

Supplementary Information for **Nemophilosides A–I, Nine
Meroterpenoid Glucosides Isolated from *Nemophila menziesii***

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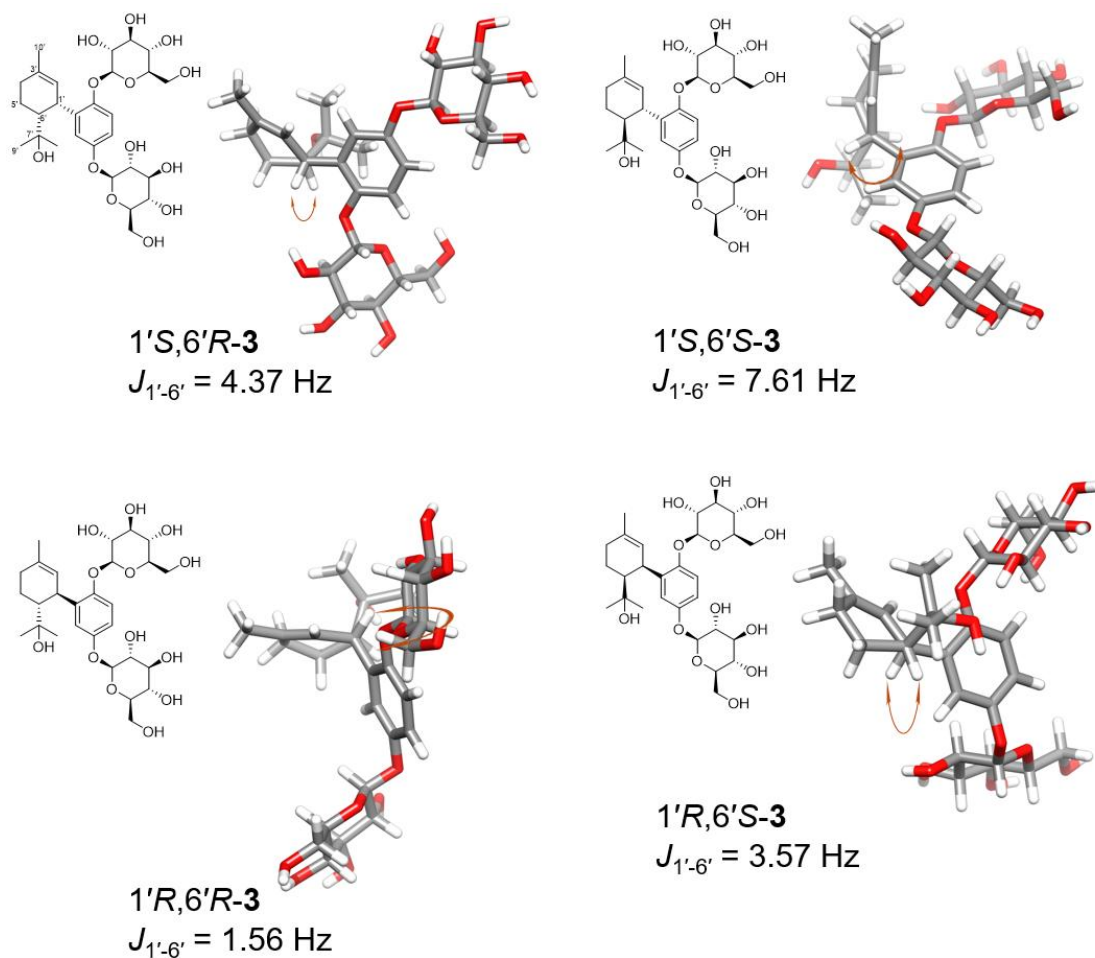
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Figure S1 Flowers of *Nemophila menziesii* Hook. et Arn.

A



B

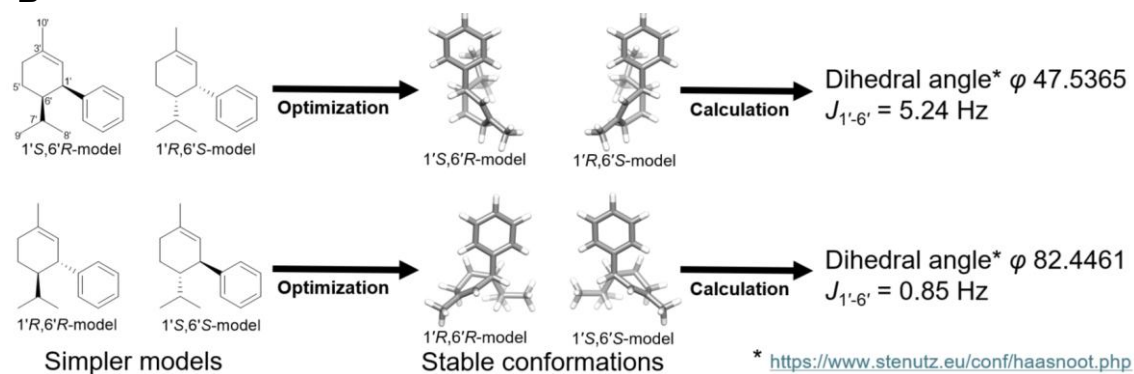


Figure S2 Stable conformations of stereo isomers of compound **3** (**A**) and simplified models (**B**) and their calculated $J_{1'-6'}$ values

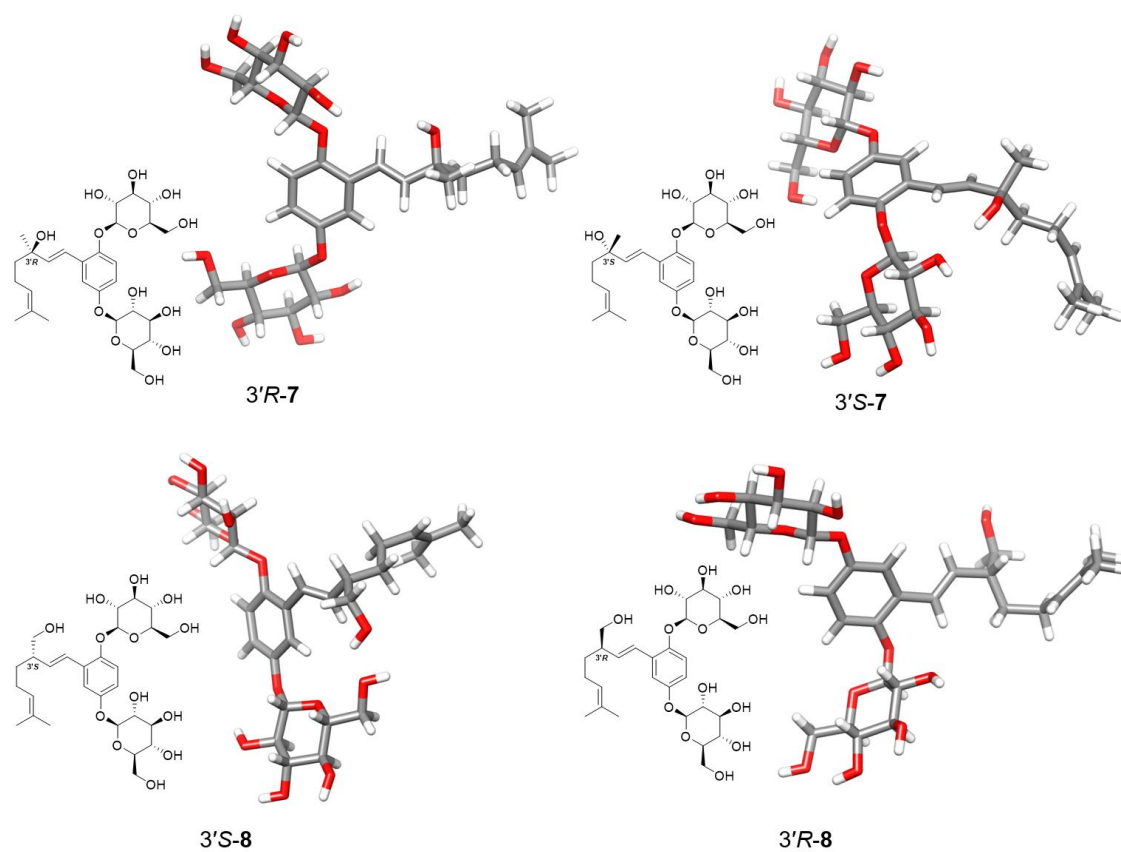


Figure S3 Stable conformations of stereo isomers of compounds **7** and **8**

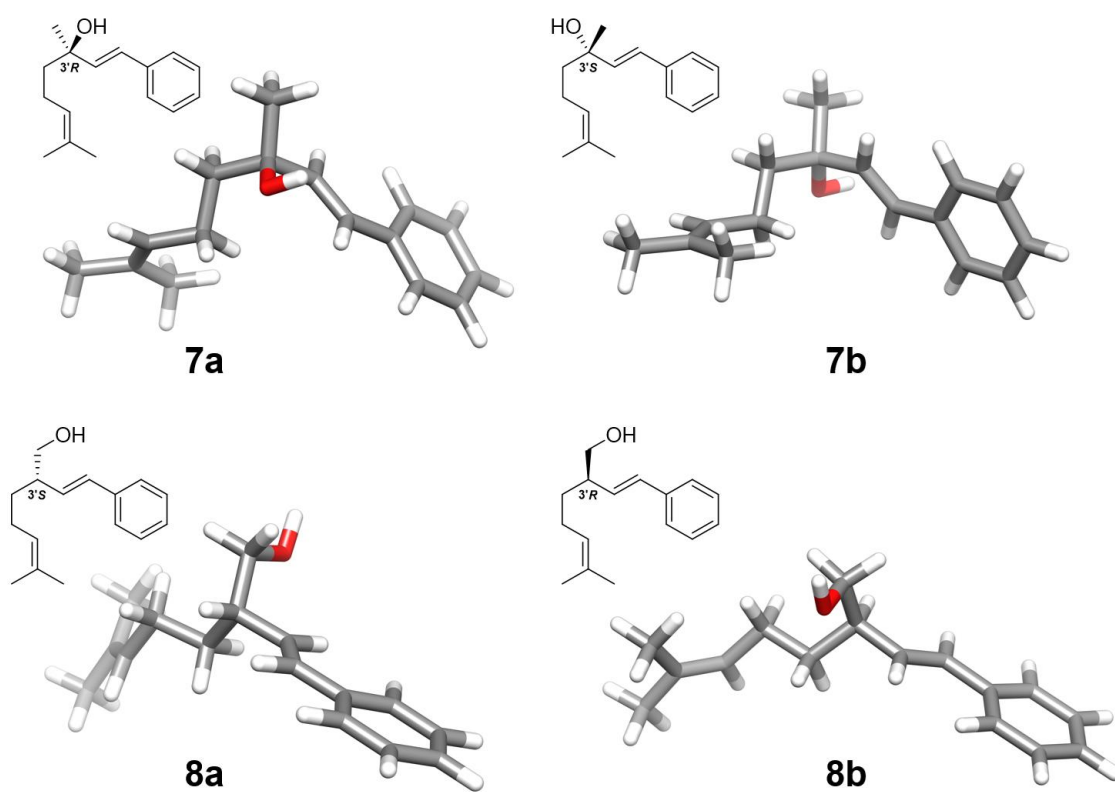


Figure S4 Conformations of simplified models of compounds **7** (**7a** and **7b**) and **8** (**8a** and **8b**).

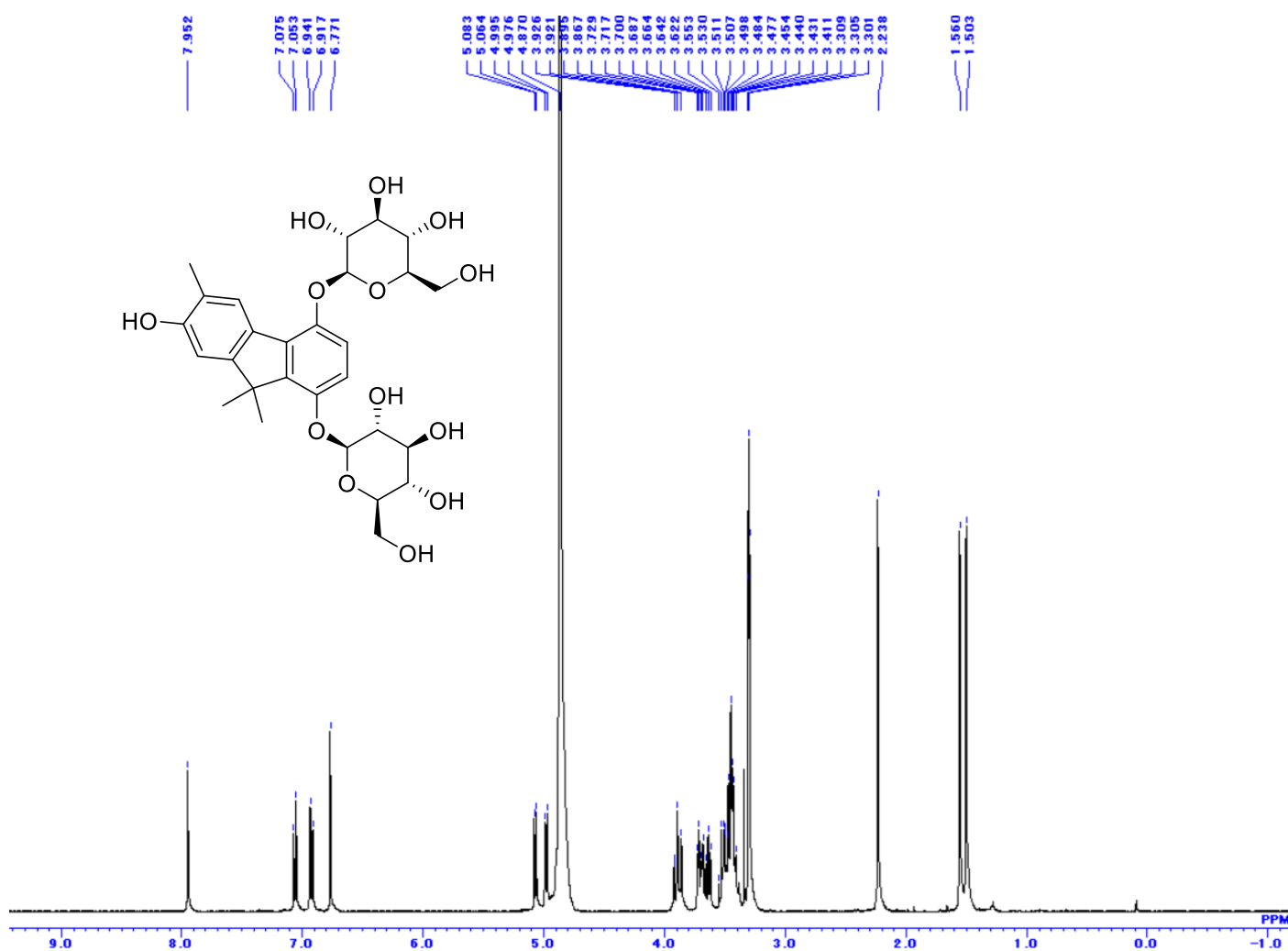


Figure S5 ^1H NMR spectrum of compound **1** (in methanol- d_4).

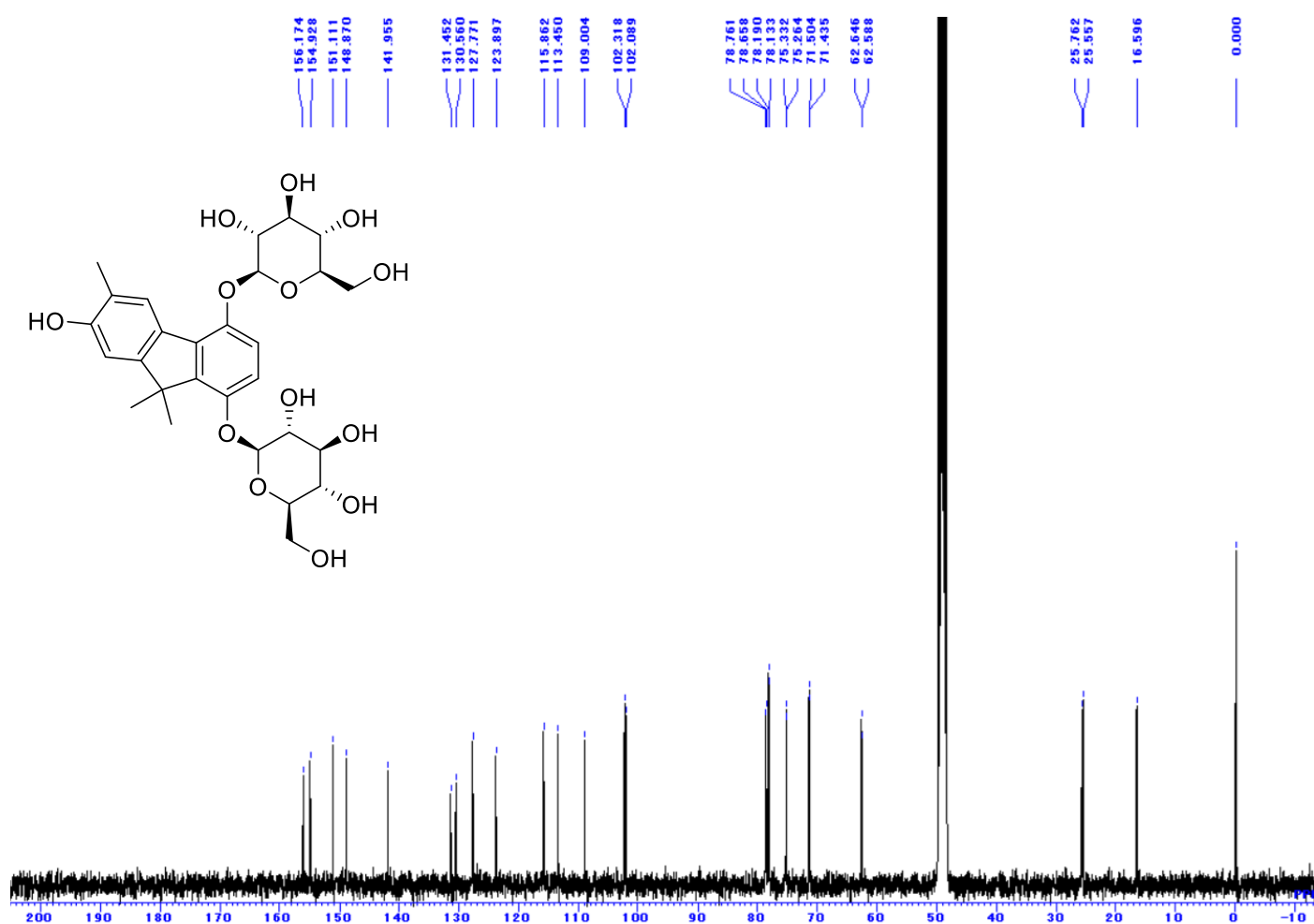


Figure S6 ^{13}C NMR spectrum of compound 1 (in methanol- d_4).

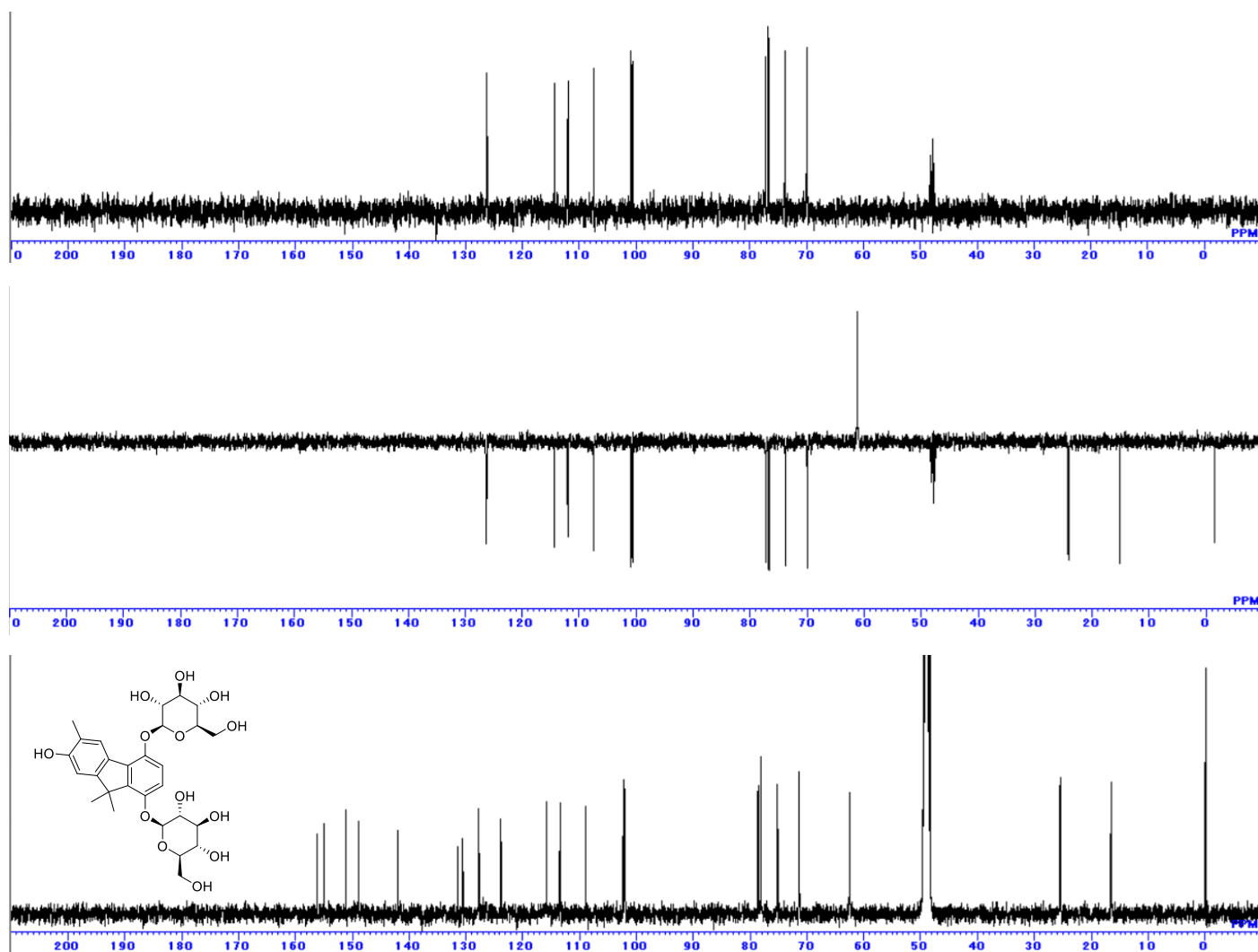


Figure S7 DEPT spectrum of compound **1** (in methanol- d_4).

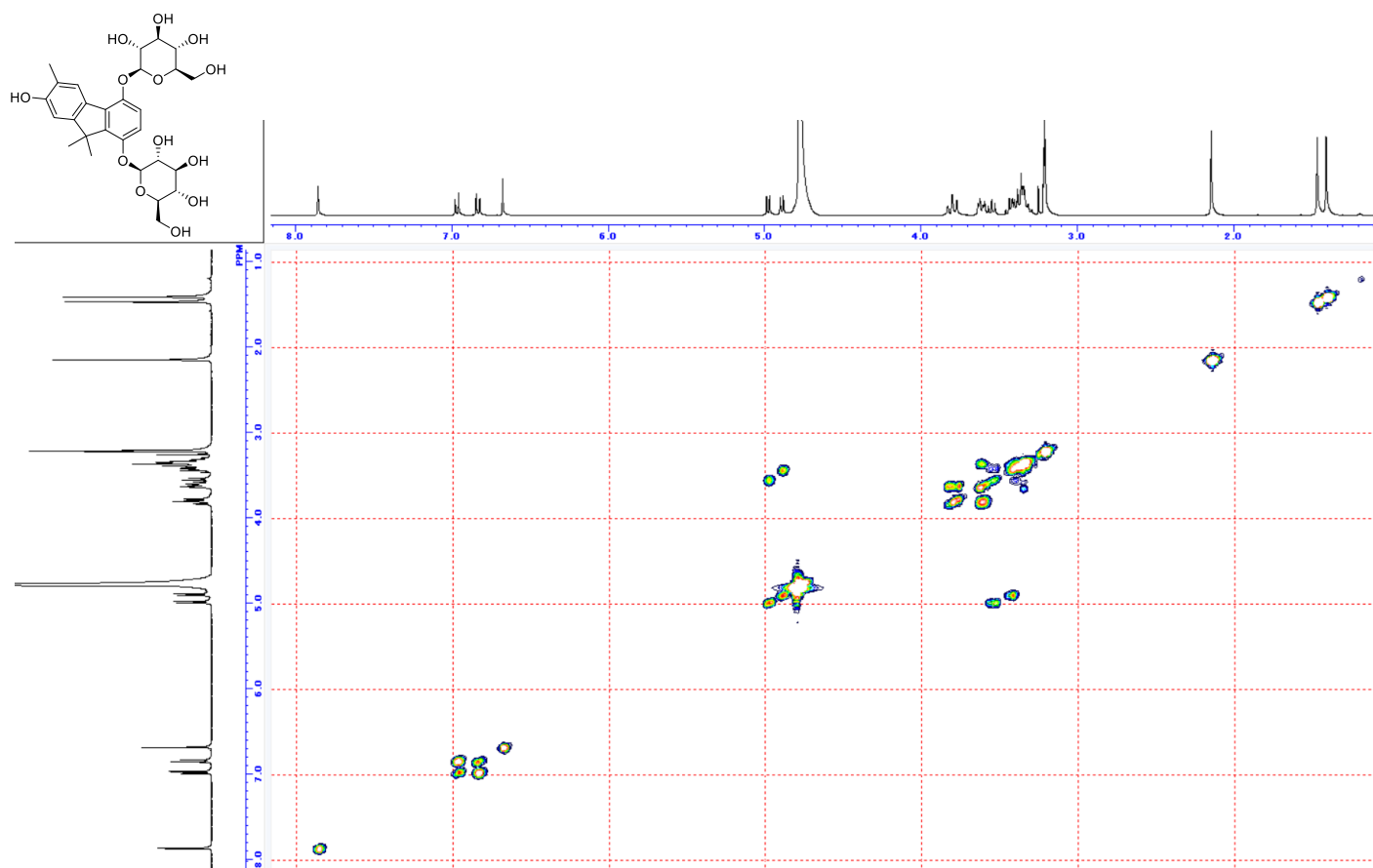


Figure S8 ^1H - ^1H COSY spectrum of compound **1** (in methanol- d_4).

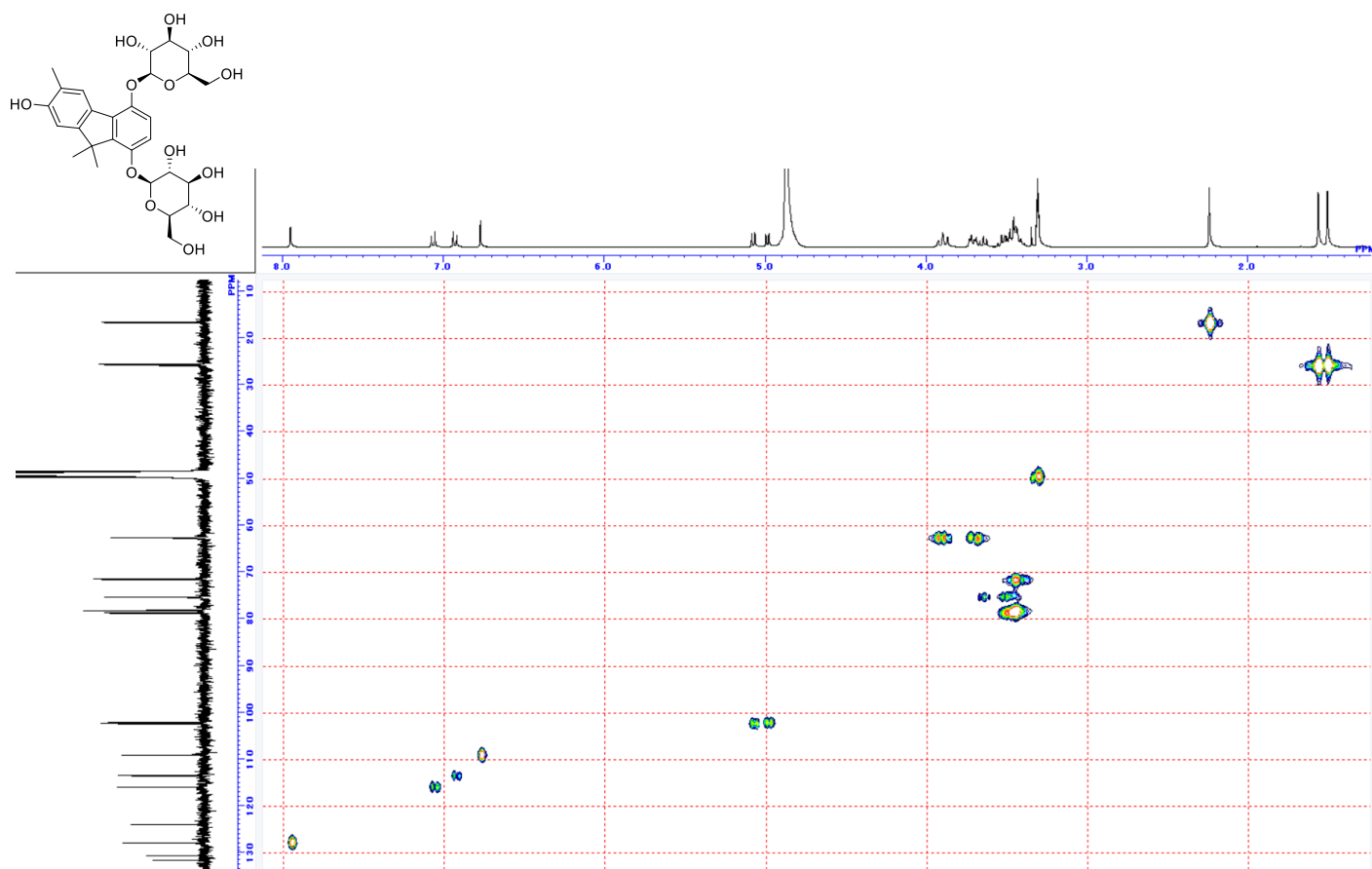


Figure S9 HMQC spectrum of compound **1** (in methanol- d_4).

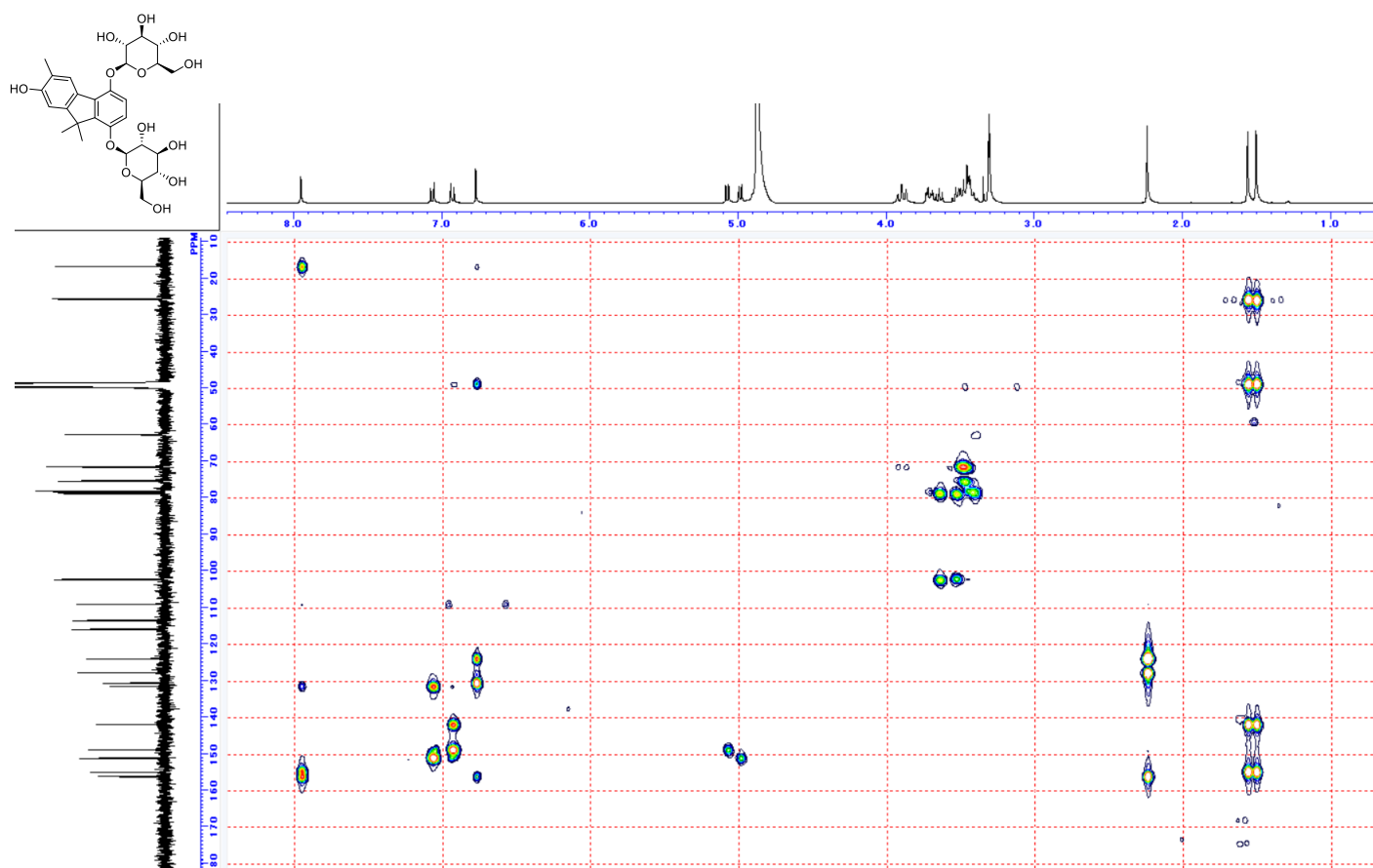


Figure S10 HMBC spectrum of compound **1** (in methanol-*d*₄).

