Supporting Information

***Rec. Nat. Prod.* X:X (202X) XX-XX**

Two New Seco-abietanoids with Xanthine Oxidase Inhibitory Activity from *Cryptomeria japonica*

Chi-I Chang[1,2], Cheng-Chi Chen[3], Sheng-Yang Wang[4,5], Jih-Jung Chen[6,7], Chiy-Rong Chen[8], Che-Yi Chao[9,10,] and Yueh-Hsiung Kuo[11,12,13,*]**

[1]*Department of Biological Science and Technology, National Pingtung University of Science and Technology, Pingtung 912, Taiwan*

[2]*Research Center for Active Natural Products Development, National Pingtung University of Science and Technology, Pingtung 912, Taiwan*

[3]*Department of Chemistry, National Taiwan University, Taipei 106, Taiwan*

[4]*Department of Forestry, National Chung-Hsing University, Taichung 402, Taiwan*

[5]*Agricultural Biotechnology Research Center, Academia Sinica, Taipei 115, Taiwan*

[6]*Faculty of Pharmacy, School of Pharmaceutical Sciences, National Yang-Ming University, Taipei 112, Taiwan*

[7] *Department of Medical Research, China Medical University Hospital, Taichung 404, Taiwan*

[8]*Department of Life Science, National Taitung University, Taitung 950, Taiwan*

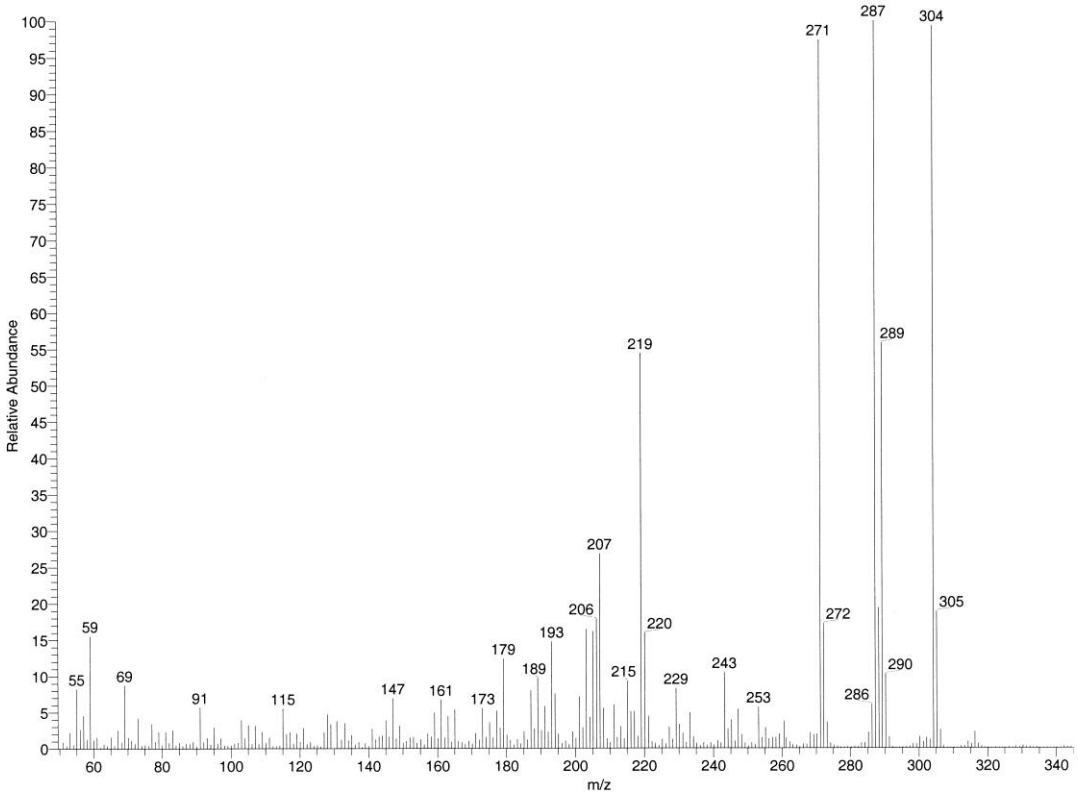
[9]*Department of Food Nutrition and Health Biotechnology, Asia University, Taichung, Taiwan*

[10]*Department of Medical Research, China Medical University Hospital, China Medical University, Taichung, Taiwan*

[11]*Department of Chinese Pharmaceutical Sciences and Chinese Medicine Resources, College of Pharmacy, China Medical University, Taichung 404, Taiwan*

[12]*Department of Biotechnology, Asia University, Taichung 413, Taiwan*

[13]*Chinese Medicine Research Center, China Medical University, Taichung 404, Taiwan*



[Mass Spectrum]
Data : 20033 Date : 21-May-2020 16:42
Instrument : MStation
Sample : CJD63
Note :
Inlet : Direct Ion Mode : EI+
Spectrum Type : Normal Ion [EF-Linear]
RT : 0.00 min Scan# : 1 Temp : 3276.7 deg.C
BP : m/z 287.2006 Int. : 20.73 (217402)
Output m/z range : 275 to 335 Cut Level : 0.00 %

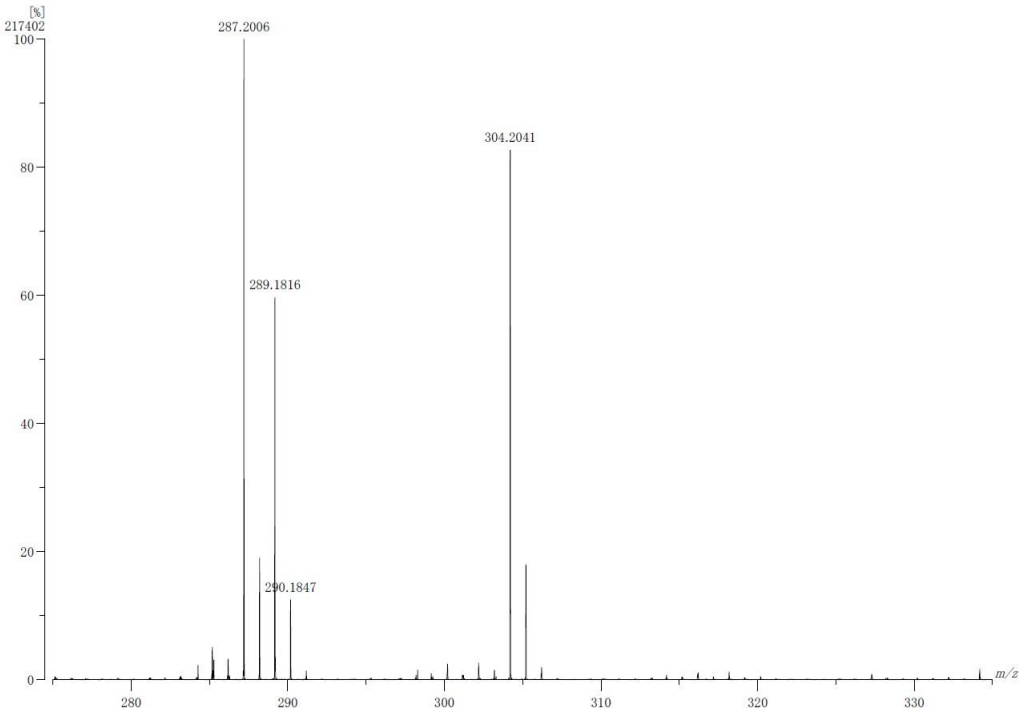


Figure S1: Mass Spectrum of compound **1** (EI-MS Spectrum and HR-EI-MS data)

