



Editorial

Editorial on “Chiral recognition by enantioselective liquid chromatography: Mechanisms and modern chiral stationary phases” by M. Lämmerhofer

The special issue of Journal of Chromatography A “Editor Choice IV” contains valuable review papers covering various aspects of separation science written by the most recognized scientists in that field. A treated topic of a certain interest for those working in both research and industrial fields, is chiral recognition mechanisms in liquid chromatography (LC).

On the other hand, we’ve already published two review papers dealing with enantiomers’ separation. In those publications Chankvetadze and Mazzotti illustrated data covering the important topic from both analytical (capillary electrophoretic techniques) and preparative point of view, respectively [1,2].

The paper I’m introducing right now has been written from Dr. Michael Lämmerhofer (Department of Analytical Chemistry and Food Chemistry of Vienna University, Austria), head together with Prof. Wolfgang Lindner of *Christian Doppler (CD) Laboratory for Molecular Recognition Materials*.

I know the author since a long time and I really appreciate all his contributions. They’re mainly based on studies about design and development of new materials to be used in analytical chemistry.

In particular, he studied new stationary phases’ development, especially those ones used for chiral separation in liquid chromatography and/or in electromigration techniques.

Other information about Dr. Lämmerhofer’s work experience is not necessary for those who work in separation science. By the way, you might easily find them in the web, if needed.

When I asked Michael to prepare that review, I expected to receive a contribution exactly as it is. In fact, data contain interest-

ing information about chiral separations, both under a theoretical and a practical point of view.

Those data are new compared with those ones published in the two previous Editors’ Choice issues [1,2].

The author introduced an historical background of chiral recognition summarizing the most important theoretical principles. From the “*Three-point attachment model*”, to the different aspect of thermodynamic–related to chiral selector–selectant association, liquid chromatographic separation, selectivity influenced by the interacting sites. Then he presents a debate about tools and methods currently used for understanding retention and recognition mechanisms. At the end, he describes the most common stationary phases in use in LC, including polysaccharides, synthetic polymers, proteins, cyclodextrins macrocyclic antibiotics, etc.

He shows, as well, some databases, available in the market, with a large number of chiral separations which might be useful for those working in routine analysis.

I truly believe Dr. Michael Lämmerhofer’s paper will attract many readers. They’ll be able to find concrete answers to many questions about chiral separations by liquid chromatography, that is a fascinating topic.

References

- [1] B. Chankvetadze, J. Chromatogr. A 1168 (2007) 45.
- [2] A. Rajendran, G. Paredes, M. Mazzotti, J. Chromatogr. A 1216 (2009) 709.

Rome, Italy

Salvatore Fanali