Supplementary Material (ESI) for Organic and Biomolecular Chemistry

Supporting Information

A New Synthesis of Amino Acids-Based Substituted 2,3,4,4a,5,6-Hexahydro-1*H*-pyrazino [1,2-a]quinoxalines

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Fig. S-27: ^{1}H Spectra of (*S*)-Methyl 2-(N-((2*R*,3*R*)-3-hydroxy-2-(2-(4- methylphenylsulfonamido)phenylamino)butyl)-4-methylphenylsulfonamido)-3-phenyl propanoate **(11a).**

.Fig. S-28: ^{13}C Spectra of (*S*)-Methyl 2-(N-((2*R*,3*R*)-3-hydroxy-2-(2-(4- methylphenylsulfonamido)phenylamino)butyl)-4-methylphenylsulfonamido)-3-phenyl propanoate **(11a).**

Fig. S-29: ^{1}H Spectra of (*S*)-Methyl 2-(N-((*R*)-3-hydroxy-2-(2-(4-methylphenylsulfonamido)phenylamino)propyl)-4-methylphenylsulfonamido)-3-phenylpropanoate **(12a).**

Fig. S-30: ^{13}C Spectra of (*S*)-Methyl 2-(N-((*R*)-3-hydroxy-2-(2-(4-methylphenylsulfonamido)phenylamino)propyl)-4-methylphenylsulfonamido)-3-phenylpropanoate **(12a).**

Fig. S-31: ^{1}H Spectra of (*S*)-Methyl 2-(N-((*R*)-3-hydroxy-2-(2-(4-methylphenylsulfonamido)phenylamino)propyl)-4-methylphenylsulfonamido)propanoate **(12b).**

Fig. S-32: ^{13}C Spectra of (*S*)-Methyl 2-(N-((*R*)-3-hydroxy-2-(2-(4-methylphenylsulfonamido)phenylamino)propyl)-4-methylphenylsulfonamido)propanoate **(12b).**

Fig. S-33: ^{1}H Spectra of (*S*)-Methyl 2-(N-((*R*)-3-hydroxy-2-(2-(4-methylphenylsulfonamido)phenylamino)propyl)-4-methylphenylsulfonamido)-3-methylbutanoate **(12c).**

Fig. S-34: ^{13}C Spectra of (*S*)-Methyl 2-(N-((*R*)-3-hydroxy-2-(2-(4-methylphenylsulfonamido)phenylamino)propyl)-4-methylphenylsulfonamido)-3-methylbutanoate **(12c).**

Fig. S-35: ^{1}H Spectra of (*S*)-Methyl 2-(N-((*R*)-3-hydroxy-2-(2-(4-methylphenylsulfonamido)phenylamino)propyl)-4-methylphenylsulfonamido)-4-methylpentanoate **(12d).**

Fig. S-36: ^{13}C Spectra of (*S*)-Methyl 2-(N-((*R*)-3-hydroxy-2-(2-(4-methylphenylsulfonamido)phenylamino)propyl)-4-methylphenylsulfonamido)-4-methylpentanoate **(12d).**

Fig. S-37: ^{1}H Spectra of (*S*)-Methyl 3-(4-(benzyloxy)phenyl)-2-(N-((*R*)-3-hydroxy-2-(2-(4-methylphenylsulfonamido)phenylamino)propyl)-4-methylphenylsulfonamido)propanoate **(12e).**

Fig. S-38: ^{13}C Spectra of (*S*)-Methyl 3-(4-(benzyloxy)phenyl)-2-(N-((*R*)-3-hydroxy-2-(2-(4-methylphenylsulfonamido)phenylamino)propyl)-4-methylphenylsulfonamido)propanoate **(12e).**

Fig. S-39: ^{1}H Spectra of (*S*)-Methyl 2-(4-methyl-N-(((2*R*,3*S*)-3-methyl-4-tosyl-1,2,3,4-tetrahydroquinoxalin-2-yl)methyl)phenylsulfonamido)-3-phenylpropanoate **(13a).**

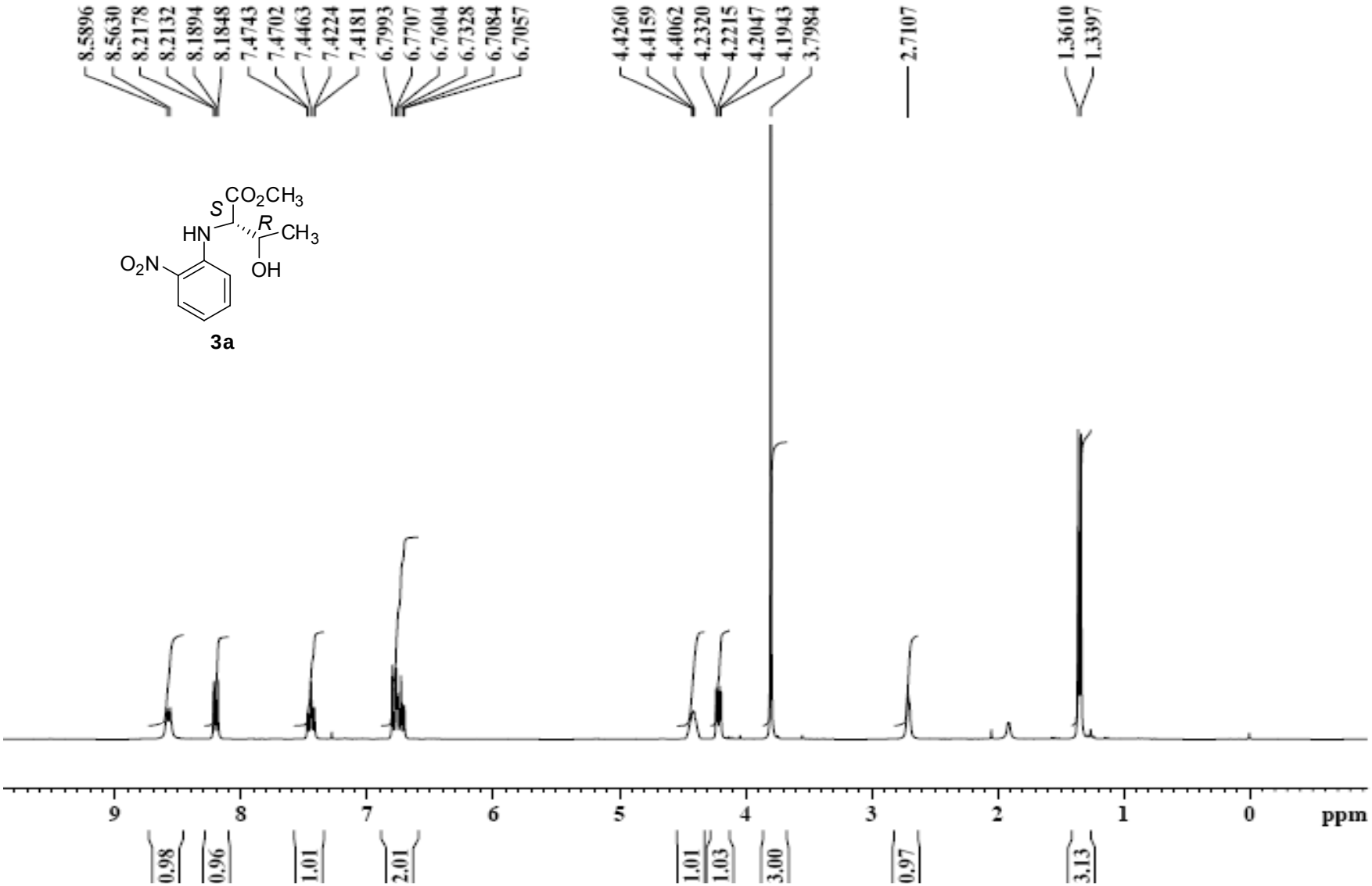


Figure S-1: ^{1}H spectrum(300 MHz, $CDCl_3$) of **3a**

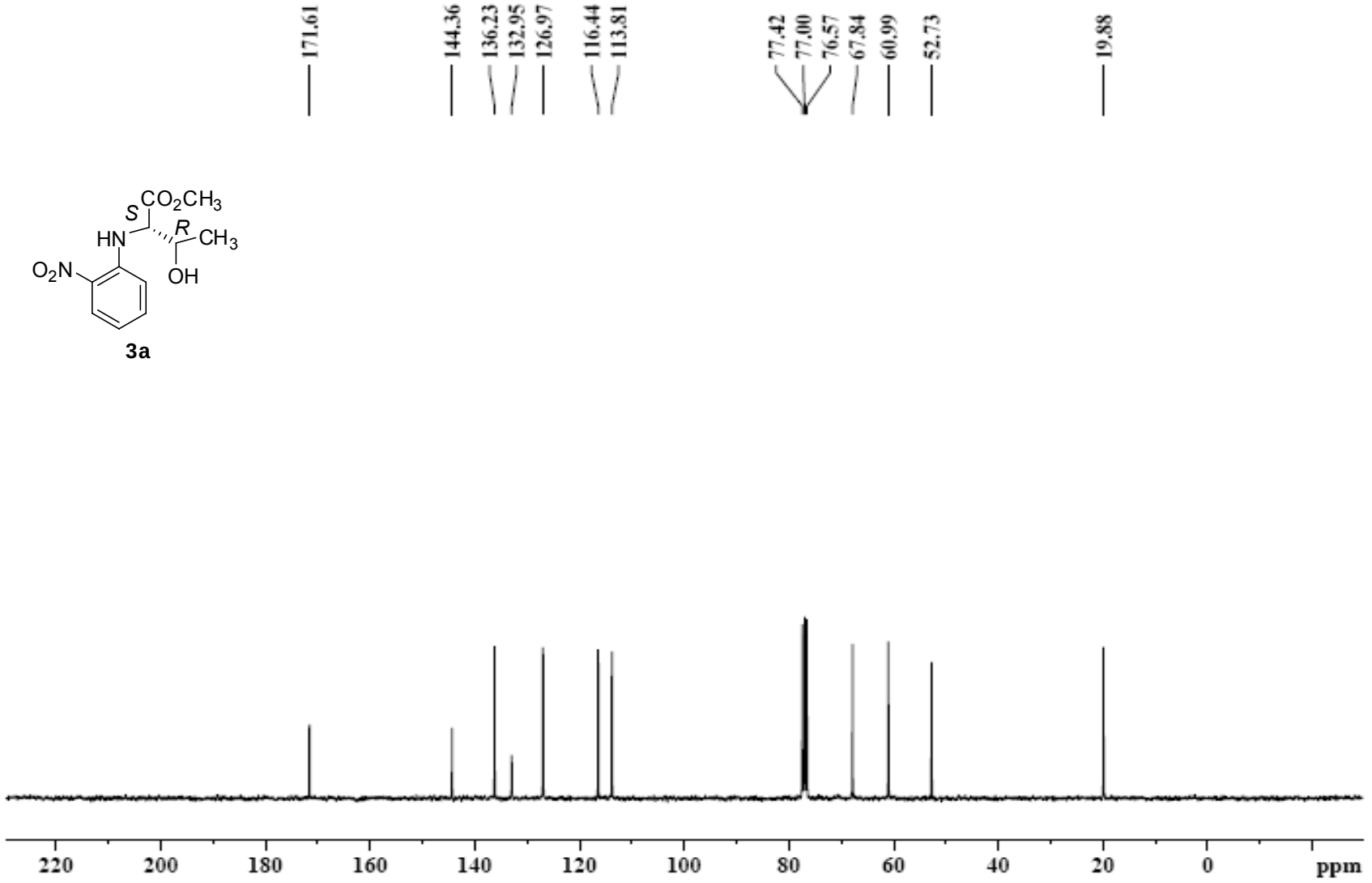
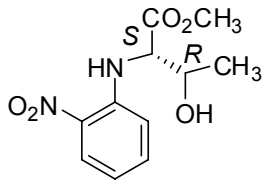
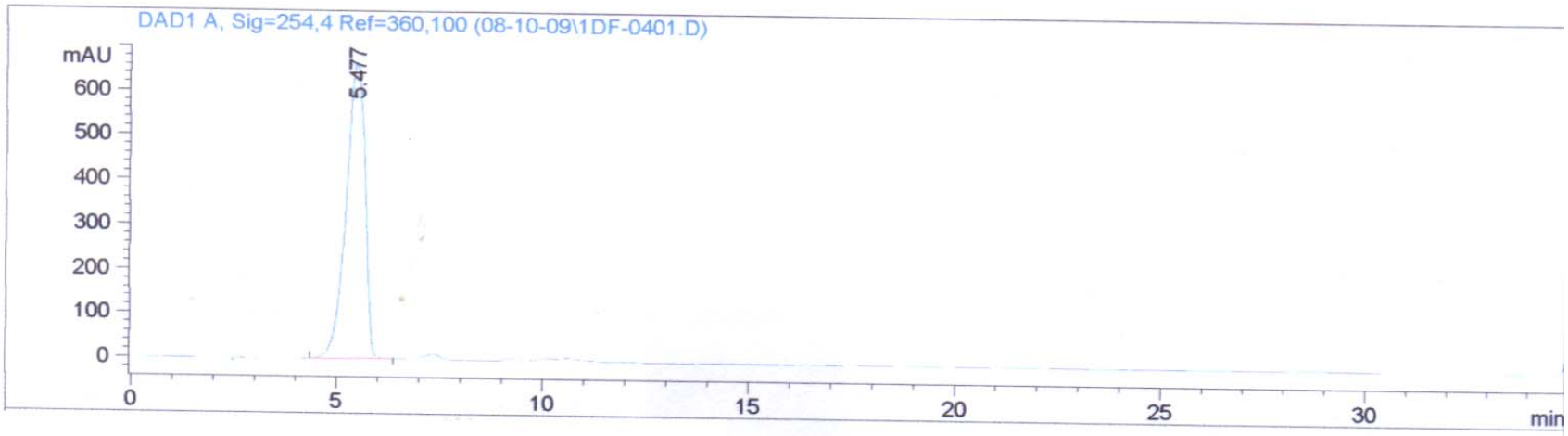


Figure S-2: ^{13}C spectrum (75MHz, $CDCl_3$) **3a**



3a



Retention time (min)

Figure S-3: HPLC spectrum of **3a**

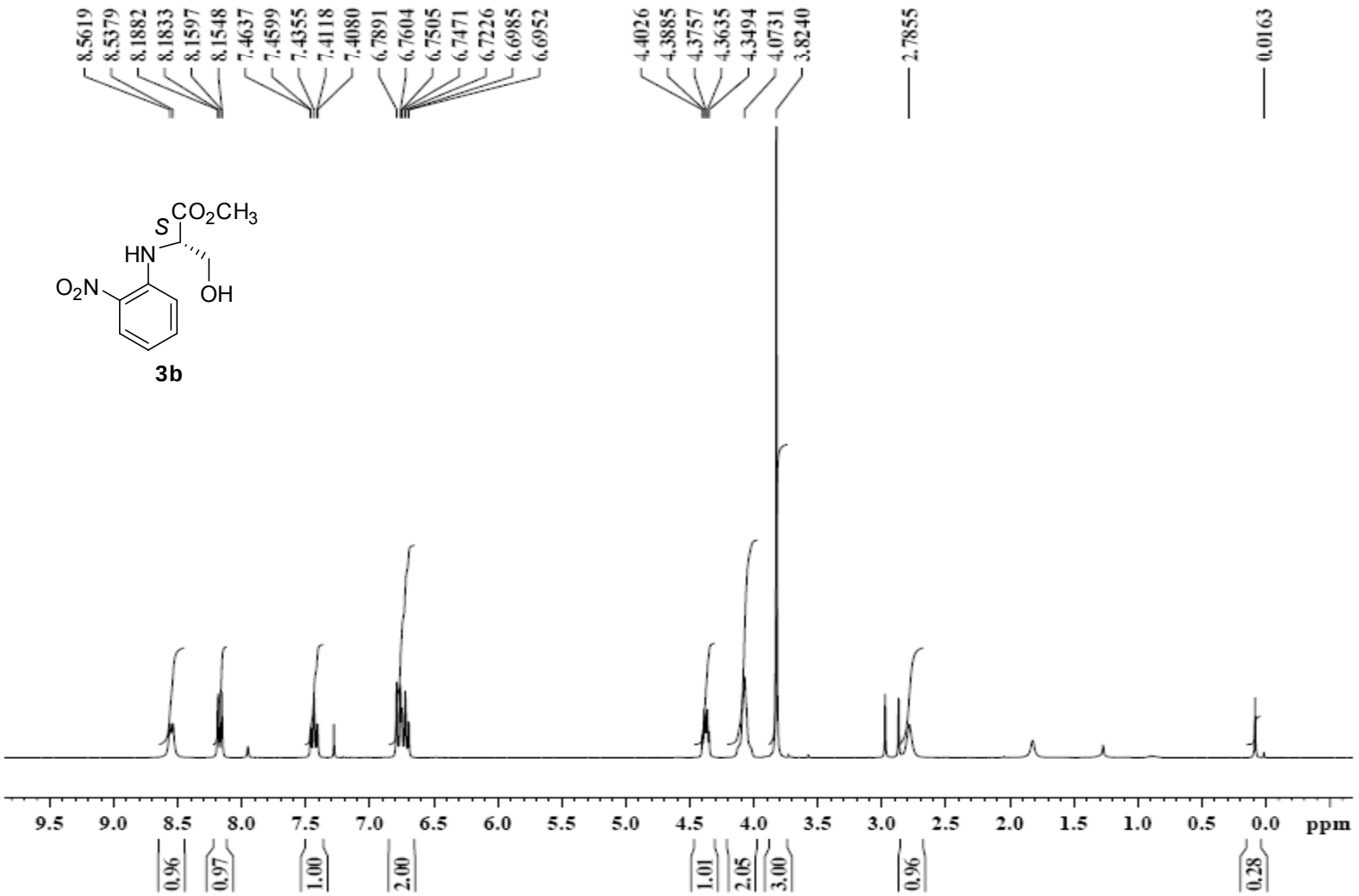
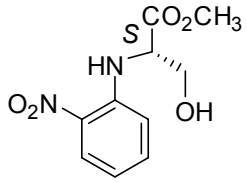
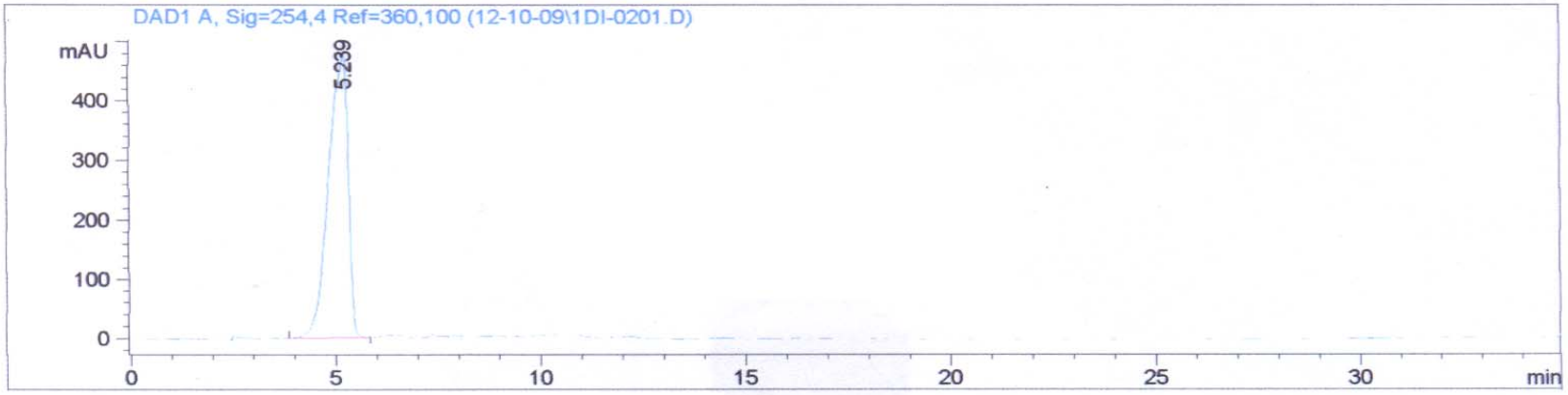


Figure S-4: ^{1}H spectrum(300 MHz, $CDCl_3$) of **3b**

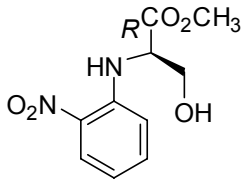


3b

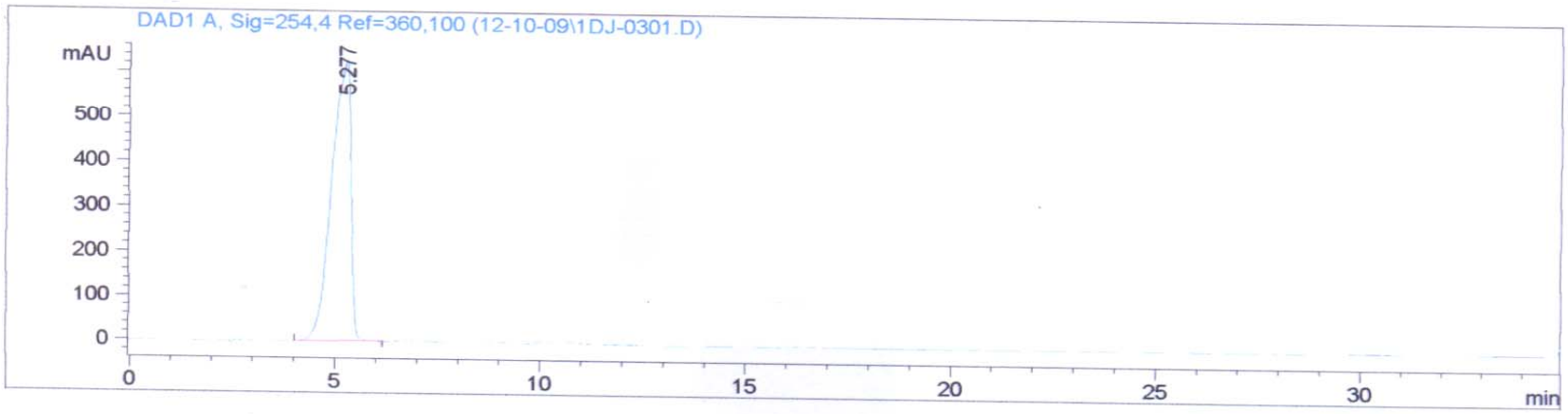


Retention time (min)

Figure S-5: HPLC spectrum of **3b**

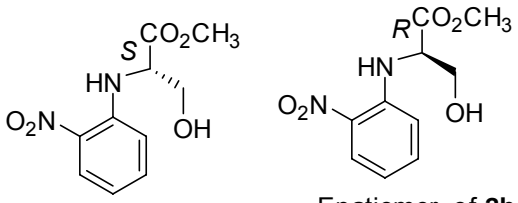


Enatiomer of **3b**



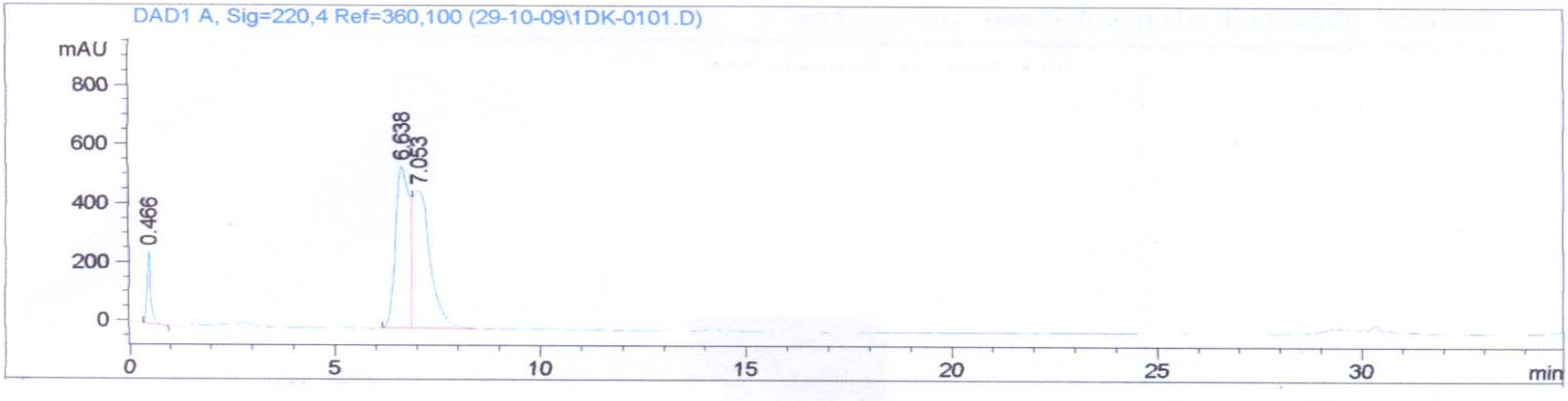
Retention time (min)

Figure S-6: HPLC spectrum for enatiomer of **3b**



3b

Enatiomer of **3b**



Retention time (min)

Figure S-7: HPLC spectrum for 1:1 mixture of **3b** and enatiomer of **3b** as a HPLC ref.

