Aim and Objectives
3. AIM AND OBJECTIVES

Comprehensive literature survey on coumarin and pyrazole revealed that the interest on these compounds has led to development of newer/impressive/novel techniques of their synthesis and evaluation for different biological activities.

The concerned literature presents a plethora of compounds with varied structural features and substitution at several positions in coumarin and pyrazole structure having antioxidant activity.

In the pharmaceutical field, there is a need for new and novel chemical inhibitors of biological functions. Our efforts are focused on the introduction of chemical diversity in the molecular frame work in order to synthesizing heterocyclic molecules which can show antioxidant property.

With the above preamble, the present work entitled “Development of Novel Antioxidants as Excipients and Anti-aging Drugs” has been undertaken with the following objectives,

**Part-I** deals with developing a method for the synthesis of coumarin derivatives and characterizing them by physical and spectral analysis.

**Part-II** deals with evaluation of synthesized derivatives for antioxidant activity.

The objective of the present work has been aimed at achieving the following,

1) Synthesis of 3-acetyl coumarin and 3-acetyl -8-methoxycoumarin
2) Synthesis of bromoacetyl coumarin and 3-(Bromoacetyl) -8-methoxycoumarin
3) Substituted 3,5-Diphenyl-4,5-dihydropyrazole-1-carbothioamide preparation
4) Condensation of substituted 3,5-Diphenyl-4,5-dihydropyrazole-1-carbothioamide with bromo acetyloumarin and 3-(Bromoacetyl) -8-methoxycoumarin
5) Characterization of synthesized compounds using melting point, thin layer chromatography, Infrared spectra, NMR spectra and mass spectra.

6) Evaluation of compounds for antioxidant activity.