Investigating advanced approaches based on iso-absorptivity coefficient in unresolved spectral signals of binary mixtures

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Abstract

everal spectrophotometric approaches utilize different functions of the iso-absorptivity coefficient in zero-order absorption signals and its manipulated spectra. This work introduced an investigation concerning the efficiency power of recent methods based on iso-absorptivity coefficient in different spectral signals. These methods were as follows: absorptivity centering method (a-Centering), absorbance subtraction method (AS), amplitude modulation method (AM,) and amplitude summation method (A-Sum). These methods were applied to determine the binary mixture of ofloxacin (OFX) and dexamethasone (DXM). Linearity of the proposed methods was investigated in the range of 1.0ï10.0¡εg/ml for both drugs. The proposed methods were validated as per ICH guidelines and were successfully applied for the simultaneous determination of OFX and DXM in their pharmaceutical preparation without interference from additives. Statistical analysis of the results obtained by the proposed spectrophotometric methods compared with a reported method revealed no significant difference between the proposed and reported methods, confirming accuracy and precision at 95% confidence limit.

Journal of Analytical Methods in Chemistry 2019, February