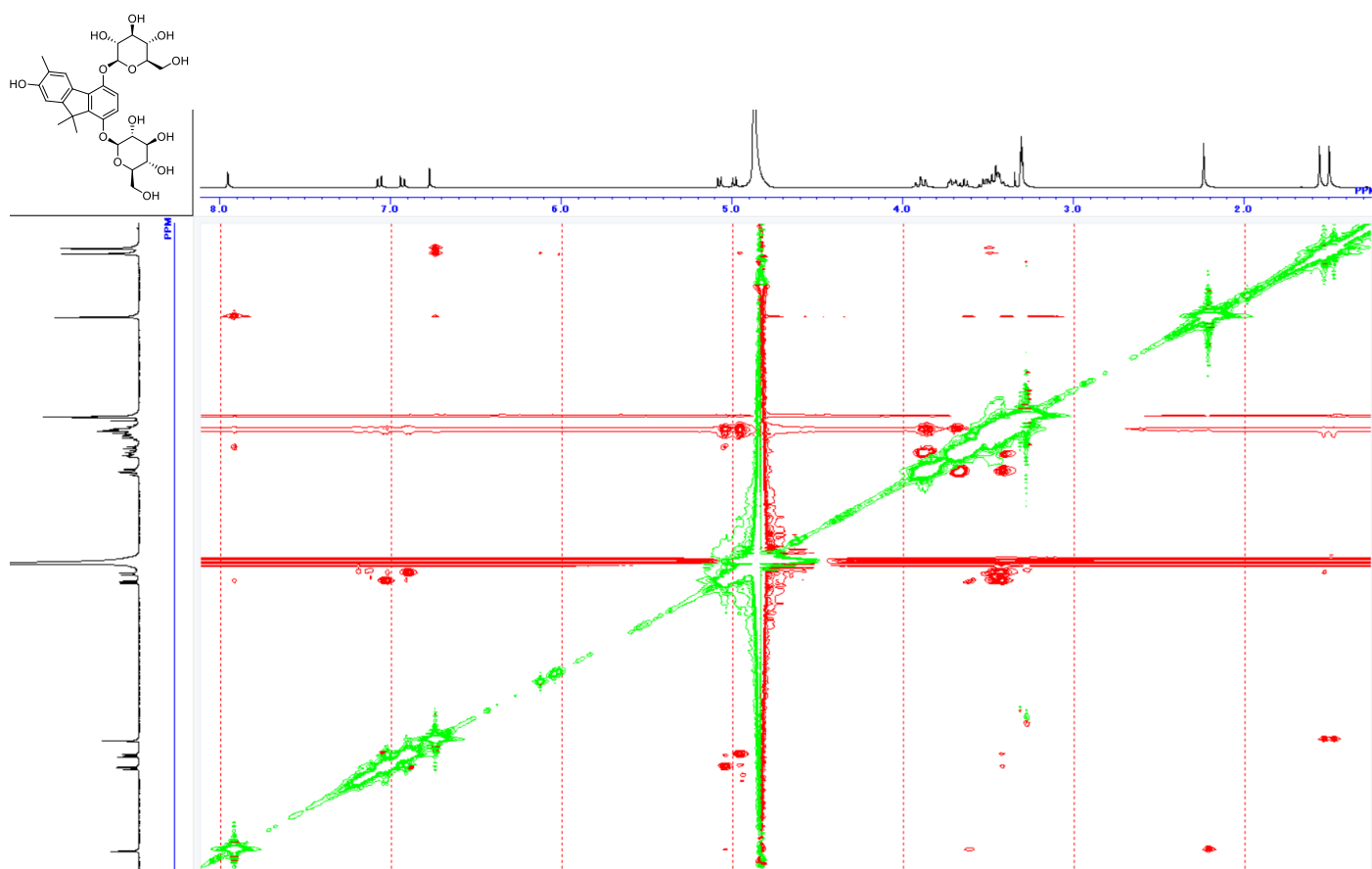


Figure S11 NOESY spectra of compound **1** (in methanol- d_4).

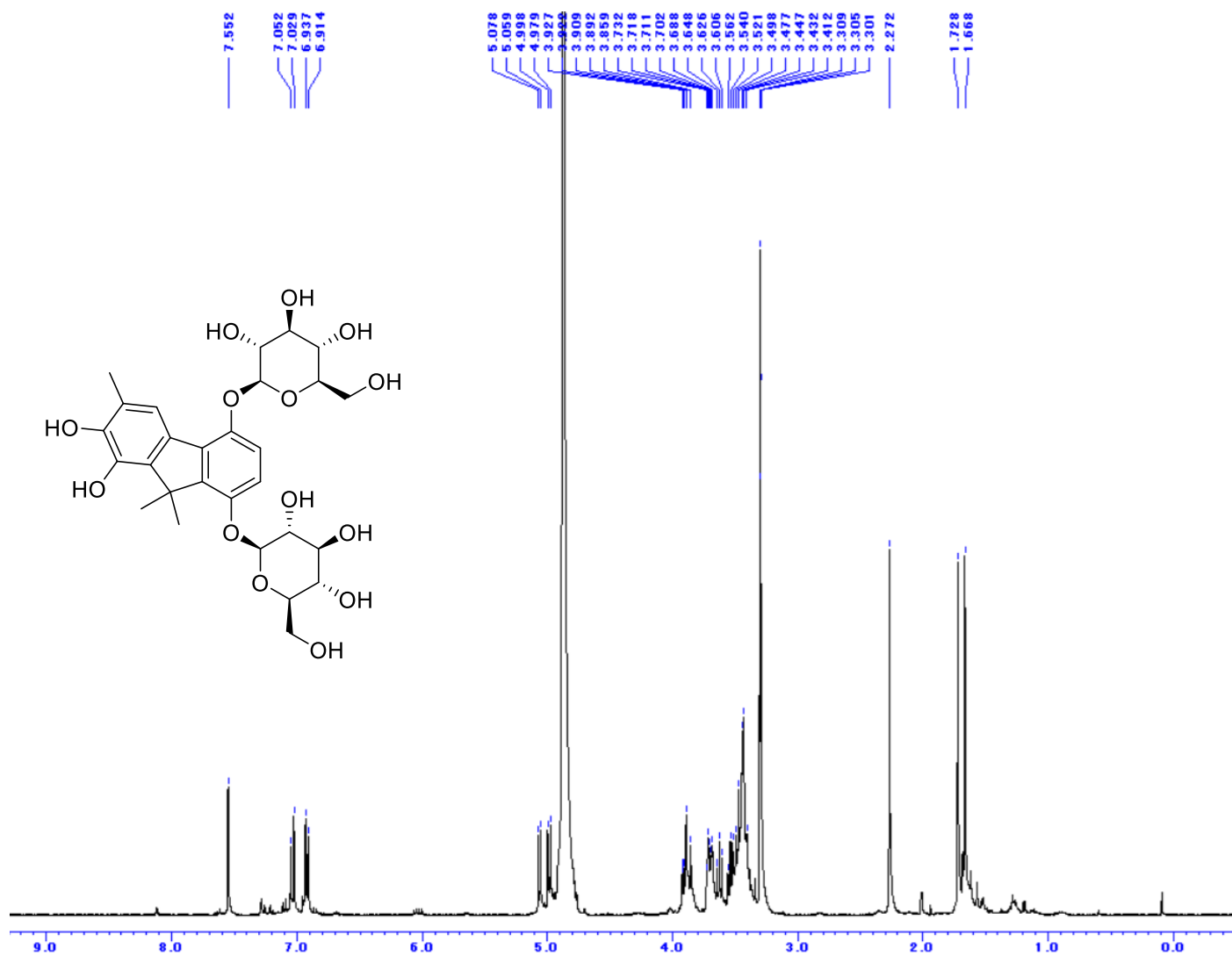


Figure S12 ^1H NMR spectrum of compound **2** (in methanol- d_4).

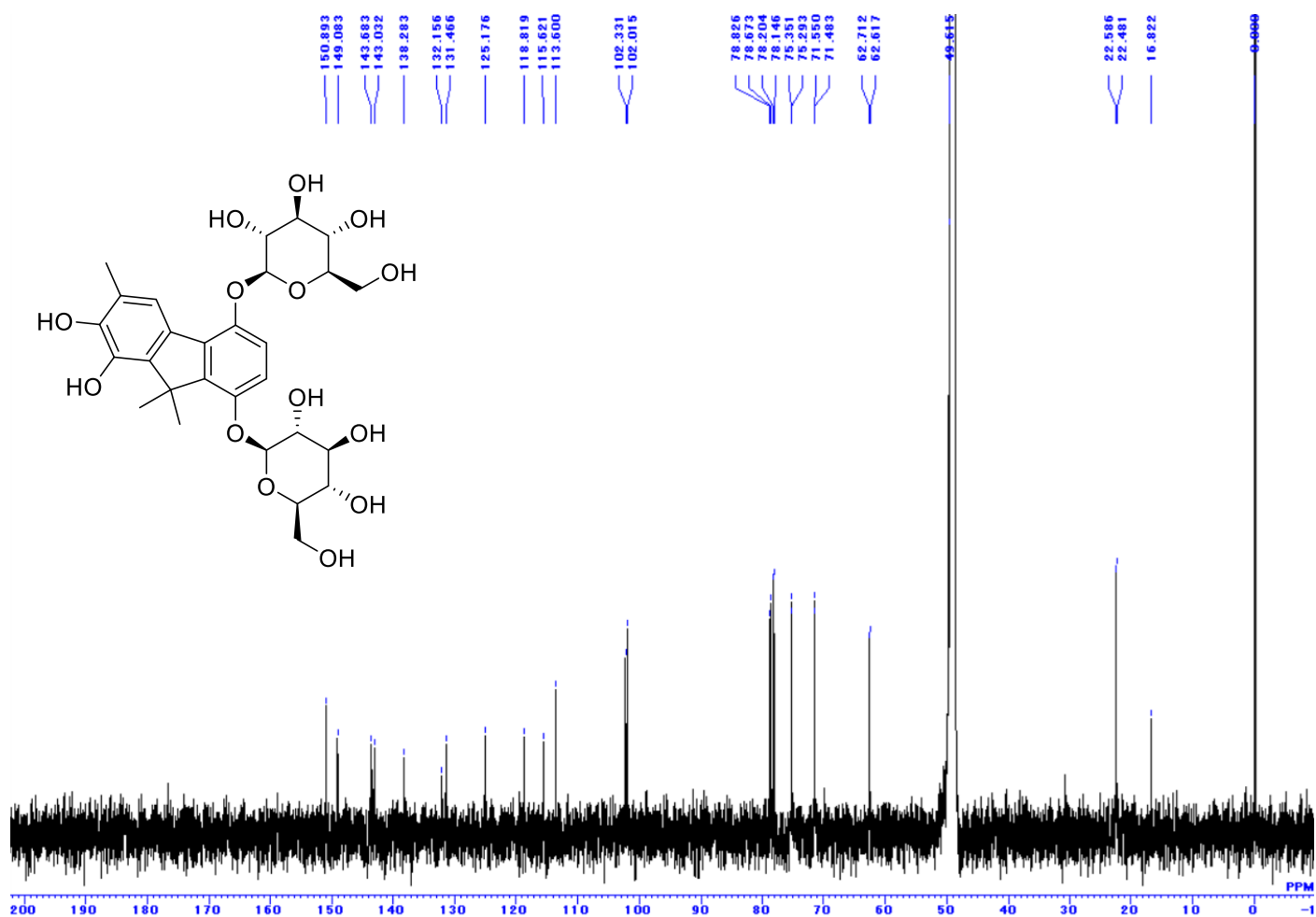


Figure S13 ^{13}C NMR spectrum of compound **2** (in $\text{methanol-}d_4$).

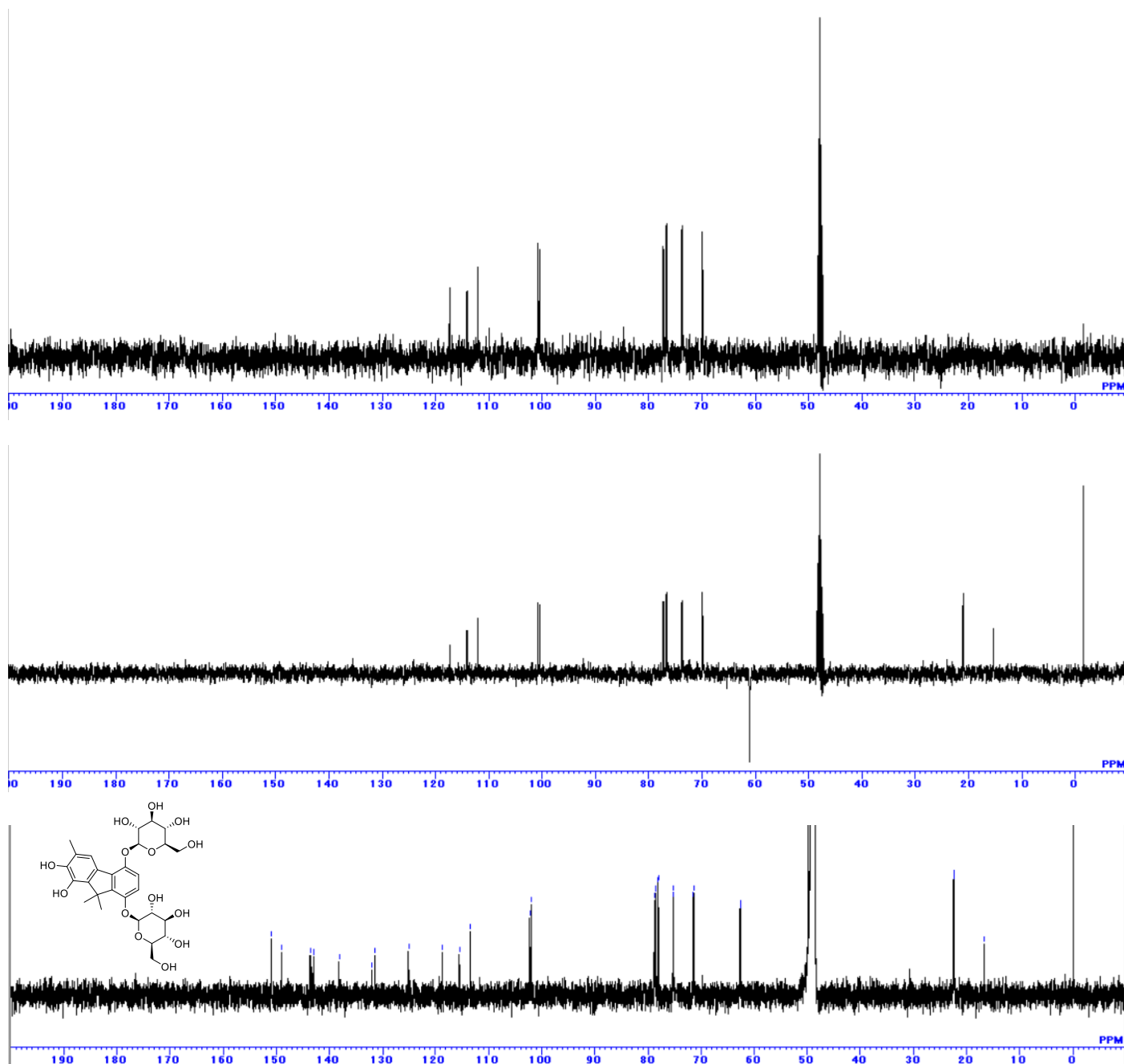


Figure S14 DEPT spectrum of compound **2** (in methanol- d_4).

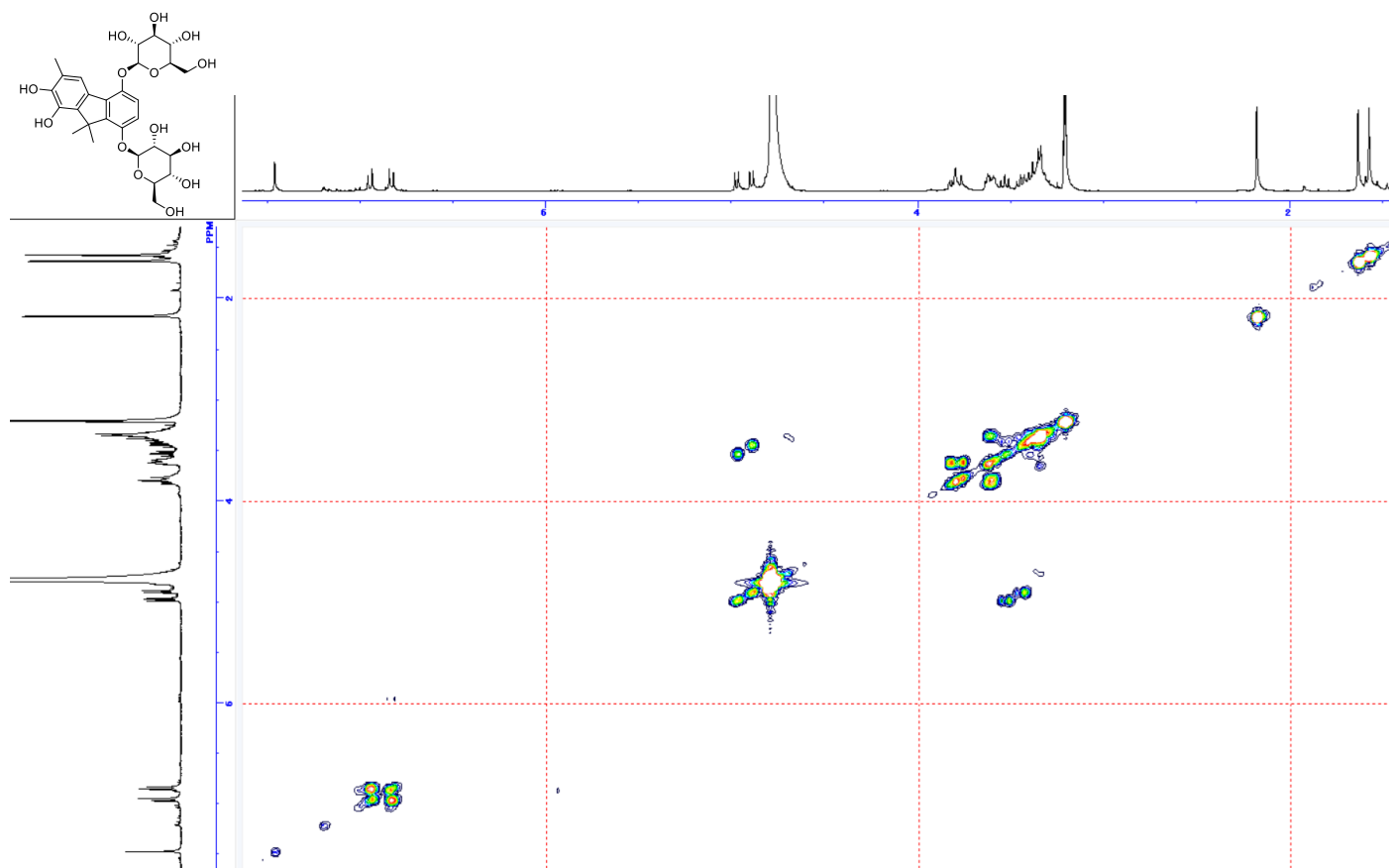


Figure S15 ^1H - ^1H COSY spectrum of compound **2** (in methanol- d_4).

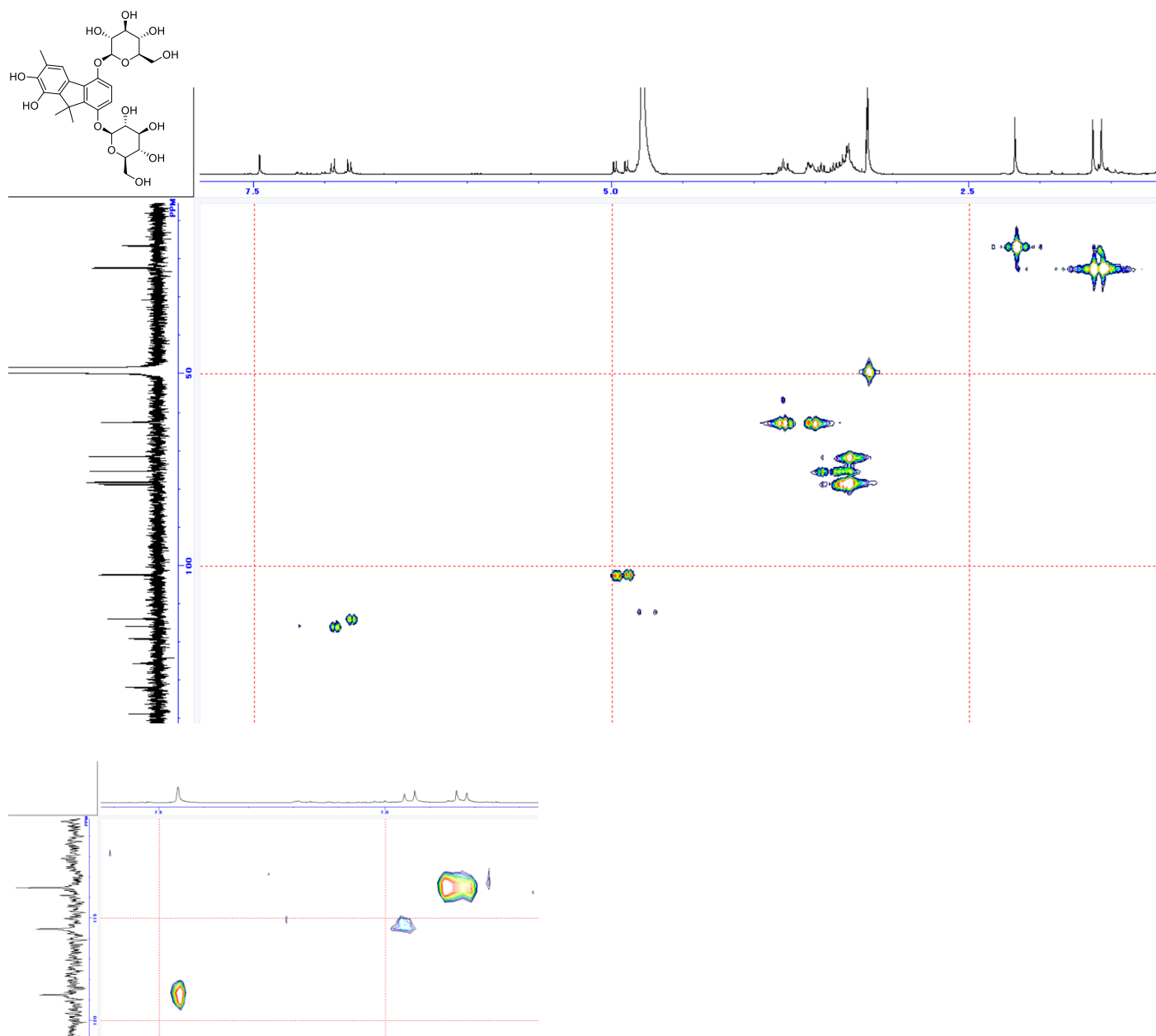
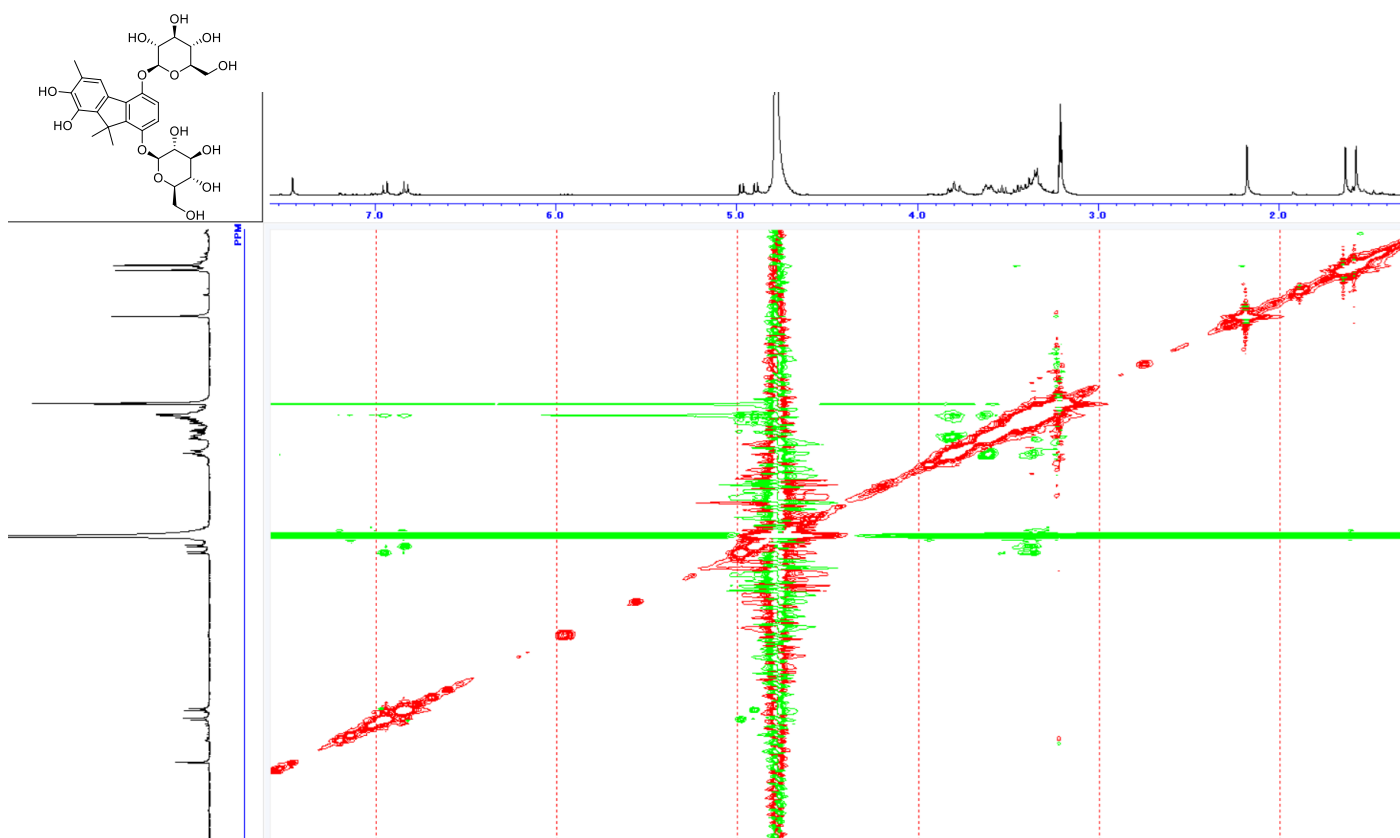
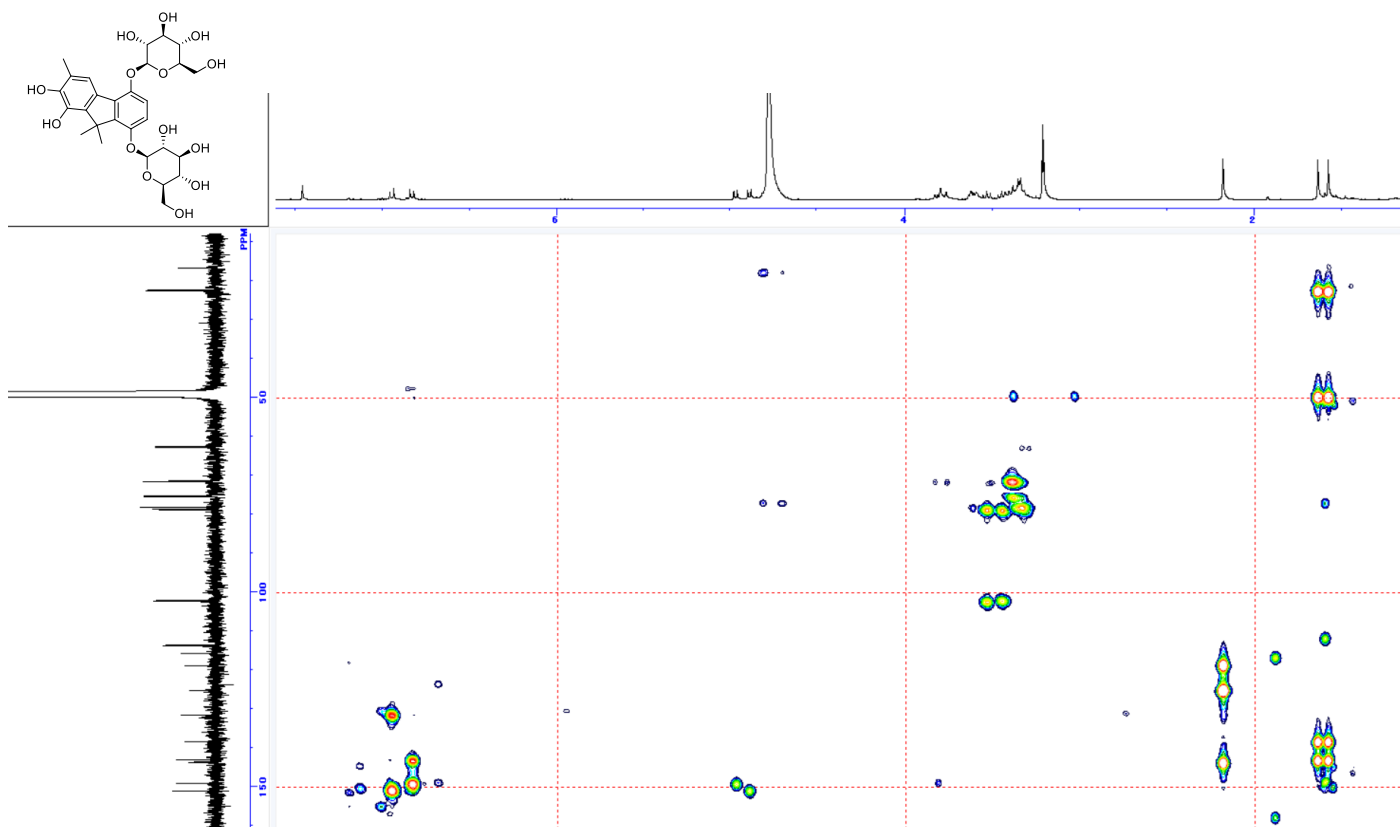


Figure S16 HMQC spectrum of compound **2** (in methanol- d_4).



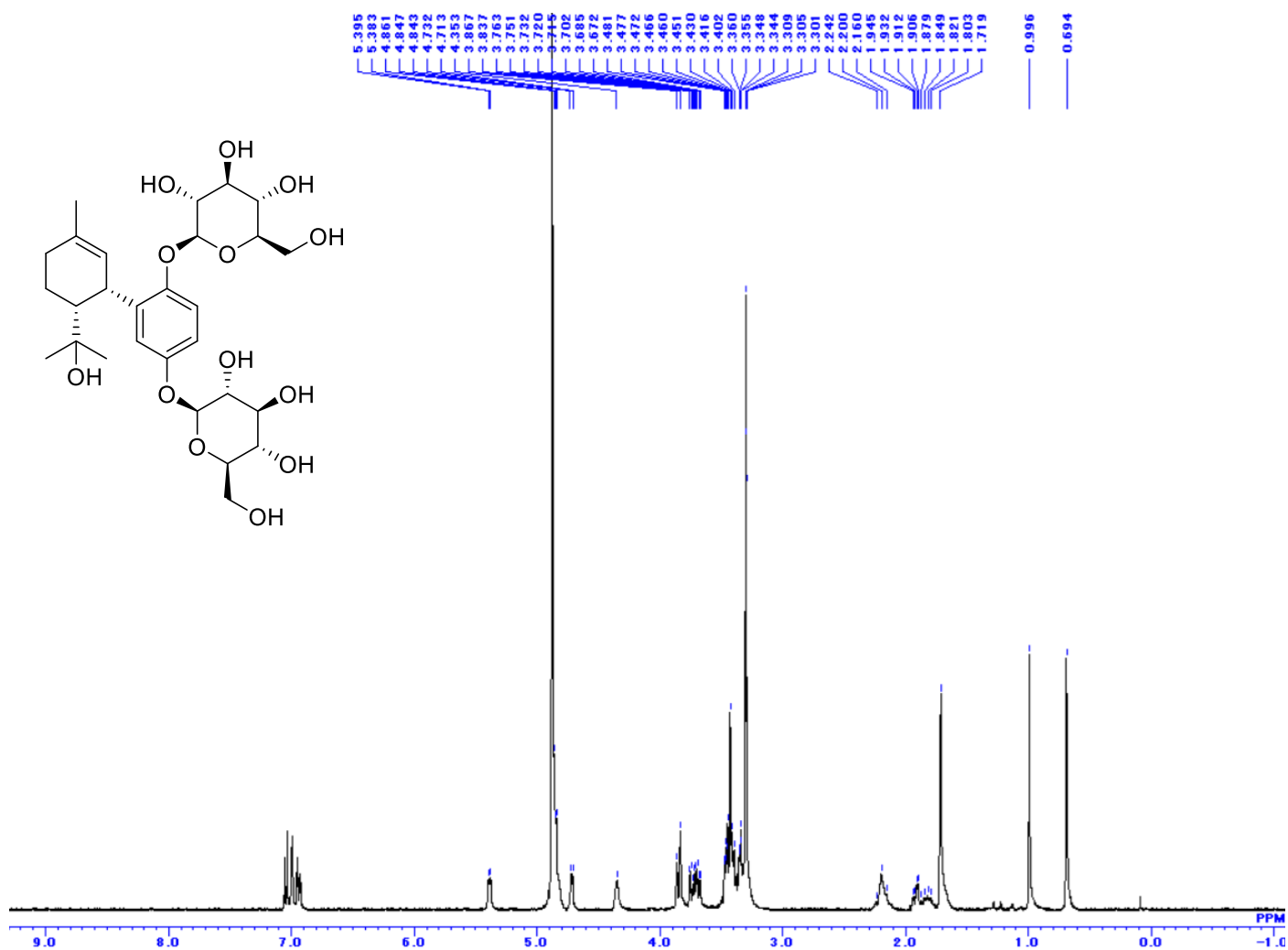


Figure S19 ^1H NMR spectrum of compound **3** (in $\text{methanol-}d_4$).

