

LIST OF FIGURES

FIG. NO.	TITLE	PAGE NO.
1.1	<i>Ailanthus excelsa</i> tree.	8
1.2	<i>Ailanthus excelsa</i> showing flowering twig, fruits and flower.	8
1.3	Structures of quassinoids from <i>Ailanthus excelsa</i> .	12
1.4	Structures of Steroid and Triterpenoid from <i>Ailanthus excelsa</i> .	13
1.5	Structure of Alkaloids from <i>Ailanthus excelsa</i> .	13
1.6	Structures of phenolics from <i>Ailanthus excelsa</i>	14
1.7	Flowers of <i>Butea monosperma</i>	19
1.8	<i>Butea monosperma</i> leaves, flowers and fruit.	19
1.9	Structure of Isobutrin and butrin from <i>Butea</i> flowers	21
2.1	Annexin/Phosphatidyl Serine in early stages of Apoptosis	49
2.2	Distribution of cells after staining with Annexin V and PI	50
2.3	Catheter setting for haemodynamic measurements	53
2.4	SoftEdge™ – Myocyte Cell Length Recording via Digital Imaging	55
3.1	XY-Scatters for <i>in vitro</i> studies on different extracts of <i>Ailanthus</i> leaves.	62
3.2	Total phenolic content in successive and total extracts of <i>Ailanthus</i> leaves.	63
3.3	Effect of <i>Ailanthus</i> extracts on endogenous antioxidant enzymes in ISO induced myocardial infarction.	67
3.4	Effect of <i>Ailanthus</i> extracts on serum cardiac and liver marker enzymes.	67
3.5	Effect of <i>Ailanthus</i> extracts on body weight of rats during treatment	70
3.6	Effect of <i>Ailanthus</i> extracts on Heart weight/body weight ratio during treatment.	70
3.7	Histopathological examination of mice organs for studying the effects of single dose administration of <i>Ailanthus</i> leaves extracts.	71
3.9	Effect of various concentration of AEEA on percentage viability of H9c2 cells at different time period	74
3.10	Effect of H ₂ O ₂ on percentage viability of AEEA pretreated H9c2 cell.	75
3.11	Flow activated cytometric analysis of H9c2 cells pretreated	78

	with different concentration of AEEA and challenged with H ₂ O ₂ and Xanthine-xanthine oxidase after loading with different molecular probes.	
3.12	Confocal images of H9c2 cells loaded with different molecular probes showing the effect of AEEA on H ₂ O ₂ and Xanthine-xanthine oxidase induced stress.	78
3.13	TLC showing nature of compounds in different extracts of leaves of <i>Ailanthus excelsa</i>	80
3.14	Quantification of quercetin in different extracts of <i>Ailanthus</i> leaves by HPTLC.	84
3.15	Calibration plot for standard apigenin	85
3.16	HPTLC fingerprinting for various extracts of <i>Ailanthus</i> leaves	87
3.17	Chromatograms- for total methanol and successive methanol extracts, scanned at 254, 366 and 520nm (after treatment with DPPH reagent in methanol)	91
3.18	XY-Scatters for <i>in vitro</i> studies on different extracts of <i>Ailanthus</i> root bark.	94
3.19	Percentage phenolics present in different extracts of Root bark of <i>Ailanthus excelsa</i> .	96
3.20	TLC plate showing Alkaloidal fraction of root bark	96
3.21	XY- Scatters for <i>in vitro</i> studies on alkaloidal fraction of <i>Ailanthus</i> root bark (AFRB).	97
3.22	Microscopic photographs of visceral organs of mice administered with a single oral dose of extract (2000mg/kg body weight).	98
3.23	Effect of AECHL on complete blood count in rats	99
3.24	Effect of AECHL (5mg/kg b.w, p.o.) on serum levels of bilirubin, uric acid cortisol and creatinine in rats.	103
3.25	Effect of AECHL (5mg/kg b.w, p.o.) on serum levels of GOT, GPT, ALKP, CKMB, LDH and brain dopamine (brain homogenate) in rats.	103
3.26	Effect of AECH on cardiovascular properties of rat heart	105
3.27	Electrocardiogram of rat treated with Chloroform extract of <i>Ailanthus</i> root bark (AECHL)	109
3.28	Photomicrographs showing the effect of AECHL on rat organs (Stained with H & E)	110
3.29	TLC Plates showing different extracts of <i>Ailanthus</i> root bark.	110

3.30	TLC Chromatogram of AFRB run in different solvent system and scanned at 254, 366 nm and 520nm.	113
3.31	Structure of AECHL-1 with its mass fragments	117
3.32	Structure for AECHL-2 and its mass fragments	120
3.33	Effect of various concentration of AECHL-1 on percentage viability of H9c2 cells at different time period	122
3.33	Annexin-V and PI staining of the H9c2 cells treated with AECHL-1 for 48hrs.	123
3.34	Mechanical properties of ventricular myocytes of 2-3 days old infants	126
3.35	Effect of Ionomycin on intracellular calcium levels in H9c2 cell lines	129
3.36	Effect of AECHL-1 on intracellular calcium levels in H9c2 cell lines	130
3.37	Phase contrast images of H9c2 cells showing the effect of AECHL-1. Fig-10 (G-r)	135
3.38	Confocal images of H9c2 cells loaded with different molecular probes showing the effect of AECHL-1 after loading with different molecular probes.	135
3.39	Flow activated cytometric analysis of H9c2 cells pretreated with different concentration of AECHL-1 after loading with different molecular probes.	136
3.40	Effect of AECHL-1 on DNA distribution in different phases of cell cycle of PC3 cells	139
3.41	Cell cycle arrest with AECHL-1 (PI) 48hrs Treatment	140
3.42	Effect of AECHL-1 on PC3, MDA-MB and B16 cell lines at different time interval	145-146
3.43	Effect of AECHL-1 on DNA distribution in different phases of cell cycle of PC3 cells	148
3.44	Effect of AECHL-1 on DNA distribution in different phases of cell cycle of MDA-MB cells	149
3.45	Effect of AECHL-1 on DNA distribution in different phases of cell cycle of B16 cells	151
2.46	Effect of AECHL-1 and Cis-platin on tumor volume in C57 mice	153
3.47	Effect of AECHL-1 on tumor weight to body weight ratio	154
3.48	Effect of AECHL-1 on body weight of mice	155
3.49	C57 mice bearing solid tumor	156
3.50	Tumors isolated from mice	156

