

TABLE OF CONTENTS

TITLE	i
VALIDATION	ii
CERTIFICATE OF AUTHENTICATION	iii
PREFACE	iv
TABLE OF CONTENTS	v
LIST OF FIGURES	vii
LIST OF TABELS	viii
LIST OF APPENDICES	ix
ABBREVIATIONS	x
ABSTRACT	xii
INTISARI	xiii
 CHAPTER I INTRODUCTION	 1
I.1 Background	1
I.2 Research Objective	3
I.3 Research Benefits	3
 CHAPTER II LITERATURES REVIEW	 4
II.1 Literatures Review	4
II.1.1 Natural product from endophytes fungi	4
II.1.2 Endophytic fungi in tropical area	6
II.1.3 Isolation of Endophytic fungi	9
II.1.4 Metabolites screening and isolation methods	11
II.1.5 Stereochemistry of natural product compound	13
II.1.6 Cytine/glutamat transporters	15
II.2 Hypotheses	15
II.2.1 Hypothesis 1	15
II.2.2 Hypothesis 2	16
II.3 Experimental Design	17
 CHAPTER III RESEARCH METHODS	 18
III.1 Materials	18
III.2 Equipments	18
III.3 Procedures	19
III.3.1. Perparation of media	19
A. PDA	19
B. NA	19
C. AGS	19
D. PYG	20
E. BPA	20
III.3.2 Isolation of Endophyte Fungi	20
A. Isolation of endophyte fungi in PDA media	20
B. Isolation of endophyte fungi in NA media	20
C. Isolation of endophyte fungi in AGS media	20

III.3.3 Screening For Secondary Metabolites	21
A. First fermentation	21
B. Screening and chemical profiling	21
C. Second fermentation and partition	21
D. Column chromatography	22
E. Configuration determination techniques	23
F. Configuration determination	23
i. Spectroscopy analysis	23
ii. Synthesis acetone derivative	23
iii. Synthesis of ester	23
III.3.5 Bioassay	23
CHAPTER IV RESULT AND DISCUSSION	25
IV.1 Isolation of Endophyte Fungi	25
IV.2 Screening For Secondary Metabolites	25
IV.2.1 First fermentation	25
IV.2.2 Screening and chemical profiling	26
IV.3 Isolation of novel compound	27
IV.4 Bioactivity Assay	47
CHAPTER V CONCLUSIONS	51
V.1 Conclusions	51
V.2 Suggestions	51
REFERENCES	52
APPENDICES	58