

Supporting Information

Cytotoxic 13,28 epoxy bridged oleanane-type triterpenoid saponins from the roots of *Ardisia crispa*

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Legends for Supplementary Table

Table S1 ^{13}C -NMR (100 MHz) Data of **4-7** in CD_3OD

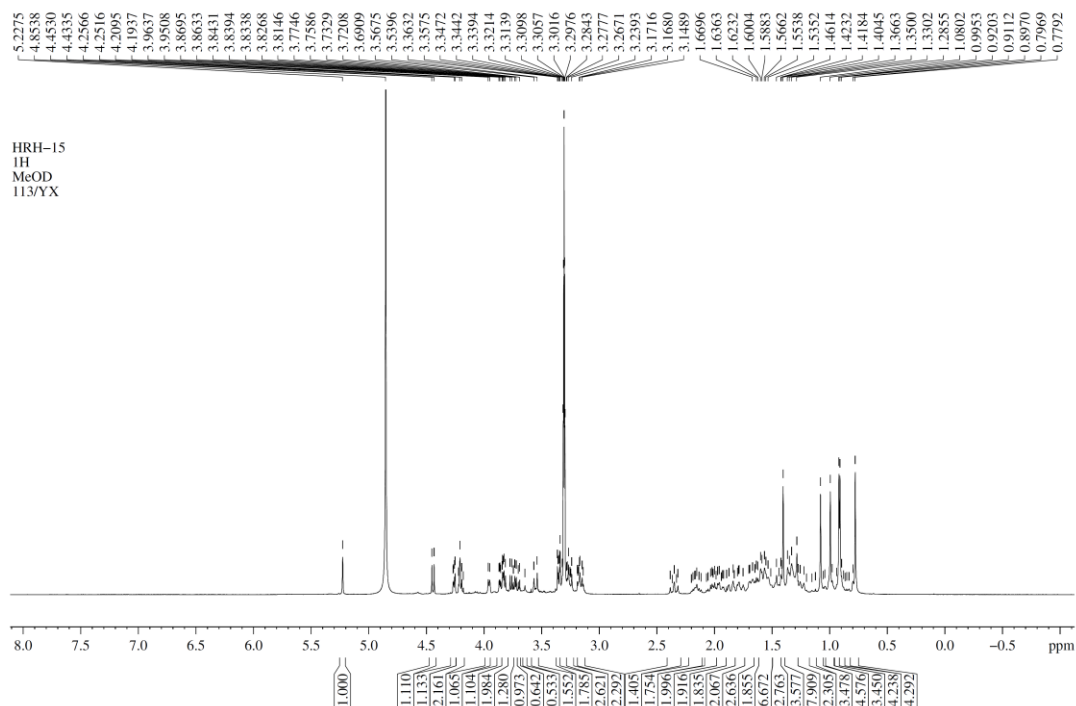


Figure S1: ^1H -NMR spectrum of Compound **1**

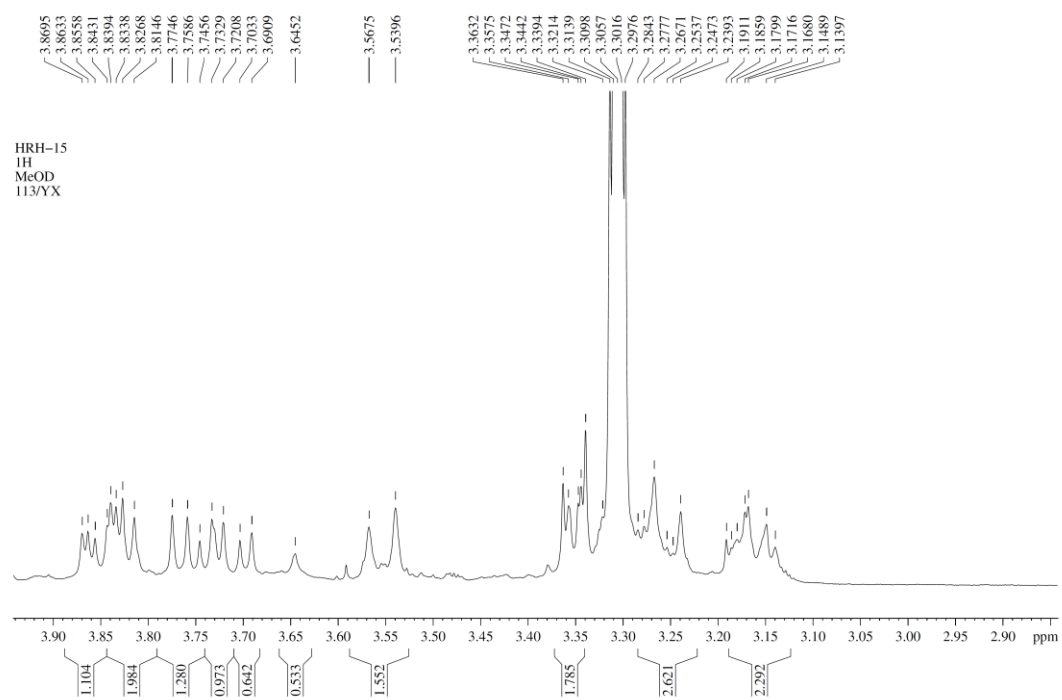


Figure S2: ^1H -NMR extended spectrum of Compound **1**

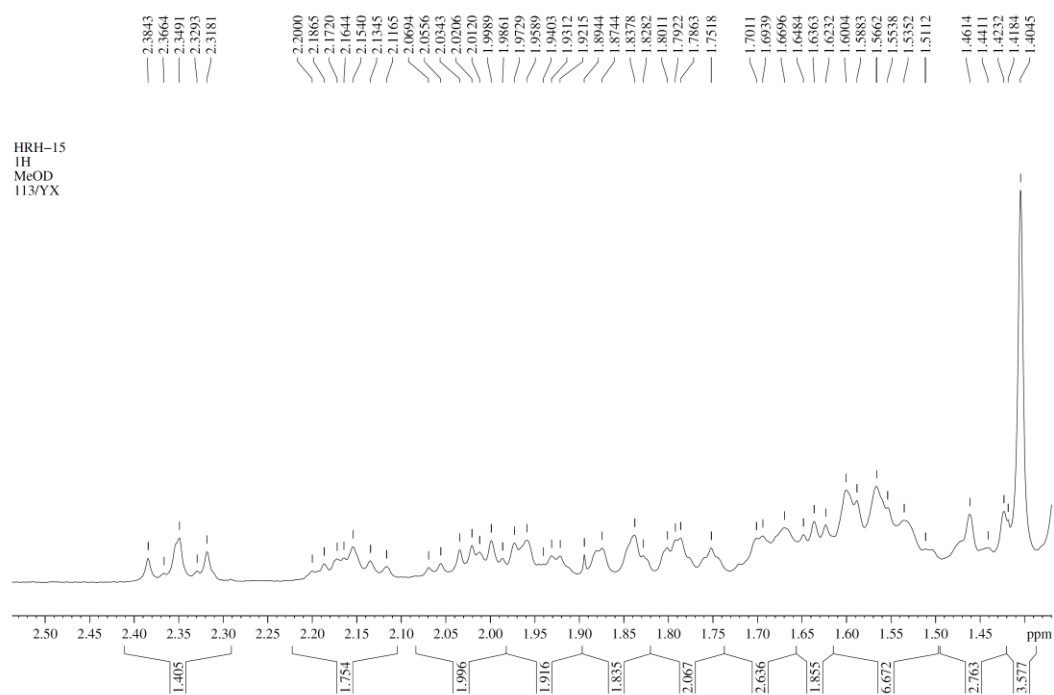


Figure S3: ^1H -NMR extended spectrum of Compound **1**

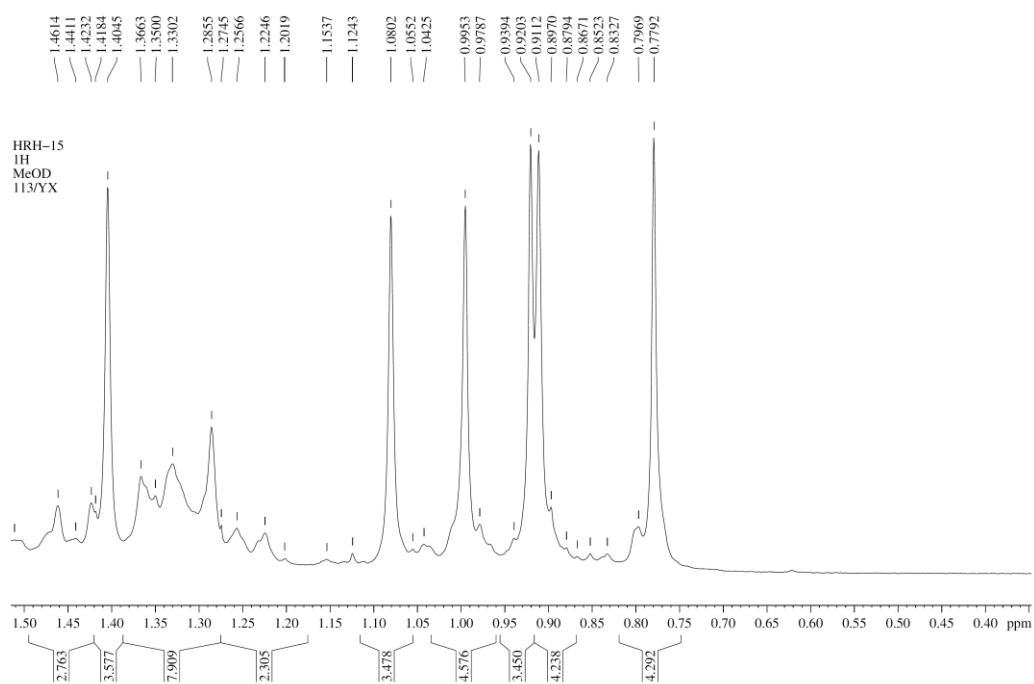


Figure S4: ^1H -NMR extended spectrum of Compound **1**

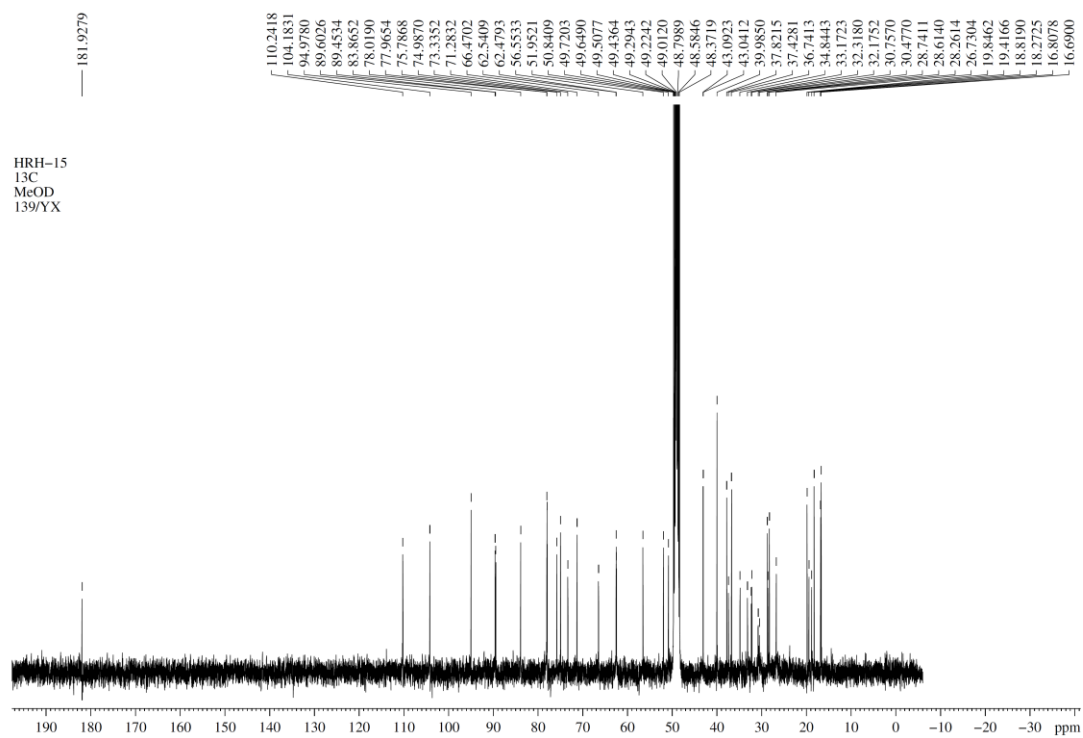


Figure S5: ^{13}C NMR spectrum of Compound **1**