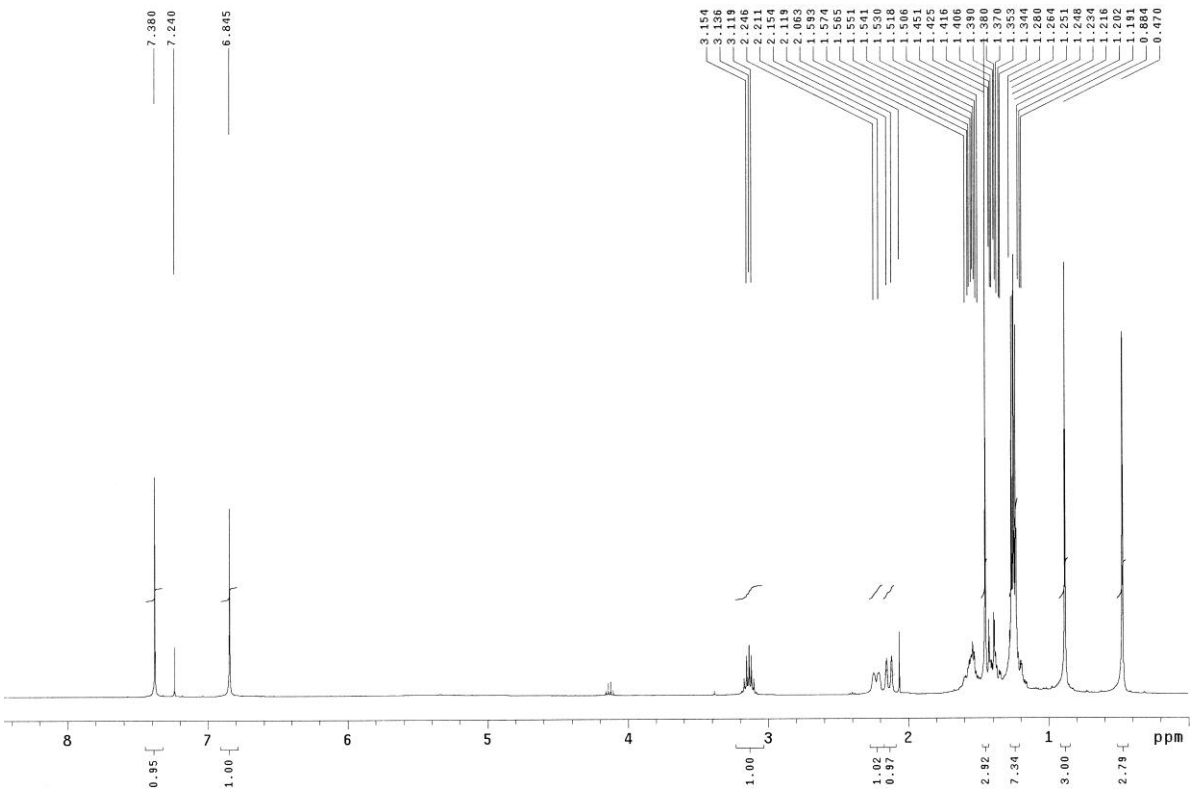


Figure S2: ^{1}H-NMR spectrum of compound **1** in $CDCl_3$

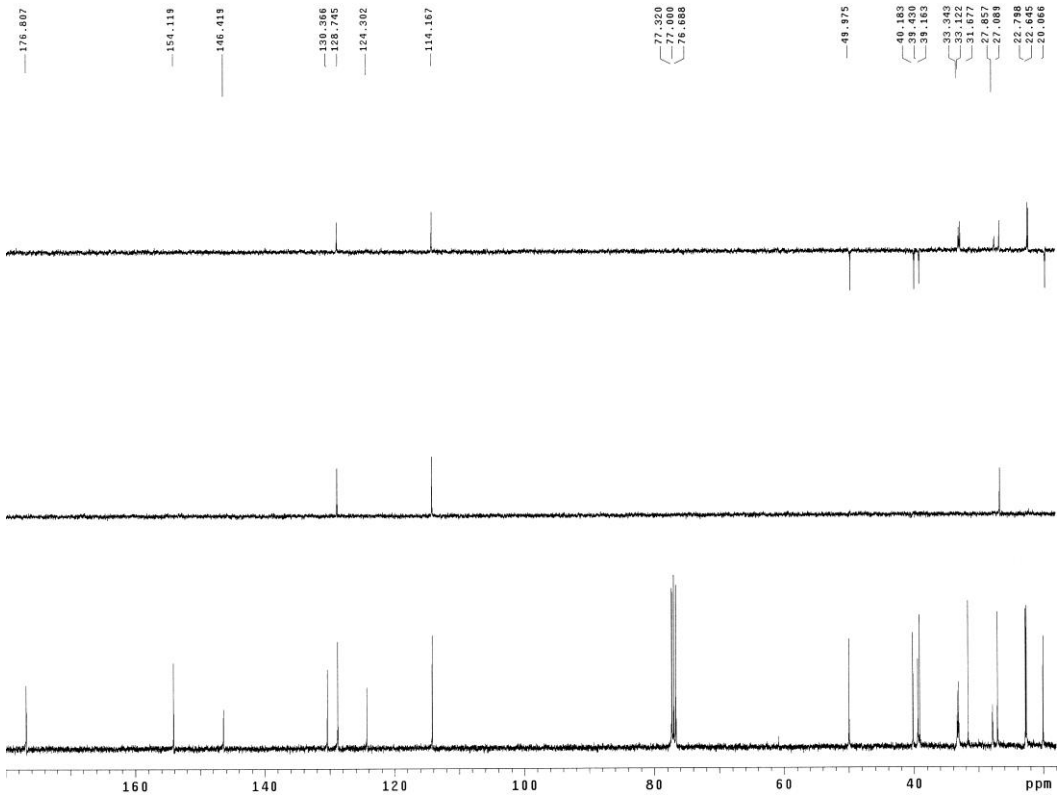


Figure S3: ^{13}C-NMR spectrum and DEPT of compound **1** in $CDCl_3$

