

## Supporting Information

### **Design, synthesis and extraction studies of a new class of conformationally constrained (N,N,N',N'-tetraalkyl) 7-oxabicyclo[2.2.1]heptane-2,3-dicarboxamides**

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**Table 1** Degradation study of OBDA **1a** in HNO<sub>3</sub>

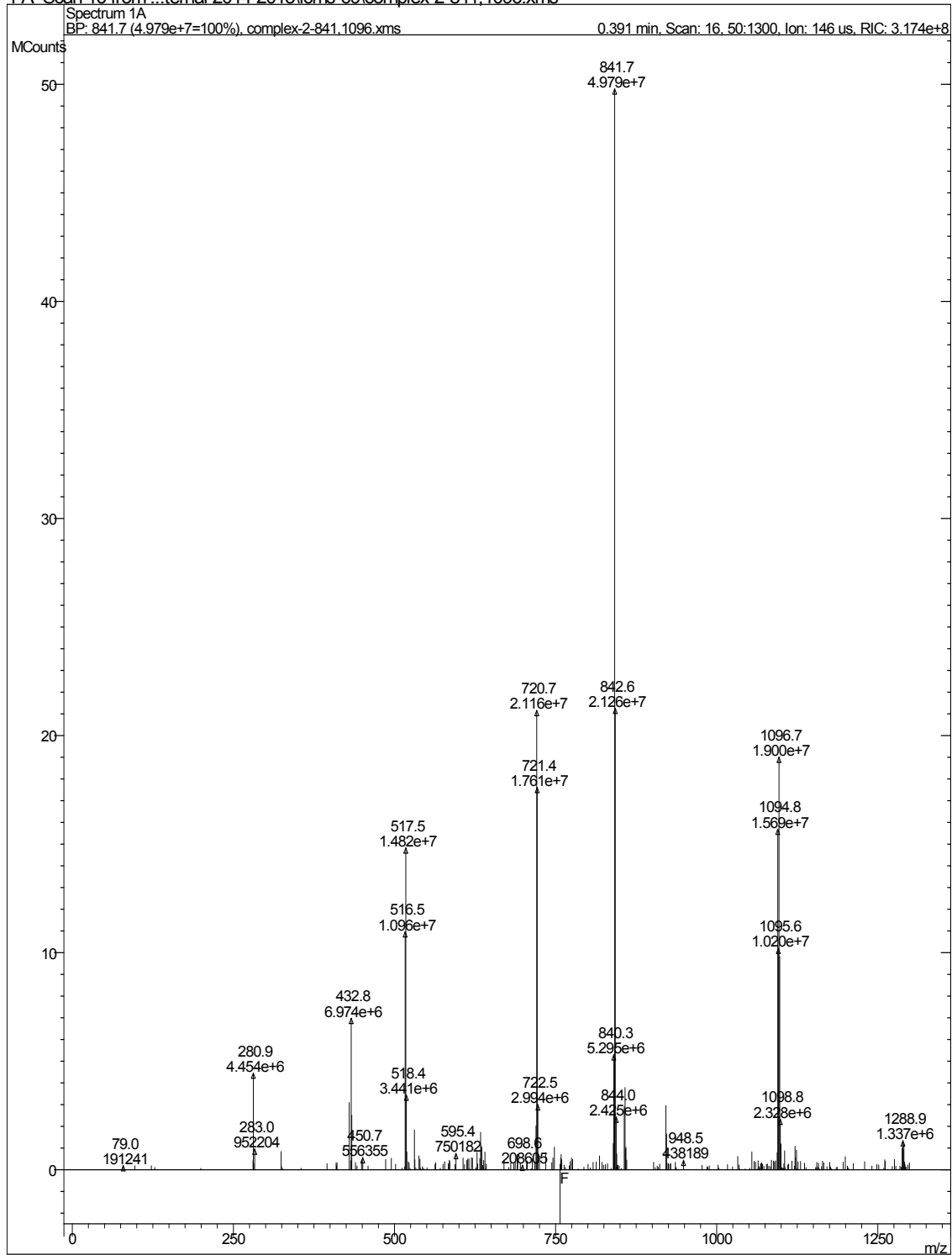
Time (min)	% of OBDA <b>1a</b> remaining after degradation		
	0.5 M aq. HNO <sub>3</sub>	1 M aq. HNO <sub>3</sub>	3 M aq. HNO <sub>3</sub>
0	100	100	100
5	99	99	98
15	99	98	10
30	98	94	0
90	91	46	-
150	88	0	-
330	61	-	-

**Table 2** Distribution ratio of Eu(III) in presence of different concentrations of Eu(III) in 3 M HNO<sub>3</sub> for 0.1 M OBDA **1a** in 15% IDA /n-dodecane.

[Eu] (ppm)	D <sub>Eu(III)</sub>
100	34.21
200	31.91
500	27.85
1000	21.01
2000	18.07
5000	4.97

