Separation of enantiomers of selected chiral triazole derivatives with polysaccharide-based chiral stationary phases and aqueous mobile phases

Lali Tchankvetadze, Salome Potstskheria, Nino Kobakhidze, Tivadar Farkas and Bezhan Chankvetadze
Tbilisi State University, Georgia

The separation of enantiomers of 13 triazole derivatives was studied using polysaccharide-based chiral stationary phases and aqueous-organic mobile phases in high-performance liquid chromatography (HPLC). The major emphasis was made on the role of chemistry of a chiral selector and the mobile phase on elution order and separation mechanism of enantiomers. For the most of chiral triazole derivatives studied the retention and separation factor of enantiomers increased with increasing content of water in the methanol as the mobile phase. An interesting effect was observed for the stereoisomers of difenconazole on the Lux Cellulose-3 column. In particular, in methanol containing 0.1% (v/v) diethylamine all four stereoisomers were baseline separated while separation worsened with increasing content of water and when water content in the mobile phase reached 20% only two separated peaks were observed. For the enantiomers of triadimephone separation of enantiomers increased with increasing content of water in methanol, reached the maximum at 15% water content, then decreased again and disappeared at the water content of 20%. For several analytes with two chiral centers all for stereoisomers were resolved baseline with various combinations of mobile and stationary phases.

Biography
Lali Tchankvetadze has obtained her PhD degree from University of Tbilisi, Georgia. She is an invited Professor and Principal Investigator in the project “Study of enantiomer separation mechanisms in liquid chromatography with novel polysaccharide-based chiral stationary phases” funded by Shota Rustaveli National Science Foundation. She has published about 10 papers in international journals and presented her results on more than 20 international conferences.

Lali_chankvetadze@geolab.ge

Notes: