Abstract

Author: Soňa Pavlovičová
Title: The application of HILIC method in the stability evaluation of ascorbic acid
Language: czech
Keywords: ascorbic acid, HILIC, stability, stabilizating agents
Ascorbic acid, vitamin C, is a very polar compound, and is therefore difficult to be analysed by RP-HPLC. For these reason HILIC method (Hydrophilic Interaction Liquid Chromatography) was developed and the optimal conditions for the analysis were determined. The analysis occured on the ZIC-HILIC column (150 x 2.1, 3.5 μm), the mobile phase consisted from acetonitrile and 50 mM ammonium acetate buffer pH 6.8. The method used UV detection at 268 nm. Under these conditions the analysis take approximately 4 minutes. Chlorogenic acid was used for quatification. Various stability factors as temperature, concentration, the presence of oxygen and pH of the solution were studied. This work also solved the troubles with stabilizating agents and their influence on stability of ascorbic acid. Optimal conditions were obtained, when the temperature was decreased to 4°C and 10 mM oxalic acid was used for stabilization. Good results were also obtained with 5 % o-phosphoric acid as stabilizating agent. The method was validated and it met pharmacopea requirements.