3.51	Microscopic examination of liver, heart, kidney, pancreas, spleen and tumors from, control, AECHL-1 and cis-platin treated group.	156
3.52	Western blot analysis of proteins isolated from animal tumors	161
3.53	Effect of various concentration of AECHL-2 on %-viability of H9c2 cells at different time period	163
3.54	Annexin-V and PI staining of the H9c2 cells treated with AECHL-2 for 48hrs.	164
3.55	Effect of AECHL-2 on generation of ROS in H9c2 cells after loading with specific molecular probes	168
3.56	Microscopic slides shoeing effect of AECHL-2 on different organs in C57 mice	168
3.57	Phase contrast photos showing effect of AECHL-2 on H9c2 cells	168
3.58	Flow activated cytometric analysis of H9c2 cells pretreated with different concentration of AECHL-2 after loading with different molecular probes	169
3.59	Effect of AECHL-2 on Intra-cellular calcium level	171
3.60	Contractile properties of ventricular myocytes from 2-3 days old infants.	175
3.61	Estimation of AECHL-2 in different extracts of Ailanthus root bark	178
3.62	Linearity plot for AECHL-2 by Spectrofluorometric method	179
3.63	Total phenolic content in different extracts of Butea flowers	183
3.64	XY- Scatters for <i>in vitro</i> studies on different extracts of Butea flowers	184
3.65	Effect of Butea extracts on endogenous antioxidant enzymes in ISO induced myocardial infarction.	189
3.66	Effect of Butea extracts on serum cardiac and liver marker enzymes.	189
3.67	Effect of Butea extracts on body weight of rats during treatment.	192
3.68	Effect of Butea extracts on Heart weight/body weight ratio during treatment.	192
369	Histopathology of heart and liver showing effect of Butea flower extracts in ISO induced myocardial and liver damage.	194

3.70	Effect of Butea extracts on serum lipid profile.	196
3.71	Effect of various concentration of BFEA on percentage viability of H9c2 cells at different time period	198
3.72	Effect of H ₂ O ₂ on %- viability of BFEA pretreated H9c2 cell.	199
3.73	Confocal images of H9c2 cells loaded with different molecular probes showing the effect of BFEA on H ₂ O ₂ and Xanthine-xanthine oxidase induced stress.	202
3.74	Flow activated cytometric analysis of H9c2 cells pretreated with different concentration of BFEA and challenged with H ₂ O ₂ and Xanthine-xanthine	202
3.75	Effect of BFEA on H ₂ O ₂ induced stress in H9c2 cell lines	202
3.76	Quantification of BFEA-1in different extracts of Butea flowers by HPTLC.	205
3.77	TLC chromatogram for ethyl acetate fraction of <i>B. monosperma</i> flowers in ethyl acetate: formic acid: glacial acetic acid: water (14.28:1.42:1.42:2.85 v/v)	206
3.78	chromatogram for ethyl acetate fraction of <i>B. monosperma</i> flowers in chloroform: acetone: formic acid (14.85:3.36:1.78 v/v)	207
3.79	HPTLC Chromatogram for different extracts and fractions of Butea flowers scanned at 366 (A-D), 254 (E-H) and 520nm (I-L)-after treatment with anisaldehyde sulphuric acid reagent	208
3.80	TLC showing for different extracts of <i>B. monosperma</i>	209
3.81	XY- Scatters for <i>in vitro</i> studies on BM1 from butea flowers.	211
3.82	Effect of BM1 on endogenous antioxidant enzymes in ISO induced myocardial infarction	215
3.83	Effect of BM1 on serum cardiac and liver marker enzymes	215
3.84	Effect of BM1 on body weight of rats during treatment	216
3.85	Effect of BM1 on Heart weight/body weight ratio during treatment.	217
3.86	Effect of addition of shifts reagent on UV absorption spectra of BM	221
3.87	Structure of BM	222
3.88	Effect of various concentration of BM on percentage viability of H9c2 cells at different time period	223
3.99	Effect of H ₂ O ₂ on %- viability of BM pretreated H9c2 cell	225

3.90	Flow activated cytometric analysis of H9c2 cells pretreated with different concentration of BM and challenged with H ₂ O ₂ and Xanthine-xanthine oxidase after loading with different molecular probes.	228
3.91	Confocal images of H9c2 cells loaded with different molecular probes showing the effect of BM on H ₂ O ₂ and Xanthine-xanthine oxidase induced stress.	228
3.92	Effect of BM on H ₂ O ₂ induced stress in H9c2 cell lines- Phase contrast images.	228
3.93	Estimation of BM in various extracts of Butea flowers	230
3.94	HPTLC- chromatogram for BM1	232