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Nota di contenuto	On-Line LC-NMR and Related Techniques; Contents; Contributors; Preface; 1 LC-NMR: Theory and Experiment; 1.1 Introduction; 1.2 NMR in a Flowing Liquid; 1.3 Design of Continuous-Flow NMR Probes; 1.4 Experimental Arrangement for HPLC-(1)H NMR Coupling; 1.5 Practical Considerations, Solvent Suppression Techniques, Gradient Elution and Purity of HPLC Solvents; 1.5.1 Solvent Signal Suppression; 1.5.2 Purity of HPLC-Grade Solvents; References; 2 LC-NMR: Automation; 2.1 Practical Use of LC-NMR and LC-NMR/MS; 2.2 Different Working Modes in LC-NMR; 2.2.1 On-Flow; 2.2.2 Direct Stop-Flow 2.2.3 Loop Storage/Loop Transfer2.2.4 Conclusions; 2.3 Use of Mass Spectrometry in the Set-Up; 2.4 Measurement Procedures; 2.4.1 Sample Preparation and Introduction ('Injection') into the Chromatography System; 2.4.2 Chromatographic Separation; 2.4.3 Peak Detection and Selection; 2.4.4 Mass Spectrometric Measurements; 2.4.5 Nuclear Magnetic Resonance Measurements; 2.4.6 Sample Recovery; 2.5 Conclusions; References; 3 Biomedical and Pharmaceutical Applications

of HPLC-NMR and HPLC-NMR-MS; 3.1 Introduction; 3.2 Technical and Operational Overview; 3.3 Applications in Combinatorial Chemistry
3.4 Application to Chemical Impurities3.5 Application to Chiral Separations of Pharmaceutical Mixtures; 3.6 Application to Natural Products; 3.7 Application to Chemical Reactivity of Drug Glucuronides; 3.8 Application to Futile Deacetylation Reactions; 3.9 Application to Trapping of Reactive Intermediates; 3.10 Application to Uptake and Transformation of Xenobiotics by Plants; 3.11 Separation of Lipoproteins and their Characterisation using HPLC-NMR; 3.12 Superheated-Water HPLC-NMR and HPLC-NMR-MS Studies on Pharmaceuticals
3.13 Application of Hypernation to a Mixture of Non-Steroidal Anti-Inflammatory Drugs3.14 Concluding Remarks; References; 4 Application of On-Line LC-NMR and Related Techniques to Drug Metabolism Studies; 4.1 Introduction; 4.2 LC-NMR Techniques; 4.2.1 Continuous-Flow LC-NMR; 4.2.2 Time-Slice LC-NMR; 4.2.3 Stop-Flow LC-NMR; 4.2.4 Loop-Storage; 4.2.5 LC-NMR-MS; 4.3 Application of LC-NMR-MS to Drug Metabolism: The Structure Elucidation of Rat Urinary Metabolites of Efavirenz by LC-NMR-MS; 4.3.1 Experimental; 4.3.2 Results; 4.4 Conclusions; References; 5 LC-NMR for Natural Products Analysis
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5.2 Hyphenation of Modern Extraction Techniques to LC-NMR for the Analysis of Geometrical Carotenoid Isomers in Functional Food and Biological Tissues

Sommario/riassunto

This book gives a comprehensive overview of the basis and the current applications of LC-NMR and related techniques. It deals with the practical aspects of the hardware and software set-up for a successful performance of on-line coupling experiments. It covers the solution of real-word problems from the fields of biomedical, pharmaceutical and environmental studies as well as the analysis of natural products and polymeric compounds. Thus guidelines for an efficient application of the powerful hyphenated technique LC-NMR in combination with LC-MS are presented. Besides LC-NMR, important techniq