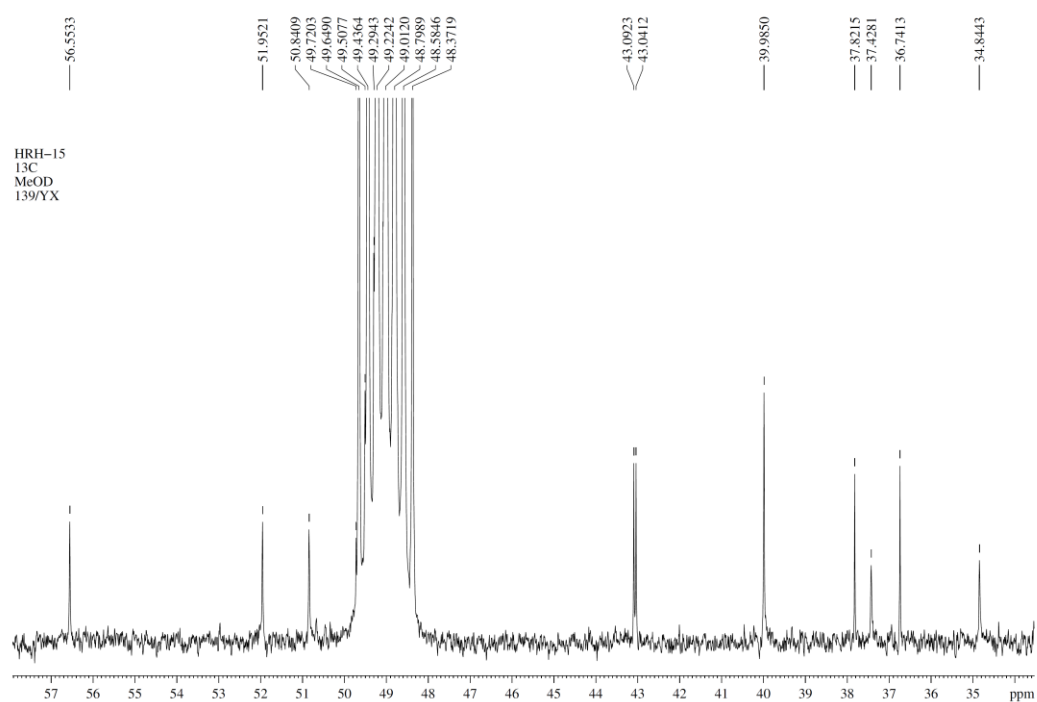


Figure S6: ^{13}C NMR extended spectrum of Compound **1**

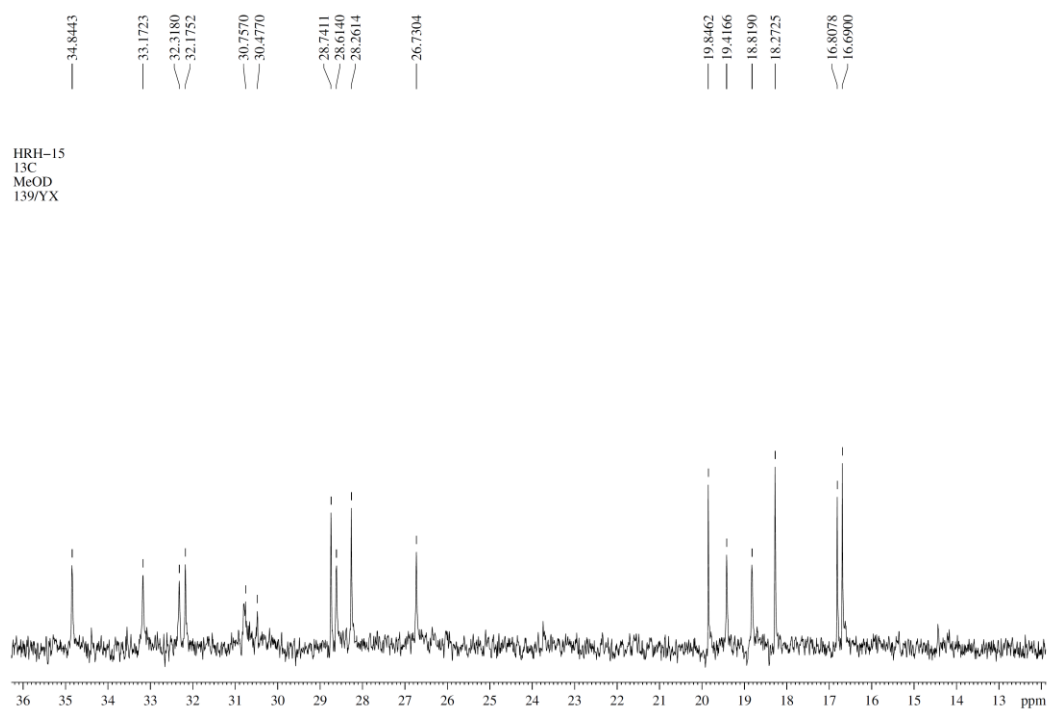


Figure S7: ^{13}C NMR extended spectrum of Compound **1**

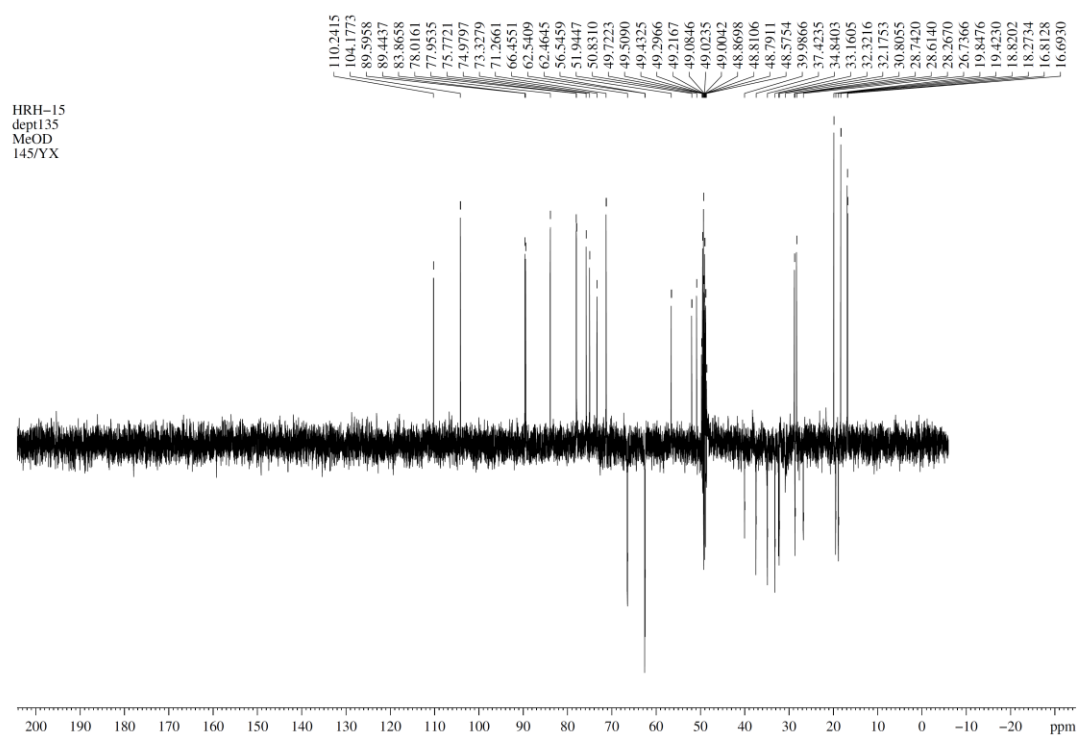


Figure S8: DEPT-135 spectrum of Compound **1**

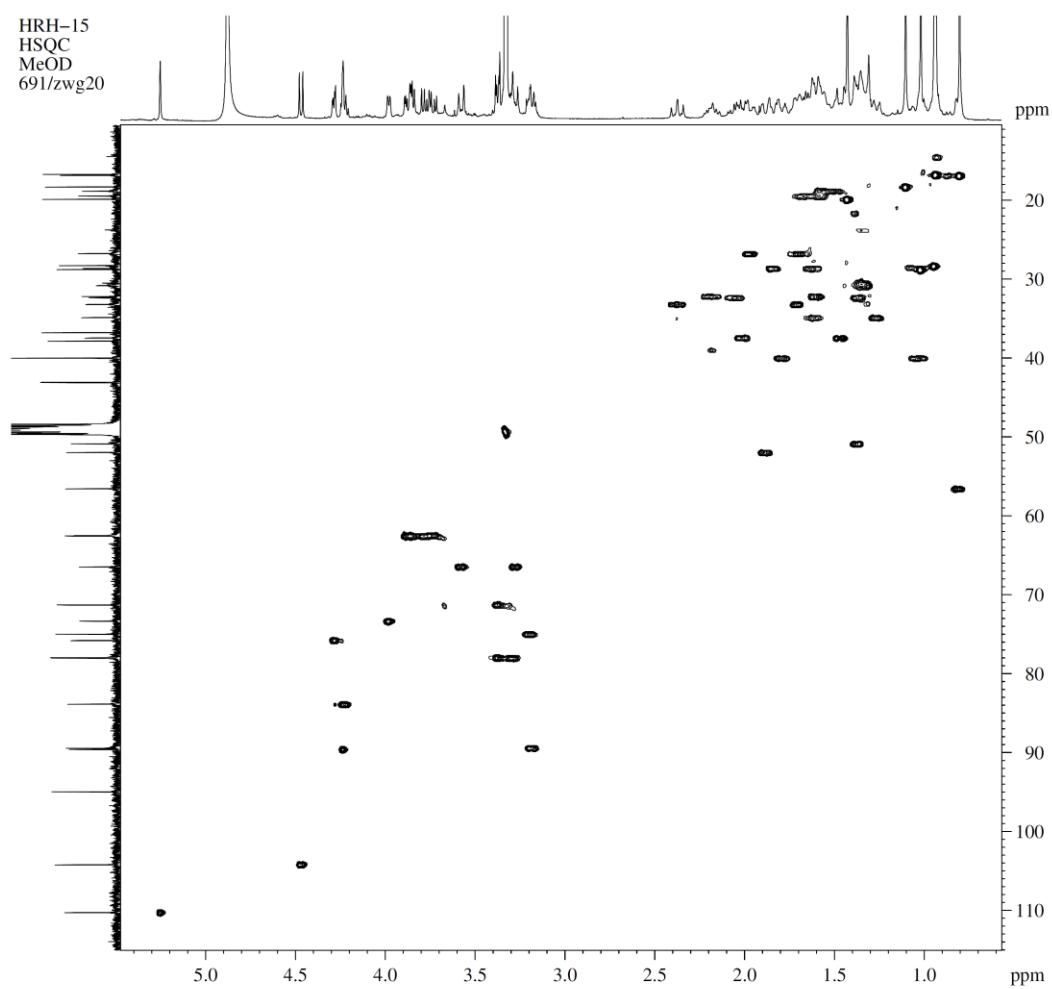


Figure S9: HSQC spectrum of Compound **1**

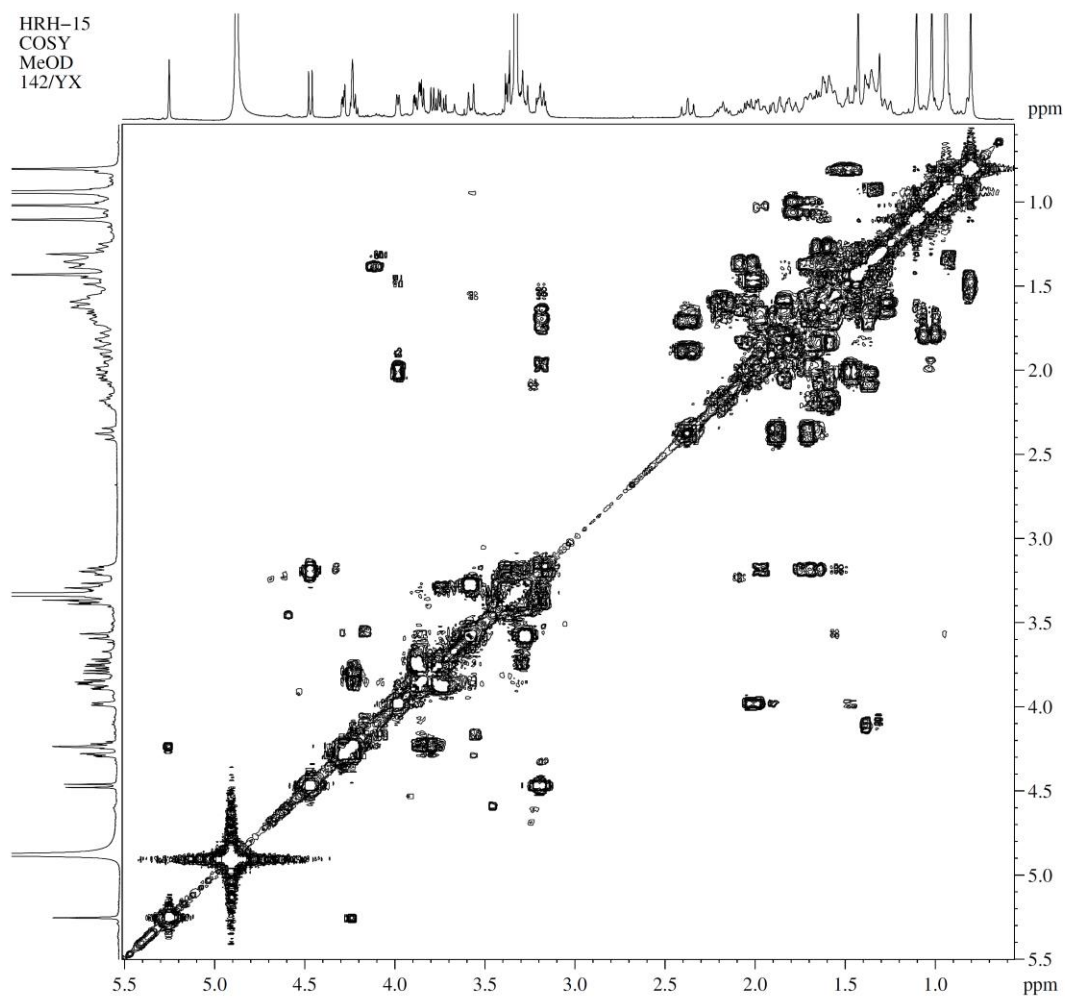


Figure S10: ^1H - ^1H COSY spectrum of Compound **1**

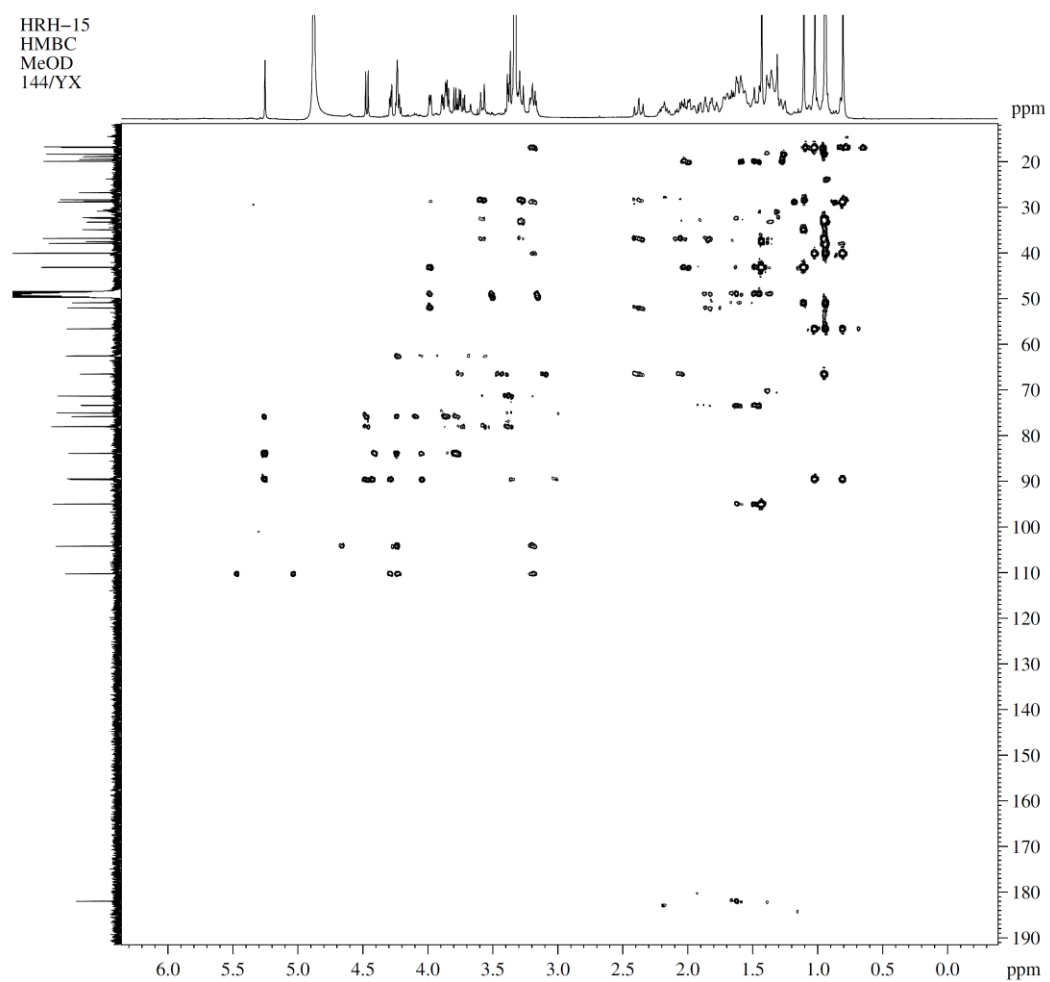


Figure S11: HMBC spectrum of Compound **1**

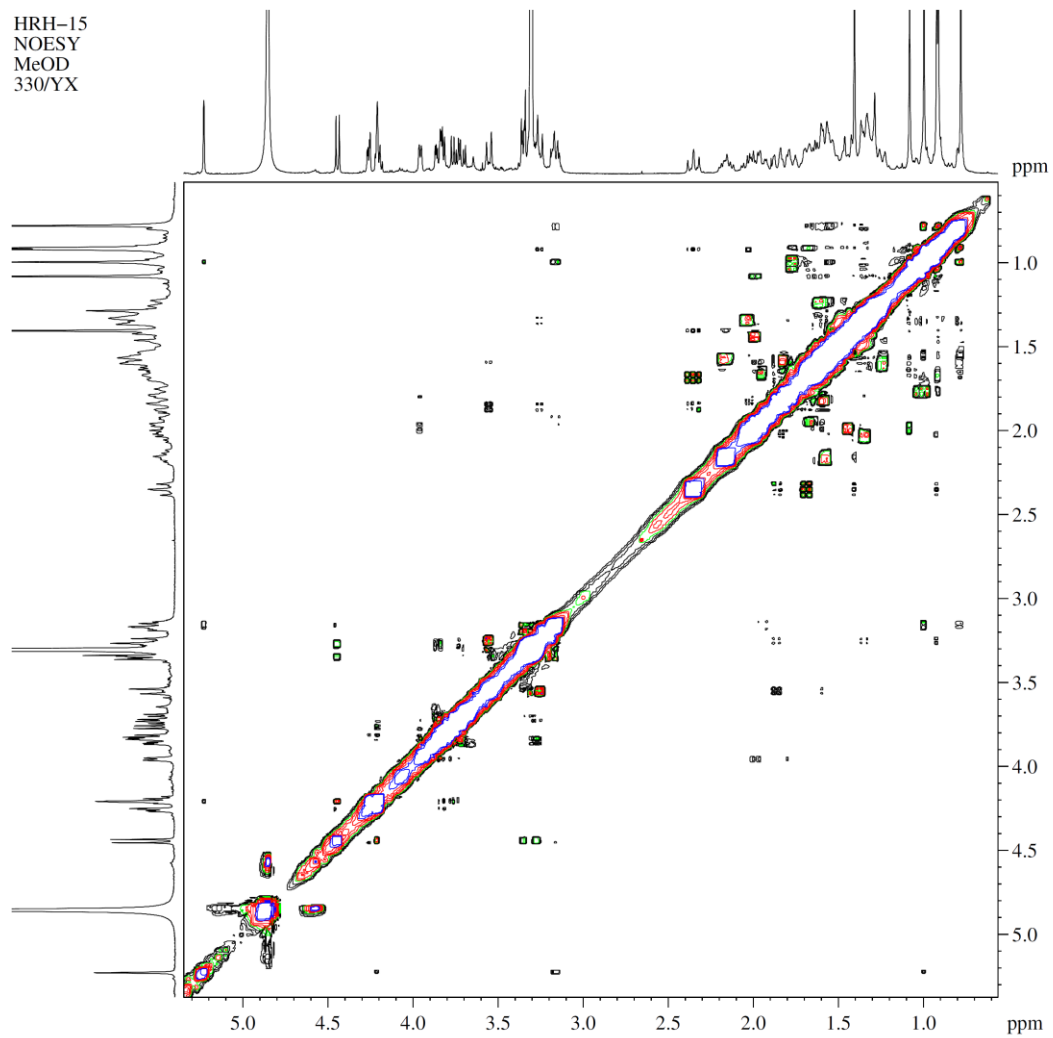


Figure S12: NOESY spectrum of Compound **1**

HRH-15 #30 RT: 0.13 AV: 1 NL: 2.32E7
T: FTMS + p ESI Full ms [100.0000-1500.0000]

