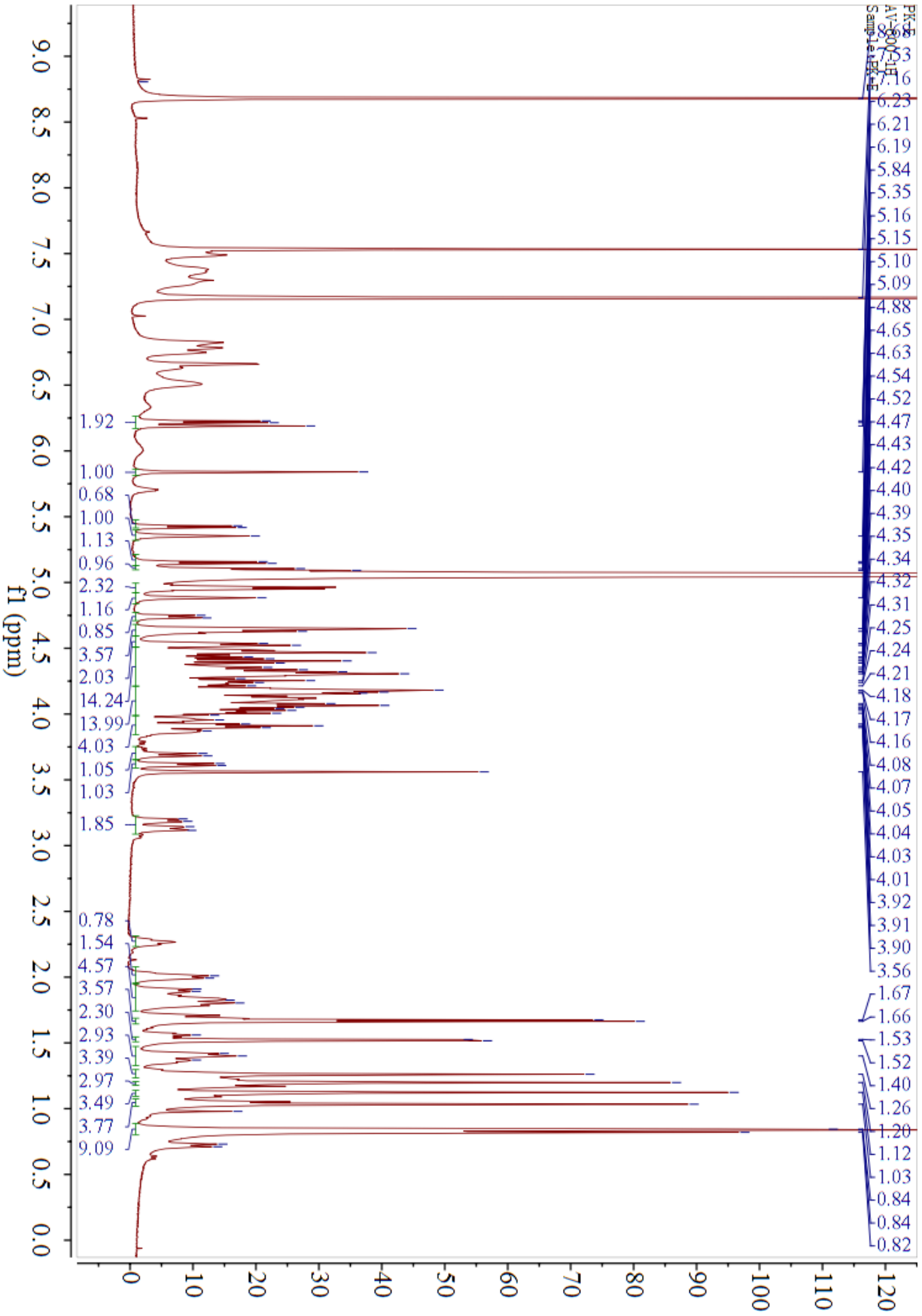
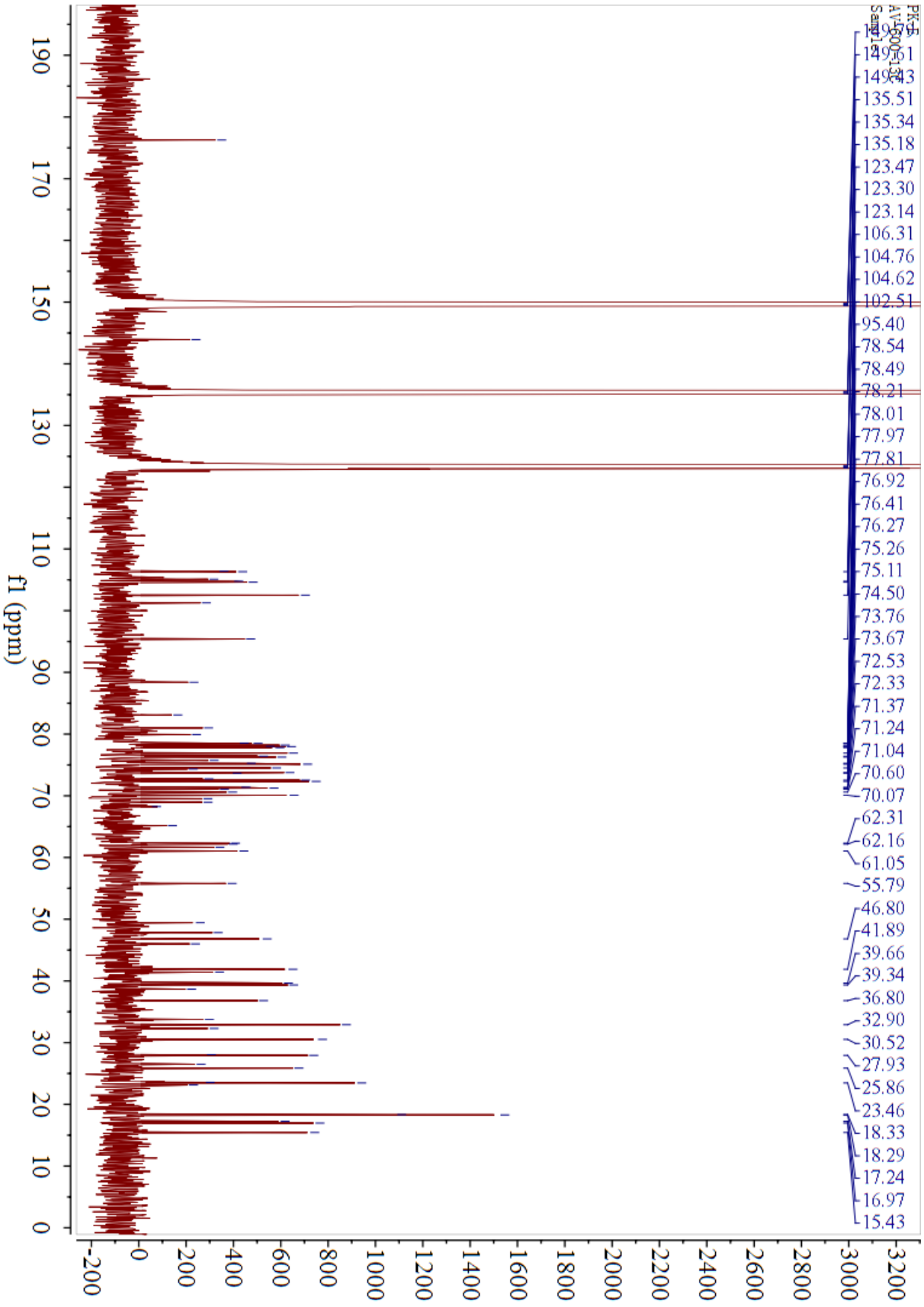
Saponins with Neuroprotective Effects from the Roots of *Pulsatilla cernua*

