Supplementary Information

Enantioselective Trapping of an α-Chiral Carbanion of Acyclic Nitrile by a Carbon Electrophile

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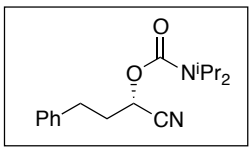
General

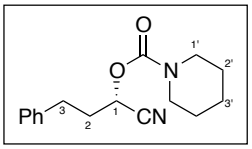
Infrared spectra were recorded on a HORIBA FT-720 spectrometer. Melting points were uncorrected. ^{1}H and ^{13}C NMR spectra were taken on a JEOL Lambda 500 (500 MHz). Chemical shifts are reported relative to $CHCl_3$ (δ 7.26) in $CDCl_3$ for ^{1}H NMR and $CHCl_3$ (δ 77.2) in $CDCl_3$ for ^{13}C NMR. Resonance patterns were described as s = singlet, d = doublet, t = triplet, m = multiplet, and br = broad. The assignment of ^{1}H and ^{13}C NMR spectra is based on H-H decoupling and HMQC experiments. Mass spectra were obtained either in ESI mode with a Thermo Fisher Scientific LTQ Orbitrap XL. Liquid chromatography under medium pressures (MPLC) was carried out using prepacked columns (22 mm x 100 mm (5 μ silica gel) or 22 mm x 300 mm (10 μ silica gel)). For routine chromatography, the following adsorbents were used: silica gel 60N of particle size 63-210 μm for column chromatography; precoated silica gel 60 F-254 plates for analytical thin-layer chromatography. Elemental analyses were performed using PerkinElmer 2400II. The optical rotation were determined using a JASCO DIP-1000 and concentrations are reported in g/100mL. All moisture sensitive reactions were performed under a positive pressure of nitrogen. Anhydrous $MgSO_4$ was used for drying all organic solvent extracts in workup, and the removal of the solvents was performed with a rotary evaporator. Dry solvents and reagents were obtained by using standard procedures.

Preparation of (*S*)-1-cyano-3-phenylpropyl diisopropylcarbamate (1a)



To a solution (25 °C) of (*S*)-2-hydroxy-4-phenylbutanenitrile (300 mg, 1.86 mmol) in pyridine (0.66 mL) was added diisopropylcarbamic chloride (548 mg, 3.35 mmol). After stirring at 90 °C for 15 h, the mixture was diluted with 1 N HCl solution (10mL) and Et_2O (15 mL) and extracted with Et_2O (15 mL x 3). Combined organic phases were washed with saturated brine (10 mL), dried, and concentrated. The residual oil was subjected to column chromatography (silica gel 15 g, elution with hexane: Et_2O = 4:1) to give **1a**[1] (464.7 mg, 87 %, 94 % ee).

Preparation of (*S*)-1-cyano-3-phenylpropyl piperidine-1-carboxylate (1e)

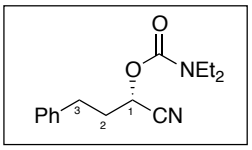


The same procedure as above was carried out by using 1-piperidinecarbonyl chloride (60 %, recovery of starting material: 20 %).

a colorless oil: $[\alpha]^{26}_{D}$ –30.4 (c 1.00, $CHCl_3$) (98% ee); CHIRALPAK AD-H (4.6 x 250 mm), hexane:*i*-PrOH = 10:1, flow rate 0.8 mL/min, detection at 254 nm, t_r = 11.1 min (major) and 11.9 min (minor); R_f = 0.280 (hexane: AcOEt = 4:1); IR (NaCl) 2939, 1712, 1435 cm^{-1}; ^{1}H NMR($CDCl_3$) δ 1.48-1.65 (6H, m, H-2' and H-3'), 2.19-2.30 (2H, m, H-2), 2.84 (2H, t, *J* = 7.0 Hz, H-3), 3.29-3.49 (4H, m, H-3), 5.32 (1H, dd, *J* = 6.7 Hz, H-4), 7.18-7.32 (5H, m, Ph); ^{13}C NMR ($CDCl_3$) δ 24.3, 25.6, 25.9, 31.1 (C-3), 34.4 (C-2), 45.2 (C-1'), 45.4 (C-1'), 62.0 (C-1), 117.7 (*C*N), 126.7 (Ph), 128.5 (Ph), 128.9 (Ph), 139.6 (Ph), 153.1 (*C*=O); HRMS-ESI (*m*/*z*): $[M + Na]^+$ calcd for $C_{16}H_{20}N_2O_2$ 295.1417 found 295.1419.

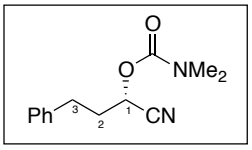
1) Sasaki, M., Kawanishi, E., Shirakawa, Y,. Kawahata, M., Masu, H., Yamaguchi, K. & Takeda, K. *Eur. J. Org. Chem.* 3061–3064 (2008).

Preparation of (*S*)-1-cyano-3-phenylpropyl diethylcarbamate (1c)



To a solution (0 °C) of triphosgene (221 mg, 0.744 mmol) in Et_2O (7.2 mL) was added Et_3N (0.31 mL, 2.23 mmol). After stirring at 0 °C for 20 min, the mixture was added a solutiuon of (*S*)-2-hydroxy-4-phenylbutanenitrile (300 mg, 1.86 mmol) in Et_2O (1.8 mL). After stirring at 0 °C for 30 min, the mixture was added Et_2NH (0.23 mL, 2.23 mmol) followed by stirring at 0 °C for 25 min before Et_3N (0.32 mL, 2.23 mmol) was addaed. After stirring at 0 °C for 45 h then 25 ºC for 30 min, the mixture was filtered through a pad of Celite with Et_2O (20 mL). The filtrates were dried and concentrated. The residual oil was subjected to column chromatography (silica gel 15 g, elution with hexane: Et_2O = 4:1) to give (*S*)-**1c** (408 mg, 84%, 89 % *ee*) as a colorless oil: $[a]^{26}_D$ –30.1 (c 1.00, $CHCl_3$) (95% ee); R_f = 0.30 (hexane: Et_2O = 3:1); IR (NaCl) 2976, 2936, 1714, 1428 cm^{-1}; ^1H NMR ($CDCl_3$) δ 1.12-1.17 (6H, brm, CH_2CH_3), 2.19-2.30 (2H, m, H-2), 2.84 (2H, t, *J* = 7.8 Hz, H-3) 3.17-3.34 (4H, m, CH_2CH_3), 5.36 (1H, dd *J* = 6.7 Hz, H-1), 7.18-7.34 (5H, m, Ph); ^{13}C NMR ($CDCl_3$) δ 13.4 (CH_2CH_3), 14.2 (CH_2CH_3), 31.0 (C-3), 34.5 (C-2), 41.6 (CH_2CH_3), 42.5 (CH_2CH_3), 61.8 (C-1), 117.7 (*C*N), 126.7 (Ph), 128.5 (Ph), 128.9 (Ph), 139.5 (Ph), 153.6 (*C*=O); HRMS-ESI (*m*/*z*): $[M + Na]^+$ calcd for $C_{15}H_{20}N_2O_2$ 283.1417 found 283.1423.

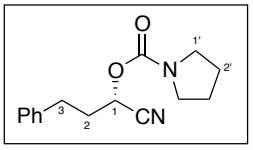
Preparation of (*S*)-1-cyano-3-phenylpropyl dimethylcarbamate (1b)



The same procedure as above was carried out by using dimethylamine (79 %).

a white solid: $[\alpha]^{26}_D$ –32.8 (c 1.00, $CHCl_3$) (97% ee); CHIRALPAK AD-H (4.6 x 250 mm, 4.6 x 150 mm), hexane:EtOH = 30:1, flow rate 1 mL/min, detection at 254 nm, t_r = 13.2 min (minor) and 14.9 min (major)); R_f = 0.20 (hexane: AcOEt = 4:1); mp 75-76 ºC, IR (KBr) 2936, 1713, 1728, 1399 cm^{-1}; ^1H NMR ($CDCl_3$) δ 2.19-2.31 (2H, m, H-2), 2.79-2.87 (2H, m, H-3), 2.88 (3H, s, NMe_2), 2.94 (3H, s, NMe_2), 5.31 (1H, dd *J*= 6.7 Hz H-1), 7.18-7.33 (5H, m, Ph); ^{13}C NMR ($CDCl_3$) δ 31.0 (C-3), 34.4 (C-2), 36.0 (NMe_2), 36.9 (NMe_2), 62.1 (C-1), 117.6 (*C*N), 126.7 (Ph), 128.5 (Ph), 128.5 (Ph), 139.5 (Ph), 154.2 (*C*=O); HRMS-ESI (*m*/*z*): $[M + Na]^+$ calcd for $C_{13}H_{16}N_2O_2$, 255.1104 found 255.1103; Anal Calcd for $C_{13}H_{16}N_2O_2$ C, 67.22; H, 6.94; N, 12.06. found C, 67.17; H, 6.96; N, 11.83.

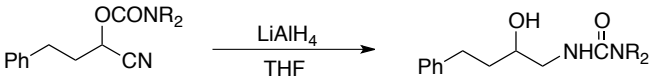
Preparation of (*S*)-1-cyano-3-phenylpropyl pyrrolidine-1-carboxylate (1d)



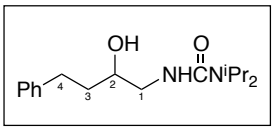
The same procedure as above was carried out by using pyrrolidine. (71 %, recovery of starting material:16 %)

a colorless oil: $[\alpha]^{26}_D$ –31.5 (c 1.00, $CHCl_3$) (96% ee); CHIRALPAK IA (4.6 x 250 mm), hexane:*i*-PrOH:EtOH = 20:1:1, flow rate 0.8 mL/min, detection at 254 nm, t_r = 13.2 min (minor) and 14.7 min (major); R_f = 0.28 (hexane: AcOEt = 4:1); IR (NaCl) 2975, 2956, 2880, 1723, 1418 cm^{-1}; ^1H NMR ($CDCl_3$) δ1.83-1.92 (4H, m, H-2'), 2.20-2.28 (2H, m, H-2), 2.79-2.87 (2H, m, H-3), 3.23-3.27 (1H, m, H-1'), 3.34-3.45 (3H, m, H-1'), 5.35 (1H, dd, *J*=6.7 Hz, H-1), 7.18-7.31 (5H, m, Ph); ^{13}C NMR ($CDCl_3$) δ 25.0 (C-2'), 25.8 (C-2'), 31.0 (C-3), 34.5 (C-2), 46.0 (C-1'), 46.7 (C-1'), 61.6 (C-1), 117.8 (*C*N), 126.7 (Ph), 128.5 (Ph), 128.9 (Ph), 139.6 (Ph), 152.6 (*C*=O); HRMS calcd for $C_{15}H_{18}O_2N_2$, 258.1368 found 259.1443. HRMS-ESI (*m*/*z*): $[M + Na]^+$ calcd for $C_{15}H_{18}N_2O_2$ 281.1261 found 281.1264.

Transformation of 1a and 1c to urea S1a and S1c

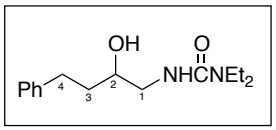


(*S*)-3-(2-hydroxy-4-phenylbutyl)-1,1-diisopropylurea (S1a)



To a cooled solution (0 °C) of **1a** (40 mg, 0.139 mmol) in THF (1.39 mL) was added lithiumaluminium hydride (15 mg, 0.361 mmol). After stirring at 0 °C for 30 min, sat. Na_2SO_4 was added by dropwise. The mixture was filtered through a pad of Celite with Et_2O (20 mL). The filtrates were dried and concentrated. The residual oil was subjected to column chromatography (silica gel 8 g, elution with hexane: AcOEt = 1:1) to give S**1a** (31.1 mg, 77%, 93 % *ee*) as a colorless oil: $[a]^{26}_D$ –11.0 (c 1.21, $CHCl_3$) (93% ee); CHIRALPAK AD-H (4.6 x 250 mm, 4.6 x 150 mm), hexane:*i*-PrOH = 10:1, flow rate 0.5 mL/min, detection at 254 nm, t_r =18.3 min (minor) and 20.3 min (major)); R_f = 0.25 (hexane: AcOEt = 1:1); IR (NaCl) 3365, 2969, 1617, 1525 cm^{-1}; ^{1}H NMR ($CDCl_3$) δ 1.28 (12H, d, *J* = 6.9 Hz, NCH*Me*$_2$), 1.72-1.88 (2H, m, H-3), 2.69-2.76 (1H, m, H-4), 2.82-2.90 (1H, m, H-4), 3.22-3.30 (1H, m, H-1), 3.45 (1H, ddd, *J*=14.2, 5.7, 2.3 Hz, H-1), 3.72-3.48 (1H, m, H-2), 3.86-3.95 (2H, m, NC*H*Me$_2$), 4.05-4.13 (1H, brs, O*H*), 4.65-4.72 (1H, brs, N*H*), 7.18-7.33 (5H, m, Ph); ^{13}C NMR ($CDCl_3$) δ 21.4 and 21.6 (NCH*Me*$_2$), 32.1 (C-4), 37.0 (C-3), 45.5 (N*C*HMe$_2$), 47.2 (C-1), 72.1 (C-2), 126.0 (Ph), 128.6 (Ph), 128.6 (Ph), 142.3 (Ph), 158.8 (*C*=O); HRMS-ESI (*m*/*z*): $[M + Na]^+$ calcd for $C_{17}H_{28}O_2N_2$ 315.2043 found 315.2040.

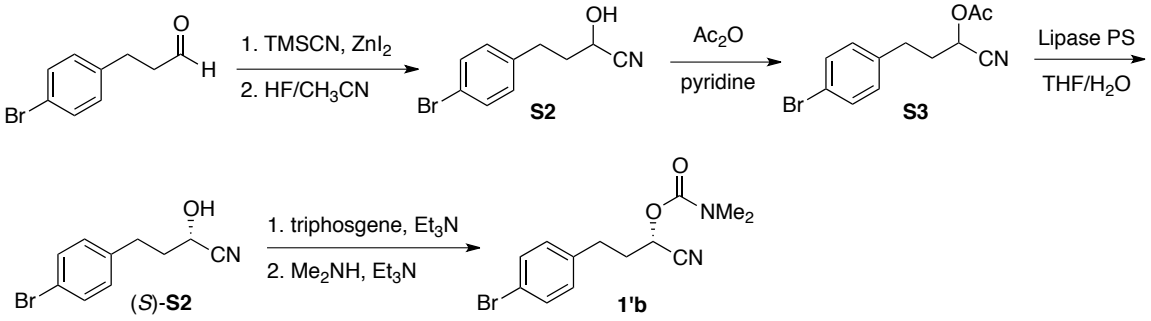
(*S*)-1,1-diethyl-3-(2-hydroxy-4-phenylbutyl)urea (S1c)



The same procedure as above was carried out by using **1c**. (73 %)

a colorless oil: $[\alpha]^{26}_D$ –8.0 (c 0.27, $CHCl_3$) (95% ee); CHIRALPAK AD-H (4.6 x 250 mm, 4.6 x 150 mm), hexane:*i*-PrOH = 3:1, flow rate 0.6 mL/min, detection at 254 nm, t_r = 9.9 min (major) and 12.5 min (minor); R_f = 0.25 (hexane: AcOEt = 1:1); IR (NaCl) 3366, 2930, 1624, 1536 cm^{-1}; ^{1}H NMR ($CDCl_3$) δ 1.14 (6H, t, *J* = 7.1 Hz, N(CH_2*Me*)$_2$), 1.68-1.82 (2H, m, H-3), 2.65-2.71 (1H, m, H-4), 2.79-2.85 (2H, m, H-4), 3.17-3.23 (1H, m, H-1), 3.26 (4H, q, *J* = 7.1 Hz, N(*CH*$_2$Me)$_2$), 3.38-3.43 (1H, m, H-1) 3.68-3.75 (1H, m, H-2), 4.68-4.72 (1H, brs, N*H*), 7.15-7.30 (5H, m, Ph); ^{13}C NMR ($CDCl_3$) δ 14.0 (N(CH_2*Me*)$_2$), 32.1 (C-4), 36.8 (C-3), 41.7 (N(*CH*$_2$Me)$_2$), 47.4 (C-1), 72.1 (C-2), 126.0 (Ph), 128.5 (Ph), 128.7 (Ph), 142.3 (Ph), 158.8 (*C*=O); HRMS-ESI (*m*/*z*): $[M + Na]^+$ calcd for $C_{15}H_{24}N_2O_2$ 287.1730 found 287.1733.

Preparation of (S)-3-(4-bromophenyl)-1-cyanopropyl dimethylcarbamate (1'b)



4-(4-bromophenyl)-2-hydroxybutanenitrile (S2)

To a cooled mixture (0 °C) of 3-(4-bromophenyl)propanal[2] (3.0 g, 14.1 mmol) and ZnI_2 (45 mg, 0.14 mmol) was added trimethylsilyl cyanide (97%, 2.3 mL, 16.9 mmol). The solution was stirred at rt for 2 h, and HF solution (5% in CH_3CN, 4.7 mL) was added. After being stirred at the same temperature for 2 h, the reaction mixture was diluted with aqueous $NaHCO_3$ solution (10 mL) and extracted with Et_2O (10 mL x 3). Combined organic phases were washed with saturated bine (10 mL), dried and concentrated. The residual oil was subjected to column chromatography (silica gel 40 g, elution with hexane: AcOEt = 4:1) to give S**2** (2.14 g, 63%) as a pale yellow oil: R_f = 0.33 (hexane: AcOEt = 4:1); IR (NaCl) 3433, 2954, 2932, 1488 cm^{-1}; ^1H NMR ($CDCl_3$) δ 2.08-2.19 (2H, m, H-2), 2.75-2.84 (2H, m, H-3), 2.91 (1H, br, O*H*), 4.42 (1H, t, *J* = 6.5 Hz, H-4), 7.08 (2H, d, *J* = 8.3 Hz, Ph), 7.43 (2H, d, *J* = 8.3 Hz, Ph); ^{13}C NMR ($CDCl_3$) δ 30.2 (C-3), 36.5 (C-4), 60.4 (C-2), 119.8, 120.6, 130.4, 132.0, 142.3 (CN and Ph); HRMS-APPI (*m/z*): M^+ calcd for $C_{10}H_{10}ONBr$ 238.9940 found 238.9941.

