

## **Spectral Analysis Approaches for Simultaneous Determination of Binary Mixtures with Overlapping Spectra: An Application on Pseudoephedrine Sulphate and Loratadine**

**Authors :** Sara El-Hanboushy, Hayam Lotfy, Yasmin Fayez, Engy Shokry, Mohammed Abdelkawy

**Abstract :** Simple, specific, accurate and precise spectrophotometric methods are developed and validated for simultaneous determination of pseudoephedrine sulphate (PSE) and loratadine (LOR) in combined dosage form based on spectral analysis technique. Pseudoephedrine (PSE) in binary mixture could be analyzed either by using its resolved zero order absorption spectrum at its  $\lambda$  max 256.8 nm after subtraction of LOR spectrum or in presence of LOR spectrum by absorption correction method at 256.8 nm, dual wavelength (DWL) method at 254nm and 273nm, induced dual wavelength (IDWL) method at 256nm and 272nm and ratio difference (RD) method at 256nm and 262 nm. Loratadine (LOR) in the mixture could be analyzed directly at 280nm without any interference of PSE spectrum or at 250 nm using its recovered zero order absorption spectrum using constant multiplication(CM).In addition, simultaneous determination for PSE and LOR in their mixture could be applied by induced amplitude modulation method (IAM) coupled with amplitude multiplication (PM).

**Keywords :** dual wavelength (DW), induced amplitude modulation method (IAM) coupled with amplitude multiplication (PM), loratadine, pseudoephedrine sulphate, ratio difference (RD)

**Conference Title :** ICEPC 2016 : International Conference on Ethnopharmacology and Pharmaceutical Chemistry

**Conference Location :** London, United Kingdom

**Conference Dates :** August 25-26, 2016