

## Supporting Information

### Design and synthesis of sugar-benzohydrazides: Low molecular weight organogelators

### ~~Design and synthesis of sugar-benzohydrazide-N-glycosylamines: Low molecular weight organogelators self-assemble into nanorods~~

Kamalakaran Soundarajan, Rathinam Periyasamy and Thangamuthu Mohan Das\*

Department of Chemistry, School of Basic and Applied Sciences, Central University of Tamil Nadu, Thiruvarur-610 004, India. E-mail: [tmohandas@cutn.ac.in](mailto:tmohandas@cutn.ac.in); Tel: 04366-277400; Fax: 04366-225312.

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**Figure.S.I-2.25**  $^1\text{H}$  NMR spectra of compound **18**

~~283~~~~225~~

**Figure.S.I-2.26**  $^{13}\text{C}$  NMR spectra of compound **18**

~~293~~~~326~~

**Figure.S.I-2.27**  $^1\text{H}$  NMR spectrum of compound **19** ~~304~~

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## **S.I. 1 Description of experimental techniques.**

### **S.I. 1.1: NMR**

NMR spectra were recorded on a Bruker DRX 300 MHz instrument in  $\text{CDCl}_3$  (with a few drops of  $\text{DMSO-d}_6$ ). Chemical shifts are referenced to internal TMS.

### **S.I. 1.2: Field emission - scanning electron microscopy (FE-SEM)**

Field emission-scanning electron microscopic studies were performed by using Hitachi Scanning Electron Microscope SU3500. The samples were prepared by drop casting of dichloroethaneethanol gel of glycosidic gelators on aluminium studs at the required concentrations at ambient conditions. FE-SEM images were obtained after drying the sample at ambient temperature.

### **S.I. 1.3: Transmission electron microscopy (TEM)**

Transmission electron microscopic studies were performed by using Hitachi Transmission electron microscope H-9500. The samples were prepared by drop casting of dichloroethaneethanol solution of glycoside (**11**) on to carbon coated copper grids (400 mesh) at the concentration of  $1 \times 10^{-5}$  M at ambient conditions. TEM images were obtained after drying the sample and without staining in vacuum

### **S.I. 1.4: Fourier Transform - Infrared spectroscopy (FT-IR)**

Fourier Transform - Infrared spectroscopy studies were performed by using Agilent Technology Carry 630 FT-IR. The samples were analyzed by directly putting them under attenuated total reflectance (ATR) mode.

### **S.I. 1.5: Rheological studies**

Rheological measurements were carried out with Anton Paar-Rheoplus instrument. Oscillatory experiments were performed in a 0.001–100 Hz frequency range with 0.1 % constant strain on 0.53 % gel of 8 in 1,2-dichloroethaneethanol at 25°C.

### **S.I. 1.6: XRD analysis**

PXRD patterns are recorded by X-ray diffractometer with  $\text{CuK}_\alpha$  radiation source. The scan rate was  $0.5^\circ/\text{min}$ . The xerogel was prepared by evaporating gel prepared in ethanol at room temperature.

### **S.I. 1.7: Photo physical studies**

UV-vis spectrophotometer and fluorescence spectrophotometer studies were performed by Agilent Technology UV-Vis spectrophotometer and Agilent Technology Carry Eclipse Fluorescence spectrophotometers. The samples were prepared from absorption and emission spectra of the N-glycosylamine was recorded at the concentration of  $5 \times 10^{-5}$  M in dichloroethane as a solvents

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## **S.I. 2 Synthesis and characterization of benzohydrazine based N-glycosylamine (1).**

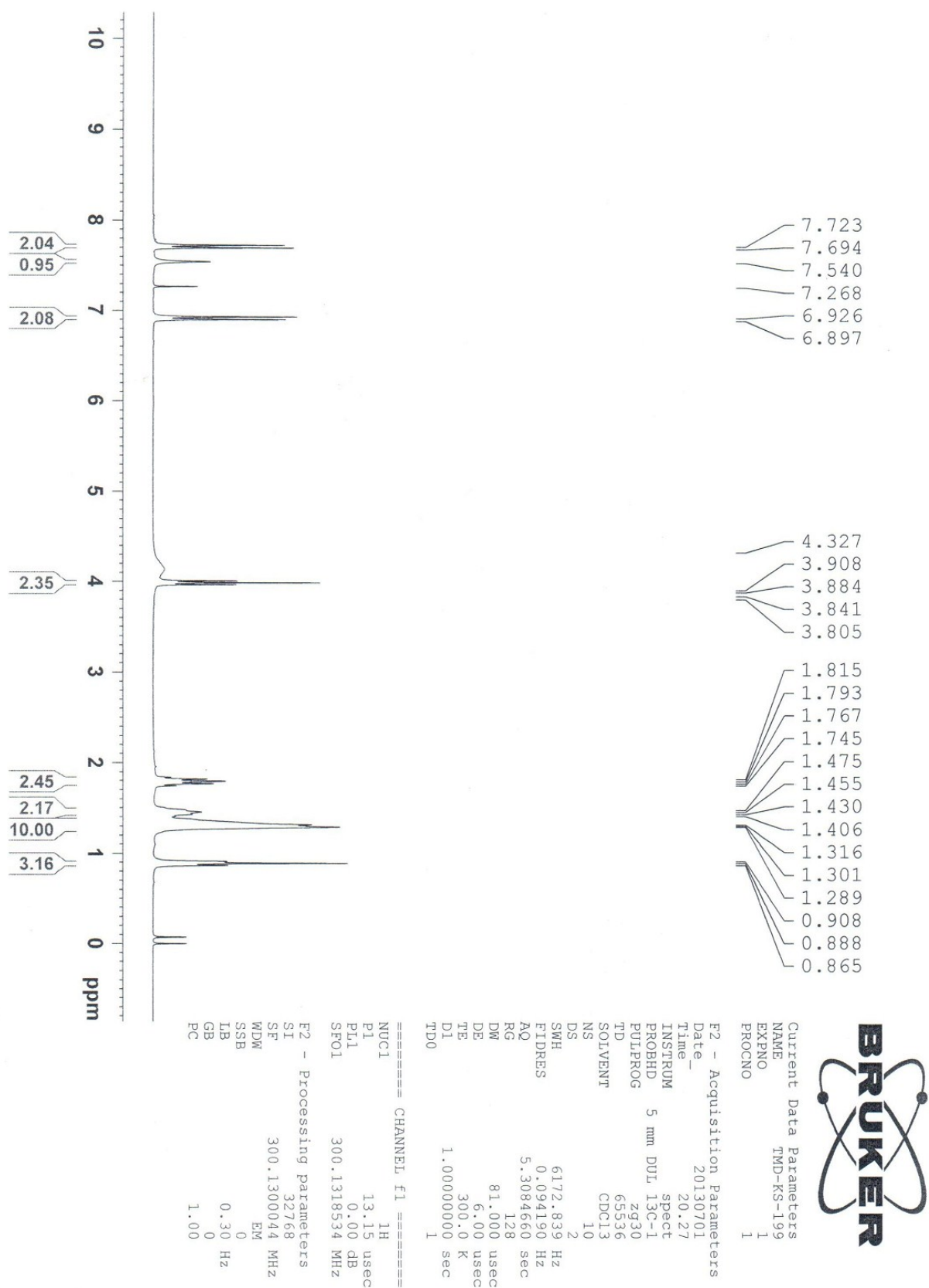


Fig. S.I.2.1: <sup>1</sup>H NMR spectrum of compound 1

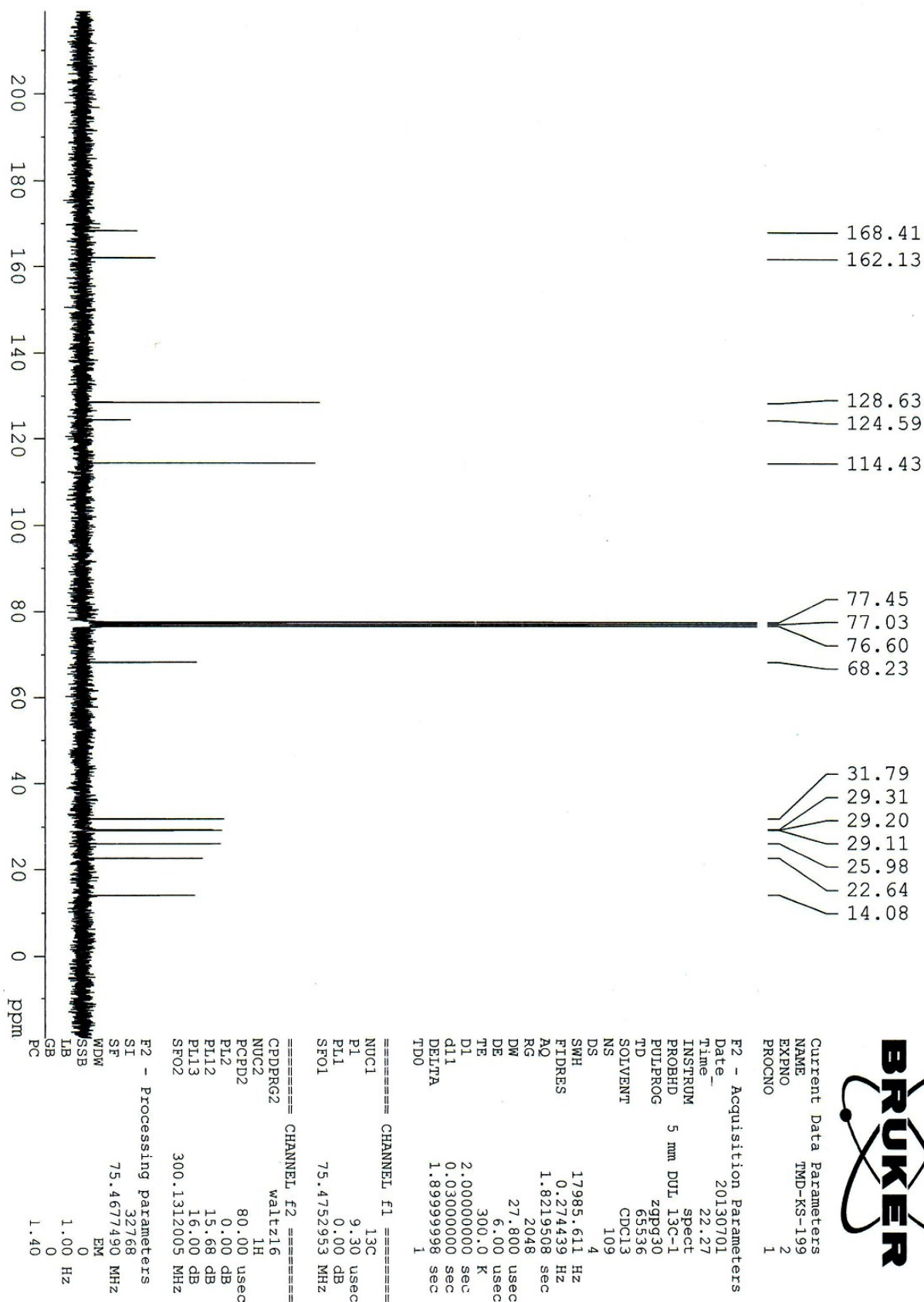
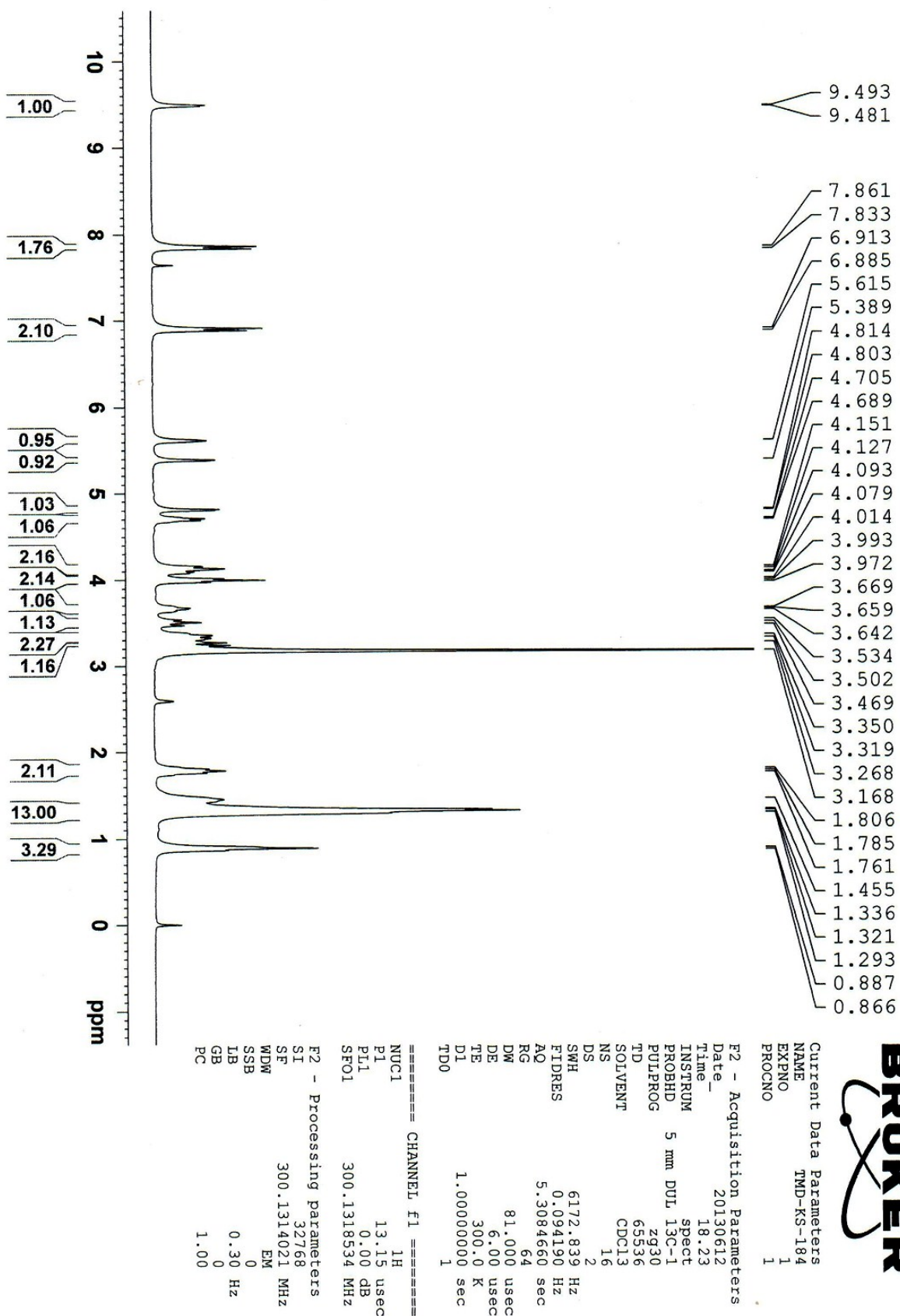
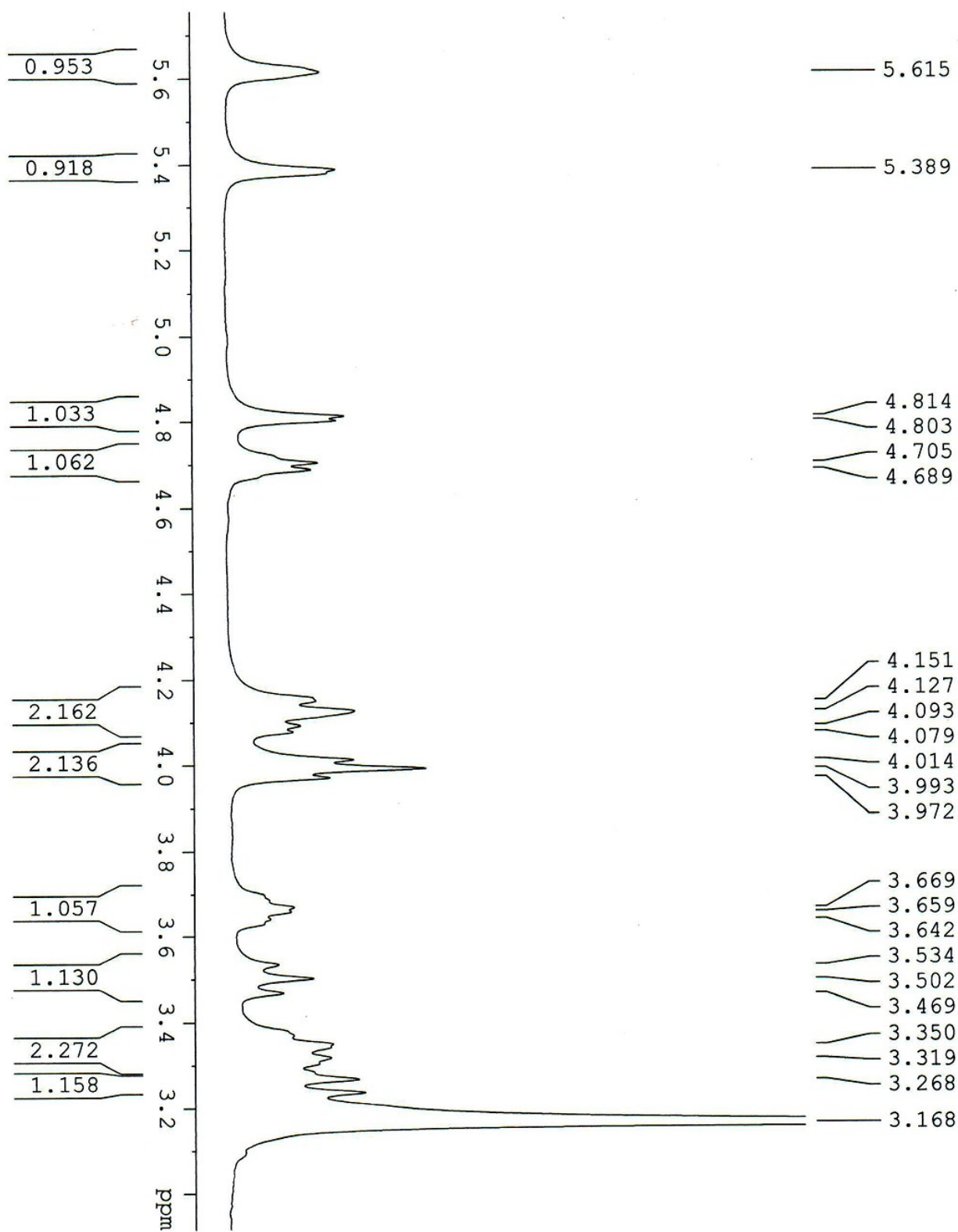
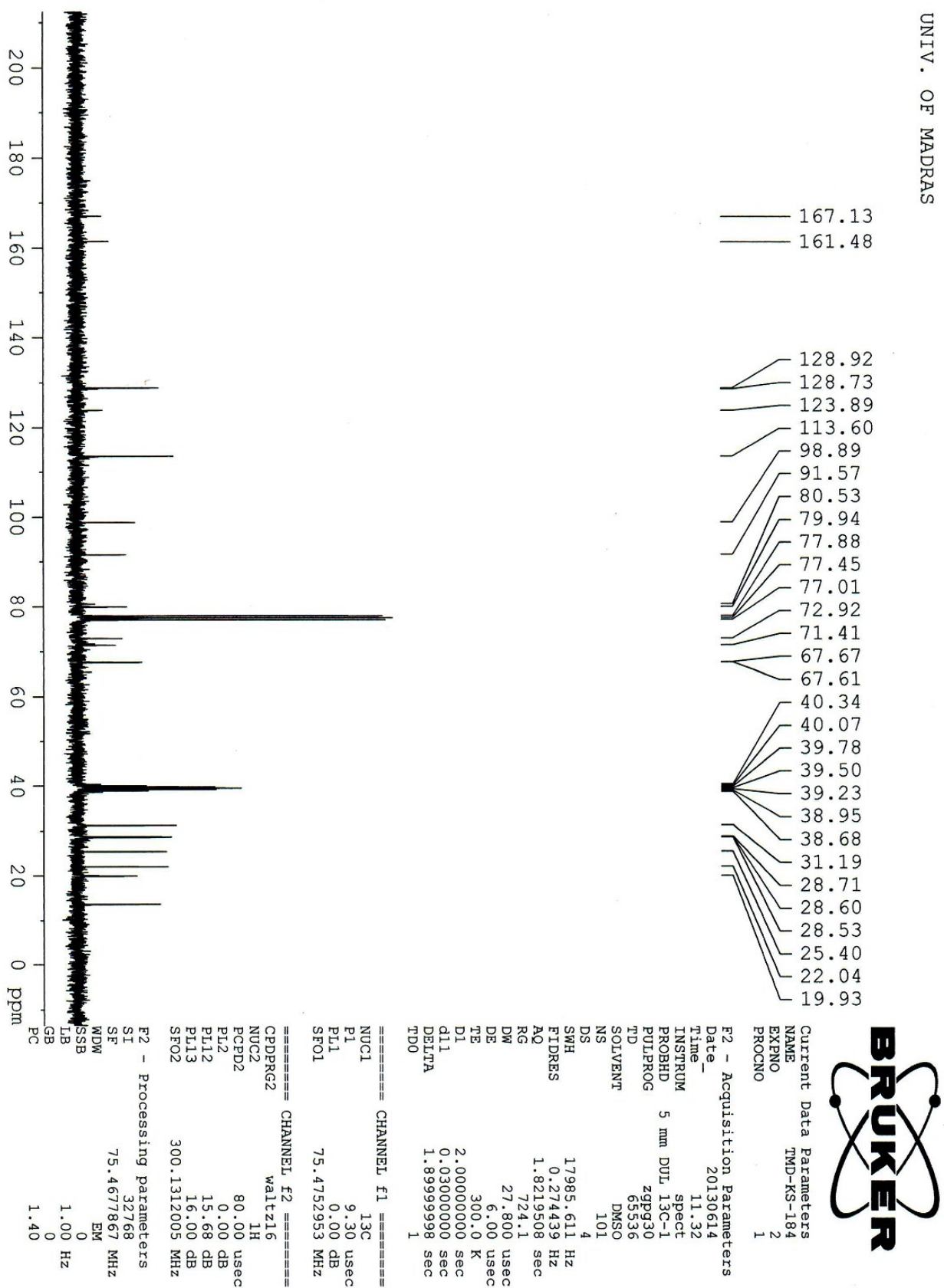