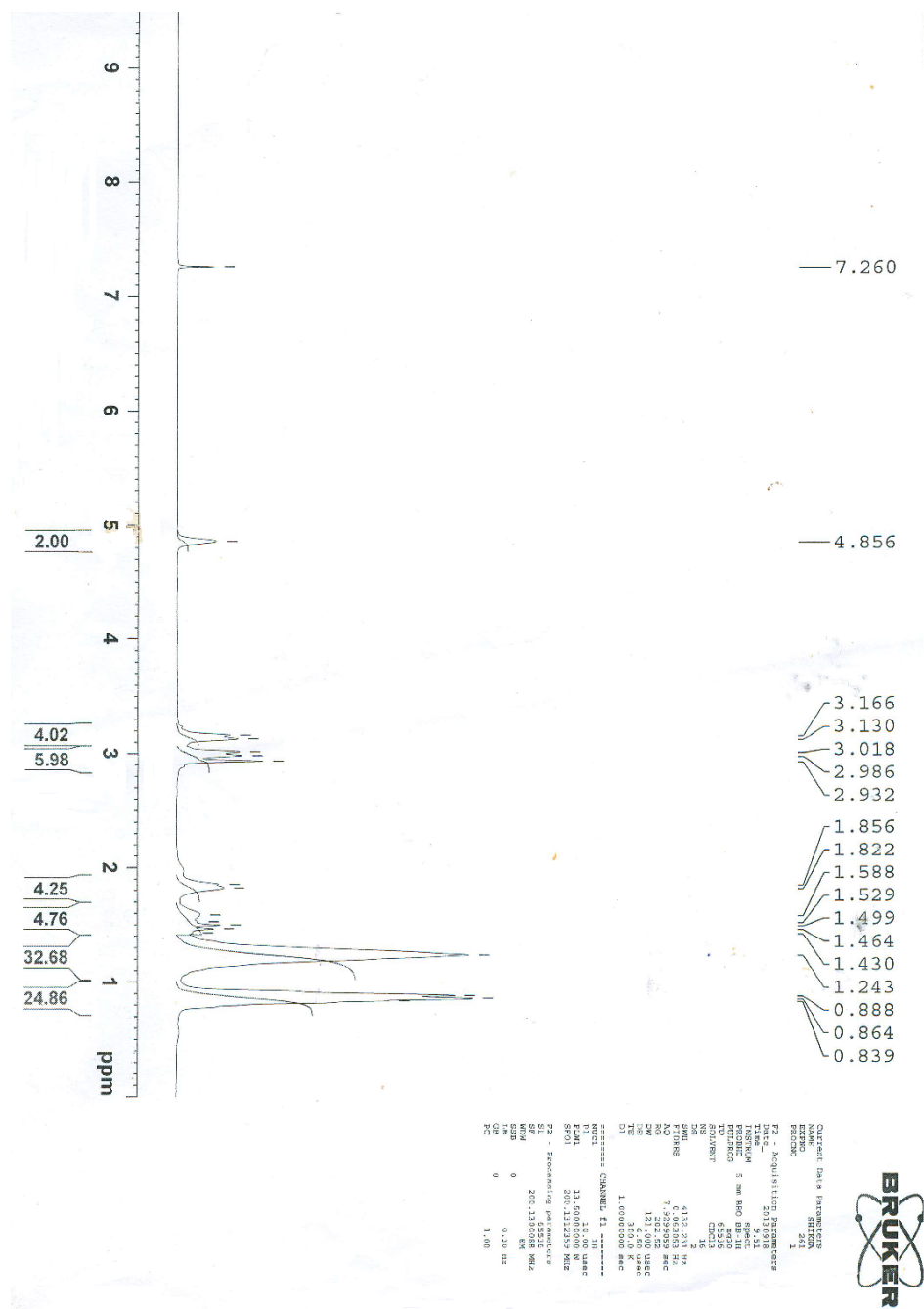
# Spectrum Plot - 11/19/2014 3:28 PM

1 A. Scan 16 from ...temal 2014-2015\cms-69\complex-2-841,1096.xms

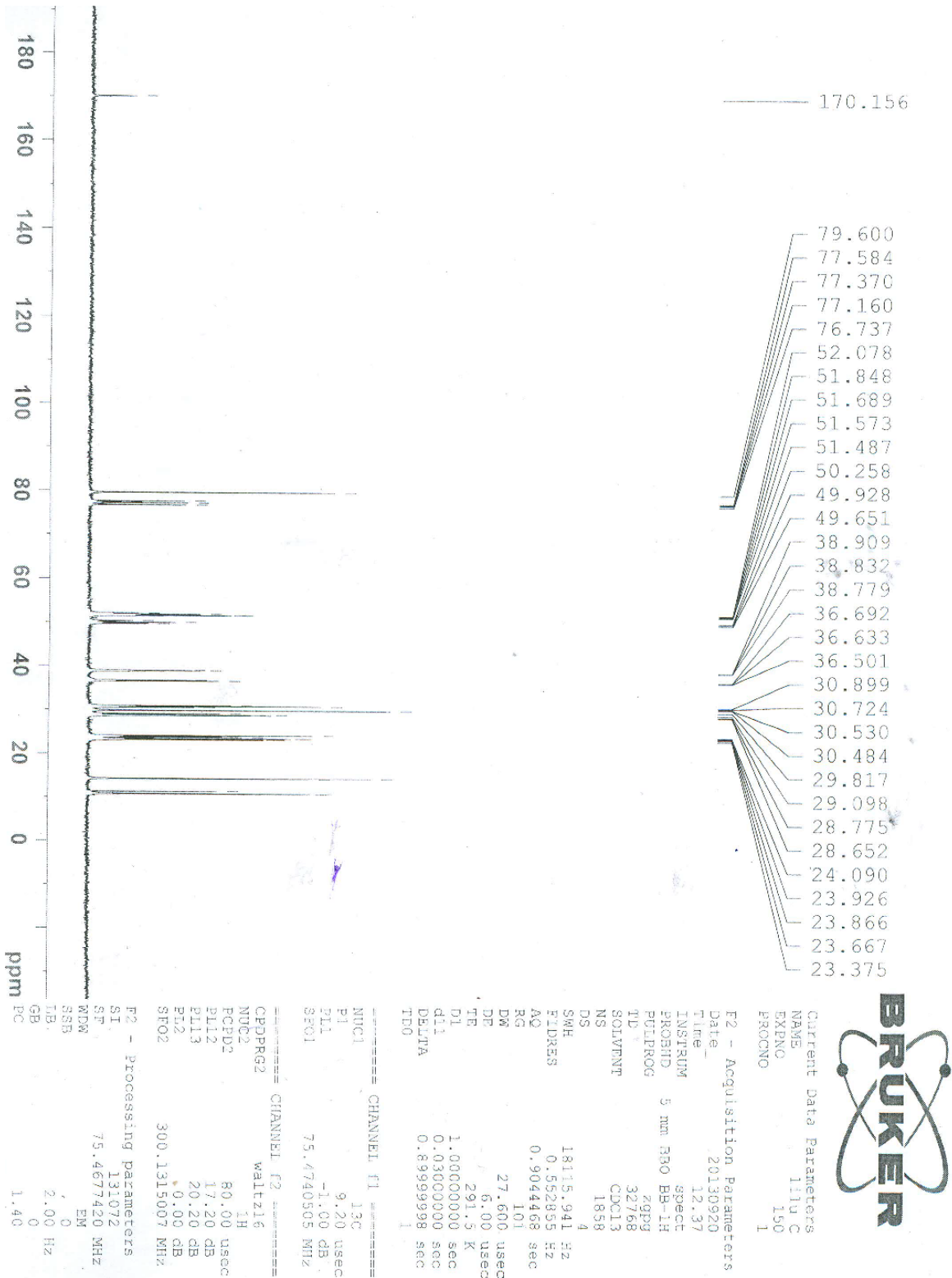


**Fig. 1** ESI-MS spectra of complex of  $\text{Eu}(\text{NO}_3)_3 \cdot 5\text{H}_2\text{O}$  with OBDA **1c**.

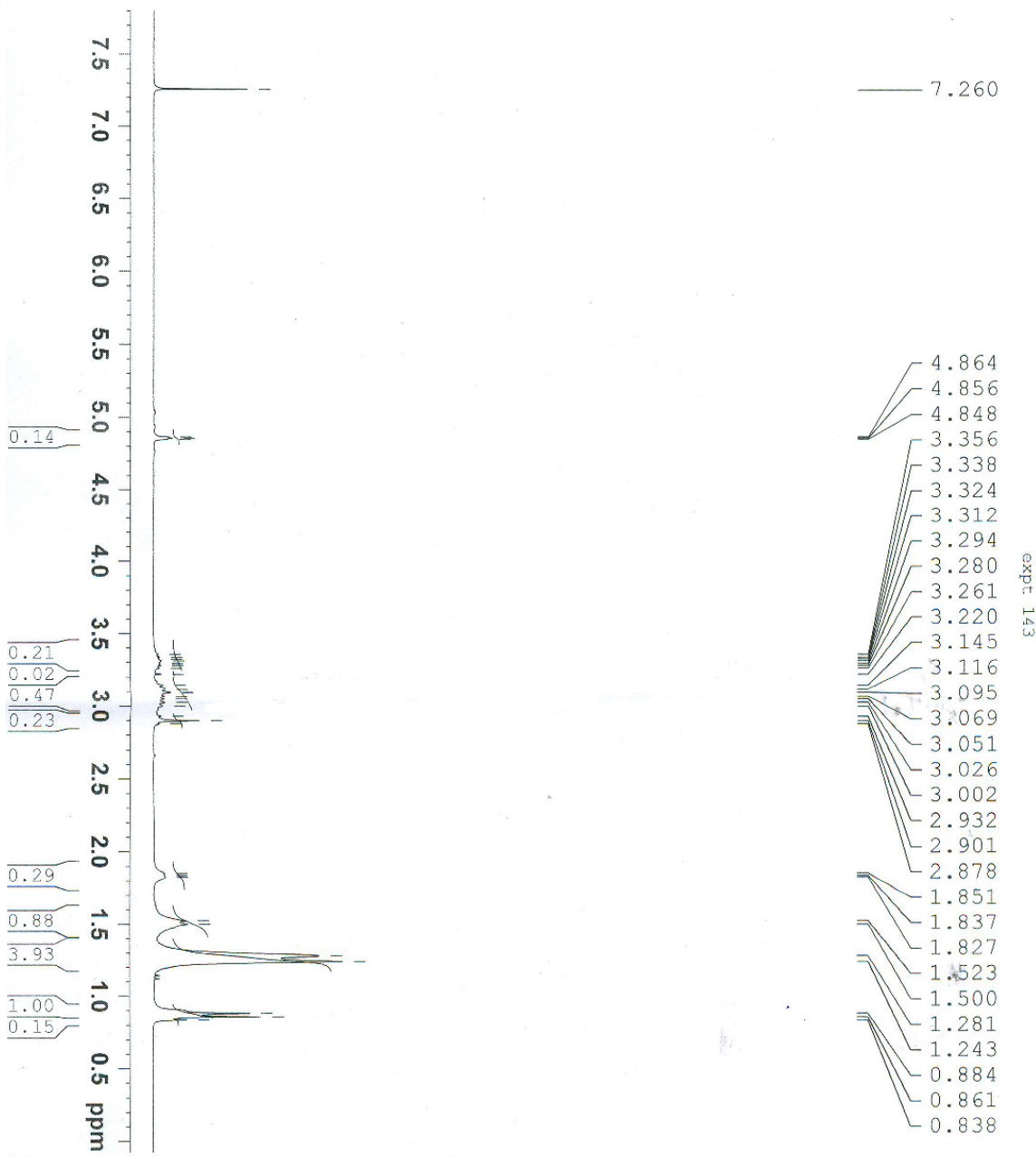
# <sup>1</sup>H and <sup>13</sup>C Spectra of OBDA 1a-c



Spectrum 1. <sup>1</sup>H NMR spectra of OBDA 1a.



Spectrum 2. <sup>13</sup>C NMR spectra of OBDA 1a.



