

# Isolation and Structure Identification of Novel Brominated Diketopiperazines from *Nocardia ignorata*—A Lichen-Associated Actinobacterium

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S1

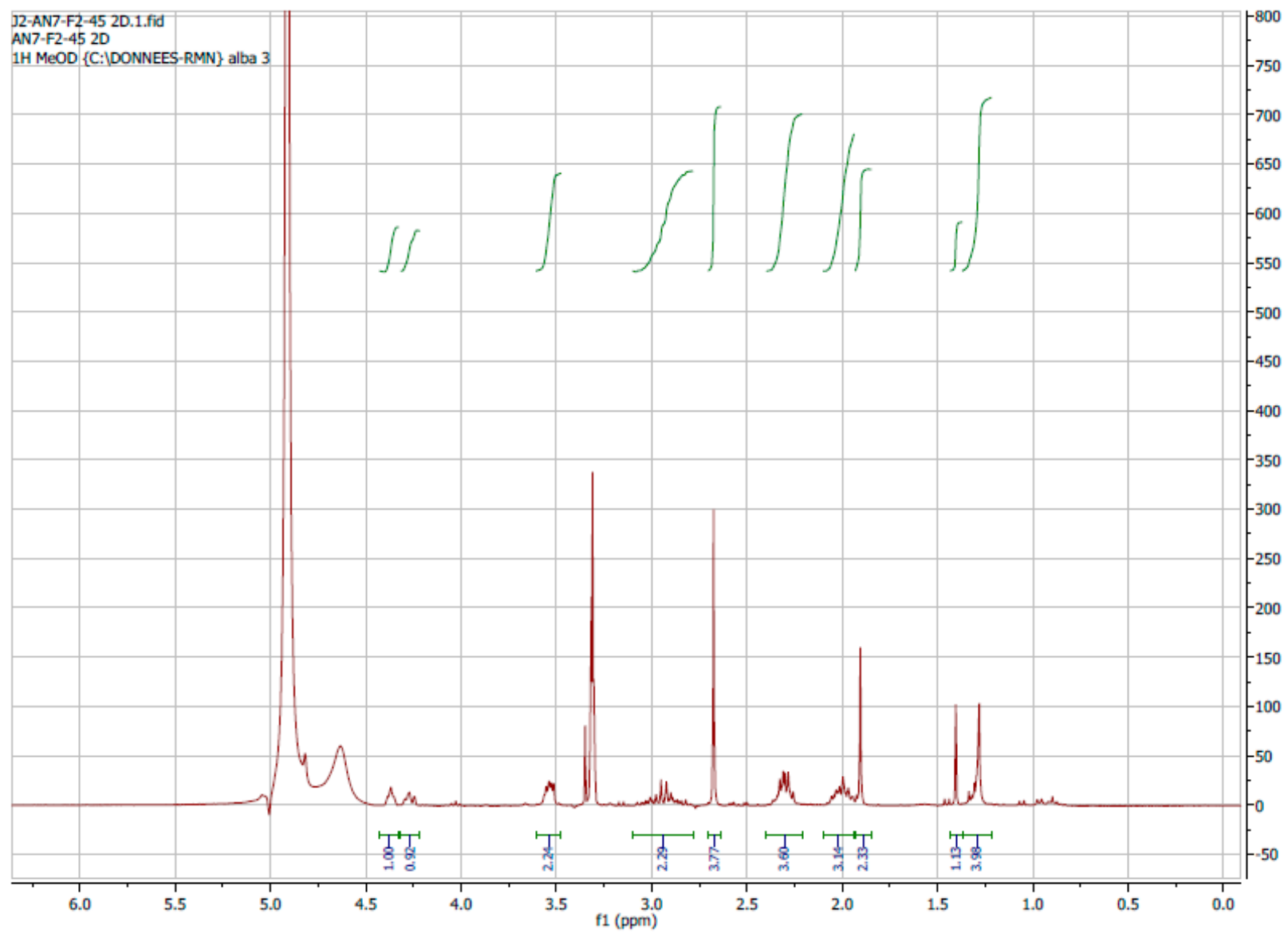


Figure S1:  $^1\text{H}$ -NMR spectrum of compound 1 in  $\text{CD}_3\text{OD}$ .

S2

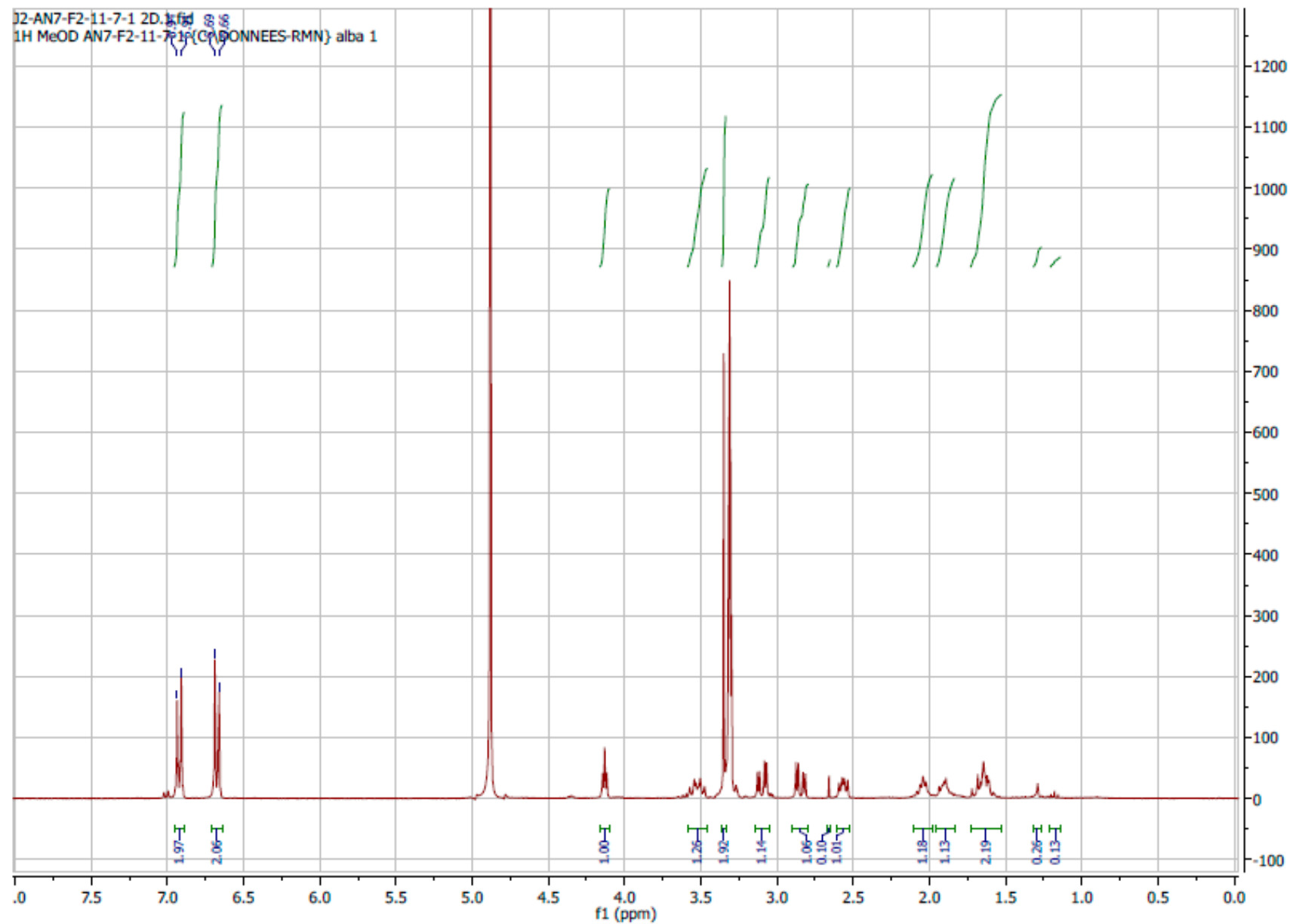


Figure S2: <sup>1</sup>H-NMR spectrum of compound 2 in CD<sub>3</sub>OD.

S3

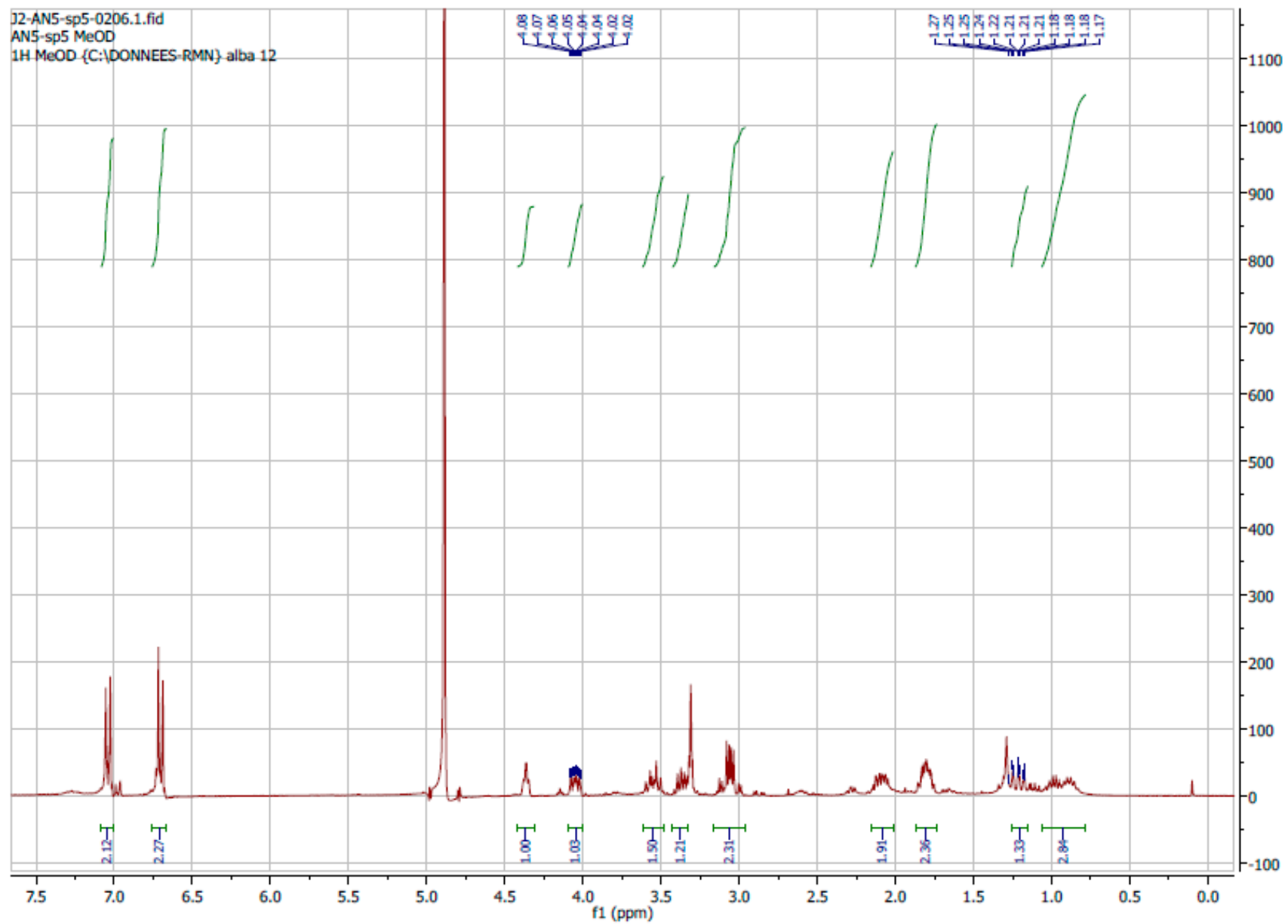


Figure S3 :  $^1\text{H}$ -NMR spectrum of compound 3 in  $\text{CD}_3\text{OD}$ .