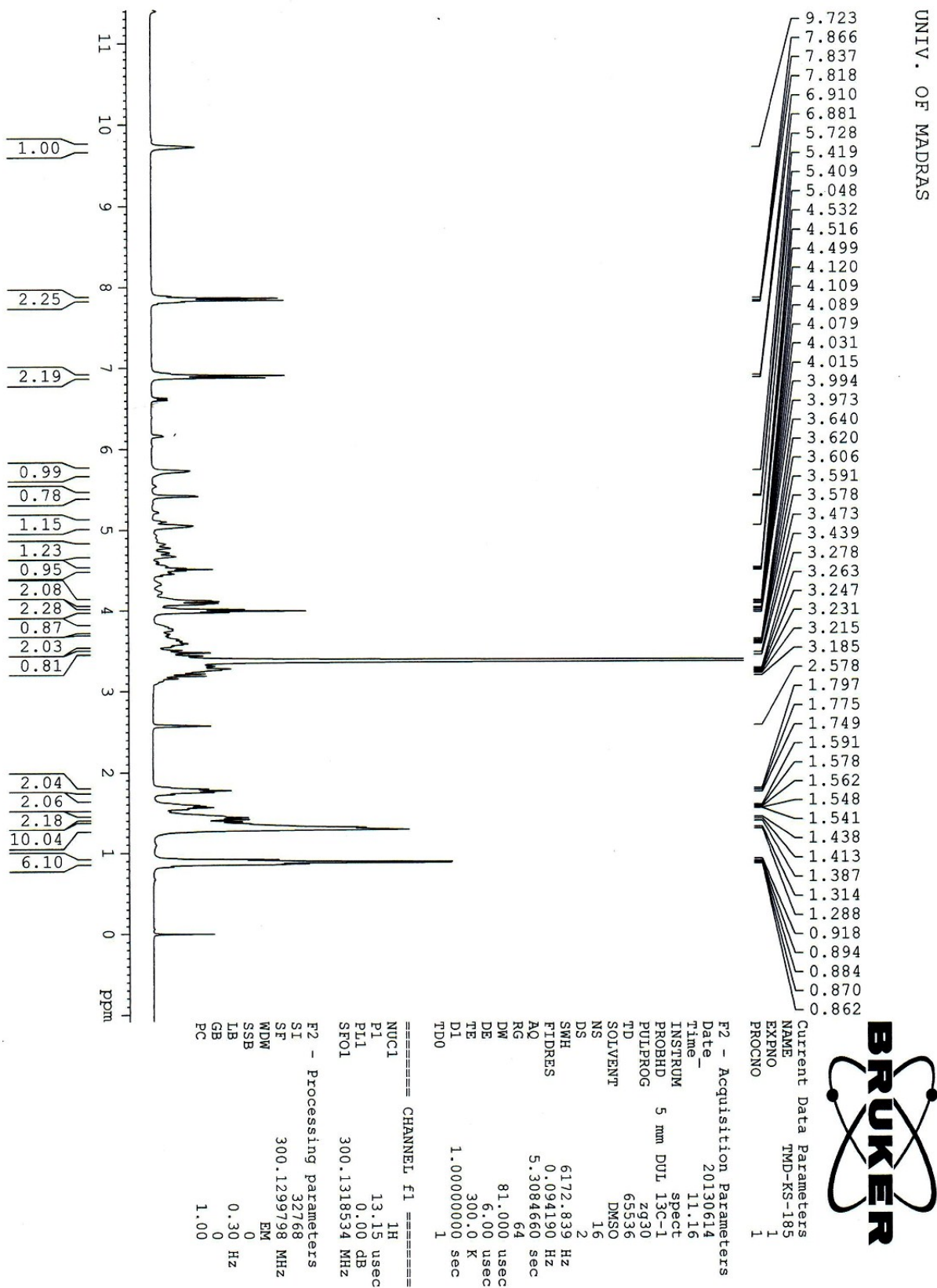
Fig. S.I.2.2:  $^{13}\text{C}$  NMR spectrum of compound 1

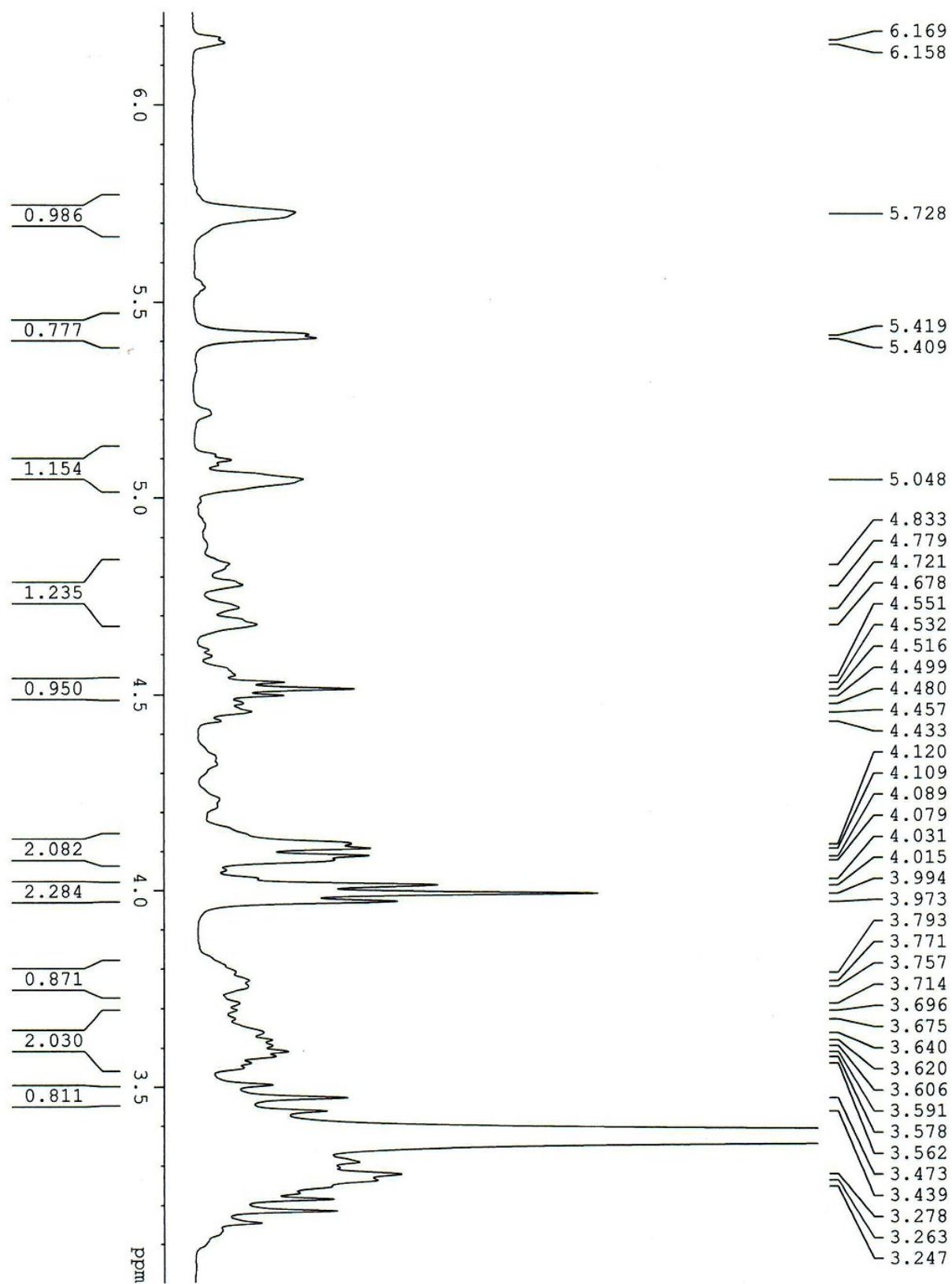
Fig. S.I.2.3:  $^1\text{H}$  NMR spectrum of compound 8

