Supporting Information

for

Hydrolysis, polarity, and conformational impact of C-terminal partially fluorinated ethyl esters in peptide models

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*Corresponding author

Amide equilibrium constants (Table S1) and copies of the NMR and CD spectra

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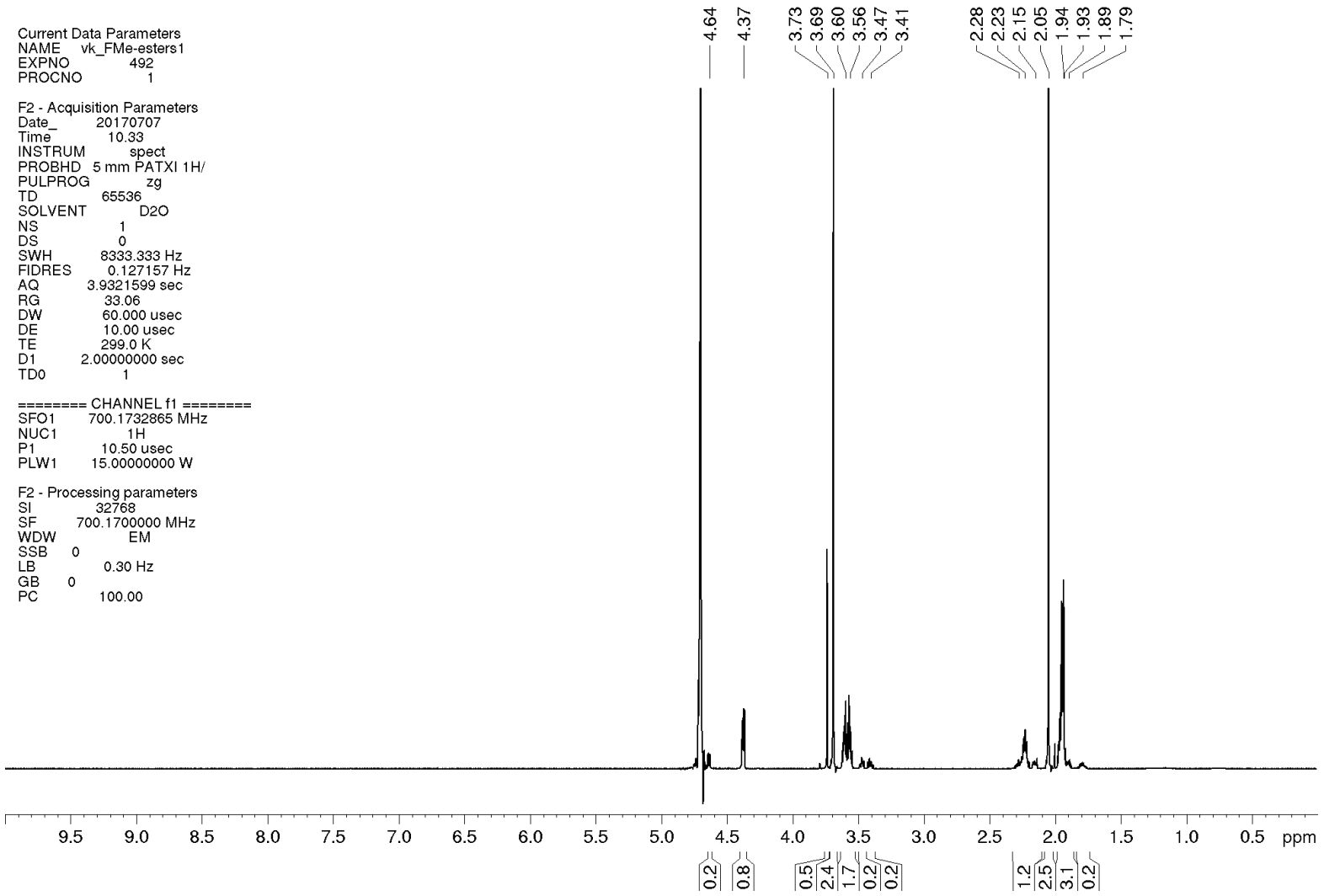
Remark: We use the notation ✔ (checkmark)-shape for description of the log*P* tendencies. On our opinion, this should be distinguished from more simple notation 'V-shape' due to the asymmetry of both the dip position and the edge highs.

Table S1: Amide equilibrium constants for compounds **1**–**5** as determined by ^{1}H and ^{19}F NMR at 298 K in different solvents.

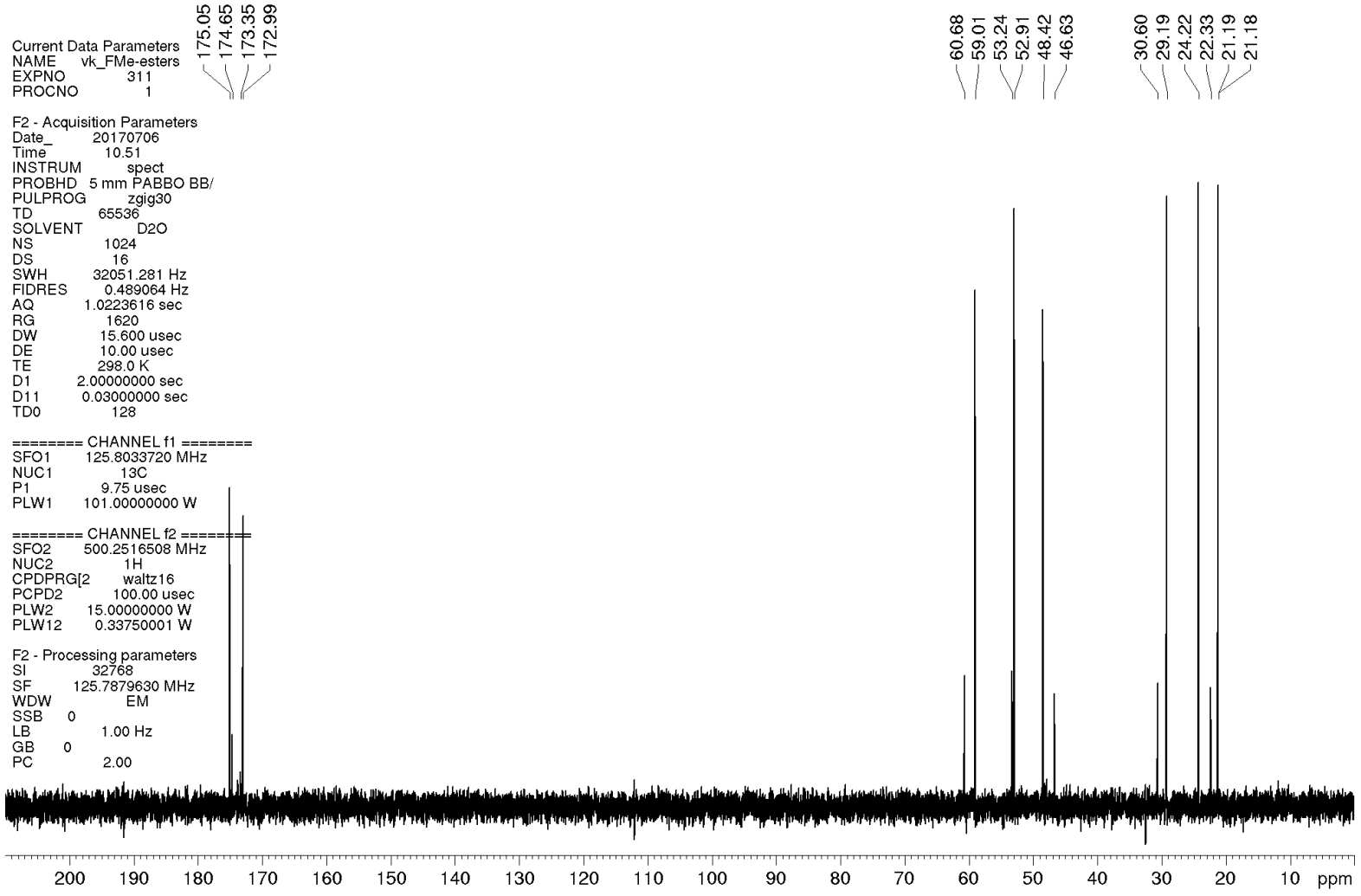
compound	$K_{trans/cis}$					
	D_2O	CD_3CN	CD_3OD	CD_2Cl_2	$CDCl_3$	C_6D_6
	ε 80.1	ε 32.7	ε 32.7	ε 8.93	ε 4.81	ε 2.27
1	4.95±0.05	4.08±0.04	3.78±0.03	4.18±0.03	3.84±0.04	5.10±0.10
2	4.60±0.08	3.58±0.04	3.49±0.04	3.52±0.03	3.20±0.04	4.67±0.03
3	4.74±0.04	4.12±0.17	3.61±0.03	4.77±0.10	4.44±0.20	6.80±0.04
4	4.95±0.05	4.85±0.07	4.12±0.03	6.57±0.14	6.29±0.22	9.06±0.26
5	5.48±0.14	5.65±0.05	4.49±0.05	7.07±0.11	6.65±0.18	10.04±0.15

Copies of the NMR spectra for compounds 1–5

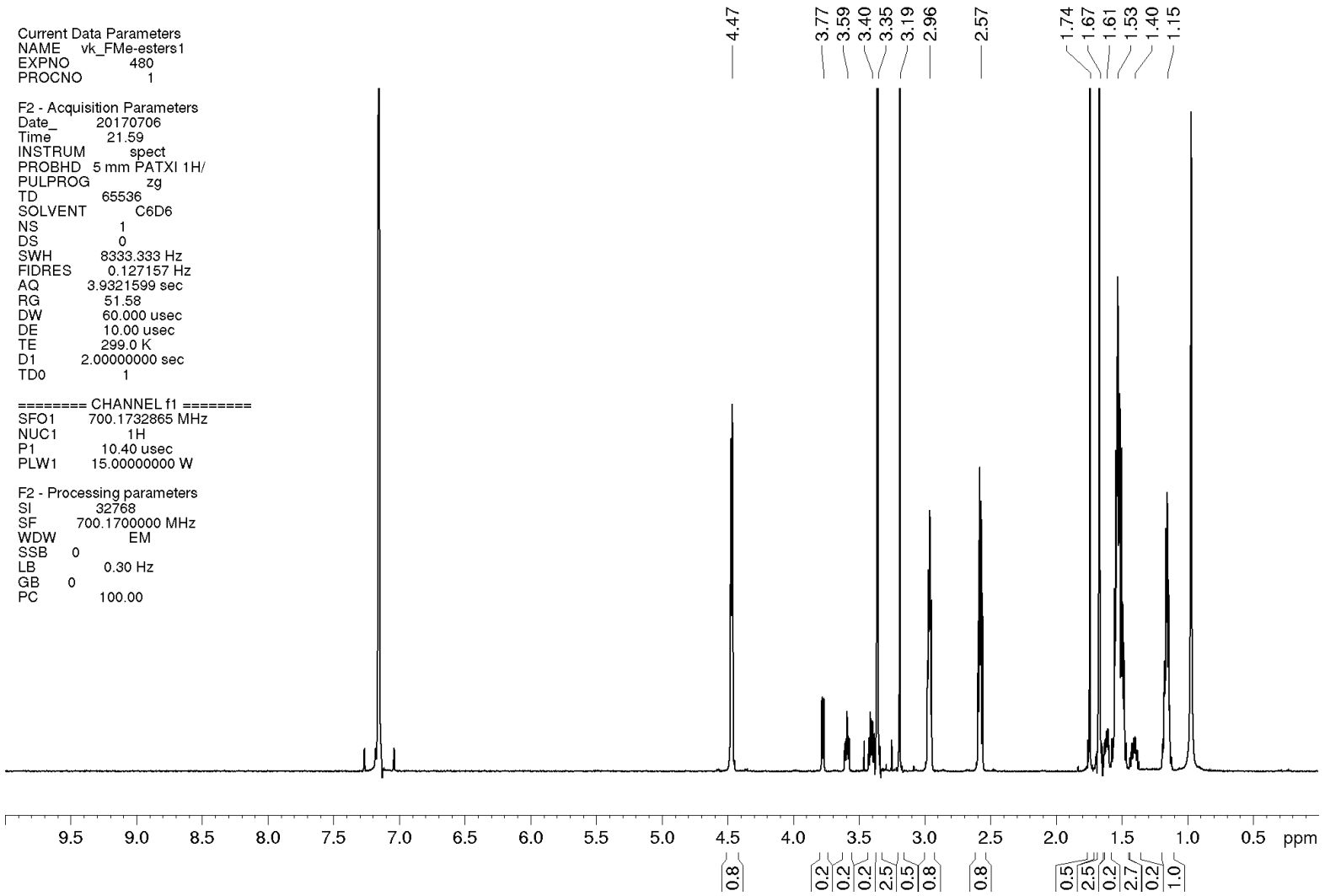
^{1}H NMR spectrum of **1** in deuterium oxide at 700 MHz



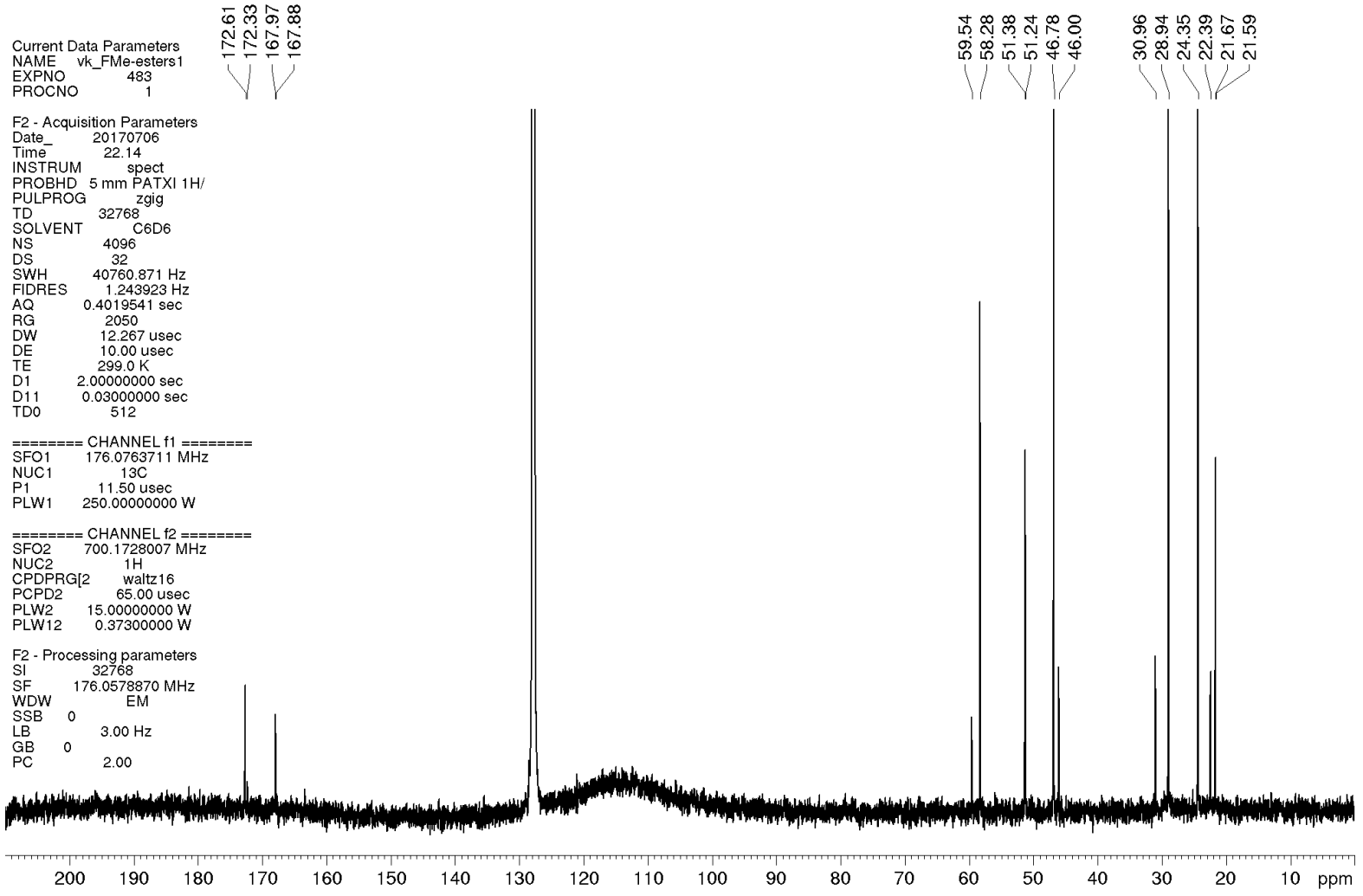
$^{13}C\{^{1}H\}$ NMR spectrum of **1** in deuterium oxide at 126 MHz



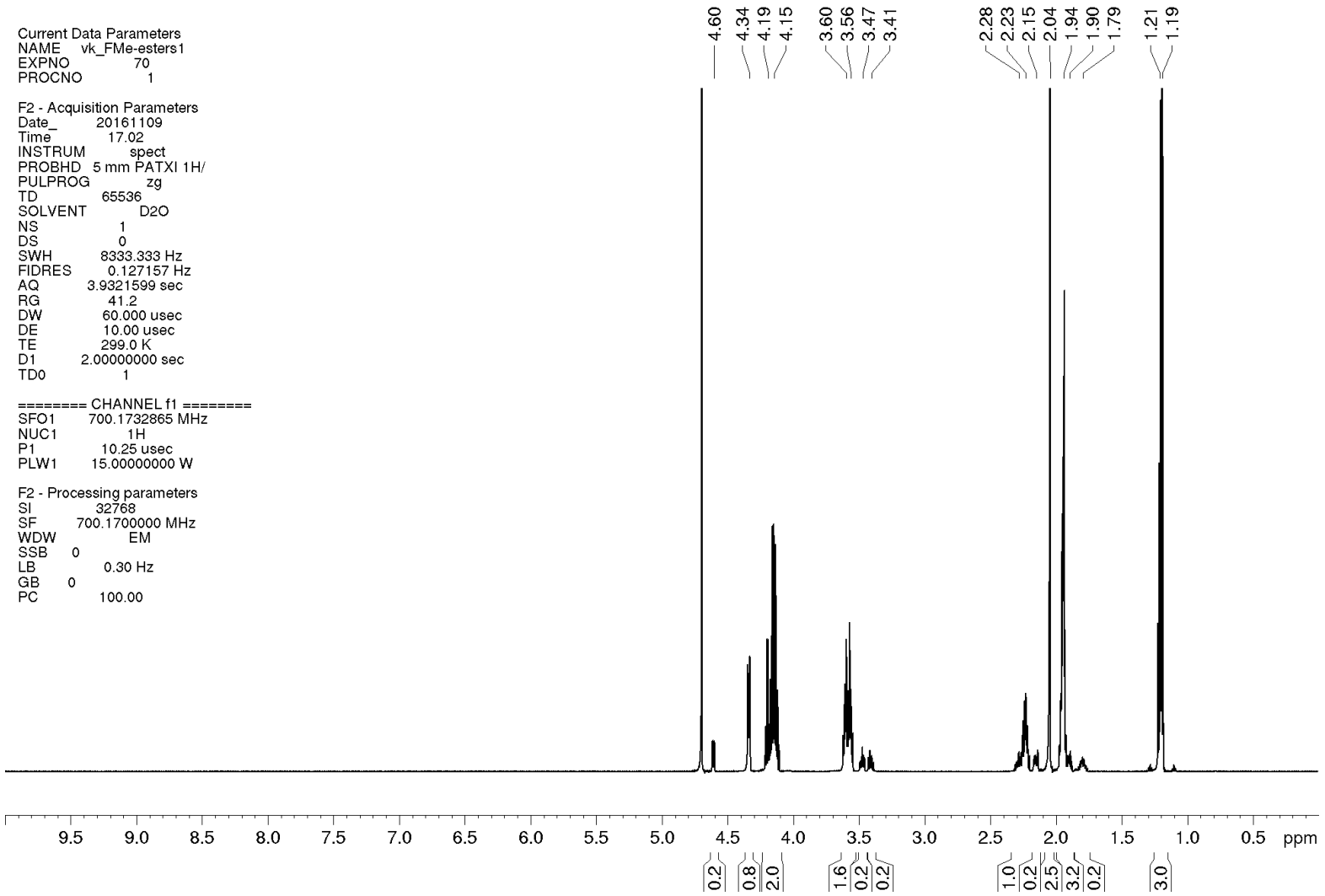
^{1}H NMR spectrum of **1** in benzene-d_6 at 700 MHz