Supplementary Materials

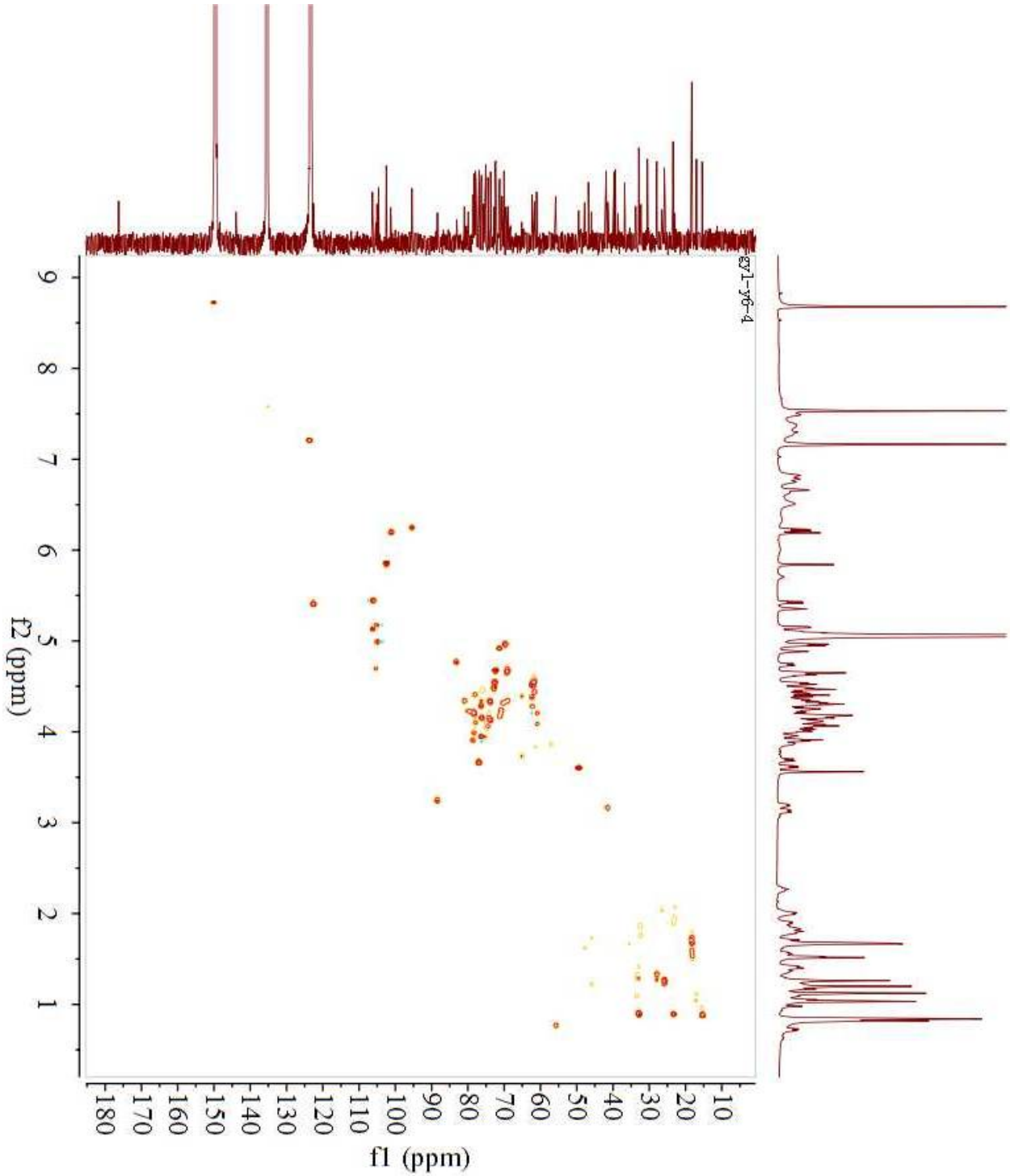
S1. ^{1}H-NMR spectrum (600 MHz, pyridine-d_5) of compound **1**.



S2. ^{13}C-NMR spectrum (150 MHz, pyridine-d_5) of compound **1**.

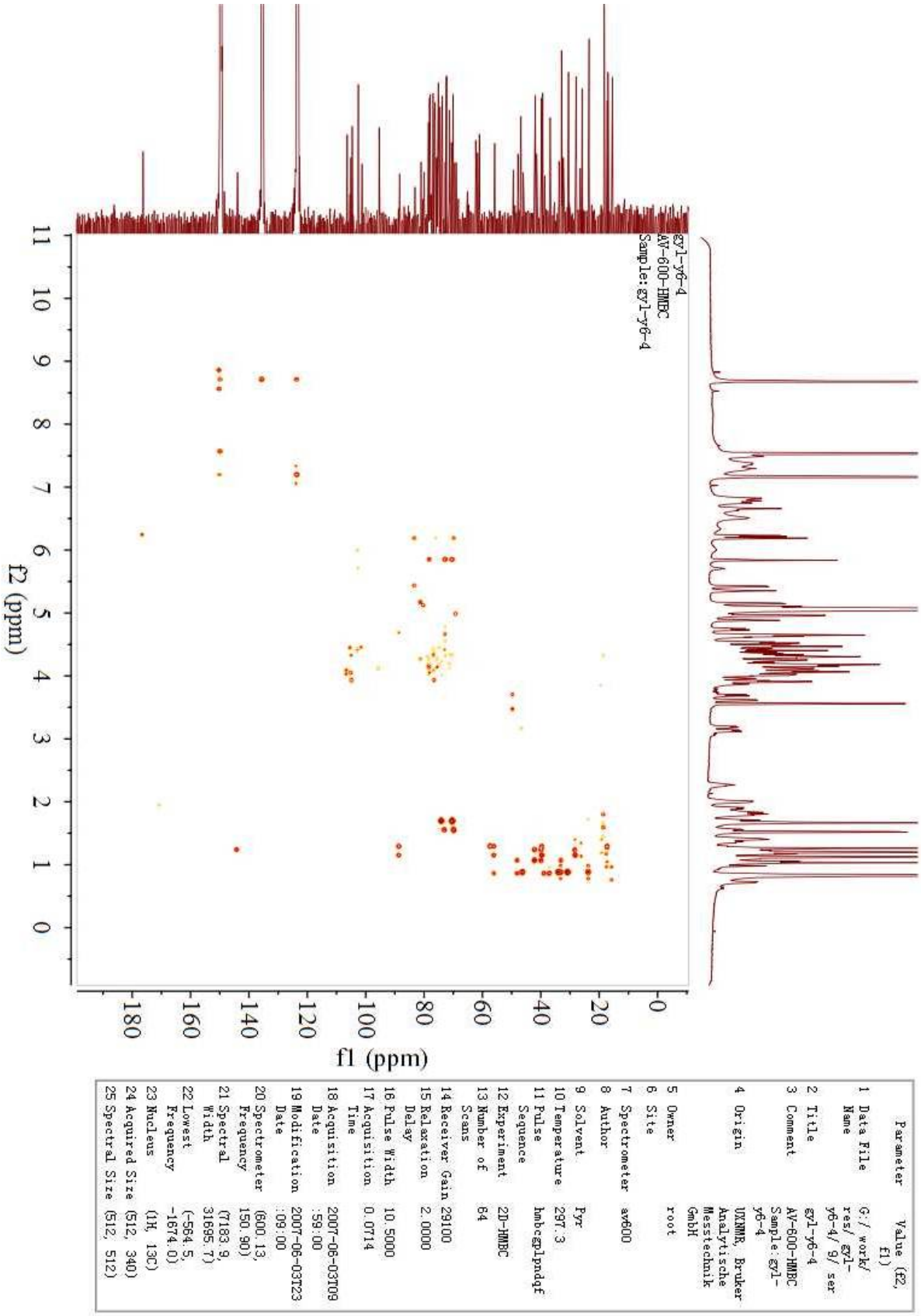


S3. HSQC spetrum of compound **1**.



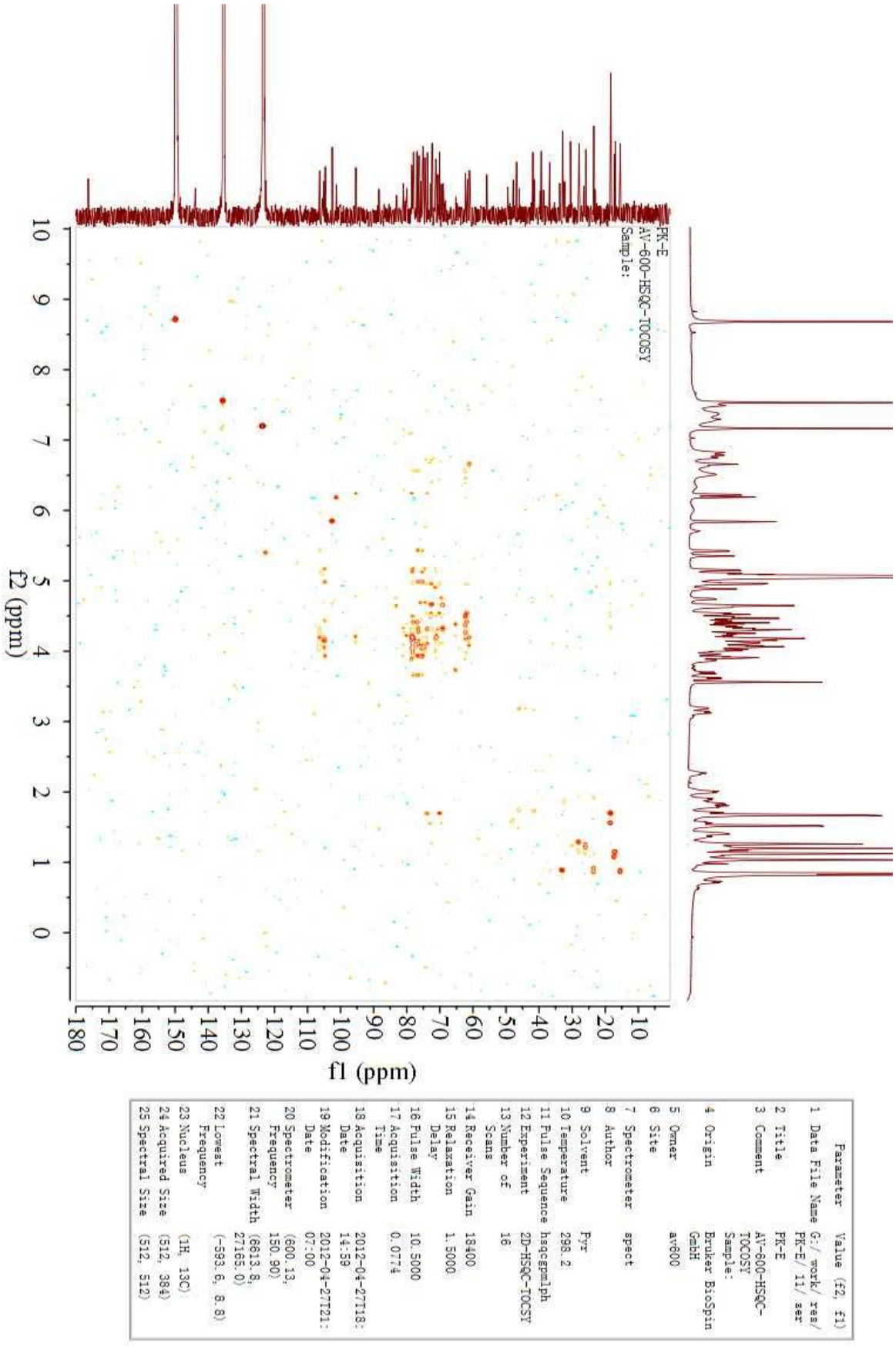
	Parameter	Value (f2, f1)
1	Data File Name	G:/ work/ res/ gyl-y6-4/ 8/ ser
2	Title	gyl-y6-4
3	Comment	
4	Origin	UXNMR, Bruker Analytische Messtechnik GmbH
5	Owner	psm
6	Site	
7	Spectrometer	av600
8	Author	
9	Solvent	DMSO
10	Temperature	297.1
11	Pulse Sequence	hsqcetgpsi
12	Experiment	2D-HSQC
13	Number of Scans	16
14	Receiver Gain	32800
15	Relaxation Delay	2.0000
16	Pulse Width	10.5000
17	Acquisition Time	0.0775
18	Acquisition Date	2007-06-21T02:15:00
19	Modification Date	2007-06-21T05:49:00
20	Spectrometer Frequency	(600.13, 150.90)
21	Spectral Width	(6613.8, 31695.7)
22	Lowest Frequency	(-692.9, -1547.7)
23	Nucleus	(1H, 13C)
24	Acquired Size	(512, 384)
25	Spectral Size	(512, 512)

S4. HMBC spetrum of compound **1**.



