

ABSTRACT

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Title of diploma thesis: Testing of potential capability of chiral ionic liquids with long alkyl chain in capillary electrophoresis chiral separations I

The main aim of this diploma thesis was testing of novel chiral ionic liquids as chiral selectors in capillary electrophoresis for the potential application in chiral separations of model compounds (mainly of pharmaceutical importance). The analysis was realized by micellar electrokinetic chromatography since the tested chiral ionic liquids were cationic surfactants. The examined electrolytes were formed by different buffers of various pH values and with different concentration of chiral ionic liquids. The separation took place in fused silica capillary (50 μm diameter, 48.5 cm total length, 40 cm effective length). The UV detection was performed at different wavelengths according to the structural features of model compounds. The separation always resulted in one peak; it means that the tested chiral ionic liquids did not show any capability in enantioseparation of model analytes. This observation can probably be explained by electrostatic interaction (between negatively charged solute and positively charged chiral selector) that hindered the separation of model analytes into individual enantiomers.

The enantioseparation of model compounds under earlier published conventional conditions was realized as well.