Supporting Information

for

A practical synthesis of long-chain iso-fatty acids (iso-C_{12}–C_{19}) and related natural products

Mark B. Richardson and Spencer J. Williams*

Address: School of Chemistry, Bio21 Molecular Science and Biotechnology Institute, University of Melbourne, Parkville, Victoria 3010, Australia

Email: Spencer J. Williams - sjwill@unimelb.edu.au

* Corresponding author

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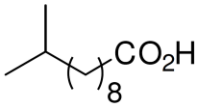
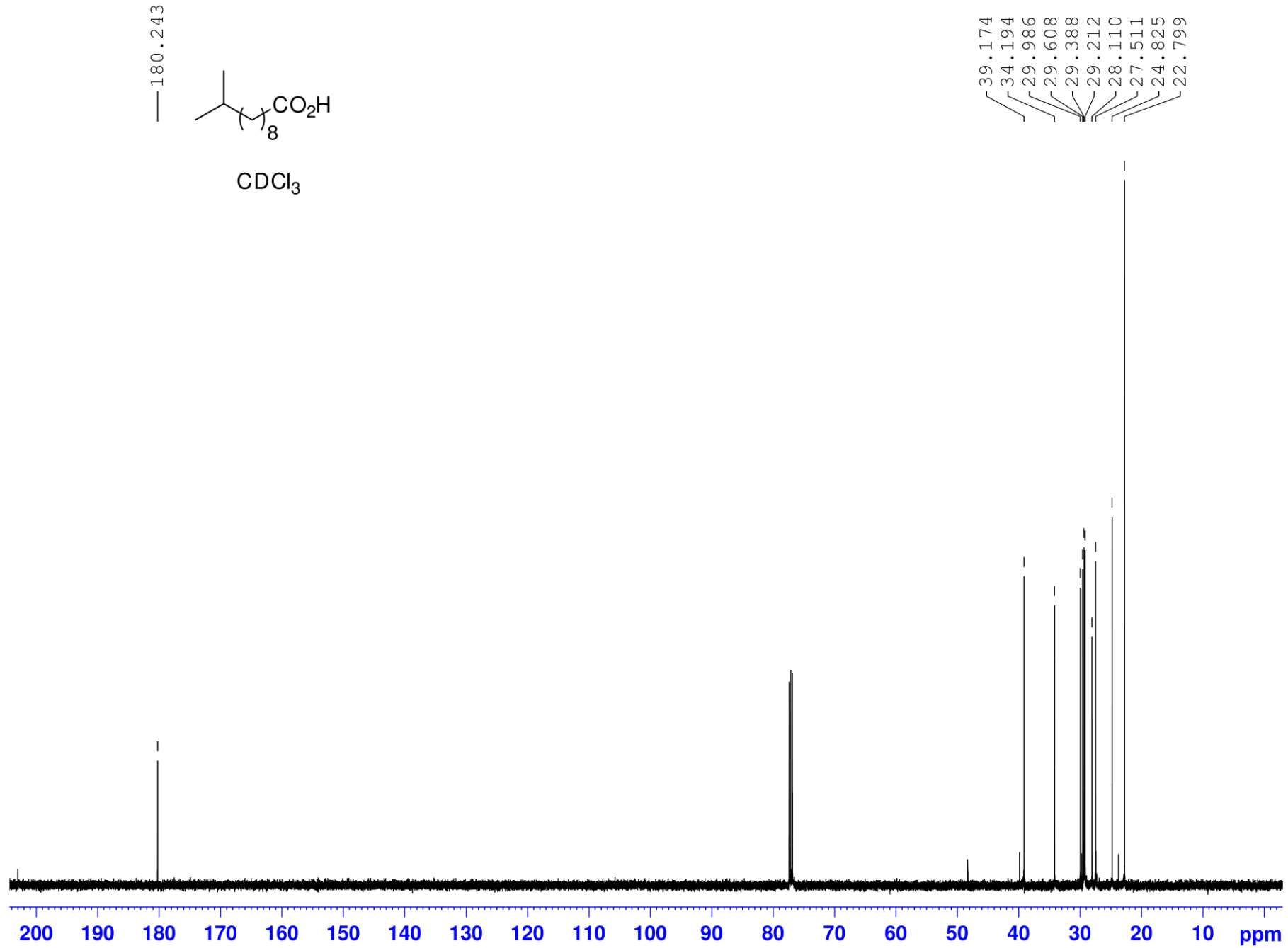
^{1}H NMR (500 MHz, $CDCl_3$) – 10-Methylundecanoic acid (**1**)

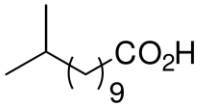


$CDCl_3$

^{13}C NMR (125 MHz, $CDCl_3$) – 10-Methylundecanoic acid (**1**)

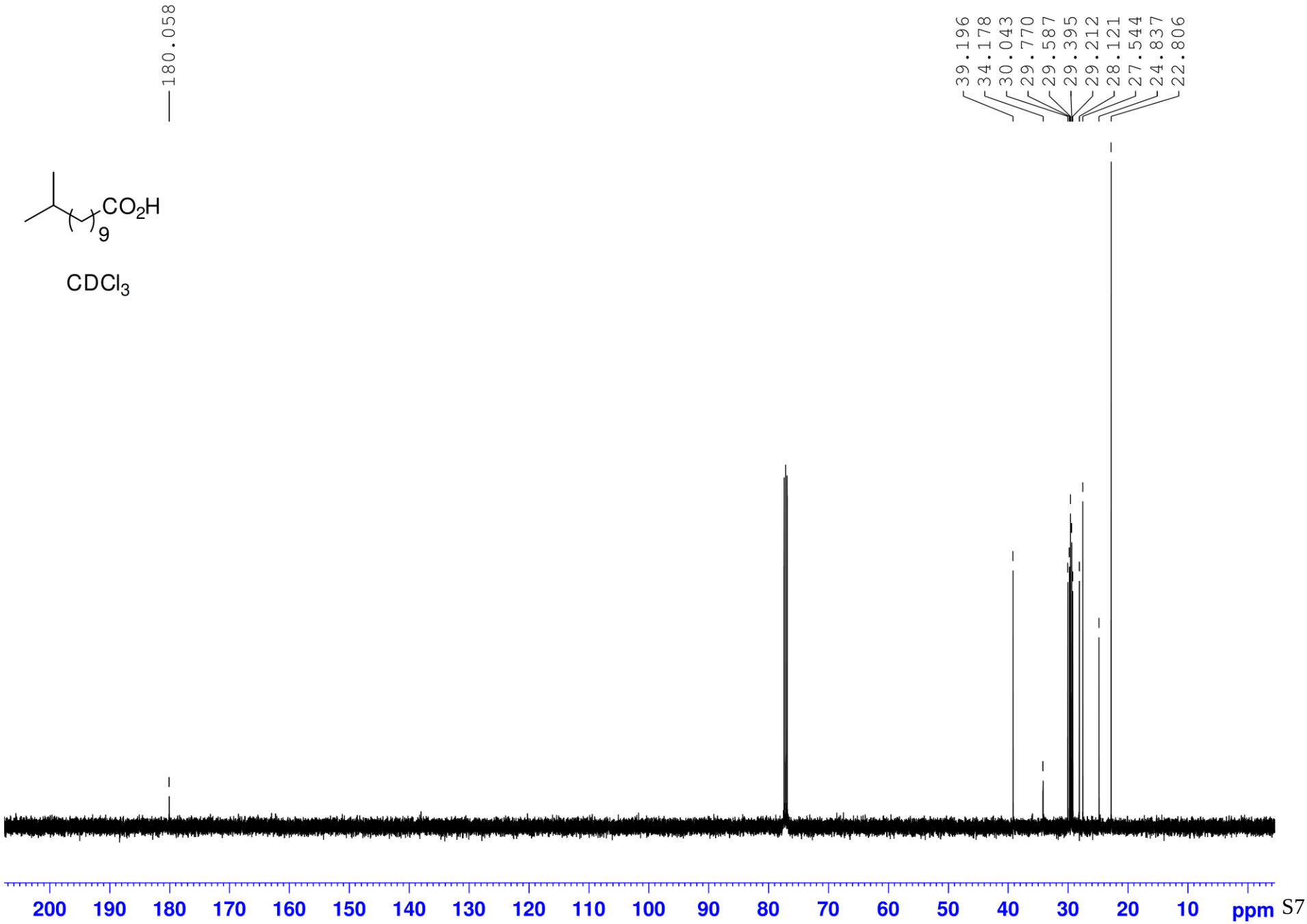


^{1}H NMR (500 MHz, $CDCl_3$) – 11-Methyldodecanoic acid (**2**)

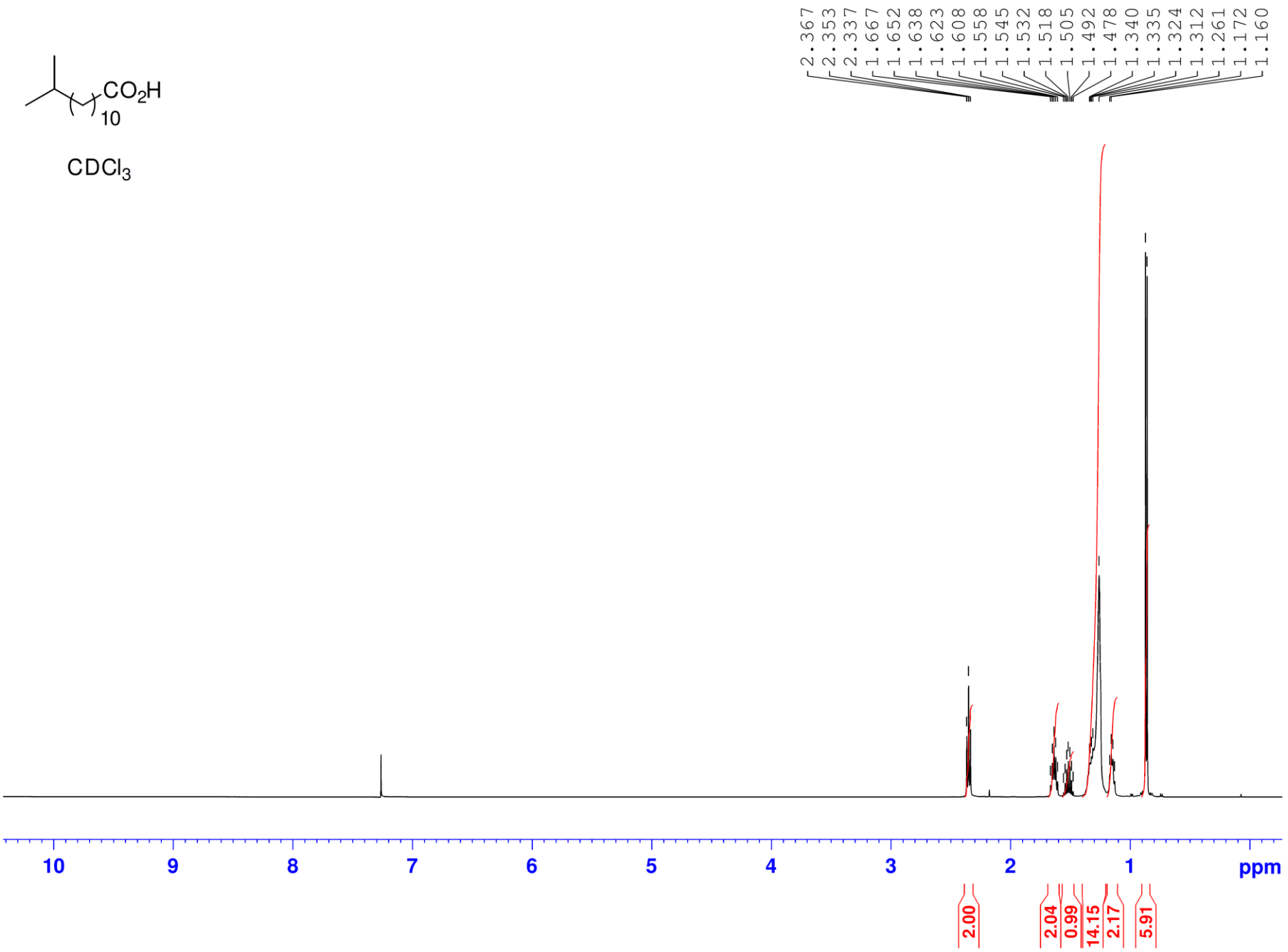


$CDCl_3$

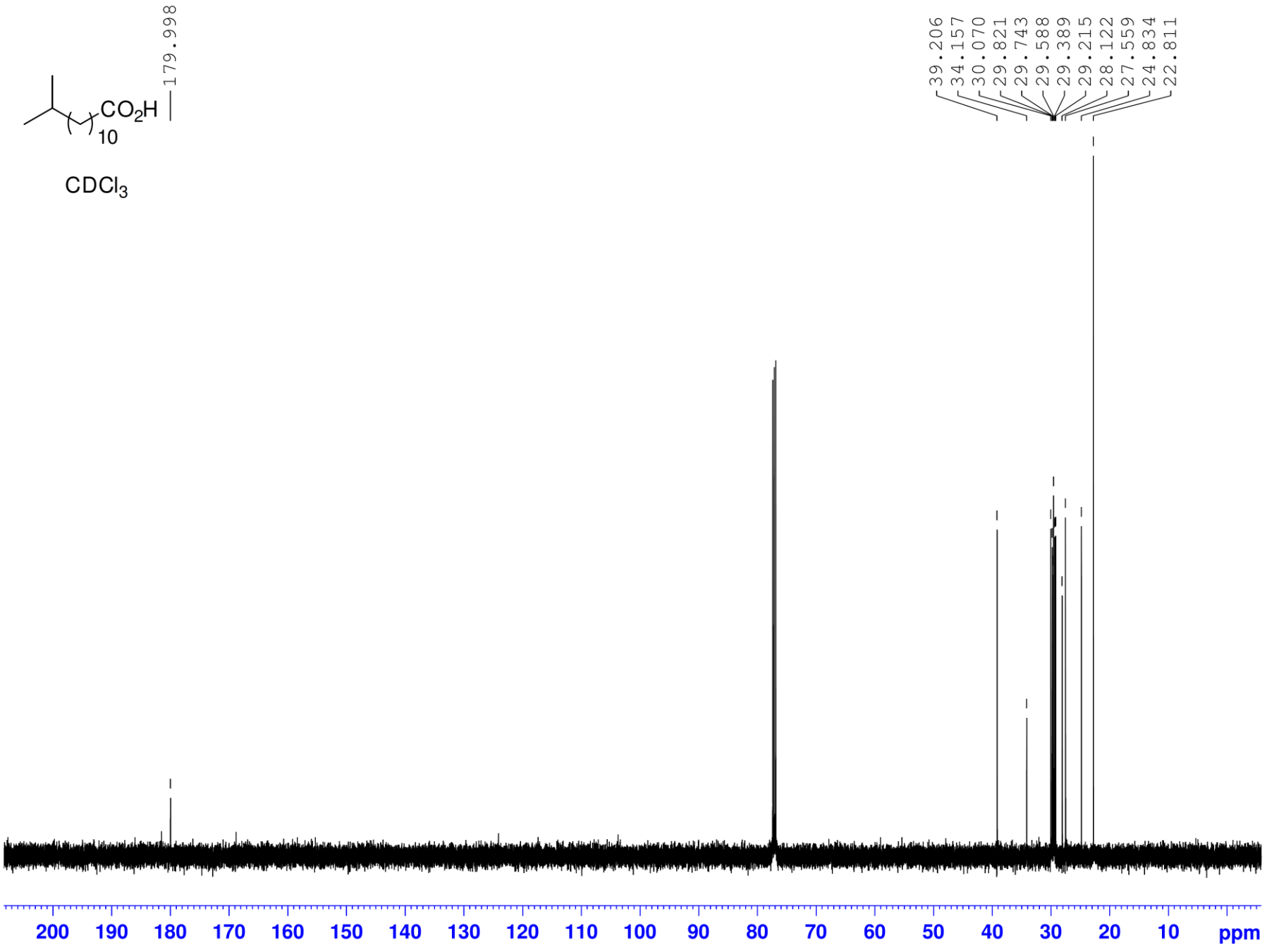
^{13}C NMR (125 MHz, $CDCl_3$) – 11-Methyldodecanoic acid (**2**)



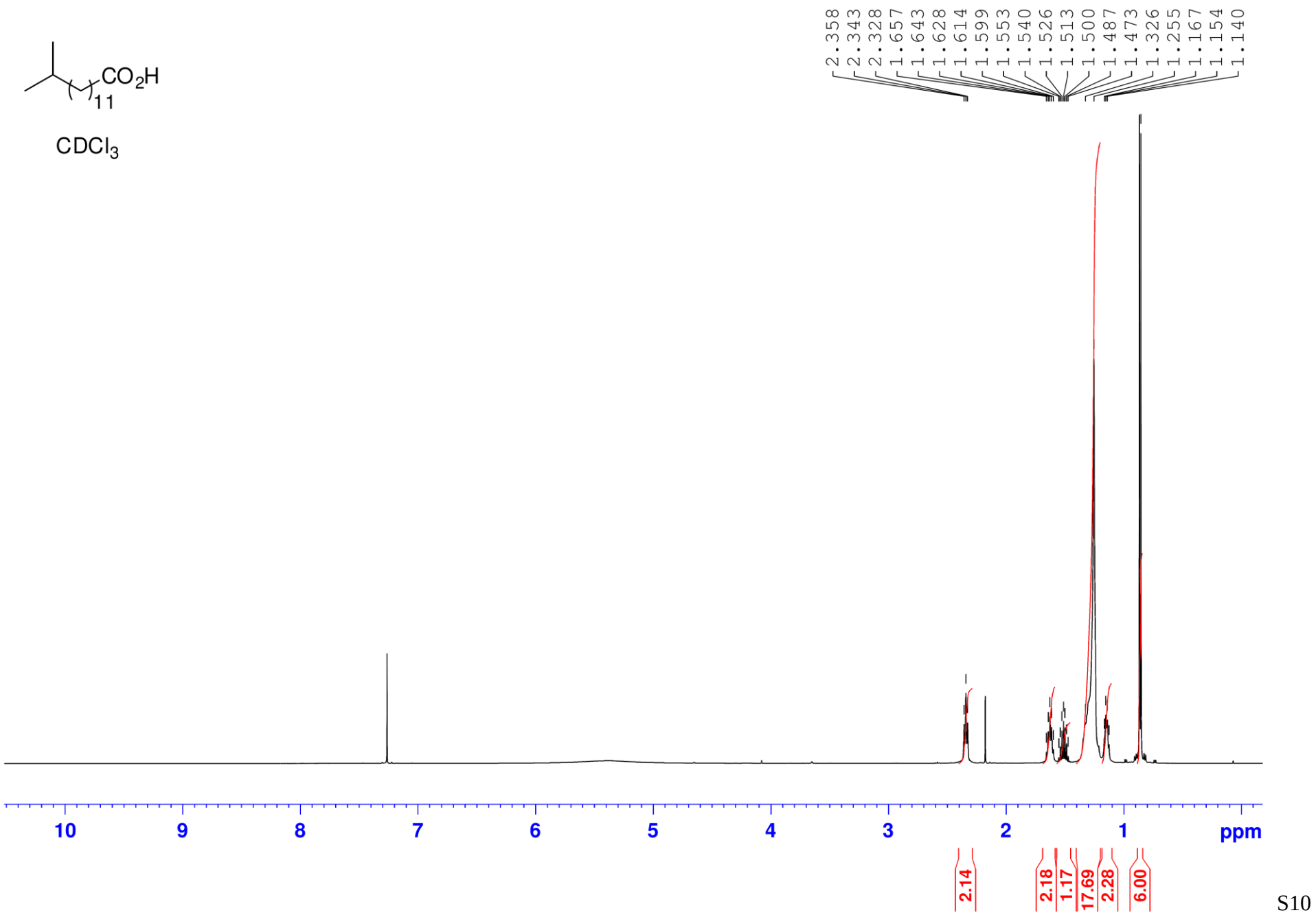
^{1}H NMR (500 MHz, $CDCl_3$) – 12-Methyltridecanoic acid (**3**)



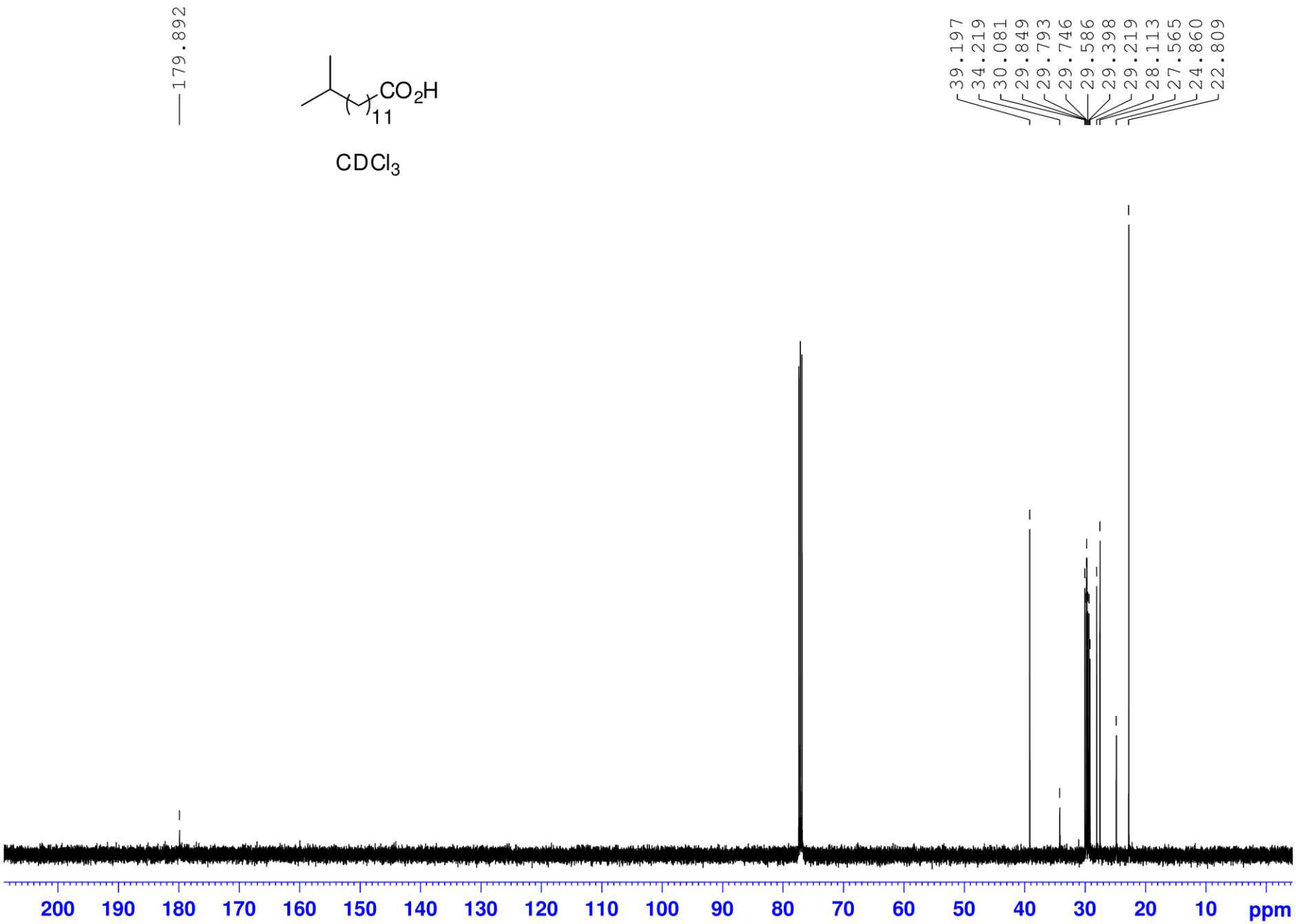
^{13}C NMR (125 MHz, $CDCl_3$) – 12-Methyltridecanoic acid (**3**)