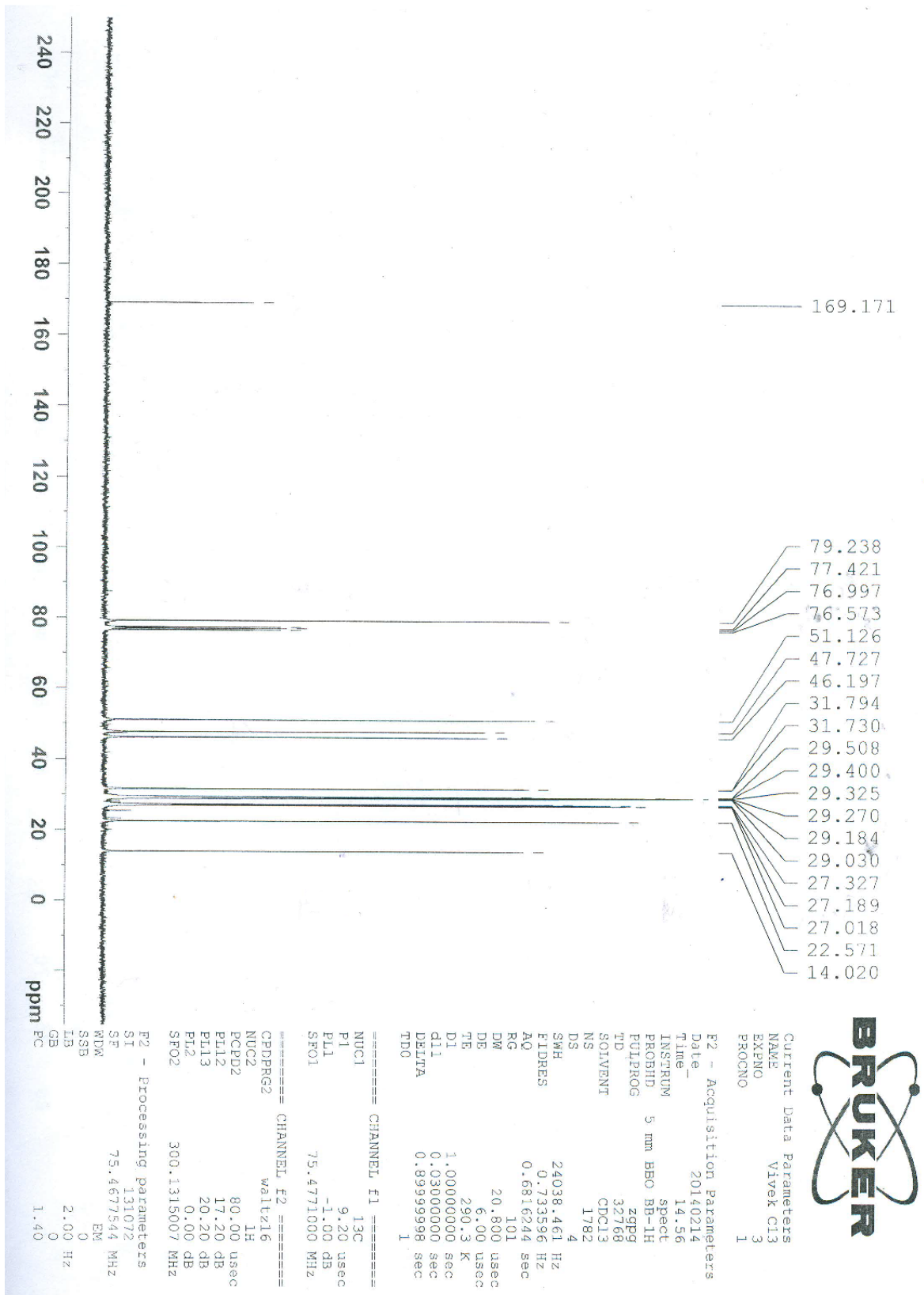
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 EXPNO 98  
 PROCNO 1

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 PULPROG zg30  
 TD 32768  
 SOLVENT CDCl3  
 NS 31  
 DS 0  
 SWH 4807.692 Hz  
 FIDRES 0.146719 Hz  
 AQ 3.4079220 sec  
 RG 101  
 DW 104.000 usec  
 DE 6.00 usec  
 TE 290.6 K  
 D1 1.00000000 sec  
 TDO 1

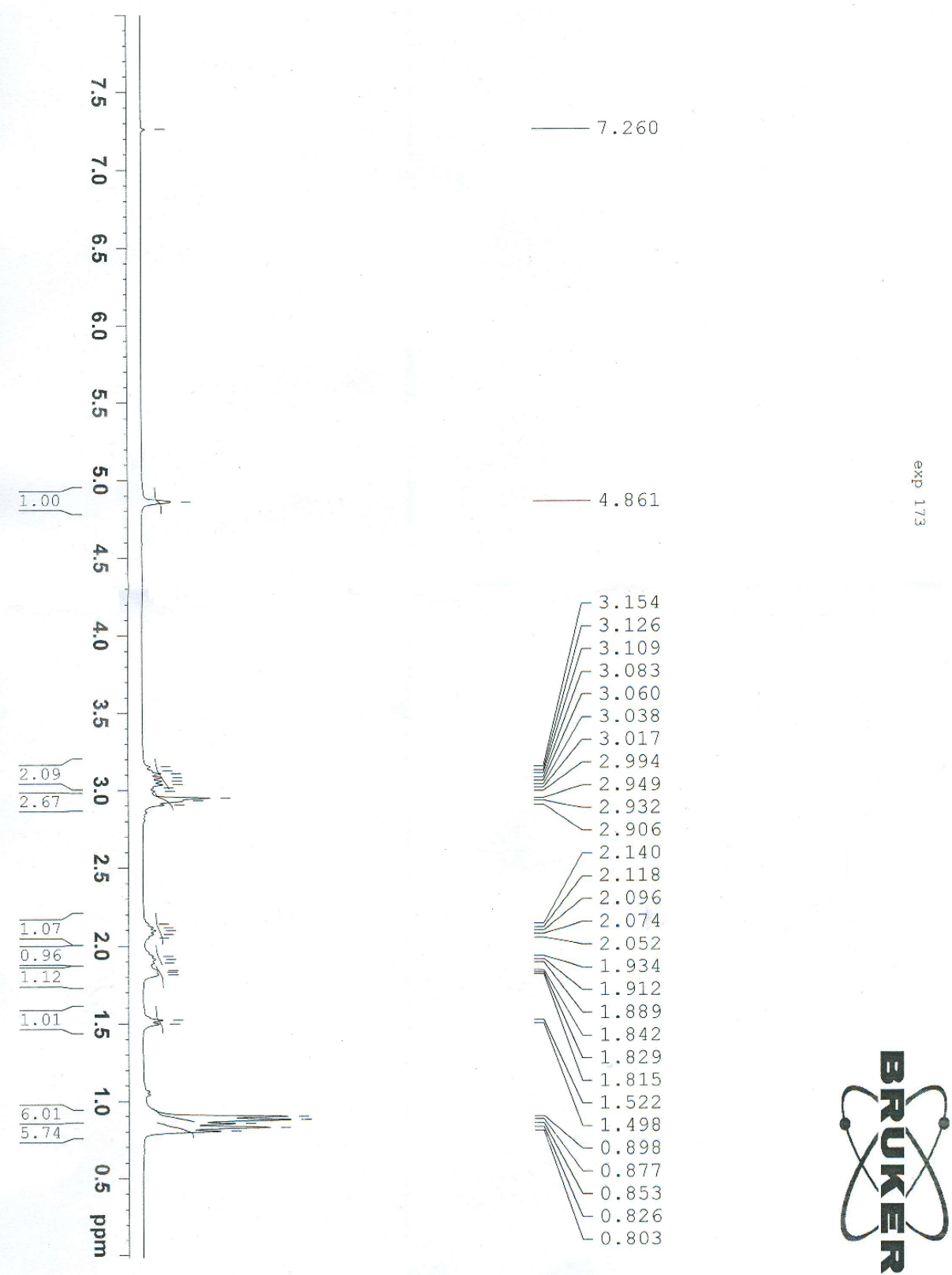
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 PL1 0.00 dB  
 SFO1 300.1320008 MHz