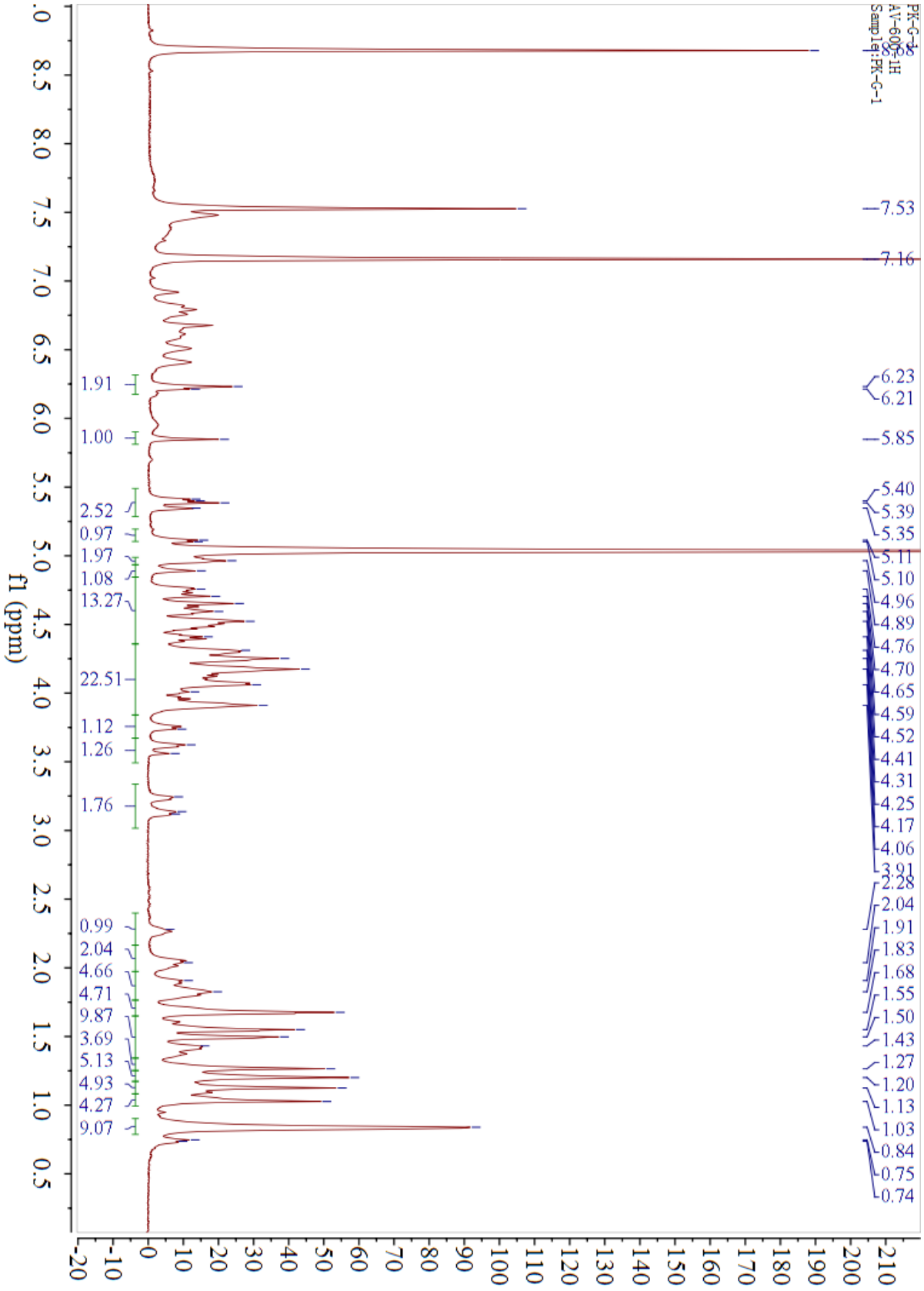
	Parameter	Value (f2, f1)
1	Data File Name	G:/ work/ res/ gyl-y6-4/ 9/ ser
2	Title	gyl-y6-4
3	Comment	AV-600-HMBC Sample:gyl-y6-4
4	Origin	UXNMR, Bruker Analytische Messtechnik GmbH
5	Owner	root
6	Site	
7	Spectrometer	av600
8	Author	
9	Solvent	Pyr
10	Temperature	297.3
11	Pulse Sequence	hmbcgplpndqf
12	Experiment	2D-HMBC
13	Number of Scans	64
14	Receiver Gain	29100
15	Relaxation Delay	2.0000
16	Pulse Width	10.5000
17	Acquisition Time	0.0714
18	Acquisition Date	2007-06-03T09 :59:00
19	Modification Date	2007-06-03T23 :09:00
20	Spectrometer Frequency	(600.13, 150.90)
21	Spectral Width	(7183.9, 31695.7)
22	Lowest Frequency	(-564.5, -1674.0)
23	Nucleus	(1H, 13C)
24	Acquired Size	(512, 340)
25	Spectral Size	(512, 512)

S5. HSQC-TOCSY spetrum of compound **1**.