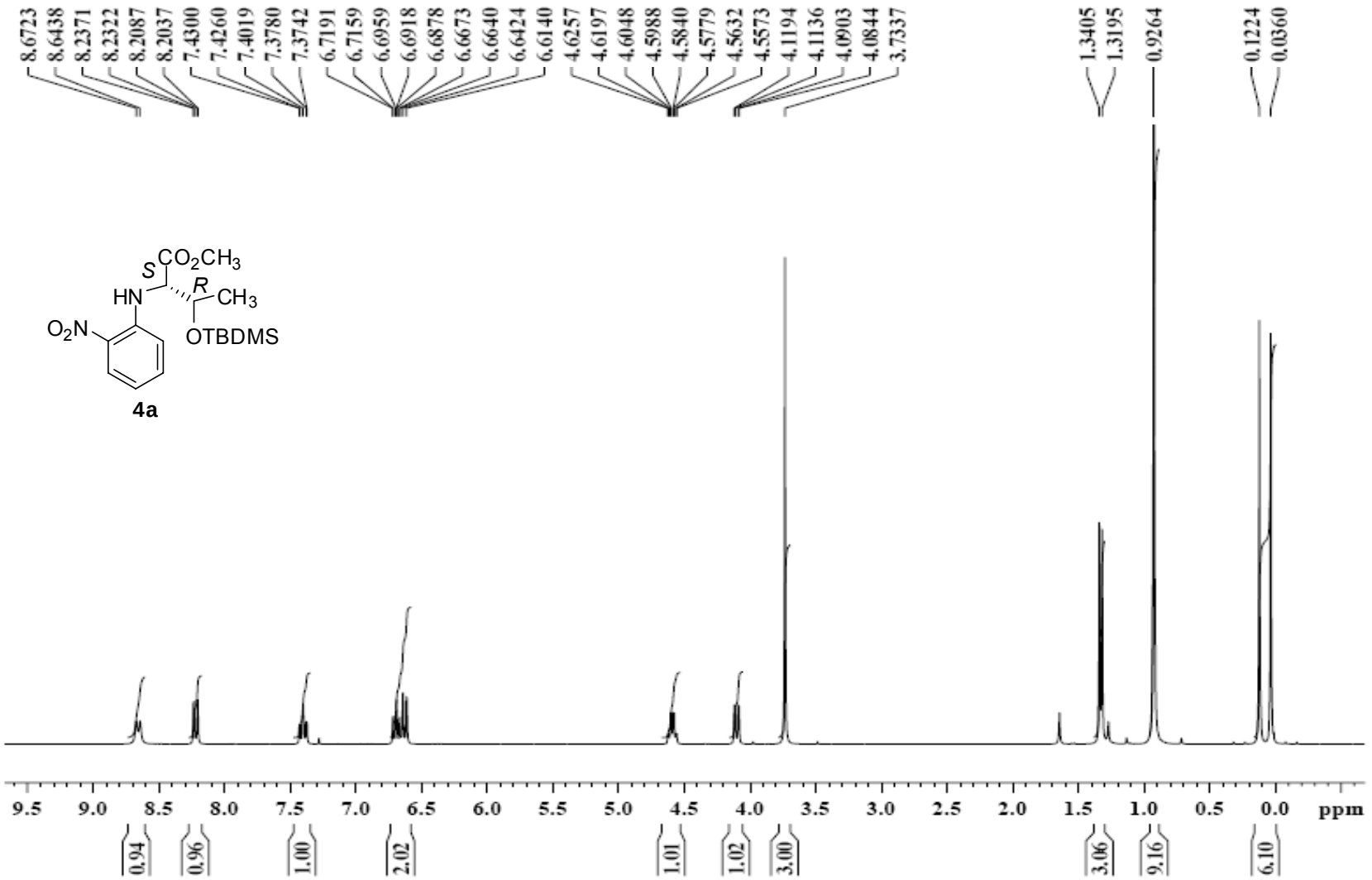


Figure S-8: ^{1}H spectrum(300 MHz, $CDCl_3$) of **4a**

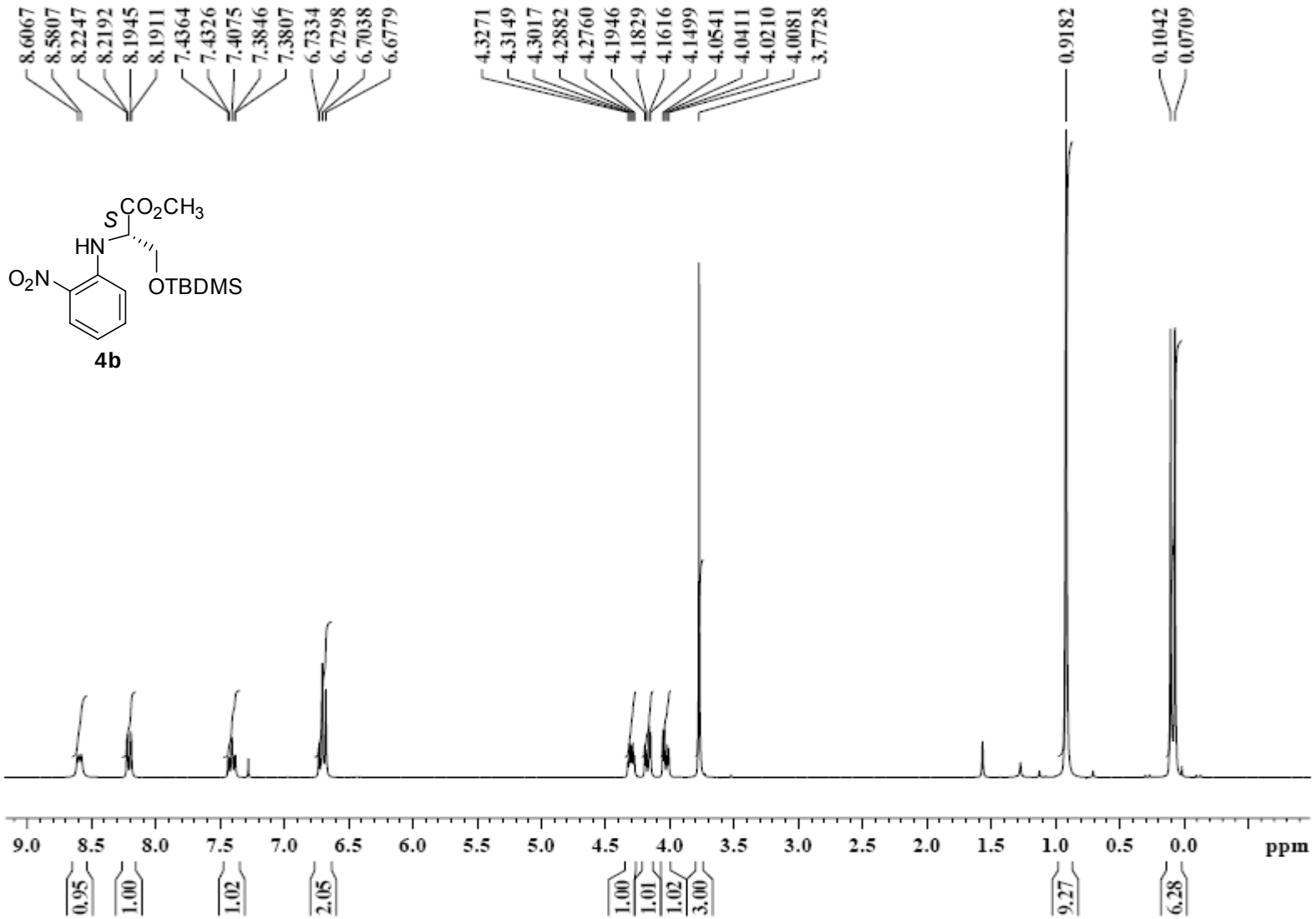


Figure S-9: ^{1}H spectrum(300 MHz, $CDCl_3$) of **4b**

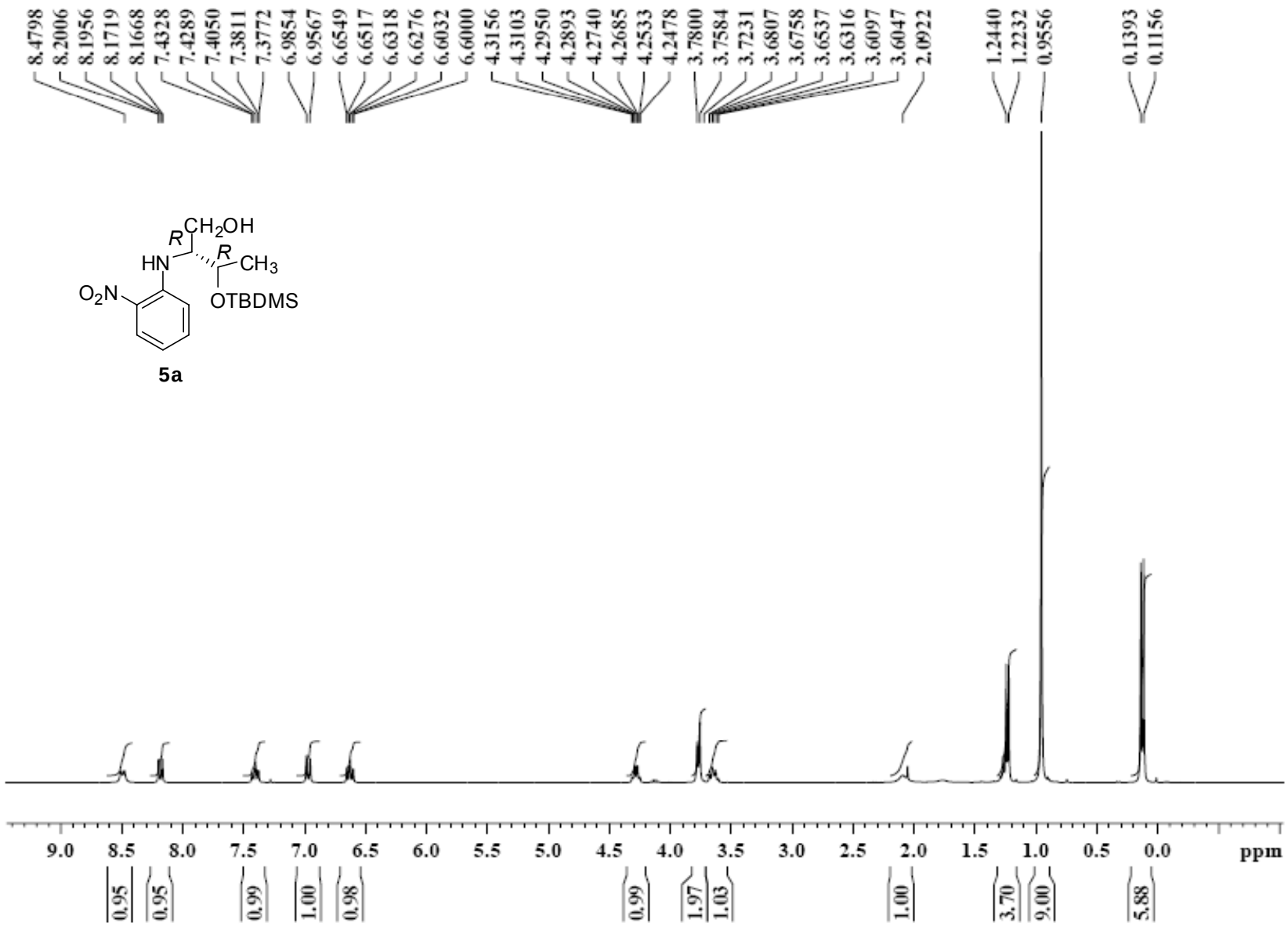


Figure S-10: ^{1}H spectrum(300 MHz, $CDCl_3$) of **5a**

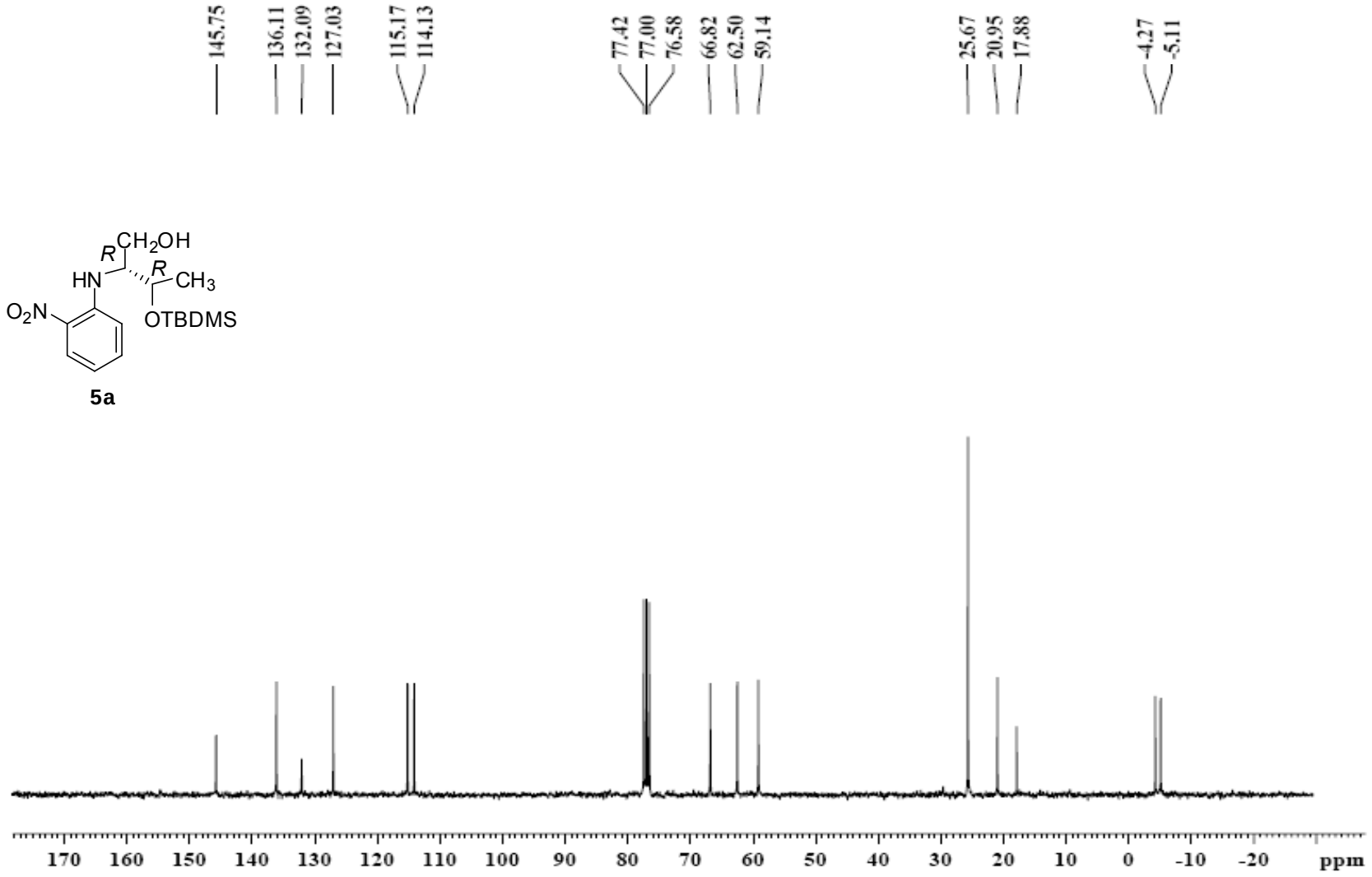


Figure S-11: ^{13}C spectrum (75MHz, $CDCl_3$) **5a**

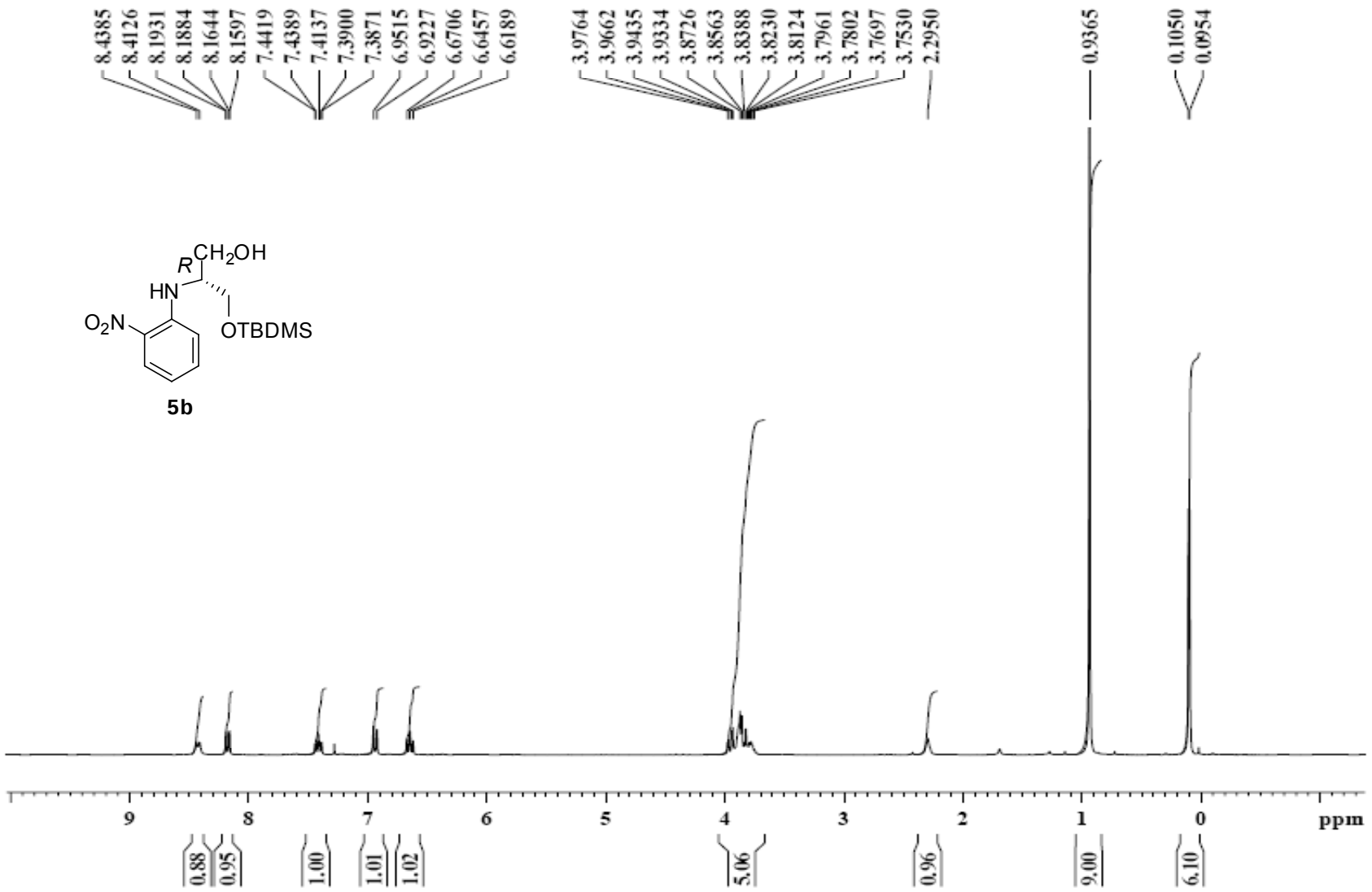


Figure S-12: ^{1}H spectrum(300 MHz, $CDCl_3$) of **5b**

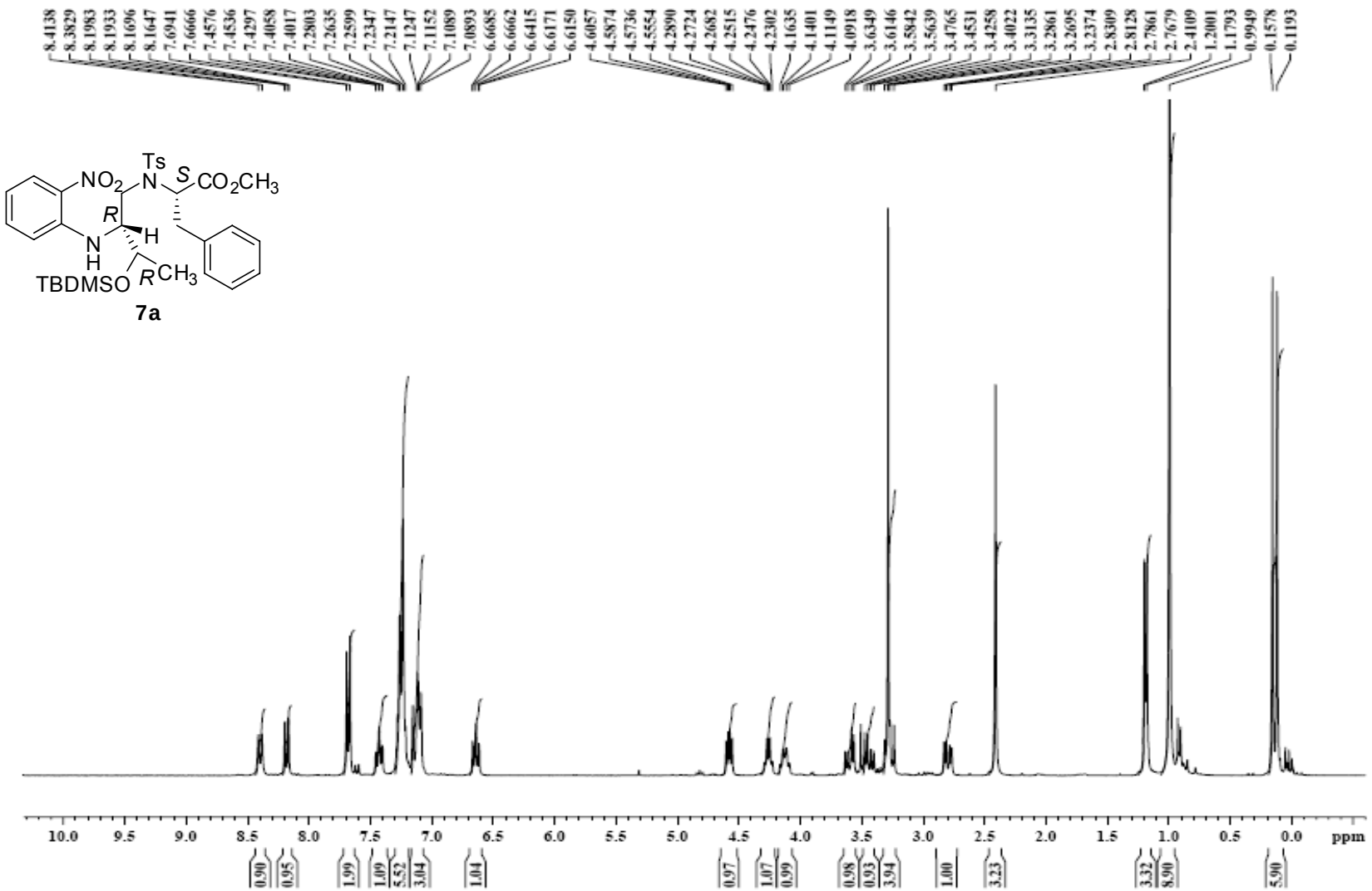


Figure S-13: ^{1}H spectrum(300 MHz, $CDCl_3$) of **7a**

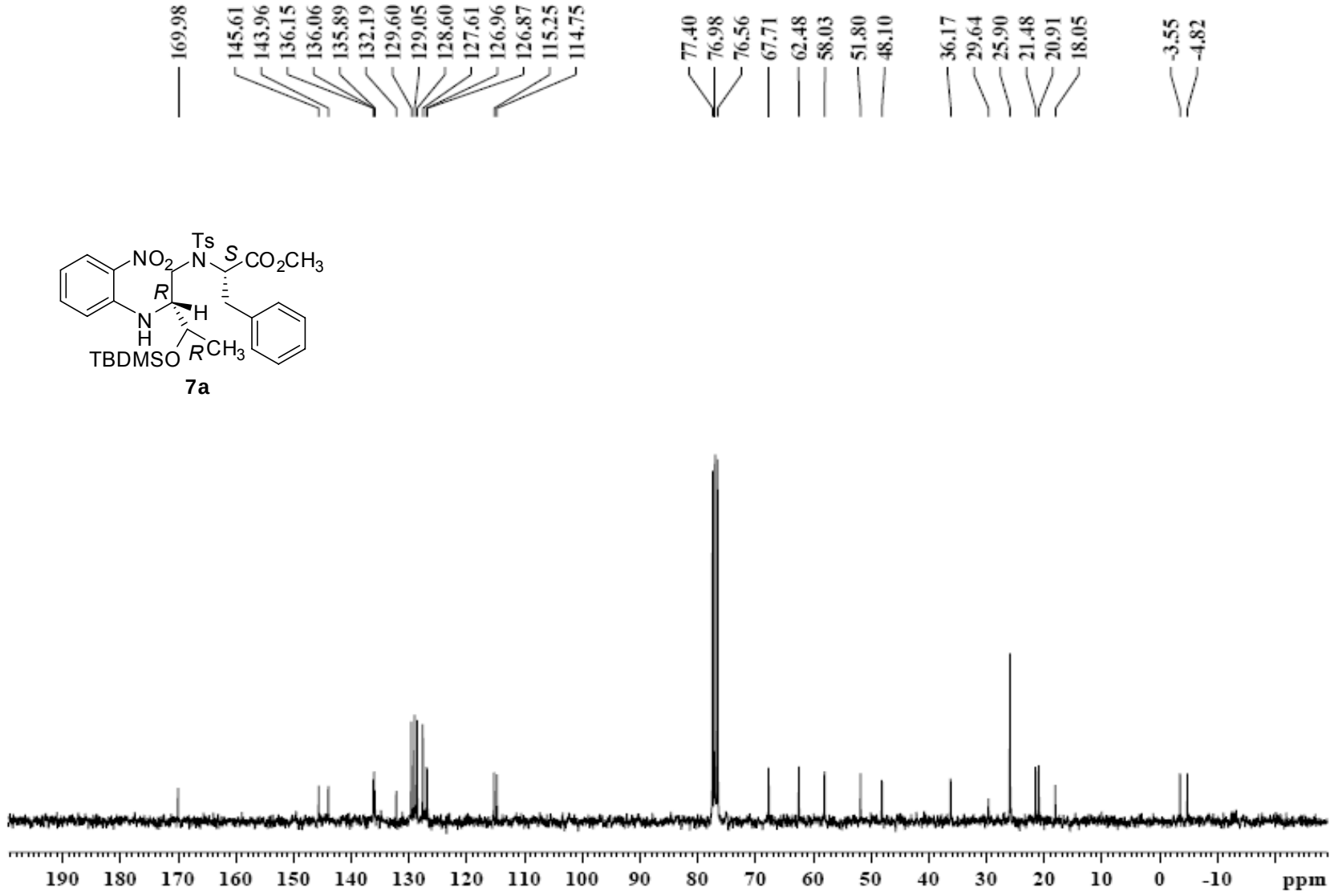


Figure S-14: ^{13}C spectrum (75MHz, $CDCl_3$) **7a**

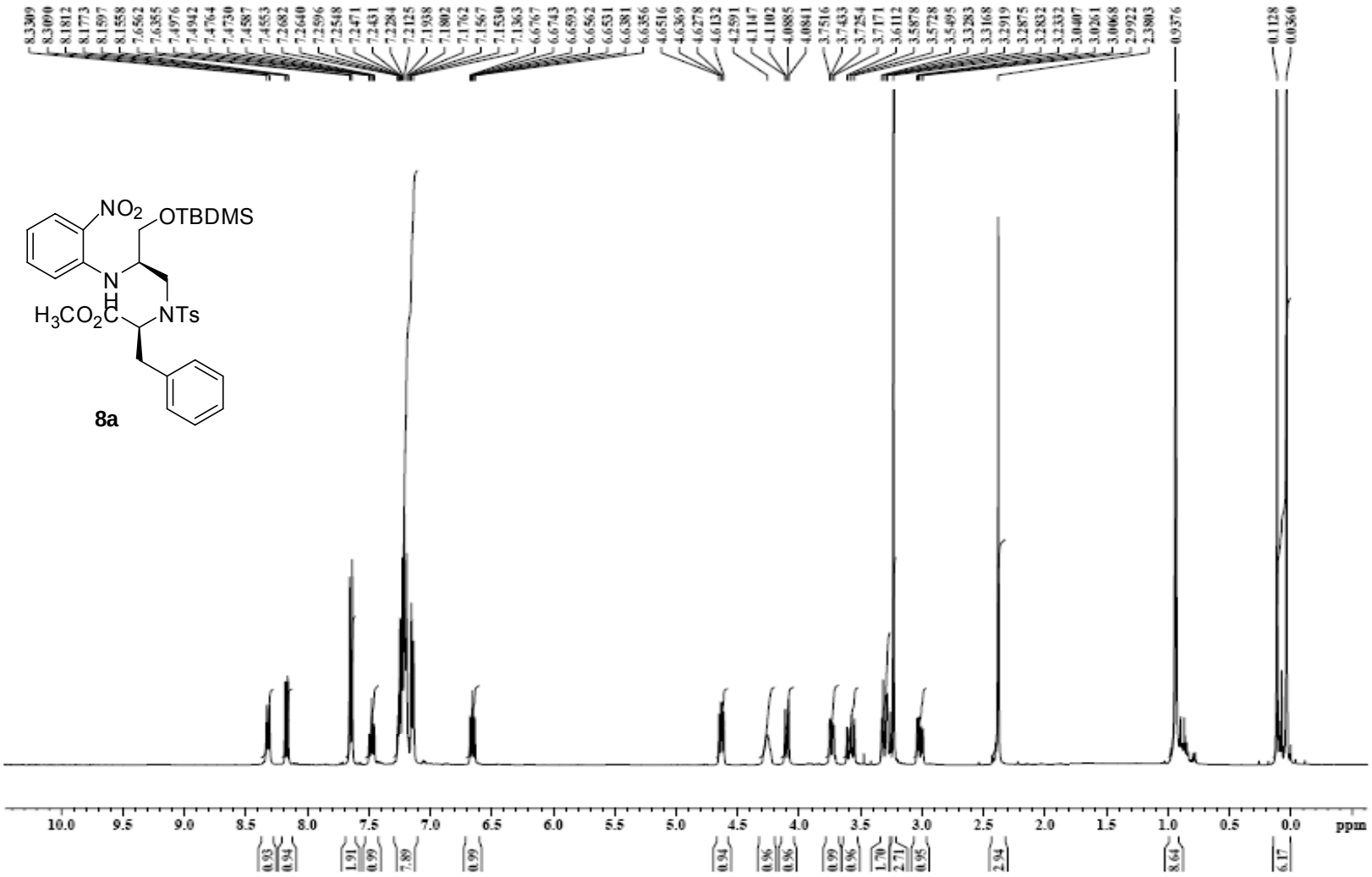


Figure S-15: ^{1}H spectrum(300 MHz, $CDCl_3$) of **8a**

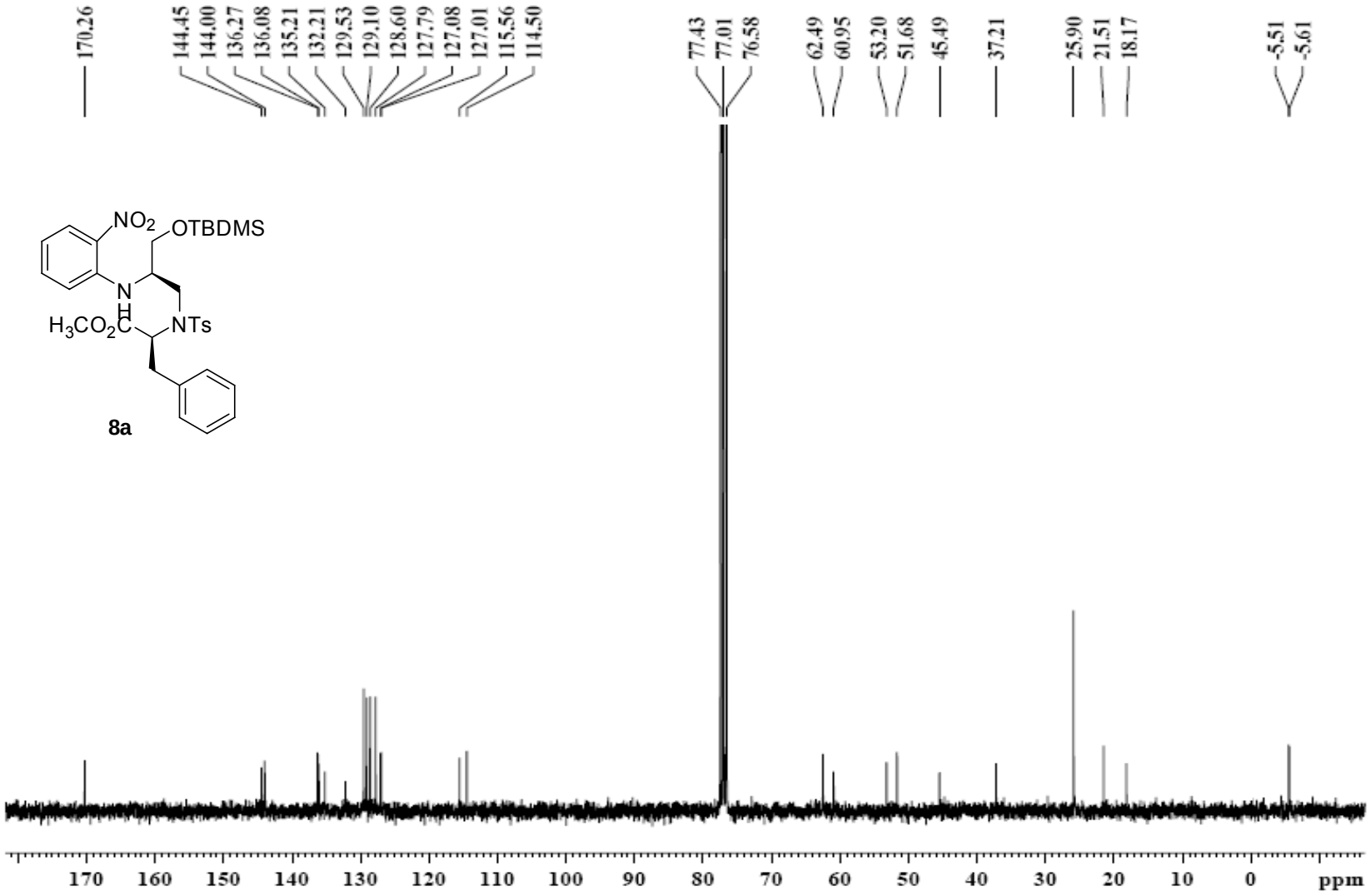


Figure S-16: ^{13}C spectrum (75MHz, $CDCl_3$) **8a**

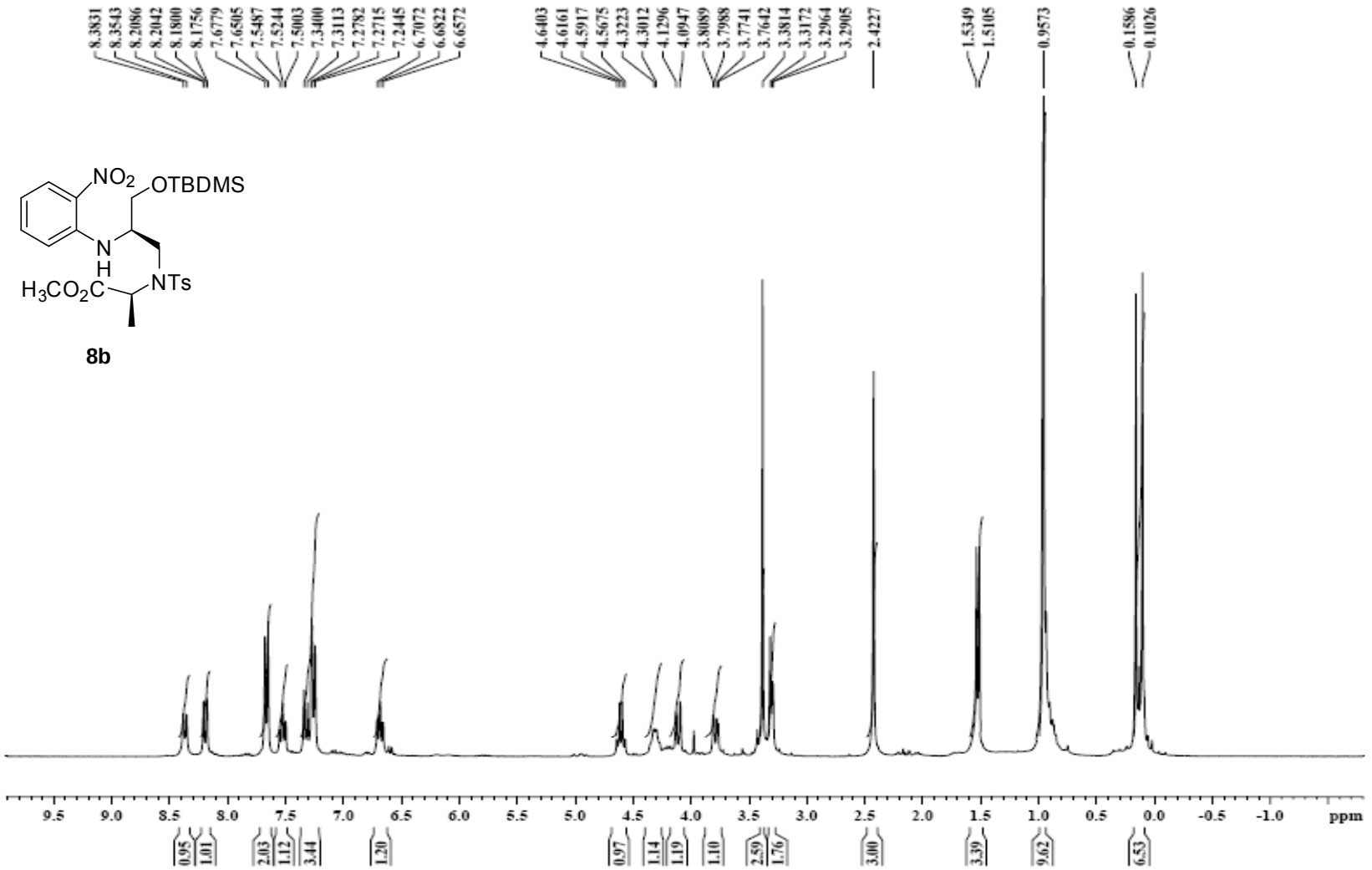


Figure S-17: ^{1}H spectrum(300 MHz, $CDCl_3$ + CCl_4) of **8b**

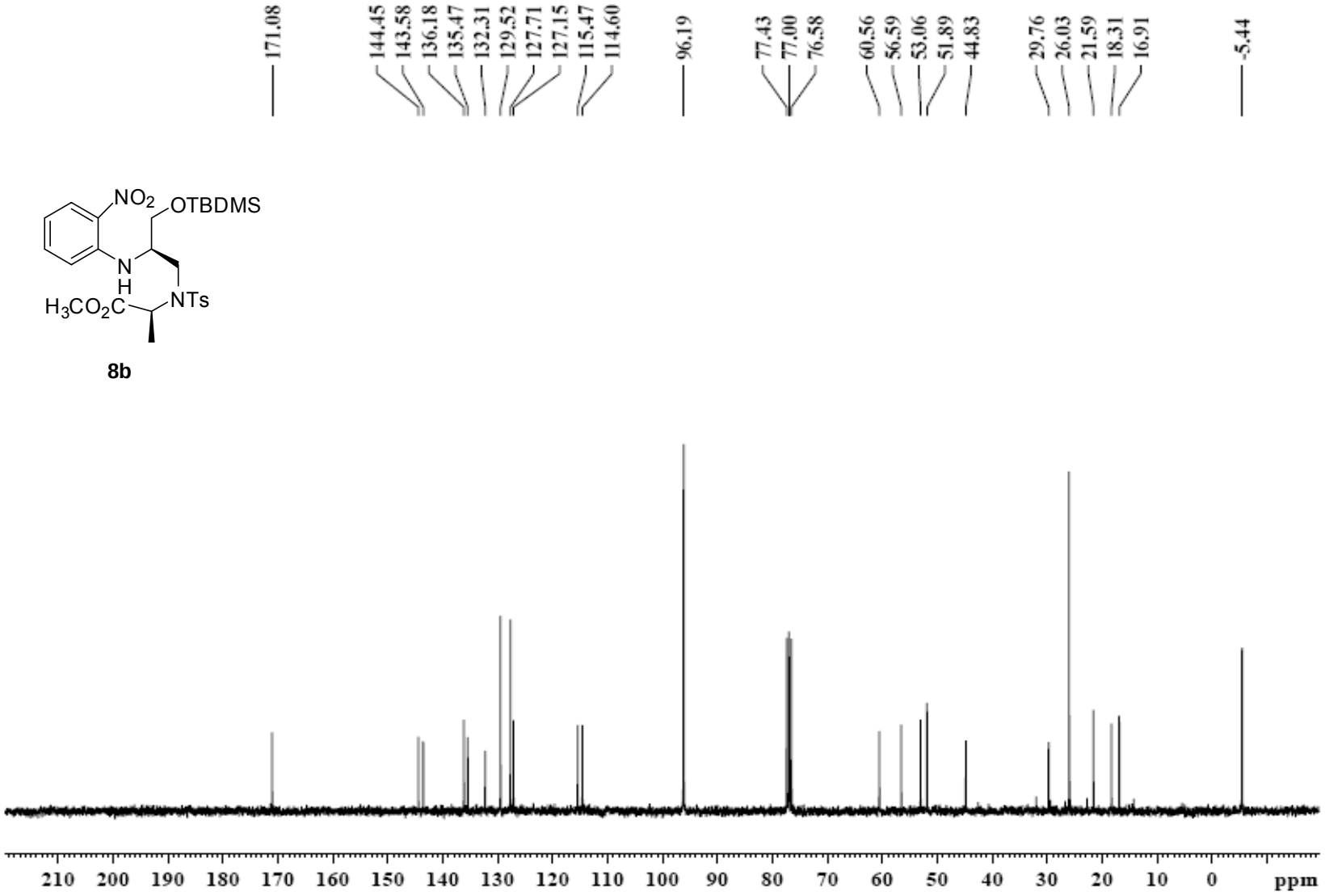


Figure S-18: ^{13}C spectrum (75MHz, $CDCl_3$ + CCl_4) **8b**

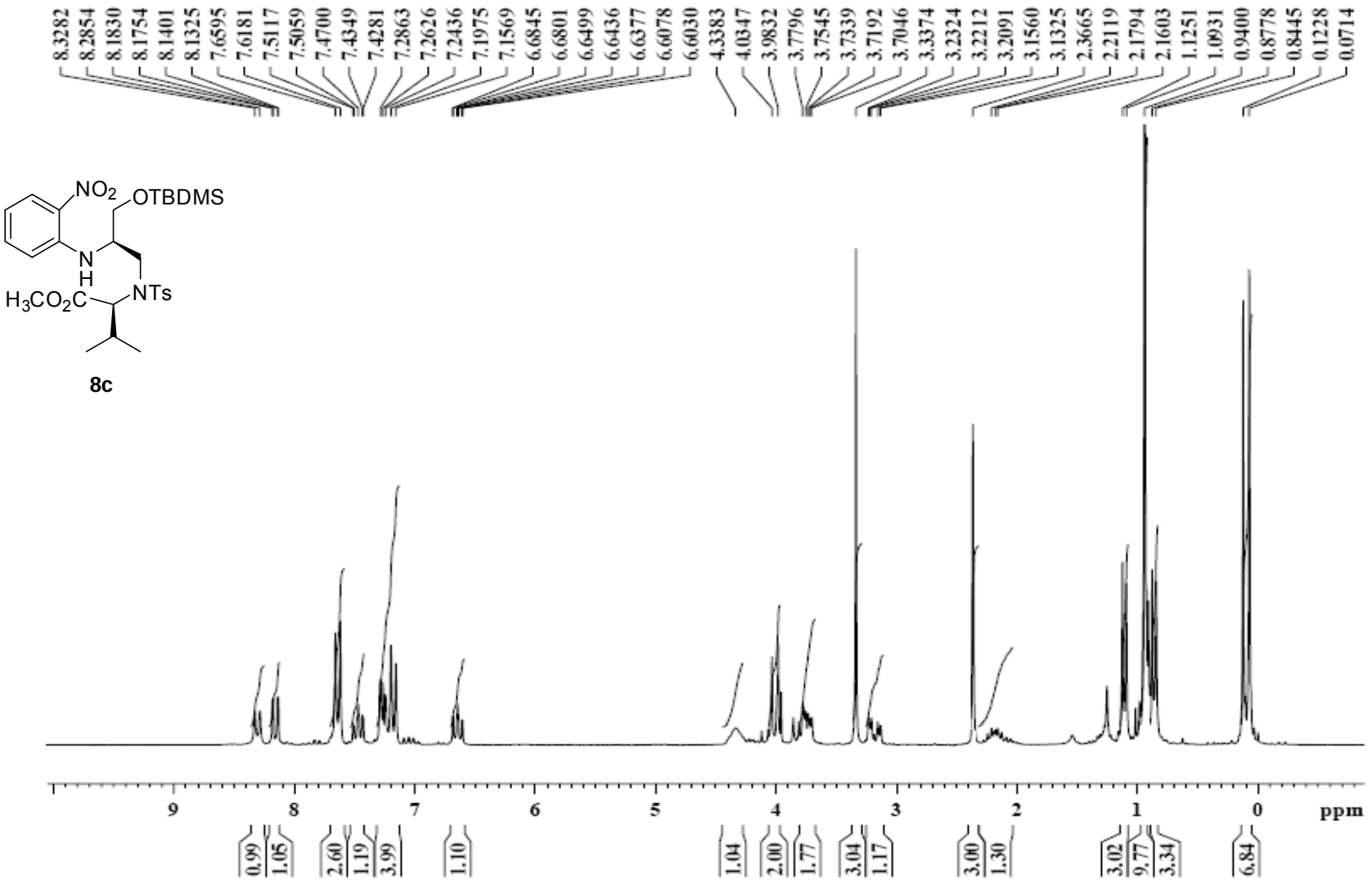
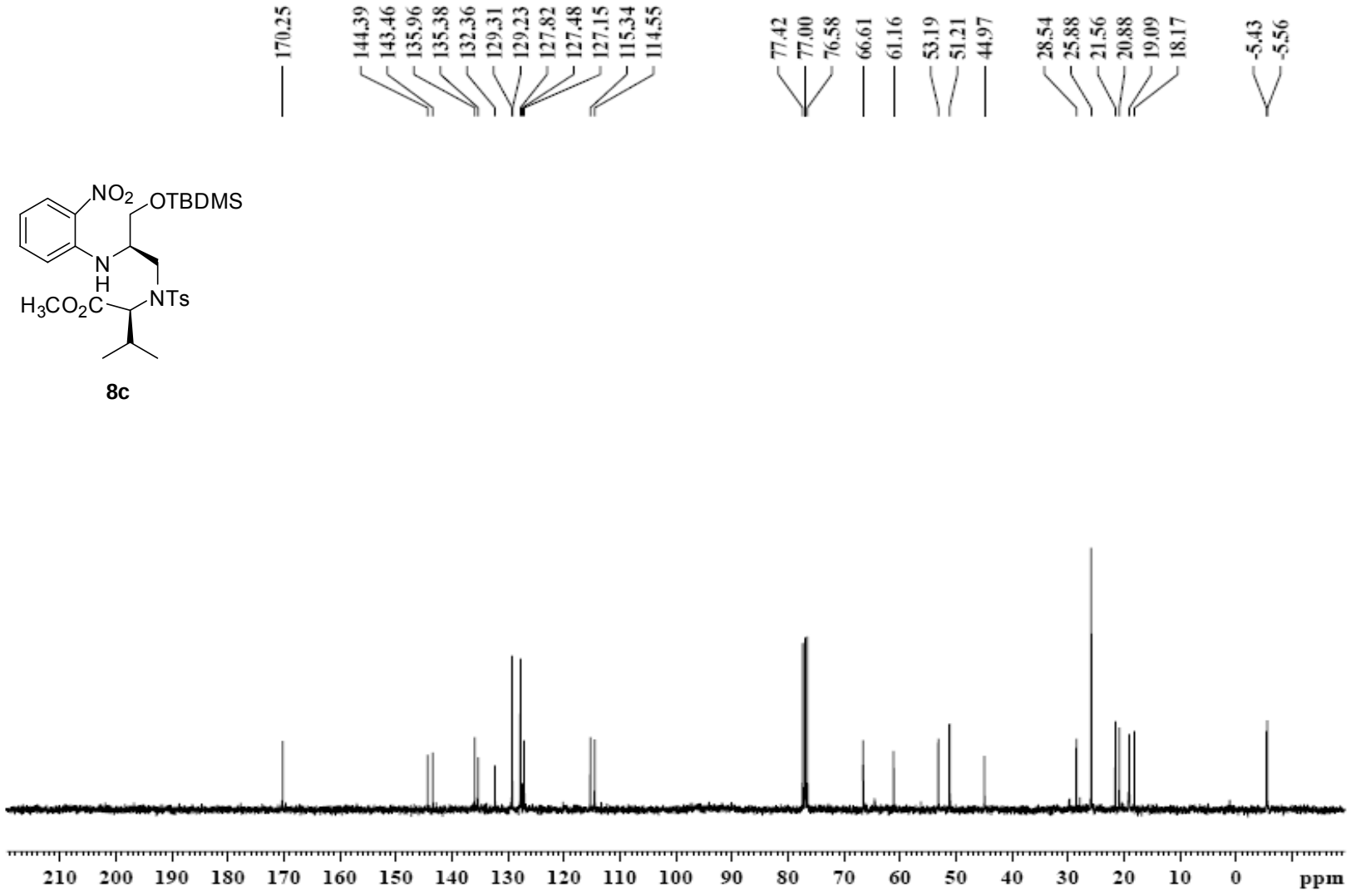
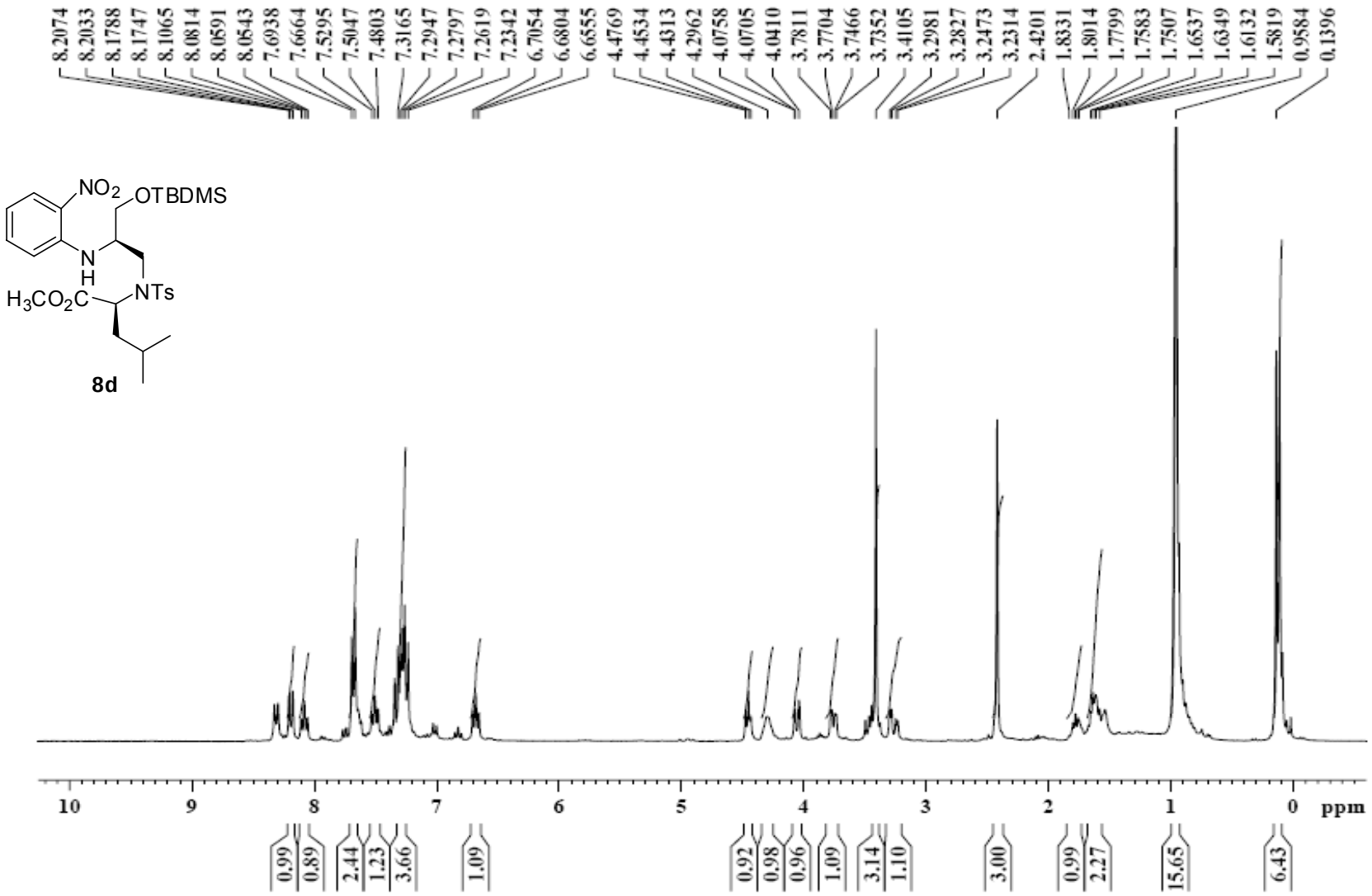


Figure S-19: ^{1}H spectrum(300 MHz, $CDCl_3$) of **8c**

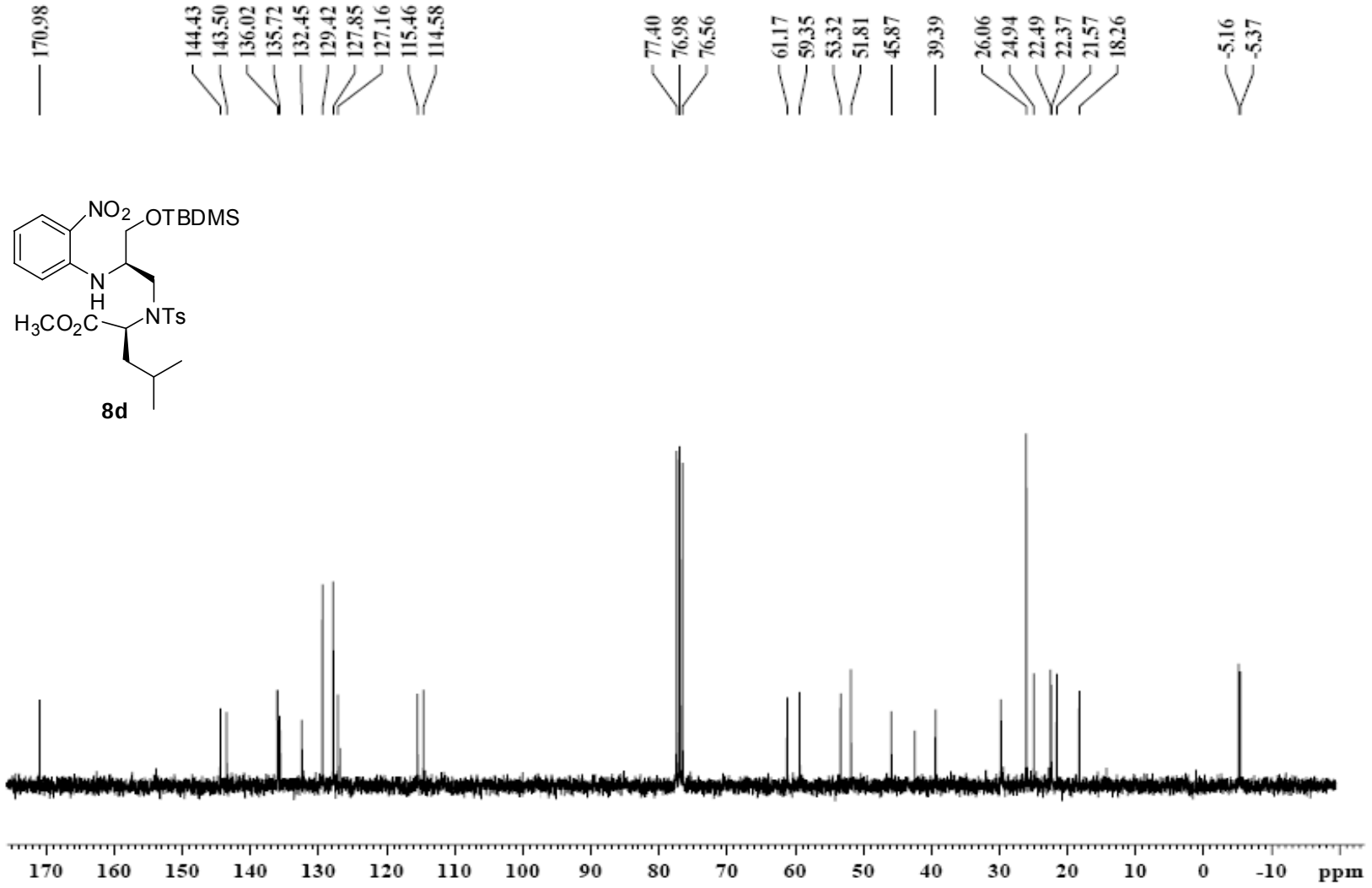


8c

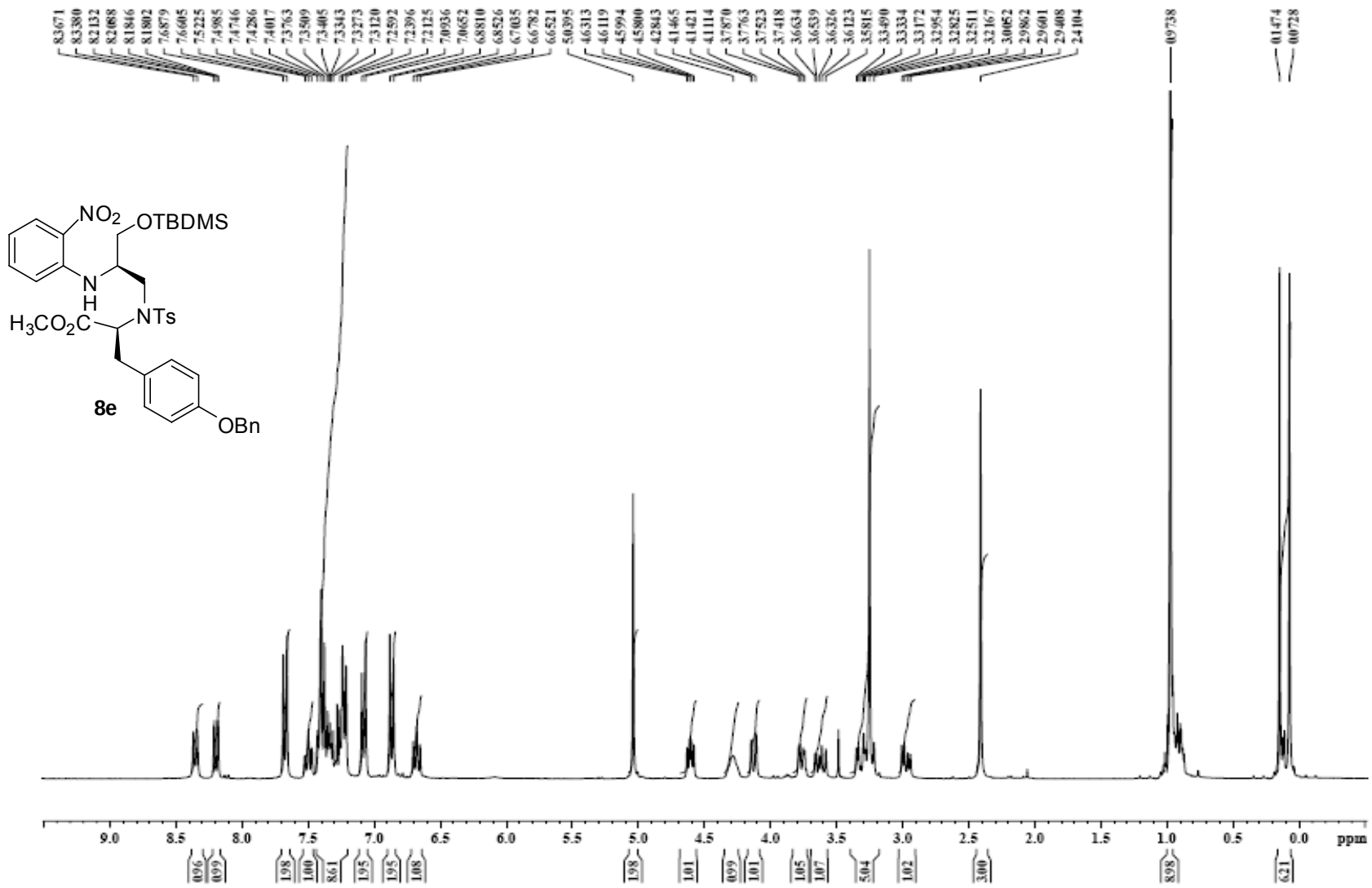
Figure S-20: ^{13}C spectrum (75MHz, $CDCl_3$) **8c**



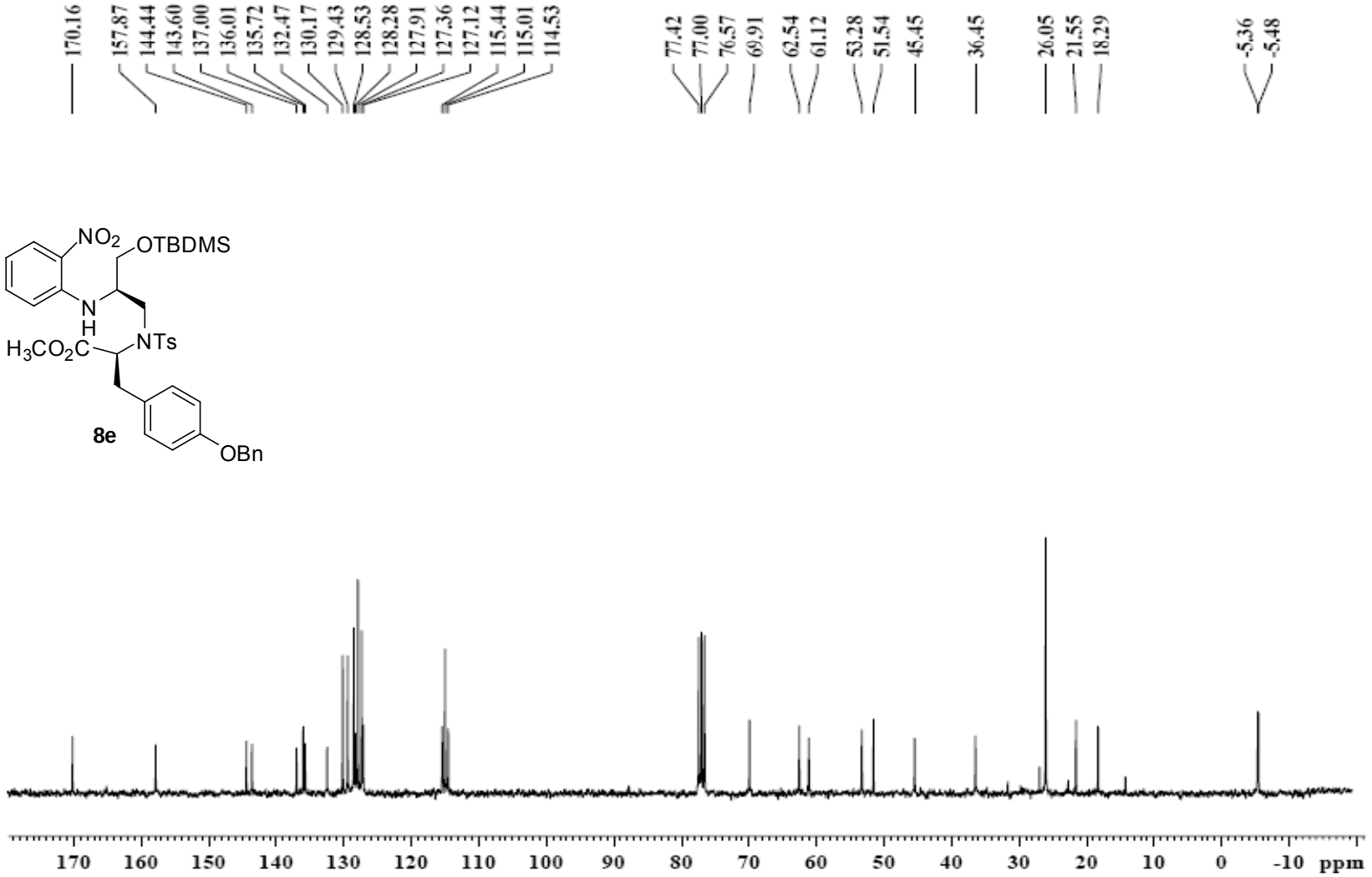
FigureS-21: ^{1}H spectrum(300 MHz, $CDCl_3$) of **8d**