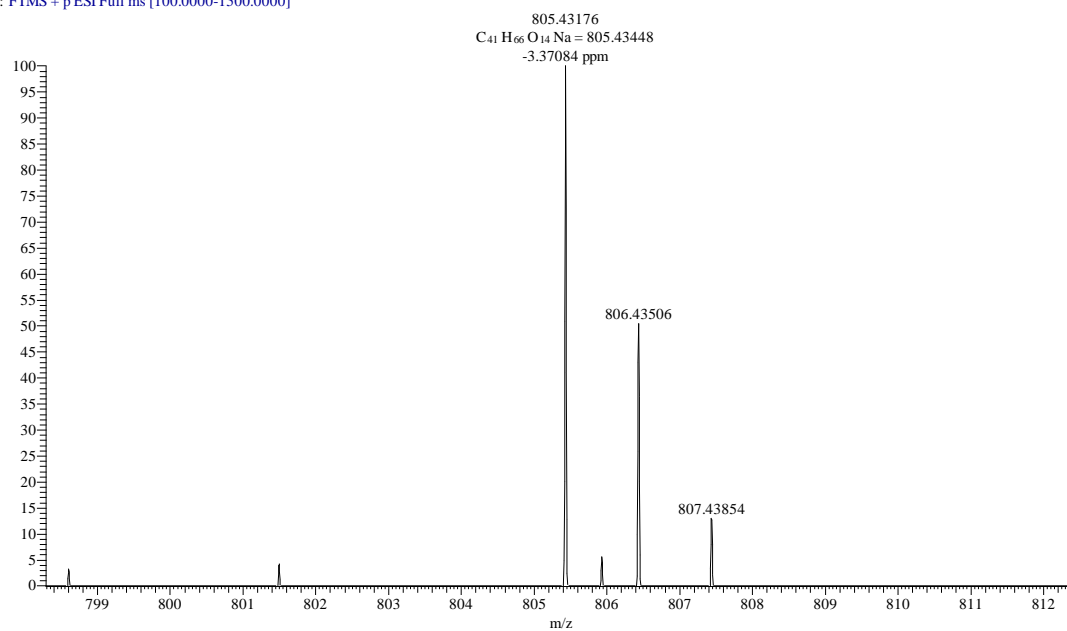


Figure S13: HR-ESI-MS spectrum of Compound **1**

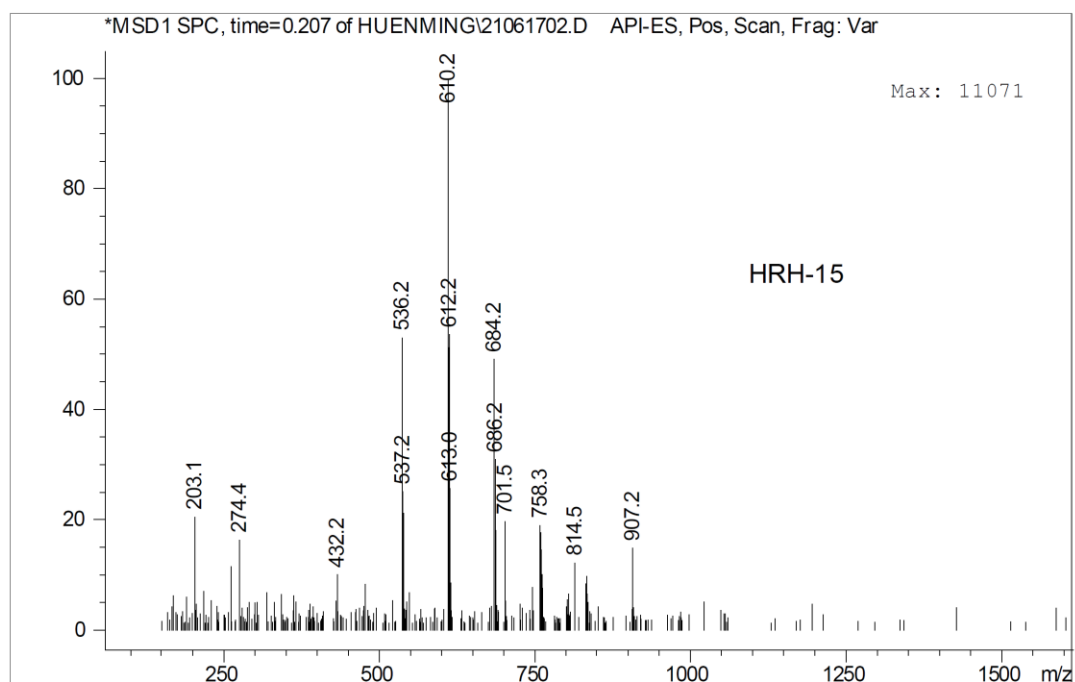


Figure S14: ESI-MS spectrum of Compound **1**

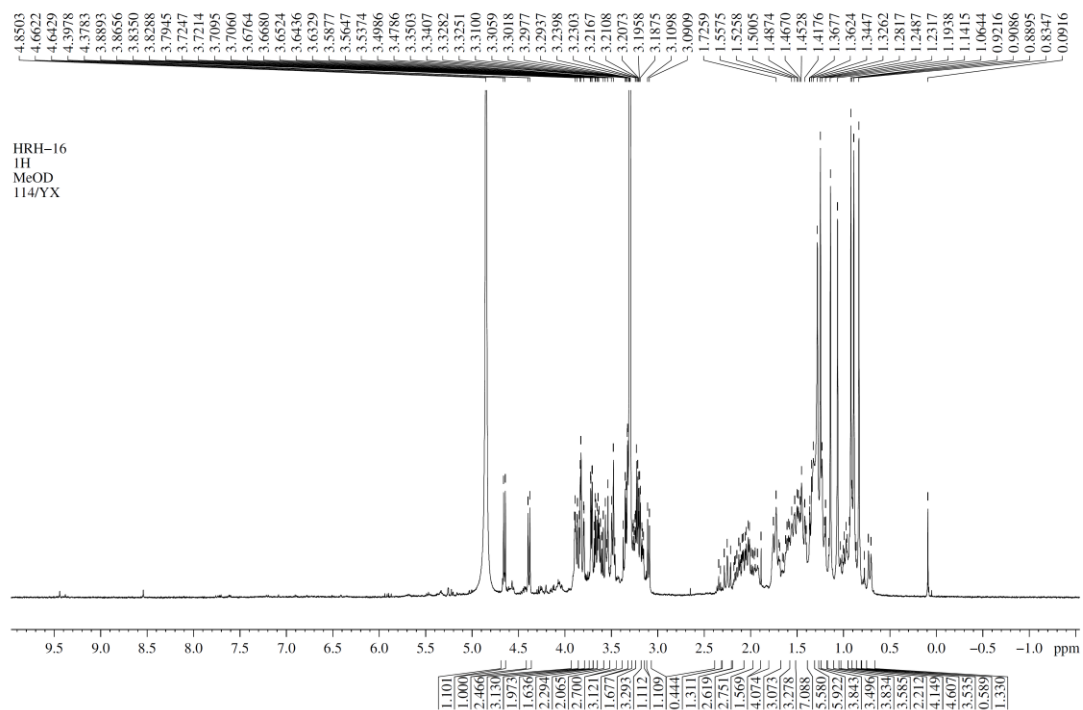


Figure S15: ^1H -NMR spectrum of Compound **2**

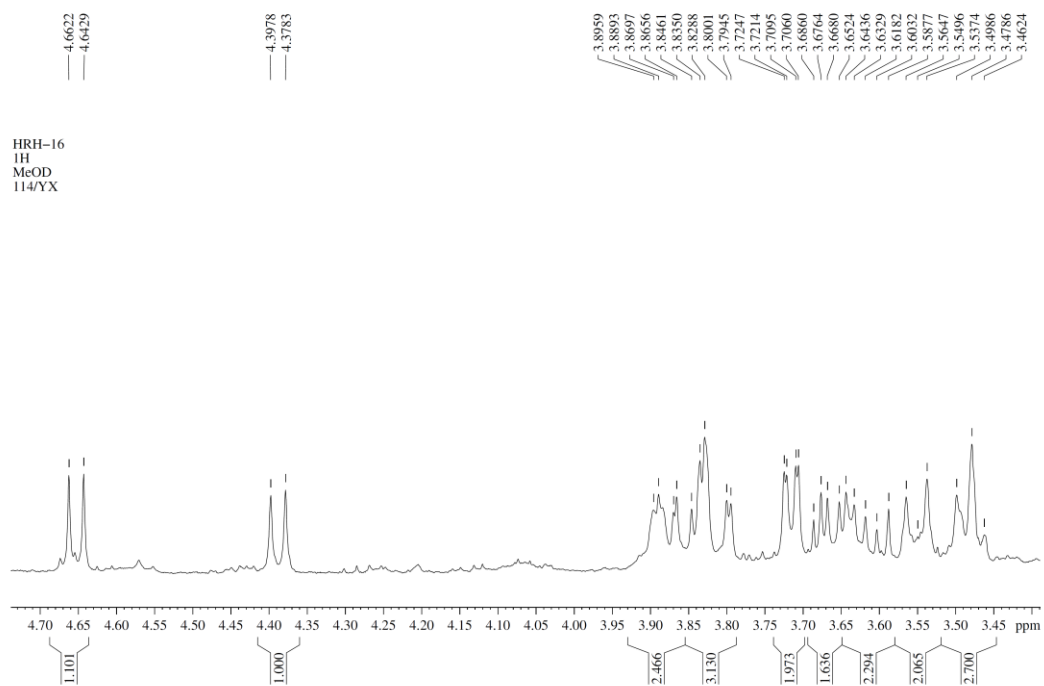


Figure S16: ^1H -NMR extended spectrum of Compound **2**

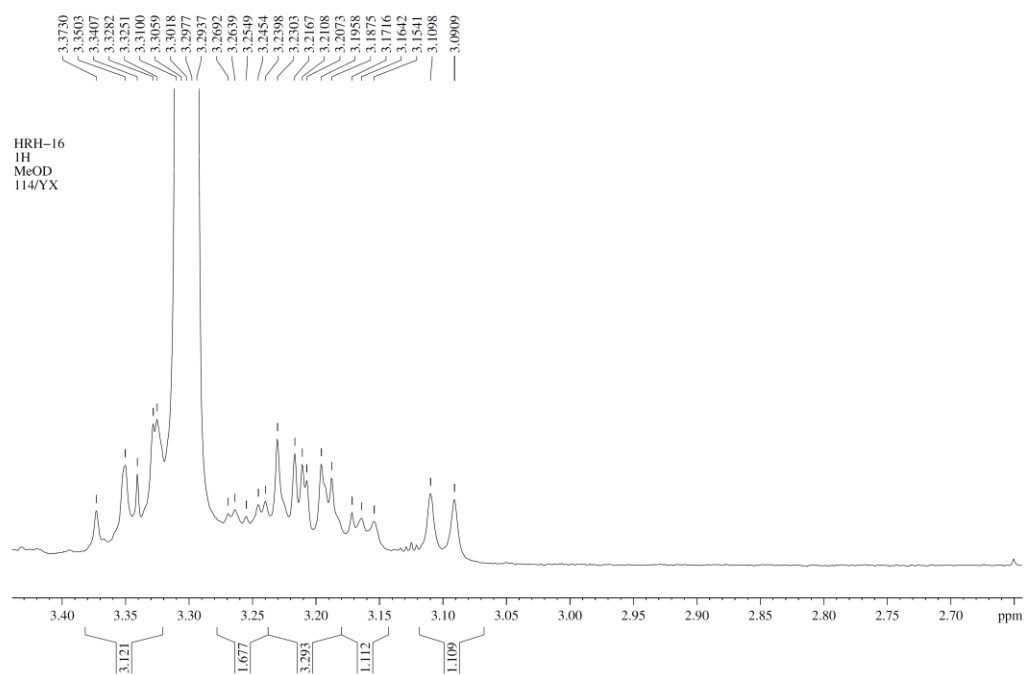


Figure S17: ^1H -NMR extended spectrum of Compound **2**

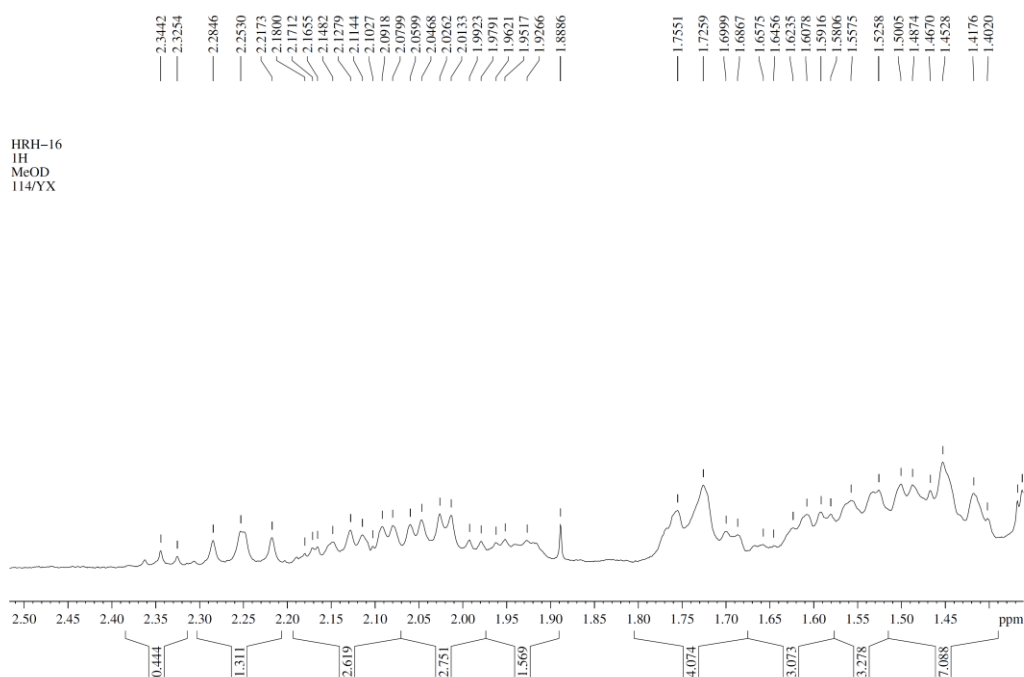


Figure S18: ^1H -NMR extended spectrum of Compound **2**

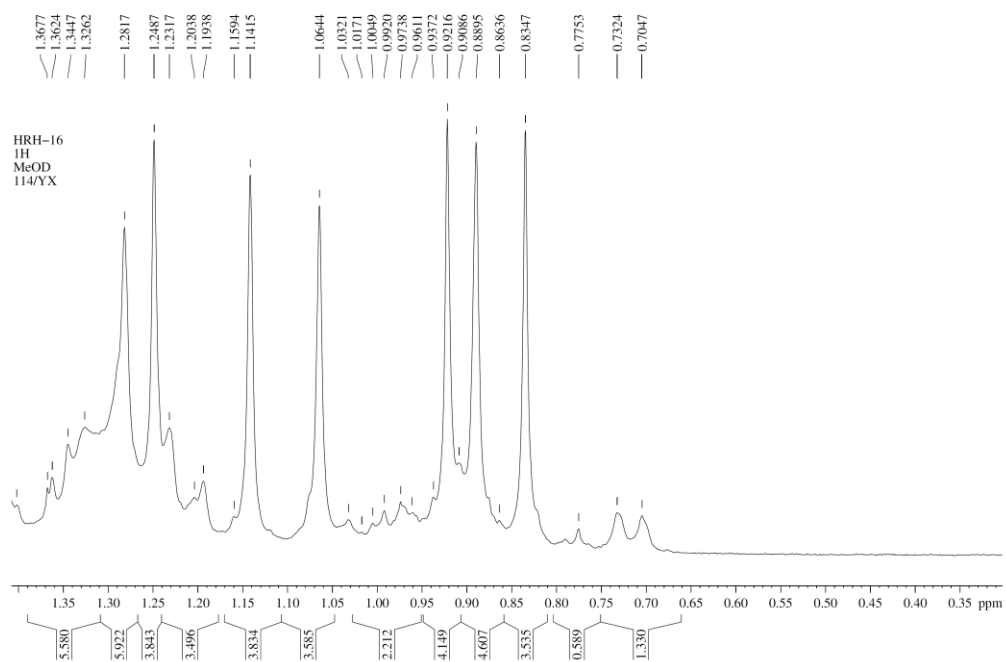


Figure S19: ^1H -NMR extended spectrum of Compound **2**

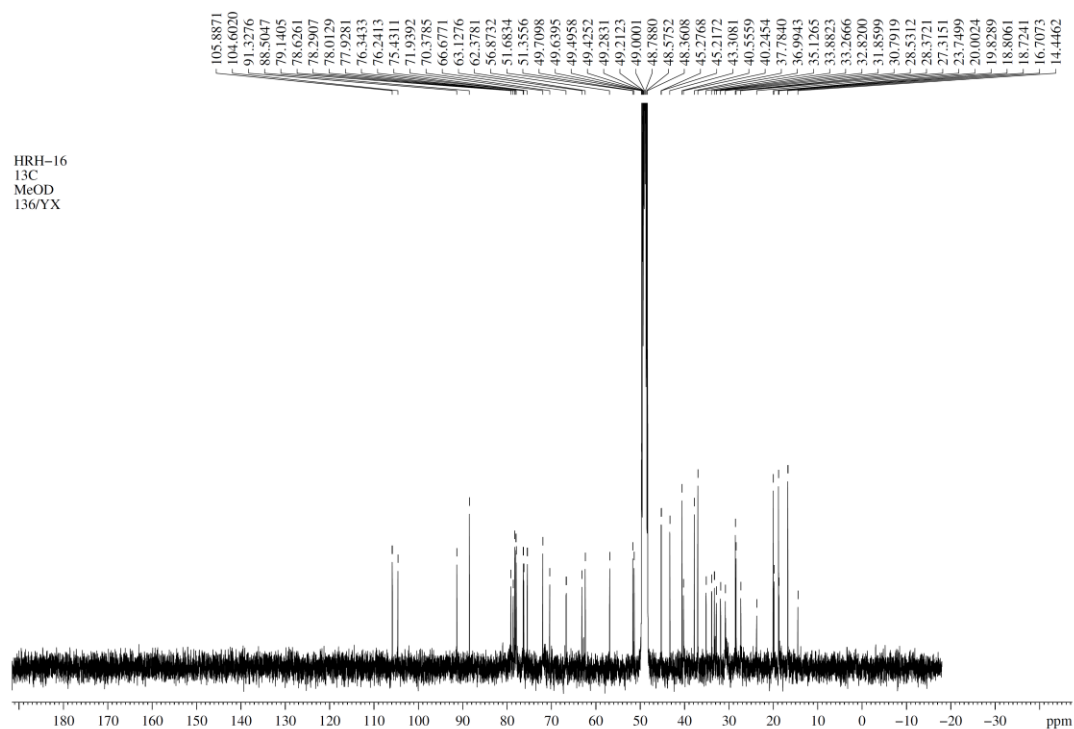


Figure S20: ^{13}C NMR spectrum of Compound **2**