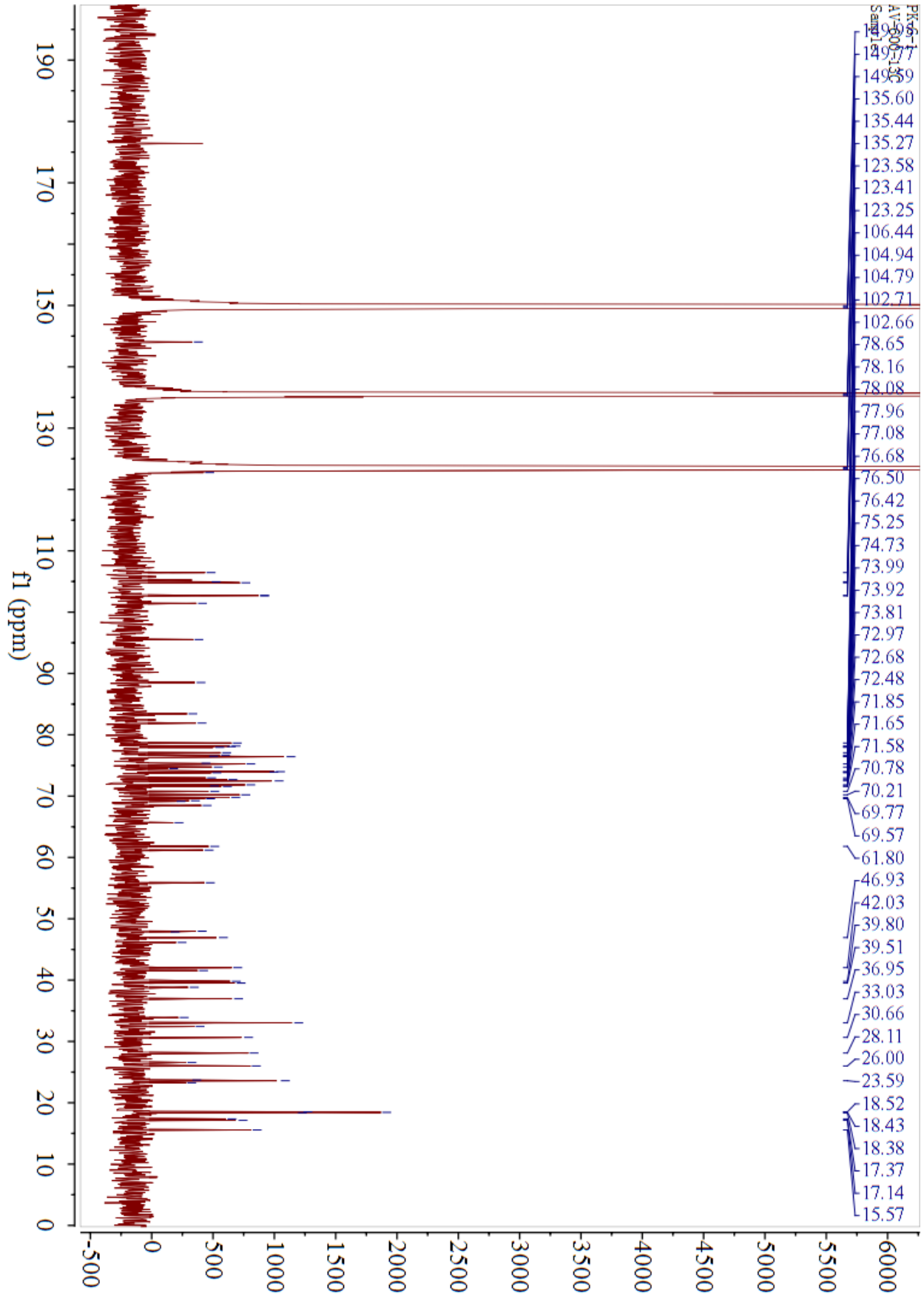


	Parameter	Value (f2, f1)
1	Data File Name	G:/ work/ res/ PR-E/ 11/ ser
2	Title	PR-E
3	Comment	AV-600-HSQC-TOCOSY Sample:
4	Origin	Bruker BioSpin GmbH
5	Owner	av600
6	Site	
7	Spectrometer	spect
8	Author	
9	Solvent	Pyr
10	Temperature	298.2
11	Pulse Sequence	hsqcgpmlph
12	Experiment	2D-HSQC-TOCSY
13	Number of Scans	16
14	Receiver Gain	18400
15	Relaxation Delay	1.5000
16	Pulse Width	10.5000
17	Acquisition Time	0.0774
18	Acquisition Date	2012-04-27T18:14:59
19	Modification Date	2012-04-27T21:07:00
20	Spectrometer Frequency	(600.13, 150.90)
21	Spectral Width	(6613.8, 27165.0)
22	Lowest Frequency	(-593.6, 8.8)
23	Nucleus	(1H, 13C)
24	Acquired Size	(512, 384)
25	Spectral Size	(512, 512)

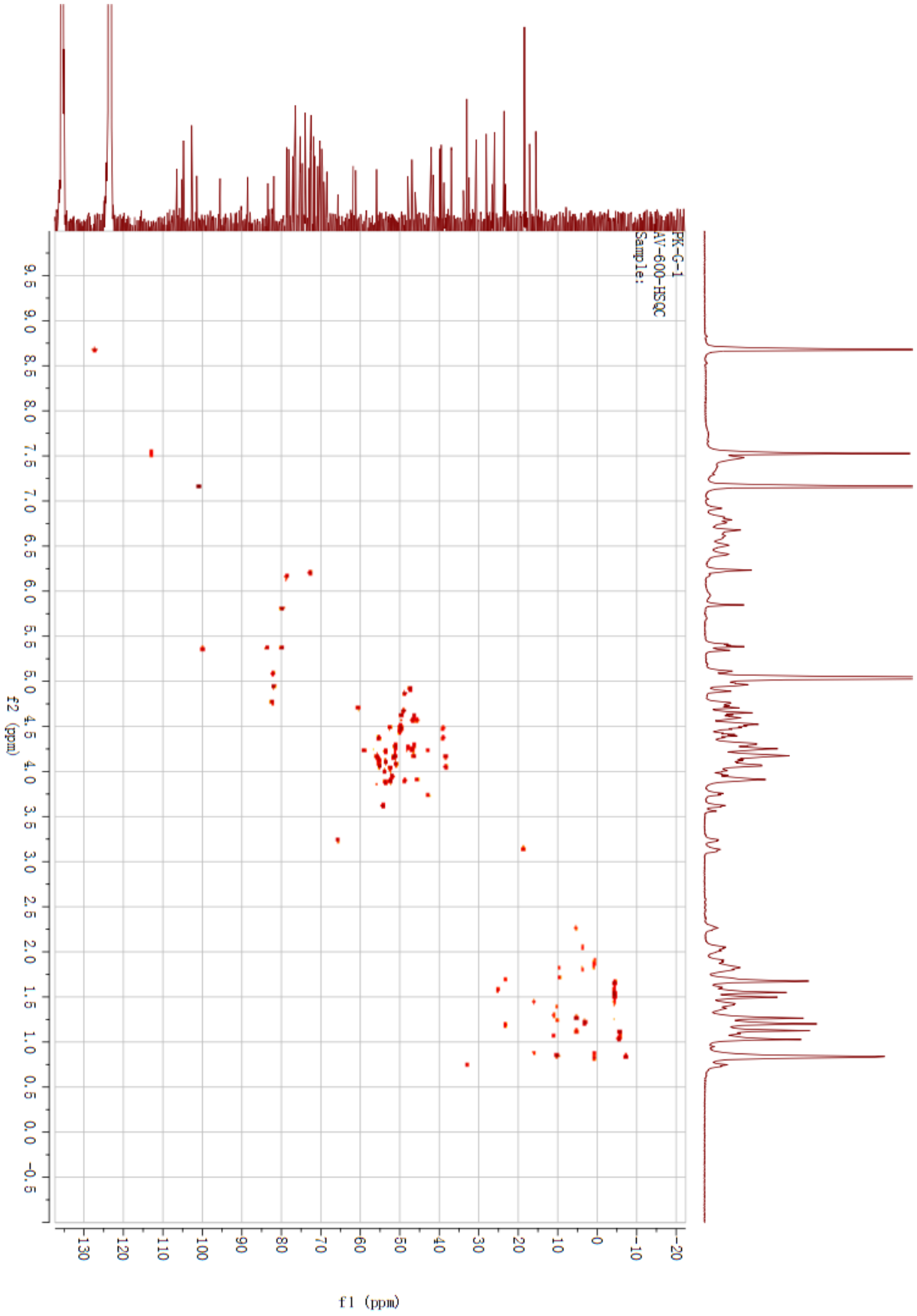
S6. ^{1}H-NMR spectrum (600 MHz, pyridine-d_5) of compound **2**.