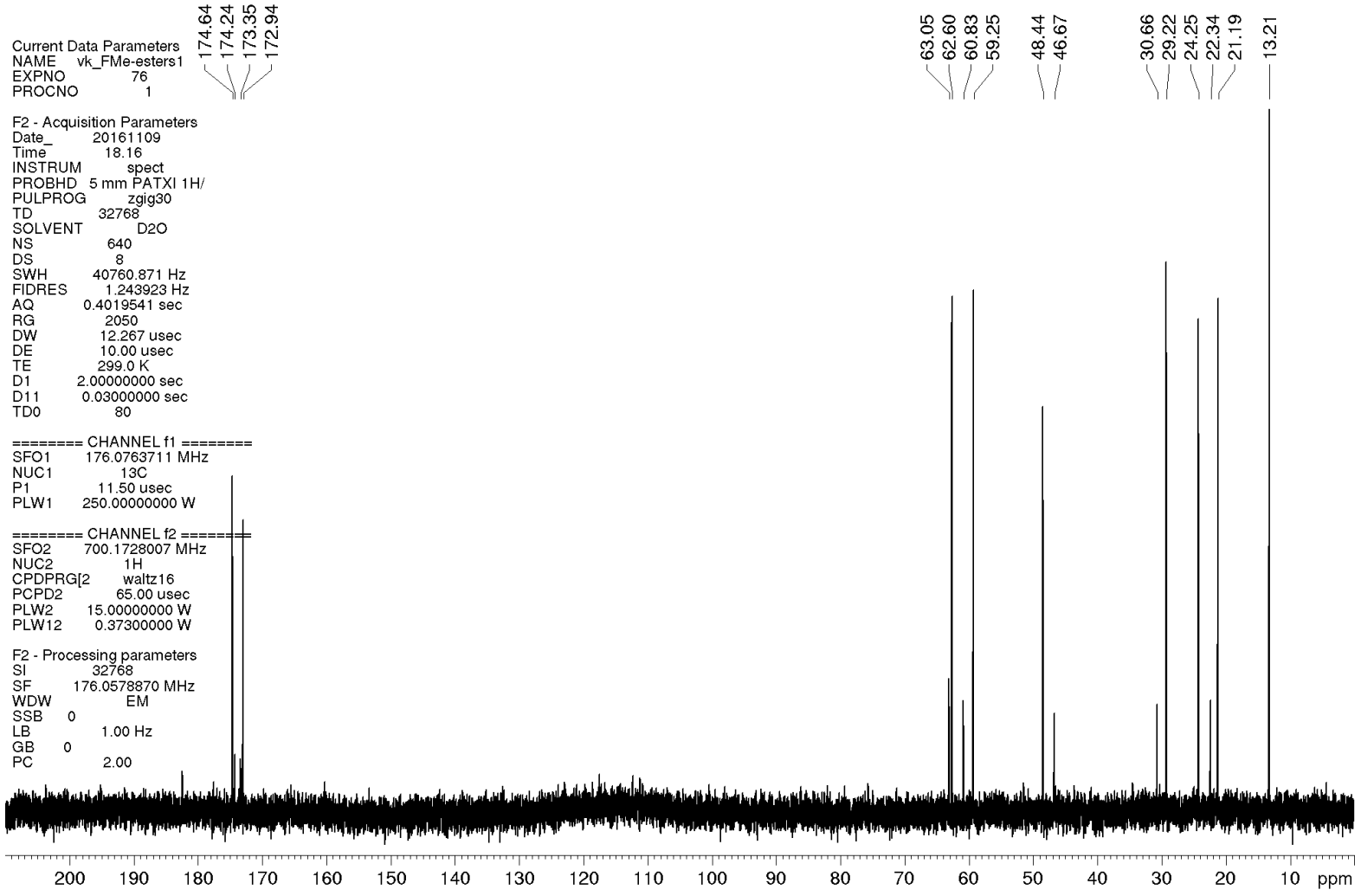
$^{13}C\{^{1}H\}$ NMR spectrum of **1** in benzene-d_6 at 176 MHz



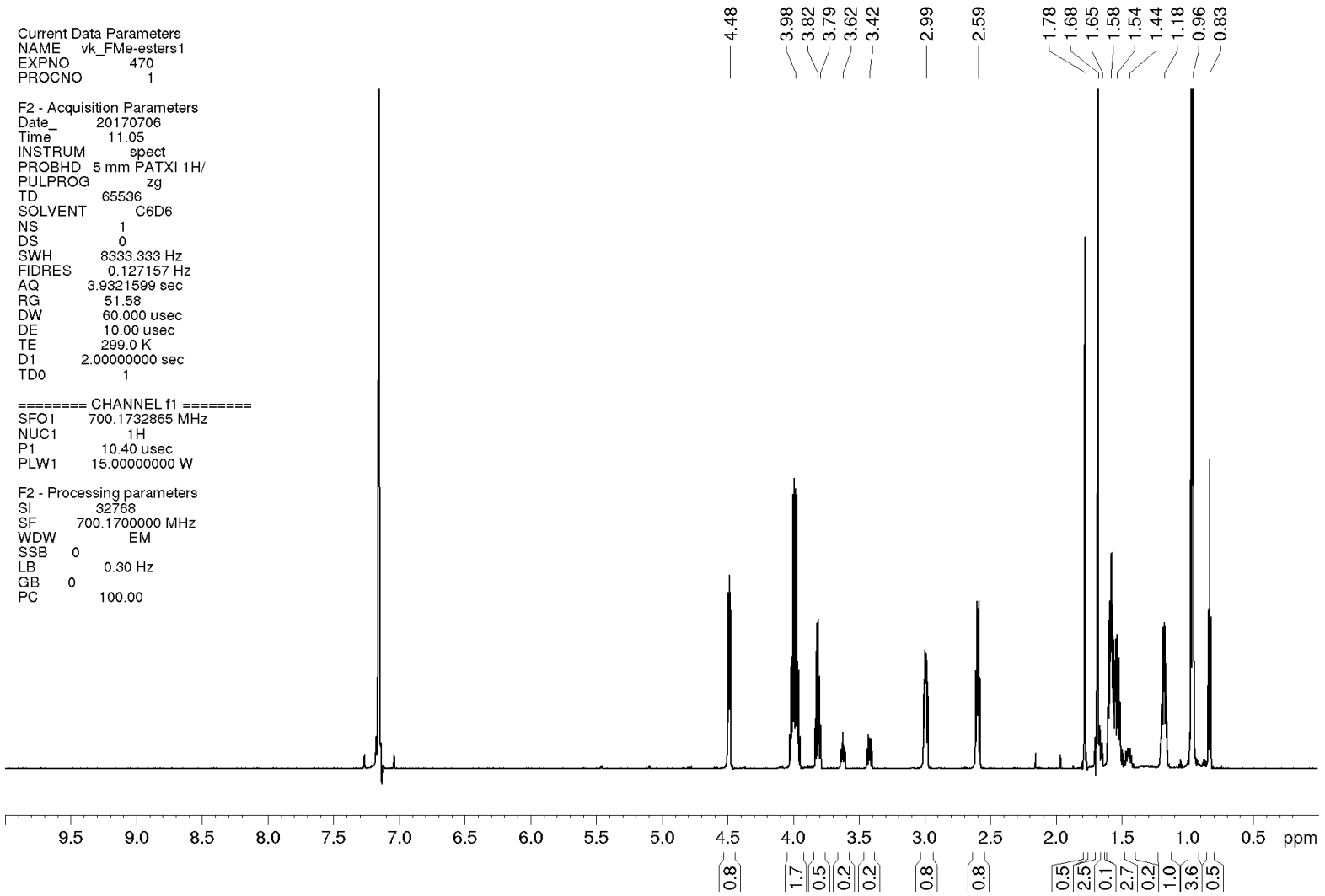
^{1}H NMR spectrum of **2** in deuterium oxide at 700 MHz



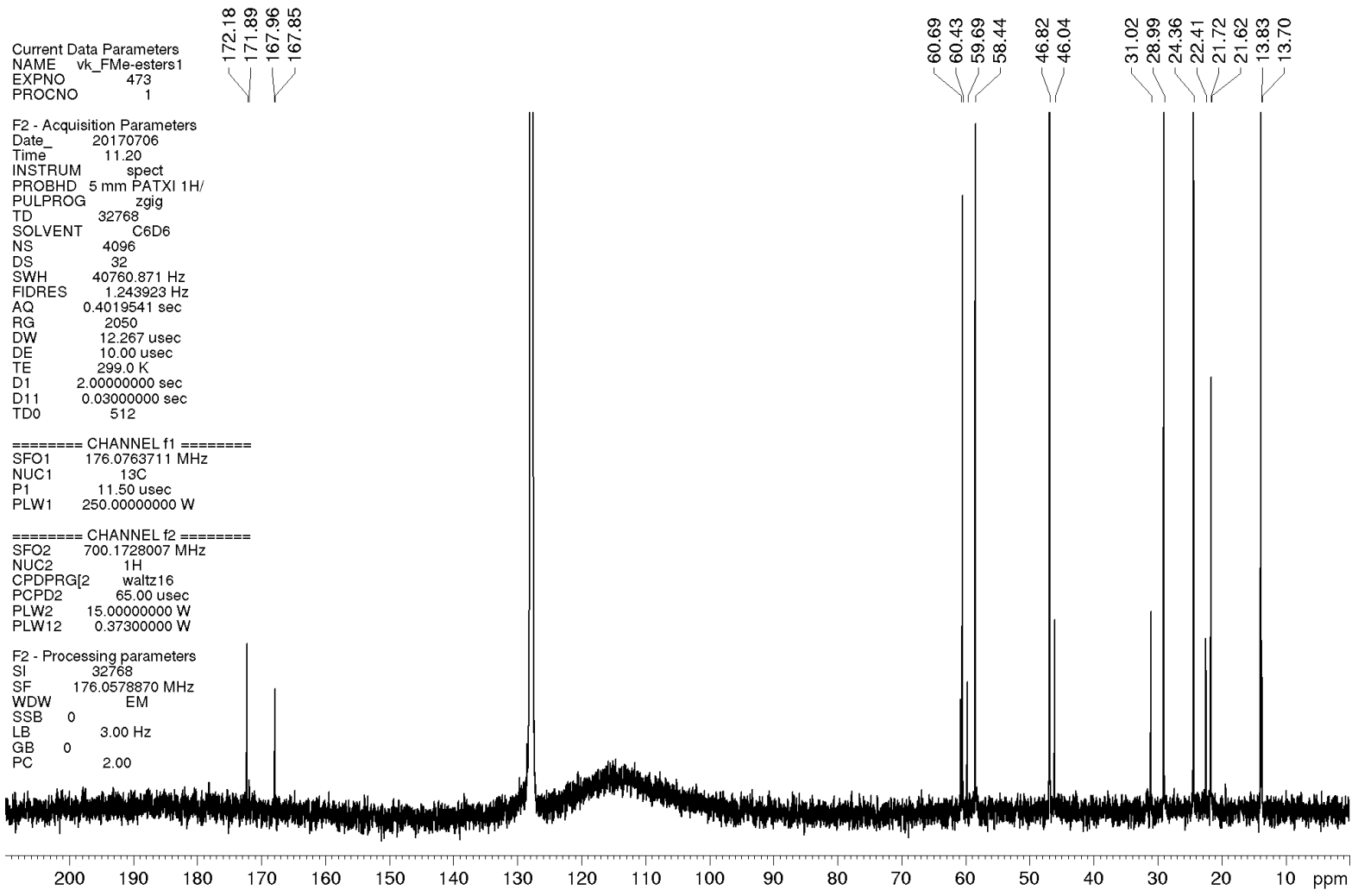
$^{13}C\{^{1}H\}$ NMR spectrum of **2** in deuterium oxide at 176 MHz



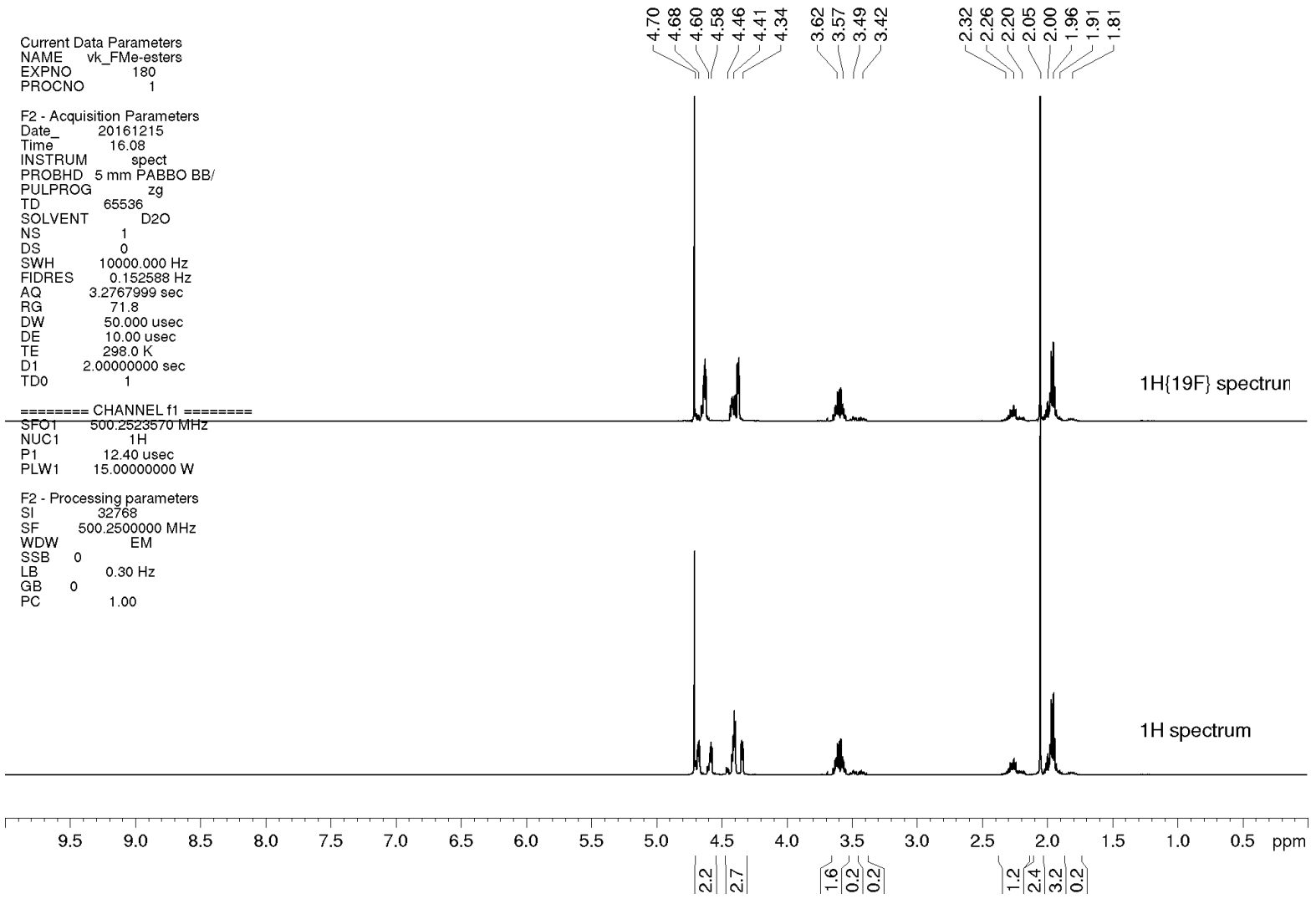
^{1}H NMR spectrum of **2** in benzene-d_6 at 700 MHz



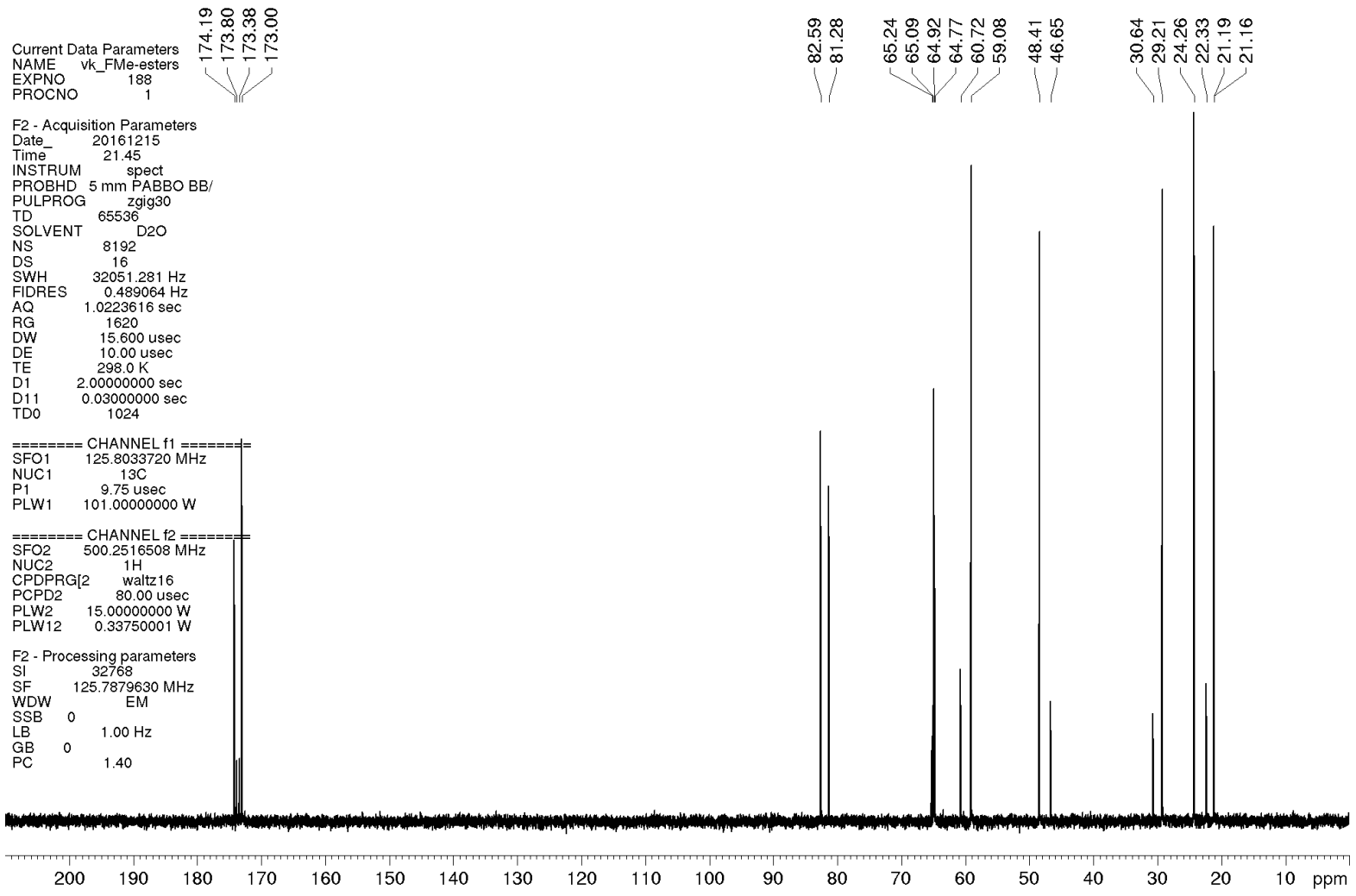
$^{13}C\{^{1}H\}$ NMR spectrum of **2** in benzene-d_6 at 176 MHz



