Caroline Magnani Spagnol, J Chromatogr Sep Tech 2016, 7:6(Suppl)
http://dx.doi.org/10.4172/2157-7064.C1.020

Quantification of caffeic acid in cosmetic formulations by an eco-friendly HPLC method

Caroline Magnani Spagnol
Sao Paulo State University, Brazil

Introduction: The caffeic acid (CA) is a phenolic compound with powerful antioxidant activity. The emulsions are widely used by the consumer; however, preparations developed in the form of dry film are presented as a technological alternative.

Aim: The aim of this work was to develop and validate a HPLC method for determination of CA in cosmetic formulations.

Methods: HPLC analysis was performed on a Waters™ HPLC with UV-Vis detector, water column RP18 (XDB, 4.6×250 mm, 5 µm); water: ethanol 60:40 (v/v); pH 2.5 adjusted with acetic acid as mobile phase and flow rate of 0.7 mL min^{-1} at 325 nm.

Results: The method was linear over the concentration range of 10-60 µg/mL (r^2=0.9999) with limits of detection and quantification of 1.44 and 4.38 µg/mL, respectively. In the specificity, the peaks obtained with the mobile phase and placebo solution showed no interference in the analysis. Method specificity was also checked by comparing the chromatograms obtained from CA solution in forced degradation procedure and it showed that degradation products did not affect the CA peak. The method was robust, since small changes in the method did not cause significant variations in results. The retention time of CA was 5.9 min.

Conclusion: The results indicated that the HPLC method presented linearity, selectivity, accuracy, precision, robustness, adequate detection and quantification limits; with the advantage of having a shorter time compared to existing methods and does not use buffer in the mobile phase. Excellent conditions were chosen in order to obtain a simple and fast HPLC method which can be easily applied in routine analysis of CA in cosmetic formulations.

Biography

Caroline Magnani Spagnol has completed her degree in Biochemistry Pharmacy. She has completed her Master's in Pharmaceutical Sciences and currently pursuing her PhD from São Paulo State University, Brazil. She has published more than 8 papers in reputed journals with 485 reads.

carol.magnani@hotmail.com

Notes: