

สารที่มีความสามารถจับอนุมูลอิสระจากข้างน้ำว



นางสาวระวีวรรณ แก้วอมตวงศ์

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วิทยานิพนธ์นี้เป็นส่วนหนึ่งของการศึกษาตามหลักสูตรปริญญาวิทยาศาสตรดุษฎีบัณฑิต

สาขาเกษตรเคมีและผลิตภัณฑ์ธรรมชาติ

คณะเกษตรศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย

ปีการศึกษา 2545

ISBN 974-17-1370-3

ลิขสิทธิ์ของจุฬาลงกรณ์มหาวิทยาลัย

I21039562

FREE RADICAL SCAVENGING COMPOUNDS FROM

OCHNA INTEGERRIMA



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ศูนย์วิทยทรัพยากร
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A Dissertation Submitted in Partial Fulfillment of the Requirements

For the Degree of Doctor of Philosophy in Pharmaceutical Chemistry and Natural Products

Faculty of Pharmaceutical Sciences

Chulalongkorn University

Academic Year 2002

ISBN 974-17-1370-3

ระวีวรรณ แก้วอมตวงศ์: สารที่มีความสามารถจับอนุมูลอิสระจากช้าน้ำ (FREE RADICAL SCAVENGING COMPOUNDS FROM *OCHNA INTEGRIMA*)
อาจารย์ที่ปรึกษา: รศ. ดร. กิตติศักดิ์ ลิขิตวิทย์, อาจารย์ที่ปรึกษาร่วม: รศ. ดร. นิจศิริ
เรืองรัมย์, Professor Dr. Norio Aimi, 204 หน้า. ISBN 974-17-1370-3.

โดยใช้วิธีทางโครมาโตกราฟีต่างๆ สามารถแยกสารประกอบเคมี 19 ชนิด จากส่วนใบ
เนื้อไม้ เปลือกต้น เนื้อราก และเปลือกรากของช้าน้ำ การพิสูจน์โครงสร้างอาศัยการวิเคราะห์
ข้อมูลทางสเปกโตรสโคปี ได้แก่ UV, IR, MS และ NMR พบว่าประกอบด้วยสารใหม่ 2 ชนิด คือ
6'''-hydroxylophirone B และ 6'''-hydroxylophirone B 4'''-O- β -glucoside และเป็นสารที่มีรายงาน
มาแล้ว 17 ชนิด ได้แก่ lophirone C, ochnaflavone, calodenone, 5-hydroxy-4'-methoxy-6,7-
methylenedioxy isoflavone, lophirone A, 7''-O-methyl ochnaflavone, squarrosin, 5,3',4'-
trimethoxy-6,7-methylenedioxy isoflavone, 3,3',4',5,7-pentahydroxy-6-prenylflavanone, 3-(2,4-
dihydroxybenzoyl)-4,6-dihydroxy-2-(4-hydroxyphenyl)-1-benzofuran-7-yl 2-(4-hydroxyphenyl)
ethenyl ketone, 3-(2,4-dihydroxybenzoyl)-2,3-dihydro-4,6-dihydroxy-2-(4-hydroxyphenyl)-1-
benzofuran-7-yl 2-(4-hydroxyphenyl) ethenyl ketone, 5,4'-dimethoxy-6,7-methylenedioxy
isoflavone, gerontoisoflavone A, 4',7'-dihydroxy 5-methoxy isoflavone, *trans* tetracocyl ferulate,
2,7,4'-trihydroxy isoflavone และ protocatechuic acid พบว่าสารที่แสดงฤทธิ์จับอนุมูล DPPH
ปานกลาง คือ 3-(2,4-dihydroxybenzoyl)-4,6-dihydroxy-2-(4-hydroxyphenyl)-1-benzofuran-7-yl
2-(4-hydroxyphenyl) ethenyl ketone, 4',7'-dihydroxy 5-methoxy isoflavone และ 2,7,4'-trihydroxy
isoflavone

ศูนย์วิทยทรัพยากร
จุฬาลงกรณ์มหาวิทยาลัย

ภาควิชาเภสัชเวท

สาขาวิชาเภสัชเคมีและผลิตภัณฑ์ธรรมชาติ

ปีการศึกษา 2545

ลายมือชื่อนิสิต.....*ระวีวรรณ แก้วอมตวงศ์*.....

ลายมือชื่ออาจารย์ที่ปรึกษา.....*นิจศิริ เรืองรัมย์*.....

ลายมือชื่ออาจารย์ที่ปรึกษาร่วม.....*นิจศิริ เรืองรัมย์*.....

ลายมือชื่ออาจารย์ที่ปรึกษาร่วม.....*Norio Aimi*.....