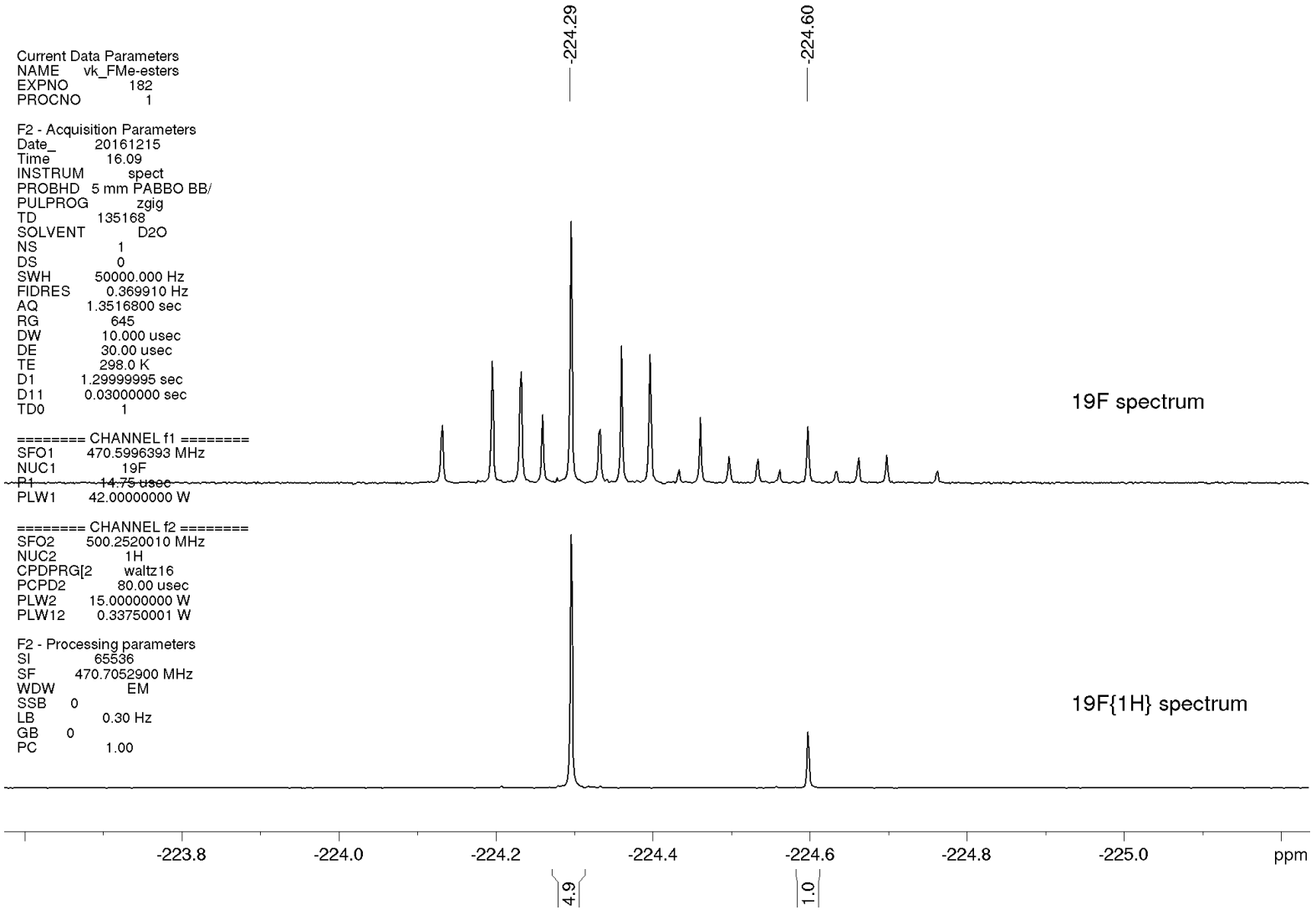
^{1}H and $^{1}H\{^{19}F\}$ NMR spectra of **3** in deuterium oxide at 500 MHz



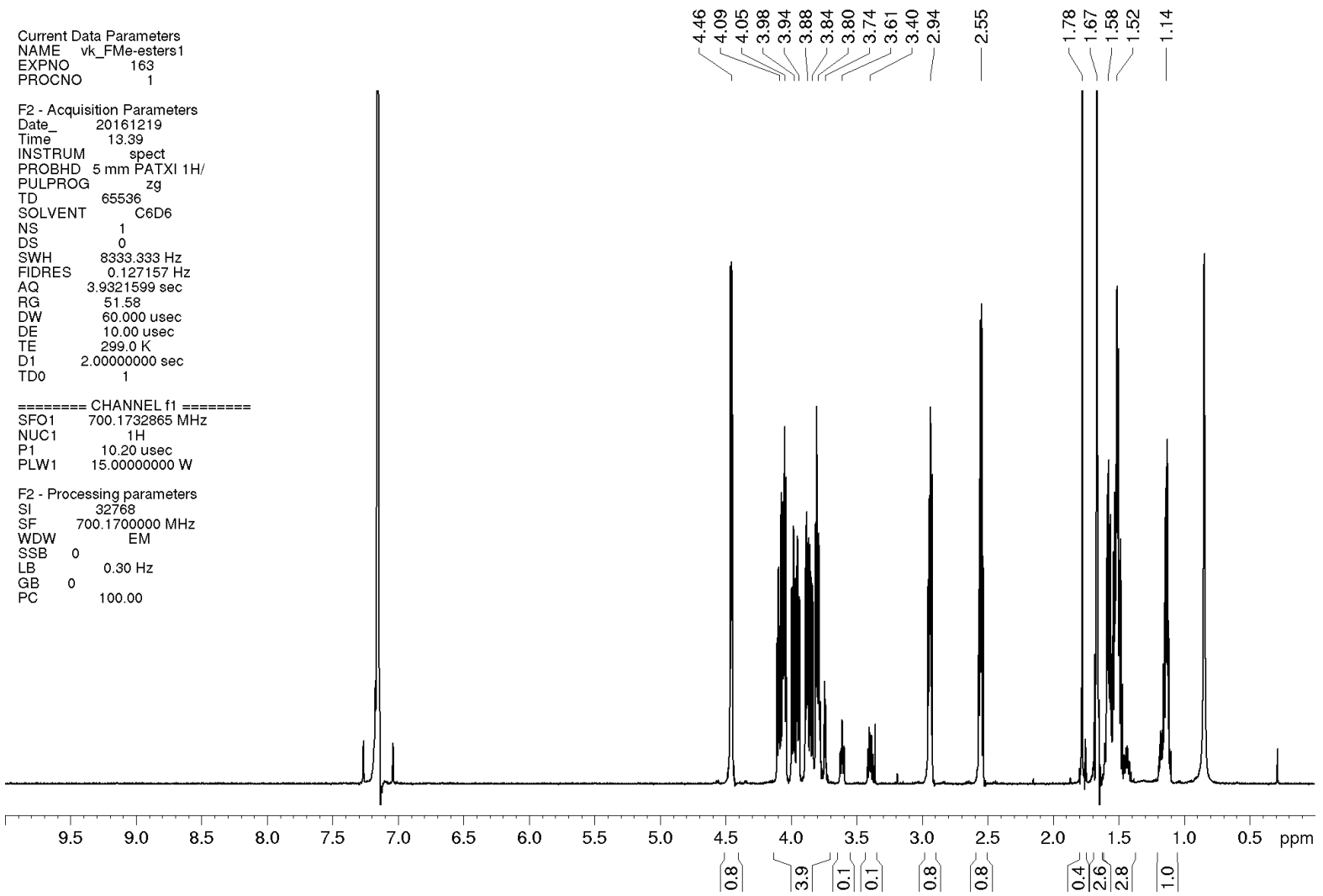
$^{13}C\{^{1}H\}$ NMR spectrum of **3** in deuterium oxide at 126 MHz



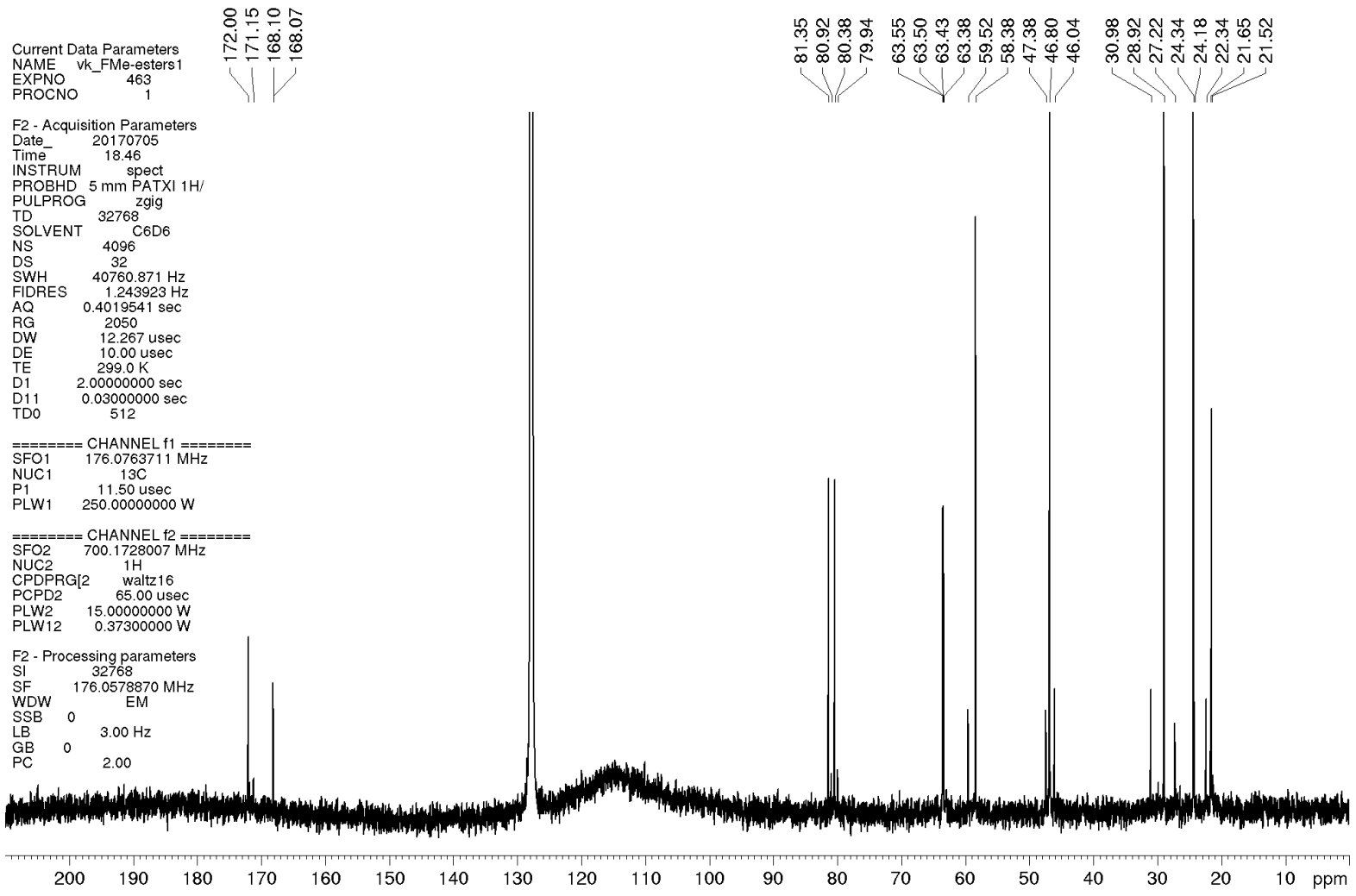
^{19}F and $^{19}F\{^{1}H\}$ NMR spectra of **3** in deuterium oxide at 471 MHz



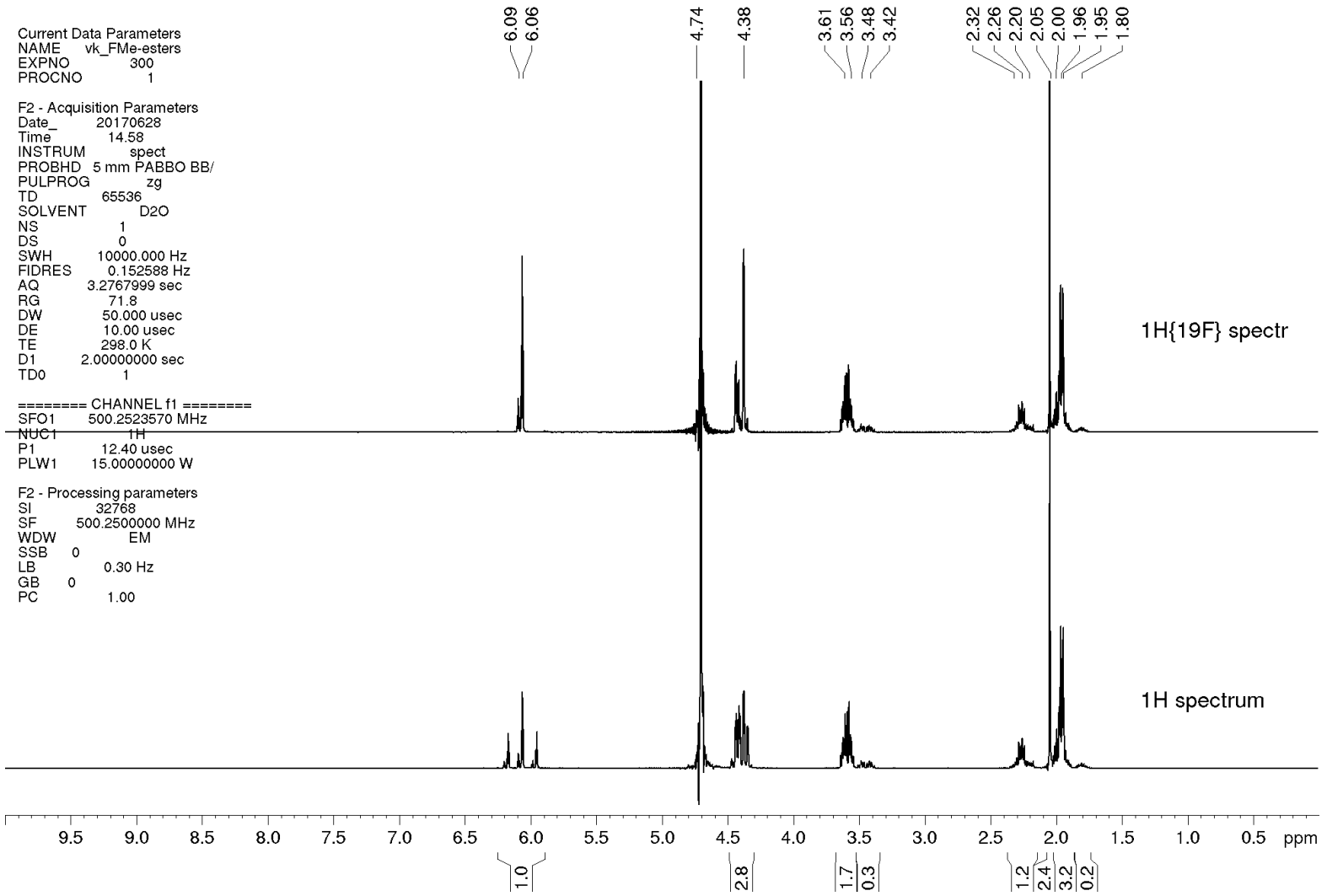
^{1}H NMR spectrum of **3** in benzene-d_6 at 700 MHz



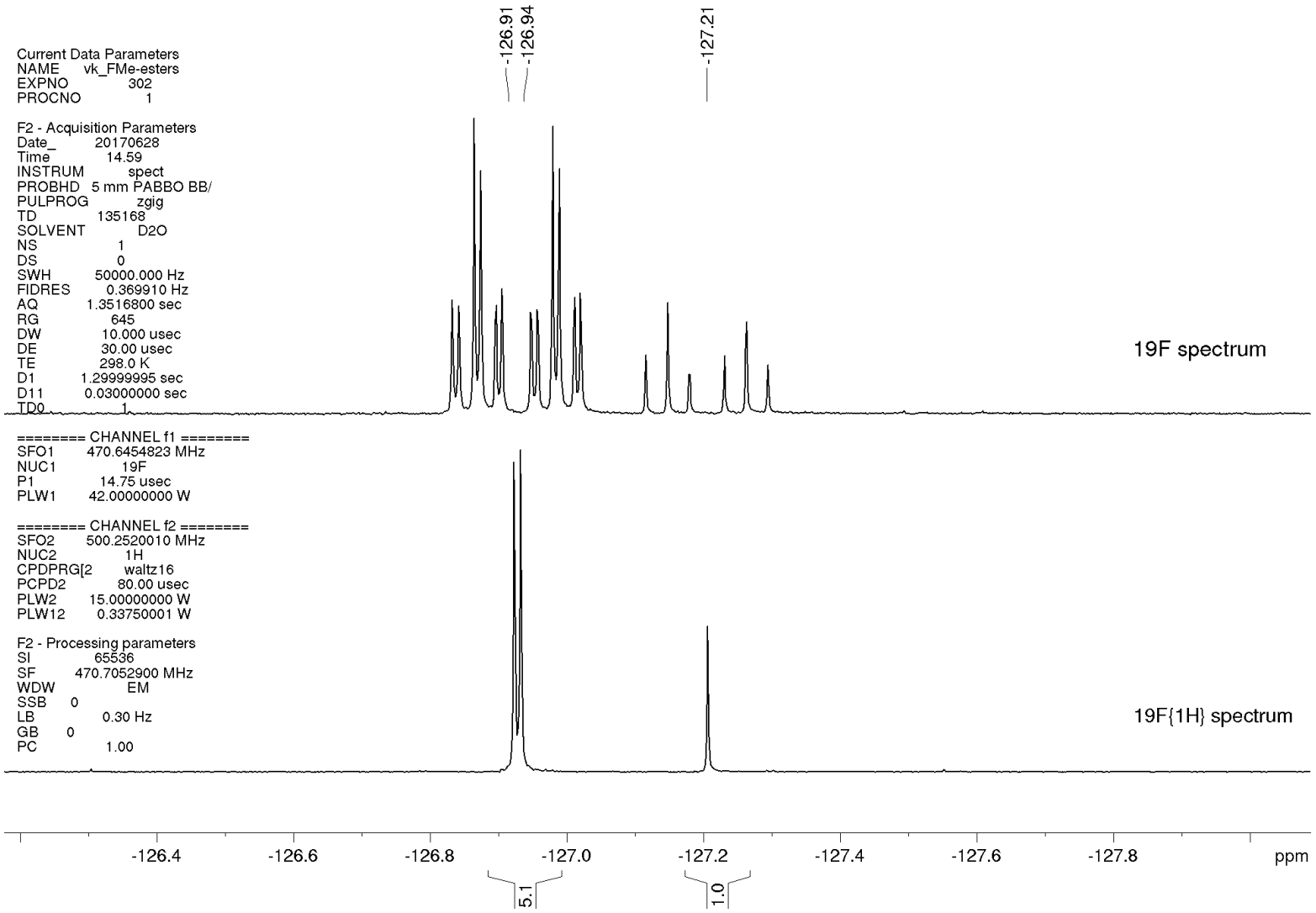
$^{13}C\{^{1}H\}$ NMR spectrum of **3** in benzene-d_6 at 176 MHz