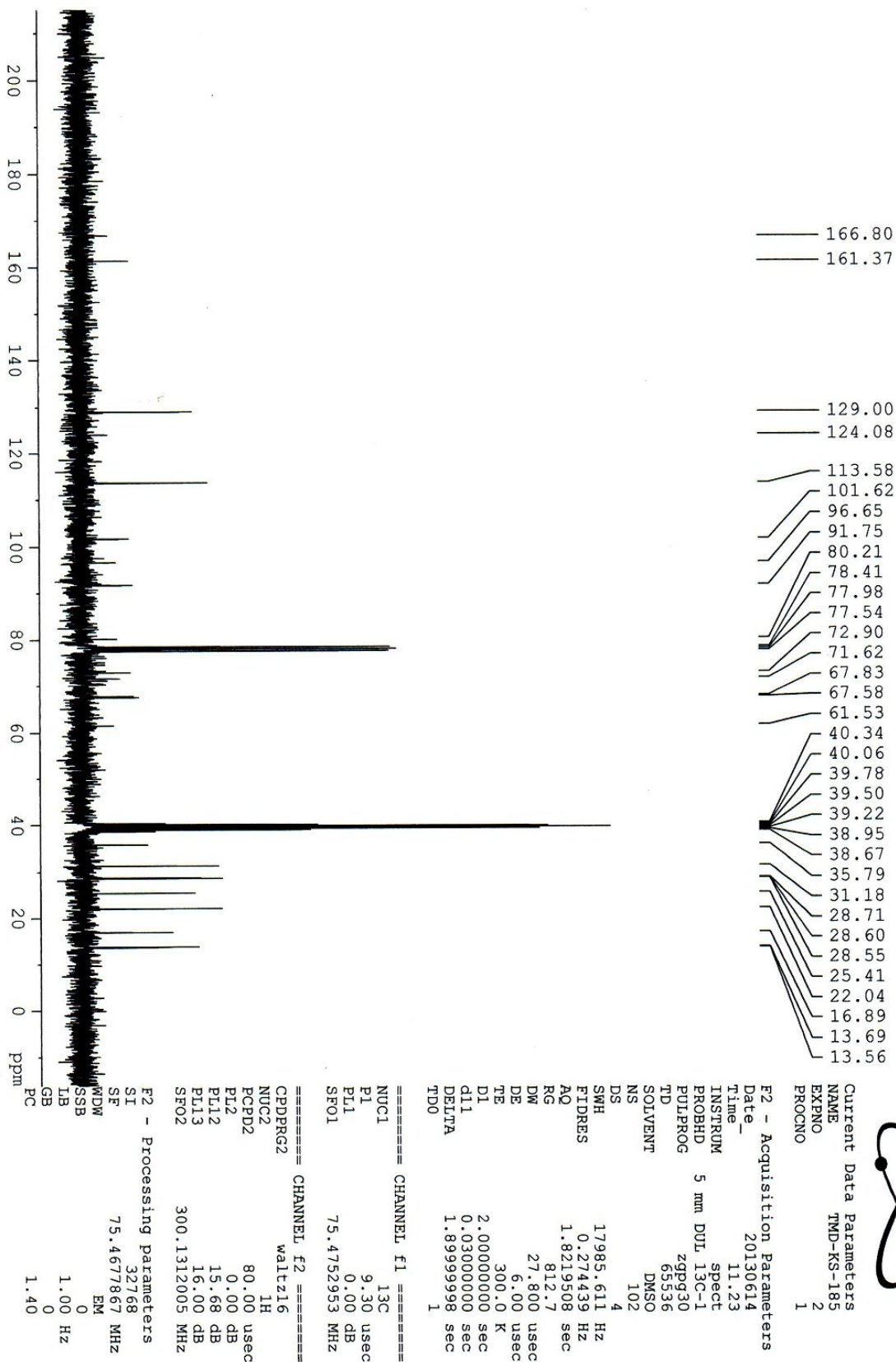




Fig. S.I.2.4:  $^{13}\text{C}$  NMR spectrum of compound 8





Fig. S.I.2.6:  $^{13}\text{C}$  NMR spectrum of compound 9



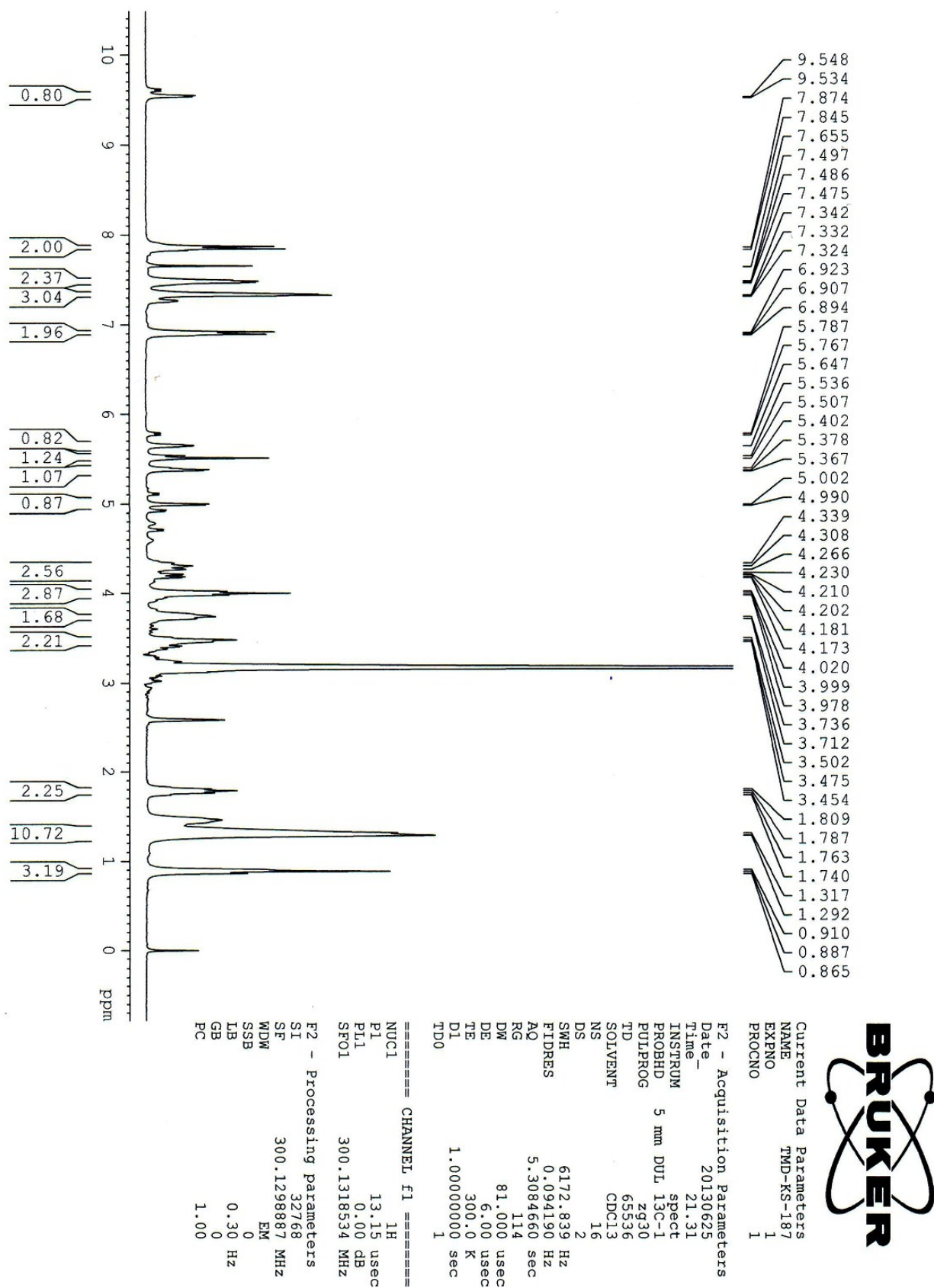
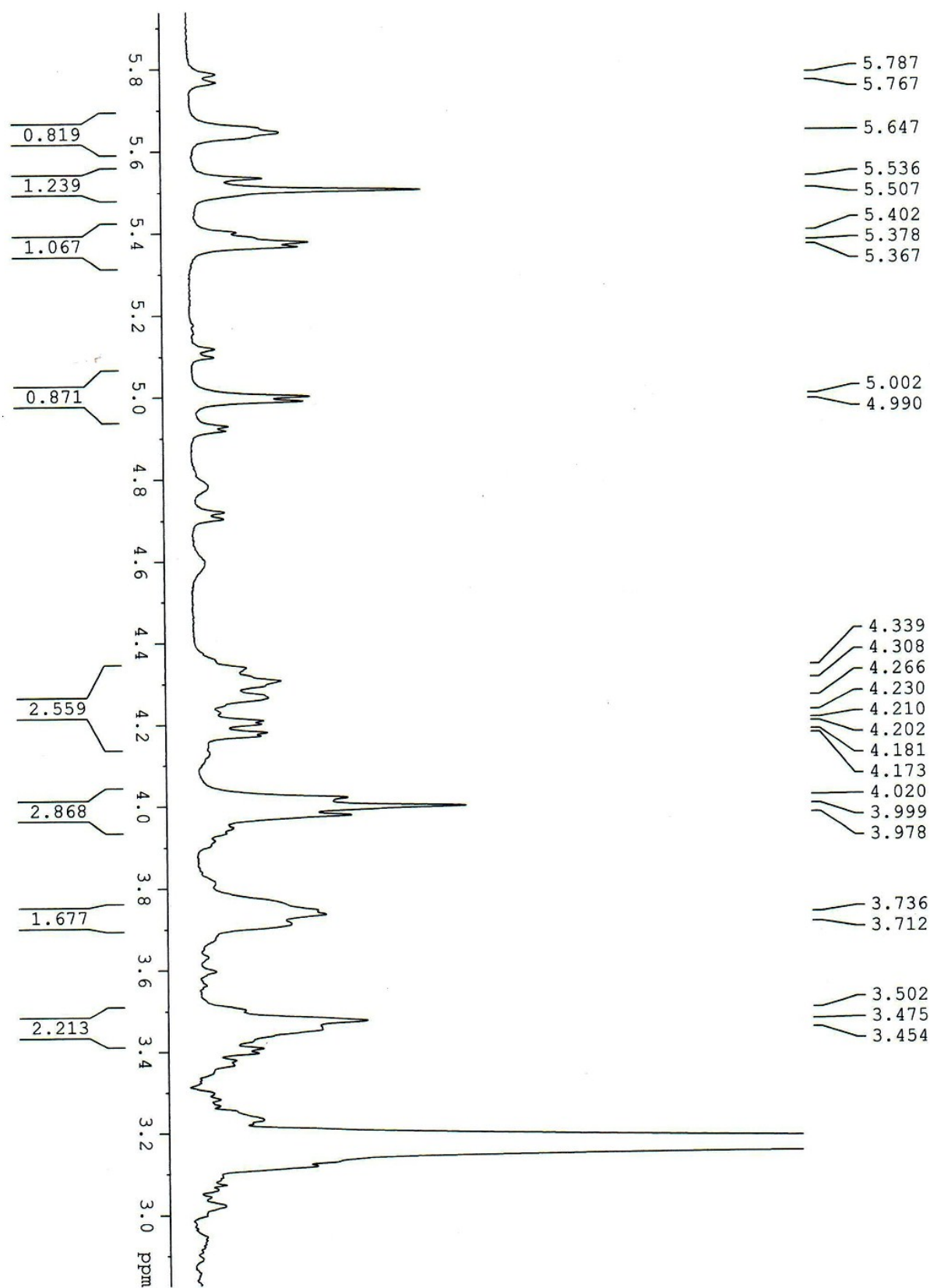