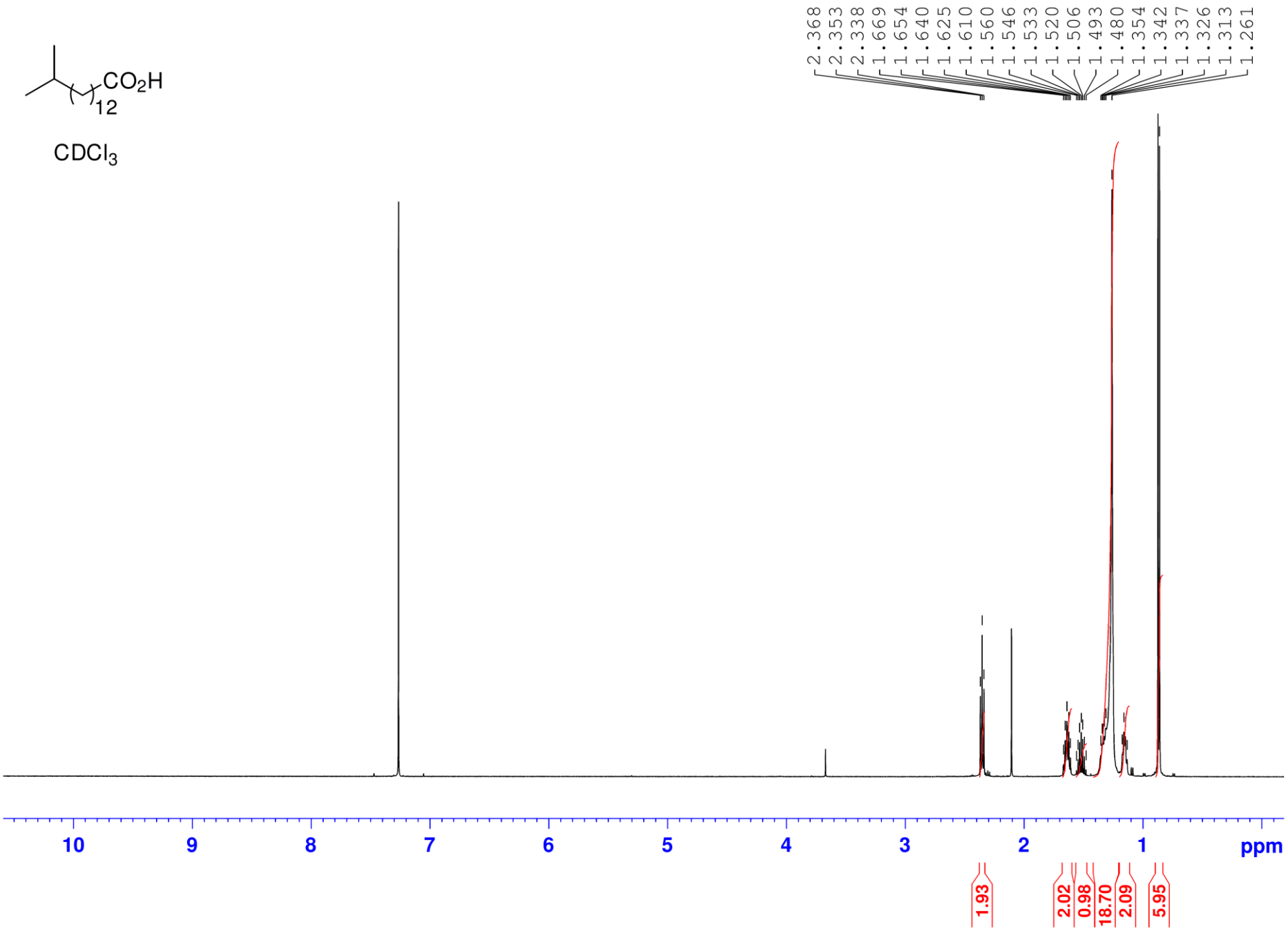
^{1}H NMR (500 MHz, $CDCl_3$) – 13-Methyltetradecanoic acid (**4**)



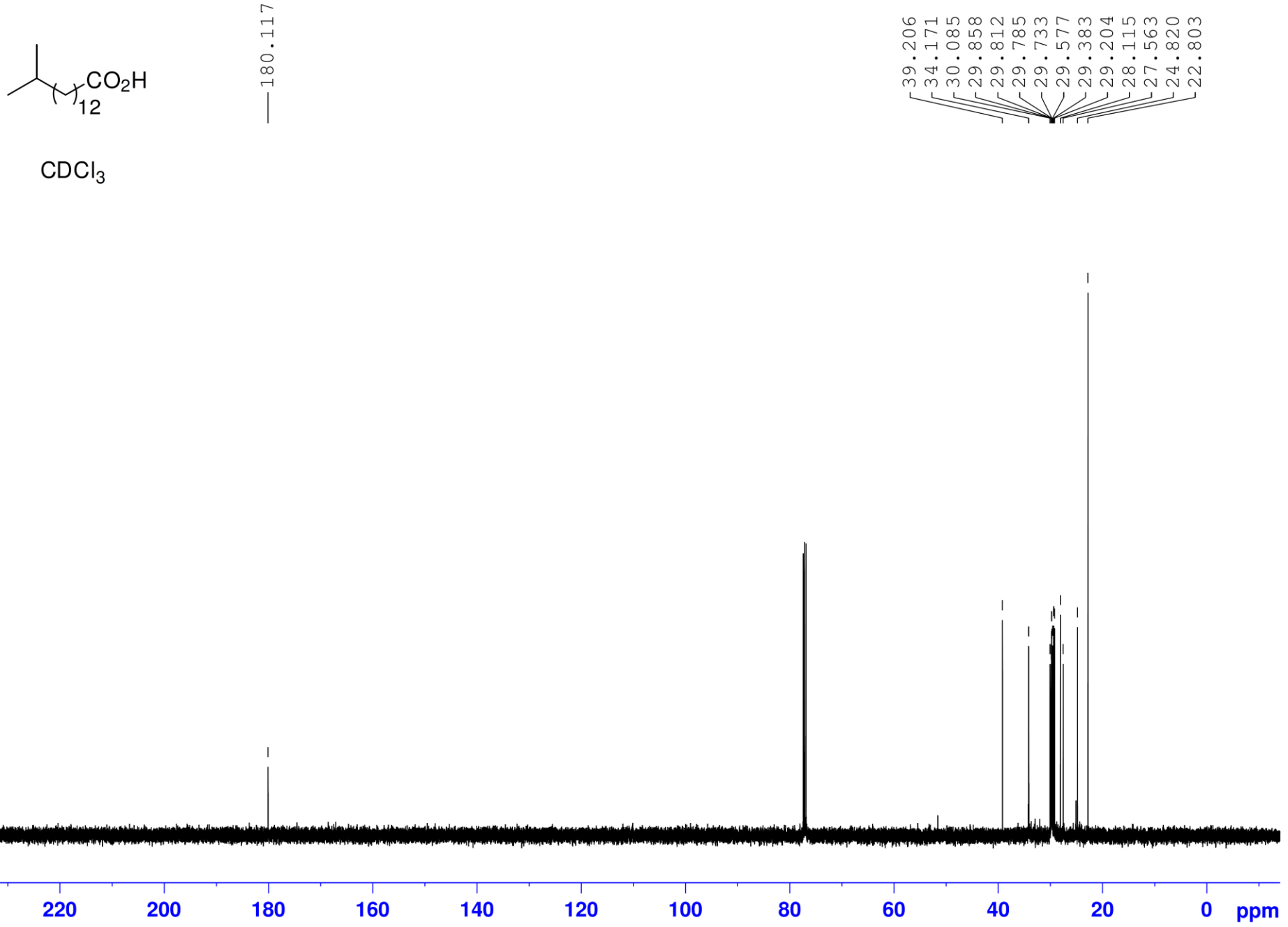
^{13}C NMR (125 MHz, $CDCl_3$) – 13-Methyltetradecanoic acid (**4**)



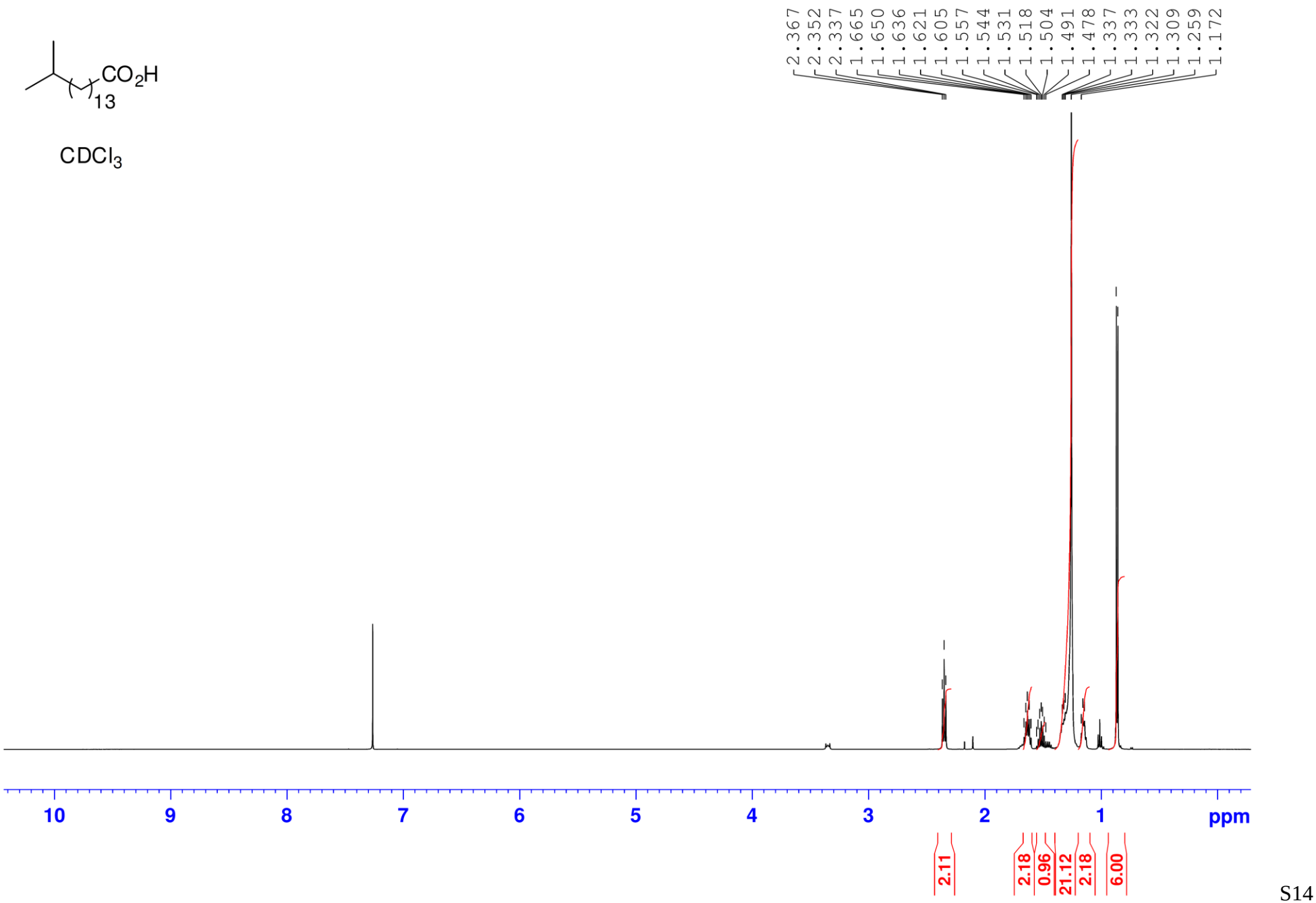
^{1}H NMR (500 MHz, $CDCl_3$) – 14-Methylpentadecanoic acid (**5**)



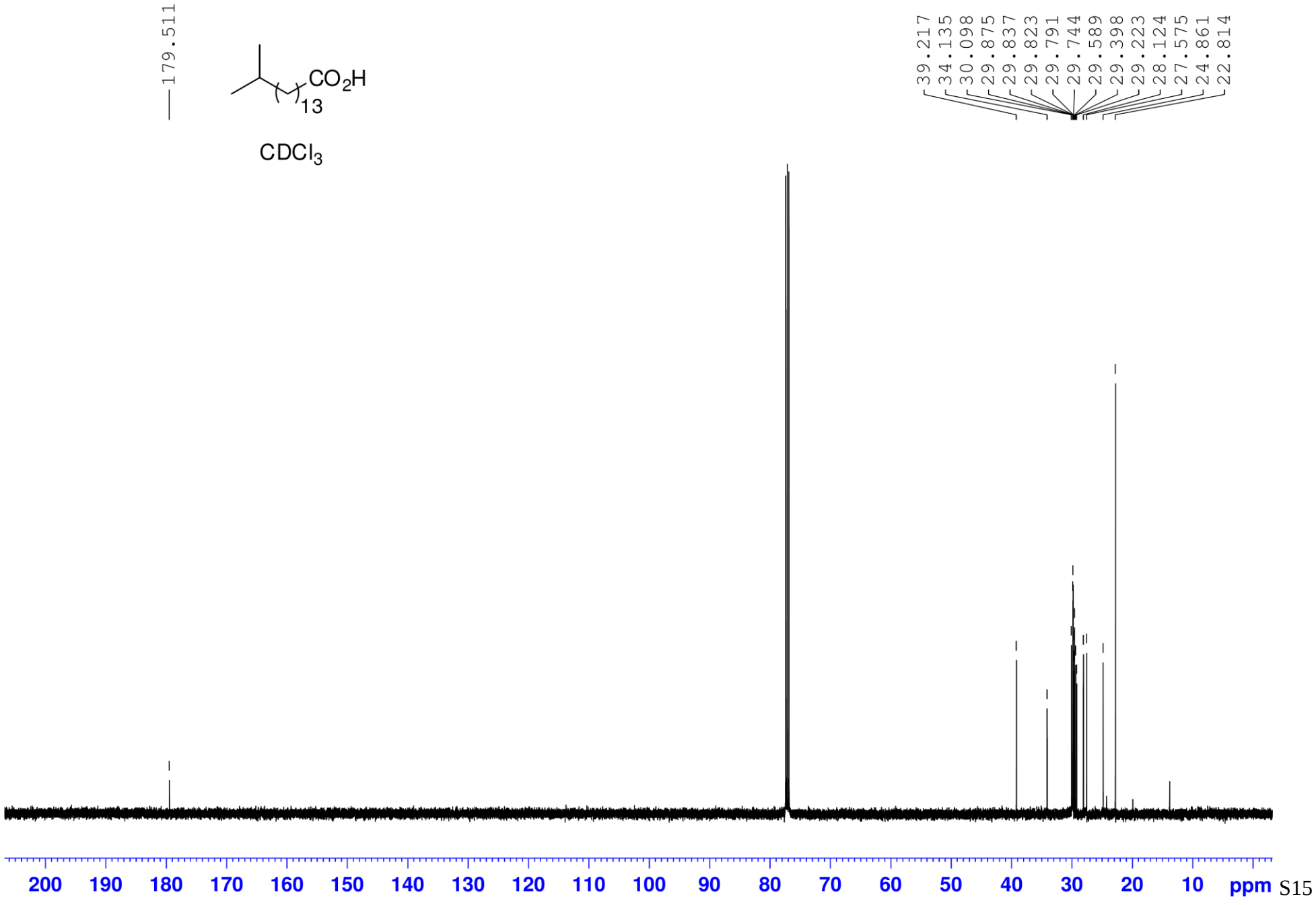
^{13}C NMR (125 MHz, $CDCl_3$) – 14-Methylpentadecanoic acid (**5**)



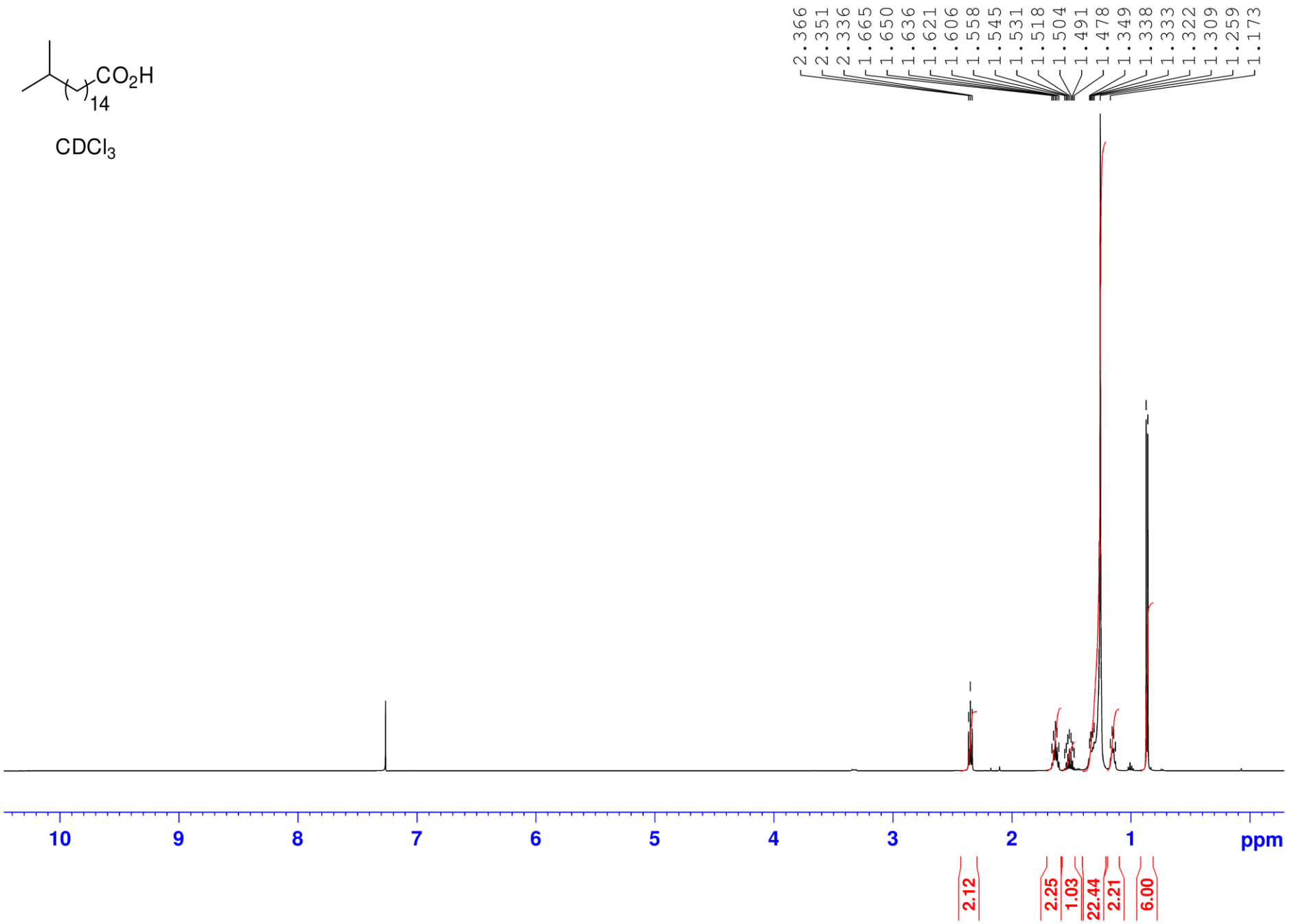
^{1}H NMR (500 MHz, $CDCl_3$) – 15-Methylhexadecanoic acid (**6**)



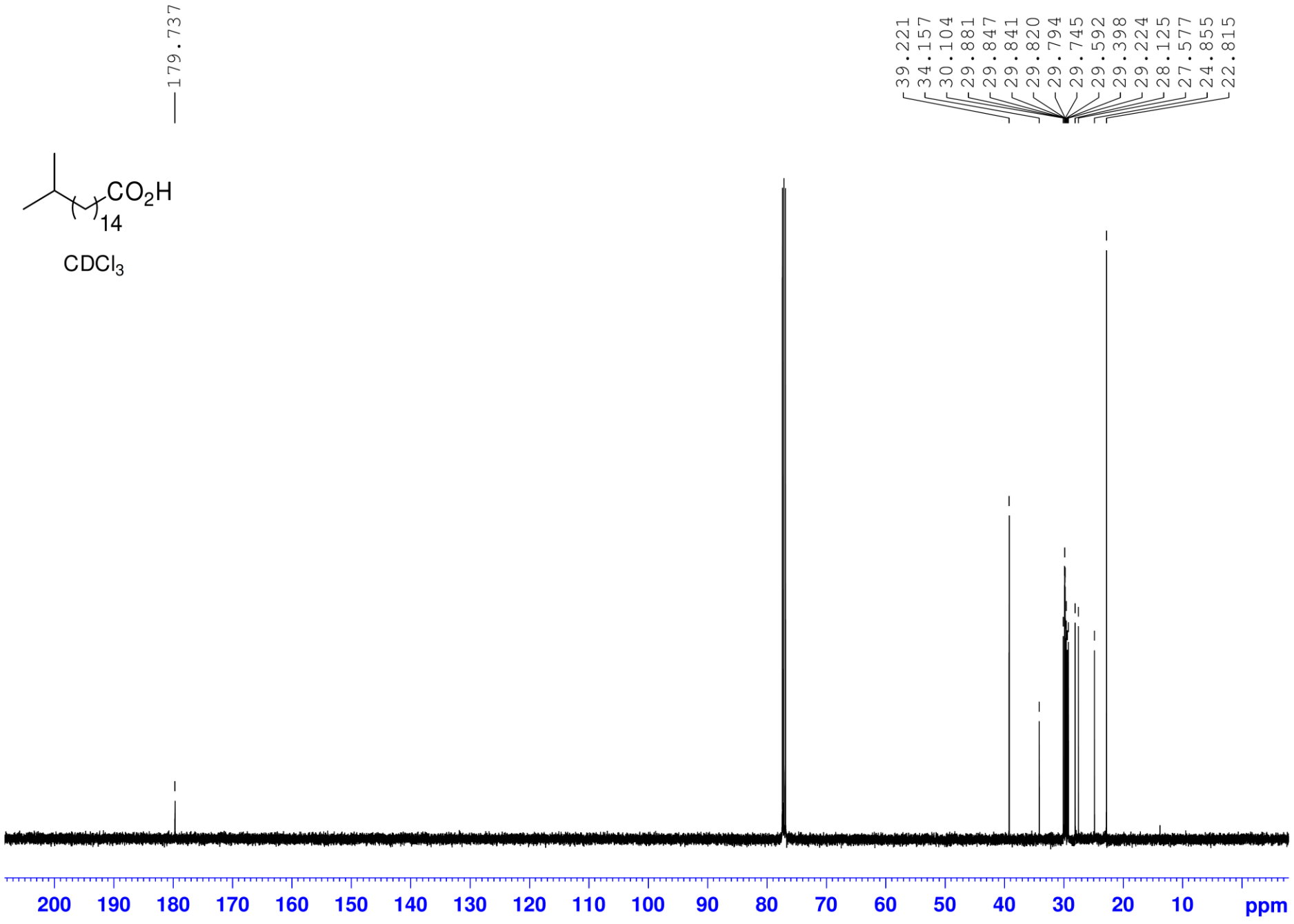
^{13}C NMR (125 MHz, $CDCl_3$) – 15-Methylhexadecanoic acid (**6**)



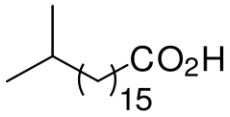
^{1}H NMR (500 MHz, $CDCl_3$) – 16-Methylheptadecanoic acid (**7**)



^{13}C NMR (125 MHz, $CDCl_3$) – 16-Methylheptadecanoic acid (**7**)

