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Development of a modified partial filling method in capillary electrophoresis using two chiral plugs for the simultaneous enantioseparation of chiral drugs: Comparison with mixed chiral selector capillary electrophoresis

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Highlights

- Chiral separation by a new method based on partial filling technique
- Simultaneous application of different chiral selectors, without being mixed together
- Comparison of modified partial filling method with single and mixed CS modified CZE
- Elimination of the potential interactions between two CSs in the BGE
- Application of developed method for enantioseparation of mixtures of racemic drugs

Abstract

In this study, a chiral CE method was developed based on the partial filling technique with two chiral plugs for the simultaneous enantioseparation of some racemic drugs, including baclofen, carvedilol, cetirizine, chlorpheniramine, citalopram, fluoxetine, hydroxyzine, propranolol, tramadol, trihexyphenidyl. This method of capillary filling involves the application of two adjacent chiral plugs containing the same BGE, but with different chiral selectors in the plugs for the enantioseparation of a mixture of drugs which cannot be separated with single or mixed chiral selectors. By using this method, each plug can separate the enantiomers independently (same as a single chiral selector modified CE) and the possible interactions between the chiral selectors would be inhibited. The best

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