

Introduction

The lipid fraction obtained from plants animals contains another important groups of compounds known as steroids. Steroids are the important “biological regulator’s” that nearly always show dramatic physiological effect when they are administered to living organism. Among these important compounds are male and female sex hormones, adrenocortical hormones, D vitamins, the bile acids, and certain cardiac position. Steroids are also derivative of the perhydrocyclopentanophenanthrene ring systems. The field of steroids has provided a host of interesting problems of isolation of the steroid entities from natural sources, their structure elucidation, biochemical studies, preparation of many analogues of potential medicinal interest and search of suitable method for industrial production on of steroids drugs. During this unending process many problems of fundamental organic chemical aspects have been successfully solved and many new compounds of diverse pharmacological activity and therapeutic interest have been discovered. Alauddin and Martin smith^{1,2} and martine-smith and sugrue³ have reviewed biological activities in steroids possessing nitrogen atom, both of natural and synthetic origin.

In order to design, synthesize, and evaluate the new steroidal derivatives like oxa and azasteroids with useful biological activities, during the last decade the major effort of the chemists was directed towards modification in the structure of steroids in order to enhance their valuable non-hormonal activity and increase selectively certain parameters of biological activity of the parent hormones. It also included the study of the activity enhancing groups that would confer increased oral activities.

Our laboratory concerned mainly with the synthesis of organic compounds and their identification and characterization by the chemical and spectral studies, have been engaged for the last two decades in preparation of modified steroids. The synthesis of a large number of oxa and azasteroids mainly from cholestane and stigmastane series, have been reported. Backmann rearrangement, Schmidt reaction and Baeyer-Villiger oxidation

have been extensively used for these syntheses. The characterization of these compounds has been achieved by chemical and spectral methods employing I.R., ¹HNMR spectroscopy and mass spectrometry.

In the present work an attempt has been made to prepare steroidal benzothiazepine derivative, by the reaction of 2-aminothiophenol with some easily accessible steroidal unsaturated ketones under microwave irradiation. We have also carried out the synthesis of some unknown steroidal indoles, and steroidal lactams from the ketone by reaction with phenylhydrazine or by schmidt reaction respectively. The structure of these products are established on the basis of spectral and chemical evidences.

The results are described in the following chapters.