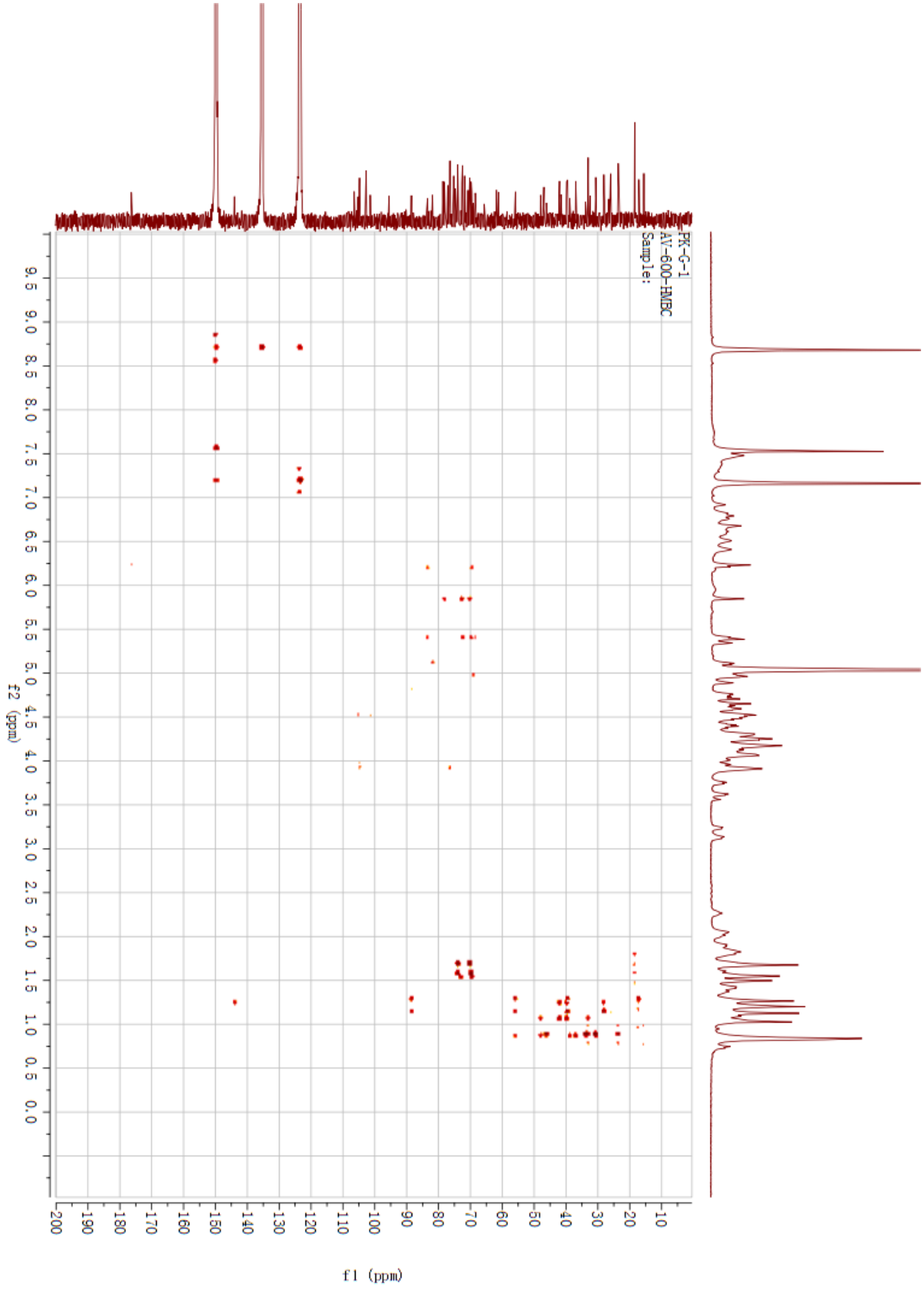
S7. ^{13}C-NMR spectrum (150 MHz, pyridine-d_5) of compound **2**



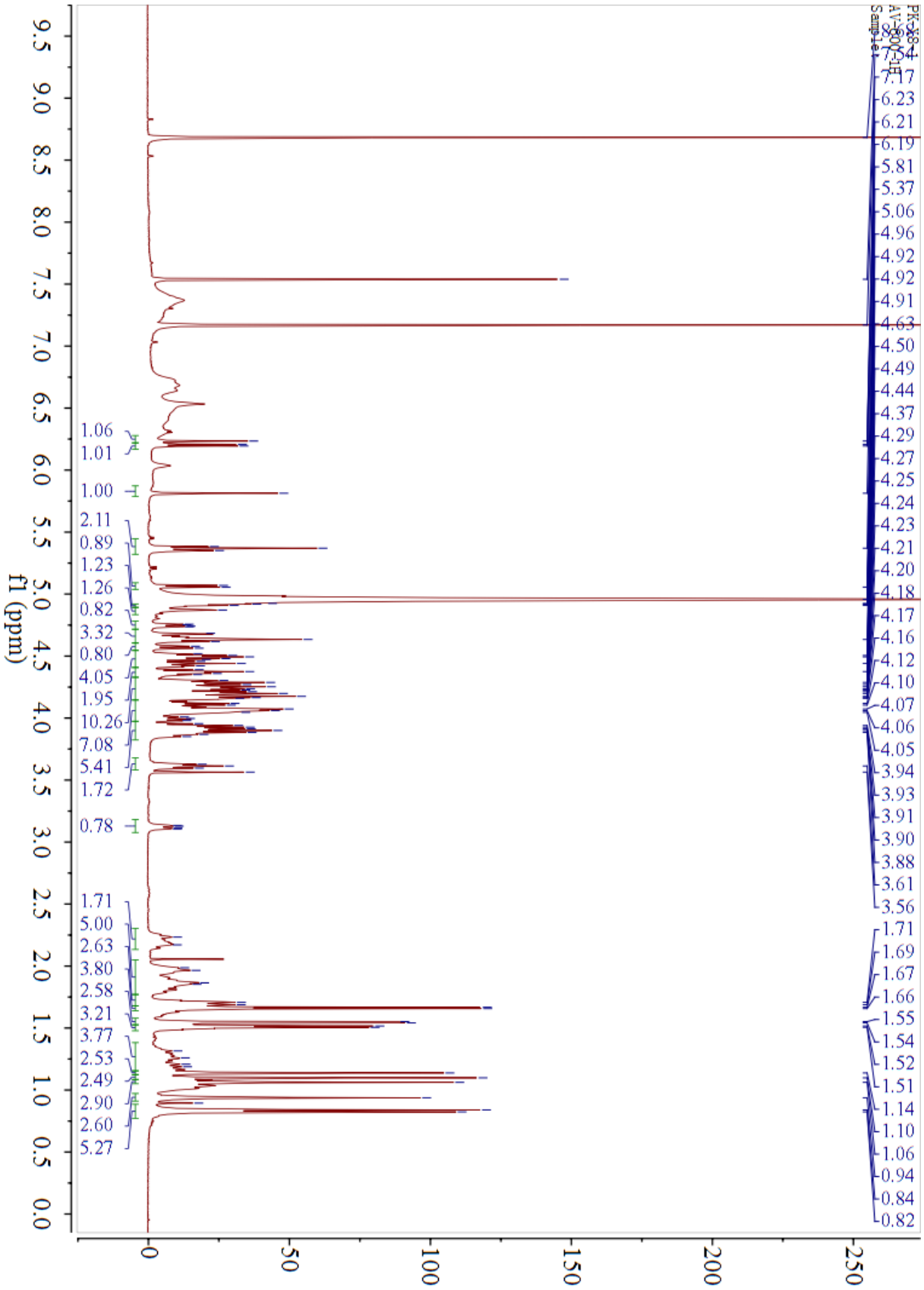
S8. HSQC spetrum of compound **2**.