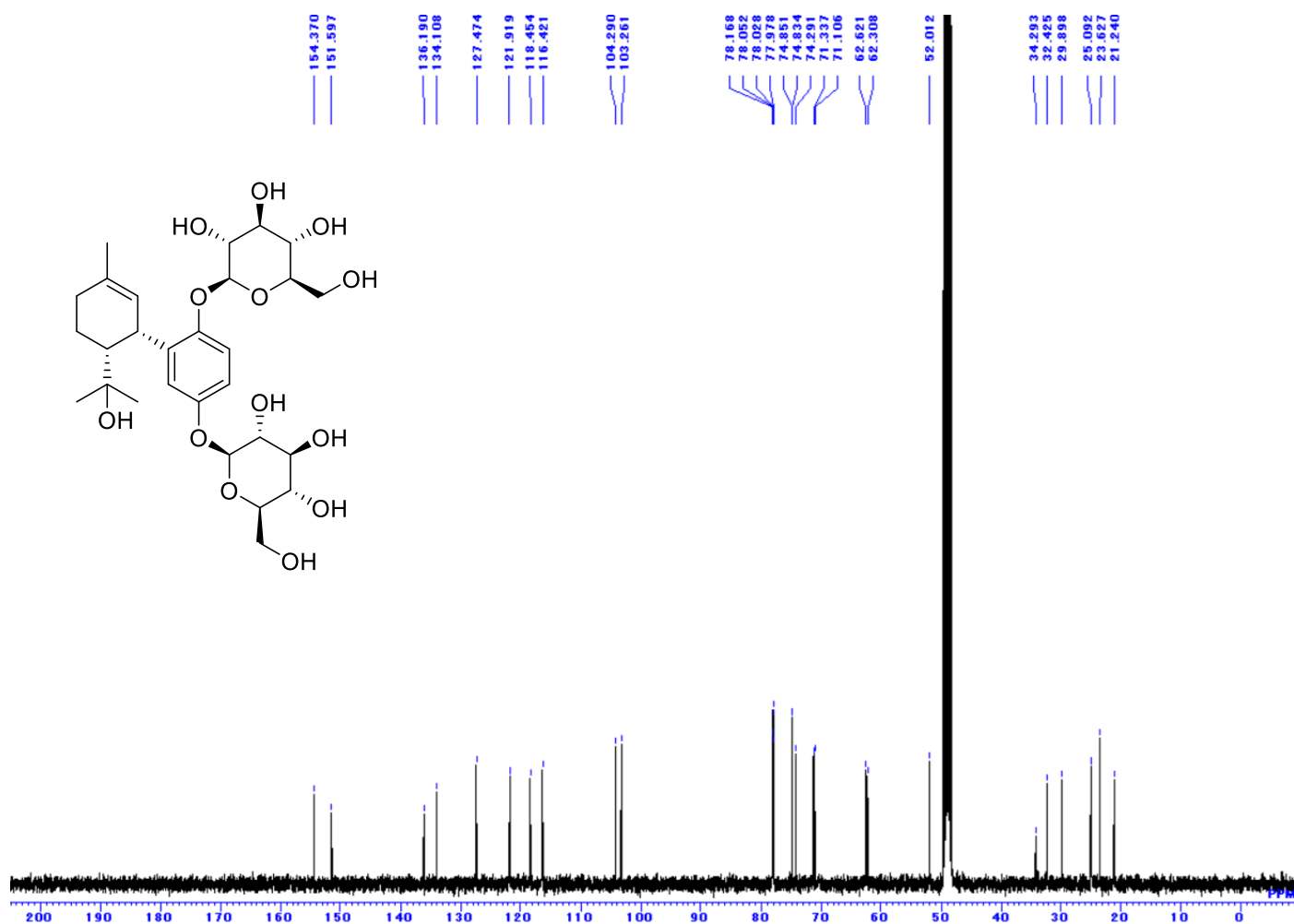


Figure S20 ^{13}C NMR spectrum of compound **3** (in methanol- d_4).

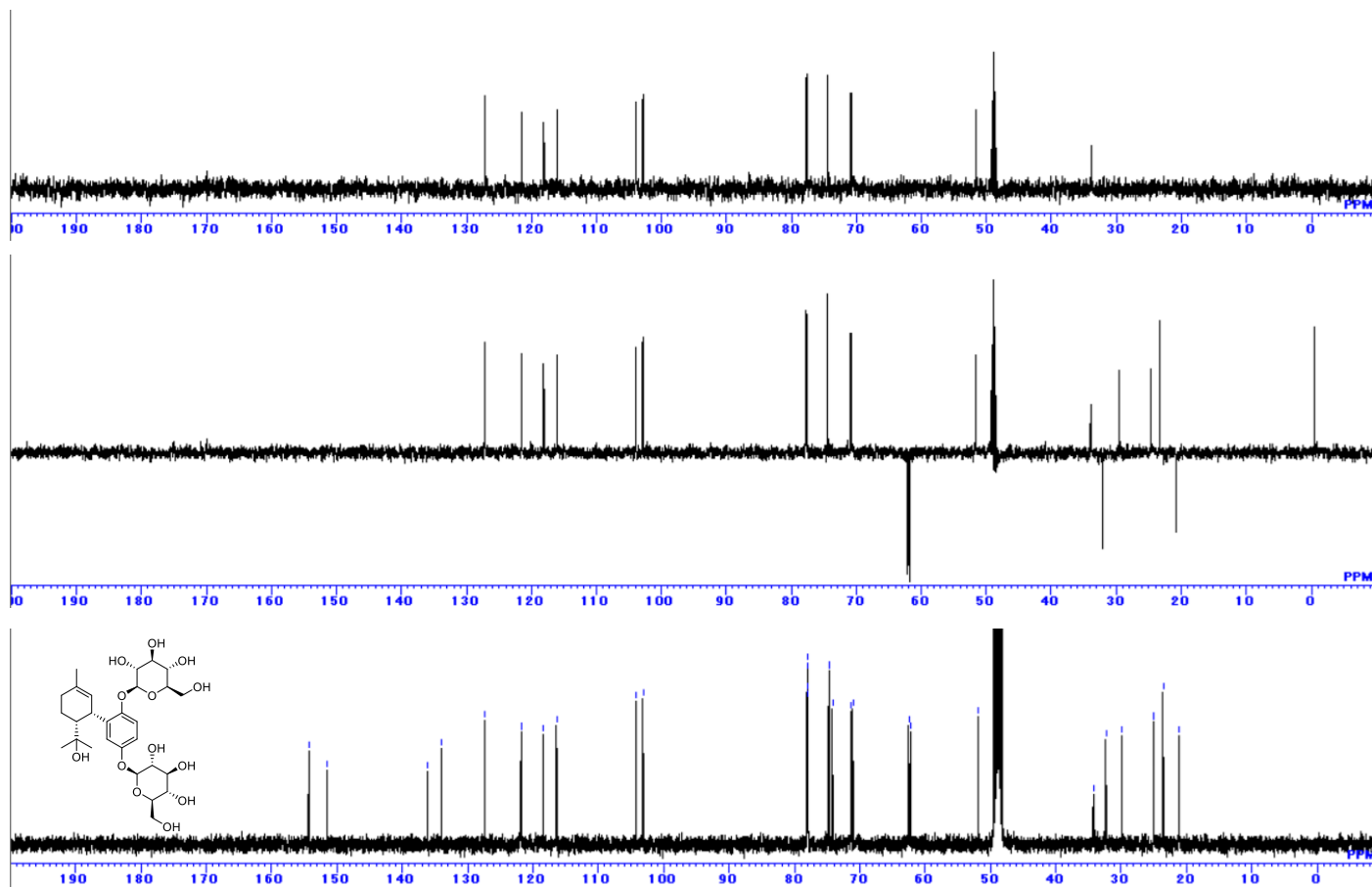


Figure S21 DEPT spectrum of compound **3** (in methanol- d_4).

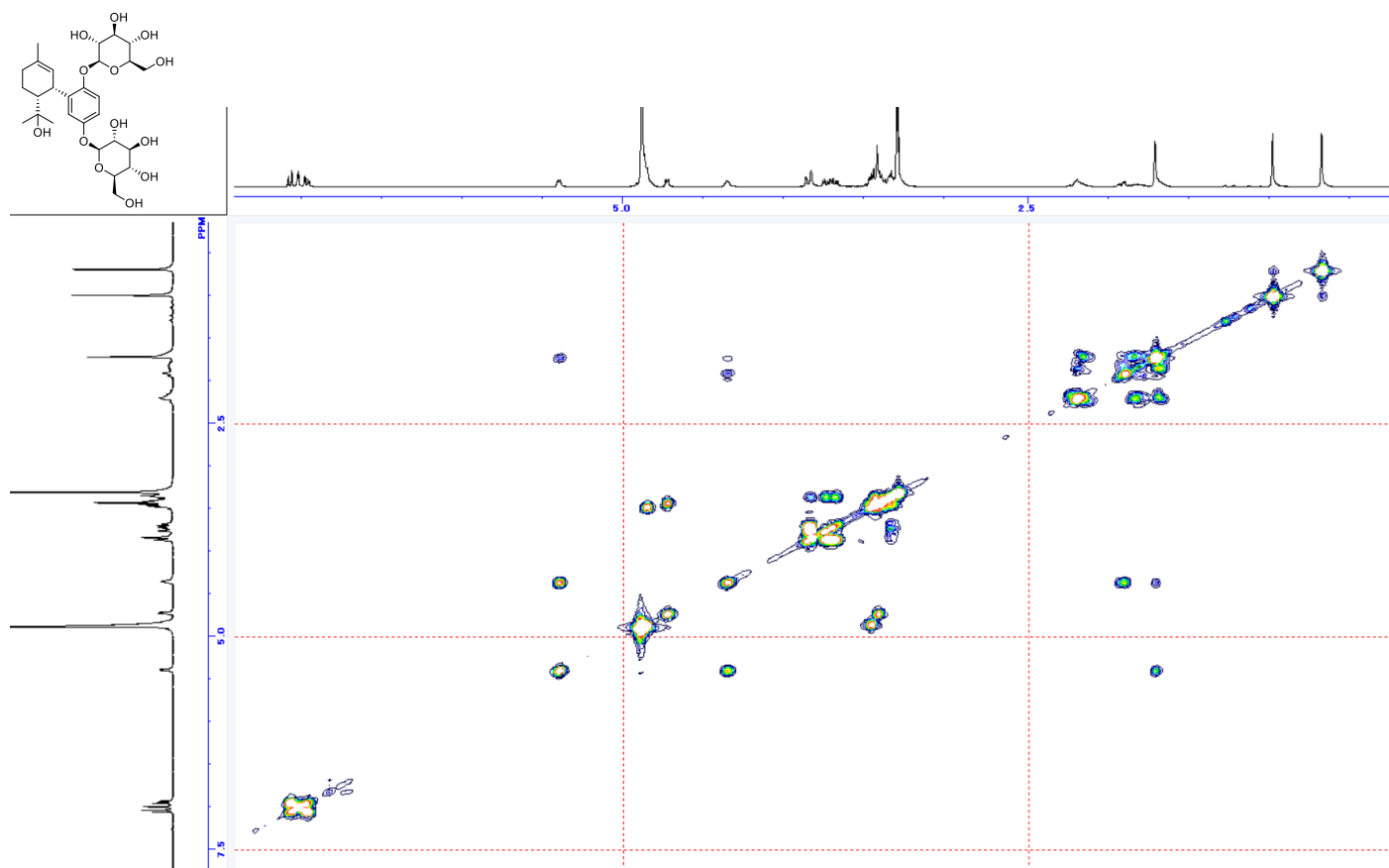


Figure S22 ^1H - ^1H COSY spectrum of compound **3** (in methanol- d_4).

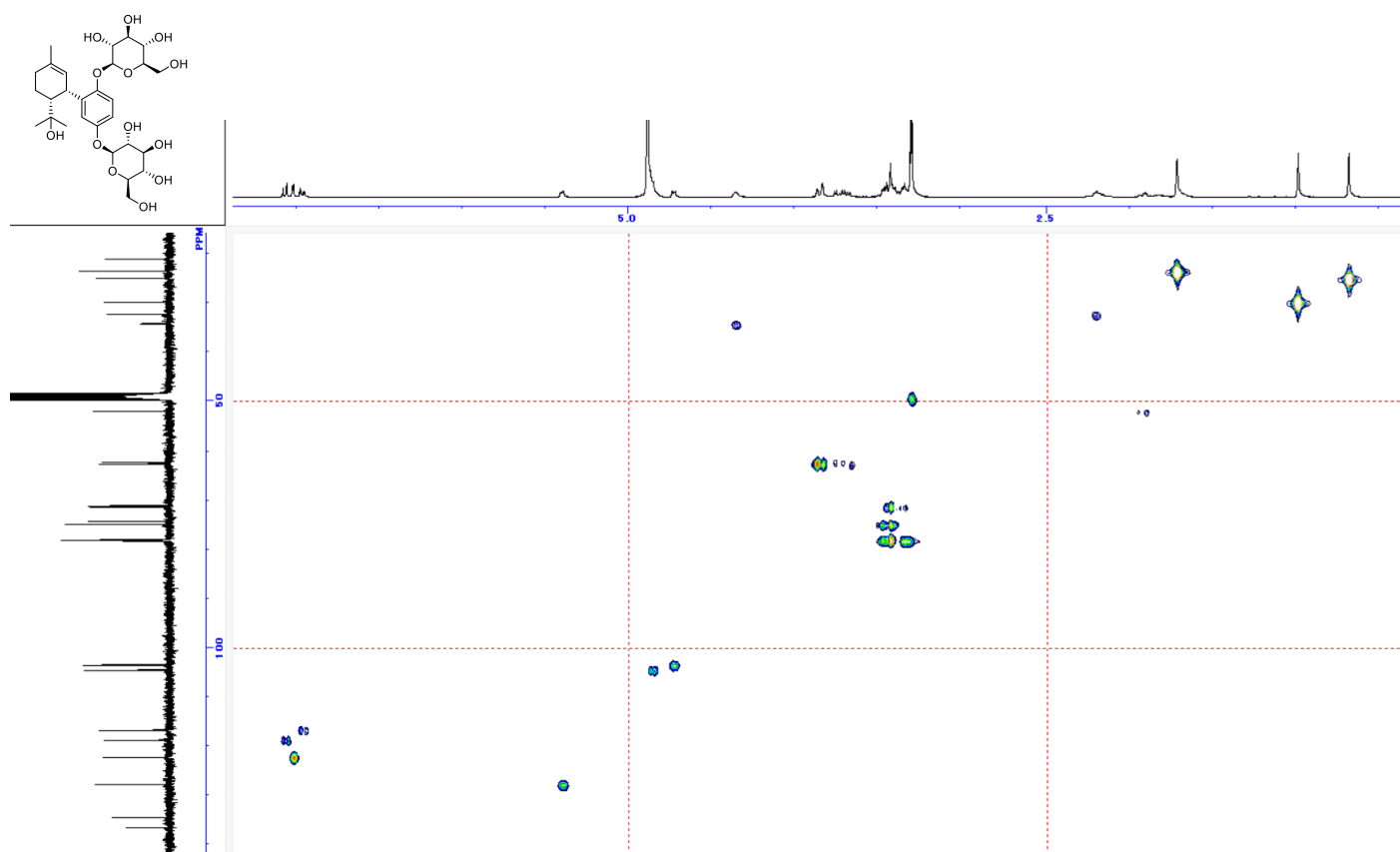


Figure S23 HMQC spectrum of compound **3** (in methanol- d_4).

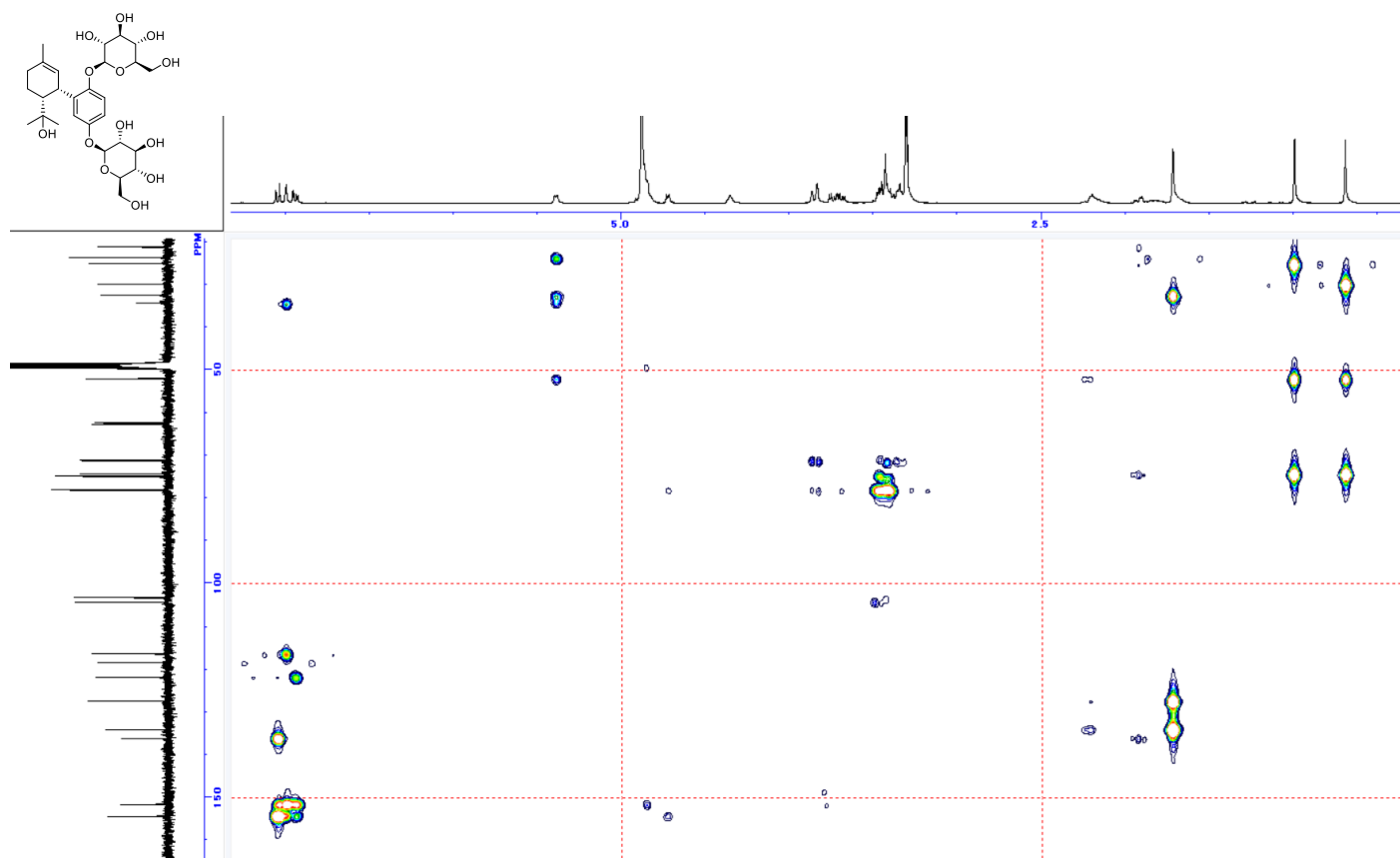


Figure S24 HMBC spectrum of compound **3** (in methanol- d_4).

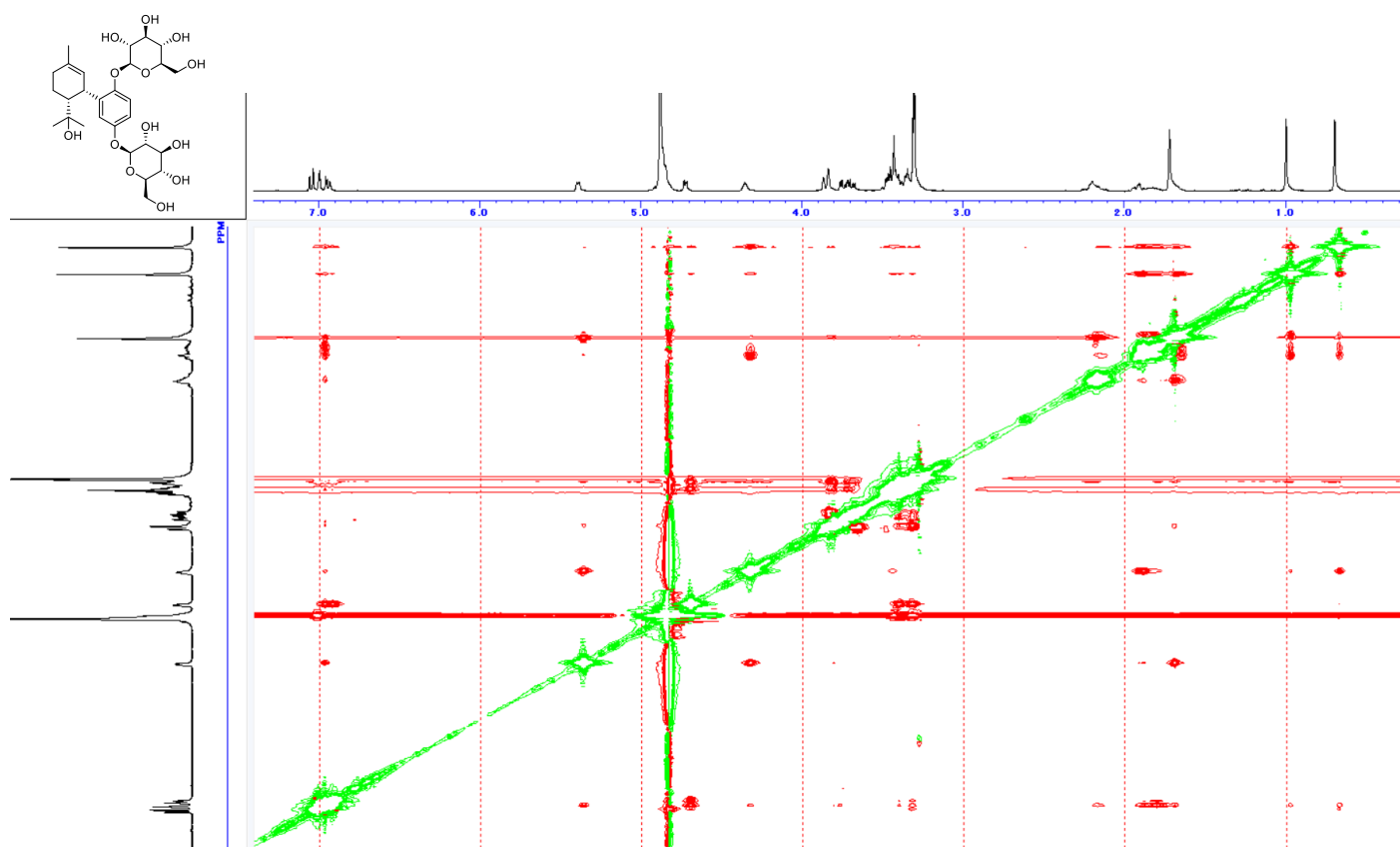


Figure S25 NOESY spectra of compound **3** (in methanol- d_4).

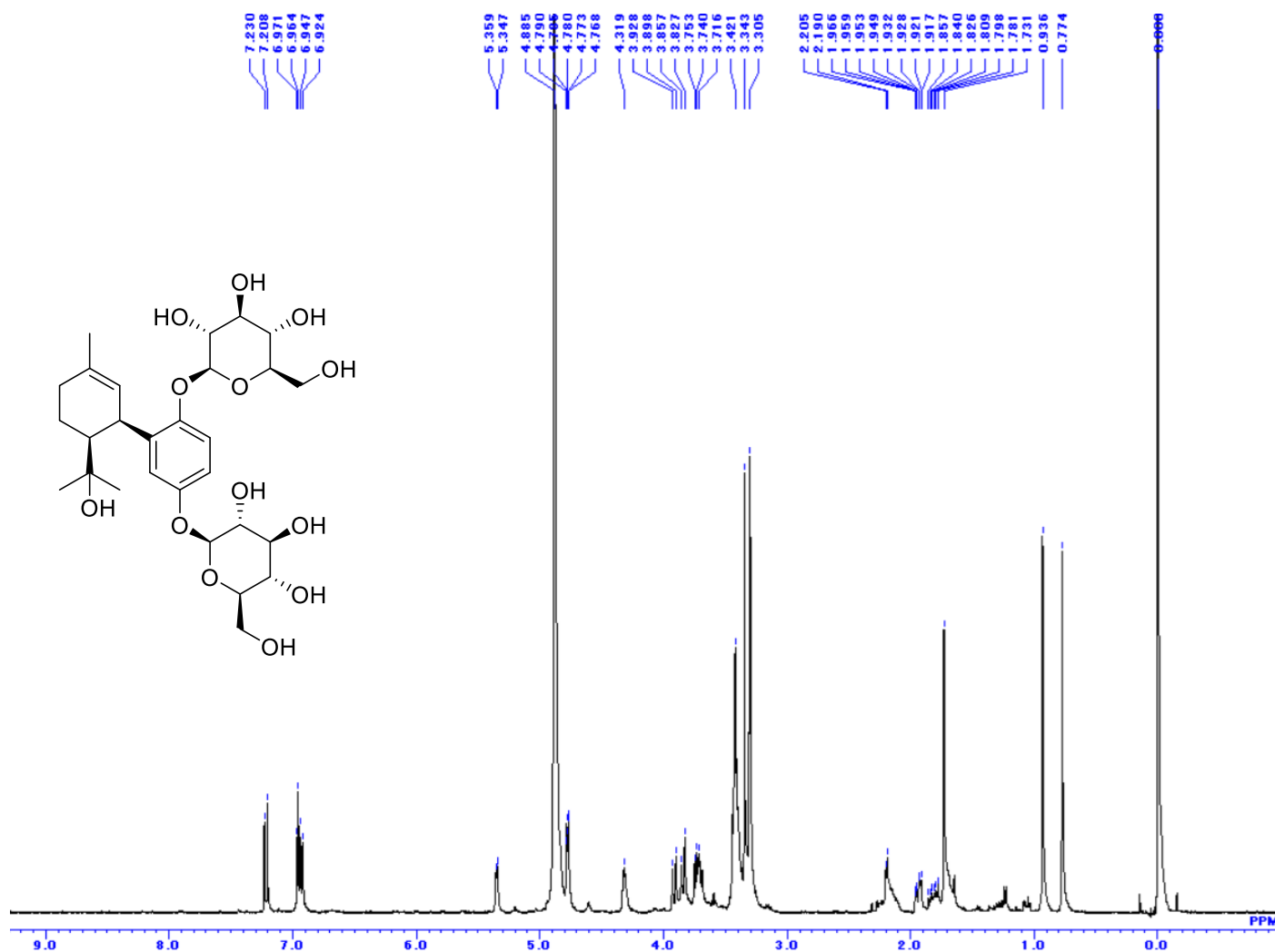


Figure S26 ^1H NMR spectrum of compound 4 (in methanol- d_4).

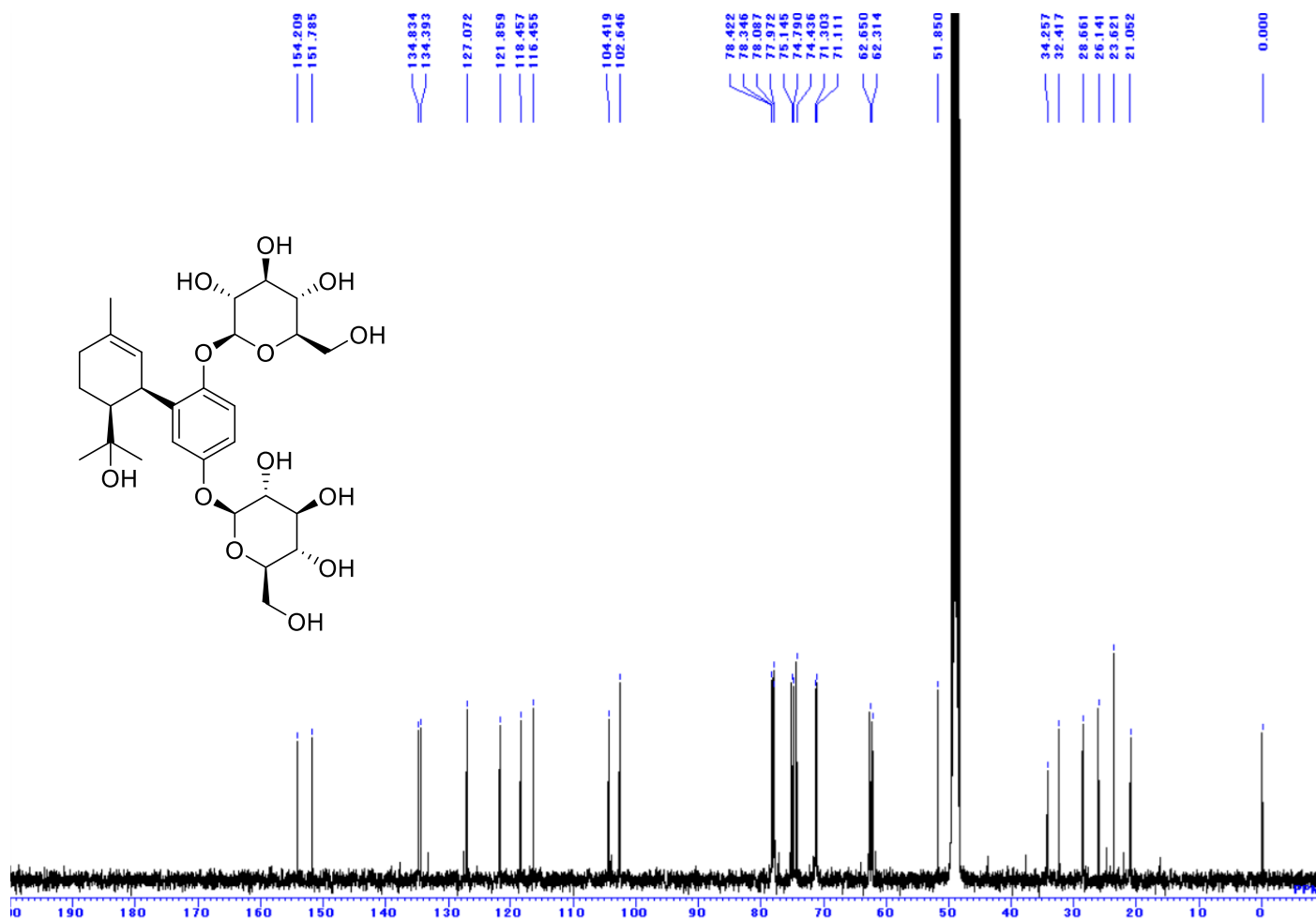


Figure S27 ^{13}C NMR spectrum of compound **4** (in methanol- d_4).