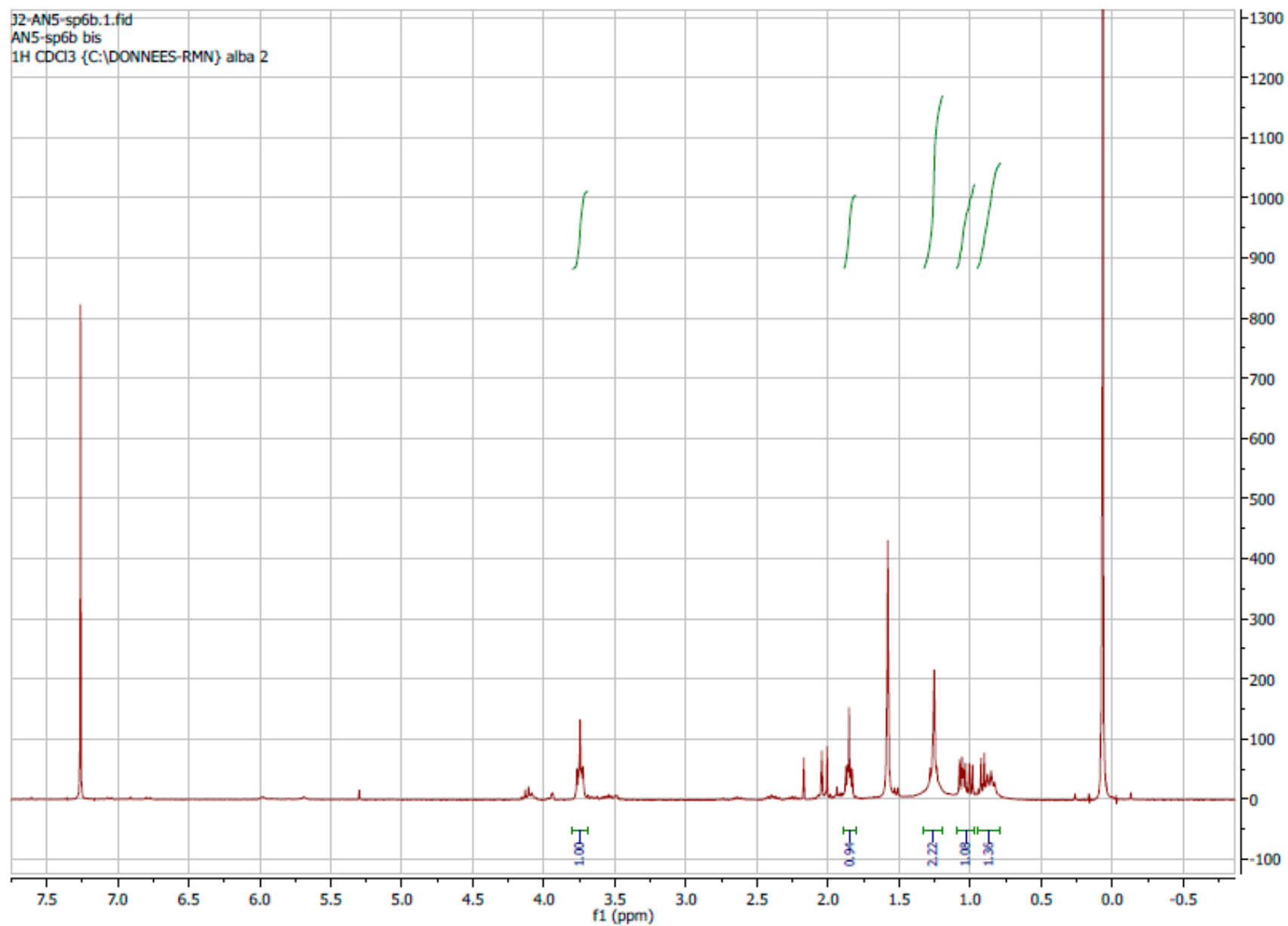


Figure S4:  $^1\text{H}$ -NMR spectrum of compound 4 in  $\text{CDCl}_3$ .

S5

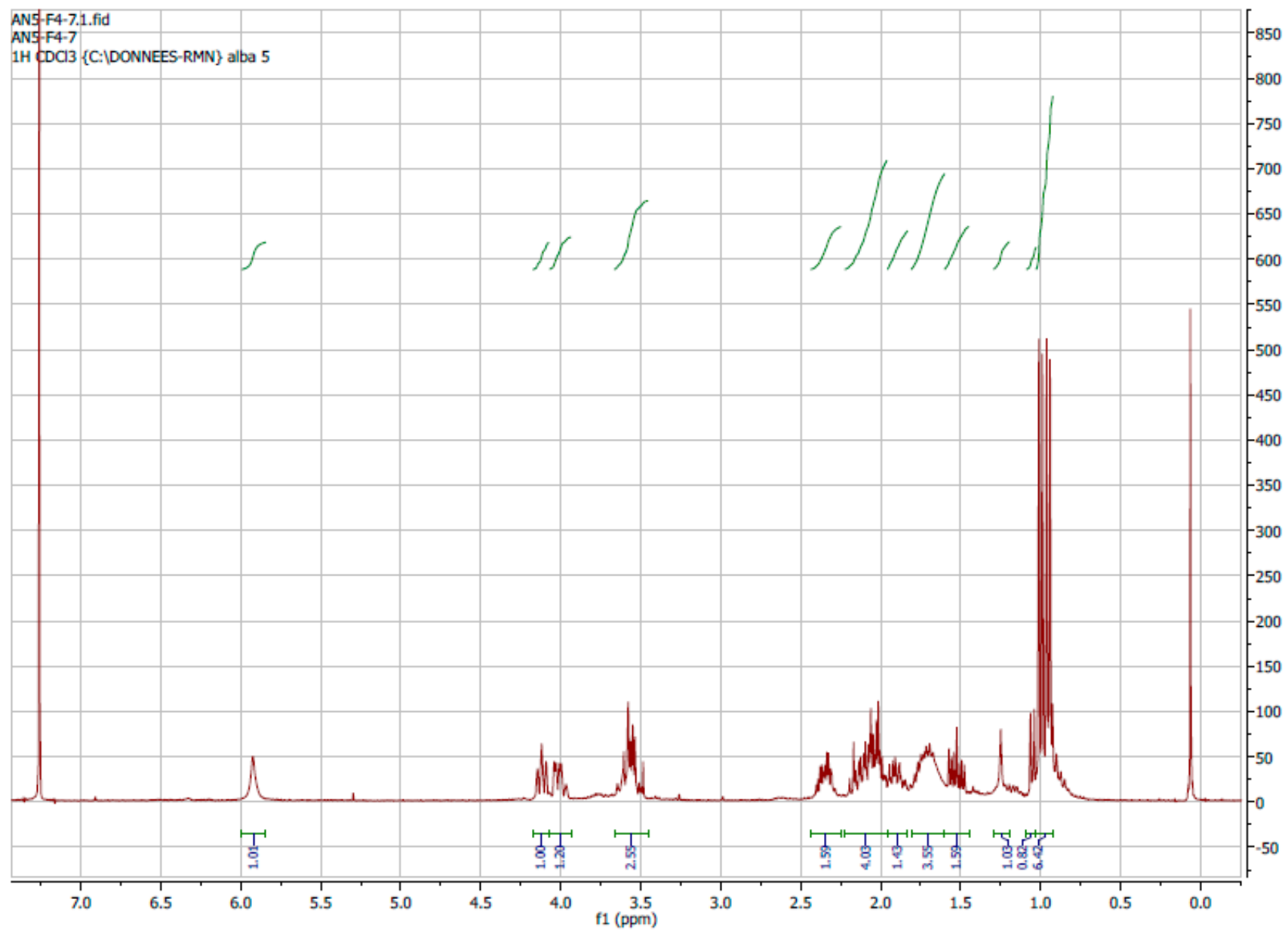


Figure S5:  $^1\text{H}$ -NMR spectrum of compound 5 in  $\text{CDCl}_3$ .

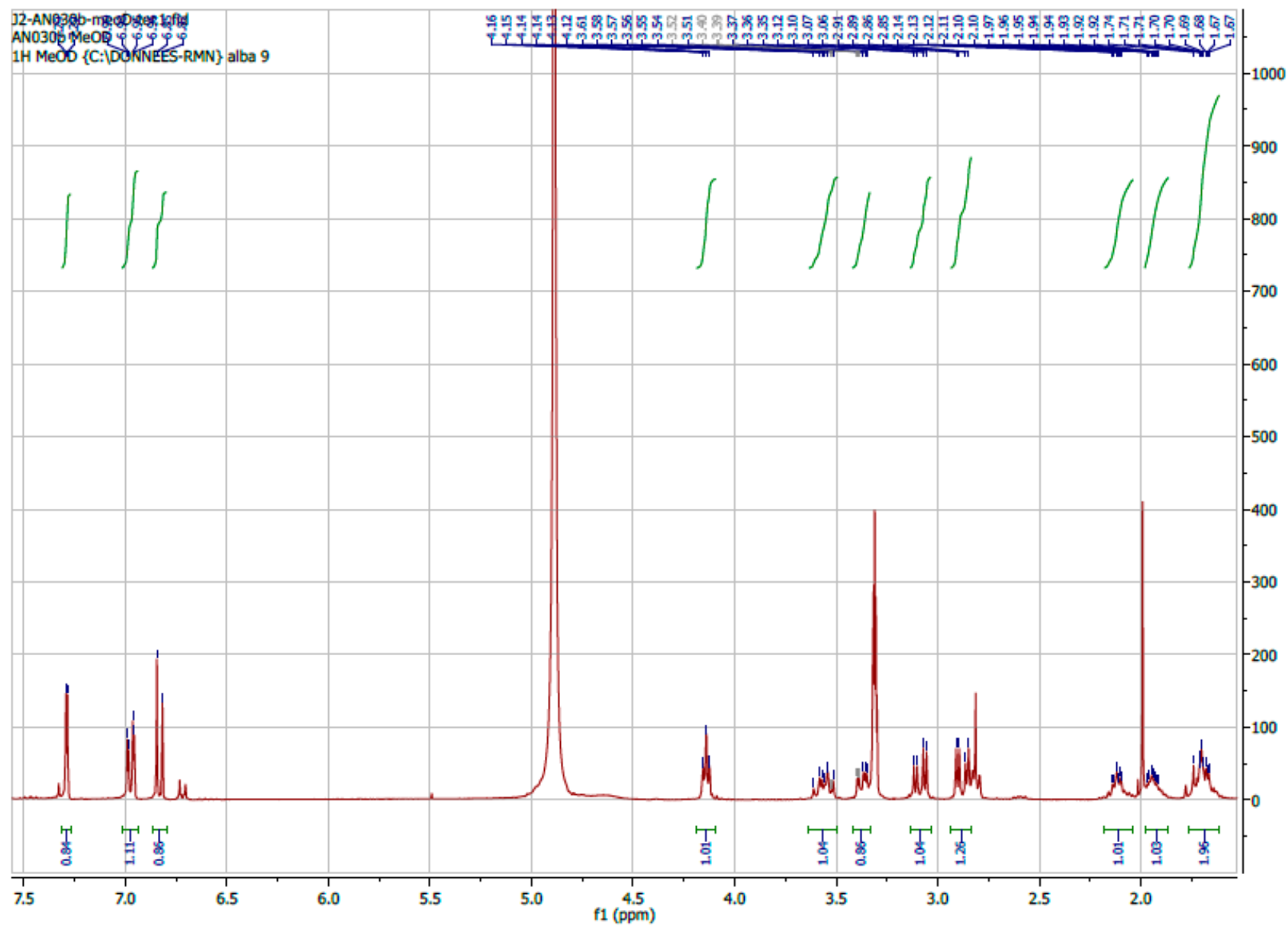


Figure S6:  $^1\text{H}$ -NMR spectrum of compound 6 in  $\text{CD}_3\text{OD}$ .

S7

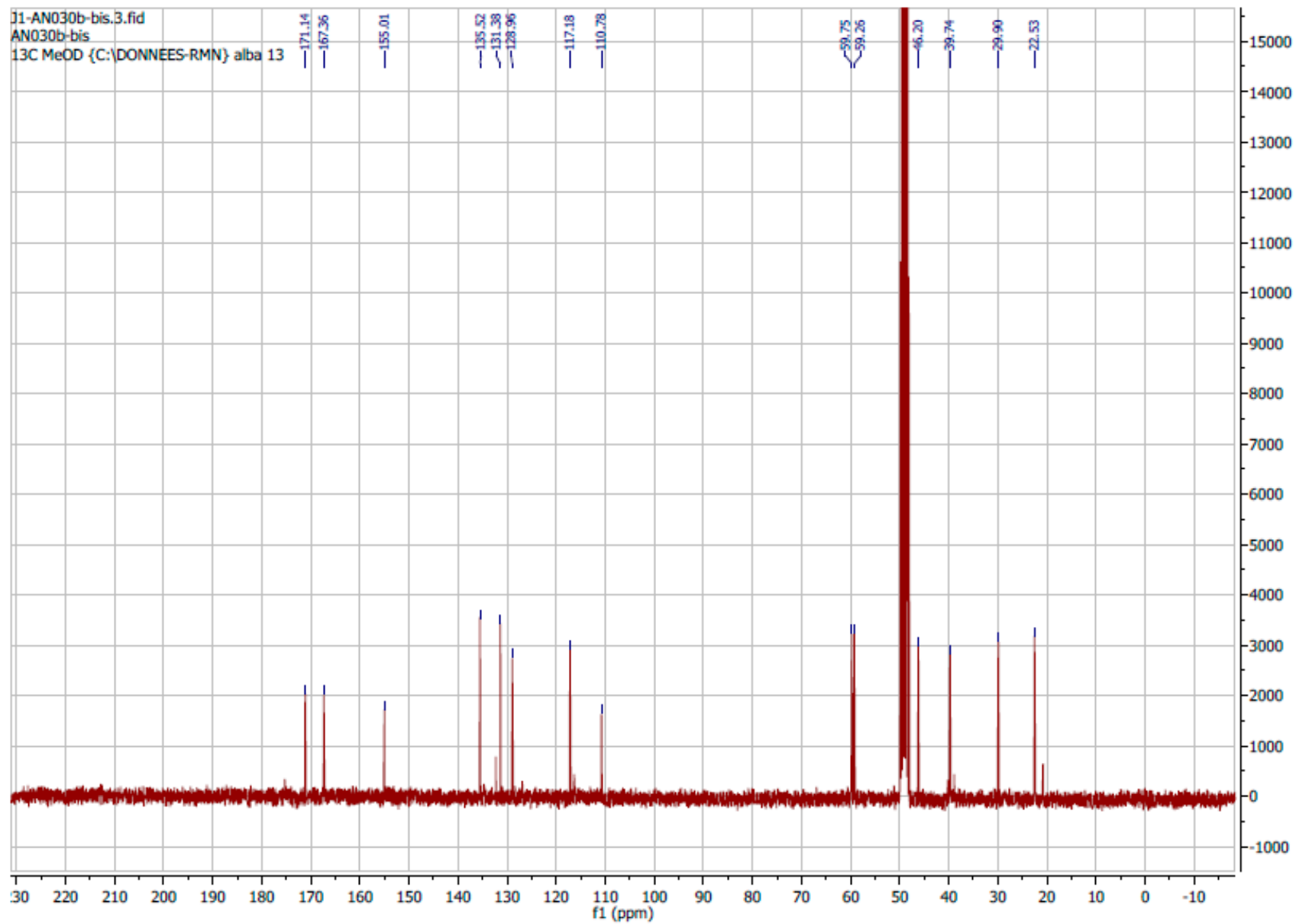


Figure S7: <sup>13</sup>C-NMR spectrum of compound 6 in CD<sub>3</sub>OD.