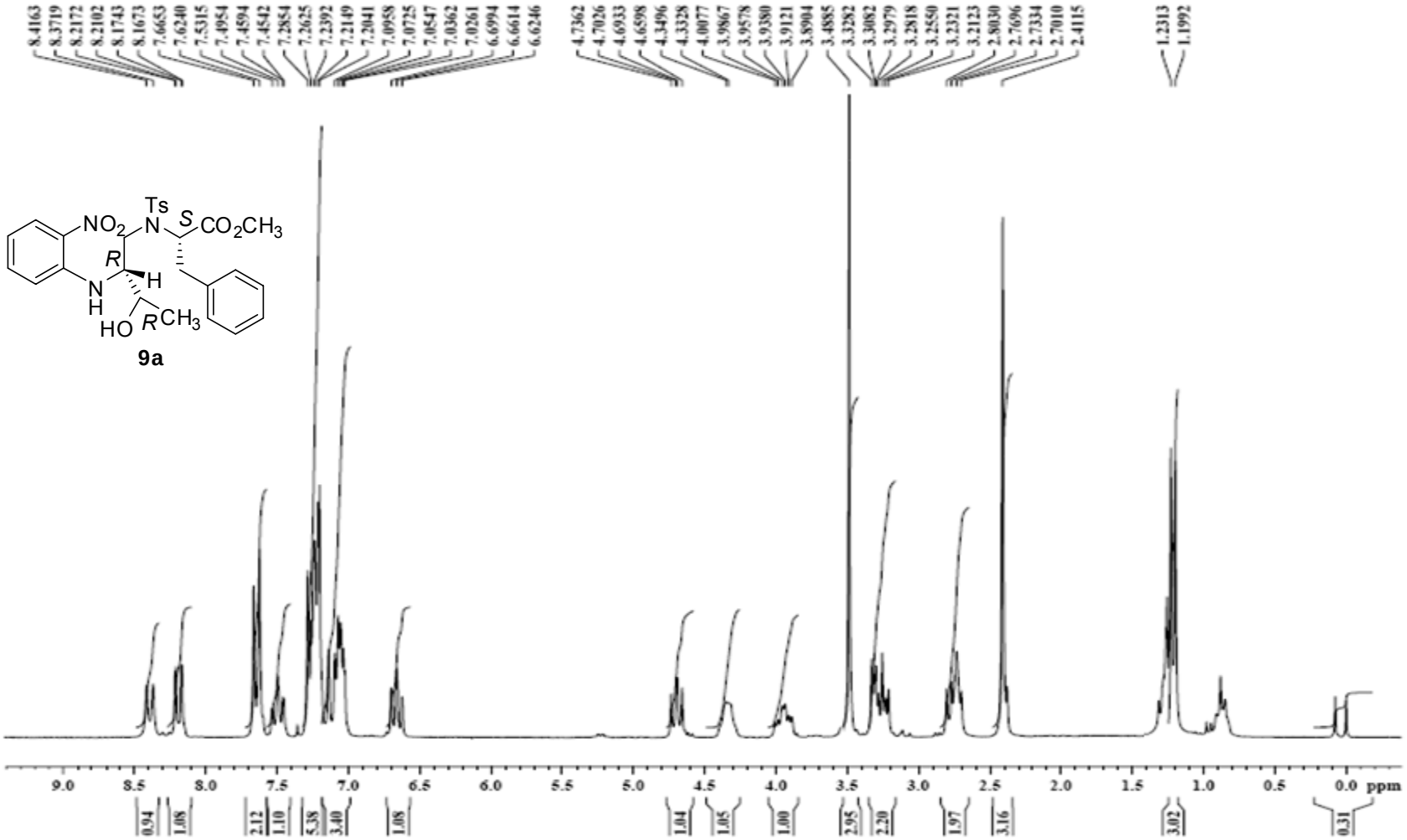
FigureS-22: ^{13}C spectrum (75MHz, $CDCl_3$) **8d**



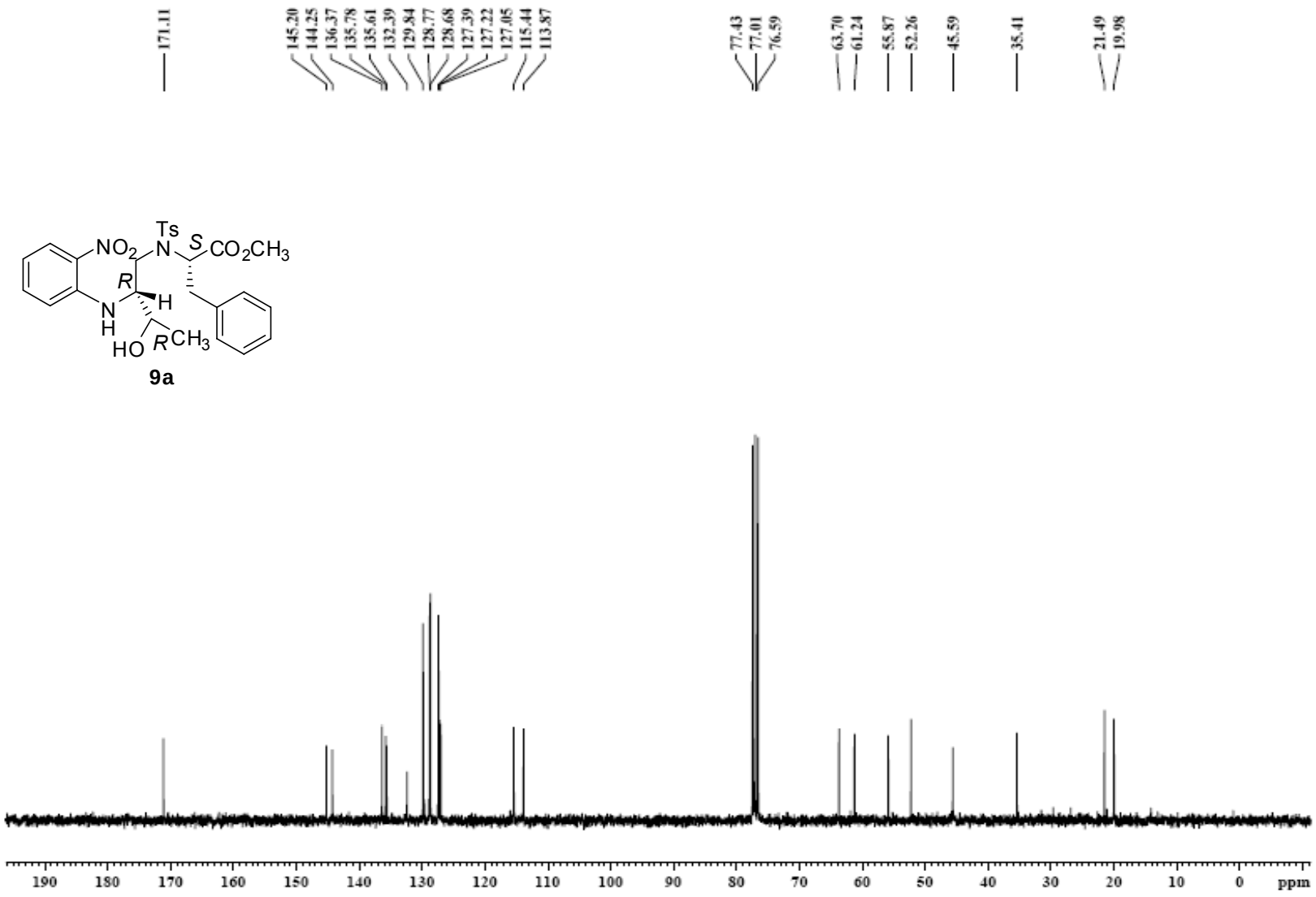
FigureS-23: ^{1}H spectrum(300 MHz, $CDCl_3$) of **8e**



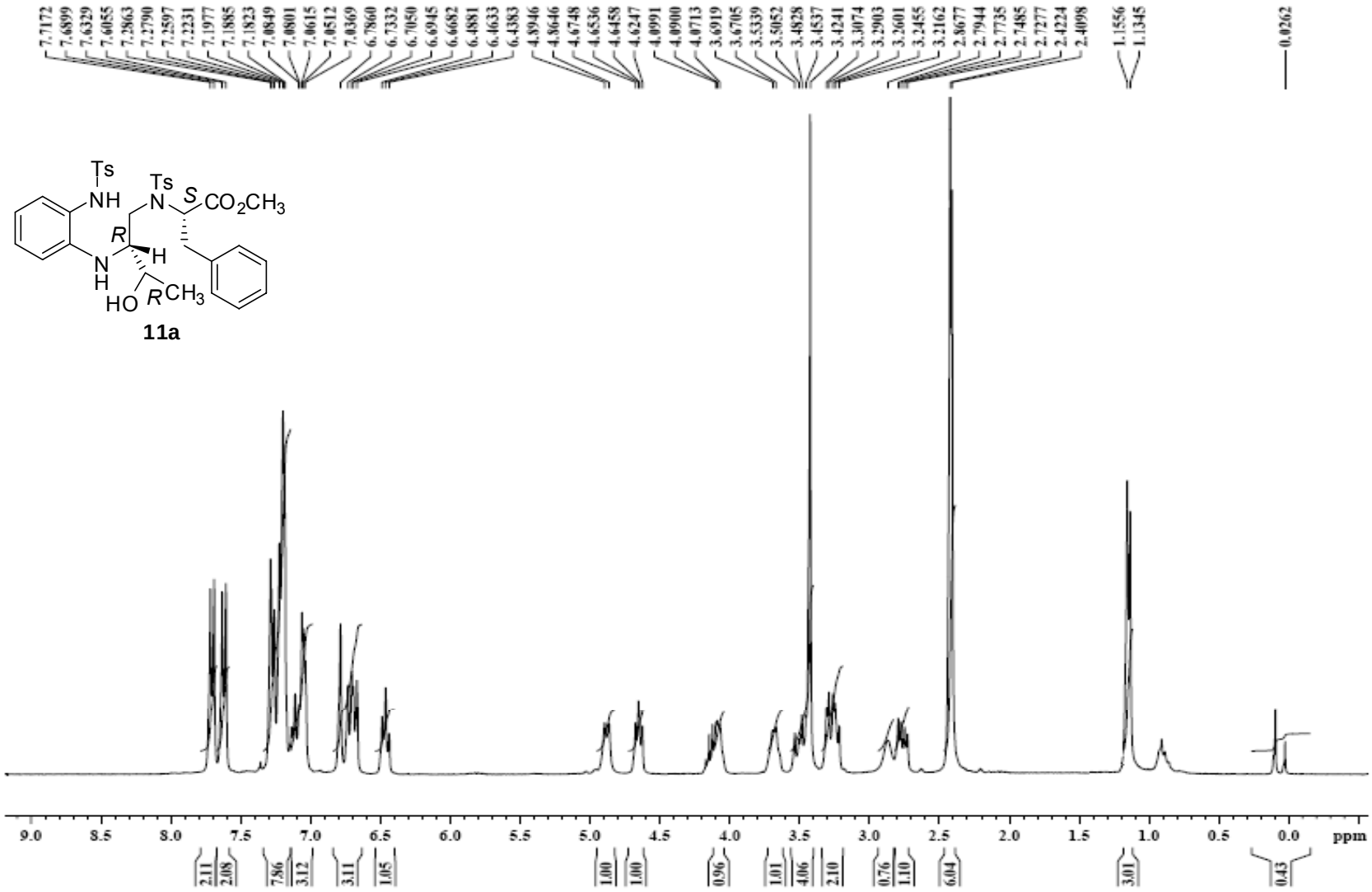
FigureS-24: ^{13}C spectrum (75MHz, $CDCl_3$) **8e**



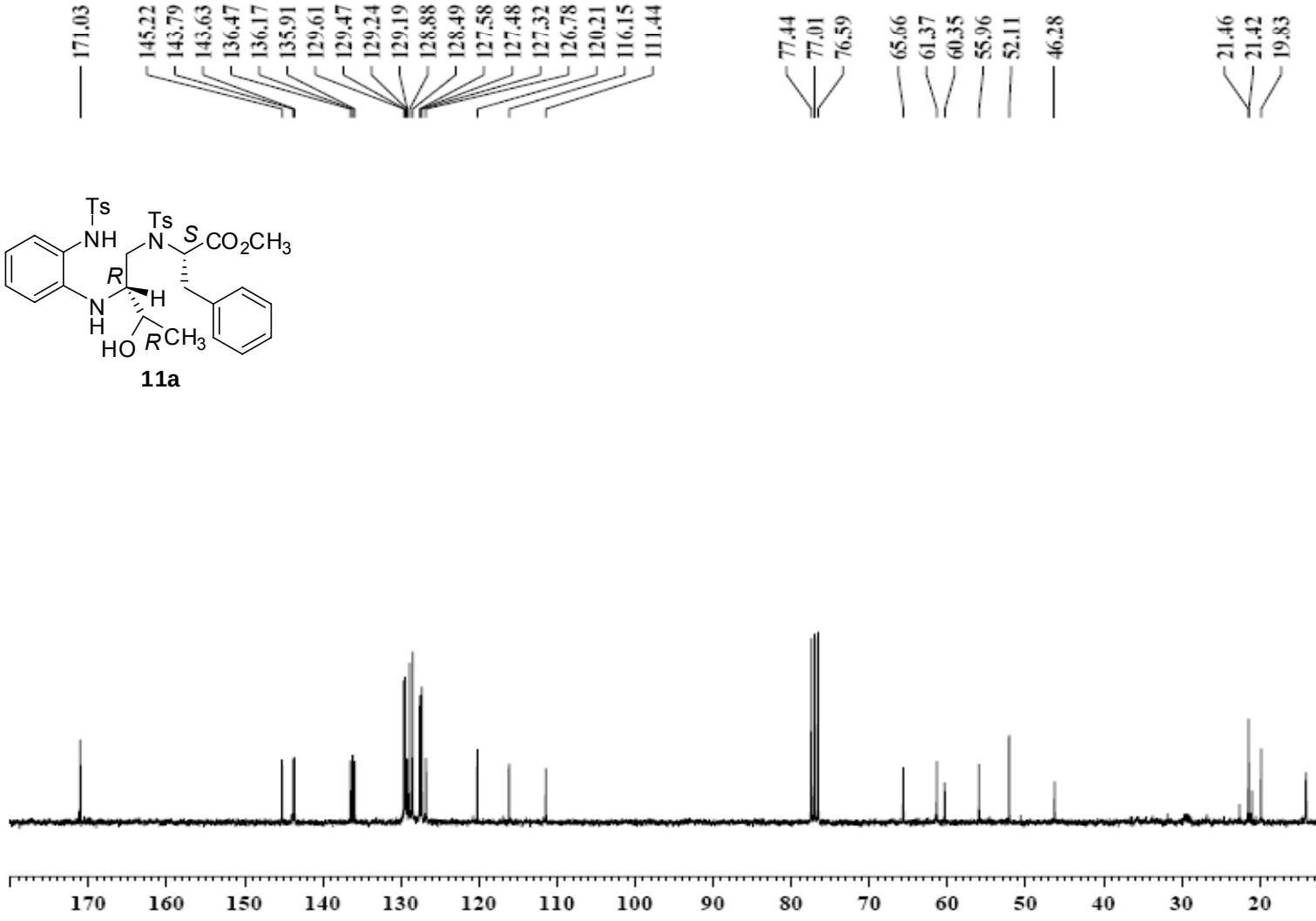
FigureS-25: ^{1}H spectrum(300 MHz, $CDCl_3$) of **9a**



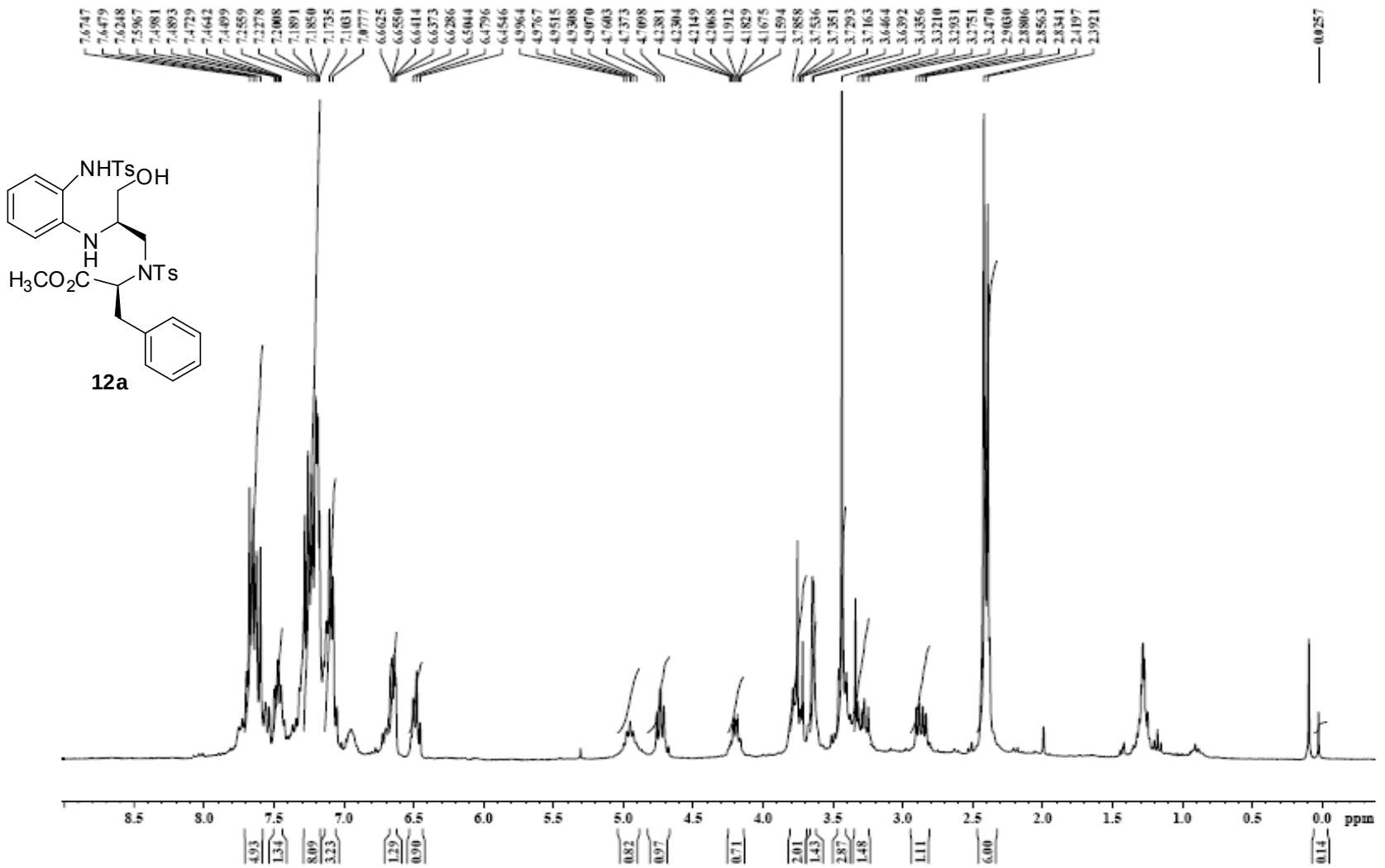
FigureS-26: ^{13}C spectrum (75MHz, $CDCl_3$) **9a**



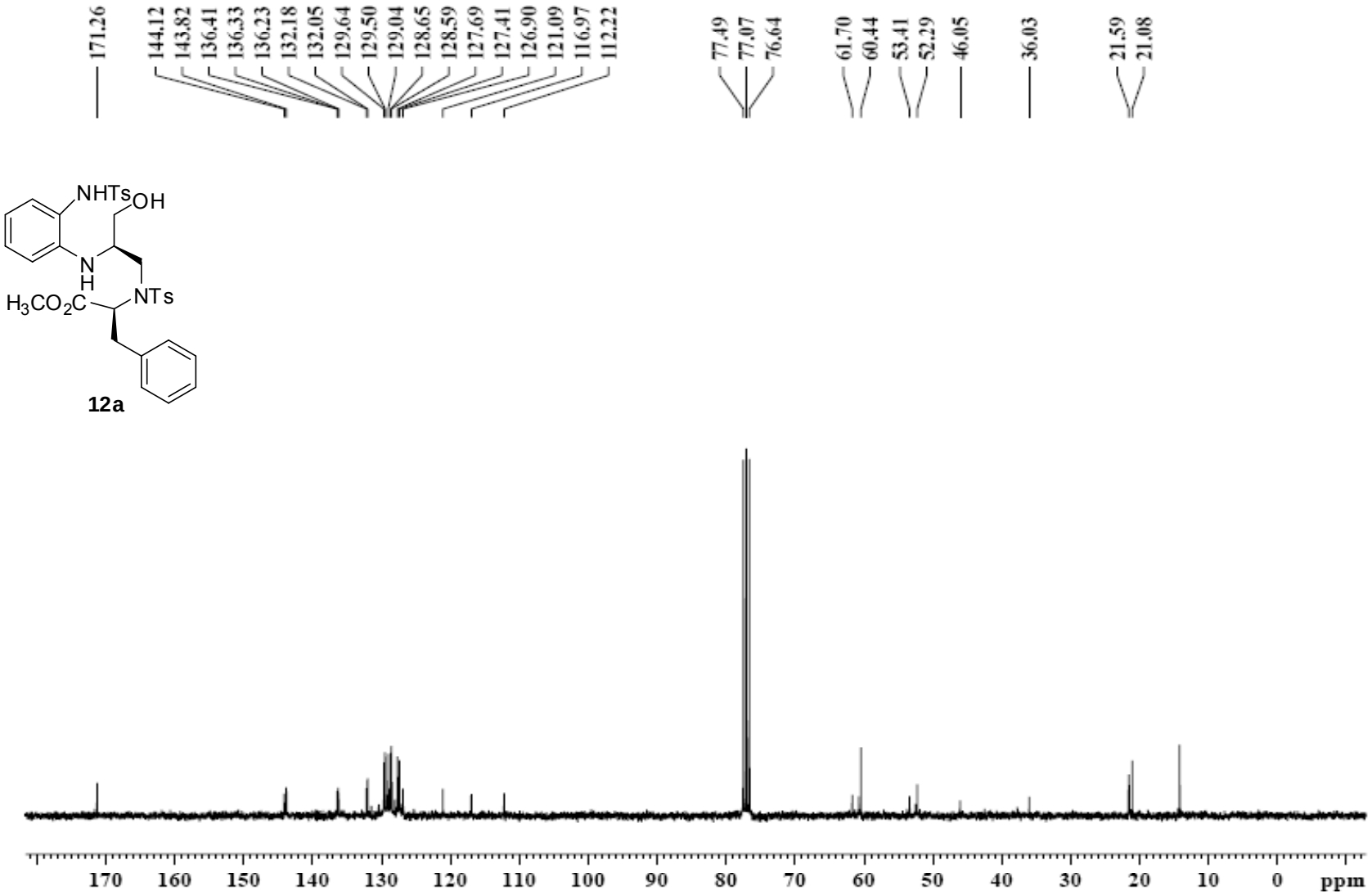
FigureS-27: ^{1}H spectrum(300 MHz, $CDCl_3$) of **11a**



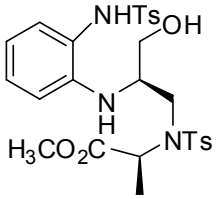
FigureS-28: ^{13}C spectrum (75MHz, $CDCl_3$) **11a**



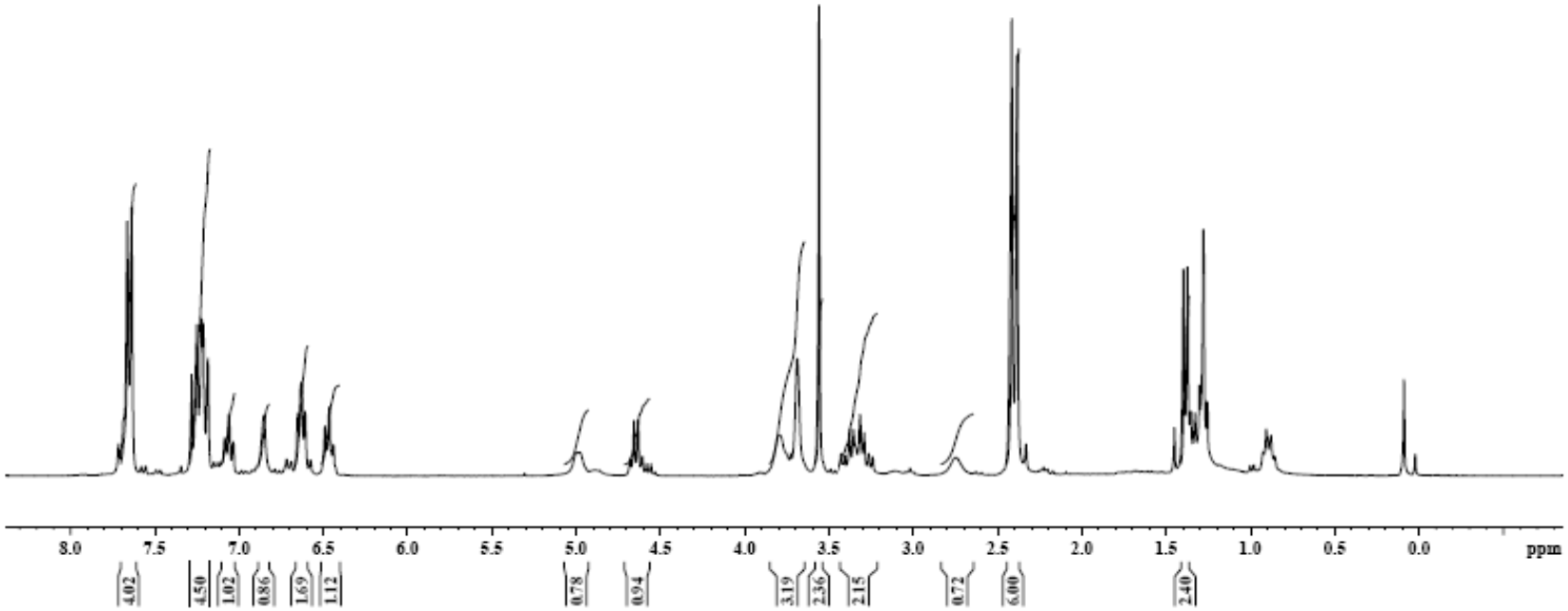
FigureS-29: ^{1}H spectrum(300 MHz, $CDCl_3$) of **12a**



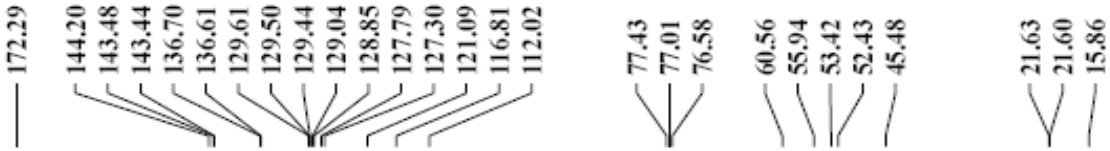
FigureS-30: ^{13}C spectrum (75MHz, $CDCl_3$) **12a**

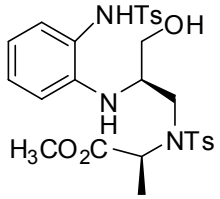


12b

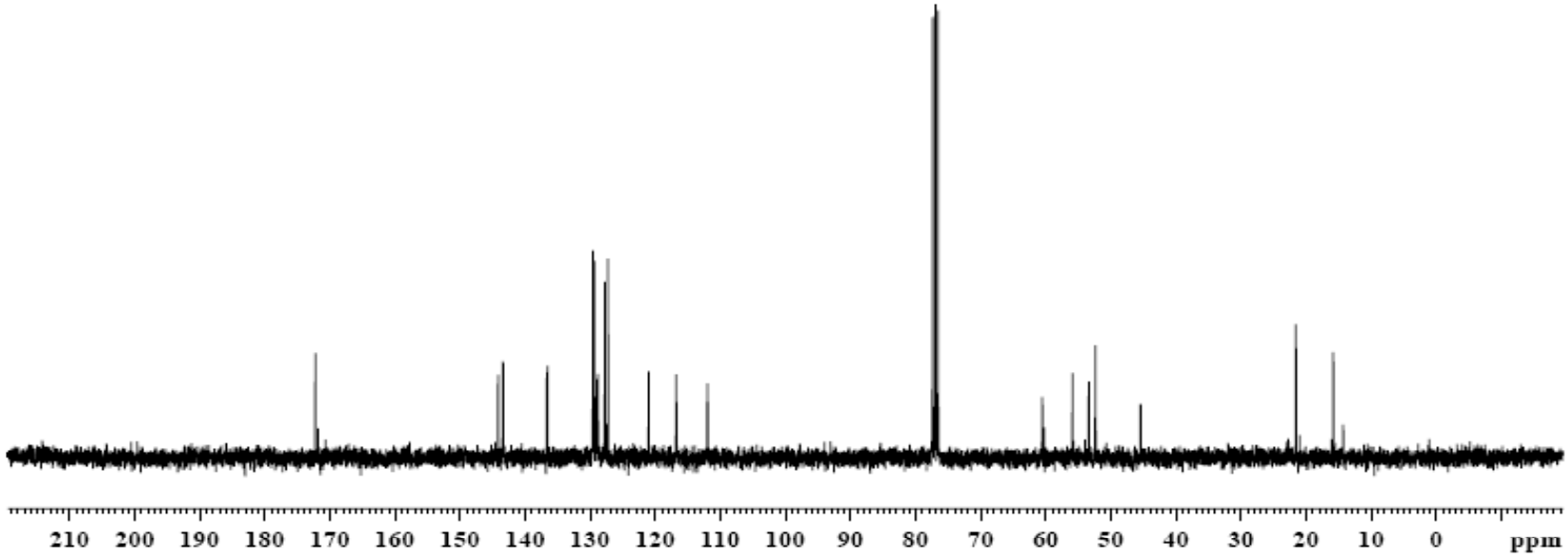


FigureS-31: ^{1}H spectrum(300 MHz, $CDCl_3$) of **12b**

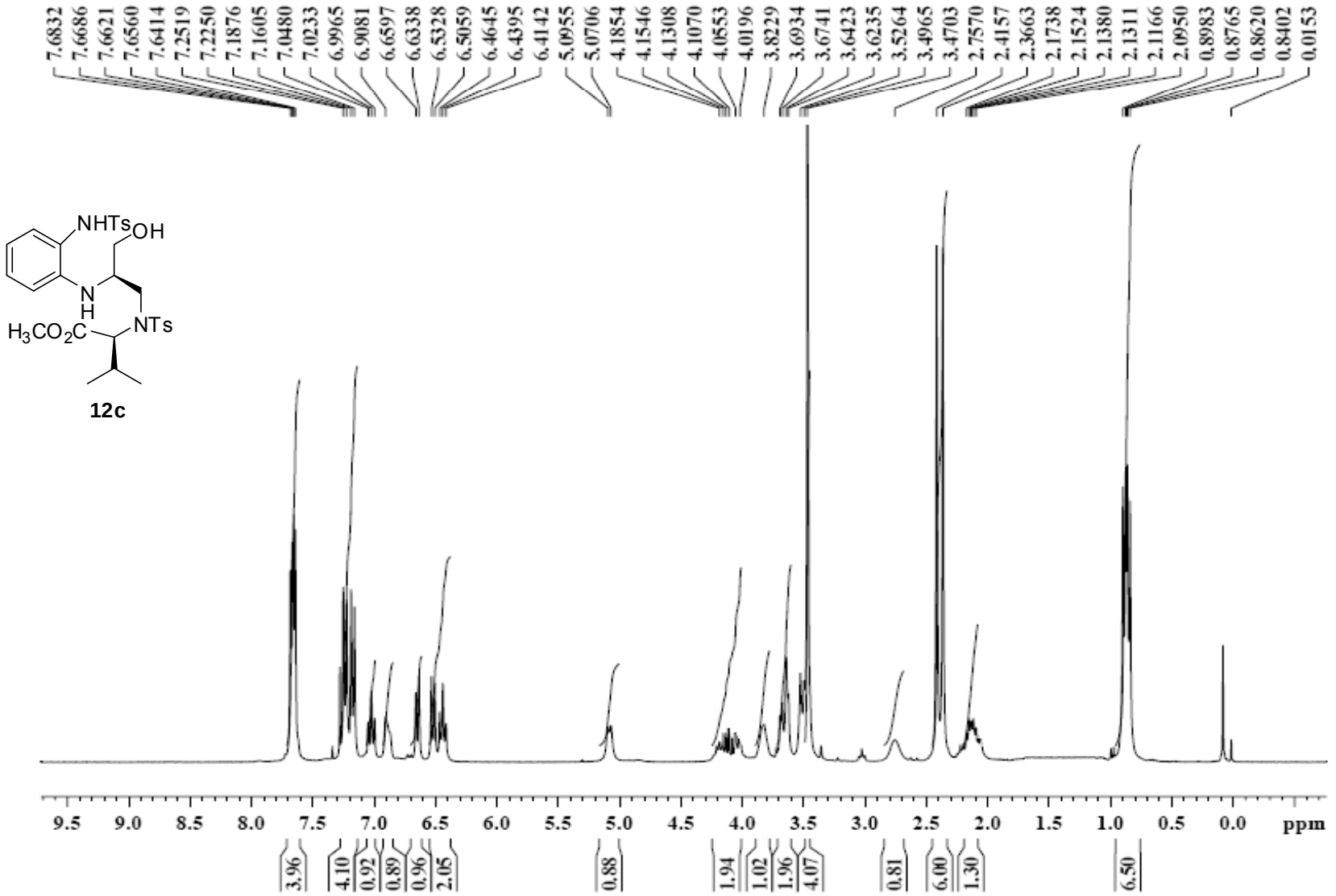




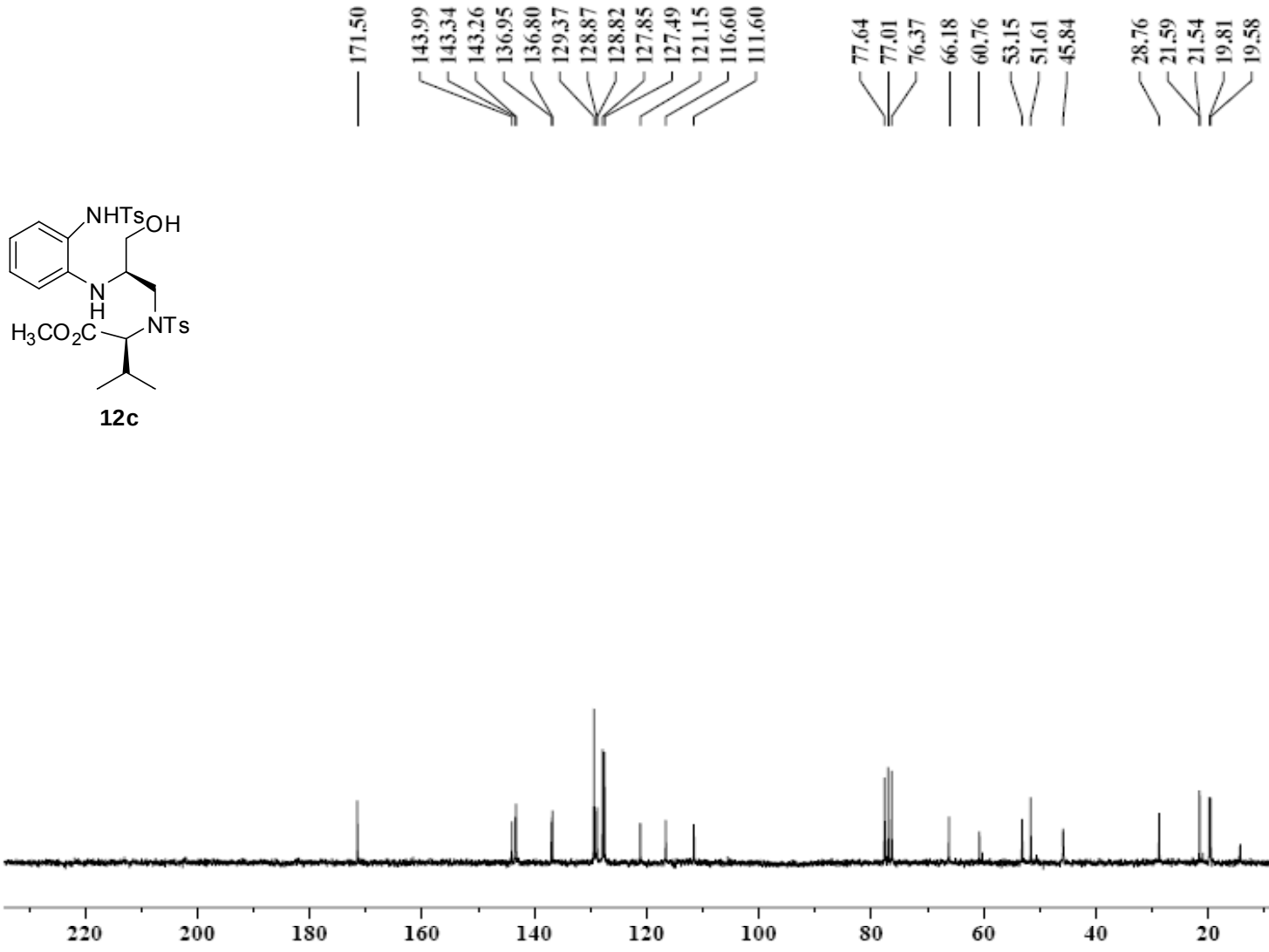
12b



FigureS-32: ^{13}C spectrum (75MHz, $CDCl_3$) **12b**

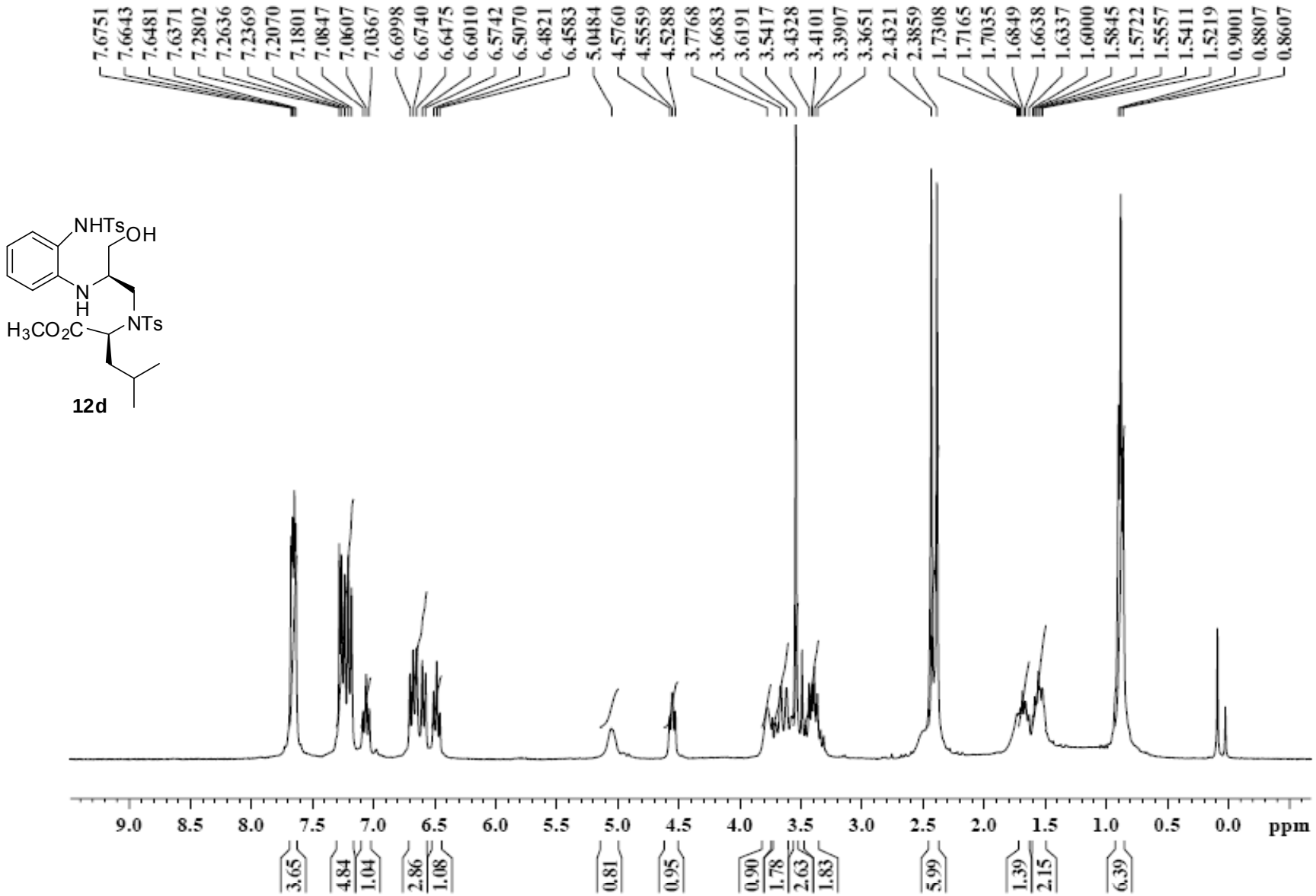


FigureS-33: ^{1}H spectrum(300 MHz, $CDCl_3$) of **12c**

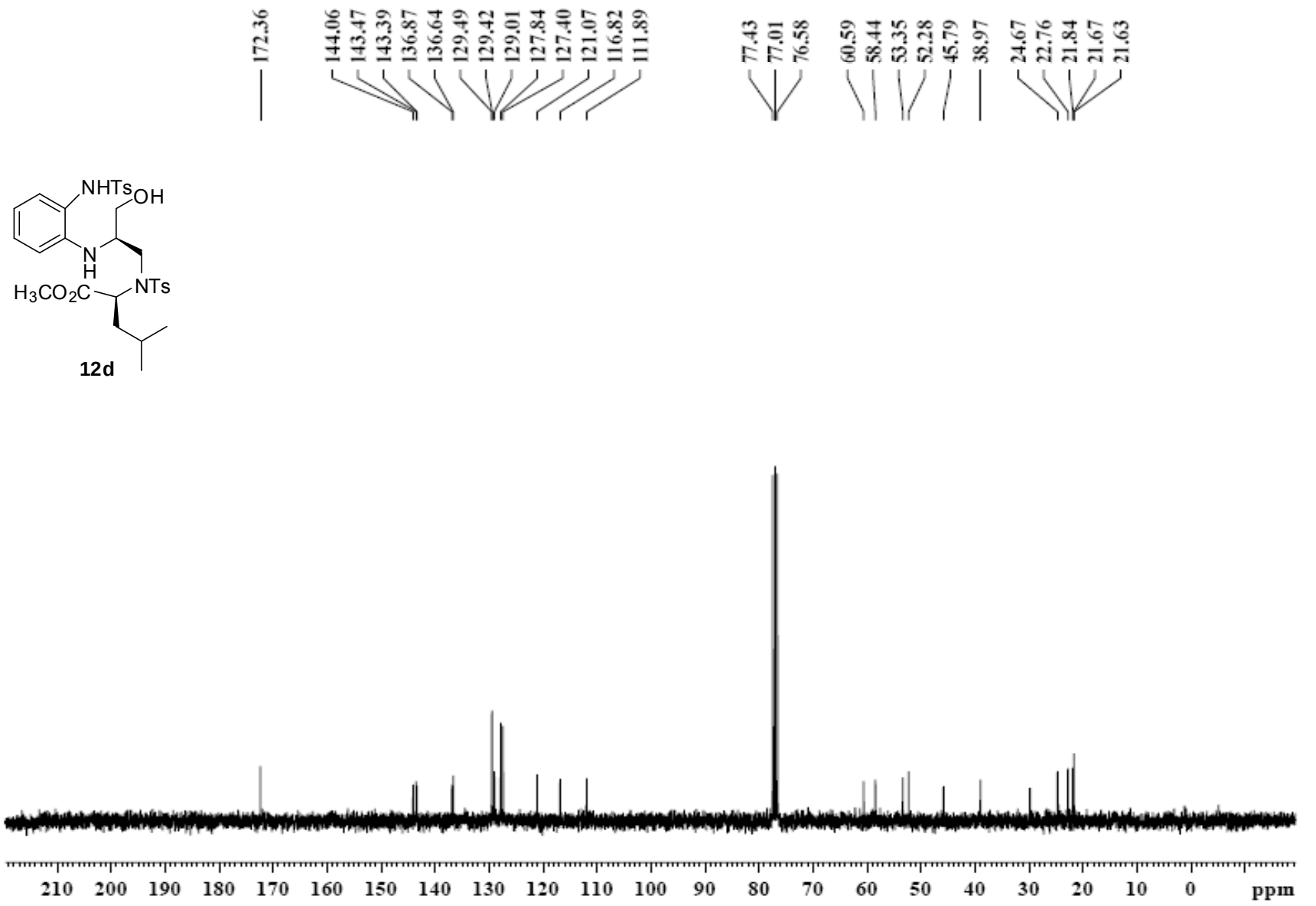


12c

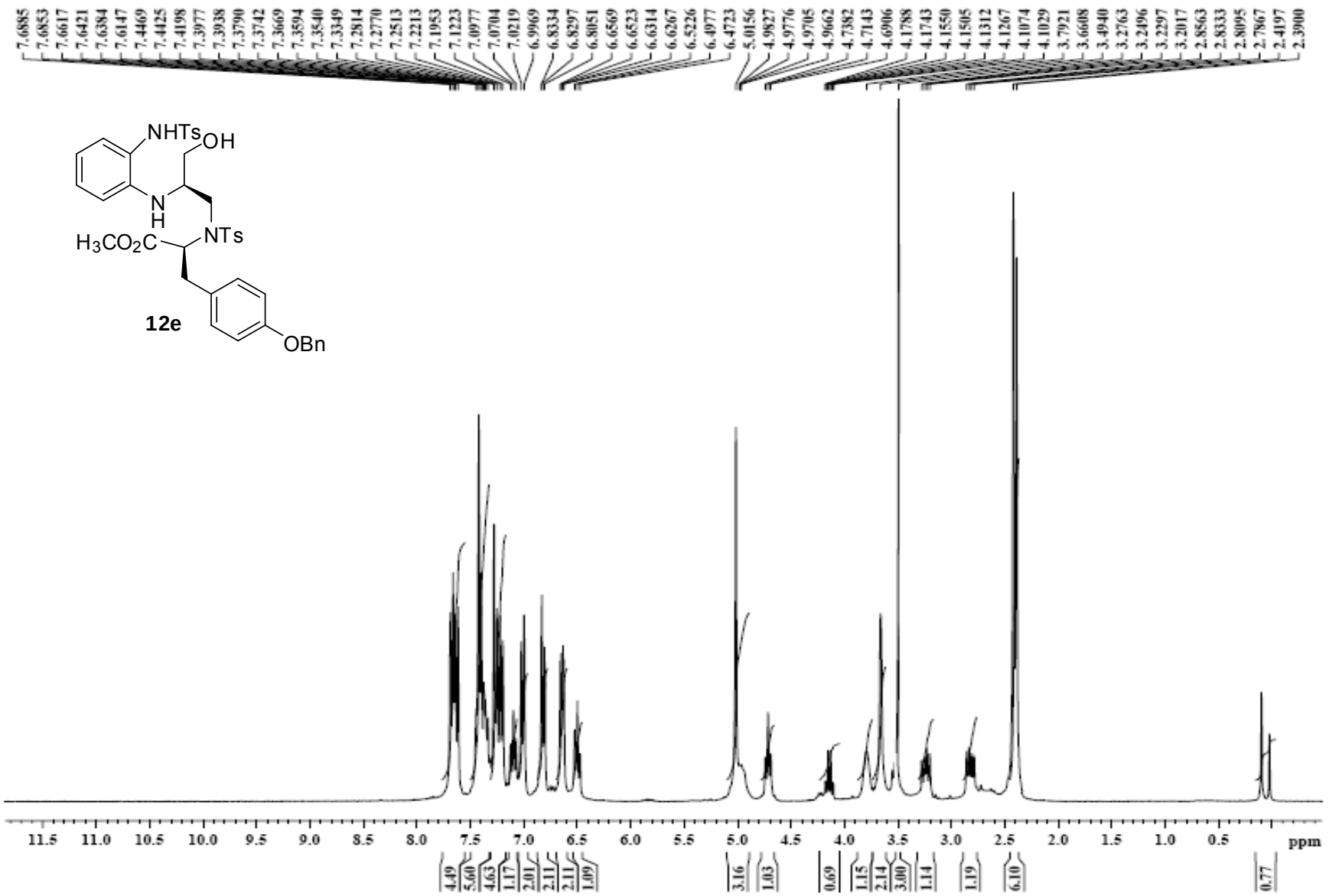
FigureS-34: ^{13}C spectrum (75MHz, $CDCl_3$) **12c**