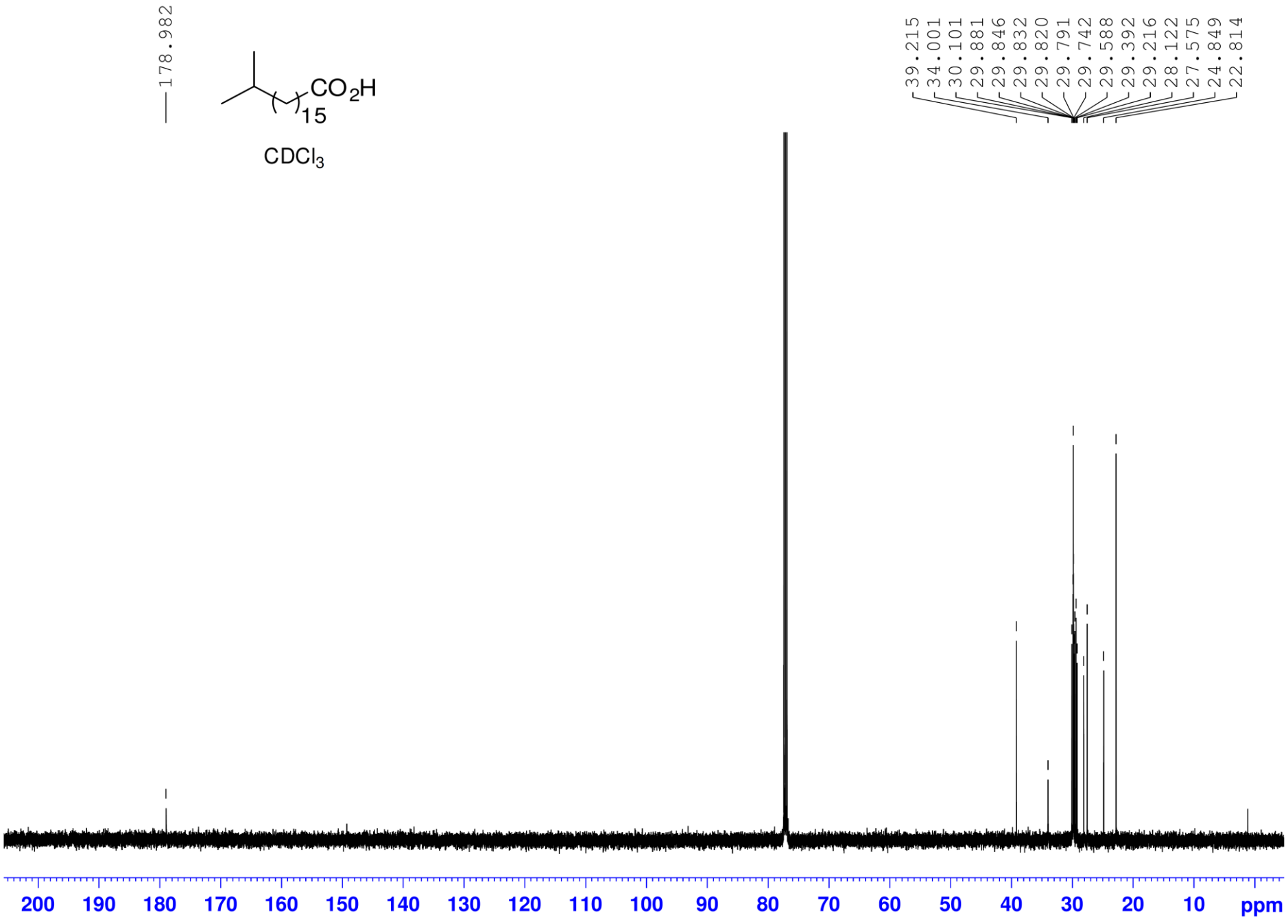


^{1}H NMR (500 MHz, $CDCl_3$) – 17-Methyloctatadecanoic acid (**8**)

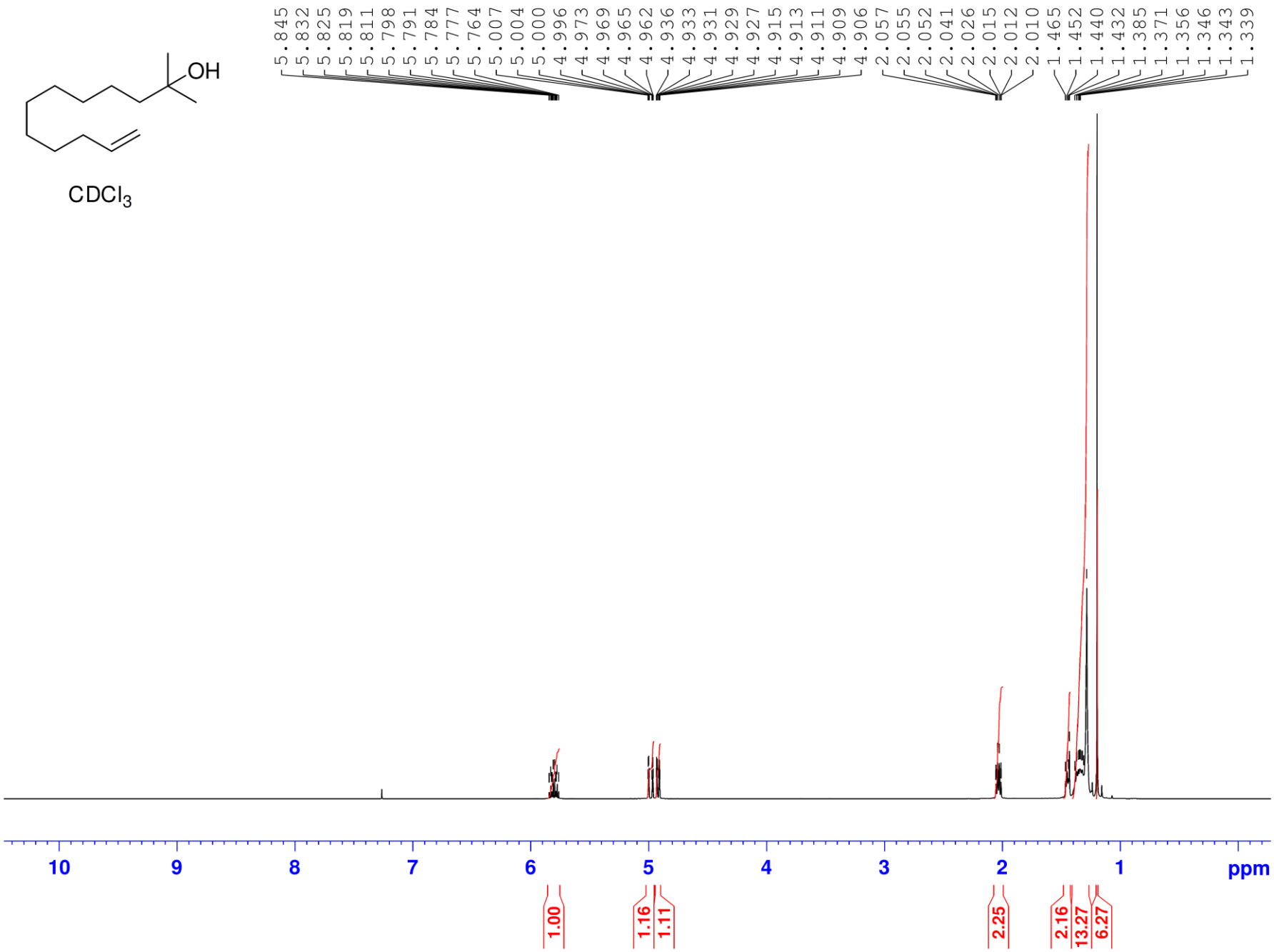


$CDCl_3$

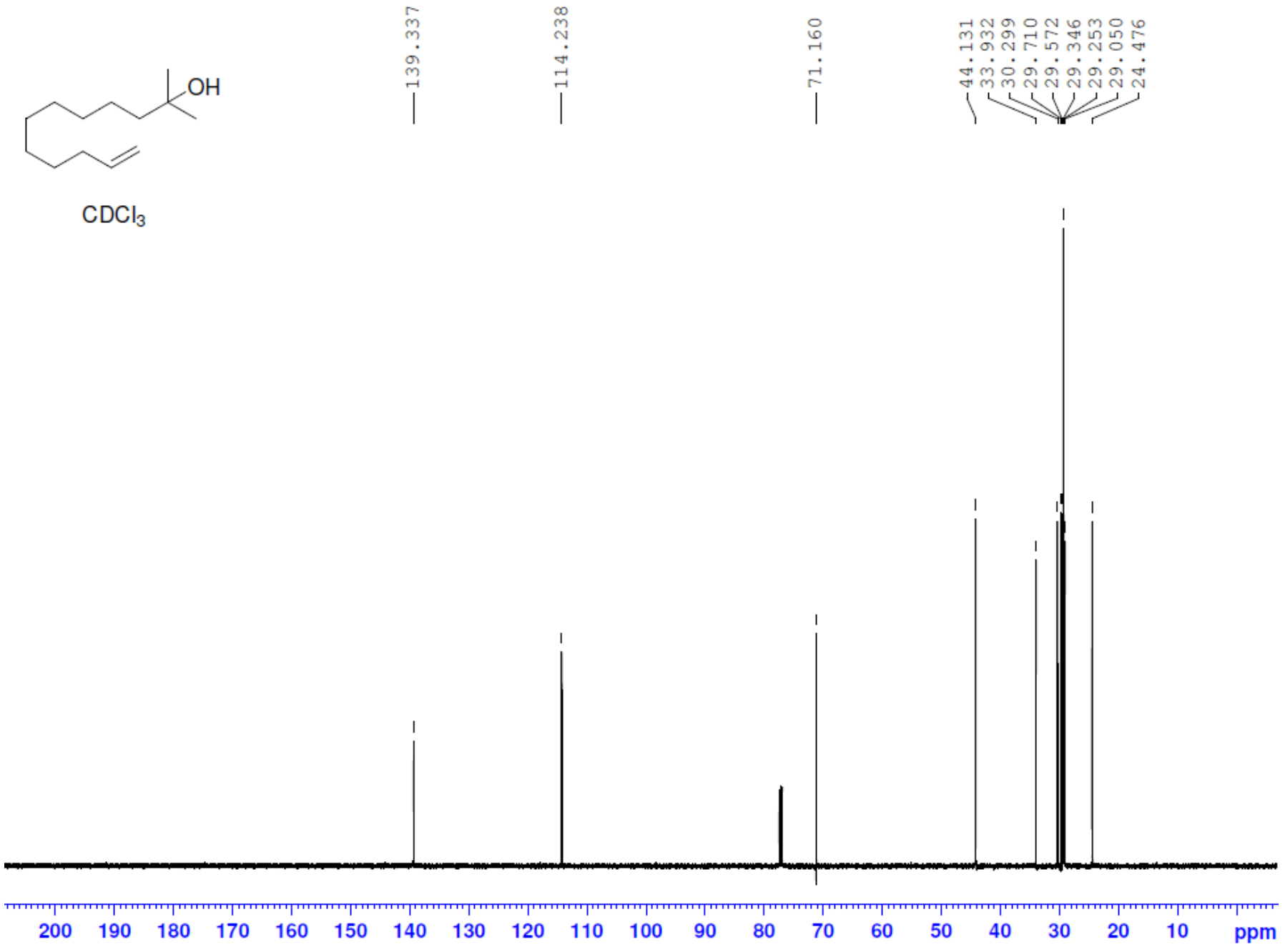
^{13}C NMR (125 MHz, $CDCl_3$) – 17-Methyloctatadecanoic acid (**8**)



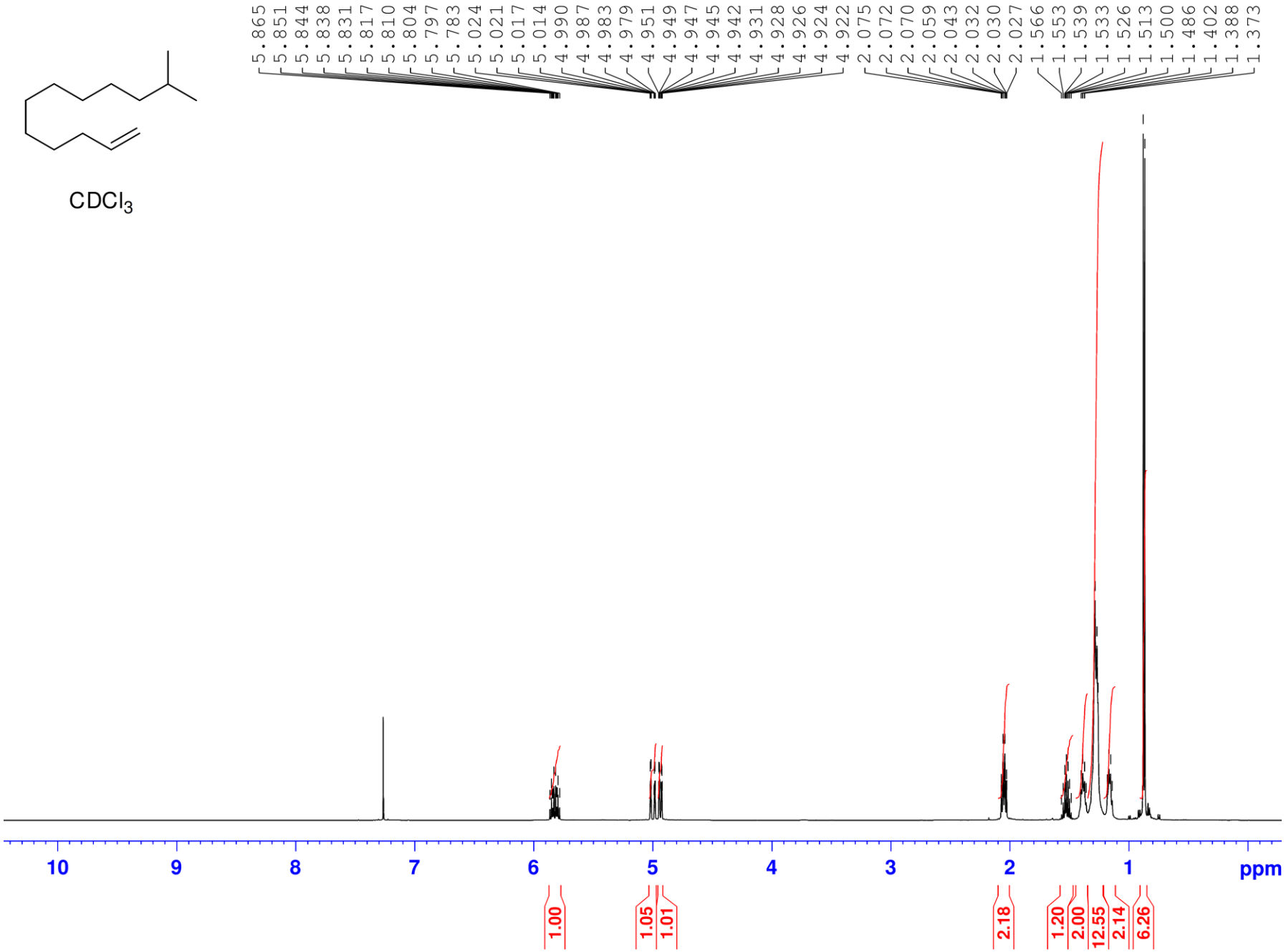
^{1}H NMR (500 MHz, $CDCl_3$) – 2-Methyldodec-11-en-2-ol (**10**)



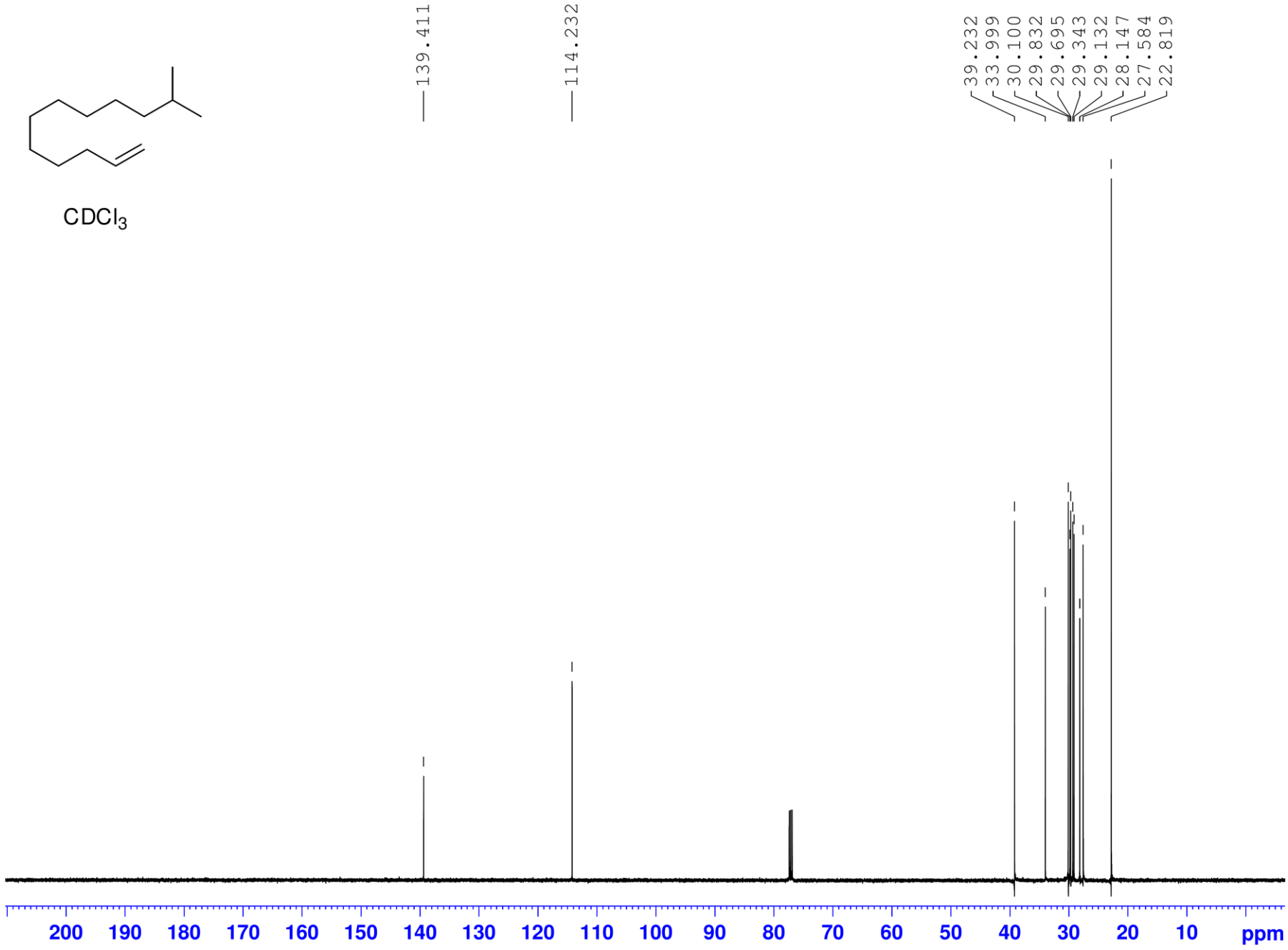
^{13}C NMR (125 MHz, $CDCl_3$) – 2-Methyldodec-11-en-2-ol (**10**)



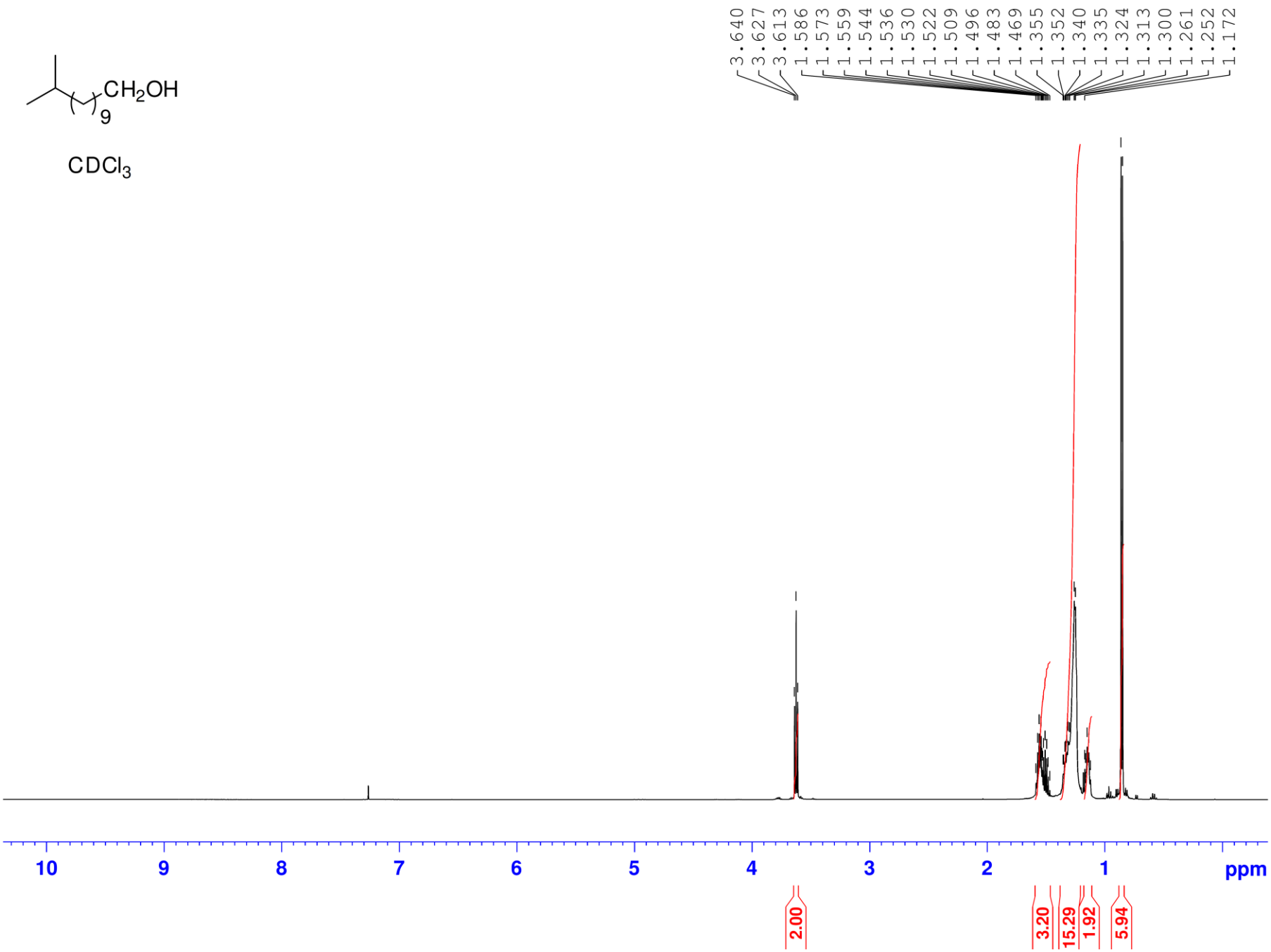
^{1}H NMR (500 MHz, $CDCl_3$) – 11-Methyldodec-1-ene (**11**)



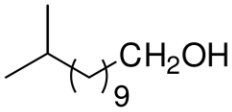
^{13}C NMR (125 MHz, $CDCl_3$) – 11-Methyldodec-1-ene (**11**)



^{1}H NMR (500 MHz, $CDCl_3$) – 11-Methyldodecan-1-ol (**12**)

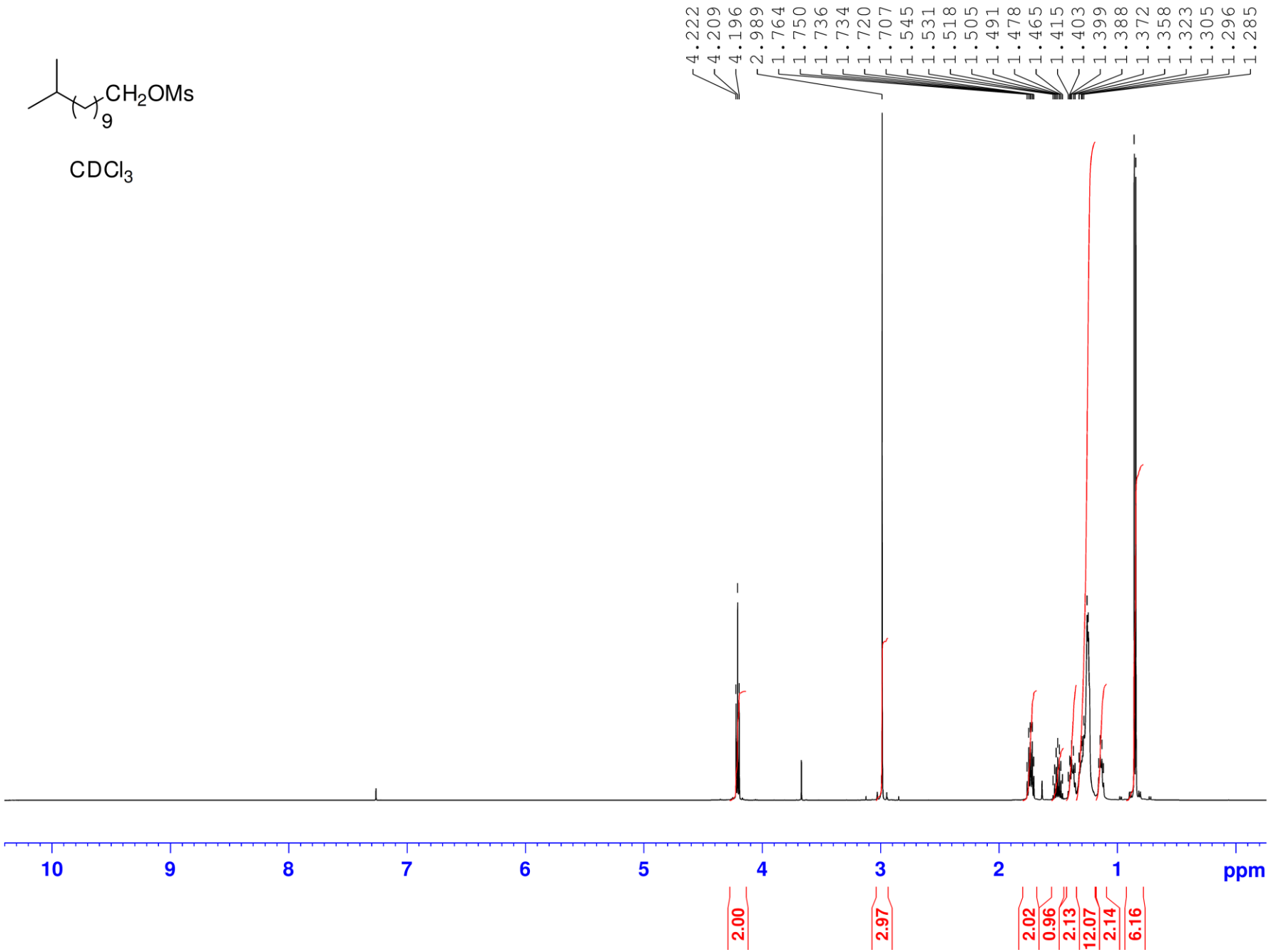


^{13}C NMR (125 MHz, $CDCl_3$) – 11-Methyldodecan-1-ol (**12**)

