

Abstract

Capillary electrophoresis (CE) has been applied to the chiral separation of acyclic nucleoside phosphonates, which belong to the most important already registered or potential antiviral drugs. For enantioseparation of acyclic nucleoside phosphonates, the following native and derivatized cyclodextrins were used as chiral selectors: α -cyclodextrin, β -cyclodextrin, γ -cyclodextrin, heptakis(2,6-dimethyl)- β -cyclodextrin, 2-hydroxypropyl- β -cyclodextrin and quaternary ammonium β -cyclodextrin. The best resolution of (*R,S*)-enantiomers of acyclic nucleoside phosphonates was achieved in basic background electrolyte composed of 35 mM sodium tetraborate; pH 10, with addition of 17.6 mM β -cyclodextrin or 10 mM quaternary ammonium β -cyclodextrin chiral selectors.

Capillary electrophoresis has been employed for determination of association constants of complexes of acyclic nucleoside phosphonate enantiomers with above mentioned chiral selectors. The association constants were determined by nonlinear regression analysis from the experimentally measured dependence of effective electrophoretic mobilities of the analytes on concentration of the chiral selector in the background electrolyte. Prior to association constant calculation, the effective electrophoretic mobilities were corrected to reference temperature, 25 °C.

Subject words: analytical chemistry, separation methods, capillary electromigration methods, acyclic nucleoside phosphonates

Keywords: association constant, capillary electrophoresis, cyclodextrins, chiral separation