3-(4-bromophenyl)-1-cyanopropyl acetate (S3)

To a cooled solution (0 °C) of S**2** (1.0 g, 4.16 mmol) in pyridine (1.89 mL) was added Ac_2O (549 mL, 5.82 mmol). After being stirred at rt for 2.5 h, the mixture was partitioned between hydrochloric acid (1N, 15 mL) and Et_2O (10 mL). The aqueous phase was extracted with Et_2O (10 mL x 3). Combined organic phases were washed with saturated bine (15 mL), dried and concentrated. The residual oil was subjected to column chromatography (silica gel 40 g, elution with hexane: Et_2O = 4:1) to give S**3** (0.90 g, 77%) as a yellow oil: R_f = 0.32 (hexane: Et_2O = 4:1); IR (NaCl) 2940, 1754 cm^{-1}; ^1H NMR ($CDCl_3$) δ 2.13 (3H, s, Me), 2.18-2.23 (2H, m, H-2), 2.74-2.84 (1H, m, H-3), 5.27 (1H, t, *J* = 6.6 Hz, H-1), 7.07 (2H, d, *J* = 8.1 Hz, Ph), 7.44 (2H, d, *J* = 8.1 Hz, Ph); ^{13}C NMR ($CDCl_3$) δ 20.5 (C(O)*Me*), 30.3 (C-3), 33.7 (C-2), 60.5 (C-1), 116.7, 120.7, 130.2, 132.0, 138.2 (CN and Ph), 169.2 (C=O).; HRMS-APPI (*m/z*): [M + H]$^+$ calcd for $C_{12}H_{12}O_2NBr$ 282.0124 found 282.0127.

(*S*)-4-(4-bromophenyl)-2-hydroxybutanenitrile ((S)-S2)

To a solution of **S3** (900 mg, 31.8 mmol) in 10% THF-H_2O (4 mL) was added Amano lipase PS (100 mg). After stirring for 4.5 hr at 50 °C, AcOEt (10 mL) and saturated brine (10 mL) were added. The mixture was filtered through a pad of Celite, extracted with AcOEt (10 mL x 3), dried and concentrated. The residual oil (**S3**:**S2** = 2:1) was dissolved in 10% THF-H_2O (4 mL) and added Amano lipase PS (200 mg). After stirring for 3 hr at 50 °C and 12 hr at rt, AcOEt (10 mL) and saturated brine (10 mL) were added. The mixture was filtered through a pad of Celite, extracted with AcOEt (10 mL x 3), dried and concentrated. The residual oil was subjected to column chromatography (silica gel 15 g, elution with hexane: Et_2O = 4:1 to 2:1) to give the title compound (380 mg, 50%) and starting material (340 mg, 38%).

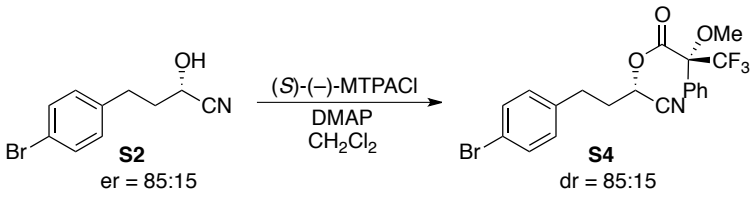
(S)-3-(4-bromophenyl)-1-c1yanopropyl dimethylcarbamate (1'b)

To a solution (0 °C) of triphosgene (98 mg, 0.33 mmol) in Et_2O (3.9 mL) was added Et_3N (0.14 mL, 1.00 mmol). After stirring at 0 °C for 10 min, the mixture was added a solutiuon of (*S*)-**2S** (200 mg, 0.83 mmol) in Et_2O (0.8 mL). After stirring at 0 °C for 40 min, the mixture was successively added Me_2NH (2M in hexane, 0.50 mL, 1.00 mmol) and Et_3N (0.14 mL, 1.00 mmol). After stirring at rt for 2 h, the mixture was filtered through a pad of Celite with AcOEt. The filtrates were dried and concentrated. The residual oil was subjected to column chromatography (silica gel 17 g, elution with hexane: Et_2O = 4:1 to 2:1) to give (*S*)-**1'b** (229 mg, 88%, 70 % *ee*). (*S*)-**1'b** was separated by using a chiral HPLC column (CHIRALPAK AD-H (20 mm x 250 mm), hexane:*i*-PrOH = 10:1, flow rate 6.5 mL/min). The compound was determined to have 97% enantiomeric purity by chiral HPLC analysis (CHIRALPAK AD-H (4.6 x 250 mm),

2) Liu J. et al. *Bioorg. Med. Chem. Lett.* **2010**, *20*, 2074-2077.

hexane:*i*-PrOH = 10:1, flow rate 0.8 mL/min, detection at 254 nm, t_r = 14.2 min (major) and 15.0 min (minor)); colorless oil; R_f = 0.31 (hexane: Et_2O = 2:1); $[\alpha]^{26}_D$ –25.6 (c 0.85, $CHCl_3$) (97% ee); IR (NaCl) 2938, 1722, 1489 cm^{-1}; ^1H NMR ($CDCl_3$) δ 2.18-2.25 (2H, m, H-2), 2.75-2.83 (2H, m, H-3), 2.87 (3H, s, N*Me*$_2$), 2.94 (3H, s, N*Me*$_2$), 5.31 (1H, t, *J* = 6.5 Hz, H-1), 7.07 (2H, d, *J* = 7.6 Hz, Ph), 7.43 (2H, d, *J* = 7.6 Hz, Ph); ^{13}C NMR ($CDCl_3$) δ 30.5 (C-3), 34.2 (C-2), 36.0 (N*Me*$_2$), 36.9 (N*Me*$_2$), 62.0 (C-1), 117.5, 120.6, 130.2, 132.0, 138.5 (CN and Ph), 154.2 (C=O); HRMS-ESI (*m*/*z*): $[M + Na]^+$ calcd for $C_{13}H_{15}O_2N_2Br$ 333.0209 found 333.0213.

Determination of absolute configuration of 1'b



3-(4-bromophenyl)-1-cyanopropyl 3,3,3-trifluoro-2-methoxy-2-phenylpropanoate (S4)

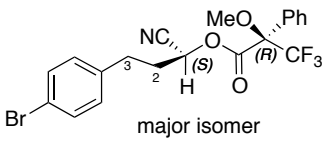
To a cooled solution (0 °C) of **S2** (70% ee, 50.0 mg, 0.2 mmol) and DMAP (49 mg, 0.4 mmol) in CH_2Cl_2 (4.8 mL) was added (*R*)-(–)-MTPACl (47 μL, 0.25 mmol). After stirring at rt for 10 min, the mixture was diluted with saturated $NaHCO_3$ solution (5 mL) and extracted with Et_2O (10 mL x 3). Combined organic phases were washed with water (10 mL) and saturated brine (10 mL), dried, and concertrated. The residual oil was subjected to column chromatography (silica gel 30 g, elution with hexane: AcOEt = 6:1) to give **S4** (81 mg, 89% dr = 1:0.17).

major isomer: (*R*)-(*S*)-3-(4-bromophenyl)-1-cyanopropyl 3,3,3-trifluoro-2-methoxy-2-phenylpropanoate

a colorless oil; $[\alpha]^{26}_D$ –2.13 (c 1.00, $CHCl_3$) (100% ee); R_f = 0.42 (hexane: AcOEt = 4:1); IR (NaCl) 2951, 1763, 1490 cm^{-1}; ^1H NMR ($CDCl_3$) δ 2.23-2.34 (2H, m, H-2), 2.72-2.82 (2H, m, H-3), 3.54 (3H, s, OCH_3), 5.40 (1H, t, *J* = 6.7 Hz, H-1), 7.02 (2H, d, *J* = 8.2 Hz, Ph), 7.40-7.53 (7H, m, Ph); ^{13}C NMR ($CDCl_3$) δ 30.2 (C-3), 33.6 (C-2), 55.8 (OCH_3), 62.1 (C-1), 115.4, 121.0, 127.4, 128.9, 130.2, 130.3, 132.2, 137.6 (CN and Ph), 165.5 (C=O) ; HRMS-APPI (*m*/*z*): $[M + H]^+$ calcd for $C_{20}H_{17}NO_3BrF_3$ 456.0417 found 456.0422.

minor isomer: (*R*)-(*R*)-3-(4-bromophenyl)-1-cyanopropyl 3,3,3-trifluoro-2-methoxy-2-phenylpropanoate

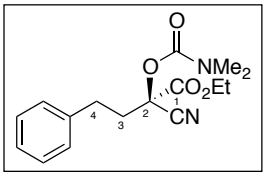
a colorless oil; $[\alpha]^{26}_D$ +52.7 (c 0.38, $CHCl_3$) (100% ee); R_f = 0.42 (hexane: AcOEt = 4:1); IR (NaCl) 2950, 1765, 1490 cm^{-1}; ^1H NMR ($CDCl_3$) δ 2.15-2.30 (2H, m, H-2), 2.58-2.72 (2H, m, H-3), 3.58 (3H, s, OCH_3), 5.42 (1H, t, *J* = 6.7 Hz, H-1), 6.94 (2H, d, *J* = 7.9 Hz, Ph), 7.39-7.53 (7H, m, Ph); ^{13}C NMR ($CDCl_3$) δ 29.9 (C-3), 33.7 (C-2), 55.9 (OCH_3), 61.6 (C-1), 115.7, 120.9, 127.3, 129.0, 130.2, 130.4, 132.1, 137.6 (CN and Ph), 165.6 (C=O); HRMS-APPI (*m*/*z*): $[M + H]^+$ calcd for $C_{20}H_{17}NO_3BrF_3$ 456.0417 found 456.0422.



	^1H chemical shift (δ ppm)		
	major	minor	Δδ (major–minor)
H-2	2.23-2.34	2.15-2.30	+0.06
H-3	2.72-2.82	2.58-2.72	+0.12

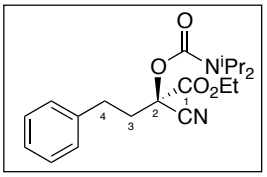
Reaction of 1a-e with LDA and cyanoformate

(*R*)-Ethyl 2-cyano-2-((dimethylcarbamoyl)oxy)-4-phenylbutanoate (4b)



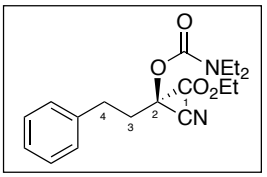
To a cooled (–111 °C) solution of (*S*)-**1b** (30 mg, 0.13 mmol) and ethyl cyanoformate (0.038 mL, 0.39 mmol) in Et_2O (0.212 mL) and THF (0.423 mL) was added dropwise a solution of lithium diisopropylamide (1.2 M in Et_2O, 0.325 mL, 0.39 mmol) over a period of 2 min. The mixture was stirred at the same temperature for 5 min before addition of CH_3COOH (1.0 M in Et_2O, 0.390 mL, 0.390 mmol). The mixture was diluted with H_2O (10 mL) and Et_2O (10 mL), and extracted with Et_2O (10 mL x 3). Combined organic phases were washed with saturated brine (10 mL), dried, and concertrated. The residual oil was subjected to column chromatography (silica gel 15 g, elution with hexane: Et_2O = 4:1) to give **4b** (36.3 mg, 92%, 80 % *ee*) as a colorless oil: $[\alpha]^{26}_D$ +33.1 (c 0.67, $CHCl_3$) (78% ee); CHIRALPAK AD-H (4.6 x 250 mm), hexane:*i*-PrOH = 10:1, flow rate 0.8 mL/min, detection at 254 nm, t_r = 8.7 min (minor) and 10.9 min (major)); R_f = 0.28 (hexane: AcOEt = 4:1); IR (NaCl) 2937, 1760, 1727, 1398 cm^{-1}; ^1H NMR ($CDCl_3$) δ 1.36 (3H, t, *J* = 7.2 Hz, CH_2*Me*), 2.35-2.47 (2H, m, H-3), 2.87-2.97 (2H, m, H-4), 2.93 (3H, s, N*Me*$_2$), 2.96 (3H, s, N*Me*$_2$), 4.29-4.38 (2H, m,*CH*$_2$Me), 7.20-7.34 (5H, m, Ph). ^{13}C NMR($CDCl_3$) δ 14.1 (CH_2*Me*), 30.4 (C-4), 36.2 (N*Me*$_2$), 37.0 (N*Me*$_2$), 38.7 (C-3), 63.7 (*CH*$_2$Me), 73.8 (C-2), 116.0 (CN), 126.8 (Ph), 128.6 (Ph), 128.9 (Ph), 139.4 (Ph), 153.7 (O*C*(=O)NMe$_2$), 165.8 (*C*(=O)OCH$_2$Me); HRMS-ESI (*m/z*): [M + Na]$^+$ calcd for $C_{16}H_{20}N_2O_4$, 327.1315 found 327.1316.

(*R*)-Ethyl 2-cyano-2-((diisopropylcarbamoyl)oxy)-4-phenylbutanoate (4a)



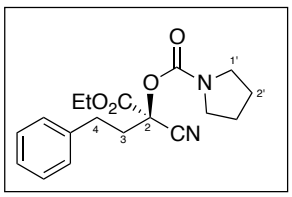
a colorless oil: R_f = 0.25 (hexane: Et_2O = 4:1); IR (NaCl) 2975, 1759, 1714 cm^{-1}; ^1H NMR ($CDCl_3$) δ 1.20-1.30 (12 H, brm, NCH*Me*$_2$) 1.33 (3H, t, *J* = 7.2 Hz, CH_2*Me*), 2.35-2.46 (2H, m H-3), 2.88-3.02 (2H, m, H-4), 3.70-3.77 (1H, brs, NC*HMe*$_2$), 3.98-4.05 (1H, brs, NC*HMe*$_2$) 4.24-4.35 (2H, m, C*H*$_2$Me), 7.20-7.34 (5H, m, Ph); ^{13}C NMR ($CDCl_3$) δ 14.1 (OCH$_2$*Me*), 20.4 (CH*Me*$_2$), 20.5 (CH*Me*$_2$), 21.5 (CH*Me*$_2$), 21.8 (CH*Me*$_2$), 30.6 (C-4), 38.8 (C-3), 46.3 (N*C*HMe$_2$), 47.6 (N*C*HMe$_2$), 63.5 (*C*H$_2$Me), 73.7 (C-2), 116.2 (*C*N), 126.8 (Ph), 128.5 (Ph), 128.9 (Ph), 139.5 (Ph), 152.9 (O*C*(O)N^{i}Pr$_2$), 165.8 (*C*(O)OEt); HRMS-ESI (*m/z*): [M + Na]$^+$ calcd for $C_{20}H_{28}N_2O_4$ 383.1941 found 383.1944.

(*R*)-Ethyl 2-cyano-2-((diethylcarbamoyl)oxy)-4-phenylbutanoate (4c)



a colorless oil: R_f = 0.29 (hexane: AcOEt = 4:1); IR (NaCl) cm^{-1}; ^1H NMR ($CDCl_3$) δ 1.13-1.22 (6H, m, NCH$_2$*Me*$_2$) 1.34 (3H, t, *J* = 7.2 Hz, OCH$_2$*Me*), 2.34-2.45 (2H, m H-3), 2.87-2.97 (2H, m, H-4), 3.26 (2H, q, *J* = 7.0 Hz, NC*H*$_2$Me$_2$), 3.33 (2H, q, *J* = 7.0 Hz, NC*H*$_2$Me$_2$), 4.32 (2H, q, *J* = 7.2 Hz, OC*H*$_2$Me), 7.19-7.34 (5H, m, Ph); ^{13}C NMR ($CDCl_3$) δ 13.4 (OCH$_2$*Me*), 14.1 (NCH$_2$*Me*), 30.4 (C-4), 38.8 (C-3), 42.0 (N*C*H$_2$Me$_2$), 42.7 (N*C*H$_2$Me$_2$), 63.6 (O*C*H$_2$Me), 73.7 (C-2), 116.1 (*C*N), 126.8 (Ph), 128.5 (Ph), 128.9 (Ph), 139.4 (Ph), 152.2 (O*C*(O)N^{i}Pr$_2$), 165.8 (*C*(O)OEt); HRMS-ESI (*m/z*): [M + Na]$^+$ calcd for $C_{18}H_{24}N_2O_4$ 355.1628 found 355.1627.

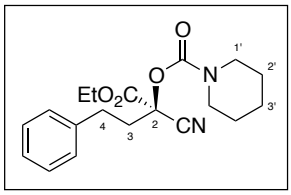
(*R*)-2-Cyano-1-ethoxy-1-oxo-4-phenylbutan-2-yl pyrrolidine-1-carboxylate (4d)



a colorless oil: $[\alpha]^{26}_D$ +51.2 (c 0.84, $CHCl_3$) (49% ee); CHIRALPAK AD-H (4.6 x 250 mm), hexane:*i*-PrOH = 10:1, flow rate 0.8 mL/min, detection at 254 nm, t_r = 10.0 min (minor) and 12.4 min (major); R_f = 0.25 (hexane: AcOEt = 4:1); IR (NaCl) 2979, 1759, 1726 cm^{-1}; ^1H NMR($CDCl_3$) δ 1.35 (3H, t, *J*= 7.1 Hz, CH_2*Me*), 1.85-1.95 (4H, m, H-2'), 2.33-2.45 (2H, m, H-3), 2.87-2.98 (2H, m, H-4), 3.32-3.36 (1H, m, H-1'), 3.39-3.48 (3H, m, H-1'), 4.28-4.37 (2H, m, *CH*$_2$Me), 7.19-7.33 (5H, m, Ph); ^{13}C NMR ($CDCl_3$) δ 14.1, (CH_2*Me*), 25.0 (C-2'), 25.9

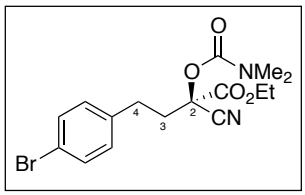
(C-2'), 30.3 (C-4), 38.7 (C-3), 46.2 (C-1'), 46.7 (C-1'), 63.6 (*C*H_2Me), 73.5 (C-2), 116.1 (*C*N), 126.8 (Ph), 128.6 (Ph), 128.9 (Ph), 139.5 (Ph), 152.0 (O*C*(=O)N), 165.9 (*C*(=O)OEt); HRMS-ESI (*m/z*): [M + Na]$^+$ calcd for $C_{18}H_{22}N_2O_4$ 353.1472 found 353.1477.

