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## Separation & Purification Reviews

Publication details, including instructions for authors and subscription information:

<http://www.informaworld.com/smpp/title~content=t713597294>

### A review of: "CHROMATOGRAPHY IN BIOTECHNOLOGY"

Carel J. van Oss

**To cite this Article** van Oss, Carel J.(1995) 'A review of: "CHROMATOGRAPHY IN BIOTECHNOLOGY"', *Separation & Purification Reviews*, 24: 1, 123 — 124

**To link to this Article:** DOI: 10.1080/03602549508014346

**URL:** <http://dx.doi.org/10.1080/03602549508014346>

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BOOK REVIEW

CHROMATOGRAPHY IN BIOTECHNOLOGY

C. Horváth and L.S. Ettre, Eds.

ACS Symposium Series 529, American Chemical Society,  
Washington, DC, 1993  
hardbound pp. ix + 189, \$49.95

The twelve chapters of this ACS Series volume comprise: 1. Chromatographic Separations in Biotechnology by John Frenz; 2. Continuous Purification of Proteins by Selective Nonadsorptive Preparative Chromatography by T.K. Nadler and F.E. Regnier; 3. Ion-Exchange Displacement Chromatography of Proteins: Theoretical and Experimental Studies by Steven M. Cramer and Clayton A. Brooks; 4. Process Chromatography in Production of Recombinant Products by Walter F. Prouty; 5. Preparative Reversed-Phase Sample Displacement Chromatography of Peptides by R.S. Hodges, T.W.L. Burke, A.J. Mendonca and C.T. Mant; 6. Displacement: Chromatographic Concentration Control by Jana Jacobson; 7. Quantitative Monosaccharide Analysis of Glycoproteins: High-Performance Liquid Chromatography by R. Reid Townsend; 8. Separation of Glucose Oxidase Isozymes from *Penicillium amagasakiense* by Ion-Exchange Chromatography by Henryk M. Kalisz and Rolf D. Schmid; 9. Analysis of Microsomal Cytochrome P-450 Patterns: Fast Protein Liquid Chromatography with Ion-Exchange and Immobilized Metal Affinity Stationary Phases by P.H. Roos; 10. Monosaccharide Compositional Analysis of *Haemophilus influenzae* Type b Conjugate Vaccine: Method for In-Process Analysis by Charlotte C. Yu Ip and William J. Miller; 11. Zirconium Oxide Based Supports for Biochromatographic Applications by P.W. Carr, J.A. Blackwell, T.P. Weber, W.A. Schafer and M.P. Rigney; 12. Preparative Reversed-Phase Chromatography of Proteins by Geoffrey B. Cox. The volume ends with Author, Affiliation and Subject Indices. Chapters 2 to 6 treat novel operational modes in preparative chromatography; Chapters 7-10 specialize in chromatography of glycoconjugates, and the last two chapters discuss advances in column engineering.

Chapter 2 describes various uses of the nonadsorptive chromatography approach, i.e. the purification of a given protein under conditions where it is the only protein that does not adsorb onto the column. One aspect of this approach is fairly old: human gamma globulin G(IgG) is easily purified in one step from whole serum, by mixing it with DEAE cellulose at neutral pH (where IgG is uncharged), upon which IgG remains unbound while all other serum proteins are bound to the DEAE. This can be done in a DEAE column as well as with a batchwise procedure (1).

Chapters 7-10 give novel analytical and preparative approaches for the study of glycoproteins. Chapter 11 furnishes a rather complete overview of the use of  $ZrO_2$  particles (bare as well as coated) in HPLC.

This volume is highly recommended to all workers involved in the chromatographic purification and characterization of proteins and glycoproteins.

Carel J. van Oss

References:

1. D.R. Stanworth, *Nature* 188, 156 (1960).