Summary and conclusion

Chapter 10

ATOR and FENO

A simple and precise method involving simultaneous equation, first derivative zero crossing, Q- absorbance, ratio derivative spectrophotometry, four chemometric techniques, HPLC and HPTLC methods were developed for the determination of ATOR and FENO in pharmaceutical formulation. The lower correlation coefficient values 0.947, 0.972, 0.977 and 0.970for ATOR estimation in CLS, ILS, PCR and PLS were found respectively. However, this was expected due to very low concentration differences quantified in these techniques. Further, after the addition of known amounts of standard drugs to the commercial formulation we found that the amount of these drugs or their spectra compare to the standard remained unchanged. Hence good agreement was seen in the assay results of pharmaceutical formulation. It can be concluded that all the proposed methods is a good approach for obtaining reliable results.

ATOR and AMLO

For routine analytical purpose it is always necessary to establish methods capable of analysing huge number of samples in a short time period with due accuracy and precision. HPTLC method and ratio spectra derivative spectrophotometric technique and spectrophotometric techniques coupled with multivariate algorithms were described. Spectrophotometric technique ratio first derivative and multivariate algorithms can generate large amount of quality data, which serve as highly powerful and convenient analytical tool. Although the HPLC methods are more specific than the HPTLC and chemometric methods, it needs expensive equipment and materials. Chemometric and HPTLC methods are non-polluting, less expensive by comparison and they do not require sophisticated instrumentation and any prior separation step. Good agreement was seen in the assay results of pharmaceutical formulation as well as in laboratory prepared mixtures by developed methods.

ATOR and EZET

The HPLC, HPTLC method and spectrophotometric techniques (Q- Absorbance) and spectrophotometric techniques coupled with multivariate algorithms were described for the estimation of above-mentioned combination drugs. The results of validation parameters are well within the limits of official compendiums. Good agreement with the analysis of pharmaceutical formulations and laboratory synthetic mixtures ensures that the proposed validated analytical techniques can be adopted in quality control laboratories for the routine estimation of these titled ingredients.

ATOR and RAMP

The HPLC, HPTLC method and spectrophotometric techniques (simultaneous equation method, First derivative zero crossing, ratio first derivative) and spectrophotometric techniques coupled with multivariate algorithms were described. Enthusiastic results demonstrating that the proposed methods were highly compatible with the parameters required to validate an analytical methods. The run time of the HPLC procedure is only four minutes. The spectrophotometric methods do not require sophisticated instrumentation or any prior separation step, which make them economical relative to the HPLC and HPTLC procedure. Good agreement was seen in the assay results of pharmaceutical formulation as well as in laboratory prepared mixtures by developed methods.

NEB and HCTZ

The HPLC, HPTLC method and spectrophotometric techniques (simultaneous equation method, First derivative zero crossing, ratio first derivative) and spectrophotometric techniques coupled with multivariate algorithms were described good agreement with validation parameters according to the official guidelines in terms of predictions, linearity, accuracy, robustness and precision. Once again in this HPLC procedure run time is only four minutes. The spectrophotometric methods HPLC and HPTLC procedures were found to be more economical. Good agreement

was seen in the assay results of pharmaceutical formulation as well as in laboratory prepared mixtures by developed methods.

The proposed chemometric methods are less expensive, mainly non-polluting and equally reliable when compare to HPLC, HPTLC and other modern sophisticated methods. The programme, which is required to run chemometric algorithm on the R-software environment, is available with mentor of this dissertation work. This programme can be adopted in new generation UV-spectrophotometers and can be used for the analysis of various pharmaceutical active ingredients.