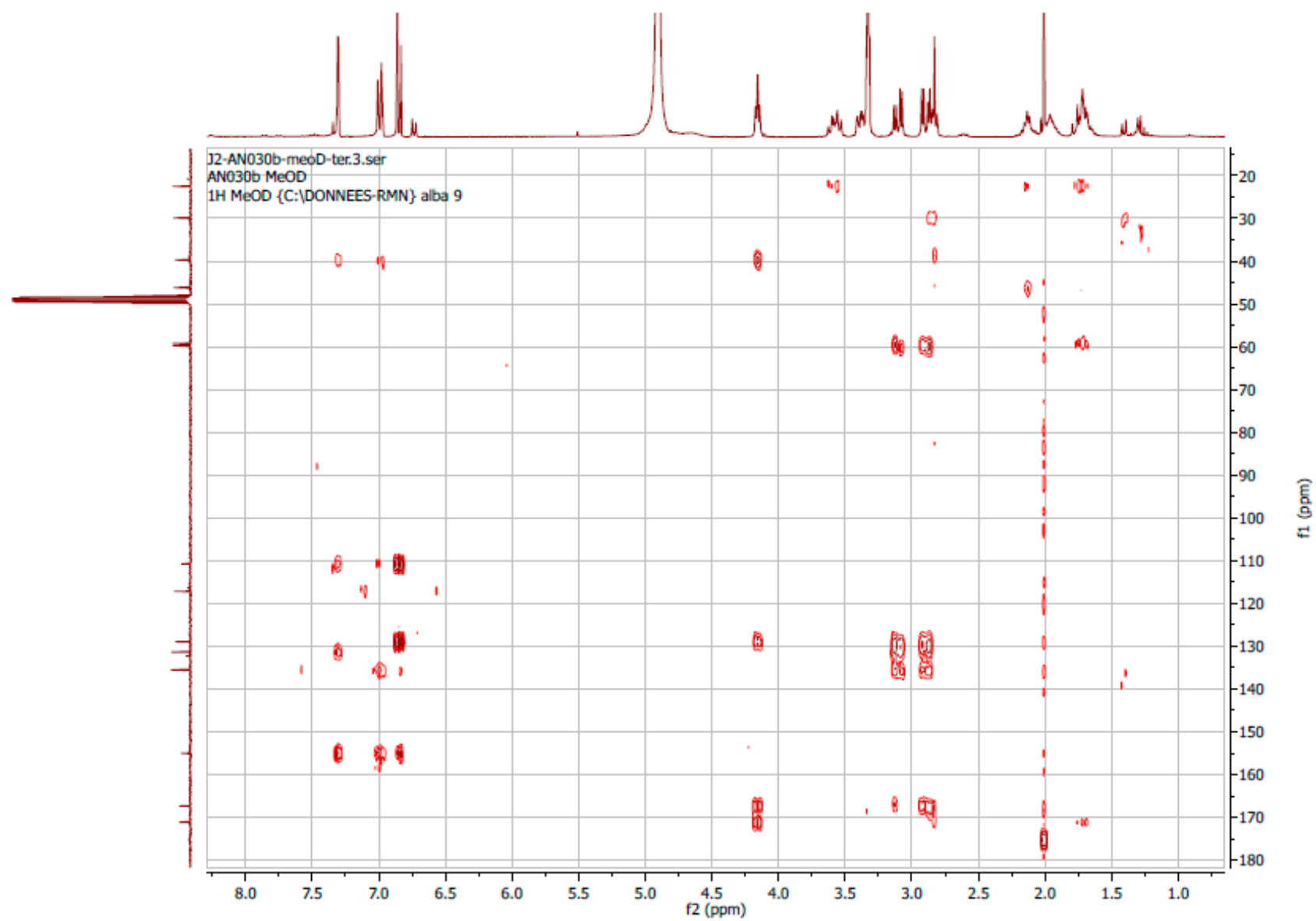


Figure S8 : HMBC spectrum of compound 6 in CD<sub>3</sub>OD.

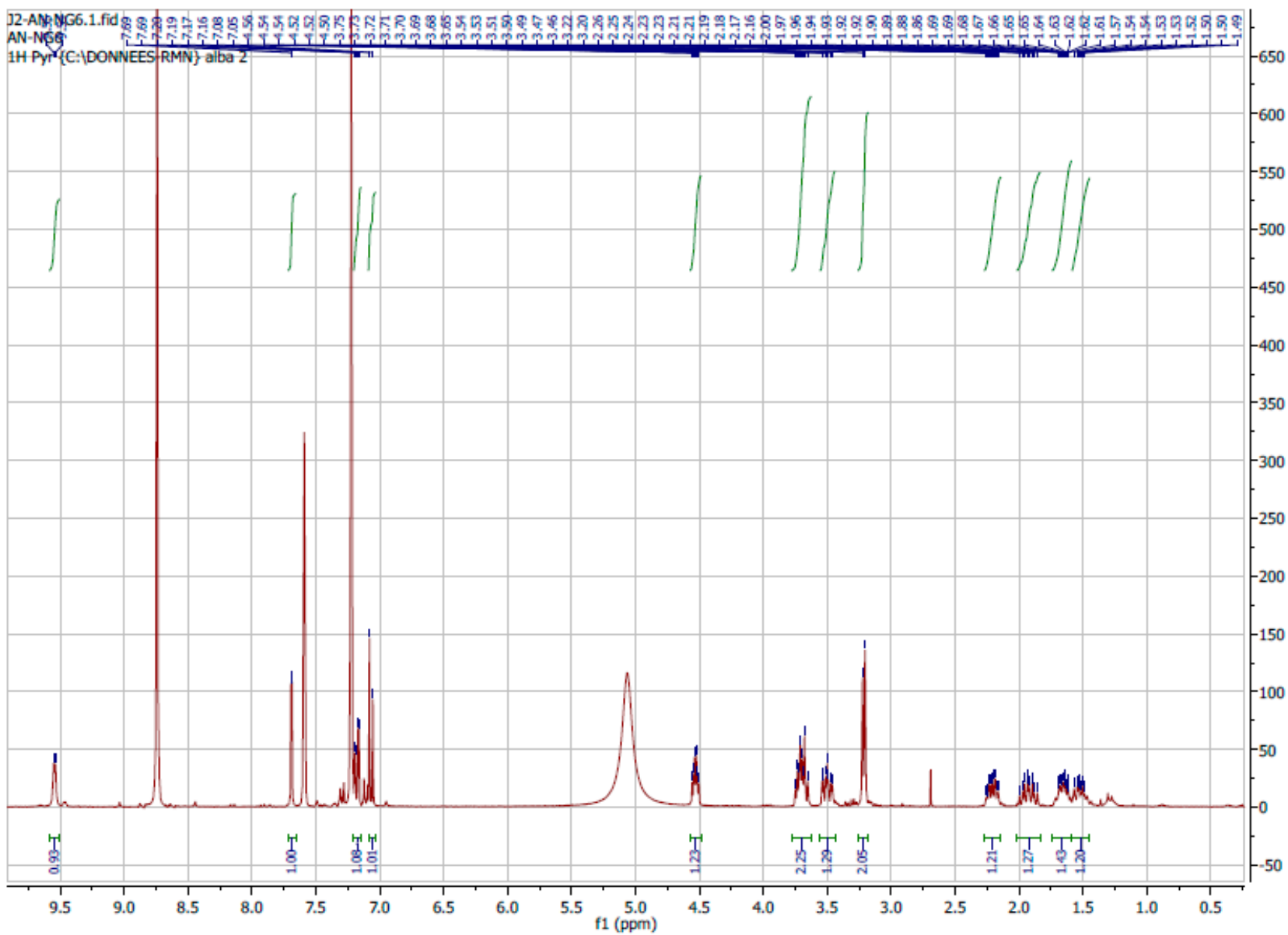


Figure S9:  $^1\text{H}$ -NMR spectrum of compound 6 in pyridine- $d_5$ .

S10

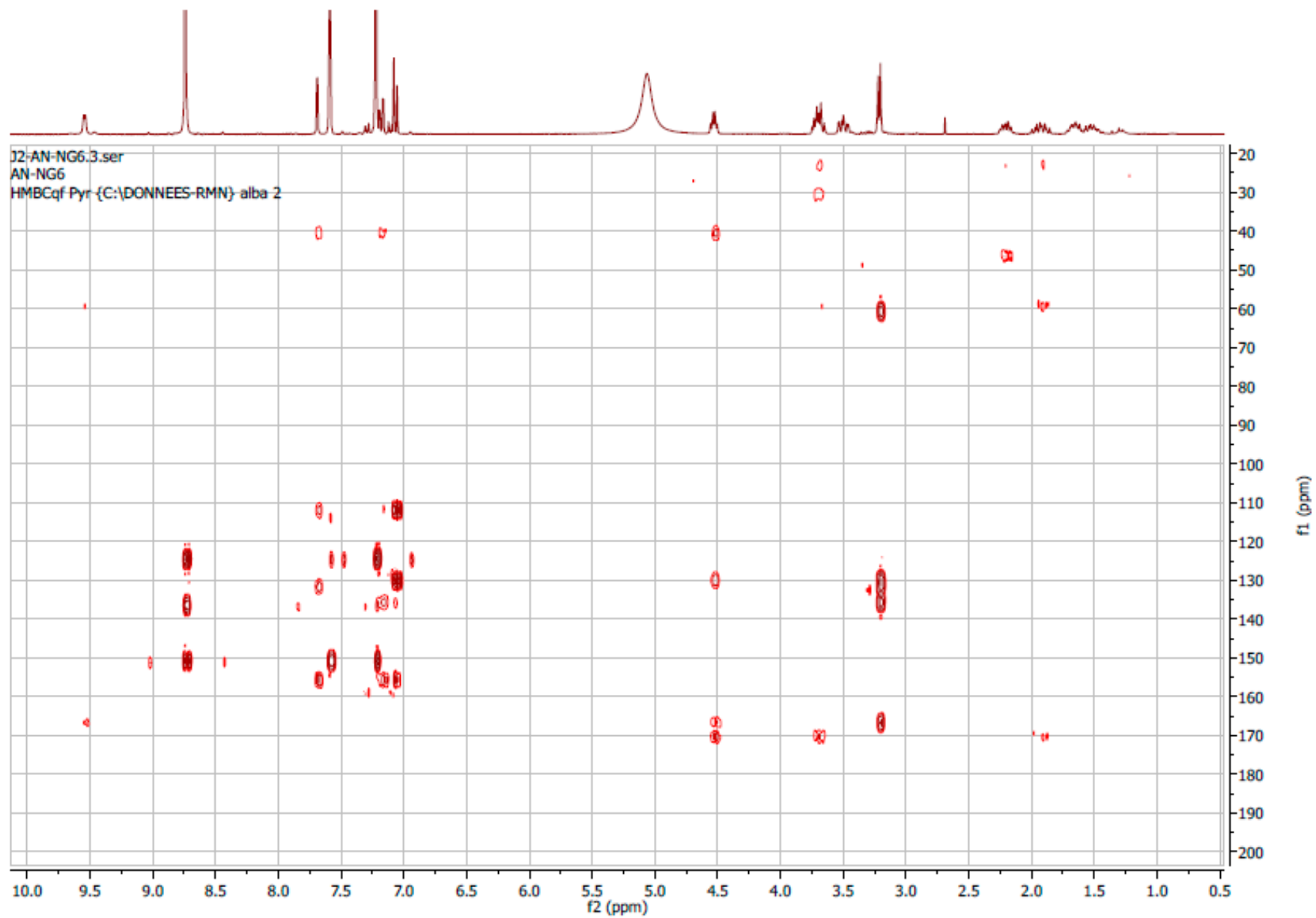


Figure S10 : HMBC spectrum of compound 6 in pyridine-*d*<sub>5</sub>.