4176955133: MAJOR PHARMACEUTICAL CHEMISTRY AND NATURAL PRODUCTS

KEY WORDS: *OCHNA INTEGERRIMA* / FREE RADICAL SCAVENGING COMPOUNDS / FLAVONOIDS

RAWIWUN KAEWAMATAWONG: FREE RADICAL SCAVENGING COMPOUNDS FROM *OCHNA INTEGERRIMA*. THESIS ADVISOR: ASSOC. PROF. KITTISAK LIKHITWITAYAWUID, Ph.D., THESIS CO-ADVISOR: ASSOC. PROF. NIJSIRI RUANGRUNGSI, Ph.D., PROF. NORIO AIMI, Ph.D., 204 pp. ISBN 974-17-1370-3.

By repetitive chromatography, a total of 19 pure compounds were isolated from the leaves, stem wood, stem bark, root wood and root bark of *O. integerrima*. The structures of these compounds were determined by spectroscopic methods (UV, IR, MS and NMR). They included two new compounds, 6'''-hydroxylophirone B and 6'''-hydroxylophirone B 4'''-O- β -glucoside and seventeen known compounds, namely lophirone C, ochnaflavone, calodenone, 5-hydroxy-4'-methoxy-6,7-methylenedioxy isoflavone, lophirone A, 7''-O-methyl ochnaflavone, squarrosin, 5,3',4'-trimethoxy-6,7-methylenedioxy isoflavone, 3,3',4',5,7-pentahydroxy-6-prenylflavanone, 3-(2,4-dihydroxybenzoyl)-4,6-dihydroxy-2-(4-hydroxyphenyl)-1-benzofuran-7-yl 2-(4-hydroxyphenyl) ethenyl ketone, 3-(2,4-dihydroxybenzoyl)-2,3-dihydro-4,6-dihydroxy-2-(4-hydroxyphenyl)-1-benzofuran-7-yl 2-(4-hydroxyphenyl) ethenyl ketone, 5,4'-dimethoxy-6,7-methylenedioxy isoflavone, gerontoisoflavone A, 4',7-dihydroxy 5-methoxy isoflavone, *trans* tetracycl ferulate, 2,7,4'-trihydroxy isoflavone and protocatechuic acid. 3-(2,4-Dihydroxybenzoyl)-4,6-dihydroxy-2-(4-hydroxyphenyl)-1-benzofuran-7-yl 2-(4-hydroxyphenyl) ethenyl ketone, 4',7-dihydroxy 5-methoxy isoflavone and 2,7,4'-trihydroxy isoflavone exhibited moderate DPPH radical scavenging activity.

Department Pharmacognosy

Field of study Pharmaceutical chemistry and natural products

Academic year 2002

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ACKNOWLEDGEMENTS

I am greatly indebted to Associate Professor Dr. Kittisak Likhitwitayawuid, Department of Pharmacognosy, Faculty of Pharmaceutical Sciences, Chulalongkorn University, for his valuable advice, keen interest and encouragement throughout this study.

I would like to express my sincere thanks to Associate Professor Dr. Nijsiri Ruangrungsi, Department of Pharmacognosy, Faculty of Pharmaceutical Sciences, Chulalongkorn University, for his kindly assistance and useful suggestions.

I would like to express my deep gratitude thanks to Professor Dr. Norio Aimi, Laboratory of Molecular Structure and Biological Function, Faculty of Pharmaceutical Sciences, Chiba University, for his valuable guidances and kindness.

I would like to express my gratitude thanks to Associate Professor Dr. Hiromitsu Takayama, Laboratory of Molecular Structure and Biological Function, Faculty of Pharmaceutical Sciences, Chiba University, for his useful advice and help.

I would like to express my grateful thanks to Dr. Mariko Kitajima, Laboratory of Molecular Structure and Biological Function, Faculty of Pharmaceutical Sciences, Chiba University, for her kindly help and suggestions.

I would like to thank all members of the Department of Pharmacognosy, Faculty of Pharmaceutical Sciences, Chulalongkorn University and Laboratory of Molecular Structure and Biological Function, Faculty of Pharmaceutical Sciences, Chiba University for their friendship, assistance and understanding.

I would like to thank the Thailand Reseach Fund, for a 1998 RGJ scholarship and the Association of International Education, Japan, for a reseach grant.

I would like to thank to the Chemical Analysis Center, Chiba University for determination of the mass spectra.

I would like to thank to Assistant Professor Dr. Thitima Pengsuparp, Department of Biochemistry, Faculty of Pharmaceutical Sciences, Chulalongkorn University for permission to use a micro plate reader.

Finally, I wish to thank my family for their love and support.

