Developing spectral numerical factor technique for the determination of amlodipine besylate and the latest generation of statins in their new pharmaceutical combination

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Abstract

Spectral numerical factor techniques have been developed for quantification of a new pharmaceutical combination. Five simple, fast and accurate spectrophotometric methods using spectral factor manipulation have been tested and validated so as to determine quantitatively a new fixed-dose combination tablet containing both amlodipine besylate (ADB) and rosuvastatin calcium (ROS). Namely, these methods are induced dual wavelength, absorbance correction, absorbance subtraction, amplitude correction and advanced amplitude subtraction. Their corresponding spectral factors are equality, absorption, absorbance, amplitude and unity factor, respectively. Calibration curves of ADB and ROS were set up for all the previously mentioned methods under the optimum conditions in a concentration range of 3.0–21.0 μg/mL with correlation coefficients ≥0.9990. Selectivity was calculated by analyzing laboratory-prepared synthetic blends of the cited drugs. A comparative study between these methods and the reported ones has been carried out statistically forming a judgment that the difference between both results is totally insignificant. Actually, the suggested spectral factor technique is so effective for use in routine laboratory essay owing to its simplicity, rapidity and precision. Generally, the proposed factor procedures have the ability to run smoothly without any interference from additives that may deteriorate analysis efficiency of a pharmaceutical combination

Spectrochemica Acta Part A: Molecular and Biomolecular Spectroscopy 2019, July