TABLE OF CONTENTS



Objectives of the study

viii

TABLE OF CONTENTS (continued)

9181816g	
20 00000	Page
II MATERIALS AND METHODS	57
Meterials	57
Methods Sec.	63
III RESULTS AND DISCUSSION	76
Screening for AChE inhibitory activity of	76
Haemanthus multiflorus Martyn	
Properties and identification of separated compounds	77
IV CONCLUSION	95
REFERENCES	96
ลี่ปลุคคามรับหาวิทยาลัยเชียงไ	106
COCURRICULUM VITAE by Chiang Mai Univer	S 109
All rights reserv	e d

LIST OF TABLES

· 97818126	
Table	Page
1 Chemical constituents of genus <i>Haemanthus</i>	35
2 The ratios and volumes of eluents for quick column chromatography	66
of ethanol extract of <i>Haemanthus multiflorus</i> Martyn. 3 The R _f values of compound 1 and physostigmine using different	78
developing solvents	
4 The absorption frequencies of compound 1	78
5 The R_f values of compound 2 and physostigmine using different	82
developing solvents	
6 The absorption frequencies of compound 2	82
7 The R_f values of compound 3 and physostigmine using different	86
Copyright [©] by Chiang Mai University of the second	rsity
A l rights reserv 8 The absorption frequencies of compound 3	e d
9 The R _f values of compound 4 and physostigmine using different	90

developing solvents

LIST OF TABLES (continued)



ลิขสิทธิ์มหาวิทยาลัยเชียงใหม่ Copyright[©] by Chiang Mai University All rights reserved

xi

LIST OF FIGURES

		· 97818126	
Fi	igure	20 000 02	Page
	1	Whole plant (a), Stamens (b), Fruit (c), Flower (d), Leaves(e), Bulb (f)	34
	6	of Haemanthus Multiflorus Martyn.	
2	2	Structures of compounds previously isolated from Haemanthus spp.	51
-	3 20	Reaction of AChE with 1-napthyl acetate and the subsequent formation	64
		of the purple dye in the TLC bioautography.	
2	4	TLC bioautographic showing the inhibition of AChE activity of crude	76
		extracts and physostigmine standard	
-	5	UV spectrum of compound 1	79
ລິຍ	6	IR spectrum of compound 1	79
	7	TLC bioautographic showing the inhibition of acetylcholinesterase activit	y 80
Cop)yr	of compound 1 and physostigmine standard	Ι
ΑΙ		rights reserve	Ċ
8	8	UV spectrum of compound 2	83
(9	IR spectrum of compound 2	83

LIST OF FIGURES (continued)

· 1318126	
Figure	Page
10 TLC bioautographic showing the inhibition of acetylcholinesterase activity	ty 84
of compound 2 and physostigmine standard	
11 UV spectrum of compound 3	87
12 IR spectrum of compound 3	87
13 TLC bioautographic showing the inhibition of acetylcholinesterase activity	ty 88
of compound 3 and physostigmine standard	
14 UV spectrum of compound 4	91
15 IR spectrum of compound 4	91
16 TLC bioautographic showing the inhibition of acetylcholinesterase activity of compound 4 and physostigmine standard	ty 92
Copyright [®] by Chiang Mai Univers	ity
All rights reserve	e d

LIST OF SCHEMES

010101

	o and the	
Schem		Page
1	The partition procedure of the combined extract	68
2	The separation procedure of the petroleum ether extract	69
3	The separation procedure of the n-hexane extract	70
45	The separation procedure of the toluene extract	71
5	The separation procedure of the ethyl acetate extract	72
6	Separation of compound 1, compound 2, compound 3 and compound 4	73

ลิขสิทธิ์มหาวิทยาลัยเชียงใหม่ **Copyright[©]** by Chiang Mai University All rights reserved

ABBREVIATIONS AND SYMBOLS

Αβ	Beta-amyloid
ACh	Acetylcholine
AChE	Acetylcholinesterase
AChEIs	Acetylcholinesterase inhibitors
AD	Alzheimer's disease
ApoE4	Apolipoprotein E
APP	Amyloid precursor protein
BuChE	Butyrylcholinesterase
ChE	Cholinesterase
ChEIS	Cholinesterase inhibitors
CNS	Central nervous system
EMEA	the European Medicines Agency
FDA	Food and Drug Administration
GABAA	γ-aminobutyric acid
Copyright	by Chiang Mai University
	g Infrared spectrum e s e r v e d
kg	Kilogram
mg	Miligram
mL	Mililiter

ABBREVIATIONS AND SYMBOLS (continued)



ig

r