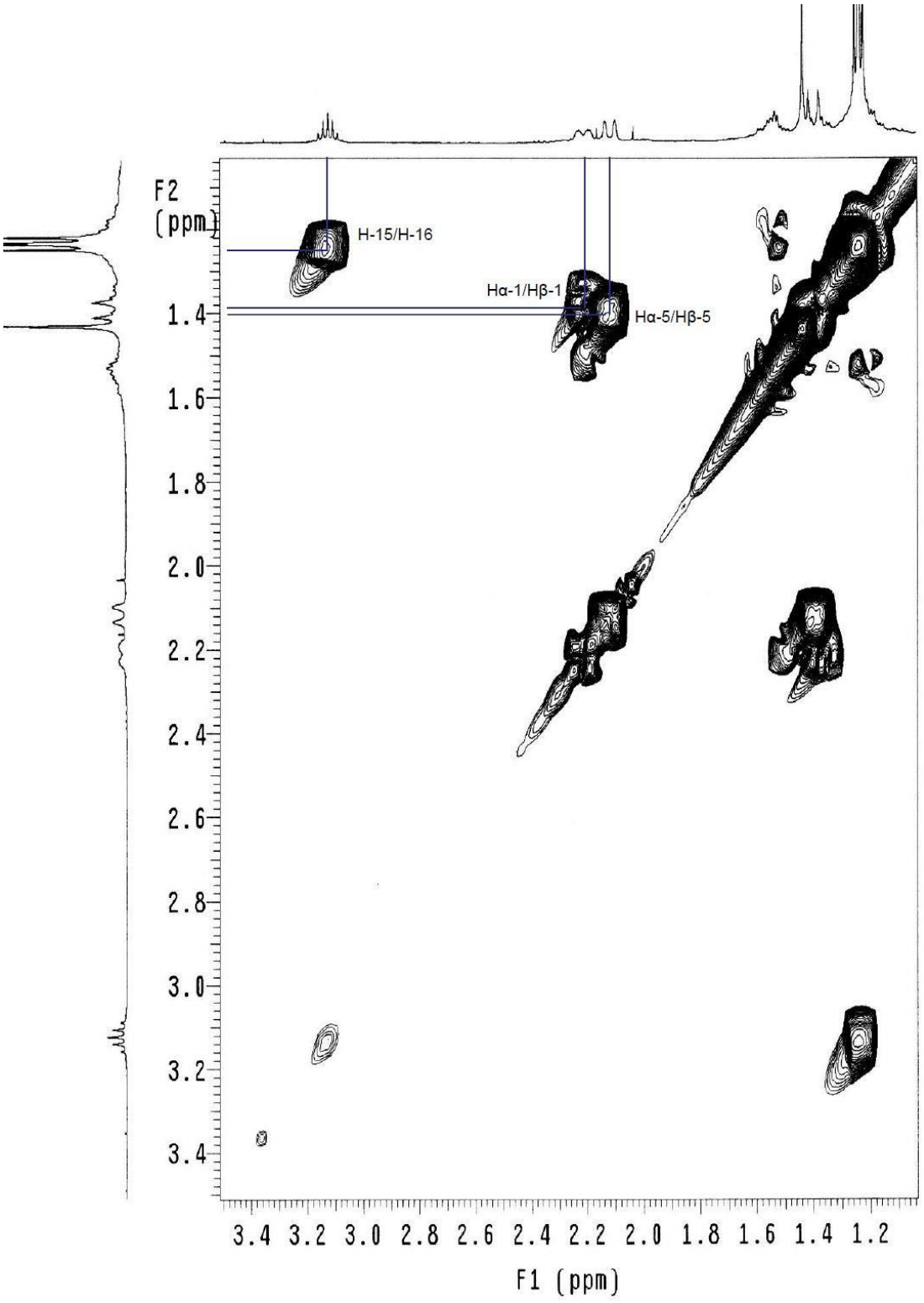


Figure S4: ^{1}H-^{1}H COSY spectrum of compound **1** in $CDCl_3$

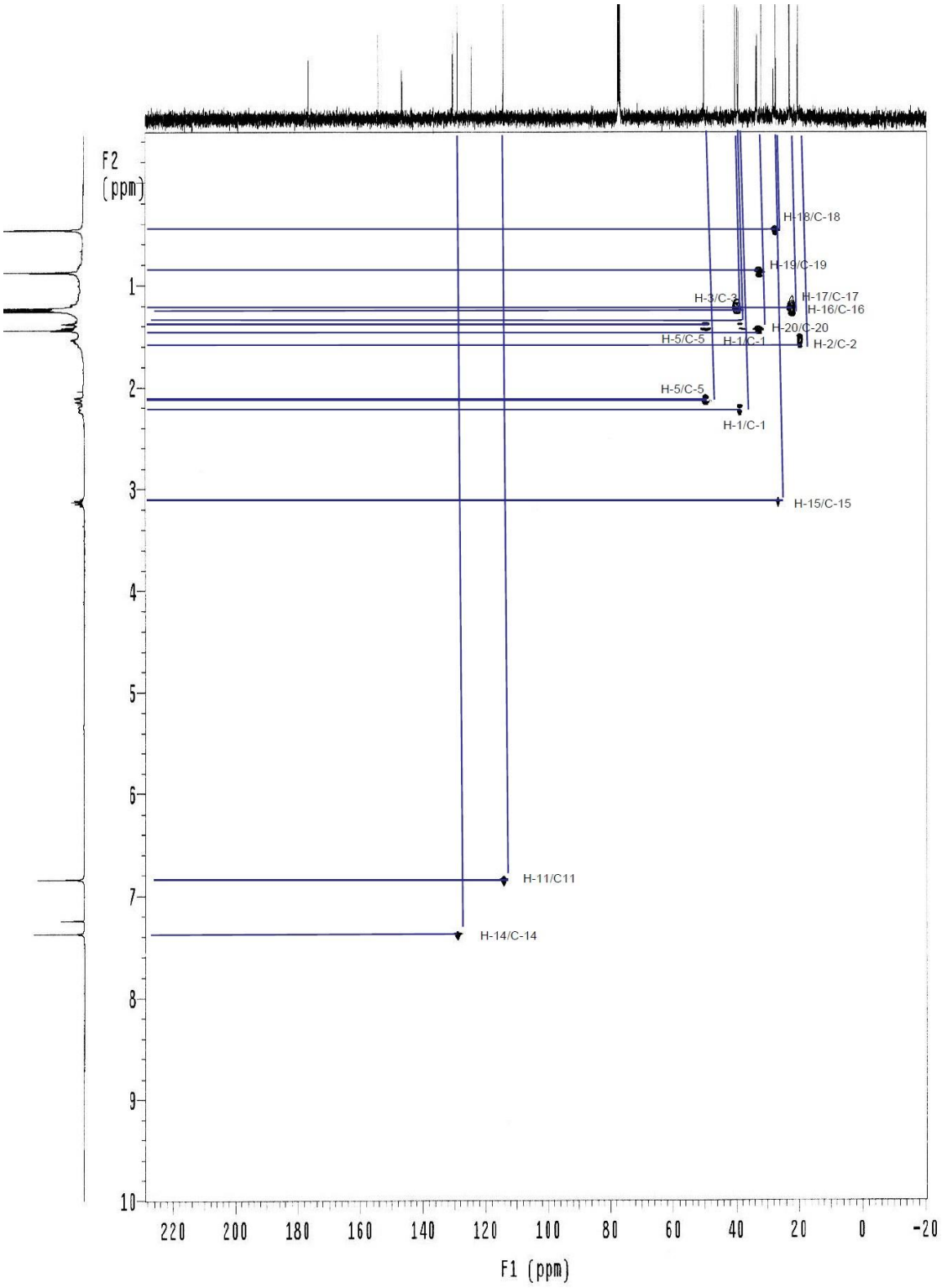


Figure S5: HMQC spectrum of compound **1** in $CDCl_3$