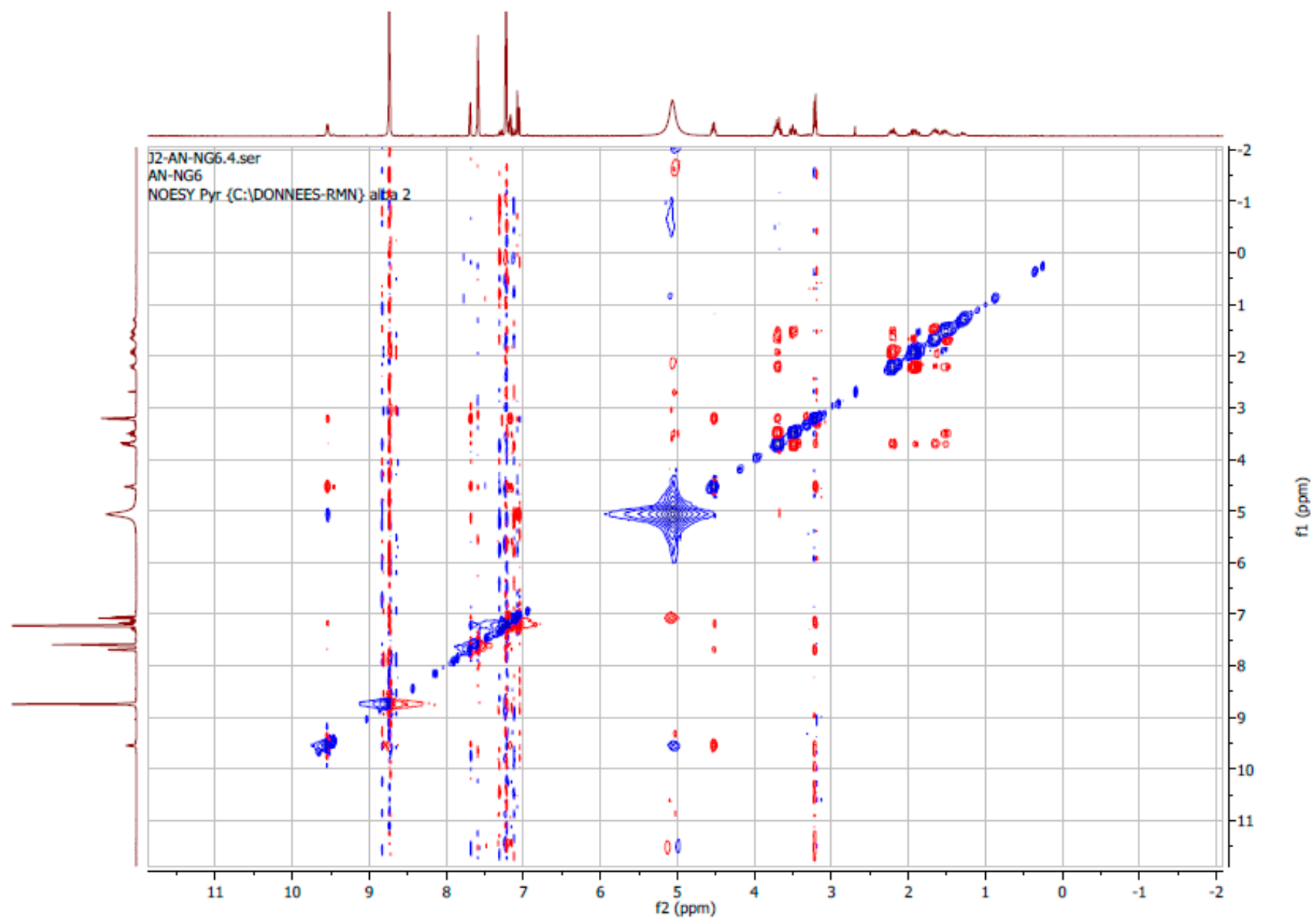


Figure S11 : NOESY spectrum of compound 6 in pyridine-*d*<sub>5</sub>.

S12

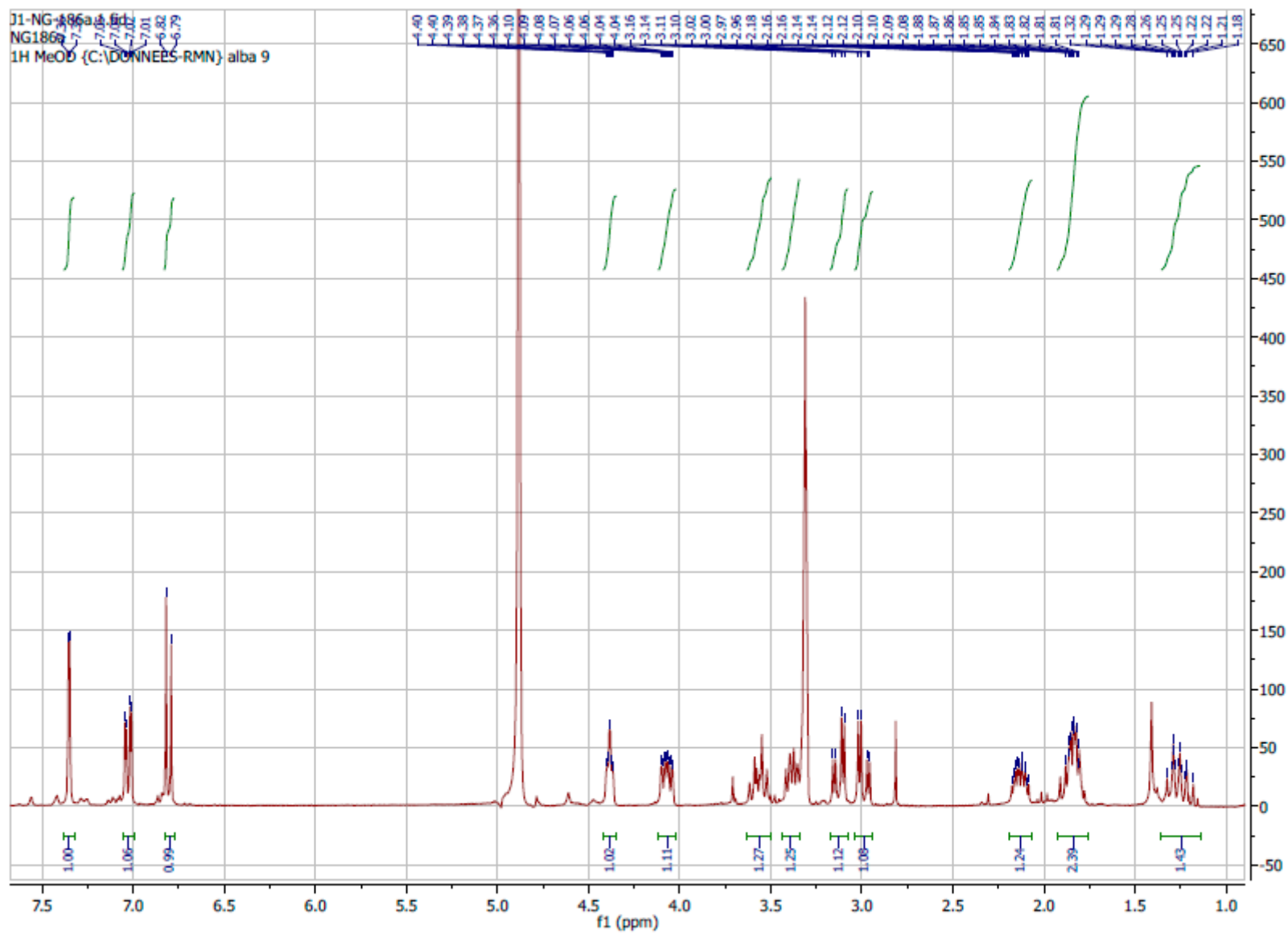


Figure S12:  $^1\text{H-NMR}$  spectrum of compound 7 in  $\text{CD}_3\text{OD}$ .

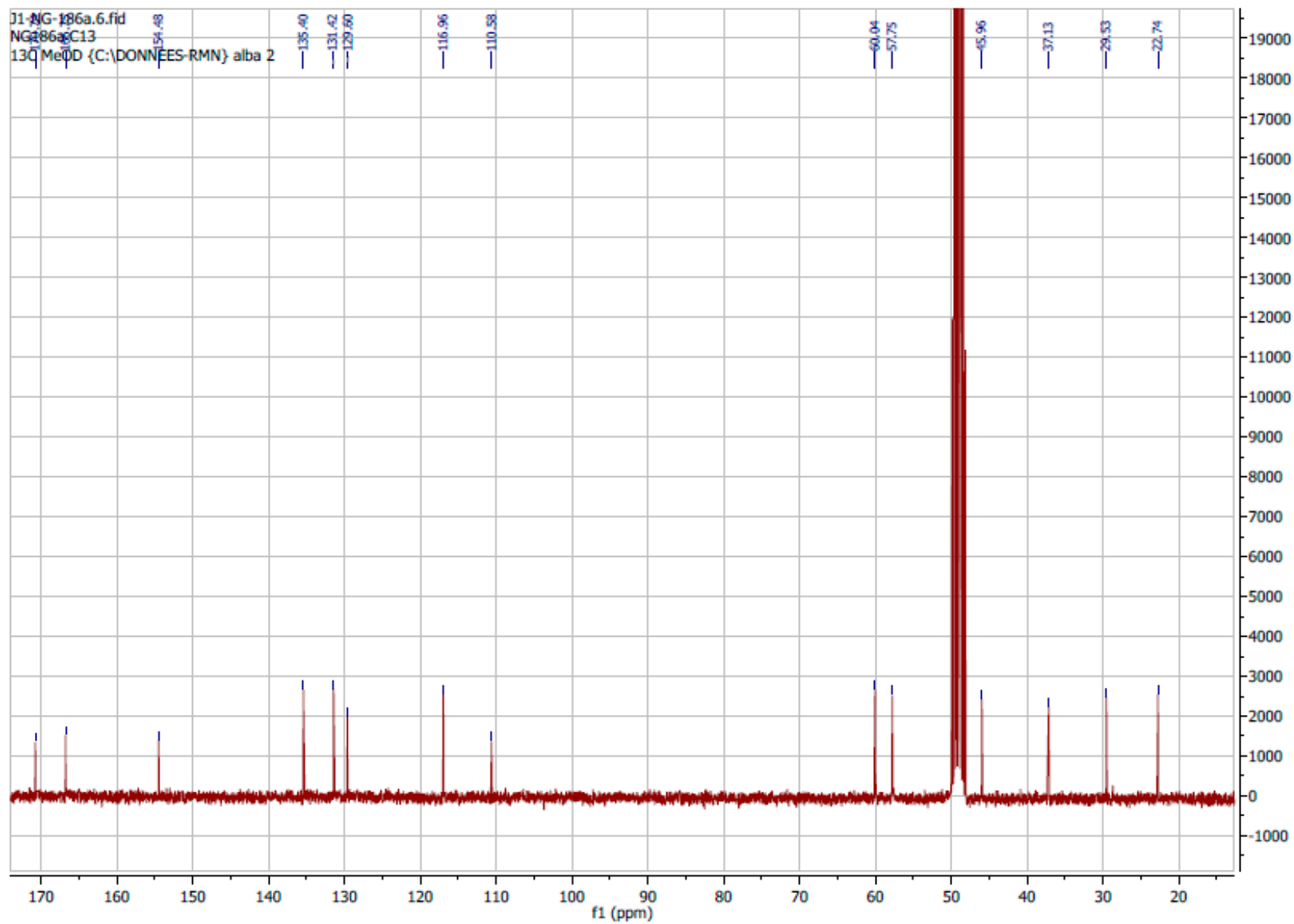


Figure S13:  $^{13}\text{C}$ -NMR spectrum of compound 7 in  $\text{CD}_3\text{OD}$ .