F2 - Processing parameters  
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 SF 300.1300032 MHz  
 WDW EM  
 SSB 0  
 LB 0.00 Hz  
 GB 0  
 PC 1.00

Spectrum 3. <sup>1</sup>H NMR spectra of OBDA 1b.

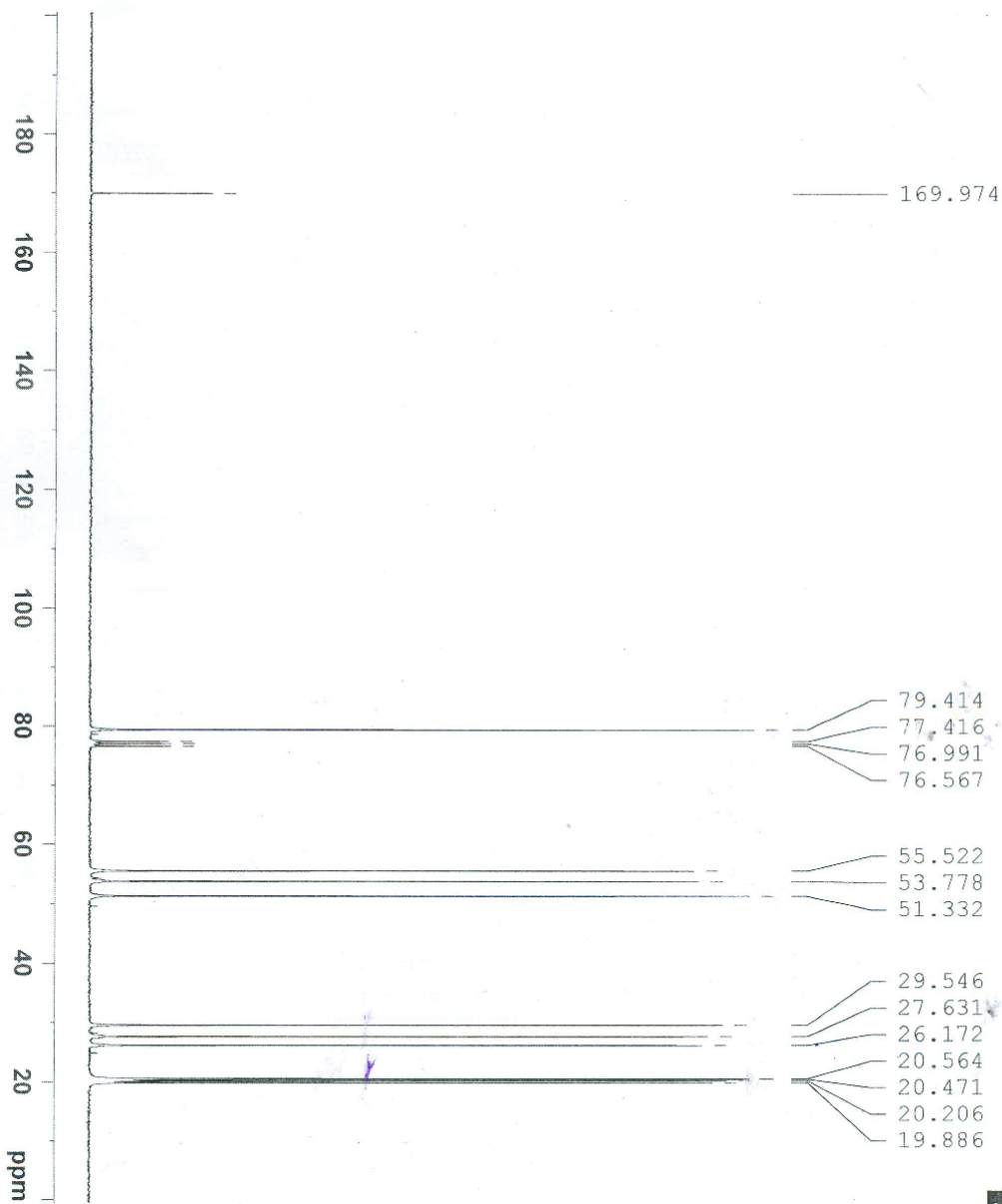


Spectrum 4. <sup>13</sup>C NMR spectra of OBDA 1b.



Spectrum 5. <sup>1</sup>H NMR spectra of OBDA 1c.