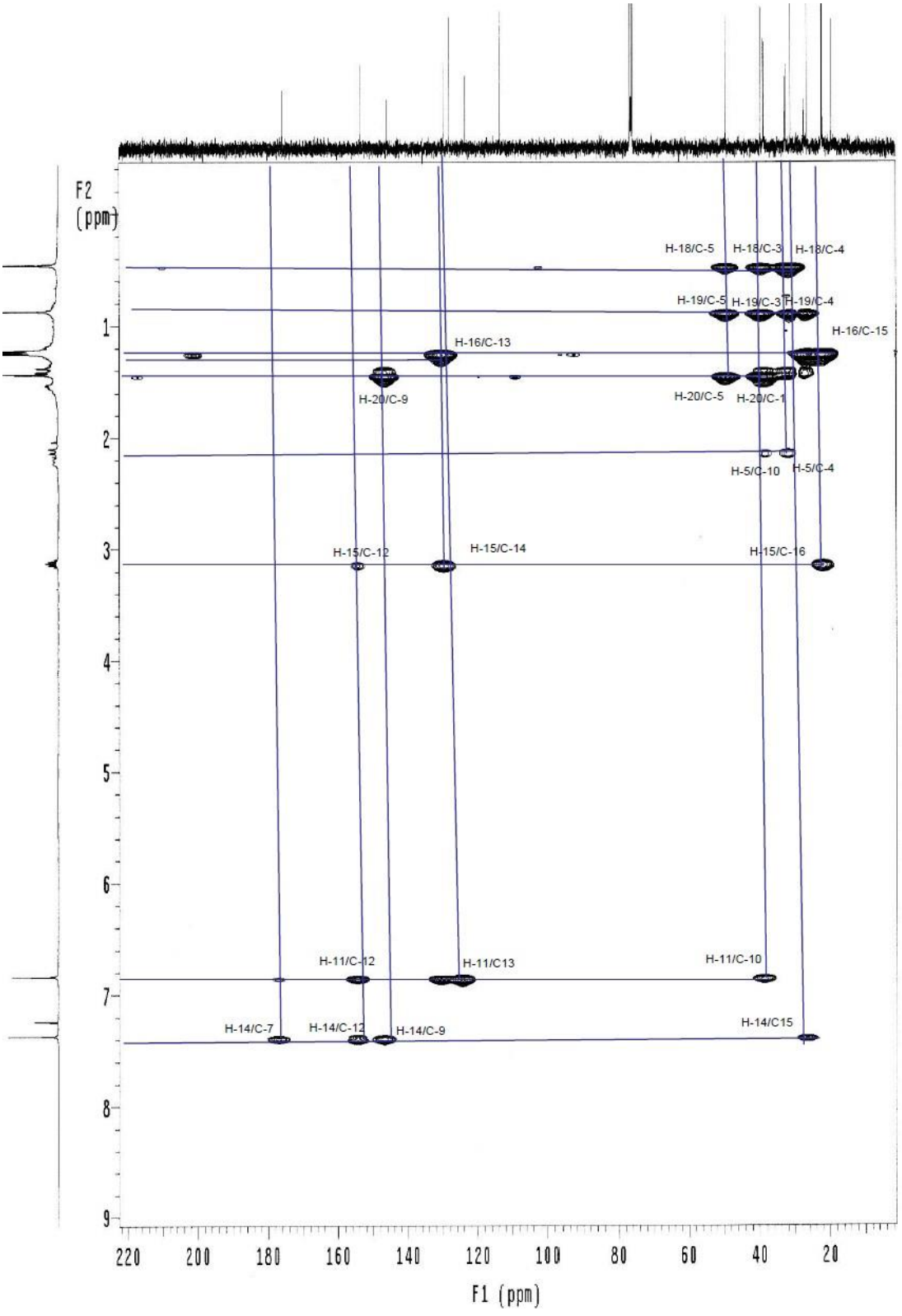


Figure S6: HMBC spectrum of compound **1**in $CDCl_3$

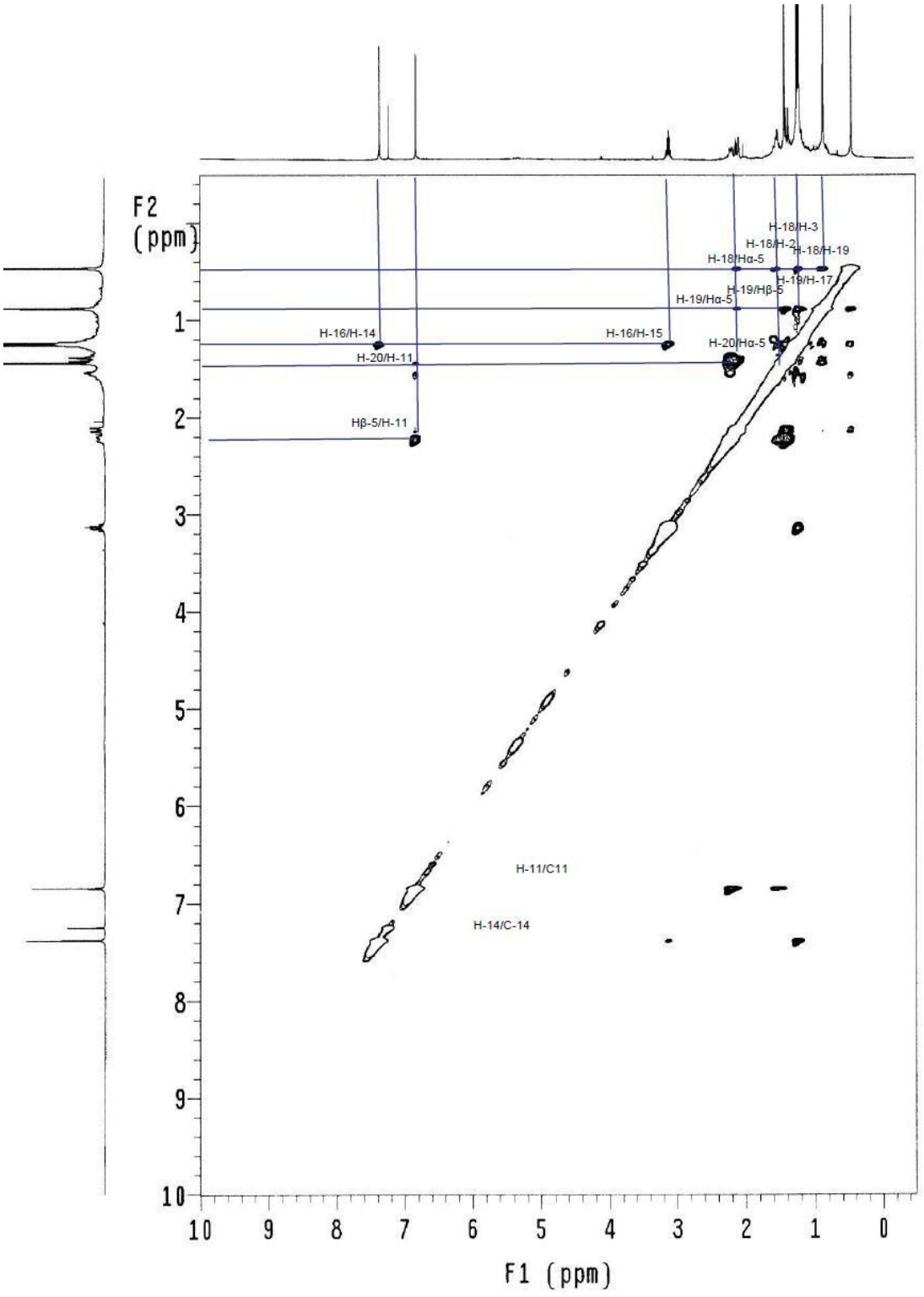
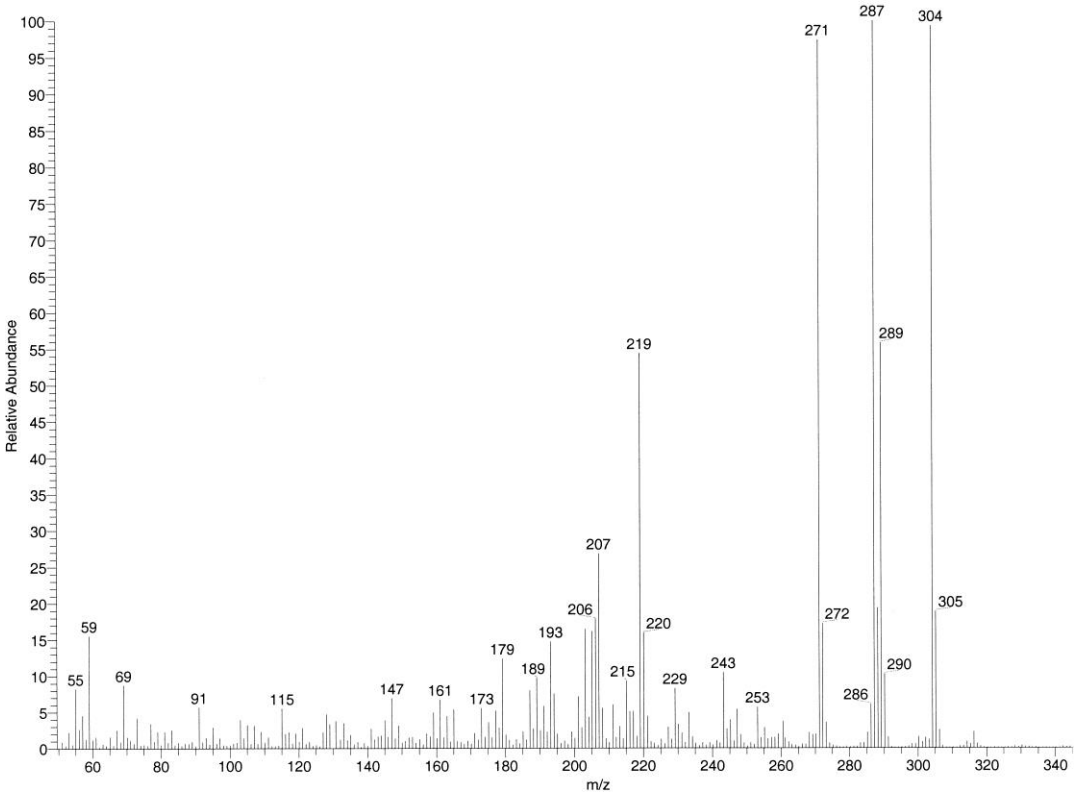


