Separation of Four Racemic Benzodiazepines by HPLC

by Anna Goldnik*, Dorota Marszałek and Ryszard Paruszewski

Department of Drug Chemistry, Medical University,
ul. Banacha 1, 02–097 Warszawa, Poland

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A method for the separation and the determination of enantiomers of four benzodiazepines: oxazepam, lorazepam, temazepam and lormetazepam by HPLC on the Chiralcel OD–R (Diacel–Chemical Industries) column is presented. When the Chiralcel OD (Diacel–Chemical Industries) column was used, only the resolution of oxazepam and lormetazepam could be successfully performed.

Przedstawiono metodę rozdzielania i oznaczania enancjomerów czterech benzodiazepin: oksazepamu, lorazepamu, temazepamu i lormetazepamu metodą HPLC na kolumnie Chiralcel OD–R (Diacel–Chemical Industries). Na kolumnie Chiralcel OD (Diacel–Chemical Industries) udało się rozdzielić jedynie oksazepam i lormetazepam.

A number of methods for the separation and determination of single benzodiazepine enantiomers have been developed to date, but there are fewer methods suitable for the resolution of some racemic benzodiazepine enantiomers in comparable conditions. Liu and Stewart [1] separated two benzodiazepines — oxazepam and temazepam — on the Chiralcel OD–R (Diacel) column. Resolution of temazepam enantiomers was better \( R_s = 4.6 \) but that of oxazepam considerably worse \( R_s = 4.8 \) than the results obtained in our laboratory. Fell et al. [2] separated enantiomers of oxazepam, lorazepam and temazepam on four new chiral stationary phases (CSP) but the results were not fully satisfying. Ameyibor and Stewart [3] resolved enantiomers of the same three drugs using native \( \beta \)-cyclodextrin and three of its derivatives as chiral solid...