(*R*)-2-Cyano-1-ethoxy-1-oxo-4-phenylbutan-2-yl piperidine-1-carboxylate (4e)



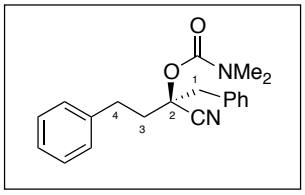
a colorless oil: $[\alpha]^{26}_D$ +16.5 (c 0.55, $CHCl_3$) (58% ee); CHIRALPAK AD-H (4.6 x 250 mm), hexane:*i*-PrOH = 10:1, flow rate 0.8 mL/min, detection at 254 nm, t_r = 8.1 min (minor) and 9.7 min (major)); R_f = 0.50 (hexane: AcOEt = 2:1); IR (NaCl) 2939, 1760, 1720 cm^{-1}; ^{1}H NMR ($CDCl_3$) δ 1.35 (3H, t, *J*=7.2 Hz, CH_2*Me*), 1.50-1.64 (6 H, m, H-2' and H-3'), 2.34-2.45 (2H, m, H-3), 2.87-2.98 (2H, m, H-4), 3.27-3.46 (4H, m, H-1'), 4.32 (2H, q, *J* = 7.2 Hz, C*H*$_2$Me), 7.20-7.28 and 7.28-7.32 (6H, m, Ph); ^{13}CNMR ($CDCl_3$) δ 14.2 (CH_2*Me*), 24.2 (C-3'), 25.5 (C-3'), 25.9 (C-2'), 30.4 (C-4), 38.6 (C-3), 45.5 (C-1'), 63.6 (*C*H_2Me), 73.8 (C-2), 116.1 (*C*N), 126.8 (Ph), 128.6 (Ph), 128.9 (Ph), 139.5 (Ph), 152.6 (O*C*(=O)N), 165.8 (*C*(=O)OEt); HRMS-ESI (*m/z*): [M + Na]$^+$ calcd for $C_{19}H_{24}N_2O_4$ 367.1628 found 367.1630.

(*R*)-ethyl 4-(4-bromophenyl)-2-cyano-2-((dimethylcarbamoyl)oxy)butanoate (4'b)



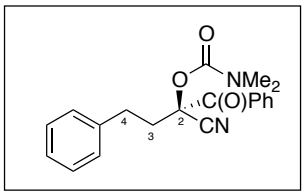
a colorless oil: $[\alpha]^{26}_D$ +54.9 (c 0.03, $CHCl_3$) (100% ee); CHIRALPAK AD-H (4.6 x 250 mm), hexane:*i*-PrOH = 10:1, flow rate 0.8 mL/min, detection at 254 nm, t_r = 11.7 min (minor) and 15.4 min (major)); R_f = 0.2 (hexane: Et_2O = 4:1); IR (NaCl) 2979, 2939, 1760, 1727 cm^{-1}; ^{1}H NMR ($CDCl_3$) δ 1.35 (3H, t, *J* = 7.1 Hz, CH_2*Me*), 2.31-2.42 (2H, m, H-3), 2.81-2.92 (2H, m, H-4), 2.90 (3H, s, N*Me*$_2$), 2.95 (3H, s, N*Me*$_2$), 4.27-4.37 (2H, m,*CH*$_2$Me), 7.09 (2H, d, *J* = 8.2 Hz, Ph), 7.43 (2H, d, *J* = 8.2 Hz, Ph); ^{13}C NMR($CDCl_3$) δ 14.1 (CH_2*Me*), 29.9 (C-4), 36.2 (N*Me*$_2$), 37.0 (N*Me*$_2$), 38.4 (C-3), 63.8 (*CH*$_2$Me), 73.6 (C-2), 115.9 (CN), 120.7 (Ph), 130.3 (Ph), 132.0 (Ph), 138.3 (Ph), 153.6 (O*C*(=O)NMe$_2$), 165.7 (*C*(=O)OCH$_2$Me); HRMS-ESI (*m/z*): [M + Na]$^+$ calcd for $C_{16}H_{19}N_2O_4Br$, 405.0420 found 405.0428. **4'b** and *ent*-**4'b** were separated by using a chiral HPLC column (CHIRALPAK AD-H (20 mm x 250 mm), eluent: hexane:*i*-PrOH:MeOH = 10:1, flow rate 7.3 mL/min).

(*S*)-2-cyano-1,4-diphenylbutan-2-yl dimethylcarbamate (3b)



a colorless oil: CHIRALPAK IC (4.6 x 250 mm), hexane:*i*-PrOH:EtOH = 20:1:1, flow rate 0.9 mL/min, detection at 254 nm, t_r = 22.8 min and 24.4 min); R_f = 0.31 (hexane: Et_2O = 4:1); IR (NaCl) 3029, 2934, 2361, 1718, 1495, 1453 cm^{-1}; ^{1}H NMR ($CDCl_3$) δ 2.13-2.20 (1H, m, H-3), 2.26-2.33 (1H, m, H-3), 2.77 (3H, s, NMe_2), 2.82-2.90 (2H, m, H-4), 2.94 (3H, s, NMe_2), 3.39 (1H, d, *J* = 13.8 Hz, H-1), 3.45 (1H, d, *J* = 13.8 Hz, H-1), 7.12-7.34 (10H, m, Ph); ^{13}CNMR ($CDCl_3$) δ 30.6 (C-4), 36.1 (NMe_2), 36.7 (NMe_2), 38.9 (C-3), 43.0 (C-1), 75.7 (C-2), 118.7, 126.5, 127.9, 128.6, 128.7, 128.8, 130.8, 133.5, 140.2 (CN and Ph), 153.9 (*C*(O)NMe$_2$); HRMS-ESI (*m/z*): [M + Na]$^+$ calcd for $C_{20}H_{22}N_2O_2$, 345.1574 found 345.1578.

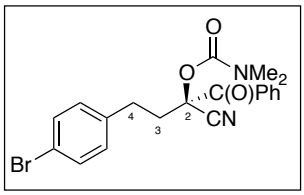
(*R*)-2-cyano-1-oxo-1,4-diphenylbutan-2-yl dimethylcarbamate (5b)



a white solid: $[\alpha]^{26}_D$ +25.6 (c 0.14, $CHCl_3$) (61% ee); CHIRALPAK AY-H (4.6 x 250 mm), hexane:*i*-PrOH :EtOH= 10:2:1, flow rate 0.6 mL/min, detection at 254 nm, t_r = 20.9 min (major) and 26.1 min (minor)); R_f = 0.25 (hexane: AcOEt = 4:1); mp 84-85 ºC, IR (KBr) 2928, 1713, 1691, 1404 cm^{-1}; ^{1}H NMR ($CDCl_3$) δ 2.49-2.56 (1H, m, H-3), 2.58-2.66 (1H, m, H-3), 2.86 (3H, s, NMe_2), 2.96 (3H, s, NMe_2), 2.99-3.10 (2H, m, H-4), 7.20-7.24 (3H, m, Ph), 7.28-7.32 (2H, m, Ph), 7.47 (2H, dd, *J* = 7.6 Hz, 2H), 7.59 (1H, t, *J* = 7.6 Hz, 1H), 8.05

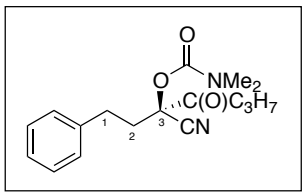
(2H, d, J = 7.6 Hz); ^{13}CNMR ($CDCl_3$) δ 30.7 (C-4), 36.2 (NMe_2), 36.9 (NMe_2), 38.9 (C-3), 79.5 (C-2), 116.9, 126.8, 128.5, 128.9, 129.1, 133.0, 133.9, 139.4 (CN and Ph), 153.5 (*C*(O)NMe_2), 190.2 (*C*(O)Ph); HRMS-ESI (*m/z*): [M + Na]$^+$ calcd for $C_{20}H_{20}N_2O_3$, 359.1366 found 359.1370.

(*R*)-4-(4-bromophenyl)-2-cyano-1-oxo-1-phenylbutan-2-yl dimethylcarbamate (5'b)



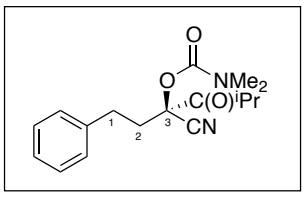
a white solid: $[\alpha]^{26}_D$ +29.7 (c 0.55, $CHCl_3$) (76% ee); CHIRALPAK AD-H (4.6 x 250 mm), hexane:*i*-PrOH = 5:1, flow rate 0.6 mL/min, detection at 254 nm, t_r = 24.0 min (minor) and 26.8 min (major)); R_f = 0.33 (hexane: AcOEt = 4:1); mp 154-155 ºC, IR (KBr) 1716, 1690 cm^{-1}; ^{1}H NMR ($CDCl_3$) δ 2.46-2.53 (1H, m, H-3), 2.56-2.62 (1H, m, H-3), 2.85 (3H, s, NMe_2), 2.95 (3H, s, NMe_2), 2.92-3.05 (2H, m, H-4), 7.09 (2H, d, J = 8.0 Hz, Ph), 7.41(2H, d, J = 8.0 Hz, Ph), 7.47 (2H, dd, J = 7.3, 7.3 Hz, 2H), 7.60 (1H, t, J = 7.3 Hz, 1H), 8.04 (2H, d, J = 7.3 Hz); ^{13}CNMR ($CDCl_3$) δ 30.2 (C-4), 36.3 (NMe_2), 37.0 (NMe_2), 38.6 (C-3), 79.2 (C-2), 116.9, 120.64, 128.9, 129.1, 130.3, 132.0, 133.0, 134.0, 138.4 (CN and Ph), 153.5 (*C*(O)NMe_2), 190.1 (*C*(O)Ph); HRMS-ESI (*m/z*): [M + Na]$^+$ calcd for $C_{20}H_{19}N_2O_3Br$, 437.0471 found 437.0470. **5'b** and *ent*-**5'b** were separated by using a chiral HPLC column (CHIRALPAK AD-H (20 mm x 250 mm), eluent: hexane:*i*-PrOH = 5:1, flow rate 3.5 mL/min).

(*R*)-3-cyano-4-oxo-1-phenylheptan-3-yl dimethylcarbamate (6b)



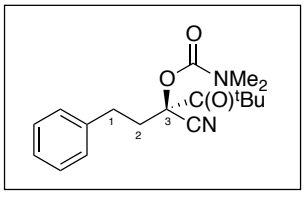
a colorless oil: $[\alpha]^{26}_D$ +32.5 (c 0.67, $CHCl_3$) (57% ee); CHIRALPAK AD-H (4.6 x 250 mm), hexane:*i*-PrOH = 10:1, flow rate 0.8 mL/min, detection at 254 nm, t_r = 7.9 min (minor) and 9.8 min (major)); R_f = 0.28 (hexane: AcOEt = 6:1); IR (NaCl) 2965, 2933, 2361, 1724 cm^{-1}; ^{1}H NMR ($CDCl_3$) δ 0.95 (3H, t, J = 7.4 Hz, $CH_2CH_2CH_3$), 1.61-1.73 (2H, m, $CH_2CH_2CH_3$), 2.17- 2.28 (2H, m, H-2), 2.58-2.65 (1H, m, $CH_2CH_2CH_3$), 2.92 (3H, s, NMe_2), 2.93 (3H, s, NMe_2), 2.90-3.00 (3H, m, $CH_2CH_2CH_3$ and C-1), 7.18-7.33 (5H, m, Ph); ^{13}CNMR ($CDCl_3$) δ 13.6 ($CH_2CH_2CH_3$), 16.8 ($CH_2CH_2CH_3$), 30.5 (C-1), 36.3 (Me), 36.9 (Me), 37.9 (C-2), 40.2 ($CH_2CH_2CH_3$), 77.9 (C-3), 117.1, 126.9, 128.6, 128.9, 139.5 (CN and Ph), 153.9 (*C*(O)NMe_2), 200.0 (*C*(O)Pr); HRMS-ESI (*m/z*): [M + Na]$^+$ calcd for $C_{17}H_{22}N_2O_3$, 325.1523 found 325.1526.

(*R*)-3-cyano-5-methyl-4-oxo-1-phenylhexan-3-yl dimethylcarbamate (7b)



a colorless oil: $[\alpha]^{26}_D$ +27.6 (c 0.78, $CHCl_3$) (44% ee); CHIRALPAK AD-H (4.6 x 250 mm), hexane:*i*-PrOH = 10:1, flow rate 0.8 mL/min, detection at 254 nm, t_r = 6.8 min (minor) and 7.7 min (major)); R_f = 0.33 (hexane: AcOEt = 4:1); IR (NaCl) 2973, 2933, 2361, 1724 cm^{-1}; ^{1}H NMR ($CDCl_3$) δ 1.18 (3H, d, J = 6.8 Hz, $CHMe_2$), 1.18 (3H, d, J = 6.8 Hz, $CHMe_2$), 2.18-2.29 (2H, m, H-2), 2.89-3.97 (2H, m, H-1), 2.92 (3H, s, NMe_2), 2.93 (3H, s, NMe_2), 3.30-3.38 (1H, m, $CHMe_2$), 7.19-7.34 (5H, m, Ph); ^{13}CNMR ($CDCl_3$) δ 19.2 ($CHMe_2$), 19.9 ($CHMe_2$), 30.7 (C-1), 36.3 (NMe_2), 37.1 (NMe_2), 38.1 ($CHMe_2$), 77.6 (C-3), 117.2 (CN), 126.9, 128.6, 129.0, 139.6 (CN and Ph), 153.8 (O*C*(=O)NMe_2),204.2 (*C*(=O)^{i}Pr); HRMS-ESI (*m/z*): [M + Na]$^+$ calcd for $C_{17}H_{22}N_2O_3$, 325.1523 found 325.1529.

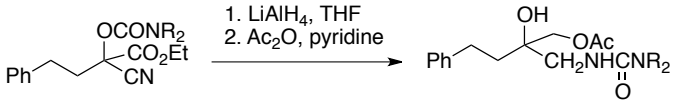
(*R*)-3-cyano-5,5-dimethyl-4-oxo-1-phenylhexan-3-yl dimethylcarbamate (8b)



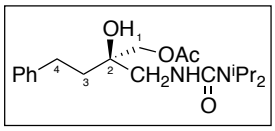
a colorless solid: $[\alpha]^{26}_D$ +11.0 (c 0.79, $CHCl_3$) (20% ee); CHIRALPAK AD-H (4.6 x 250 mm), hexane:*i*-PrOH = 10:1, flow rate 0.8 mL/min, detection at 254 nm, t_r = 6.3 min (minor) and 6.8 min (major)); R_f = 0.33 (hexane: AcOEt = 4:1); mp 101-102 ºC, IR (KBr) 2970, 2938, 1721, 1394 cm^{-1}; ^{1}H NMR ($CDCl_3$) δ 1.42 (9H, s, ^{t}Bu), 2.21-2.36 (2H, m, H-2), 2.85-3.01 (2H, m, H-1), 2.93 (3H, s, NMe_2),

2.95 (3H, s, NMe_2), 7.19-7.34 (5H, m, Ph); ^{13}CNMR ($CDCl_3$) δ 27.8 (^{t}Bu), 30.6 (C-1), 36.3 (NMe_2), 36.9 (NMe_2), 38.9 (C-2), 45.6 ($C(CH_3)_3$), 75.5 (C-3), 117.9, 126.8, 128.6, 128.9, 139.7 (CN and Ph), 153.7 (O*C*(=O)NMe_2), 203.6 (*C*(=O)^{t}Bu); HRMS-ESI (*m*/*z*): $[M + Na]^+$ calcd for $C_{18}H_{24}N_2O_3$, 339.1679 found 339.168.

Transformation of 4a and 4c to urea S5a and S5c



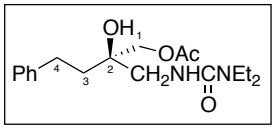
2-((3,3-diisopropylureido)methyl)-2-hydroxy-4-phenylbutyl acetate (S5a)



To a cooled solution (0 °C) of **3** (11.7 mg, 0.032 mmol) in THF (0.32 mL) was added lithiumaluminium hydride (7 mg, 0.17 mmol). After stirring at 0 °C for 30 min, sat. Na_2SO_4 was added by dropwise. The mixture was filtered through a pad of Celite with Et_2O (20 mL). The filtrates were dried and concentrated.

To a cooled (0 °C) solution of the above compound in pyridine (0.125 mL) was added Ac_2O (24 μL, 0.25 mmol). After stirring at the room temperature for 2 hr, the mixture was diluted with 1 N HCl solution (10 mL) and Et_2O (10 mL) and extracted with Et_2O (10 mL x 3). Combined organic phases were successively washed with 1 N HCl solution (10 mL), H_2O (10 mL) and saturated brine (10 mL), dried, and concentrated. The residual oil was subjected to column chromatography (silica gel 15 g, elution with hexane: AcOEt = 1:1) to give **S5a** (6.6 mg, 57 % in 2 steps) as a colorless oil: $[\alpha]^{26}_D$ +12.6 (c 0.34, $CHCl_3$) (45% ee); CHIRALPAK AD-H (4.6 x 250 mm, 4.6 x 150 mm), hexane:*i*-PrOH = 5:1, flow rate 0.45 mL/min, detection at 254 nm, t_r = 19.1 min (major) and 22.2 min (minor)); R_f = 0.28 (hexane: AcOEt = 1:1); IR (NaCl) 3357, 2968, 1739, 1615, 1524 cm^{-1}; ^{1}H NMR ($CDCl_3$) δ 1.24-1.29 (12H, m, NCH*Me*$_2$), 1.75-1.79 (2H, m, H-3), 2.09 (3H, s, OC(=O)*Me*), 2.77-2.82 (2H, m, H-4), 2.95 (1H, dd, *J* = 14.8, 5.3 Hz, C*H*$_2$NHC(O)), 3.63 (1H, dd, *J* = 14.8, 6.6 Hz, C*H*$_2$NHC(O)), 3.81 (1H, d, *J* = 11.3 Hz, H-1), 3.84-3.92 (2H, m, N*CH*^{i}Pr$_2$), 4.38 (1H, d, *J* = 11.3 Hz, H-1), 5.06-5.13 (1H, brs, O*H*), 5.50 (1H, s, N*H*), 7.15-7.30 (5H, m, Ph); ^{13}C NMR ($CDCl_3$) δ 21.2, 21.2 and 21.6 (OC(O)*Me*, NCH*Me*$_2$), 29.3 (C-4), 38.5 (C-3), 45.8 (N*CH*^{i}Pr$_2$), 46.8 (*C*H$_2$NHC(O), 66.2 (C-1), 73.8 (C-2), 125.9 (Ph), 128.6 (Ph), 142.8 (Ph), 159.6 (N*C*(O)N*i*Pr$_2$), 171.8 (O*C*(O)Me); HRMS-ESI (*m*/*z*): $[M + Na]^+$ calcd for $C_{20}H_{32}N_2O_4$ 387.2254 found 387.2261.

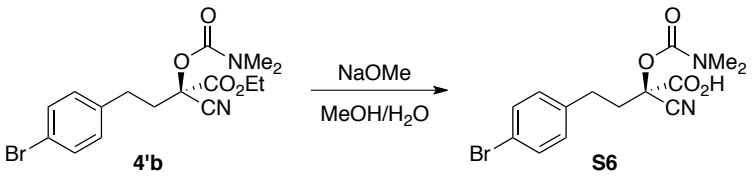
2-((3,3-diethylureido)methyl)-2-hydroxy-4-phenylbutyl acetate (S5c)



The same procedure as above was carried out by using **4c** (45 % in 2 steps).

a color less oil: $[\alpha]^{26}_D$ +10.8 (c 0.81, $CHCl_3$) (56% ee); CHIRALPAK AD-H (4.6 x 250 mm, 4.6 x 150 mm), hexane:*i*-PrOH = 3:1, flow rate 0.44 mL/min, detection at 254 nm, t_r = 17.5 min (major) and 20.1 min (minor); R_f = 0.29 (hexane: AcOEt = 2:1); IR (NaCl) 3359, 2974, 2932, 1738, 1620, 1534 cm^{-1}; ^{1}H NMR ($CDCl_3$) δ 1.20 (6H, t, *J* = 7.1 Hz, NCH_2*Me*), 1.79-1.84 (2H, m, H-3), 2.15 (3H, s, OC(=O)*Me*), 2.77-2.87 (2H, m, H-4), 3.04 (1H, dd, *J* = 14.8, 5.5 Hz, C*H*$_2$NHC(O)), 3.24-3.38 (4H, m, N(*CH*$_2$Me)$_2$), 3.62 (1H, dd , *J* = 14.8, 6.5 Hz, C*H*$_2$NHC(O)), 3.88 (1H, d, *J* = 11.3 Hz, H-1), 4.39 (2H, d, *J* = 11.3 Hz, H-1), 5.16-5.21 (1H, brs, O*H*) 5.30 (1H, brs, N*H*), 7.20-7.34 (5H, m, Ph); ^{13}C NMR ($CDCl_3$) δ 13.9 (CH_2*Me*), 21.2 (OC(O)*Me*), 29.3 (C-4), 38.4 (C-3), 41.8 (N(*CH*$_2$Me)$_2$), 46.9 (*C*H$_2$NHC(O)), 66.3 (C-1), 73.8 (C-2), 126.0 (Ph), 128.6 (Ph), 142.7 (Ph), 159.5 (N*C*(O)N*i*Pr$_2$), 171.7 (*C*(O)OMe); HRMS-ESI (*m*/*z*): $[M + Na]^+$ calcd for $C_{18}H_{28}N_2O_4$ 359.1941 found 359.1945.

Conversion of 4'b to S6



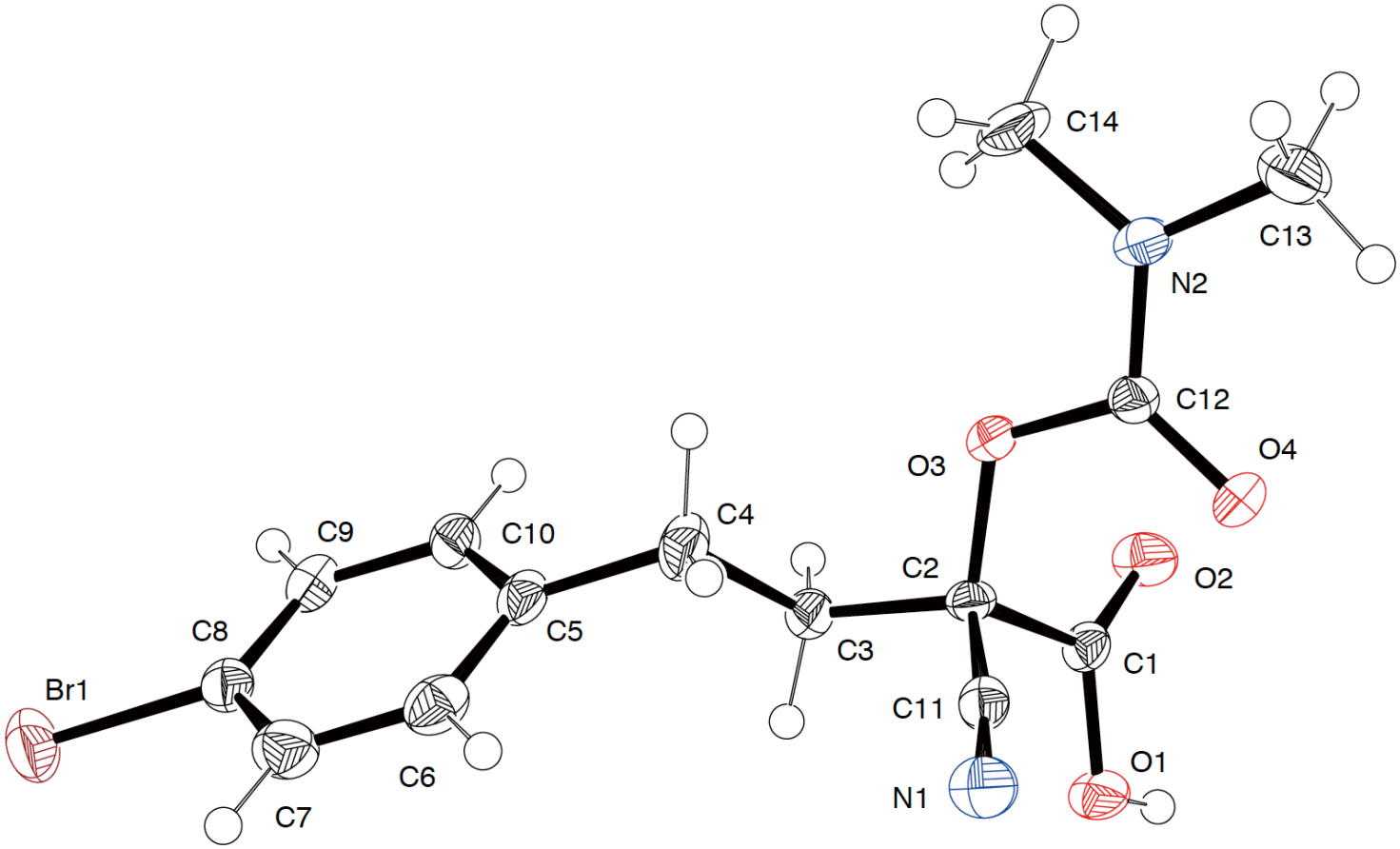
(R)-4-(4-bromophenyl)-2-cyano-2-((dimethylcarbamoyl)oxy)butanoic acid (S6)

A solution of **4'b** (100% ee) in 1% NaOH/MeOH/H_2O (10:1) was stirred at rt for 30 min. The mixture was acidified with diluted aqueous HCl (1N) and extracted with AcOEt (10 mL x 3). The combined organic phases were extracted with saturated aqueous $NaHCO_3$ (15 mL). The aqueous phase was acidified with diluted aqueous HCl (1N) and extracted with AcOEt (10 mL x 3). The combined organic phases were washed with saturated brine (10 mL), dried and concentrated. The white solid (48 mg, 98%) was recrystallized from hexane-Et_2O and 23 mg of colorless clear needles were obtained: $[\alpha]^{26}_{D}$ +37.5 (c 0.35, $CHCl_3$) (100% ee); R_f = 0.28 (hexane: AcOEt = 1:1); mp 156-157 ºC, IR (KBr) 2933, 1762, 1671 cm^{-1}; ^{1}H NMR ($CDCl_3$) δ 2.39-2.45 (2H, m, H-3), 2.89-2.95 (2H, m, H-4), 2.90 (3H, s, N*Me*$_2$), 2.96 (3H, s, N*Me*$_2$), 4.06 (1H, brs, COOH), 7.10 (2H, d, *J* = 8.2 Hz, Ph), 7.43 (2H, d, *J* = 8.2 Hz, Ph); ^{13}C NMR($CDCl_3$) δ 29.8 (C-4), 36.3 (N*Me*$_2$), 37.1 (N*Me*$_2$), 38.1 (C-3), 73.9 (C-2), 115.6 (CN), 120.7 (Ph), 130.4 (Ph), 132.0 (Ph), 138.2 (Ph), 154.1 (O*C*(=O)NMe$_2$), 167.4 (*C*(=O)OH); HRMS-APCI (*m/z*): $[M + H]^+$ calcd for $C_{14}H_{15}N_2O_4Br$, 355.0288 found 355.0288; Anal Calcd for $C_{14}H_{15}N_2O_2Br$ C, 47.34; H, 4.26; N, 7.89. found C, 47.46; H, 4.05; N, 7.83.

Crystal Data of S6 (carboxylic acid derived from 4'b)

Identification code	TMT-IV-685B	
Empirical formula	C14 H15 Br N2 O4	
Formula weight	355.19	
Temperature	150 K	
Wavelength	0.71073 Å	
Crystal system	Monoclinic	
Space group	P21	
Unit cell dimensions	a = 8.4223(14) Å	α= 90°.
	b = 6.1123(11) Å	β= 97.455(2)°.
	c = 14.743(3) Å	γ = 90°.
Volume	752.6(2) $Å^3$	
Z	2	
Density (calculated)	1.567 Mg/m^3	
Absorption coefficient	2.748 mm^{-1}	
F(000)	360	
Crystal size	0.20 x 0.15 x 0.08 mm^3	
Theta range for data collection	2.44 to 27.48°.	
Index ranges	-10<=h<=10, -7<=k<=7, -19<=l<=19	
Reflections collected	8516	
Independent reflections	3402 [R(int) = 0.0410]	
Completeness to theta = 25.00°	99.9 %	
Absorption correction	Empirical	
Max. and min. transmission	0.8101 and 0.6095	
Refinement method	Full-matrix least-squares on F^2	
Data / restraints / parameters	3402 / 1 / 196	
Goodness-of-fit on F^2	0.972	
Final R indices [I>2sigma(I)]	R1 = 0.0325, wR2 = 0.0701	
R indices (all data)	R1 = 0.0407, wR2 = 0.0723	
Absolute structure parameter	0.004(8)	
Largest diff. peak and hole	0.406 and -0.445 e. $Å^{-3}$	

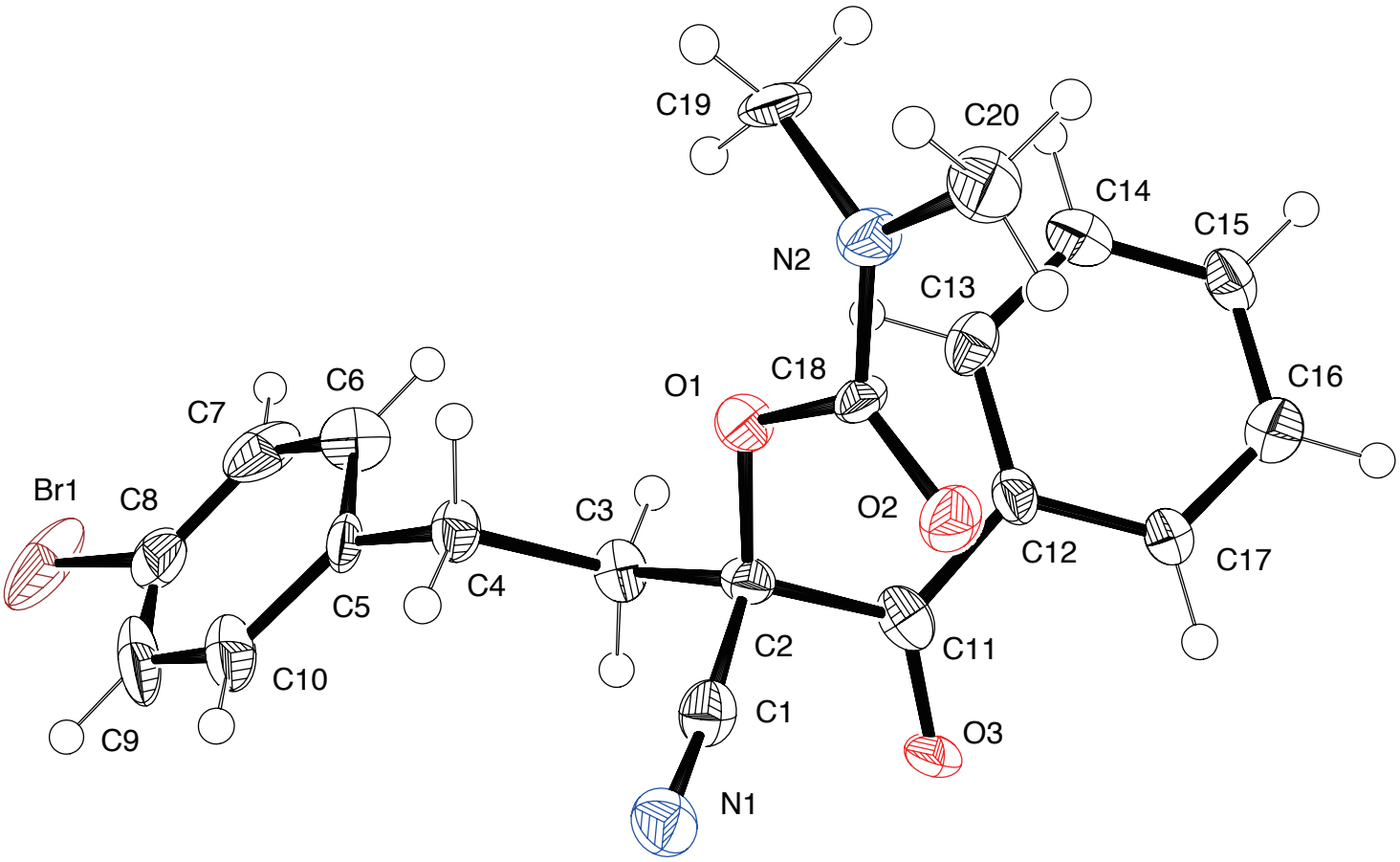
ORTEP Drawing of S6 (carboxylic acid derived from 4'b)



Crystal Data of 5'b

Identification code	TMT-IV-714D	
Empirical formula	C20 H19 Br N2 O3	
Formula weight	415.28	
Temperature	120 K	
Wavelength	0.71073 Å	
Crystal system	Monoclinic	
Space group	C2	
Unit cell dimensions	a = 16.499(7) Å	α= 90°
	b = 6.349(3) Å	β= 98.851(6)°
	c = 18.273(8) Å	γ = 90°
Volume	1891.4(15) $Å^3$	
Z	4	
Density (calculated)	1.458 Mg/m^3	
Absorption coefficient	2.195 mm^{-1}	
F(000)	848	
Crystal size	0.60 x 0.05 x 0.02 mm^3	
Theta range for data collection	1.13 to 27.61°.	
Index ranges	-21<=h<=21, -8<=k<=8, -23<=l<=23	
Reflections collected	10342	
Independent reflections	4274 [R(int) = 0.0767]	
Completeness to theta = 25.00°	99.9 %	
Absorption correction	Empirical	
Max. and min. transmission	0.9574 and 0.3526	
Refinement method	Full-matrix least-squares on F^2	
Data / restraints / parameters	4274 / 1 / 238	
Goodness-of-fit on F^2	1.126	
Final R indices [I>2sigma(I)]	R1 = 0.0749, wR2 = 0.1627	
R indices (all data)	R1 = 0.1310, wR2 = 0.1971	
Absolute structure parameter	0.04(2)	
Extinction coefficient	0.0047(9)	
Largest diff. peak and hole	1.602 and -1.211 $e.Å^{-3}$	

ORTEP Drawing of 5'b



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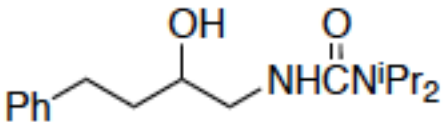
TMT-II-334B



S1a

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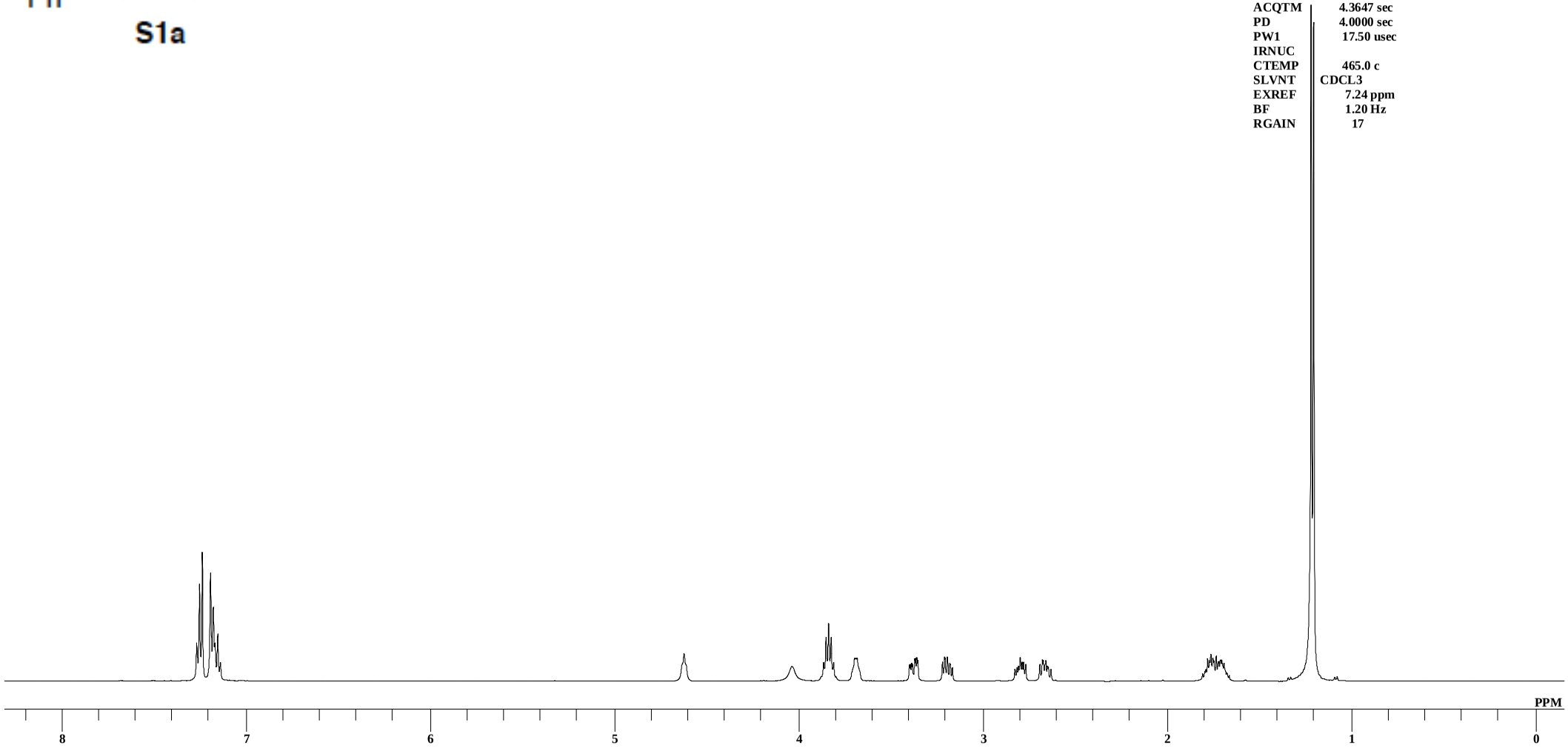
OBSET	2.41 KHz
OBFIN	6.01 Hz
POINT	32768
FREQU	7507.51 Hz
SCANS	12
ACQTM	4.3647 sec
PD	4.0000 sec
PW1	17.50 usec
IRNUC	
CTEMP	465.0 c
SLVNT	CDCL3
EXREF	7.24 ppm
BF	1.20 Hz
RGAIN	17