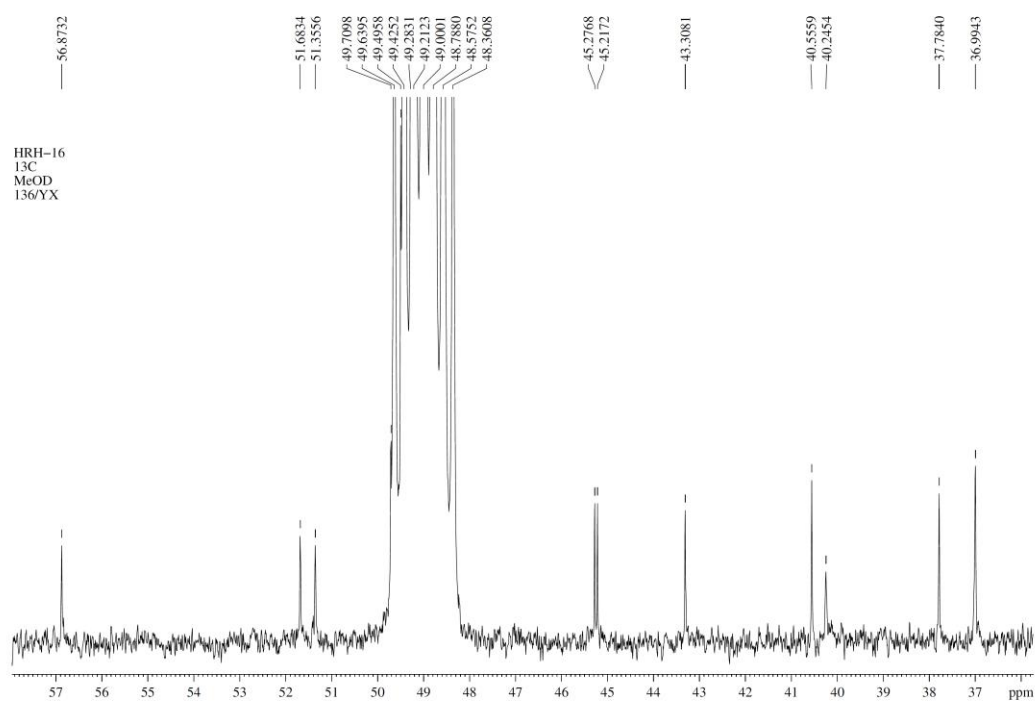


Figure S21: ^{13}C NMR extended spectrum of Compound **2**

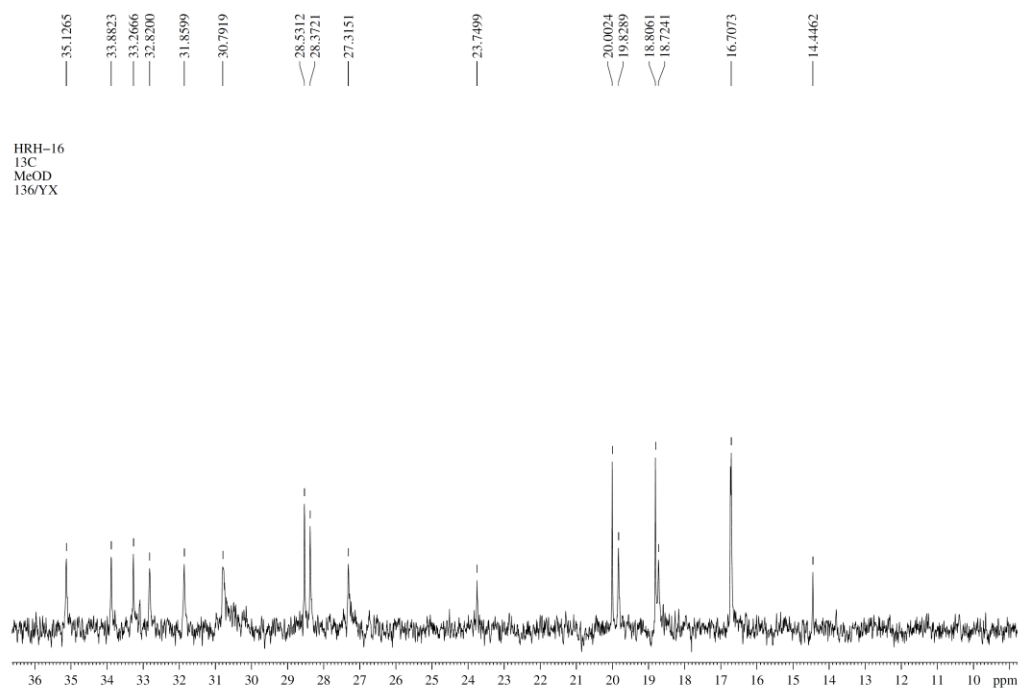


Figure S22: ^{13}C NMR extended spectrum of Compound 2

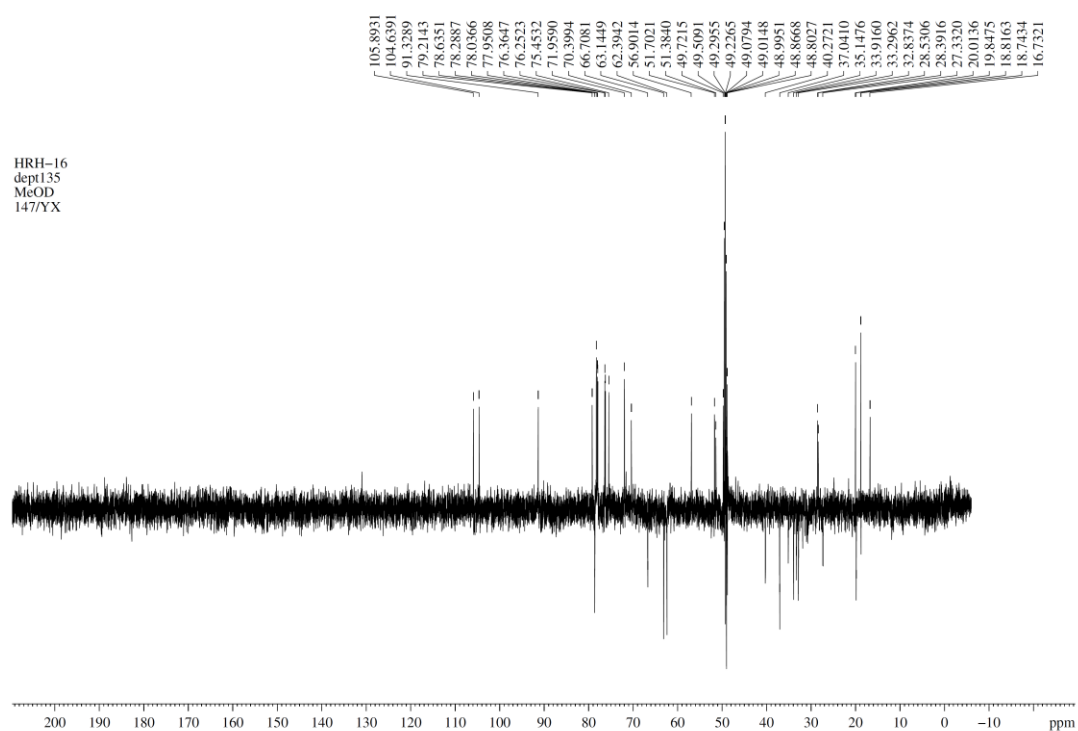


Figure S23: DEPT-135 spectrum of Compound **2**

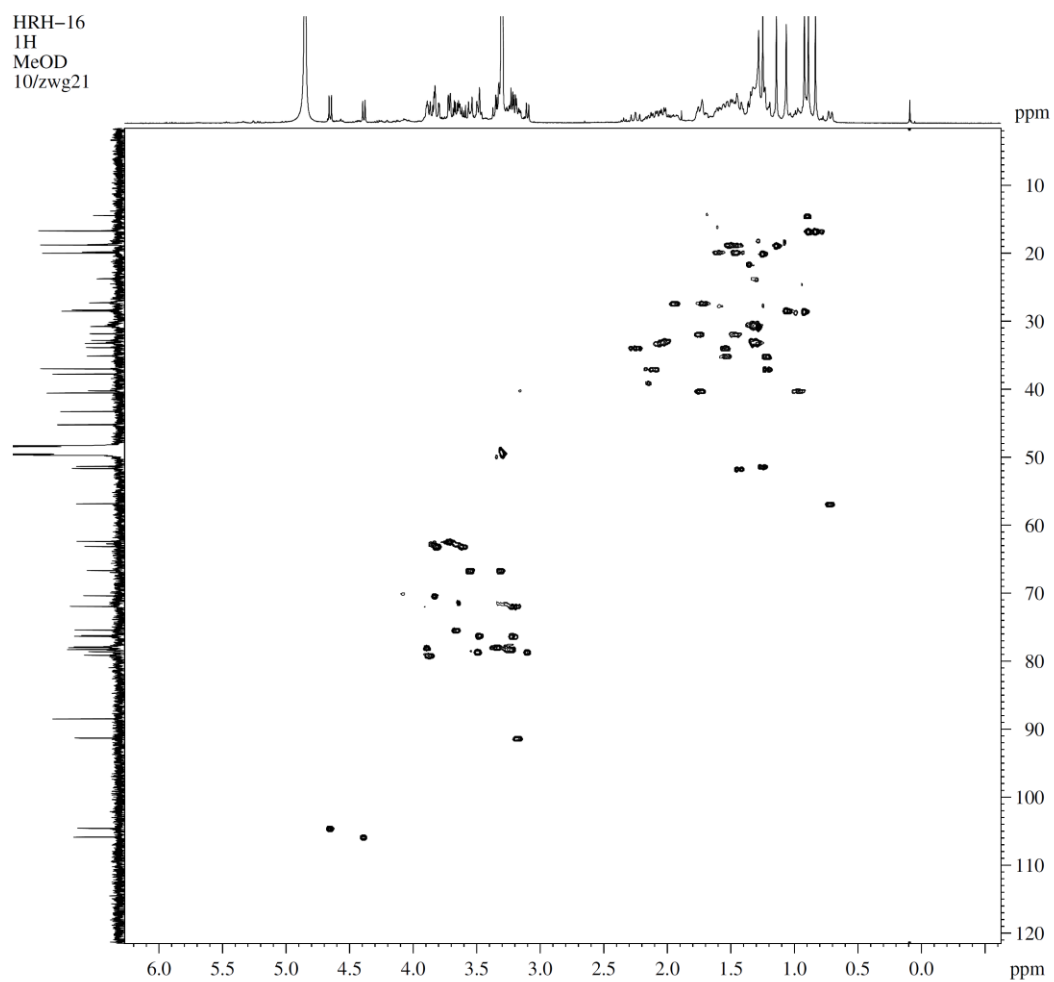


Figure S24: HSQC spectrum of Compound **2**

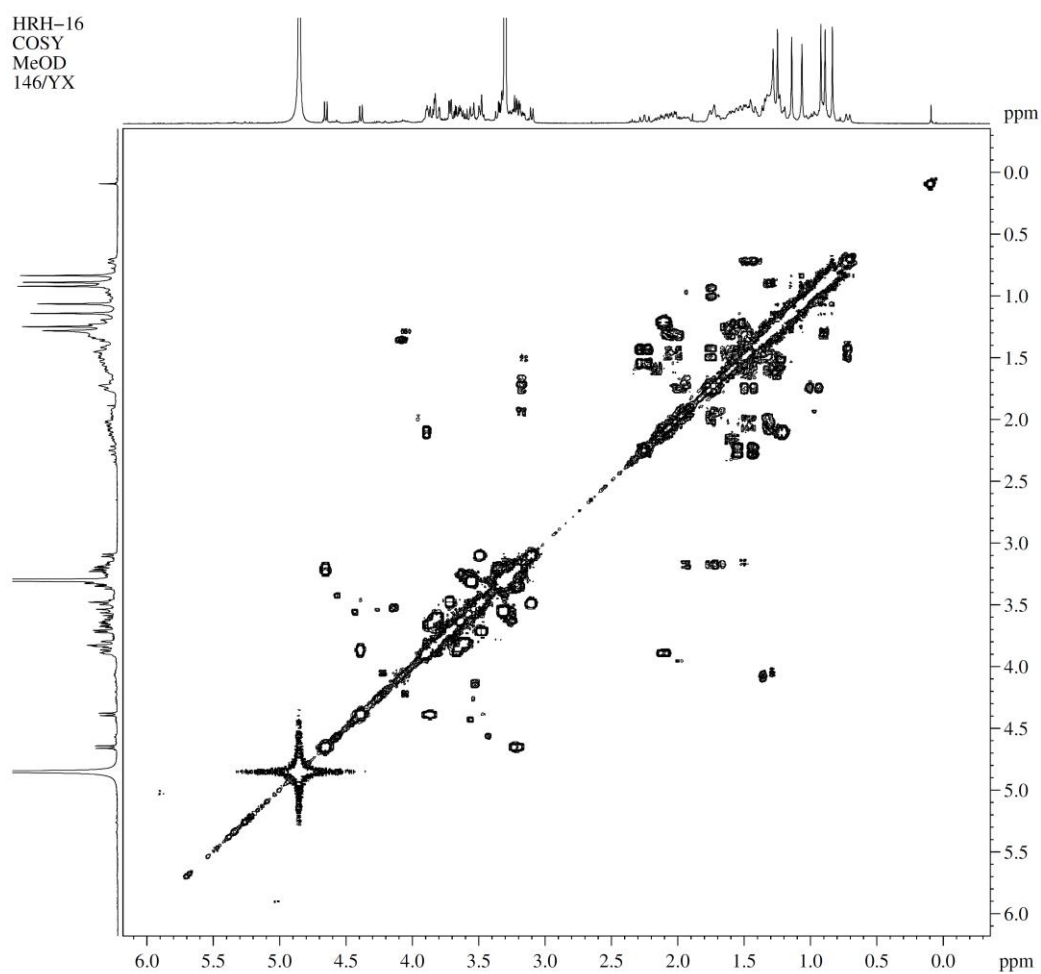


Figure S25: ^1H - ^1H COSY spectrum of Compound **2**

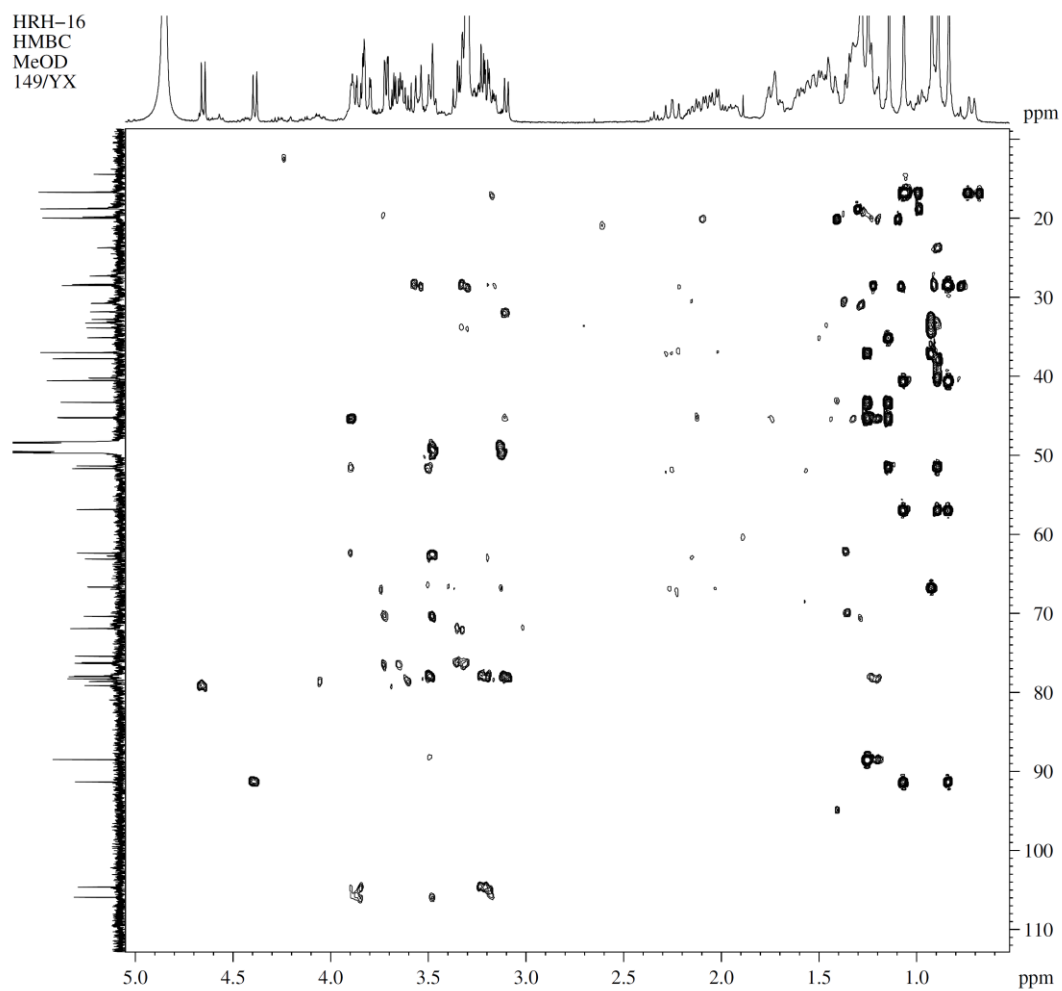


Figure S26: HMBC spectrum of Compound 2

HRH-16
NOESY
MeOD
331/YX

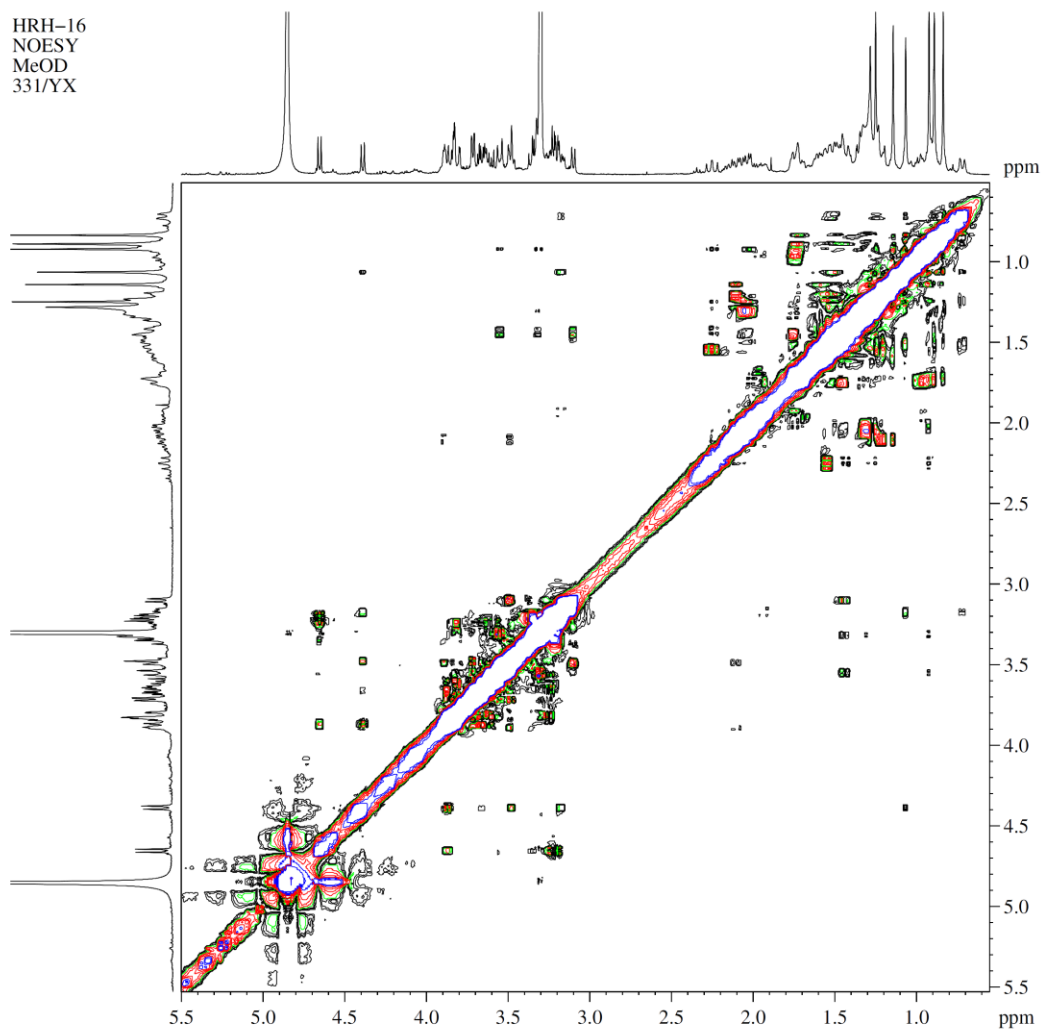


Figure S27: NOESY spectrum of Compound 2

HRH-16 #47 RT: 0.21 AV: 1 NL: 7.35E7
T: FTMS + p ESI Full ms [100.0000-1500.0000]