Figure S7: NOSEY spectrum of compound **1** in $CDCl_3$



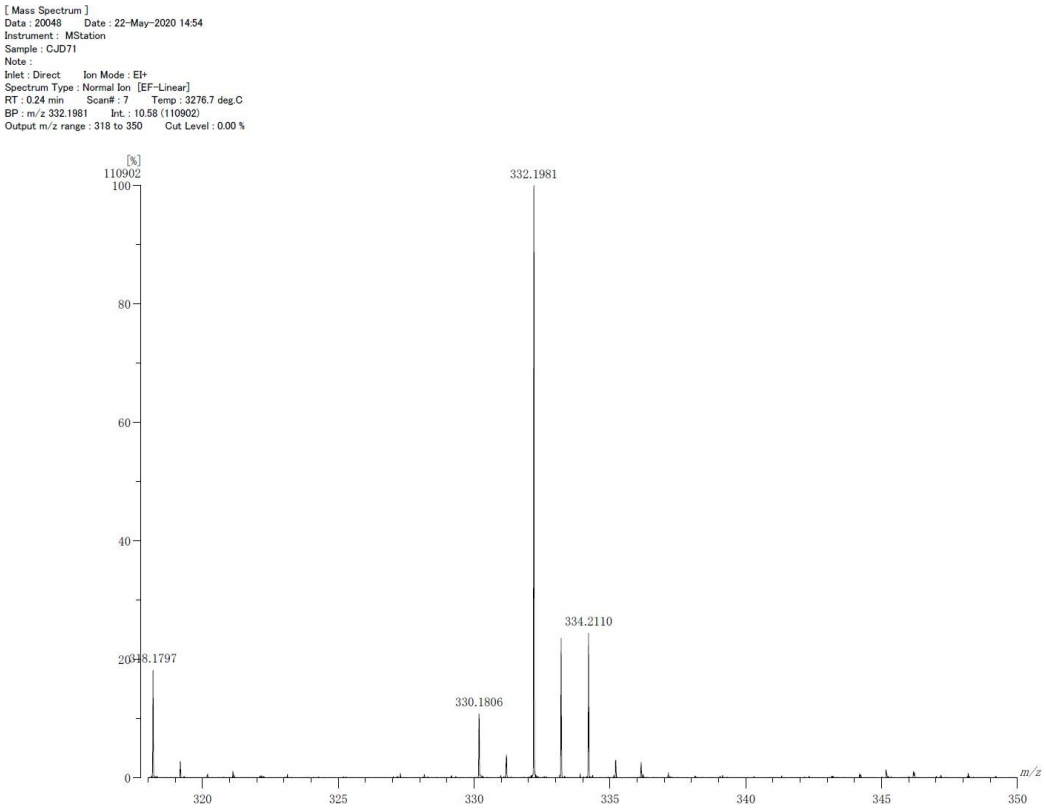


Figure S8: Mass Spectrum of compound **3** (EI-MS Spectrum and HR-EI-MS data)

CAS SciFinder^{n}

Task History

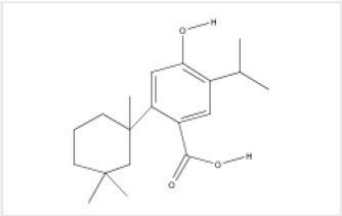
Initiating Search

September 29, 2021, 9:22AM

Substances:

Filtered By:

Structure Match:	**Similarity**
Similarity:	**85-89, >=99**
Number of Components:	**1**



Search Tasks

Task	Search Type	View
Exported: Returned Substance Results + Filters	Substances	View Results

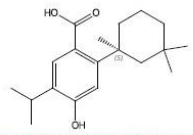
CAS SciFinder^{n}

Substances (16)

View in SciFinder^{n}

1 — Similarity Score: **100**

2055346-30-8



Absolute stereochemistry shown

$C_{19}H_{28}O_3$

4-Hydroxy-5-(1-methylethyl)-2-[(1*S*)-1,3,3-trimethylcyclohexyl]benzoic acid

2 References | 0 Reactions | 0 Suppliers

Key Physical Properties	Value	Condition
Molecular Weight	304.42	-
Boiling Point (Predicted)	439.8±45.0 °C	Press: 760 Torr
Density (Predicted)	1.055±0.06 g/cm^3	Temp: 20 °C; Press: 760 Torr
pKa (Predicted)	4.55±0.36	Most Acidic Temp: 25 °C

Figure S9: Scifinder report for compound **1**

	1		reference compound	
Position	δ_C	δ_H	δ_C*	δ_H
1	39.1	2.23 br d (14.0), 1.38 m		2.14 m, 1.40 m
2	20.0	1.56 m, 1.58 m		1.56 m
3	40.1	1.20 m, 1.24 m		1.60 m
4	31.6			
5	49.9	1.41 d (14.0), 2.13 d (14.0)		
6				
7	176.8			
8	124.3			
9	146.4			
10	39.4			
11	114.1	6.84 s		6.84 s
12	154.1			
13	130.3			
14	128.7	7.38 s		7.36 s
15	27.0	3.13 sept (7.0)		
16	22.7	1.24 d (7.0)	1.25 d (6.8)	
17	22.6	1.26 d (7.0)	1.26 d (6.8)	
18	27.8	0.47 s		0.47 s
19	33.1	0.88 s		0.88 s
20	33.3	1.45 s		1.45 s
7-OH				

Table S1: ^{1}H and ^{13}C NMR data for compounds **1** and reference compound.
* ^{13}C NMR data are unavailable.