CONTENTS

	Page
ABSTRACT (Thai).....	iv
ABSTRACT (English).....	v
ACKNOWLEDGEMENTS.....	vi
CONTENTS.....	vii
LIST OF TABLES.....	xii
LIST OF FIGURES.....	xiv
LIST OF SCHEMES.....	xxii
LIST OF ABBREVIATIONS.....	xxiii
CHAPTER	
I INTRODUCTION.....	1
II HISTORICAL	
1. Chemical Constituents of genus <i>Ochna</i>	5
2. Biological activity of compounds isolated from <i>Ochna</i>	12
3. Flavonoids with free radical scavenging activities.....	13
III EXPERIMENTAL	
1. Source of Plant Material.....	42
2. General Techniques	
2.1 Analytical Thin-Layer Chromatography.....	42
2.2 Column Chromatography.....	43
2.3 Medium Pressure Liquid Chromatography.....	44
2.4 High Pressure Liquid Chromatography.....	45
2.5 Spectroscopy	
2.5.1 Ultraviolet (UV) Absorption Spectra	45
2.5.2 Infrared (IR) Absorption Spectra.....	45
2.5.3 Mass Spectra.....	46

CONTENTS (continued)

2.5.4 Proton and Carbon-13 Nuclear Magnetic Resonance (¹ H and ¹³ C-NMR) Spectra.....	46
2.6 Physical Properties	
2.6.1 Melting Points.....	46
2.6.2 Optical Rotations.....	47
2.6.3 Circular Dichroism Spectra.....	47
2.7 Solvents.....	47
2.8 Microtiter Plate Reading.....	47
3. Extraction and Separation	
3.1 Extraction and Separation of the Leaves	
3.1.1 Extraction.....	47
3.1.2 Separation	
3.1.2.1 Initial Separation.....	48
3.1.2.2 Isolation of Compound 47.....	49
3.1.2.3 Isolation of Compounds 4 and 170.....	49
3.2 Extraction and Separation of the Stem Bark	
3.2.1 Extraction	50
3.2.2 Separation.....	50
3.2.2.1 Isolation of Compound 1.....	52
3.2.2.2 Isolation of Compound 171.....	52
3.2.2.3 Isolation of Compound 172.....	53
3.2.2.4 Isolation of Compound 173.....	53
3.2.2.5 Isolation of Compound 27.....	53
3.2.2.6 Isolation of Compound 21.....	54
3.2.2.7 Isolation of Compound 174.....	54

CONTENTS (continued)

3.3	Extraction and Separation of the Stem Wood	
3.3.1	Extraction	54
3.3.2	Separation.....	54
3.3.2.1	Isolation of Compound 26.....	56
3.3.2.2	Isolation of Compound 58.....	56
3.3.2.3	Isolation of Compounds 175 and 60.....	56
3.3.2.4	Isolation of Compound 176.....	57
3.3.2.5	Isolation of Compound 177.....	57
3.4	Extraction and Separation of the Root Bark	
3.4.1	Extraction	58
3.4.2	Separation.....	58
3.4.2.1	Isolation of Compound 178.....	60
3.4.2.2	Isolation of Compounds 175 and 60.....	60
3.4.2.3	Isolation of Compound 1.....	60
3.4.2.4	Isolation of Compound 171.....	60
3.4.2.5	Isolation of Compounds 27 and 173.....	61
3.4.2.6	Isolation of Compounds 21 and 27.....	61
3.4.2.7	Isolation of Compounds 27 and 179.....	61
3.5	Extraction and Separation the Root Wood	
3.5.1	Extraction	62
3.5.2	Separation.....	62
3.5.2.1	Isolation of Compounds 175 and 60.....	63
3.5.2.2	Isolation of Compound 1.....	64
3.5.2.3	Isolation of Compound 171.....	64
3.5.2.4	Isolation of Compounds 172 and 173.....	64

CONTENTS (continued)

3.5.2.5 Isolation of Compounds 177.....	65
3.5.2.6 Isolation of Compounds 21, 27 and 180.....	65
4. DPPH Free Radical Scavenging Activity Assay of Pure Compounds	
4.1 Preliminary Screening.....	65
4.2 IC ₅₀ Determination.....	66
5. Physical and Spectral data of Isolated Compounds	
5.1 Characterization of Compound 47.....	67
5.2 Characterization of Compound 4.....	67
5.3 Characterization of Compound 170.....	67
5.4 Characterization of Compound 1.....	68
5.5 Characterization of Compound 171.....	68
5.6 Characterization of Compound 172.....	68
5.7 Characterization of Compound 173.....	69
5.8 Characterization of Compound 27.....	69
5.9 Characterization of Compound 21.....	69
5.10 Characterization of Compound 174.....	70
5.11 Characterization of Compound 26.....	70
5.12 Characterization of Compound 58.....	71
5.13 Characterization of Compound 175.....	71
5.14 Characterization of Compound 60.....	71
5.15 Characterization of Compound 176.....	72
5.16 Characterization of Compound 177.....	72
5.17 Characterization of Compound 178.....	72
5.18 Characterization of Compound 179.....	72
5.19 Characterization of Compound 180.....	73
6. The DPPH Free Radical Scavenging Activity.....	73