Current Data Parameters  
 NAME Vlyek C13  
 EXPNO 2  
 PROCNO 1

F2 - Acquisition Parameters  
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 Time 15.08

INSTRUM spect  
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 NS 3455

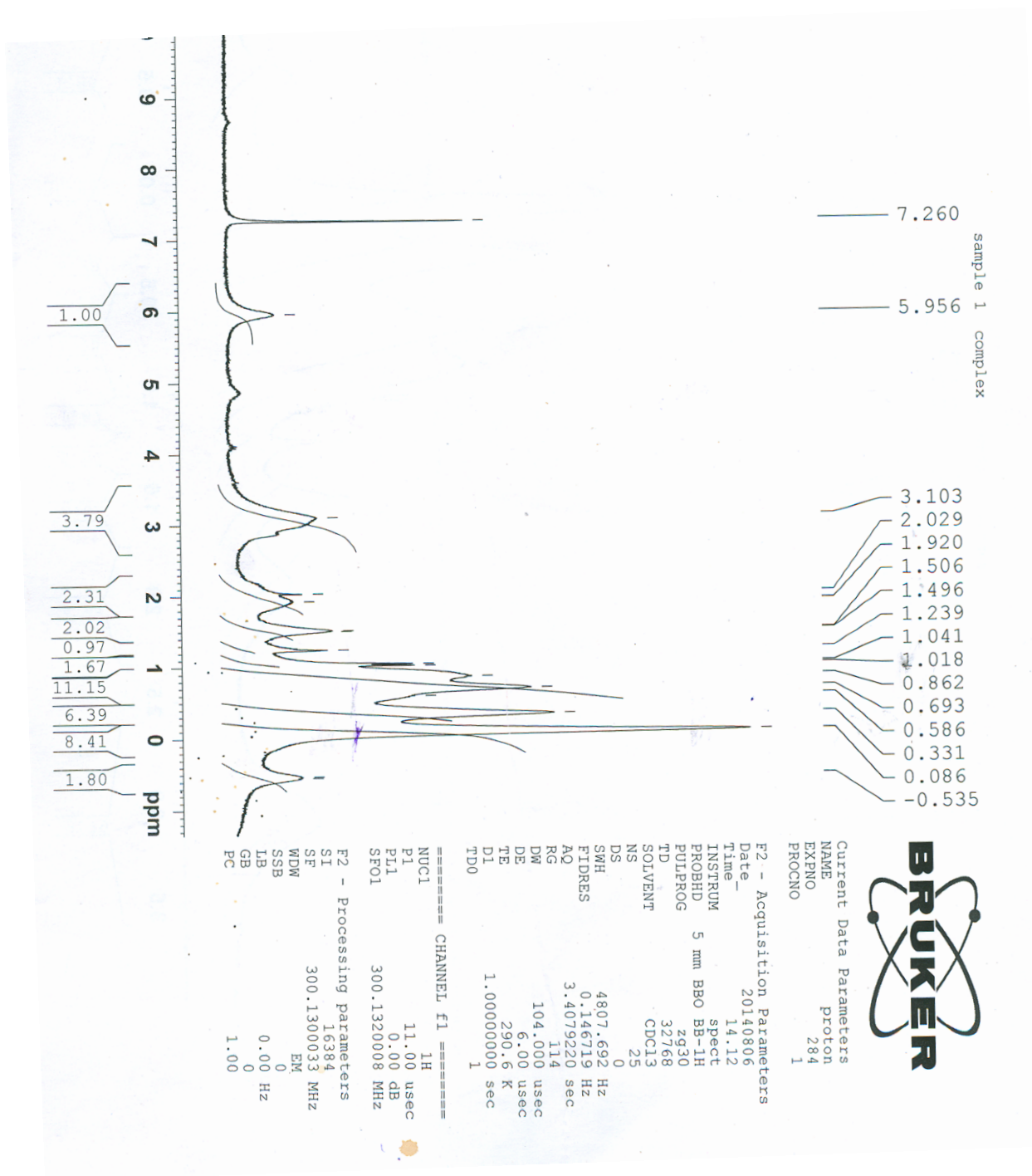
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 TE 290.3 K  
 D1 1.00000000 sec  
 d11 0.03000000 sec  
 DELTA 0.89999998 sec  
 TDO 1

CHANNEL F1  
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 P1 9.20 usec  
 PL1 -1.00 dB  
 SFO1 75.4771000 MHz

CHANNEL F2  
 waitz16  
 NUC2 1H  
 PCPD2 80.00 usec  
 PL12 17.20 dB  
 PL13 20.20 dB  
 PL2 0.00 dB  
 SFO2 300.1315007 MHz

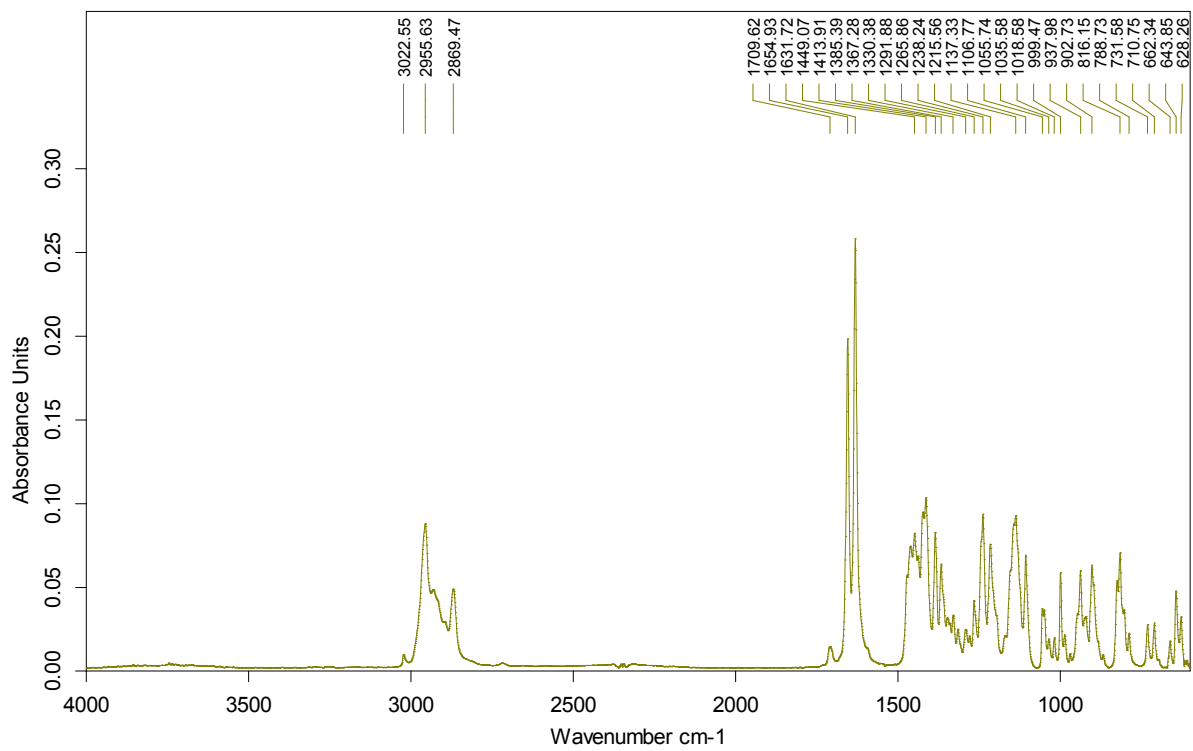
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 SSB 0  
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 GB 0  
 FC 1.40

Spectrum 6. <sup>13</sup>C NMR spectra of OBDA 1c.

