
LIST OF FIGURES

Figures	Title	Page
Figure 1.1	Schematic representation of factors involved in progression of cardiac disease.	4
Figure 1.2	WHO report on death caused due to CVDs in world	5
Figure 1.3	Structure of anthocyanin	11
Figure 1.4	Different natural sources of anthocyanins	12
Figure 1.5	HPLC chromatogram profile of RC anthocyanin	18
Figure 1.6	Hypothesis of the study	29
Figure 2.1	Transition of anthocyanin structural forms at different pH	33
Figure 2.2	TLC chromatogram of ARCE	39
Figure 2.3 (A)	GC-MS analysis of crude extract. (A) GC chromatogram	40
Figure 2.3 (B)	GC-MS analysis of crude extract. (B) Mass spectrometry	41
Figure 2.4 (A)	GC-MS analysis of 1 st band separated on TLC. (A) GC chromatogram	42

Figure 2.4 (B)	GC-MS analysis of 1 st band separated on TLC . (B) Mass spectrometry	43
Figure 2.5 (A)	GC-MS analysis of 2 nd band separated on TLC. (A) Chromatogram	44
Figure 2.5 (B)	GC-MS analysis of 2 nd band separated on TLC. (B) Mass spectrometry	45
Figure 2.6	HPTLC chromatogram of ARCE	46
Figure 3.1	ARCE protects H9c2 cells from H ₂ O ₂ induced cell death	60
Figure 3.2	ARCE prevents H ₂ O ₂ induced cytotoxicity in H9c2 cells	61
Figure 3.3	ARCE mediated prevention of H ₂ O ₂ induced apoptosis in H9c2 cells	62
Figure 3.4 (A)	ARCE mediated reduction of H ₂ O ₂ induced intracellular oxidative stress in H9c2 cells	63
Figure 3.4 (B)	ARCE mediated reduction of H ₂ O ₂ induced intracellular oxidative stress in H9c2 cells	64
Figure 3.5 (A)	ARCE mediated regulation of H ₂ O ₂ induced imbalance in mitochondrial membrane potential	65
Figure 3.5 (B)	ARCE mediated regulation of H ₂ O ₂ induced imbalance in caveolin-3	66
Figure 4.1 (A, B)	ARCE mediated regulation of ISO induced imbalance in (A) plasma CK-MB (B) Cardiosomatic index	80
Figure 4.2 (A, B, C)	ARCE prevented ISO induced cardiac damage- Macroscopic observations	81

Figure 4.3	ARCE prevented ISO induced cardiac damage- Microscopic observations	82
Figure 4.4	ARCE prevented ISO induced oxidative stress and apoptosis	83
Figure 4.5	ARCE prevented ISO induced modulations in <i>caveolin-3</i> , <i>ANKRD1</i> and <i>SERCA2a</i>	84
Figure 4.6	Graphical abstract depicting the mode of action of ARCE mediated prevention of experimental induced myocardial infarction	91
Figure 5.1	Schematic diagram of agonist mediated activation of β adrenergic receptor	93
Figure 5.2	Ramachandran plot analysis of β_1 AR	100
Figure 5.3	3D model of Rat β_1 AR	101
Figure 5.4	Sequence alignment of Rat β_1 AR and Turkey β_1 AR	101
Figure 5.5	Molecular interaction of cyanidin-3-glucoside with β_1 AR and Ligplot analysis	102
Figure 5.6	Molecular interaction of cyanidin-3,5-diglucoside with β_1 AR and Ligplot analysis	103
Figure 5.7	Molecular interaction of delphinidin-3-glucoside with β_1 AR and Ligplot analysis	104
Figure 5.8	Molecular interaction of isoproterenol with β_1 AR and Ligplot analysis	105