HIGH-PERFORMANCE LIQUID CHROMATOGRAPHIC ENANTIOSEPARATION OF SOME AMINO CMOPOUNDS WITH PHARMACEUTICAL RELEVANCE ON ION-EXCHANGER-BASED CHIRAL STATIONARY PHASES

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New, pharmacologically interesting chiral amino compounds, namely, tetrahydroisoquinoline (THIQ)- and tetrahydro-*β*-carboline (TH*β*C)-core containing alkaloids ([1, 2], Figure 1) have been separated by high-performance liquid chromatography on novel strong cation exchangers and *Cinchona* alkaloid-based zwitterionic (ZWIX(+)™ and ZWIX(−)™) ion-exchanger stationary phases. Separation of the stereoisomers was optimized by investigating the effects of the composition of the bulk solvent, the impact of the counter- and co-ion concentration and the influence of the temperature on the chromatographic behaviour. In addition, the relationship between the compound's structure and the chromatographic parameters were also investigated. Experiments were performed in the temperature range 10–50 °C. Thermodynamic parameters were calculated from plots of lnα versus 1/T. The separations were generally enthalpy-controlled, but entropy-controlled separation was also observed. The enantiomer elution order was determined in all cases and most of the time was observed to be opposite on the ZWIX(+)™ and ZWIX(−)™ columns. Our results contribute to a better understanding of the enantiorecognition mechanism of chiral bases with chiral zwitterionic and cation-exchanger selectors.

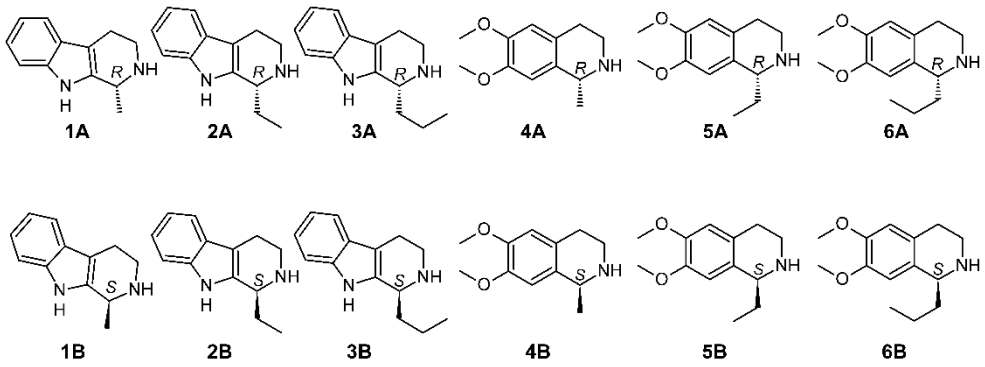

Figure 1. Structure of analytes

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