INTRODUCTION

Research in the field of pharmaceuticals has its most important task in the development of new and better drugs and their successful introduction into clinical practice. The word 'drug' is derived from the French word ‘drogue’, which means a dry herb. In general, a drug may be defined as a substance used in the prevention, diagnosis, treatment or cure of disease in man or other animals.

According to WHO, a drug may be any substance or product which is used or intended to be used for modifying or exploring physiological systems or pathological states for the benefit of the recipient.

Organic chemistry and medicinal chemistry share a remarkable common history. The relationship of medicinal chemistry to other disciplines has been indicated by the following diagram:

Chemistry and Pharmaceuticals → Biochemistry → Biopharmaceuticals → Medicinal chemistry → Pharmacology → Internal medicine → Biology and Toxicology → Microbiology → Pathology.

The basis of understanding in the medicinal chemistry like in an awareness of the relationships between the chemistry of a particular compound or group of compounds and their interactions with the body, which is known as structure activity relationship, and the mechanism by which the compound influences the biological system, which is known as its mode of action.

The chemistry of the heterocyclic compounds is as logical as that of aliphatic or aromatic compounds. A heterocyclic compound is one, which possesses acyclic structure with at least two different kinds of atoms in the ring. Heterocyclic compounds have great applicability in pharmacetics because they have specific chemical reactivity and provide false synthon in biosynthetic process or block the normal functioning of biological receptors. Among large number of heterocycles found in nature, heterocycles containing nitrogen are most abundant than those containing oxygen or sulphur owing to their wide distribution in nucleic acid instance and involvement in almost every physiological process of plant and animals.

Natural products containing heterocyclic compound such as alkaloids and glycosides have been used since old age, as remedial agents. Febrical alkaloid from ancient Chinese drug chang shan, reserpine from Indian rouwolfia, curen alkaloid from arrow poison codeiene, tropine and strychnine are all examples of heterocyclic compounds. Many antibiotics like
penicillin, cephalosporin, norfloxacin etc., veterinary products like atrazine and simazine are well known examples of some compounds of medicinal interest.

In the pharmaceutical field, these have always been and will continue to be a need for new and novel chemical inhibitors of biological function. Our efforts are focused on the introduction of chemical diversity in the molecular framework in order to synthesizing pharmacologically interesting compounds of widely different composition.