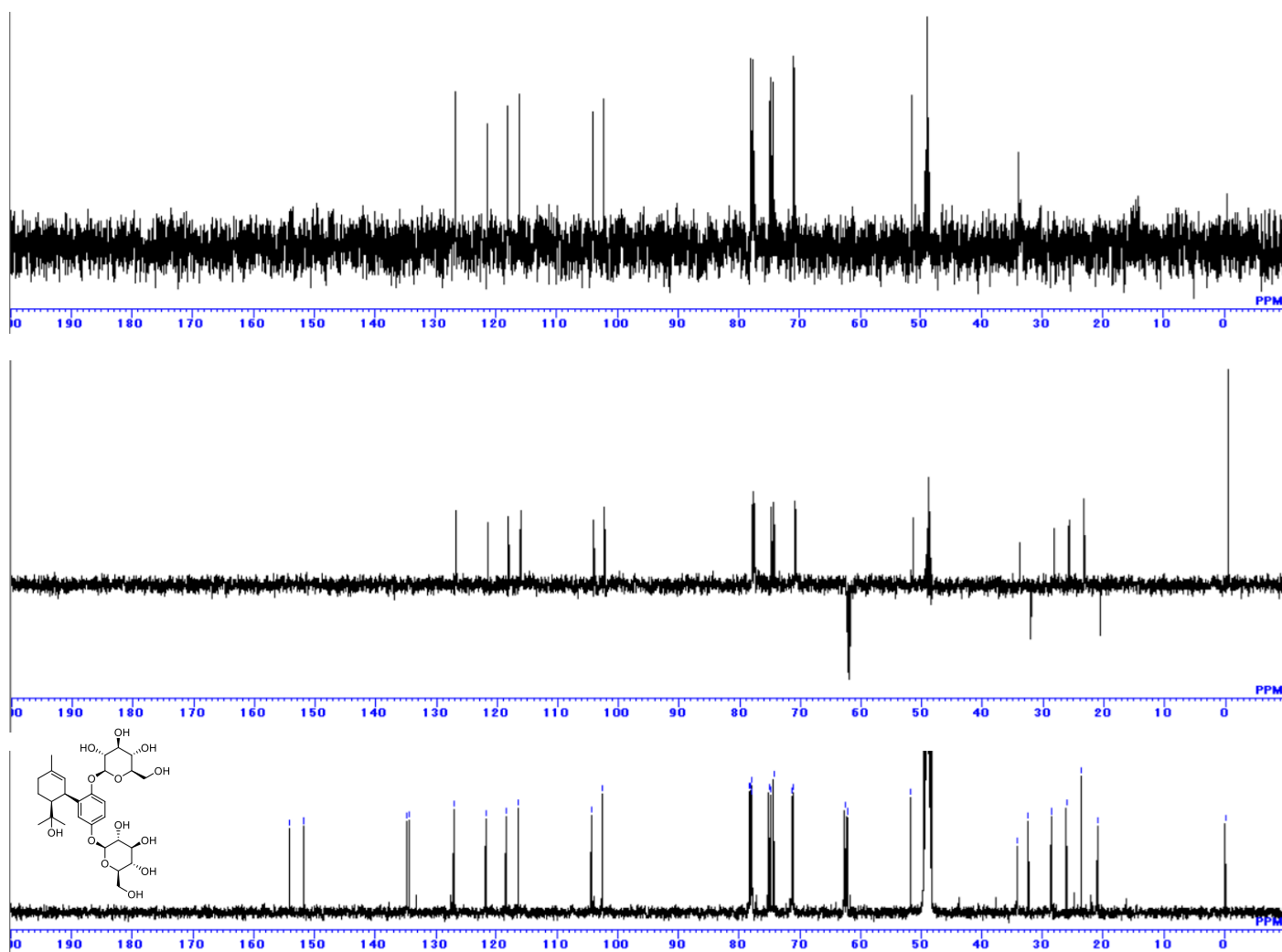


Figure S28 DEPT spectrum of compound **4** (in methanol- d_4).

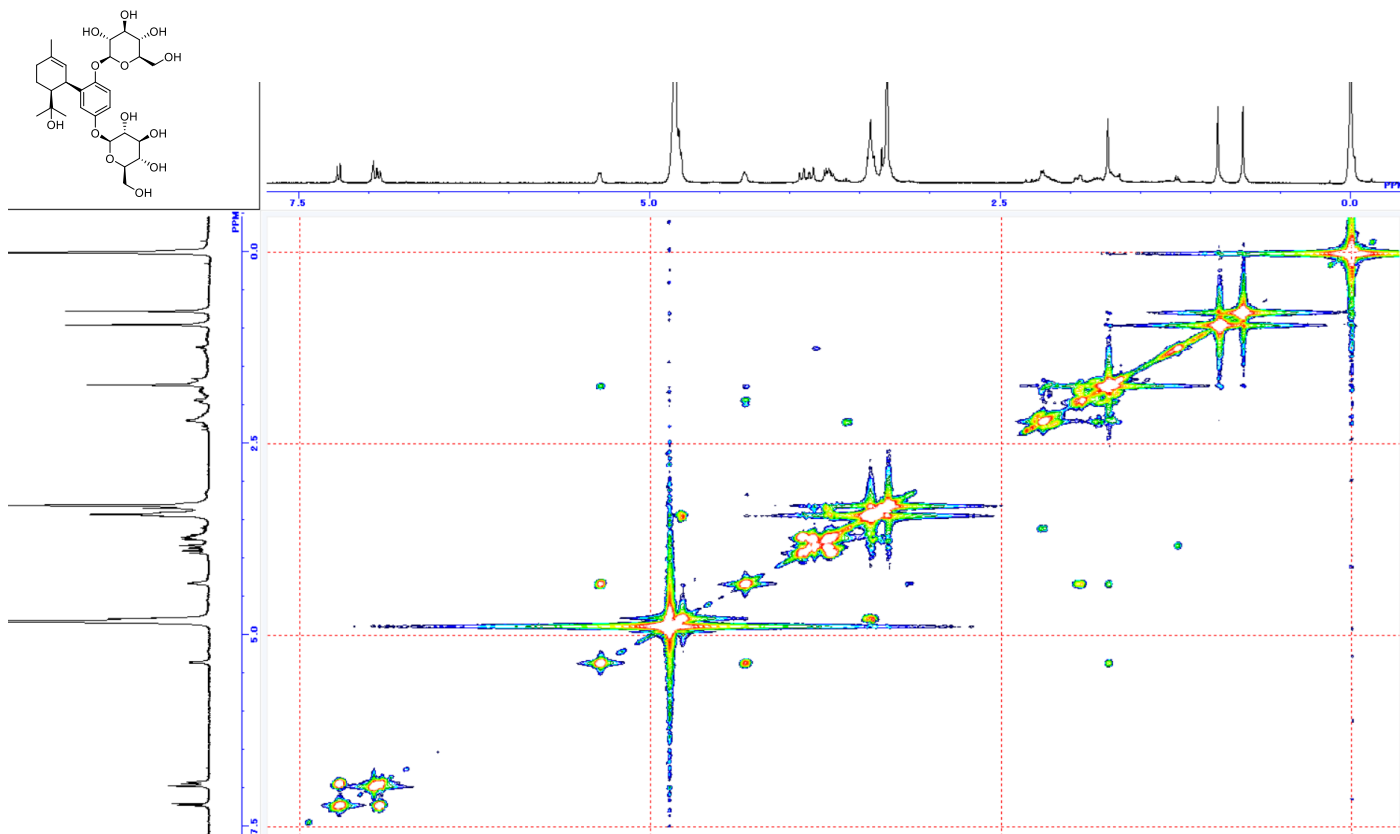


Figure S29 ^1H - ^1H COSY spectrum of compound 4 (in methanol- d_4).

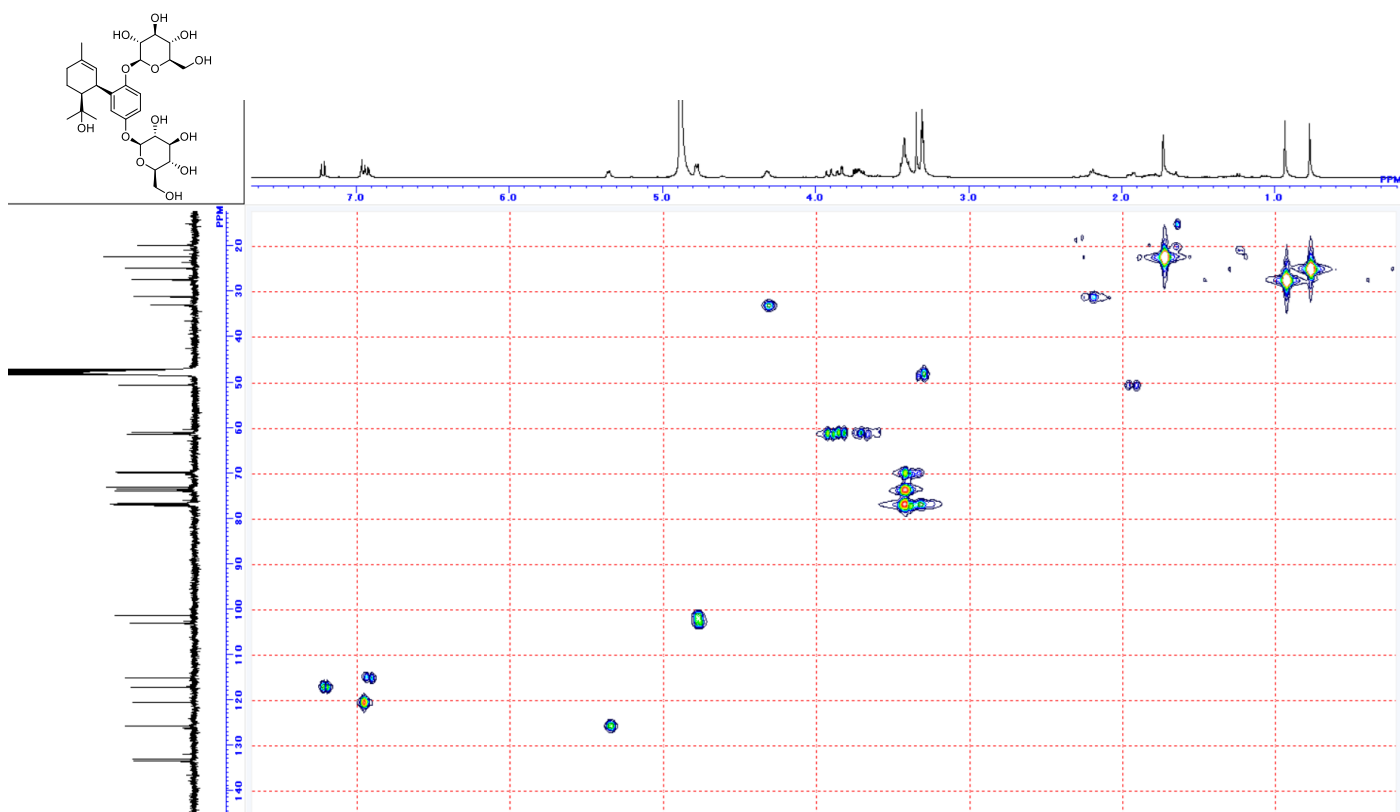


Figure S30 HMBC spectrum of compound 4 (in methanol- d_4).

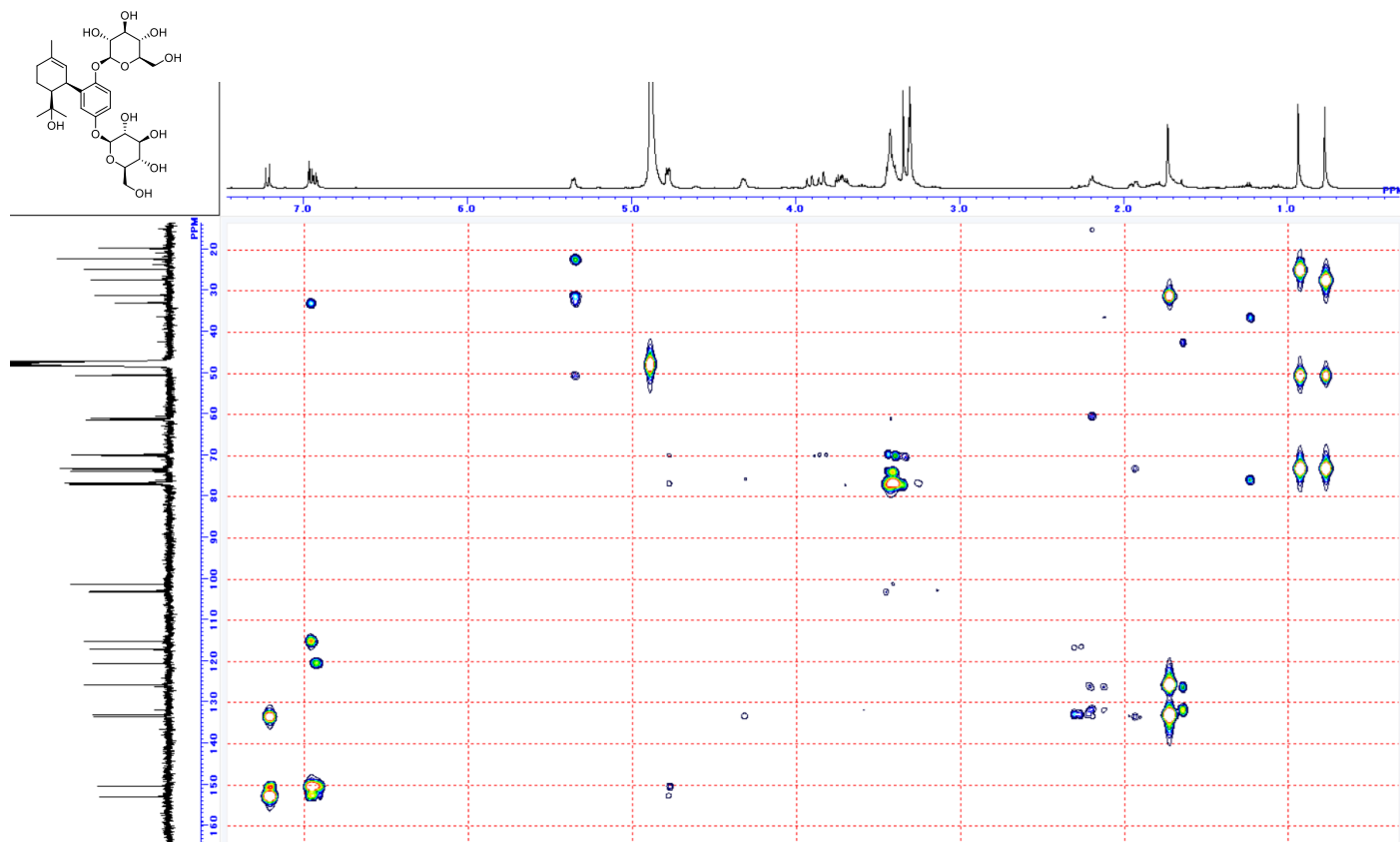


Figure S31 HMBC spectrum of compound **4** (in methanol- d_4).

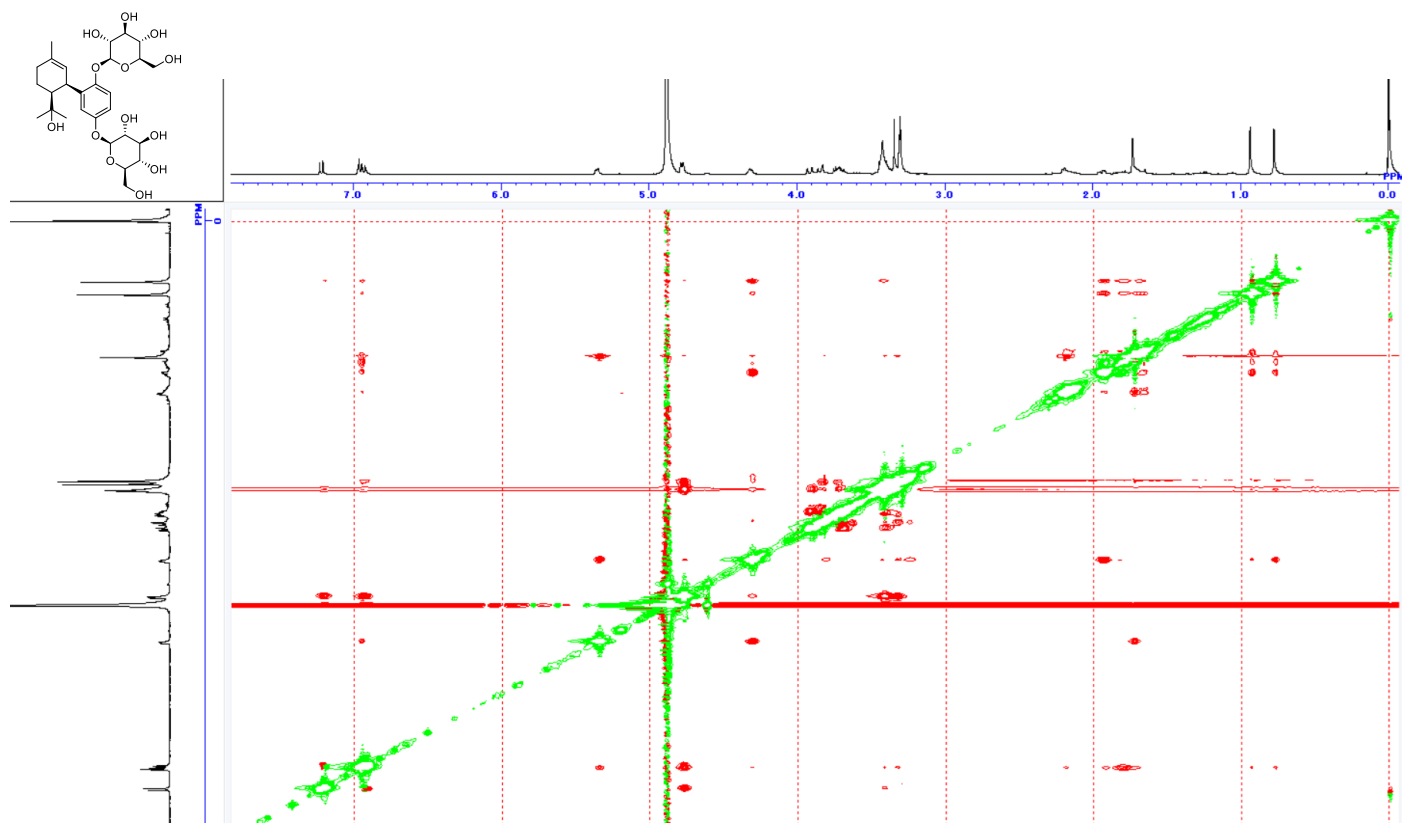


Figure S32 NOESY spectra of compound **4** (in methanol- d_4).

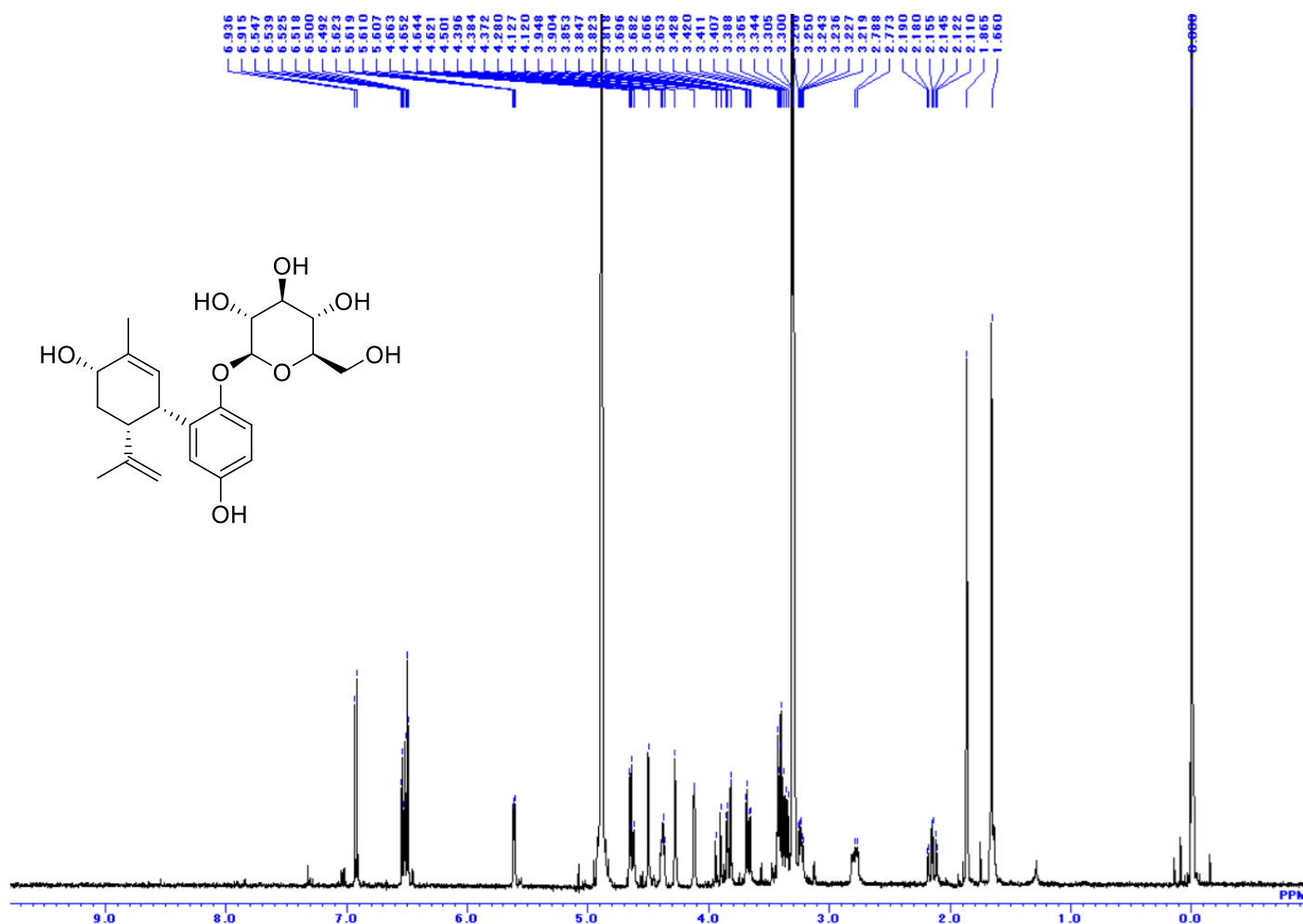


Figure S33 ^1H NMR spectrum of compound **5** (in $\text{methanol-}d_4$).

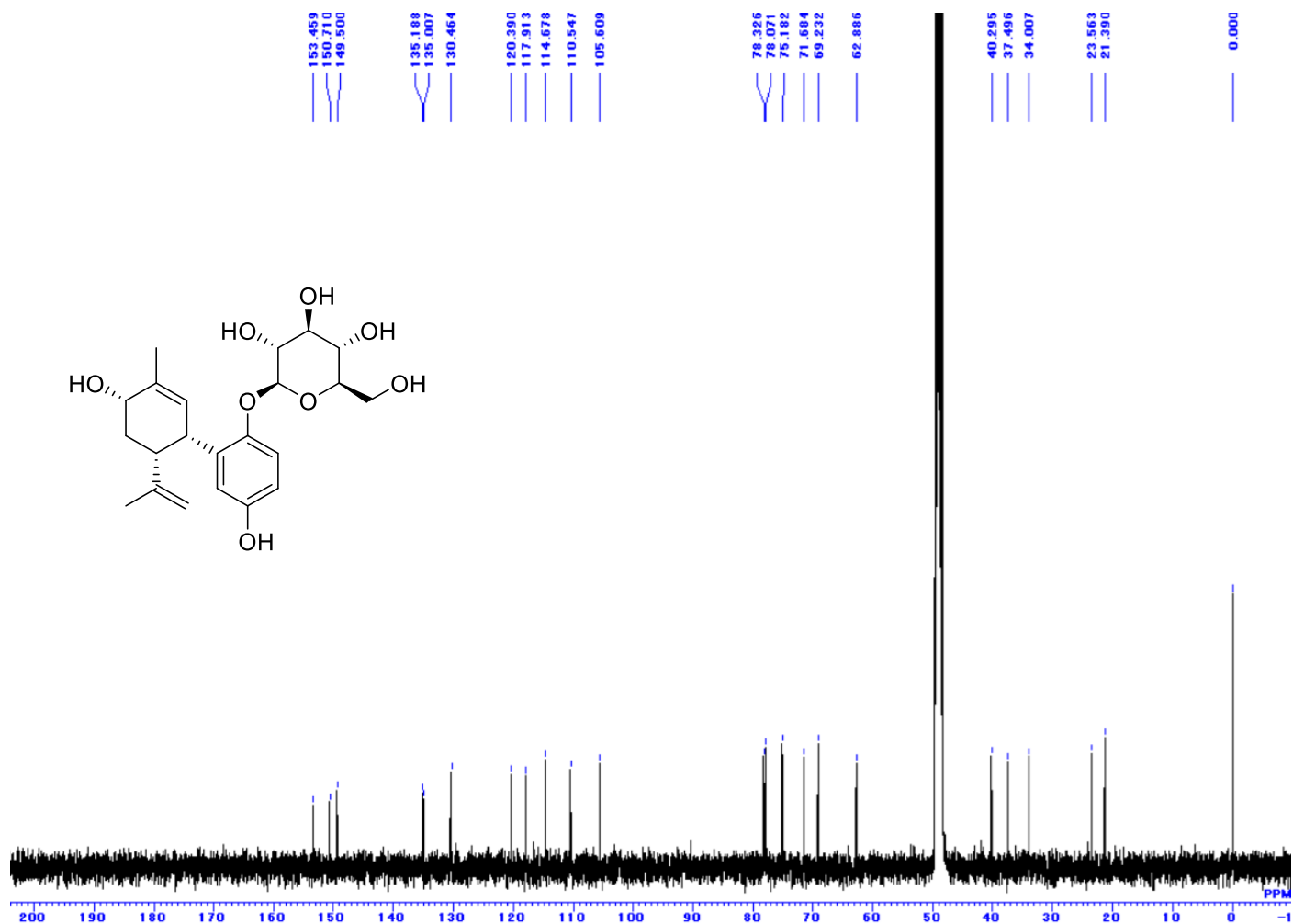


Figure S34 ^{13}C NMR spectrum of compound **5** (in methanol- d_4).

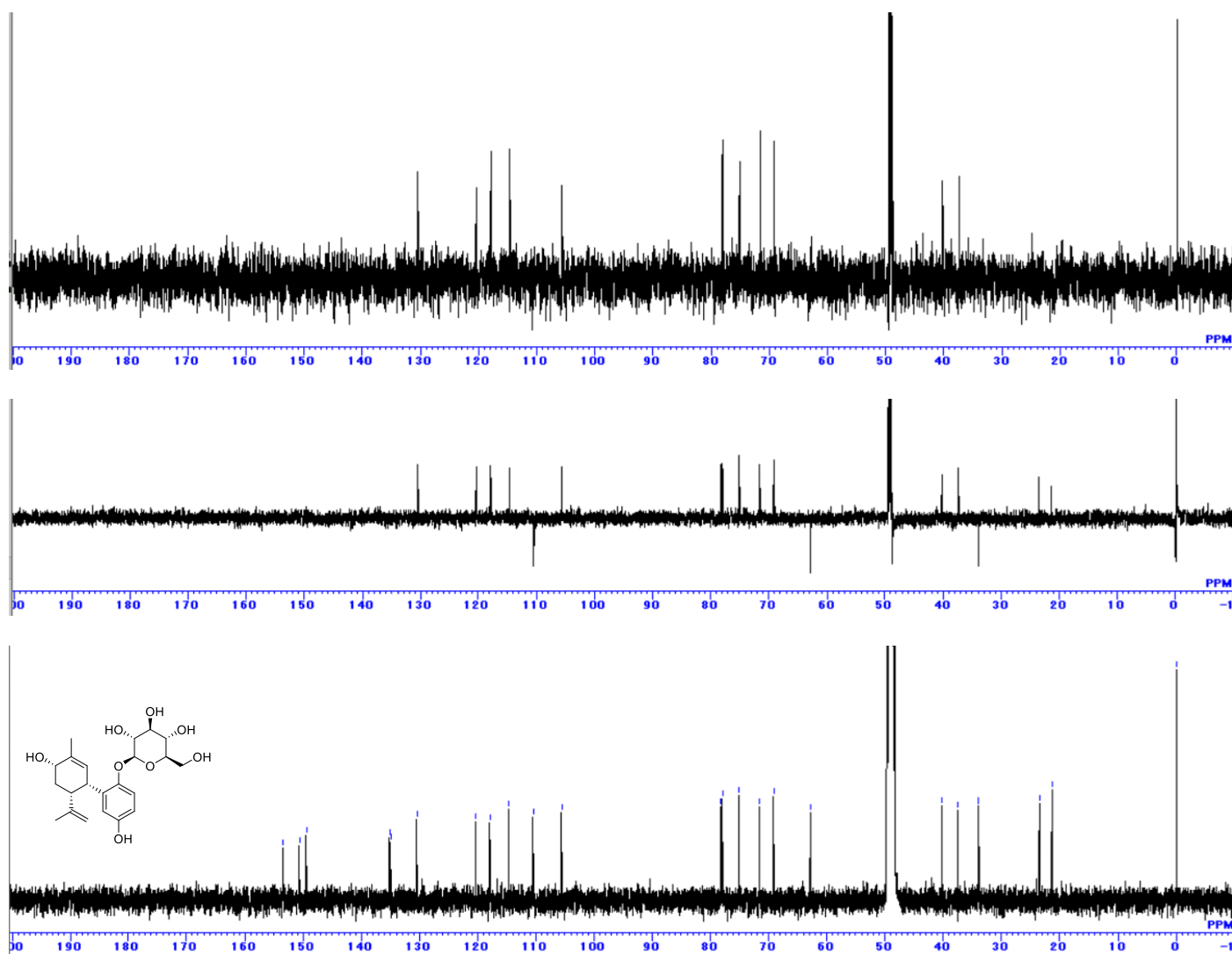


Figure S35 DEPT spectrum of compound **5** (in methanol- d_4).

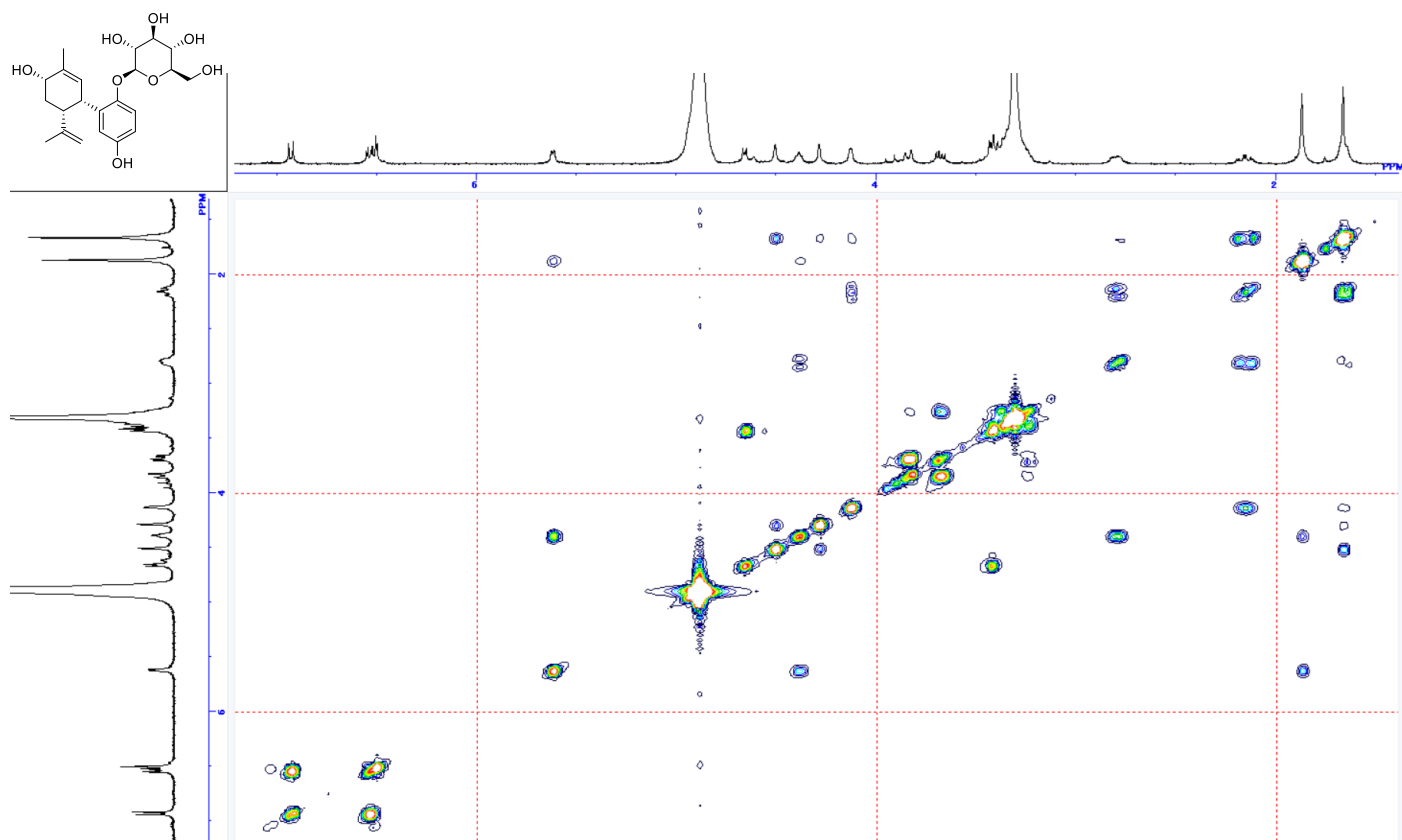


Figure S36 ^1H - ^1H COSY spectrum of compound **5** (in methanol- d_4).