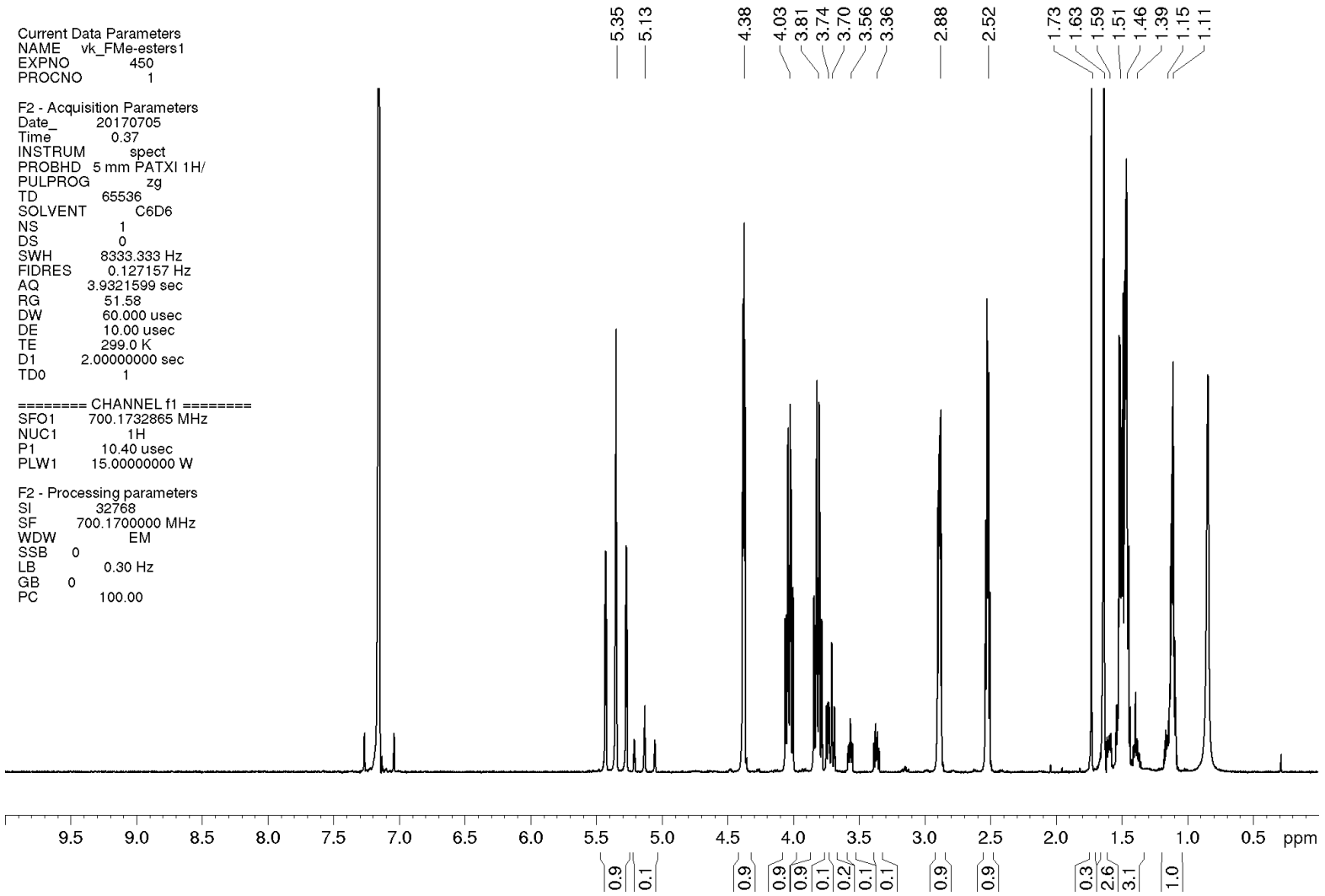
^{1}H and $^{1}H\{^{19}F\}$ NMR spectra of **4** in deuterium oxide at 500 MHz



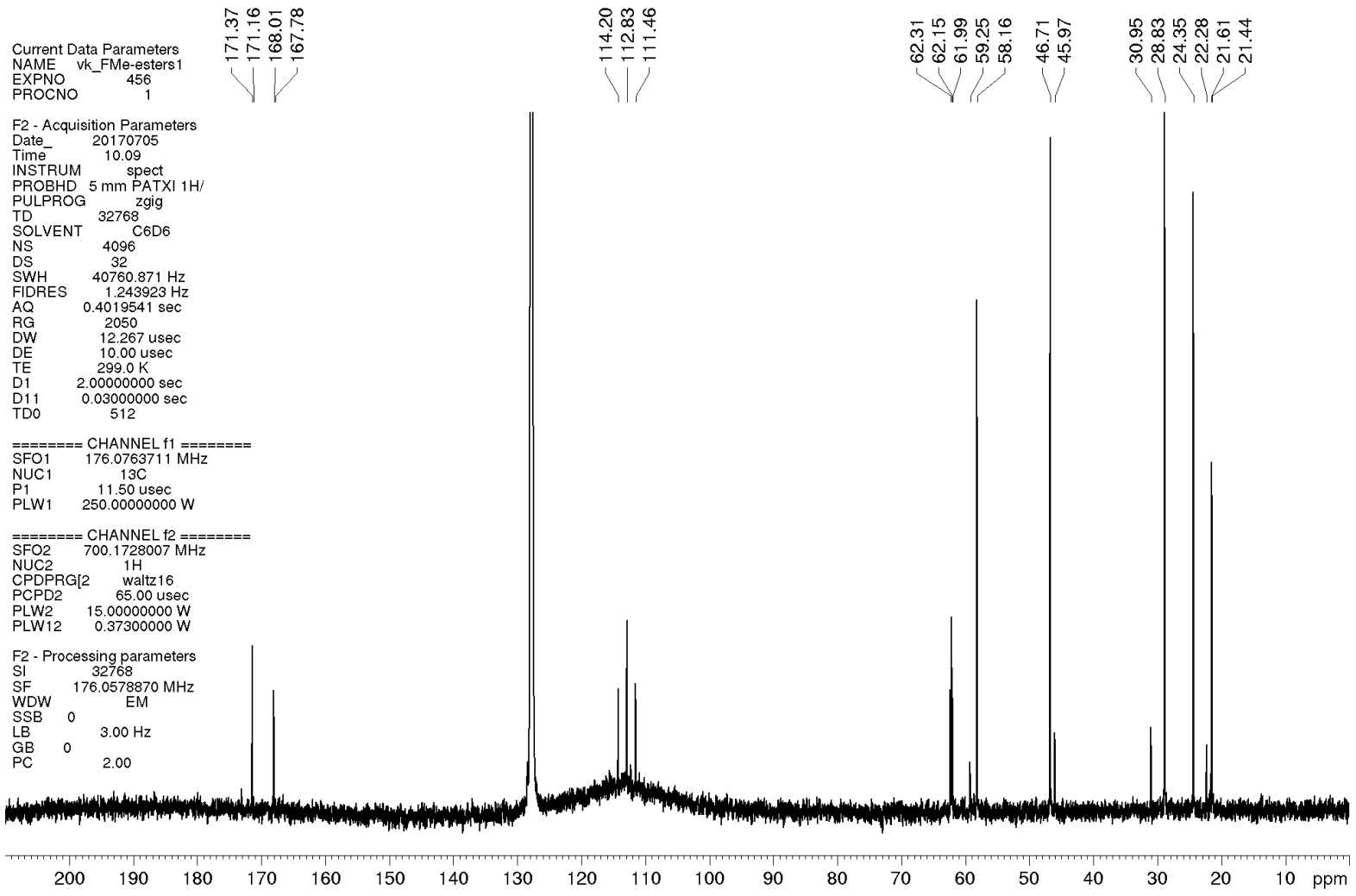
^{19}F and $^{19}F\{^{1}H\}$ NMR spectra of **4** in deuterium oxide at 471 MHz



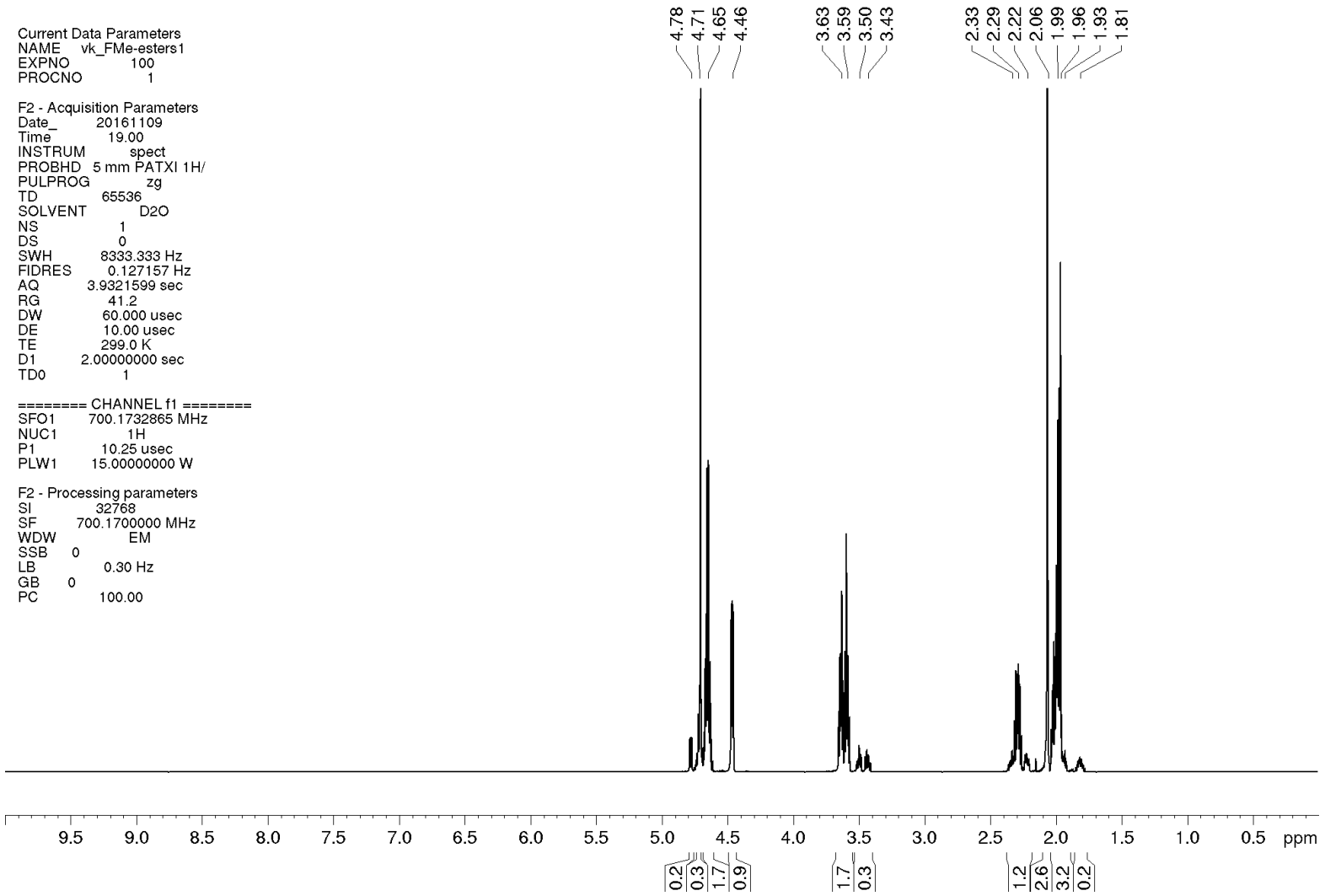
^{1}H NMR spectrum of **4** in benzene-d_6 at 700 MHz



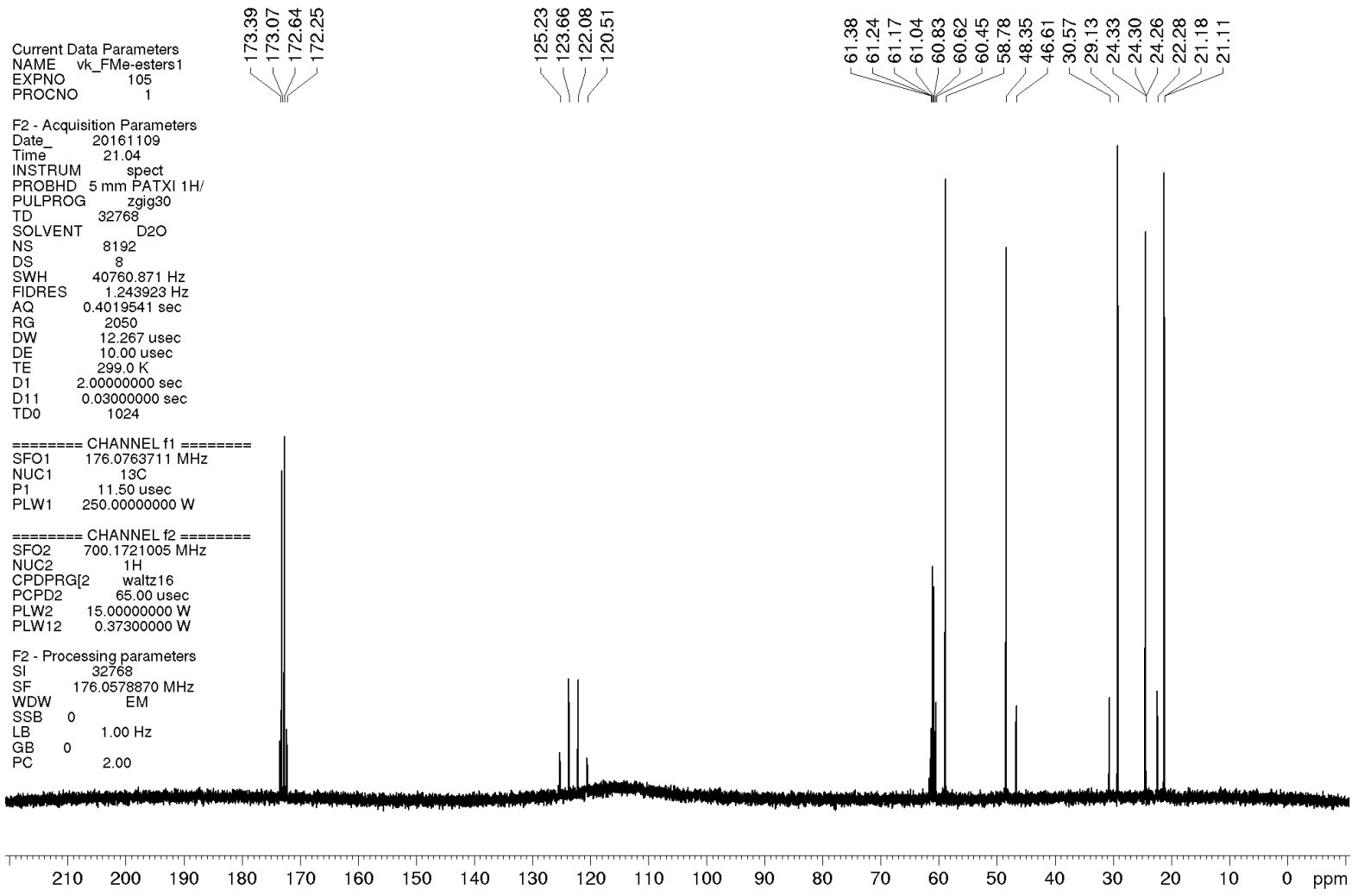
$^{13}C\{^{1}H\}$ NMR spectrum of **4** in benzene-d_6 at 176 MHz



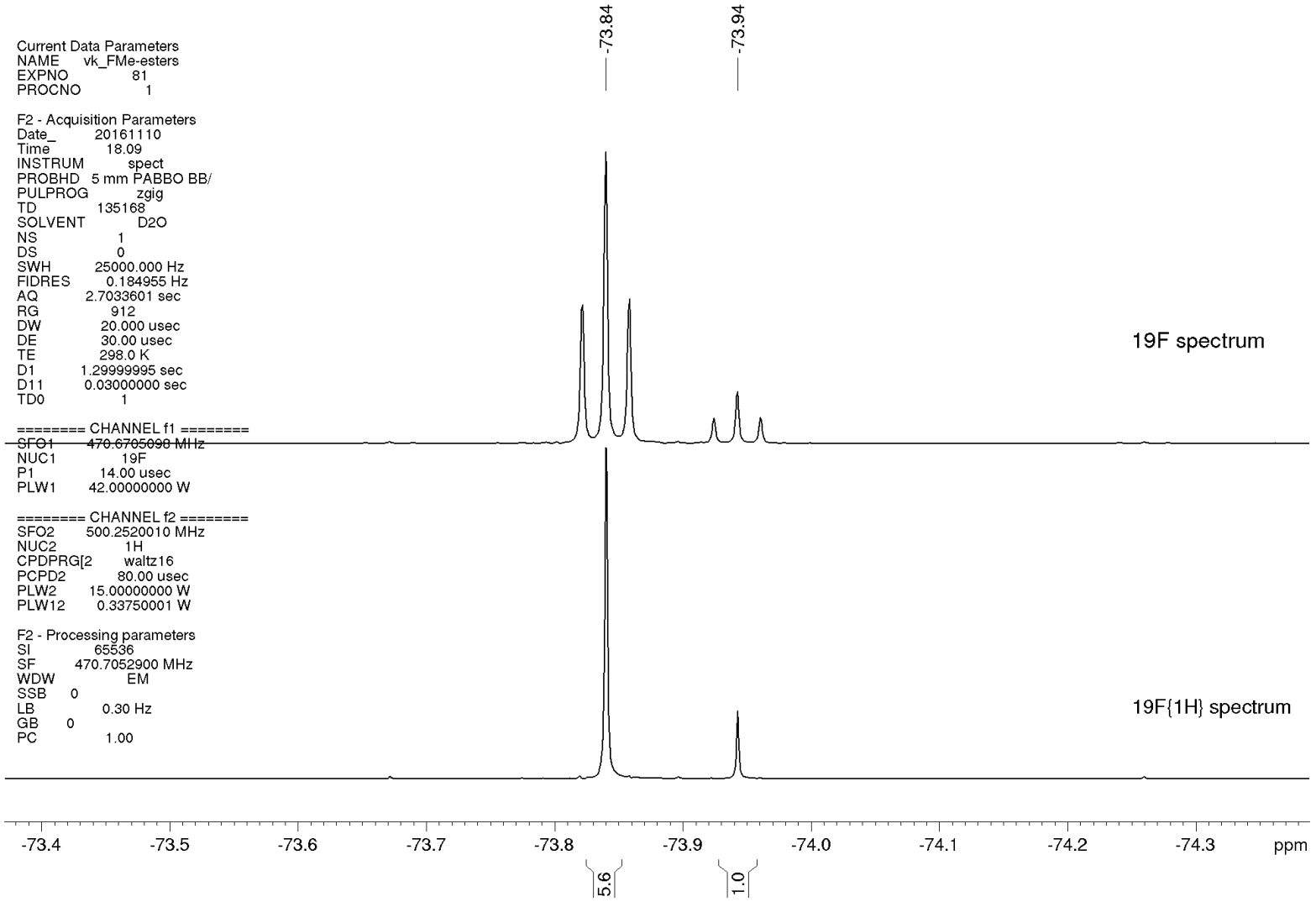
^{1}H NMR spectrum of **5** in deuterium oxide at 700 MHz



