



Editorial

Editorial on “Stereoselective determination of drugs and metabolites in body fluids, tissues and microsomal preparations by capillary electrophoresis (2000–2010)” by Jitka Caslavská and Wolfgang Thormann

The analysis of drugs and metabolites in samples of biological origin by using capillary electrophoresis (CE) is not a simple problem because of the (i) low concentration levels of analyzed compounds and because of (ii) interferences by substances present in the analyzed biological matrices. These problems have been, in many cases, successfully resolved employing either more sensitive detectors (mass spectrometry, MS; laser induced fluorescence, LIF, amperometric etc.) and/or pre-concentration methods (on- and off-line). In addition, sample pre-treatment can eliminate/minimize matrices effect.

Based on the data available in literature, accurate and precise analytical methods for the determination of chiral compounds in body fluids are needed. On the other hand in previous “Editors Choice” special issues, valuable review papers, dealing with theory, basic principles and applications in the field of enantiomers separation have been presented and appreciated by our readers [1–3].

The paper that I am introducing now is an extension and deepening of previous presented overviews in the field with useful examples of the practical applicability of electromigration techniques to the analysis of chiral compounds in real samples of biological, biomedical, toxicological interest. The manuscript has been written by a recognized group headed by Prof. Wolfgang Thormann who is professor at Bern University, Department of Clinical Pharmacology, Switzerland.

Going through the website [4] it is not surprising to find the confirmation about Wolfgang’s interest for studies dealing with stereoselectivity related to the biomedical field. In addition his attention for electromigration techniques also including the “old” isotachopheresis is documented by the remarkable work dealing with theory and practical applications. I have in mind our fruitful cooperation about the study of enantiomeric resolution

of mephenytoin, 4-hydroxymephenytoin and 4-hydroxyphenytoin enantiomers in human urine by using cyclodextrin micellar electrokinetic capillary chromatography [5]. This work was an interesting example for practical analysis of drugs and metabolites where the enantiomeric ratio can give useful information about metabolizer capability of a certain drug of a patient.

I was very glad that Prof. Thormann accepted my invitation to write this review paper covering a topic of great interest for those working in the biomedical analysis and utilizing capillary electrophoresis. This work is an updating of a previous review paper by Zuegg and Thormann [6], published in our Journal, that could be considered for covering all data published till now and dealing with elucidation of stereoselectivity and related topics.

I am convinced that this comprehensive overview presents very interesting aspects of chiral assays where CE can play a very important role. Several applications including *in vivo* and *in vitro* pharmacokinetic drug enantiomers, bioanalysis of drug enantiomers investigated in toxicology, forensic and doping sciences have been illustrated. These data together with the previous reported by Wolfgang [6] should be useful also to young scientists approaching for the first time the interesting field of chiral analysis using electrodriven techniques.

References

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