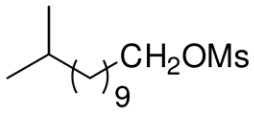


$CDCl_3$

^{1}H NMR (500 MHz, $CDCl_3$) – 11-Methyldodecyl methanesulfonate (**13**)

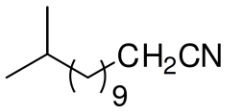


^{13}C NMR (125 MHz, $CDCl_3$) – 11-Methyldodecyl methanesulfonate (**13**)



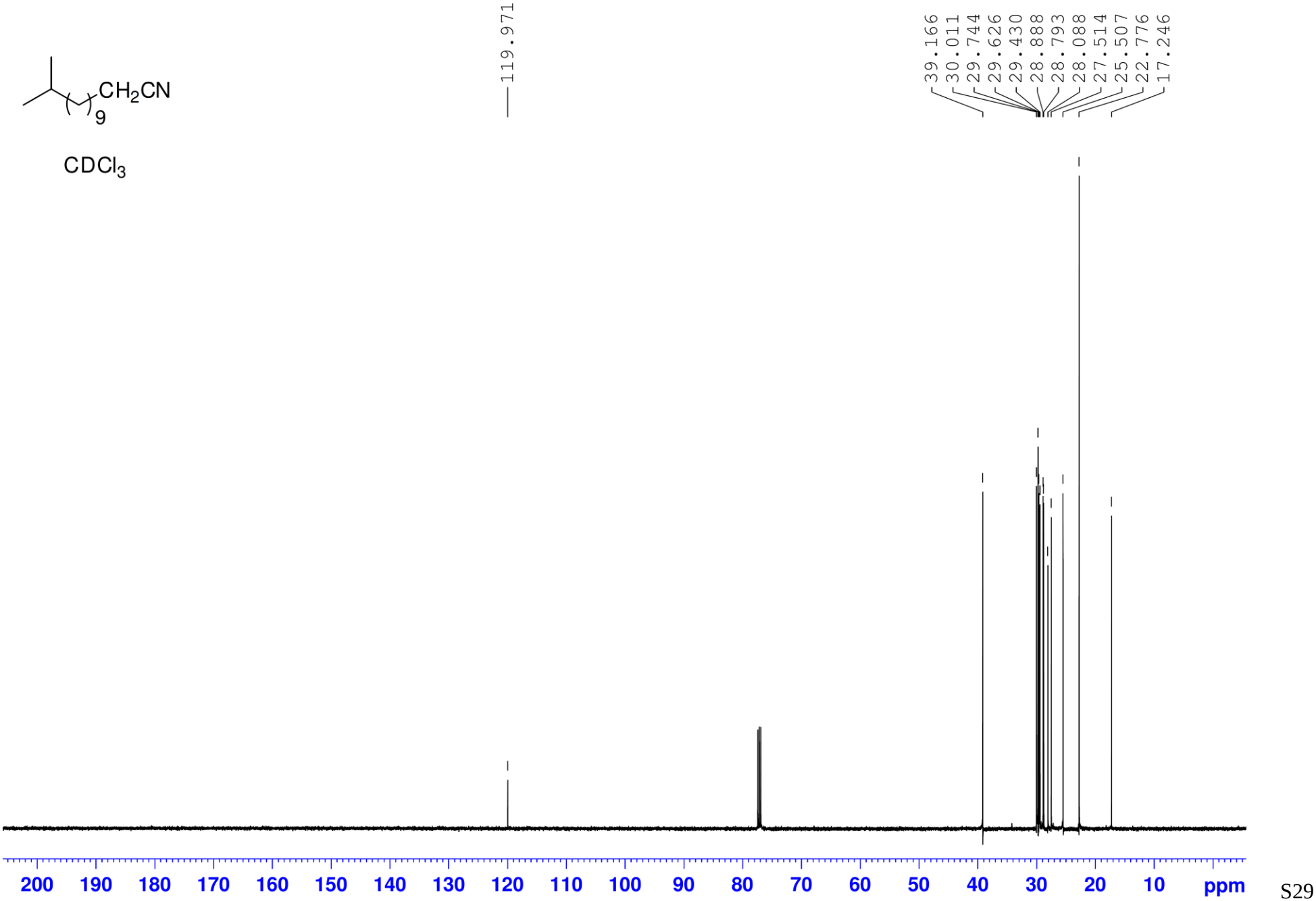
$CDCl_3$

^{1}H NMR (500 MHz, $CDCl_3$) – 12-Methyltridecanenitrile (**14**)

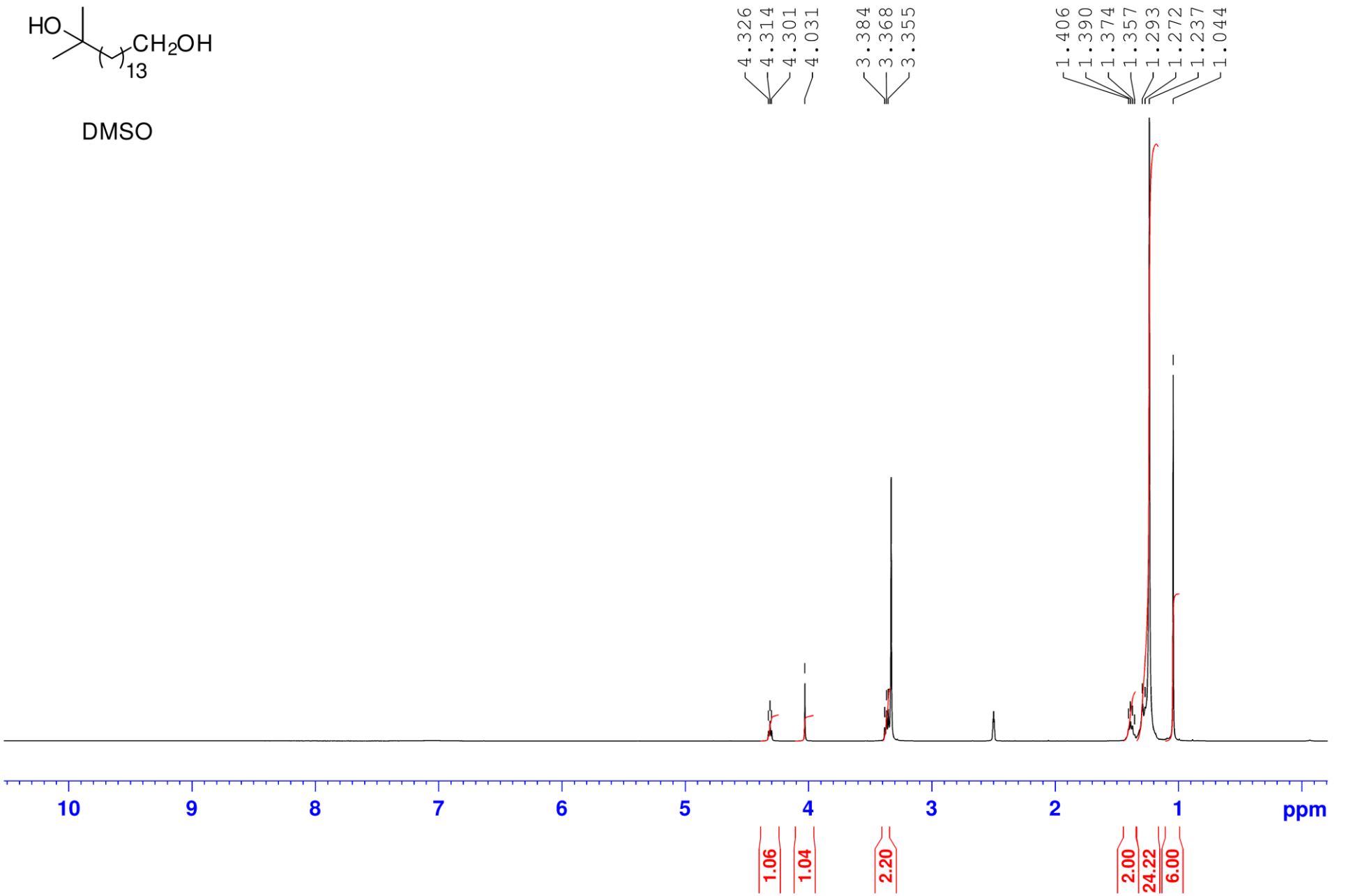


$CDCl_3$

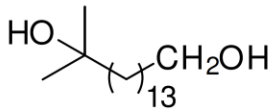
^{13}C NMR (125 MHz, $CDCl_3$) – 12-Methyltridecanenitrile (**14**)



^{1}H NMR (500 MHz, DMSO-d_6) – 15-Methylhexadecane-1,15-diol (**16**)

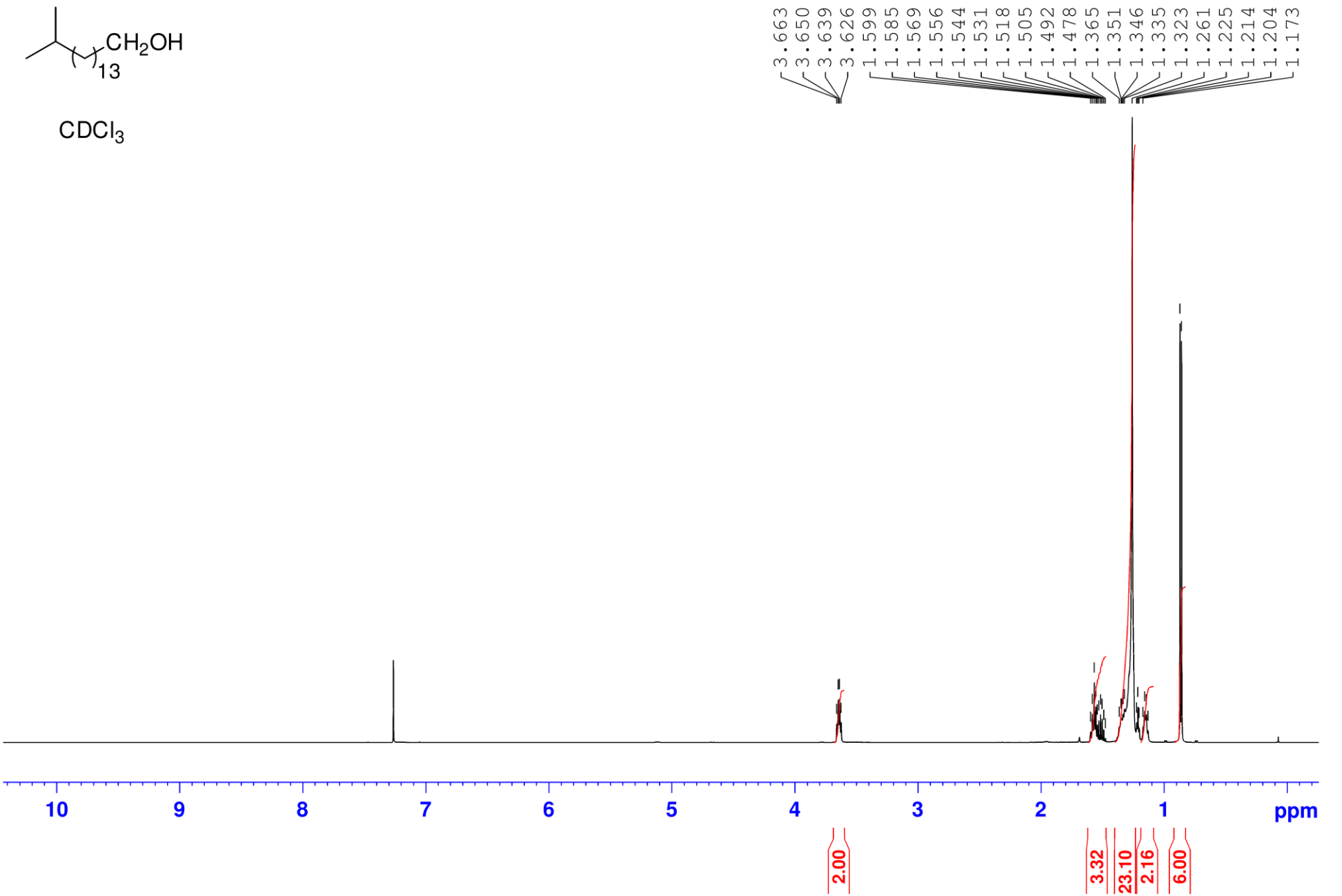


^{13}C NMR (125 MHz, $CDCl_3$) – 15-Methylhexadecane-1,15-diol (**16**)

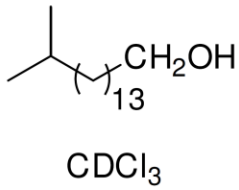


$CDCl_3$

^{1}H NMR (500 MHz, $CDCl_3$) – 15-Methylhexadecan-1-ol (**17**)

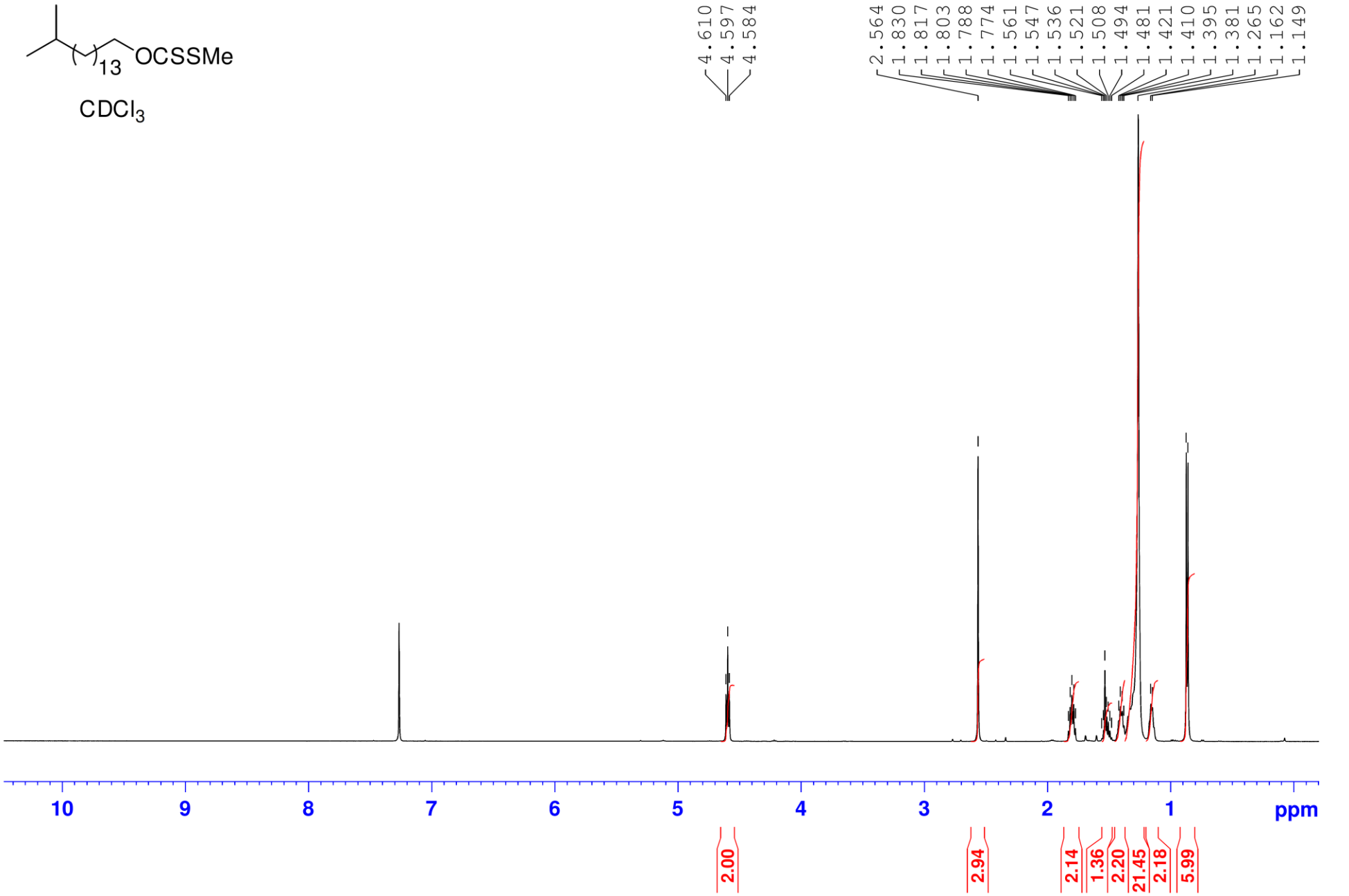


^{13}C NMR (125 MHz, $CDCl_3$) – 15-Methylhexadecan-1-ol (**17**)

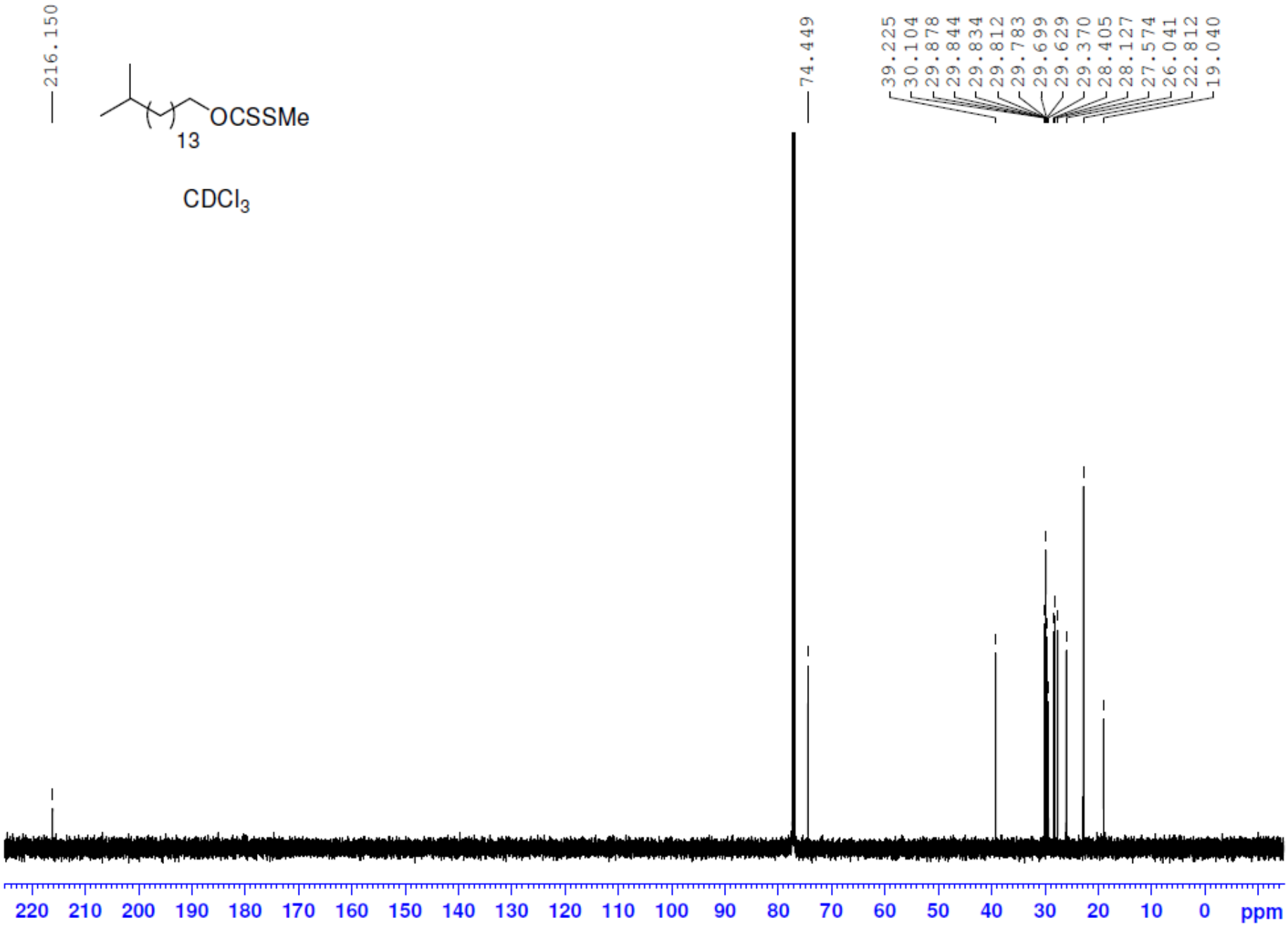


$CDCl_3$

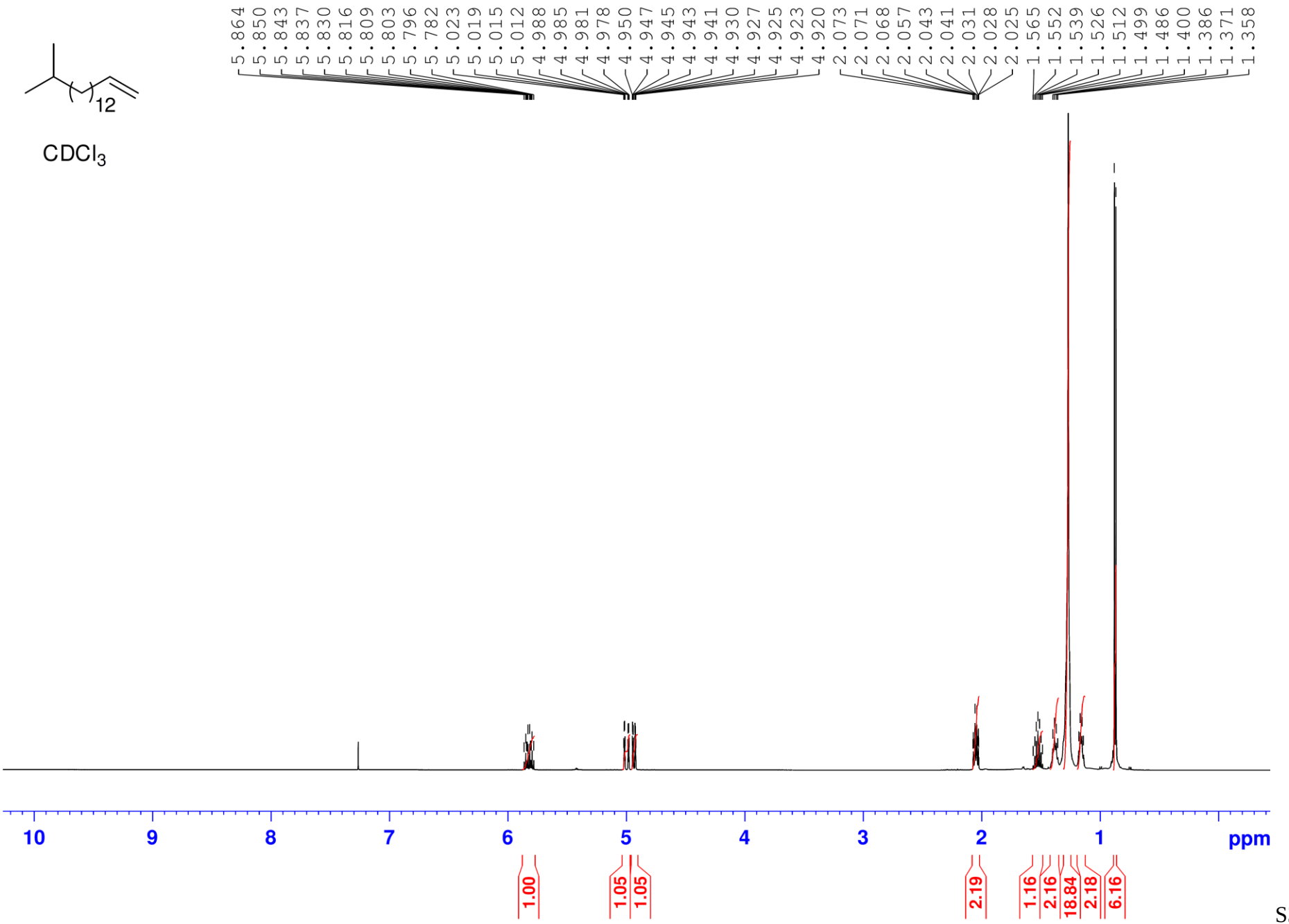
^{1}H NMR (500 MHz, $CDCl_3$) – *S*-Methyl-*O*-15-methylhexadecyl dithiocarbonate (**18**)