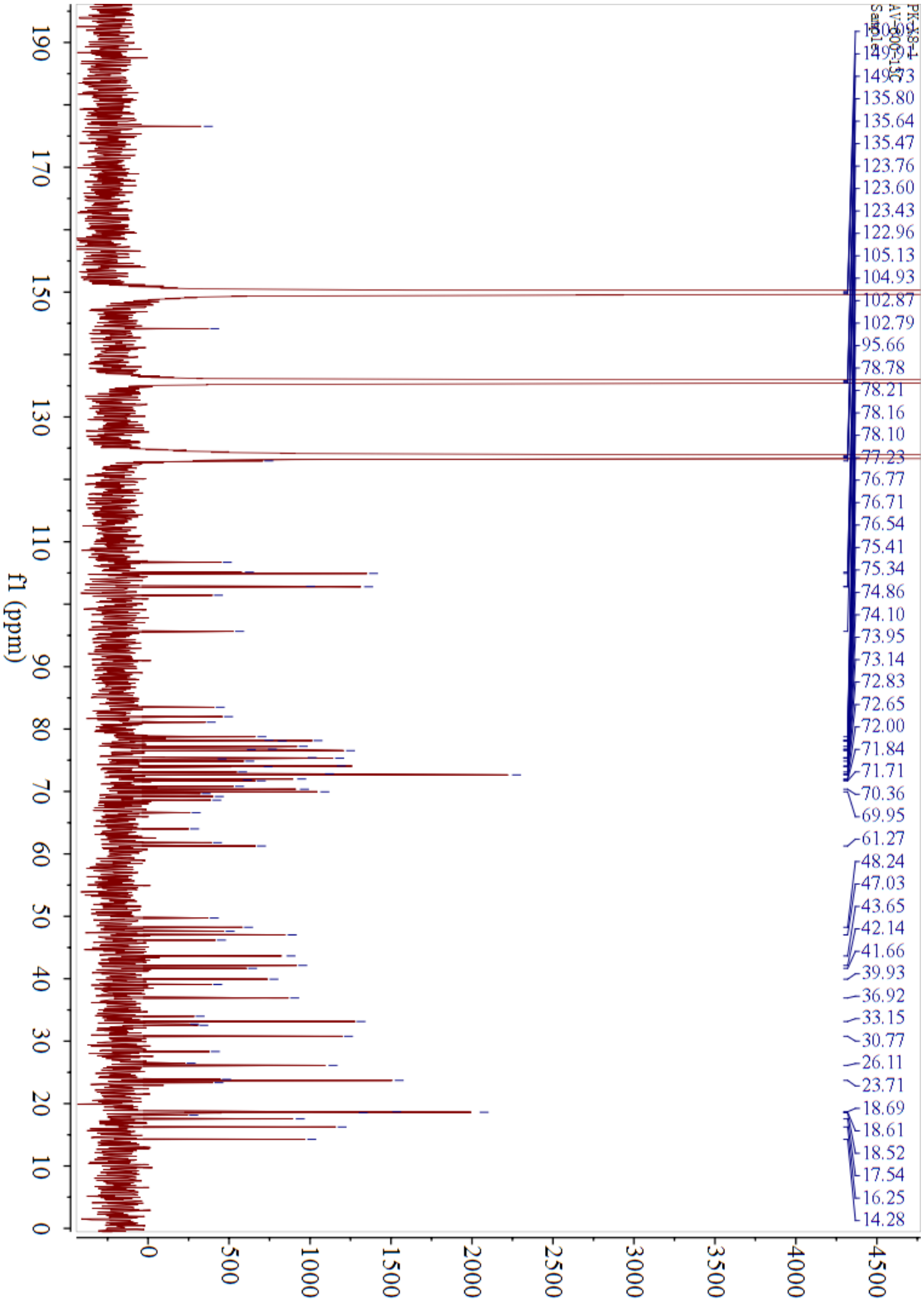
S9. HMBC spetrum of compound **2**.



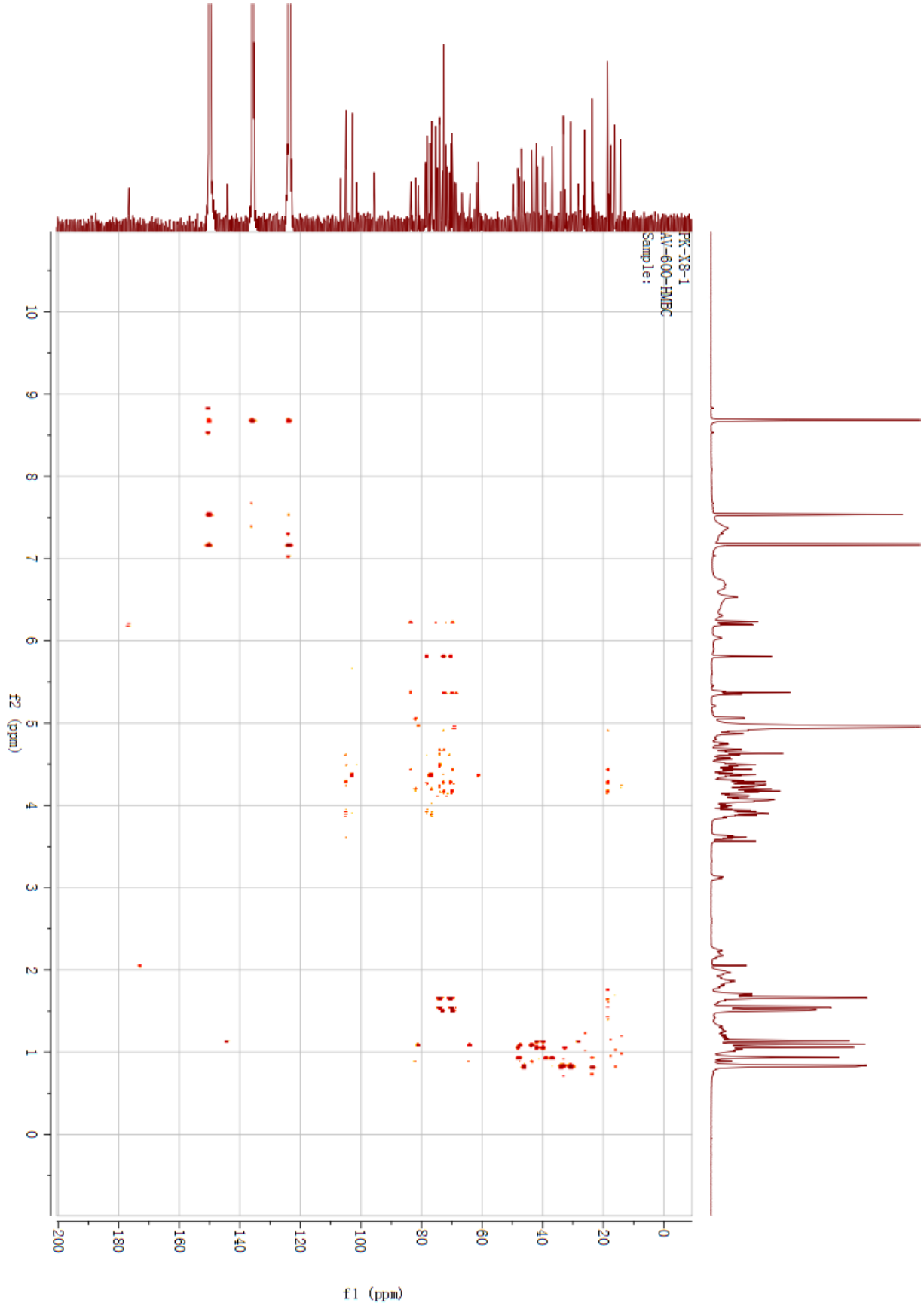
S10. ^{1}H-NMR spectrum (600 MHz, pyridine-d_5) of compound **3**.