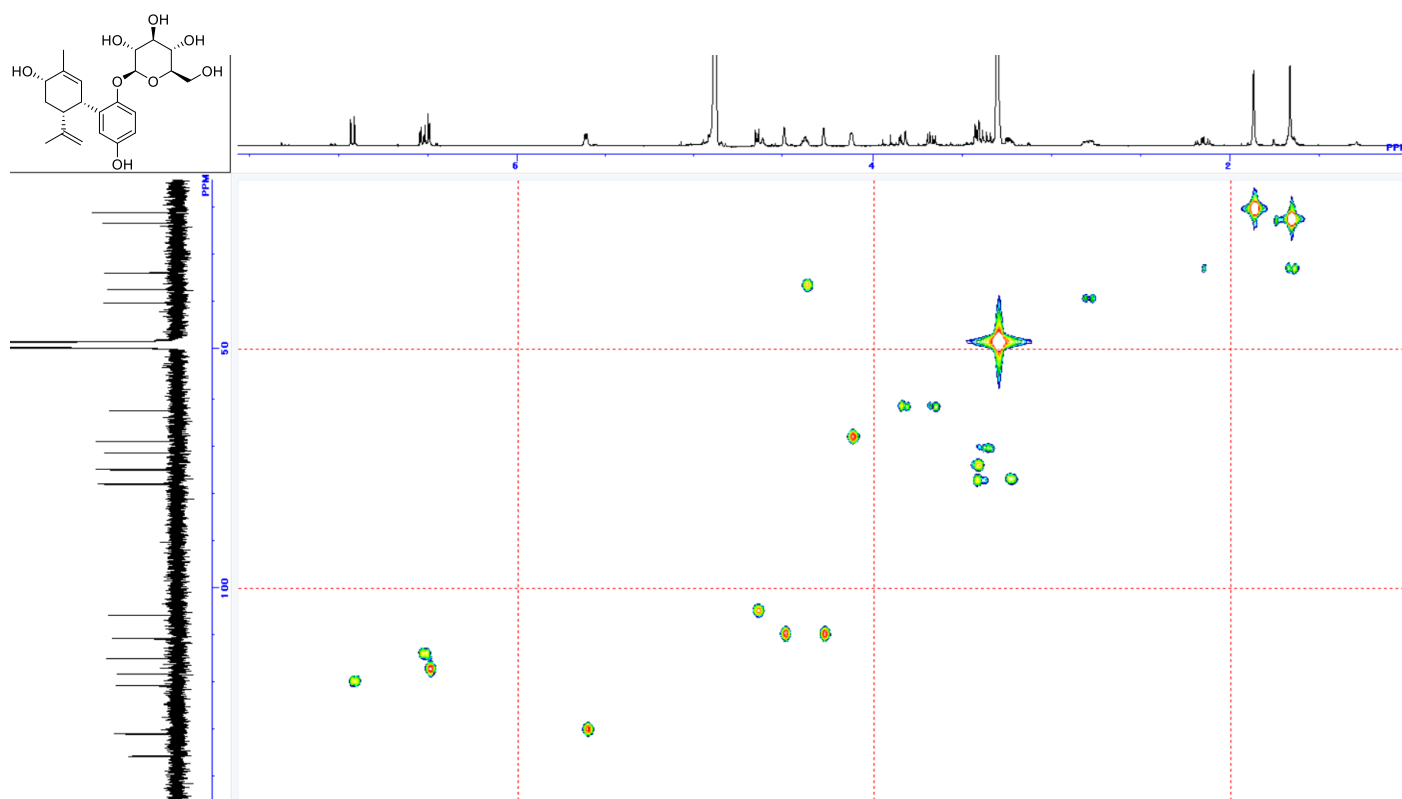
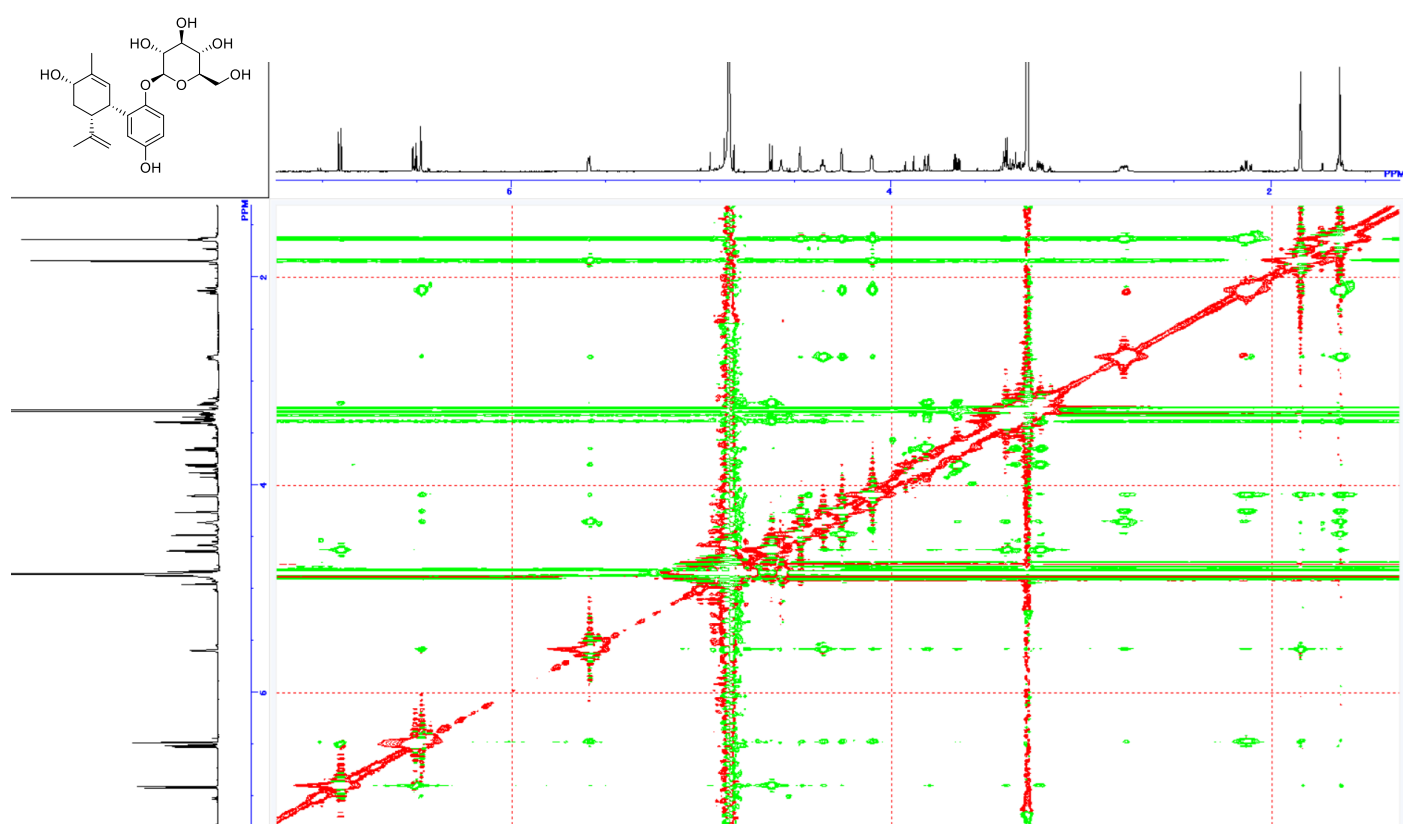
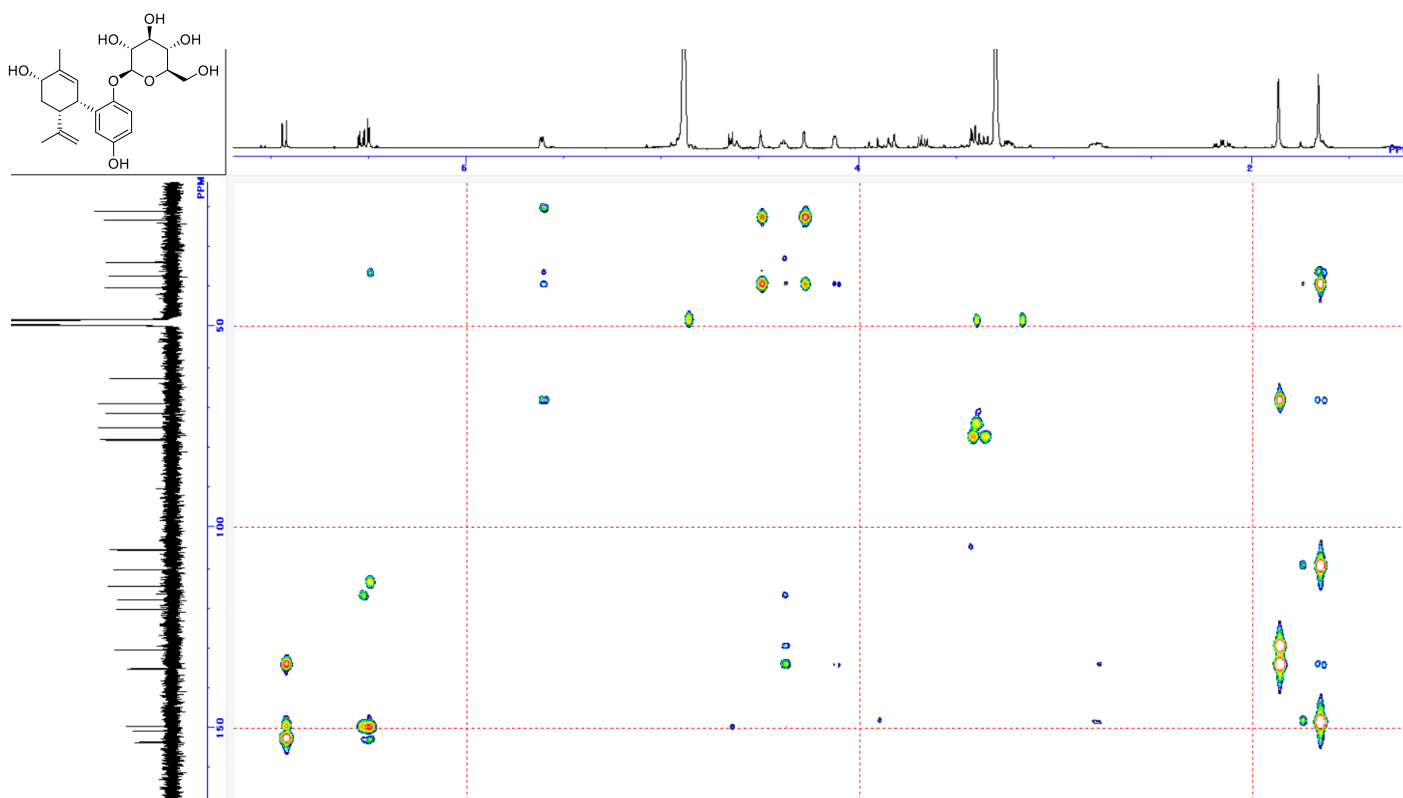


Figure S37 HMQC spectrum of compound **5** (in methanol- d_4).



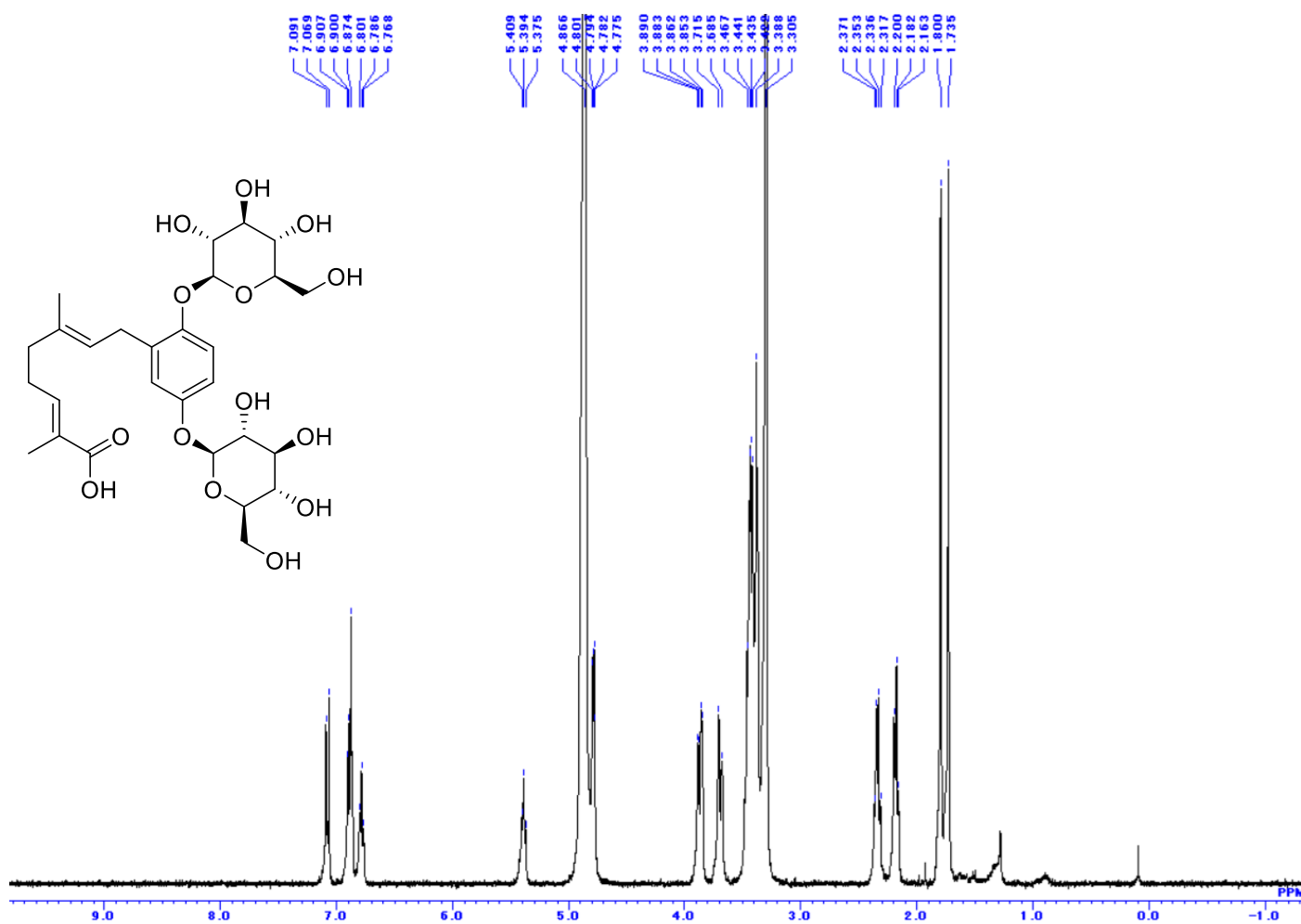


Figure S40 ^1H NMR spectrum of compound **6** (in methanol- d_4).

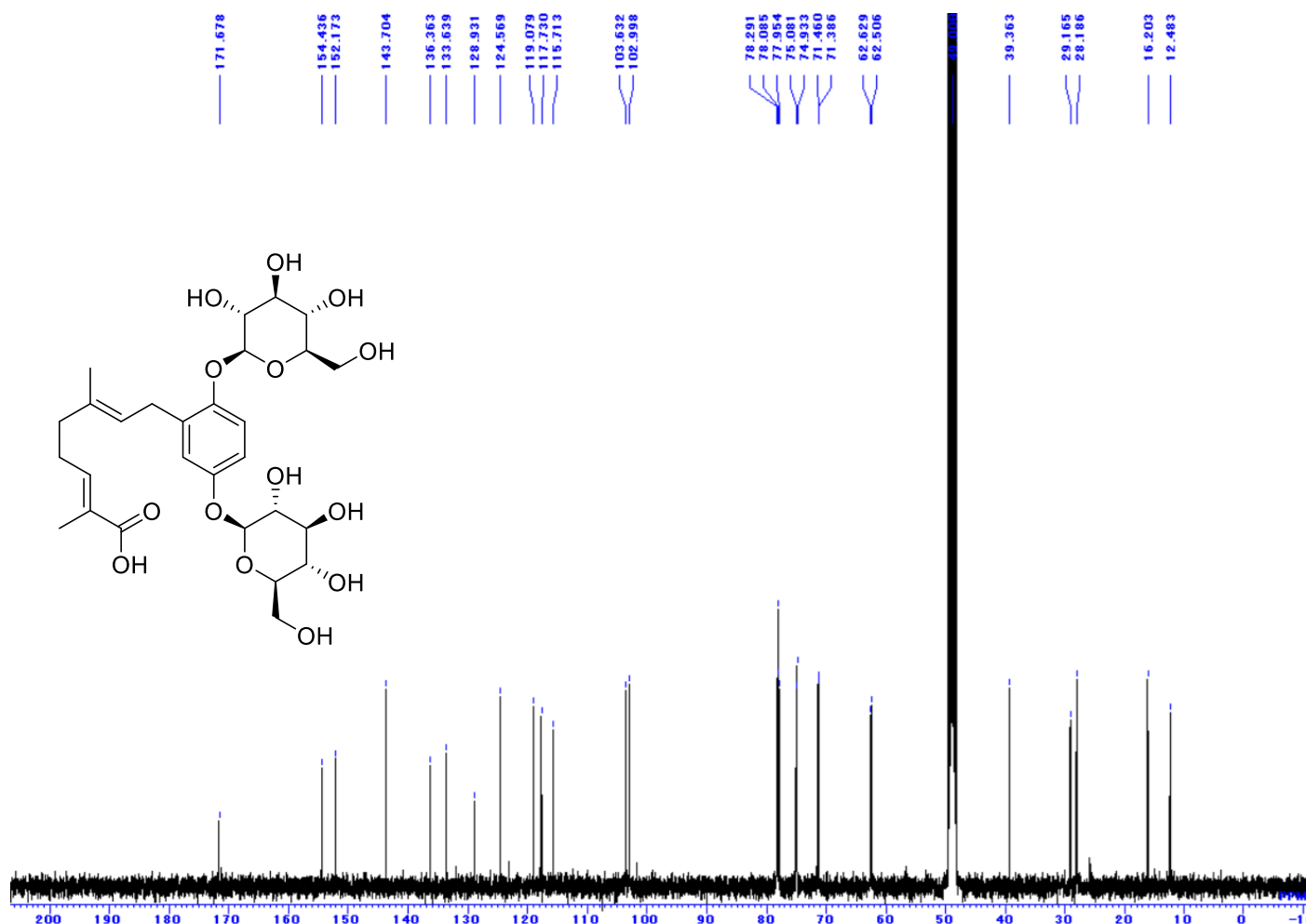


Figure S41 ^{13}C NMR spectrum of compound **6** (in methanol- d_4).

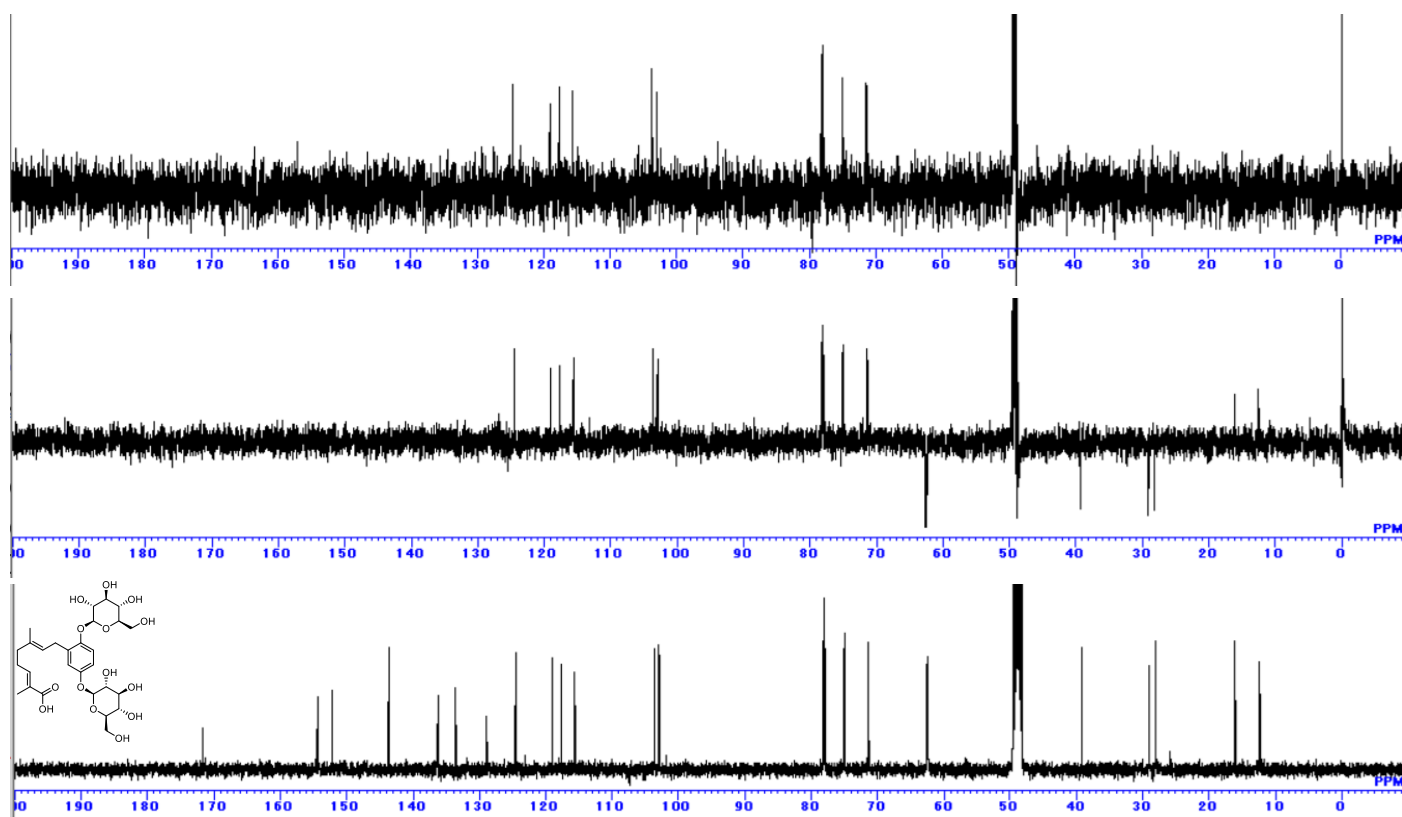


Figure S42 DEPT spectrum of compound 6 (in methanol- d_4).

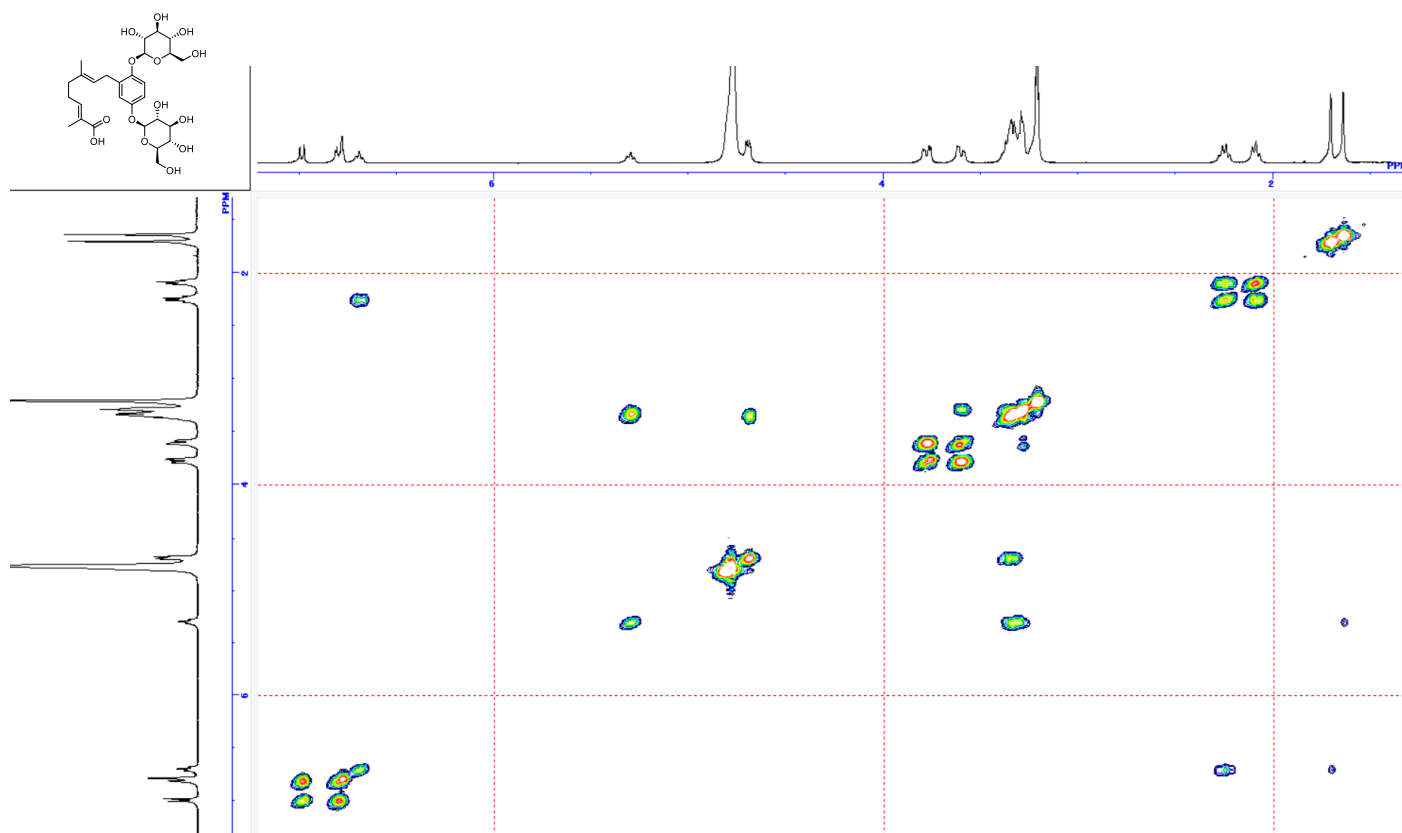


Figure S43 ^1H - ^1H COSY spectrum of compound 6 (in methanol- d_4).

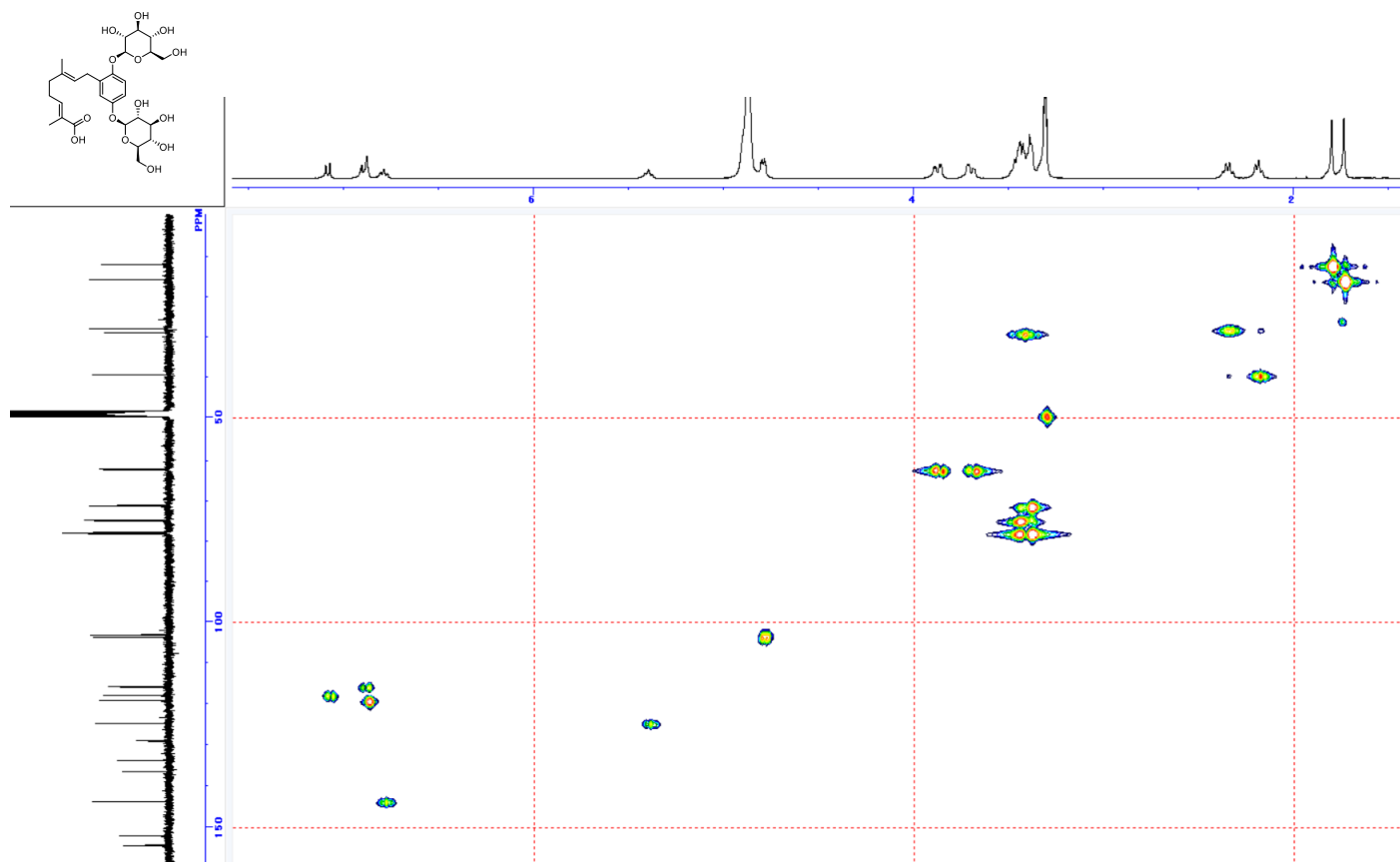


Figure S44 HMQC spectrum of compound **6** (in methanol- d_4).

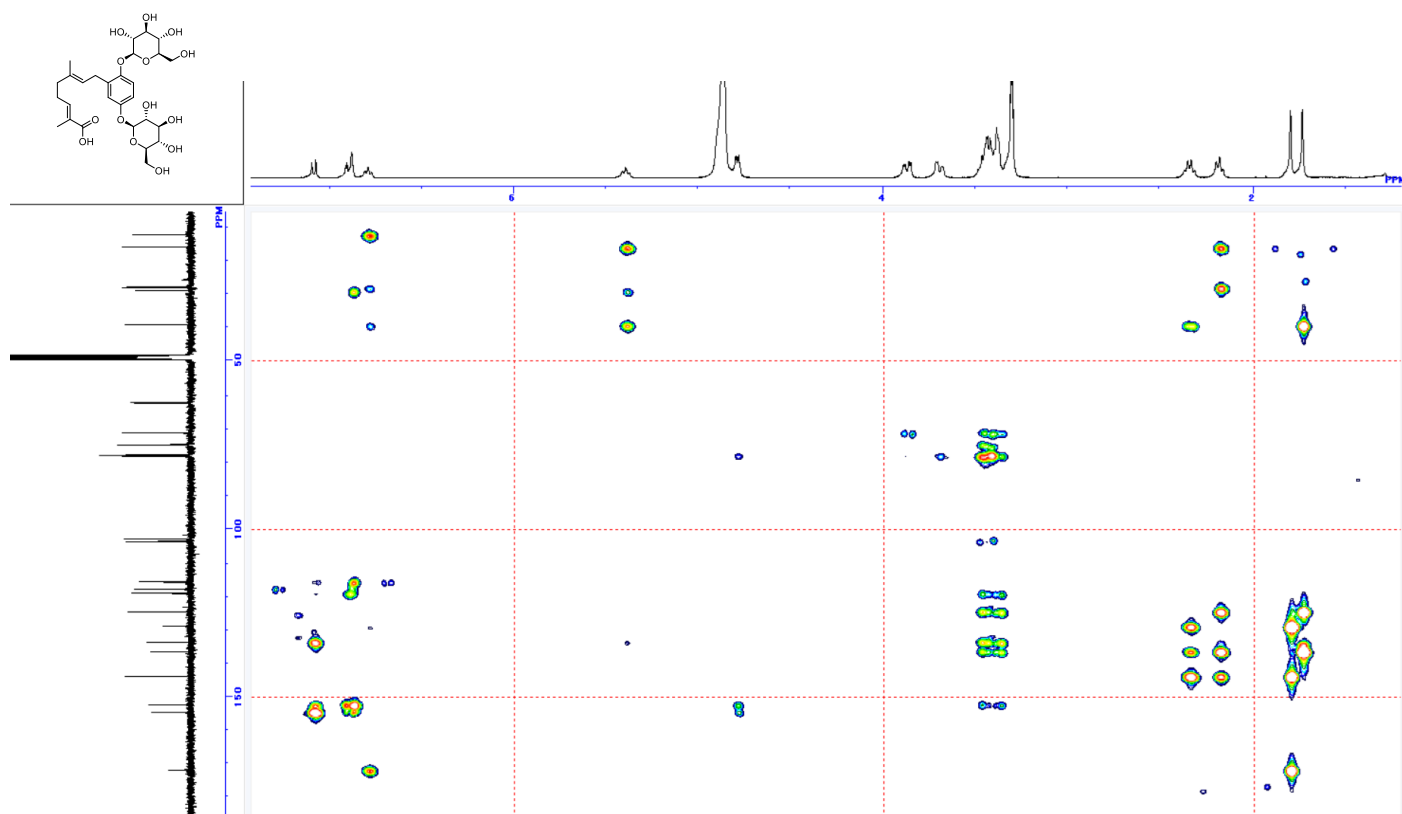


Figure S45 HMBC spectrum of compound **6** (in methanol- d_4).