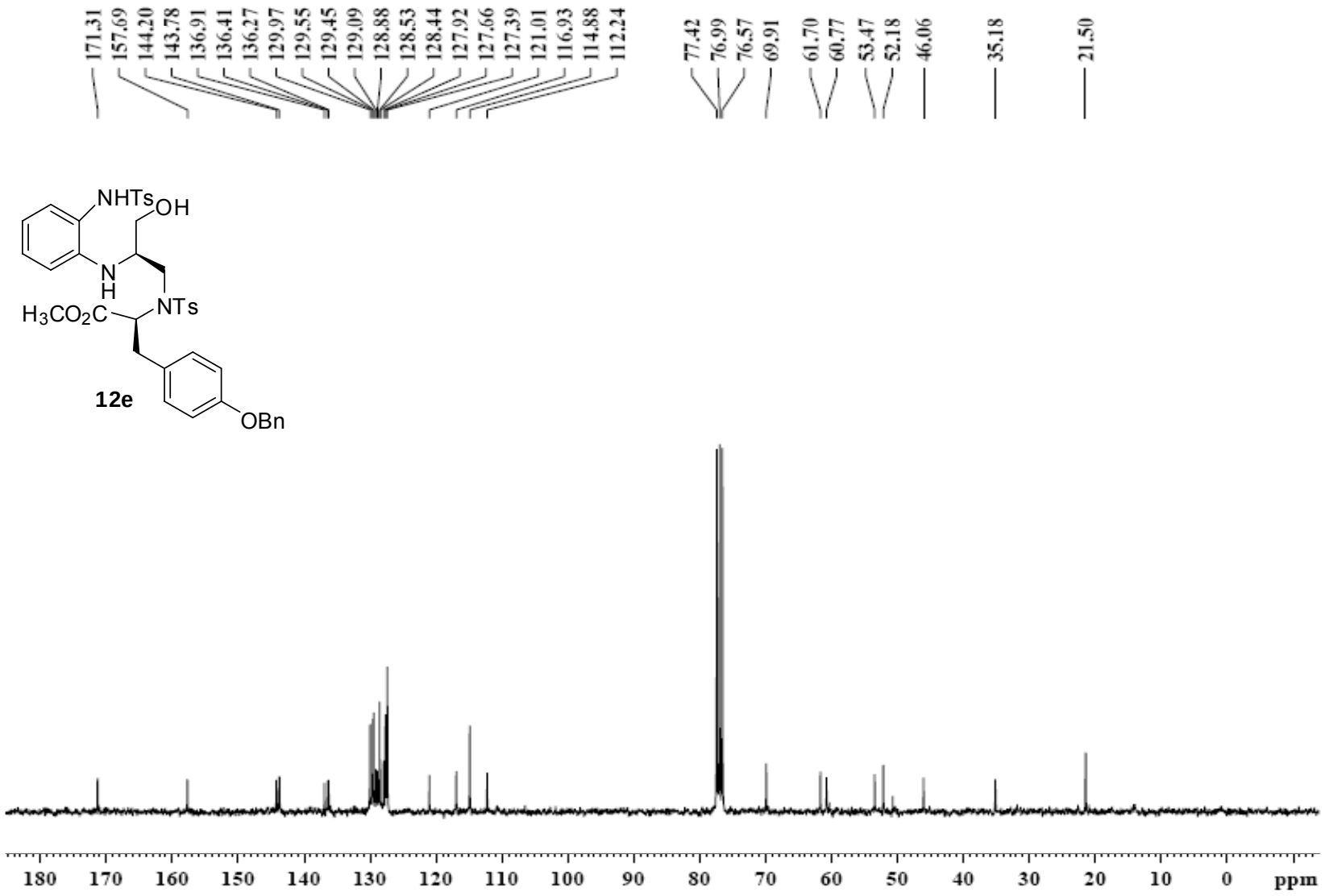
FigureS-35: ^{1}H spectrum(300 MHz, $CDCl_3$) of **12d**



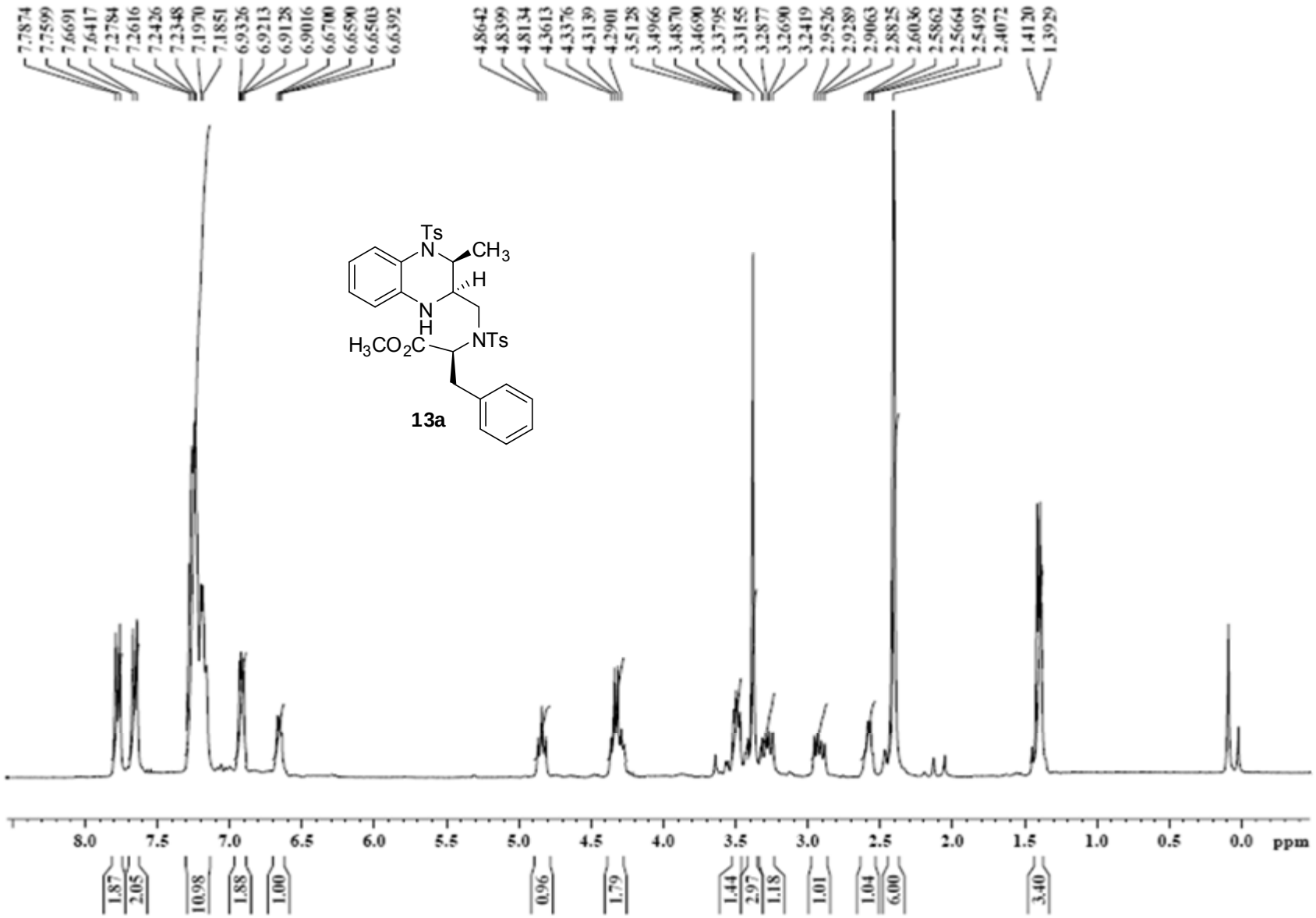
FigureS-36: ^{13}C spectrum (75MHz, $CDCl_3$) **12d**



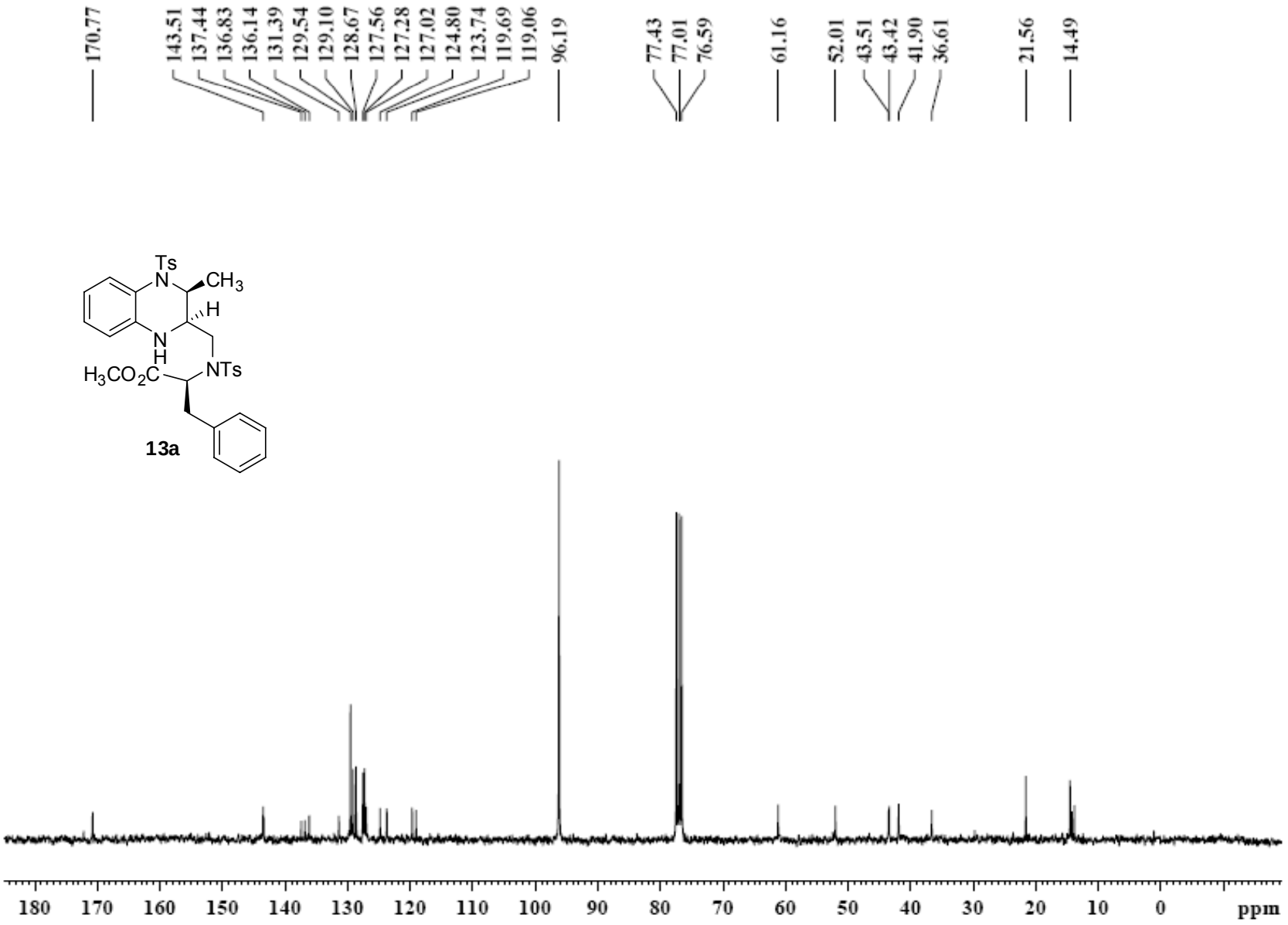
FigureS-37: ^{1}H spectrum(300 MHz, $CDCl_3$) of **12e**



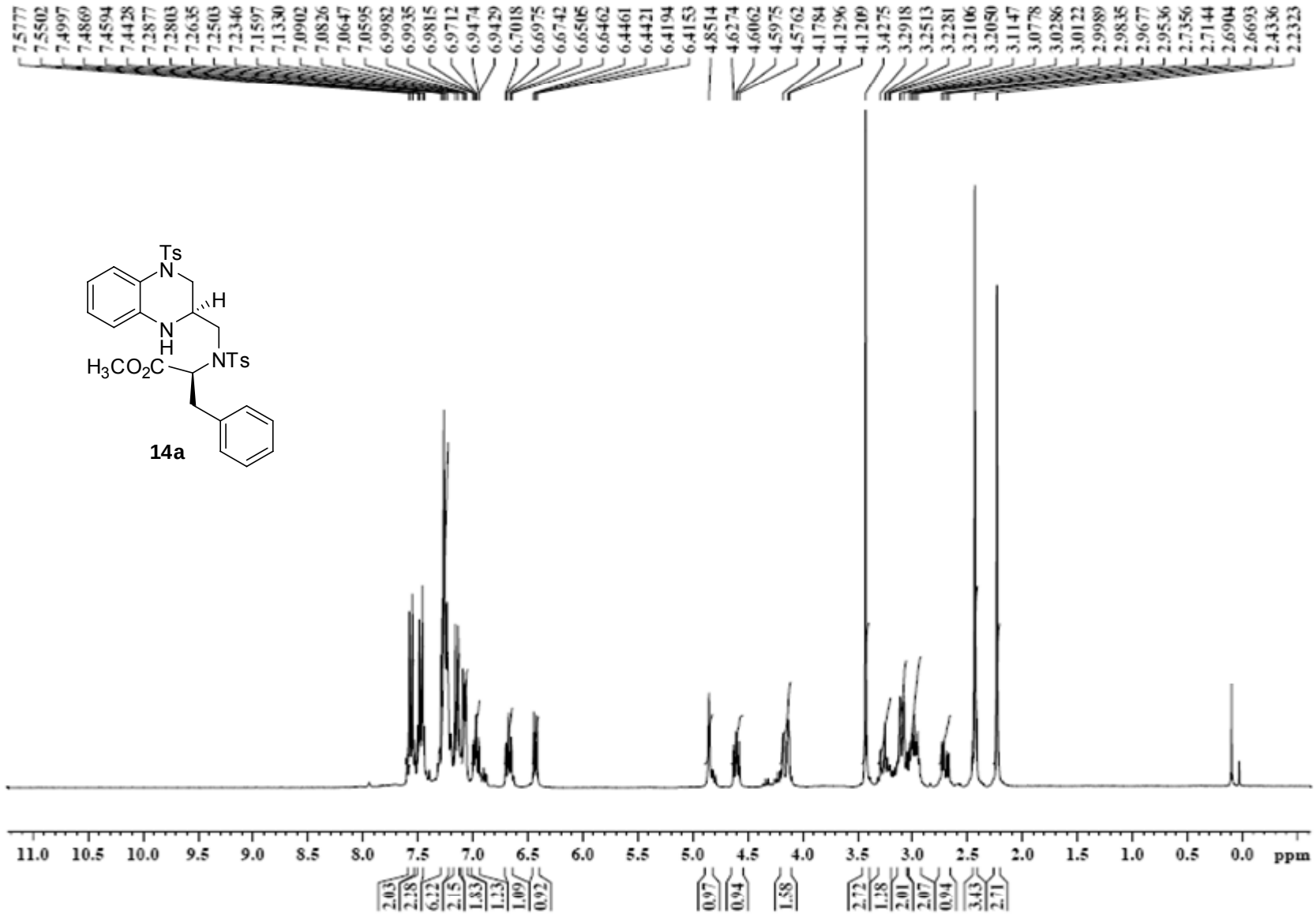
FigureS-38: ^{13}C spectrum (75MHz, $CDCl_3$) **12e**



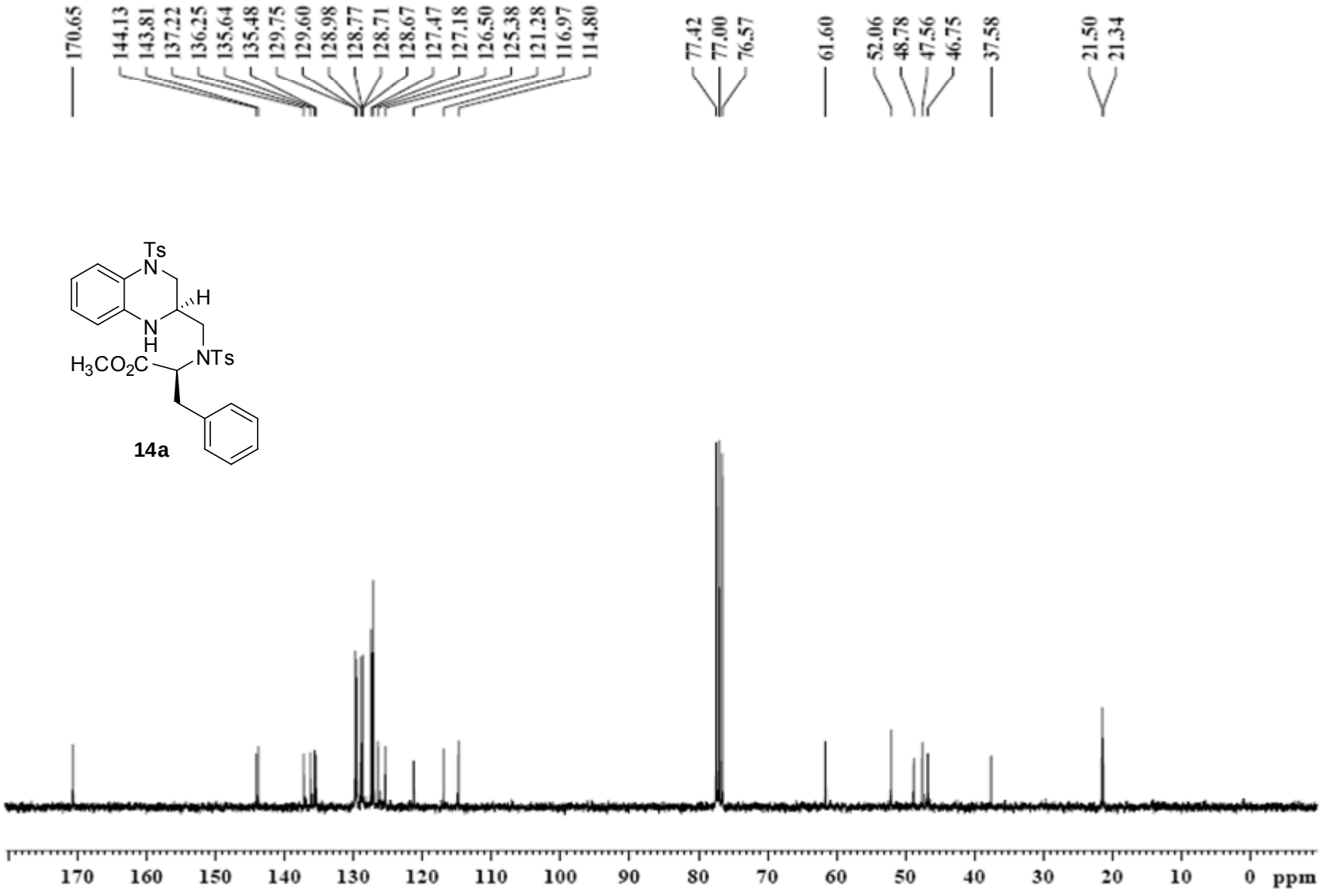
FigureS-39: ^{1}H spectrum(300 MHz, $CDCl_3$ + CCl_4) of **13a**



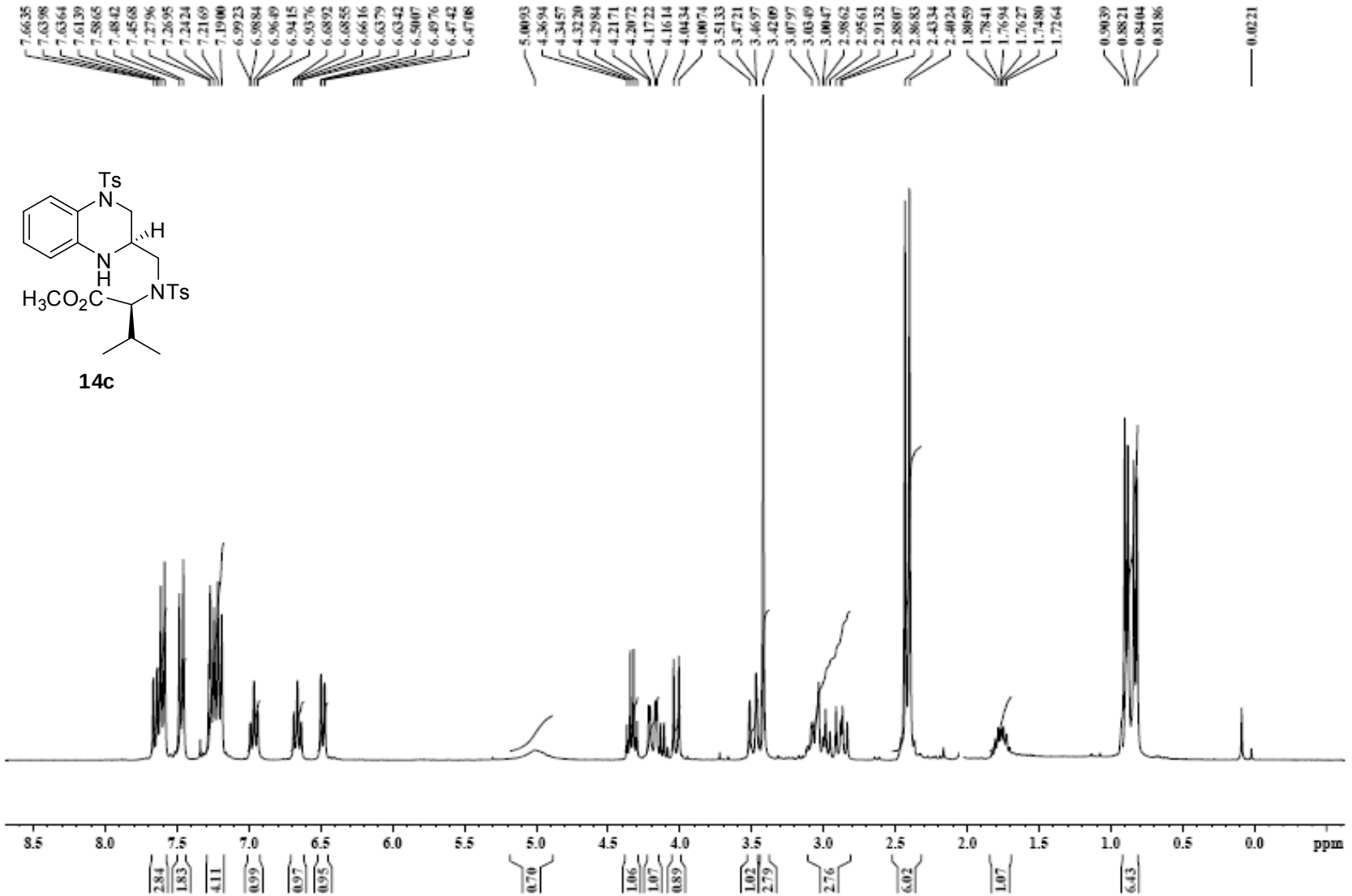
FigureS-40: ^{13}C spectrum (75MHz, $CDCl_3$ + CCl_4) **13a**



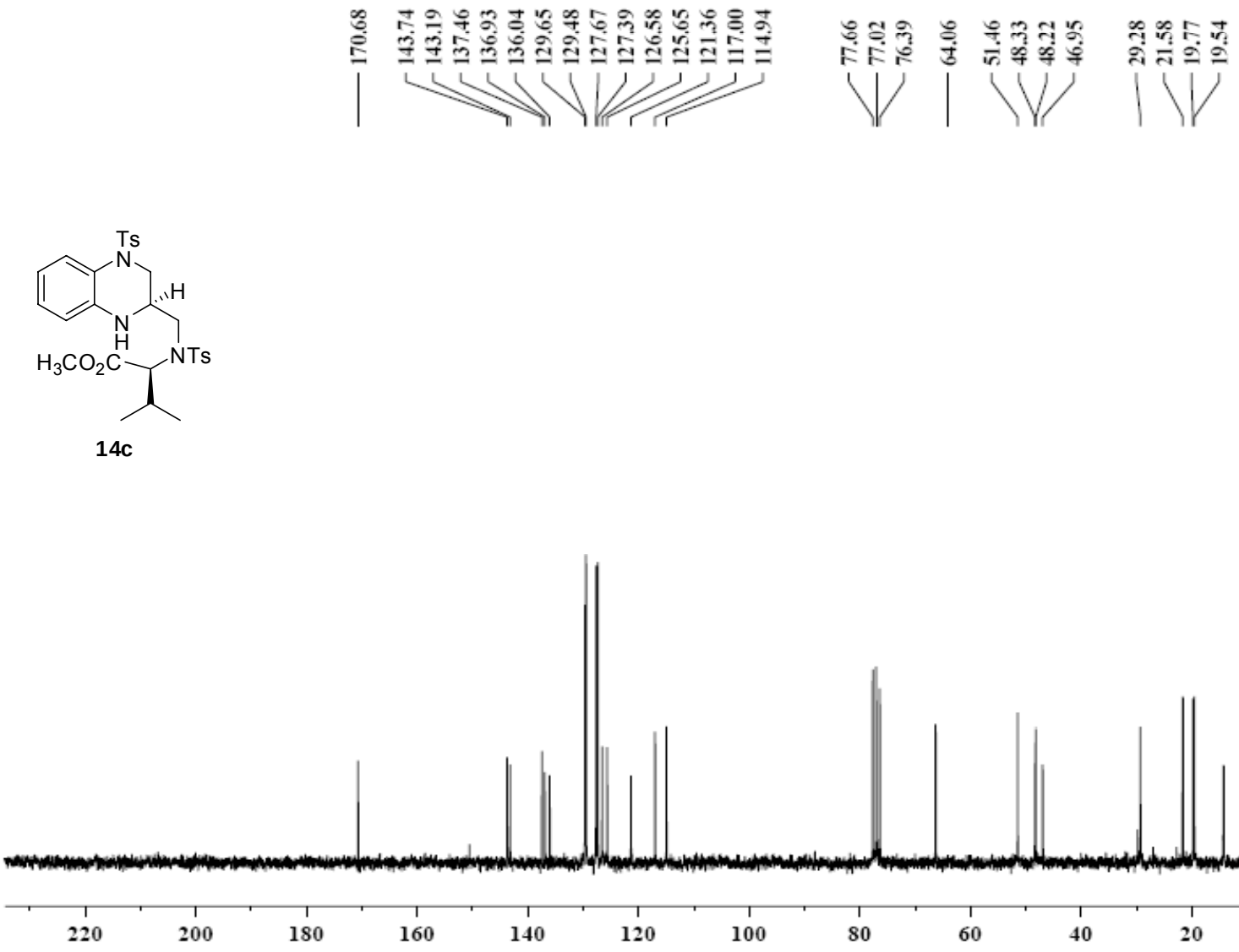
FigureS-41: ^{1}H spectrum(300 MHz, $CDCl_3$) of **14a**



FigureS-42: ^{13}C spectrum (75MHz, $CDCl_3$) **14a**

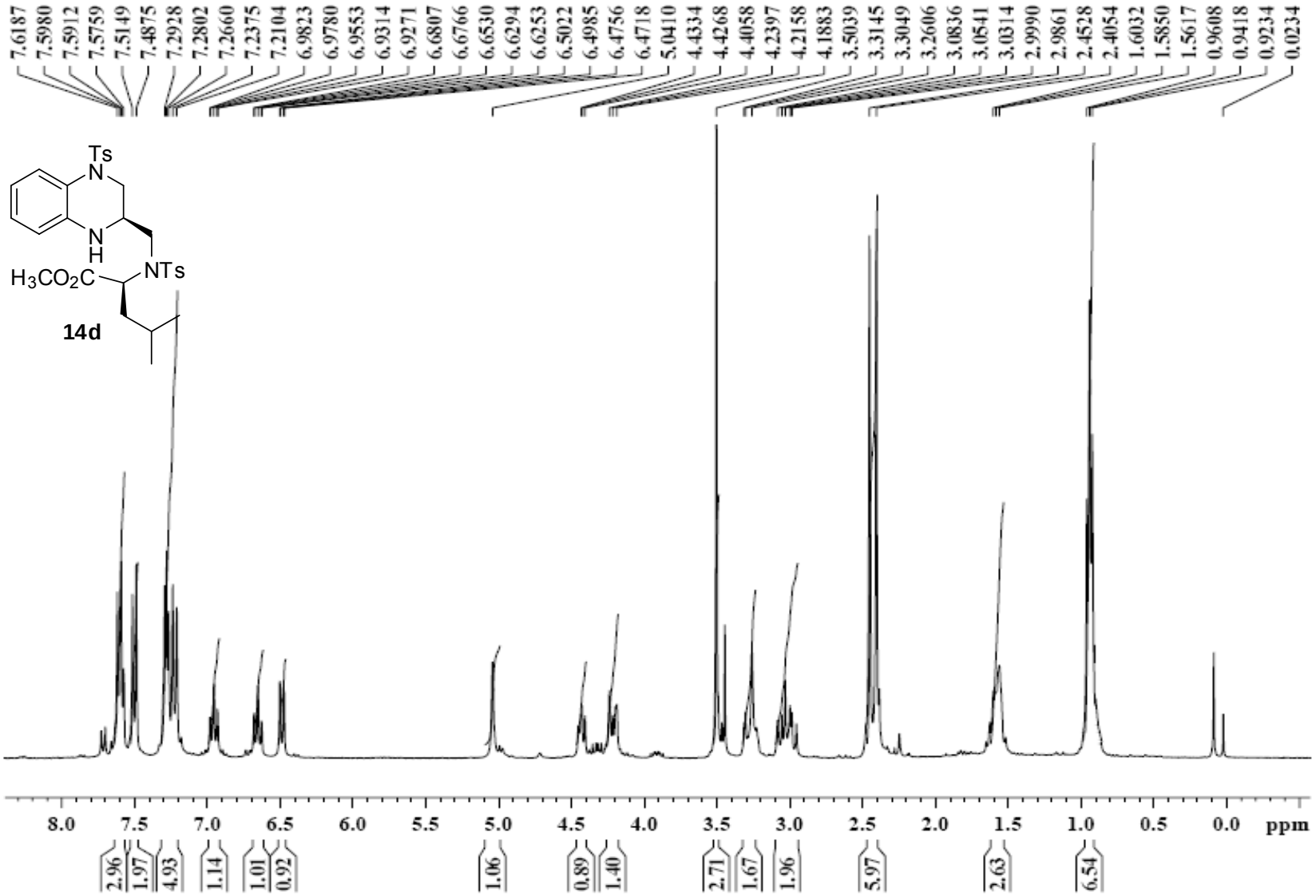


FigureS-43: ^{1}H spectrum(300 MHz, $CDCl_3$) of **14c**

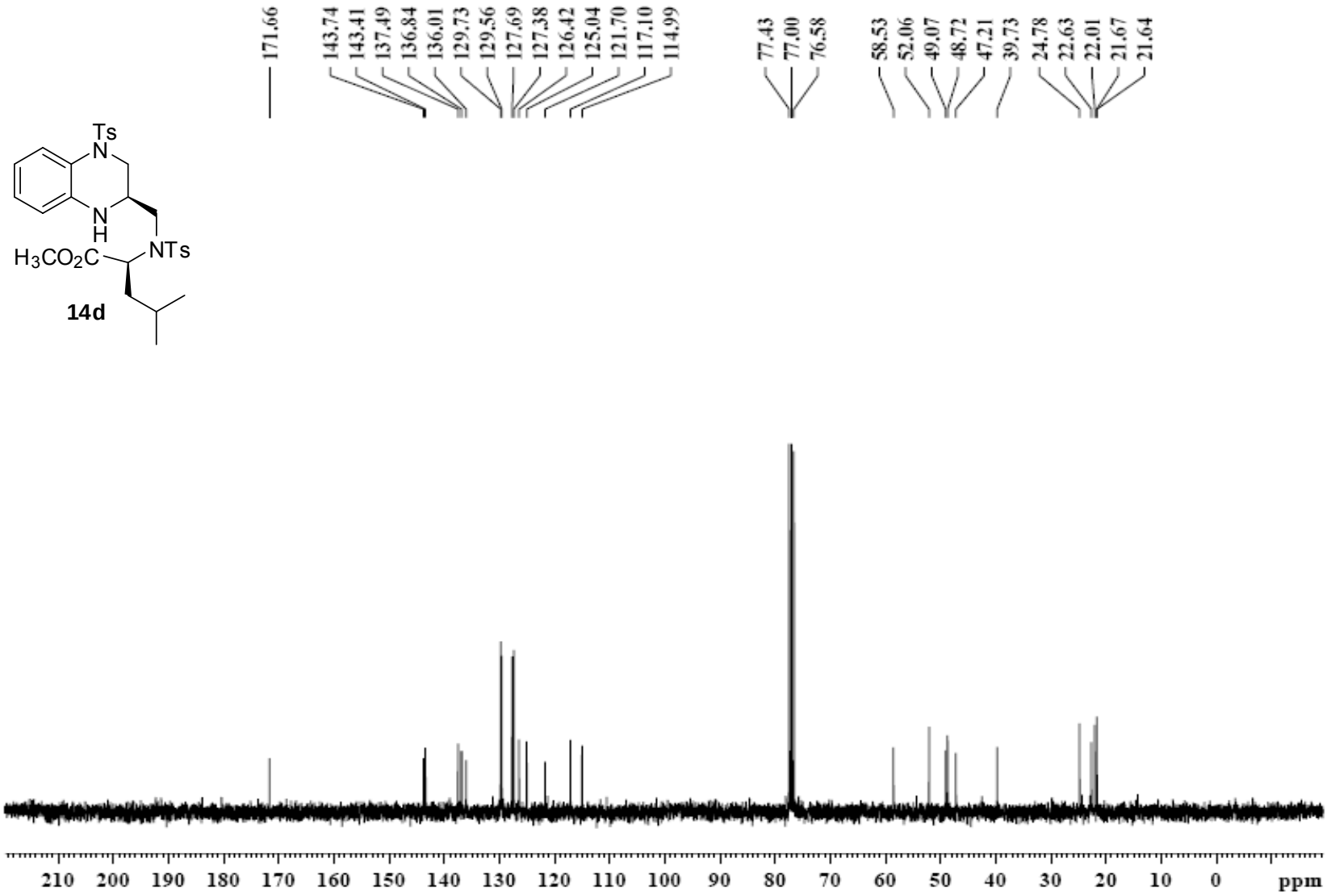


14c

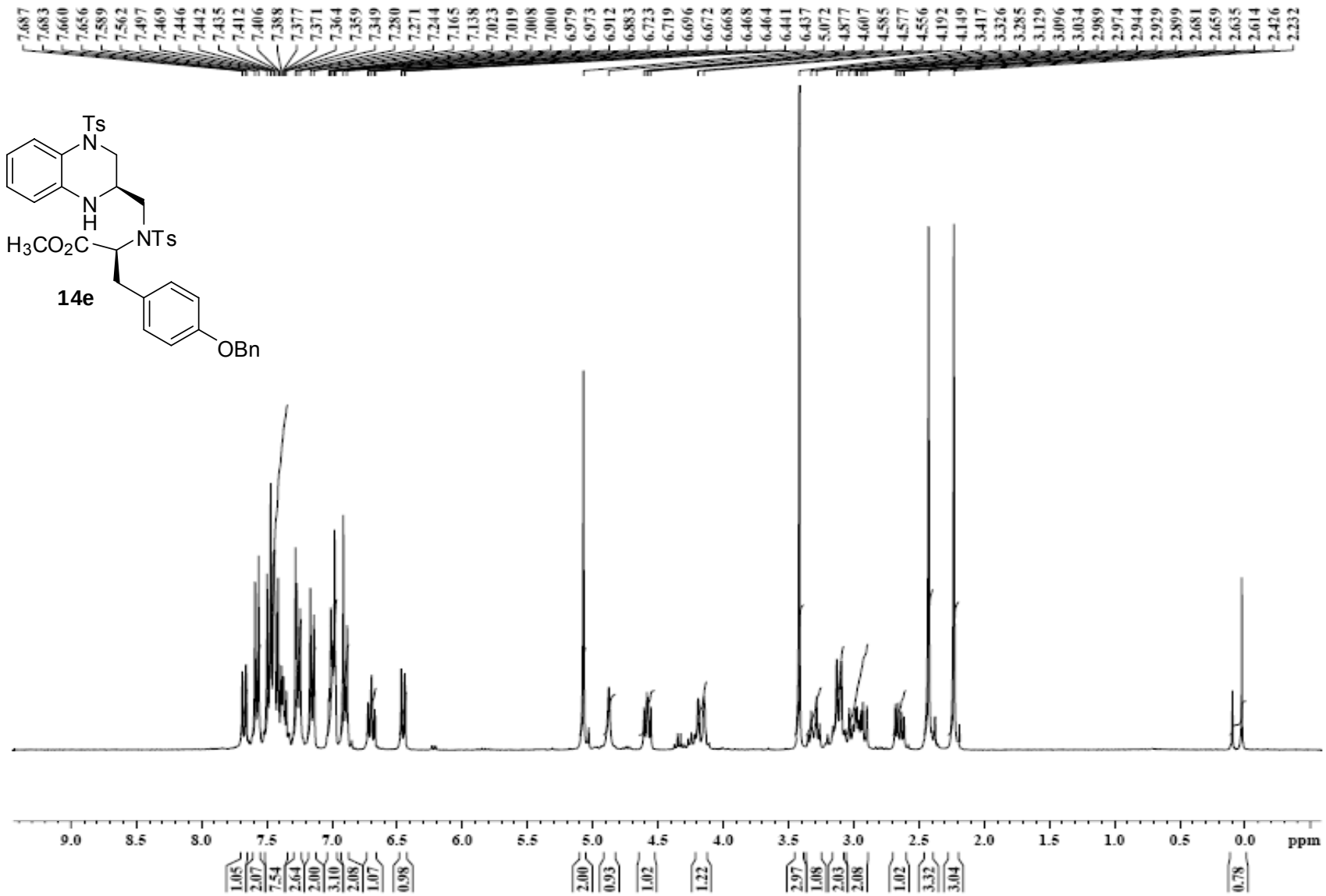
FigureS-44: ^{13}C spectrum (75MHz, $CDCl_3$) **14c**



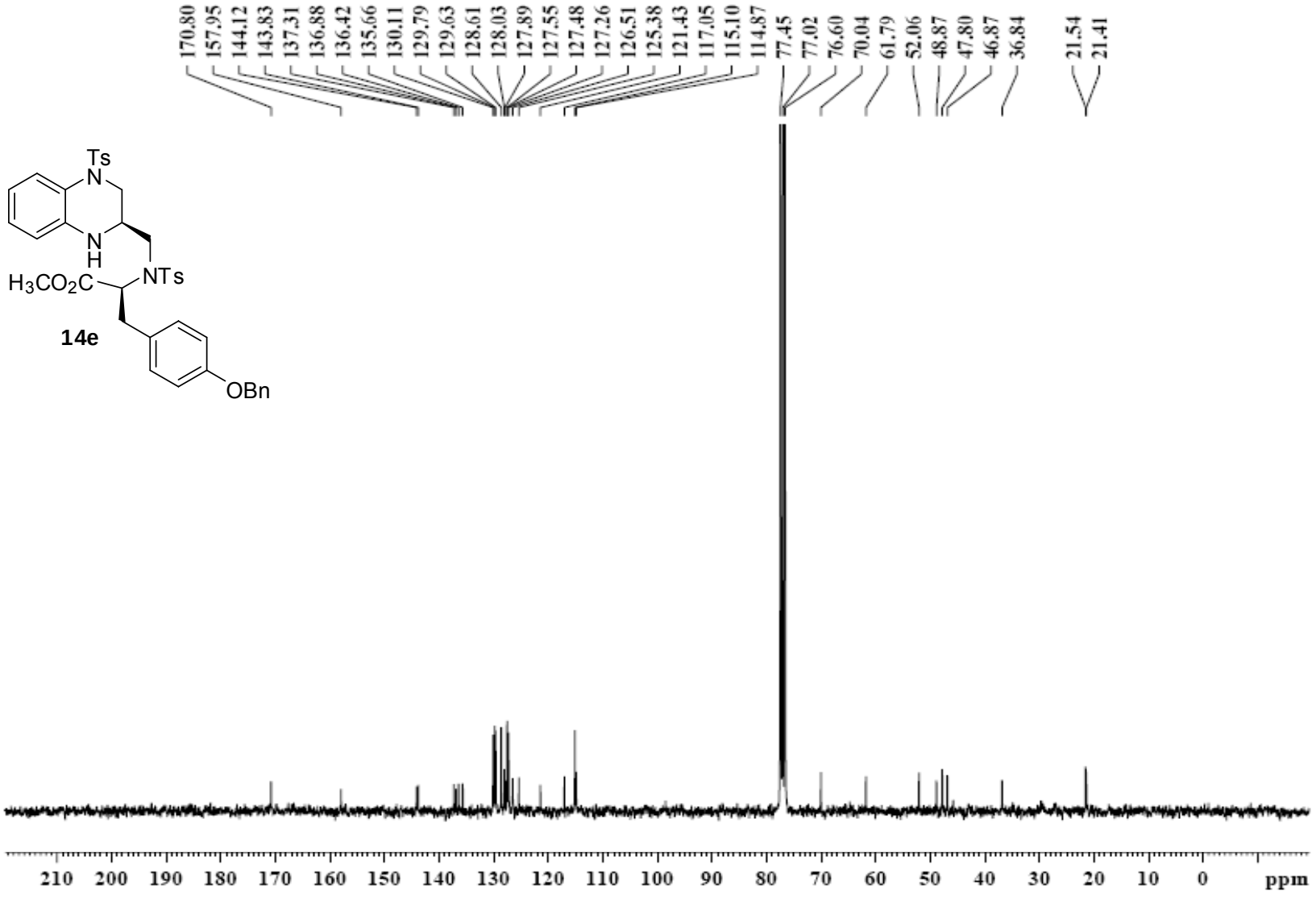
FigureS-45: ^{1}H spectrum(300 MHz, $CDCl_3$) of **14d**