Fig. S.I.2.7:  $^1\text{H}$  NMR spectrum of compound 10



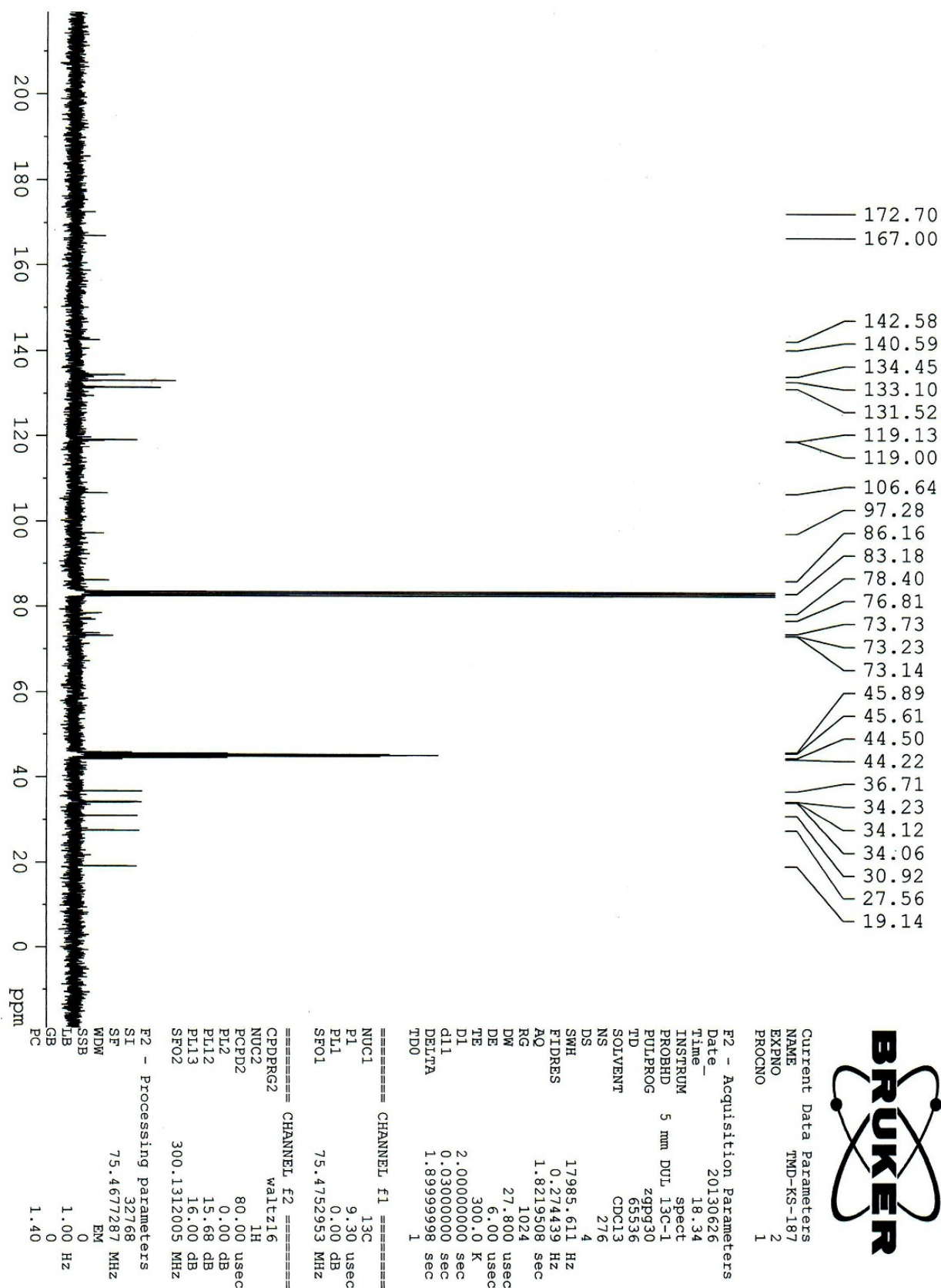


Fig. S.I.2.8:  $^{13}\text{C}$  NMR spectrum of compound 10



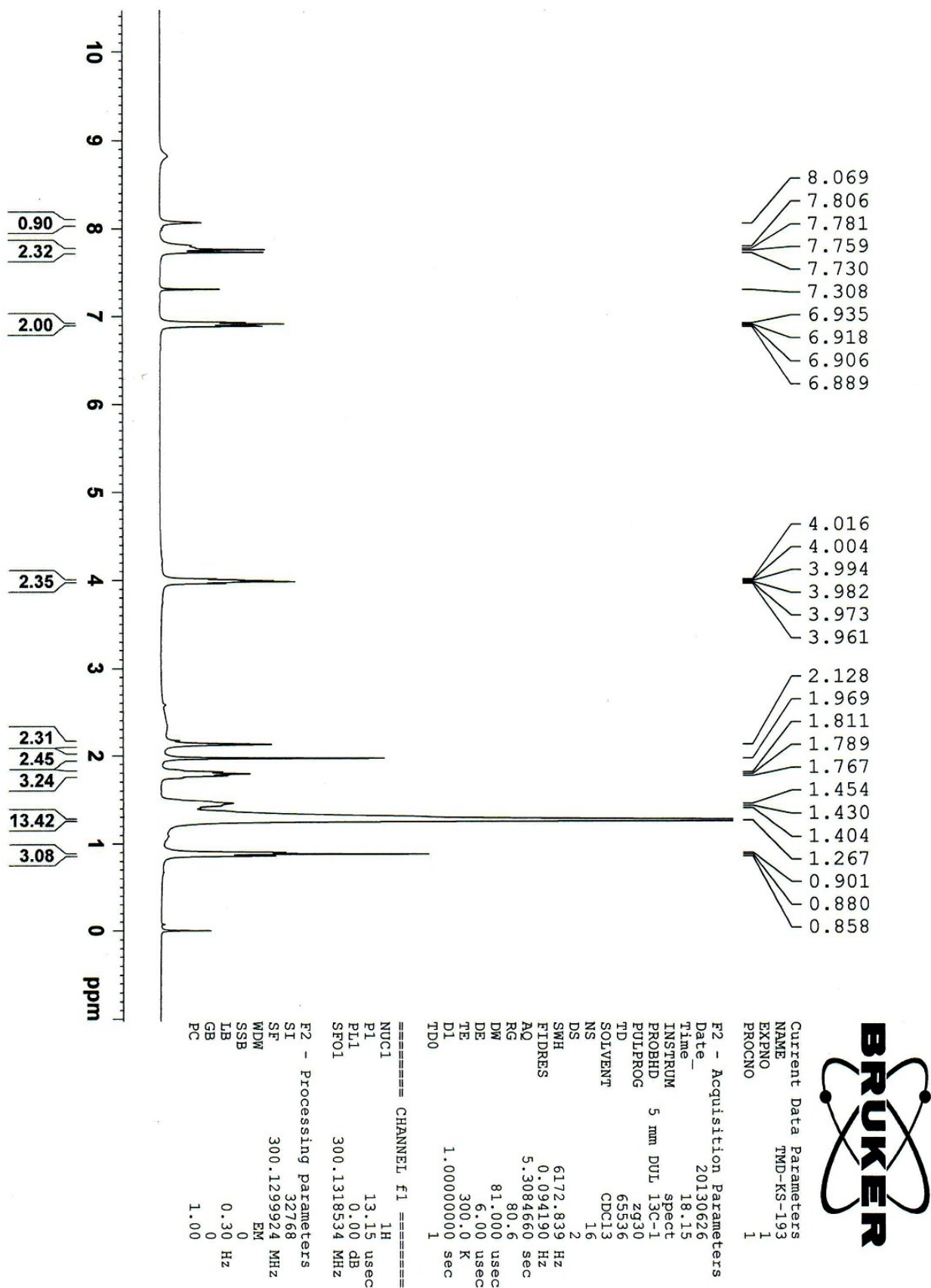


Fig. S.I.2.9: <sup>1</sup>H NMR spectrum of compound 2

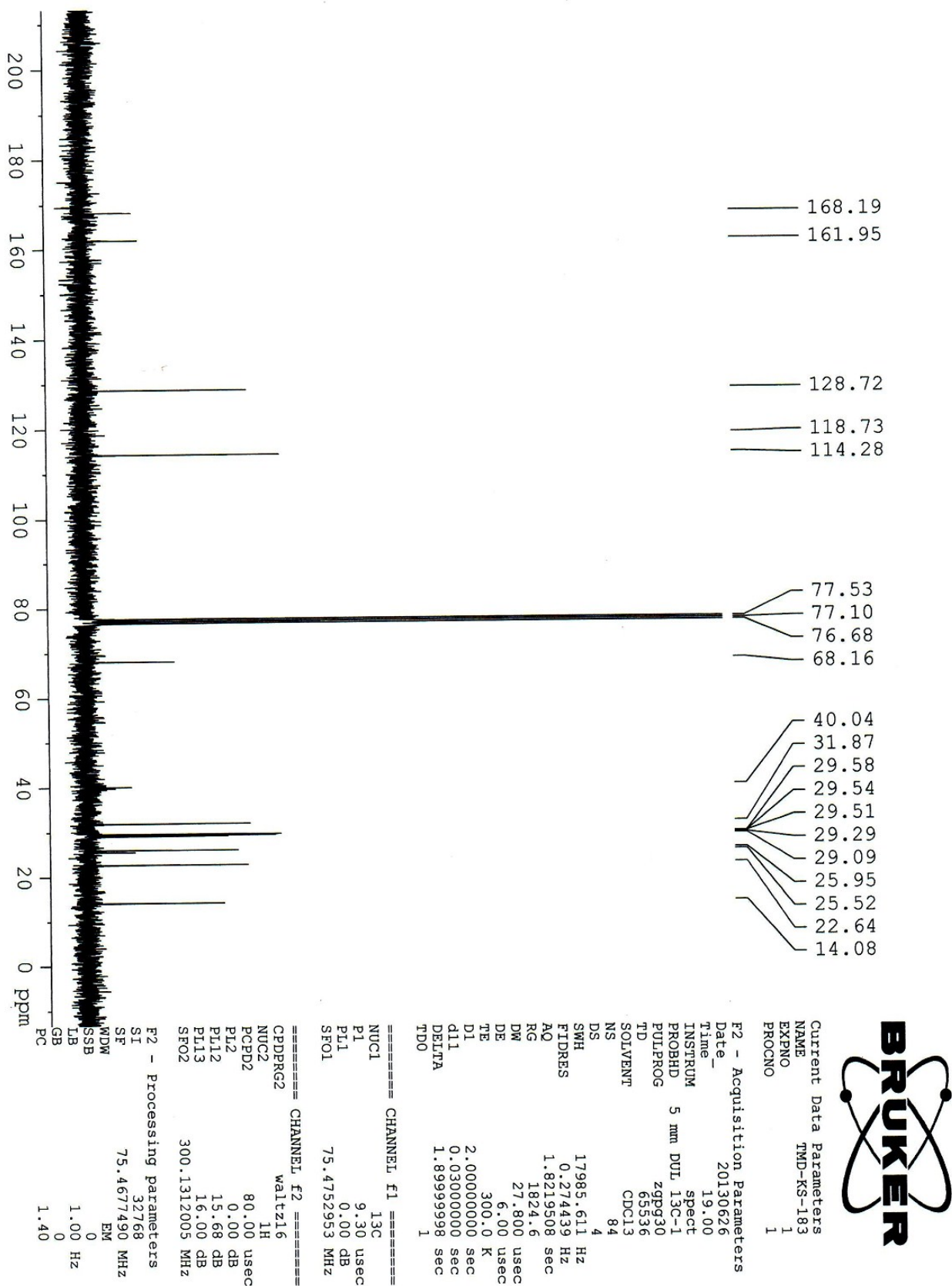
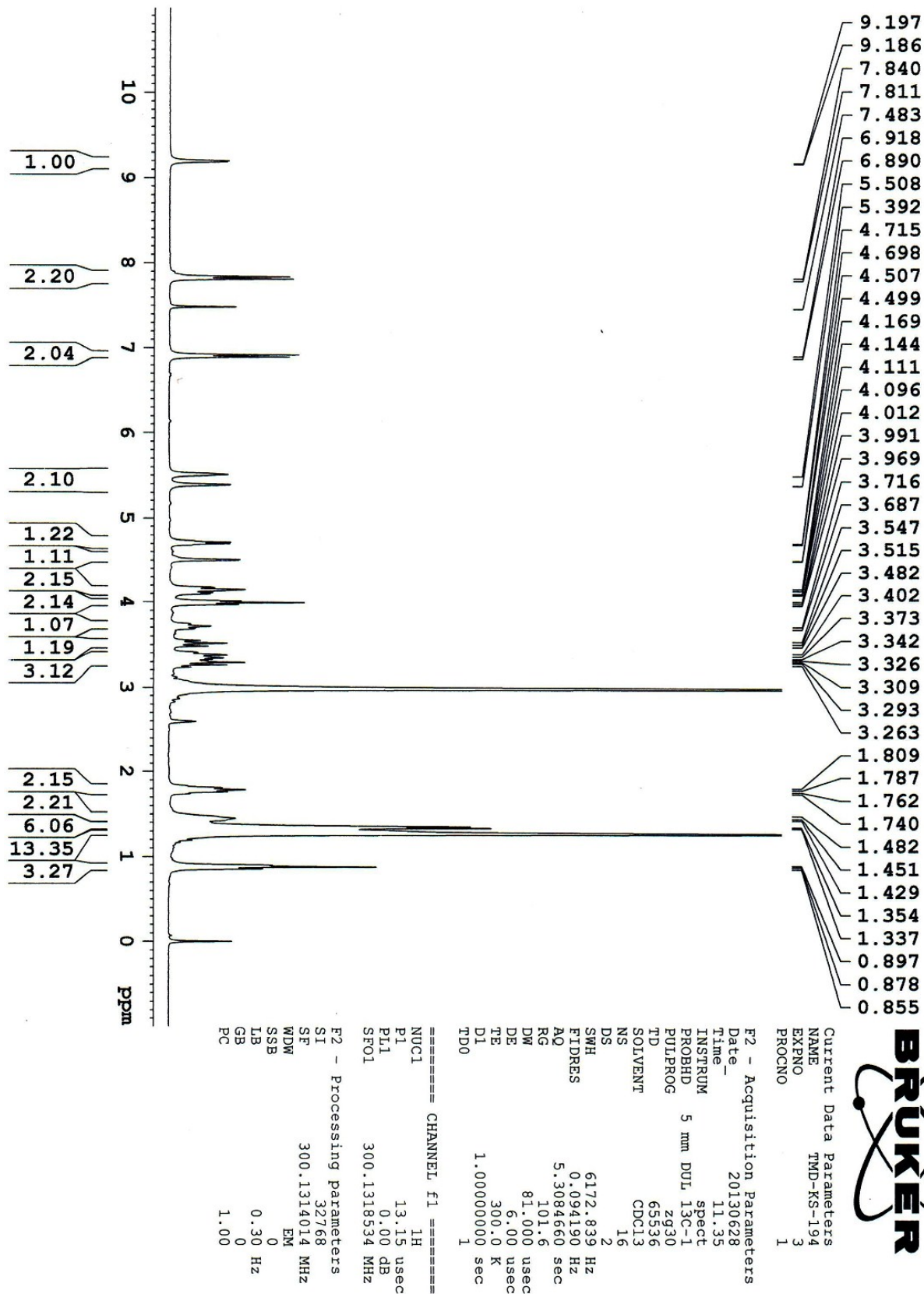