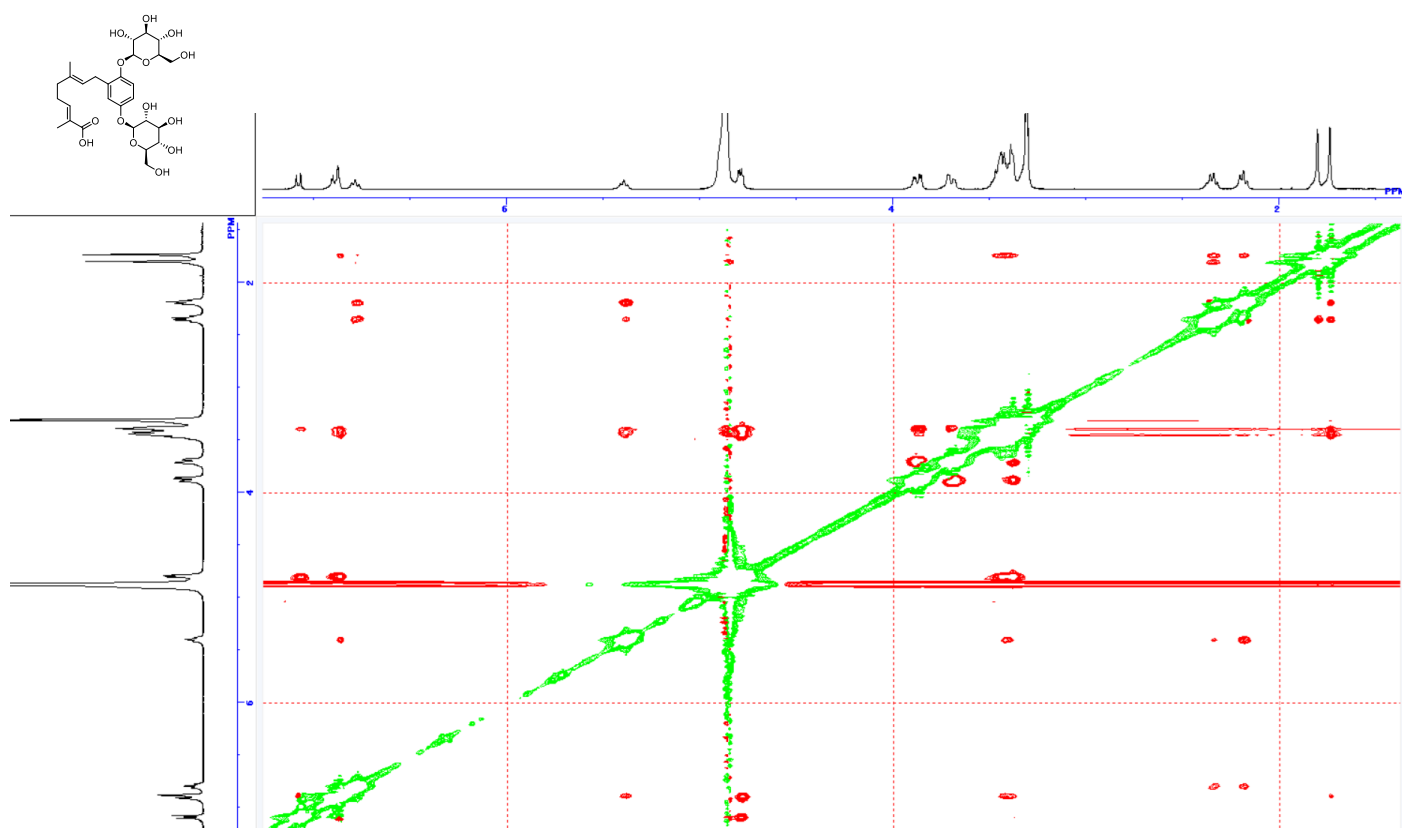


Figure S46 NOESY spectra of compound **6** (in methanol- d_4).

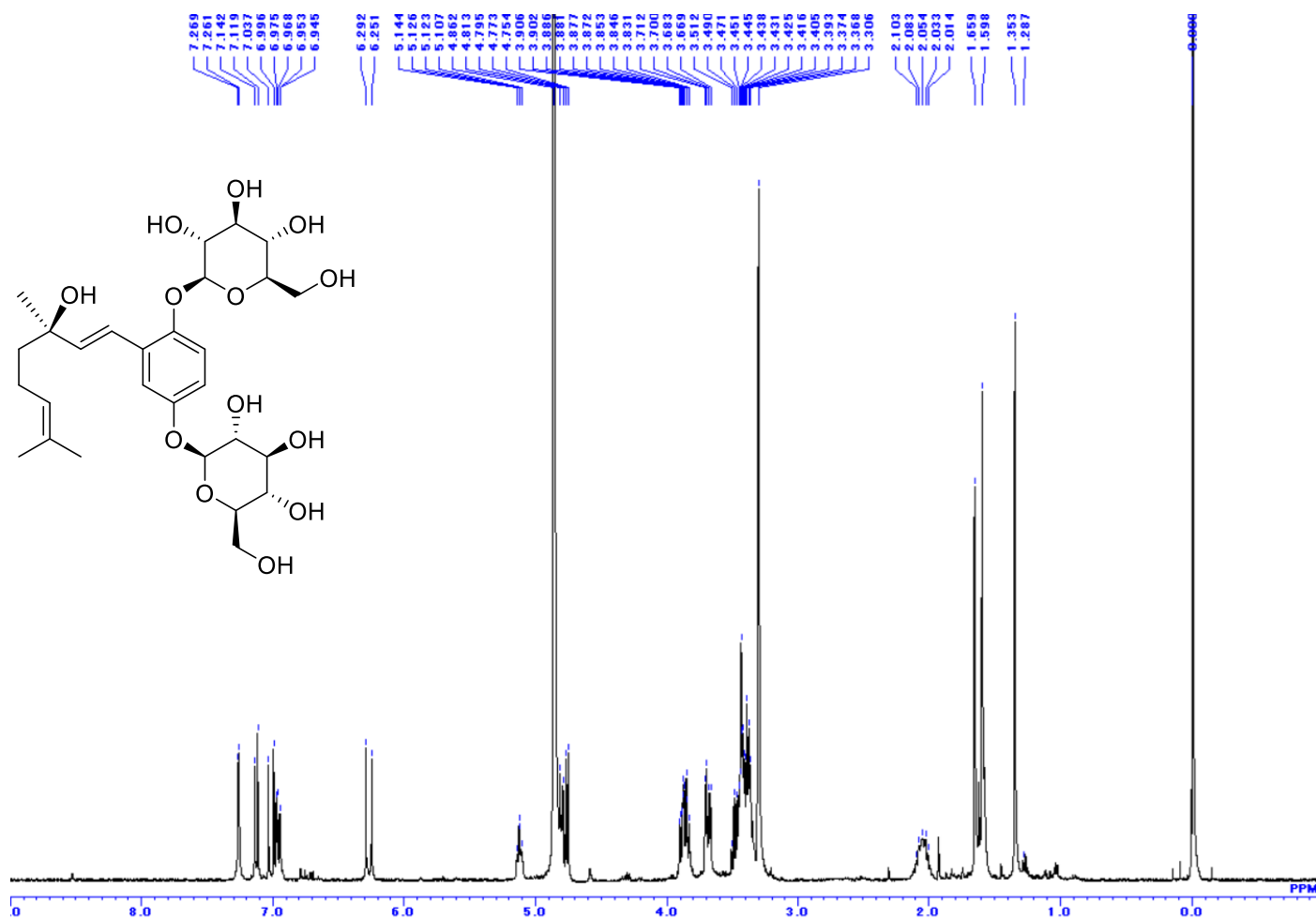


Figure S47 ¹H NMR spectrum of compound **7** (in methanol-*d*₄).

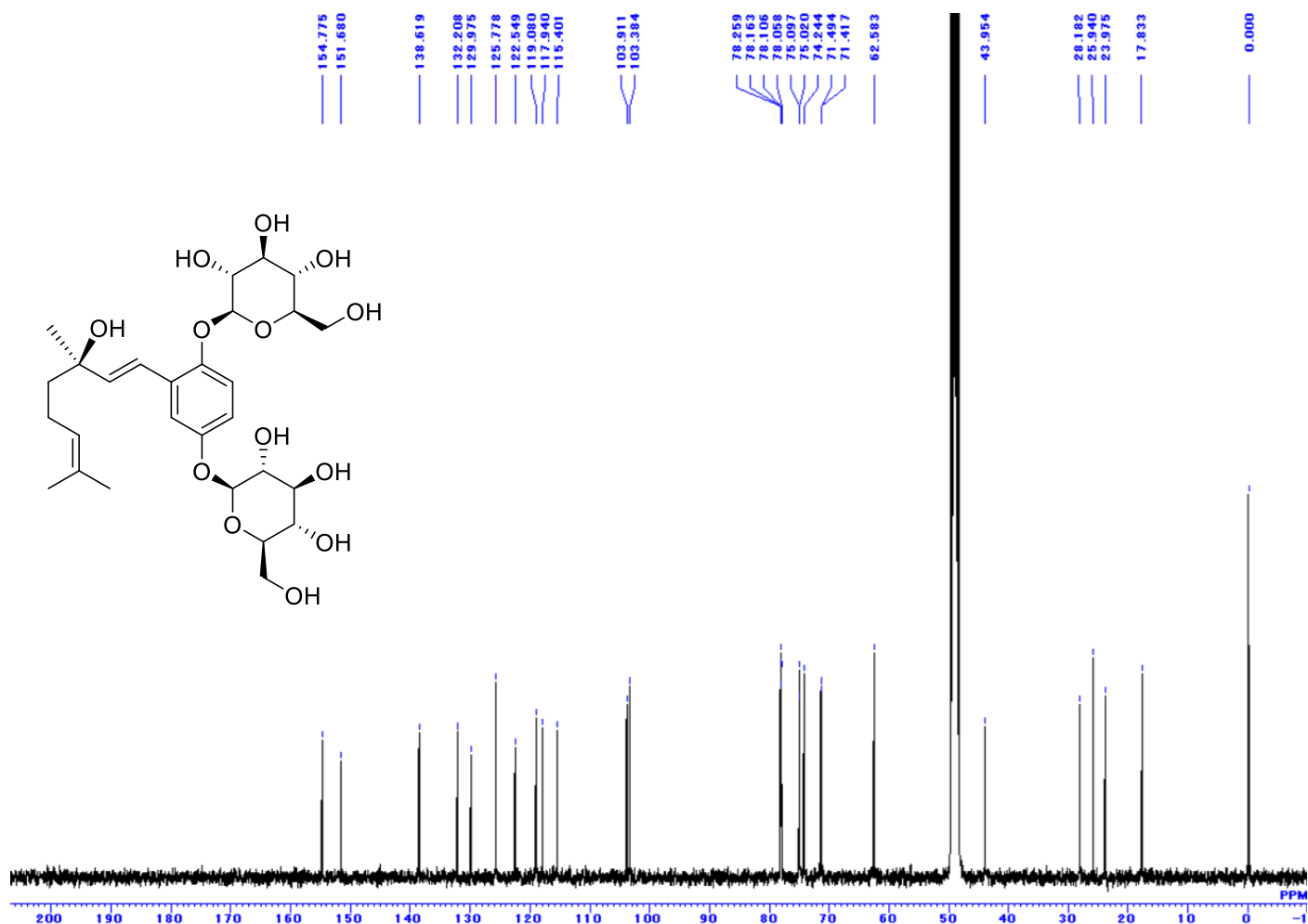


Figure S48 ^{13}C NMR spectrum of compound 7 (in methanol- d_4).

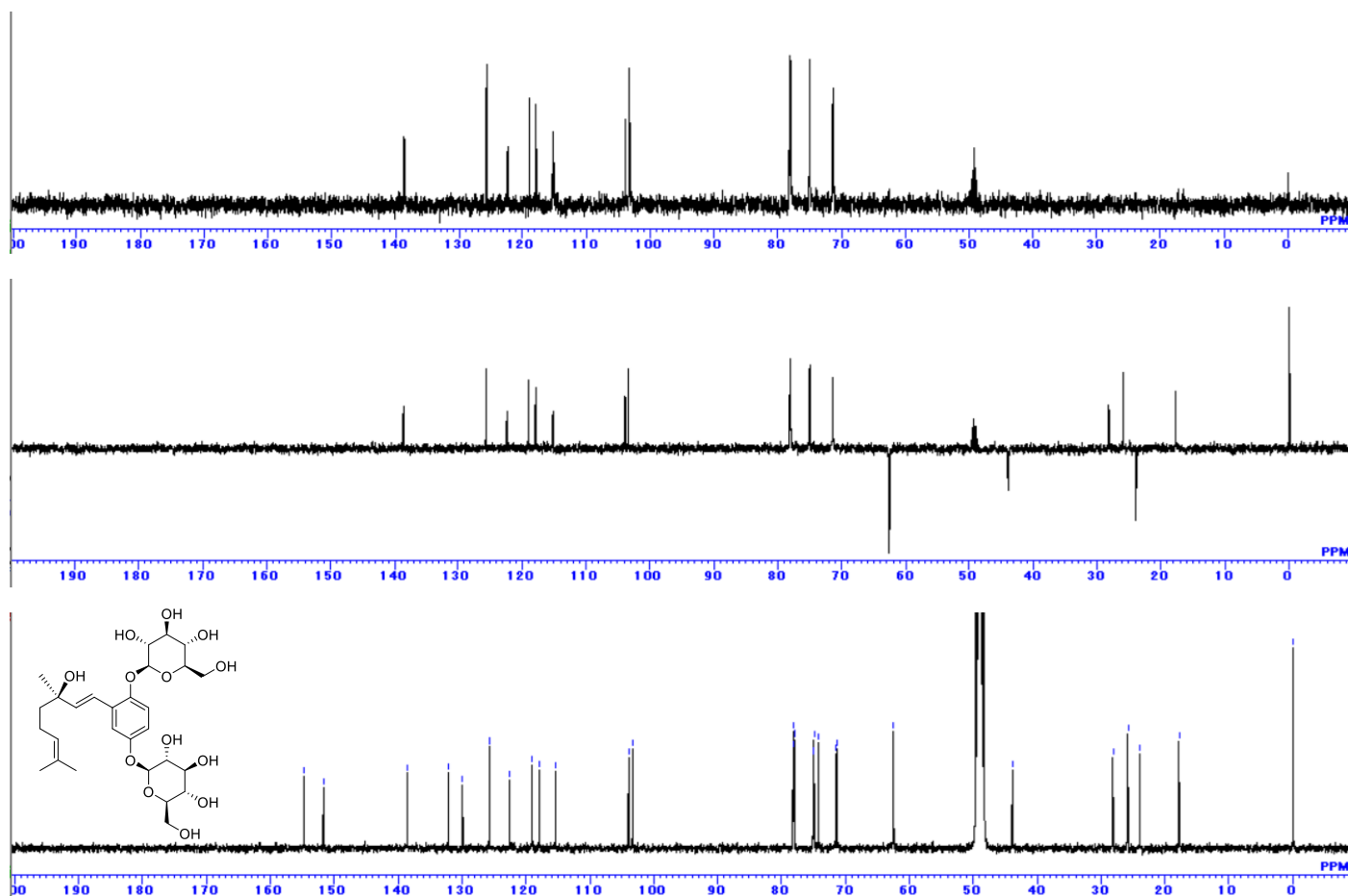


Figure S49 DEPT spectrum of compound **7** (in methanol- d_4).

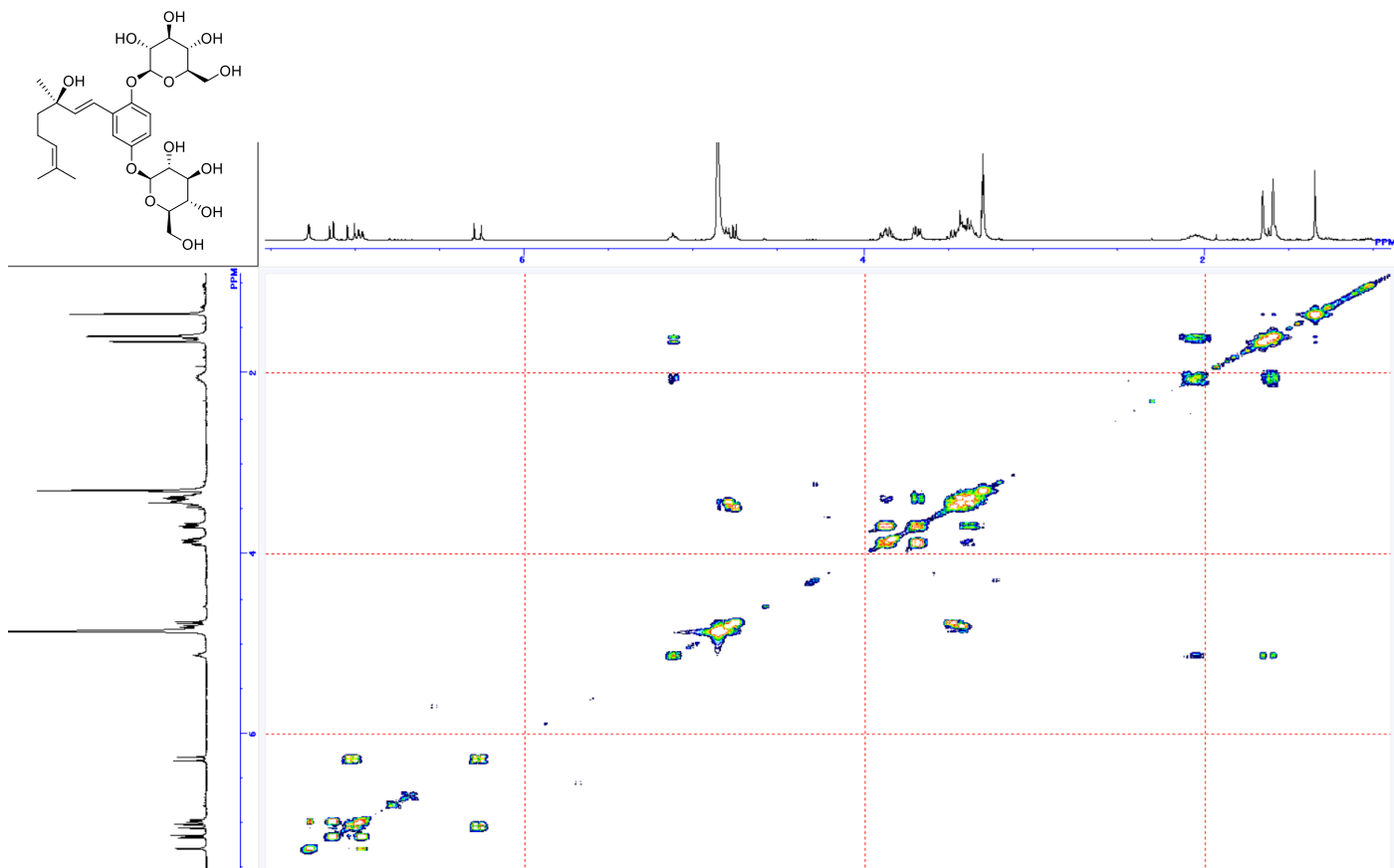


Figure S50 ^1H - ^1H COSY spectrum of compound **7** (in methanol- d_4).

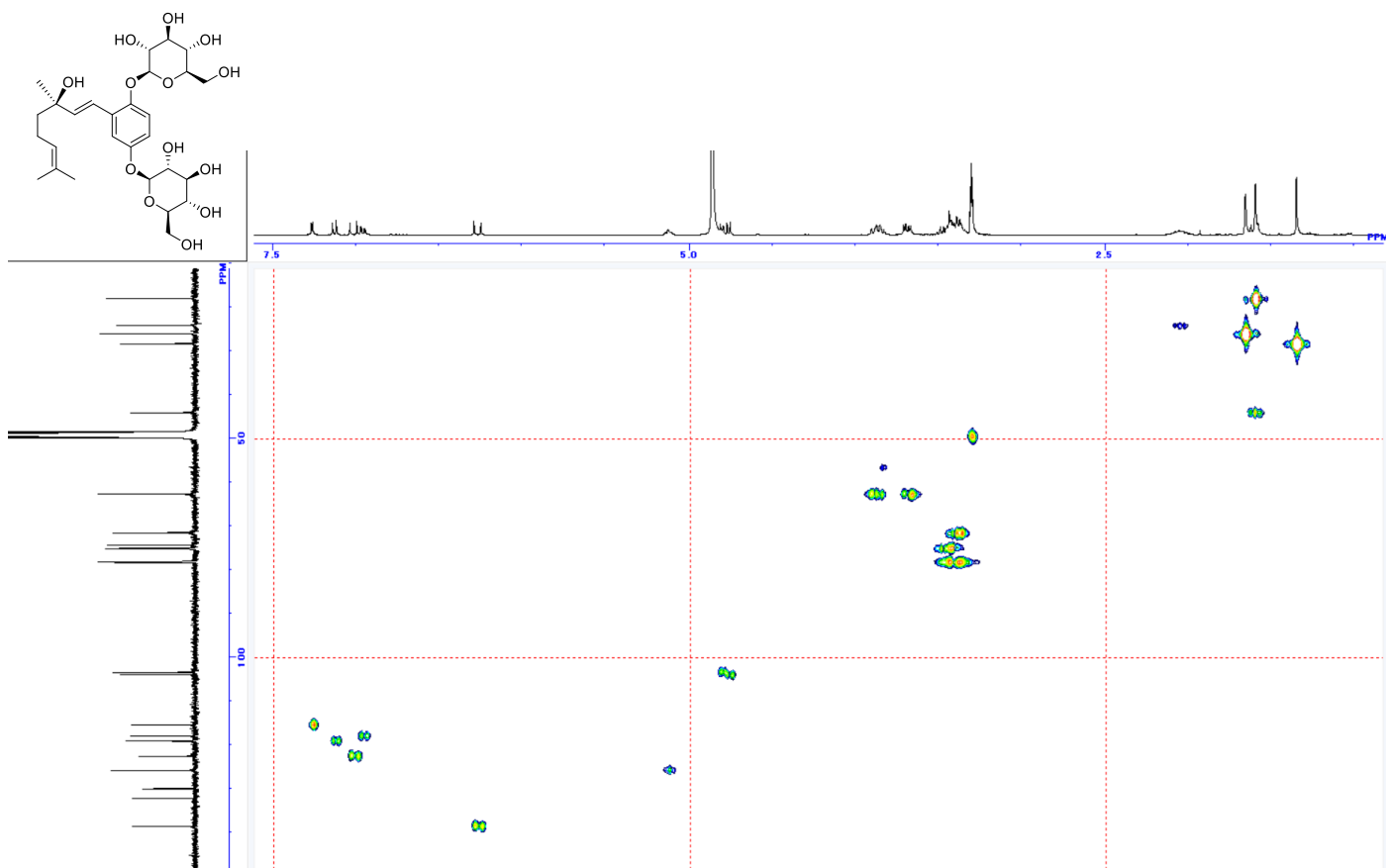


Figure S51 HMQC spectrum of compound **7** (in methanol- d_4).

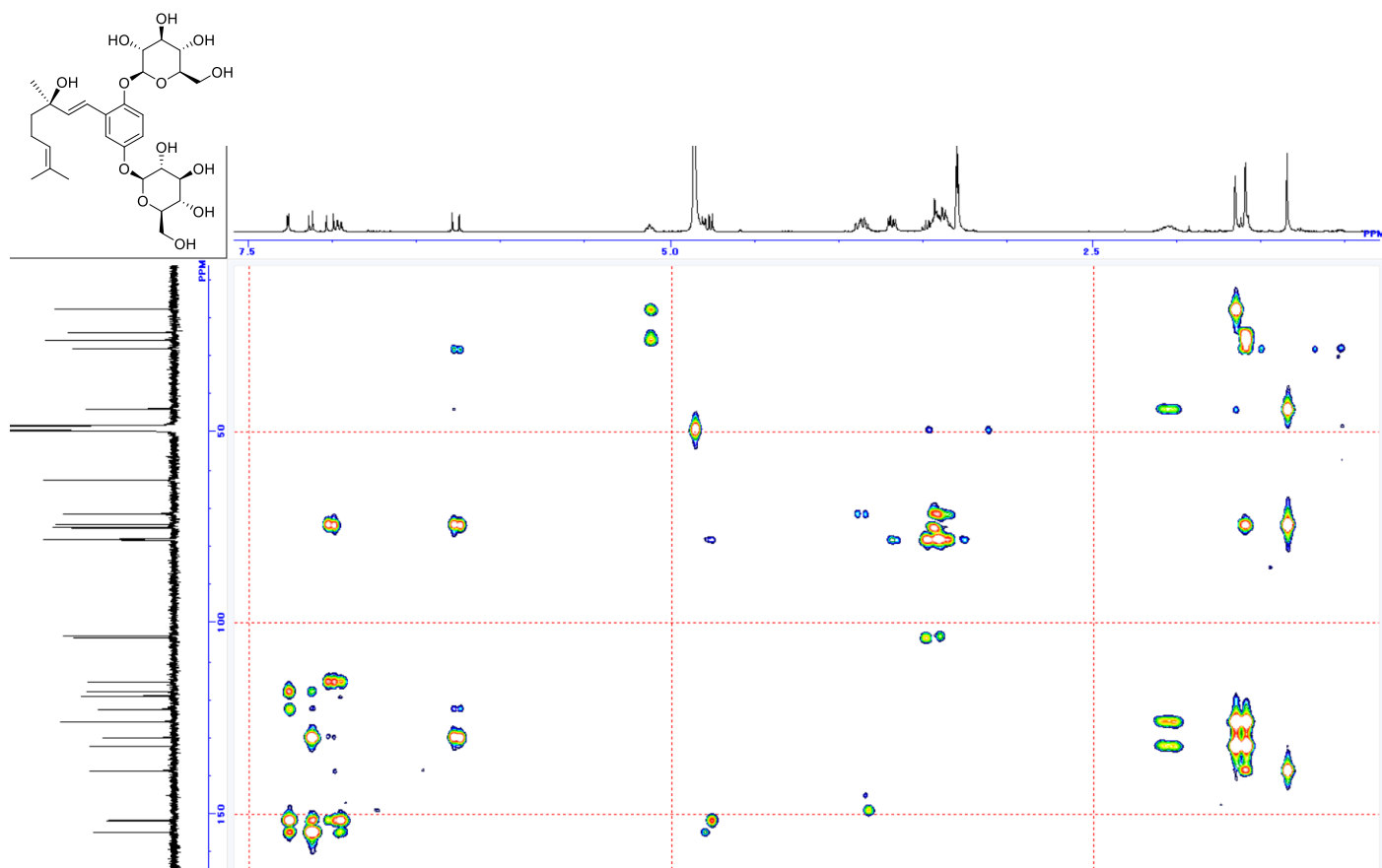


Figure S52 HMBC spectrum of compound **7** (in methanol- d_4).

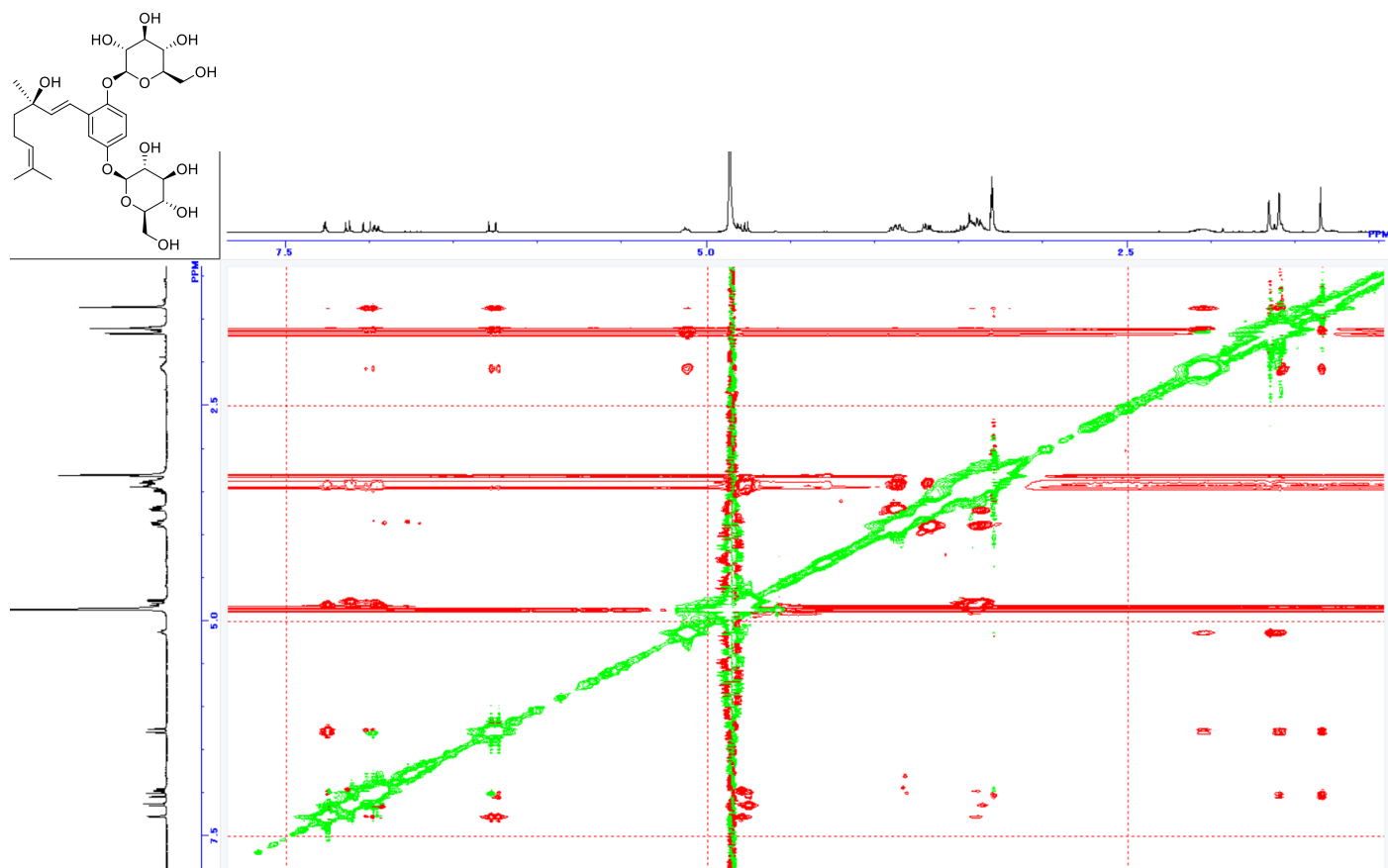


Figure S53 NOESY spectra of compound **7** (in methanol- d_4).

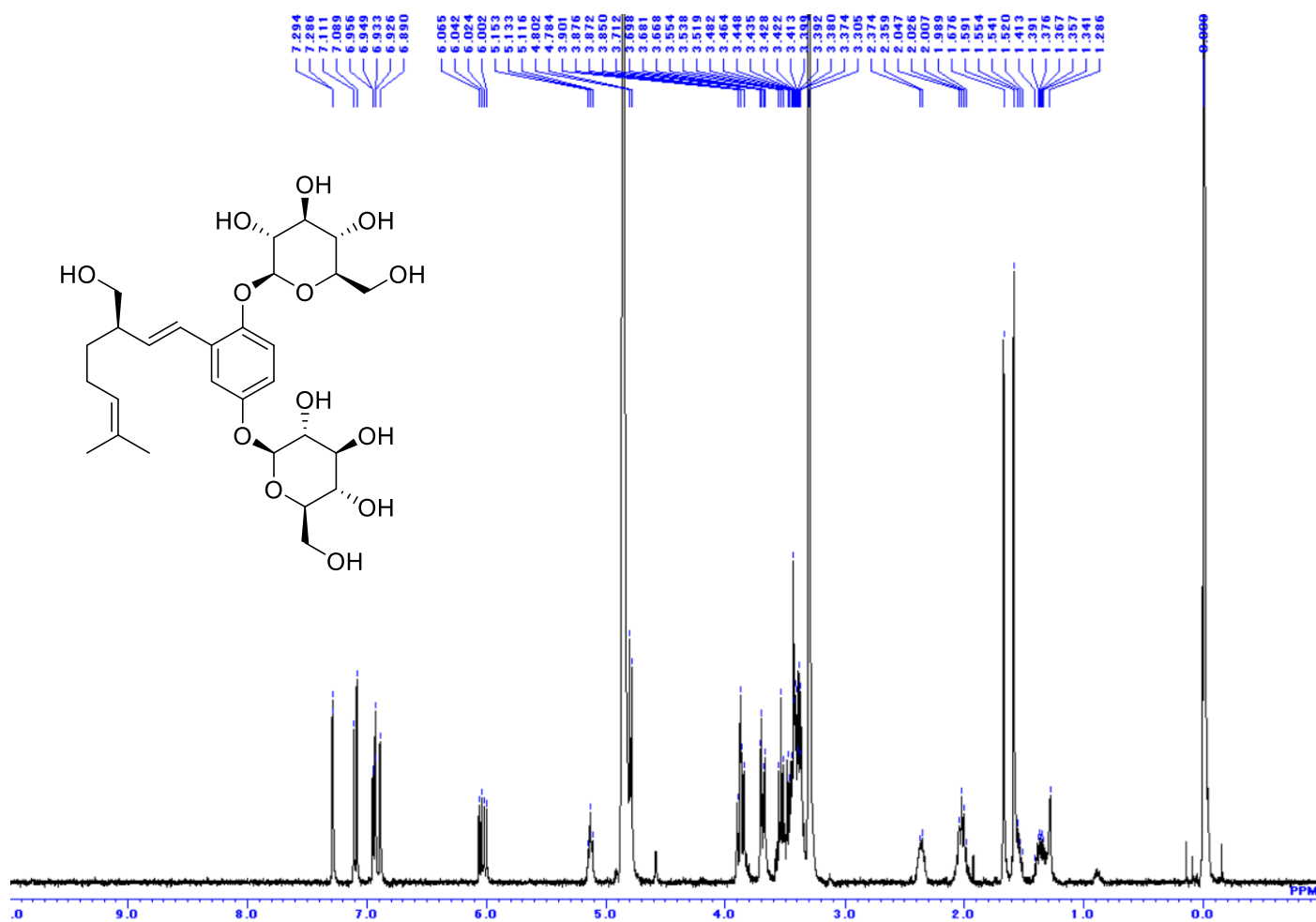


Figure S54 ¹H NMR spectrum of compound **8** (in methanol-*d*₄).