CONTENTS (continued)**IV RESULTS AND DISCUSSION**

1. Structure Determination of Isolated Compounds	
1.1 Structure Determination of Compound 47.....	75
1.2 Structure Determination of Compound 4.....	77
1.3 Structure Determination of Compound 170.....	79
1.4 Structure Determination of Compound 1.....	81
1.5 Structure Determination of Compound 171.....	83
1.6 Structure Determination of Compound 172.....	86
1.7 Structure Determination of Compound 173.....	88
1.8 Structure Determination of Compound 27.....	92
1.9 Structure Determination of Compound 21.....	95
1.10 Structure Determination of Compound 174.....	98
1.11 Structure Determination of Compound 26.....	101
1.12 Structure Determination of Compound 58.....	103
1.13 Structure Determination of Compound 175.....	105
1.14 Structure Determination of Compound 60.....	107
1.15 Structure Determination of Compound 176.....	109
1.16 Structure Determination of Compound 177.....	111
1.17 Structure Determination of Compound 178.....	113
1.18 Structure Determination of Compound 179.....	114
1.19 Structure Determination of Compound 180.....	116
2. DPPH Free Radical Scavenging Activity	117
V CONCLUSION.....	119
REFERENCES.....	120
APPENDIX.....	127
VITA.....	204

LIST OF TABLES

Table		Page
1	Chemical constituents of genus <i>Ochna</i>	5
2	IC ₅₀ (µg/ml) values of antilipid peroxidative flavones.....	14
3	Flavones as ABTS ⁺ cation scavengers.....	14
4	Antilipid peroxidative flavones from <i>Ginkgo biloba</i>	15
5	Antilipid peroxidative activities of flavonols.....	16
6	TEAC values and antilipid peroxidative activities of flavonols.....	16
7	Antilipid peroxidative activity of flavonol glycosides from <i>Eucalyptus rostrata</i>	17
8	Antioxidative activities of isoflavonoids from <i>Lespedeza homoloba</i>	20
9	Antioxidative activities of retrochalcones from <i>Glycyrrhiza inflata</i>	22
10	Antioxidative activities of biflavones from <i>Ginkgo biloba</i>	23
11	Chromatographic fractions of the ethyl acetate extract of leaves of <i>O. integerrima</i>	48
12	Chromatographic separation of the MeOH extract of the stem bark of <i>O. integerrima</i>	50
13	Combination of fractions in Table 12.....	51
14	Chromatographic fractions of the MeOH extract of the stem wood of <i>O. integerrima</i>	55
15	Combination of fractions in Table 14.....	55
16	Chromatographic fractions of the MeOH extract of the root bark of <i>O. integerrima</i>	58
17	Combination of fractions in Table 16.....	59

LIST OF TABLES (continued)

18	Chromatographic fractions of the MeOH extract of the root wood of <i>O. integerrima</i>	62
19	Combination of fractions in Table 18.....	63
20	The DPPH free radical scavenging activity of pure compounds from <i>O. integerrima</i>	74
21	The ^1H and ^{13}C NMR data of compound 47 in $\text{DMSO}-d_6$	76
22	The ^1H and ^{13}C NMR data of compound 4 in $\text{DMSO}-d_6$	78
23	The ^1H and ^{13}C NMR data of compound 170 in $\text{MeOH}-d_4$	80
24	The ^1H and ^{13}C NMR data of compound 1 in acetone- d_6	82
25	The ^1H and ^{13}C NMR data of compound 171 in acetone- d_6	84
26	The ^1H and ^{13}C NMR data of compound 172 in acetone- d_6	87
27	The ^1H and ^{13}C NMR data of compound 173 in acetone- d_6	90
28	The ^1H and ^{13}C NMR data of compound 27 in acetone- d_6	93
29	The ^1H and ^{13}C NMR data of compound 21 in acetone- d_6	96
30	The ^1H and ^{13}C NMR data of compound 174 in acetone- d_6	99
31	The ^1H NMR data of compound 26 in CDCl_3	102
32	The ^1H and ^{13}C NMR data of compound 58 in CDCl_3	104
33	The ^1H and ^{13}C NMR data of compound 175 in CDCl_3	106
34	The ^1H and ^{13}C NMR data of compound 60 in CDCl_3	108
35	The ^1H and ^{13}C NMR data of compound 176 in $\text{DMSO}-d_6$	110
36	The ^1H and ^{13}C NMR data of compound 177 in $\text{DMSO}-d_6$	112
37	The ^1H and ^{13}C NMR data of compound 178 in CDCl_3	113
38	The ^1H and ^{13}C NMR data of compound 179 in acetone- d_6	115
39	The ^1H and ^{13}C NMR data of compound 180 in acetone- d_6	116

