Objective of the research work

1) To develop bioanalytical methods for pharmaceutical industry by using novel techniques for quantification of drug molecules such as liquid chromatography–tandem mass spectrometry. To help address these challenges, the utilization of analytical technologies and high-throughput automated platforms in order to perform more experiments in a shorter time frame with increased data quality.

2) The developed bioanalytical method should be fully validated for quantifying drug molecules fast, selective and reproducible. Validation experiments included study of matrix effect, anticoagulant effect from different biological matrixes lots, intra- and inter-day precision and accuracy, selectivity/specificity, sensitivity metabolite interferences and various stability tests such as freeze thaw stability, stock solution stability, and bench top stability.

3) Febuxostat is a xanthine oxidase inhibitor, achieves its therapeutic effect by decreasing serum uric acid. On detailed literature survey of febuxostat, it was found that there was not a single Analytical or bioanalytical method reported for estimation of febuxostat. No stability indicating assay method is published to reveal specificity and degradation study. The non-availability of LC-MS/MS method until now for estimation of febuxostat from biological matrix form made it worthwhile objective to establish a simple, accurate, rapid and sensitive method using LC-MS/MS for the quantitation of febuxostat in human plasma form according to USFDA guidelines.

4) Clebopride is a substituted benzamide with prokinetic and antiemetic properties. On detailed literature survey of clebopride, it was found that there was few LC-MS/MS method reported for estimation of clebopride from human plasma, which was found time consuming and costly. Therefore, the objective of present work was to develop simple isocratic bioanalytical method to estimate clebopride from human plasma with due consideration of accuracy, sensitivity, rapidity, economy, selectivity, stability according to USFDA guideline.

5) On detailed literature survey of candesartan, it was found that no LC-MS/MS method reported for estimation of candesartan from human matrix, other method found which was time consuming. Therefore, the objective of present work was to develop simple, time saving, sensitive, accurate and precise method by using USFDA guidelines.