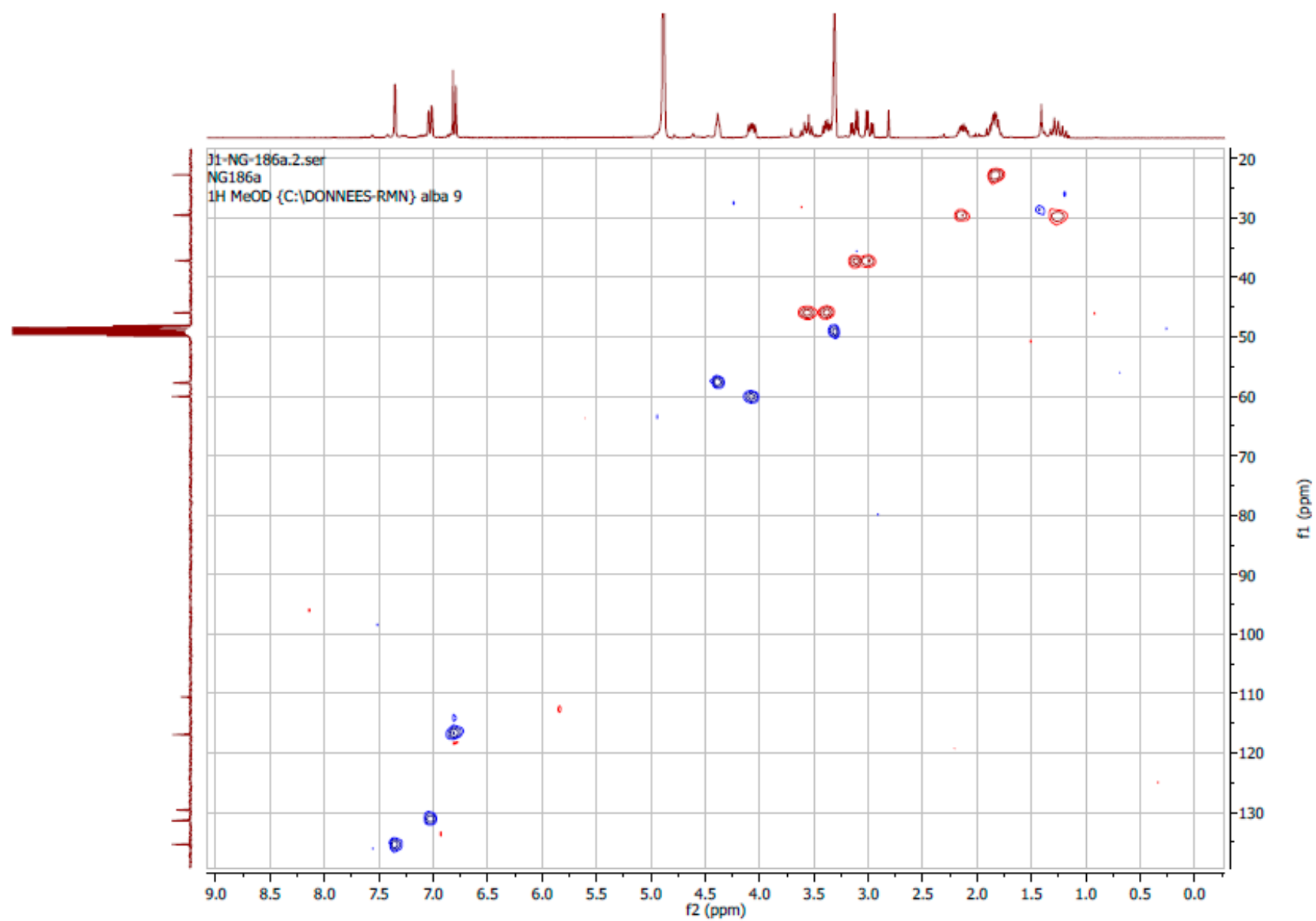


Figure S14: HSQC spectrum of compound 7 in  $\text{CD}_3\text{OD}$ .

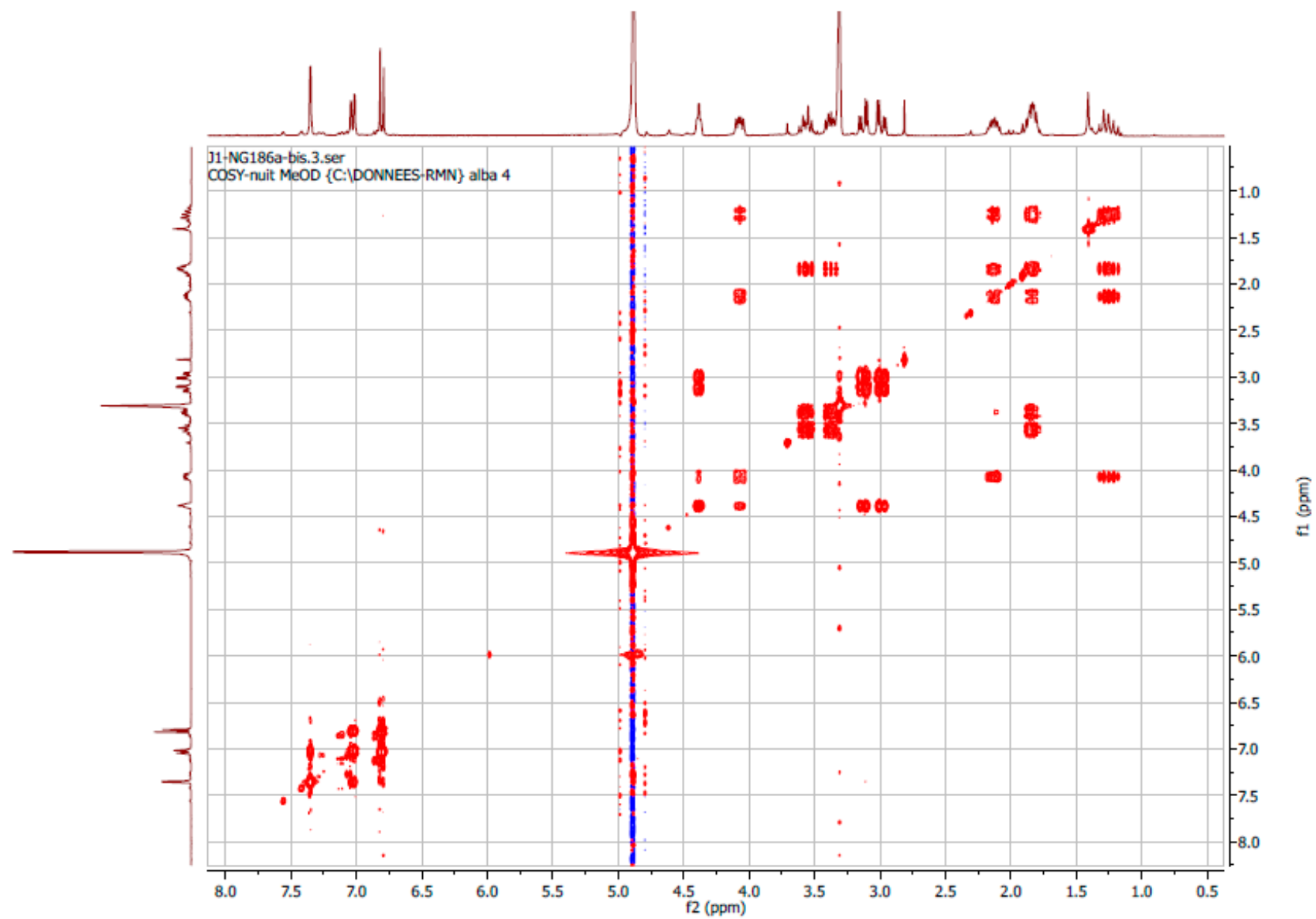


Figure S15: COSY spectrum of compound 7 in CD<sub>3</sub>OD.



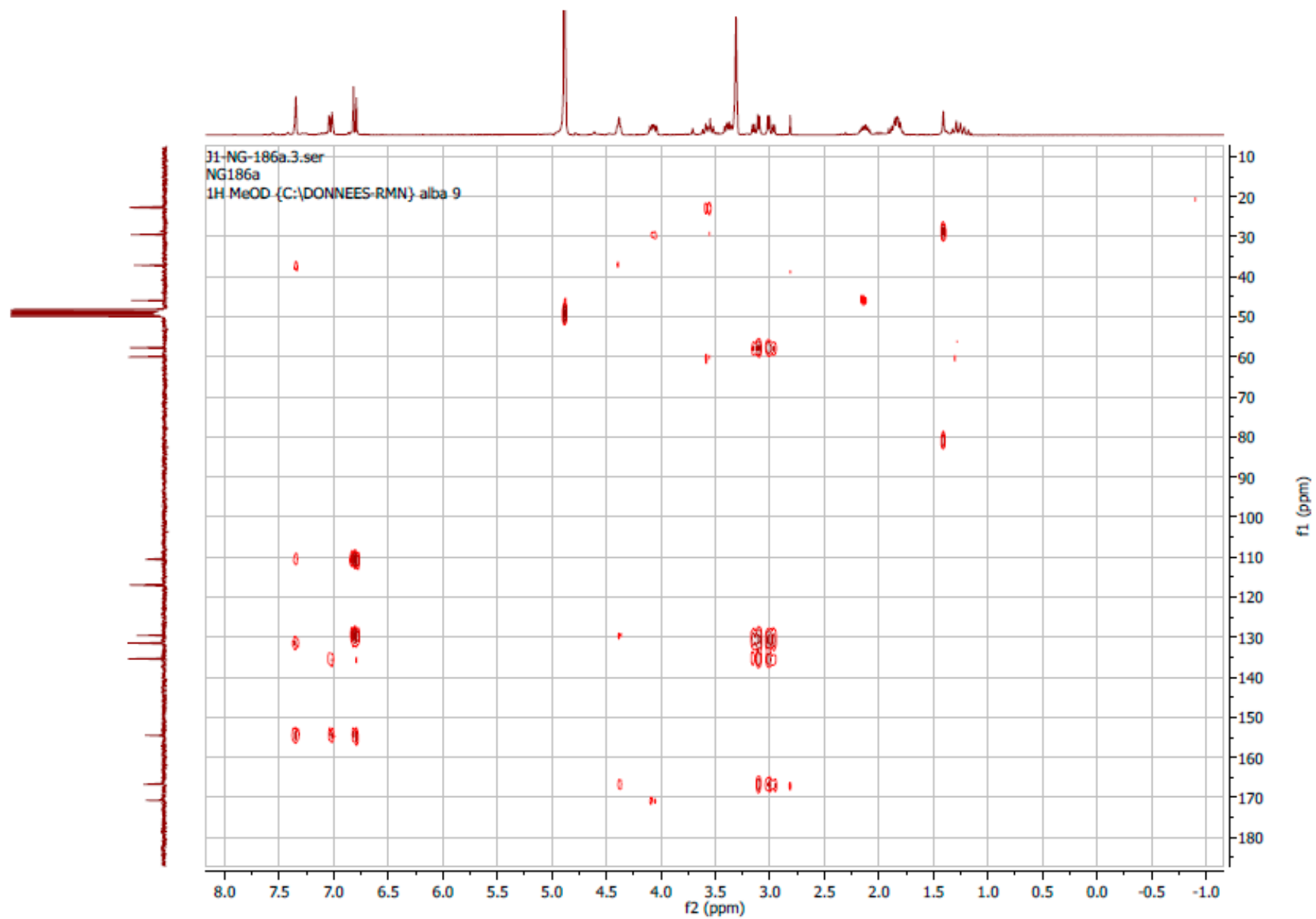


Figure S16: HMBC spectrum of compound 7 in CD<sub>3</sub>OD.

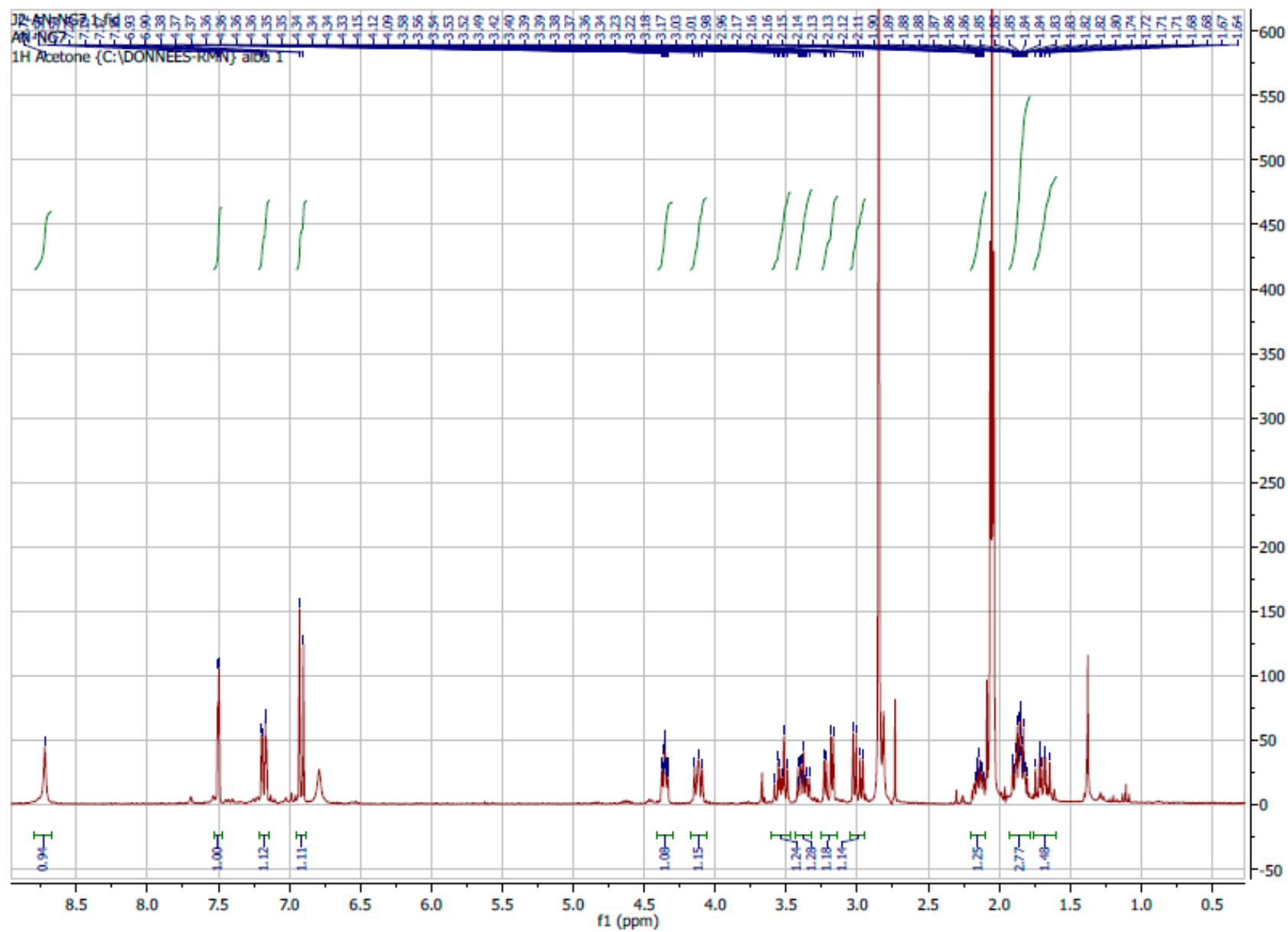


Figure S17:  $^1\text{H}$ -NMR spectrum of compound 7 in acetone- $d_6$ .