Fig. S.I.2.10:  $^{13}\text{C}$  NMR spectrum of compound 2

Fig. S.I.2.11:  $^1\text{H}$  NMR spectrum of compound 11

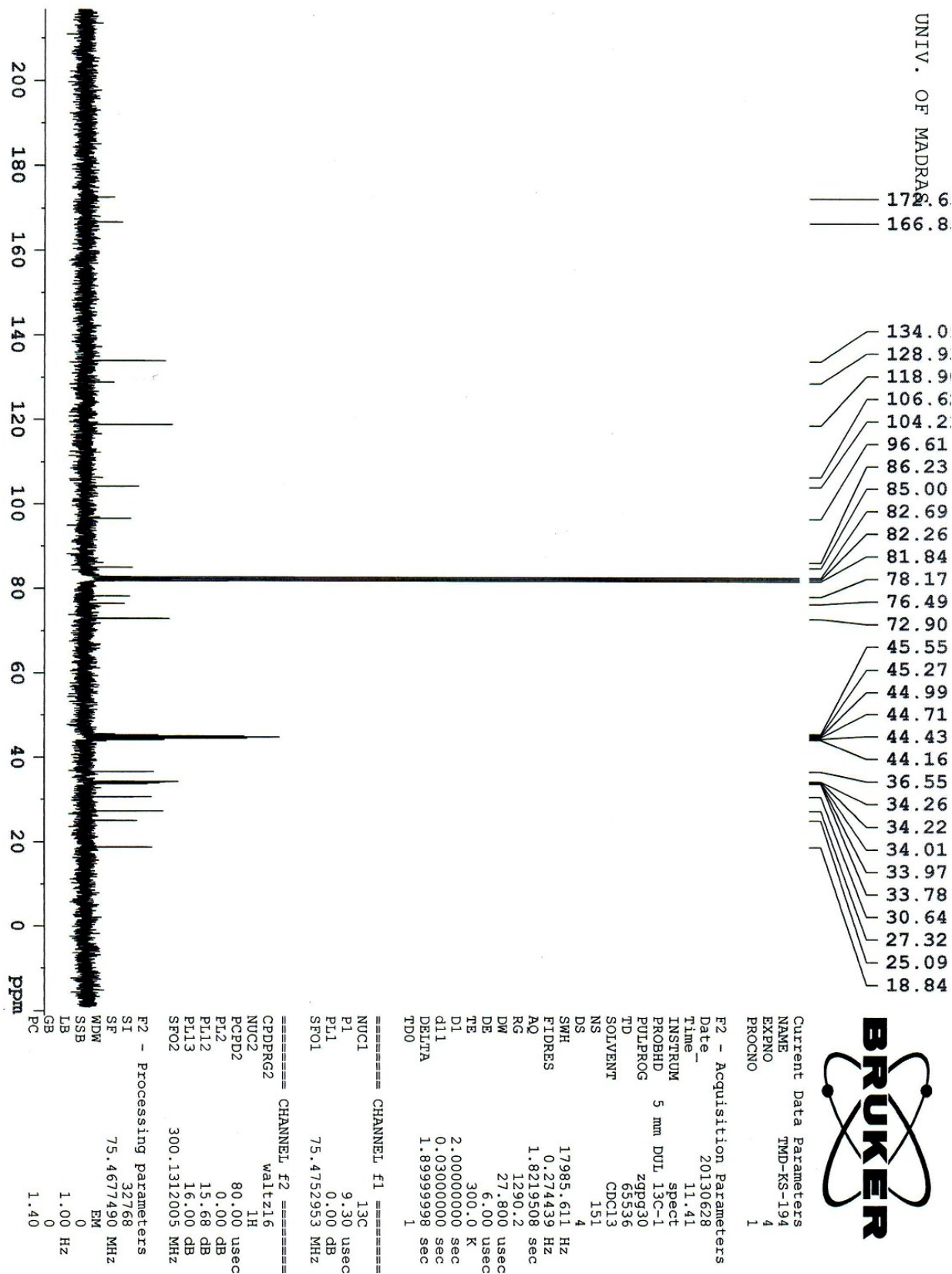


Fig. S.I.2.12:  $^{13}\text{C}$  NMR spectrum of compound 11



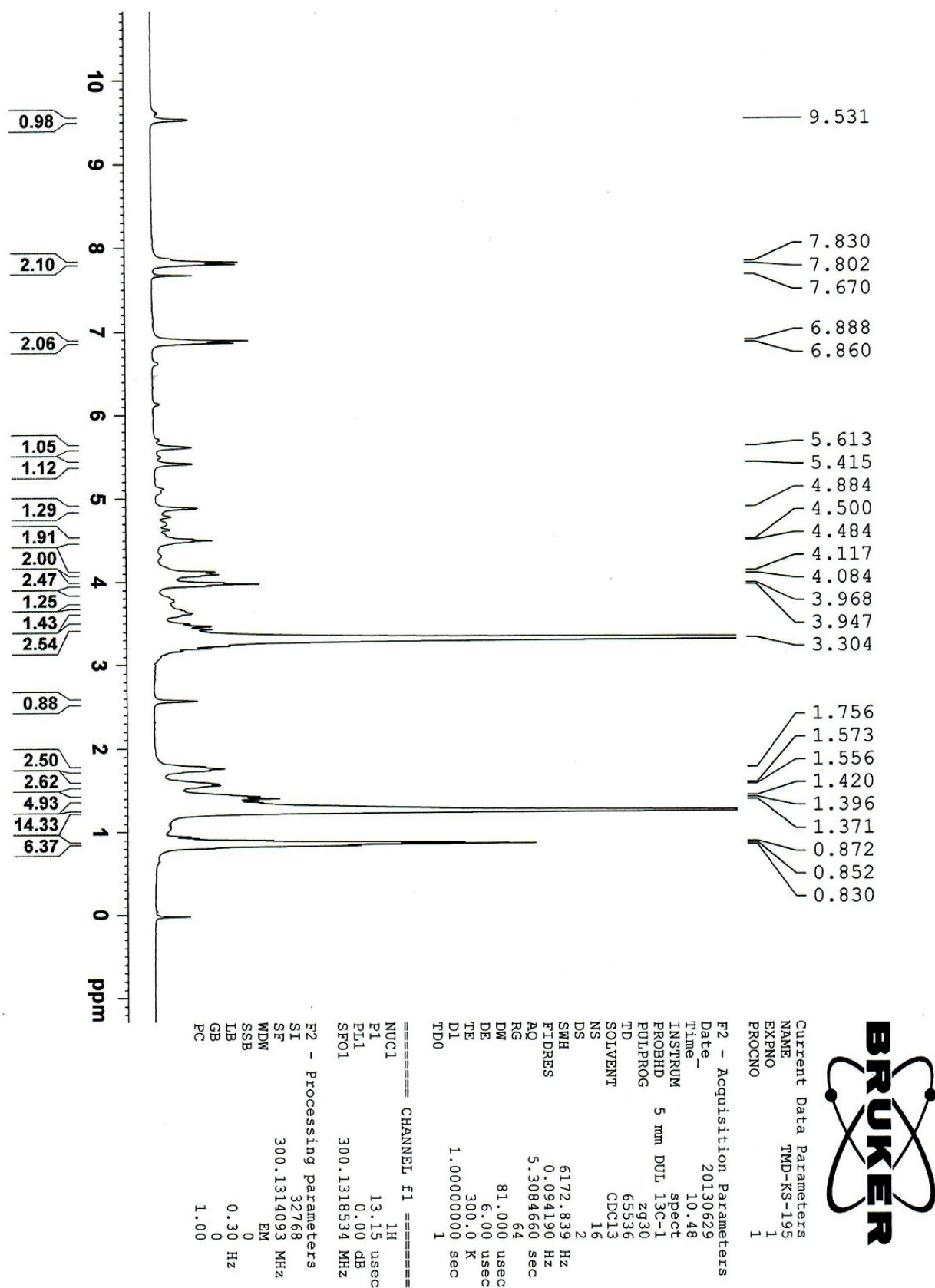
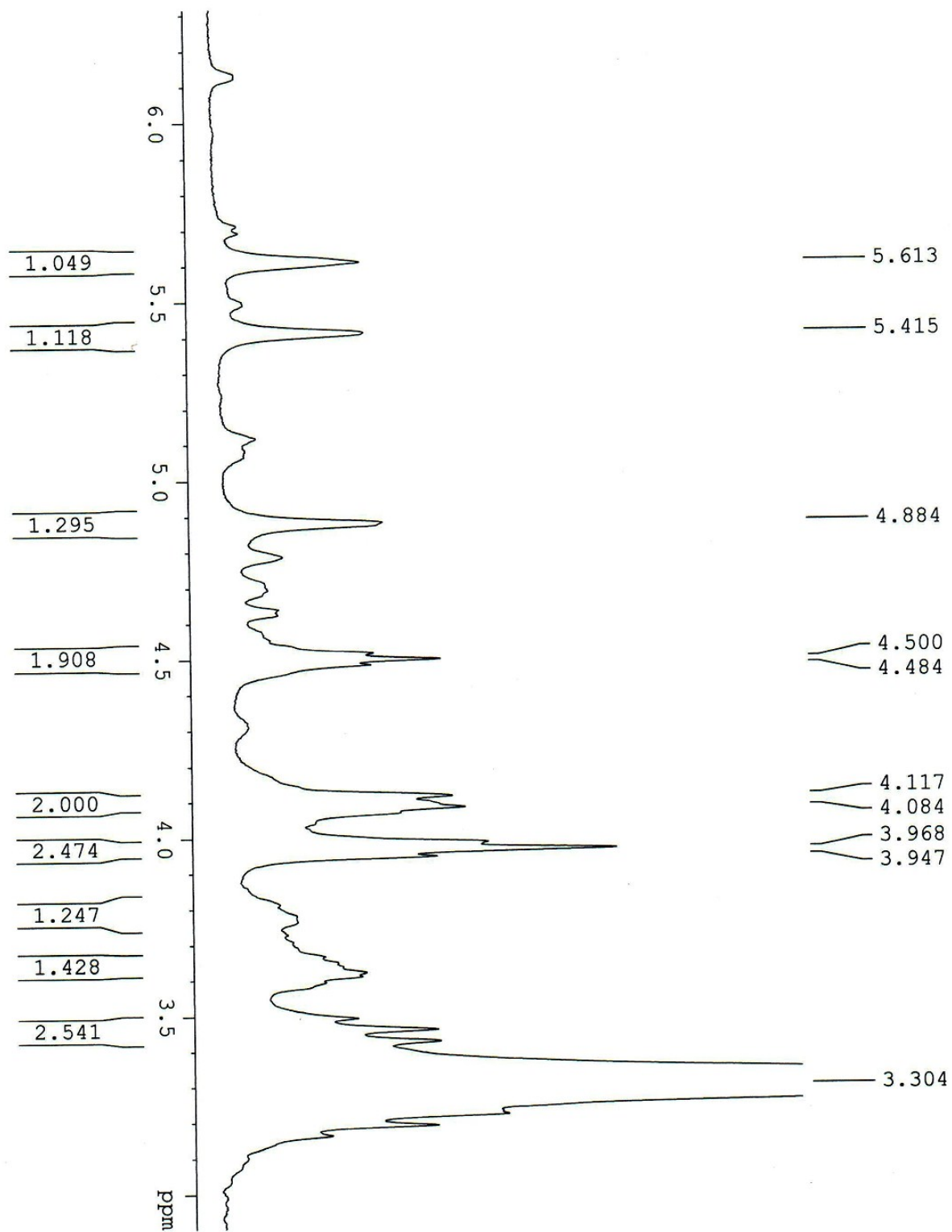