LIST OF FIGURES

Figure		Page
1	<i>Ochna integerrima</i> (Lour.) Merr. (Ochnaceae).....	4
2	Structures of compounds previously isolated from <i>Ochna</i>	24
3	Structures of flavonoids with free radical scavenging activity.....	30
4	Structures of flavonoids with DPPH free radical scavenging activity from <i>O. integerrima</i>	118
5	The FAB mass spectrum of compound 47.....	127
6	The UV spectrum of compound 47 (in methanol)	127
7	The ¹ H NMR (600 MHz) spectrum of compound 47 (in DMSO- <i>d</i> ₆)..	128
8	The ¹³ C NMR (150 MHz) spectrum of compound 47 (in DMSO- <i>d</i> ₆)..	128
9	The ¹ H- ¹ H COSY spectrum of compound 47 (in DMSO- <i>d</i> ₆).....	129
10	The HMQC spectrum of compound 47 (in DMSO- <i>d</i> ₆).....	129
11	The HMBC spectrum of compound 47 (in DMSO- <i>d</i> ₆) [δ_{H} 6.2-6.9 ppm, δ_{C} 103.0-107.0 ppm].....	130
12	The HMBC spectrum of compound 47 (in DMSO - <i>d</i> ₆) [δ_{H} 12.73-12.97 ppm, δ_{C} 95.0-108.0 ppm].....	130
13	The NOE difference spectrum of compound 47 (in DMSO- <i>d</i> ₆).....	131
14	The FAB mass spectrum of compound 4.....	131
15	The UV spectrum of compound 4 (in methanol).....	132
16	The ¹ H NMR (600 MHz) spectrum of compound 4 (in DMSO- <i>d</i> ₆)....	132
17	The ¹³ C NMR (150 MHz) spectrum of compound 4 (in DMSO- <i>d</i> ₆)....	133
18	The HMQC spectrum of compound 4 (in DMSO- <i>d</i> ₆) [δ_{H} 5.9-8.2 ppm, δ_{C} 93.0-131.0 ppm].....	133
19	The HMBC spectrum of compound 4 (in DMSO- <i>d</i> ₆) [δ_{H} 6.0-8.2 ppm, δ_{C} 100.0-150.0 ppm].....	134

LIST OF FIGURES (continued)

20	The HMBC spectrum of compound 4 (in DMSO- d_6) [δ_H 12.7-13.0 ppm, δ_C 103.4-105.6 ppm].....	134
21	The UV spectrum of compound 170 (in methanol)	135
22	The IR spectrum of compound 170 (KBr disc).....	135
23	The FAB mass spectrum of compound 170	136
24	The 1H NMR (600 MHz) spectrum of compound 170 (in MeOH- d_4)..	136
25	The ^{13}C NMR (150 MHz) spectrum of compound 170 (in MeOH- d_4)..	137
26	The 1H - 1H COSY spectrum of compound 170 (in MeOH- d_4).....	137
27	The HMQC spectrum of compound 170 (in MeOH- d_4).....	138
28	The HMQC spectrum of compound 170 (in MeOH- d_4).....	138
29	The HMBC spectrum of compound 170 (in MeOH- d_4)	139
30	The HMBC spectrum of compound 170 (in MeOH- d_4) [δ_H 6.7-7.1 ppm, δ_C 120.0-150.0 ppm].....	139
31	The UV spectrum of compound 1 (in methanol)	140
32	The FAB mass spectrum of compound 1	140
33	The 1H NMR (600 MHz) spectrum of compound 1 (in acetone- d_6).....	141
34	The ^{13}C NMR (150 MHz) spectrum of compound 1 (in acetone- d_6)....	141
35	The 1H - 1H COSY spectrum of compound 1 (in acetone- d_6).....	142
36	The HMQC spectrum of compound 1 (in acetone- d_6).....	142
37	The HMQC spectrum of compound 1 (in acetone- d_6) [δ_H 6.2-8.0 ppm, δ_C 90.0-140.0 ppm]	143
38	The HMBC spectrum of compound 1 (in acetone- d_6)	143
39	The HMBC spectrum of compound 1 (in acetone- d_6) [δ_H 6.2-8.0 ppm, δ_C 144.0-168.0 ppm]	144
40	The HMBC spectrum of compound 1 (in acetone- d_6) [δ_H 6.2-7.8 ppm, δ_C 130.2-132.2 ppm].....	144

LIST OF FIGURES (continued)