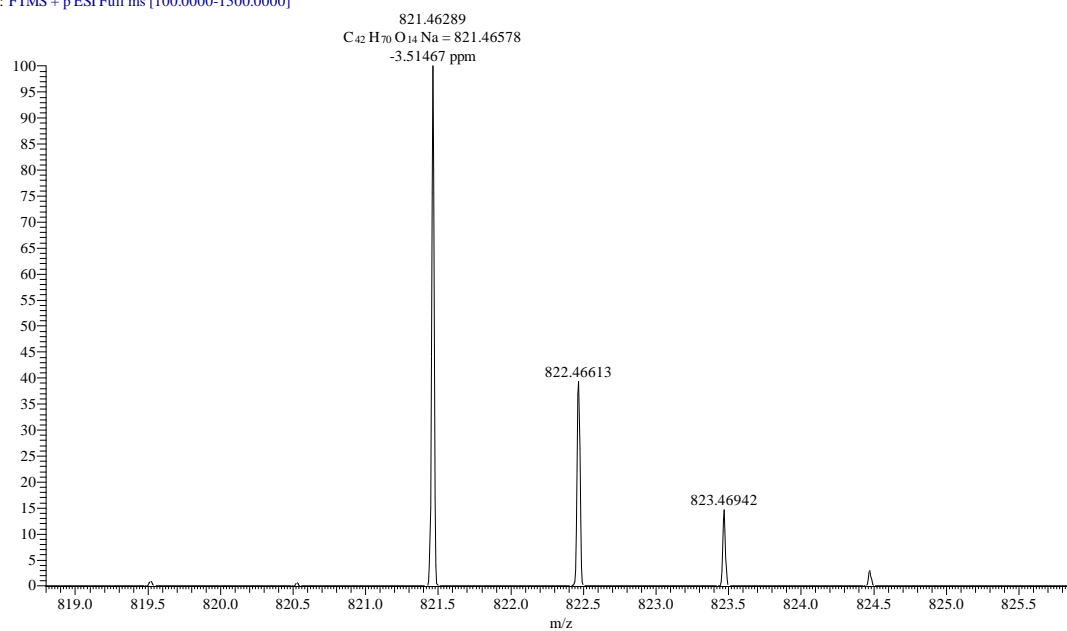


Figure S28: HR-ESI-MS spectrum of Compound 2

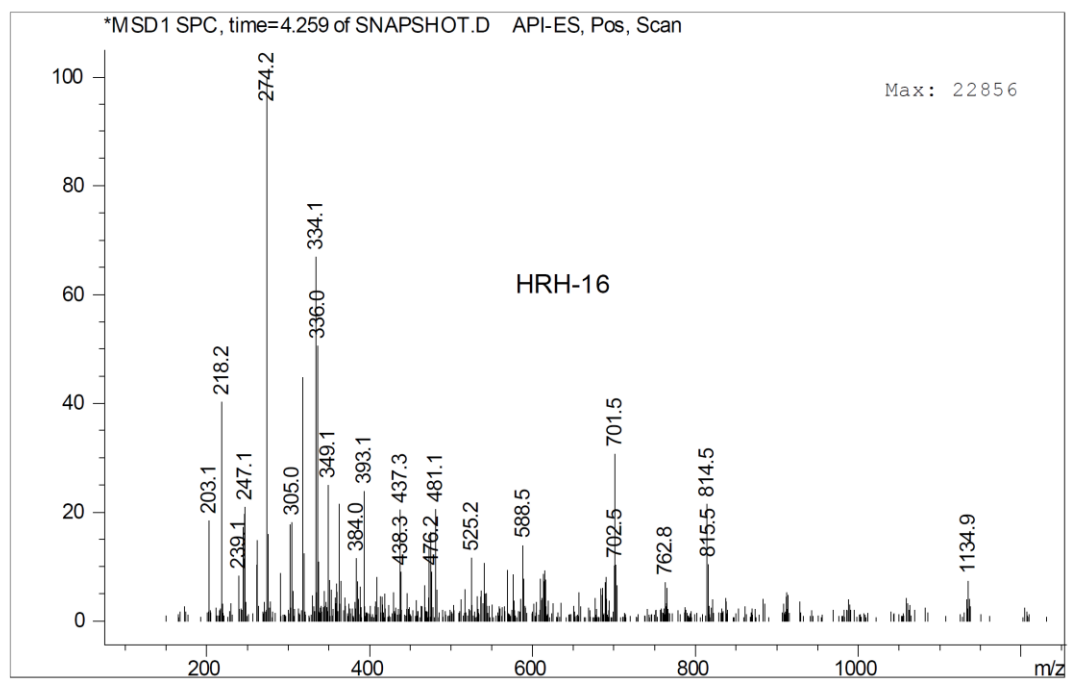


Figure S29: ESI-MS spectrum of Compound **2**

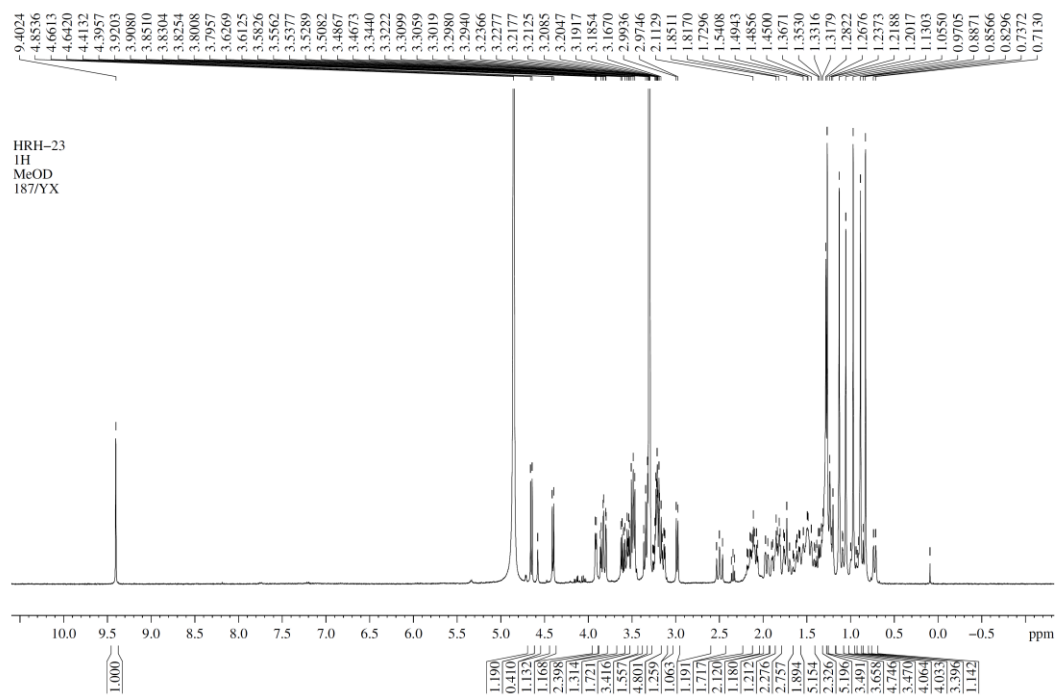


Figure S30: ^1H -NMR spectrum of Compound **3**

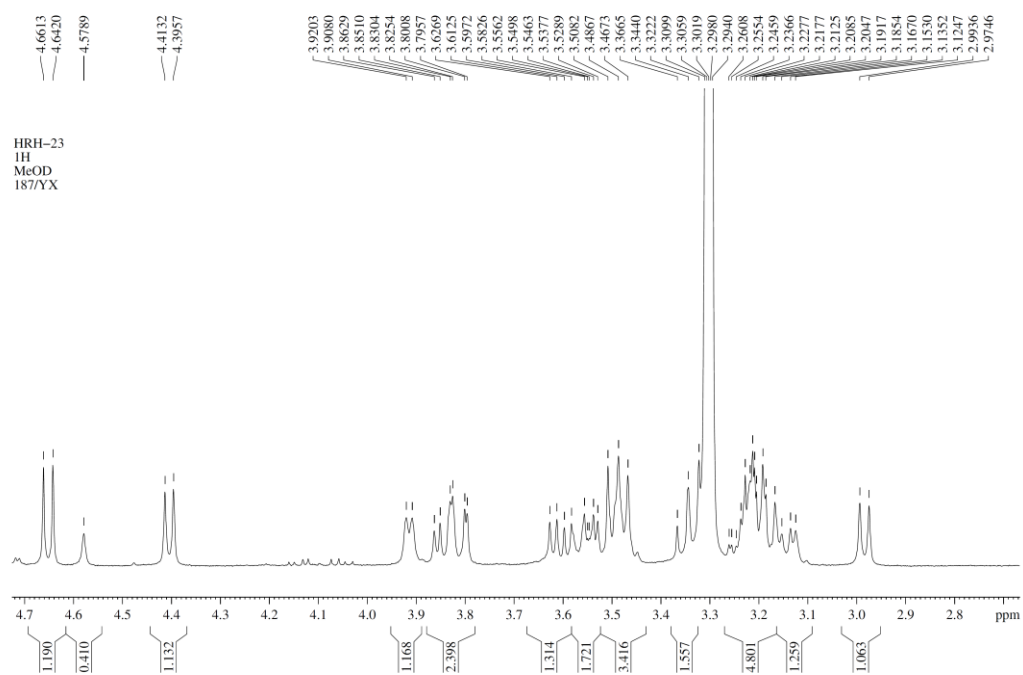


Figure S31: ^1H -NMR extended spectrum of Compound **3**

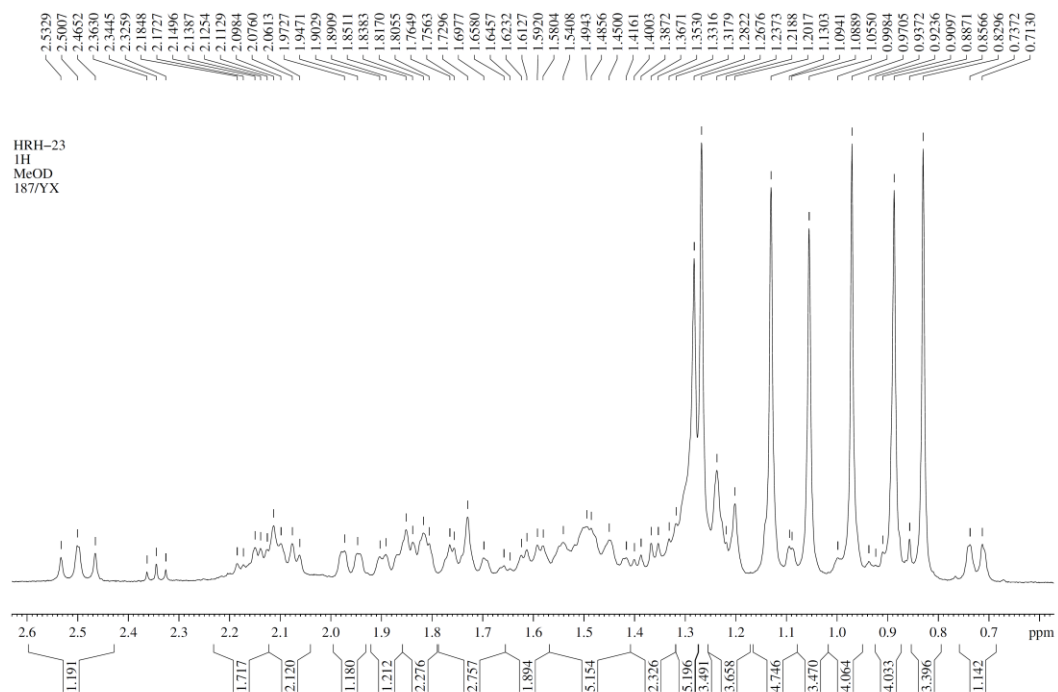


Figure S32: ^1H -NMR extended spectrum of Compound **3**

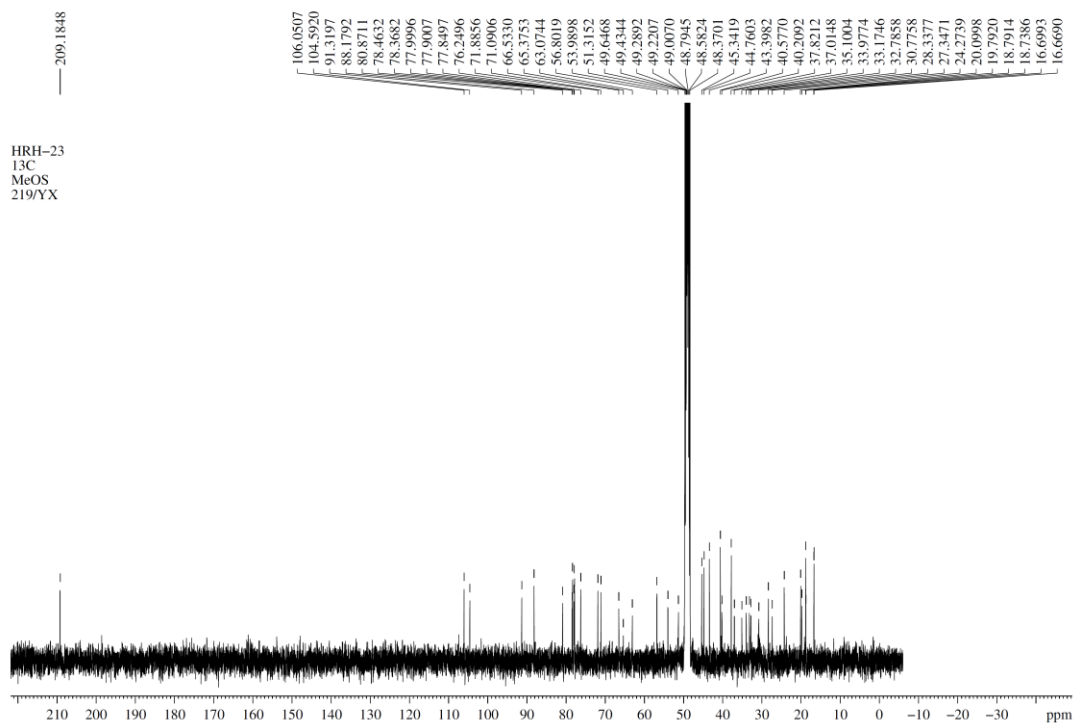


Figure S33: ^{13}C NMR spectrum of Compound **3**

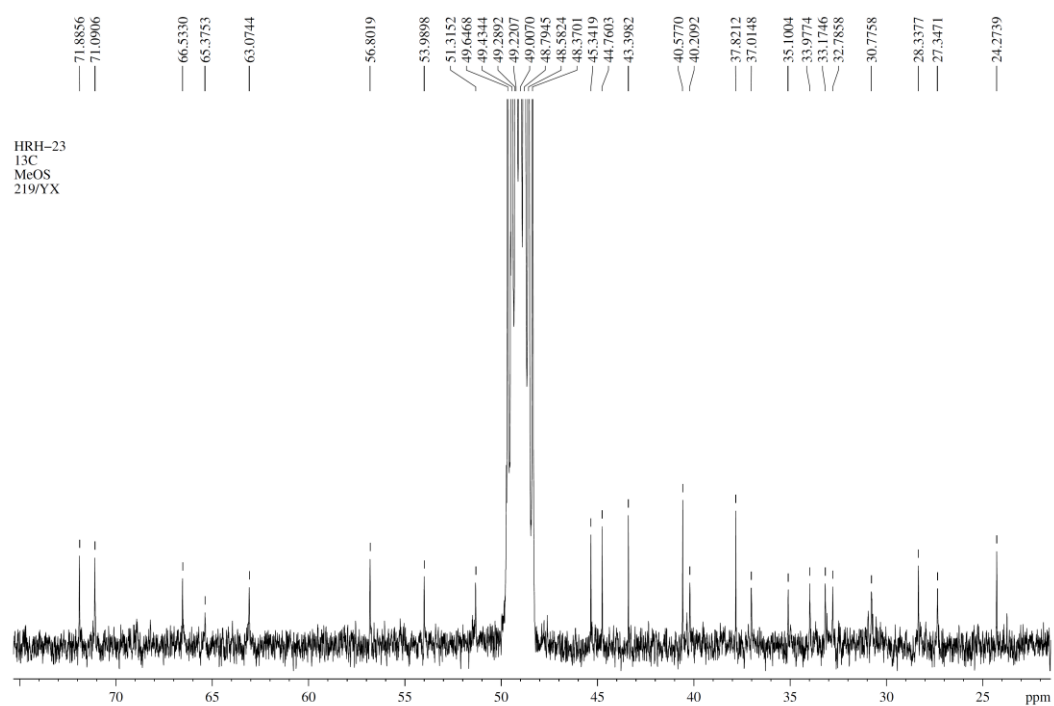


Figure S34: ^{13}C NMR extended spectrum of Compound **3**