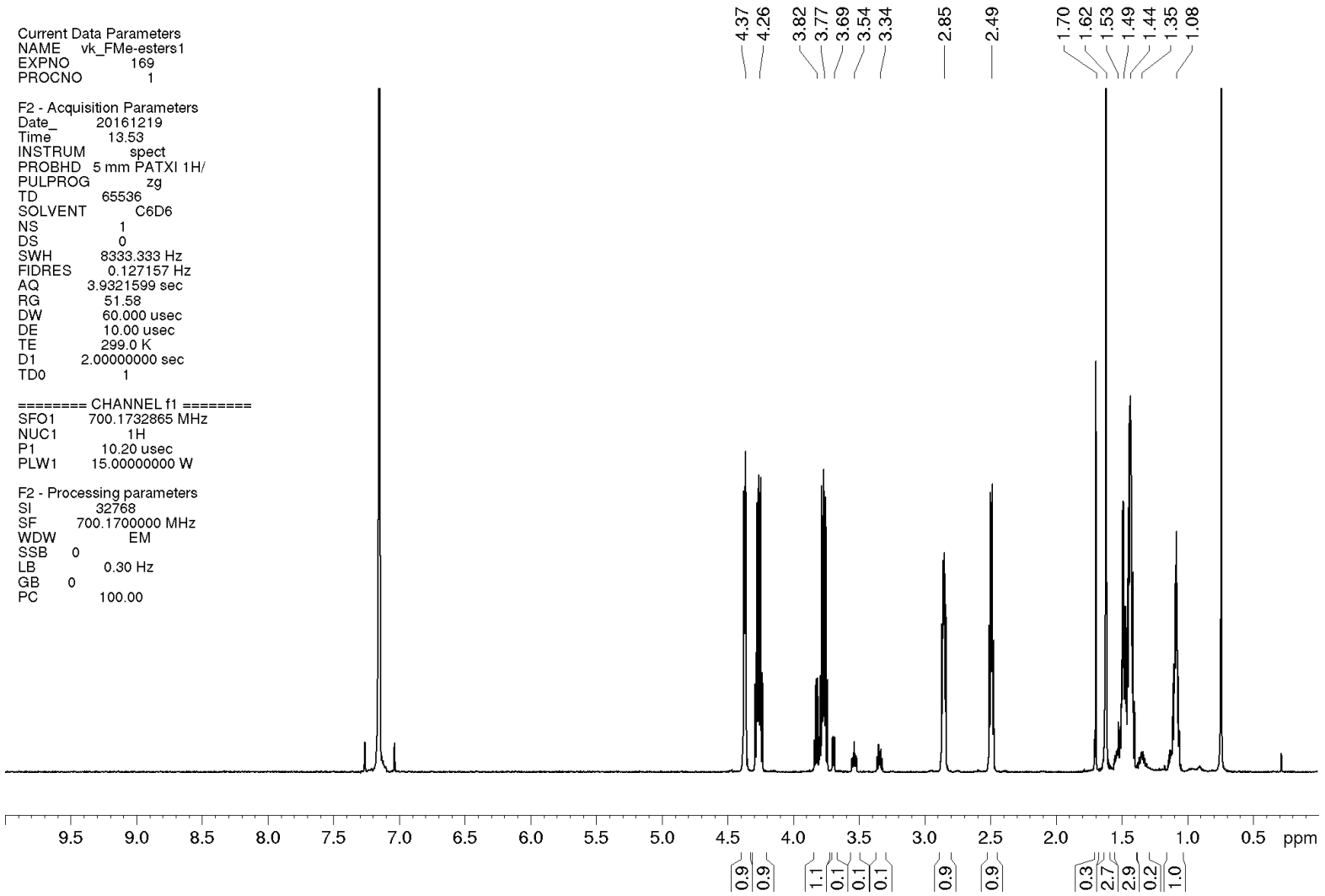
$^{13}C\{^{1}H\}$ NMR spectrum of **5** in deuterium oxide at 176 MHz



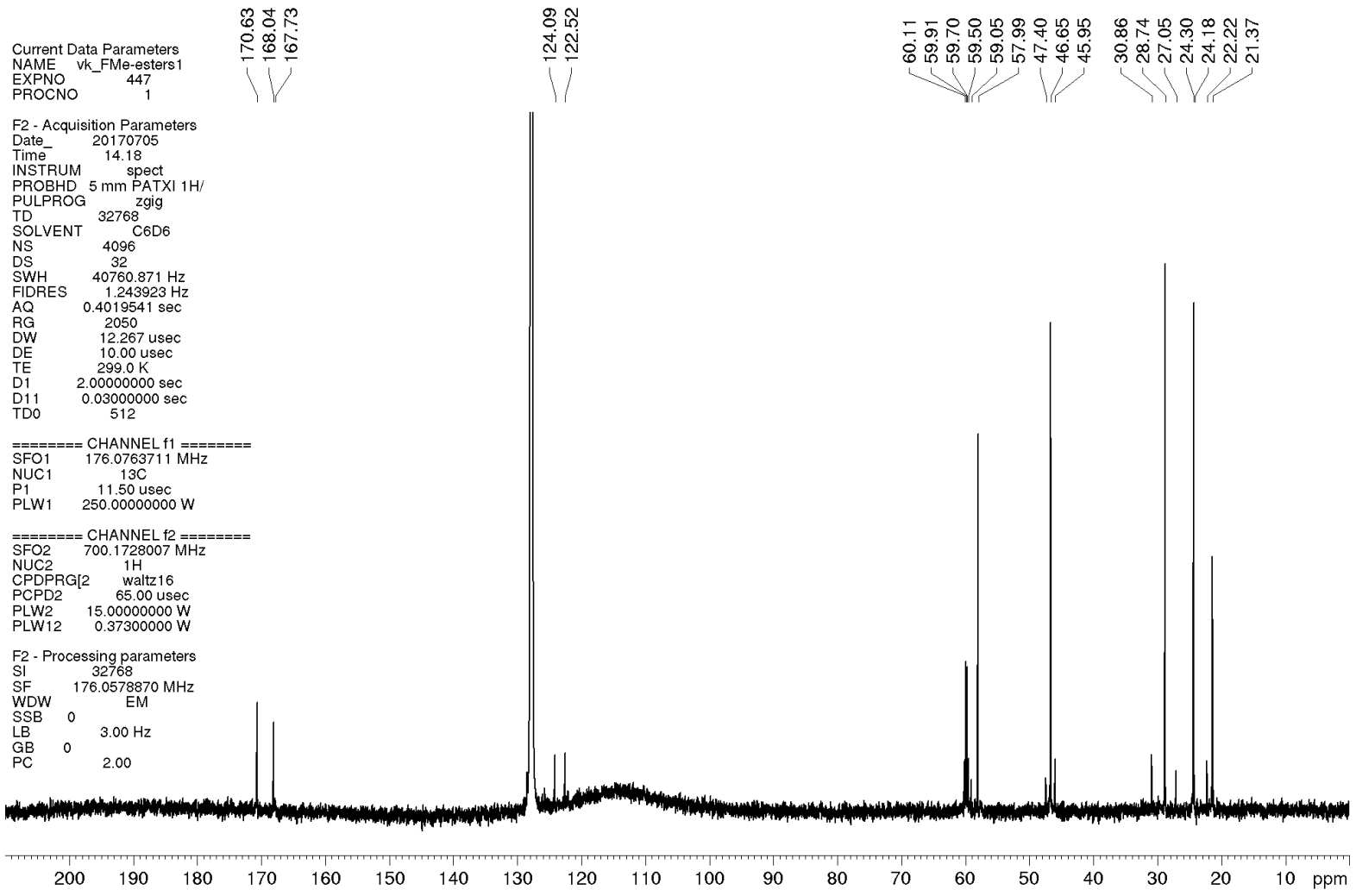
^{19}F and $^{19}F\{^{1}H\}$ NMR spectra of **5** in deuterium oxide at 471 MHz



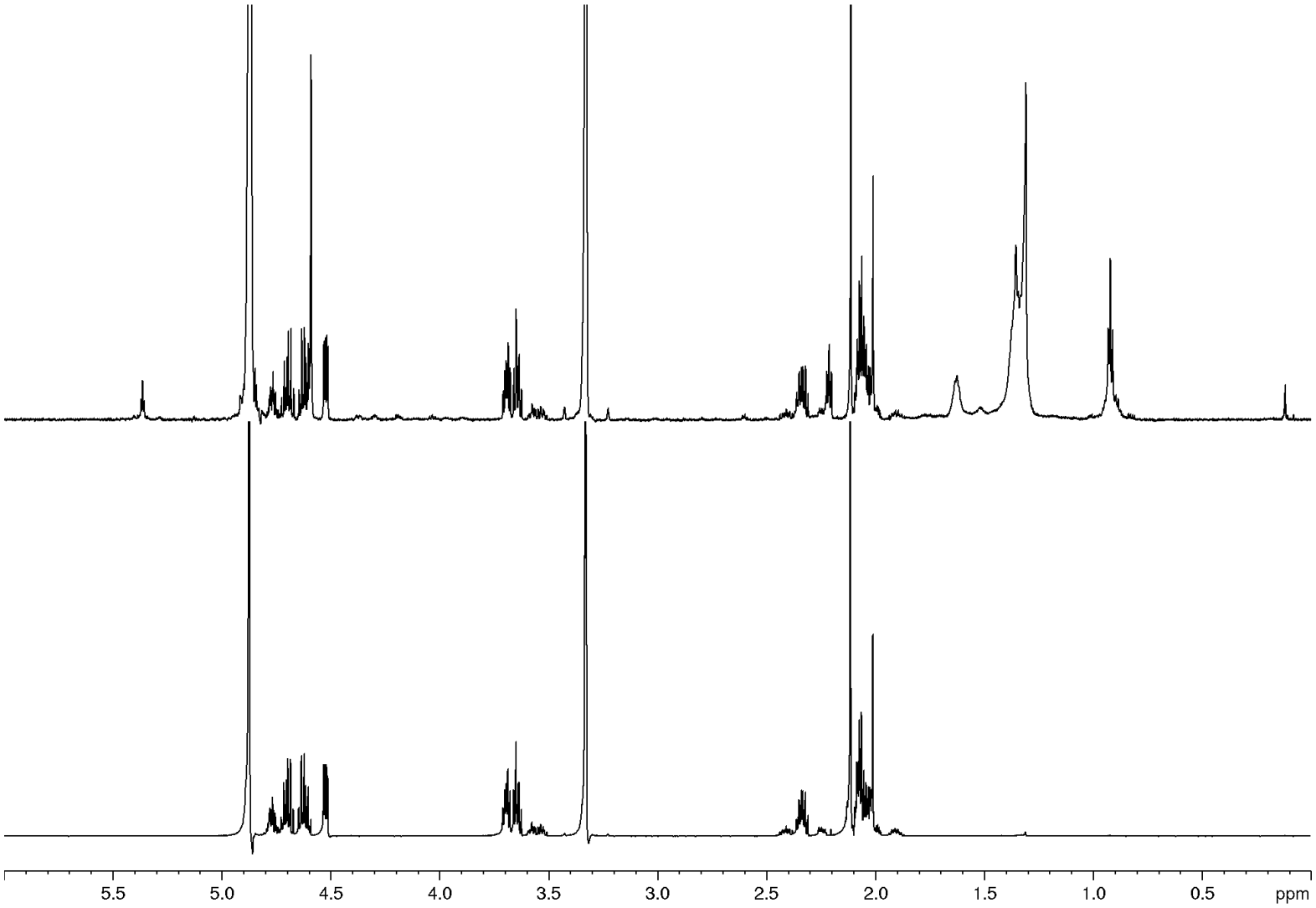
^{1}H NMR spectrum of **5** in benzene-d_6 at 700 MHz



$^{13}C\{^{1}H\}$ NMR spectrum of **5** in benzene-d_6 at 176 MHz

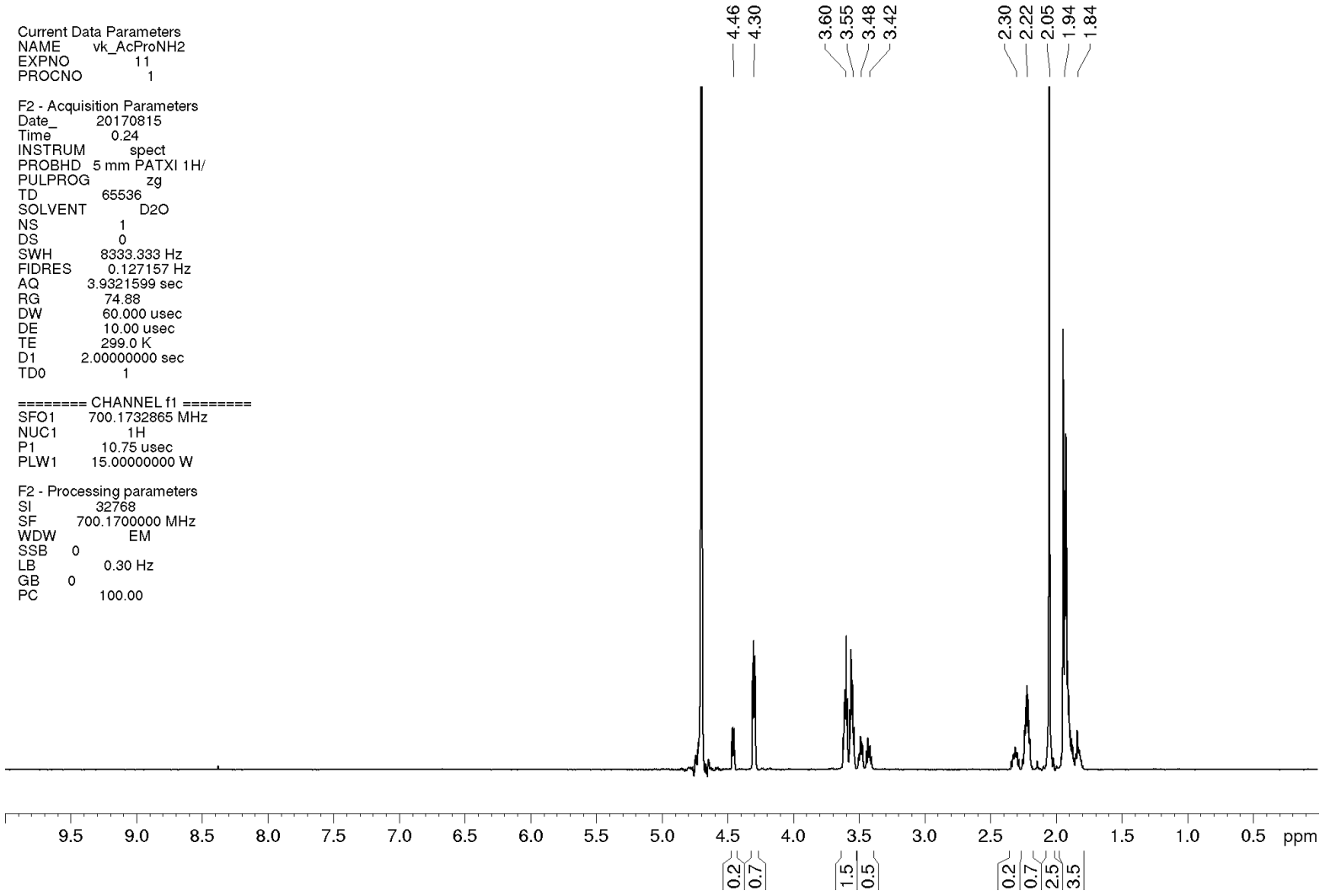


Spectra of **5** (in methanol-d_4, 700 MHz) obtained after esterification via chloranhydride (bottom) and in acidic trifluoroethanol (top)



