Using of sequential injection chromatography method for separation and determination of salicylic acid and triamcinolone acetonide in pharmaceutical preparation Triamcinolon-IVAX

Pavel Holík

Abstract

A novel and fast simultaneous determination of triamcinolone acetonide (TCA) and salicylic acid (SA) in topical pharmaceutical formulations by sequential injection chromatography (SIC) as an alternative to classical high performance liquid chromatography (HPLC) has been developed. A recently introduced Onyx™ monolithic C18 (50 mm × 4,6 mm, Phenomenex®) with 5 mm monolithic precolumn were used for the first time for creating sequential injection chromatography system based on a FIAlab® 3000 with a six-port selection valve and 5,0 ml syringe pump in study. The mobile phase used was acetonitrile/water (35:65, v/v), pH 3.3 adjusted with acetic acid at flow rate 15 $\mu l.s^{-1}$. UV detection provided by fibre-optic DAD detector was set up at 240 nm. Propylparaben was chosen as suitable internal standard (IS). There is only simple pre-adjustment of the sample of topical solution (dilution with mobile phase) so the analysis is not uselessly elongated. Parameters of the method showed good linearity in wide range, correlation coefficient >0,999; system precision (relative standard deviation, R.S.D.) in the range 0,45–1,95% at three different concentration levels, detection limits (3σ) 1,00 $\mu g.ml^{-1}$ (salicylic acid), 0,66 $\mu g.ml^{-1}$ (triamcinolone acetonide) and 0,33 $\mu g.ml^{-1}$ (propylparaben) and recovery from the pharmaceutical preparations in the range 97,50–98,94%. The chromatographic resolution between peaks of compounds was more than 4,5 and analysis time was 5,1 min under the optimal conditions. The advantages of sequential injection chromatography against classical HPLC are discussed and showing that SIC can be a method of option in many cases.