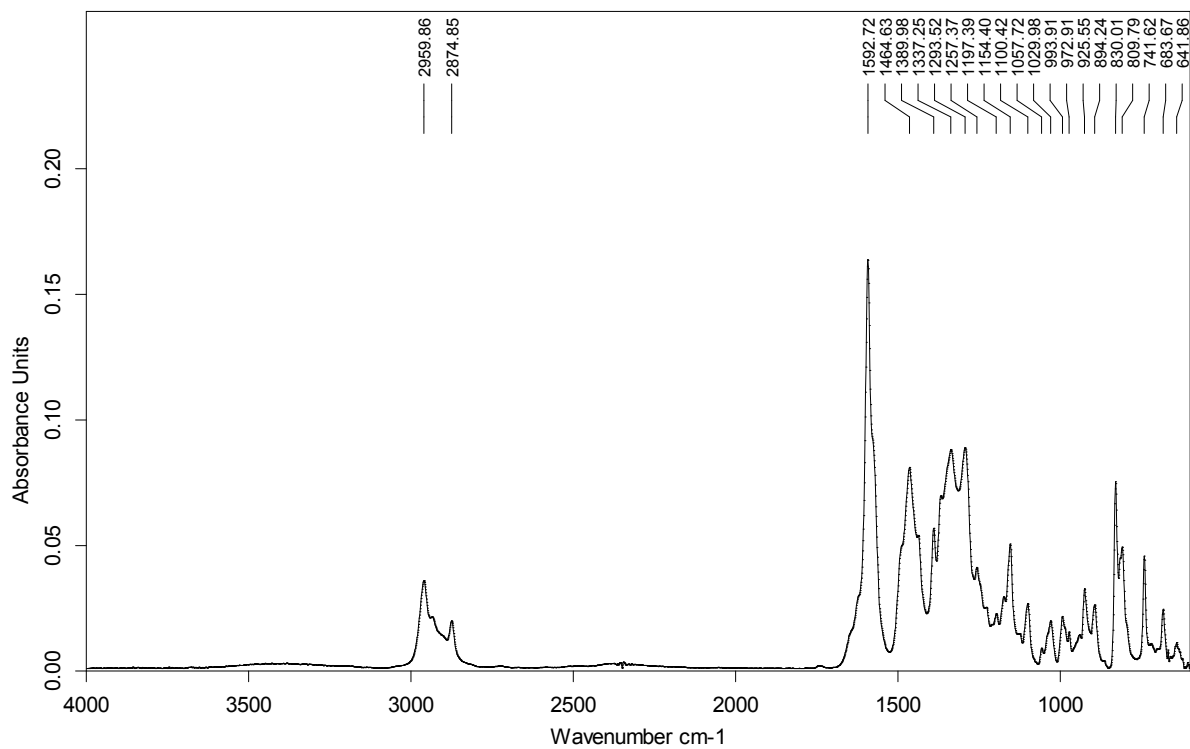


**Spectrum 7.**  $^1\text{H}$  NMR spectra of complex of  $\text{Eu}(\text{NO}_3)_3 \cdot 5\text{H}_2\text{O}$  with OBDA **1c**.

(broad peaks due to paramagnetic nature)