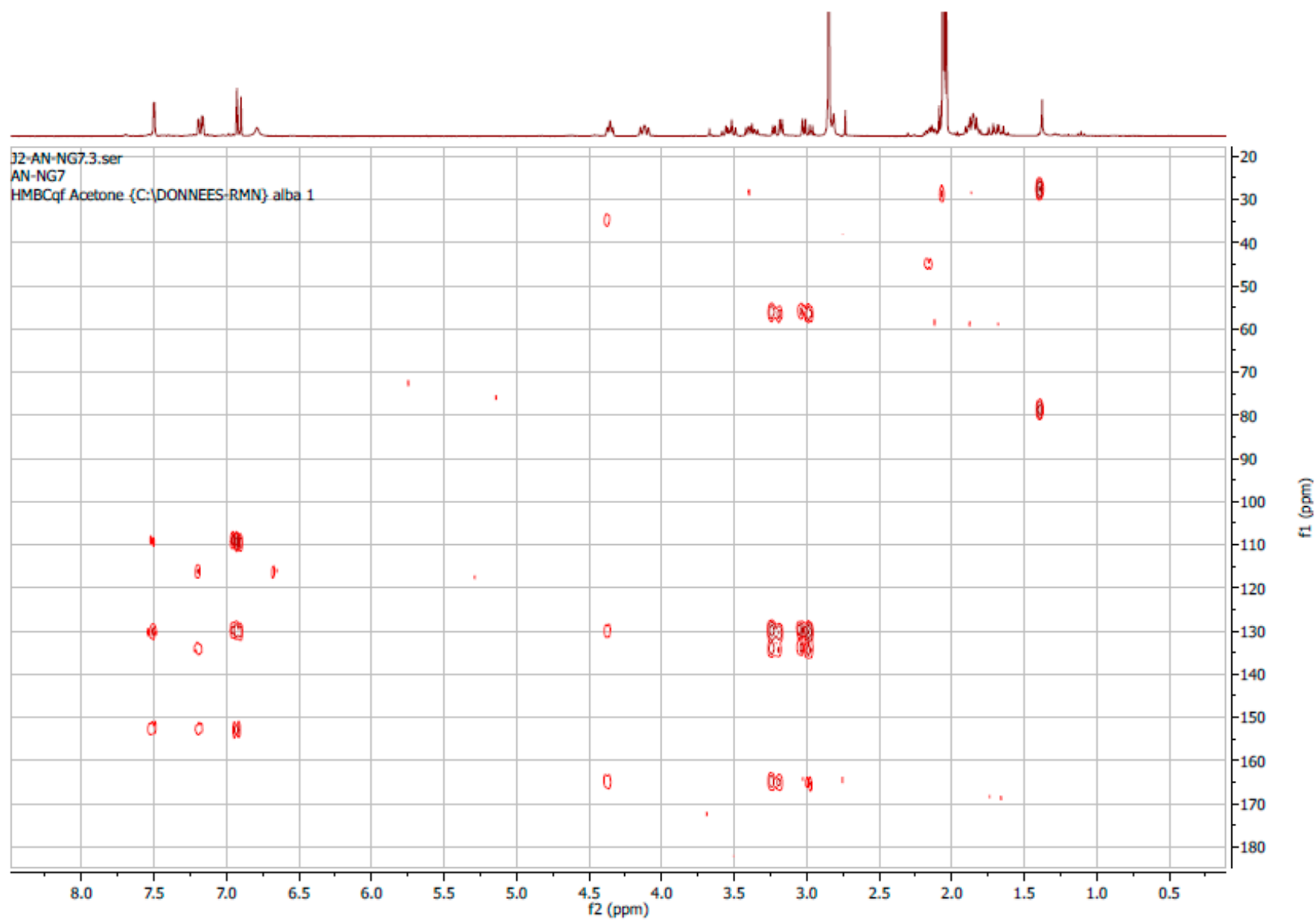


Figure S18 : HMBC spectrum of compound 7 in acetone- $d_6$ .

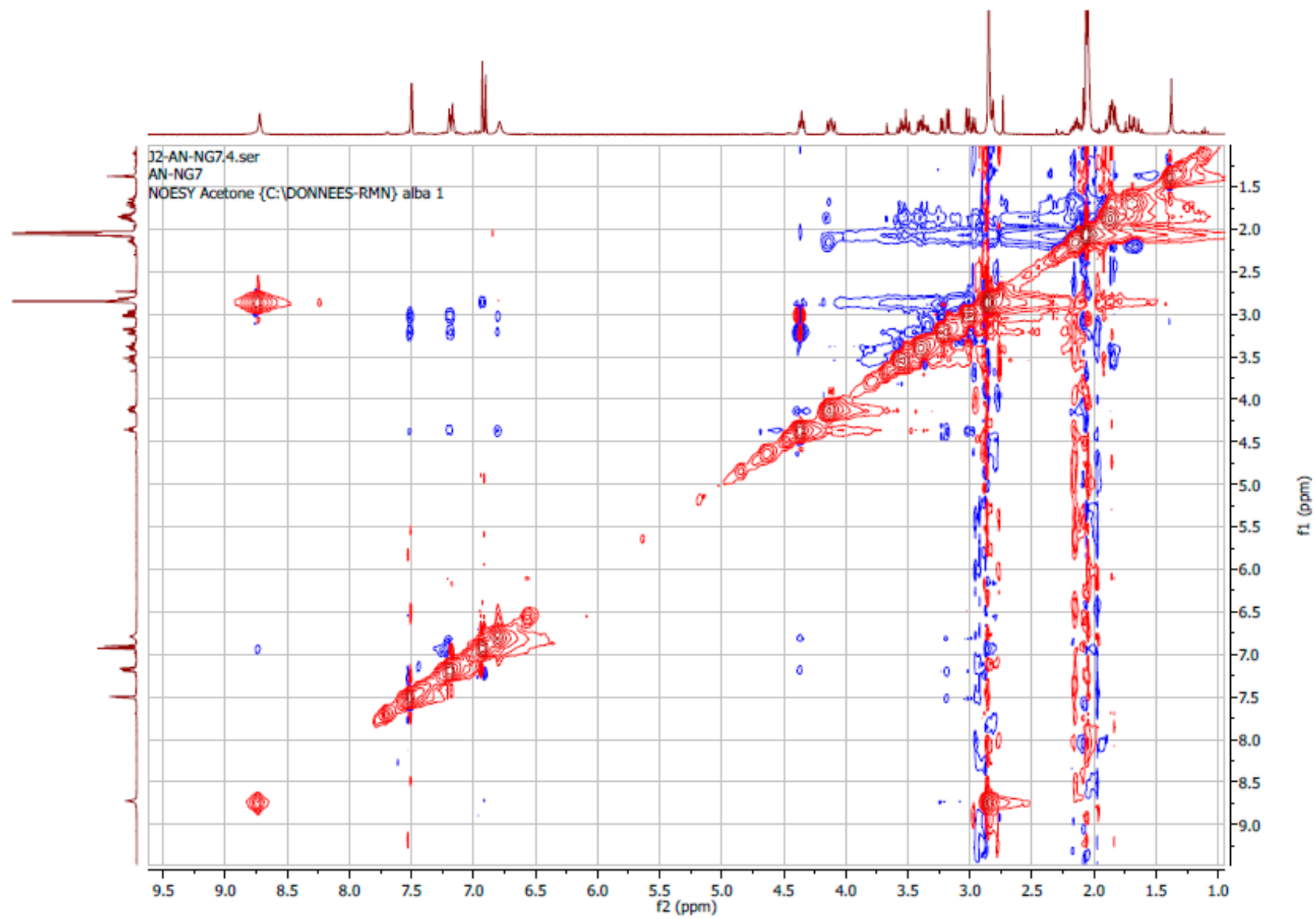


Figure S19: NOESY spectrum of compound 7 in acetone- $d_6$ .

S20

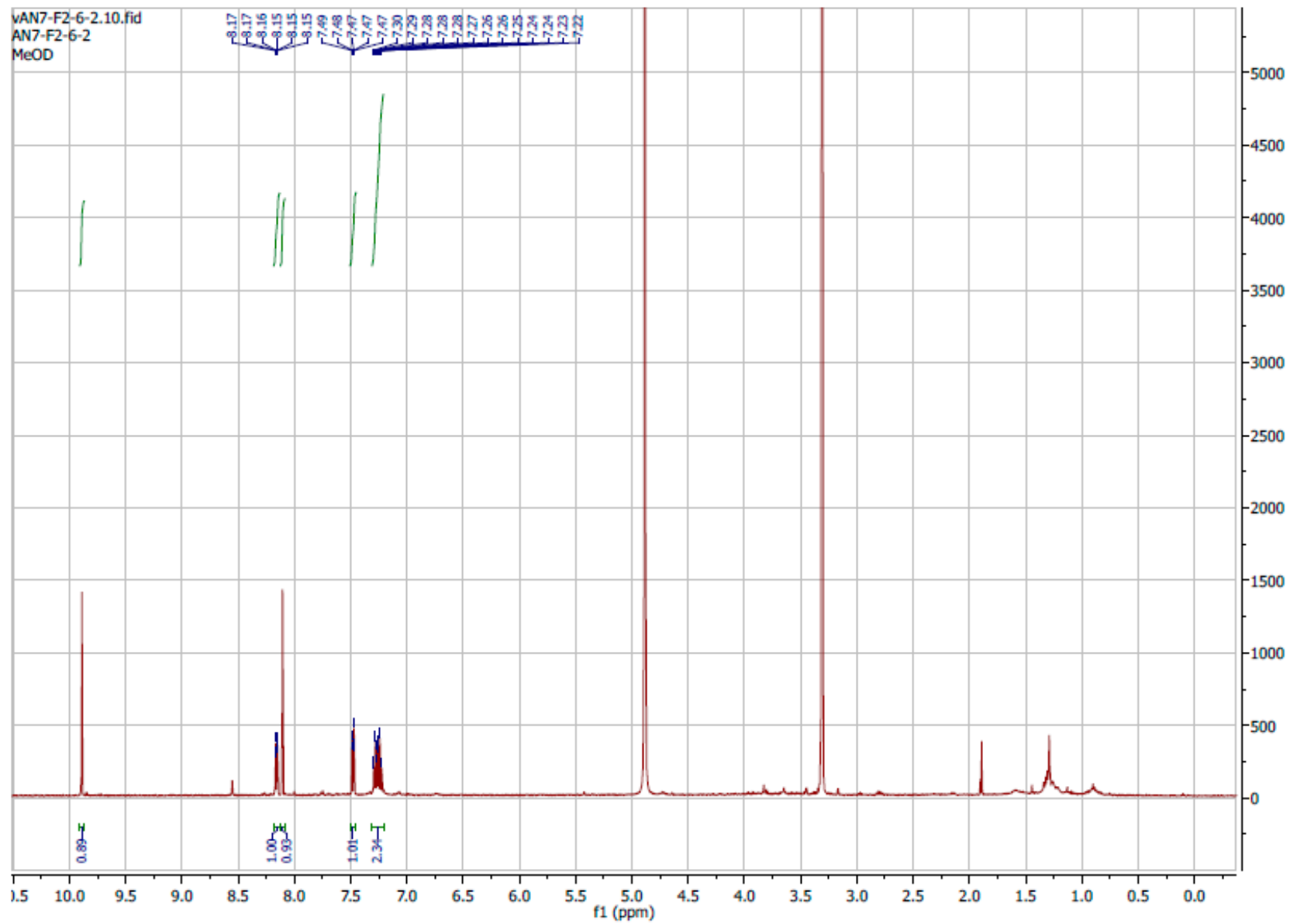


Figure S20: <sup>1</sup>H-NMR spectrum of compound 8 in CD<sub>3</sub>OD.

