A phenomenal growth in the field of pharmaceutical analysis has been observed during the last few decades partly due to untiring efforts of pharmaceutical analytical chemists to develop new/modify the existing analytical techniques for qualitative and quantitative analysis. Due to this, it is now possible to determine the analyte in different samples even if it is present in trace amounts in relatively free form or in complex matrices. This is quite evident from the observation that majority of the research articles in the field of pharmaceutical analytical chemistry are related to the assay of various class of drugs by different analytical techniques.

Newer drugs are being pushed into market for the treatment of diseases and often for maintenance of better quality of human health at such a great pace that it has become difficult to keep abreast of their merits and demerits. Hence, the quality evaluation of the drugs and their therapeutic actions assume significance. For this, the regulatory authorities have made rules and regulations, and they publish standardized (Official) methods (like BP, USP, IP, EP, etc.,) for quality assurance in pharmaceutical industries.

In the present study, the investigator has selected different class of drugs such as antidepressant, antiepileptic, anticonvulsant, gastrointestinal agent, β-lactum antibiotic, anticholesteremic agent and peripheral vasodilator, and developed simple, cost effective, rapid, sensitive, reasonably precise and
accurate spectrophotometric and HPLC methods for their assay in bulk, formulations and plasma samples in view of the increasing demands on quality assurance and for clinical studies. Among several analytical techniques available, the investigator has employed chromatographic and spectrophotometric techniques which are known for simplicity and reliability. The selectivity and sensitivity of spectrophotometric methods depend only on the nature of chemical reactions involved in color development or formation of chromophores but not on the sophistication of the instrument. HPLC is a versatile tool for both qualitative and quantitative analysis of drugs.

The developed procedures involve analytical reagents and solvents (for mobile phase and extraction) which are cheaper and readily available. Most of the methods do not involve critical reaction conditions. The total analysis time in all the proposed methods is less.

An added advantage of the proposed methods is the relative freedom from the interference by various excipients and additives. The utility of the proposed spectrophotometric and HPLC methods have been well demonstrated by applying these methods for the analysis of bulk samples, dosage forms and plasma samples. The results of the proposed methods are in good agreement with the labeled and those obtained by the reported/official methods. Moreover, the results have been supported by statistical parameters.

In view of the above, the investigator believes that the proposed spectrophotometric and HPLC methods could be safely employed as better alternatives to the existing methods for the quality evaluation of selected drugs.