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Screening Lipases or Esterases in the Kinetic Resolution of Chiral p-Nitrophenyl Esters; 2.2.2 Enzyme-coupled UV/Vis-based Assay for Lipases and Esterases; 2.2.3 Enzymatic Method for Determining Enantiomeric Excess (EMDee); 2.2.4 UV/Vis-based Enzyme Immunoassay as a Means to Measure Enantiomeric Excess; 2.2.5 Other UV/Vis-based ee-Assays; 2.3 Assays Using Fluorescence 2.3.1 Umbelliferone-based Systems 2.3.2 Fluorescence-based Assay Using DNA Microarrays; 2.3.3 Other Fluorescence-based ee-Assays; 2.4 Assays Based on Mass Spectrometry (MS); 2.4.1 MS-based Assay Using Isotope Labeling; 2.5 Assays Based on Nuclear Magnetic Resonance Spectroscopy; 2.6 Assay Based on Fourier Transform Infrared Spectroscopy for Assaying Lipases or Esterases; 2.7 Assays Based on Gas Chromatography; 2.8 Assays Based on HPLC; 2.9 Assays Based on Capillary Array Electrophoresis; 2.10 Assays Based on Circular Dichroism (CD) 2.11 Assay Based on Surface-enhanced Resonance Raman Scattering 2.12 Conclusions; References; 3 High-throughput Screening Methods Developed for Oxidoreductases; 3.1 Introduction; 3.2 High-throughput Methods for Various Oxidoreductases; 3.2.1 Dehydrogenases; 3.2.1.1 Colorimetric Screen Based on NAD(P)H Generation; 3.2.1.2 Screens Based on NAD(P)H Depletion; 3.2.2 Oxidases; 3.2.2.1 Galactose Oxidase; 3.2.2.2 D-Amino Acid Oxidase; 3.2.2.3 Peroxidases; 3.2.3 Oxygenases; 3.2.3.1 Assays Based on Optical Properties of Substrates and Products 3.2.3.2 Assays Based on Gibbs' Reagent and 4-Aminoantipyrine

Sommario/riassunto

Edited by one of the leading experts in the field, this book fills the need for a book presenting the most important methods for high-throughput screenings and functional characterization of enzymes. It adopts an interdisciplinary approach, making it indispensable for all those involved in this expanding field, and reflects the major advances made over the past few years. For biochemists, analytical, organic and catalytic chemists, and biotechnologists.