S21

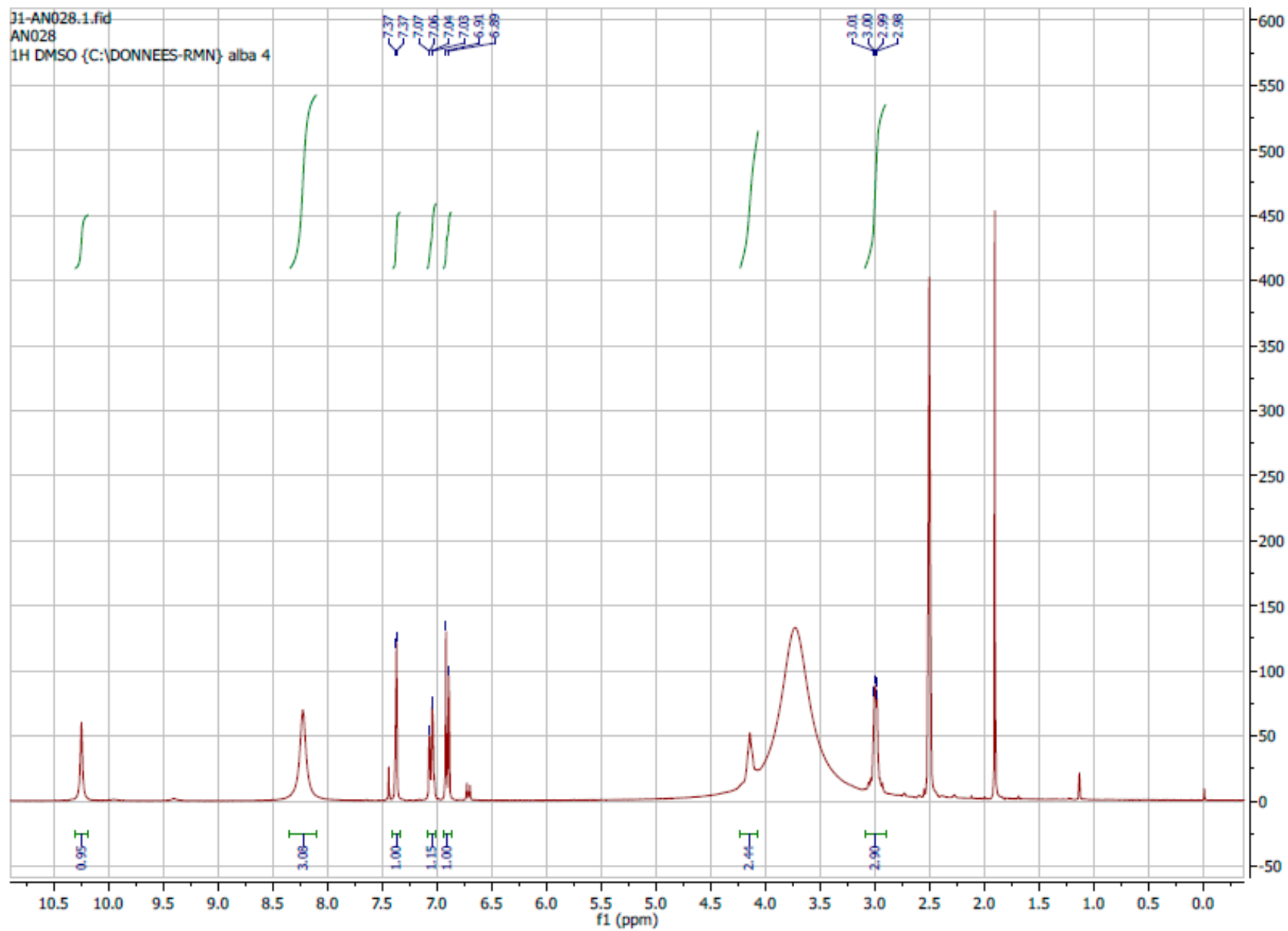


Figure S21:  $^1\text{H-NMR}$  spectrum of compound **10** in  $\text{DMSO-d}_6$ .

S22

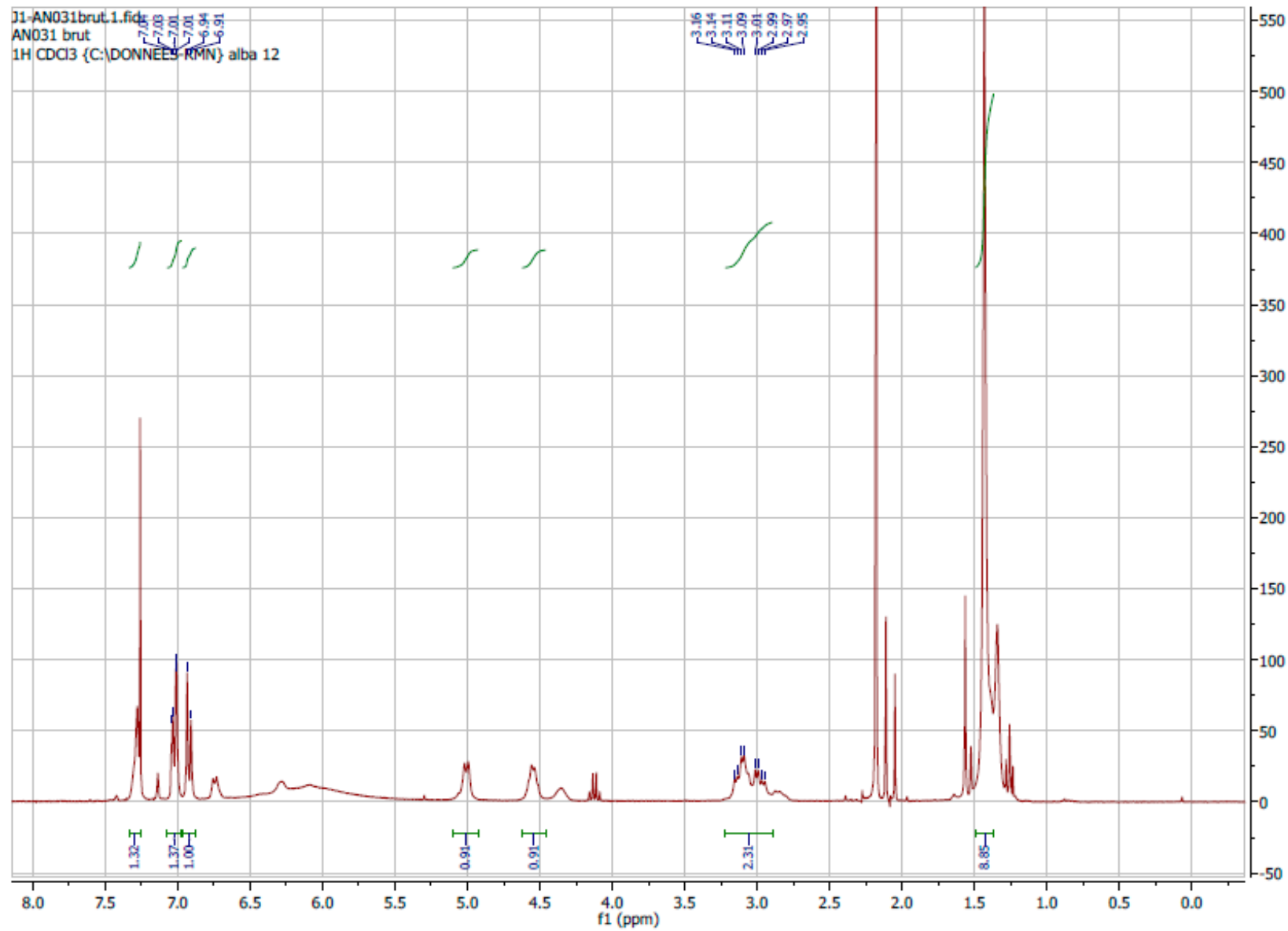


Figure S22:  $^1\text{H-NMR}$  spectrum of compound **11** in  $\text{CDCl}_3$ .

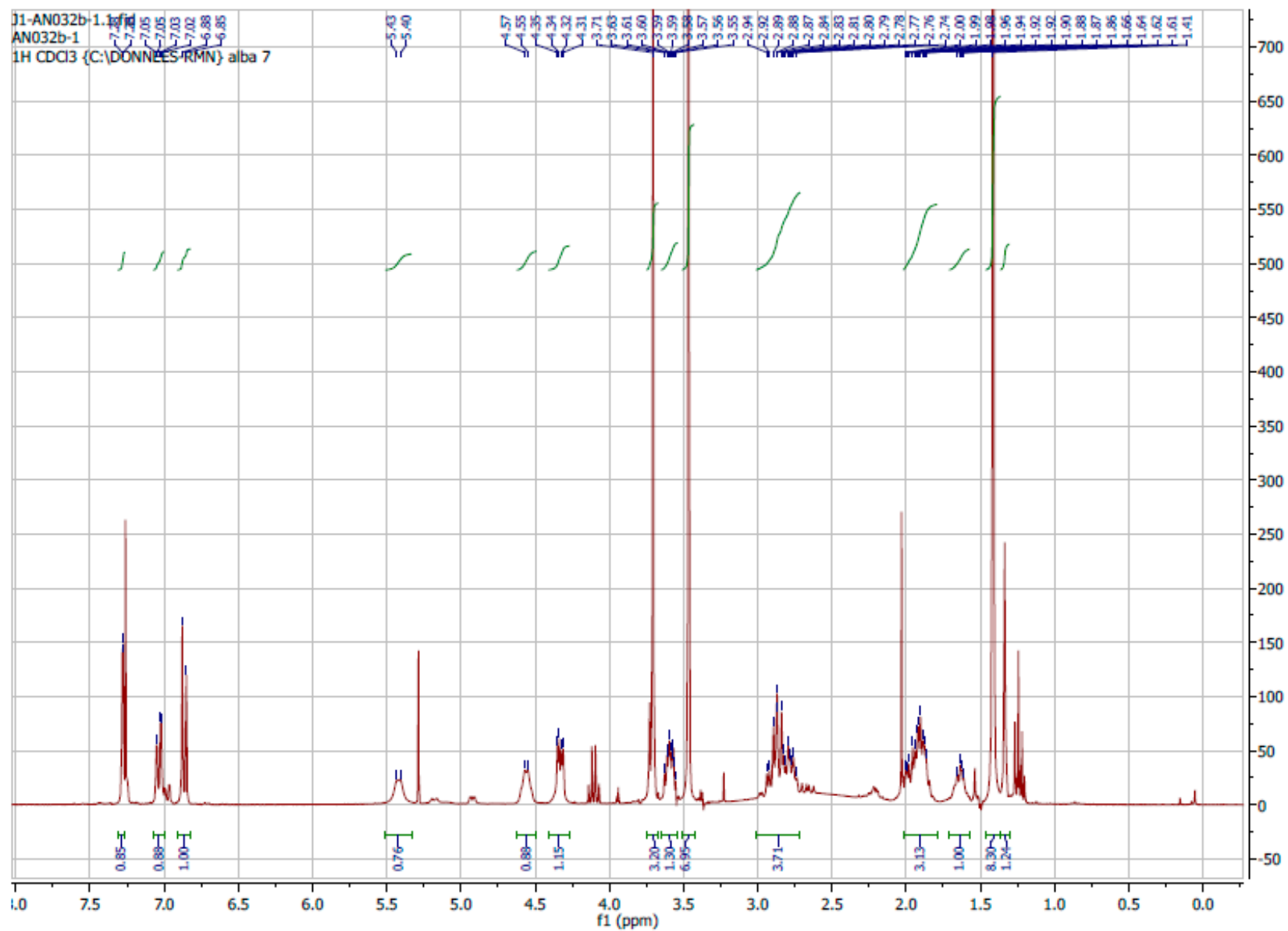


Figure S23: <sup>1</sup>H-NMR spectrum of compound 13a in CDCl<sub>3</sub>.