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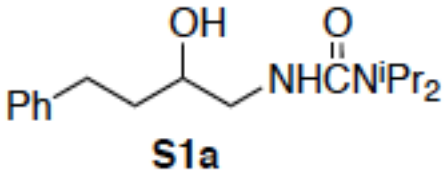
TMT-II-334B



S1a

DFILE	TMT-II-334B.1
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OBFIN	4.21 Hz
POINT	32768
FREQU	31446.54 Hz
SCANS	1710
ACQTM	1.0420 sec
PD	2.0000 sec
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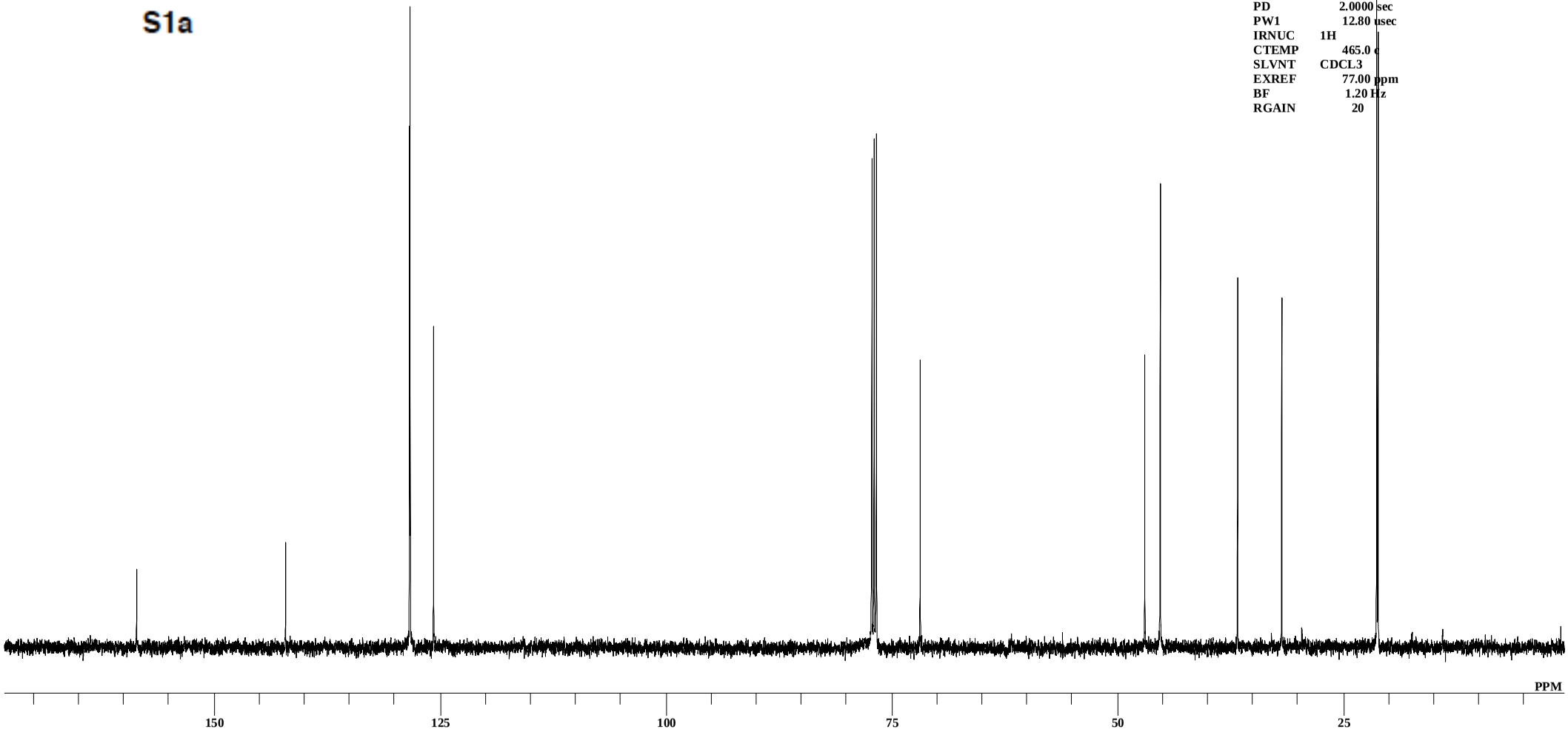
IRNUC	1H
CTEMP	465.0
SLVNT	CDCL3
EXREF	77.00 ppm
BF	1.20 Hz
RGAIN	20



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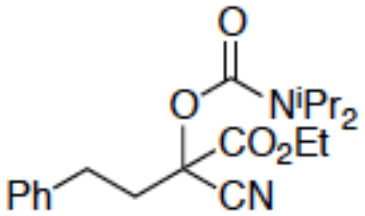
TMT-II-301C



4a

DFILE	TMT-II-301C.als
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POINT	32768
FREQU	7507.51 Hz
SCANS	4
ACQTM	4.3647 sec
PD	4.0000 sec
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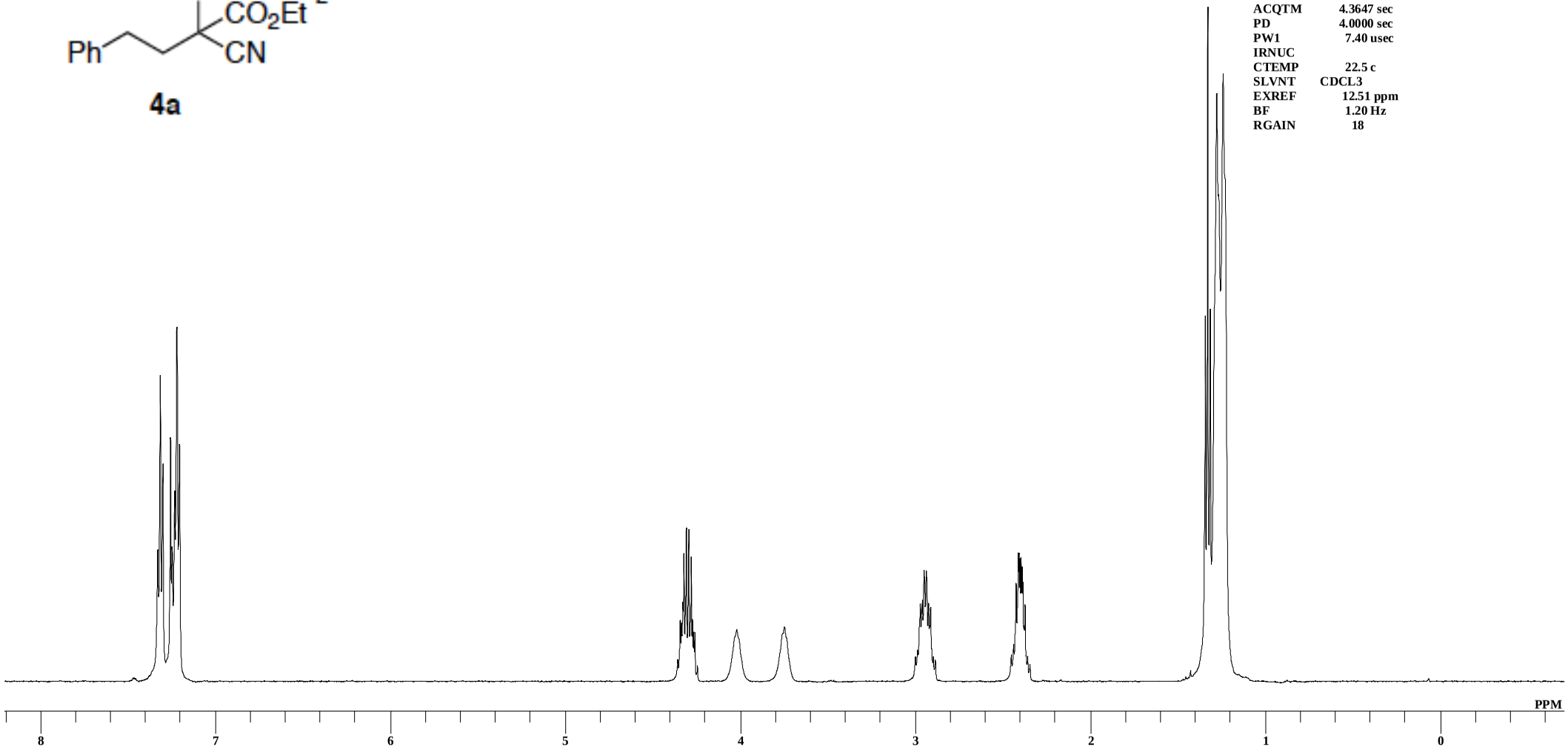
IRNUC	
CTEMP	22.5 c
SLVNT	CDCL3
EXREF	12.51 ppm
BF	1.20 Hz
RGAIN	18



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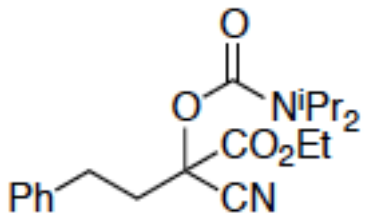
TMT-II-301C



4a

DFILE	TMT-2-301C.2
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OBFIN	4.21 Hz
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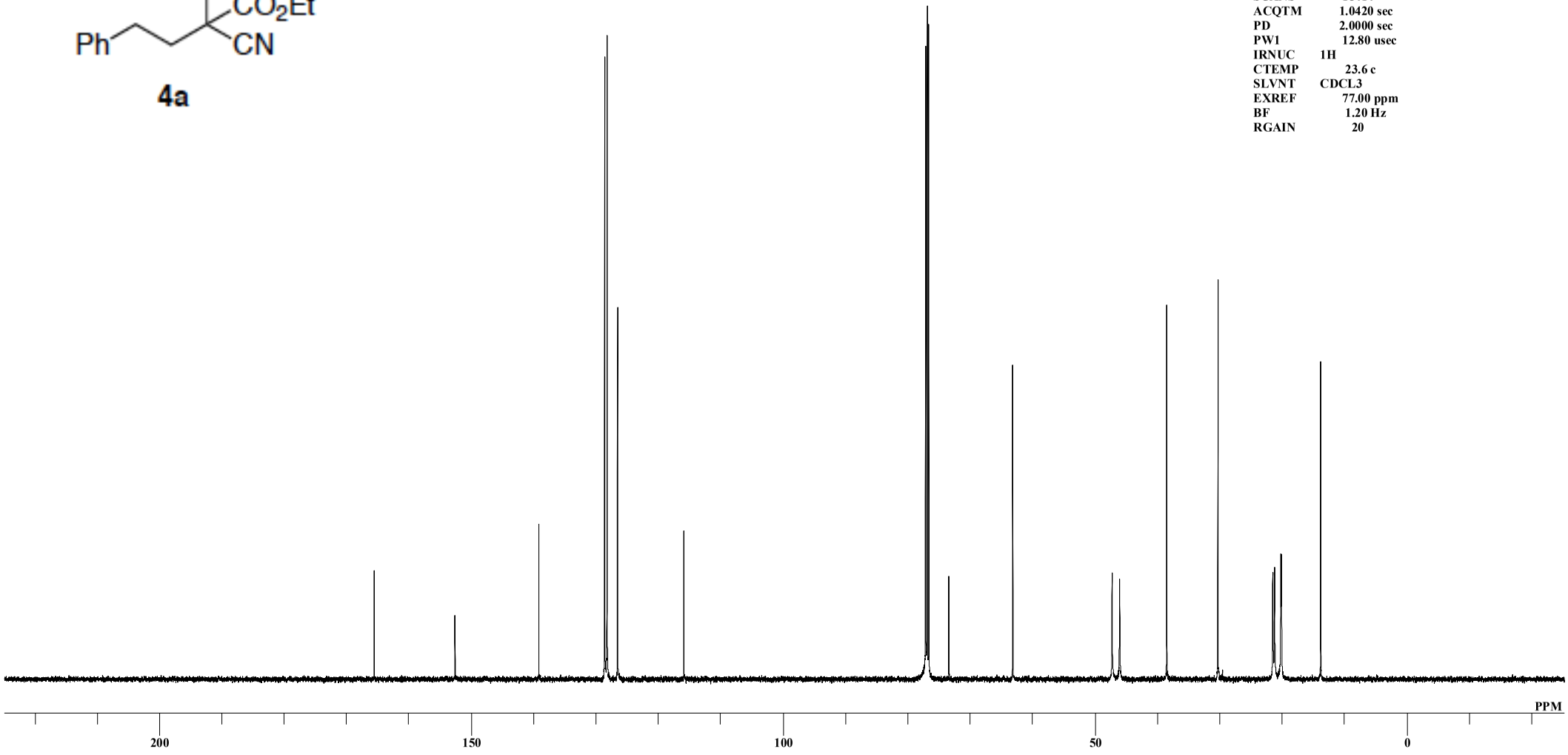
FREQU	31446.54 Hz
SCANS	18414
ACQTM	1.0420 sec
PD	2.0000 sec
PW1	12.80 usec
IRNUC	1H
CTEMP	23.6 c
SLVNT	CDCL3
EXREF	77.00 ppm
BF	1.20 Hz
RGAIN	20



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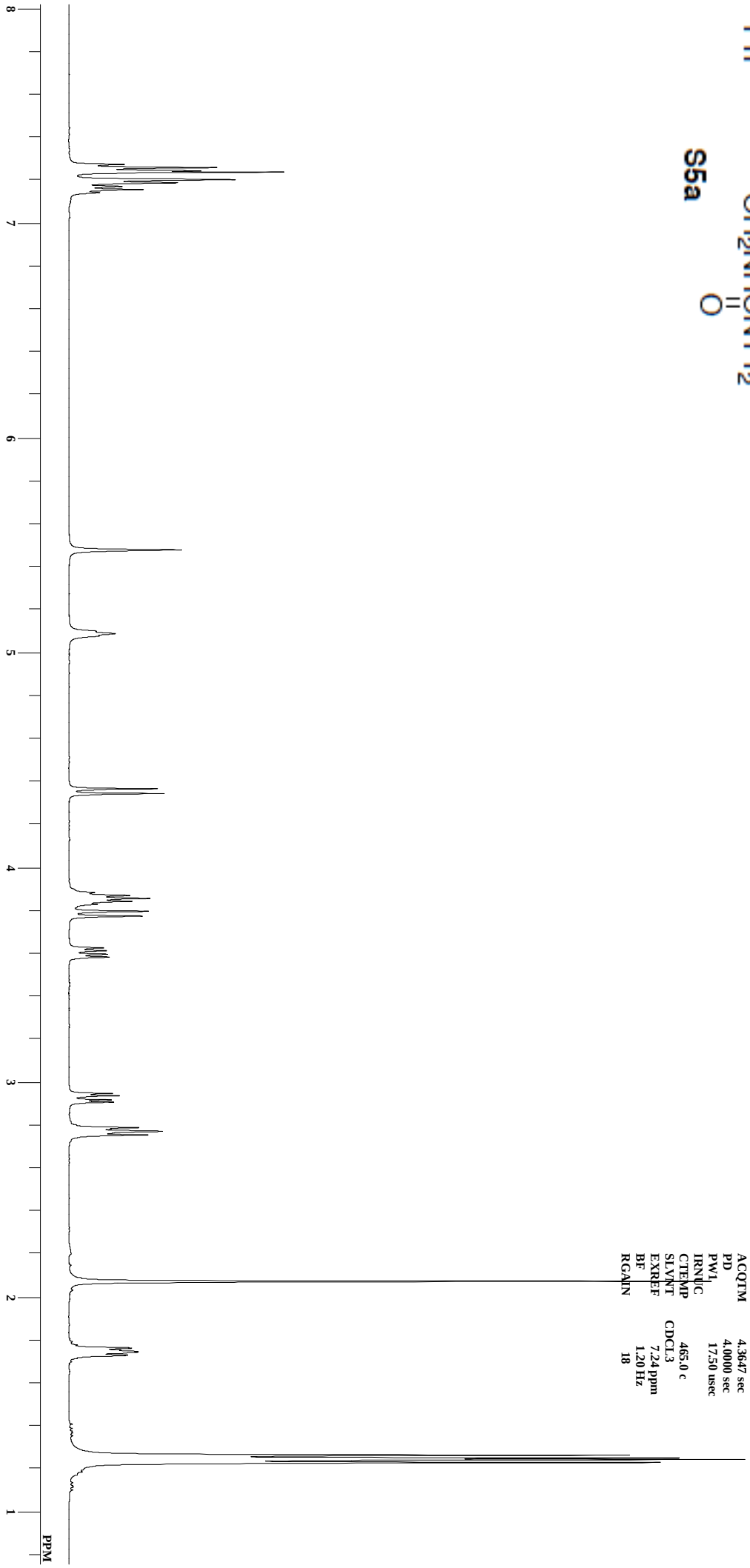
TMT-II-348B

S5a



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FREQU	7507.51 Hz
SCANS	12
ACQTM	4.3647 sec
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PW1	17.50 usec
IRNUC	
CTEMP	465.0 c
SLVNT	CDCL3
EXREF	7.24 ppm
BF	1.20 Hz
RGAIN	18

