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Descrizione fisica	1 online resource (247 p.)
Disciplina	572.7 572/.7
Soggetti	Enzyme kinetics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
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Note generali	Description based upon print version of record.
Nota di bibliografia	"Bibliography": p. 217-219. Includes bibliographical references and index.
Nota di contenuto	ENZYME KINETICS; CONTENTS; PREFACE; 1 TOOLS AND TECHNIQUES OF KINETIC ANALYSIS; 1.1 Generalities; 1.2 Elementary Rate Laws; 1.2.1 Rate Equation; 1.2.2 Order of a Reaction; 1.2.3 Rate Constant; 1.2.4 Integrated Rate Equations; 1.2.4.1 Zero-Order Integrated Rate Equation; 1.2.4.2 First-Order Integrated Rate Equation; 1.2.4.3 Second- Order Integrated Rate Equation; 1.2.4.4 Third-Order Integrated Rate Equation; 1.2.4.5 Higher-Order Reactions; 1.2.4.6 Opposing Reactions; 1.2.4.7 Reaction Half-Life; 1.2.5 Experimental Determination of Reaction Order and Rate Constants 1.2.5.1 Differential Method (Initial Rate Method)1.2.5.2 Integral Method; 1.3 Dependence of Reaction Rates on Temperature; 1.3.1 Theoretical Considerations; 1.3.2 Energy of Activation; 1.4 Acid-Base Chemical Catalysis; 1.5 Theory of Reaction Rates; 1.6 Complex Reaction Pathways; 1.6.1 Numerical Integration and Regression; 1.6.1.1 Numerical Integration; 1.6.1.2 Least-Squares Minimization (Regression Analysis); 1.6.3 Exact Analytical Solution (Non-Steady-State Approximation); 1.6.3 Exact Analytical Solution (Steady-State

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	<ul> <li>Approximation); 2 HOW DO ENZYMES WORK?</li> <li>3 CHARACTERIZATION OF ENZYME ACTIVITY 3.1 Progress Curve and Determination of Reaction Velocity; 3.2 Catalysis Models: Equilibrium and Steady State; 3.2.1 Equilibrium Model; 3.2.2 Steady-State Model;</li> <li>3.2.3 Plot of v versus [S]; 3.3 General Strategy for Determination of the Catalytic Constants K(m) and V(max); 3.4 Practical Example; 3.5 Determination of Enzyme Catalytic Parameters from the Progress Curve; 4 REVERSIBLE ENZYME INHIBITION; 4.1 Competitive Inhibition; 4.2 Uncompetitive Inhibition; 4.3 Linear Mixed Inhibition; 4.4 Noncompetitive Inhibition; 4.5 Applications</li> <li>4.5.1 Inhibition of Fumarase by Succinate 4.5.2 Inhibition of Pancreatic Carboxypeptidase A by -Phenylpropionate; 4.5.3 Alternative Strategies; 5 IRREVERSIBLE ENZYME INHIBITION; 5.1 Simple Irreversible Inhibition; 5.2 Simple Irreversible Inhibition in the Presence of Substrate; 5.3 Time-Dependent Simple Irreversible Inhibition; 5.4 Time-Dependent Simple Irreversible Inhibition in the Presence of Substrate; 5.5 Differentiation Between Time-Dependent and Time- Independent Inhibition; 6 pH DEPENDENCE OF ENZYME-CATALYZED REACTIONS; 6.1 The Model; 6.2 pH Dependence of the Catalytic Parameters</li> <li>6.3 New Method of Determining pK Values of Catalytically Relevant Functional Groups 7 TWO-SUBSTRATE REACTIONS; 7.1 Random- Sequential Bi Bi Mechanism; 7.2.1 Constant [B]; 7.2.2 Constant [A]; 7.2.3 Order of Substrate Binding; 7.3 Ping-Pong Bi Bi Mechanism; 7.3.1 Constant [B]; 7.3.2 Constant [A]; 7.4 Differentiation Between Mechanisms; 8 MULTISITE AND COOPERATIVE ENZYMES; 8.1 Sequential Interaction Model; 8.1.1 Basic Postulates; 8.1.2 Interaction Factors; 8.1.3 Microscopic versus Macroscopic Dissociation Constants</li> </ul>
	8.1.4 Generalization of the Model
Sommario/riassunto	Practical Enzyme Kinetics provides a practical how-to guide for beginning students, technicians, and non-specialists for evaluating enzyme kinetics using common software packages to perform easy enzymatic analyses.