The present thesis entitled "Phytochemical studies of some hepatoprotective Indian Traditional Plants" deals with isolation, purification and identification of the bioactive constituents from aerial part of Andrographis paniculata (Nees.) and fruits of Anthocephalus cadamba their pharmacological activities have been studied in the form of hepatoprotectives against hepatotoxins (CCL4).

It consists of Five chapters which are briefly described as following :-

CHAPTER-I

INTRODUCTION

This chapter includes the function of liver and its importance, it also describes the disorder of liver. It explains the importance of phytochemistry and about the natural products origin of hepatoprotective agents; it includes the medicinal properties of Andrographis paniculata (Nees.) Anthocephalus cadamba describes the contributions of modern methods of phytochemical analysis in the field of chemistry and bibliography.
CHAPTER-II

ISOLATION AND STRUCTURAL STUDY OF FLAVONOIDAL GLYCOSIDE (SU-I): 5, 4' DIHYDROXY FLAVONES-7-O-(α-L-ARIBANOPYRANOSYL (1→4)-O-β-D-GLUCOPYRANOSIDE) FROM THE AERIAL OF ANDROGRAPHIS PANICULATA (NEES.)

This chapter incorporates the isolation and structural elucidation of a flavonoidal-glycoside, which analysed for molecular formula C_{26}H_{30}O_{14}, [M+] 556 [FAB-MS] and m.p. 210-211°C (0.084%) obtained by column chromatography from the benzene soluble fraction of the aerial part of Andrographis paniculata (Nees.) and identified as: 5,4'-dihydroxy-flavone-7-O-(α-L-arabinopyranosyl-(1→4)-O-β-D-glucopyranoside), [SU-I] by various chemical degradations and 1H-NMR, 13C-NMR and mass spectral studies.
CHAPTER-III


This chapter deals with isolation and structural elucidation of SU-II from the chloroform soluble fraction of the aerial part of Andrographis paniculata (Nees.) when worked up by column chromatography yielded a triterpinoidal saponin analysed for C_{42}H_{68}O_{13}, m.p. 189-191°C and [M^+] = 780 (FAB-MS) (yield 0.0302%) and identified as: 3-O-[α-L-rhamnopyranosyl (1→4)-O-β-D-glucopyranoside] olean-12-ene-16β-ol-28-oic acid. [SU-II] by various chemical degradations, colour reactions and ^1^H-NMR, ^13^C-NMR, and Mass spectral studies.
CHAPTER-IV

ISOLATION AND STUDY OF THE FLAVONE-GLYOSIDE (SU-III): 5, 7, 4' TRIOHYDROXY FLAVONE 3' (3"' METHYL, BUT 2"' ENYL) 3-O-β-D-GLUCOPYRANOSIDE FROM FRUITS OF ANTHECEPHALUS CADAMBA

This chapter describes the isolation and structural elucidation of SU-III from the benzene soluble portions when worked up yielded compound SU-III (yield 0.116%) which analysed for molecular formula C_{26}H_{28}O_{11}, [M+] 516 and m.p. 159-160°C. And identified as: 5, 7, 4' trihydroxy flavone 3' (3"' methyl, but 2"' enyl) 3-0-β-D-glucopyranoside.
CHAPTER-V

This chapter include three parts A, B and C.

PART-A

ISOLATION AND STRUCTURAL STUDY OF THE FLAVONOID GLYCOSIDE (SU-IV): KAMPEFEROL-3-O-(α-L-RHAMNOPYRANOSYL (1→2)-O-β-D-GLUCO-PYRANOSIDE) FROM FRUITS OF ANTHOCEPHALUS CADAMBA

This chapter deal with the isolation and structural elucidation of flavone glycoside SU-IV (yield 0.21%) from the ethyl acetate soluble fraction of the concentrated 95% ethanolic extract of fruits of Anthocephalus cadamba when worked up by column chromatography yielded a flavonoidal glycoside, analysed for molecular formula C_{27}H_{30}O_{15}, m.p. 238-239°C and [M^+] 594 [FAB-MS] yield (%) and identified as: Kaempferol 3-O-[α-L-rhamnopyranosyl (1→2)-O-β-D-gluco-pyranoside]. [SU-IV] by various chemical degradations, colour reactions and ¹H-NMR, ¹³C-NMR, and Mass spectral studies.
PART-B

ISOLATION AND STRUCTURAL STUDY OF THE BIOACTIVE FLAVONOIDAL GLYCOSIDE (SU-V): QUERCETIN 4'-O-β-D-GLUCOPYRANOSYL (1→4)-O-β-D-GLUCOPYRANOSIDE

This chapter deal with the isolation and structural elucidation of flavone glycoside SU-V from the ethyl acetate soluble fraction of the concentrated 95% ethanolic extract of fruits of Anthocephalus cadamba when worked up by column chromatography yielded a flavonoidal glycoside, analysed for molecular formula C_{27}H_{30}O_{17}, m.p. 212-214°C and [M⁺] 626 (FAB-MS) (yield 0.523%) and identified as 5, 7, 3, 3' tetra hydroxyl flavone 4'-O-β-D-glucopyranoside (1→4)-O-β-D-glucopyranoside [quercetin 4'-O-β-D-glucophranosyle (1→4)-O-β-D-glucophyranoside] SU-V.
PART-C

HEPATOPROTECTIVE ACTIVITY OF COMPOUNDS (SU-I, SU-II, SU-III, SU-IV AND SU-V)*

This part describes the hepatoprotective activity of compounds (in vivo).

[I] The aerial part of the extract of *Andrographis paniculata* (Nees.) yielded compound SU-I and SU-II that were tested for hepatoprotective activity against hepatotoxins CCl₄, paracetamol, galactoseamine etc. Different assessment of liver function used during study were serum glutamic oxaloacetic transaminase (SGOT), serum glutamic pyruvic transaminase (SGPT), alkaline phosphate (ALKP), total bilirubin (T.Bil.) and direct bilirubin (D.Bil.) which showed that it has significant hepatoprotective activity against hepatotoxins SU-I is more effective against hepatotoxicity induced by using CCl₄ as compared to SU-II.

[II] The fruits extract of *Anthoccephalus cadamba* yielded compound SU-III, SU-IV and SU-V. They also show similar activity. SU-III and SU-V has shown hepatoprotective activity against CCl₄ more effectively then that of SU-IV.

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