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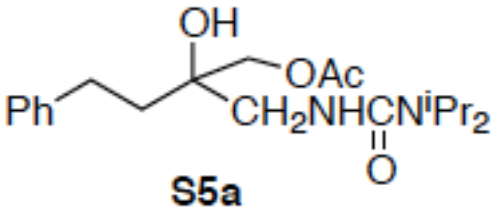
TMT-II-348B



S5a

DFILE	TMT-II-348B.1
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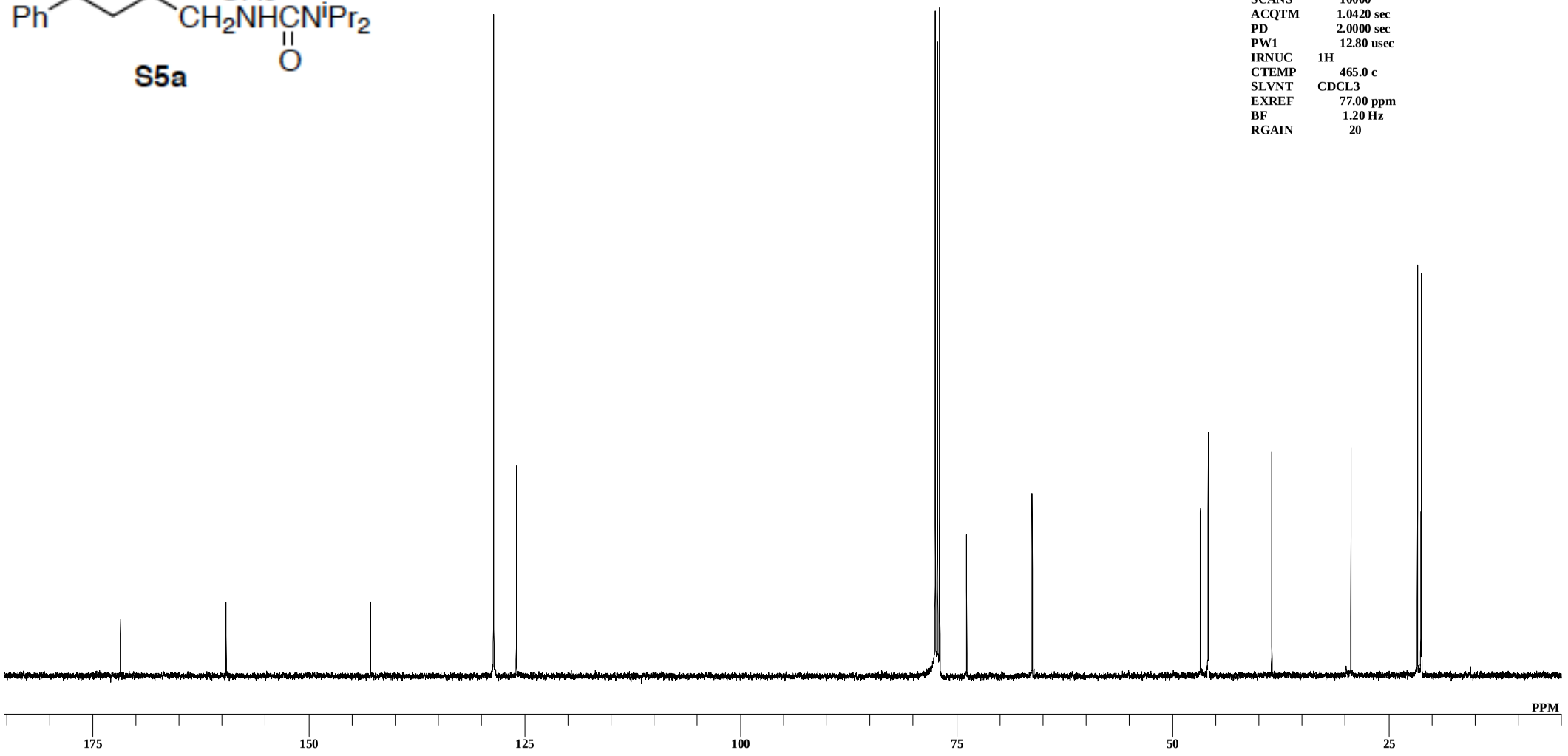
OBSET	7.87 KHz
OBFIN	4.21 Hz
POINT	32768
FREQU	31446.54 Hz
SCANS	10000
ACQTM	1.0420 sec
PD	2.0000 sec
PW1	12.80 usec
IRNUC	1H
CTEMP	465.0 c
SLVNT	CDCL3
EXREF	77.00 ppm
BF	1.20 Hz
RGAIN	20



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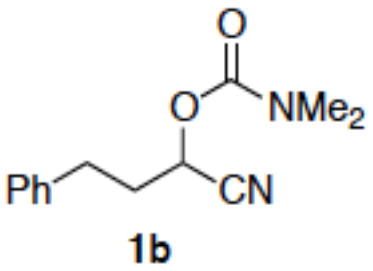
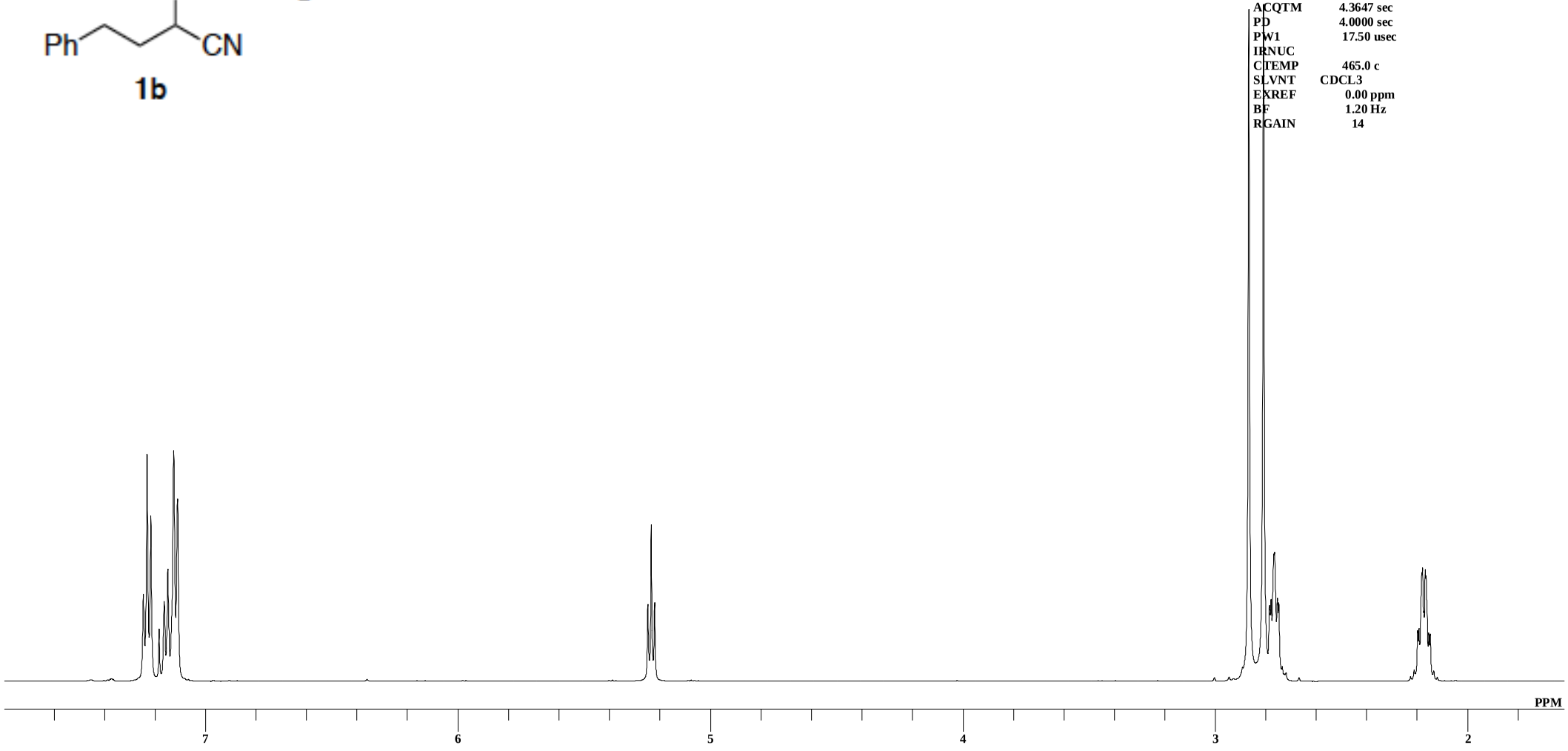
TMT-II-310C



1b

DFILE	TMT-III-310C.1
COMNT	TMT-II-310C
DATIM	09-07-2011 16:03:27
OBNUC	1H
EXMOD	single_pulse.exp
OBFRQ	500.16 MHz
OBSET	2.41 KHz
OBFIN	6.01 Hz
POINT	32768
FREQU	7507.51 Hz
SCANS	16
ACQTM	4.3647 sec
PD	4.0000 sec
PW1	17.50 usec
IRNUC	
CTEMP	465.0 c
SLVNT	CDCL3
EXREF	0.00 ppm
BF	1.20 Hz
RGAIN	14



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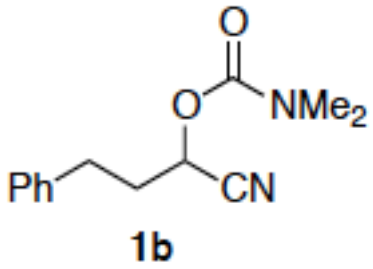
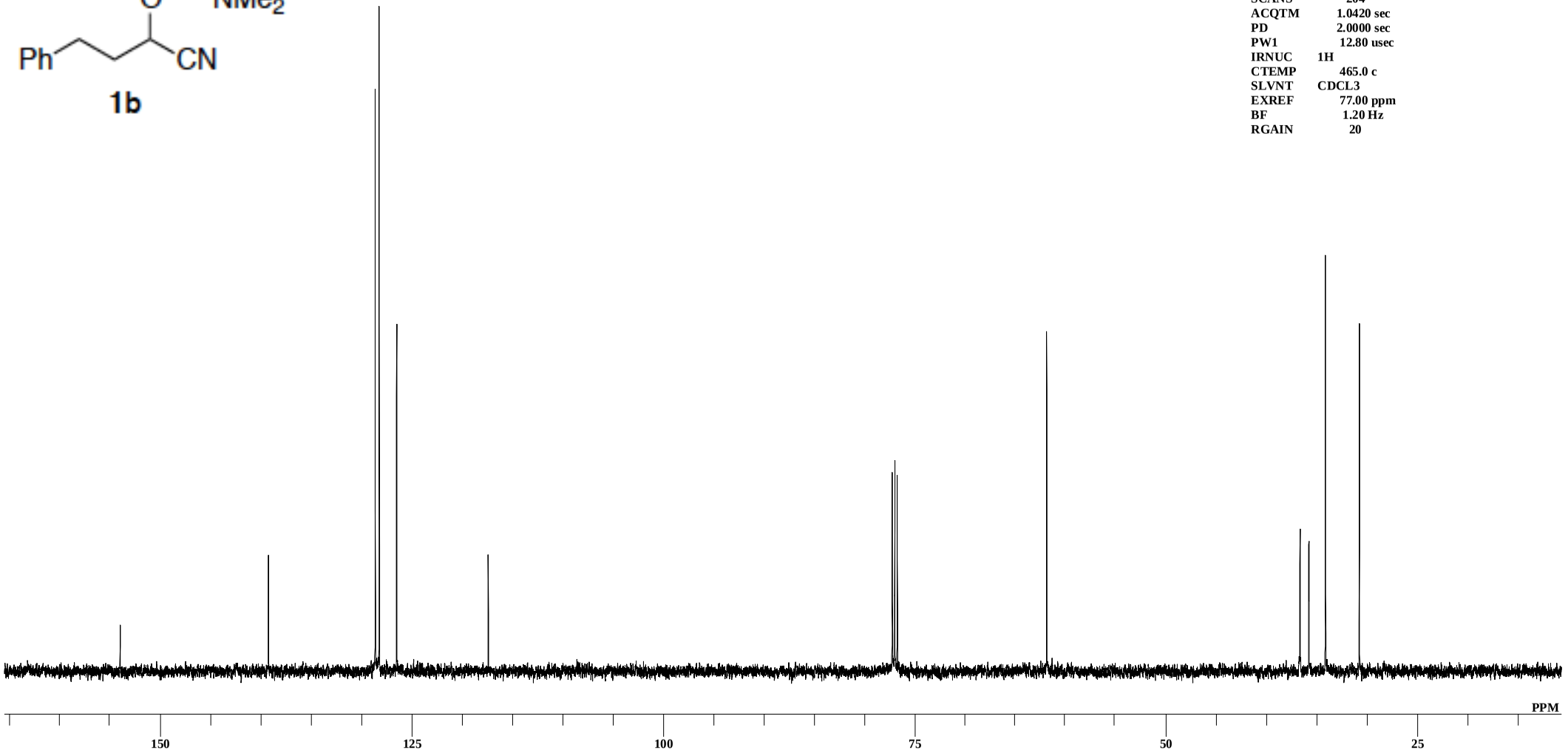
TMT-II-310C



1b

DFILE	TMT-II-310C (2).1
COMNT	TMT-II-310C
DATIM	11-07-2011 07:05:11
OBNUC	13C
EXMOD	single_pulse_dec
OBFRQ	125.77 MHz
OBSET	7.87 KHz
OBFIN	4.21 Hz
POINT	32768
FREQU	31446.54 Hz
SCANS	204
ACQTM	1.0420 sec
PD	2.0000 sec
PW1	12.80 usec
IRNUC	1H
CTEMP	465.0 c
SLVNT	CDCL3
EXREF	77.00 ppm
BF	1.20 Hz
RGAIN	20



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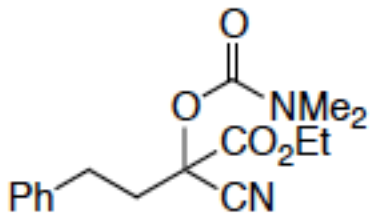
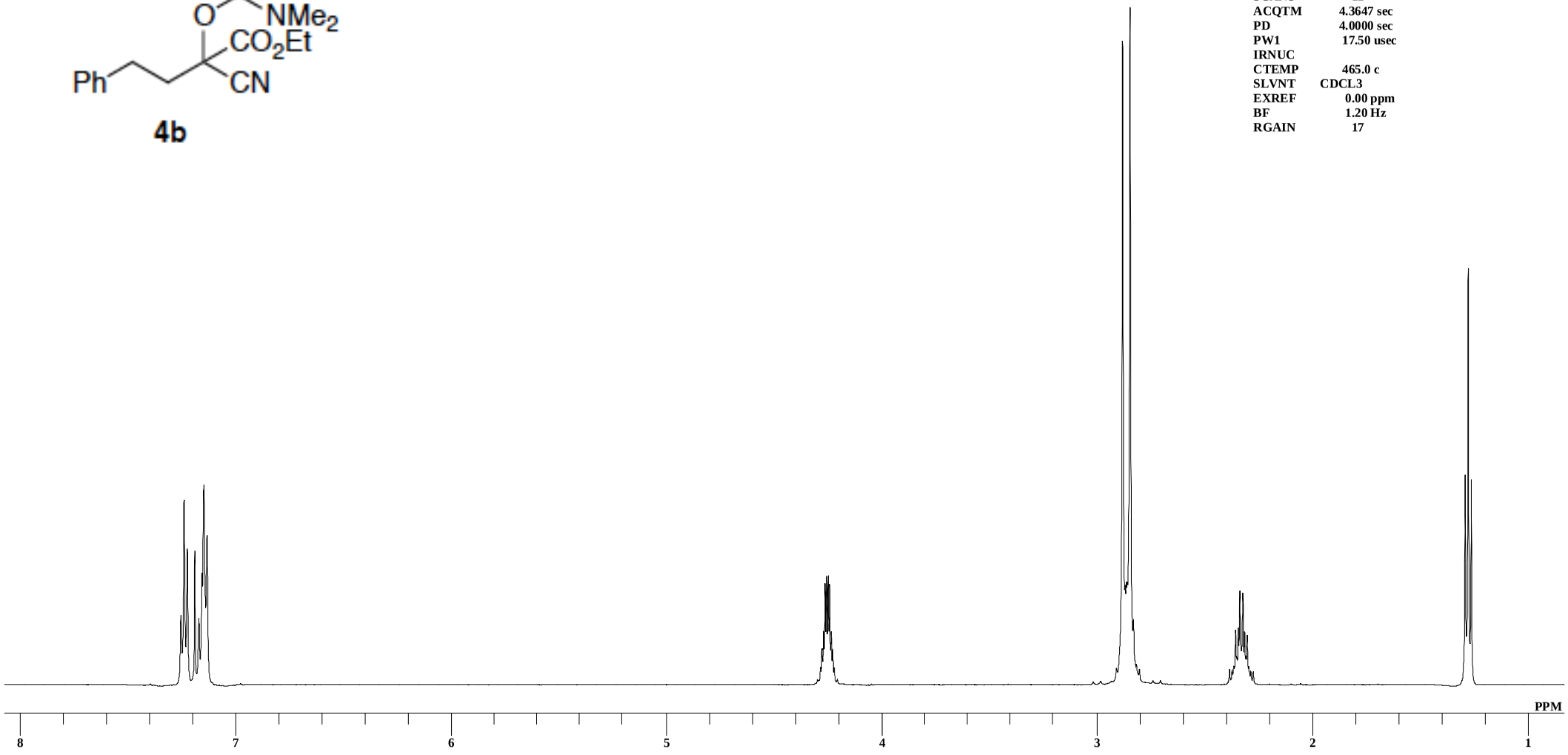
TMT-II-392B



4b

DFILE	TMT-III-392B.1
COMNT	TMT-II-392B
DATIM	09-07-2011 17:03:20
OBNUC	1H
EXMOD	single_pulse.exp
OBFRQ	500.16 MHz
OBSET	2.41 KHz
OBFIN	6.01 Hz
POINT	32768
FREQU	7507.51 Hz
SCANS	12
ACQTM	4.3647 sec
PD	4.0000 sec
PW1	17.50 usec
IRNUC	
CTEMP	465.0 c
SLVNT	CDCL3
EXREF	0.00 ppm
BF	1.20 Hz
RGAIN	17



