CHAPTER IX

Concluding Remarks

This chapter outlines the remarks of the investigator about the proposed spectrophotometric and spectrofluorimetric methods for the assay of selected drugs in various samples.
Analytical chemistry, in general and pharmaceutical analytical chemistry in particular, has registered a phenomenal growth during the last few decades partly due to untiring efforts of pharmaceutical analytical chemists to develop new/modify analytical techniques for qualitative and quantitative analyses. This has been reflected in the observation that majority of the research articles in the field of pharmaceutical chemistry are related to the analysis of various class of drugs by employing different analytical techniques.

With ever growing demand on drug specificity to fight against new illnesses, the newer drugs arrive into market at such a great pace that it has become difficult to keep abreast of their merits and demerits. Nevertheless a strict control on the quality of the drugs and their therapeutic action is very important. Hence, the pharmaceutical analysis plays a pivotal role in quality assurance, control of pharmaceutical chemicals and pharmaceuticals. For this, the regulatory authorities have made some useful rules and regulations, and they publish standardized methods (like B.P., U.S.P., I.P., EP, etc.,) for maintaining the quality of the drugs.

Keeping in view of the increasing demands on quality assurance, sincere efforts have been made to contribute, a little, to pharmaceutical analytical chemistry by way of developing simple, cost effective, rapid, sensitive and accurate methods for the determination of selected drugs of pharmaceutical importance.

In the present study, the investigator has selected various class of drugs viz., antihistaminic, antihypertensive, antiparkinson, antitubercular, anti-inflammatory, tranquillisers and antibacterial, and developed simple, reasonably sensitive and selective spectrophotometric and spectrofluorimetric methods for their assay. The selected drugs readily yielded coloured species/fluorophores upon interaction with the reagents available at most of the laboratories. These species have been followed either spectrophotometrically or spectrofluorimetrically. The species are stable over the period of 35 min to several hours, thereby making the methods more practicable. Moreover, no method involves any stringent reaction conditions.

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The results of the proposed methods are in good agreement with the labeled and those obtained by the reported/official methods. The results are reproducible. Moreover, all the results have been subjected to rigorous statistical data treatment. Hence, the proposed methods could be adopted as alternatives to official methods.

The novelty of the so developed spectrophotometric and spectrofluorimetric methods has been well demonstrated by applying these methods for the analysis of bulk samples, pharmaceutical formulations and spiked biological samples.

The suitability of the proposed methods has been thoroughly investigated by analyzing selected drugs in presence of commonly associated excipients and additives. It is evident from the data presented in appropriate chapters that they do not interfere in the determination of selected drugs even if they are present in large excess.

The *sensitivity*, *rapidity*, *simplicity* and *accuracy* are the special features of the developed methods compiled in this thesis compared to reported/official methods.

In view of the results presented in this thesis, the investigator hopes that the proposed spectrophotometric and spectrofluorimetric procedures could be safely used as better alternatives to the existing methods for the determination of selected drugs in bulk samples, pharmaceutical formulations and spiked biological samples for routine quality control.