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Mixed micelles as chiral selectors in micellar electrokinetic chromatography

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Sodium 7-octenyl sulfate (SOcS), an achiral surfactant, sodium 10-undecenyl leucinate (SUL), a chiral surfactant and their five mixed micelles at varied percent mole fractions were prepared and evaluated as novel chiral pseudostationary phases in micellar electrokinetic chromatography (MEKC) for separation of warfarin, coumarin, 1,1'-binaphthyl-2,2'-diamine (BNA), 1,1'-bi-2-naphthol (BOH) and (6)-1,1'-binaphthyl-2,2'-dihydrogen phosphate (BNP) at varied pHs. One of the major drawbacks of pseudostationary phases with amino acid head groups (*e.g.*, SUL) is their solubility problem below pH 7.0. In this study, we attempted to form mixed micelles of SOcS, a highly soluble surfactant in a wide range of pH and SUL, an insoluble surfactant below pH 7.0. We expected that this approach might circumvent the solubility limitations at low pH, while maintaining the chirality of the mixed micelles. Successful chiral separations of warfarin, caumarin, BNA, BOH and BNP were achieved with high resolution values at pH 6.0, 7.0 and 8.0.

General Posters
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