Fig. S.I.2.13:  $^1\text{H}$  NMR spectrum of compound **12**



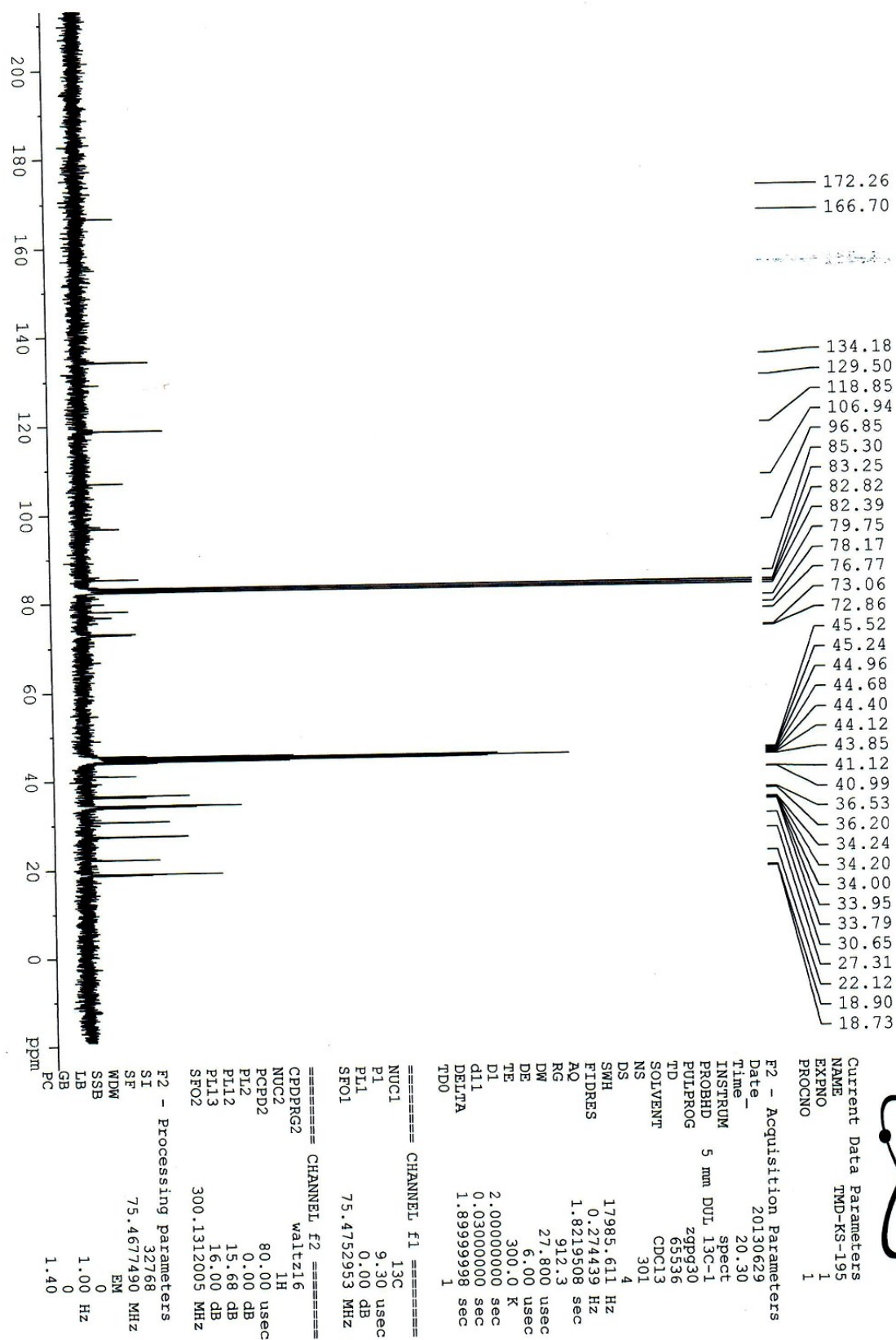


Fig. S.I.2.14:  $^{13}\text{C}$  NMR spectrum of compound 12

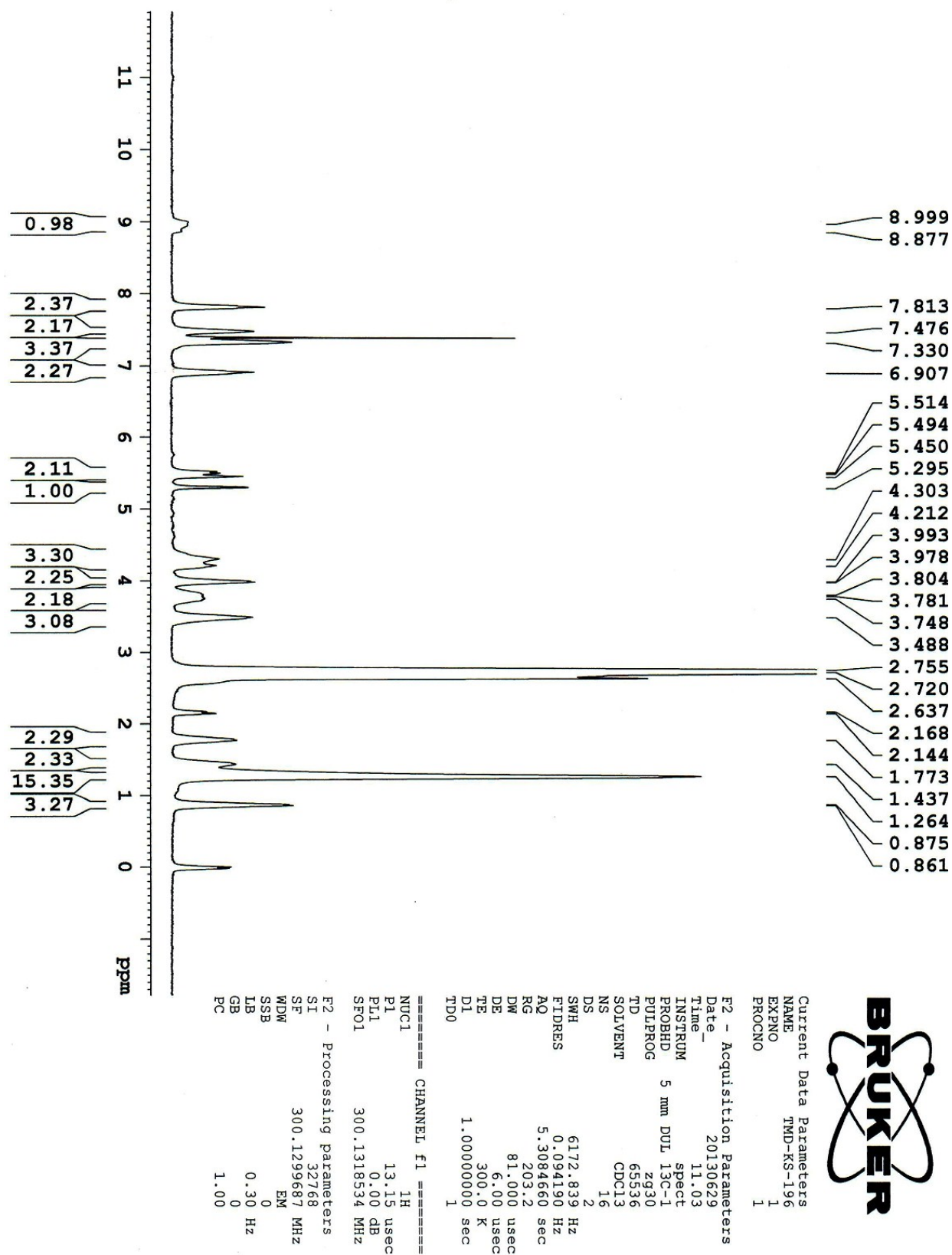


Fig. S.I.2.15:  $^1\text{H}$  NMR spectrum of compound 13



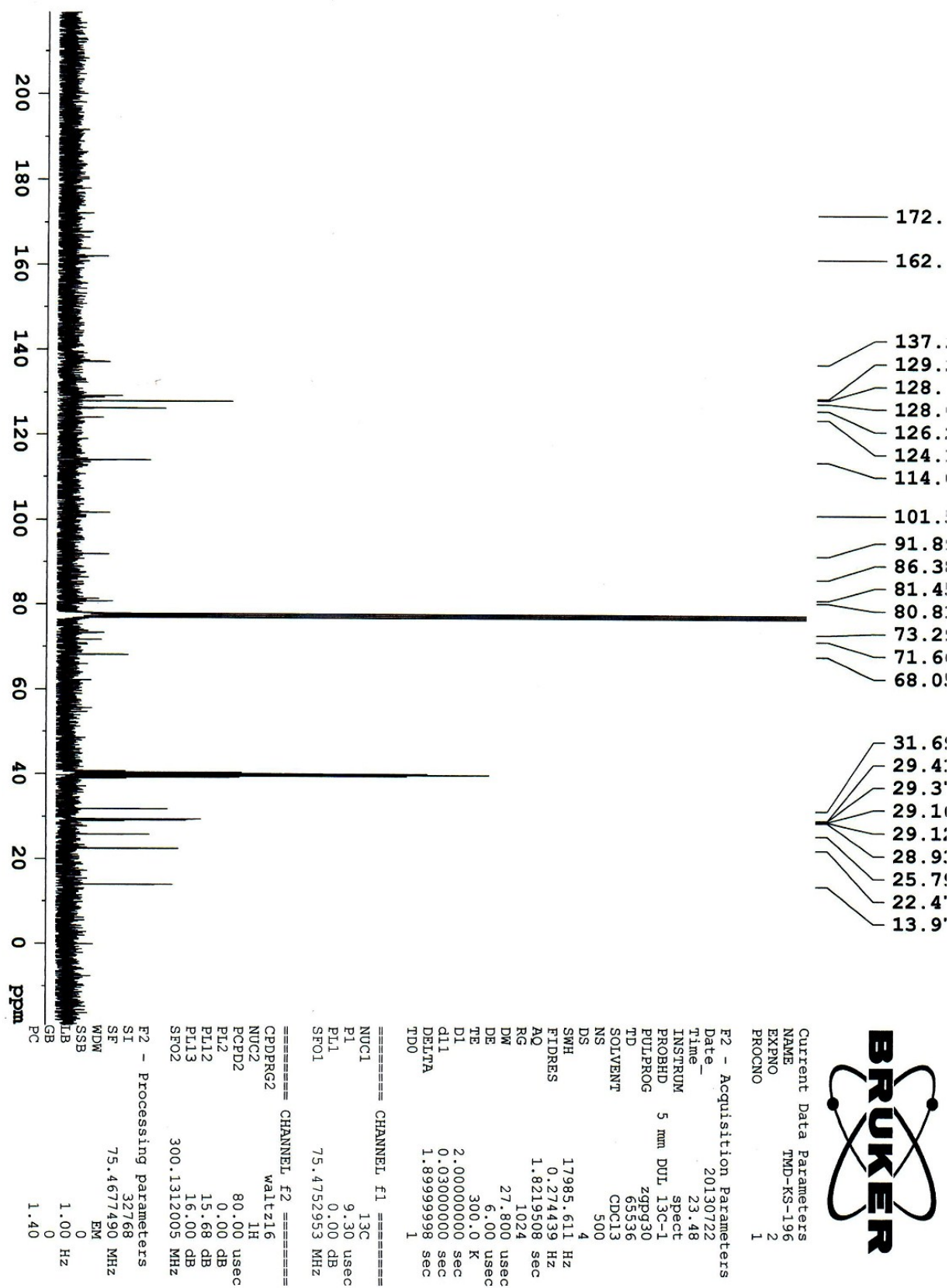


Fig. S.I.2.16:  $^{13}\text{C}$  NMR spectrum of compound 13

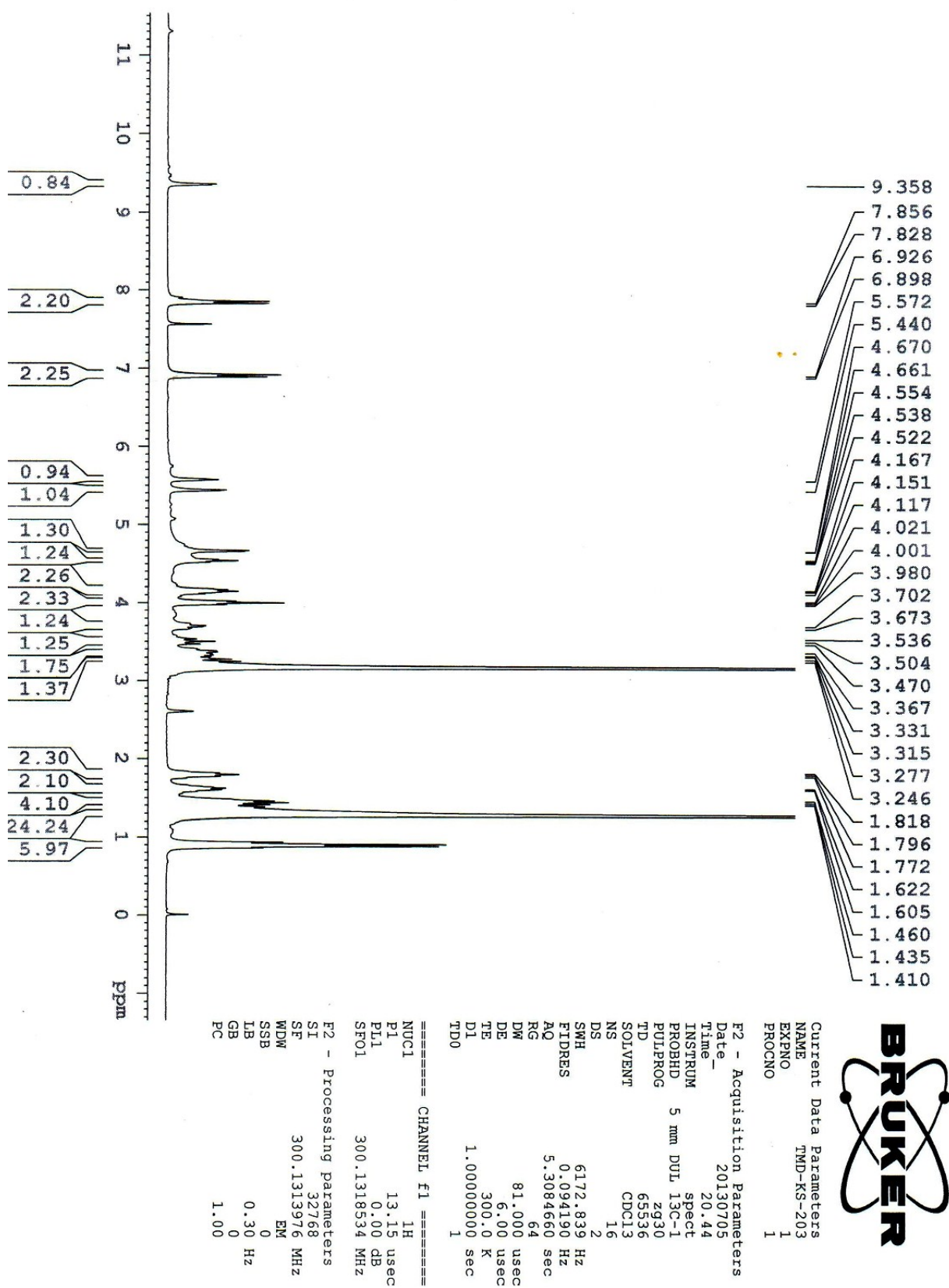


Fig. S.I.2.17:  $^1\text{H}$  NMR spectrum of compound 14

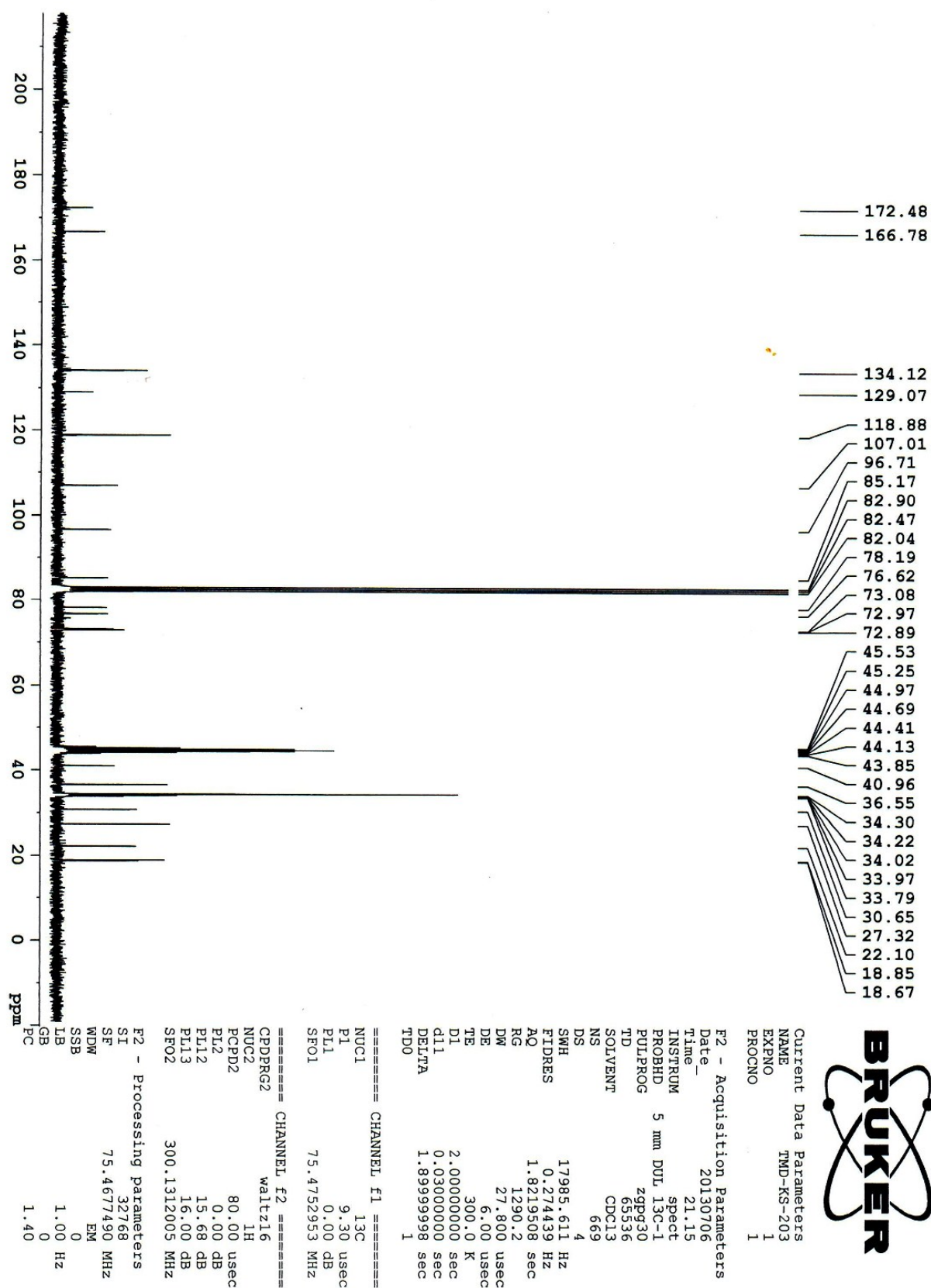
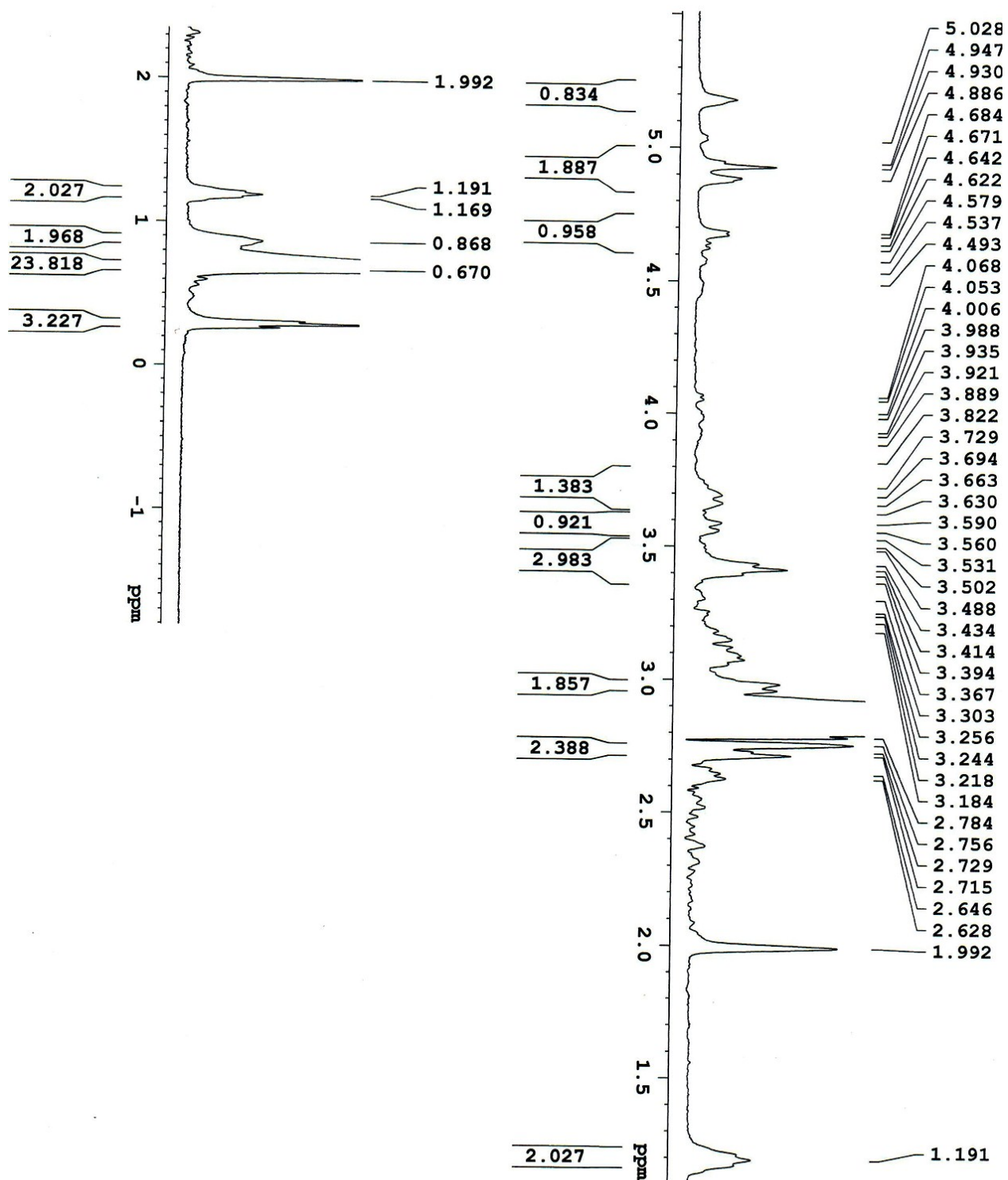


