

Abstract

Capillary electrophoresis is a method used in pharmaceutical analysis because of its low cost, speed and environmental friendliness. This diploma thesis deals with development of electrophoretic method for rivaroxaban determination. After several optimizations, a method suitable for rivaroxaban determination inside its dosage forms was developed. Optimizations involved change of background electrolyte's composition from aqueous solution of low molecular weight organic acids to non-aqueous solution of acetic acid and cetyltrimethylammoniumbromide in acetonitrile in multiple steps.

Final conditions of analysis included background electrolyte composed of 1M acetic acid and 40mM cetyltrimethylammoniumbromide in acetonitrile, sample injection carried out hydrodynamically by pressure of 5,0 kPa for period of 3 s and subsequent insertion of separation voltage of 30,0 kV for entire duration of analysis. Capillary content was mobilized by pressure of 0,50 kPa for entire duration of analysis. With aforementioned optimizations a selective method for determination of dosage forms of rivaroxaban was obtained. This method provides limit of detection 0,0056 mg/ml and limit of quantification 0,019 mg/ml and is linear in 0,01 – 0,40 mg/ml range with a recovery of 93,2 %.

Keywords

capillary electrophoresis, pharmaceutical analysis