



TABLE OF CONTENTS

RATIFICATION PAGE	ii
STATEMENT PAGE	iii
DEDICATION	iv
ACKNOWLEDGMENT	v
TABLE OF CONTENTS	vi
LIST OF FIGURES	viii
LIST OF TABLES	x
ABSTRACT	xi
INTISARI	xii
CHAPTER I INTRODUCTION	1
I.1 Background	1
I.2 Research Objectives	3
I.3 Research Benefits	4
CHAPTER II LITERATURE REVIEW AND HYPOTHESIS FORMULATION	5
II.1 Literature Review	5
II.1.1 Chalcone scaffold	5
II.1.2 1,4-Dione intermediates	9
II.2 Hypothesis Formulation and Research Design	11
II.2.1 Hypothesis formulation I	11
II.2.2 Hypothesis formulation II	11
II.2.3 Research design	12
CHAPTER III RESEARCH METHODS	13
III.1 Research Materials	13
III.2 Research Tools	13
III.3 Research Procedure	13
III.3.1 Synthesis of (<i>E</i>)-1-(2-aminophenyl)-3-phenylprop-2-en-1-one (3a)	13
III.3.2 Synthesis of (<i>E</i>)-1-(2-aminophenyl)-3-(4-chlorophenyl)prop-2-en-1-one (3b)	14
III.3.3 Synthesis of (<i>E</i>)-1-(2-aminophenyl)-3-(thiophen-2-yl)prop-2-en-1-one (3c)	14
III.3.4 Synthesis of (<i>E</i>)-1-(2-aminophenyl)-3-(4-methoxyphenyl)prop-2-en-1-one (3d)	14
III.3.5 Synthesis of 1,4-bis(2-aminophenyl)-2-phenylbutane-1,4-dione (5a)	15
III.3.6 Synthesis of 1,4-bis(2-aminophenyl)-2-(4-chlorophenyl)butane-1,4-dione (5b)	15
III.3.7 Synthesis of 1,4-bis(2-aminophenyl)-2-(thiophen-2-yl)butane-1,4-dione (5c)	15
III.3.8 Synthesis of 1,4-bis(2-aminophenyl)-2-(4-methoxyphenyl)butane-1,4-dione (5d)	15



CHAPTER IV RESULTS AND DISCUSSION	16
IV.1 Synthesis of 2'-Aminochalcone Derivatives	16
IV.1.1 Synthesis of (<i>E</i>)-1-(2-aminophenyl)-3-phenylprop-2-en-1-one (3a)	17
IV.1.2 Synthesis of (<i>E</i>)-1-(2-aminophenyl)-3-(4-chlorophenyl)prop-2-en-1-one (3b)	20
IV.1.3 Synthesis of (<i>E</i>)-1-(2-aminophenyl)-3-(thiophen-2-yl)prop-2-en-1-one (3c)	24
IV.1.4 Synthesis of (<i>E</i>)-1-(2-aminophenyl)-3-(4-methoxyphenyl)prop-2-en-1-one (3d)	27
IV.1.5 Summary and proposed mechanism of 2'-aminochalcones synthesis	31
IV.2 Synthesis of 1,4-bis(2-aminophenyl)-2-phenylbutane-1,4-dione Derivatives	33
IV.2.1 Synthesis of 1,4-bis(2-aminophenyl)-2-phenylbutane-1,4-dione (5a)	34
IV.2.2 Synthesis of 1,4-bis(2-aminophenyl)-2-(4-chlorophenyl)butane-1,4-dione (5b)	37
IV.2.3 Synthesis of 1,4-bis(2-aminophenyl)-2-(thiophen-2-yl)butane-1,4-dione (5c)	40
IV.2.4 Synthesis of 1,4-bis(2-aminophenyl)-2-(4-methoxyphenyl)butane-1,4-dione (5d)	44
IV.2.5 Summary and proposed mechanism of 1,4-diones synthesis	47
CHAPTER V CONCLUSION	51
V.1 Conclusions	51
V.2 Recommendations	51
REFERENCES	52
APPENDIX	57