ABSTRACT
The present thesis entitled **STUDIES ON ANTITUMOUR XANTHANOLOIDS FROM XANTHIUM GENUS** deals with the isolation, purification and characterisation of some novel sesquiterpene lactones from *Xanthium strumarium* Linn (N.O. Compositae).

It consists of five chapters. A brief resume of each of the chapters is described below:

**CHAPTER - I : INTRODUCTION**

This is an introductory chapter. It describes plant originated anticancerous components with special reference to sesquiterpene lactones. Some recently isolated sesquiterpene lactones, xanthanolides, their stereochemistry and significance as anticarcinogenic agents have been incorporated in this chapter. It gives an account of the therapeutic importance of *Xanthium strumarium* Linn., problem taken and work done.

**CHAPTER - II :**

**ISOLATION AND STUDY OF THE NOVEL XANTHANOLIDE; 4-DIHYDRO-2-OXO-1β,5ß-EPoxy TOMETOSIN FROM THE FRUITS OF XANTHIUM STRUMARIUM LINN.**

This chapter incorporates the study of a novel xanthanolide (1) (0.064% yield), molecular formula C_{15}H_{20}O_5; eims, m/z 280 M⁺; [α]_{D}^{26} = -52 (c = 0.5, CHCl₃).
obtained from the EtOAc soluble fraction of the residue of 90% EtOH extract of the fruits of *Xanthium strumarium* Linn. The isolated compound was identified as; 4-dihydro-2-oxo-1β,5β-epoxy tomentosin by chemical transformations and spectroscopic methods.

![Chemical structure](image)

**CHAPTER - III:**

**ISOLATION AND STUDY OF THE NOVEL XANTHANOLIDE; DESACETYL-1α,5α-EPoxy-6β-HYDROXY-8-EPi-XANTHUMANOL FROM THE FRUITS OF XANTHIMUM STRUMARIUM LINN**

The CHCl₃ soluble part of the residue of 90% EtOH extract of the fruits of *Xanthium strumarium* Linn., when worked-up, afforded a colourless grum (2) (0.069% yield), molecular formula C₁₅H₂₂O₆; eims, m/z 298 M⁺; [α]D²⁵ = -49 (C = 0.3, CHCl₃). This chapter deals with the isolation and structure elucidation of the compound (2). It was identified as; desacetyl-1α,5α-epoxy-6β-hydroxy-8-epi-xanthumanol by derivatives preparations coupled with spectral data analysis.
CHAPTER - IV :
ISOLATION AND STUDY OF THE NOVEL XANTHANOLIDE; 6β,9β-
DIHYDROXY-8-EPI-XANTATIN FROM THE LEAVES OF XANTHIUM
STRUMARIUM LINN.

The isolation and structural determination of a
novel xanthanolide (3) (0.059% yield) from the C₆H₆
soluble fraction of 90% EtOH extract of the leaves of
Xanthium strumarium Linn., molecular formula C₁₅H₁₈O₅;
m.p. 128⁰; eims, m/z 278 M⁺; [α]D²₆ = -32 (c = 0.51, CHCl₃),
which was identified as; 6β,9β-dihydroxy-8-epi-xanthatin on
the basis of chemical transformation and uv, ir, nmr
spectroscopy, has been described in this chapter.
CHAPTER V:

ISOLATION AND STUDY OF THE NOVEL XANTHANOLIDE; 5,6β-METHYLENEDIOXY XANTHANOL FROM THE LEAVES OF XANTHIIUM STRUMARIUM LINN.

In this chapter of the thesis, study of a novel xanthanolide (4) (0.052% yield), molecular formula $C_{18}H_{24}O_7$; m.p. 192°; eims, m/z 352 M$^+$; $[\alpha]_D^{28} = -44$ (c = 0.62 CHCl$_3$) from the CHCl$_3$ soluble fraction of 90% EtOH extract of the leaves of Xanthium strumarium Linn. has been discussed. The isolated compound was characterized as; 5,6β-methylenedioxy xanthanol by chemical and spectroscopic methods.