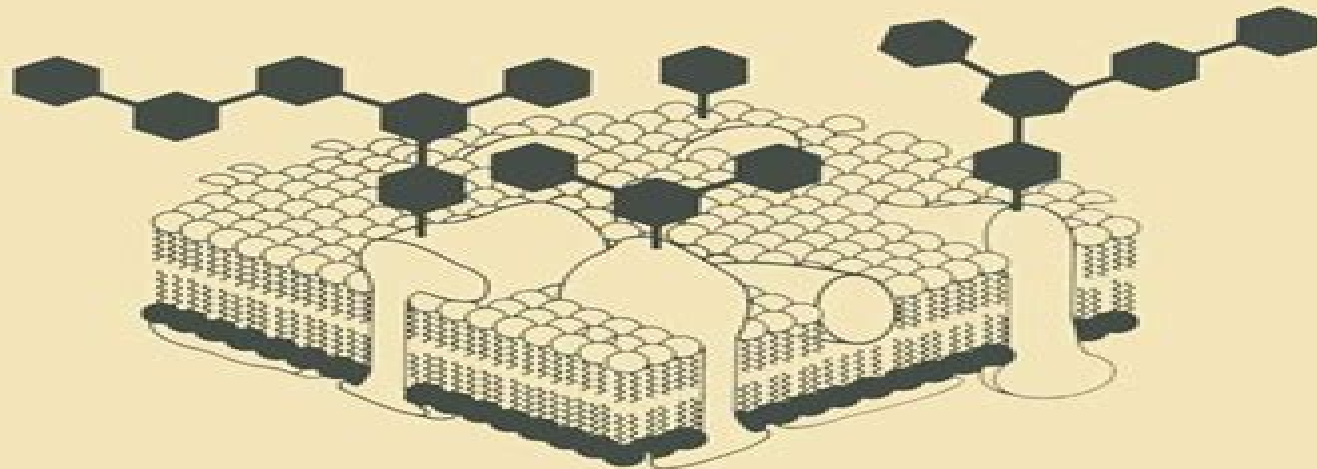


LIPID BIOCHEMISTRY

An introduction
Fourth edition



M. I. Gurr and J. L. Harwood



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Lipid Biochemistry An Introduction

**Michael Ian Gurr, Keith N. Frayn, J. L.
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Gurr, 2013-04-17 Lipids can usually be extracted easily from tissues by making use of their hydrophobic characteristics However such extractions yield a complex mixture of different lipid classes which have to be purified further for quantitative analysis Moreover the crude lipid extract will be contaminated by other hydrophobic molecules e.g. by intrinsic membrane proteins Of the various types of separation processes thin layer and column chromatography are most useful for intact lipids High performance liquid chromatography HPLC is also rapidly becoming more popular especially for the fractionation of molecular species of a given lipid class The most powerful tool for quantitation of the majority of lipids is gas liquid chromatography GLC The method is very sensitive and if adapted with capillary columns can provide information with regard to such subtle features as the position or configuration of substitutions along acyl chains By coupling GLC or HPLC to a radioactivity detector then the techniques are also very useful for metabolic measurements Although research laboratories use generally sophisticated analytical methods such as GLC to analyse and quantify lipid samples chemical derivatizations are often used in hospitals For these methods the lipid samples are derivatized to yield a product which can be measured simply and accurately usually by colour Thus total triacylglycerol cholesterol or phospholipid phosphorus can be quantitated conveniently without bothering with the extra information of molecular species etc which might be determined by more thorough analyses REFERENCES Christie W.W. 1982 Lipid Analysis 2nd edn Pergamon Press Oxford **Lipid Biochemistry** Michael Ian Gurr, John L. Harwood, 1991 Lipids can usually be extracted easily from tissues by making use of their hydrophobic characteristics However such extractions yield a complex mixture of different lipid classes which have to be purified further for quantitative analysis Moreover the crude lipid extract will be contaminated by other hydrophobic molecules e.g. by intrinsic membrane proteins Of the various types of separation processes thin layer and column chromatography are most useful for intact lipids High performance liquid chromatography HPLC is also rapidly becoming more popular especially for the fractionation of molecular species of a given lipid class The most powerful tool for

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Lipid Analysis William W. Christie, 2014-06-05 *Lipid Analysis Isolation Separation Identification and Structural Analysis of Lipids* focuses on the methods principles and approaches involved in the isolation identification separation and structural analysis of lipids The publication first elaborates on the structure chemistry and occurrence of lipids isolation of lipids from tissues and chromatographic and spectroscopic analysis of lipids Discussions focus on equipping a laboratory for lipid analysis spectroscopy chromatographic procedures general principles of solvent extraction procedures structural features of lipids important in analyses simple and complex lipids and fatty acids The text then examines the preparation of volatile derivatives of lipids and analysis of fatty acids and simple lipid classes Topics include alkyl diglycerides and neutral plasmalogens analysis of the hydrolysis products of simple lipids preparation of large quantities of pure fatty acids physical characterization of fatty acids location of double bonds in fatty acid chains and saponification of lipids The manuscript covers the analysis and radioassay of isotopically labelled lipids enzymatic hydrolysis of lipids and analysis of molecular species of lipids The publication is a primary reference for researchers interested in lipid analysis

Chromatography for the Analysis of Lipids Eugene W. Hammond, 1993-02-09 *Chromatography for the Analysis of*

Lipids focuses on the three main chromatographic techniques for analyzing lipids thin layer TLC gas liquid GLC and high performance liquid chromatography HPLC It also covers supercritical fluid chromatography SFC Applications for each chromatographic technique are discussed with emphasis on their quantitative aspects and suitability for use and variations in technique are covered in detail Figures are used throughout the book to illustrate typical results which shows end points that can be compared in your own laboratory This important technical book will be an excellent workbench companion for chromatographers food scientists lipid chemists analytical chemists and others who use chromatographic techniques for lipid analysis

Plant Lipids Denis J. Murphy, 2020-02-03 New research tools have revealed many surprising aspects of the dynamic nature of lipids and their participation in processes such as recognition intra and inter cellular signalling deterrence and defense against pathogens membrane trafficking and protein function This is in addition to new information on the more established roles of plant lipids as structural components of membranes and as long term storage products Plant lipids are also increasingly being seen as sources of a new generation of environmentally friendly biodegradable and renewable industrial products including biopolymers and high grade lubricants *Plant Lipids Biology Utilisation and Manipulation* provides a broad overview of plant lipid research and its many applications Linking various disciplines the editor brings together researchers from major international laboratories to review the history and current state of progress in this quickly evolving field The text starts by providing a fascinating historical perspective on the study of plant lipids from its inception as a branch of alchemy in the seventeenth century to the current post genomic era It then offers a detailed discussion on the formation modification and utilization of fatty acids This is followed by an exploration of the major classes of macromolecular structures formed by plant lipids including bilayer membranes and storage bodies From there the contributors consider other types of macromolecular lipid assemblies in plants examining proteins and the key plant lipid structure the cuticle The final chapters look at diverse classes of plant lipids that are linked to various aspects of signaling This text provides an excellent resource for researchers and professionals in plant biochemistry molecular biology biotechnology and genetics in both the academic and industrial sectors It also meets the needs of students looking for a comprehensive introduction to this field as well as direction for fut

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