41	The HMBC spectrum of compound 1 (in acetone- d_6) [δ_H 6.2-7.3 ppm, δ_C 88.0-114.0 ppm].....	145
42	The UV spectrum of compound 171 (in methanol).....	145
43	The IR spectrum of compound 171 (KBr disc)	146
44	The FAB mass spectrum of compound 171	146
45	The 1H NMR (400 MHz) spectrum of compound 171 (in acetone- d_6)..	147
46	The ^{13}C NMR (100 MHz) spectrum of compound 171 (in acetone- d_6).	147
47	The UV spectrum of compound 172 (in methanol).....	148
48	The IR spectrum of compound 172 (KBr disc).....	148
49	The FAB mass spectrum of compound 172	149
50	The 1H NMR (600 MHz) spectrum of compound 172 (in acetone- d_6).	149
51	The ^{13}C NMR (150 MHz) spectrum of compound 172 (in acetone- d_6).	150
52	The 1H - 1H COSY spectrum of compound 172 (in acetone- d_6).....	150
53	The HMQC spectrum of compound 172 (in acetone- d_6).....	151
54	The HMQC spectrum of compound 172 (in acetone- d_6) [δ_H 5.9-8.0 ppm, δ_C 90.0-140.0 ppm].....	151
55	The HMBC spectrum of compound 172 (in acetone- d_6).....	152
56	The HMBC spectrum of compound 172 (in acetone- d_6) [δ_H 5.1-7.3 ppm, δ_C 90.0-118.0 ppm].....	152
57	The HMBC spectrum of compound 172 (in acetone- d_6) [δ_H 13.9-14.4 ppm, δ_C 90.0-106.0 ppm].....	153
58	The UV spectrum of compound 173 (in methanol).....	153
59	The IR spectrum of compound 173 (KBr disc).....	154
60	The FAB mass spectrum of compound 173	154
61	The ^{13}C NMR (150 MHz) spectrum of compound 173 (in acetone- d_6).	155
62	The 1H NMR (600 MHz) spectrum of compound 173 (in acetone- d_6)..	155

LIST OF FIGURES (continued)

63	The ^1H NMR (600 MHz) spectrum of compound 173 (in acetone- d_6):.	156
64	The ^1H - ^1H COSY spectrum of compound 173 (in acetone- d_6).....	156
65	The HMQC spectrum of compound 173 (in acetone- d_6) [δ_{H} 5.8-8.0 ppm, δ_{C} 80.0-150.0 ppm,].....	157
66	The HMBC spectrum of compound 173 (in acetone- d_6).....	157
67	The HMBC spectrum of compound 173 (in acetone- d_6) [δ_{H} 5.8-7.6 ppm, δ_{C} 52.0-60.0 ppm].....	158
68	The HMBC spectrum of compound 173 (in acetone- d_6) [δ_{H} 4.7-8.0 ppm, δ_{C} 82.0-108.0 ppm].....	158
69	The HMBC spectrum of compound 173 (in acetone- d_6) [δ_{H} 12.2-13.7 ppm, δ_{C} 160.0-195.0 ppm].....	159
70	The HMBC spectrum of compound 173 (in acetone- d_6) [δ_{H} 12.2-13.7 ppm, δ_{C} 163.0-168.0 ppm].....	159
71	The CD spectrum of compound 173	160
72	The UV spectrum of compound 27 (in methanol).....	160
73	The IR spectrum of compound 27 (KBr disc).....	161
74	The FAB mass spectrum of compound 27	161
75	The ^1H NMR (400 MHz) spectrum of compound 27 (in acetone- d_6)..	162
76	The ^1H NMR (400 MHz) spectrum of compound 27 (in acetone- d_6)..	162
77	The ^{13}C NMR (100 MHz) spectrum of compound 27 (in acetone- d_6)..	163
78	The UV spectrum of compound 21 (in methanol).....	163
79	The IR spectrum of compound 21 (KBr disc).....	164
80	The FAB mass spectrum of compound 21	164
81	The ^1H NMR (400 MHz) spectrum of compound 21 (in acetone- d_6)...	165
82	The ^1H NMR (400 MHz) spectrum of compound 21 (in acetone- d_6)...	165
83	The ^{13}C NMR (100 MHz) spectrum of compound 21 (in acetone- d_6)...	166

LIST OF FIGURES (continued)