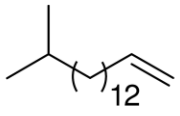
^{13}C NMR (125 MHz, $CDCl_3$) – *S*-Methyl-*O*-15-methylhexadecyl dithiocarbonate (**18**)



^{1}H NMR (500 MHz, $CDCl_3$) – 15-Methylhexadecan-1-ene (**19**)



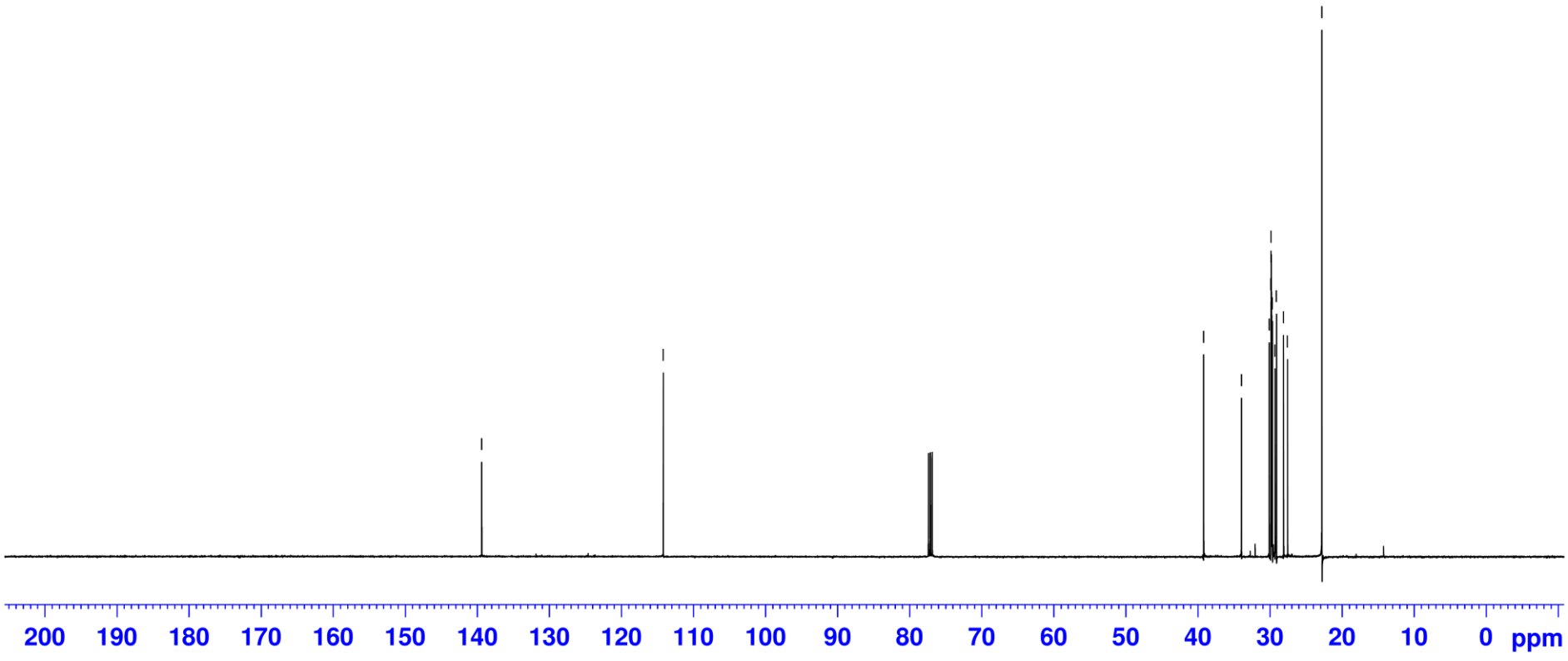
^{13}C NMR (125 MHz, $CDCl_3$) – 15-Methylhexadecan-1-ene (**19**)



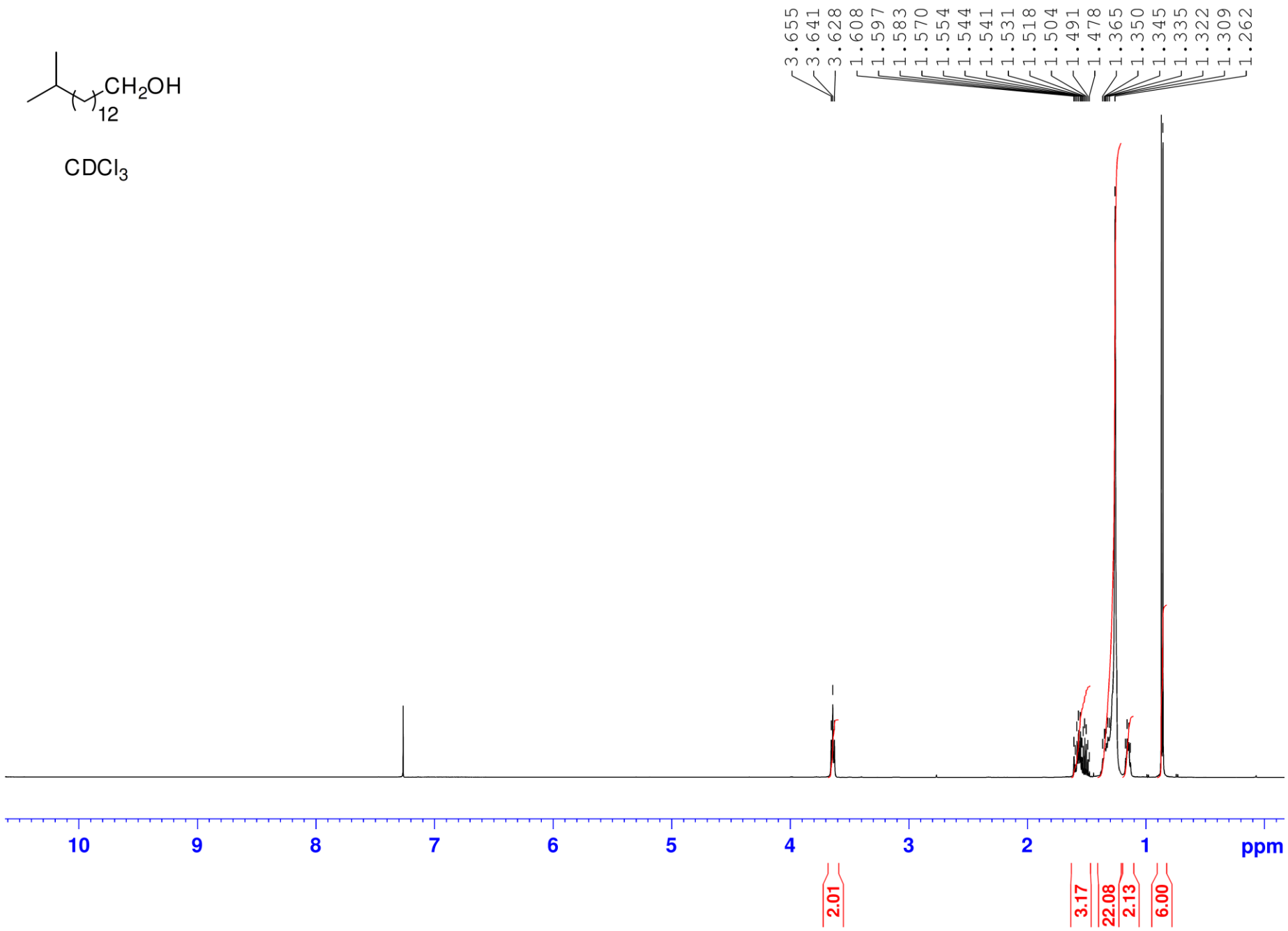
$CDCl_3$

139.418
114.225

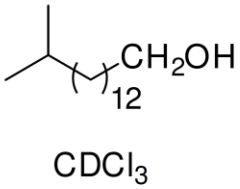
39.246
33.993
30.125
29.900
29.863
29.857
29.839
29.794
29.687
29.335
29.135
28.146
27.596
22.821



^{1}H NMR (500 MHz, $CDCl_3$) – 14-Methylpentadecan-1-ol (**20**)

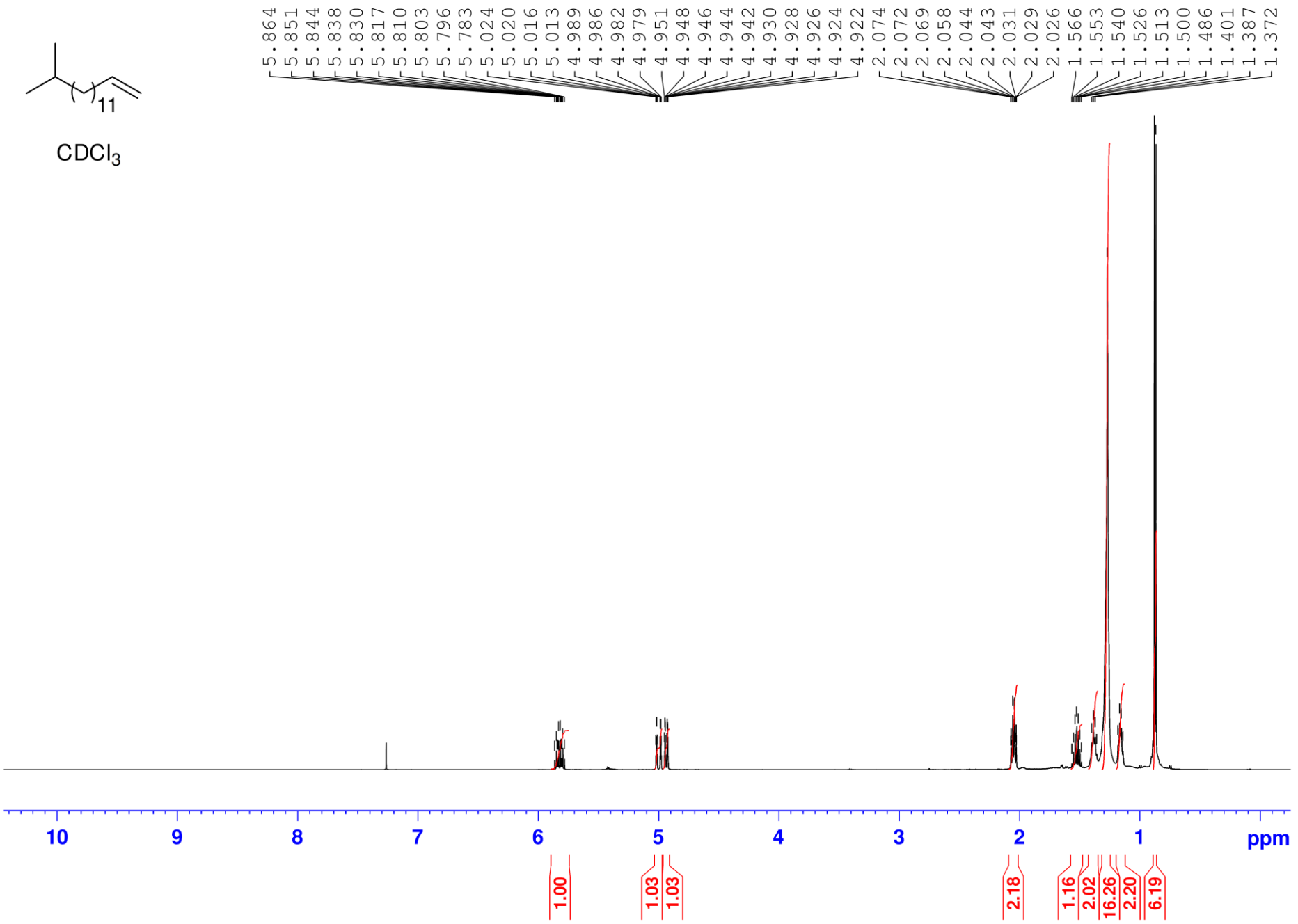


^{13}C NMR (125 MHz, $CDCl_3$) – 14-Methylpentadecan-1-ol (**20**)

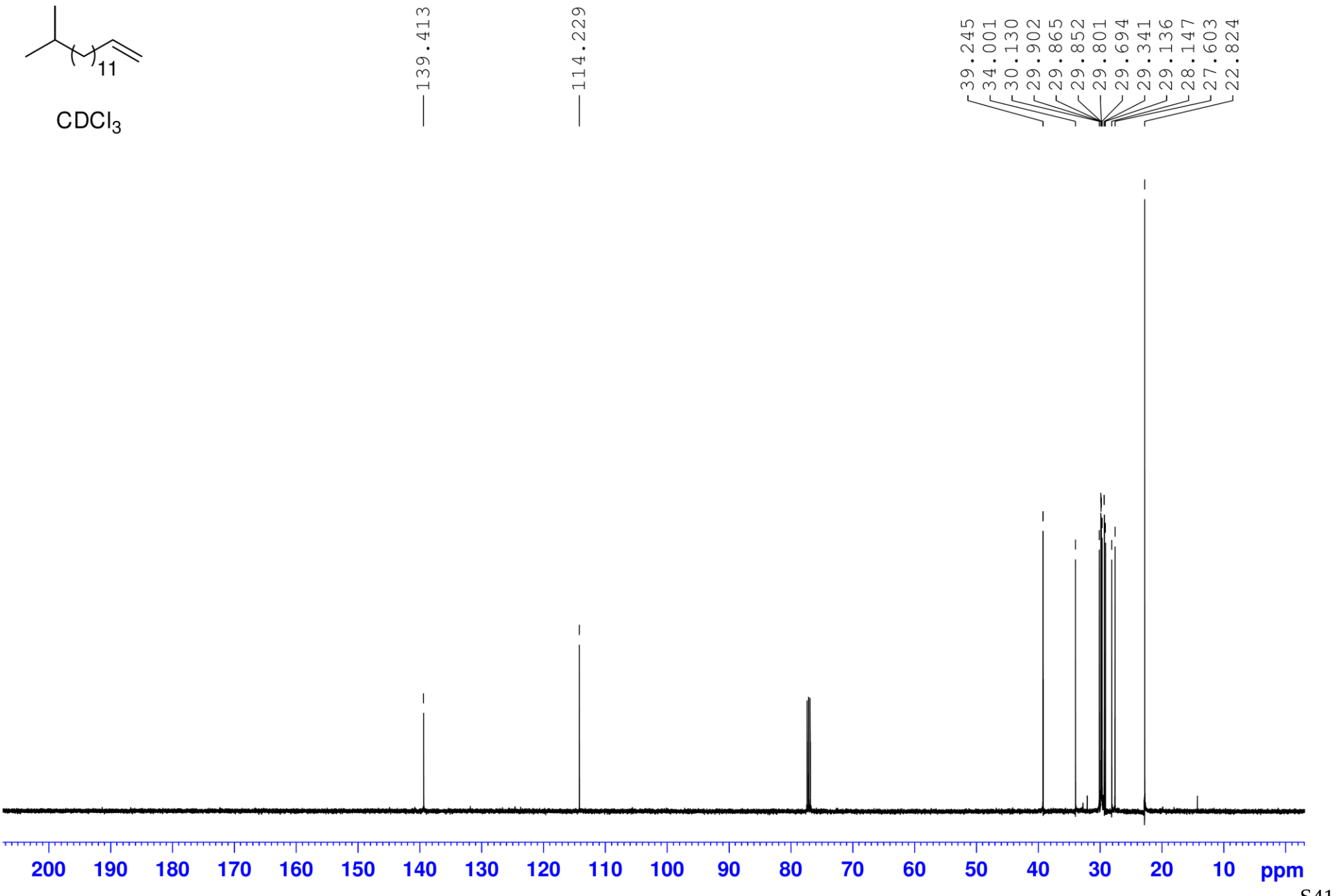


$CDCl_3$

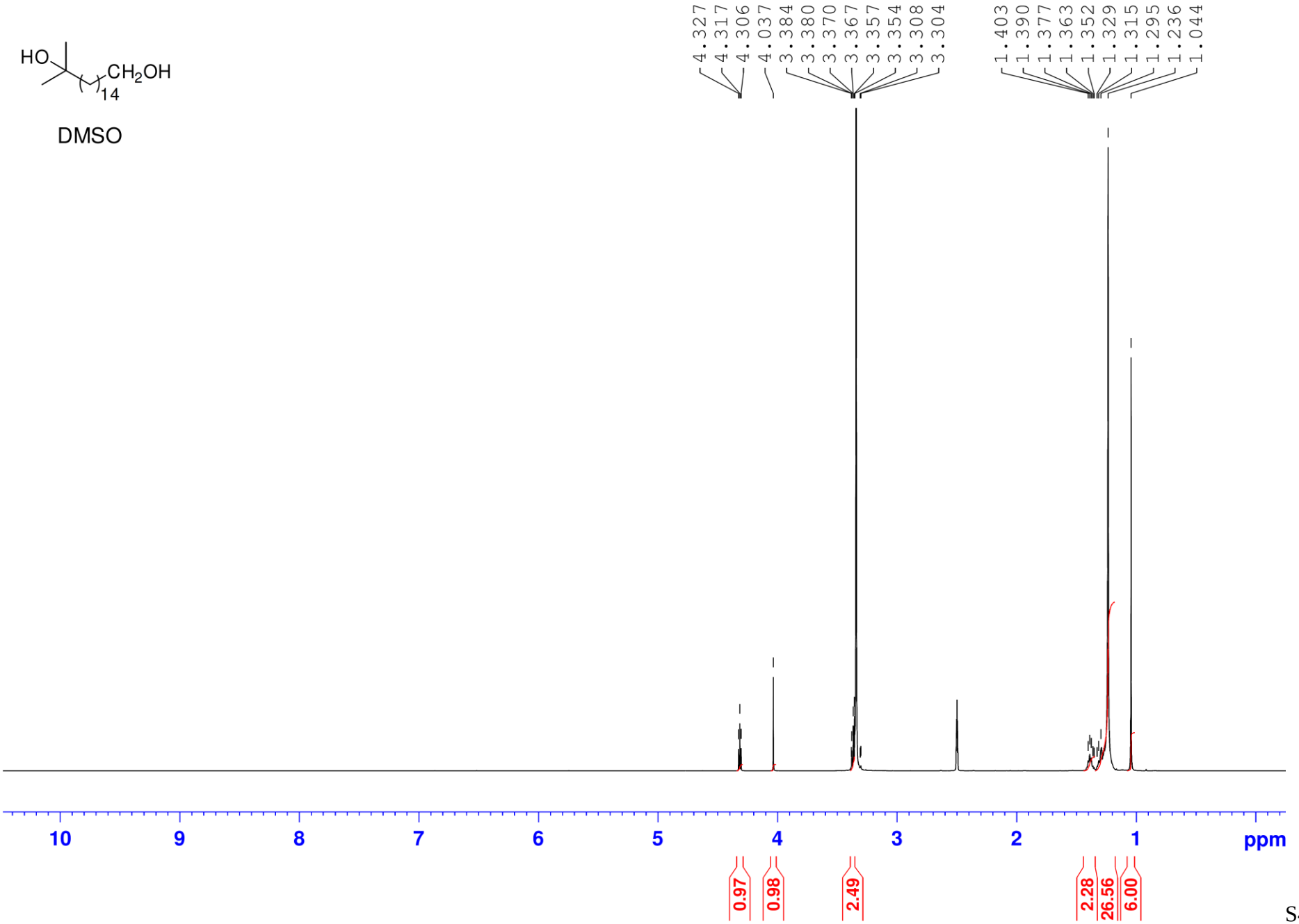
^{1}H NMR (500 MHz, $CDCl_3$) – 14-Methylpentadec-1-ene (**22**)



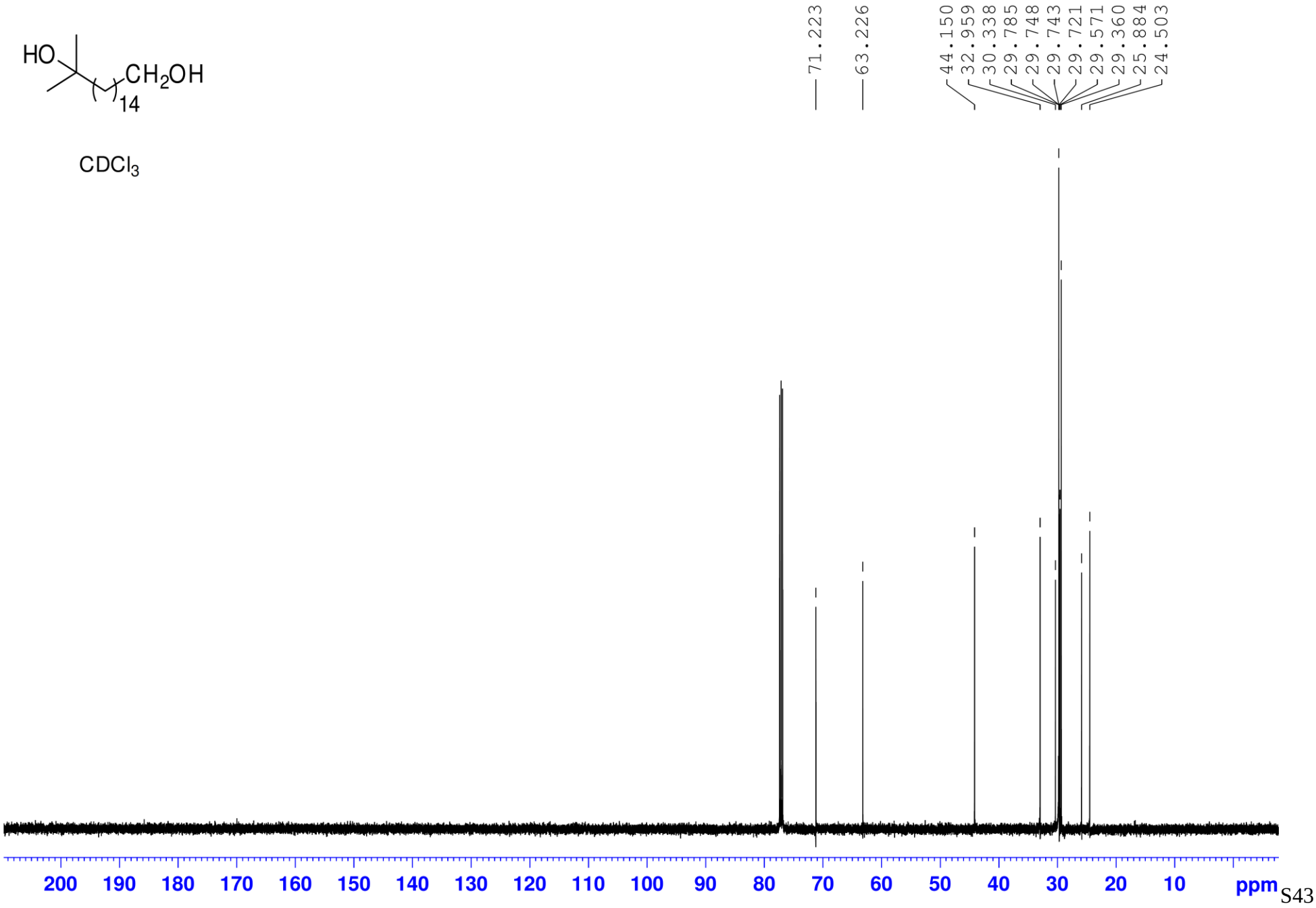
^{13}C NMR (125 MHz, $CDCl_3$) – 14-Methylpentadec-1-ene (**22**)