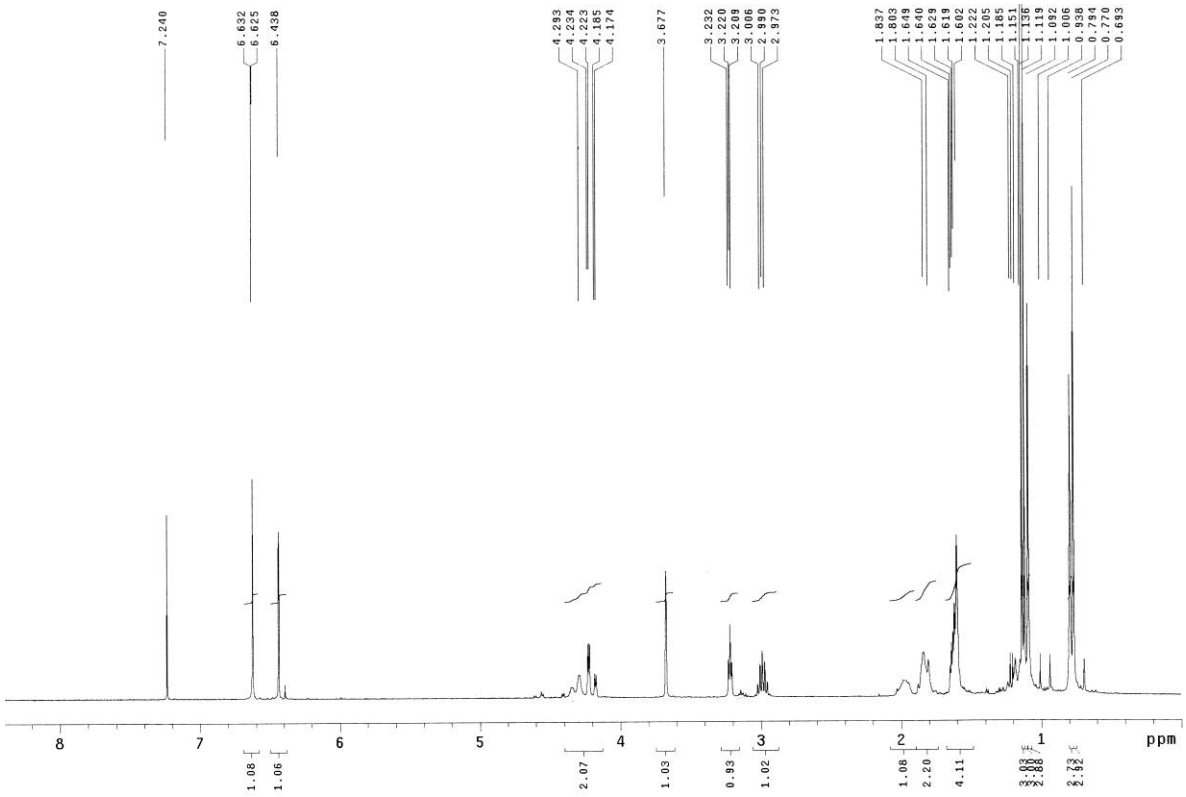


Figure S10: ^{1}H-NMR spectrum of compound **3** in $CDCl_3$

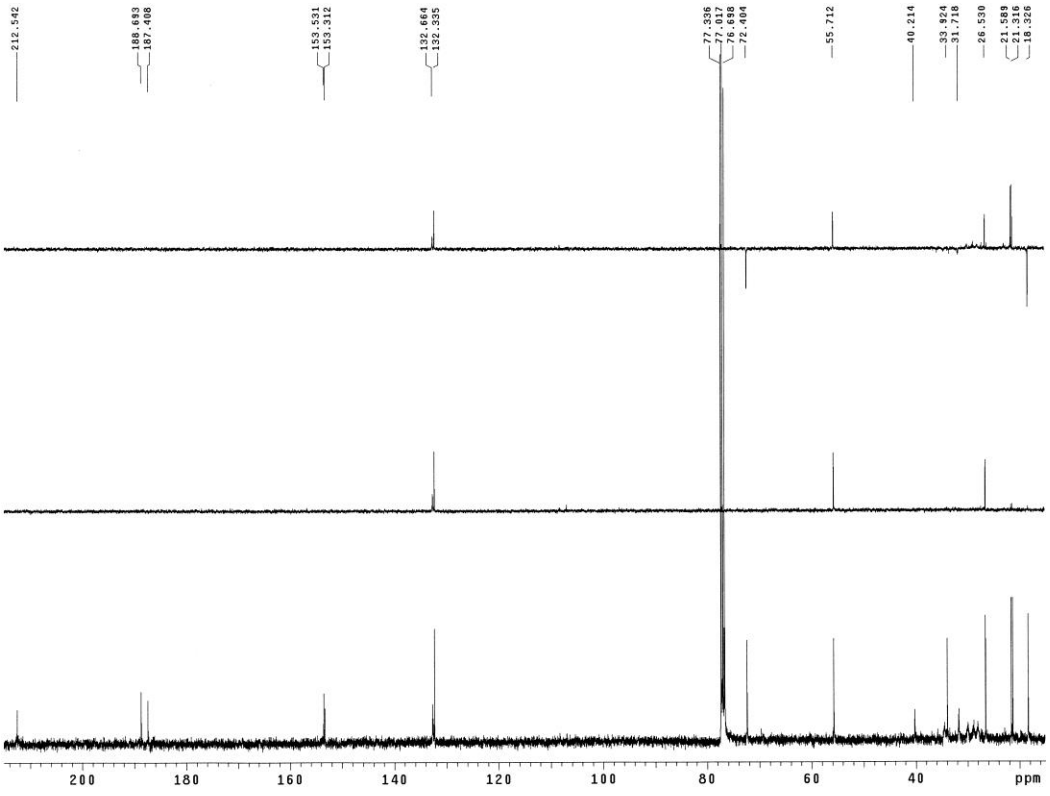


Figure S11: ^{13}C-NMR spectrum and DEPT of compound **3** in $CDCl_3$

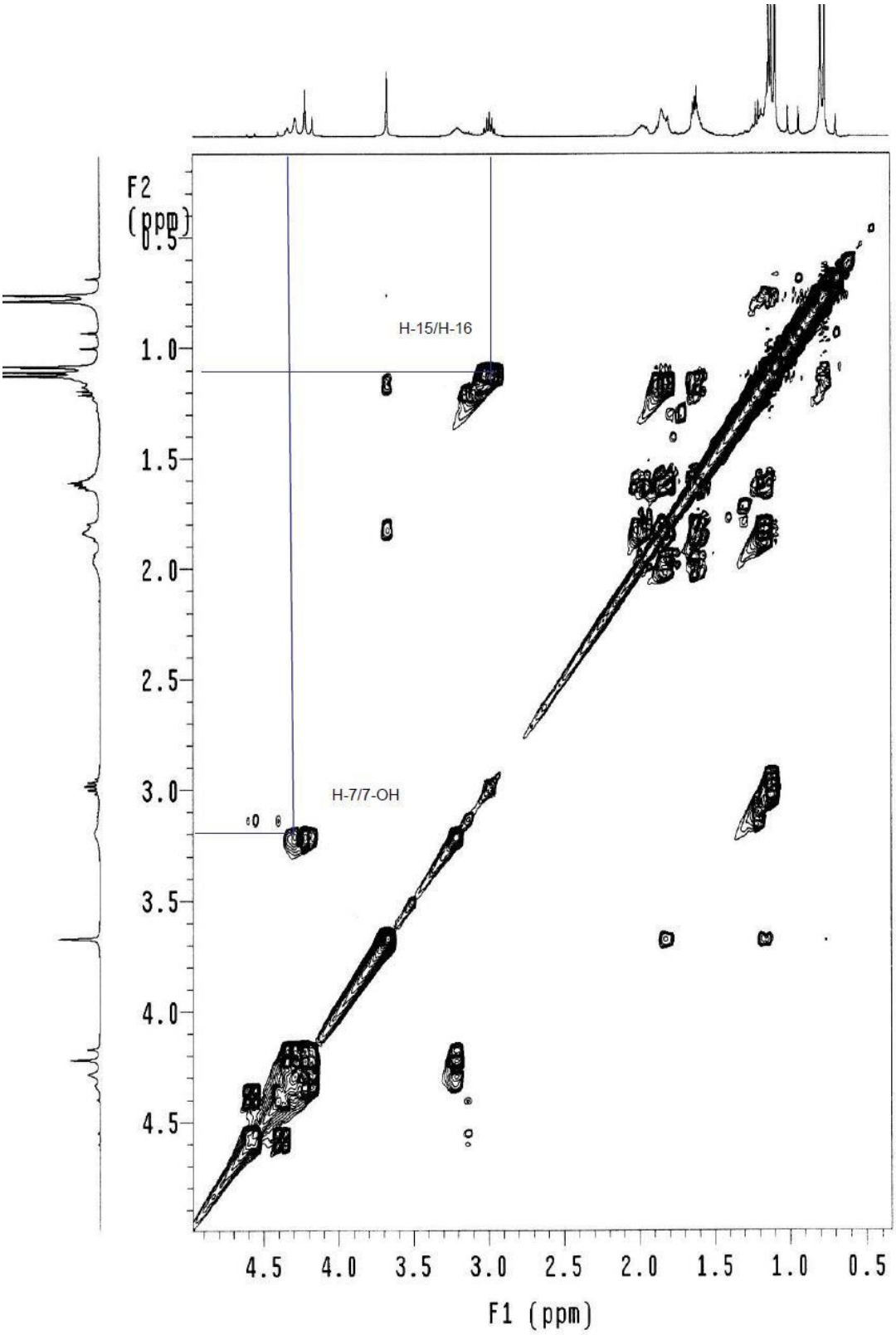


Figure S12: ^{1}H-^{1}H COSY spectrum of compound **3** in $CDCl_3$

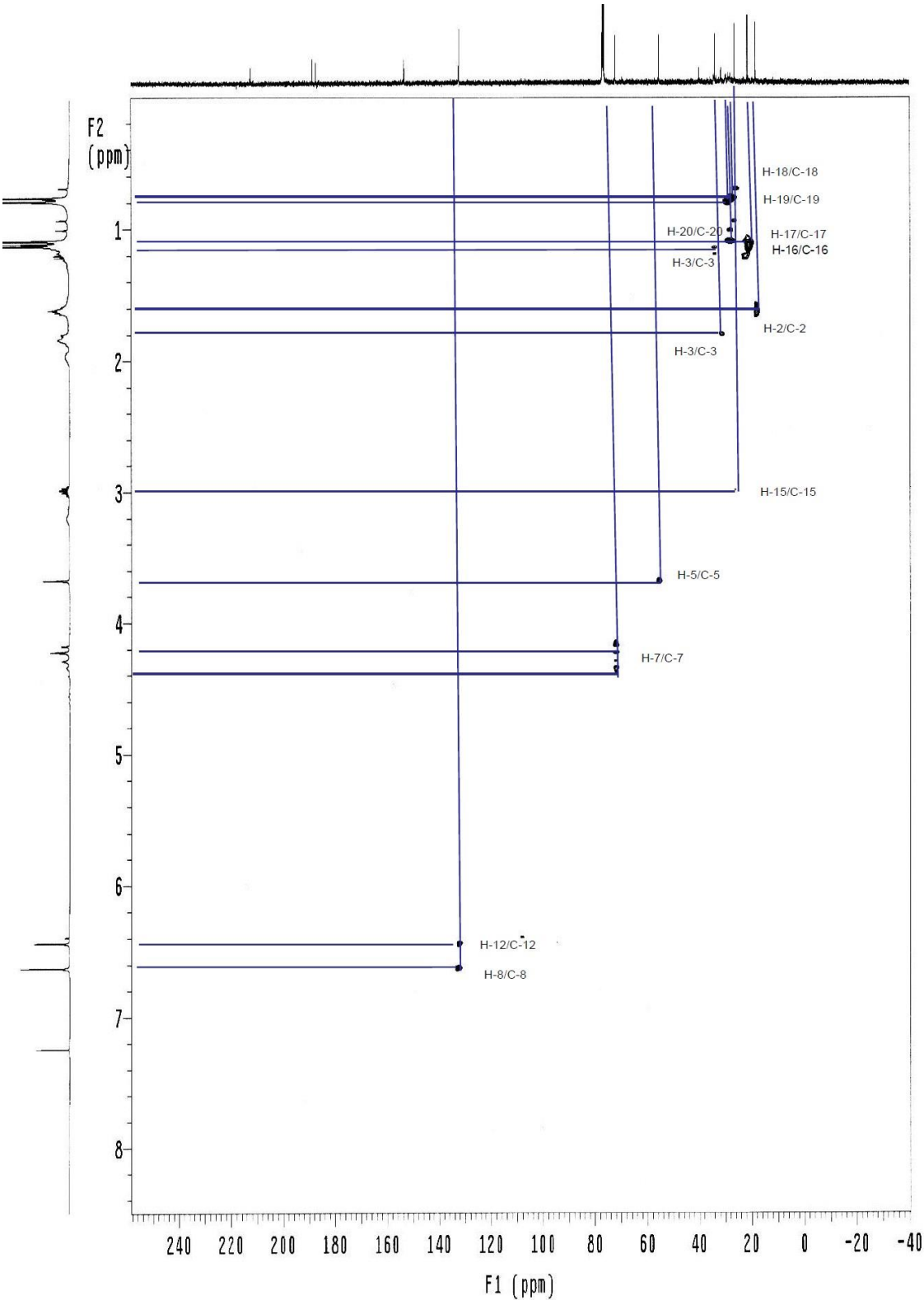


Figure S13: HMQC spectrum of compound **3** in $CDCl_3$

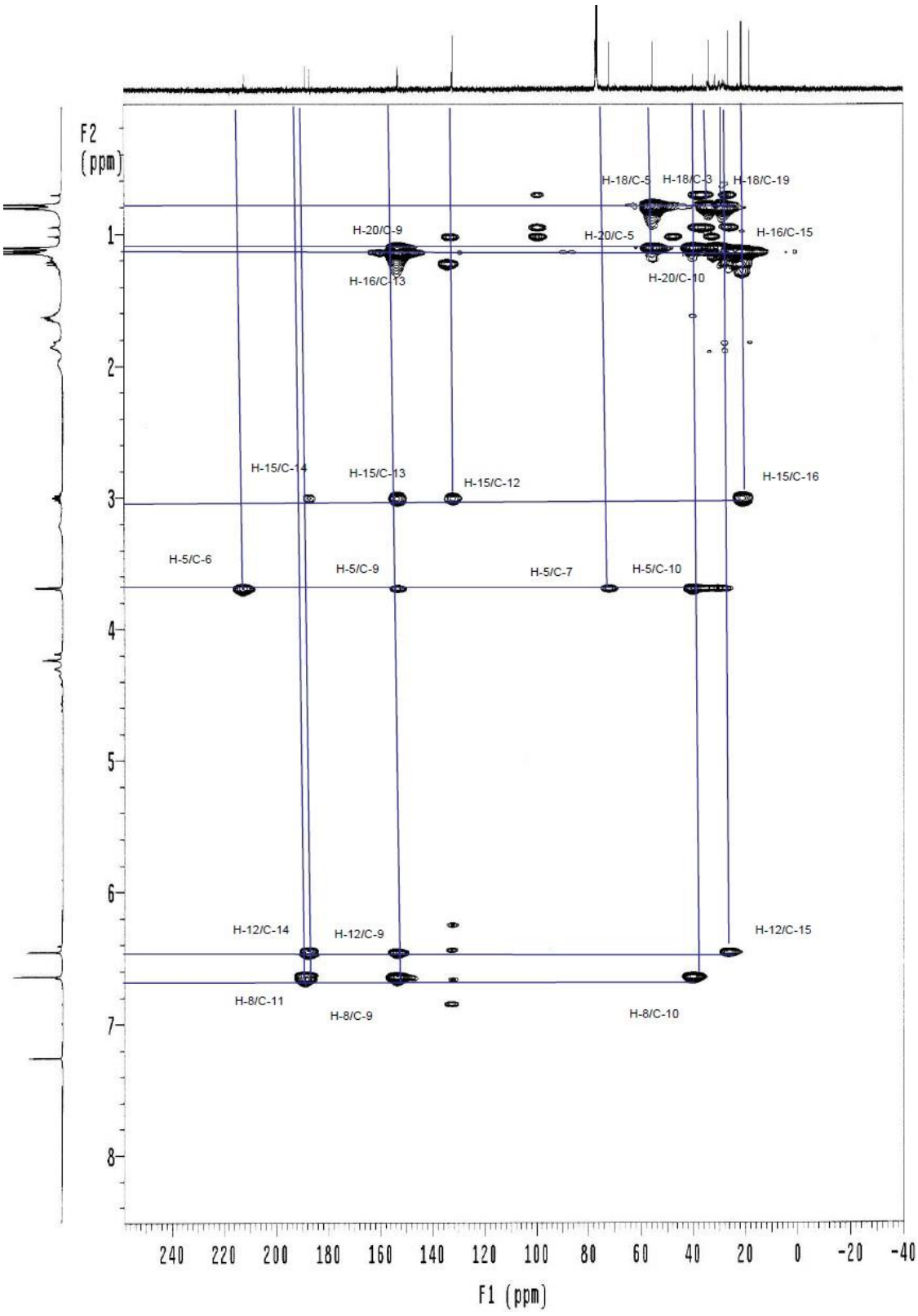


Figure S14: HMBC spectrum of compound **3** in $CDCl_3$

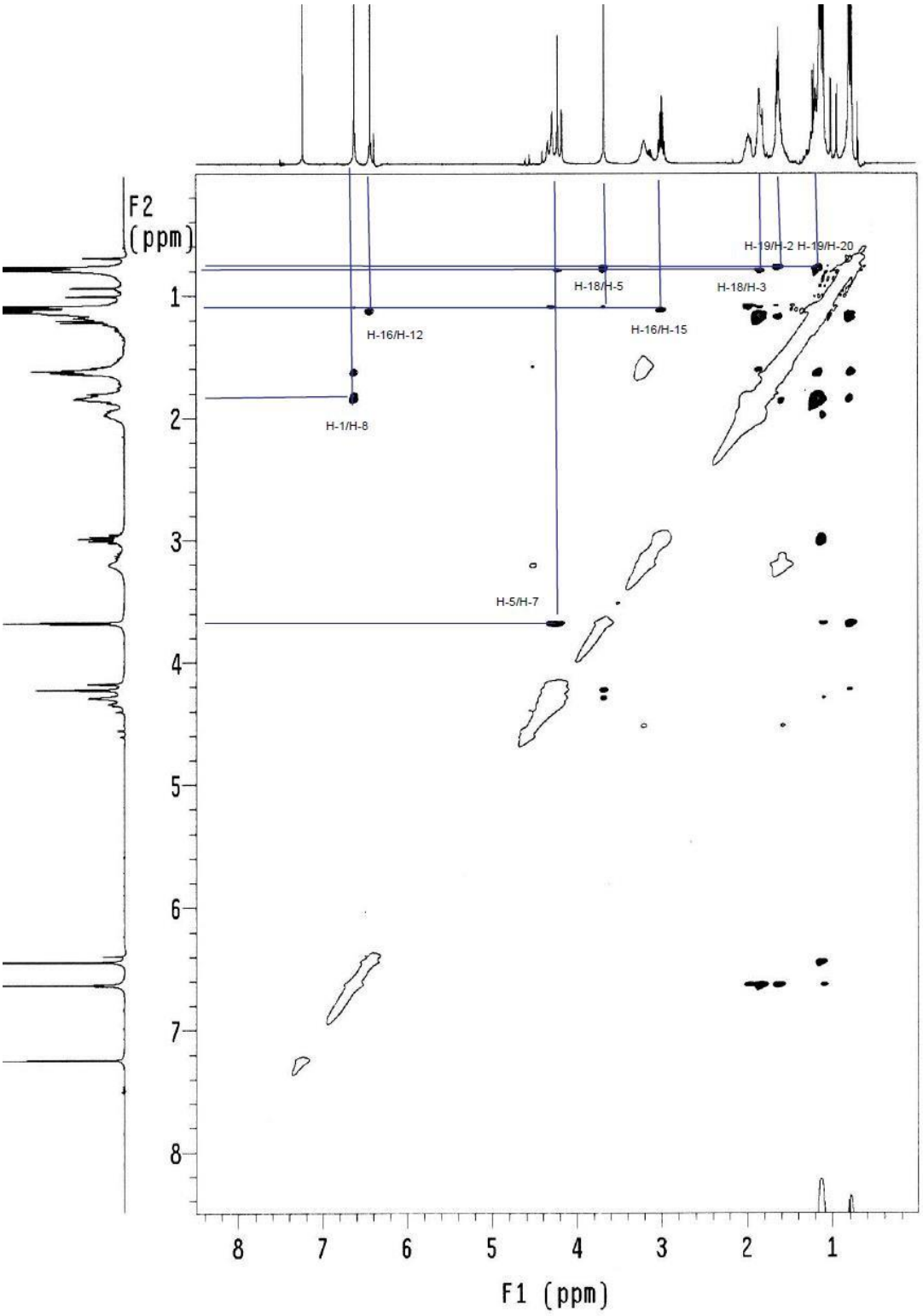


Figure S15: NOSEY spectrum of compound **3** in $CDCl_3$

CAS SciFinder^{n}

Task History

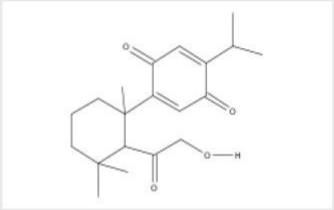
Initiating Search

September 29, 2021, 9:27AM

Substances:

Filtered By:

Structure Match:	**Similarity**
Similarity:	**85-89, 90-94**
Number of Components:	**1**



Search Tasks

