

Investigation of enantioseparation of chiral sulfoxides in Reversed-Phase High-Performance Liquid Chromatography by polysaccharide-based chiral selectors

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Abstract

Research on instrumental separation of enantiomers was started nearly century ago, despite huge amount of experimental data, chiral recognition mechanism is not completely clear yet.

Goal of my research is to investigate enantiomer separations in high-performance liquid chromatography with polysaccharide-based chiral selectors and reversed-phase eluents. The factors responsible for elution order changes will be also studied.

At current stage of thesis work, it was analyzed 14 chiral sulfoxides using 17 chiral stationary phases based on polysaccharide trisphenylcarbamate derivatives, which have high chiral recognition ability. As mobile phases methanol / water and acetonitril/water mixture were used.

On current stage of experiments for methanol/water eluents analysis follows reverse-phase chromatography principles: increasing water content in mobile phase retention time increases, but not in case of eluents such as acetonitrile/water mixture. In some cases changes of enantiomer elution order were also revealed. Column efficiency, resolution and selectivity varies depending on column and test substances.