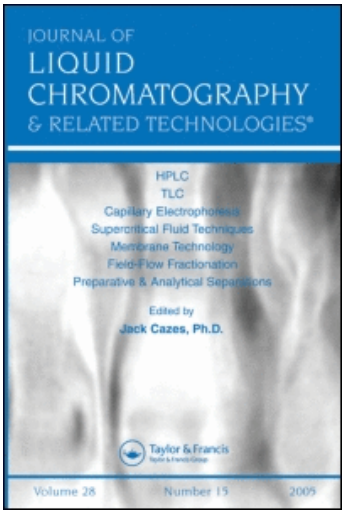

Journal of Liquid Chromatography & Related Technologies
Publication details, including instructions for authors and subscription information:
http://www.informaworld.com/smpp/title~content=t713597273

Book Review

To cite this Article (2008) 'Book Review', Journal of Liquid Chromatography & Related Technologies, 31: 3, 465 — 466
To link to this Article: DOI: 10.1080/10826070701780987
URL: http://dx.doi.org/10.1080/10826070701780987

Journal of Liquid Chromatography & Related Technologies®, 31: 465–466, 2008

ISSN 1082-6076 print/1520-572X online
DOI: 10.1080/10826070701780987

Book Review

Teresa Kowalska, Joseph Sherma, Eds.: Thin Layer Chromatography in Chiral Separation and Analysis. CRC Press, Chromatographic Series Volume 98. Boca Raton, New York, Abingdon, 2007

Chiral separations have become an important field of separation science, since many drugs, agrochemicals, food additives and fragrances are chiral compounds and their biological activities are, most often, related to their chirality. As a consequence, preparative separations have become of utmost importance. Chiral separations are nowadays among the greatest experimental challenges in chromatography, no matter which particular mode is considered. TLC certainly is the least frequently used enantioseparation technique, although its potential to separate just two compounds is more than sufficient, with many advantages in comparison with the other chromatographic techniques.

Freshmen and other users wanting to get, at first, a solid overview on the fundamentals of chirality and related general and TLC-specific analytical implications won't learn it in a satisfactory manner from just any one chapter of the book alone (the authors of chapter 2 named "Chirality", refer, e.g., for that purpose, to other books). They must distil related piecemeal information out of some six or seven chapters of different other authors and recompose it themselves to get a more coherent and comprehensive view. This situation is not uncommon to multi-author books. But in new, fast developing or broken fields a multi-author book is generally better than no book at all. To present there is no other reference book on TLC applied to chiral separations available on which it could fairly be compared.

The book is intended to encourage people to perform enantioseparations by means of TLC, because modern instrumental TLC often outperforms the other chromatographic modes. Enantioseparations performed with use of TLC can be stored digitally and also in a material sense, directly on the plate while with the other techniques one is left with the digital records alone. You can return to your separation result, you can digest it in many different ways and with many after-techniques. This preservation of the separation on the plate has many evident advantages and in this fact represents the real power of TLC.

The book is organized in a *first section* with nine chapters on general principles and practice of enantioseparations and analysis and a *second section* including five chapters covering a large array of enantomeric substance classes as pharmaceutical racemates (viewing them both from a perspective of their use as medicines and also as chiral selectors in TLC separation procedures, as adrenergic drugs, amino acids, non-steroidal anti-inflammatory drugs, chiral antibiotics from the groups of cephalosporins and quinolones and, finally, an extra chapter is dedicated to the indirect analysis of enantiomers via diasteromers obtained through Marfey's reagent, a bifunctional variation of Sanger's reagent of 1945 for amino acids.

The editors have managed to gather together most of the *best names in the field of enantioseparations* by means of TLC (Ravi Bhushan, Antoine-Michel Siouffi, Luciano Lepri, Władysław Gołkiewicz, Jan Krzek and Jacek Bojarski to name a few. They have also contributed with two chapters of their own: T. Kowalska and M. Sajewicz present a few epistomologically astounding examples where 'unpredictable effects' as keto-enol tautomerism underlying an oscillatory transenantiomerization can hamper separation. Joseph Sherma presents a chapter on commercial precoated layers used as chiral stationary phases (CPS) and achiral plates used with chiral solvents, both used for direct enantiomer separations. As that the number of commercial CPS for TLC is rather limited, well-stuffed chapters on non-commercial ones (by L. Lepri) and on chiral mobile phase additives (by D. Agbaba) are a quite welcome complement. A chapter on indirect enantiosaparation via diastereomers by V. Coman rounds off the picture.

The main messages of the book are to encourage the scientists to make more use of TLC as an enantioseparation tool and to provide them with the up-to-the-date reference material addressing the methods already elaborated. The book honestly and exhaustively reflects the state-of-the-art in the field. It summarizes all the main aspects of the problem and it is nobody's fault that the results so far obtained by the international scientific community are less impressive than those obtained by HPLC. Maybe the book on TLC applied to enantioseparations will inspire certain people to further exploring this not yet fully exploited possibility. Its contents represent probably an optimum of what, realistically, could have been squeezed out from the international community of the TLC enantioseparationists. Such books are, by their very nature, rather ephemeral; an update could be the occasion of making it more systematical. The book should have its place in every analytical library. Analysts and chromotographers not having come across racemic mixtures to date are likely to do so tomorrow.

Friedrich Geiss