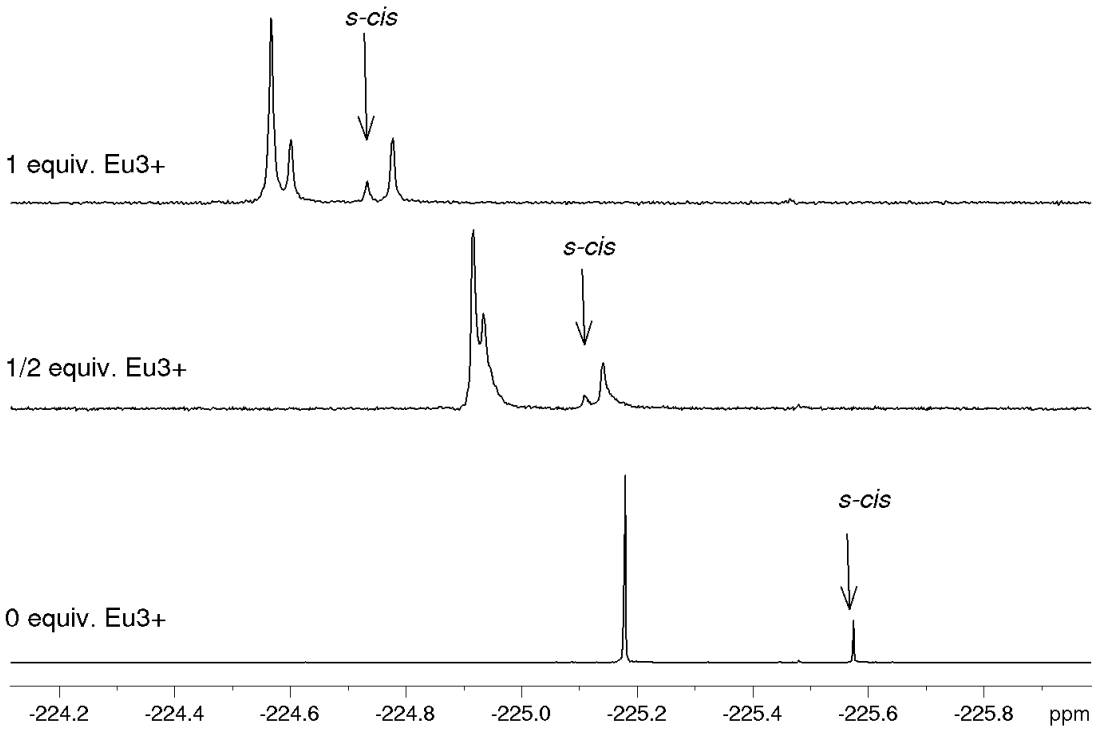
^{1}H NMR spectrum of compound 7

^{1}H NMR spectrum of compound **7** in deuterium oxide at 700 MHz

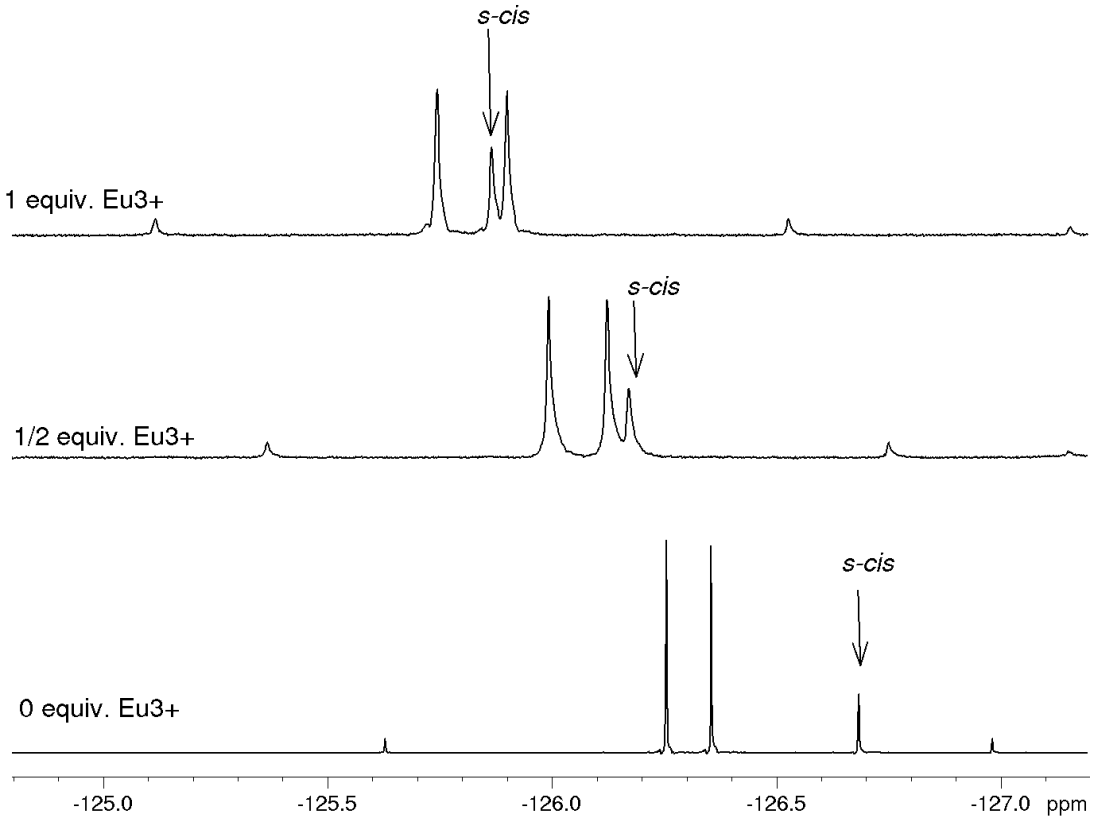


NMR spectra of 3-5 with the europium shift reagent

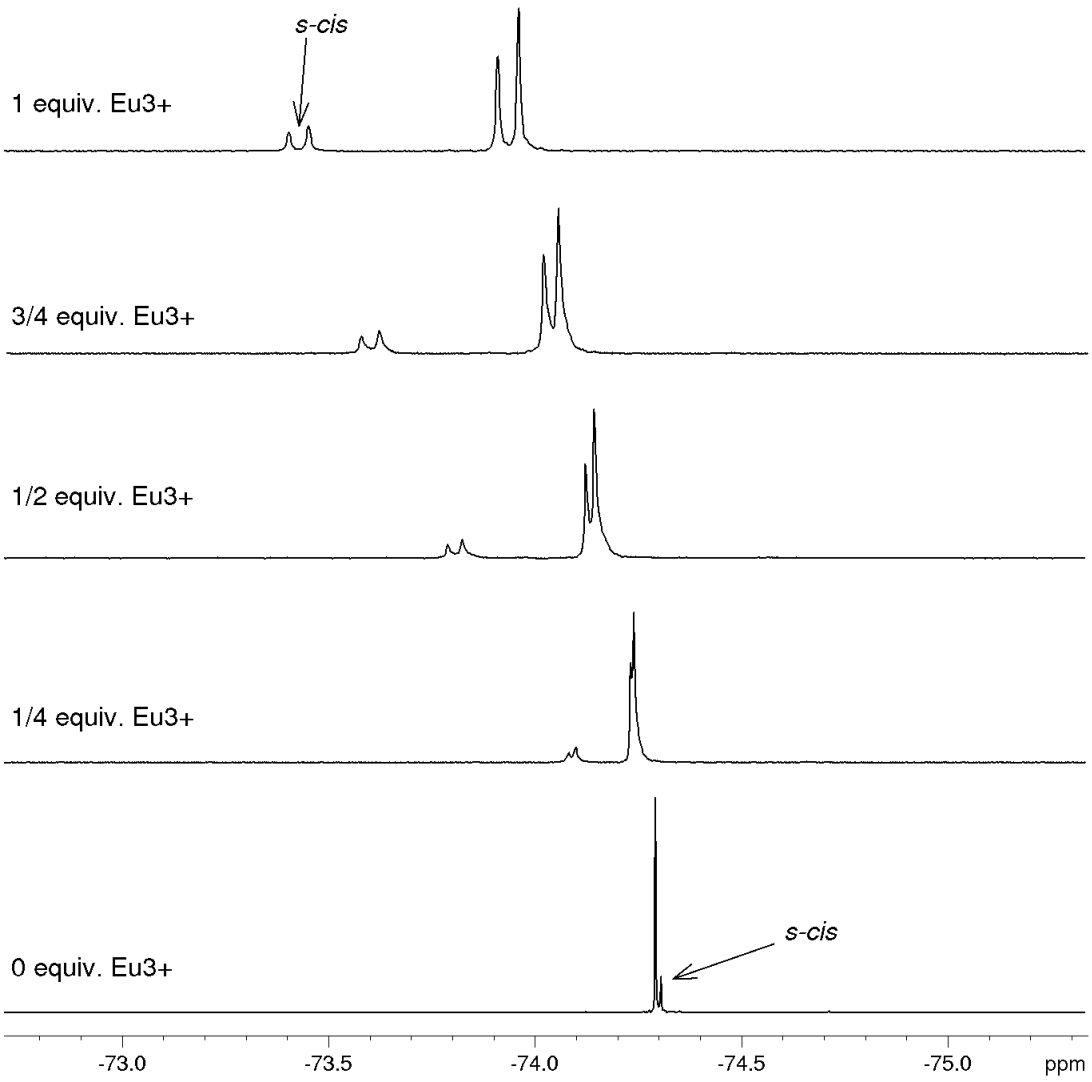
$^{19}F\{^{1}H\}$ NMR spectra (inverse-gated decoupling) of **3** in dichloromethane-d_2 upon addition of Eu^{3+} shifting reagent (two enantiomers)



$^{19}F\{^{1}H\}$ NMR spectra (inverse-gated decoupling) of **4** in dichloromethane-d_2 upon addition of Eu^{3+} shifting reagent (single enantiomer)

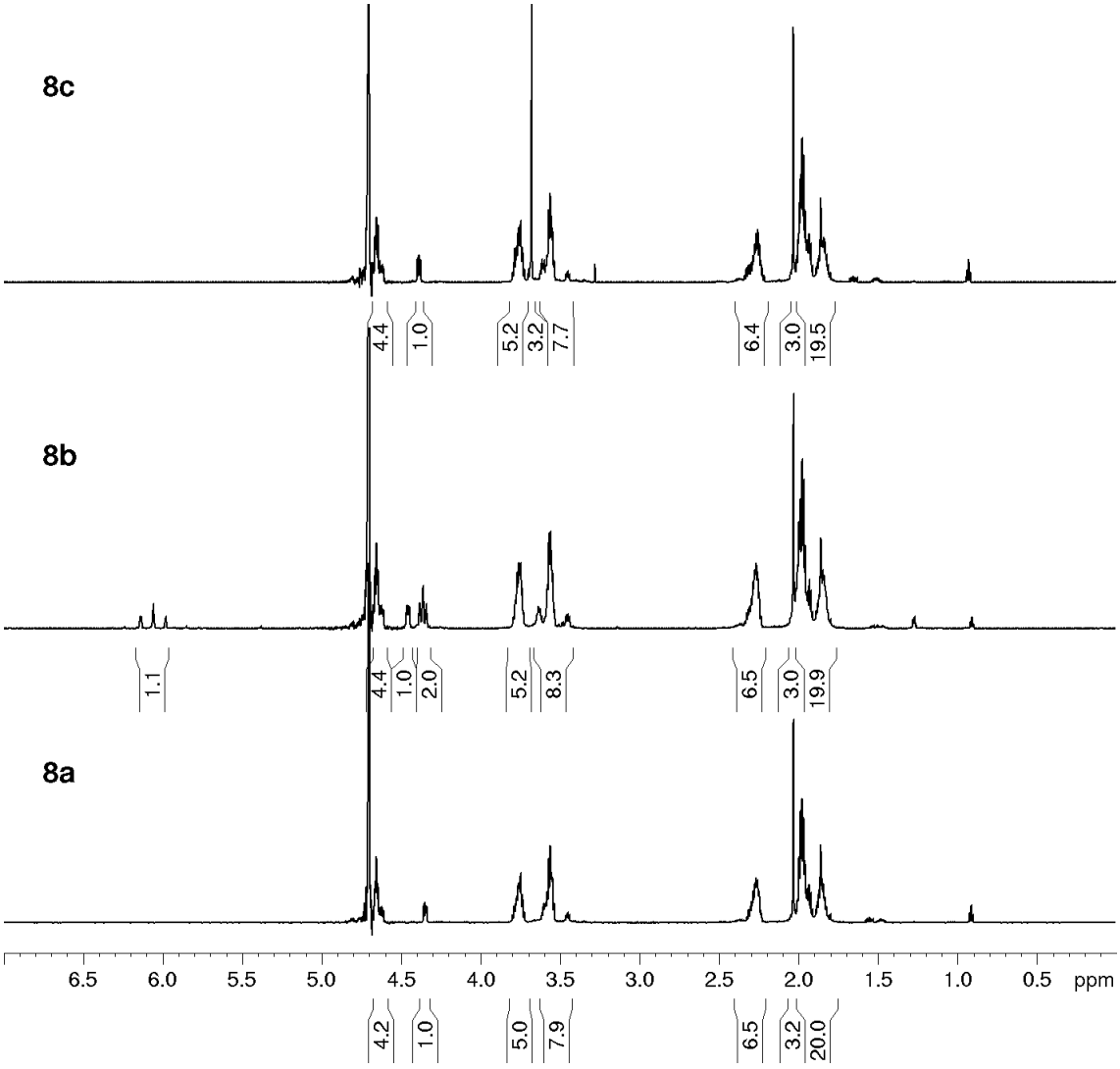


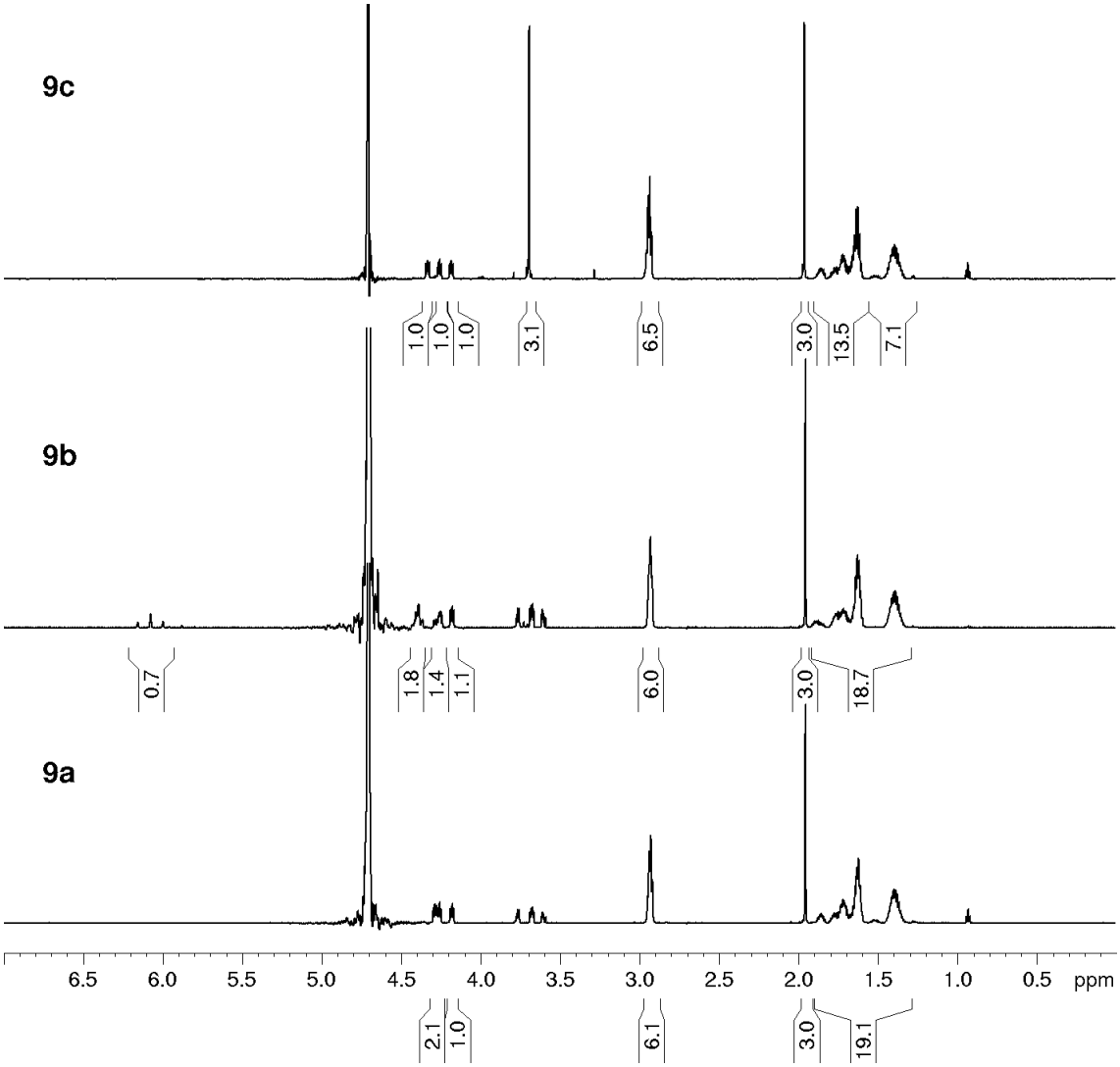
$^{19}F\{^{1}H\}$ NMR spectra (inverse-gated decoupling) of **5** in dichloromethane-d_2 upon addition of Eu^{3+} shifting reagent (two enantiomers)



