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Immobilized Enzymes [91]; 2.2.15 Electrophoresis; 2.3 Quality Evaluation of Enzyme Preparations; 2.3.1 Quality Criteria
2.3.2 Specific Activity2.3.3 Protein Determination; 2.3.4 Contaminating Activities; 2.3.5 Electrophoretic Purity; 2.3.6 High-Performance Liquid Chromatography [111]; 2.3.7 Performance Test; 2.3.8 Amino Acid Analysis and Protein Sequence Analysis; 2.3.9 Stability [93]; 2.3.10 Formulation of Enzyme Preparations; 3 General Production Methods; 3.1 Microbial Production; 3.1.1 Organism and Enzyme Synthesis; 3.1.2 Strain Improvement; 3.1.3 Physiological Optimization; 3.1.4 The Fermentor and its Limitations; 3.1.5 Process Design; 3.1.6 Modeling and Optimization; 3.1.7 Instrumentation and Control
3.2 Isolation and Purification [172-187]3.2.1 Preparation of Biological Starting Materials; 3.2.1.1 Cell Disruption by Mechanical Methods; 3.2.1.2 Cell Disruption by Nonmechanical Methods; 3.2.2. Separation of Solid Matter; 3.2.2.1 Filtration; 3.2.2.2 Centrifugation; 3.2.2.3 Extraction; 3.2.2.4 Flocculation and Flotation; 3.2.3 Concentration; 3.2.3.1 Thermal Methods; 3.2.3.2 Precipitation; 3.2.3.3 Ultrafiltration; 3.2.4 Purification; 3.2.4.1 Crystallization; 3.2.4.2 Electrophoresis; 3.2.4.3 Chromatography; 3.2.5 Product Formulation; 3.2.6 Waste Disposal; 3.3 Immobilization; 3.3.1 Definitions
3.3.2 History3.3.3 Methods; 3.3.3.1 Carrier Binding; 3.3.3.2 Cross-linking; 3.3.3.3 Entrapment; 3.3.4 Characterization; 3.3.5 Application; 4 Discovery and Development of Enzymes; 4.1 Enzyme Screening; 4.1.1 Overview; 4.1.2 Natural Isolate Screening; 4.1.3 Molecular Screening; 4.1.4 Environmental Gene Screening; 4.1.5 Genomic Screening; 4.1.6 Proteomic Screening; 4.2 Protein Engineering; 4.2.1 Introduction; 4.2.2 Application of Protein Engineering in Academia and Industry; 4.2.3 Outlook; 5 Industrial Enzymes; 5.1 Enzymes in Food Applications; 5.1.1 Enzymes in Baking; 5.1.1.1 Introduction
5.1.1.2 Amylases

Sommario/riassunto

Leading experts from all over the world present an overview of the use of enzymes in industry for:- the production of bulk products, such as glucose, or fructose- food processing and food analysis- laundry and automatic dishwashing detergents- the textile, pulp and paper and animal feed industries- clinical diagnosis and therapy- genetic engineering.The book also covers identification methods of new enzymes and the optimization of known ones, as well as the regulatory aspects for their use in industrial applications.Up to date and wide in scope, this