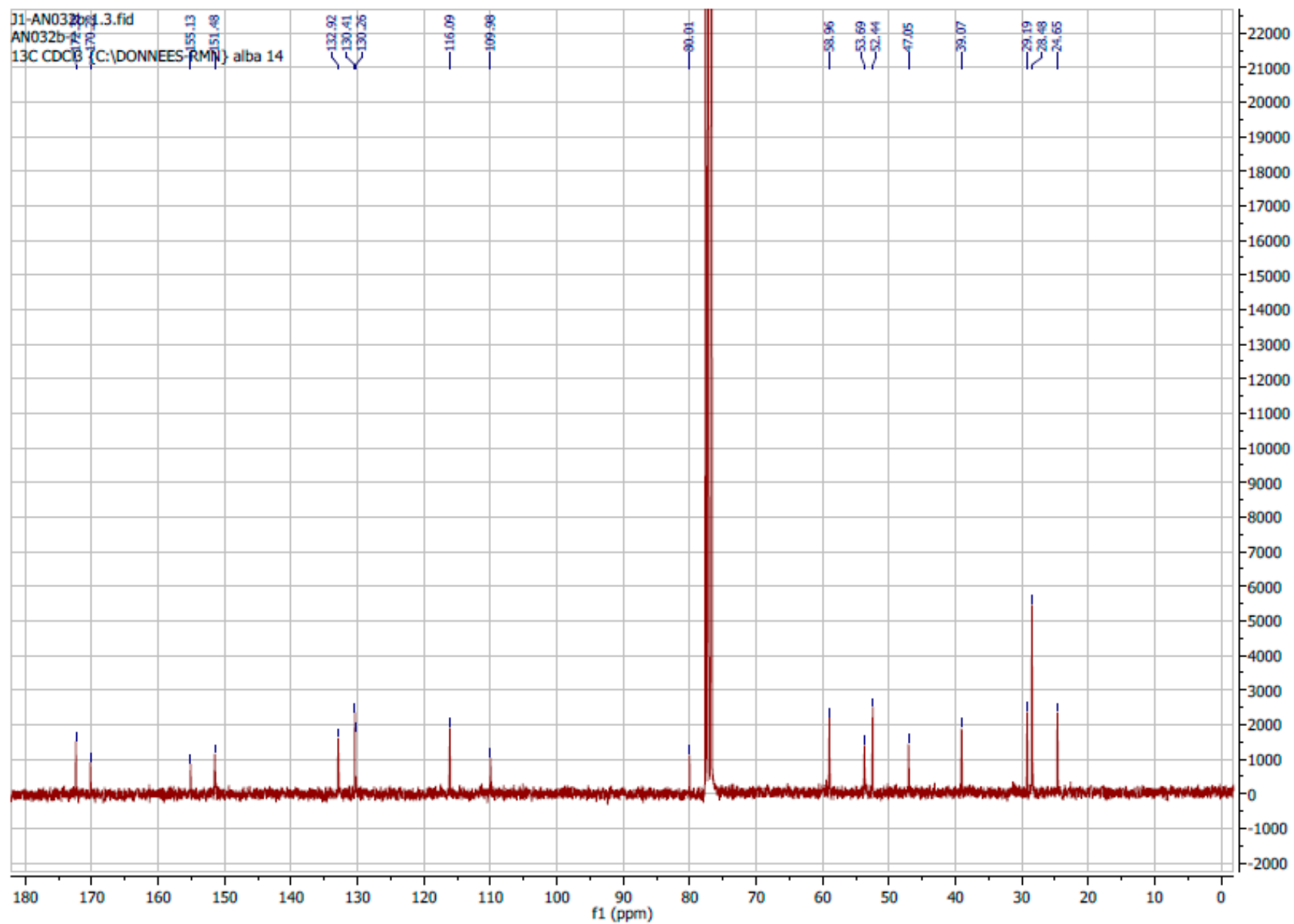


Figure S24:  $^{13}\text{C}$ -NMR spectrum of compound **13a** in  $\text{CDCl}_3$ .

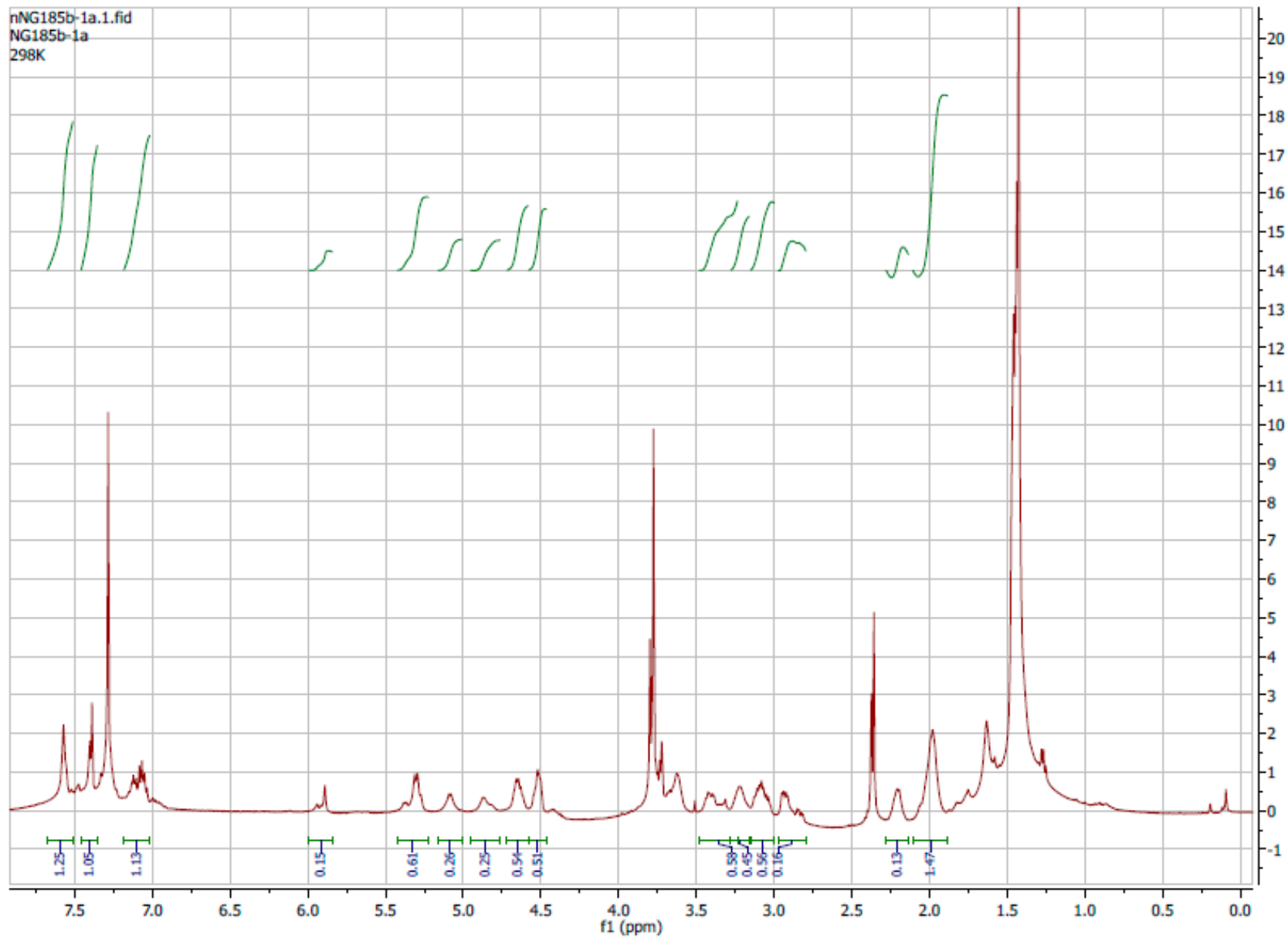


Figure S25:  $^1\text{H}$ -NMR spectrum of compound **13b** in  $\text{CDCl}_3$ .

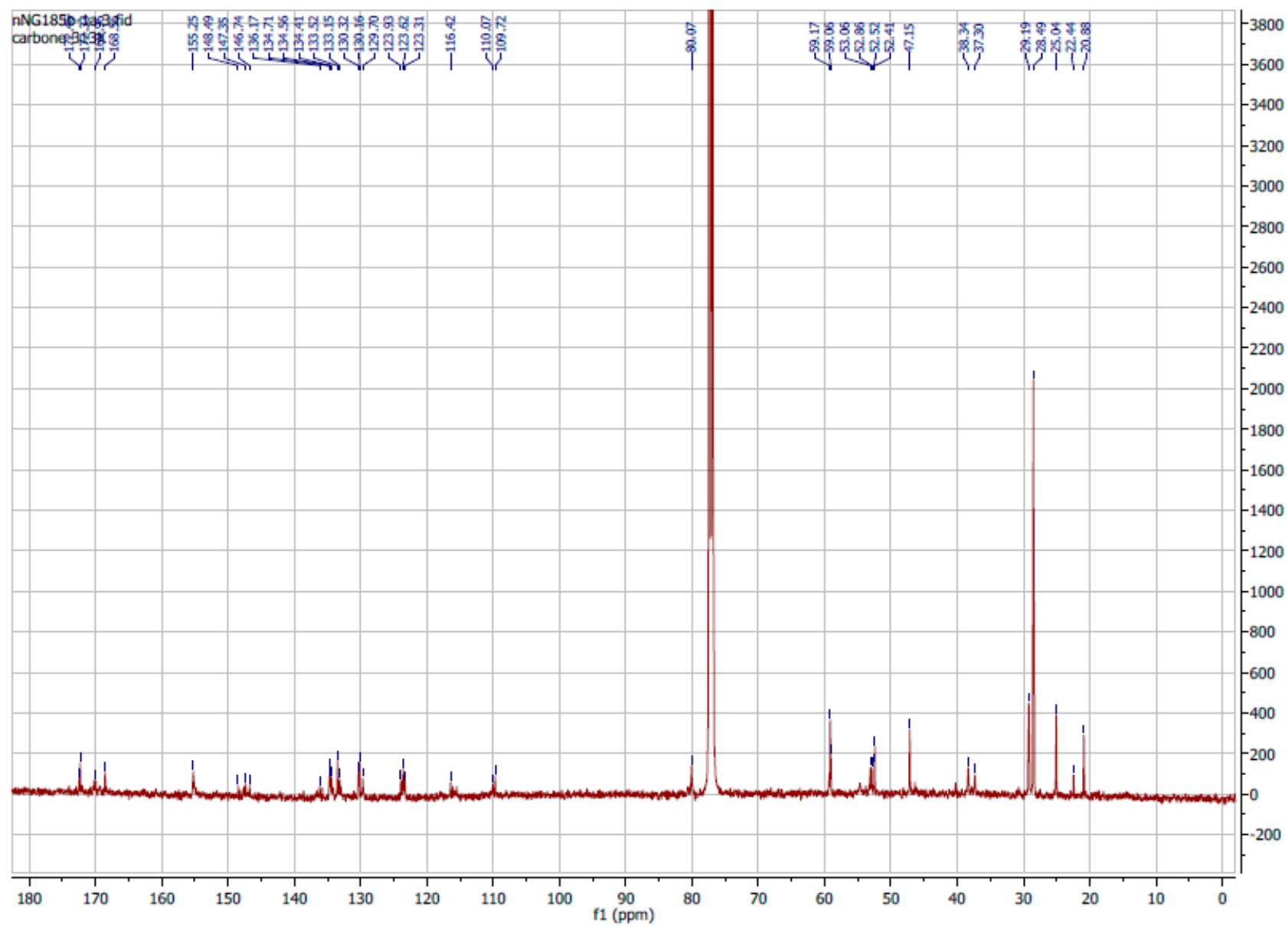


Figure S26:  $^{13}\text{C}$ -NMR spectrum of compound **13b** in  $\text{CDCl}_3$ .

S27

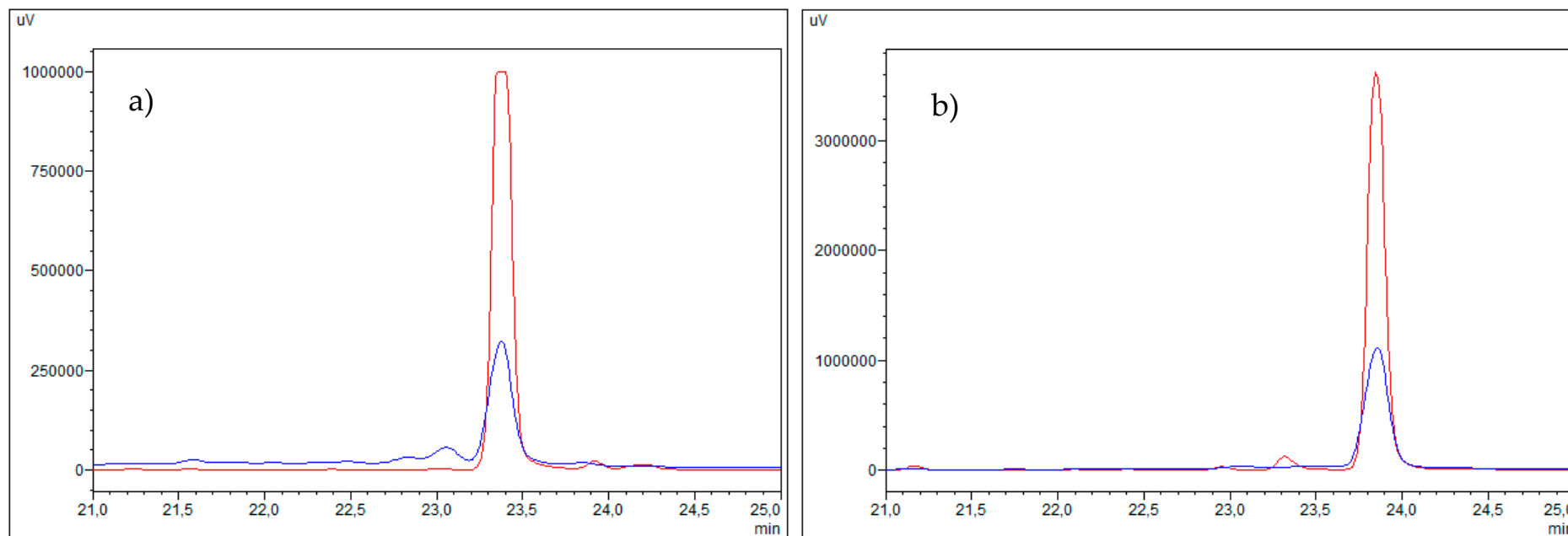


Figure S27: HPLC chromatogram at 220 nm of isolated (blue) and synthetic (red) compounds 6 (a) and 7 (b).