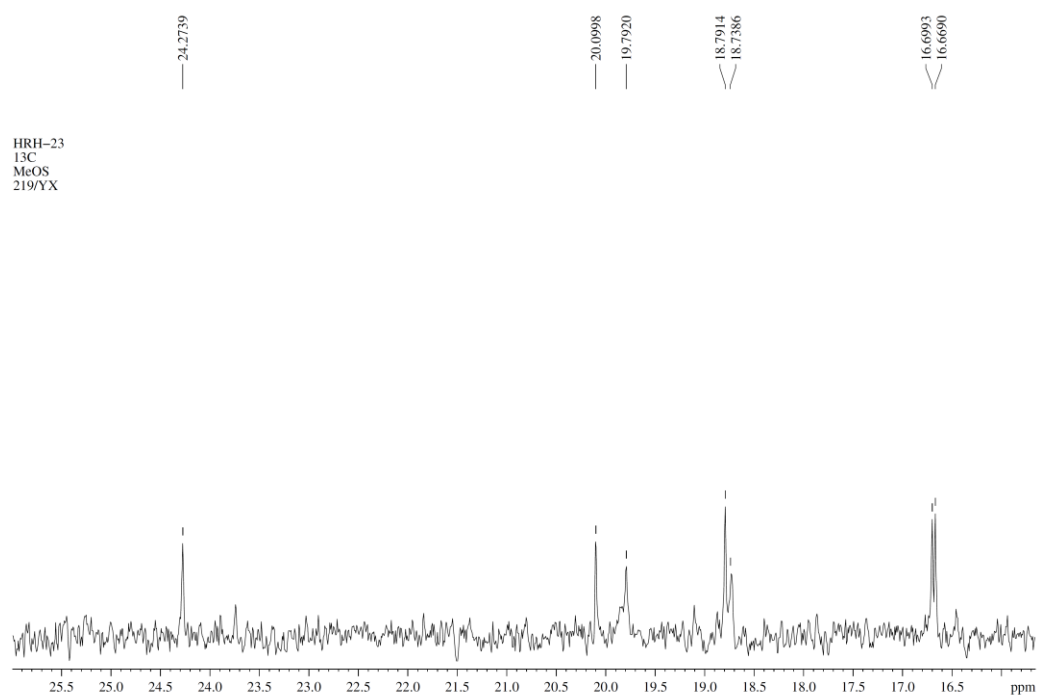


Figure S35: ^{13}C NMR extended spectrum of Compound **3**

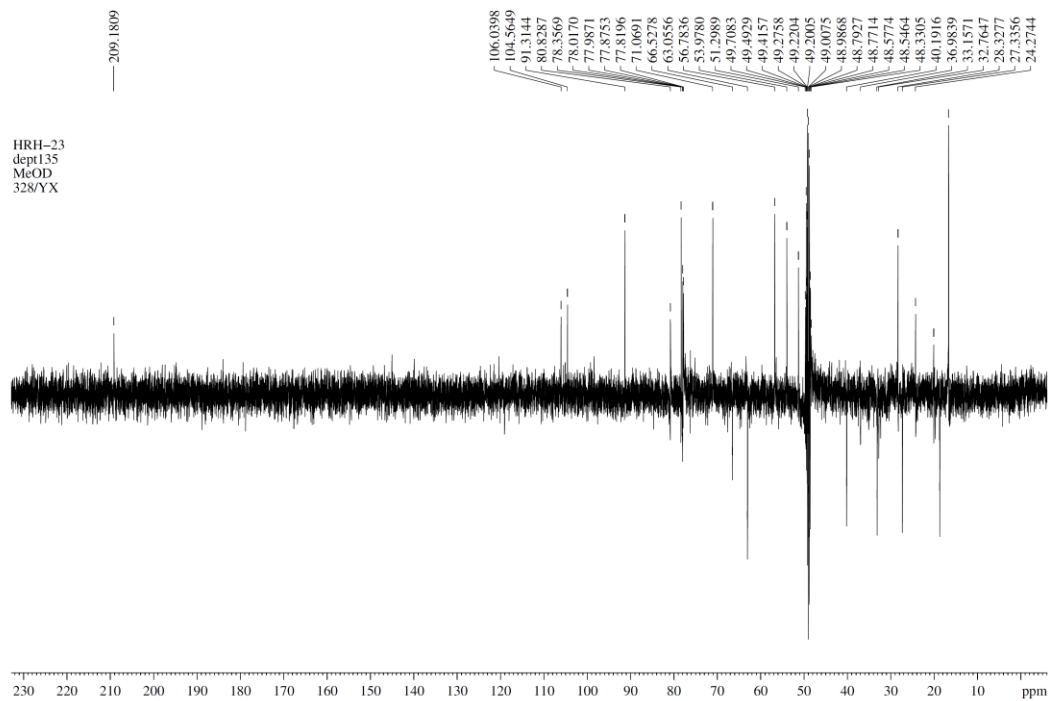


Figure S36: DEPT-135 spectrum of Compound **3**

HRH-23
HSQC
MeOD
326/YX

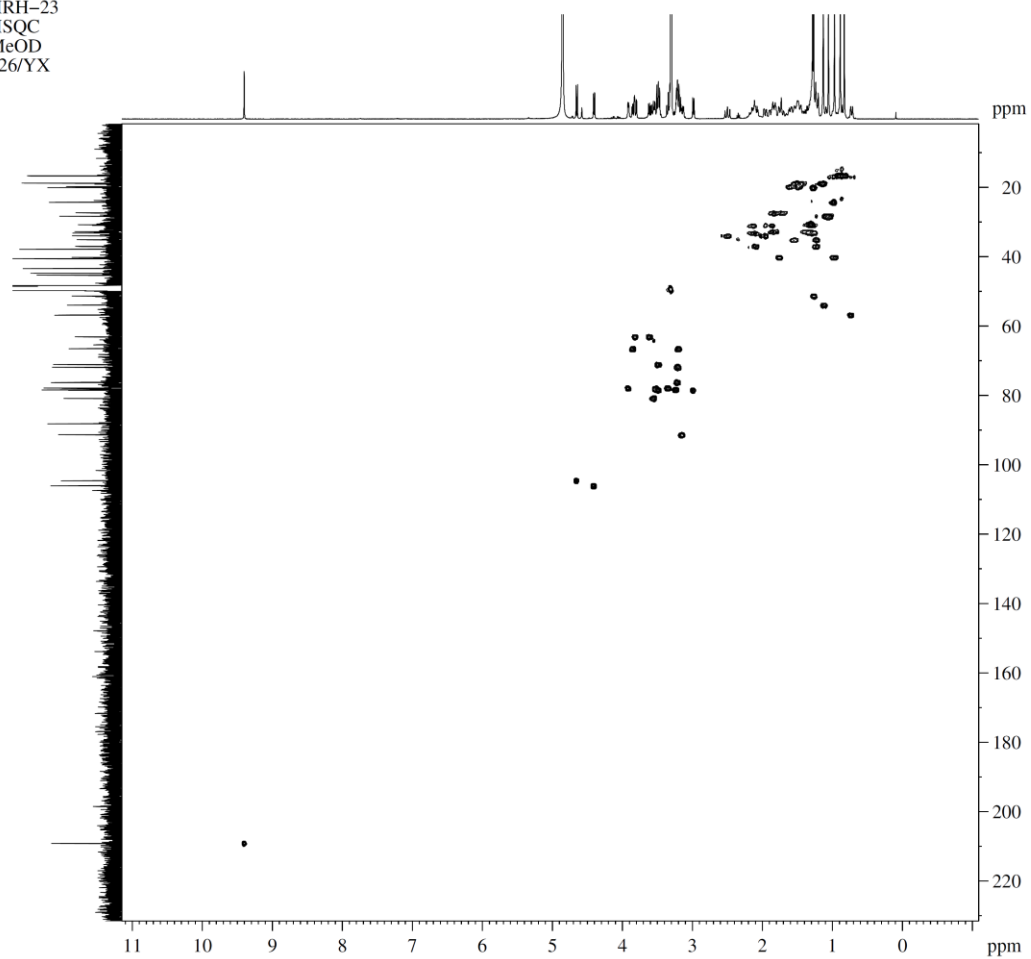


Figure S37: HSQC spectrum of Compound **3**

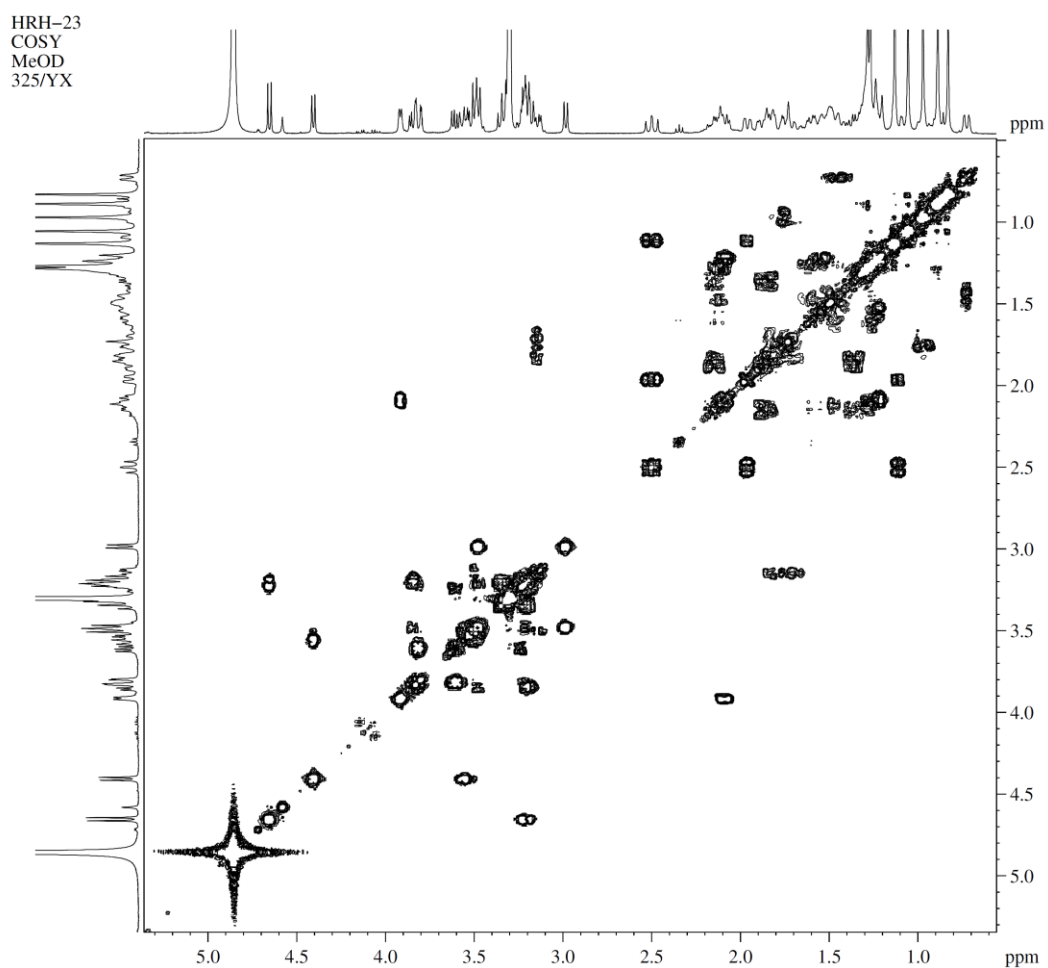


Figure S38: ^1H - ^1H COSY spectrum of Compound **3**

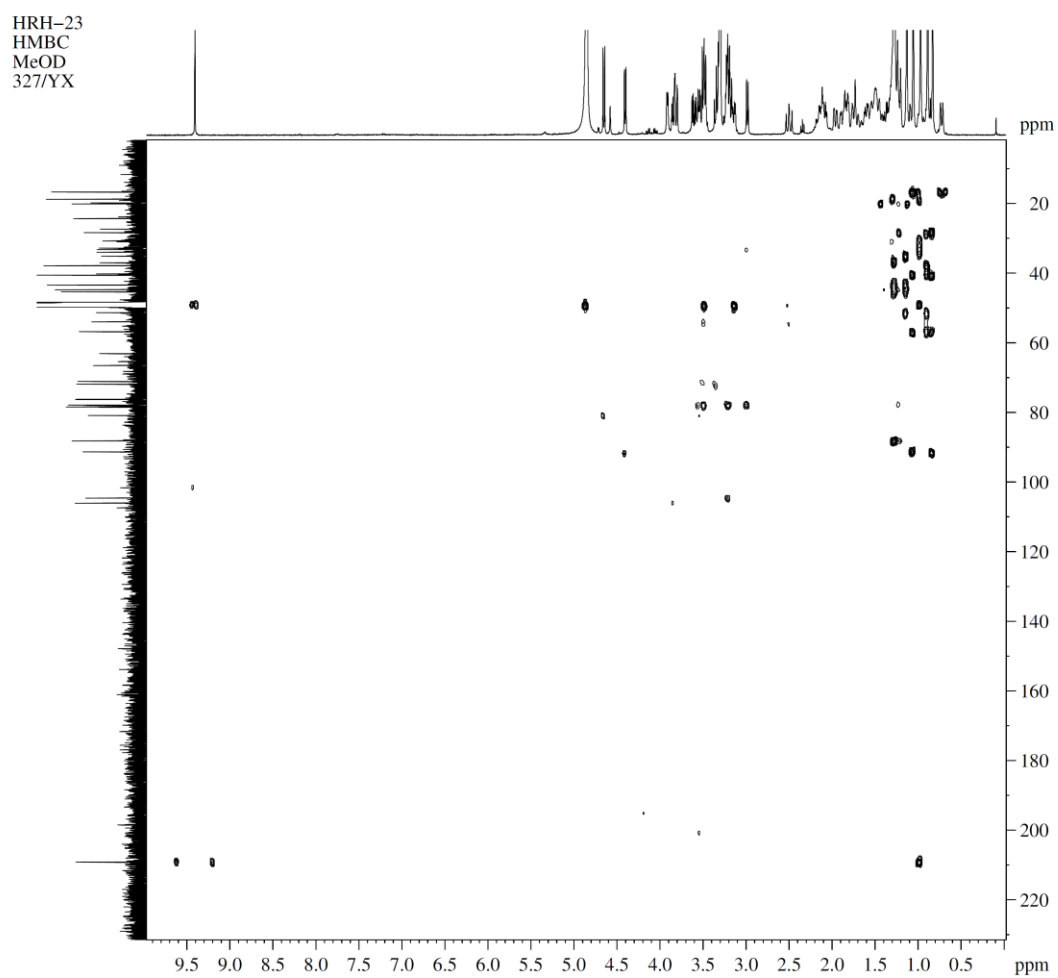


Figure S39: HMBC spectrum of Compound **3**

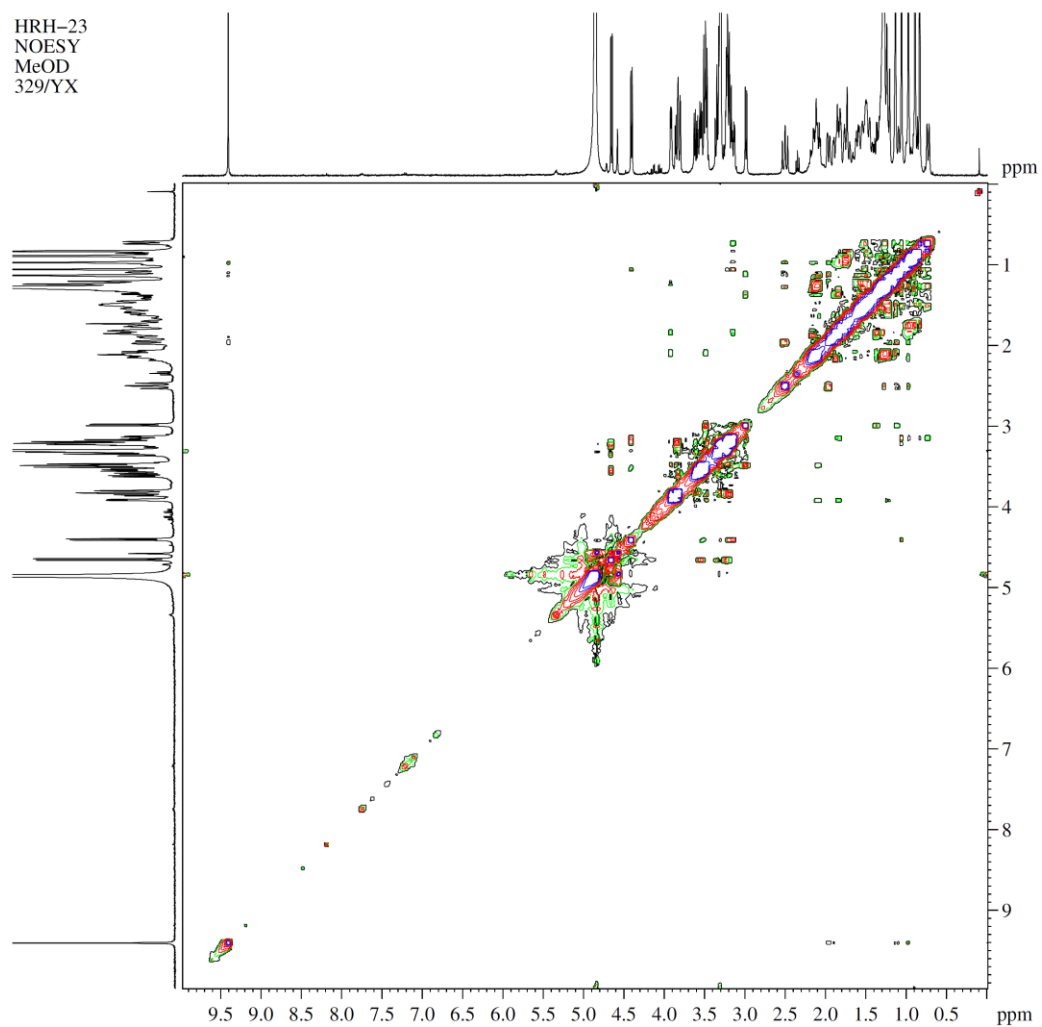


Figure S40: NOESY spectrum of Compound **3**

HRH-23 #91 RT: 0.40 AV: 1 NL: 9.77E6
T: FTMS + p ESI Full ms [100.0000-1500.0000]

