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Computer-Assisted Method Development for High-Performance Liquid Chromatography

edited by **J.L. Glajch** *and* **L.R. Snyder**

(Spin-off from the Journal of Chromatography Vol. 485 plus an additional chapter, index and glossary)

This book deals with the use of the computer as an aid in selecting adequate or optimum conditions for a given analytical separation. Originally published as Volume 485 of the Journal of Chromatography, it has now been reprinted in book form, since the information is so useful that many chromatographers want a copy readily available in the lab.
An extensive Introduction is added to the book edition. This surveys the field and refers to the pages where particular items are discussed in the book. The addition of a Glossary of Terms, an Author Index and a Subject Index make this book an invaluable source of easily consulted information for the practising chromatographer.
For the purpose of this book, computer-assisted method development will be limited to specific procedures which are intended to be used with a computer - rather than their manually applied precursors. In that sense, the subject can be considered to have begun around 1980.
The ongoing, intense research activity into various forms of computer assisted HPLC method development provides the assurance that this approach can really assist the practical chromatographer working in an industrial laboratory.

Contents. Introduction Chapter: Computer-assisted method development for HPLC *(J.L. Glajch & L.R. Snyder)*. Foreword *(G.L. Glajch & L.R. Snyder)*. Simplex optimization of HPLC separations *(J.C. Berridge)*. Computer-assisted optimization in HPLC method development *(S.N. Deming et al.)*. Selection of mobile phase parameters and their optimization in reversed-phase LC *(H.A.H. Billiet & L. de Galan)*. Method development in HPLC using retention mapping and experimental design techniques *(J.L. Glajch & J.J. Kirkland)*. Isocratic elution *(L.R. Snyder et al.)*. Drylab computer simulation for HPLC method development. I. Isocratic elution *(L.R. Snyder et al.)*. II. Gradient elution *(J.W. Dolan et al.)*. Predictive calculation methods for optimization of gradient elution using binary and ternary solvent gradients *(P. Jandera)*. Computer-assisted retention prediction for HPLC in the ion-exchange mode *(Y. Baba)*. 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See also 4230, 4236, 4239, 4242, 4248, 4272, 4373, 4374, 4379, 4380, 4381, 4385, 4388, 4396, 4406, 4567, 4638, 4686, 4823, 4915, 5072.

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4. SPECIAL TECHNIQUES

4a. Automation and computerization

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5. HYDROCARBONS AND HALOGEN DERIVATIVES

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21. PURINES, PYRIMIDINES, NUCLEIC ACIDS AND THEIR CONSTITUENTS

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33. CLINICO-CHEMICAL APPLICATIONS

33b. Complex mixtures and profiling (single compounds by cross-reference only)

See 4469, 4474, 4524, 4525, 4569, 4840, 4869.

34. FOOD ANALYSIS

See 4547.

34a. General papers and reviews

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5. HYDROCARBONS AND HALOGEN DERIVATIVES

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15. TERPENES AND OTHER VOLATILE AROMATIC COMPOUNDS

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17. AMINES, AMIDES AND RELATED NITROGEN COMPOUNDS

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21. PURINES, PYRIMIDINES, NUCLEIC ACIDS AND THEIR CONSTITUENTS

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23. OTHER SUBSTANCES CONTAINING HETEROCYCLIC NITROGEN

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See 1951, 2051.

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See also 1932, 1940, 1970.

34. FOOD ANALYSIS

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See 960.

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See 1027.

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33. CLINICO-CHEMICAL APPLICATIONS

33b. Complex mixtures and profiling (single compounds by cross-reference only)

See 979, 983.

34. FOOD ANALYSIS

34b. Complex mixtures (single compounds by cross-reference only)

See 1014.

37. CELLS, CELLULAR PARTICLES AND SUPRAMOLECULAR STRUCTURES

See 965.

38. INORGANIC COMPOUNDS

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21. PURINES, PYRIMIDINES, NUCLEIC ACIDS AND THEIR CONSTITUENTS

21a. Purines, pyrimidines, nucleosides, nucleotides

See 1571, 1797.

21b. Nucleic acids, RNA

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30. SYNTHETIC AND NATURAL DYES

30b. Chloroplast and other natural pigments

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32. DRUG ANALYSIS

32a. Drug analysis, general techniques

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33. CLINICO-CHEMICAL APPLICATIONS

33b. Complex mixtures and profiling (single compounds by cross-reference only)

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34. FOOD ANALYSIS

34b. Complex mixtures (single compounds by cross-reference only)

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36c. Various technical products

1851 Dulog, L. and Hilt, M.: (Mass transport electrophoresis of aqueous dispersions of binders and pigments). *Farbe Lack,* 95 (1989) 395-400; *C.A.,* 112 (1990) 181436w.

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38. INORGANIC COMPOUNDS

38a. Cations

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38b. Anions

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39. RADIOACTIVE AND OTHER ISOTOPE COMPOUNDS

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PUBLICATION SCHEDULE FOR 1990

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Chromatography and Modification of Nucleosides

Part C
Modified Nucleosides in Cancer and Normal Metabolism - Methods and Applications

Journal of Chromatography Library, 45C

edited by **C.W. Gehrke** *and* **K.C.T. Kuo**, *Department of Biochemistry, University of Missouri-Columbia, and Cancer Research Center, P.O. Box 1268, Columbia, MO, USA*

Chromatography and Modification of Nucleosides is a four-volume work which provides state-of-the-art chromatography and analytical methods for use in a wide spectrum of nucleic acid modification research.

The focus of Part A is the presentation of advanced methods for modification research on tRNAs, mRNAs, mtRNAs, tRNAs and DNAs. HPLC-UV, GC-MS, NMR, FT-IR and affinity chromatography approaches to nucleic acid modification studies are presented, as are nucleoside, oligonucleotide and nucleic acid isolation techniques. Part B has as its central theme the modified nucleosides of tRNA and the current analytical means for studying rRNA modifications. Modified nucleoside synthesis, function, structural conformation, biological regulation, and occurrence of modification in a wide range of tRNAs are presented, as is a chapter on DNA modification and a chapter on solid phase immunoassay for determining a particular modification.

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The chapters are written by leading scientists in their respective fields and present an up-to-date review on the roles of modified nucleosides in nucleic acids which will be extremely useful for workers in chromatography, molecular biology, genetics, biochemistry, biotechnology and the pharmaceutical industry.

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