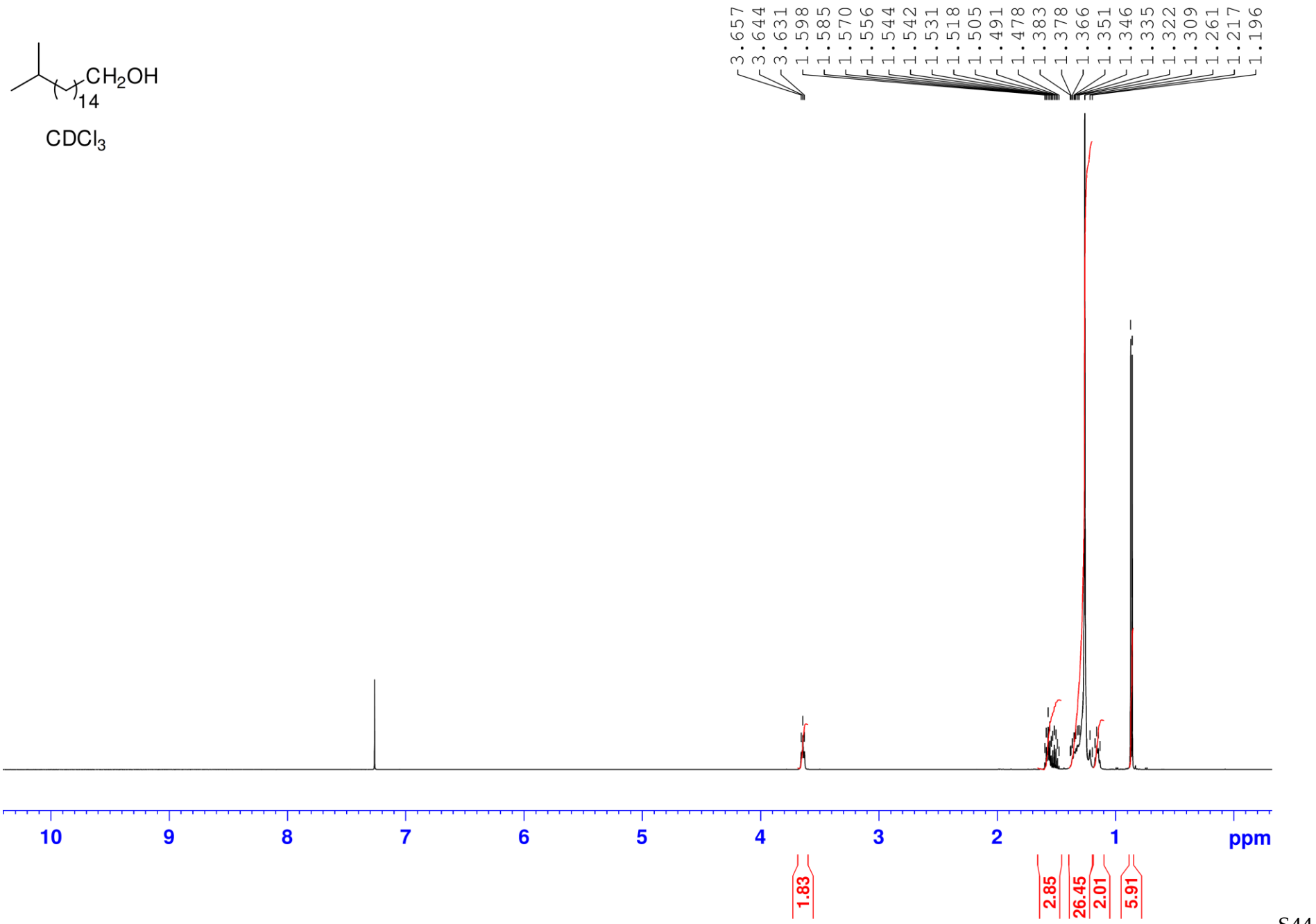
^{1}H NMR (500 MHz, DMSO-d_6) – 16-Methylheptadecane-1,16-diol (**24**)



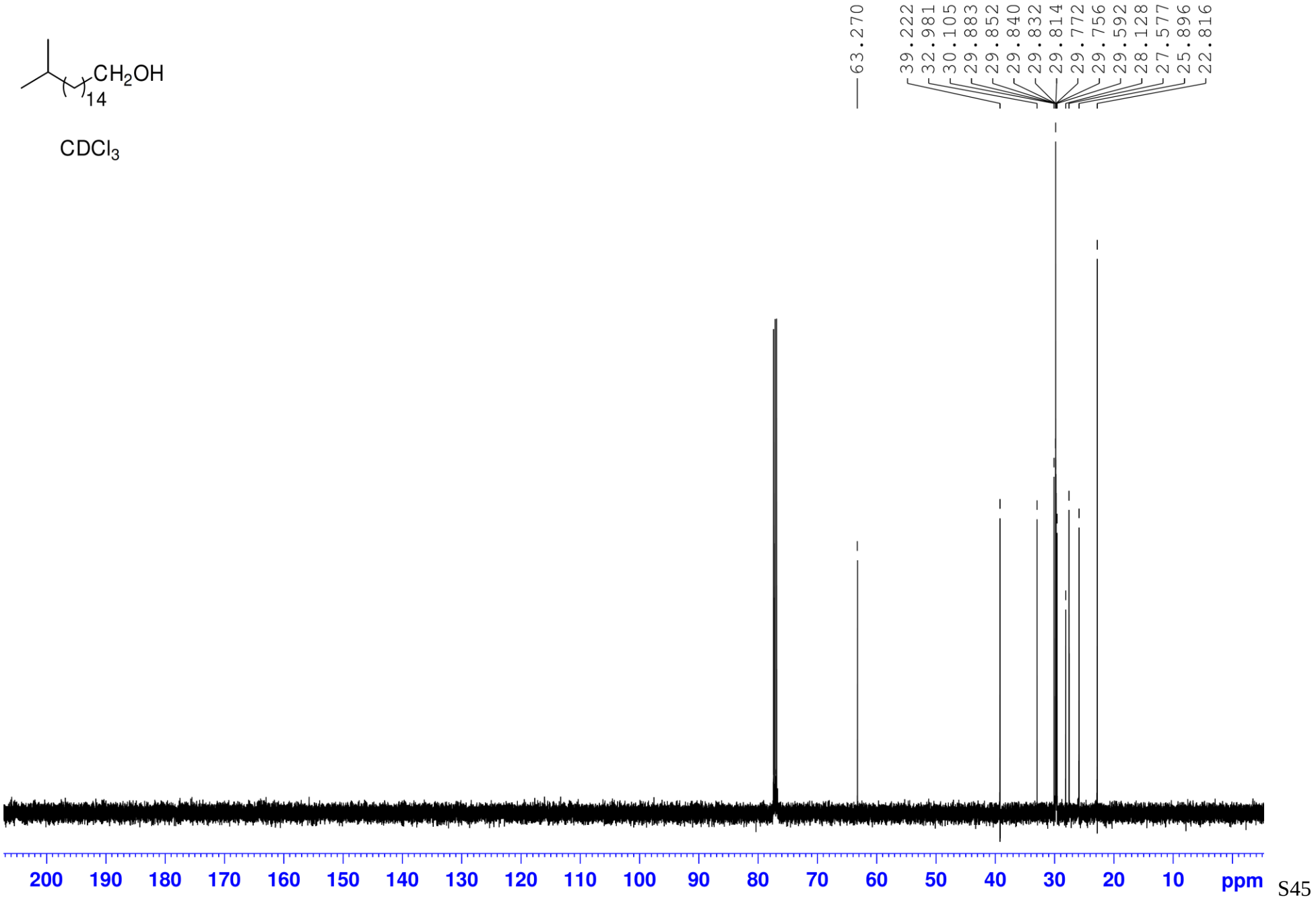
^{13}C NMR (125 MHz, $CDCl_3$) – 16-Methylheptadecane-1,16-diol (**24**)



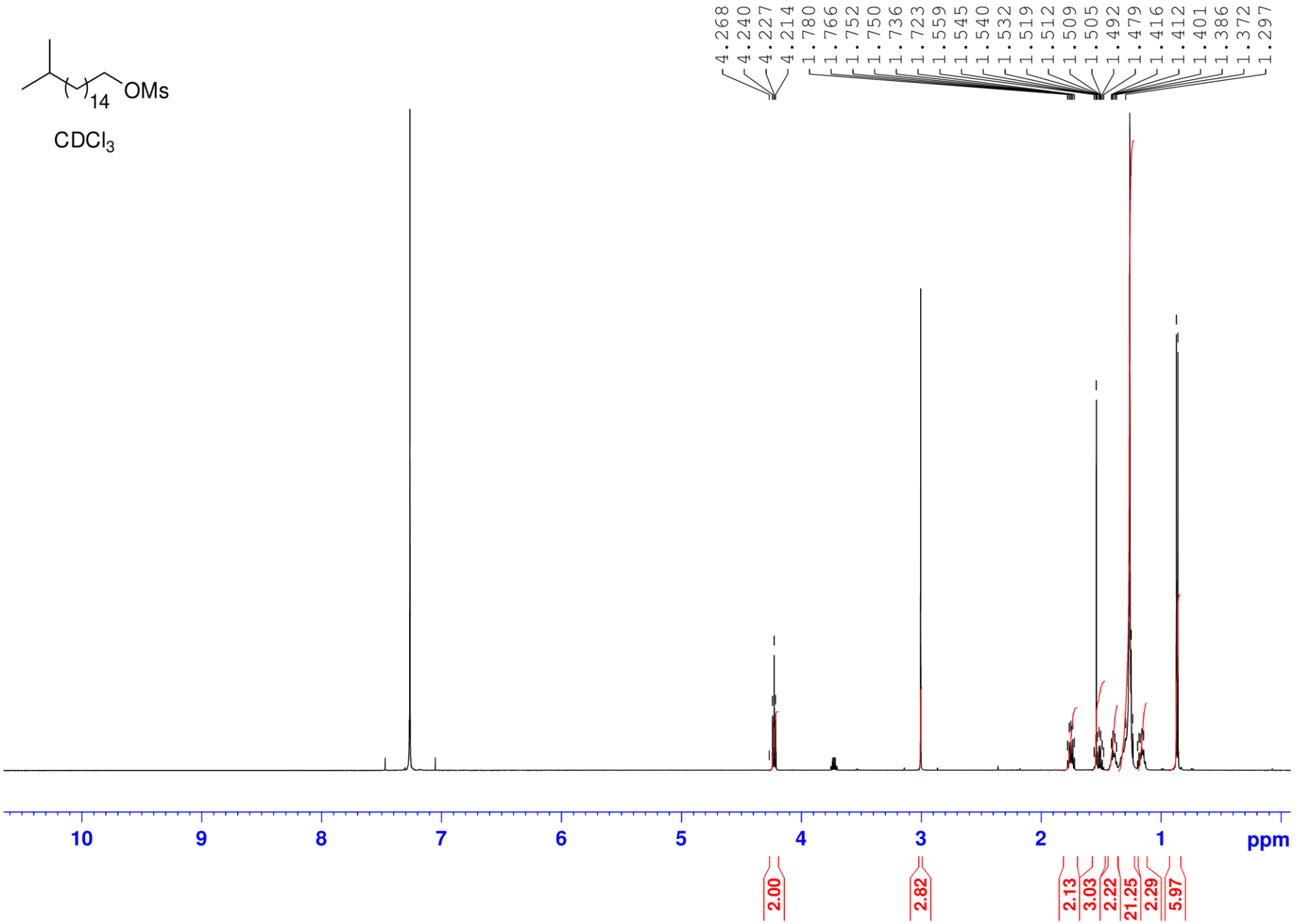
^{1}H NMR (500 MHz, $CDCl_3$) – 16-Methylheptadecan-1-ol (**25**)



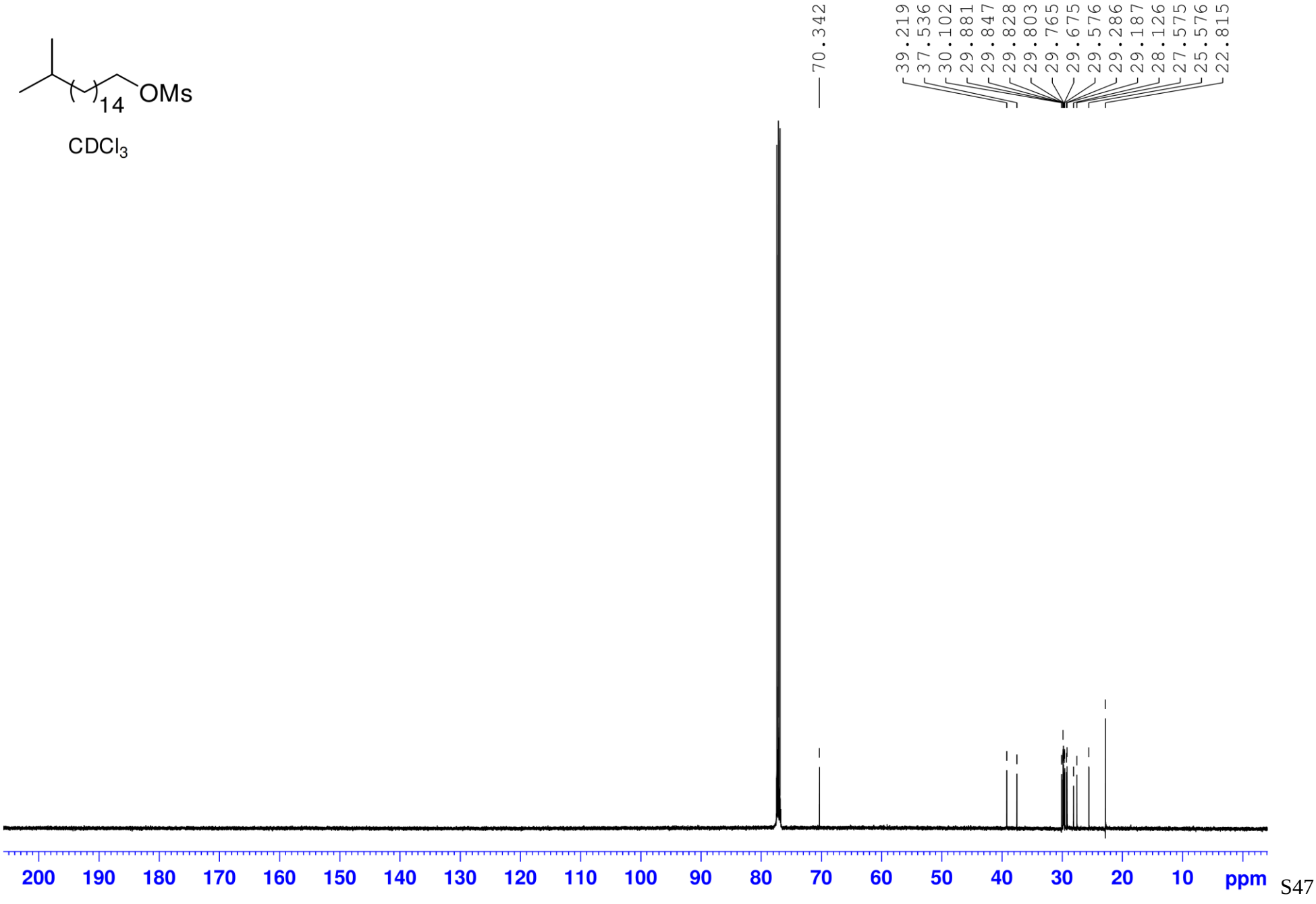
^{13}C NMR (125 MHz, $CDCl_3$) – 16-Methylheptadecan-1-ol (**25**)



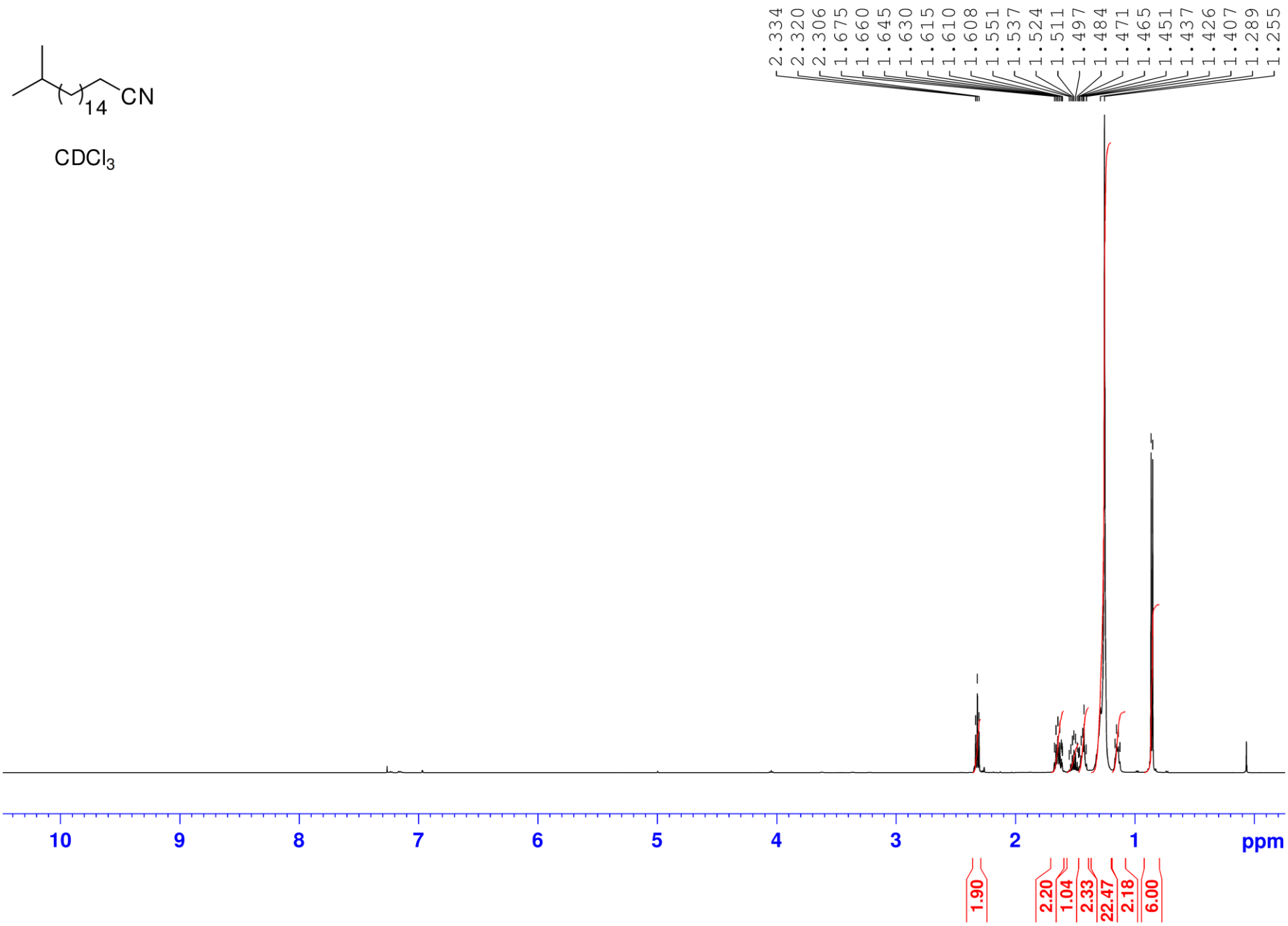
^{1}H NMR (500 MHz, $CDCl_3$) – 16-Methylheptadecyl methanesulfonate (**26**)



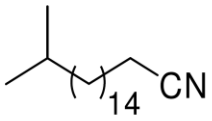
^{13}C NMR (125 MHz, $CDCl_3$) – 16-Methylheptadecyl methanesulfonate (**26**)



^{1}H NMR (500 MHz, $CDCl_3$) – 17-Methyloctadecanenitrile (**27**)



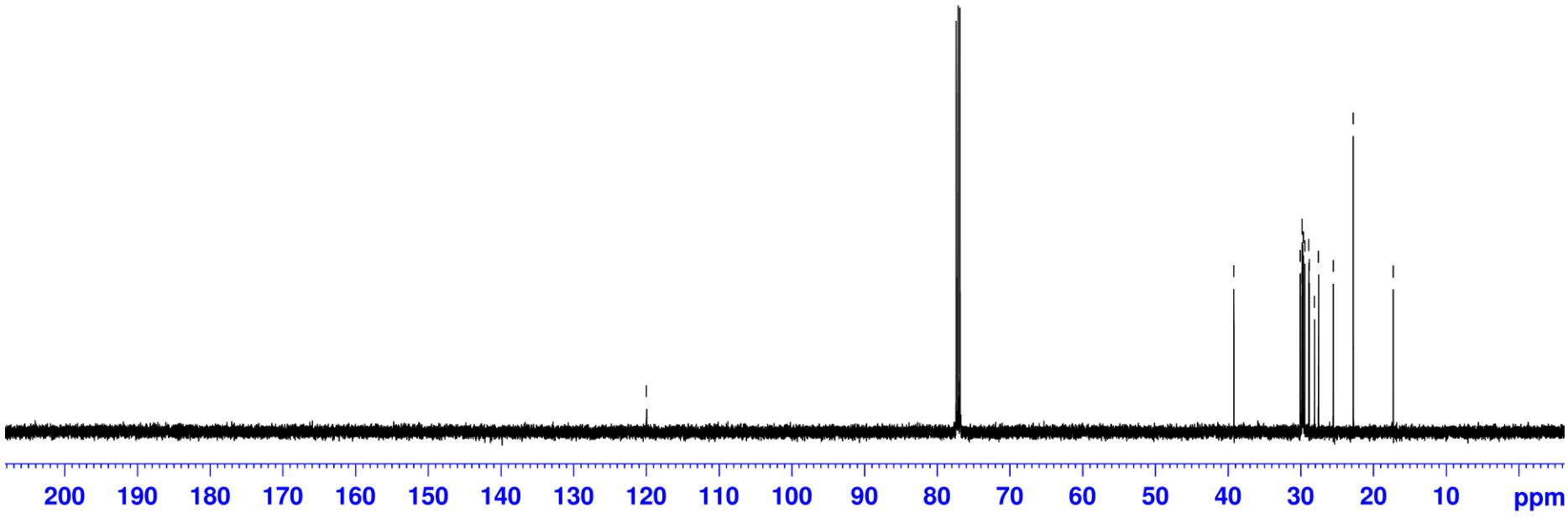
^{13}C NMR (125 MHz, $CDCl_3$) – 17-Methyloctadecanenitrile (**27**)