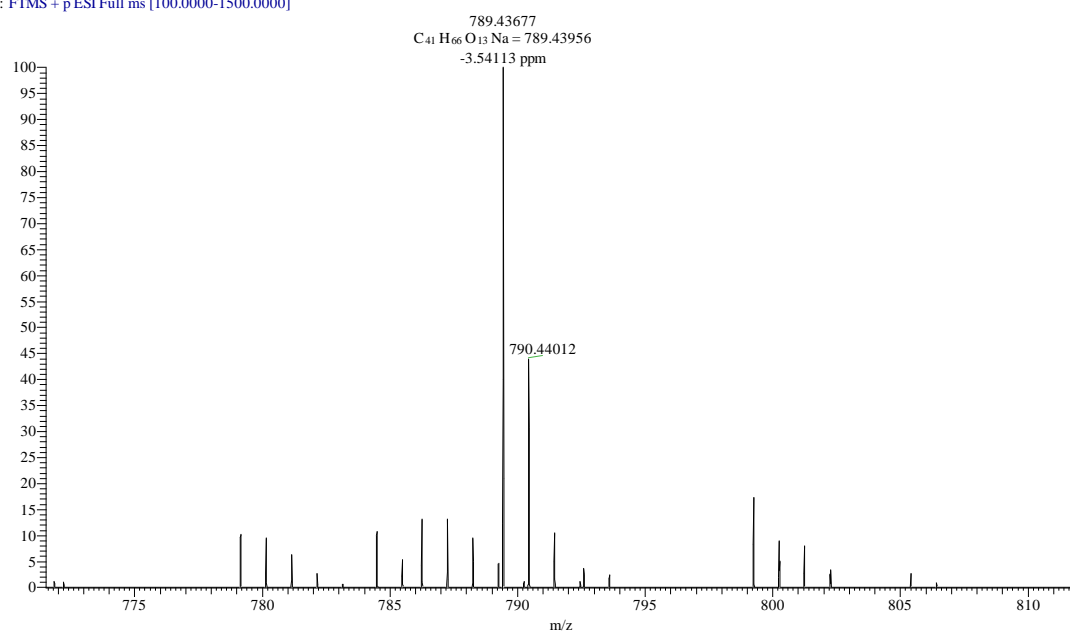


Figure S41: HR-ESI-MS spectrum of Compound **3**

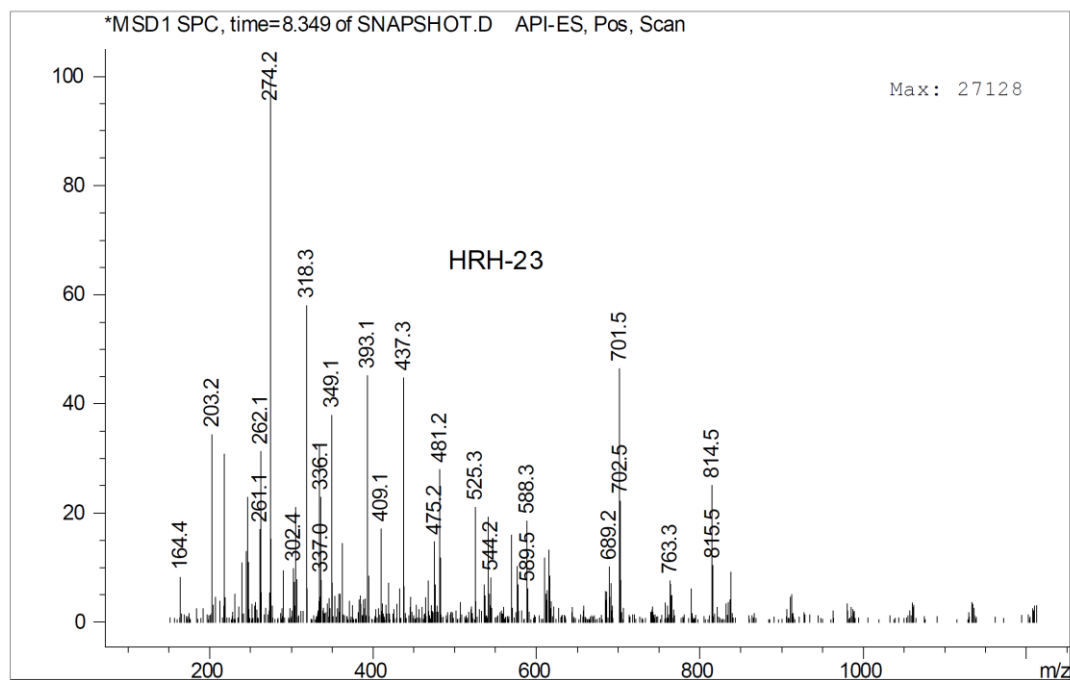


Figure S42: ESI-MS spectrum of Compound **3**

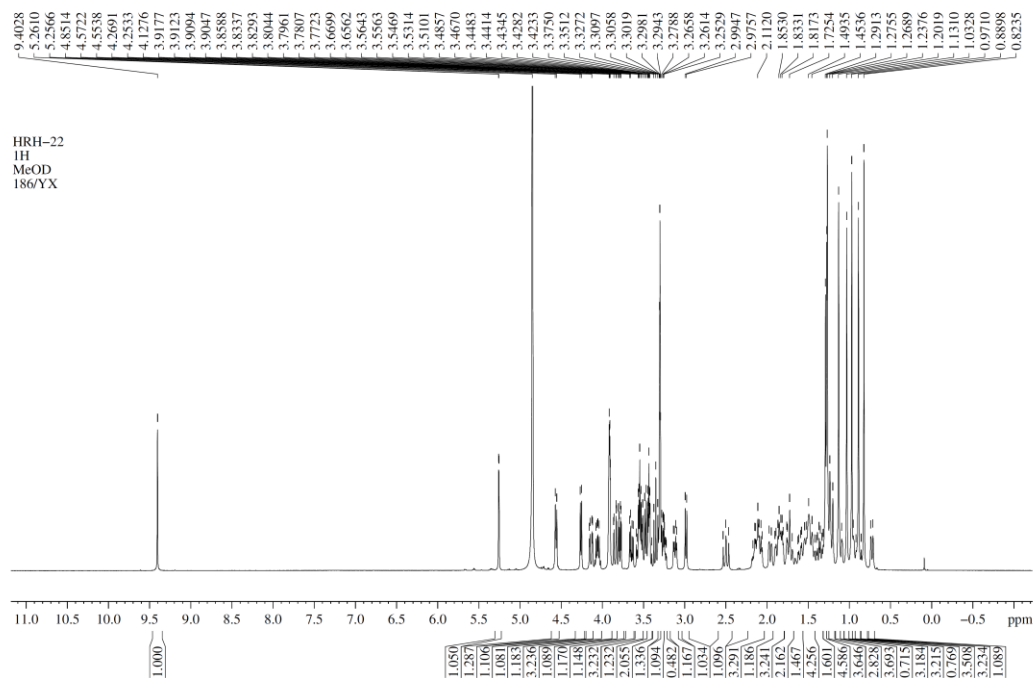


Figure S43: ^1H -NMR spectrum of Compound **4**

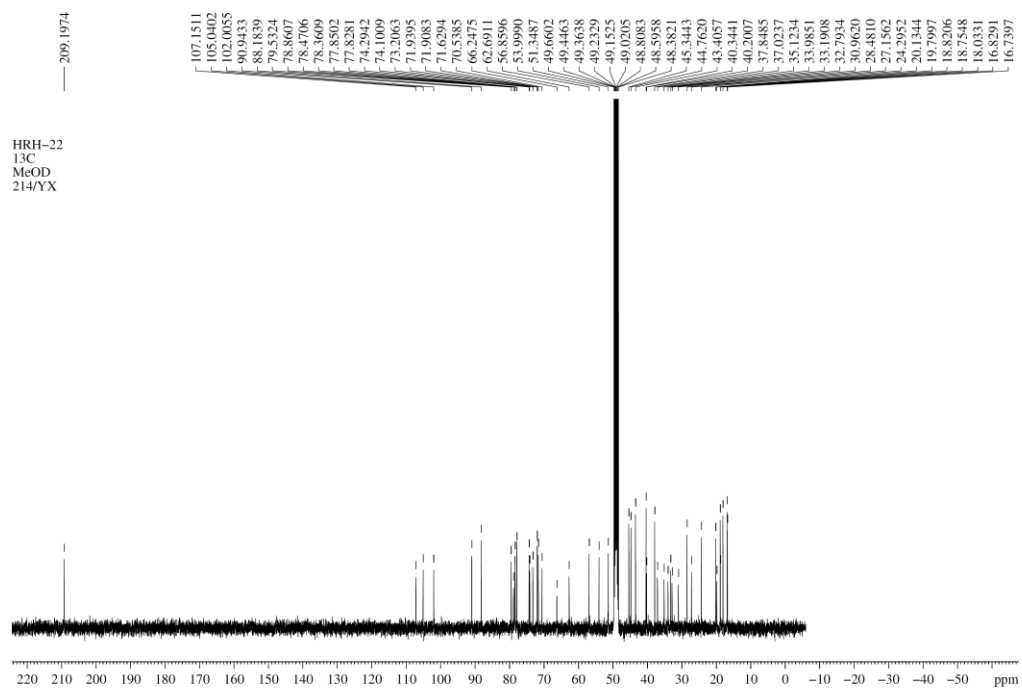


Figure S44: ^{13}C NMR spectrum of Compound **4**

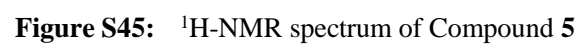


Figure S45: ^1H -NMR spectrum of Compound **5**

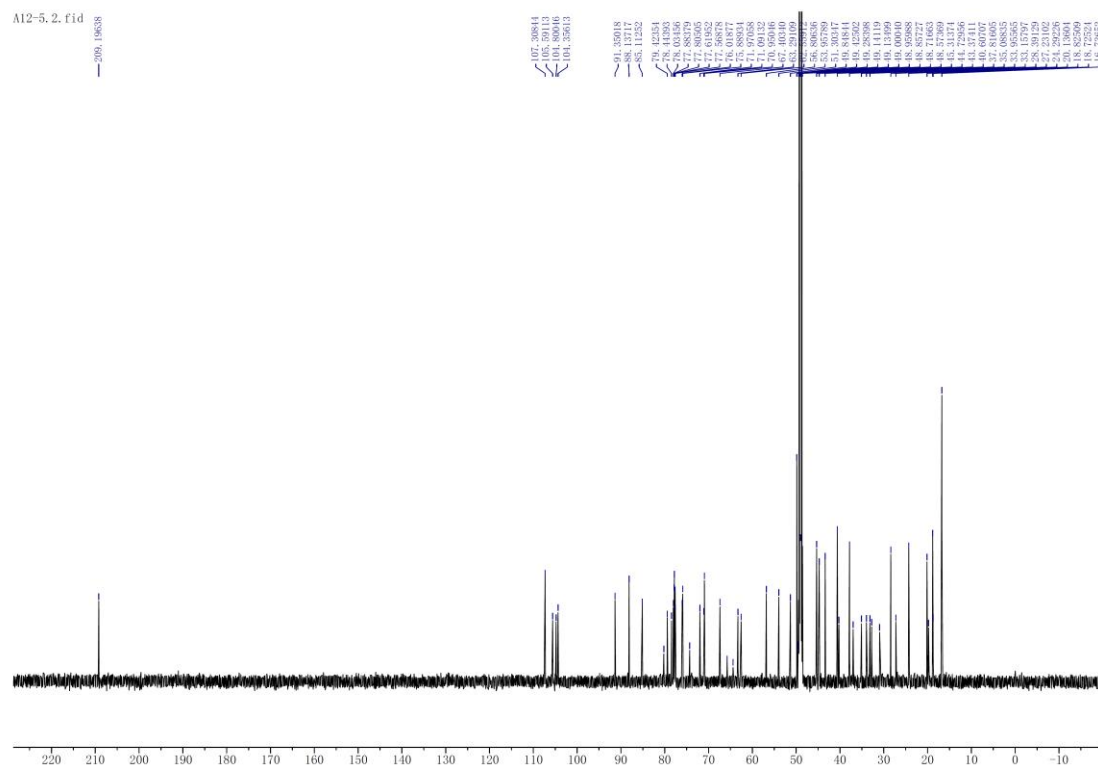


Figure S46: ^{13}C NMR spectrum of Compound **5**

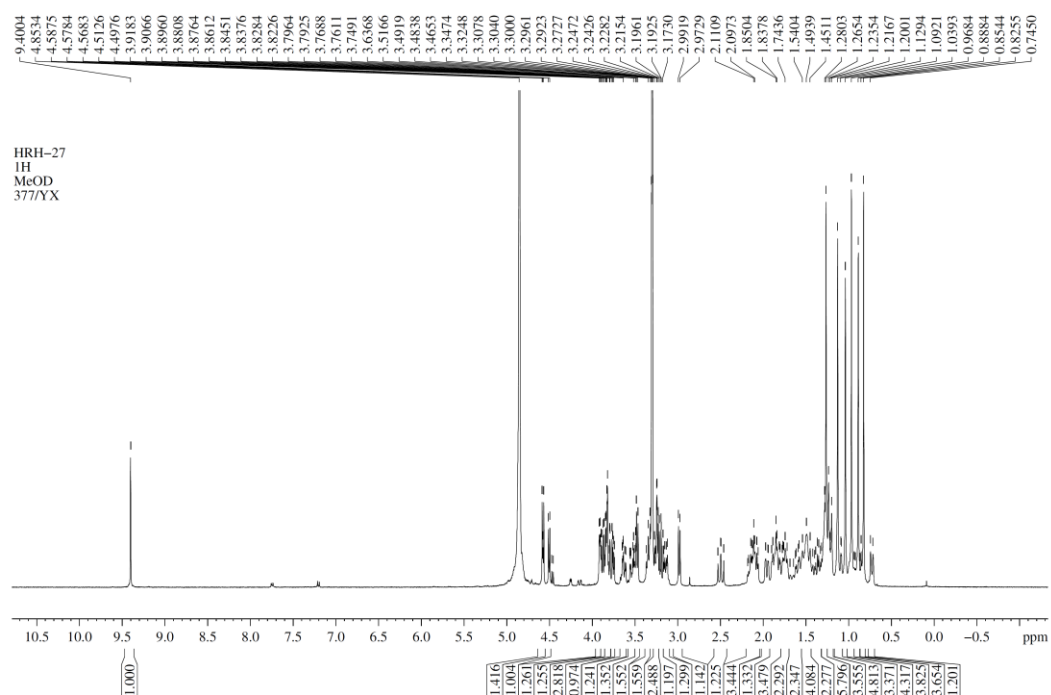


Figure S47: ^1H -NMR spectrum of Compound **6**

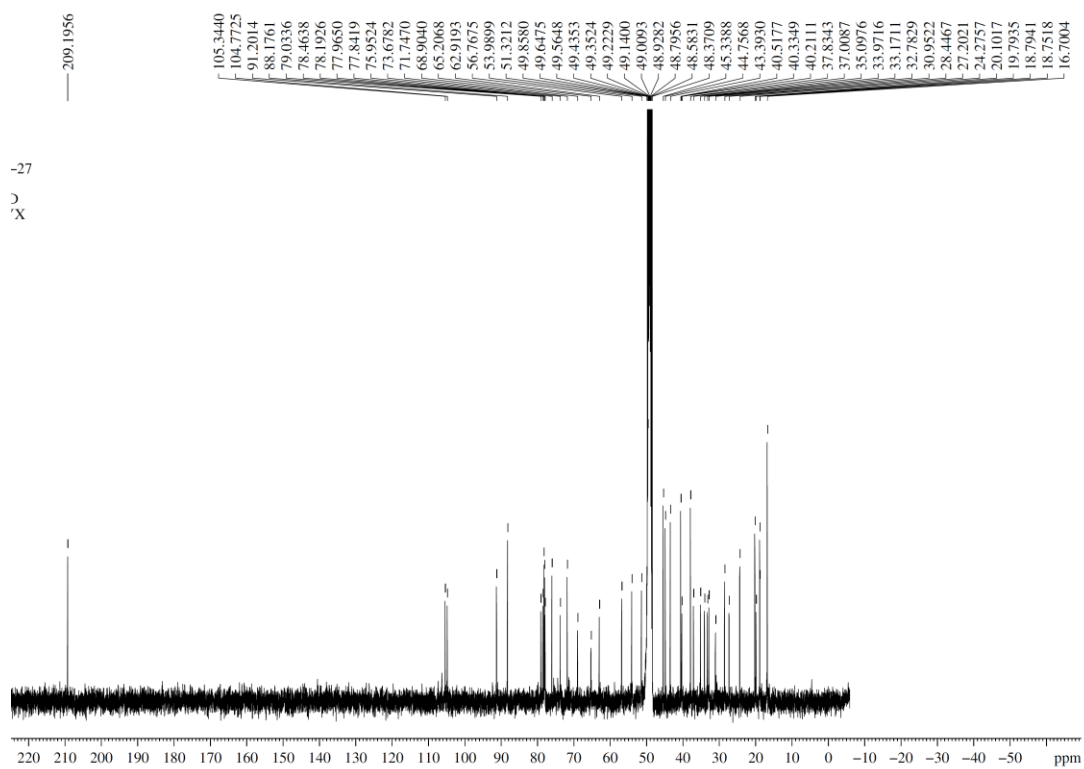


Figure S48: ^{13}C NMR spectrum of Compound 6

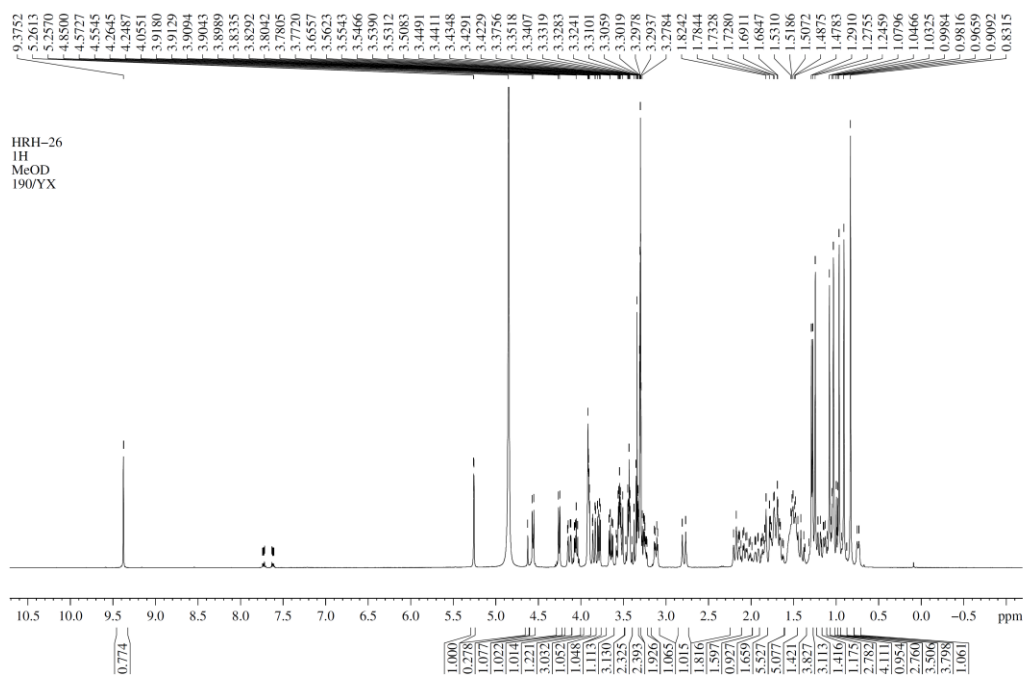


Figure S49: ^1H -NMR spectrum of Compound **7**

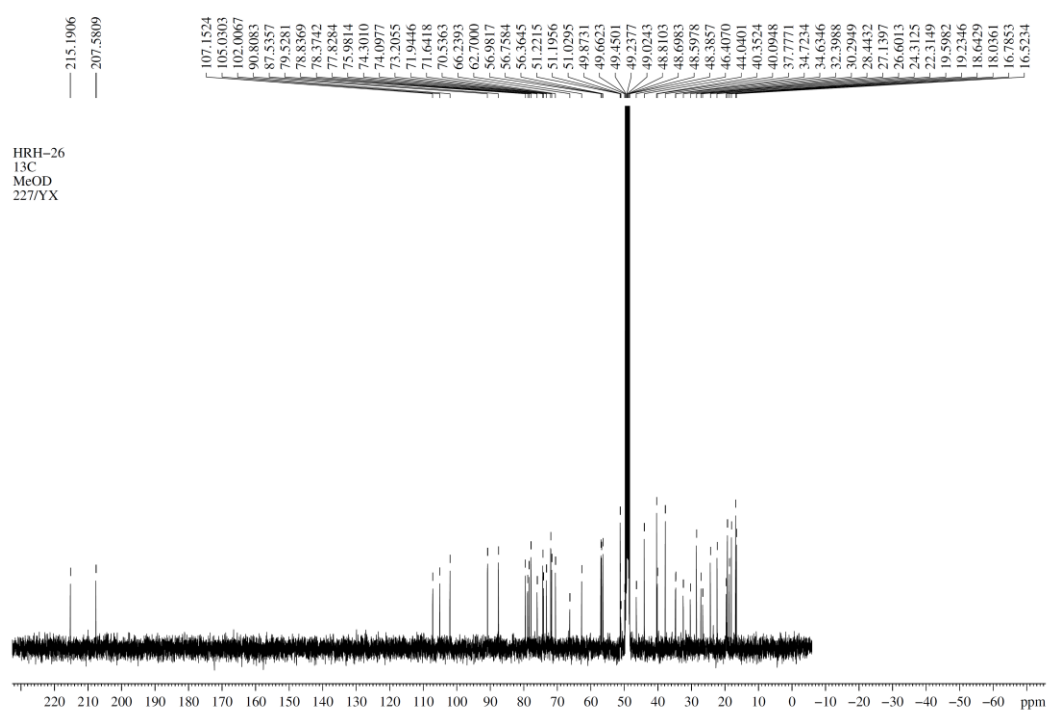


Figure S50: ^{13}C NMR spectrum of Compound **7**

Table S1 ¹³C-NMR (100 MHz) Data of **4-7** in CD₃OD

Position	4	5	6	7
1	37.8	40.2	40.2	37.8
2	27.1	27.2	27.2	26.6
3	90.9	91.3	91.2	90.8
4	40.3	40.5	40.5	40.1
5	56.8	56.8	56.7	57.0
6	18.8	18.7	18.7	18.0