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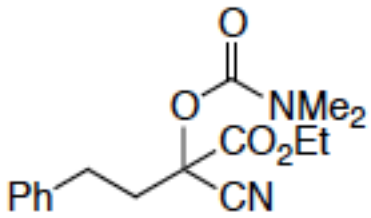
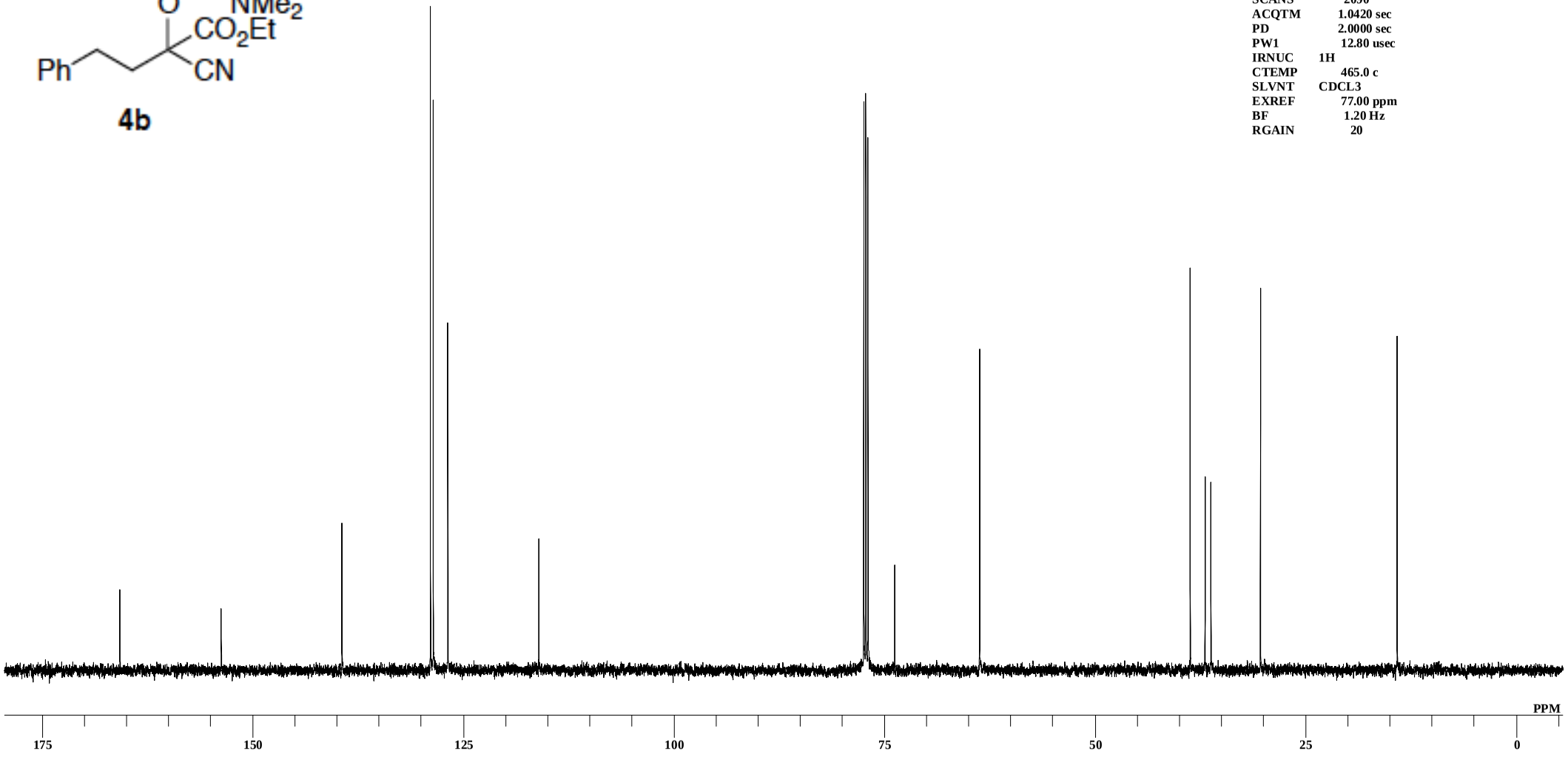
TMT-II-392B



4b

DFILE	TMT-II-392B.1
COMNT	TMT-II-392B
DATIM	09-07-2011 21:40:35
OBNUC	13C
EXMOD	single_pulse_dec
OBFRQ	125.77 MHz
OBSET	7.87 KHz
OBFIN	4.21 Hz
POINT	32768
FREQU	31446.54 Hz
SCANS	2090
ACQTM	1.0420 sec
PD	2.0000 sec
PW1	12.80 usec
IRNUC	1H
CTEMP	465.0 c
SLVNT	CDCL3
EXREF	77.00 ppm
BF	1.20 Hz
RGAIN	20



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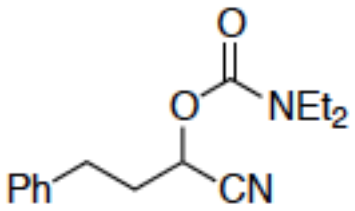
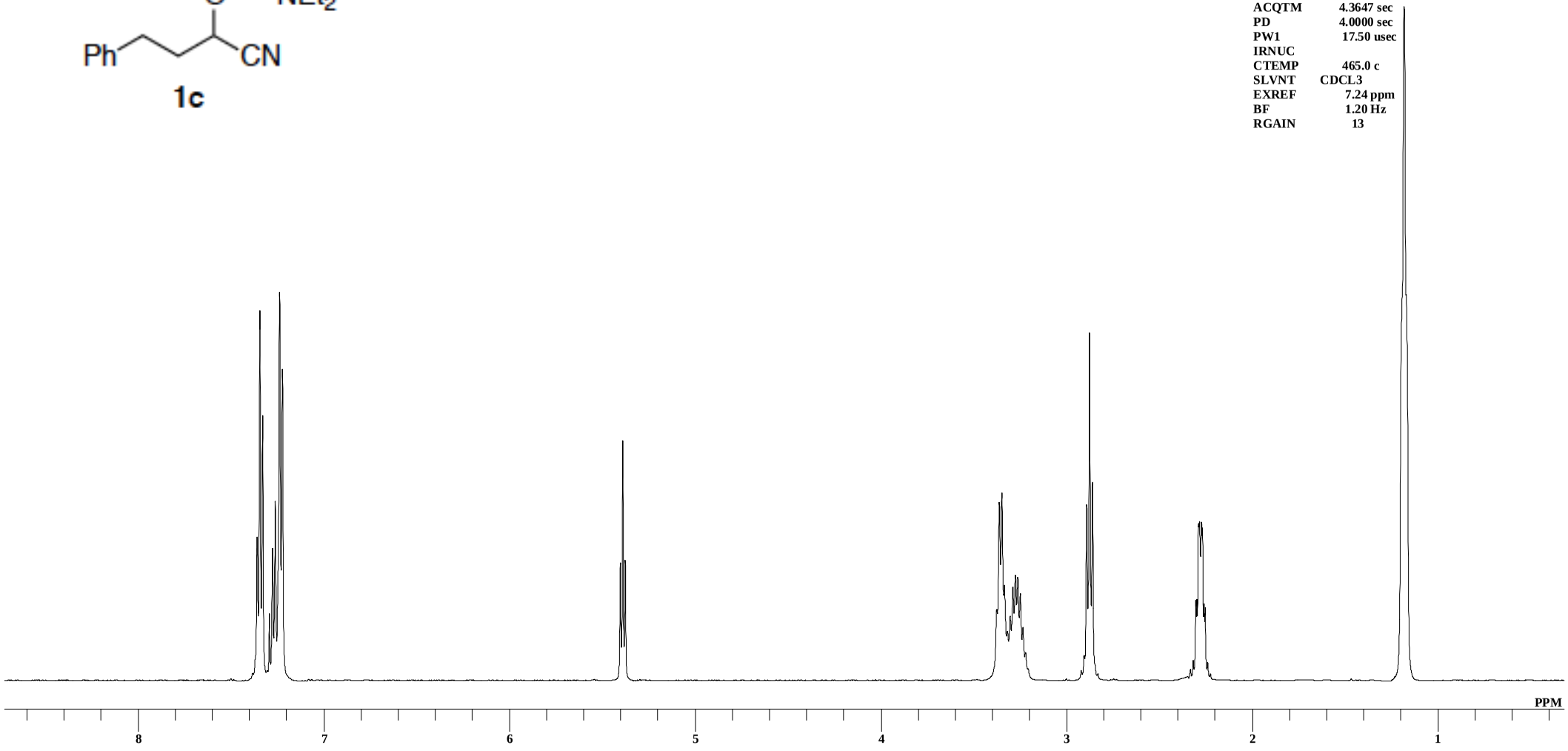
TMT-I-106B



1c

DFILE	TMT-I-106B2.als
COMNT	TMT-I-106B
DATIM	03-08-2011 22:59:24
OBNUC	1H
EXMOD	single_pulse.exp
OBFRQ	500.16 MHz
OBSET	2.41 KHz
OBFIN	6.01 Hz
POINT	32768
FREQU	7507.51 Hz
SCANS	4
ACQTM	4.3647 sec
PD	4.0000 sec
PW1	17.50 usec
IRNUC	
CTEMP	465.0 c
SLVNT	CDCL3
EXREF	7.24 ppm
BF	1.20 Hz
RGAIN	13



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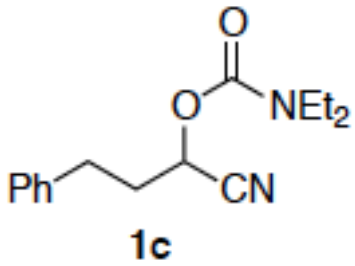
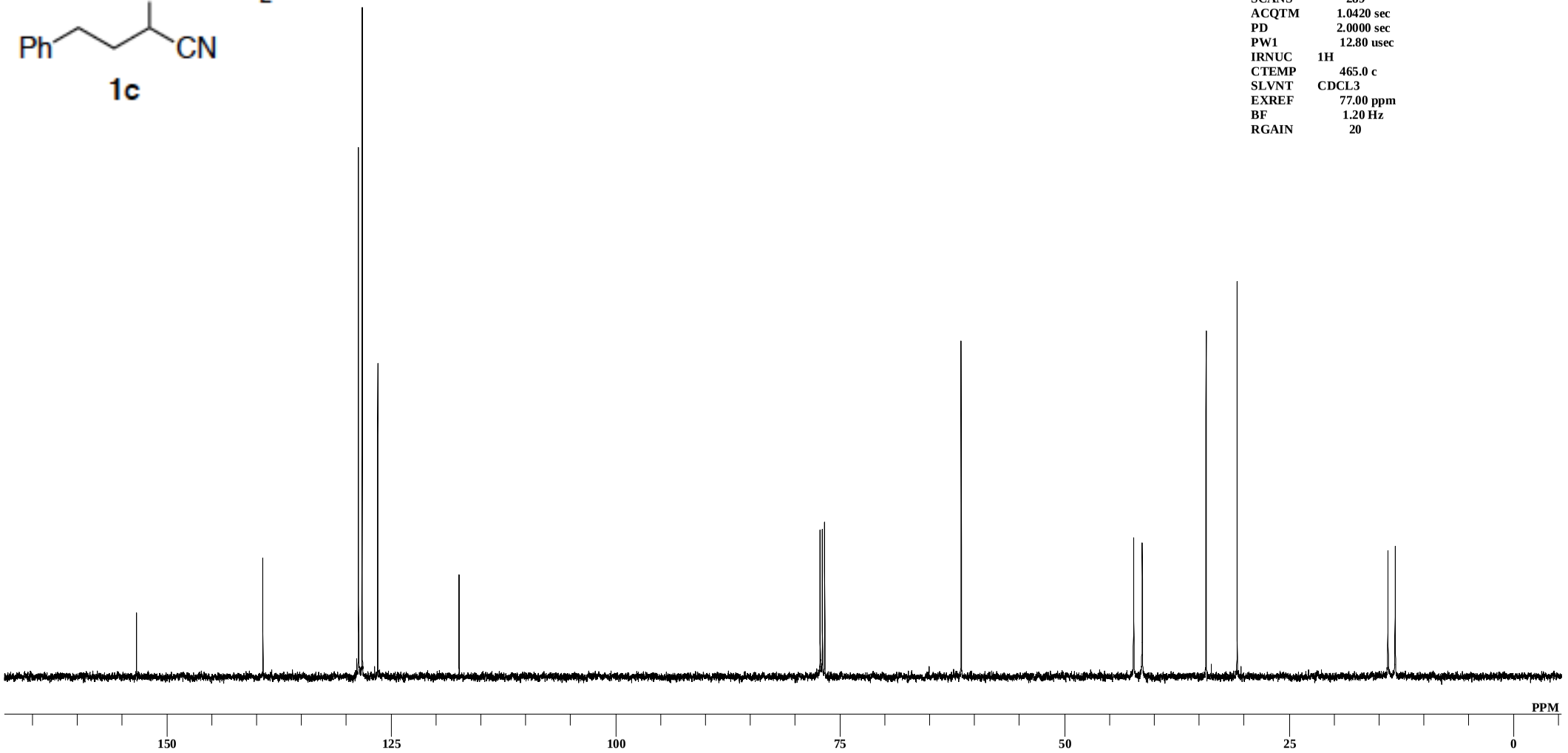
TMT-I-106B



1c

DFILE	TMT-II-106B.1
COMNT	TMT-I-106B
DATIM	04-08-2011 07:20:23
OBNUC	13C
EXMOD	single_pulse_dec
OBFRQ	125.77 MHz
OBSET	7.87 KHz
OBFIN	4.21 Hz
POINT	32768
FREQU	31446.54 Hz
SCANS	289
ACQTM	1.0420 sec
PD	2.0000 sec
PW1	12.80 usec
IRNUC	1H
CTEMP	465.0 c
SLVNT	CDCL3
EXREF	77.00 ppm
BF	1.20 Hz
RGAIN	20



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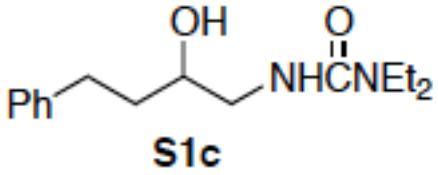
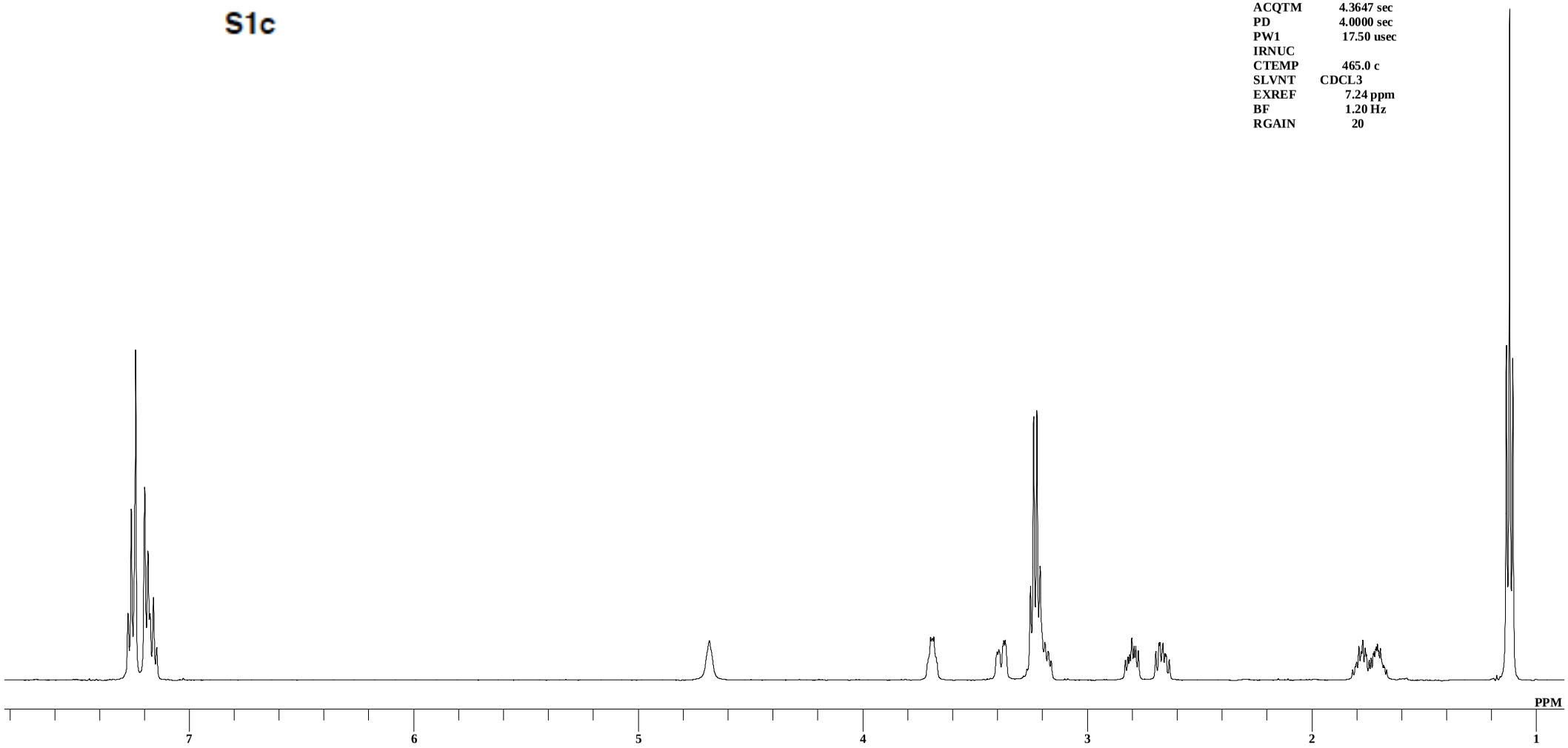
TMT-II-303B



S1c

DFILE	TMT-III-303B.1
COMNT	TMT-II-303B
DATIM	09-07-2011 16:38:11
OBNUC	1H
EXMOD	single_pulse.exp
OBFRQ	500.16 MHz
OBSET	2.41 KHz
OBFIN	6.01 Hz
POINT	32768
FREQU	7507.51 Hz
SCANS	12
ACQTM	4.3647 sec
PD	4.0000 sec
PW1	17.50 usec
IRNUC	
CTEMP	465.0 c
SLVNT	CDCL3
EXREF	7.24 ppm
BF	1.20 Hz
RGAIN	20