Task	Search Type	View
Exported: Returned Substance Results + Filters	Substances	View Results

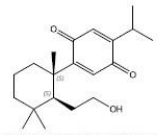
CAS SciFinder^n

Substances (6)

View in SciFinder^n

1 Similarity Score: **91**

2697170-39-9



Absolute stereochemistry shown

$C_{20}H_{30}O_3$

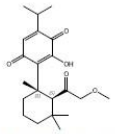
2,5-Cyclohexadiene-1,4-dione, 2-[(1*S*,2*S*)-2-(2-hydroxyethyl)-1,3,3-trimethylcyclohexyl]-5-(1-methylethyl)-

1 Reference | 1 Reaction | 0 Suppliers

Key Physical Properties	Value	Condition
Molecular Weight	318.45	-
Boiling Point (Predicted)	418.4±14.0 °C	Press: 760 Torr
Density (Predicted)	1.040±0.06 g/cm^3	Temp: 20 °C; Press: 760 Torr
pKa (Predicted)	15.14±0.10	Most Acidic Temp: 25 °C

2 Similarity Score: **91**

1879065-67-4



Absolute stereochemistry shown, Rotation (+)

$C_{21}H_{30}O_5$

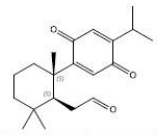
3-Hydroxy-2-[(1*S*,2*S*)-2-(2-methoxyacetyl)-1,3,3-trimethylcyclohexyl]-5-(1-methylethyl)-2,5-cyclohexadiene-1,4-dione

3 References | 0 Reactions | 1 Supplier

Key Physical Properties	Value	Condition
Molecular Weight	362.46	-
Boiling Point (Predicted)	483.7±45.0 °C	Press: 760 Torr
Density (Predicted)	1.132±0.06 g/cm^3	Temp: 20 °C; Press: 760 Torr
pKa (Predicted)	3.19±0.50	Most Acidic Temp: 25 °C

3 Similarity Score: **91**

453510-93-5



Absolute stereochemistry shown

$C_{20}H_{28}O_3$

(1*S*,6*S*)-2,2,6-Trimethyl-6-[4-(1-methylethyl)-3,6-dioxo-1,4-cyclohexadien-1-yl]cyclohexaneacetaldehyde

4 References | 2 Reactions | 1 Supplier

Key Physical Properties	Value	Condition
Molecular Weight	316.43	-
Boiling Point (Predicted)	413.3±14.0 °C	Press: 760 Torr
Density (Predicted)	1.034±0.06 g/cm^3	Temp: 20 °C; Press: 760 Torr
Spectra		

Figure S16: Scifinder report for compound **3**