

: SYNOPSIS :

The dissertation entitled, "SYNTHESIS OF SOME NEW INDOLE DERIVATIVES" presented to the Faculty of Science, Shivaji University, Kolhapur, in partial fulfilment of the degree of Master of Philosophy in Chemistry.

The Dissertation consists of three chapters and embodies accounts of Chapter one, an introduction to the subject, a brief survey of literature and scope of present work; Chapter two, an experimental part and spectral interpretation; chapter three, evaluation of antibacterial activity, of synthesised compounds, results and conclusion .

CHAPTER ONE :

An introduction chapter describes indoles as an interesting class of substituted benzopyrrole having wide ranging applications. Many important medicines, insecticides and biologically active substances, constitute the members of this series of heterocyclic compounds. The biological activities such as antibiotic, anti-inflammatory, antibacterial, antifungal, antitubercular etc. of indole derivatives have been reported. In addition to these properties they are also used to improve image quality in photography indicated with due references.

The biological, industrial and commercial importance of these derivatives has stimulated to undertake the present dissertation work. The first chapter also comprises of a brief survey of related literature on different

approaches for the synthesis of indole derivatives possessing different biological activities.

It includes the scope of present work indicating that though anti-microbial and anti-inflammatory properties of indole derivatives have been reported. Some more work is necessary to study the relation between chemical constitution and biological activity.

The title compounds in the present study are synthesised by new route and tested for antibacterial activity against different types of bacteria.

CHAPTER TWO

Chapter two consists of four parts - part I, part II, part III and part IV Part I describes the details of experimental work on the synthesis of N-propyl amino-2,5-dimethyl-3-phenyl indole and its derivatives while part II deals with the synthesis of N-propylamino, 2,3,dihydro, 5-methyl indole and its derivatives Part III contains the synthesis of N-Propylamino, 2-methyl, 3-phenyl indole and its derivatives. Part IV includes the synthesis of N-Propylamino 2,3,dihydro indole and its derivatives.

N-substituted indoles are synthesised by new route, using p-toluidine and aniline as starting materials. Aromatic amines were first converted into their corresponding N-cyanoethyl amines by a known method. These amines were further treated with α -benzoyl ethyl bromide and chloroacetyl chloride to form substituted N-cyanoethylamino indole and substituted N-cyanoethyl,

2,3-dihydro indole respectively by using; TEA ii) P_2O_5 in xylene / i) TEA $AlCl_3$ catalyst. The N-cyanoethyl indoles are further reduced by $LiAlH_4$ to give N-alkyl amino indoles. The different derivatives of these compounds were prepared.

All the compounds encountered in part I, part II, part III and part IV are characterised by M.P./B.P., elemental analysis, UV, IR and PMR spectra.

This part also incorporates the spectral interpretation of synthesised compounds in support to their structures.

CHAPTER THREE

Chapter three deals with the evaluation of antibacterial activity of the compounds and it throws some light on the relation between structure and the antibacterial activity of the compounds.