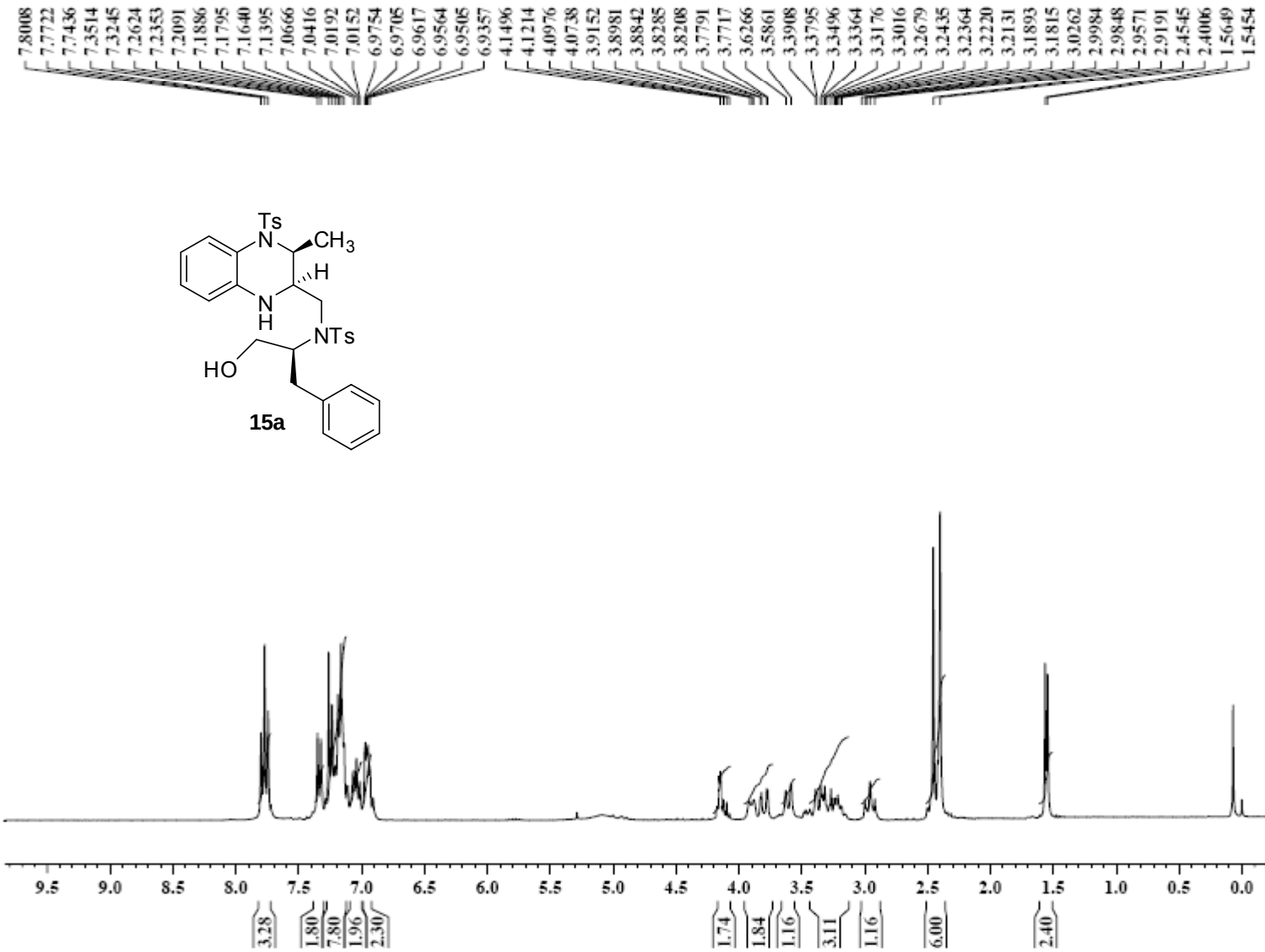
FigureS-46: ^{13}C spectrum (75MHz, $CDCl_3$) **14d**



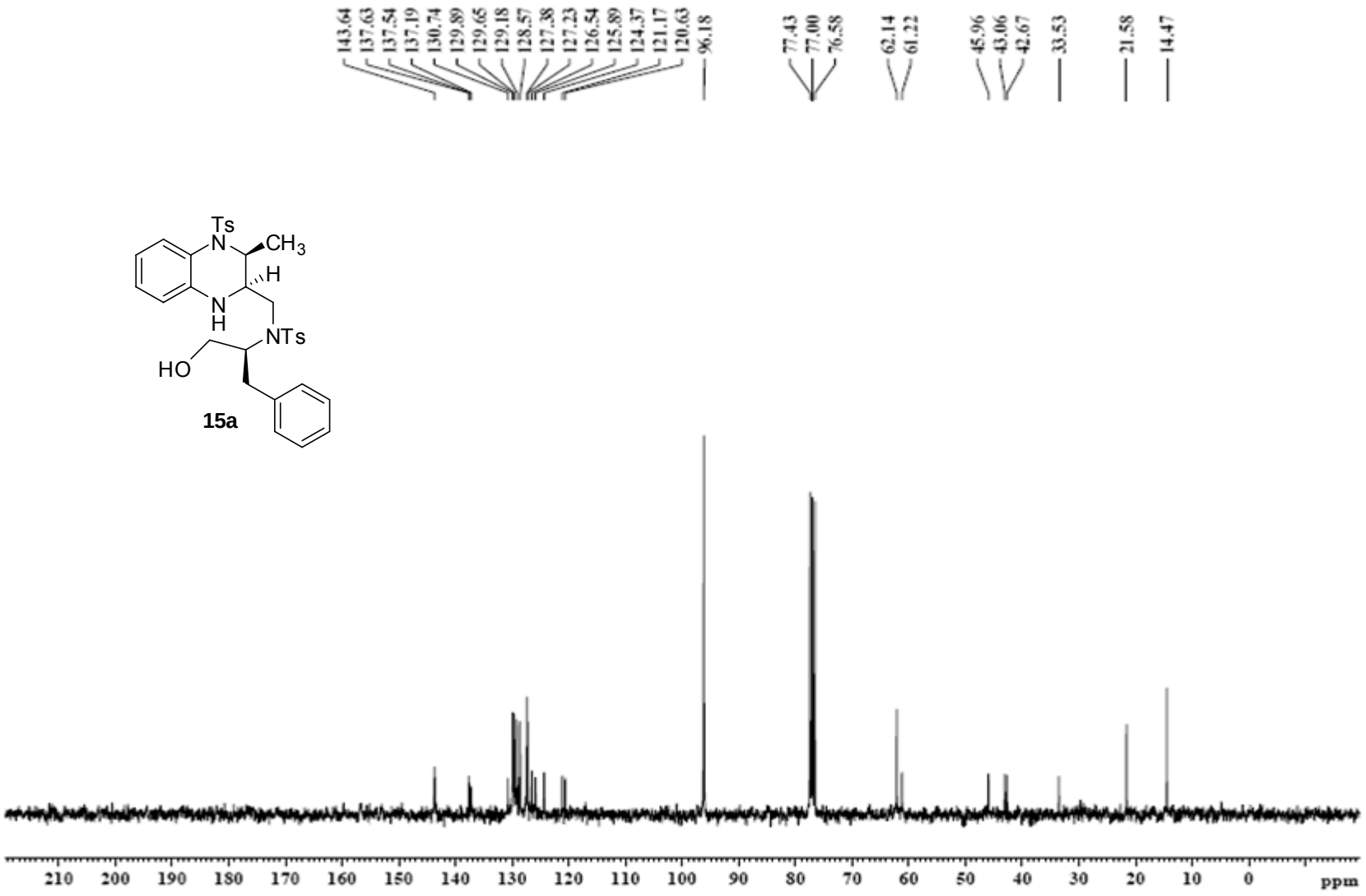
FigureS-47: ^{1}H spectrum(300 MHz, $CDCl_3$) of **14e**



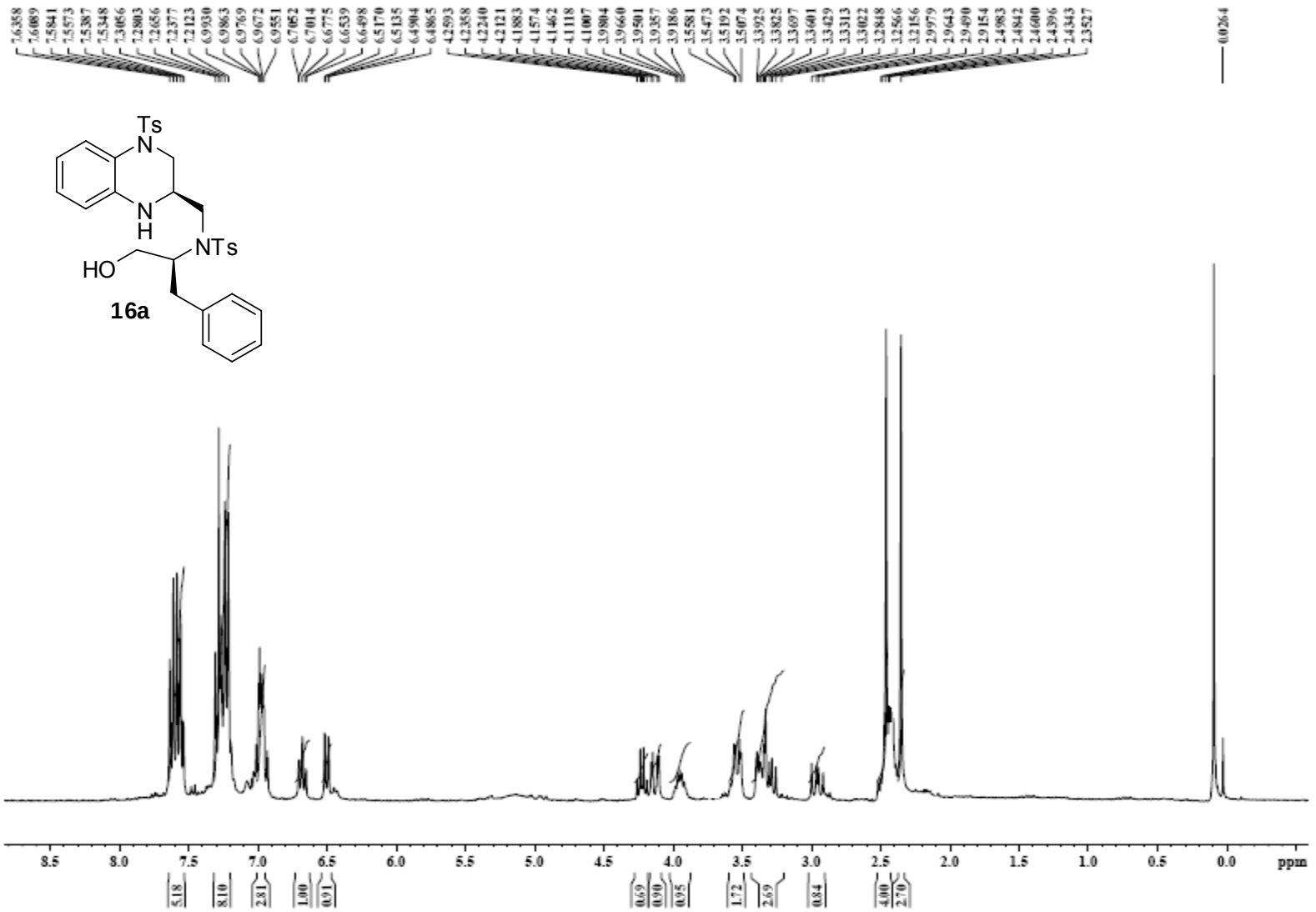
FigureS-48: ^{13}C spectrum (75MHz, , $CDCl_3$) **14e**



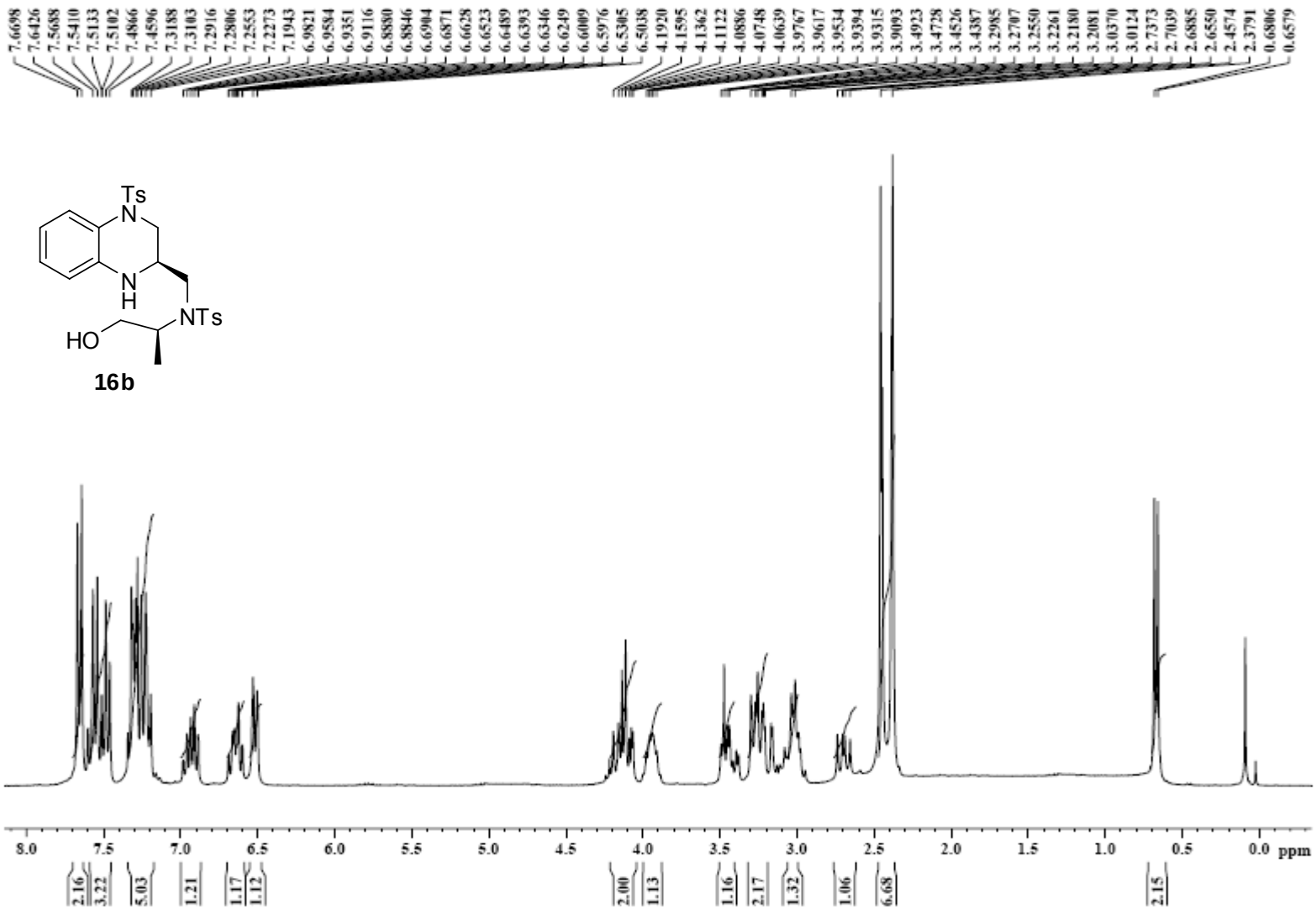
FigureS-49: ^{1}H spectrum(300 MHz, $CDCl_3$ + CCl_4) of **15a**



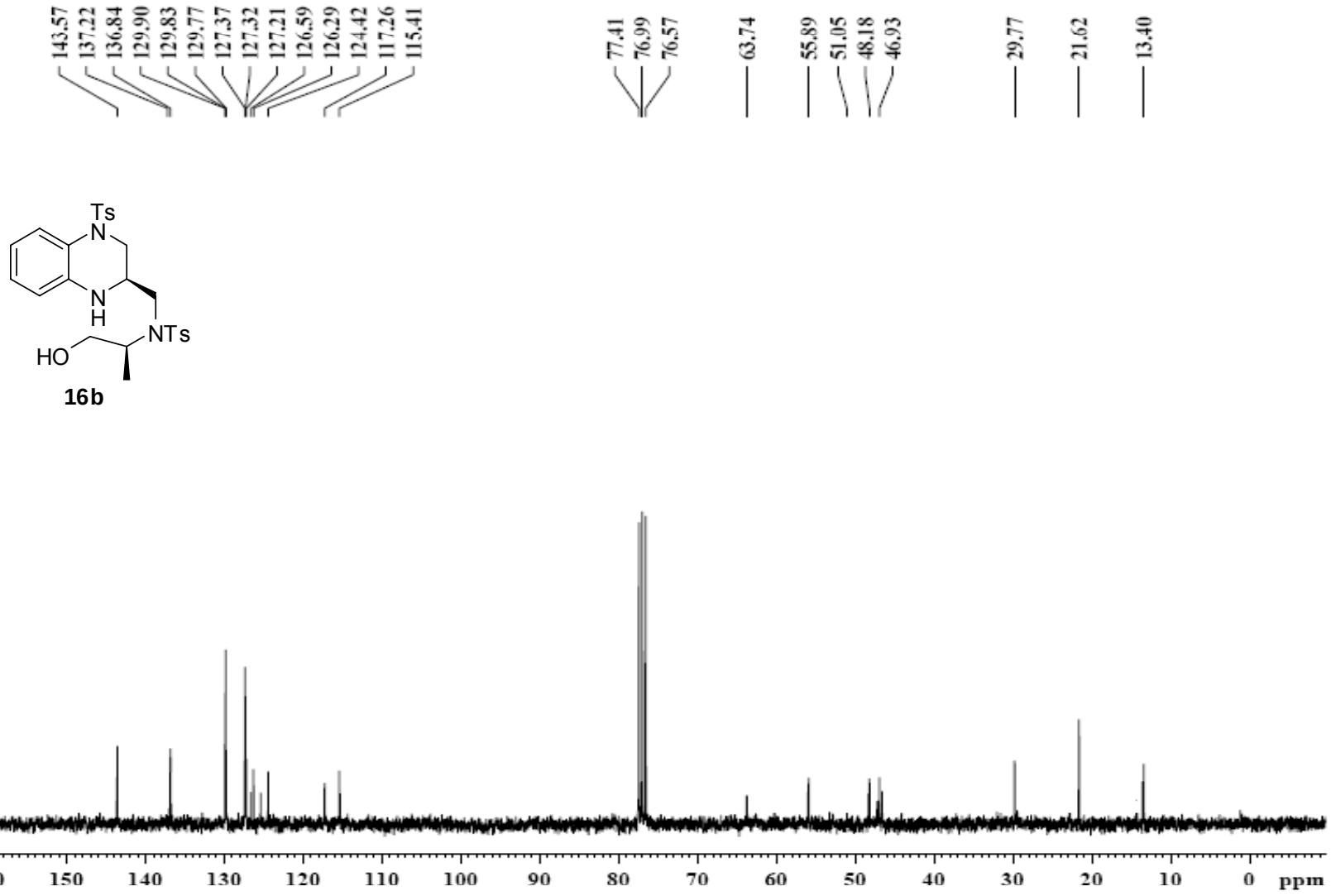
FigureS-50: ^{13}C spectrum (75MHz, $CDCl_3$ + CCl_4) **15a**



FigureS-51: ^{1}H spectrum(300 MHz, $CDCl_3$) of **16a**

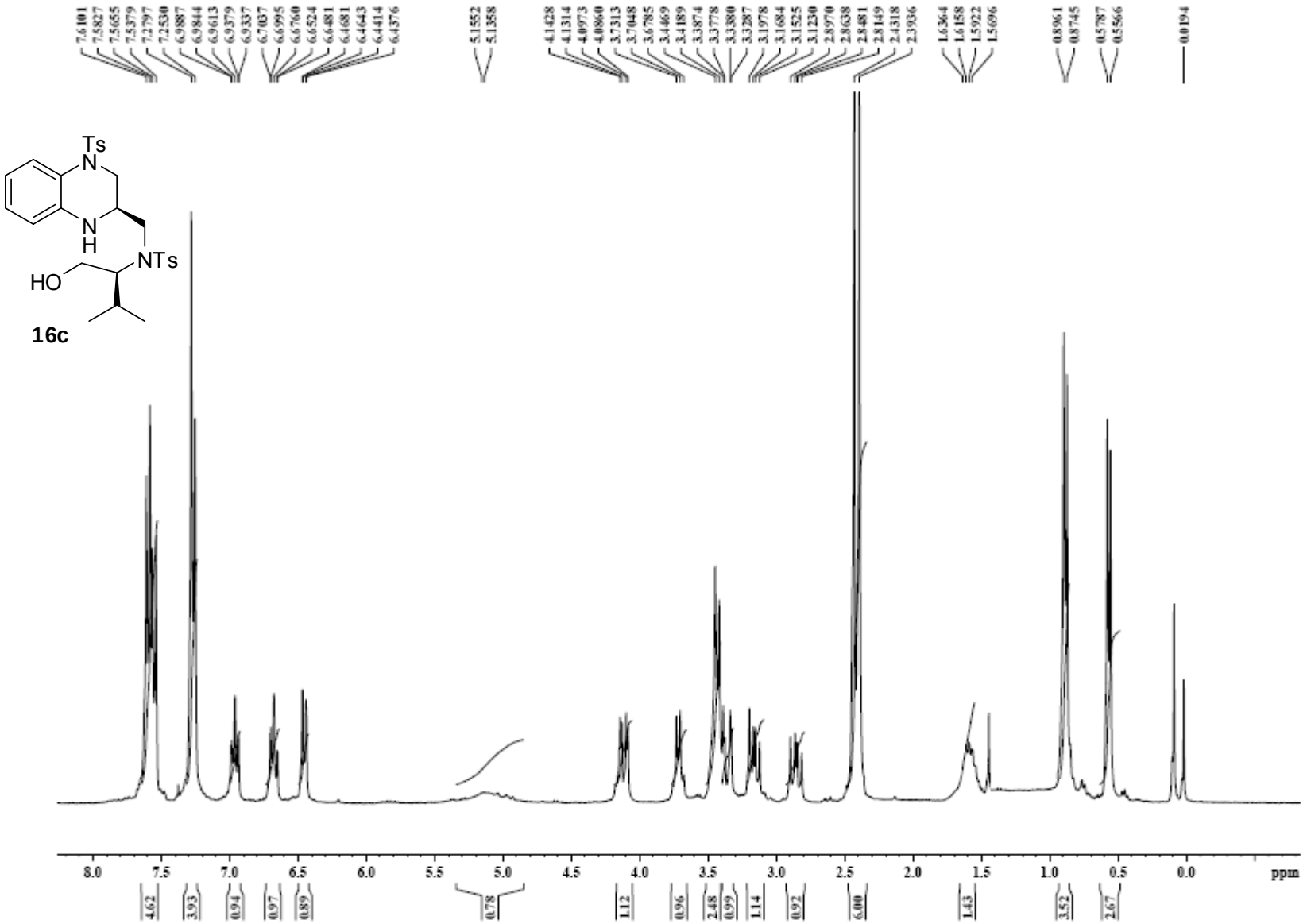


FigureS-52: ^{1}H spectrum(300 MHz, $CDCl_3$) of **16b**

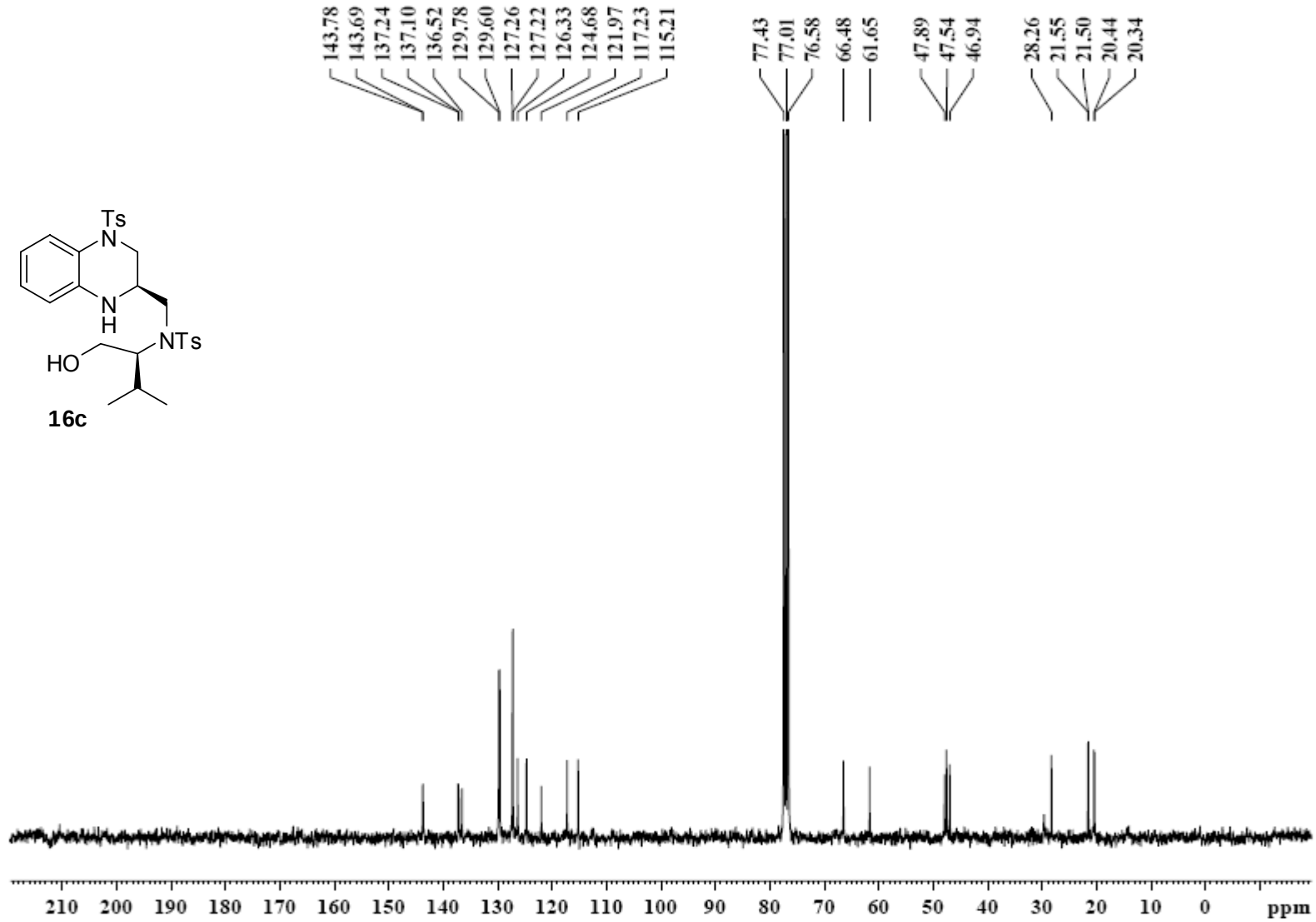


16b

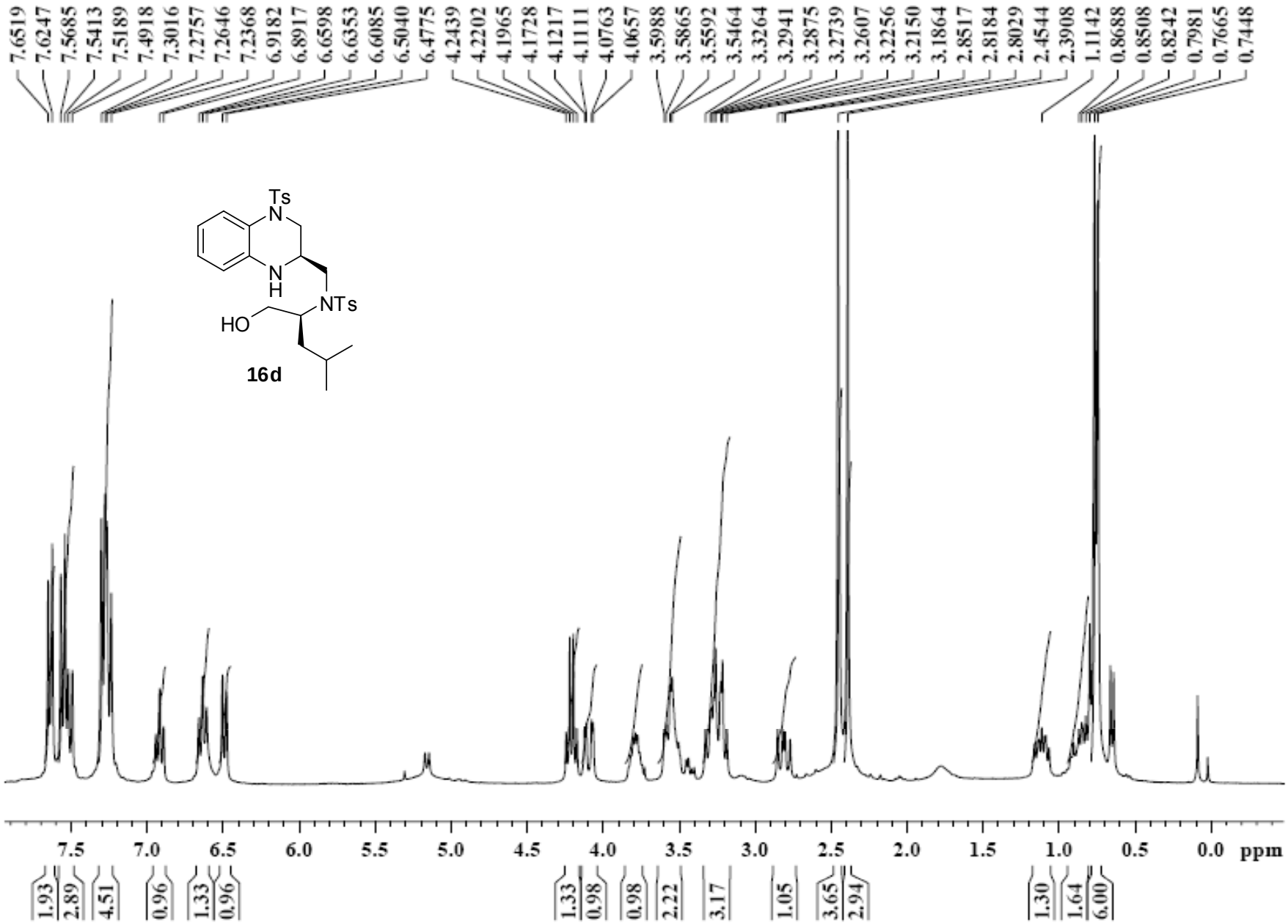
FigureS-53: ^{13}C spectrum (75MHz, $CDCl_3$) **16b**



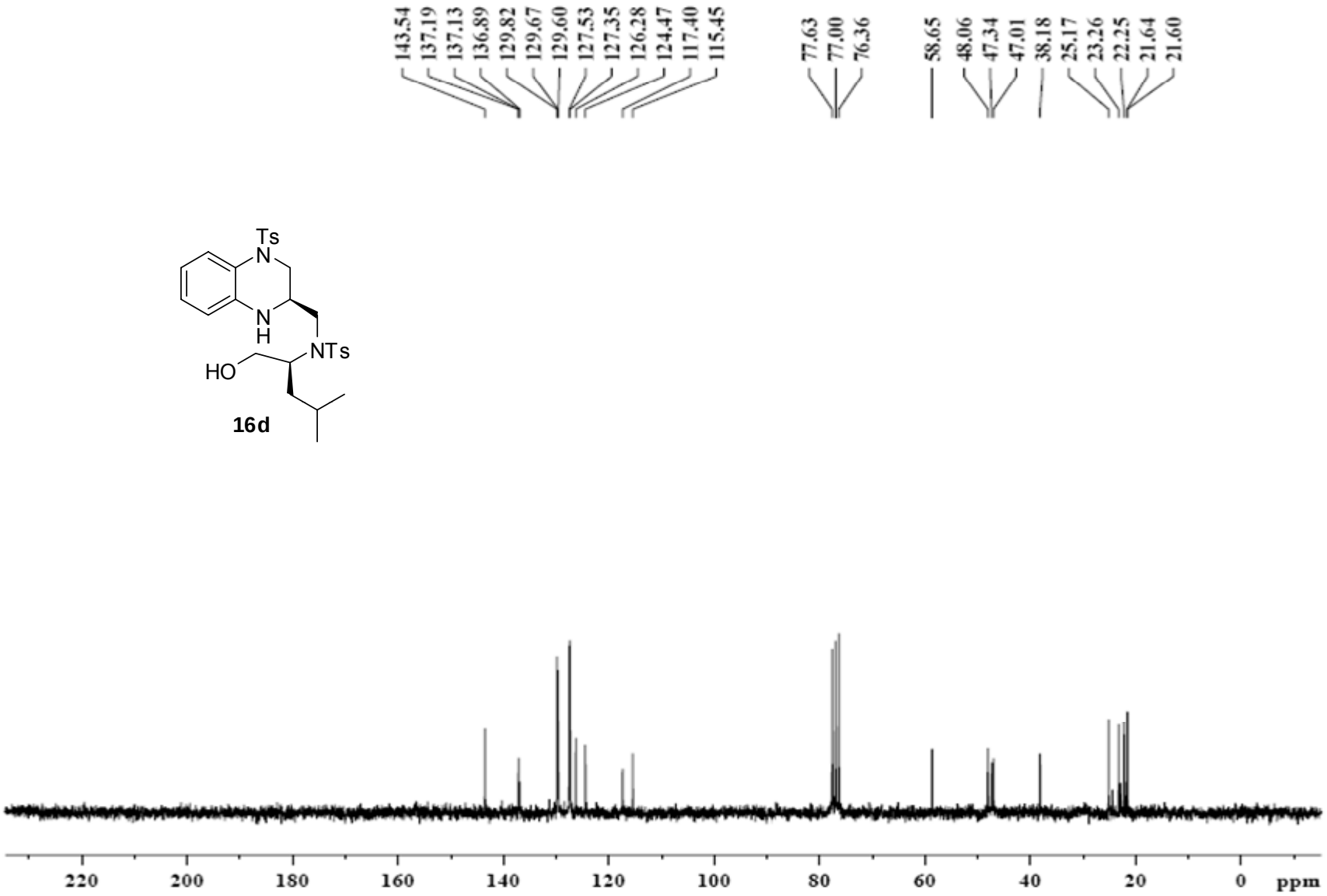
FigureS-54: ^{1}H spectrum(300 MHz, $CDCl_3$) of **16c**



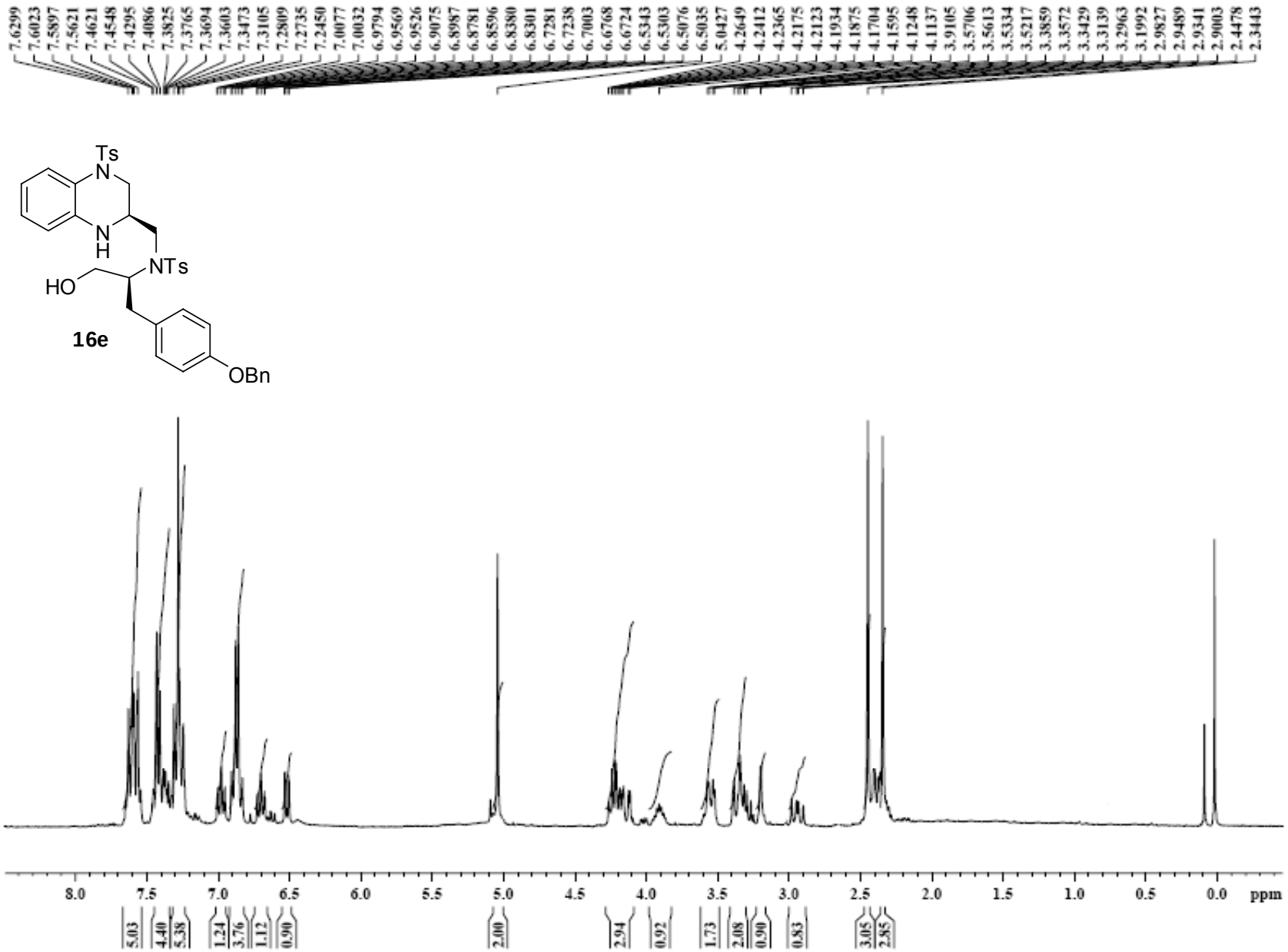
FigureS-55: ^{13}C spectrum (75MHz, $CDCl_3$) **16c**



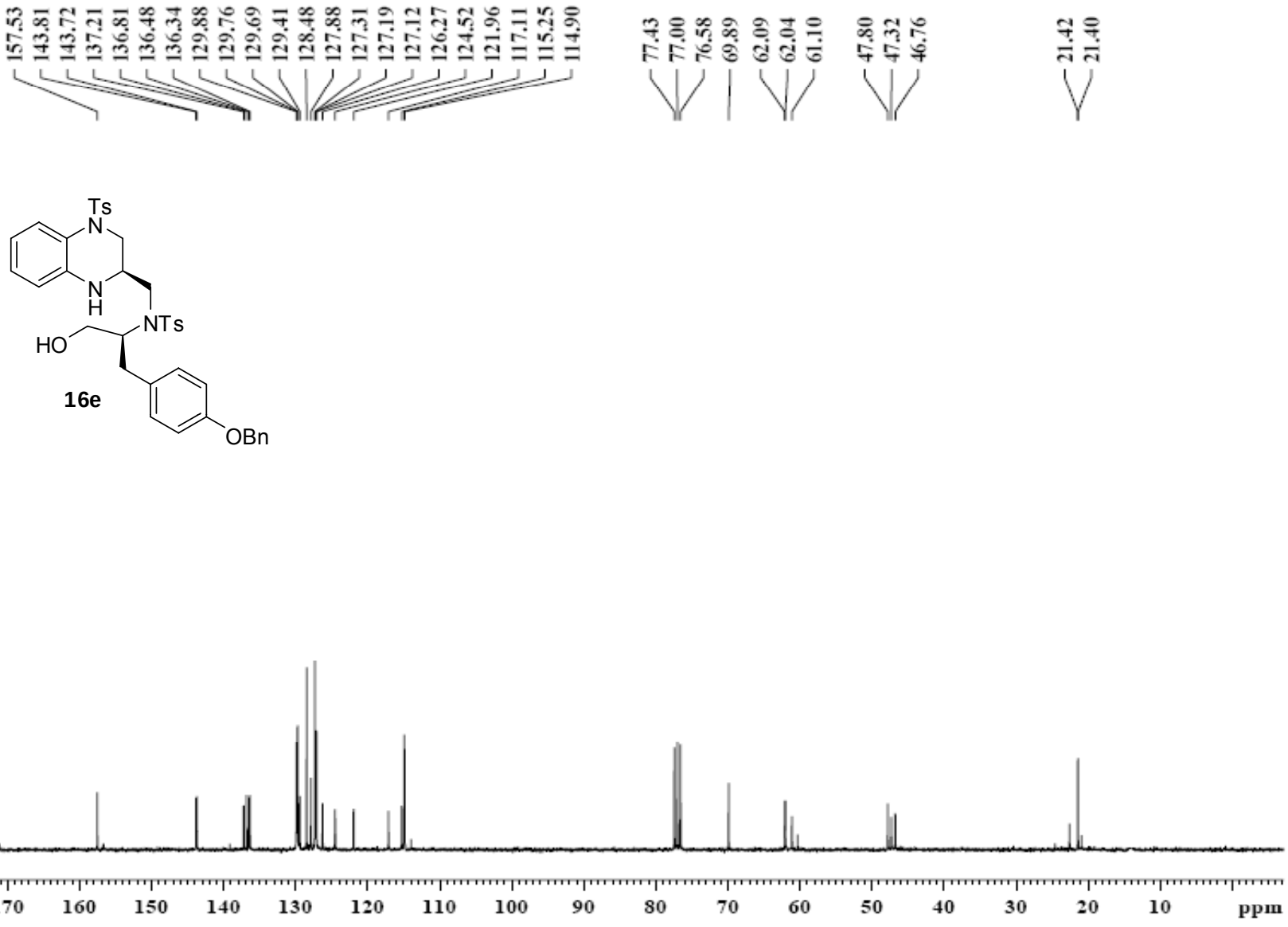
FigureS-56: ^{1}H spectrum(300 MHz, $CDCl_3$) of **16d**