NMR spectra of the peptides

^{1}H 90-pulse NMR spectra in deuterium oxide

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1.0
3.1
6.5
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13.5
7.1
9b
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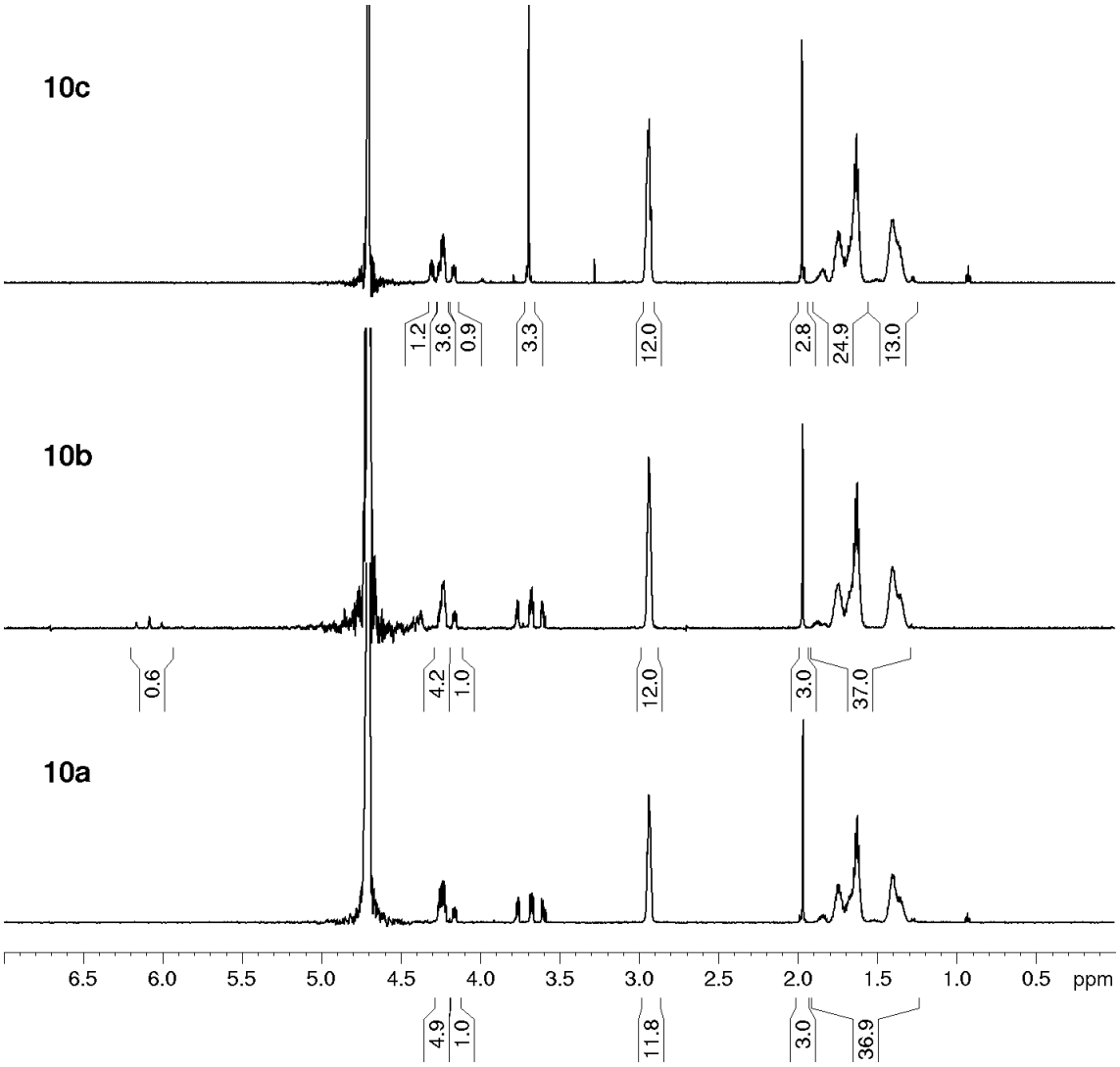
1.4
1.1
6.0
3.0
18.7
9a
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
ppm
2.1
1.0
6.1
3.0
19.1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4.2
1.0
12.0
3.0
37.0
10a
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
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ppm
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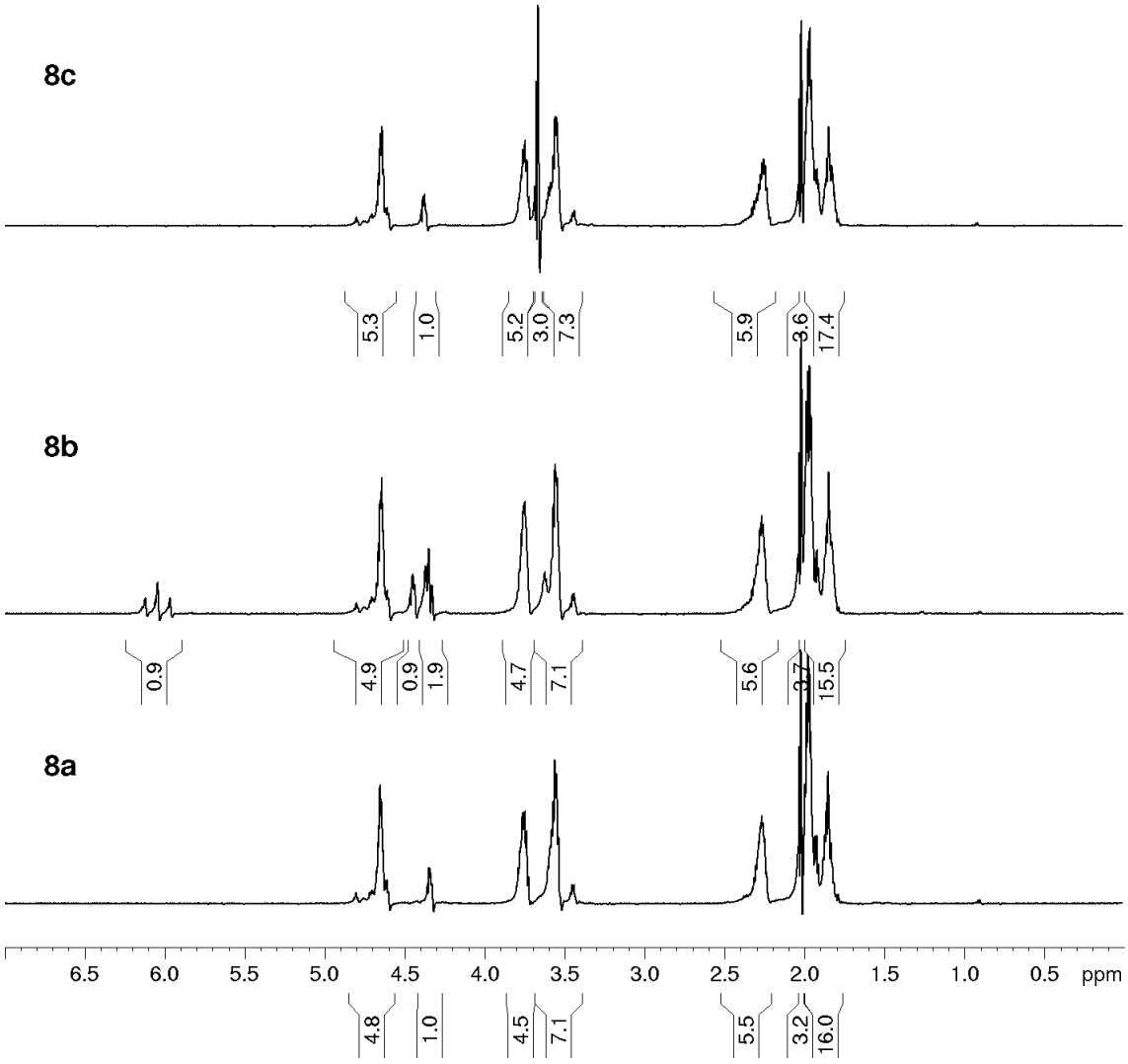
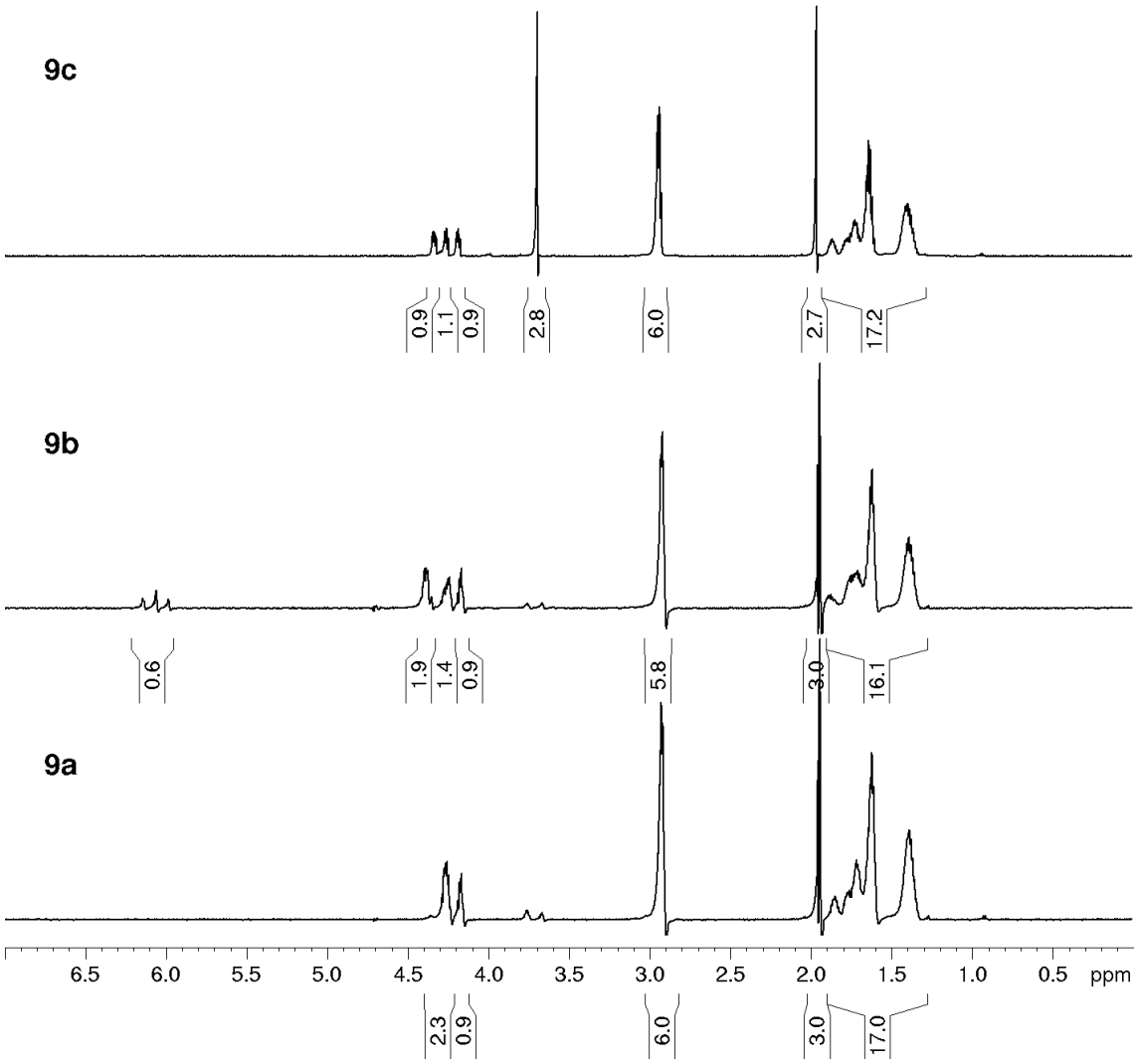
11.8
3.0
36.9

^{1}H 1D stimulated echo NMR spectra in deuterium oxide at 700 MHz

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5.8
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9a
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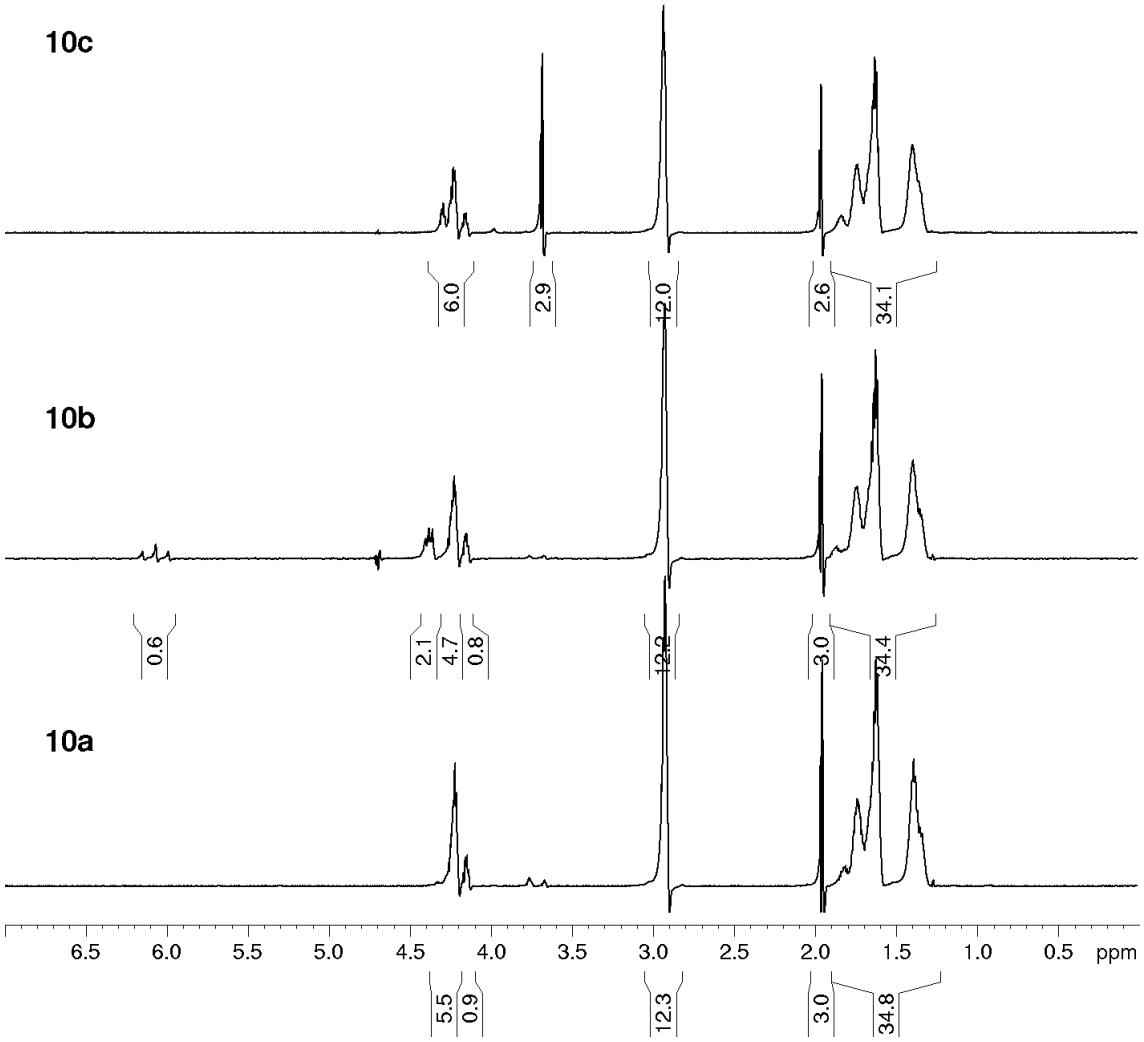
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10b
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4.7
0.8
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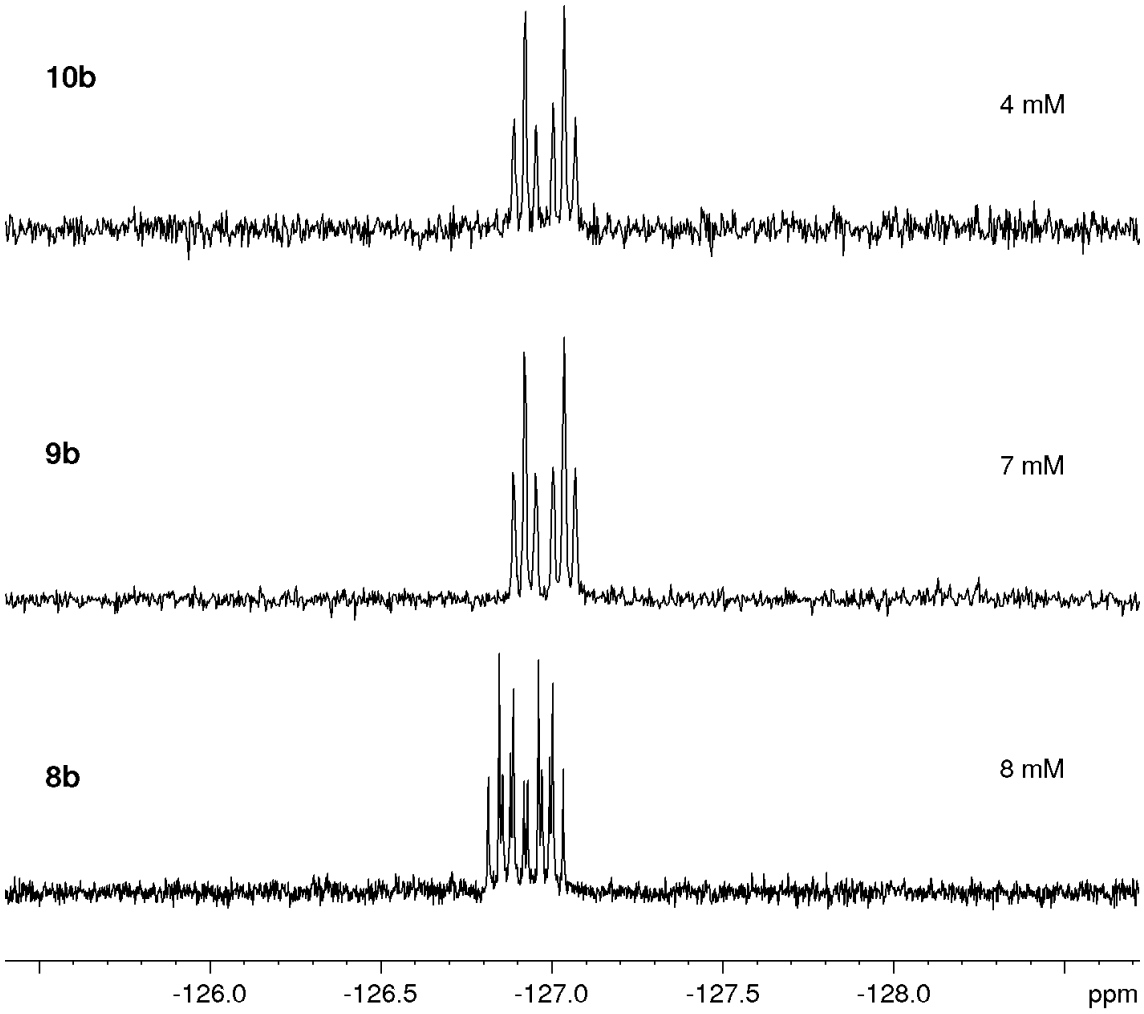
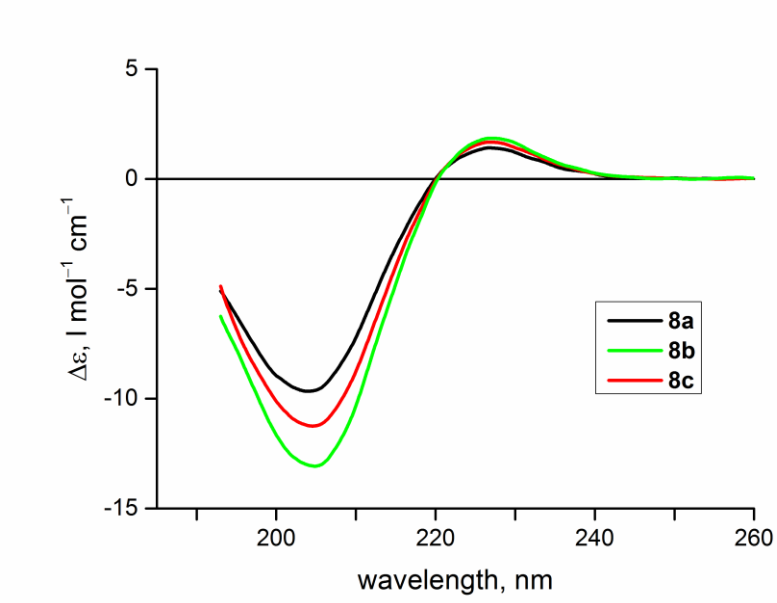
3.0
34.4
10a
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
ppm
5.5
0.9
12.3
3.0
34.8

^{19}F NMR spectra of the peptides in deuterium oxide at 471 MHz

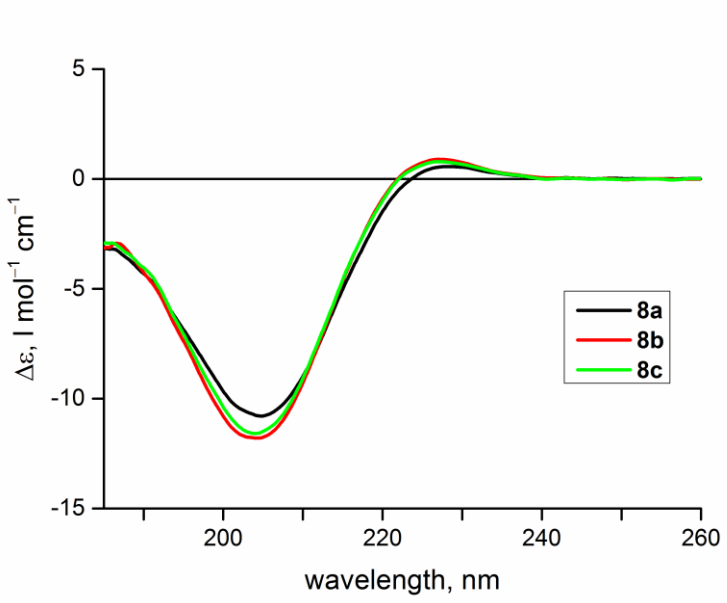


Circular dichroism spectra for the peptides

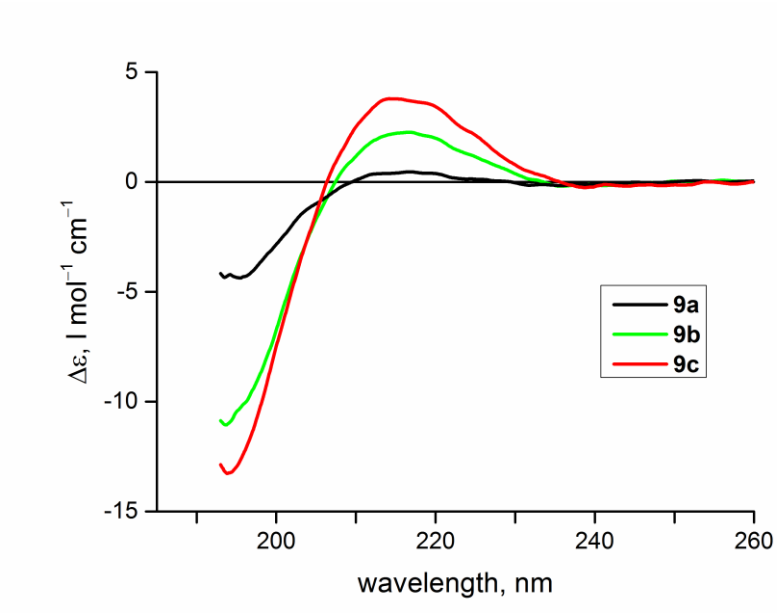
in methanol:



