

PREFACE

Synthetic organic chemistry progress is associated with searching and synthesis of new organic compounds with desired properties. The great challenge for the pharmaceutical industry is to proceed to innovate, to provide clinically discriminated medicines and really make a significant change in patient's livelihood. For every 5,000-10,000 organic compounds that enter the research and development (R&D) pipeline, eventually only one could be able to receiving the approval and clinical development takes about 10-12 years.

Heterocyclic compounds plays very vital role in the chemistry. This is not because of their abundance in plant kingdom, in animals and in nature, but above all because of their, biological, chemical and technical significance of the ~ 116 millions of chemical compounds presently registered in chemical abstracts, about one half contains heterocyclic system.

Among the heterocyclic compounds, nitrogen heterocycles are the most abundant and basic scaffolds found to be present ubiquitously in a variety of natural products, synthetic drugs, agrochemicals and pharmaceuticals. The existence of nitrogen heterocycle as a necessary structural motif in a variety of biologically active compounds and their extensive applications, these scaffolds have long been a topic of enormous interest, and considerable efforts have been made to the development of novel methodologies and technologies for their synthesis which might lead to the invention of novel and more potent compounds in medicinal chemistry.

The large numbers of heterocyclic building blocks were identified for their varied applications in drug discovery and pharmaceutical research. The majority of heterocyclic organic compounds containing nitrogen have been confirmed to have the better biological activity than heterocyclic organic compounds without nitrogen. So in this regard, nitrogen containing Indole and pyridine derivatives are chosen as vital building blocks for drug discovery.