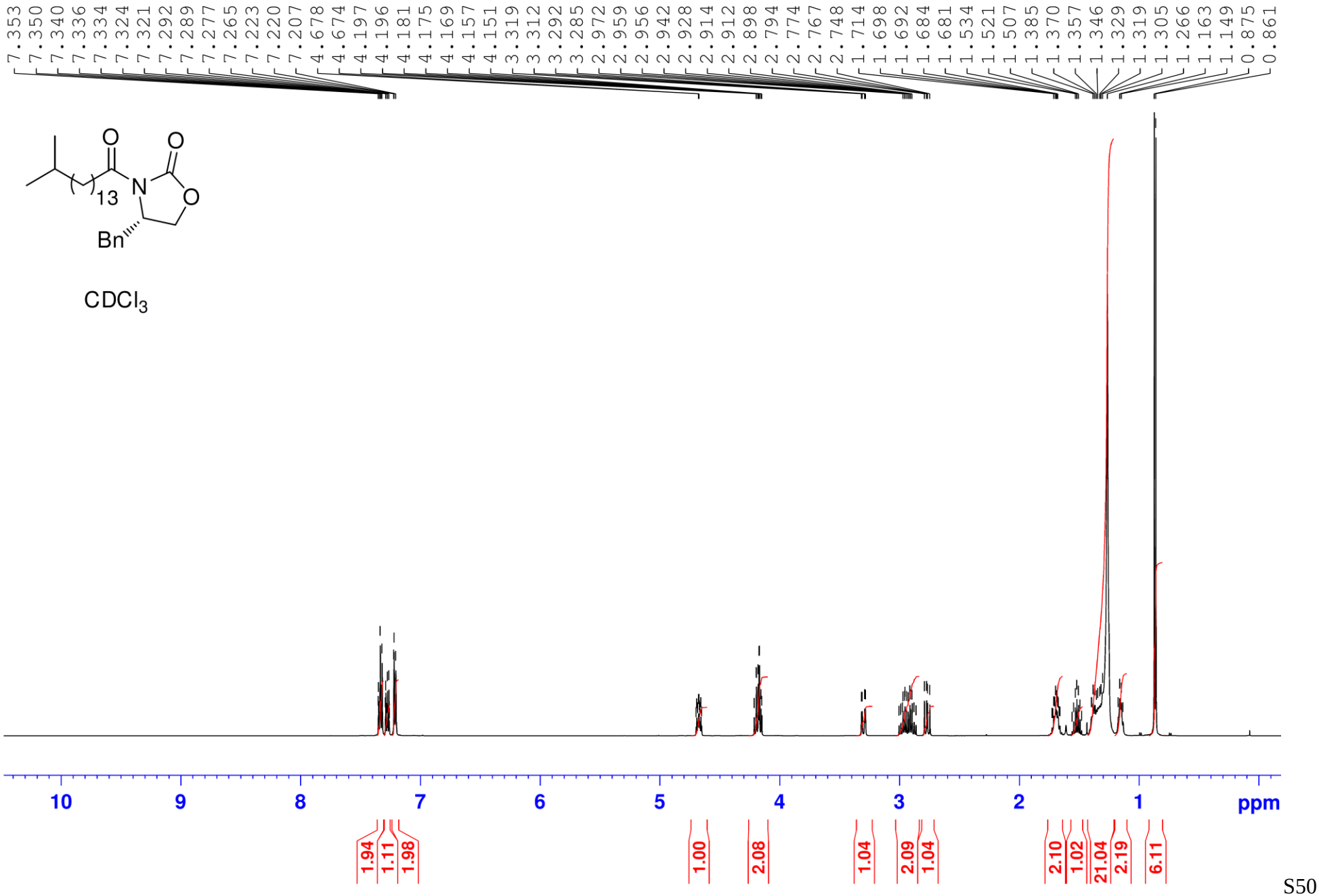
$CDCl_3$

120.012

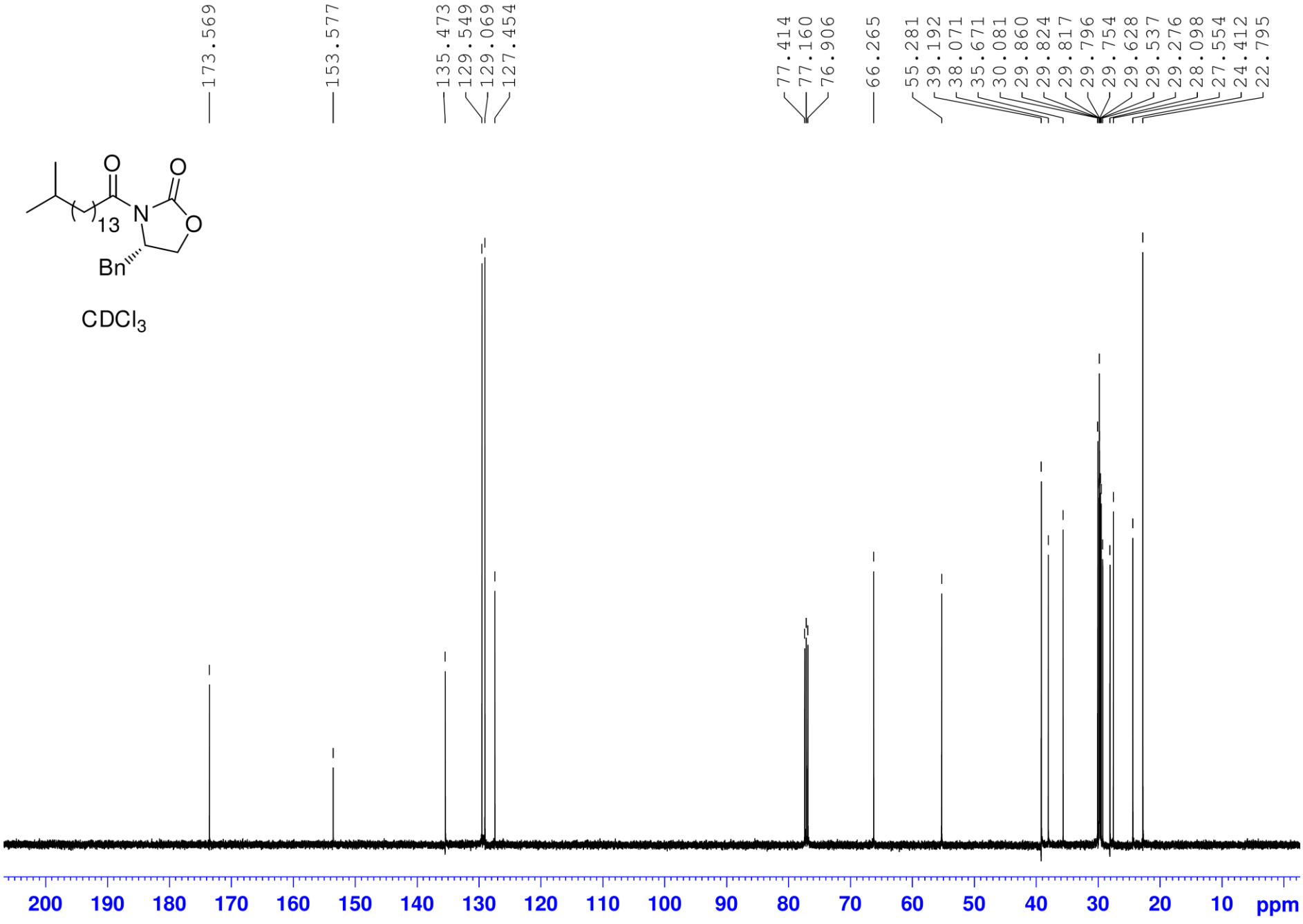
39.218
30.100
29.878
29.843
29.836
29.817
29.789
29.742
29.654
29.456
28.919
28.824
28.125
27.573
25.534
22.814
17.283



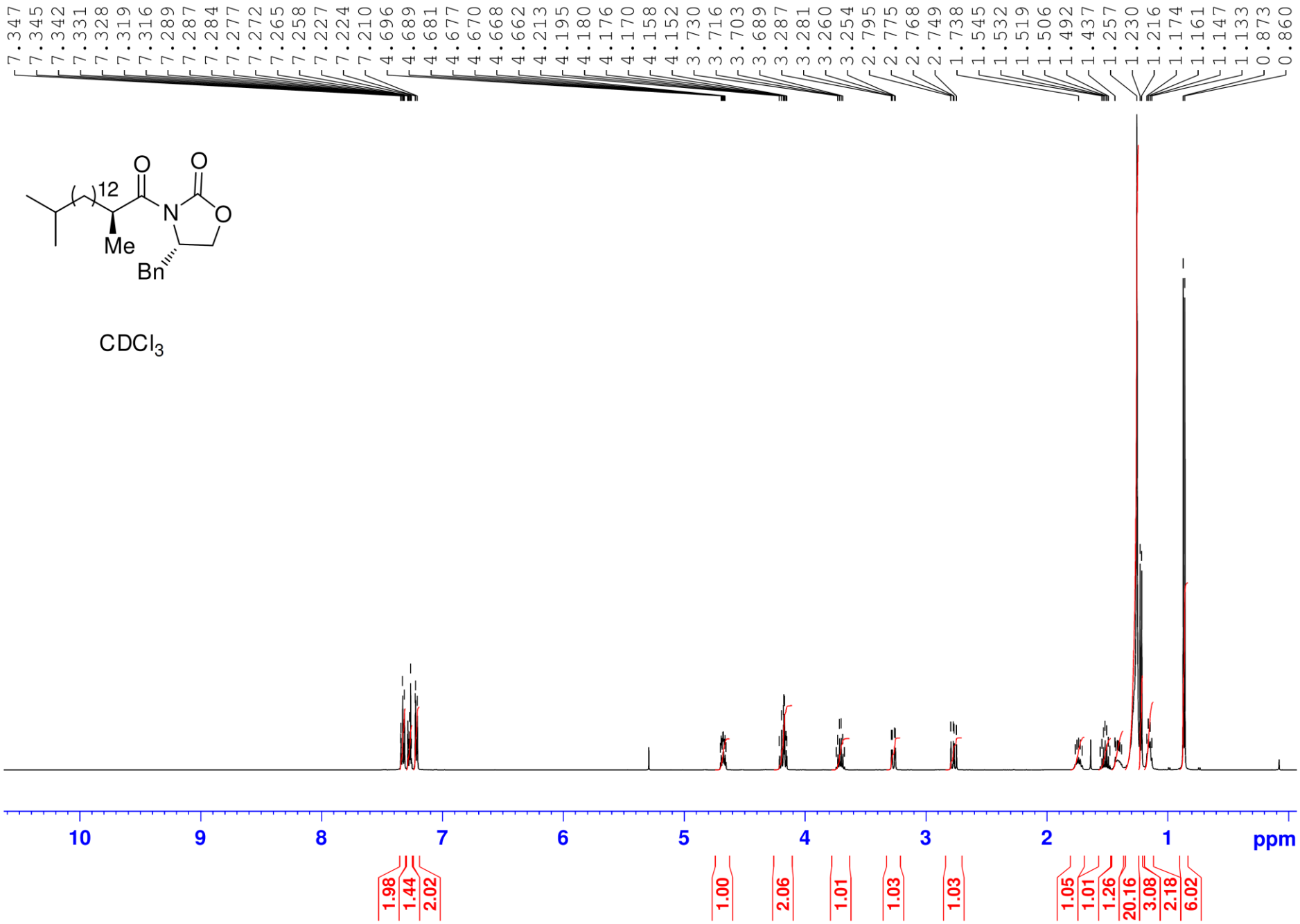
^{1}H NMR (500 MHz, $CDCl_3$) – (*S*)-4-Benzyl-3-(15-methylhexadecanoyl)oxazolidin-2-one (**28**)



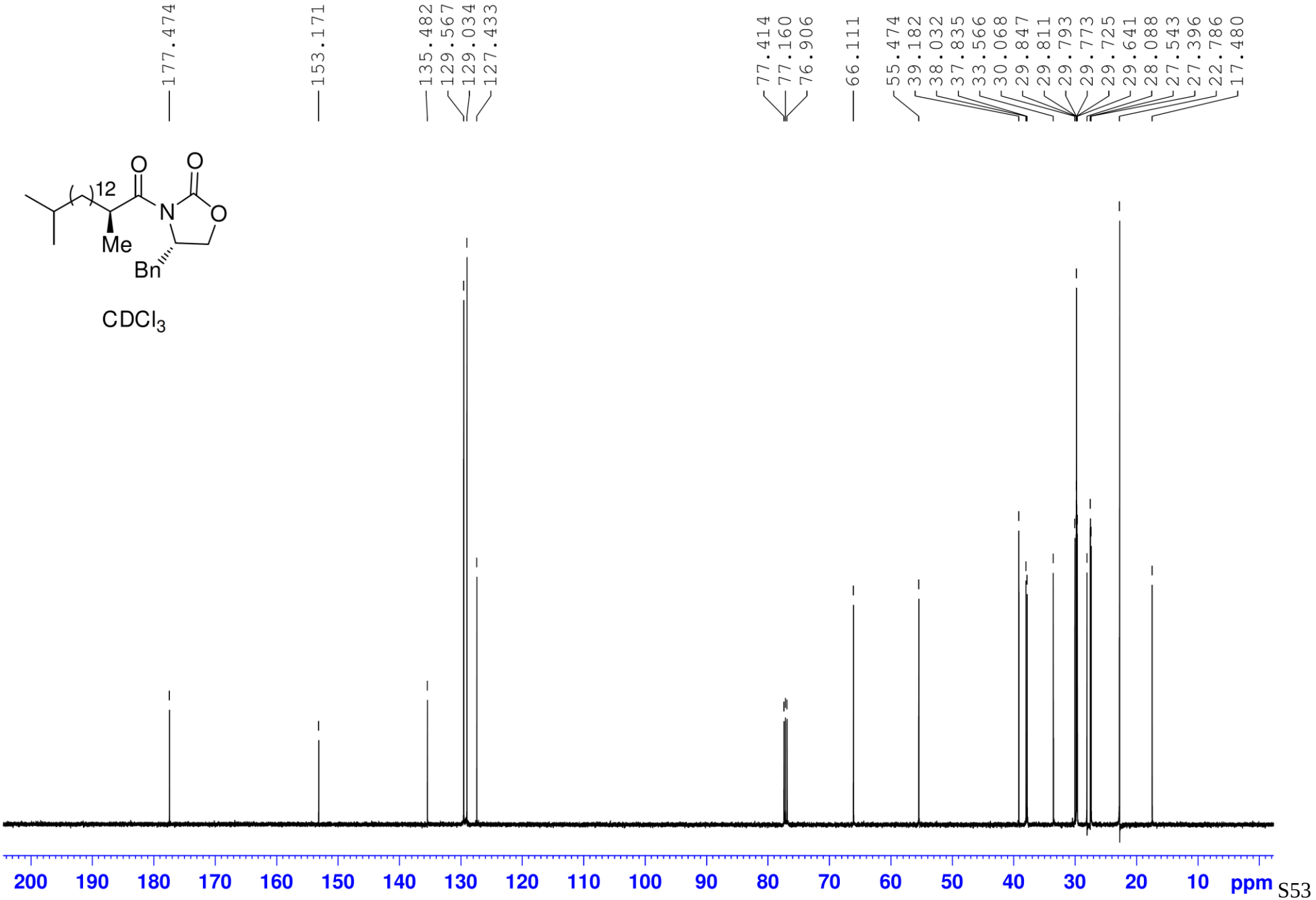
^{13}C NMR (125 MHz, $CDCl_3$) – (*S*)-4-Benzyl-3-(15-methylhexadecanoyl)oxazolidin-2-one (**28**)



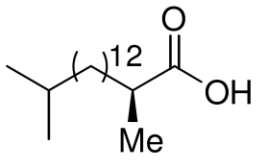
^{13}C NMR (125 MHz, $CDCl_3$) – (*S*)-4-Benzyl-3-((*S*)-2,15-dimethylhexadecanoyl)oxazolidin-2-one (**29**)



^{1}H NMR (500 MHz, $CDCl_3$) – (*S*)-4-Benzyl-3-((*S*)-2,15-dimethylhexadecanoyl)oxazolidin-2-one (**29**)

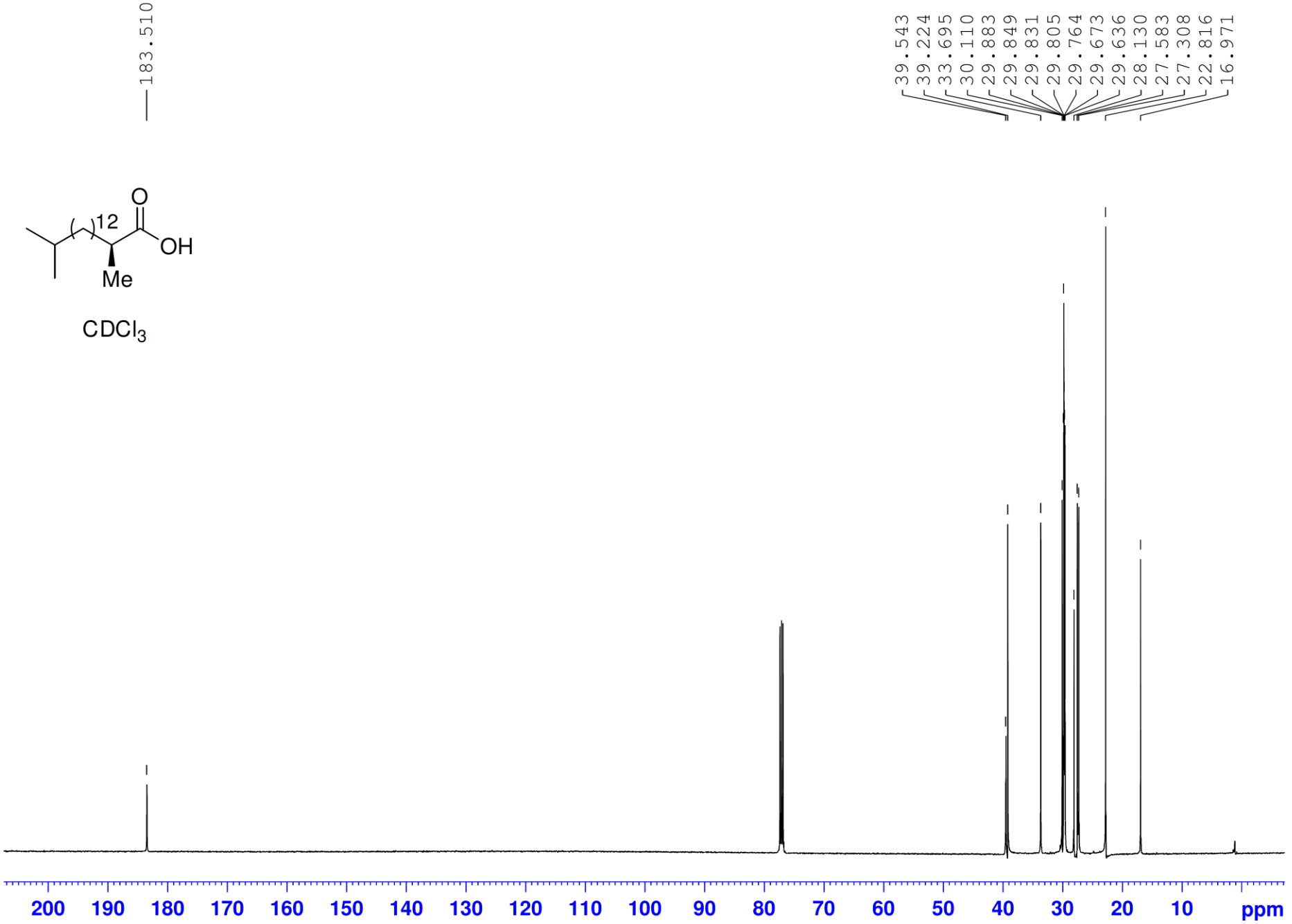


^{1}H NMR (500 MHz, $CDCl_3$) – (*S*)-2,15-Dimethylhexadecanoic acid (**30**)

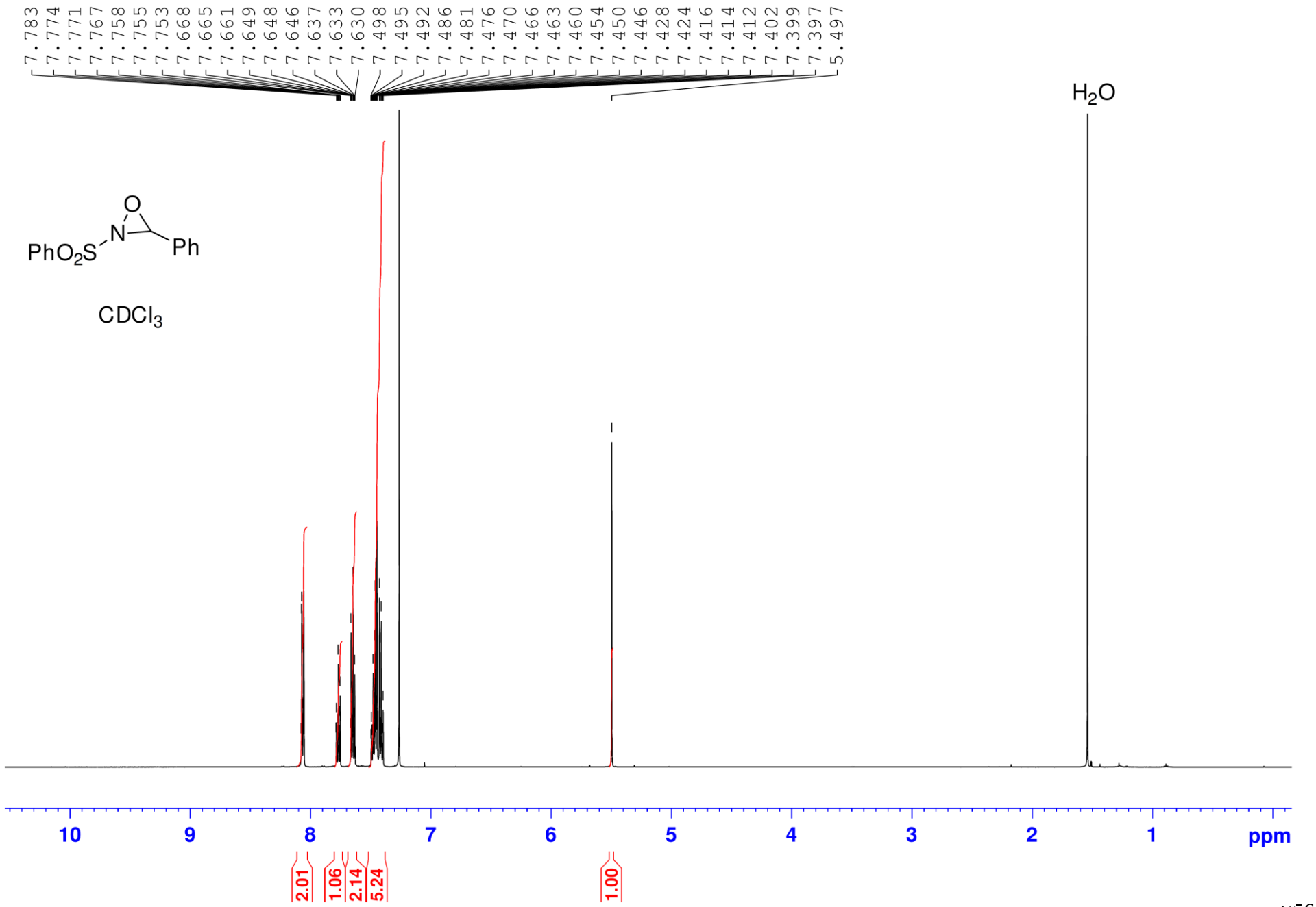


$CDCl_3$

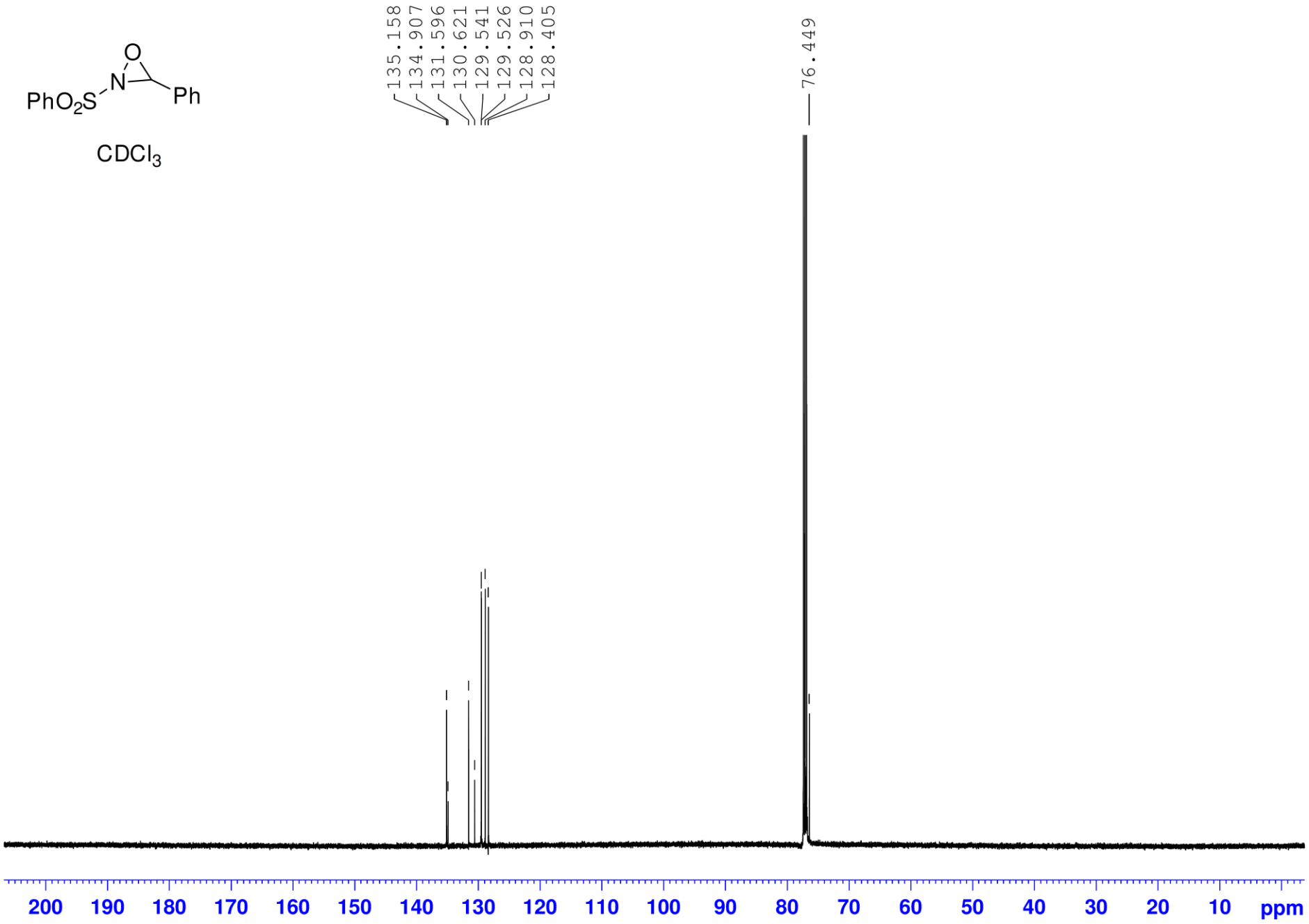
^{13}C NMR (125 MHz, $CDCl_3$) – (*S*)-2,15-Dimethylhexadecanoic acid (**30**)