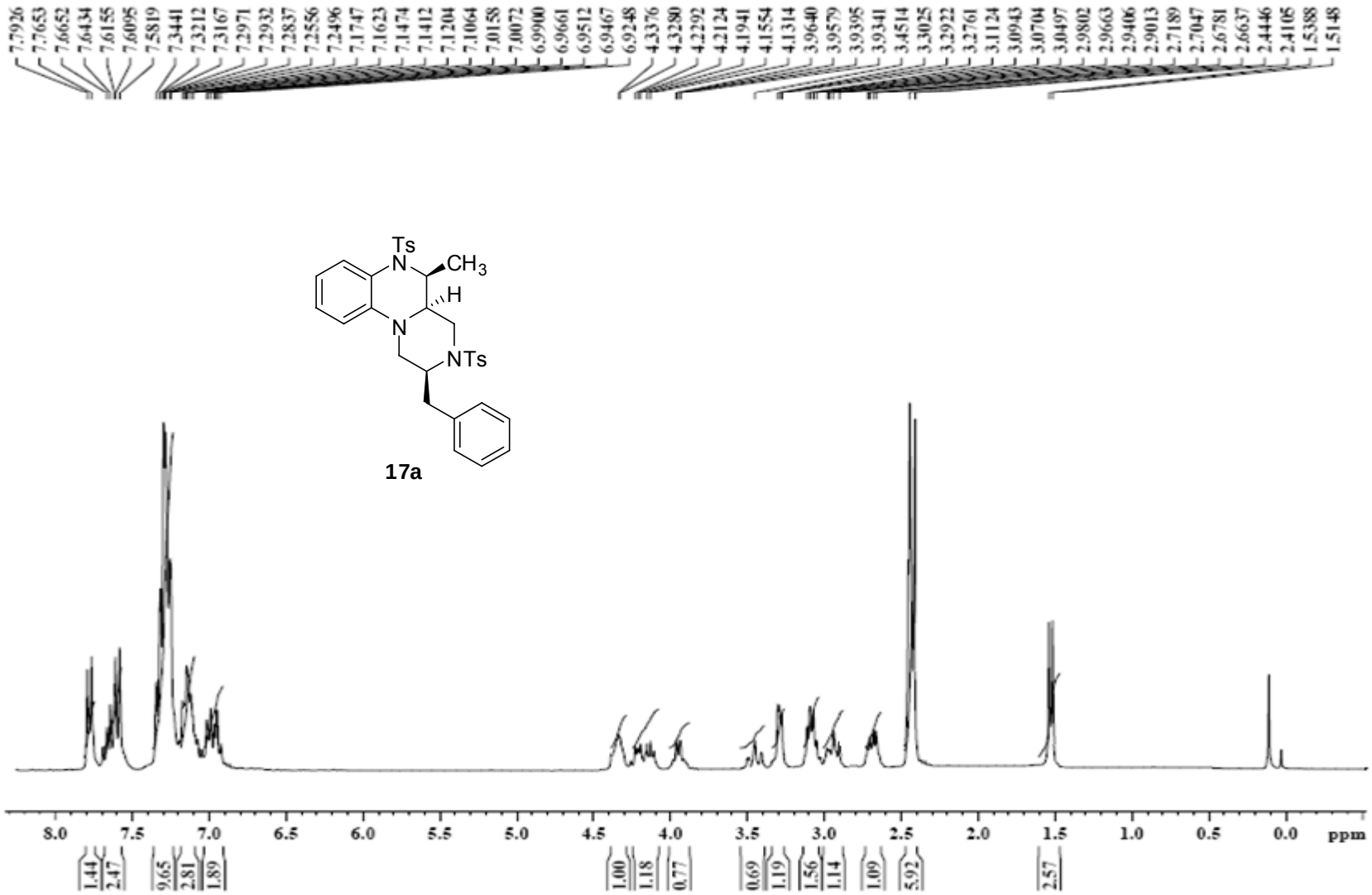
FigureS-57: ^{13}C spectrum (75MHz, $CDCl_3$) **16d**



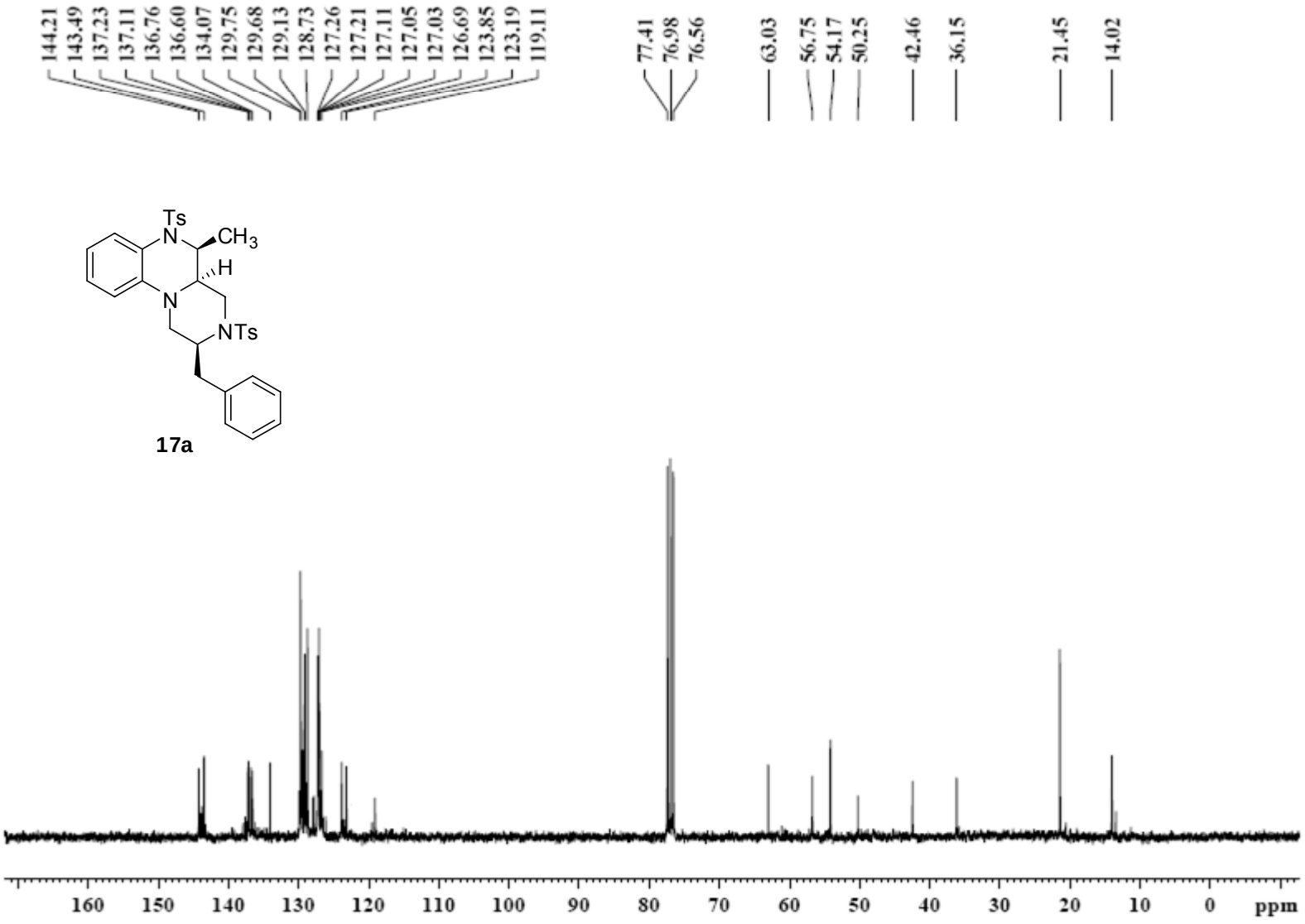
FigureS-58: ^{1}H spectrum(300 MHz, $CDCl_3$) of **16e**



FigureS-59: ^{13}C spectrum (75MHz, $CDCl_3$) **16e**

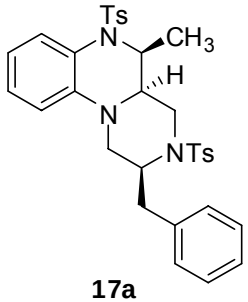


FigureS-60: ^{1}H spectrum(300 MHz, $CDCl_3$) of **17a**

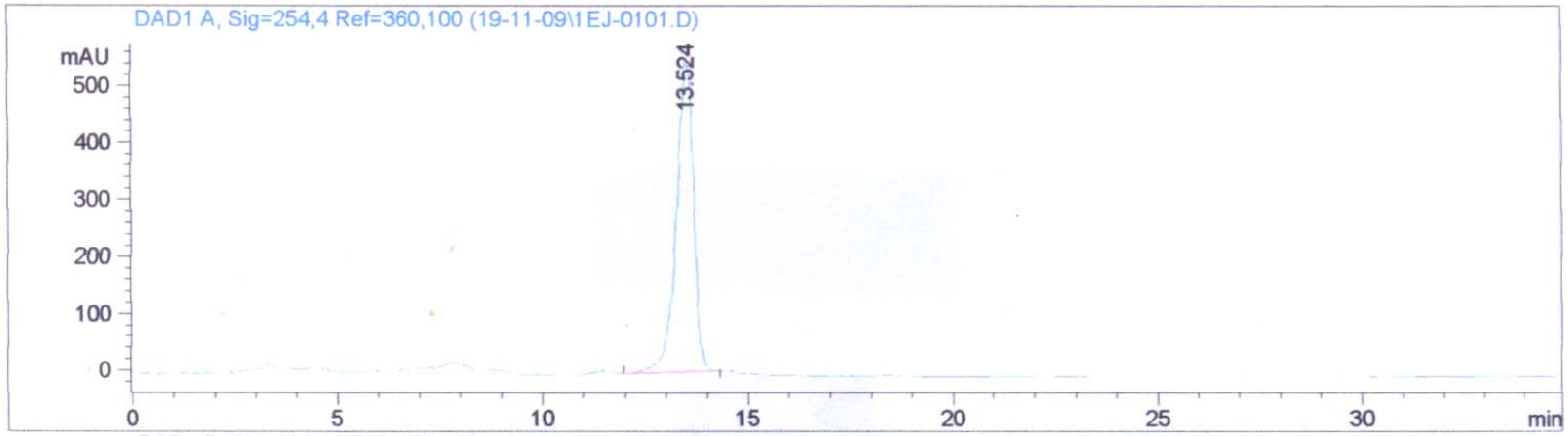


17a

FigureS-61: ^{13}C spectrum (75MHz, $CDCl_3$) **17a**

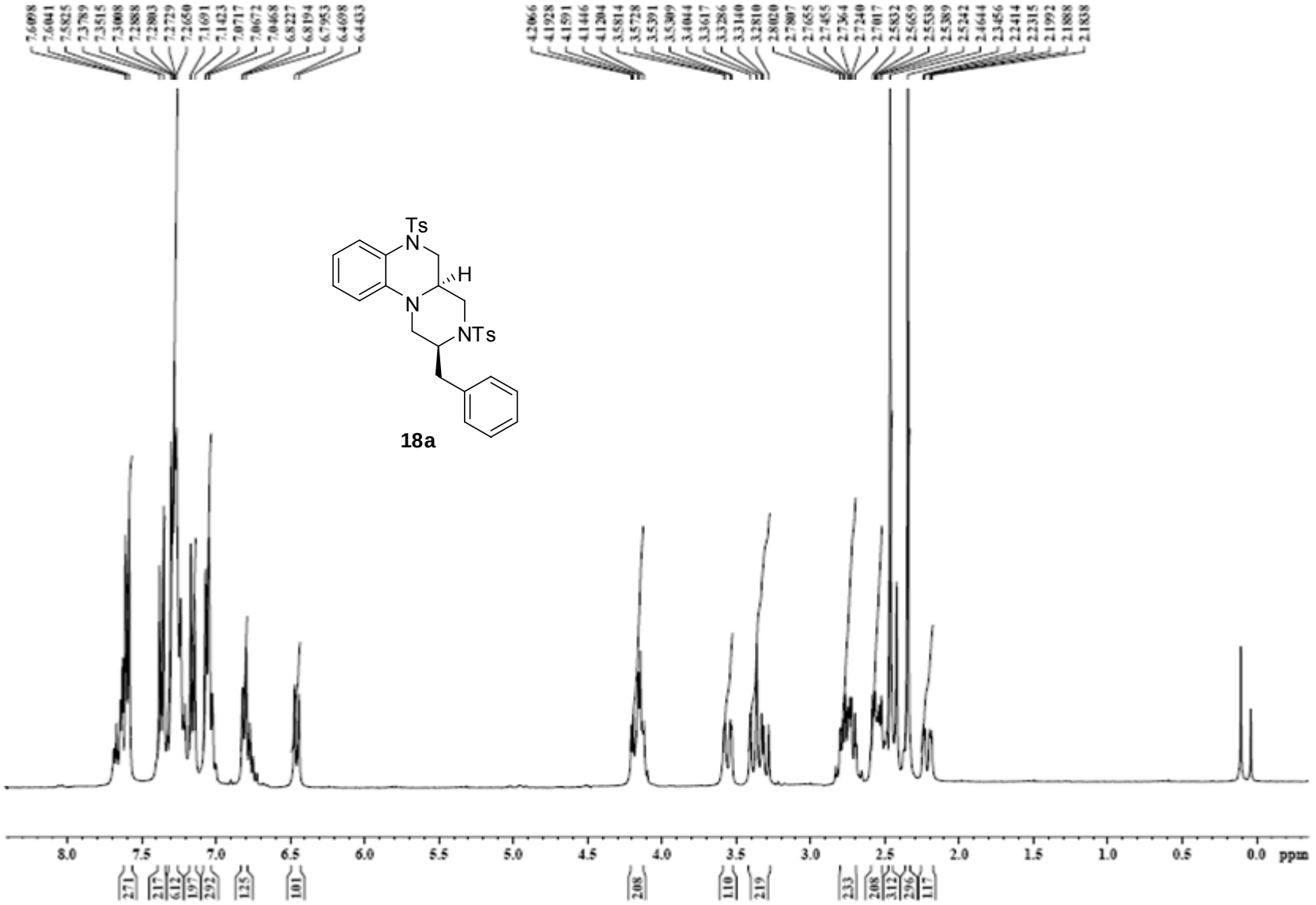


17a

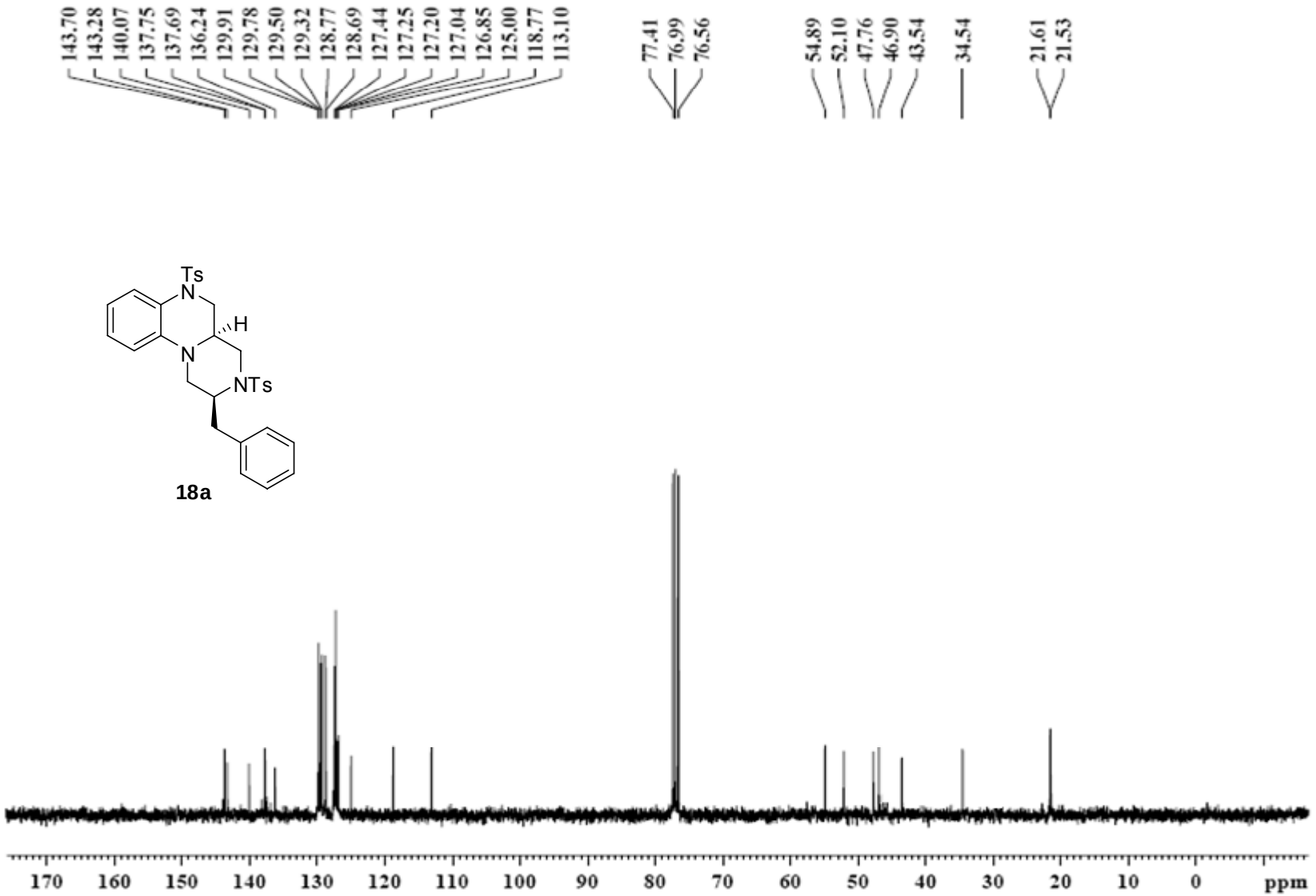


Retention time (min)

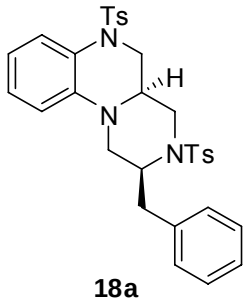
FigureS-62: HPLC graph for **17a**



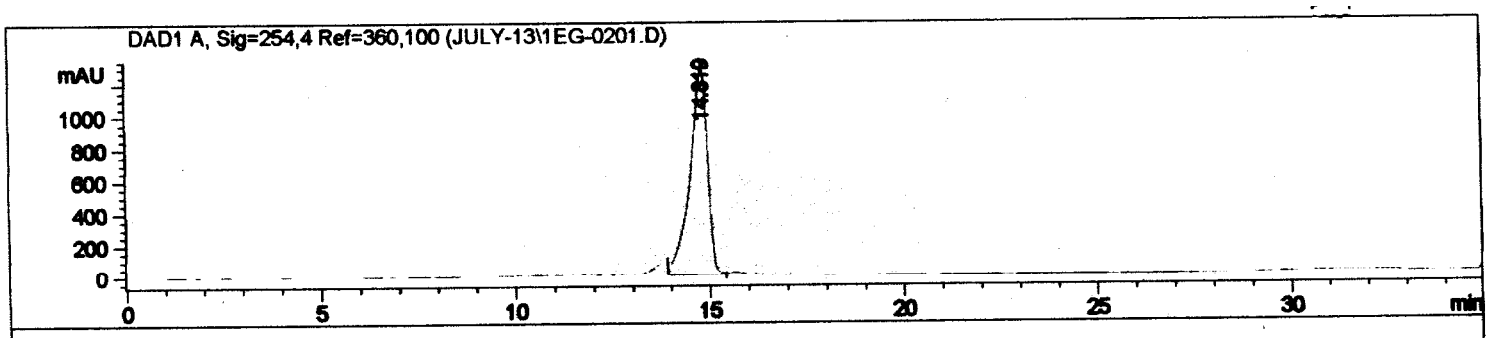
FigureS-63: ^{1}H spectrum(300 MHz, $CDCl_3$) of **18a**



FigureS-64: ^{13}C spectrum (75MHz, $CDCl_3$) **18a**

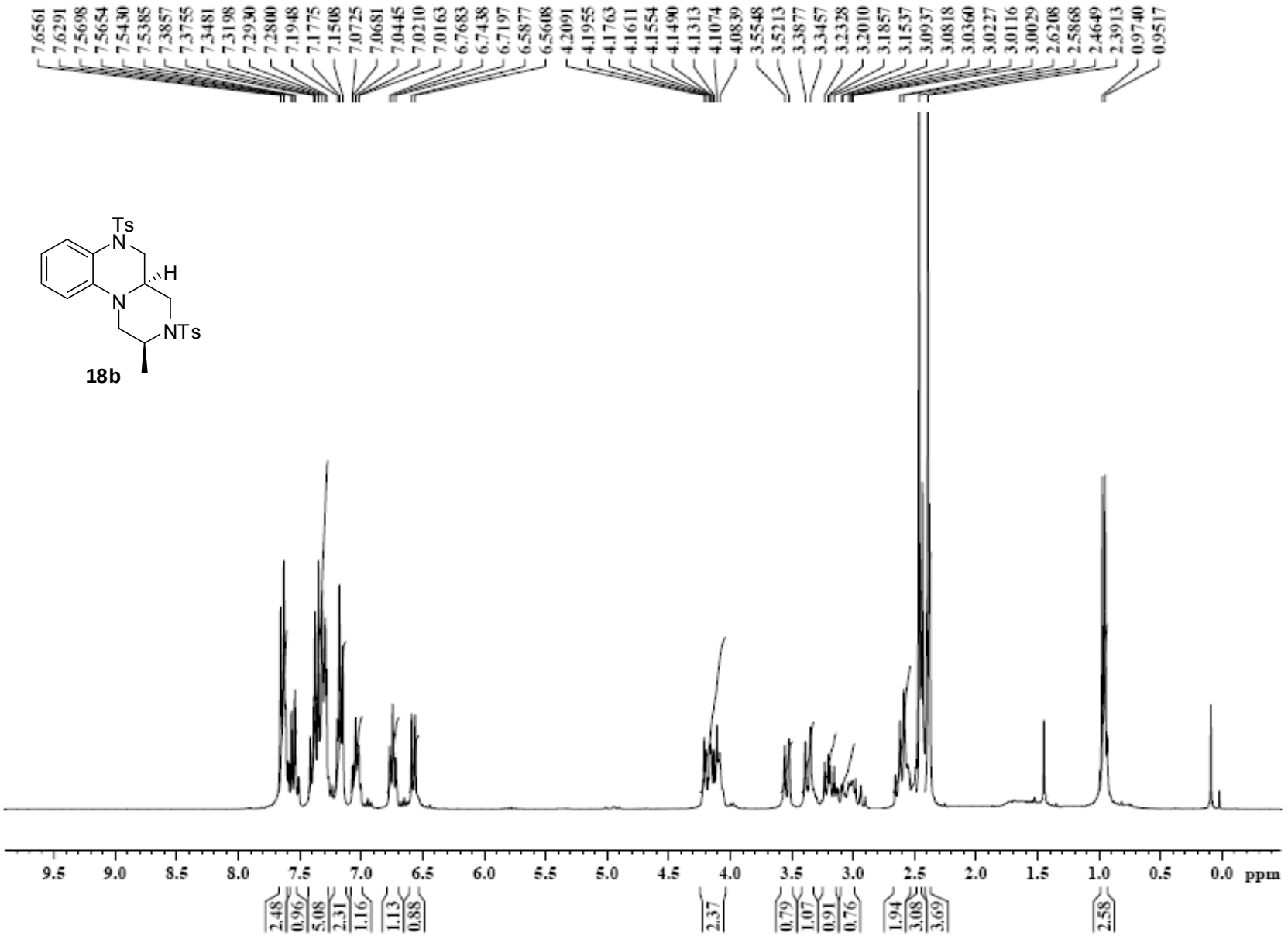


18a

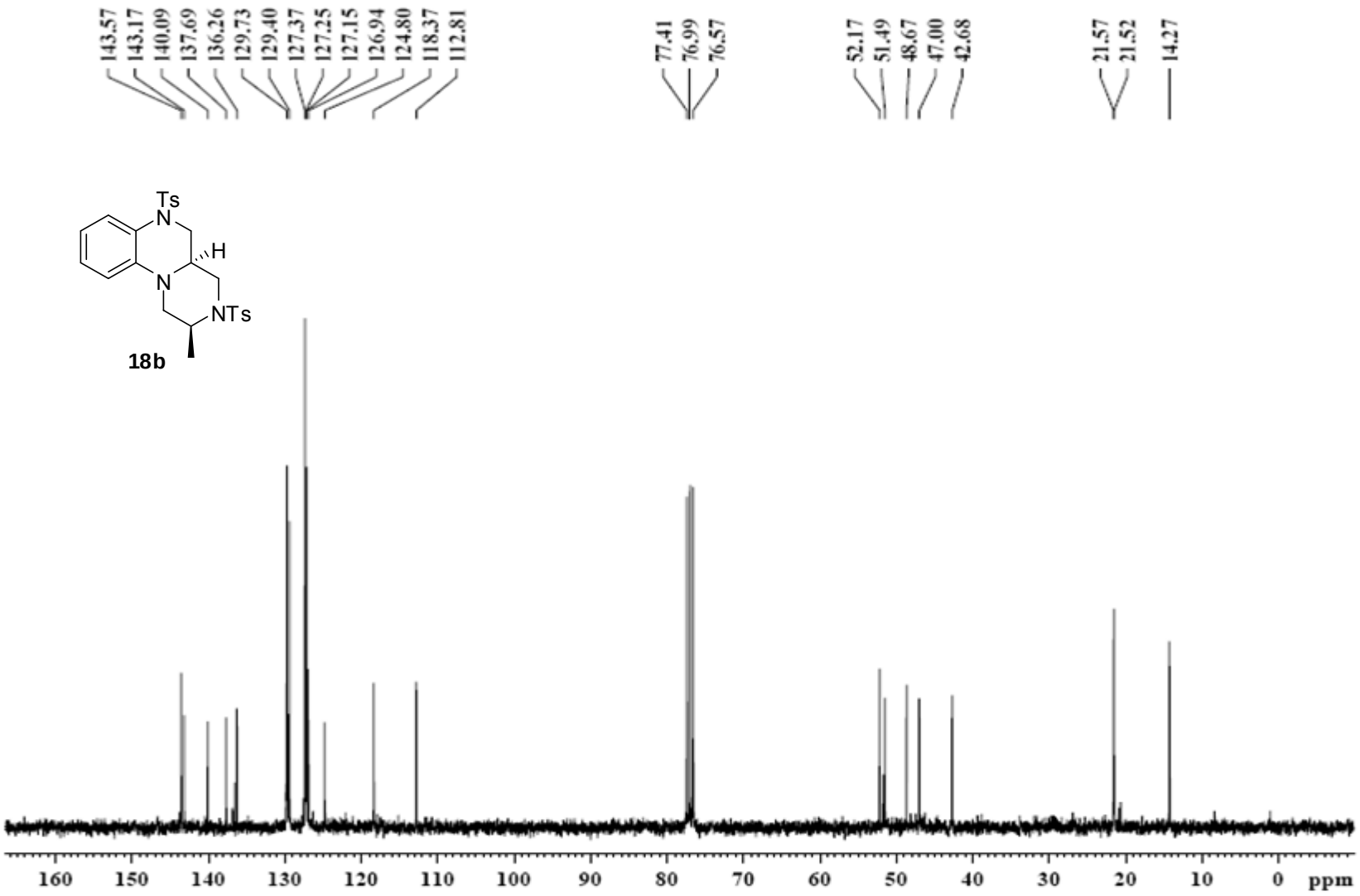


Retention time (min)

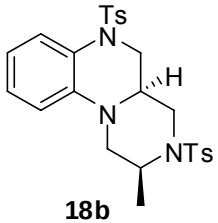
FigureS-65: HPLC graph for **18a**



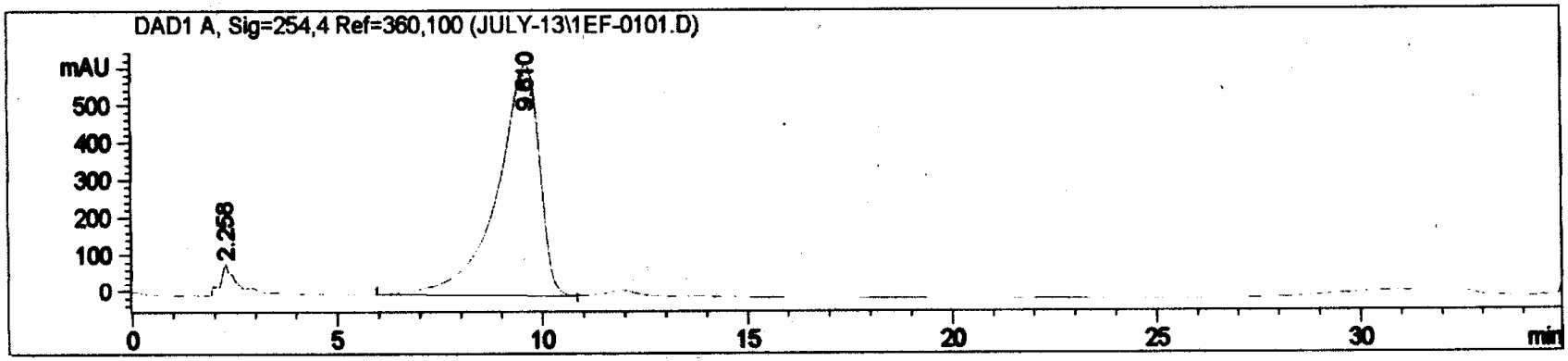
FigureS-66: ^{1}H spectrum(300 MHz, $CDCl_3$) of **18b**



FigureS-67: ^{13}C spectrum (75MHz, $CDCl_3$) **18b**

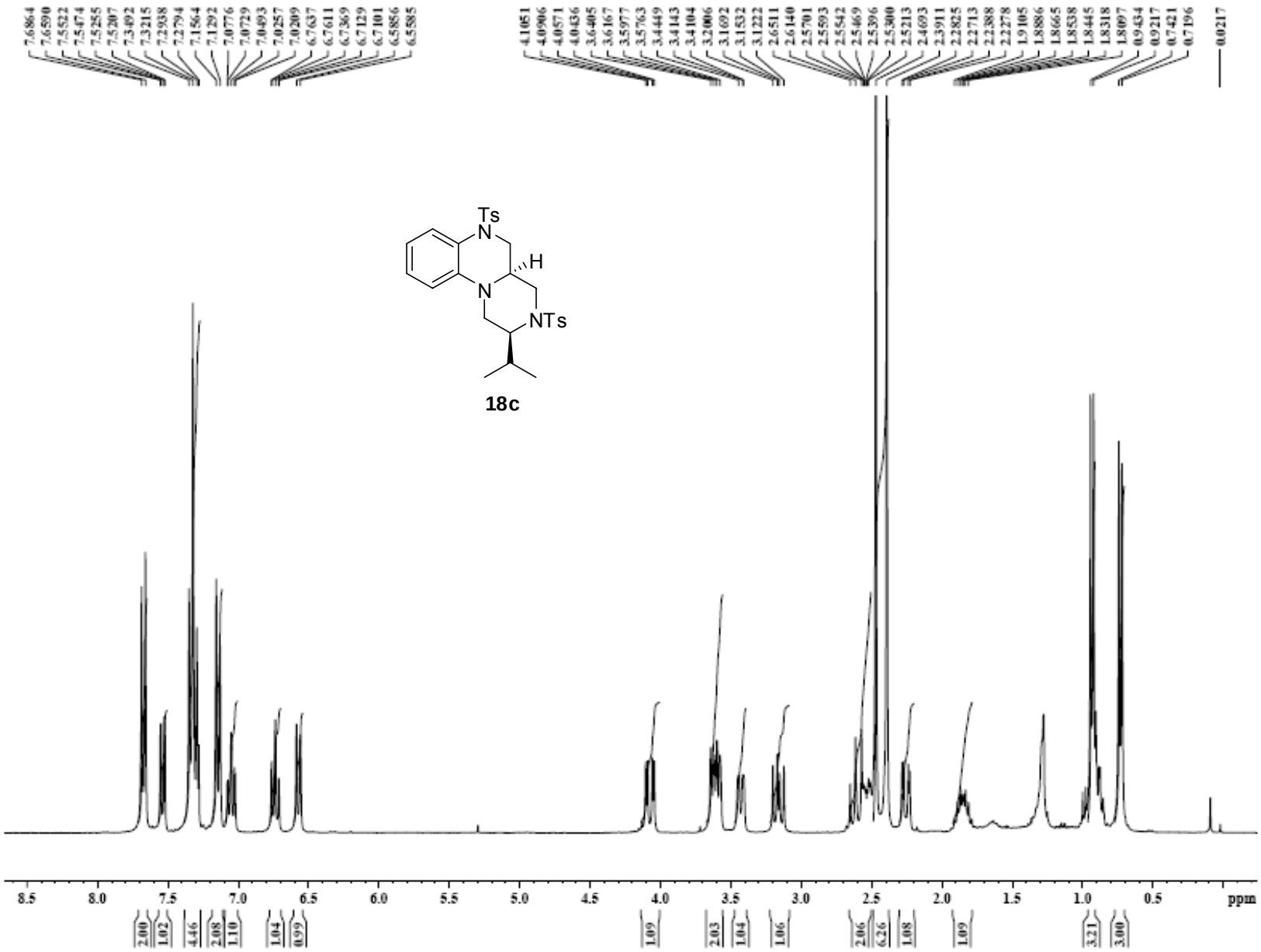


18b

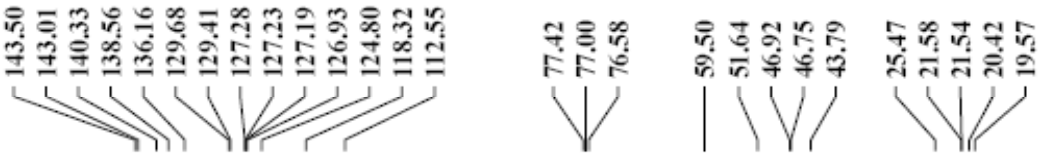


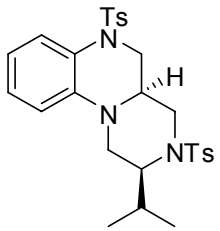
Retention time (min)

FigureS-68: HPLC graph for **18b**

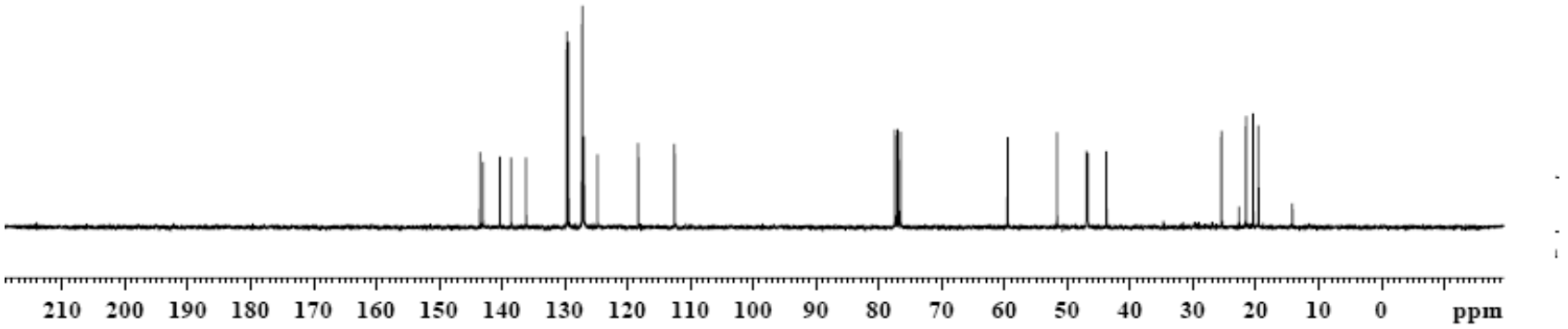


FigureS-69: ^{1}H spectrum(300 MHz, $CDCl_3$) of **18c**

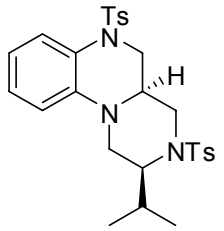




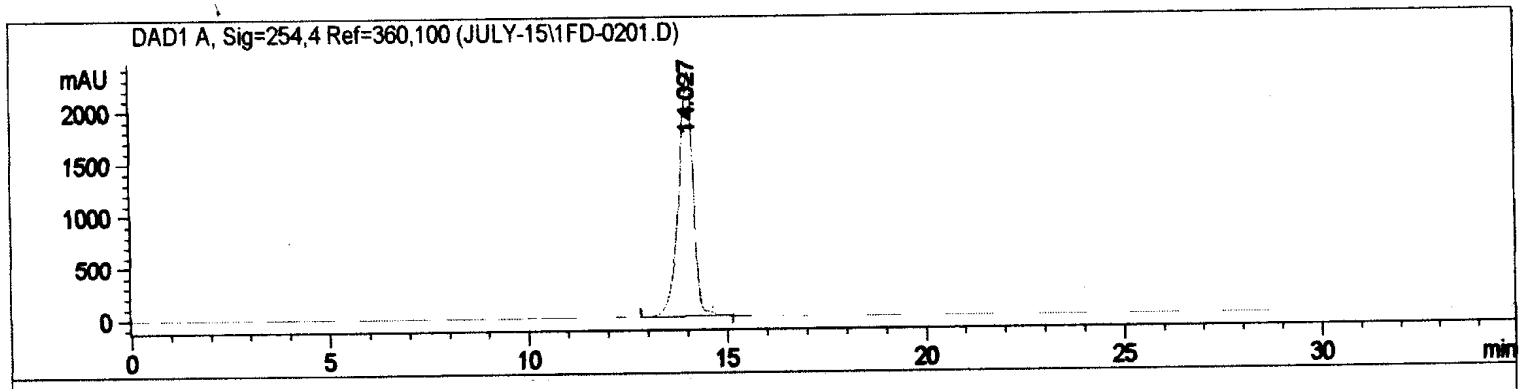
18c



FigureS-70: ^{13}C spectrum (75MHz, $CDCl_3$) **18c**

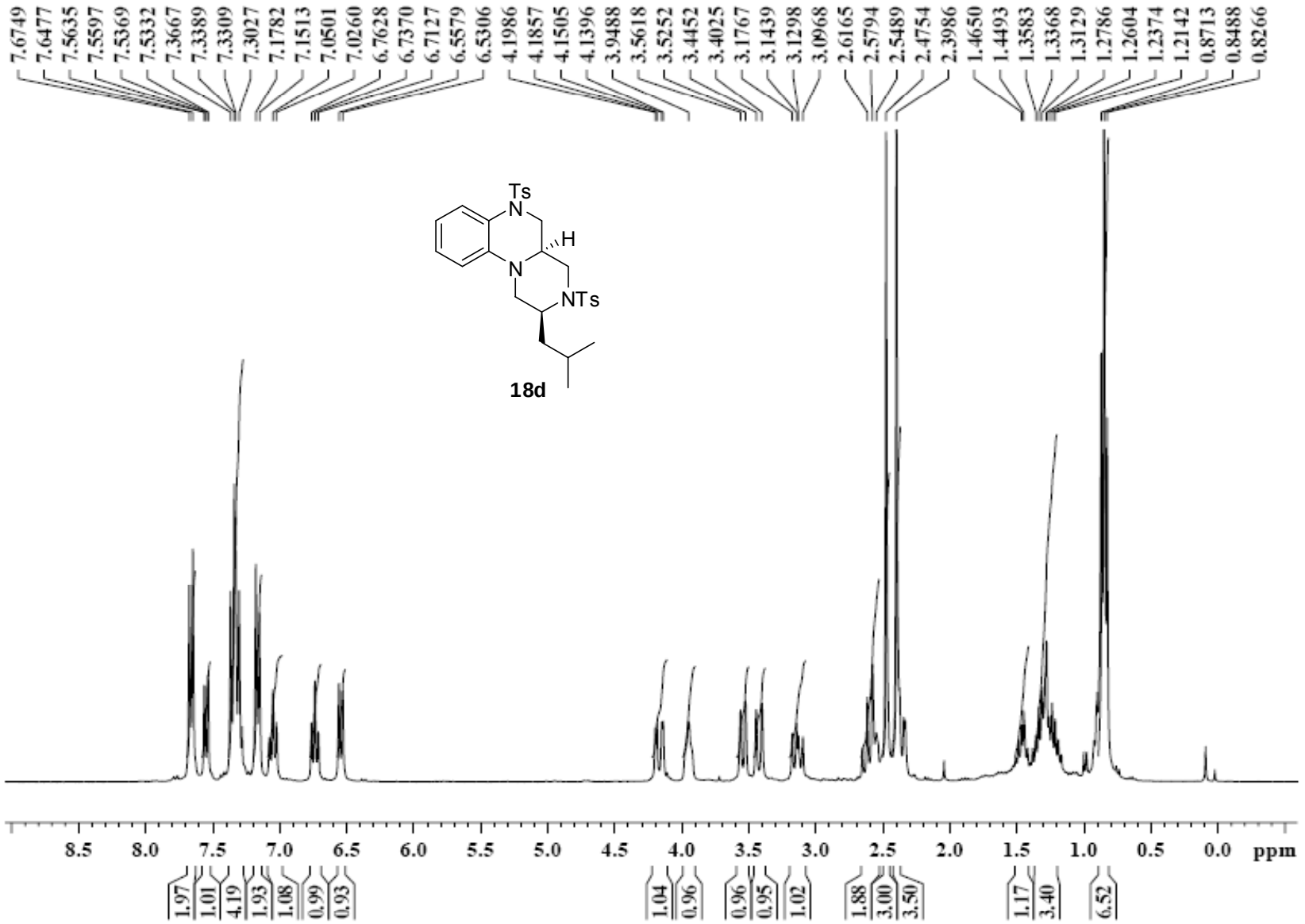


18c

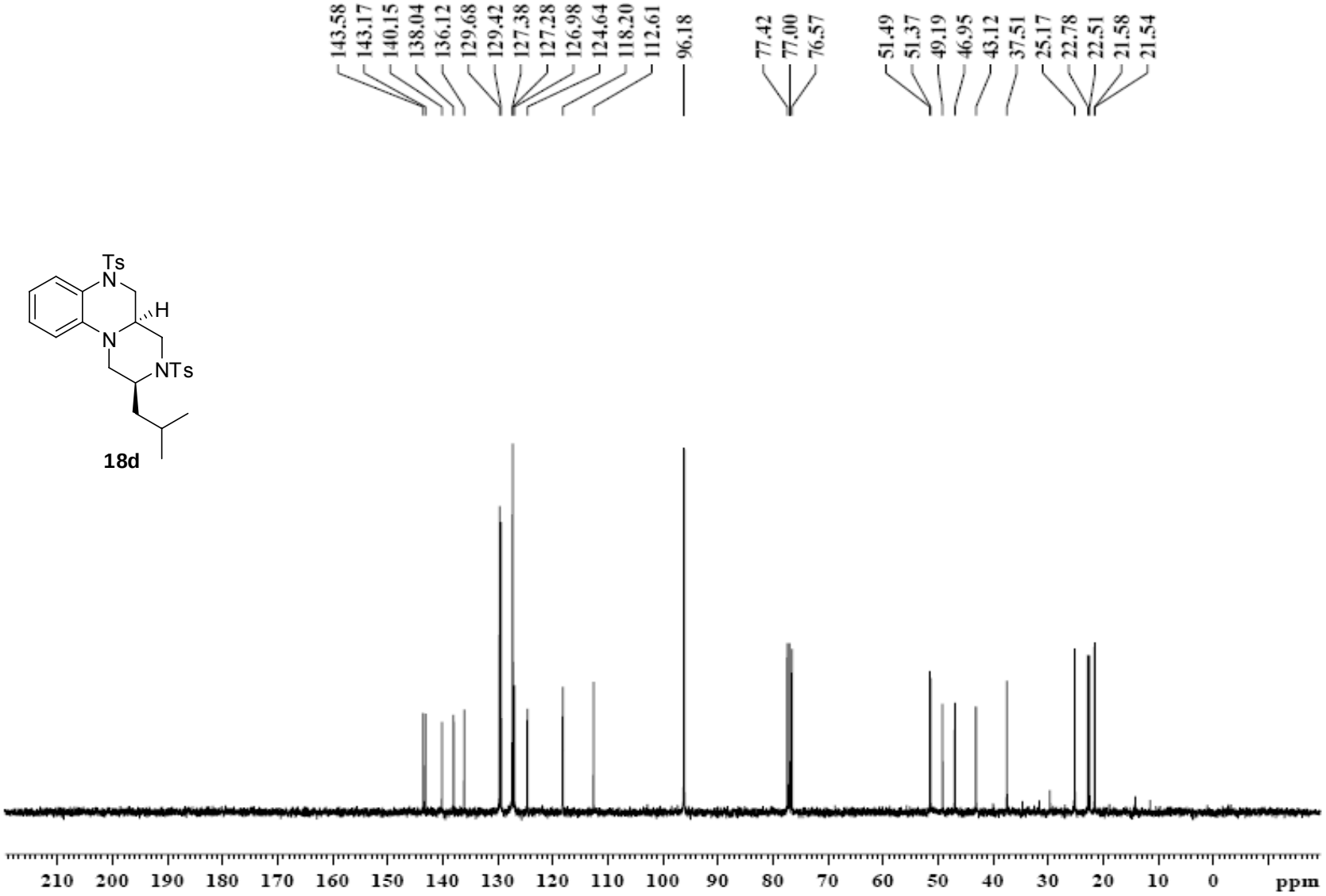


Retention time (min)