Fig. S.I.2.18:  $^{13}\text{C}$  NMR spectrum of compound 14

Fig. S.I.2.6:  $^1\text{H}$ -NMR spectrum of compound 13





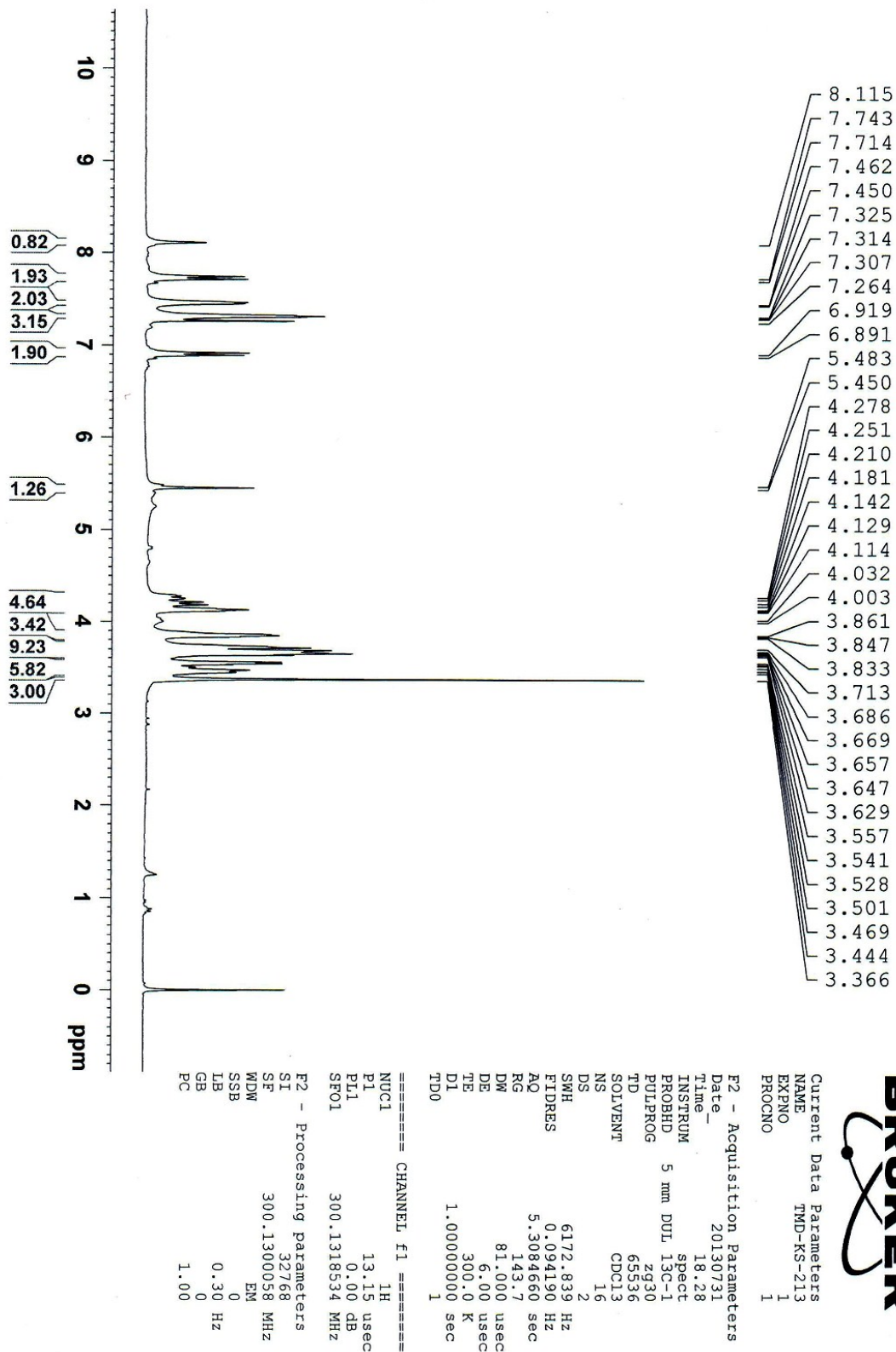


Fig. S.I.2.19: <sup>1</sup>H NMR spectrum of compound 15

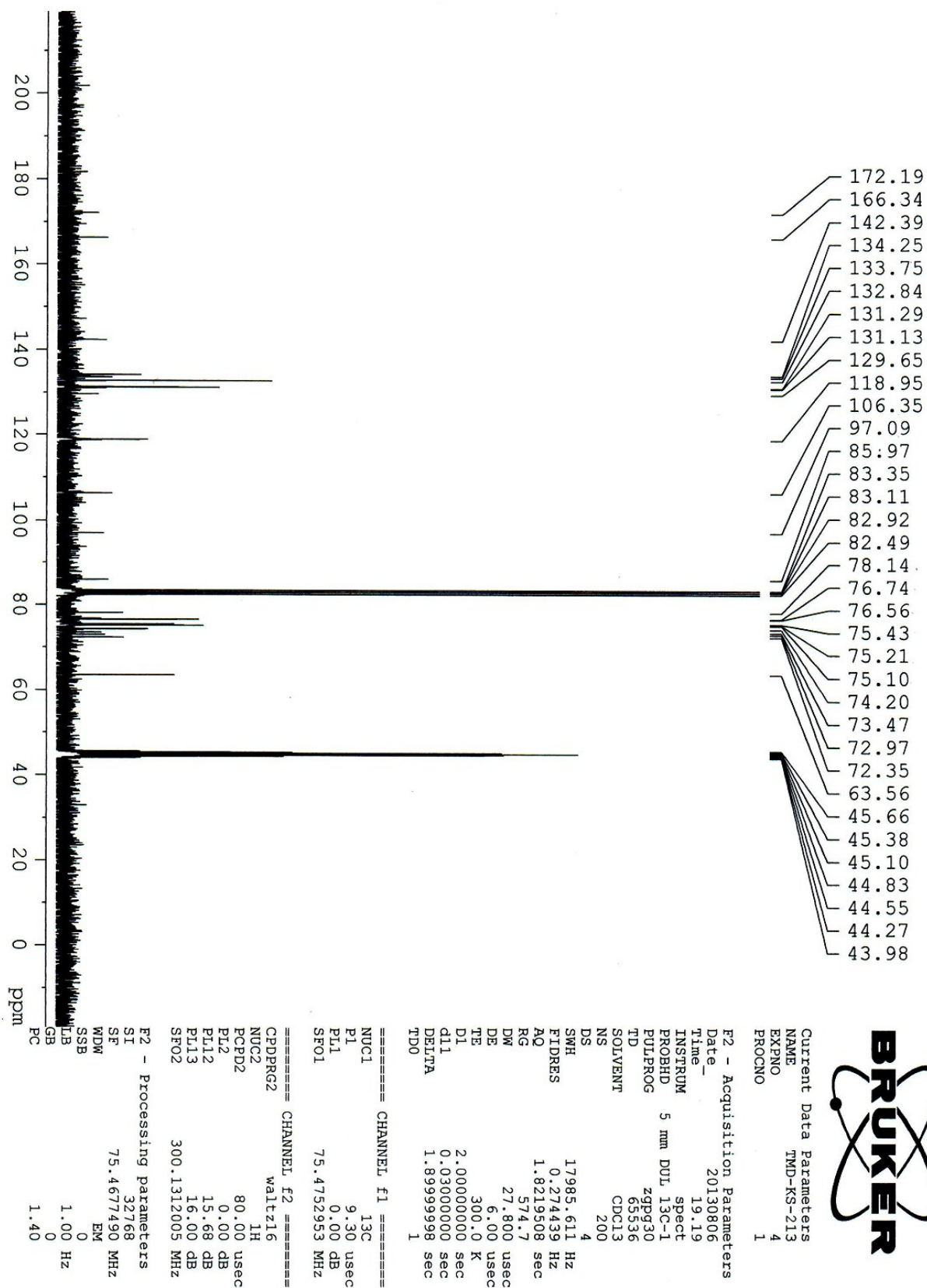


Fig. S.I.2.20:  $^{13}\text{C}$  NMR spectrum of compound 15

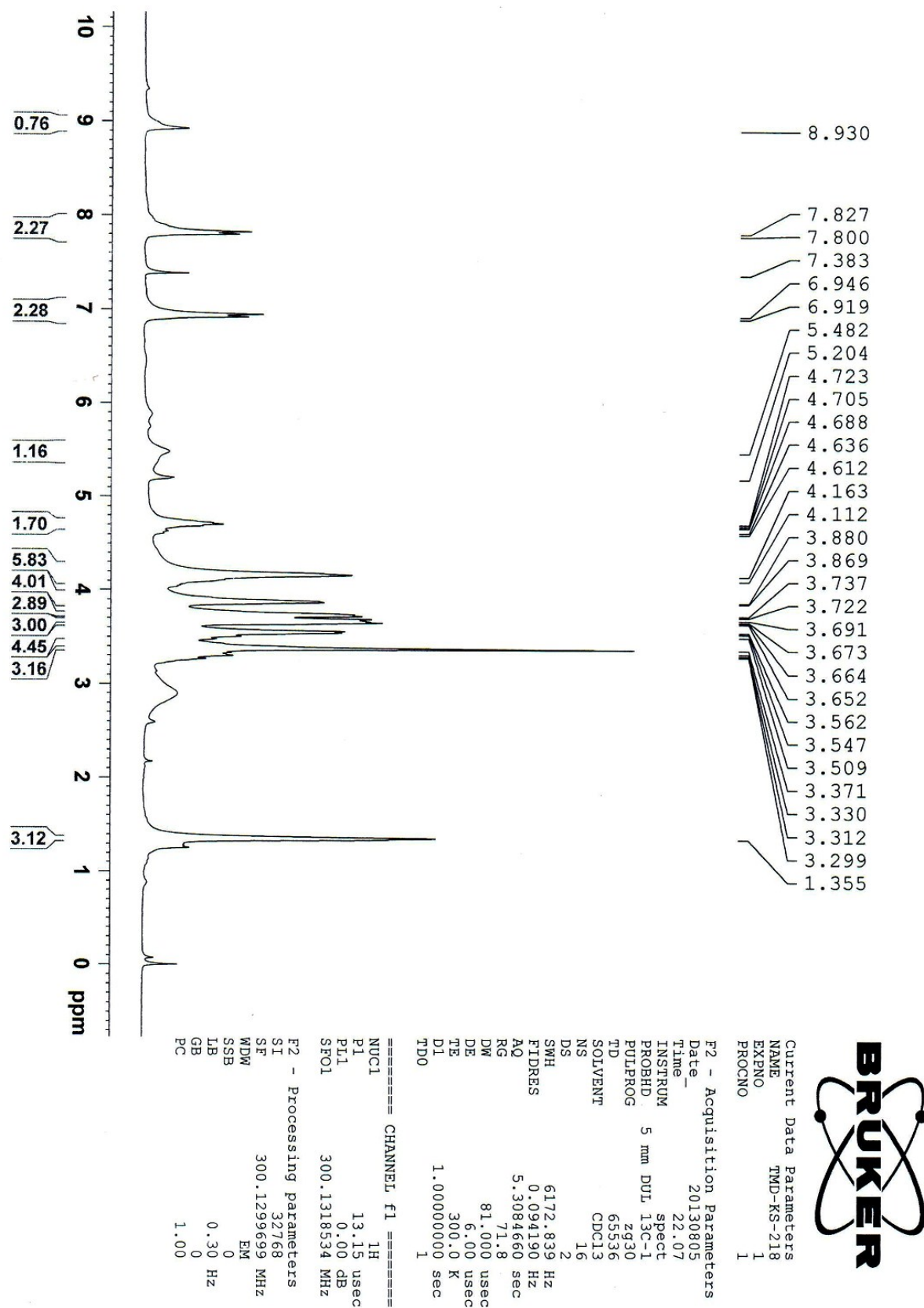


Fig. S.I.2.21:  $^1\text{H}$  NMR spectrum of compound 16

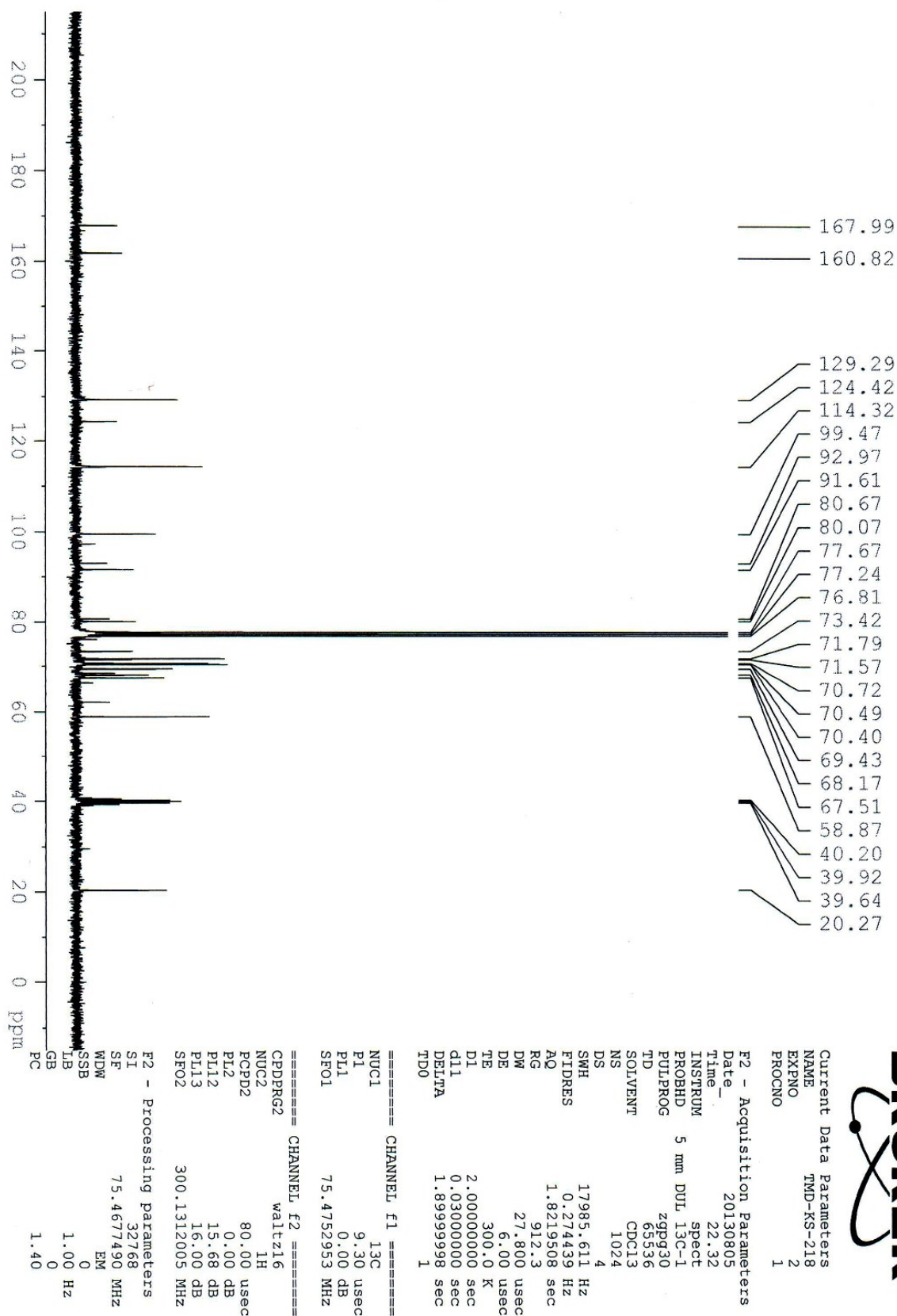


Fig. S.I.2.227:  $^{13}\text{C}$  NMR spectrum of compound 16



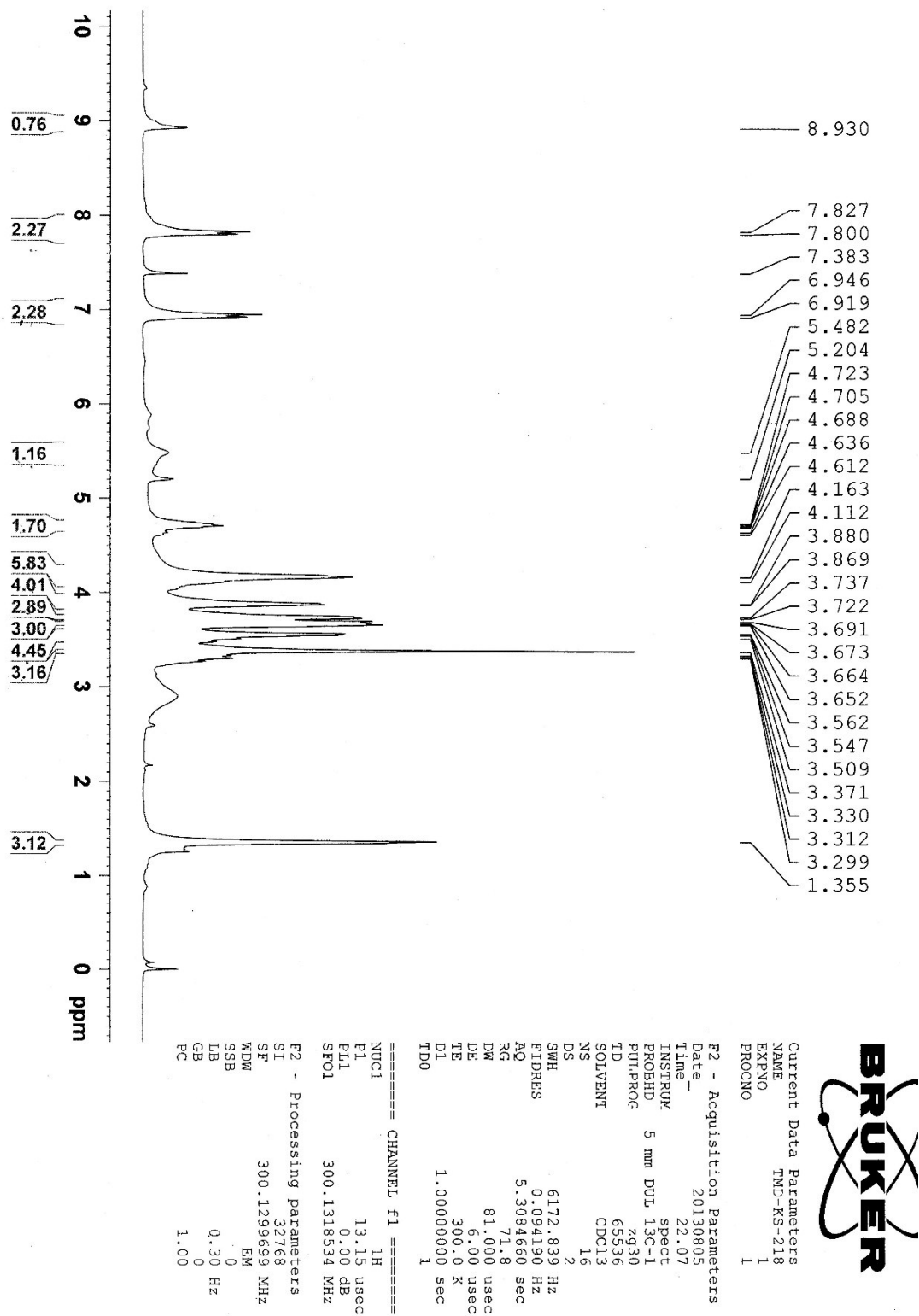


Fig. S.I.2.23:  $^1\text{H}$  NMR spectrum of compound 17

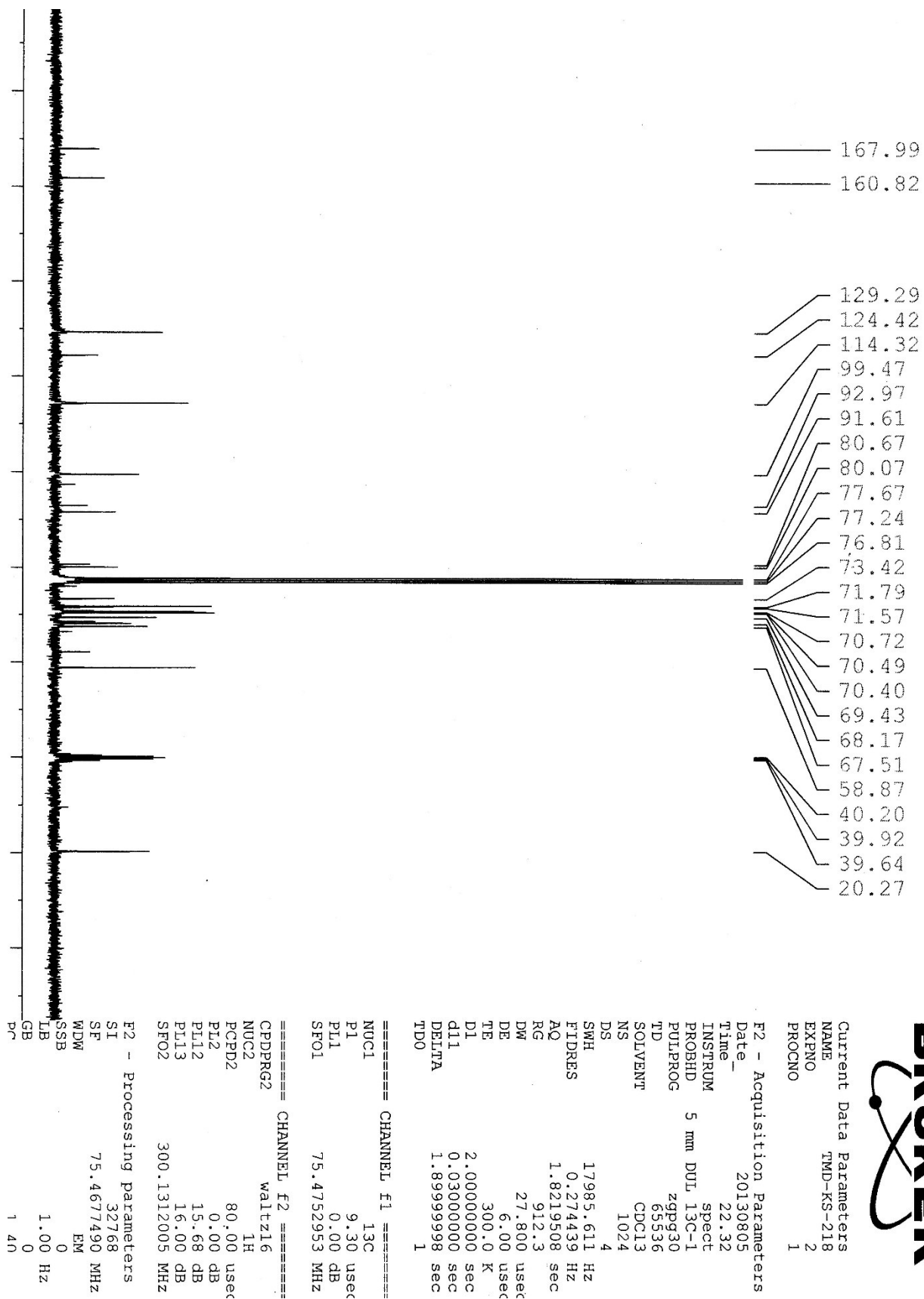


Fig. S.I.2.247:  $^{13}\text{C}$  NMR spectrum of compound 17

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PROCNO 1

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2.123  
2.169  
2.594  
3.004  
3.243  
3.275  
3.367  
3.459  
3.494  
3.558  
3.651  
3.688  
3.719  
3.879  
4.170  
4.345  
4.525  
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5.526  
5.672  
5.763  
6.925  
6.946