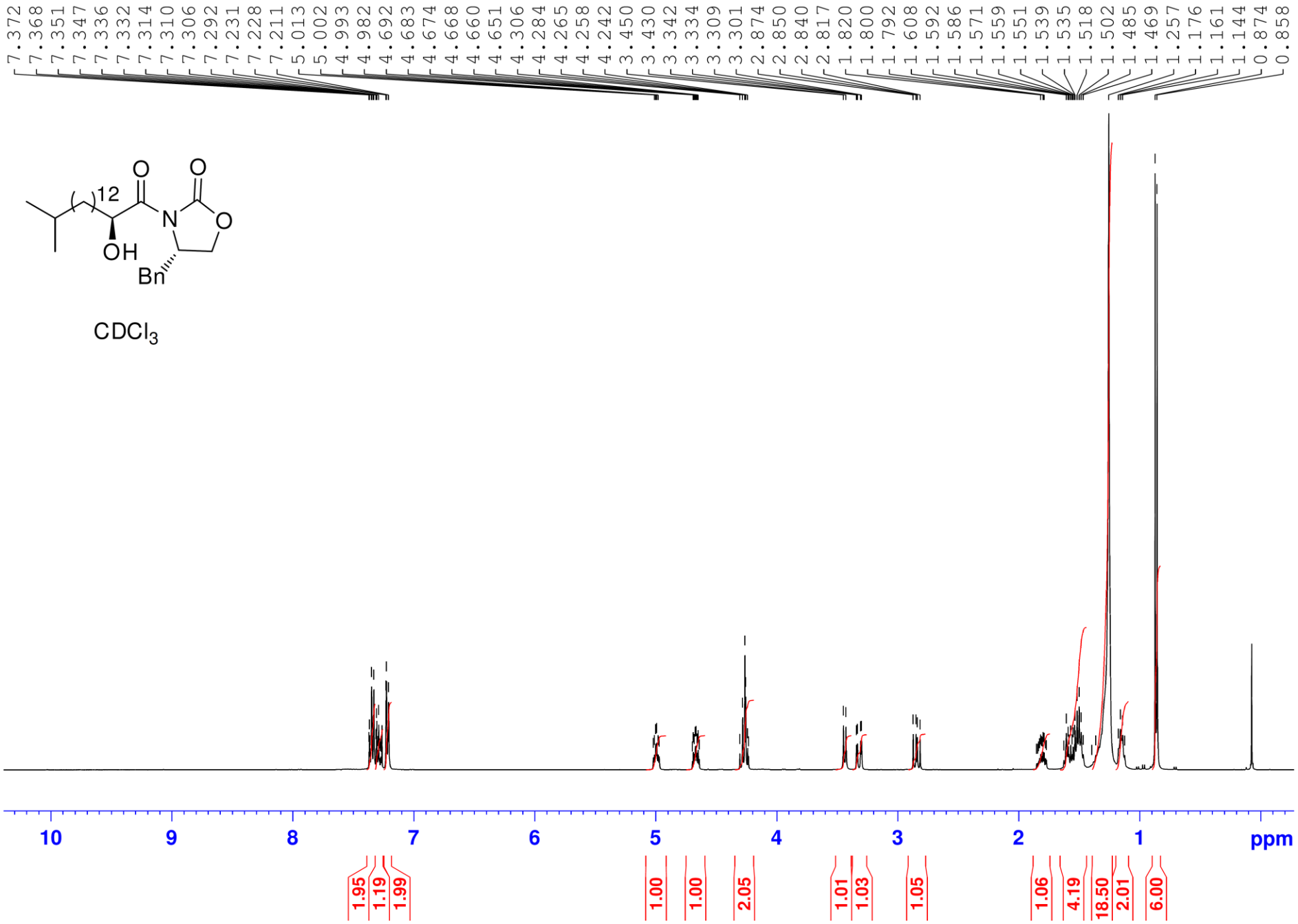
^{1}H NMR (500 MHz, $CDCl_3$) – 3-Phenyl-2-(phenylsulfonyl)-1,2-oxaziridine



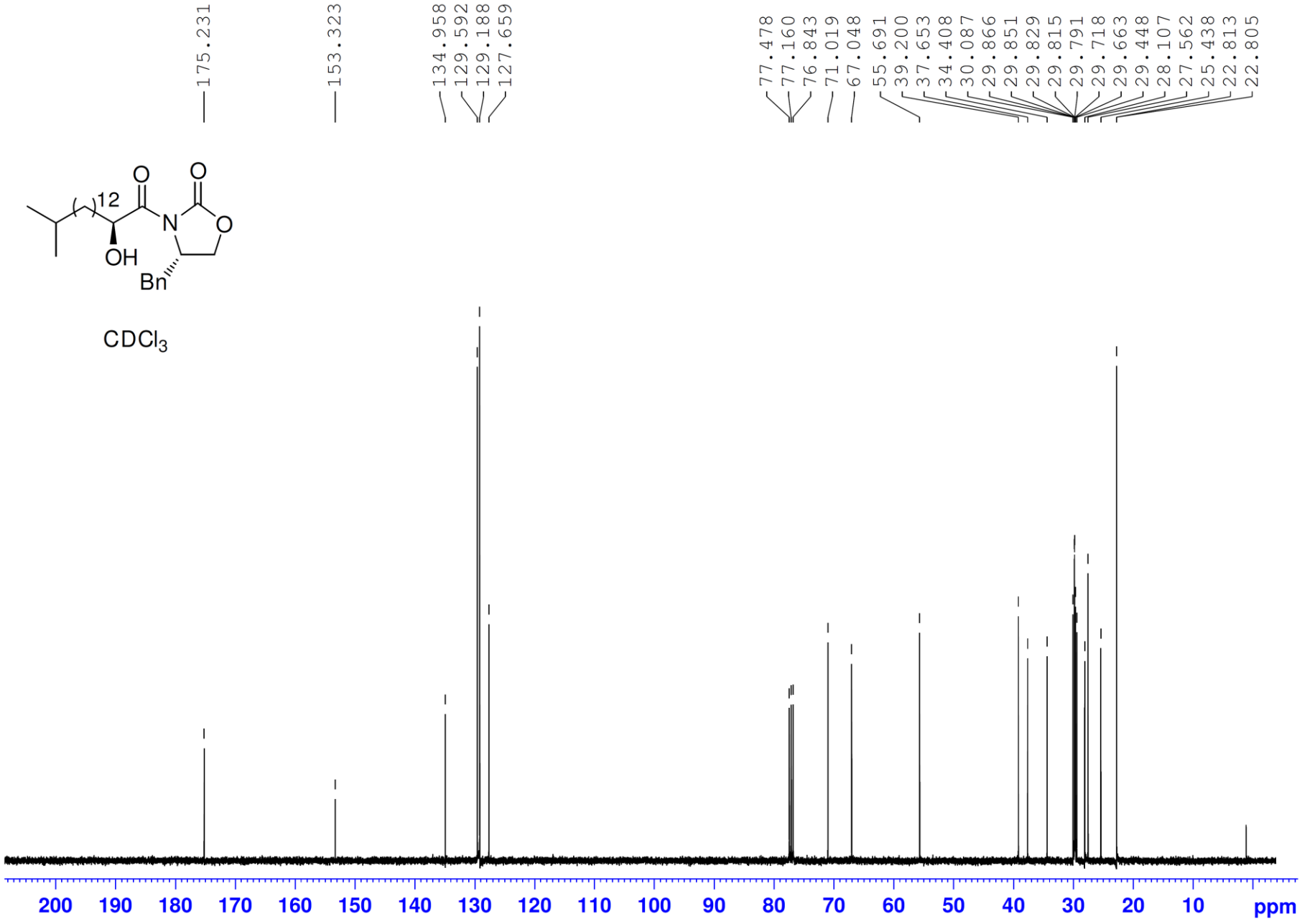
^{13}C NMR (125 MHz, $CDCl_3$) – 3-Phenyl-2-(phenylsulfonyl)-1,2-oxaziridine



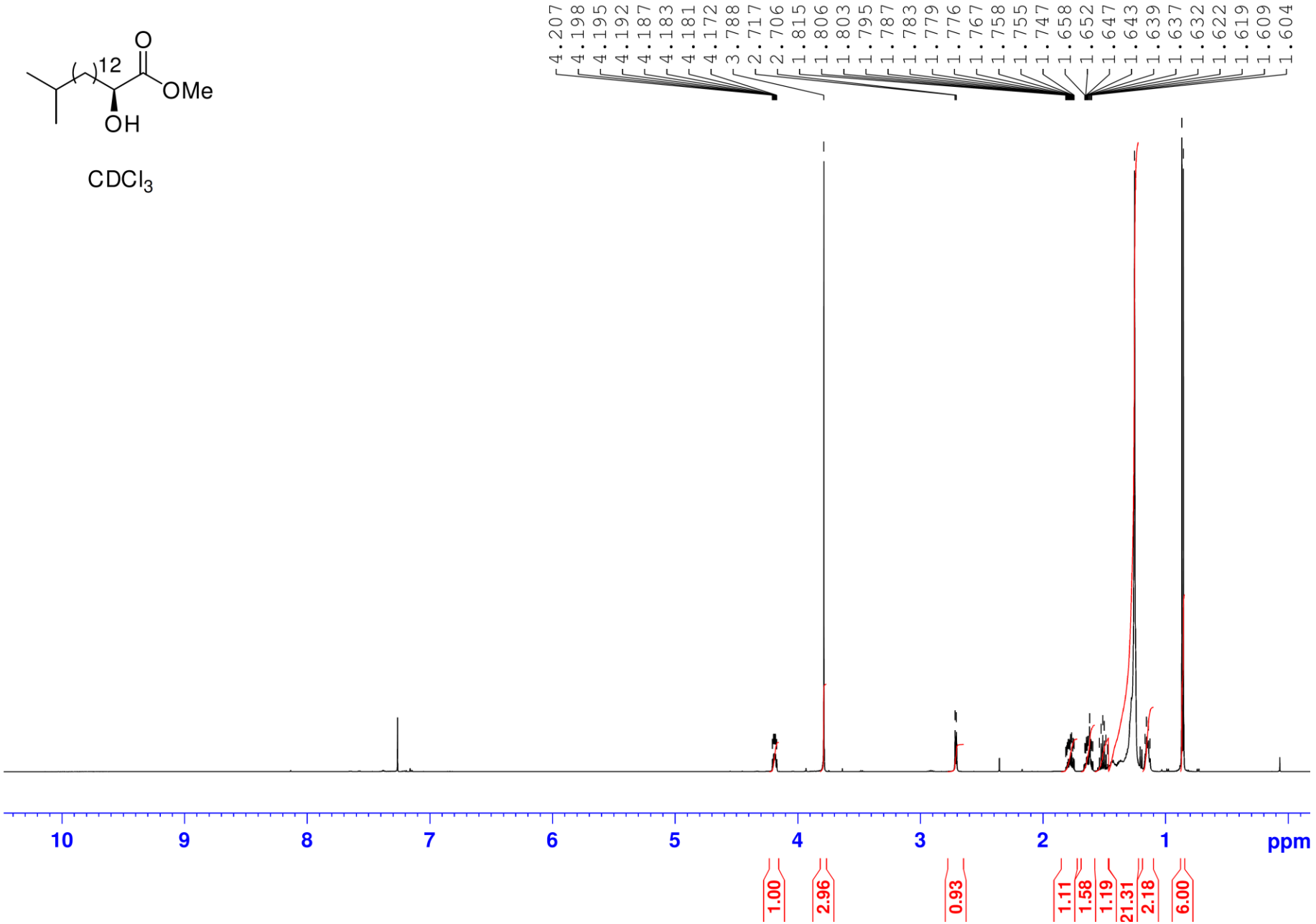
^{1}H NMR (500 MHz, $CDCl_3$) – (*S*)-4-Benzyl-3-((*S*)-2-hydroxy-15-methylhexadecanoyl)oxazolidin-2-one (**31**)



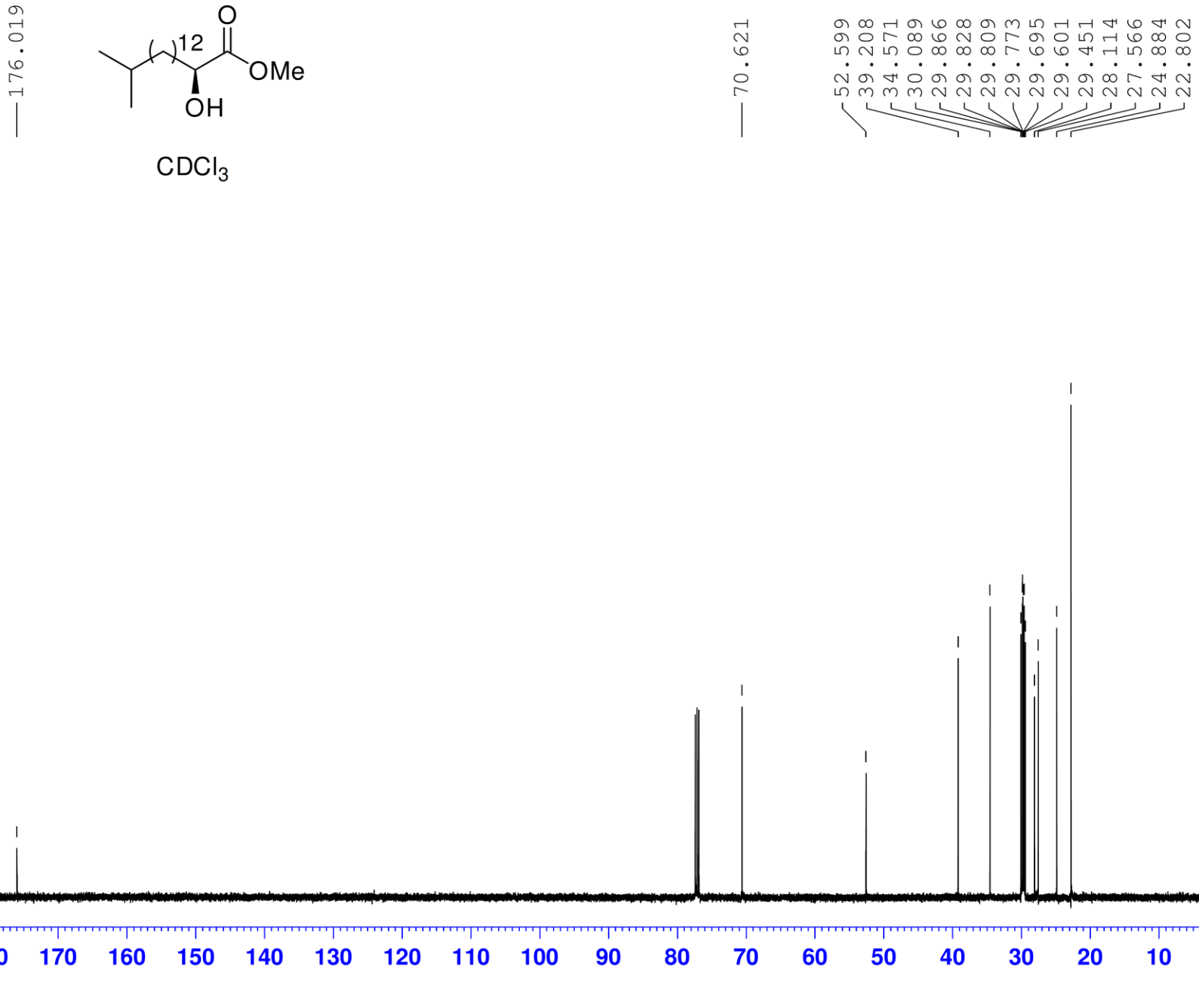
^{13}C NMR (125 MHz, $CDCl_3$) – (*S*)-4-Benzyl-3-((*S*)-2-hydroxy-15-methylhexadecanoyl)oxazolidin-2-one (**31**)



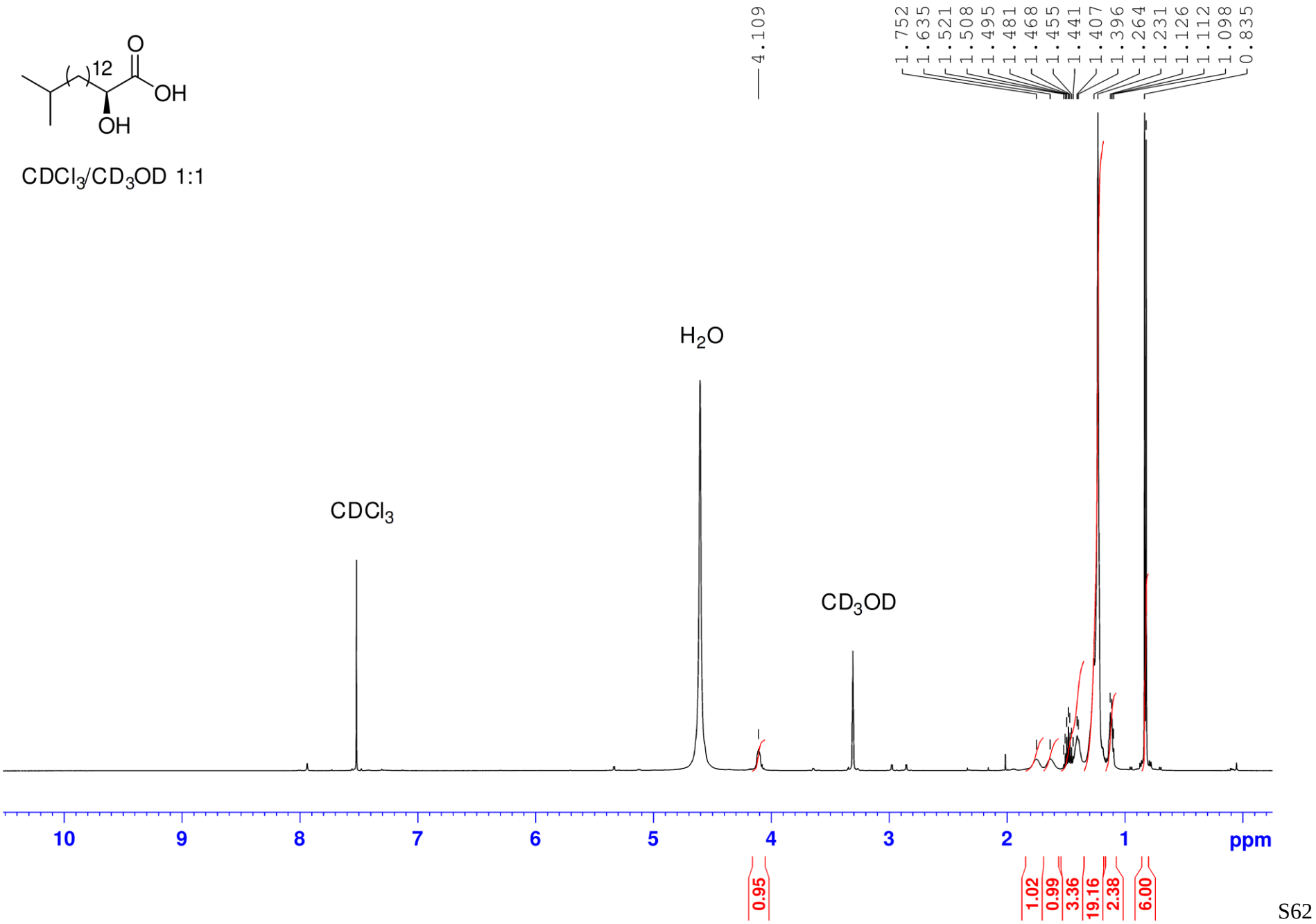
^{1}H NMR (500 MHz, $CDCl_3$) – (*S*)-Methyl 2-hydroxy-15-methylhexadecanoate



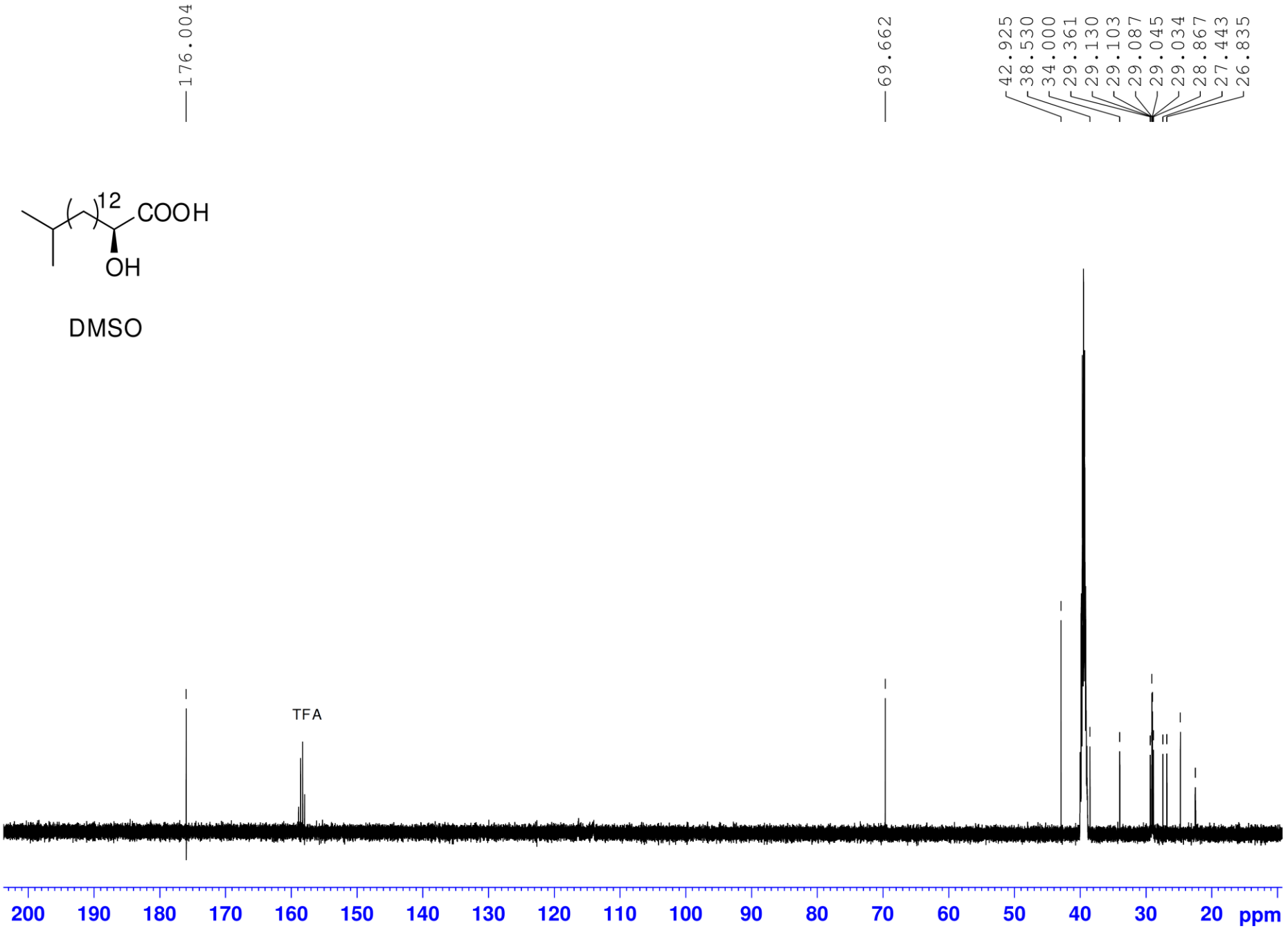
^{13}C NMR (125 MHz, $CDCl_3$) – (*S*)-Methyl 2-hydroxy-15-methylhexadecanoate



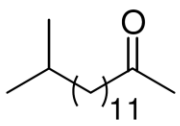
^{1}H NMR (500 MHz, $CDCl_3/CD_3OD$) – (*S*)-2-Hydroxy-15-methylhexadecanoic acid (**32**)



^{13}C NMR (125 MHz, DMSO-d_6/TFA) – (*S*)-2-Hydroxy-15-methylhexadecanoic acid (**32**)



^{1}H NMR (500 MHz, $CDCl_3$) – 14-Methylpentadecan-2-one (**33**)



$CDCl_3$

^{13}C NMR (125 MHz, $CDCl_3$) – 14-Methylpentadecan-2-one (**33**)