Our studies about chirality, chiral recognition mechanisms and enantioseparations in 2016

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Keywords: Chirality, Chiral Recognition Mechanisms, Enantioseparations
Abstract:

In this presentation those of our current studies are discussed which were either published or accepted for publication in 2016 in the international journals with impact factor. These studies basically relate to chirality, chiral recognition mechanisms and separation of enantiomers by using various methods. In 2016 our especial interest was paid to development of polysaccharide-type chiral stationary phases (CSP) based on superficially porous silica and application of these materials for separation of enantiomer in ultra-high performance liquid chromatography (UPLC) [1, 2]. In other group of our studies the separation of enantiomers of chiral compounds representing various structural and pharmacological groups were studied by using high-performance liquid chromatography (HPLC) and polysaccharide-based chiral columns. In these studies especial attention was paid to the elution order of enantiomers and separation mechanisms [3, 4]. Significant research effort was made for development of stable and robust CSPs by covalent immobilization of polysaccharide derivatives onto the surface of totally porous and superficially porous silica [5]. One of the papers was devouted to separation of enantiomers of emerging amphetamine drugs for abuse by using three different modes of HPLC, as well as supercritical fluid chromatography (SFC) and capillary electrochromatography (CEC) [6] . One review paper was also published summarizing our 25 year-long efforts on elucidation of chiral separation mechanisms in capillary electrophoresis (CE) by using nuclear magnetic resonance (NMR) spectroscopy [7].

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