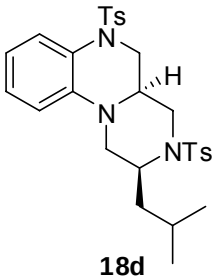
FigureS-71: HPLC graph for **18c**



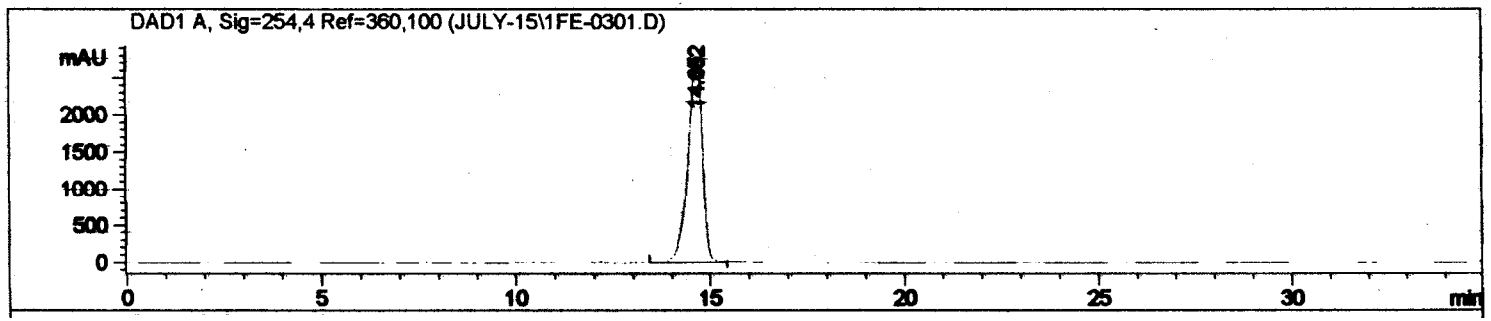
FigureS-72: ^{1}H spectrum(300 MHz, $CDCl_3$ + CCl_4) of **18d**



FigureS-73: ^{13}C spectrum (75MHz, $CDCl_3$ + CCl_4) **18d**

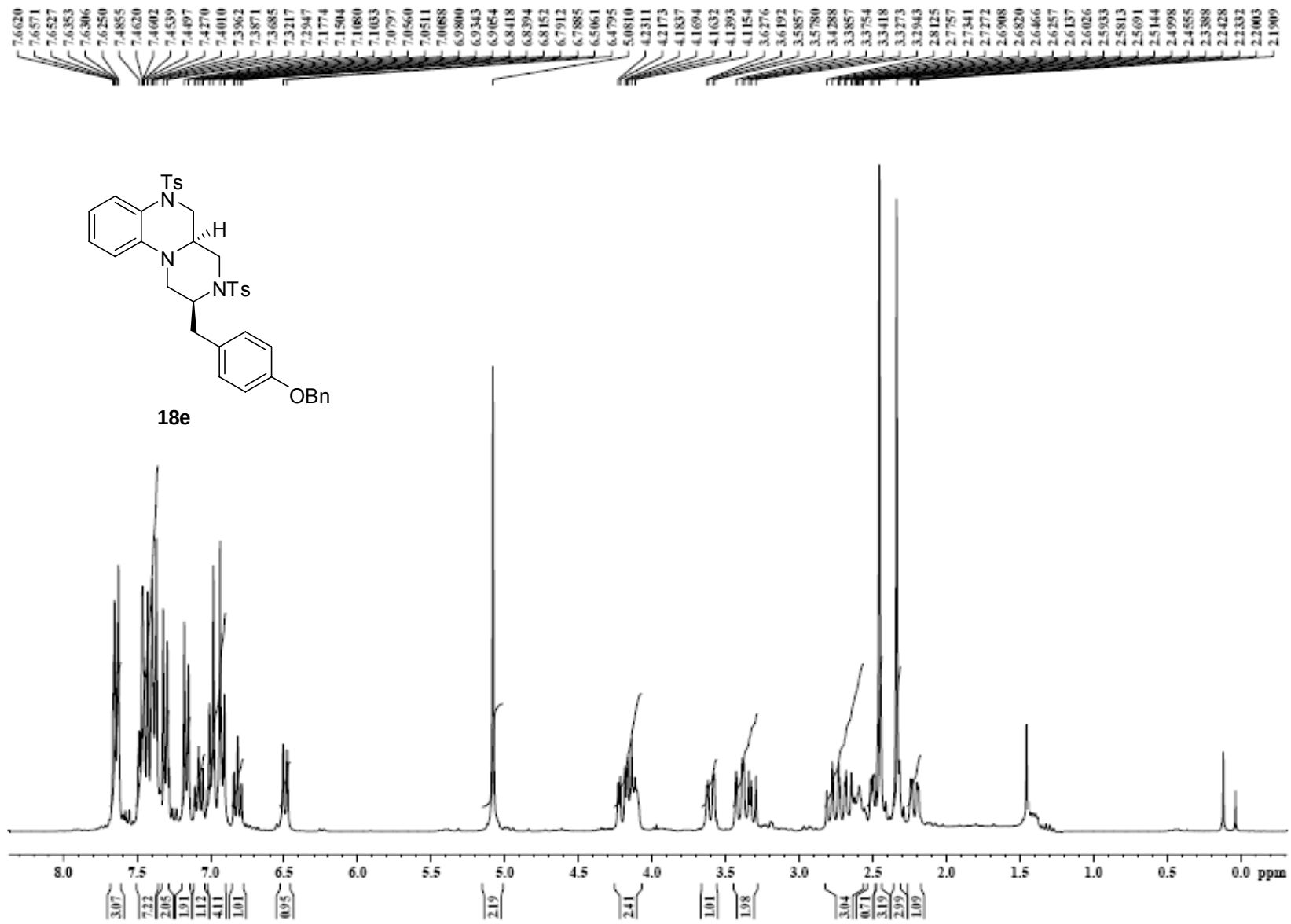


18d

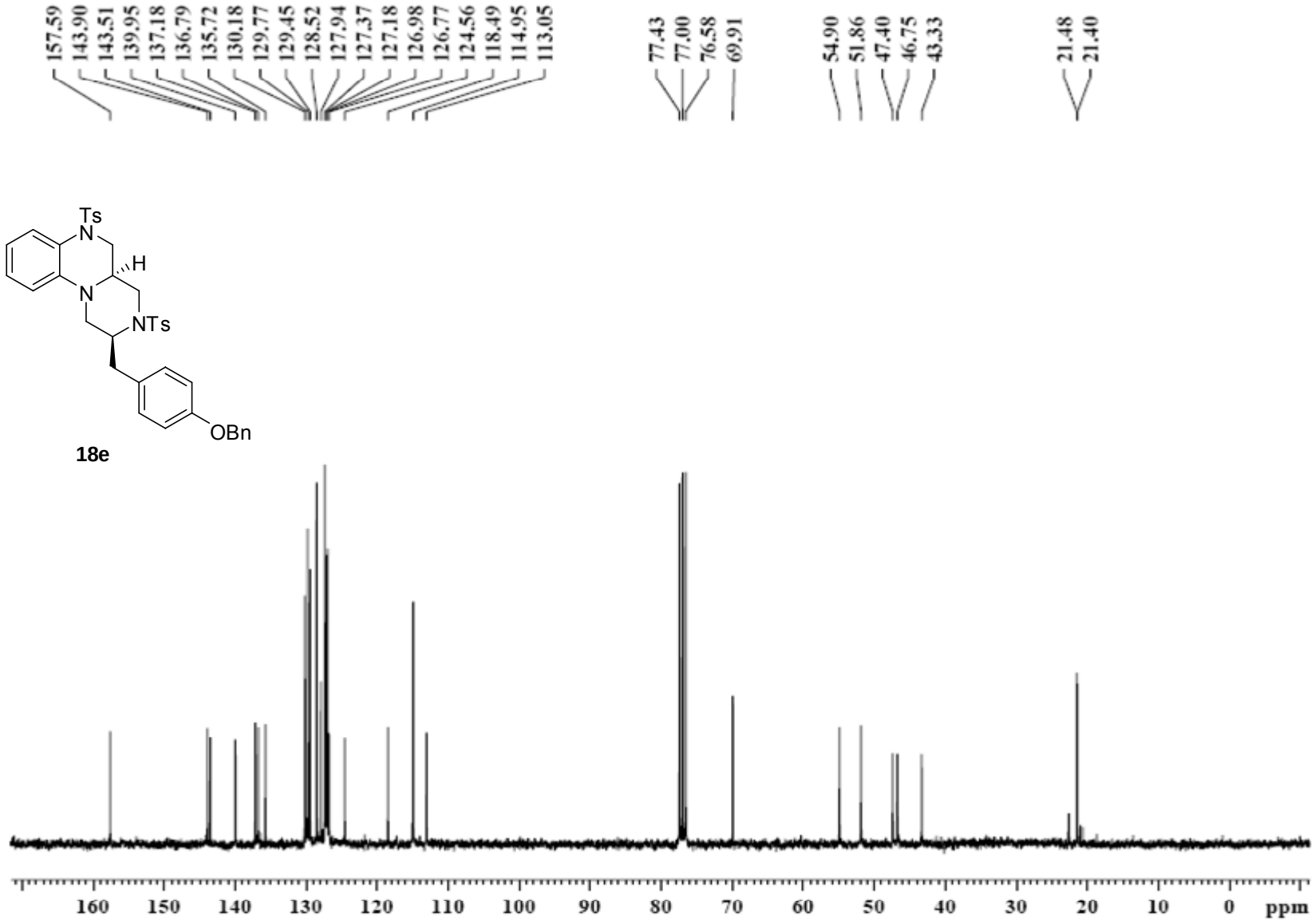


Retention time (min)

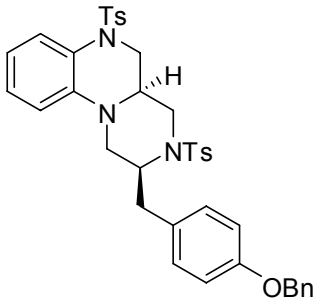
FigureS-74: HPLC graph for **18d**



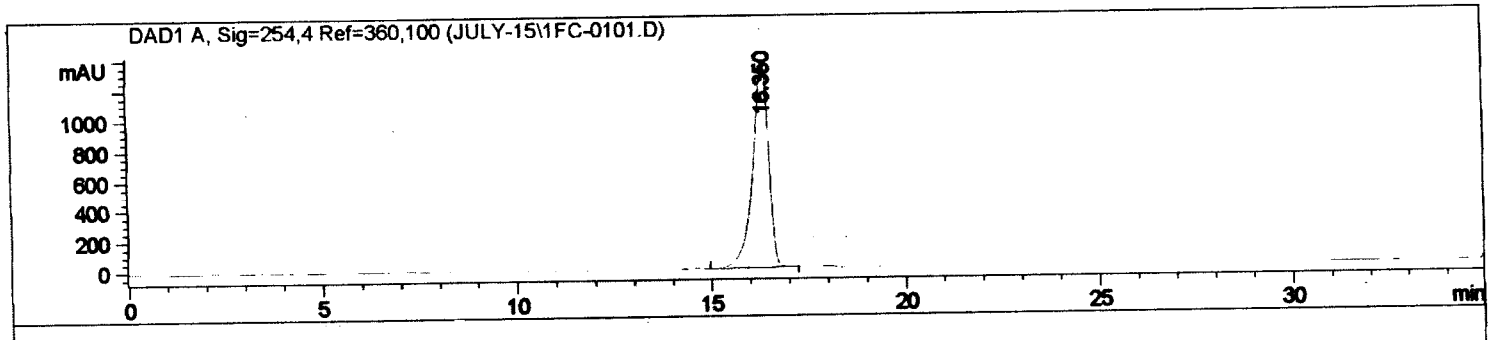
FigureS-75: ^{1}H spectrum(300 MHz, $CDCl_3$) of **18e**



FigureS-76: ^{13}C spectrum (75MHz, $CDCl_3$) **18e**

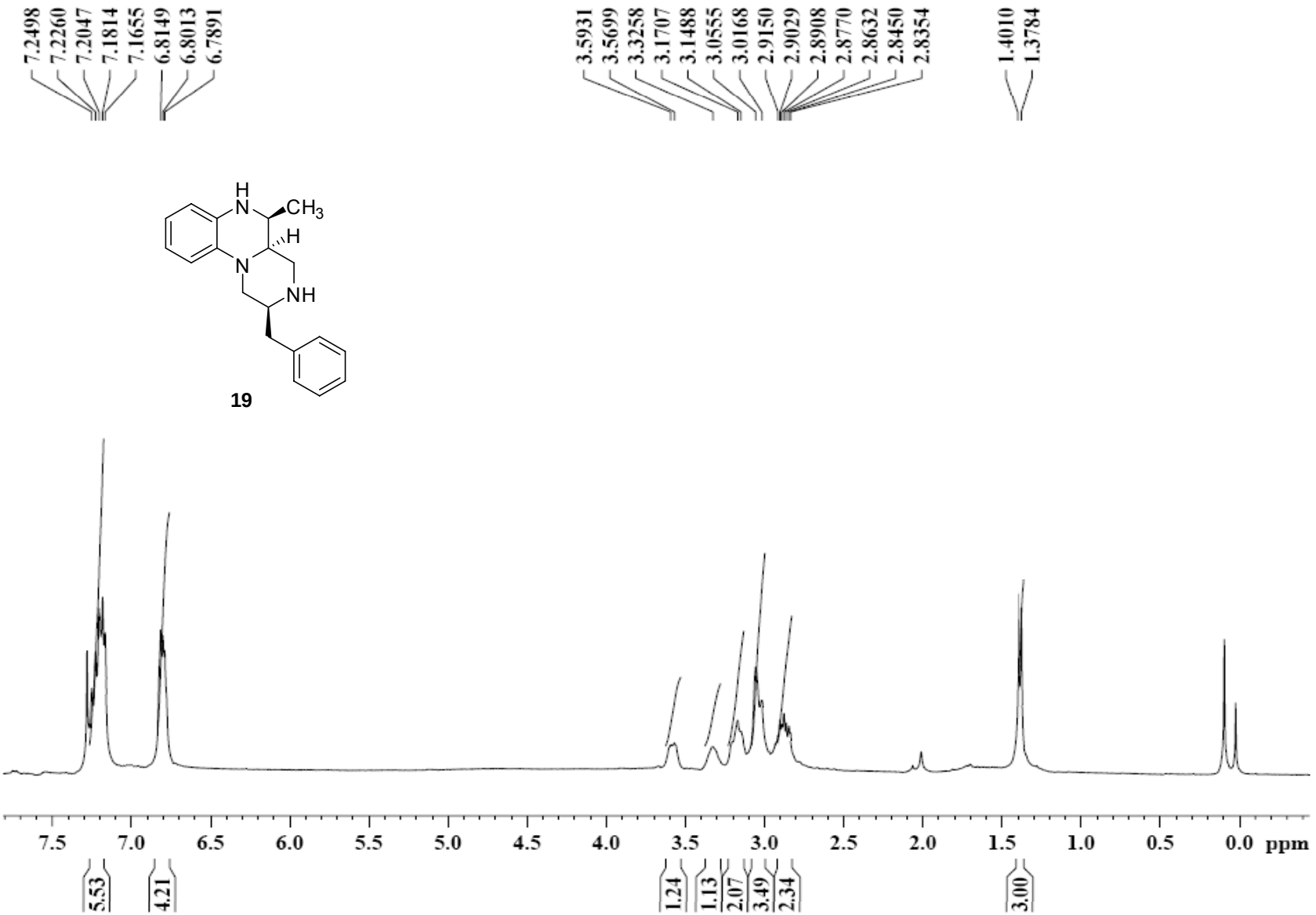


18e

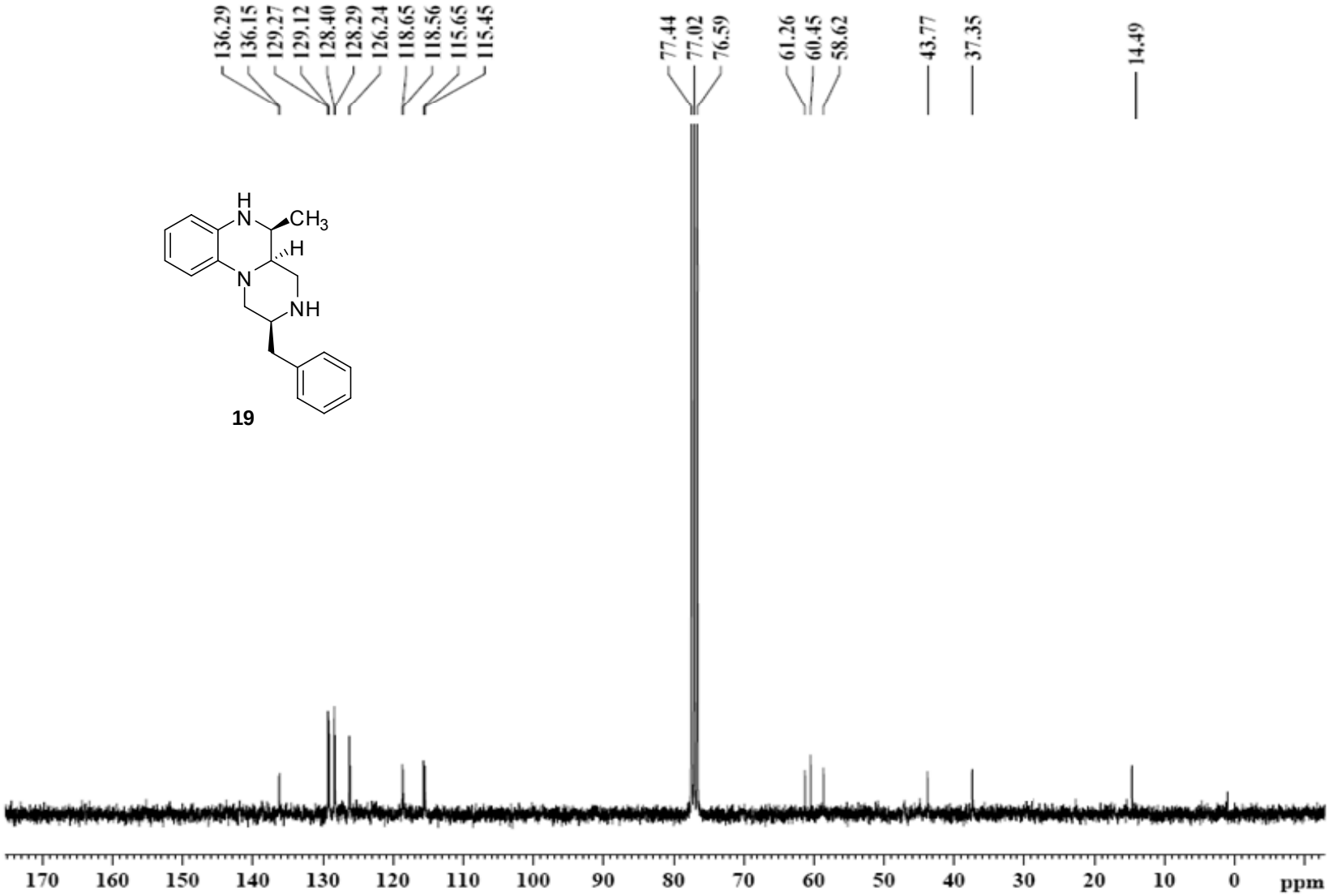


Retention time (min)

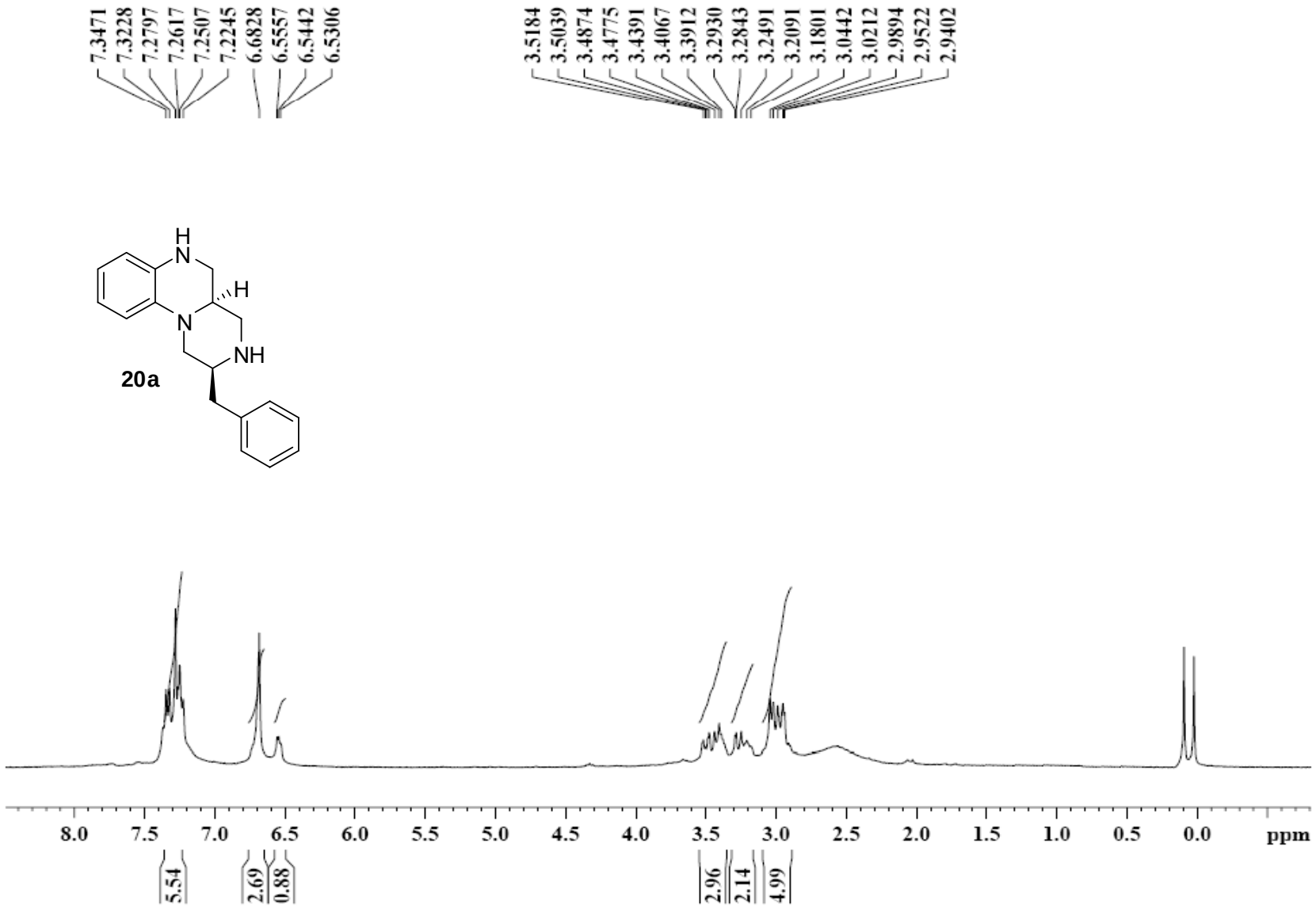
FigureS-77: HPLC graph for **18e**



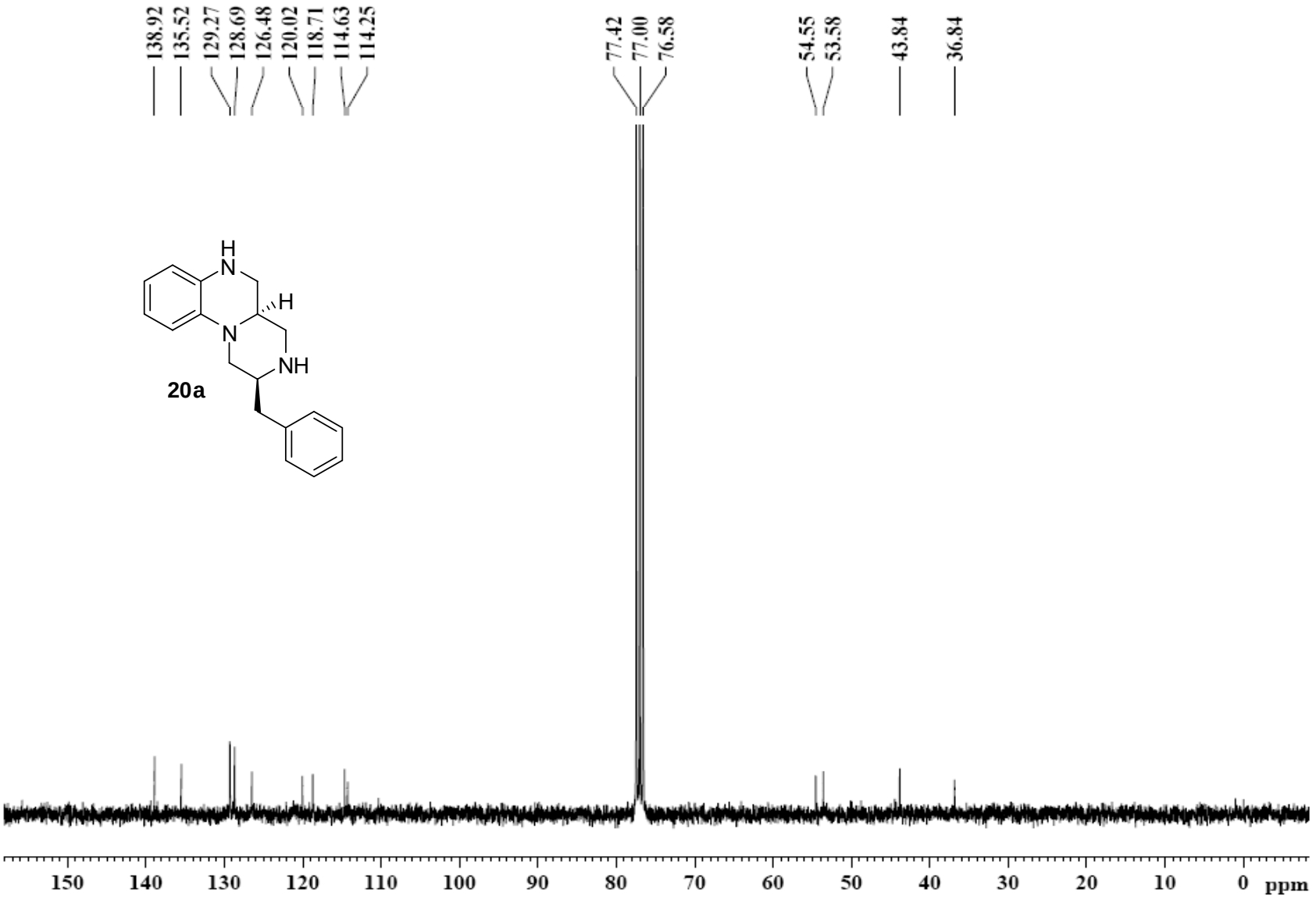
FigureS-78: ^{1}H spectrum(300 MHz, $CDCl_3$) of **19**



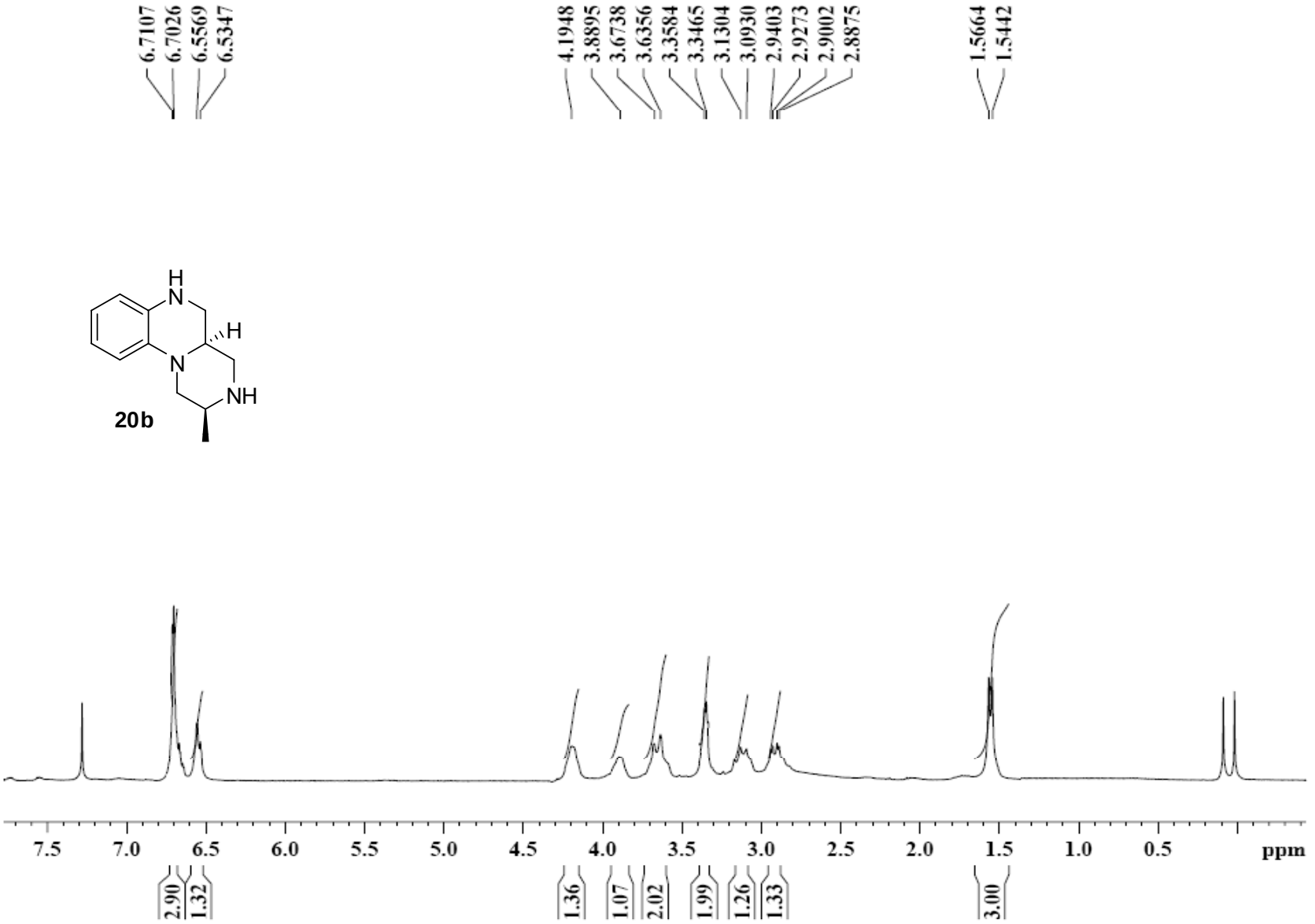
FigureS-79: ^{13}C spectrum (75MHz, $CDCl_3$)**19**



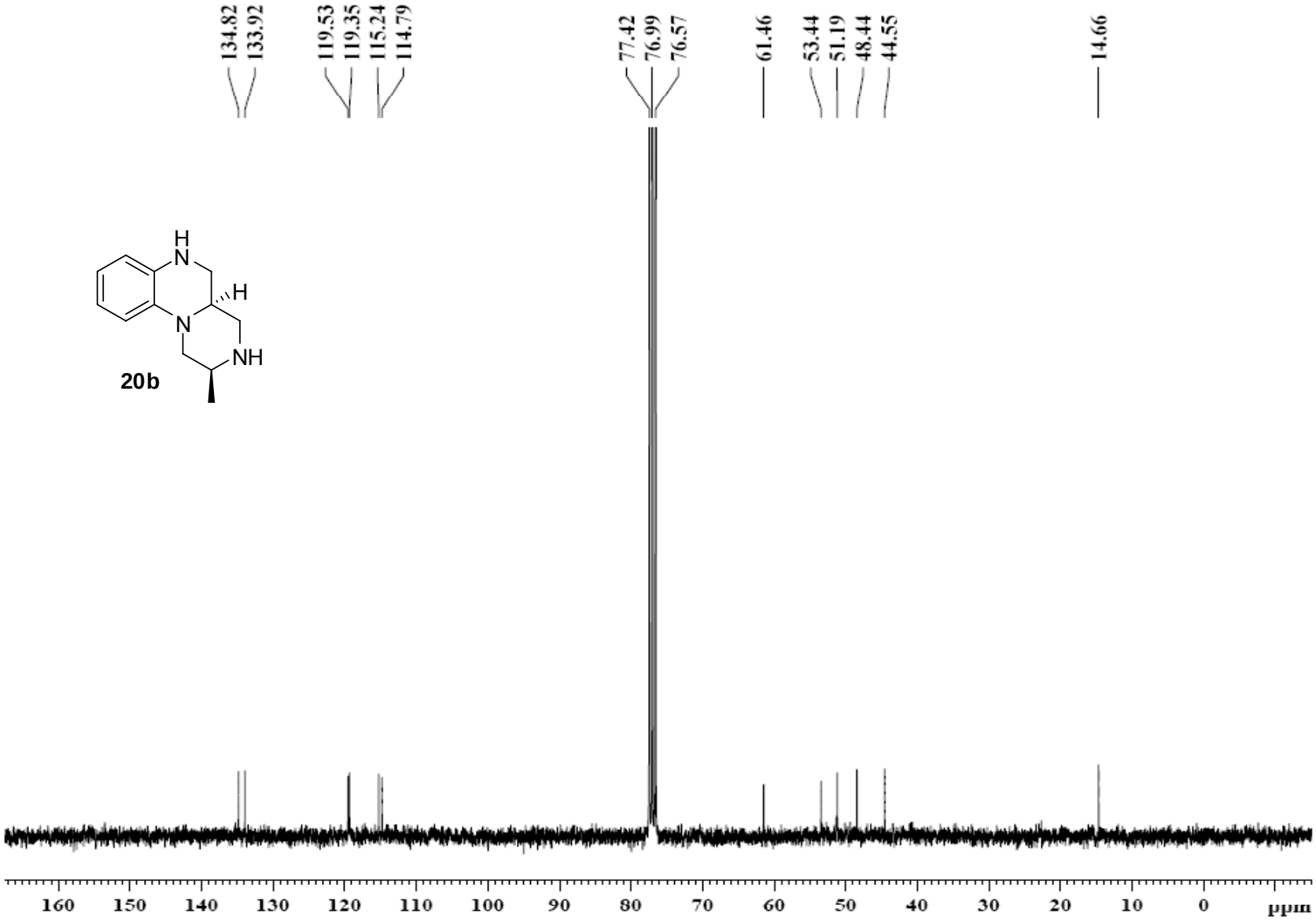
FigureS-80: ^{1}H spectrum(300 MHz, $CDCl_3$) of **20a**



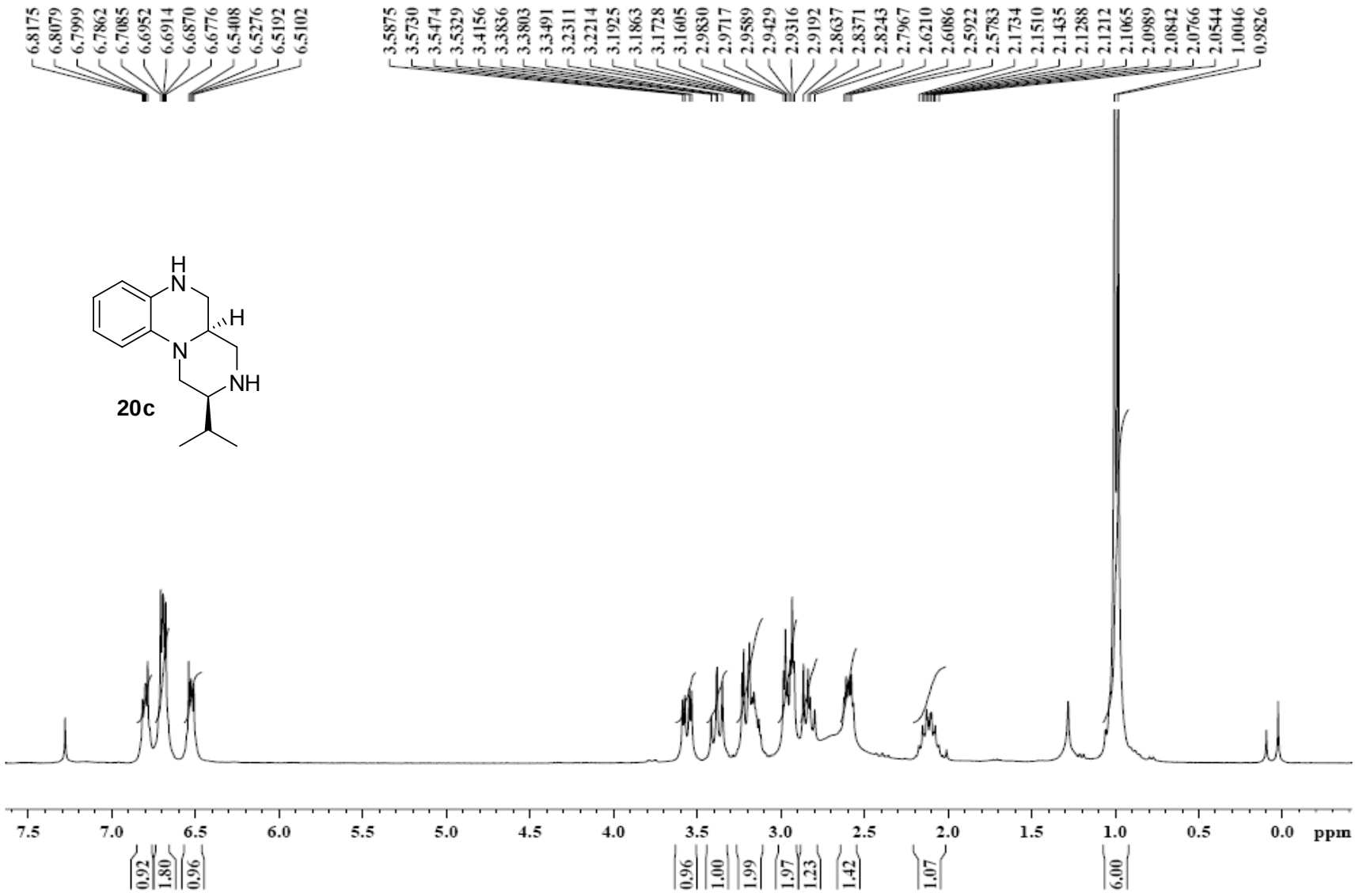
FigureS-81: ^{13}C spectrum (75MHz, $CDCl_3$) **20a**



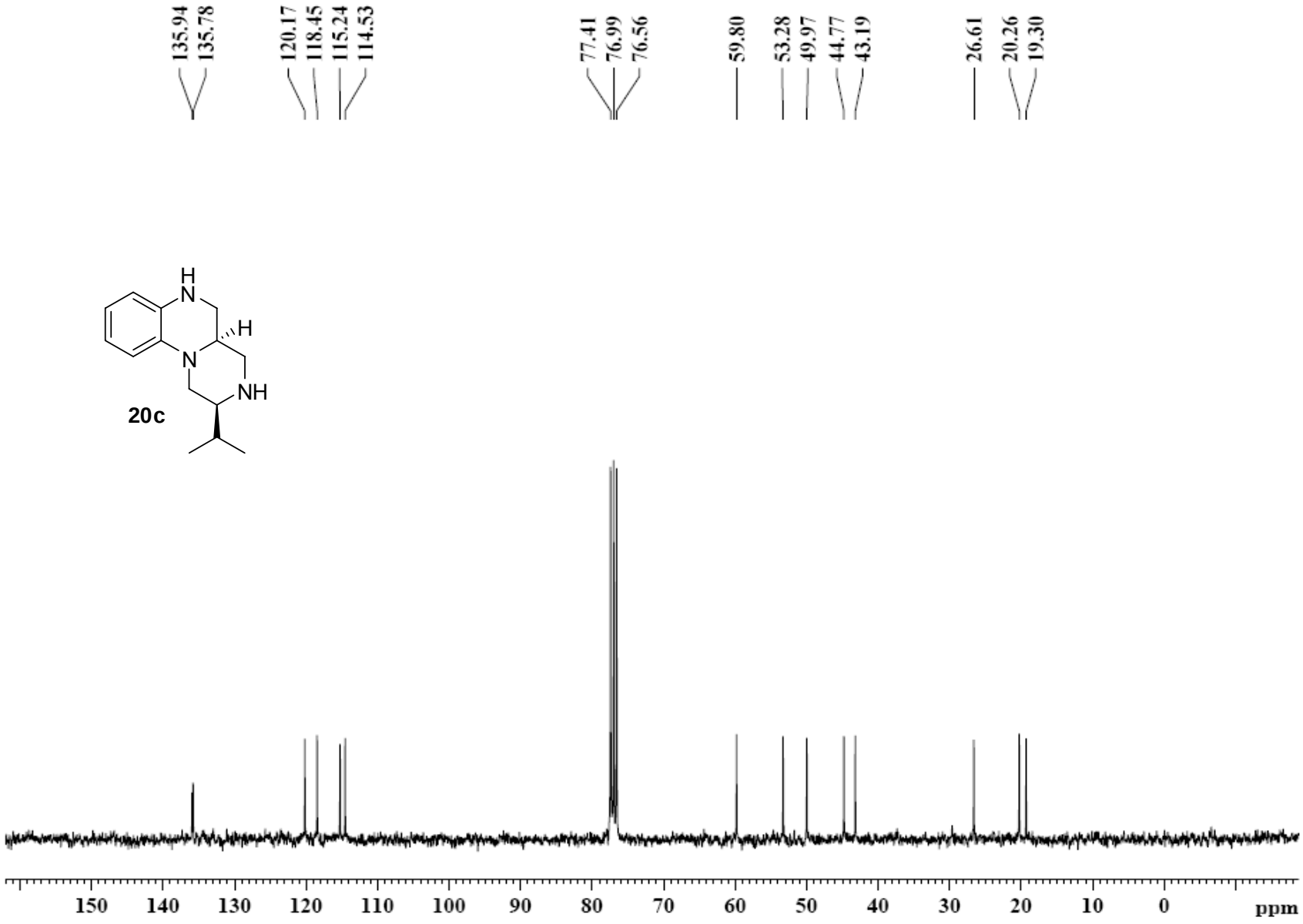
FigureS-82: ^{1}H spectrum(300 MHz, $CDCl_3$) of **20b**



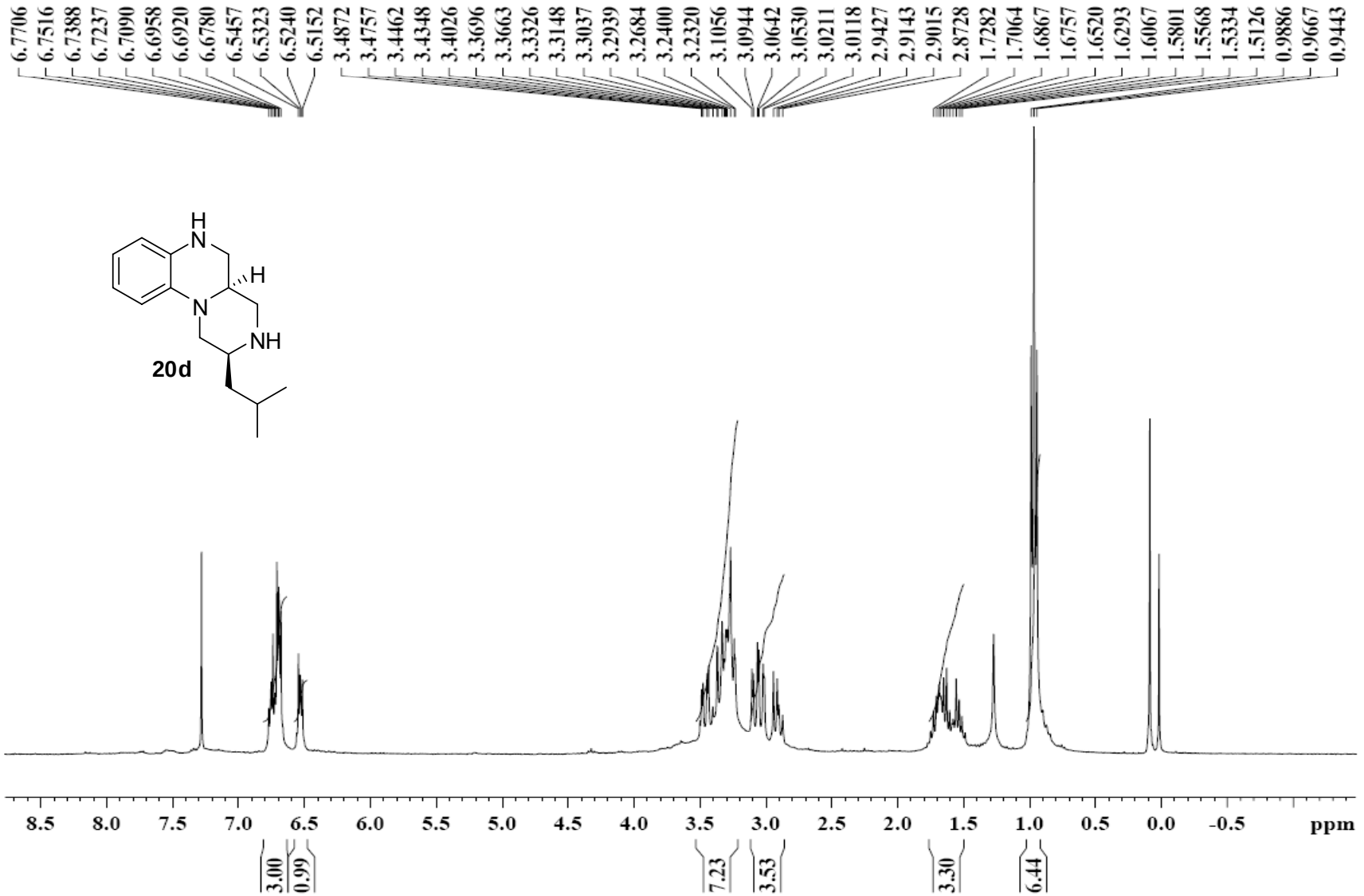
FigureS-83: ^{13}C spectrum (75MHz, $CDCl_3$) **20b**



