ABSTRACT

Diploma thesis

The use of HPLC in the analysis of drugs III

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High-performance liquid chromatography is one of the most progressive separative and analytical methods. Phases based on the oxide of zirconium with more advantageous chemical properties represent an alternative to classical stationary silica gel phases. The aim of this diploma thesis was to transfer the conditions of separation from the column ZirChrom®-PBD to the column Zirchrom®-MS and, thus, enable connection with the mass detector. During the separation, various types of buffer (diammonium hydrogen phosphate, ammonium acetate), concentrations of buffer, and constitutions of the mobile phase (solvents: acetonitrile, methanol) were used. For the separation of ondansetron and its five impurities, the following optimal conditions were found out: a mobile phase composed of acetonitrile and 5 mM ammonium acetate (pH 7), 0–4 min. (40 : 60, V/V), 4–5 min. (40→50 : 60→50, V/V), 5–21 min. (50 : 50, V/V), 21–25 min. (50→40 : 50→60, V/V). The analysis was carried out at the temperature of 40 °C and the flow rate of 0.5 mL min^{-1}. The detection was performed at the wavelength of 216 nm. The separation lasted 20 minutes in total.