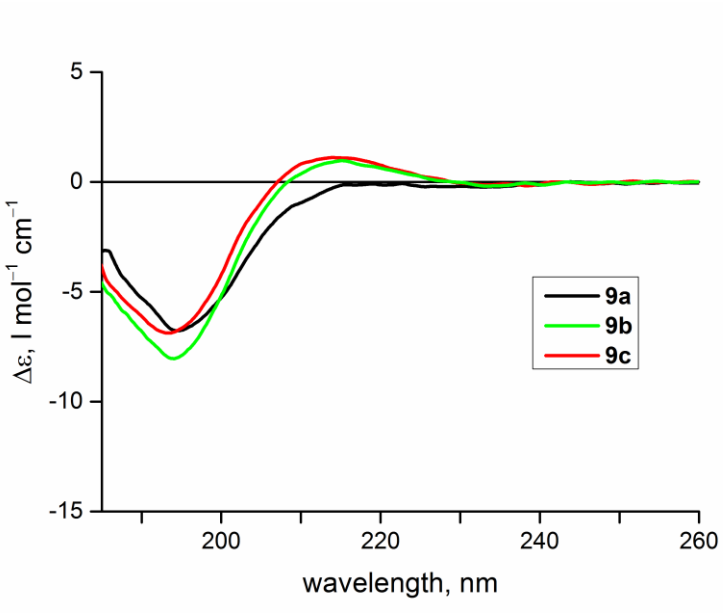
in aqueous buffer:



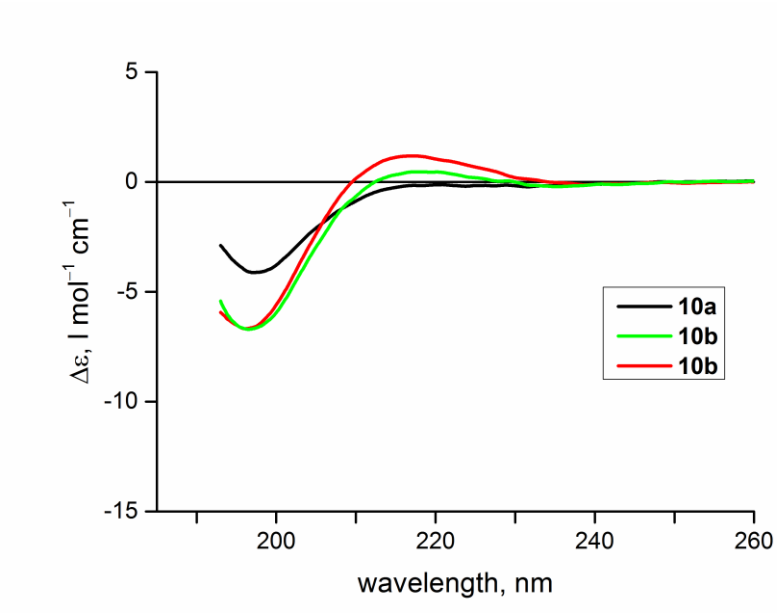
in methanol:



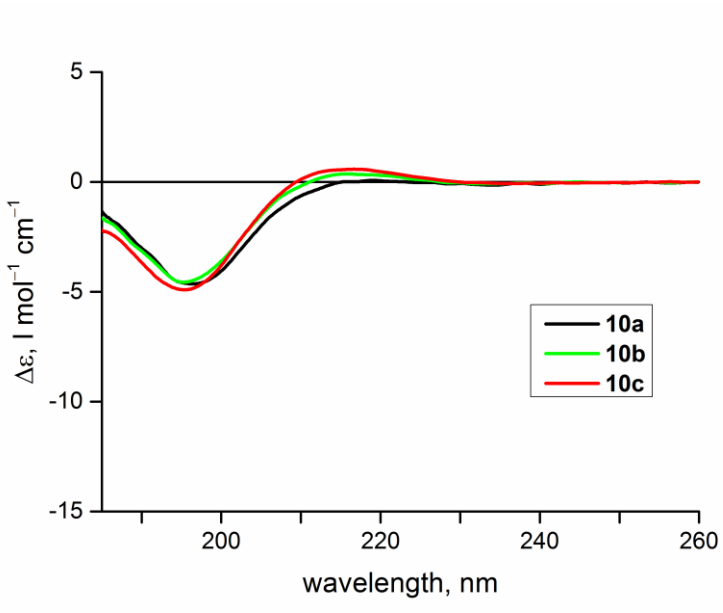
in aqueous buffer:



in methanol:



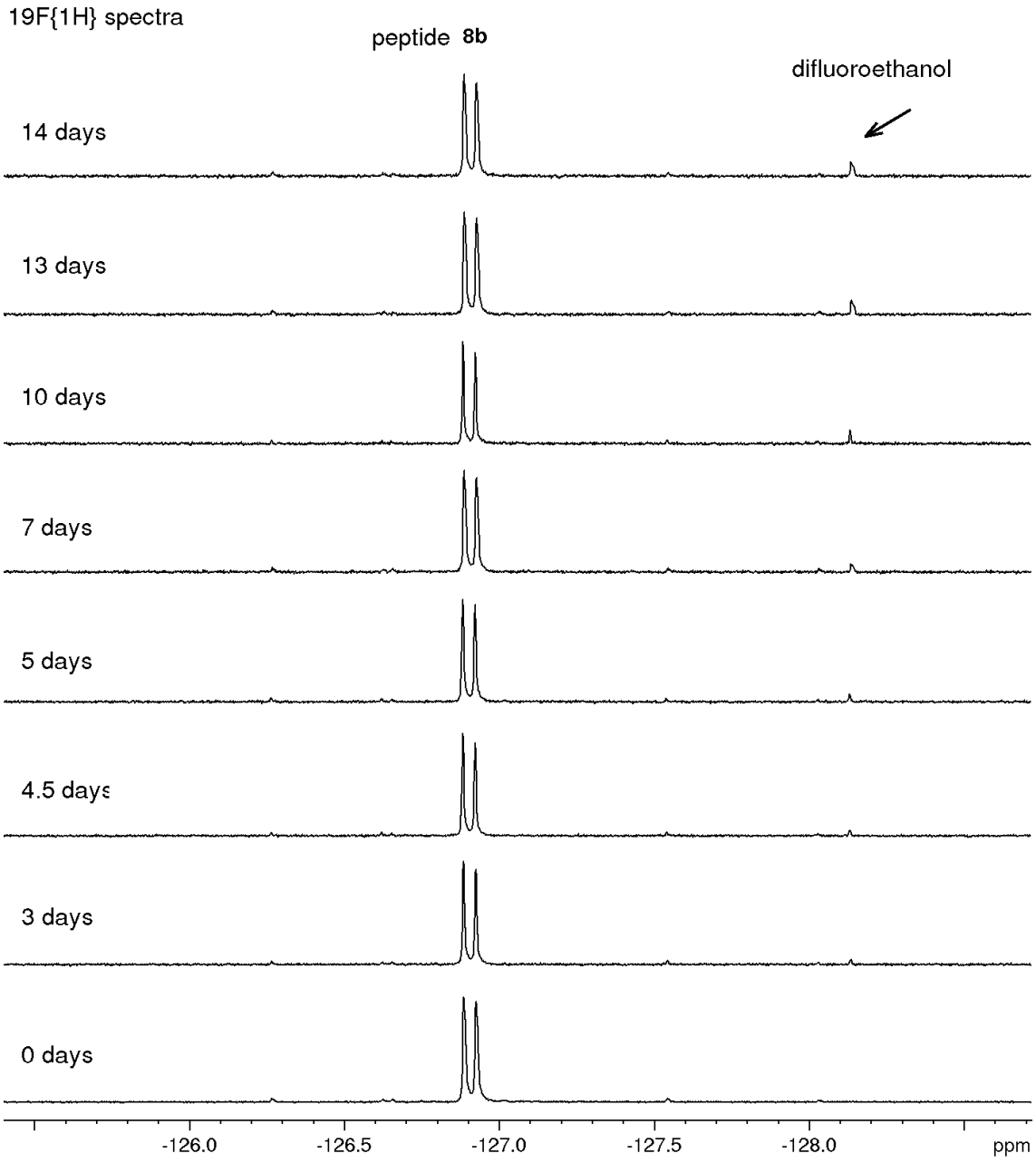
in aqueous buffer:



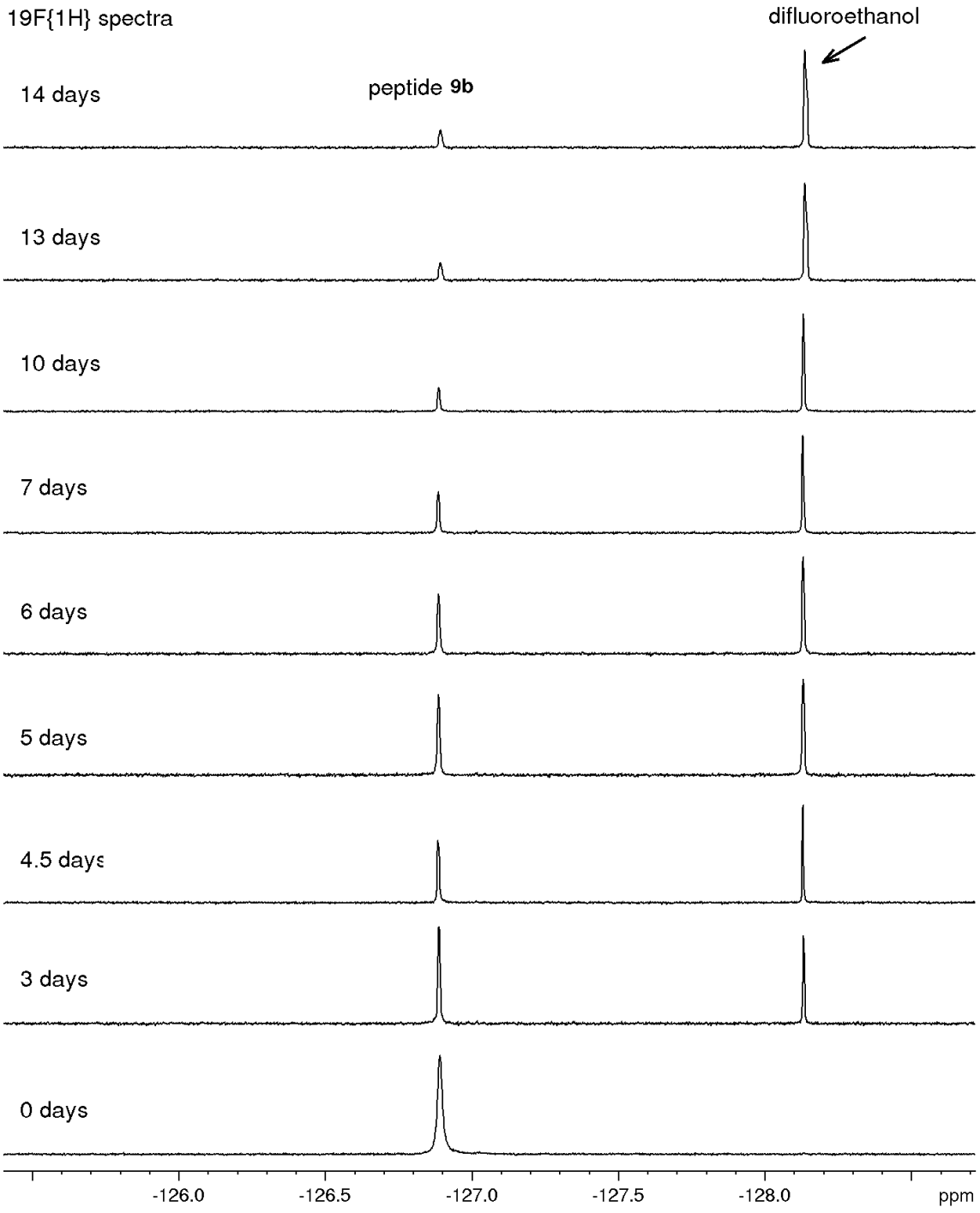
Hydrolysis of the peptides

Starting peptide concentrations **8b** – 5 mM, **9b** – 5 mM, **10b** – 2.5 mM

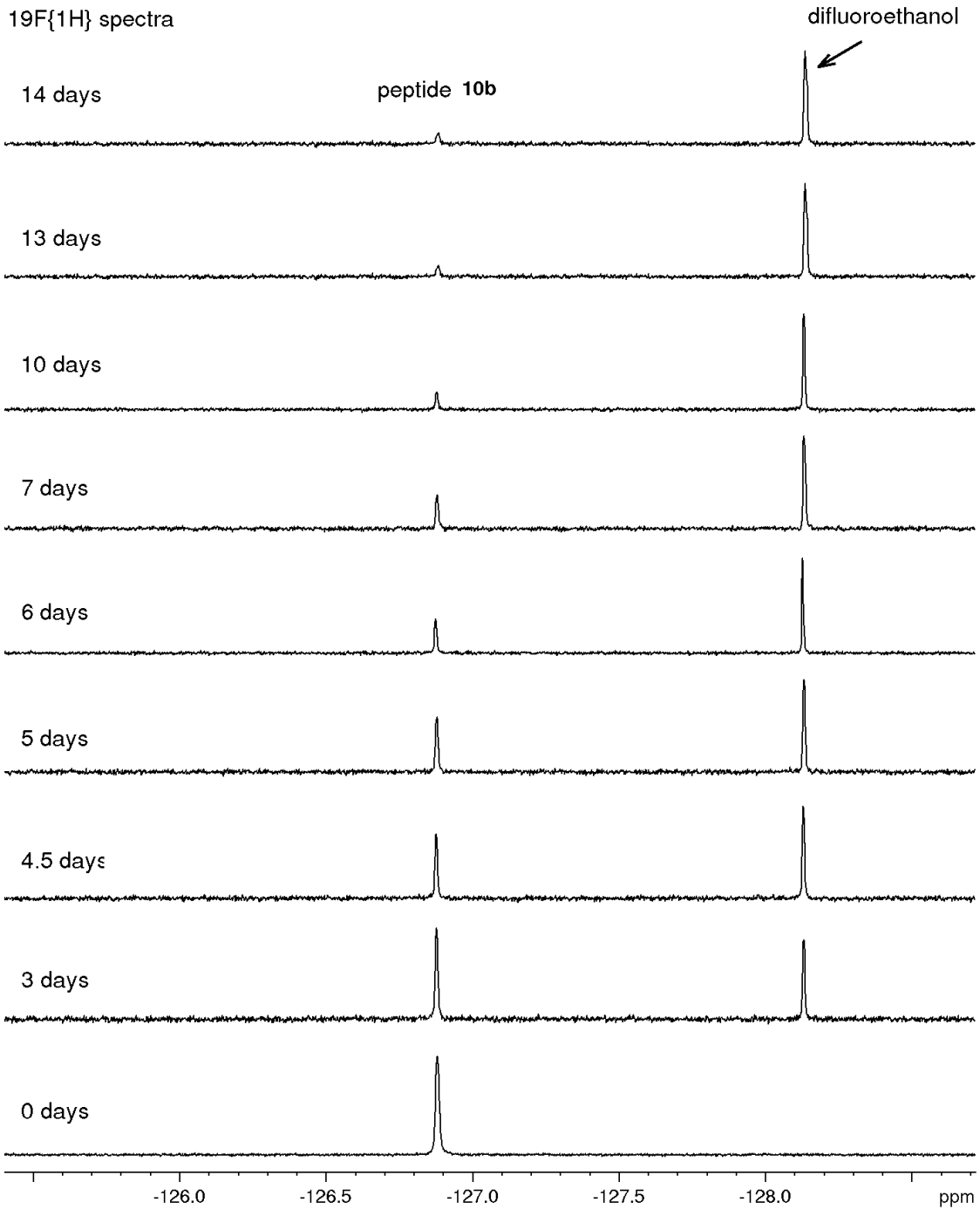
peptide **8b**, series # 1



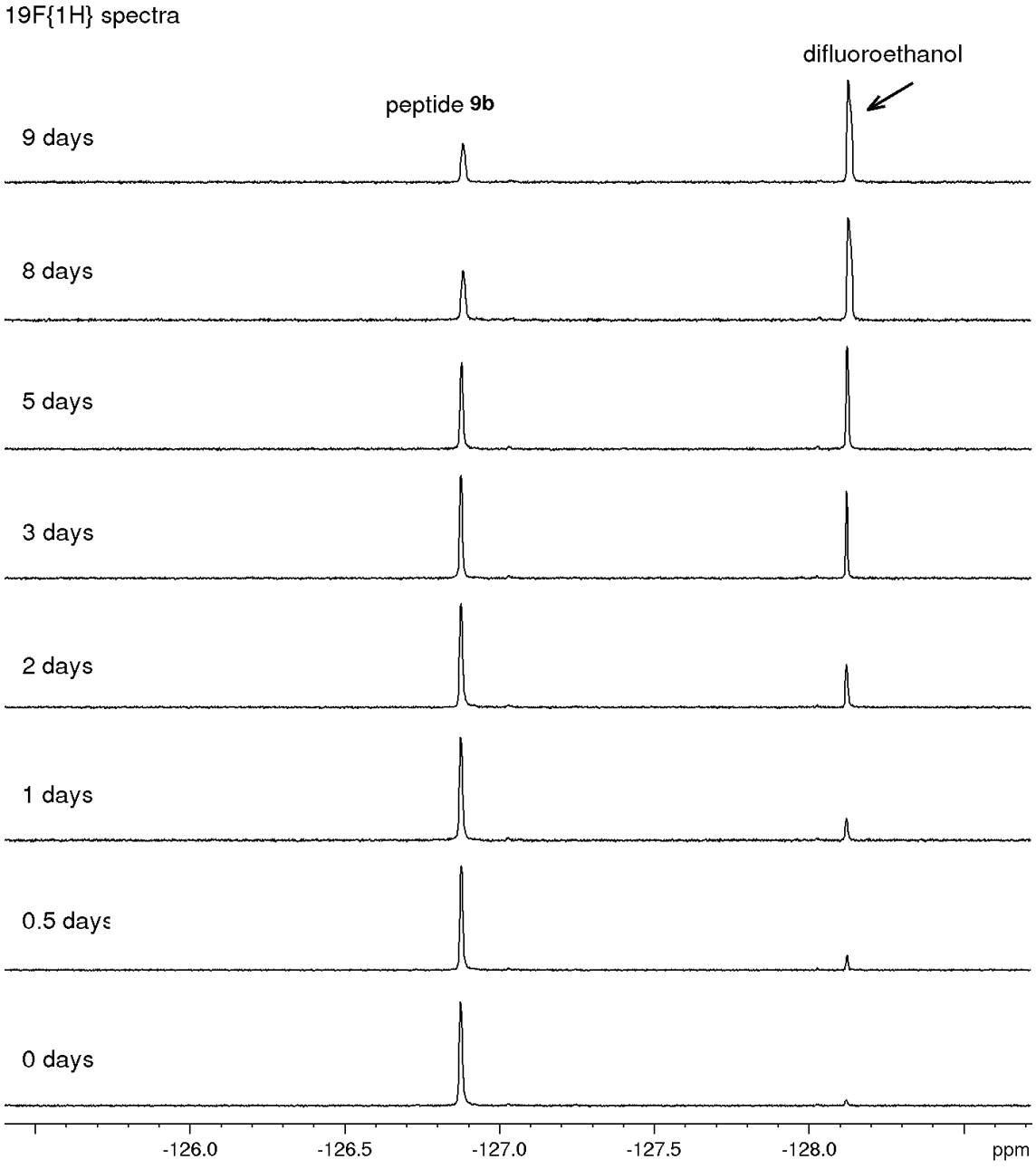
peptide **9b**, series # 1



peptide **10b**, series # 1



peptide **9b**, series # 2



peptide **10b**, series # 2