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obtained his diploma in natural sciences from the ETH in Zurich, Switzerland, under D. Seebach, and his PhD in chemistry from the University of Lausanne, Switzerland, under P. Vogel. In 1990 he joined the Scripps Research Institute in La Jolla, CA, USA, with Richard A. Lerner. In 1997 he became an Associate Professor at the Department of Chemistry and Biochemistry of the University of Berne, Switzerland, and was appointed Full Professor in 1998. His current research interests include peptide dendrimers as artificial proteins, high-throughput screening and fingerprinting of enzyme activities, and virtual small molecule libraries for drug discovery.

Nowadays, the characterization of enzymes using simple assays is a key technology for finding the optimum enzymes for, among others, catalysis in enzymology and drug discovery. Thus, enzymes have become an everyday tool not only for biologists, but also for chemists, and the number of applications is now overwhelming.

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 screening 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.

From the contents:

Part I. High-throughput Screening

- Quantitative assay of hydrolases for activity and selectivity using color changes
- High-throughput screening systems for assaying the enantioselectivity of enzymes
- High throughput screening methods developed for oxidoreductases
- Industrial perspectives on assays

Part II. Genetic Selection

- Agar plate-based assays
- High-throughput screens and selections of enzyme-encoding genes
- Chemical complementation
- Molecular approaches for the screening of novel enzymes

Part III. Enzyme Fingerprinting

- Fluorescent probes for lipolytic enzymes
- Fingerprinting methods for hydrolases
- Protease substrate profiling
- Enzyme assays on chips

For biochemists, analytical, organic and catalytic chemists, and biotechnologists.

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