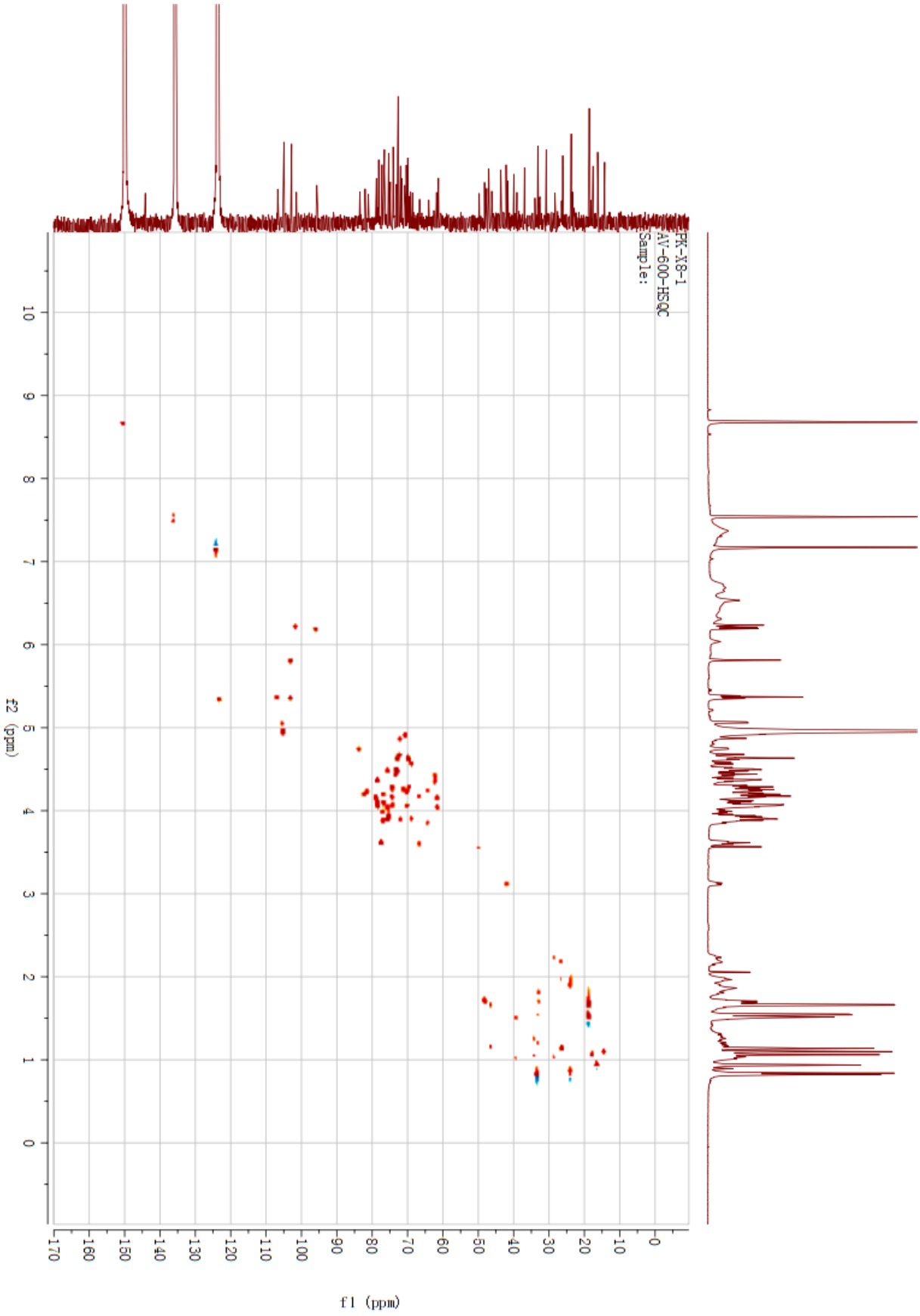
S11. ^{13}C-NMR spectrum (150 MHz, pyridine-d_5) of compound **3**.



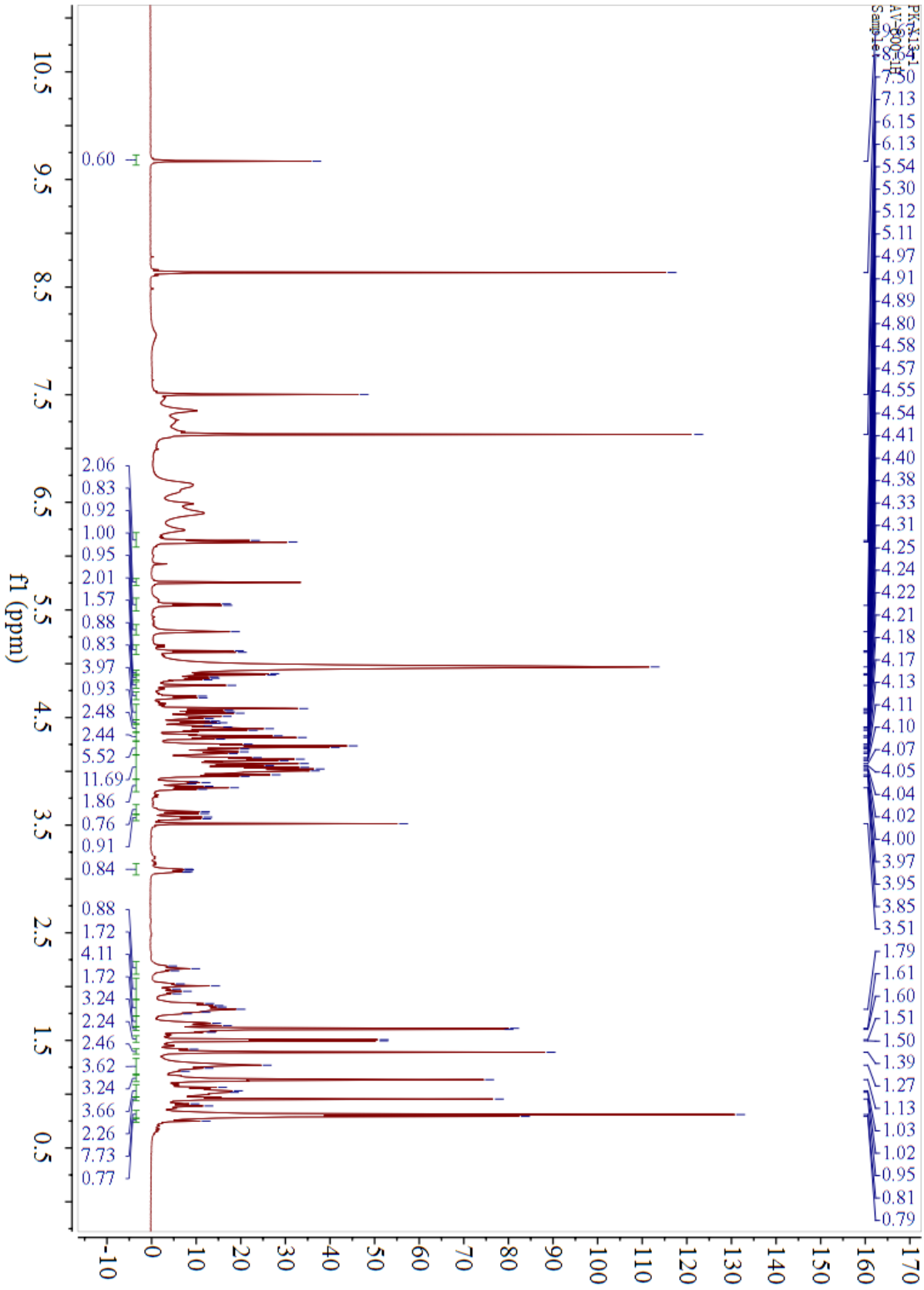
S12. HSQC spetrum of compound **3**.



S13. HMBC spetrum of compound **3**.



S14. ^{1}H-NMR spectrum (600 MHz, pyridine-d_5) of compound **4**.



S15. ^{13}C-NMR spectrum (150 MHz, pyridine-d_5) of compound **4**.