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Separation of enantiomers of selected chiral beta-agonists with polysaccharide-based chiral stationary phases and aqueous mobile phases

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The enantiomeric resolution of eighteen β 2-agonists including bambuterol, clenbuterol, clenpenterol, brombuterol, butoxamine, cimaterol, cimbuterol, dobutamine, fenoterol, formoterol, isoxuprine, labetalol, pirbuterol, ractopamine, ritodrine, salbutamol, salmeterol and terbutaline, was studied on six polysaccharide-based chiral stationary phases and aqueous-organic mobile phases in high-performance liquid chromatography (HPLC). The effect of chemistry of a chiral selector and the mobile phase on elution order and separation mechanism of enantiomers was studied. With increasing content of water in methanol a classical reversed phase separation mechanism was observed (the retention and in most cases separation selectivity increased with increasing content of water in the mobile phase). The more complex picture was observed with increasing content of water in acetonitrile. In this case at lower water content HILIC separation mechanism dominated while at the water content higher than 20% (v/v) the reversed-phase separation mechanism governed the retention and separation.

Biography

Ann Gogolashvili has obtained her Bachelor's degree from Tbilisi State University, Tbilisi, Georgia. She is Master's student and is employed as a technician in the project "Study of enantiomer separation mechanisms in liquid chromatography with novel polysaccharide-based chiral stationary phases" funded by Shota Rustaveli Georgia National Science Foundation. She has presented her results at 4 international conferences.

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