84	The UV spectrum of compound 174 (in methanol).....	166
85	The IR spectrum of compound 174 (KBr disc).....	167
86	The FAB mass spectrum of compound 174.....	167
87	The ^1H NMR (600 MHz) spectrum of compound 174 (in acetone- d_6)..	168
88	The ^{13}C NMR (150 MHz) spectrum of compound 174 (in acetone- d_6).	168
89	The ^{13}C NMR (150 MHz) spectrum of compound 174 (in acetone- d_6).	169
90	The ^1H - ^1H COSY spectrum of compound 174 (in acetone- d_6).....	169
91	The HMQC spectrum of compound 174 (in acetone- d_6).....	170
92	The NOE difference spectrum of compound 174 (in acetone- d_6).....	170
93	The HMBC spectrum of compound 174 (in acetone- d_6).....	171
94	The HMBC spectrum of compound 174 (in acetone- d_6) [δ_{H} 3.4-3.7 ppm, δ_{C} 60.0-100.0 ppm].....	171
95	The CD spectrum of compound 174	172
96	The UV spectrum of compound 26 (in methanol).....	172
97	The IR spectrum of compound 26 (KBr disc).....	173
98	The FAB mass spectrum of compound 26.....	173
99	The ^1H NMR (400 MHz) spectrum of compound 26 (in acetone- d_6).	174
100	The UV spectrum of compound 58 (in methanol).....	174
101	The IR spectrum of compound 58 (KBr disc).....	175
102	The FAB mass spectrum of compound 58.....	175
103	The ^1H NMR (300 MHz) spectrum of compound 58 (in CDCl_3).....	176
104	The ^{13}C NMR (75 MHz) spectrum of compound 58 (in CDCl_3).....	176
105	The HMQC spectrum of compound 58 (in CDCl_3).....	177
106	The HMBC spectrum of compound 58 (in CDCl_3).....	177

LIST OF FIGURES (continued)

107	The HMBC spectrum of compound 58 (in CDCl ₃) [δ_{H} 4.0-8.0 ppm, δ_{C} 120.0-190.0 ppm].....	178
108	The UV spectrum of compound 175 (in methanol).....	178
109	The FAB mass spectrum of compound 175	179
110	The ¹ H NMR (600 MHz) spectrum of compound 175 (in CDCl ₃).....	179
111	The ¹³ C NMR (150 MHz) spectrum of compound 175 (in CDCl ₃).....	180
112	The HMQC spectrum of compound 175 (in CDCl ₃).....	180
113	The HMBC spectrum of compound 175 (in CDCl ₃).....	181
114	The HMBC spectrum of compound 175 (in CDCl ₃) [δ_{H} 6.0-8.0 ppm, δ_{C} 120.0-170.0 ppm].....	181
115	The UV spectrum of compound 60 (in methanol).....	182
116	The FAB mass spectrum of compound 60	182
117	The ¹³ C NMR (150 MHz) spectrum of compound 60 (in CDCl ₃).....	183
118	The ¹ H NMR (600 MHz) spectrum of compound 60 (in CDCl ₃).....	183
119	The HMQC spectrum of compound 60 (in CDCl ₃).....	184
120	The HMBC spectrum of compound 60 (in CDCl ₃).....	184
121	The HMBC spectrum of compound 60 (in CDCl ₃) [δ_{H} 6.8-8.0 ppm, δ_{C} 145.0.0-153.0 ppm].....	185
122	The UV spectrum of compound 176 (in methanol).....	185
123	The FAB mass spectrum of compound 176	186
124	The ¹ H NMR (500 MHz) spectrum of compound 176 (in DMSO- <i>d</i> ₆)..	186
125	The ¹³ C NMR (125 MHz) spectrum of compound 176 (in DMSO- <i>d</i> ₆)..	187
126	The HMQC spectrum of compound 176 (in DMSO- <i>d</i> ₆).....	187
127	The HMBC spectrum of compound 176 (in DMSO- <i>d</i> ₆).....	188
128	The NOE difference spectrum of compound 176 (in DMSO- <i>d</i> ₆) with irradiation at δ 7.07 ppm.....	188

LIST OF FIGURES (continued)

129	The NOE difference spectrum of compound 176 (in DMSO- d_6) with irradiation at δ 3.77 ppm.....	189
130	The UV spectrum of compound 177 (in methanol).....	189
131	The FAB mass spectrum of compound 177.....	190
132	The ^1H NMR (600 MHz) spectrum of compound 177 (in DMSO- d_6)	190
133	The ^{13}C NMR (150 MHz) spectrum of compound 177 (in DMSO- d_6).	191
134	The HMQC spectrum of compound 177 (in DMSO- d_6).....	191
135	The HMBC spectrum of compound 177 (in DMSO- d_6).....	192
136	The HMBC spectrum of compound 177 (in DMSO- d_6) [δ_{H} 6.4-8.0 ppm, δ_{C} 100.0-170.0 ppm].....	192
137	The FAB mass spectrum of compound 178.....	193
138	The UV spectrum of compound 178 (in methanol).....	193
139	The ^1H NMR (300 MHz) spectrum of compound 178 (in CDCl_3).....	194
140	The ^{13}C NMR (75 MHz) and DEPT 135 spectra of compound 178 (in CDCl_3).....	194
141	The ^1H - ^1H COSY spectrum of compound 178 (in CDCl_3).....	195
142	The HMBC spectrum of compound 178 (in CDCl_3).....	195
143	The HMBC spectrum of compound 178 (in CDCl_3) [δ_{H} 6.5-7.5 ppm, δ_{C} 100.0-170.0 ppm].....	196
144	The HMBC spectrum of compound 178 (in CDCl_3) [δ_{H} 3.6-4.4 ppm, δ_{C} 20.0-70.0 ppm].....	196
145	The UV spectrum of compound 179 (in methanol).....	197
146	The FAB mass spectrum of compound 179.....	197
147	The ^1H NMR (300 MHz) spectrum of compound 179 (in acetone- d_6).	198
148	The ^{13}C NMR (75 MHz) spectrum of compound 179 (in acetone- d_6)..	198
149	The HMQC spectrum of compound 179 (in acetone- d_6).....	199

