Isomer separation of some chiral flavonoids and 
$\beta$-blockers using microbial cyclosphoraoses and their 
sulfated derivatives as novel chiral additives in capillary 
electrophoresisX

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Abstract

Neutral cyclosphoraoses and highly sulfated cyclosphoraoses (HS-Cys) 
were used as chiral selectors for separation of some chiral flavonoids and $\beta$ 
-blockers in capillary electrophoresis. HS-Cys were synthesized by the chem- 
ical modification of a family of neutral cyclosphoraoses isolated from soil 
microorganism, Rhizobium meliloti 2011. The HS-Cys were analytically char- 
acterized using fourier transform infrared spectroscopy and elemental 
analysis. The five basic chiral compounds of $\beta$-blockers were successfully 
separated with the resolution values ranging from 0.25 to 2.3 by HS-Cys in 
low-pH aqueous background electrolytes. For separation of chiral flavonoids, 
neutral cyclosphoraoses and HS-Cys were applied with sodium dodecyl sul- 
fate (SDS) in micellar electrokinetic chromatography (MEKC). Chiral catechin 
was separated with the resolution (RS) of 0.754 by neutral cyclosphoraoses 
and SDS. In the case of isosakuranetin and neohesperidin, resolution (RS) 
values of 1.483 and 1.306 were obtained with HS-Cys and SDS, respectively.
References