**Spectrum 8.** IR spectra of OBDA 1c.

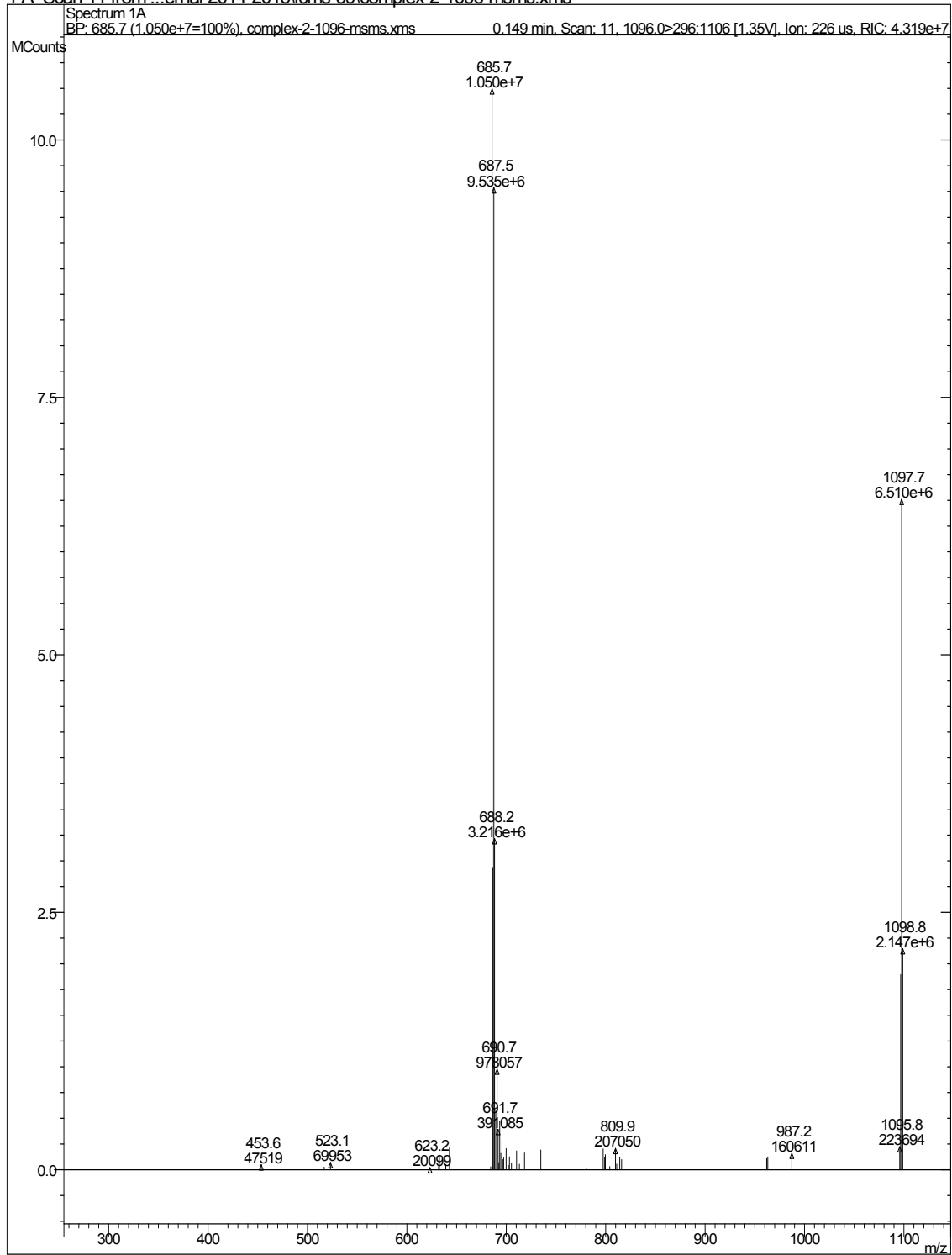


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**Spectrum 9.** IR spectra of complex of  $\text{Eu}(\text{NO}_3)_3 \cdot 5\text{H}_2\text{O}$  with OBDA **1c**.

# Spectrum Plot - 11/19/2014 3:27 PM

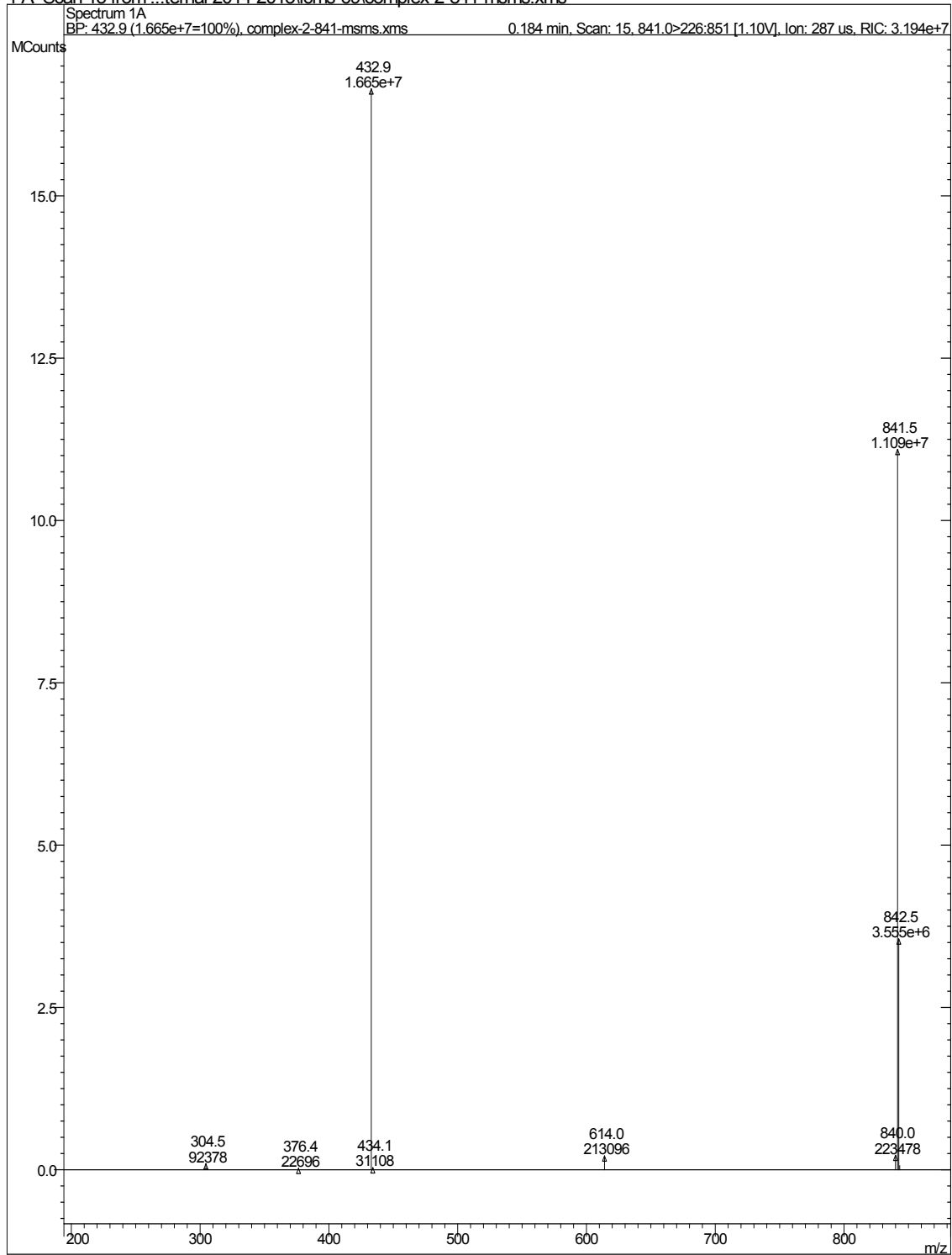
1 A. Scan 11 from ...ernal 2014-2015\lcms-69\complex-2-1096-msms.xms



ms of ms of peak 1096.7 in ESIMS (see fig. 1 ESI-MS spectra).

# Spectrum Plot - 11/19/2014 3:28 PM

1 A. Scan 15 from ...ternal 2014-2015\lcms-69\complex-2-841-msms.xmls



ms of ms of peak 841.7 in ESIMS (see fig. 1 ESI-MS spectra).