

Methods in Enzymology  
Volume 284

*Methods in Enzymology*

Volume 284

# *Lipases*

*Part A  
Biotechnology*

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LIPOMED

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## Preface

The pace of lipase research has been accelerating. The powerful tools of molecular biology have been brought to bear, more new lipase amino acid sequences and three-dimensional structures are appearing, and new approaches for handling their complicated interfacial kinetics are being reported. In addition, more ways are being discovered and used to control lipase activity and for harnessing their catalytic prowess to pull greater efficiency into older chemical processes. Indeed, studies of heterogeneous lipase catalysis, long passed over by many academic researchers in favor of more experimentally tractable homogeneous, single-phase enzyme systems, are moving closer to the level of depth previously reserved for proteases, their hydrolytic cousins.

To the usual problems of abundance and purity that enzymologists and structural biologists generally face, lipases present the additional difficulty associated with multiphase systems. Unlike proteases, the substrates that are hydrolyzed by lipases are most efficiently presented to the enzyme in a separate, lipid phase. The presence of a suitable second phase appears to bring about an increase in lipase activity and, in some cases, effect a change in their three-dimensional structures. Part of the expanding interest in lipases derives from the increasing applications for these enzymes and from the success of new techniques for studying them.

Previous volumes of *Methods in Enzymology* have dealt specifically with phospholipids, their degradation (Volume 197, Phospholipases), and their biosynthesis (Volume 209, Phospholipid Biosynthesis). The recent explosion of interest in lipases led us to develop Volumes 284 and 286. The first, Biotechnology (Volume 284), includes sequencing, cloning, and structural studies of lipases and, the second, Enzyme Characterization and Utilization (Volume 286), includes the purification of novel lipases, kinetics and assay issues, aspects of lipid metabolism, and the use of lipases in organic synthesis.

Research in the lipase field has been dominated by European scientists and stimulated by the European Community Bridge Program. In addition, there has been a great deal of research emphasis on this field in industrial laboratories. Thus, the authorship of this volume is truly international and includes a diverse mixture of academic and industrial scientists.

Expert secretarial assistance from Mary Kincaid, Ophelia Chiu, and Vina Wong helped enormously with the development of this volume. Editorial assistance from Shirley Light is greatly appreciated.

BYRON RUBIN  
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