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TD 65536  
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DS 2  
SWH 6172.839 Hz  
FIDRES 0.094190 Hz  
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D1 1.00000000 sec  
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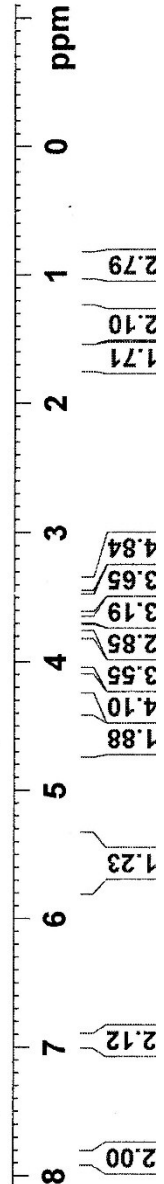
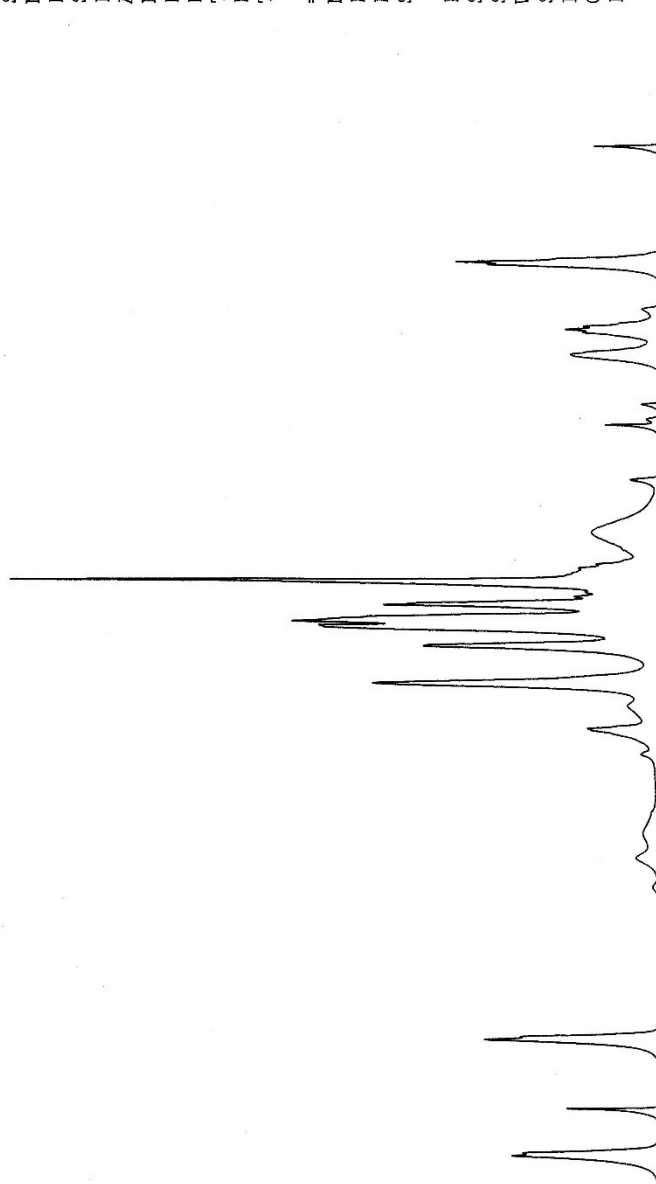


Fig. S.I.2.25:  $^1\text{H}$  NMR spectrum of compound 18



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 SOLVENT CDCl3  
 NS 561  
 DS 4  
 SWH 17985.611 Hz  
 FIDRES 0.274439 Hz  
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 RG 1448.2  
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 DE 6.00 usec  
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 D1 2.00000000 sec  
 d11 0.03000000 sec  
 DELTA 1.89999998 sec  
 TDO 1

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 PL1 0.00 dB  
 SFO1 75.4752953 MHz

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 NUC2 1H  
 PCPD2 80.00 usec  
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 PL12 15.68 dB  
 PL13 16.00 dB  
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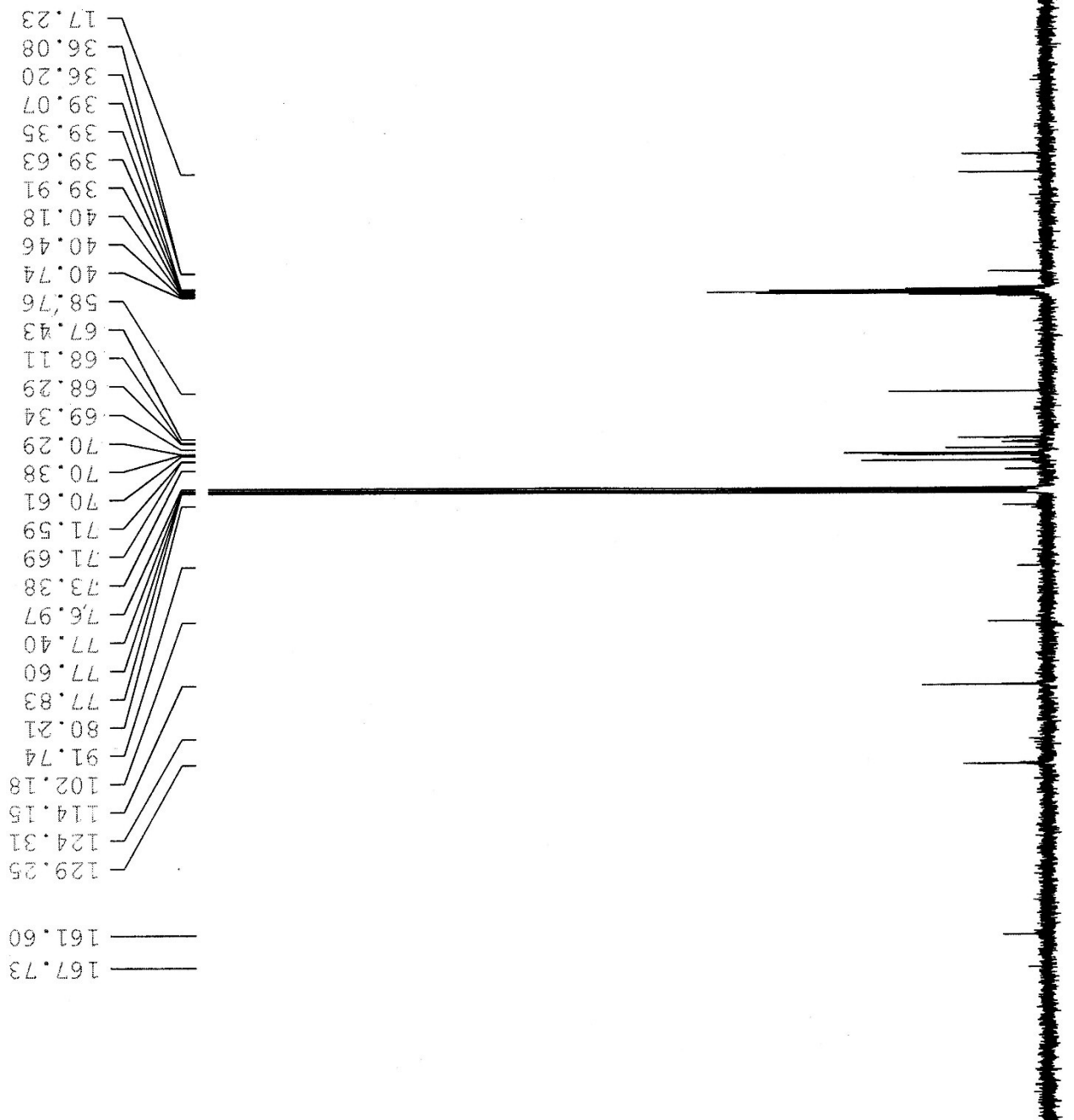


Fig. S.I.2.267: <sup>13</sup>C NMR spectrum of compound 18



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PROCNO 1

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SOLVENT CDCl3  
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DS 2  
SWH 6172.839 Hz  
FIDRES 0.094190 Hz  
AQ 5.3084660 sec  
RG 143.7  
DW 81.000 usec  
DE 6.00 usec  
TE 300.0 K  
D1 1.00000000 sec  
TD0 1

===== CHANNEL f1 =====  
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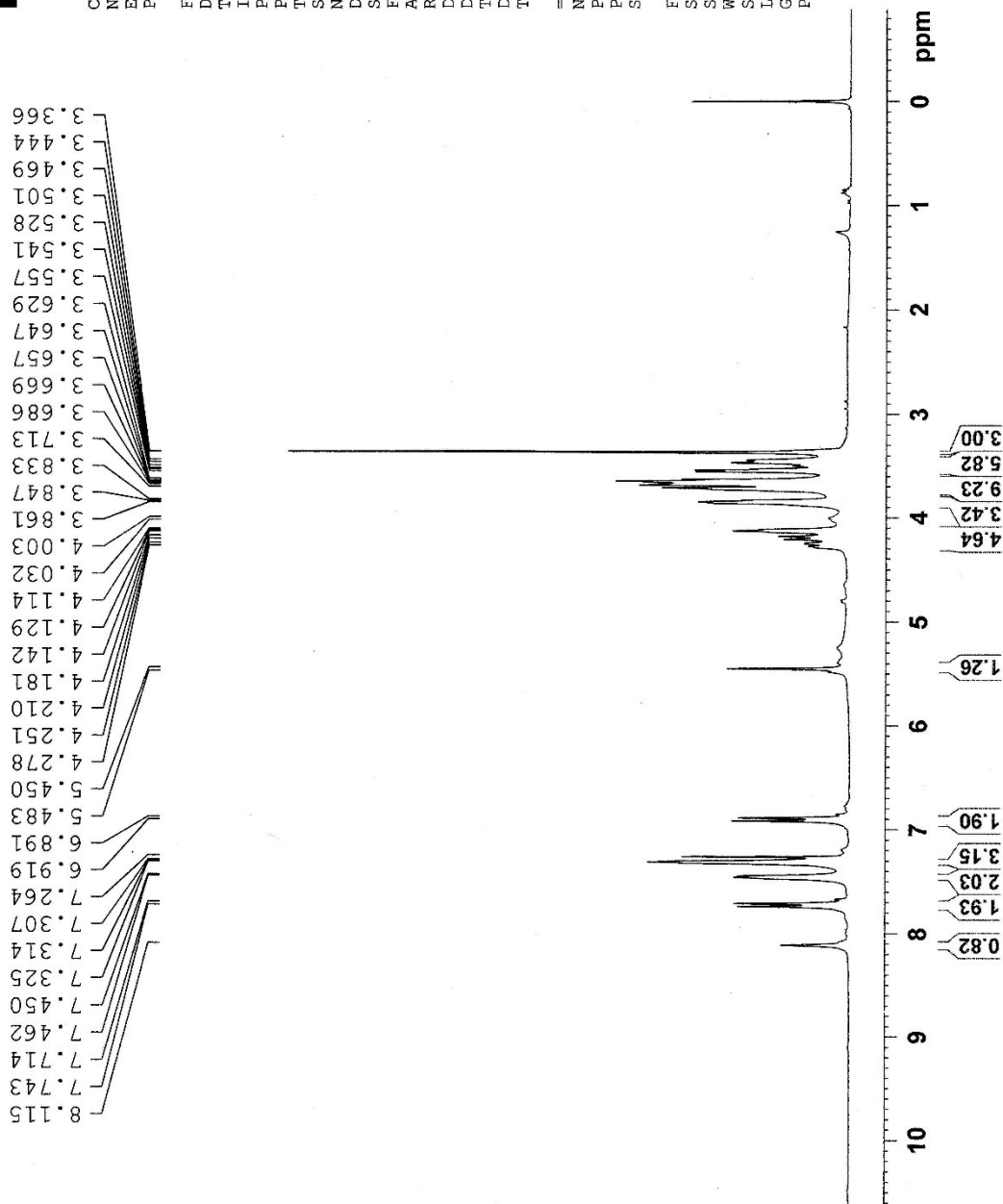


Fig. S.I.2.277:  $^1\text{H}$  NMR spectrum of compound 19



172.19  
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131.29  
131.13  
129.65  
118.95  
106.35  
97.09  
85.97  
83.35  
83.11  
82.92  
82.49  
78.14  
76.74  
76.56  
75.43  
75.21  
75.10  
74.20  
73.47  
72.97  
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PROCNO 1

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SOLVENT CDCl3  
NS 200  
DS 4  
SWH 17985.611 H  
FIDRES 0.274439 H  
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RG 574.7  
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d11 0.03000000 s  
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TDO 1

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P1 9.30 u  
PL1 0.00 d  
SFO1 75.4752953 M

===== CHANNEL f2 =====  
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PL2 0.00 d  
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PL13 16.00 d  
SFO2 300.1312005 M

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200  
180  
160  
140  
120  
100  
80  
60  
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20  
0  
ppm

Fig. S.I.2.287: <sup>13</sup>C NMR spectrum of compound 19



### S.I. 3 Digital photograph of gel of compound 8

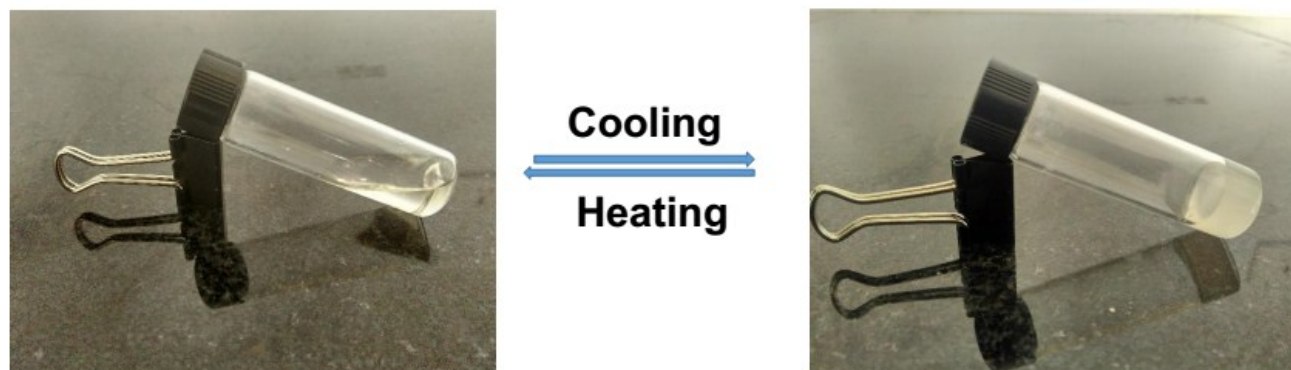


Fig. S.I.3.1: Digital photograph of gel in 1, 2-dichloroethane of compound 8