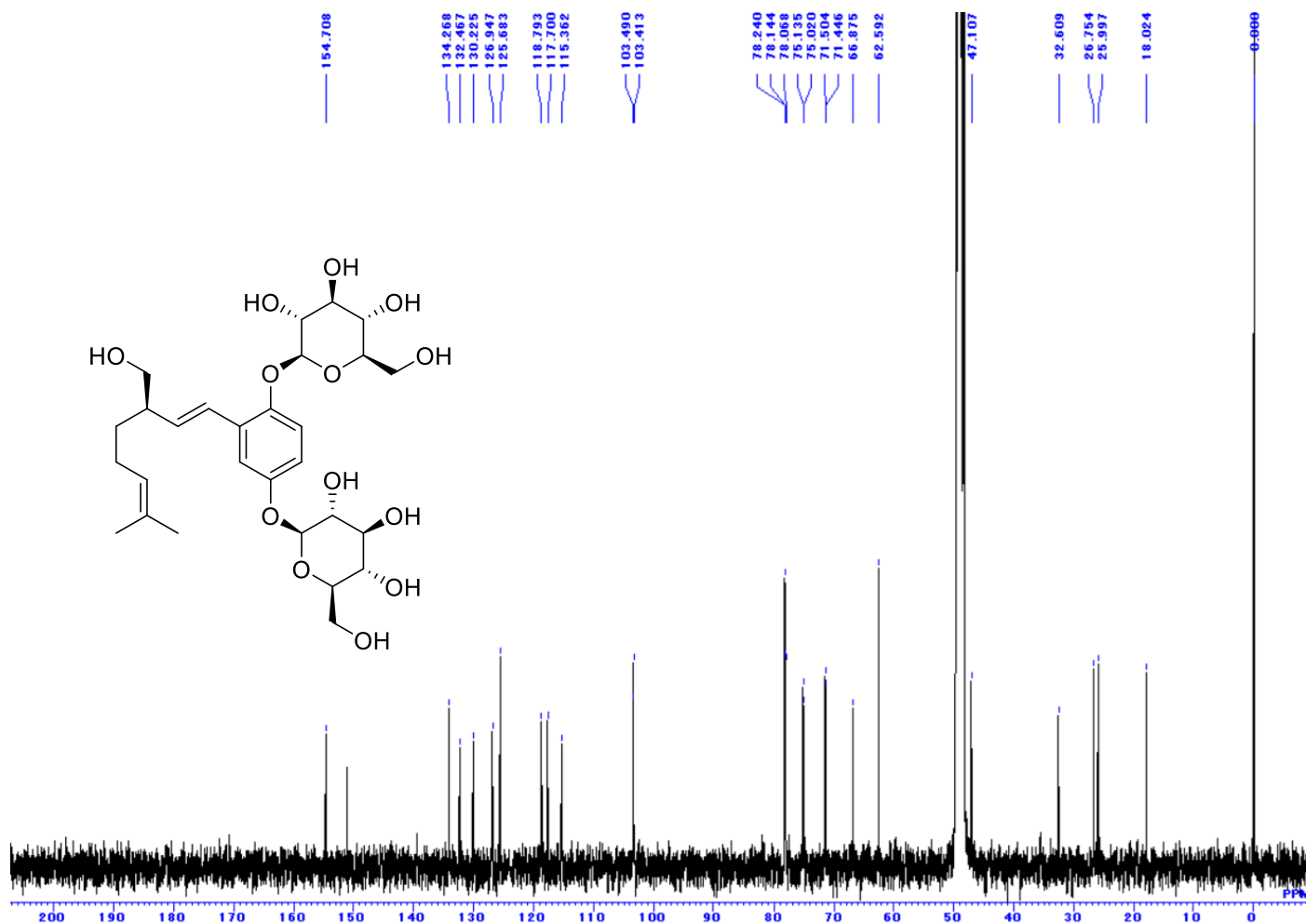


Figure S55 ^{13}C NMR spectrum of compound **8** (in $\text{methanol-}d_4$).

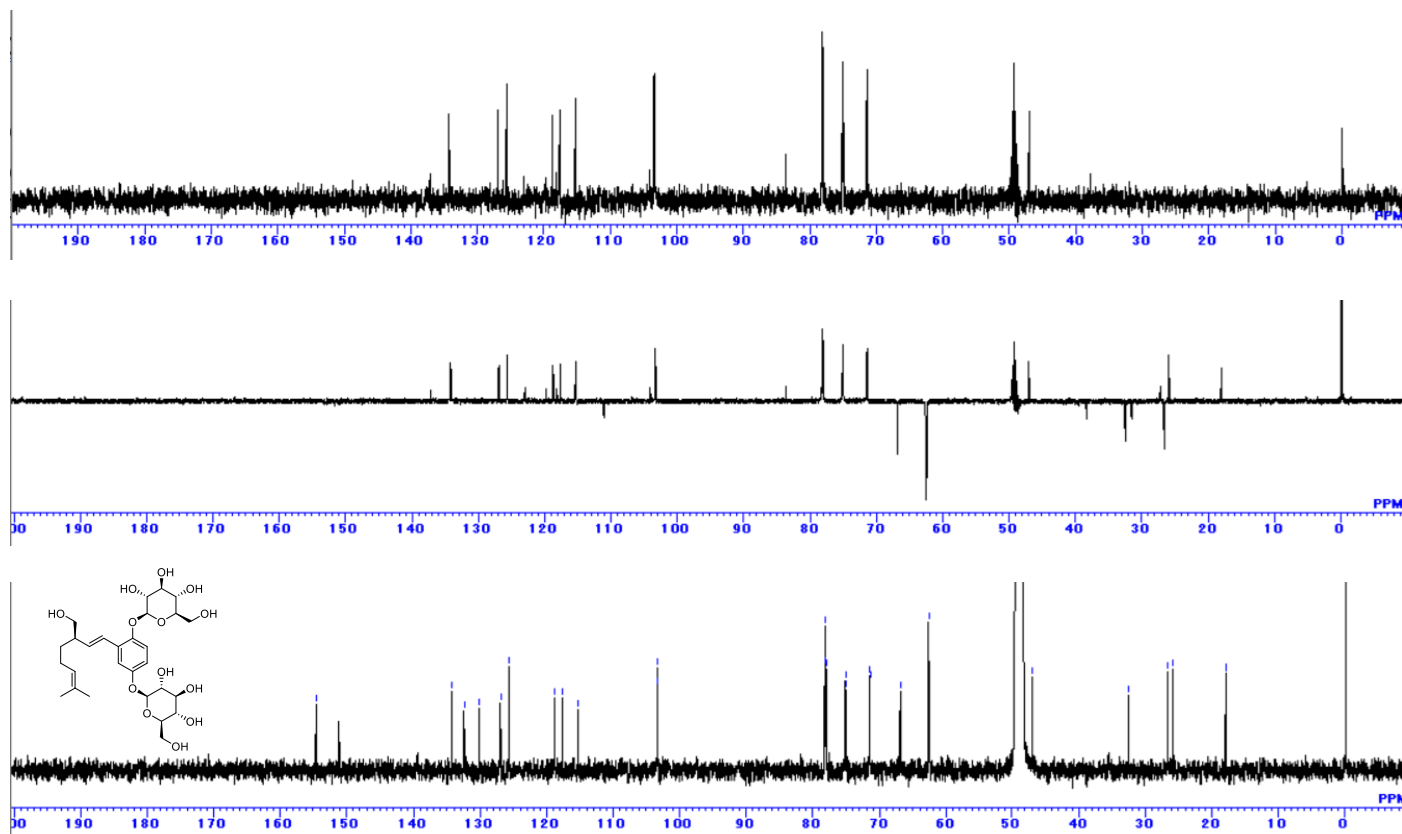


Figure S56 DEPT spectrum of compound **8** (in methanol- d_4).

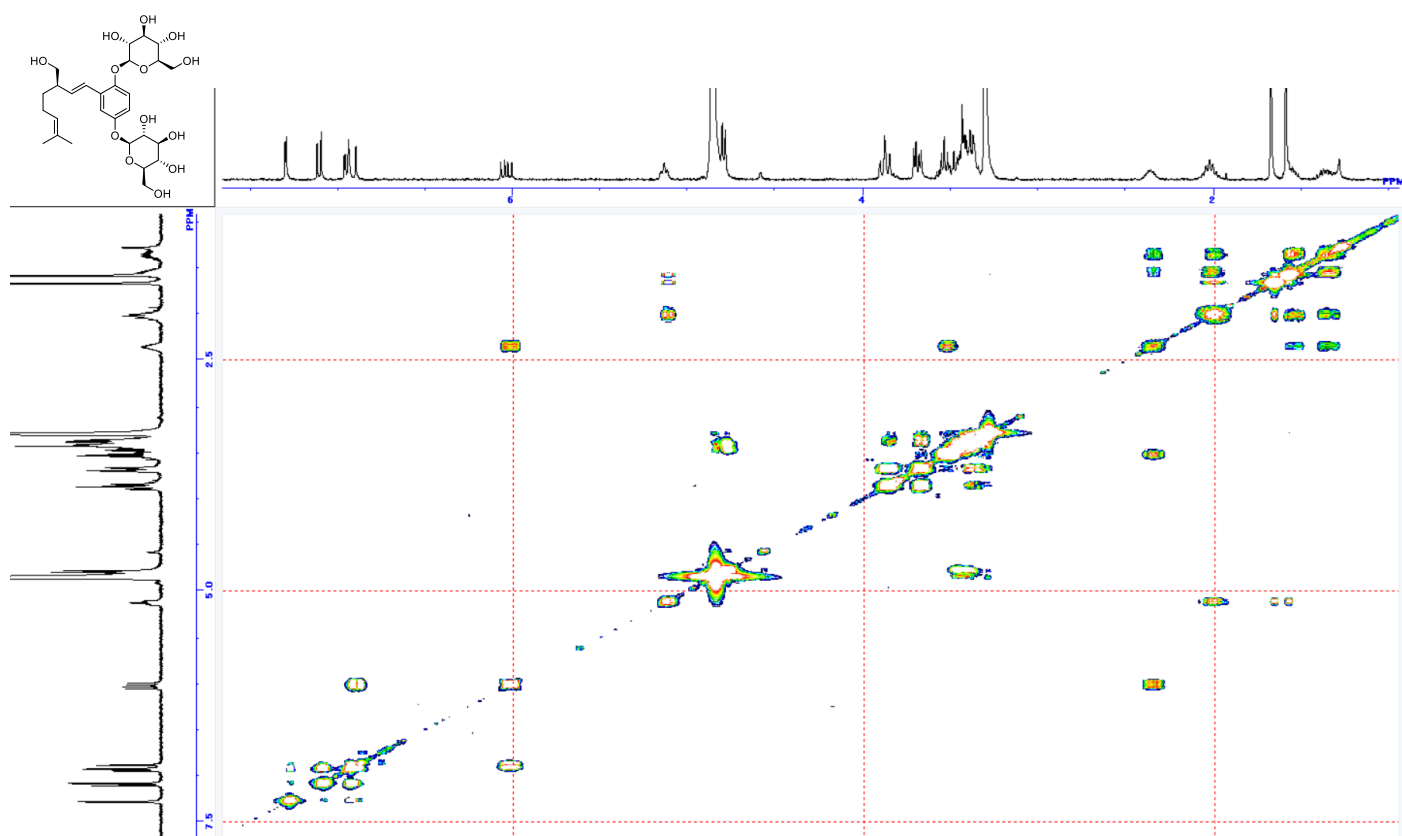


Figure S57 ^1H - ^1H COSY spectrum of compound **8** (in methanol- d_4).

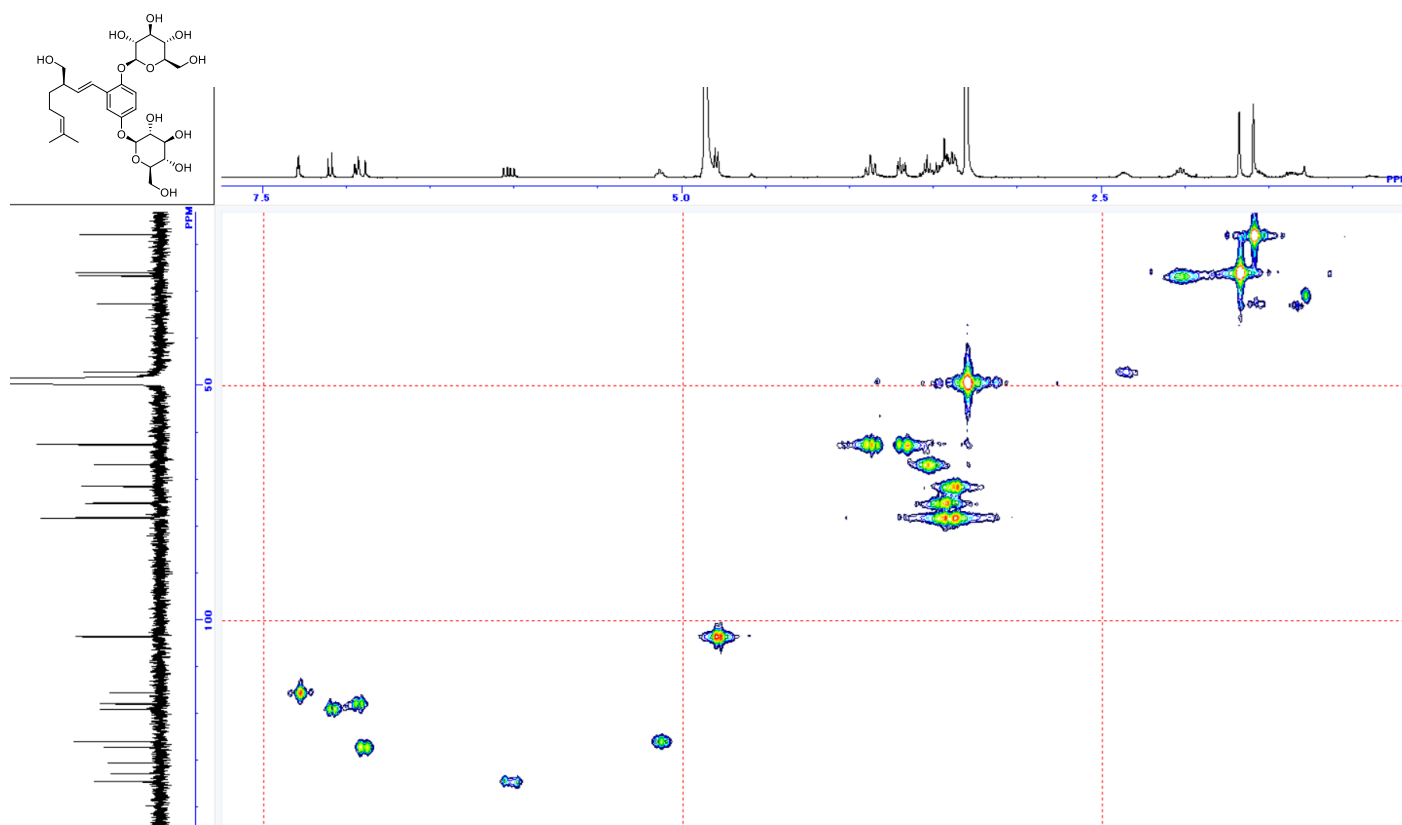


Figure S58 HMQC spectrum of compound **8** (in methanol-*d*₄).

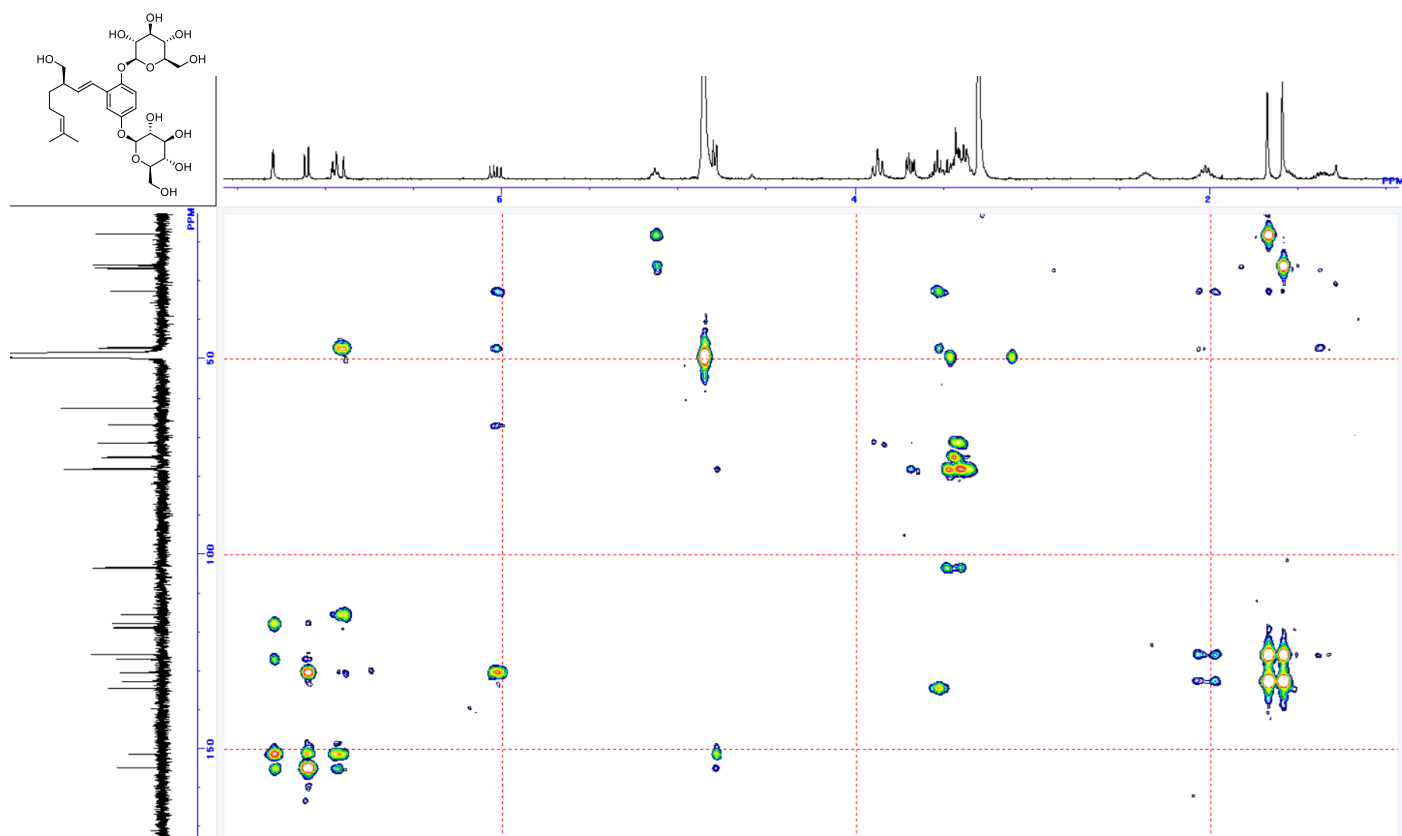


Figure S59 HMBC spectrum of compound **8** (in methanol-*d*₄).

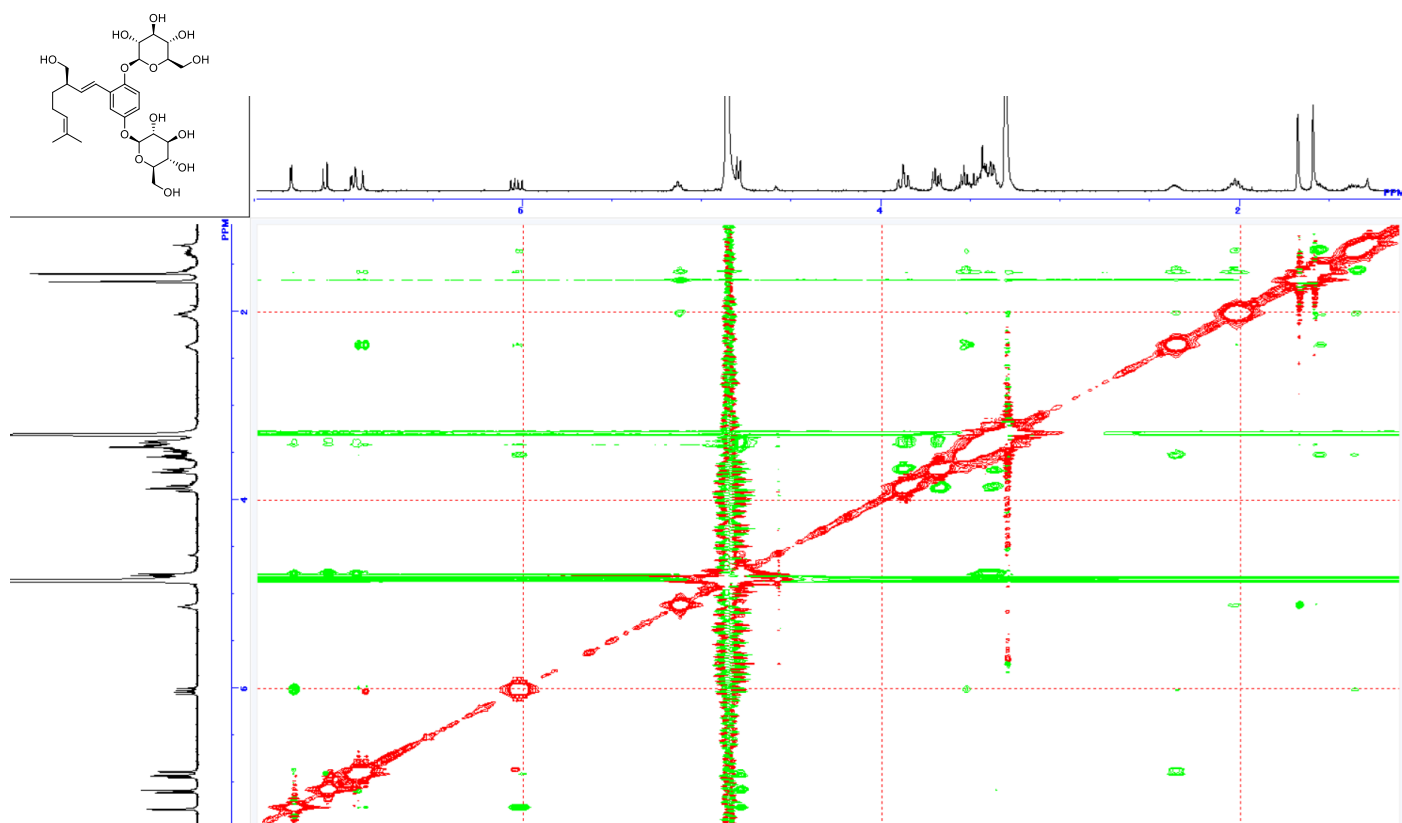


Figure S60 NOESY spectra of compound **8** (in methanol-*d*₄).

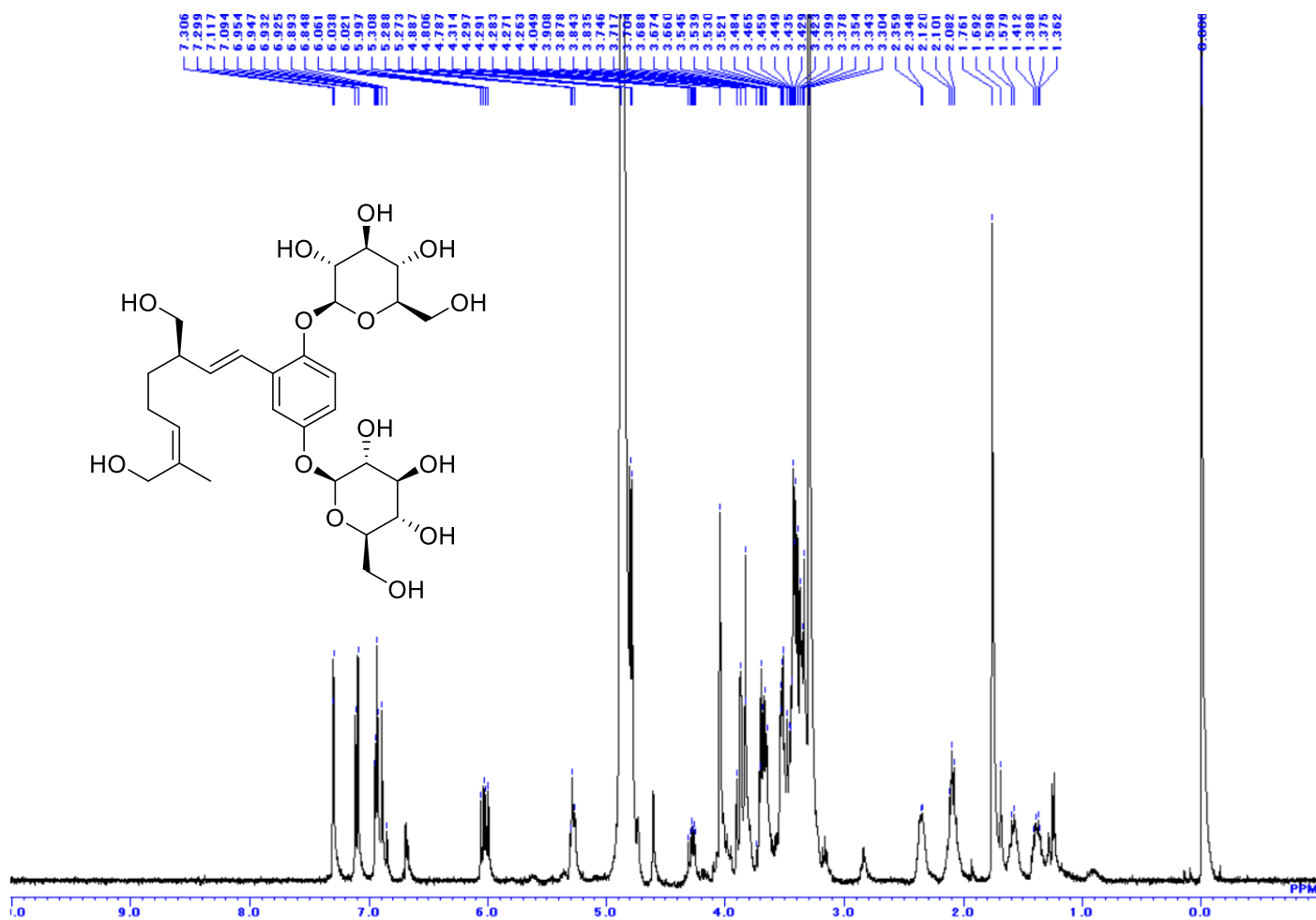


Figure S61 ^1H NMR spectrum of compound **9** (in $\text{methanol-}d_4$).

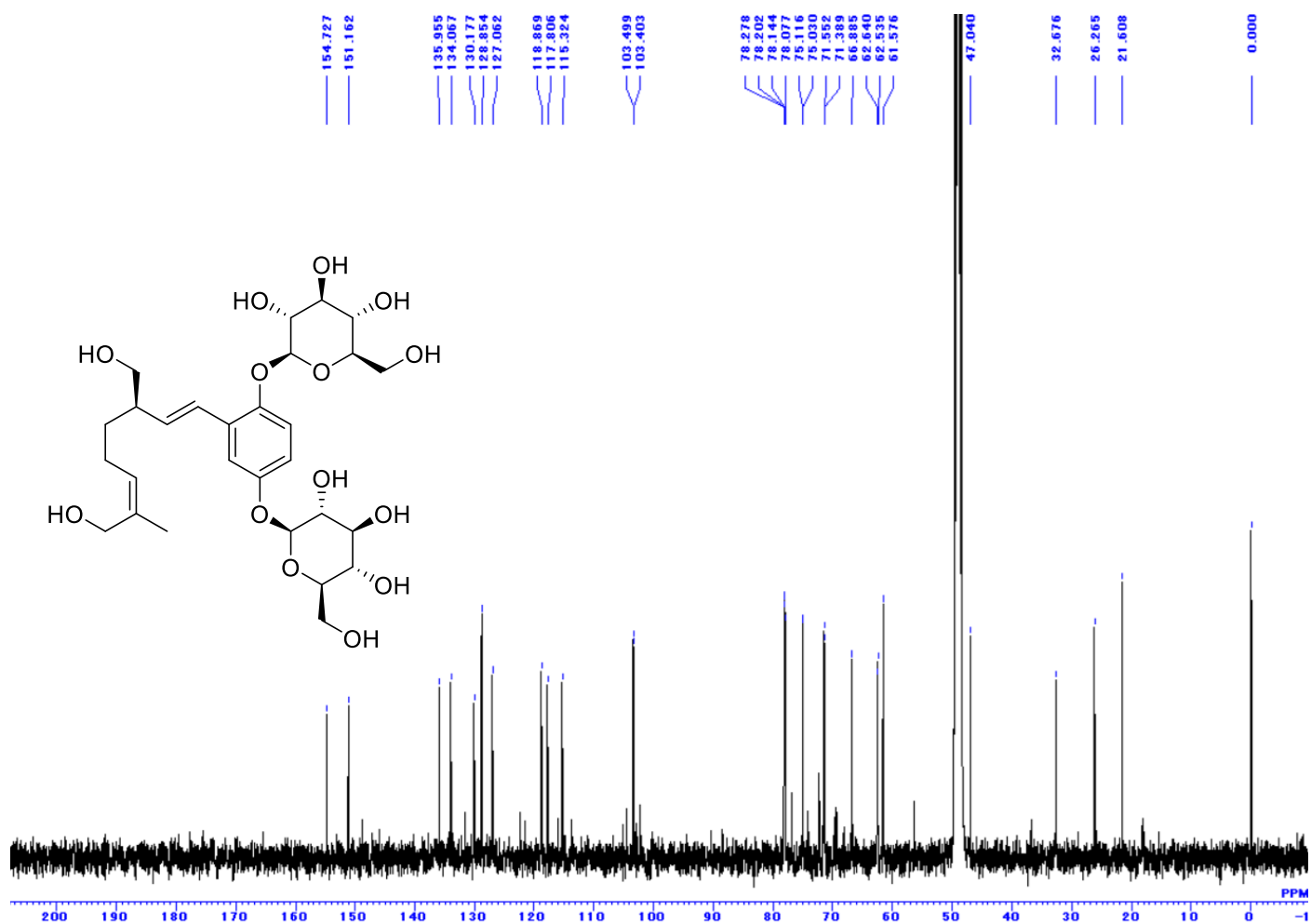


Figure S62 ^{13}C NMR spectrum of compound **9** (in $\text{methanol-}d_4$).

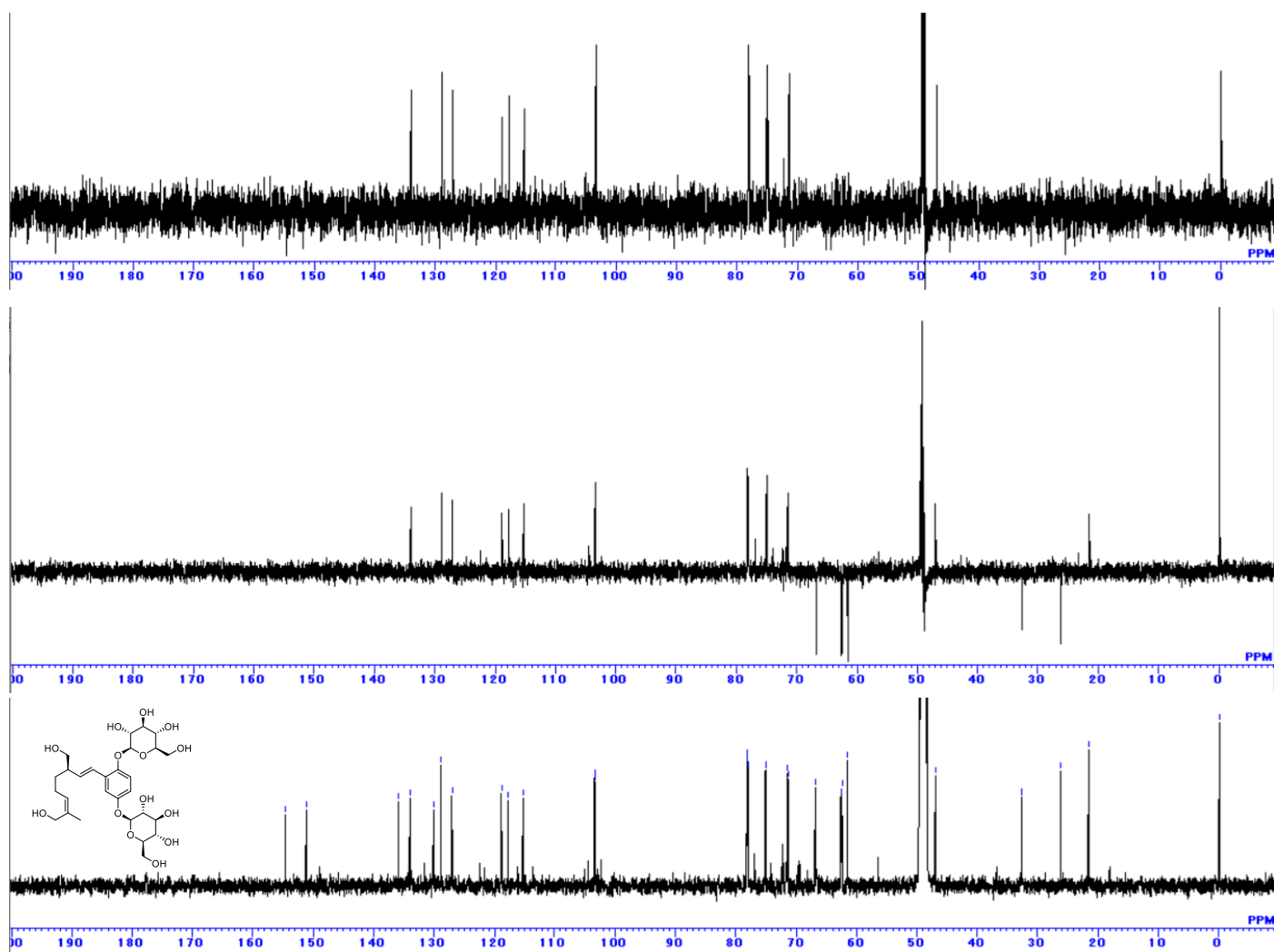


Figure S63 DEPT spectrum of compound **9** (in methanol- d_4).

