Based Assay; 1.2.5 Other Protein Quantitation Methods; 1.3 Total DNA; 1.3.1 Diaminobenzoic Acid Method; 1.3.2 Diphenylamine Method; 1.3.3 Other Fluorometric Methods; 1.4 Total RNA; 1.5 Total Carbohydrate; 1.5.1 Ferricyanide Method; 1.5.2 Phenol-Sulfuric Acid Method; 1.5.3 2-Aminothiophenol Method; 1.5.4 Purpald Assay for Bacterial Polysaccharides 1.6 Free Fatty AcidsReferences; Problems; 2. Enzymes; 2.1 Introduction; 2.2 Enzyme Nomenclature; 2.3 Enzyme Commission Numbers; 2.4 Enzymes in Bioanalytical Chemistry; 2.5 Enzyme Kinetics; 2.5.1 Simple One-Substrate Enzyme Kinetics; 2.5.2 Experimental Determination of Michaelis-Menten Parameters; 2.5.2.1 Eadie-Hofstee Method; 2.5.2.2 Hanes Method; 2.5.2.3 Lineweaver-Burk Method; 2.5.2.4 Cornish-Bowden-Eisenthal Method; 2.5.3 Comparison of Methods for the Determination of K(m) Values; 2.5.4 One-Substrate, Two-Product Enzyme Kinetics; 2.5.5 Two-Substrate Enzyme Kinetics 2.5.6 Examples of Enzyme-Catalyzed Reactions and Their Treatment2.6

Enzyme Activators; 2.7 Enzyme Inhibitors; 2.7.1 Competitive Inhibition; 2.7.2 Noncompetitive Inhibition; 2.7.3 Uncompetitive Inhibition; 2.8 Enzyme Units and Concentrations; Suggested References; References; Problems; 3. Quantitation of Enzymes and Their Substrates; 3.1 Introduction; 3.2 Substrate Depletion or Product Accumulation; 3.3 Direct and Coupled Measurements; 3.4 Classification of Methods; 3.5 Instrumental Methods; 3.5.1 Optical Detection; 3.5.1.1 Absorbance; 3.5.1.2 Fluorescence; 3.5.1.3 Luminescence 3.5.1.4 Nephelometry 3.5.2 Electrochemical Detection; 3.5.2.1 Amperometry; 3.5.2.2 Potentiometry; 3.5.2.3 Conductometry; 3.5.3 Other Detection Methods; 3.5.3.1 Radiochemical; 3.5.3.2 Manometry; 3.5.3.3 Calorimetry; 3.6 Ultra-High-Throughput Assays (HTA); 3.7 Practical Considerations for Enzymatic Assays; Suggested References; References; Problems; 4. Immobilized Enzymes; 4.1 Introduction; 4.2 Immobilization Methods; 4.2.1 Nonpolymerizing Covalent Immobilization; 4.2.1.1 Controlled-Pore Glass; 4.2.1.2 Polysaccharides; 4.2.1.3 Polyacrylamide; 4.2.1.4 Acidic Supports; 4.2.1.5 Anhydride Groups 4.2.1.6 Thiol Groups 4.2.2 Cross-Linking with Bifunctional Reagents; 4.2.3 Adsorption; 4.2.4 Entrapment; 4.2.5 Microencapsulation; 4.3 Properties of Immobilized Enzymes; 4.4 Immobilized Enzyme Reactors; 4.5 Theoretical Treatment of Packed-Bed Enzyme Reactors; Suggested References; References; Problems; 5. Antibodies; 5.1 Introduction; 5.2 Structural and Functional Properties of Antibodies; 5.3 Polyclonal and Monoclonal Antibodies; 5.4 Antibody-Antigen Interactions; 5.5 Analytical Applications of Secondary Antibody-Antigen Interactions; 5.5.1 Agglutination Reactions 5.5.2 Precipitation Reactions

Sommario/riassunto

Bioanalytical Chemistry provides a thorough introduction for students and practitioners with a broad range of backgrounds from chemistry to medicine. In so doing, it brings together many of the techniques commonly used by biochemists and molecular biologists. The text includes entire chapters on design and implementation of enzyme assays; mass spectrometry; and validation of new methods. Each chapter progresses from basic concepts to applications involving real samples, and ends with a set of problems, while an appendix contains selected answers. The authors have limited mathematical derivatio