LIST OF FIGURES (continued)

150	The HMBC spectrum of compound 179 (in acetone- d_6).....	199
151	The HMBC spectrum of compound 179 (in acetone- d_6) [δ_H 5.5-8.5 ppm, δ_C 80.0-160.0 ppm].....	200
152	The EI mass spectrum of compound 180	200
153	The UV spectrum of compound 180 (in methanol).....	201
154	The 1H NMR (300 MHz) spectrum of compound 180 (in acetone- d_6)..	201
155	The ^{13}C NMR (75 MHz) spectrum of compound 180 (in acetone- d_6)..	202
156	The HMQC spectrum of compound 180 (in acetone- d_6).....	202
157	The HMBC spectrum of compound 180 (in acetone- d_6).....	203
158	The HMBC spectrum of compound 180 (in acetone- d_6) [δ_H 6.5-8.0 ppm, δ_C 90.0-130.0 ppm].....	203

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จุฬาลงกรณ์มหาวิทยาลัย

LIST OF SCHEMES

Scheme	Page
1 Antioxidant as DPPH free radical scavenger.....	66
2 The proposed biogenetic pathway of 6'''-hydroxylophirone B (173)..	91



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ABBREVIATIONS

Acetone- d_6	=	Deuterated acetone
ϵ	=	Molar absorptivity
br s	=	Broad singlet (for NMR spectra)
$^{\circ}\text{C}$	=	Degree Celsius
CDCl_3	=	Deuterated chloroform
CHCl_3	=	chloroform
cm	=	Centimeter
^{13}C NMR	=	Carbon-13 nuclear magnetic resonance
COSY	=	Correlated spectroscopy
1-D	=	One dimensional
2-D	=	Two dimensional
DEPT	=	Distortionless Enhancement by Polarization Transfer
d	=	Doublet (for NMR spectra)
dd	=	Doublet of doublets (for NMR spectra)
δ	=	Chemical shift
DPPH	=	2,2-diphenyl-1-picrylhydrazyl
$\text{DMSO-}d_6$	=	Deuterated dimethyl sulfoxide
EIMS	=	Electron impact mass spectrum
FABMS	=	Fast atom bombardment mass spectrum
g	=	Gram
HETCOR	=	Heteronuclear chemical shift correlation
HMBC	=	^1H -detected Heteronuclear Multiple Bond Coherence
HMQC	=	^1H -detected Heteronuclear Multiple Quantum Coherence
^1H NMR	=	Proton nuclear magnetic resonance
HPLC	=	High performance liquid chromatography
HRFABMS	=	High resolution fast atom bombardment mass spectrum

ABBREVIATIONS (continued)

Hz	=	Hertz
IC ₅₀	=	Median inhibitory concentration
IR	=	Infrared spectrum
<i>J</i>	=	Coupling constant
kg	=	Kilogram
λ_{max}	=	Wavelength at maximal absorption
[M+H] ⁺	=	quasimolecular ion
m	=	Multiplet (for NMR spectra)
MeOH	=	Methanol
MeOH- <i>d</i> ₄	=	Deuterated methanol
mg	=	Miligram
MHz	=	Megahertz
ml	=	Milliliter
mm	=	Millimeter
μg	=	Microgram
μl	=	Microliter
μm	=	Micrometer
MPLC	=	Medium Pressure liquid chromatography
<i>m/z</i>	=	Mass to charge ratio
MS	=	Mass spectrometry
NMR	=	Nuclear magnetic resonance
nm	=	Nanometer
No.	=	Number
NOE	=	Nuclear Overhauser effect
ODS	=	Octadecylsilane

ABBREVIATIONS (continued)

ν_{\max}	=	Wave number at maximal absorption
s	=	Singlet (for NMR spectra)
sp.	=	Species
t	=	Triplet (for NMR spectra)
TLC	=	Thin layer chromatography
UV	=	Ultraviolet



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