7	35.1	33.9	35.1	34.6
8	43.4	43.3	43.4	40.3
9	54	51.3	51.3	51.2
10	40.2	37.8	37.8	34.7
11	19.8	19.8	19.8	19.5
12	33.2	35.1	33.2	30.2
13	88.1	88.1	88.2	87.5
14	45.3	44.7	45.3	46.4
15	37.0	37.0	37.0	44.0
16	77.8	77.8	77.8	215.2
17	44.7	45.3	44.7	56.3
18	51.3	53.9	54.0	56.7
19	34	30.9	34.0	32.3
20	49	49.8	49.0	49.0
21	31	33.1	30.9	28.4
22	32.8	32.7	32.7	34.6
23	28.5	16.7	28.4	27.1
24	16.8	28.3	16.7	16.8
25	16.7	16.7	16.7	16.5
26	18	18.8	18.8	19.2
27	20.1	20.1	20.1	22.3
28	78.4	77.6	78.0	75.9
29	24.3	24.3	24.2	24.3
30	209.2	209.2	209.2	207.6
Ara-1	107.1	104.8	104.8	107.1
Ara-2	74.3	80.2	79	73.2
Ara-3	73.2	74.3	73.6	74.3
Ara-4	78.8	78.4	68.9	78.8
Ara-5	66.2	65.0	65.2	66.2
Glc-1'	105	104.3	105.3	105.0
Glc-2'	79.5	85.1	75.9	77.8
Glc-3'	78.3	77.8	78.4	79.5
Glc-4'	71.6	71.1	71.7	71.6
Glc-5'	77.8	79.4	78.2	78.3
Glc-6'	62.7	62.6	62.9	62.7
Glc-1''		105.7		
Glc-2''		76.0		
Glc-3''		78.0		
Glc-4''		72.0		
Glc-5''		77.9		
Glc-6''		63.2		
Xyl-1		107.3		
Xyl-2		75.8		
Xyl-3		77.5		
Xyl-4		70.9		
Xyl-5		67.4		
Rha-1	102			102.0
Rha-2	71.9			71.9
Rha-3	71.9			71.9

Rha-4	74.1	74.1
Rha-5	70.5	70.5
Rha-6	18.7	18.6
