SPECTRAL RESOLUTION AND SIMULTANEOUS QUANTIFICATION OF LEVODPA, CARBIDOPA AND ENTACAPONE BY ARTIFICIAL NEURAL NETWORKS

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Levodopa, carbidopa and entacapone in pharmaceutical formulation were simultaneously quantified by UV-Vis spectrophotometric studies and artificial neural networks (ANN). Absorption spectra of three components were recorded in 200-400 nm spectral region with an interval of 1 nm. The calibration models were thoroughly evaluated at several concentration levels using the spectra of synthetic ternary mixture. Two layer feed-forward neural networks using the back-propagation algorithm (BP) has been employed for building and testing models. The number of neurons in the hidden layer was optimized. The relative standard deviation (RSD) for each component in the real sample was calculated as 0.045, 0.486 and 0.214 for levodopa, carbidopa and entacapone, respectively. The results showed a very good agreement between true values and predicted concentration values and were compared with the standard chromatographic method results. The proposed procedure is a simple, precise and convenient method for the simultaneous determination of levodopa, carbidopa and entacapone in commercial tablets

Biography

Mahsa khalili has completed her BSC in Applied Chemistry, in 2007 from IAU (Karaj Branch). She followed her education at Chemistry and Chemical Engineering Research Center of IRAN and received her MSc degree in Analytical Chemistry. Due to her motivation, she has experienced a vast range of quality control and research activities in the field of Food and Drug. She has started her PhD education in 2014. She also has job experience as a QC Supervisor in a pharmaceutical company. She is Chair of the Board of Directors in NAPLAB, her own R&D Laboratory as well. She has published two ISI papers until now.

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