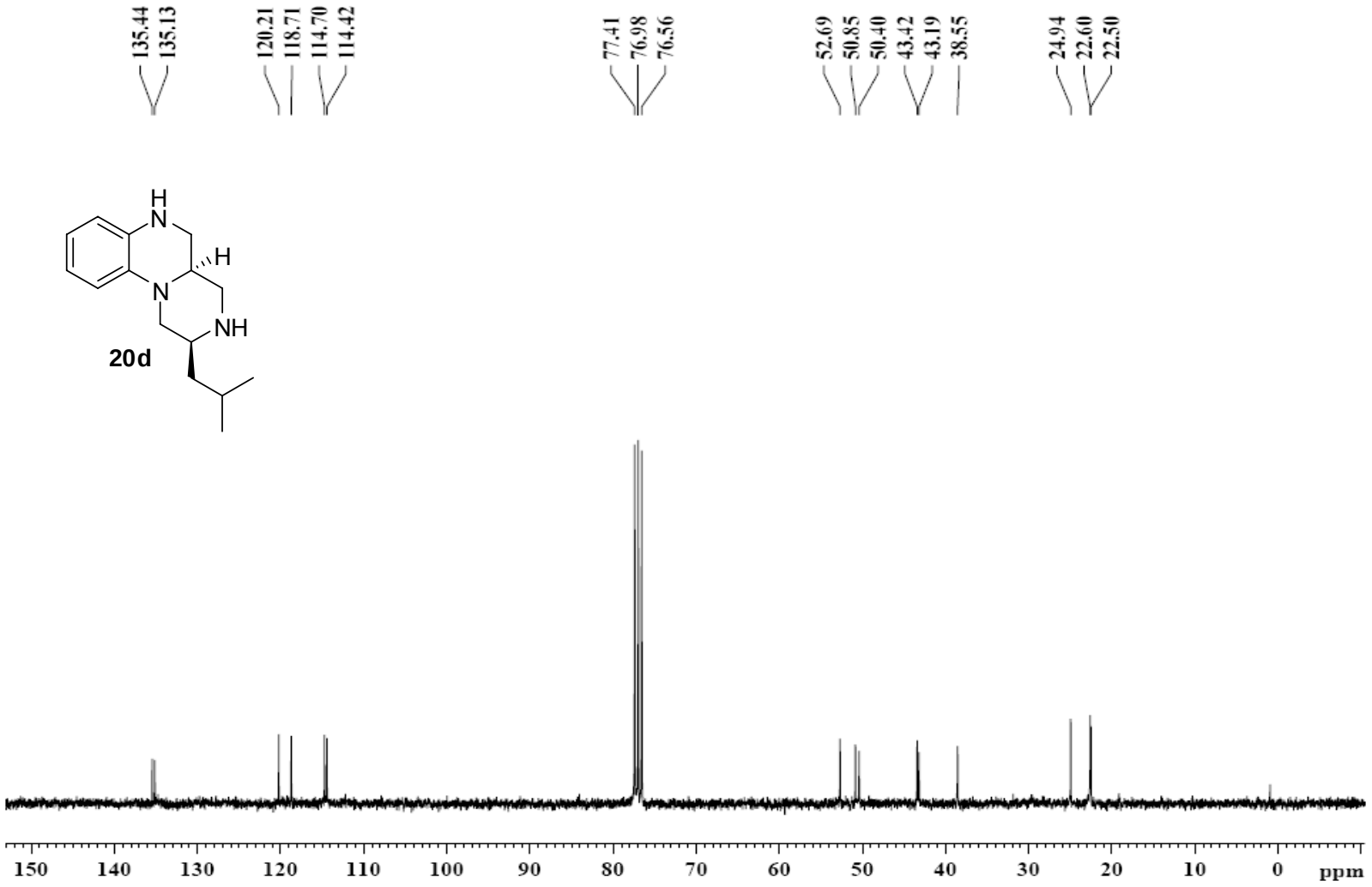
FigureS-84: ^{1}H spectrum(300 MHz, $CDCl_3$) of **20c**



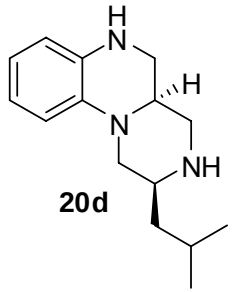
FigureS-85: ^{13}C spectrum (75MHz, $CDCl_3$) **20c**



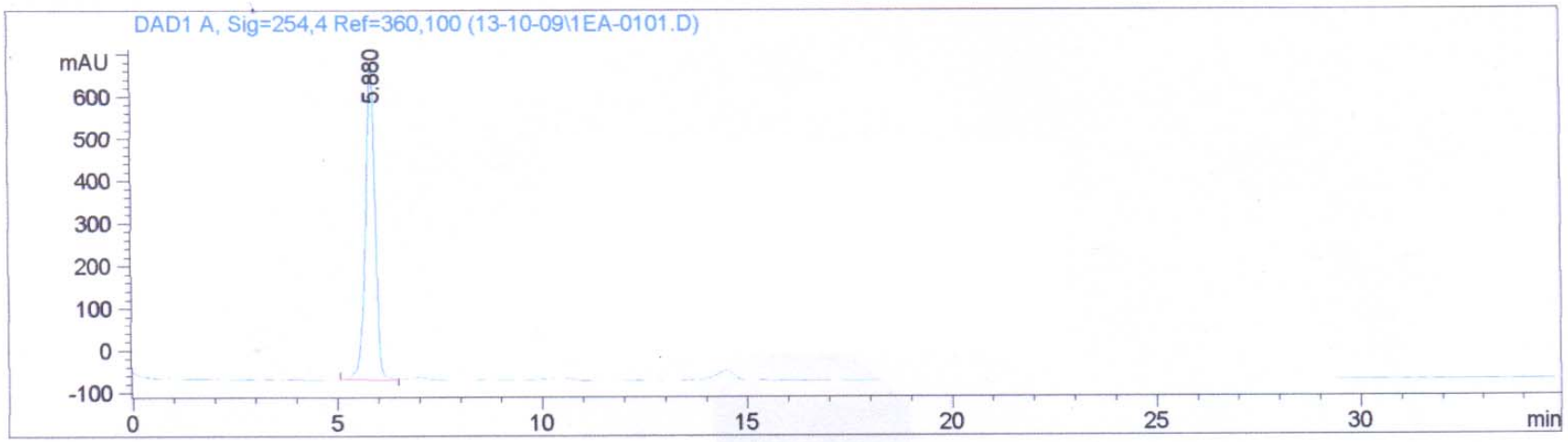
FigureS-86: ^{1}H spectrum(300 MHz, $CDCl_3$) of **20d**



FigureS-87: ^{13}C spectrum (75MHz, $CDCl_3$) **20d**



20d



Retention time (min)

FigureS-88: HPLC graph for **20d**

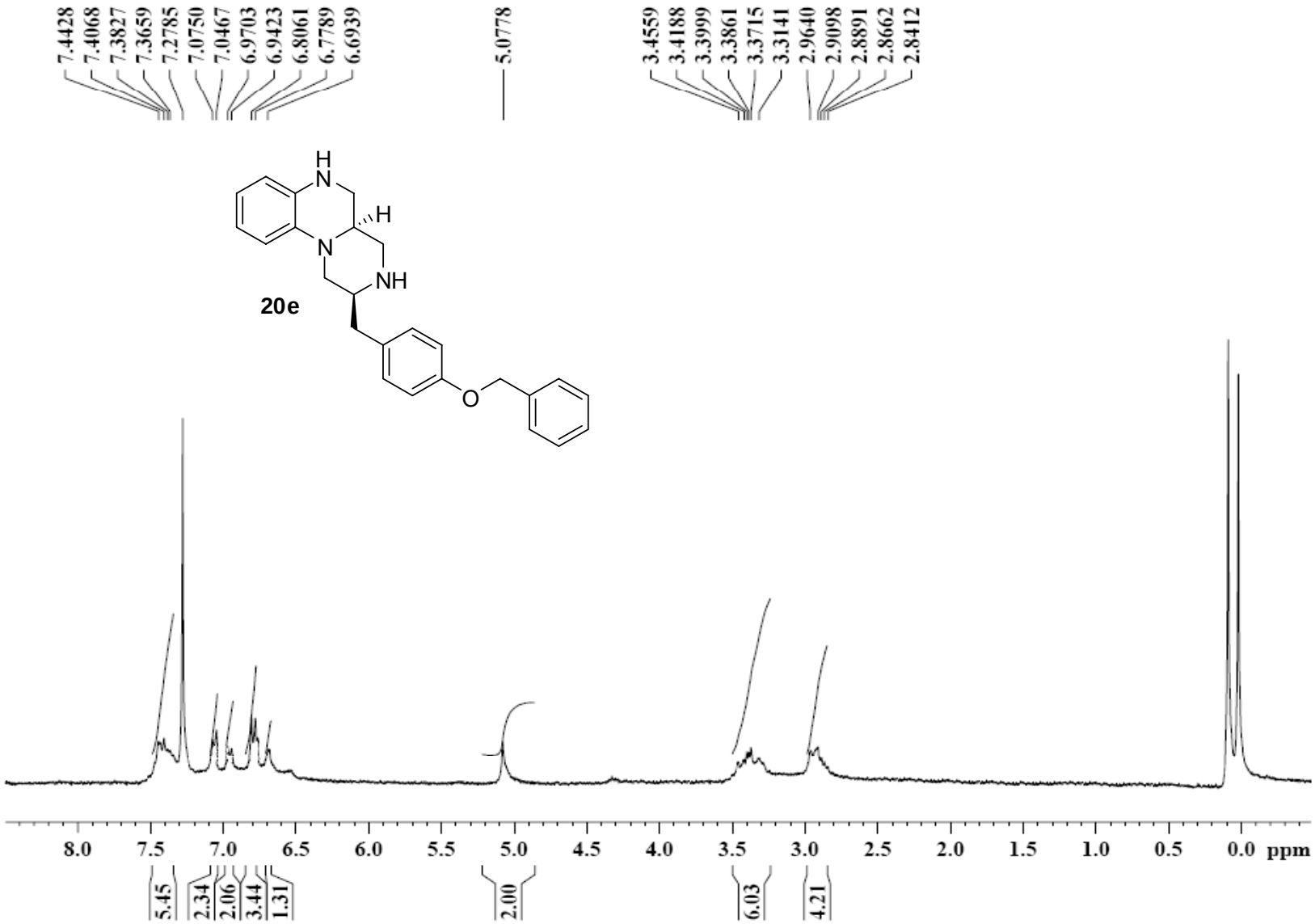


Figure S-89: ^{1}H spectrum(300 MHz, $CDCl_3$) of **20e**

Characterization Data of Selected Examples not Mentioned in the Text of the Manuscript

(*S*)-Methyl 3-Hydroxy-2-(2-nitrophenylamino)propanoate (3b): yellow oil; yield, 77%; R_f, 0.45 (6.5/3.5, hexane/ethylacetate); $[\alpha]_D^{30}$ = -17.1 (c 0.10, MeOH), HPLC analysis: ee > 99 (t_R = 5.2 min, CH_3CN/H_2O); IR (neat, cm^{-1}): 3538, 3378, 2950, 2366, 1735, 1620, 1574, 1430, 1153. ^1H NMR (300 MHz, $CDCl_3$) δ 8.55 (d, 1H, J = 7.3), 8.17 (dd, 1H, J_1 = 1.5, J_2 = 8.6), 7.46-7.40 (m, 1H), 6.78-6.69 (m, 2H), 4.40-4.34 (m, 1H), 4.07 (bs, 2H), 3.82 (s, 3H), 2.78 (bs, 1H). MS (ESI): *m/z* 241$[M+H]^+$.

(*S*)-Methyl3-(*tert*-Butyldimethylsilyloxy)-2-(2-nitrophenyl amino)propanoate (4b): To a stirred solution of **3b** (2.39 g, 9.95 mmol) in anhydrous DCM (15 mL) were added TBDMSiCl (2.039 g , 11.94 mmol) and imidazole (1.22 g, 14.92 mmol) at 0 ^oC and stirred for 30 min. It was diluted with water and aqueous layer was extracted with DCM. Removal of solvent and column chromatography on silica gel with AcOEt-hexane (1.0:9.0) as eluent to furnish **4b** (2.92 g, 83%) as yellow oil. R_f, 0.51 (9.5/0.5), hexane/ethylacetate); IR (neat, cm^{-1}): 3371, 2977, 2373, 1738, 1618, 1574, 1442, 763. ^1H NMR (300 MHz, $CDCl_3$) δ 8.59 (d, 1H, J = 7.9), 8.20 (dd, 1H, J_1 = 1.7, J_2 = 9.1), 7.43-7.38 (m, 1H), 6.73-6.67 (m, 2H), 4.32-4.27 (m, 1H), 4.17 (dd, 1H, J_1 = 3.5, J_2 = 9.8), 4.03 (dd, 1H, J_1 = 3.9, J_2 = 9.9), 3.77 (s, 3H), 0.91 (s, 9H), 0.10-0.07 (m, 6H). MS (ESI): *m/z* 355$[M+H]^+$.

(*S*)-Methyl 2-(N-((*R*)-3-(*tert*-Butyldimethylsilyloxy)-2-(2-nitrophenylamino)propyl)-4-methylphenylsulfonamido)-3-methylbutanoate 8c: yellow oil, yield, 83 %; R_f , 0.51 (8.5.olour/1.5, hexane/ethylacetate); IR (neat, cm^{-1}): 3366, 2957, 1740, 1615, 1510, 1154, 761. ^1H NMR (300 MHz, $CDCl_3$) δ 8.30 (d, 1H, J = 8.5), 8.15 (dd, 1H, J_1 = 1.6, J_2 = 8.6), 7.65-7.61 (m, 2H), 7.51-7.42 (m, 1H), 7.26-7.15 (m, 3H), 6.68-6.60 (m, 1H), 4.33 (bs, 1H), 4.03-3.98 (m, 2H), 3.77-3.70 (m, 2H), 3.33 (s, 3H), 3.23-3.13 (m, 1H), 2.36 (s, 3H), 2.24-2.05 (m, 1H), 1.10 (d, 3H, J = 6.4), 0.94 (s, 9H), 0.86 (d, 3H, J = 6.6), 0.12-0.07 (m, 6H). ^{13}C NMR (75 MHz, $CDCl_3$) δ 170.2, 144.4, 143.5, 136.0, 135.4, 132.4, 129.3, 129.2, 127.8, 127.5, 127.1, 115.3, 114.5, 66.6, 61.2, 53.2, 51.2, 45.0, 28.5, 25.9, 21.6, 20.9, 19.1, 18.2, -5.4, -5.6. MS (ESI): *m/z* 594 $[M+H]^+$, 616 $[M+Na]^+$. Anal. Calcd. (%)for $C_{28}H_{43}N_3O_7SSi$; C, 56.63; H, 7.30; N, 7.08; Found: C, 56.78; H, 7.34; N, 7.18.

(*S*)-Methyl 2-(N-((*R*)-3-(*tert*-Butyldimethylsilyloxy)-2-(2-nitrophenylamino)propyl)-4-methylphenylsulfonamido)-4-methylpentanoate 8d: yellow oil. yield, 76 %; R_f , 0.51 (8.8.olour/1.2, hexane/ethylacetate); IR (neat, cm^{-1}): 3371, 2930, 2362, 1664, 1599, 1156, 771. ^1H NMR (300 MHz, $CDCl_3$) δ 8.19 (dd, 1H, J_1 = 1.2, J_2 = 8.6), 8.10-8.05 (m, 1H), 7.69-7.66 (m, 2H), 7.52-7.48 (m, 1H), 7.31-7.23 (m, 3H), 6.70-6.65 (m, 1H), 4.47-4.43 (m, 1H), 4.29 (bs, 1H), 4.07-4.04 (m, 1H), 3.78-3.73 (m, 1H), 3.41 (s, 3H), 3.29-3.23(m, 1H), 2.42 (s, 3H), 1.83-1.75 (m, 1H), 1.65-1.58 (m, 2H), 0.95 (s, 15H), 0.13-0.11 (m, 6H), ^{13}C NMR (75 MHz, $CDCl_3$) δ 171.0, 144.4, 143.5, 136.0, 135.7, 132.4, 129.4, 127.8, 127.2, 115.5, 114.6, 61.2, 59.3, 53.3, 51.8, 45.9, 39.4, 26.1, 24.9, 22.5, 22.4, 21.6, 18.3, -5.16, -5.37. MS (ESI): *m/z* 608[M+H], 630 $[M+Na]^+$. Anal. Calcd. (%)for $C_{29}H_{45}N_3O_7SSi$; C, 57.30; H, 7.46; N, 6.91; Found: C, 57.39; H, 7.54; N, 7.12.

***(S)*-Methyl3-(4-(benzyloxy)phenyl)-2-(N-((R)-3-(*tert*-butyl dimethylsilyloxy)-2-(2-nitrophenylamino)propyl)-4-methyl phenylsulfonamido)propanoate 8e:** yellow oil. yield, 77 %; R_f , 0.52 (8.0.olour/2.0, hexane/ethylacetate); IR (neat, cm^{-1}): 3363, 2951, 1741, 1616, 1511, 1217, 761. ^1H NMR (300 MHz, $CDCl_3$) δ 8.35 (d, 1H, J = 8.7), 8.19 (dd, 1H, J_1 = 1.3, J_2 = 8.6), 7.68-7.66 (m, 2H), 7.52-7.47 (m, 1H), 7.42-7.21 (m, 8H), 7.09-7.06 (m, 2H), 6.88-6.85 (m, 2H), 6.70-6.65 (m, 1H), 5.03 (s, 2H), 4.63-4.58 (m, 1H), 4.28 (bs, 1H), 4.14-4.11 (m, 1H), 3.76 (dd, 1H, J_1 = 3.1, J_2 = 10.4), 3.66-3.58 (m, 1H), 3.34-3.21 (m, 5H), 3.00-2.94 (m, 1H), 2.41 (s, 3H), 0.97 (s, 9H), 0.14-0.07 (m, 6H). ^{13}C NMR (75 MHz, $CDCl_3$) 170.2, 157.9, 144.4, 143.6, 137.0, 136.0, 135.7, 132.5, 130.2, 129.4, 128.5, 128.3, 127.9, 127.4, 127.1, 115.4, 115.0, 114.5, 69.9, 62.5, 61.1, 53.3, 51.5, 45.4, 36.4, 26.0, 21.5, 18.3, -5.4, -5.5. MS (ESI): *m/z* 748[M+H]. Anal. Calcd. (%) for $C_{39}H_{49}N_3O_8SSi$; C, 62.62; H, 6.60; N, 5.62; Found: C, 62.67; H, 6.75; N, 5.51.

.**(*S*)-Methyl 2-(N-((*R*)-3-hydroxy-2-(2-(4-methylphenylsulfon amido)phenylamino)propyl)-4-methylphenylsulfonamido)-3-methylbutanoate 12c.** Same for **12a**. Brown oil. yield, 47%); R_f = 0.45 (9.8.olour/0.2, $CHCl_3$:MeOH). IR (neat, cm^{-1}): 3515, 3403, 2929, 1738, 1329, 1156, 755. ^1H NMR (300 MHz, $CDCl_3$) δ 7.68-7.64 (m, 4H), 7.25-7.16 (m, 4H), 7.04-6.99 (m, 1H), 6.90 (bs, 1H), 6.65-6.63 (m, 1H), 6.51 (d, 1H, *J* = 8.0), 6.46-6.41 (m, 2H), 5.09-5.07 (m, 1H), 4.20-4.01 (m, 2H), 3.82 (bs, 1H), 3.69-3.62 (m, 2H), 3.52-3.49 (m, 1H), 3.47 (s, 3H), 2.75 (bs, 1H), 2.41 (s, 3H), 2.36 (s, 3H), 2.17-2.09 (m, 1H), 0.88 (d, 3H, *J* = 6.5), 0.85 (d, 3H, *J* = 6.5). ^{13}C NMR (75 MHz, $CDCl_3$) δ 171.5, 144.0, 143.34, 143.26, 136.9, 136.8, 129.4, 128.9, 128.8, 127.8, 127.5, 121.1, 116.6, 111.6, 66.2, 60.8, 53.1, 51.6, 45.8, 28.8, 21.6, 21.5, 19.8, 19.6. MS (ESI): *m/z* 604[M+H], 626 $[M+Na]^+$. (%) Anal. Calcd. for $C_{29}H_{37}N_3O_7S_2$; C, 57.69; H, 6.18; N, 6.96; Found: C, 57.75; H, 6.24; N, 7.18.

(*S*)-Methyl2-(N-((*R*)-3-hydroxy-2-(2-(4-methylphenylsulfon amido) phenylamino)propyl)-4-methylphenylsulfonamido)-4-methylpentanoate 12d: Same procedure like for **12a.** Brown oil. yield, 44% (in three steps); R_f = 0.50 (9.7.olour/0.3, $CHCl_3$:MeOH). IR (neat, cm^{-1}): 3514, 3401, 2928, 1741, 1331, 1153, 761. ^1H NMR (300 MHz, $CDCl_3$) δ 7.67-7.63 (m, 4H), 7.28-7.18 (m, 5H), 7.08-7.03 (m, 1H), 6.69-6.57 (m, 3H), 6.50-6.45 (m, 1H), 5.04 (bs, 1H), 4.57-4.52 (m, 1H), 3.77 (bs, 1H), 3.66-3.61 (m, 2H), 3.54 (s, 3H), 3.43-3.36 (m, 2H), 2.43 (s, 3H), 2.38 (s, 3H), 1.73-1.63 (m, 1H), 1.60-1.52 (m, 2H), 0.90-0.86 (m, 6H). ^{13}C NMR (75 MHz, $CDCl_3$) δ 172.4, 144.1, 143.5, 143.4, 136.9, 136.6, 129.5, 129.4, 129.0, 127.8, 127.4, 121.1, 116.8, 111.9, 60.6, 58.4, 53.3, 52.3, 45.8, 39.0, 24.7, 22.8, 21.8, 21.7, 21.6. MS (ESI): *m/z* 618[M+H], 640 $[M+Na]^+$. (%) Anal. Calcd. for $C_{30}H_{39}N_3O_7S_2$; C, 58.33; H, 6.36; N, 6.80; Found: C, 58.49; H, 6.48; N, 6.88.

(*S*)-Methyl 3-(4-(benzyloxy)phenyl)-2-(N-((*R*)-3-hydroxy-2-(2-(4-methylphenylsulfonamido)phenylamino)propyl)-4-methylphenylsulfonamido)propanoate 12e: Same procedure like for **12a.** Brown oil. yield, 43% (in three steps); R_f = 0.50 (9.6.olour/0.4, $CHCl_3$:MeOH). IR (neat, cm^{-1}): 3516, 3404, 2931, 1738, 1328, 1156, 760. ^1H NMR (300 MHz, $CDCl_3$) δ 7.68-7.61 (m, 4H), 7.44-7.33 (m, 6H), 7.28-7.19 (m, 4H), 7.12-7.07 (m, 1H), 7.02-6.99 (m, 2H), 6.83-6.80 (m, 2H), 6.65-6.62 (m, 2H), 6.52-6.47 (m, 1H), 5.01 (s, 2H), 4.98-4.96 (m, 1H), 4.73-4.69 (m, 1H), 4.17-4.10 (m, 1H), 3.72 (bs, 1H), 3.66 (s, 2H), 3.49 (s, 3H), 3.27-3.20 (m, 1H), 2.85-2.78 (m, 1H), 2.41 (s, 3H), 2.39 (s, 3H). ^{13}C NMR (75 MHz, $CDCl_3$) δ 171.3, 157.7, 144.2, 143.8, 136.9, 136.4, 136.3, 130.0, 129.5, 129.4, 129.1, 128.9, 128.5, 128.4, 127.9, 127.7, 127.4, 121.0, 116.9, 114.9, 112.2, 69.9, 61.7, 60.8, 53.5, 52.2, 46.1, 35.2, 21.5. MS (ESI): *m/z* 758$[M+H]^+$. (%) Anal. Calcd. for $C_{40}H_{43}N_3O_8S_2$; C, 63.39; H, 5.72; N, 5.54; Found: C, 63.48; H, 5.79; N, 5.63.

(*S*)-Methyl-4-Methyl-2-(4-methyl-N-(((*R*)-4-tosyl-1,2,3,4-tetrahydroquinoxalin-2-yl)methyl)phenylsulfonamido) pentanoate 14d: Same procedure like for **13a.** Colorless oil. yield, 78% ; R_f = 0.51 (6.5.olour/3.5, hexane:ethylacetate). IR (neat, cm^{-1}): 3397, 3024, 2959, 1740, 1161, 760. ^1H NMR (300 MHz, $CDCl_3$) δ 7.61-7.57 (m, 3H), 7.51-7.48 (m, 2H), 7.29-7.21 (m, 4H), 6.98-6.92 (m, 1H), 6.68-6.62 (m, 1H), 6.48 (dd, 1H, J_1 = 1.1, J_2 = 8.0), 5.04 (bs, 1H), 4.45-4.40 (m, 1H), 4.23-4.18 (m, 1H), 3.50 (s, 3H), 3.31-3.22 (m, 2H), 3.08-2.96 (m, 2H), 2.45 (s, 3H), 2.40 (s, 3H), 1.60-1.56 (m, 3H), 0.96-0.92 (m, 6H). ^{13}C NMR (75 MHz, $CDCl_3$) δ 171.7, 143.7, 143.4, 137.5, 136.8, 136.0, 129.7, 129.6, 127.7, 127.4, 126.4, 125.0, 121.7, 117.1, 115.0, 58.5, 52.1, 49.1, 48.7, 47.2, 39.7, 24.8, 22.6. 22.0, 21.7, 21.6. MS (ESI): *m/z* 600 $[M+H]^+$. Anal. Calcd.(%) for $C_{30}H_{37}N_3O_6S_2$; C, 60.08; H, 6.22; N, 7.01.Found: C, 60.24; H, 6.28; N, 7.23.

(*S*)-Methyl 3-(4-(Benzyloxy)phenyl)-2-(4-methyl-N-(((*R*)-4-tosyl-1,2,3,4-tetrahydroquinoxalin-2-yl)methyl)phenylsulfon amido)propanoate 14e: Same procedure like for **13a.** colorless oil. yield, 76% ; R_f = 0.51 (6.0.olour/4.0, hexane:ethylacetate). IR (neat, cm^{-1}): 3398, 3023, 2961, 1741, 1162, 763. ^1H NMR (300 MHz, $CDCl_3$) δ 7.67 (dd, 1H, J_1 = 1.2, J_2 = 8.2), 7.58-7.56 (m, 2H), 7.49-7.34 (m, 7H), 7.27-7.24 (m, 2H), 7.16-7.13 (m, 2H), 7.02-6.97 (m, 3H), 6.91-6.88 (m, 2H), 6.72-6.66 (m, 1H), 6.45 (dd, 1H, J_1 = 1.2, J_2 = 8.1), 5.07 (s, 2H), 4.87 (bs, 1H), 4.60-4.55 (m, 1H), 4.19-4.14 (m, 1H), 3.41 (s, 3H), 3.34-3.26 (m, 1H), 3.12-3.09 (m, 1H), 3.03-2.89 (m, 2H), 2.64 (dd, 1H, J_1 = 6.4, J_2 = 13.6), 2.42 (s, 3H), 2.23 (s, 3H). ^{13}C NMR (75 MHz, $CDCl_3$) δ 170.8, 157.9, 144.1, 143.8, 137.3, 136.9, 136.4, 135.7, 130.1, 129.8, 129.6, 128.6, 128.0, 127.9, 127.55, 127.48, 127.3, 126.5, 125.4, 121.4, 117.0, 115.1, 114.9, 70.0, 61.8, 52.1, 48.9, 47.8, 46.9, 36.8, 21.5, 21.4. MS (ESI): *m/z* 740 $[M+H]^+$. Anal. Calcd.(%) for $C_{40}H_{41}N_3O_7S_2$; C, 64.93; H, 5.59; N, 5.68. Found: C, 64.80; H, 5.68; N, 5.78.

N-((*S*)-1-Hydroxy-3-methylbutan-2-yl)-4-methyl-N-(((*R*)-4-tosyl-1,2,3,4-tetrahydroquinoxalin-2-yl)methyl)benzene sulfonamide 16c: Same procedure like for **5.** colorless oil. yield, 82% ; R_f = 0.51 (6.0.olour/4.0, hexane:ethylacetate). IR (Neat, cm^{-1}): 3517, 3401, 2959, 1498, 1156, 760. ^1H NMR (300 MHz, $CDCl_3$) δ 7.61-7.53 (m, 5H), 7.27-7.25 (m, 4H), 6.98-6.93 (m, 1H), 6.70-6.64 (m, 1H), 6.45 (dd, 1H, J_1 = 1.1, J_2 = 8.0), 5.15-5.13 (bs, 1H), 4.14-4.08 (m, 1H), 3.73-3.67 (m, 1H), 3.44-3.41 (m, 3H), 3.38-3.32 (m, 1H), 3.19-3.12 (m, 1H), 2.89-2.81 (m, 1H), 2.43 (s, 3H), 2.39 (s, 3H), 1.63-1.56 (m, 1H), 0.88 (d, 3H, J = 6.5), 0.56 (d, 3H, J = 6.6). ^{13}C NMR (75 MHz, $CDCl_3$) δ 143.8, 143.7, 137.2, 137.1, 136.5, 129.8, 129.6, 127.3, 127.2, 126.3, 124.7, 122.0, 117.2, 115.2, 66.5, 61.6, 47.9, 47.5, 46.9, 28.3, 21.55, 21.50, 20.4, 20.3. MS (ESI): *m/z* 558 $[M+H]^+$. Anal. Calcd.(%) for $C_{28}H_{35}N_3O_5S_2$; C, 60.30; H, 6.33; N, 7.53. Found: C, 60.47; H, 6.47; N, 7.69.

N-((*S*)-1-Hydroxy-4-methylpentan-2-yl)-4-methyl-N-(((*R*)-4-tosyl-1,2,3,4-tetrahydroquinoxalin-2-yl)methyl)benzene sulfonamide 16d: Same procedure like for **5.** colorless oil. yield, 88% ; R_f = 0.57 (6.0.olour/4.0, hexane:ethylacetate). IR (Neat, cm^{-1}): 3518, 3402, 2961, 1496, 1159, 763. ^1H NMR (300 MHz, $CDCl_3$) δ 7.65-7.62 (m, 2H), 7.56-7.49 (m, 3H), 7.30-7.23 (m, 4H), 6.94-6.89 (m, 1H), 6.65-6.60 (m, 1H), 6.50-6.47 (m, 1H), 4.24-4.17 (m, 1H), 4.09 (dd, 1H, J_1 = 3.1, J_2 = 13.6), 3.81-3.74 (m, 1H), 3.59-3.50 (m, 2H), 3.32-3.18 (m, 3H), 2.81 (dd, 1H, J_1 = 10.0, J_2 = 14.7), 2.45 (s, 3H), 2.39 (s, 3H), 1.77 (bs, 1H), 1.16-1.06 (m, 1H), 0.91-0.79 (m, 2H), 0.76-0.74 (m, 6H). ^{13}C NMR (75 MHz, $CDCl_3$) δ 143.5, 137.2, 137.1, 136.9, 129.8, 129.7, 129.6, 127.5, 127.3, 126.3, 124.5, 117.4, 115.4, 58.6, 48.1, 47.3, 47.0, 38.2, 25.2, 23.3, 22.2, 21.64, 21.60. MS (ESI): *m/z* 572 $[M+H]^+$. Anal. Calcd.(%) for $C_{29}H_{37}N_3O_5S_2$; C, 60.92; H, 6.52; N, 7.35. Found: C, 60.95; H, 6.68; N, 7.52.

N-((*S*)-1-(4-(Benzyloxy)phenyl)-3-hydroxypropan-2-yl)-4-methyl-N-(((*R*)-4-tosyl-1,2,3,4-tetrahydroquinoxalin-2-yl)methyl)benzenesulfonamide 16e: Same procedure like for **5.** colorless oil. yield, 85%; R_f= 0.45 (6.0.olour/4.0, hexane:ethylacetate); IR (neat, cm^{-1}): 3519, 3396, 2956, 1496, 1158, 761. ^1H NMR (300 MHz, $CDCl_3$) δ 7.62-7.56 (m, 5H), 7.46-7.34 (m, 4H), 7.31-7.24 (m, 5H), 7.00-6.95 (m, 1H), 6.90-6.83 (m, 4H), 6.72-6.67 (m, 1H), 6.51 (dd, 1H, J_1 = 1.2, J_2 = 8.0), 5.04 (s, 2H), 4.26-4.11 (m, 3H), 3.95-3.88 (m, 1H), 3.59-3.52 (m, 2H), 3.38-3.29 (m, 2H), 3.19 (s, 1H), 2.94 (dd, 1H, J_1 = 10.1, J_2 = 14.6), 2.44 (s, 3H), 2.34 (s, 3H). ^{13}C NMR (75 MHz, $CDCl_3$) δ 157.5, 143.8, 143.7, 137.2, 136.8, 136.5, 136.3, 129.9, 129.8, 129.7, 129.4, 128.5, 127.9, 127.3, 127.2, 127.1, 126.3, 124.5, 122.0, 117.1, 115.2, 114.9, 69.9, 62.1, 62.0, 61.1, 47.8, 47.3, 46.8, 21.42, 21.40. MS (ESI): *m/z* 712$[M+H]^+$. Anal. Calcd.(%) for $C_{39}H_{41}N_3O_6S_2$; C, 65.80; H, 5.81; N, 5.90. Found: C, 65.96; H, 5.87; N, 5.97.

(2*S*,4a*R*)-2-*iso*-Propyl-3,6-ditosyl-2,3,4,4a,5,6-hexahydro-1*H*-pyrazino[1,2-a]quinoxaline 18c: Same procedure like for **17a.** light brown oil. yield, 77% ; $[\alpha]_D^{30}$ = +34.8 (c 0.13, MeOH), HPLC analysis: ee > 99 (t_R = 14.0min, CH_3CN/H_2O); R_f = 0.56 (7.5.olour/2.5, hexane:ethylacetate). IR (neat,cm^{-1}): 3431, 3025, 2966, 1497, 1345, 1161, 758. ^{1}H NMR (300 MHz, $CDCl_3$) δ 7.68-7.65 (m, 2H), 7.53 (dd, 1H, J_1 = 1.4, J_2 = 8.0), 7.34-7.27 (m, 4H), 7.15-7.12 (m, 2H), 7.07-7.02 (m, 1H), 6.76-6.71 (m, 1H), 6.57 (d, 1H, J = 8.1), 4.10-4.04 (m, 1H) , 3.64-3.57 (m, 2H), 3.44-3.41 (m, 1H), 3.16 (dd, 1H, J_1 = 9.4, J_2 = 14.2), 2.65-2.52 (m, 2H), 2.46 (s, 3H), 2.39 (s, 3H), 2.25 (dd, 1H, J_1 = 3.4, J_2 = 13.0), 1.91-1.80 (m, 1H), 0.93 (d, 3H, J = 6.5), 0.73 (d, 3H, J = 6.8). ^{13}C NMR (75 MHz, $CDCl_3$) δ 143.5, 143.0, 140.3, 138.6, 136.2, 129.7, 129.4, 127.3, 127.23, 127.19, 126.9, 124.8, 118.3, 112.5, 59.5, 51.6, 46.9, 46.7, 43.8, 25.5, 21.6, 21.5, 20.4, 19.6. MS (ESI): *m/z* 540 $[M+H]^+$, 562 $[M+Na]^+$. Anal. Calcd.(%) for $C_{28}H_{33}N_3O_4S_2$; C, 62.31; H, 6.16; N, 7.79; Found: C, 62.48; H, 6.28; N, 7.85.

(2*S*,4a*R*)-2-*iso*-Butyl-3,6-ditosyl-2,3,4,4a,5,6-hexahydro-1*H*-pyrazino[1,2-a]quinoxaline 18d: Same procedure like for **17a.** light brown oil. yield, 81% ; $[\alpha]_D^{30}$ = +67.6 (c 0.15, MeOH), HPLC analysis: ee > 99 (t_R = 14.6 min, CH_3CN/H_2O); R_f = 0.53 (8.5.olour/1.5, hexane:ethylacetate). IR (neat, cm^{-1}): 3431, 3025, 2928, 1342, 1162, 760. ^{1}H NMR (300 MHz, $CDCl_3$ + CCl_4) δ 7.67-7.64 (m, 1H), 7.54 (dd, 1H, J_1 = 1.1, J_2 = 8.0), 7.36-7.30 (m, 4H), 7.17-7.15 (m, 2H), 7.07-7.02 (m, 1H), 6.76-6.71 (m, 1H), 6.54 (dd, 1H, J = 8.2), 4.16 (dd, 1H, J_1 = 3.9, J_2 = 14.5), 3.94 (bs, 1H), 3.56-3.52 (m, 1H), 3.44-3.40 (m, 1H), 3.17-3.09 (m, 1H), 2.65-2.53 (m, 2H), 2.47 (s, 3H), 2.39 (s, 3H), 1.52-1.42 (m, 1H), 1.38-1.19 (m, 2H), 0.87-0.82 (m, 6H). ^{13}C NMR (75 MHz, $CDCl_3$) δ 143.6, 143.2, 140.1, 138.0, 136.1, 129.7, 129.4, 127.4, 127.3, 127.0, 124.6, 118.2, 112.6, 51.5, 51.4, 49.2, 46.9, 43.1, 37.5, 25.2, 22.8, 22.5, 21.6, 21.5. MS (ESI): *m/z* 554 $[M+H]^+$, 576 $[M+Na]^+$. Anal. Calcd.(%) for $C_{29}H_{35}N_3O_4S_2$; C, 62.90; H, 6.37; N, 7.59; Found: C, 62.97; H, 6.52; N, 7.72.

(2*S*,4a*R*)-2-(4-(Benzyloxy)benzyl)-3,6-ditosyl-2,3,4,4a,5,6-hexahydro-1*H*-pyrazino[1,2-a]quinoxaline 18e: Same procedure like for **17a.** light brown oil. yield, 80% ; $[\alpha]_D^{30}$ = -52.1 (c 0.14, MeOH), HPLC analysis: ee > 99 (t_R = 16.3min, CH_3CN/H_2O); R_f = 0.53 (7.5.olour/2.5, hexane:ethylacetate). IR (neat, cm^{-1}): 3488, 2925, 1606, 1161, 756. ^{1}H NMR (300 MHz, $CDCl_3$) δ 7.66-7.62 (m, 3H), 7.48-7.29 (m, 9H), 7.17-7.15 (m, 2H), 7.10-7.05 (m, 1H), 7.00-6.90 (m, 4H), 6.84-6.78 (m, 1H), 6.49 (d, 1H, J = 8.0), 5.08 (s, 2H), 4.23-4.11 (m, 2H), 3.62-3.57 (m, 1H), 3.42-3.29 (m, 2H), 2.81-2.56 (m, 3H), 2.51-2.49 (m, 1H), 2.45 (s, 3H), 2.33 (s, 3H), 2.24-2.19 (m, 1H). ^{13}C NMR (75 MHz, $CDCl_3$) δ 157.6, 143.9, 143.5, 139.9, 137.2, 136.8, 135.7, 130.2, 129.8, 129.4, 128.5, 127.9, 127.4, 127.2, 127.0, 126.8, 124.6, 118.5, 114.9, 113.0, 69.9, 54.9, 51.9, 47.4, 46.7, 43.3, 21.5, 21.4. MS (ESI): *m/z* 694 $[M+H]^+$, 716 $[M+Na]^+$. Anal. Calcd.(%) for $C_{39}H_{39}N_3O_5S_2$; C, 67.51; H, 5.67; N, 6.06; Found: C, 67.65; H, 5.78; N, 6.17.

(2*S*,4a*R*)-2-Methyl-2,3,4,4a,5,6-hexahydro-1*H*-pyrazino[1,2-a]quinoxaline (20b): light brown oil. yield, 65% ; R_f , 0.51 (8.8/1.2, chloroform/methanol); IR (neat, cm^{-1}): 3370, 2925, 2855, 1690, 1507, 1268, 747. ^1H NMR (300 MHz, $CDCl_3$) δ 6.71-6.70 (m, 3H), 6.55-6.53 (m, 1H), 4.19 (bs, 1H), 3.88 (bs, 1H), 3.67-3.63 (m, 2H), 3.35-3.34 (m, 2H), 3.13-3.09 (m, 2H), 2.94-2.88 (m, 1H), 1.55 (d, 3H, J = 6.6). ^{13}C NMR (75 MHz, $CDCl_3$) δ 134.8, 133.9, 119.5, 119.3, 115.2, 114.8, 61.5, 53.4, 51.2, 48.4, 44.5, 14.7. MS (ESI): *m/z* 204 $[M+H]^+$, Anal. Calcd.(%) for $C_{12}H_{17}N_3$; C, 70.90; H, 8.43; N, 20.67; Found: C, 70.96; H, 8.51; N, 20.61.

(2*S*,4a*R*)-2-*iso*-Propyl-2,3,4,4a,5,6-hexahydro-1*H*-pyrazino[1,2-a]quinoxaline (20c): light brown oil. yield, 64%; R_f, 0.52 (9.0/1.0, chloroform/methanol); IR (neat, cm^{-1}): 3366, 2954, 2860, 2362, 1505, 1264, 742. ^1H NMR (300 MHz, $CDCl_3$) δ 6.81-6.78 (m, 1H), 6.70-6.67 (m, 2H), 6.54-6.51 (m, 1H), 3.56 (dd, 1H, J_1 = 4.3, J_2 = 12.0), 3.41-3.34 (m, 1H), 3.23-3.14 (m, 2H), 2.98-2.91 (m, 2H), 2.86-2.79 (m, 1H), 2.62-2.57 (m, 1H), 2.17-2.05 (m, 1H), 1.00-0.98 (m, 6H). ^{13}C NMR (75 MHz, $CDCl_3$) δ 135.9, 135.8, 120.2, 118.4, 115.2, 114.5, 59.8, 53.3, 50.0, 44.8, 43.2, 26.6, 20.3, 19.3. MS (ESI): *m/z* 232 $[M+H]^+$, Anal. Calcd.(%) for $C_{14}H_{21}N_3$; C, 72.69; H, 9.15; N, 18.16; Found: C, 72.62; H, 9.23; N, 18.12.

(2*S*,4a*R*)-2-*iso*-Butyl-2,3,4,4a,5,6-hexahydro-1*H*-pyrazino[1,2-a]quinoxaline (20d): light brown oil. yield, 68% ; $[\alpha]_D^{30}$ = +264.1 (c 0.10, MeOH), HPLC analysis: ee > 99 (t_R = 5.9 min, CH_3CN/H_2O); R_f , 0.54 (9.0/1.0, chloroform/methanol); IR (neat, cm^{-1}): 3455, 3022, 2364, 1638, 1216, 768. ^1H NMR (300 MHz, $CDCl_3$) δ 6.77-6.67 (m, 3H), 6.54-6.51 (m, 1H), 3.48-3.23 (m, 7H), 3.10-2.87 (m, 3H), 1.72-1.51 (m, 3H), 0.98-0.94 (m, 6H). ^{13}C NMR (75 MHz, $CDCl_3$) δ 135.4, 135.1, 120.2, 118.7, 114.7, 114.4, 52.7, 50.8, 50.4, 43.4, 43.2, 38.5, 24.9, 22.6, 22.5. MS (ESI): *m/z* 246 $[M+H]^+$, Anal. Calcd.(%) for $C_{15}H_{23}N_3$; C, 73.43; H, 9.45; N, 17.13; Found: C, 73.48; H, 9.48; N, 17.19.

(2*S*,4a*R*)-2-(4-(Benzyloxy)benzyl)-2,3,4,4a,5,6-hexahydro-1*H*-pyrazino[1,2-a]quinoxaline (20e): light brown oil. yield, 64% ; R_f , 0.51 (9.2/0.8, chloroform/methanol); IR (neat, cm^{-1}): 3272, 2925, 2826, 1676, 1503, 1223, 767. ^1H NMR (300 MHz, $CDCl_3$) δ 7.44-7.36 (m, 5H), 7.07-7.04 (m, 2H), 6.97-6.94 (m, 2H), 6.80-6.77 (m, 3H), 6.69 (s, 1H), 5.07 (s, 2H), 3.45-3.31 (m, 6H), 2.96-2.84 (m, 4H). MS (ESI): *m/z* 386 $[M+H]^+$, Anal. Calcd.(%) for $C_{25}H_{27}N_3O$; C, 77.89; H, 7.06; N, 10.90; Found: C, 77.94; H, 7.00; N, 10.96.