

TABLE OF CONTENTS

TITLE PAGE	i
COVER PAGE	ii
APPROVAL SHEET	iii
PERNYATAAN BEBAS PLAGIASI	iv
ACKNOWLEDGEMENTS	v
PREFACE	vi
TABLE OF CONTENT	viii
LIST OF FIGURES	xi
LIST OF TABLES	xiii
LIST OF APPENDICES	xiv
LIST OF ABBREVIATIONS	xv
ABSTRACT	xvi
CHAPTER I INTRODUCTION	1
A. Background	1
B. Statement of Problems	4
C. The Aims of the Study	4
D. The Significances of the Study	5
E. Literature Review.....	5
1. ROS and oxidative stress	5
2. Antioxidant	7
3. SAR of methoxy and thioether group towards antioxidant activity .	8
4. HGV-5.....	9
5. 3,4,5-Trimethoxybenzaldehyde	10
6. Tetrahydro-4H-thiopyran-4-one.....	11
7. Aldol condensation reaction	11
8. Thin layer chromatography (TLC).....	13
9. Melting point assay	14
10. Spectroscopy	15
11. Antioxidant activity assay	18
F. Theoretical Basis.....	20

G. Hypothesis.....	21
CHAPTER II METHOD OF RESEARCH	22
A. Research Design.....	22
B. Research Variables.....	22
C. Research Materials	22
D. Research Instruments	23
E. Research Places.....	23
F. Research Procedures	24
1. Synthesis of 2,6-bis-(3',4',5'-trimethoxybenzylidene)-thiopyran-4-one	24
2. Antioxidant activity review of 2,6-bis-(3',4',5'-trimethoxybenzylidene)-thiopyran-4-one.....	26
G. Data Analysis	28
CHAPTER III RESULTS AND DISCUSSIONS.....	29
A. Synthesis Result of 2,6-Bis-(3',4',5'-trimethoxybenzylidene)-thiopyran-4-one.....	29
B. Synthesis of 2,6-Bis-(3',4',5'-trimethoxybenzylidene)-thiopyran-4-one.....	30
C. Result Analysis of 2,6-Bis-(3',4',5'-trimethoxybenzylidene)-thiopyran-4-one.....	34
1. Yield of 2,6-bis-(3',4',5'-trimethoxybenzylidene)-thiopyran-4-one..	34
2. Purity test of 2,6-bis-(3',4',5'-trimethoxybenzylidene)-thiopyran-4-one.....	35
3. Structure elucidation of 2,6-bis-(3',4',5'-trimethoxybenzylidene)-thiopyran-4-one.....	37
D. Narrative review on expected antioxidant activity of 2,6-Bis-(3',4',5'-trimethoxybenzylidene)-thiopyran-4-one	62
1. Ability of 2,6-bis-(3',4',5'-trimethoxybenzylidene)-in DPPH neutralization and ferric ion reduction.....	62
2. Antioxidant activity of methoxy group.....	68
3. Antioxidant activity of thioether group.....	74



CHAPTER IV CONCLUSIONS AND SUGGESTIONS	78
A. Conclusions.....	78
B. Suggestions	79
BIBLIOGRAPHY	80
APPENDICES	86