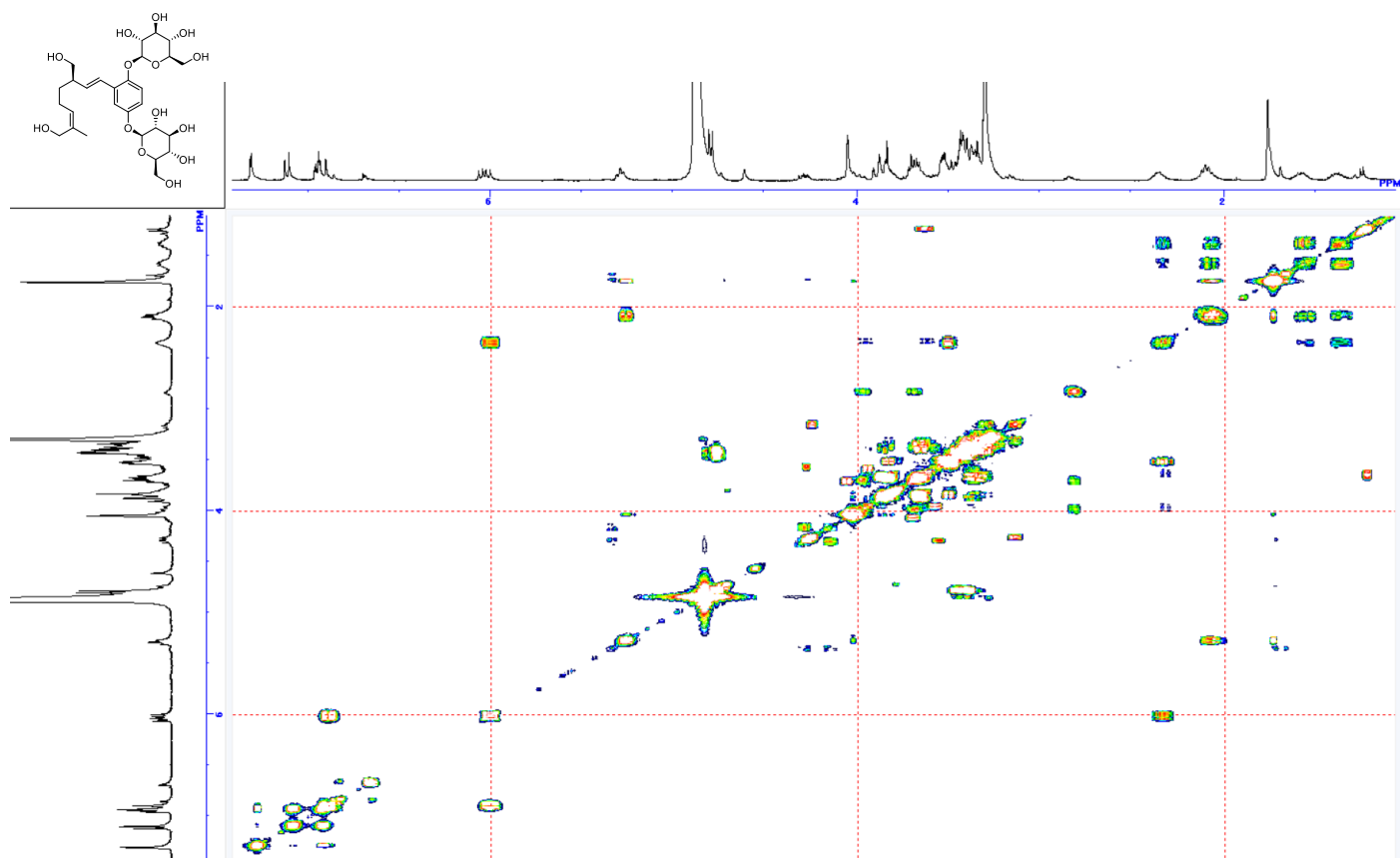


Figure S64 ^1H - ^1H COSY spectrum of compound **9** (in methanol- d_4).

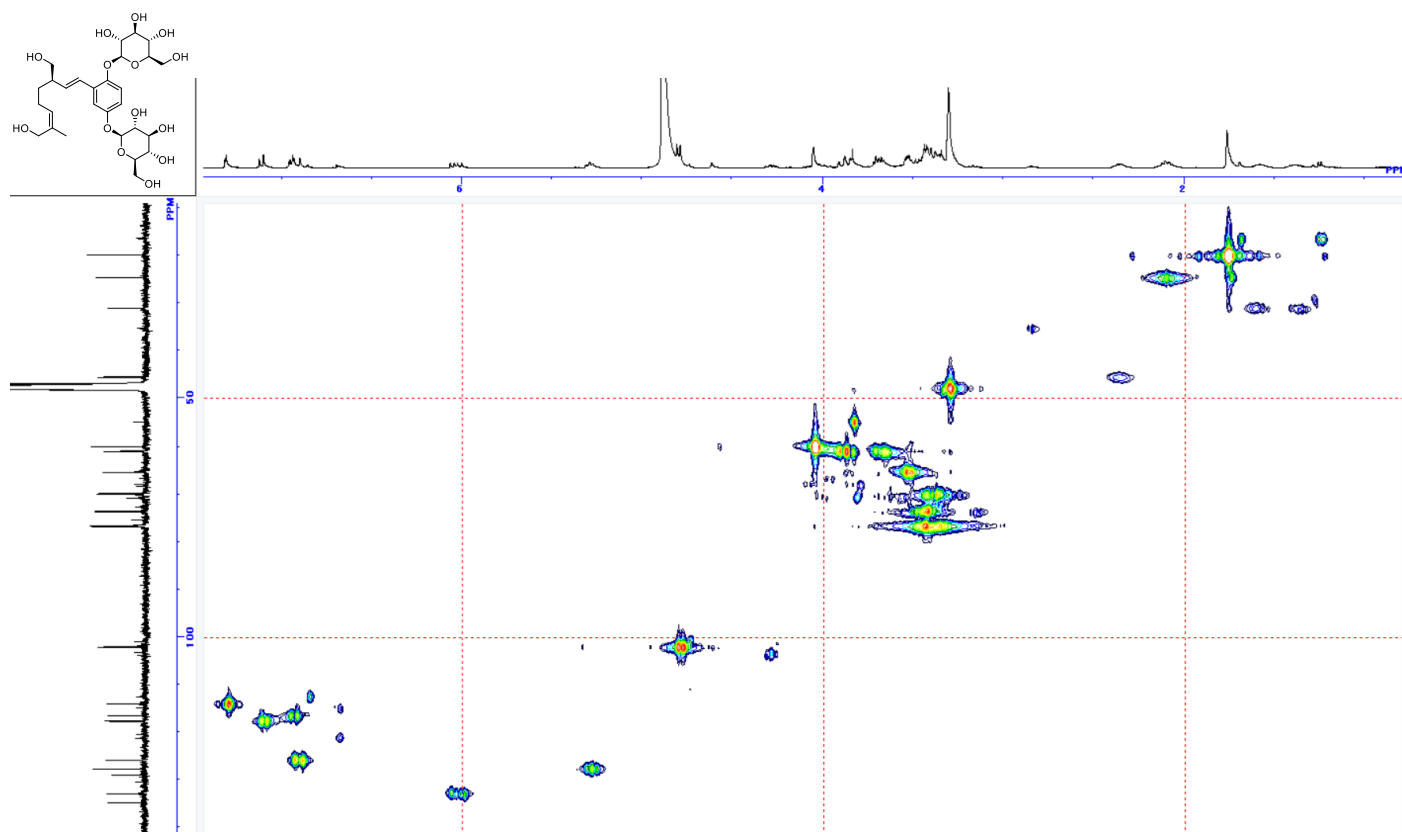


Figure S65 HMQC spectrum of compound **9** (in methanol- d_4).

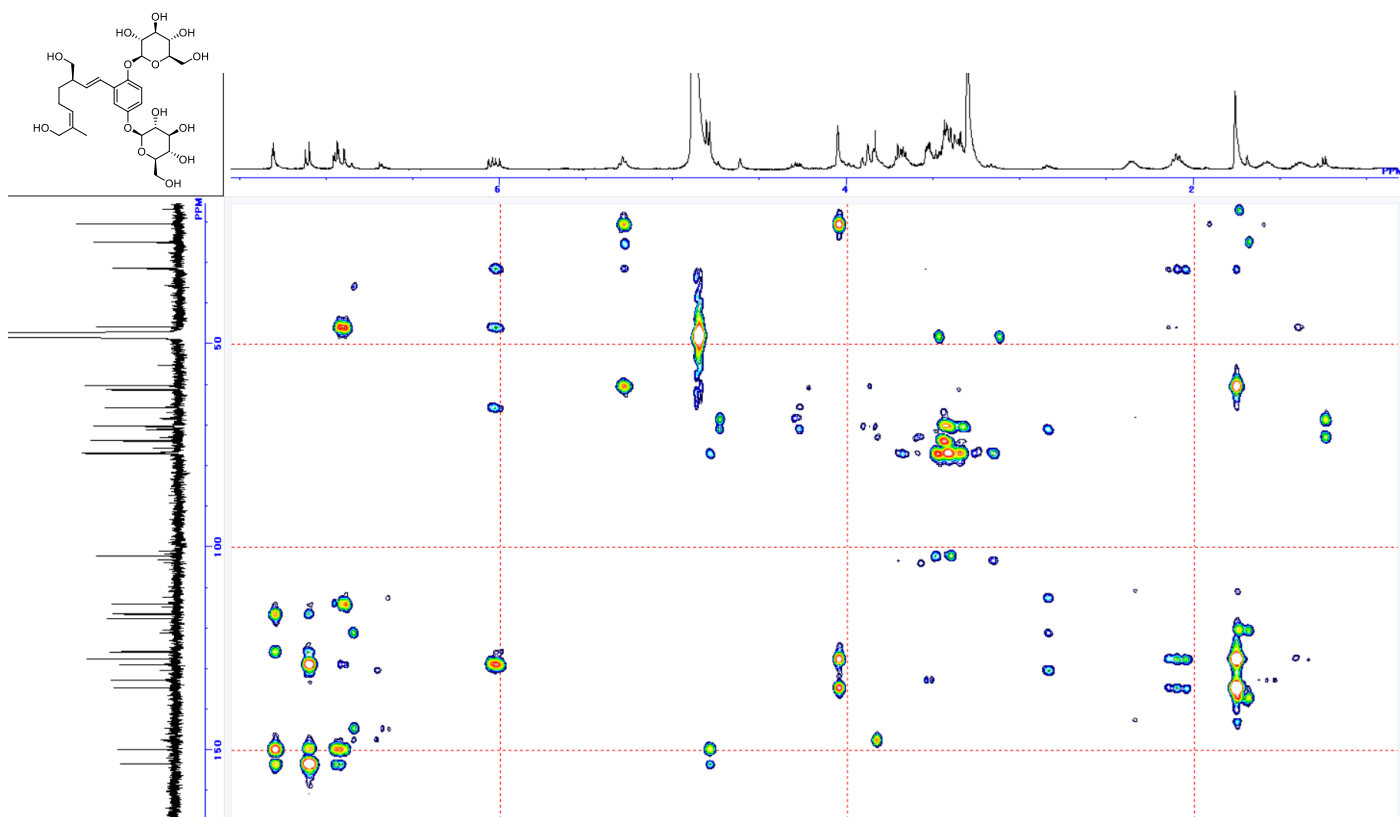


Figure S66 HMBC spectrum of compound **9** (in methanol- d_4).

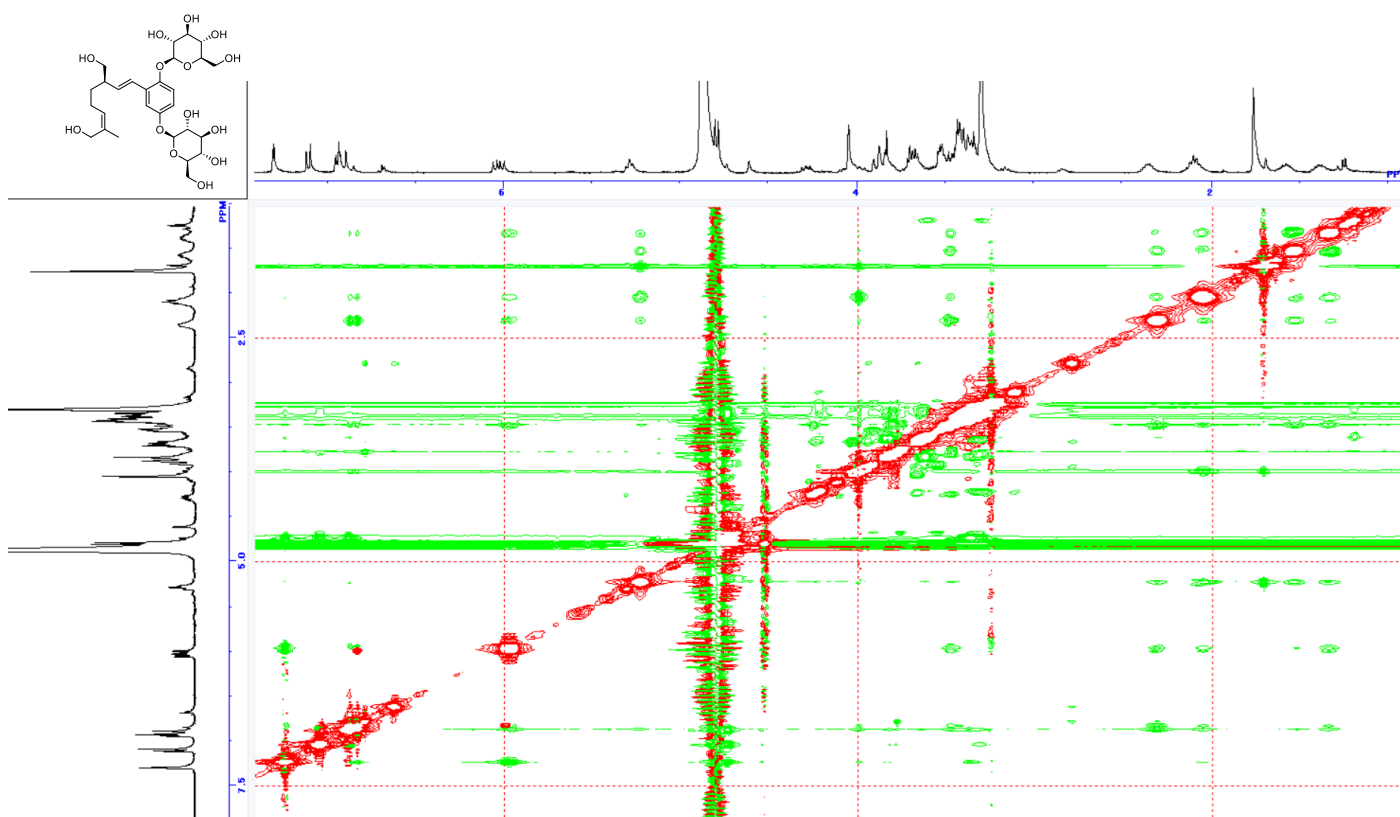


Figure S67 NOESY spectra of compound **9** (in methanol- d_4).

Data : murata2024-05-17024 Date : 17-May-2024 11:21

Instrument : MStation

Sample : NM-31R (Glycerol)

Note : -

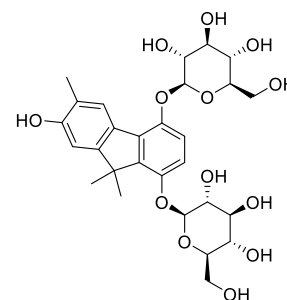
Inlet : Direct Ion Mode : FAB+

RT : 0.84 min Scan# : 11

Elements : C 28/0, H 36/0, O 13/0, Na 1/0

Mass Tolerance : 1000ppm, 5mmu if m/z < 5, 50mmu if m/z > 50

Unsaturation (U.S.) : -0.5 - 50.0



	Observed m/z	Int%	Err[ppm / mmu]	U.S.	Composition
1	603.2042	100.00	-1.9 / -1.2	10.5	C28 H36 O13 Na

Figure S68 HRFABMS of compound 1.

Data : murata2024-05-21024 Date : 21-May-2024 11:14

Instrument : MStation

Sample : NM-31K (Glycerol) MW. 596

Note : -

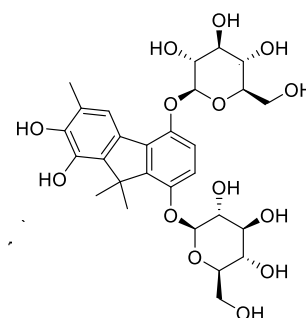
Inlet : Direct Ion Mode : FAB-

RT : 2.42 min Scan# : 30

Elements : C 28/0, H 35/0, O 14/0

Mass Tolerance : 1000ppm, 5mmu if m/z < 5, 50mmu if m/z > 50

Unsaturation (U.S.) : -0.5 - 50.0



	Observed m/z	Int%	Err[ppm / mmu]	U.S.	Composition
1	595.2042	28.78	+2.6 / +1.5	11.5	C28 H35 O14

Figure S69 HRFABMS of compound 2.

Data : murata2024-05-17023 Date : 17-May-2024 11:09

Instrument : MStation

Sample : NM-39F+15E (Glycerol)

Note : -

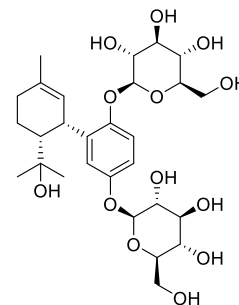
Inlet : Direct Ion Mode : FAB+

RT : 0.75 min Scan# : 10

Elements : C 28/0, H 42/0, O 13/0, Na 1/0

Mass Tolerance : 100mmu

Unsaturation (U.S.) : -0.5 - 50.0



	Observed m/z	Int%	Err[ppm / mmu]	U.S.	Composition
1	609.2515	100.00	-1.3 / -0.8	7.5	C28 H42 O13 Na

Figure S70 HRFABMS of compound **3**.

Data : murata2024-05-21010 Date : 21-May-2024 09:16

Instrument : MStation

Sample : NM-16D (Glycerol)

Note : -

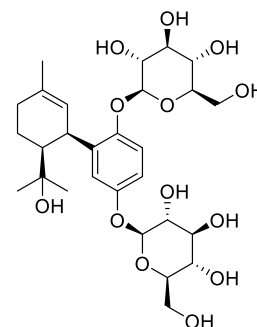
Inlet : Direct Ion Mode : FAB+

RT : 1.00 min Scan# : 13

Elements : C 28/0, H 42/0, O 13/0, Na 1/0

Mass Tolerance : 1000ppm, 5mmu if m/z < 5, 50mmu if m/z > 50

Unsaturation (U.S.) : -0.5 - 50.0



	Observed m/z	Int%	Err[ppm / mmu]	U.S.	Composition
1	609.2515	100.00	-1.3 / -0.8	7.5	C28 H42 O13 Na

Figure S71 HRFABMS of compound **4**.

Data : murata2024-05-21023 Date : 21-May-2024 11:02

Instrument : MStation

Sample : NM-20L (Glycerol) MW. 422

Note : -

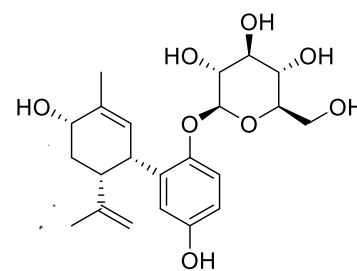
Inlet : Direct Ion Mode : FAB-

RT : 0.67 min Scan# : 9

Elements : C 22/0, H 29/0, O 8/0

Mass Tolerance : 1000ppm, 5mmu if m/z < 5, 50mmu if m/z > 50

Unsaturation (U.S.) : -0.5 - 50.0



	Observed m/z	Int%	Err[ppm / mmu]	U.S.	Composition
1	421.1867	67.74	+1.1 / +0.5	8.5	C22 H29 O8

Figure S72 HRFABMS of compound 5.

Data : murata2024-05-21022 Date : 21-May-2024 10:48

Instrument : MStation

Sample : NM-5L+J (Glycerol) MW. 600

Note : -

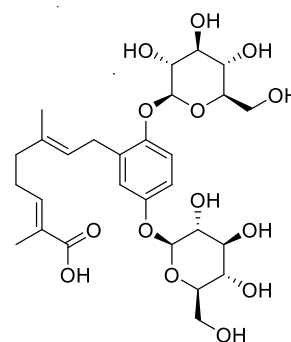
Inlet : Direct Ion Mode : FAB-

RT : 0.59 min Scan# : 8

Elements : C 28/0, H 39/0, O 14/0

Mass Tolerance : 1000ppm, 5mmu if m/z < 5, 50mmu if m/z > 50

Unsaturation (U.S.) : -0.5 - 50.0



	Observed m/z	Int%	Err[ppm / mmu]	U.S.	Composition
1	599.2323	100.00	-2.8 / -1.7	9.5	C28 H39 O14

Figure S73 HRFABMS of compound 6.

Data : kurosawa2024-10-04019 Date : 04-Oct-2024 10:26

Instrument : MStation

Sample : NM-65D (Glycerol) MW. 586

Note : -

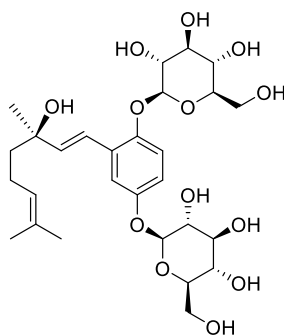
Inlet : Direct Ion Mode : FAB-

RT : 2.09 min Scan# : 26

Elements : C 28/0, H 41/0, O 13/0

Mass Tolerance : 1000ppm, 5mmu if m/z < 5, 50mmu if m/z > 50

Unsaturation (U.S.) : -0.5 - 50.0



	Observed m/z	Int%	Err[ppm / mmu]	U.S.	Composition
1	585.2535	100.00	-2.1 / -1.2	8.5	C28 H41 O13

Figure S74 HRFABMS of compound **7**.

Data : kurosawa2024-10-04018 Date : 04-Oct-2024 10:06

Instrument : MStation

Sample : NM-66B (Glycerol) MW. 586

Note : -

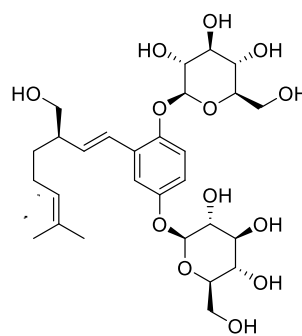
Inlet : Direct Ion Mode : FAB-

RT : 2.25 min Scan# : 28

Elements : C 28/0, H 41/0, O 13/0

Mass Tolerance : 1000ppm, 5mmu if m/z < 5, 50mmu if m/z > 50

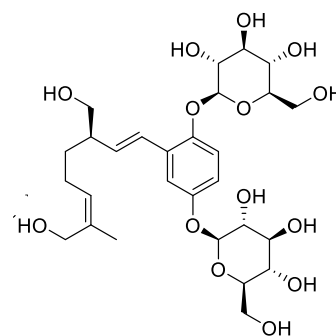
Unsaturation (U.S.) : -0.5 - 50.0



	Observed m/z	Int%	Err[ppm / mmu]	U.S.	Composition
1	585.2540	100.00	-1.2 / -0.7	8.5	C28 H41 O13

Figure S75 HRFABMS of compound **8**.

Data : kurosawa2024-10-04020 Date : 04-Oct-2024 10:42
Instrument : MStation
Sample : NM-67B (Glycerol) MW. 602
Note : -
Inlet : Direct Ion Mode : FAB-
RT : 2.34 min Scan# : 29
Elements : C 28/0, H 41/0, O 14/0
Mass Tolerance : 1000ppm, 5mmu if m/z < 5, 50mmu if m/z > 50
Unsaturation (U.S.) : -0.5 - 50.0



	Observed m/z	Int%	Err[ppm / mmu]	U.S.	Composition
1	601.2493	51.27	-0.6 / -0.3	8.5	C28 H41 O14

Figure S76 HRFABMS of compound **9**.

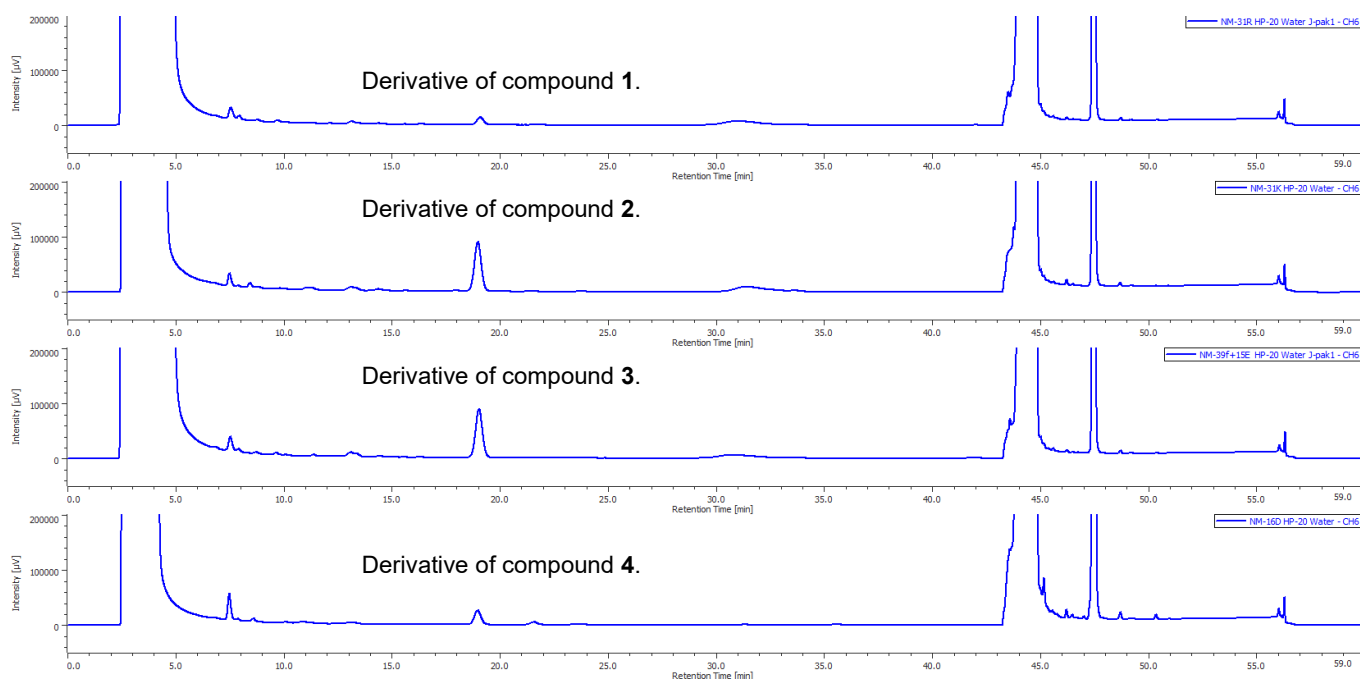


Figure S77 HPLC analyses for sugar identification of **1-4. f**

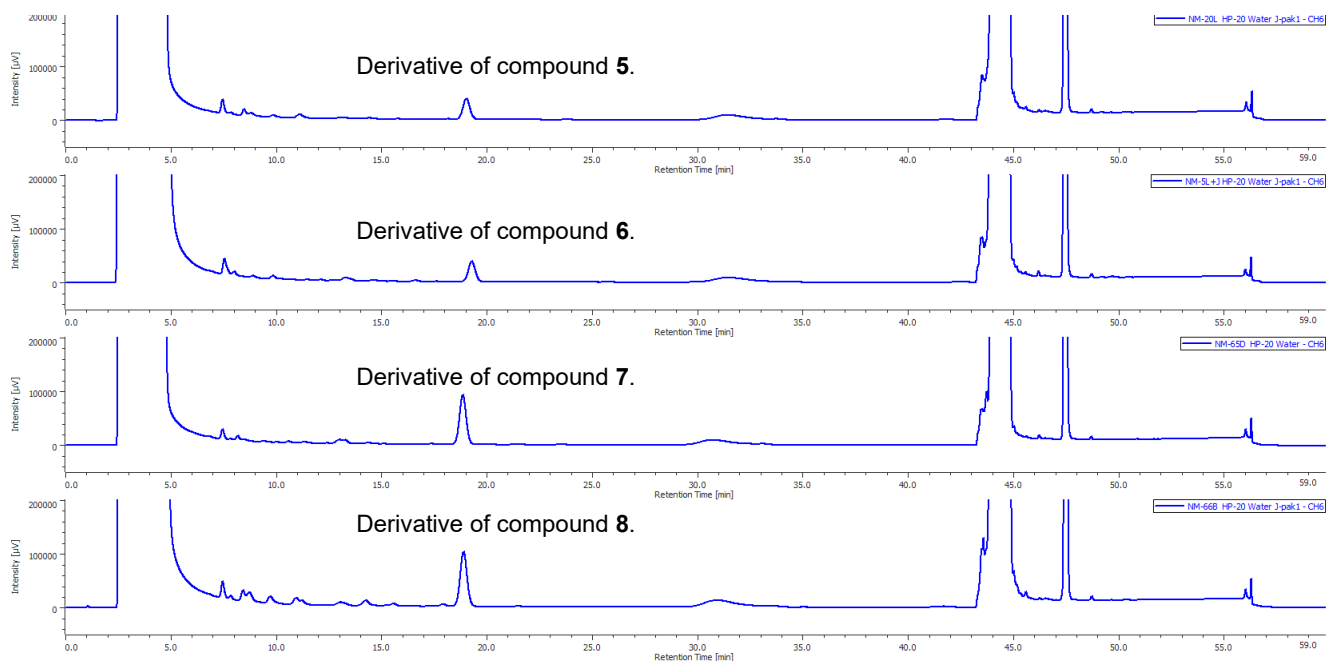


Figure S78 HPLC analyses for sugar identification of **5-8**.

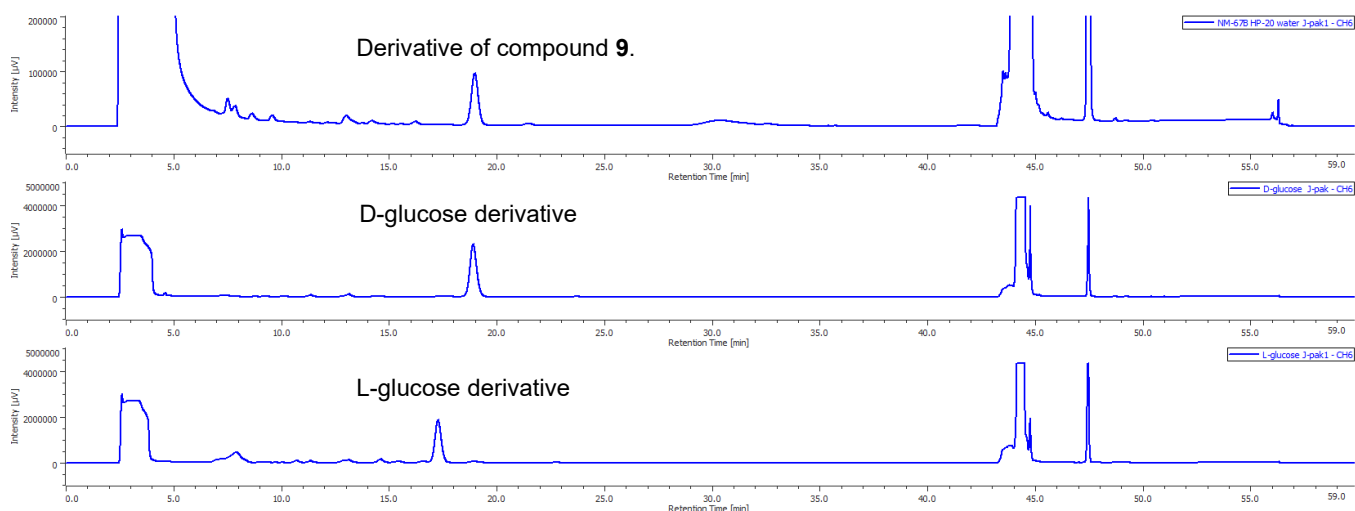


Figure S79 HPLC analyses for sugar identification of **9**.