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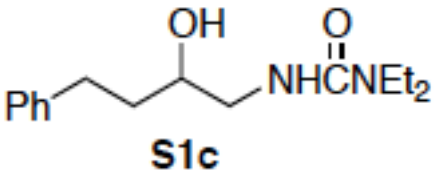
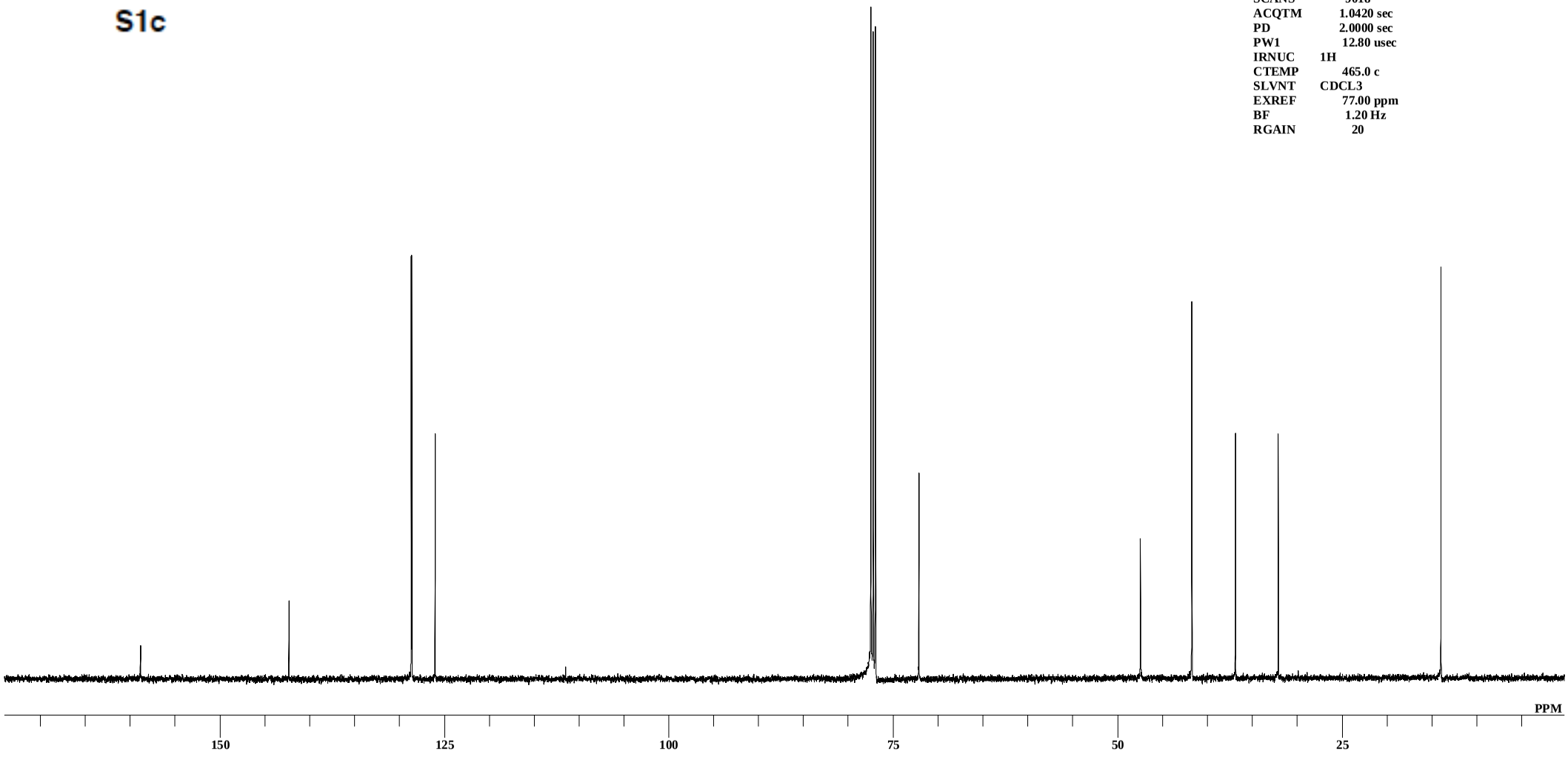
TMT-II-303B



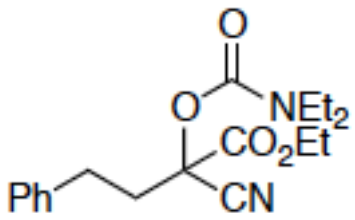
S1c

DFILE	TMT-II-303B.2
COMNT	TMT-II-303B
DATIM	04-08-2011 06:55:00
OBNUC	13C
EXMOD	single_pulse_dec
OBFRQ	125.77 MHz
OBSET	7.87 KHz
OBFIN	4.21 Hz
POINT	32768
FREQU	31446.54 Hz
SCANS	9018
ACQTM	1.0420 sec
PD	2.0000 sec
PW1	12.80 usec
IRNUC	1H
CTEMP	465.0 c
SLVNT	CDCL3
EXREF	77.00 ppm
BF	1.20 Hz
RGAIN	20



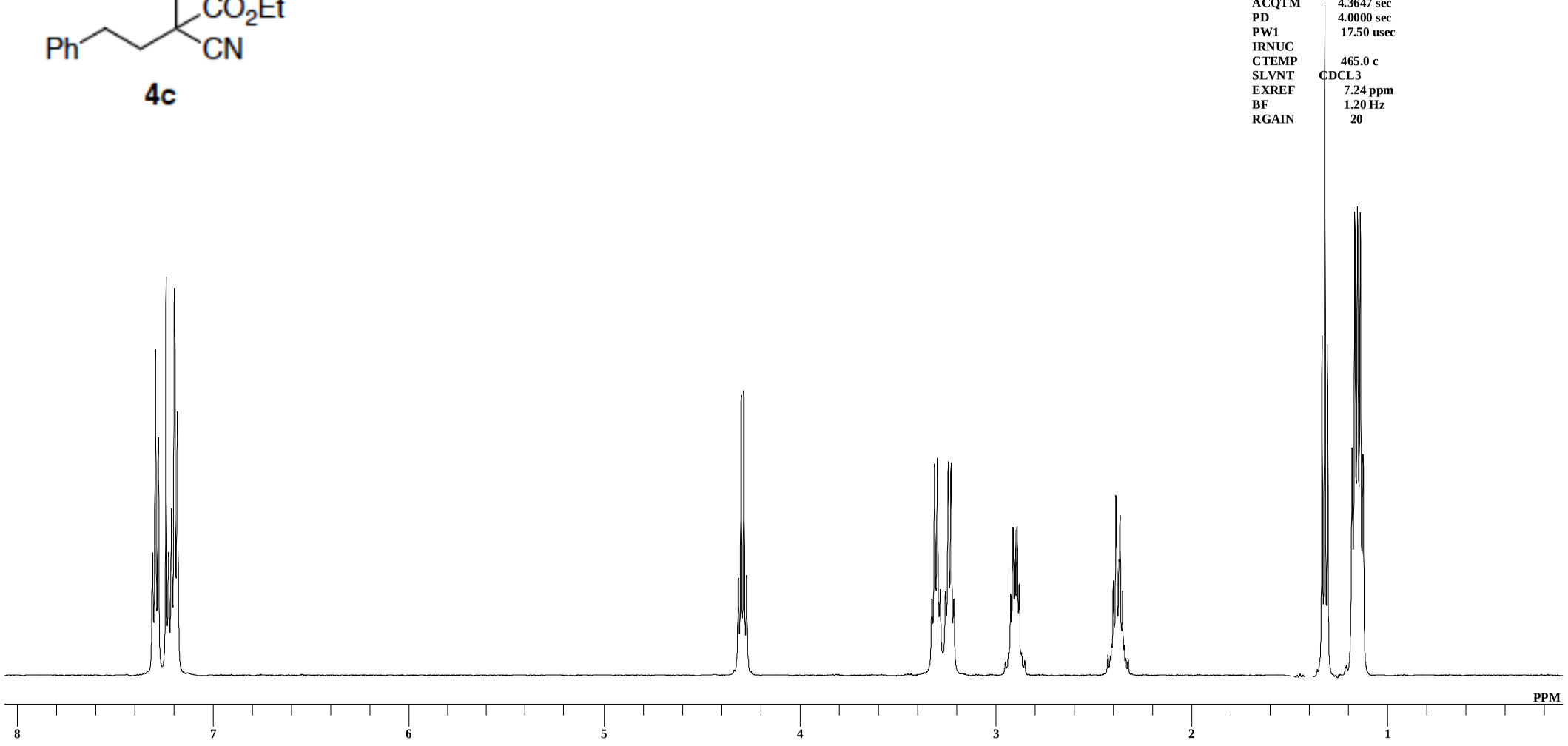
C:\Users\delta\Desktop\tmt\TMT-IV-622B.als

TMT-IV-622B



4c

DFILE	TMT-IV-622B.als
COMNT	TMT-IV-622B
DATIM	30-08-2011 08:41:22
OBNUC	1H
EXMOD	single_pulse.exp
OBFRQ	500.16 MHz
OBSET	2.41 KHz
OBFIN	6.01 Hz
POINT	32768
FREQU	7507.51 Hz
SCANS	4
ACQTM	4.3647 sec
PD	4.0000 sec
PW1	17.50 usec
IRNUC	
CTEMP	465.0 c
SLVNT	CDCL3
EXREF	7.24 ppm
BF	1.20 Hz
RGAIN	20



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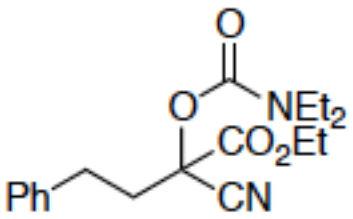
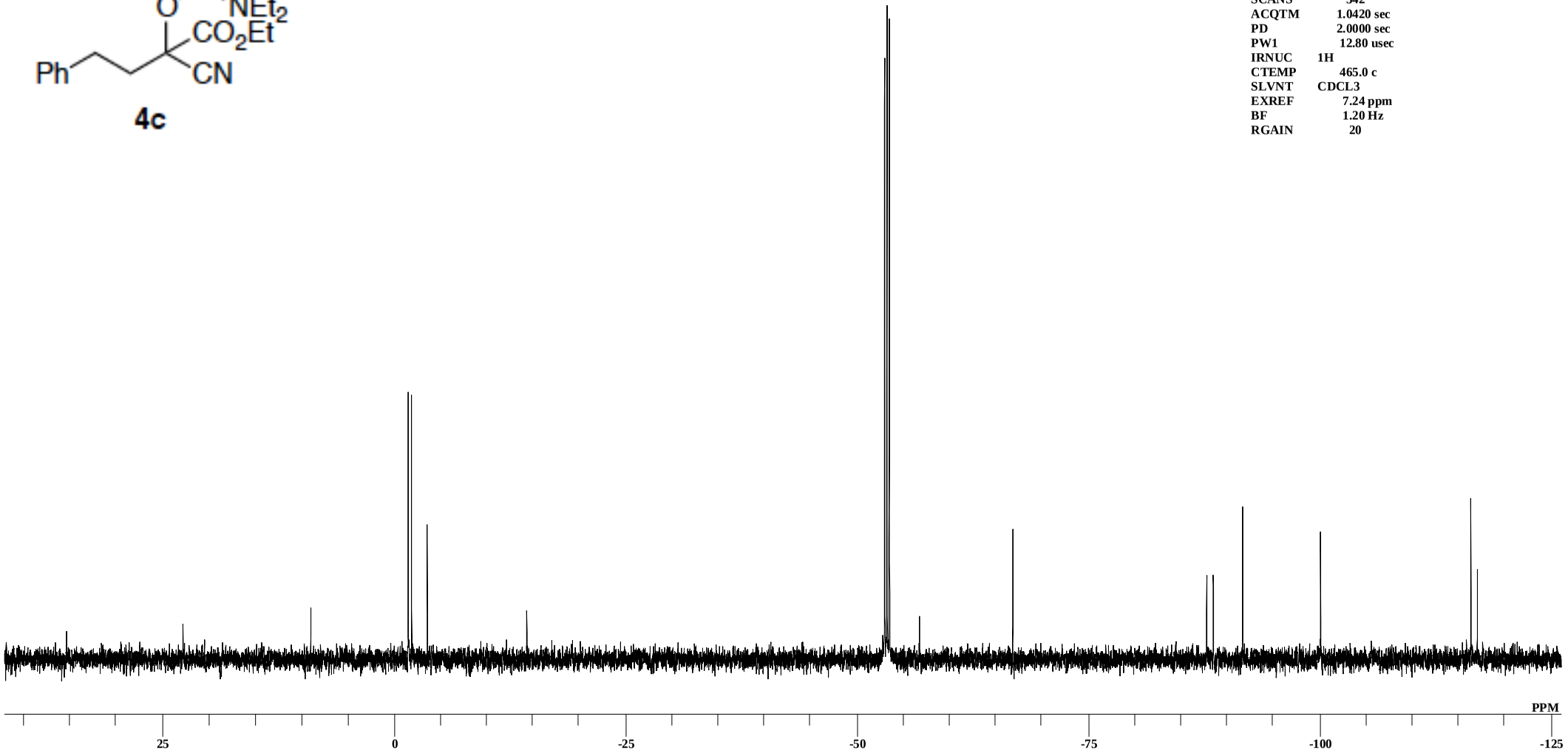
TMT-IV-622B



4c

DFILE	TMT-IV-622B.als
COMNT	TMT-IV-622B
DATIM	30-08-2011 09:33:01
OBNUC	13C
EXMOD	single_pulse_dec
OBFRQ	125.77 MHz
OBSET	7.87 KHz
OBFIN	4.21 Hz
POINT	32768
FREQU	31446.54 Hz
SCANS	342
ACQTM	1.0420 sec
PD	2.0000 sec
PW1	12.80 usec
IRNUC	1H
CTEMP	465.0 c
SLVNT	CDCL3
EXREF	7.24 ppm
BF	1.20 Hz
RGAIN	20



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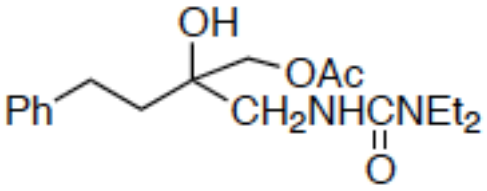
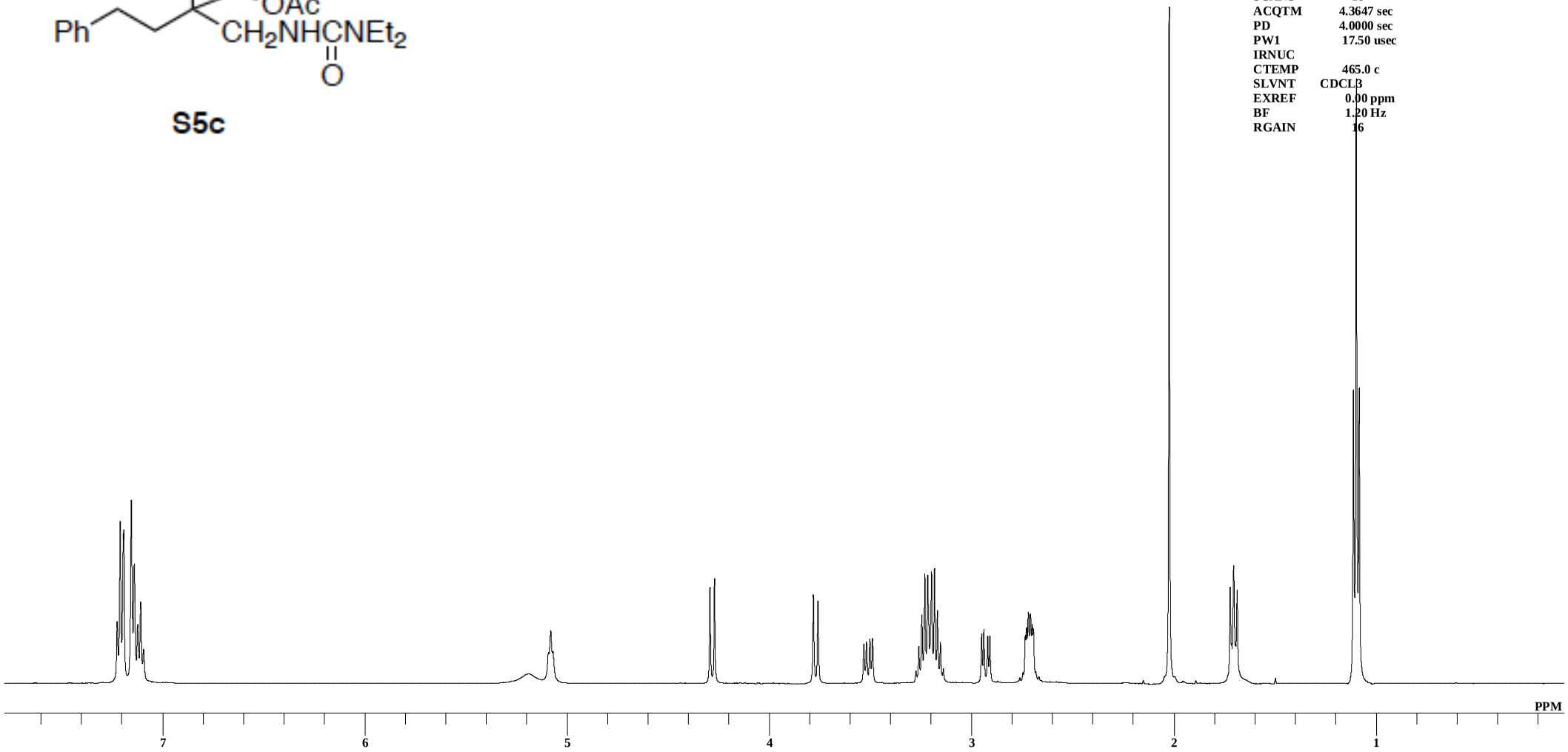
TMT-II-365C



S5c

DFILE	TMT-III-365C.1
COMNT	TMT-II-365C
DATIM	09-07-2011 16:09:35
OBNUC	1H
EXMOD	single_pulse.exp
OBFRQ	500.16 MHz
OBSET	2.41 KHz
OBFIN	6.01 Hz
POINT	131072
FREQU	7507.51 Hz
SCANS	16
ACQTM	4.3647 sec
PD	4.0000 sec
PW1	17.50 usec
IRNUC	
CTEMP	465.0 c
SLVNT	CDCL3
EXREF	0.00 ppm
BF	1.20 Hz
RGAIN	16



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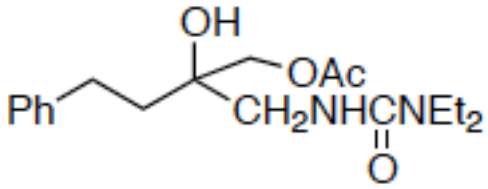
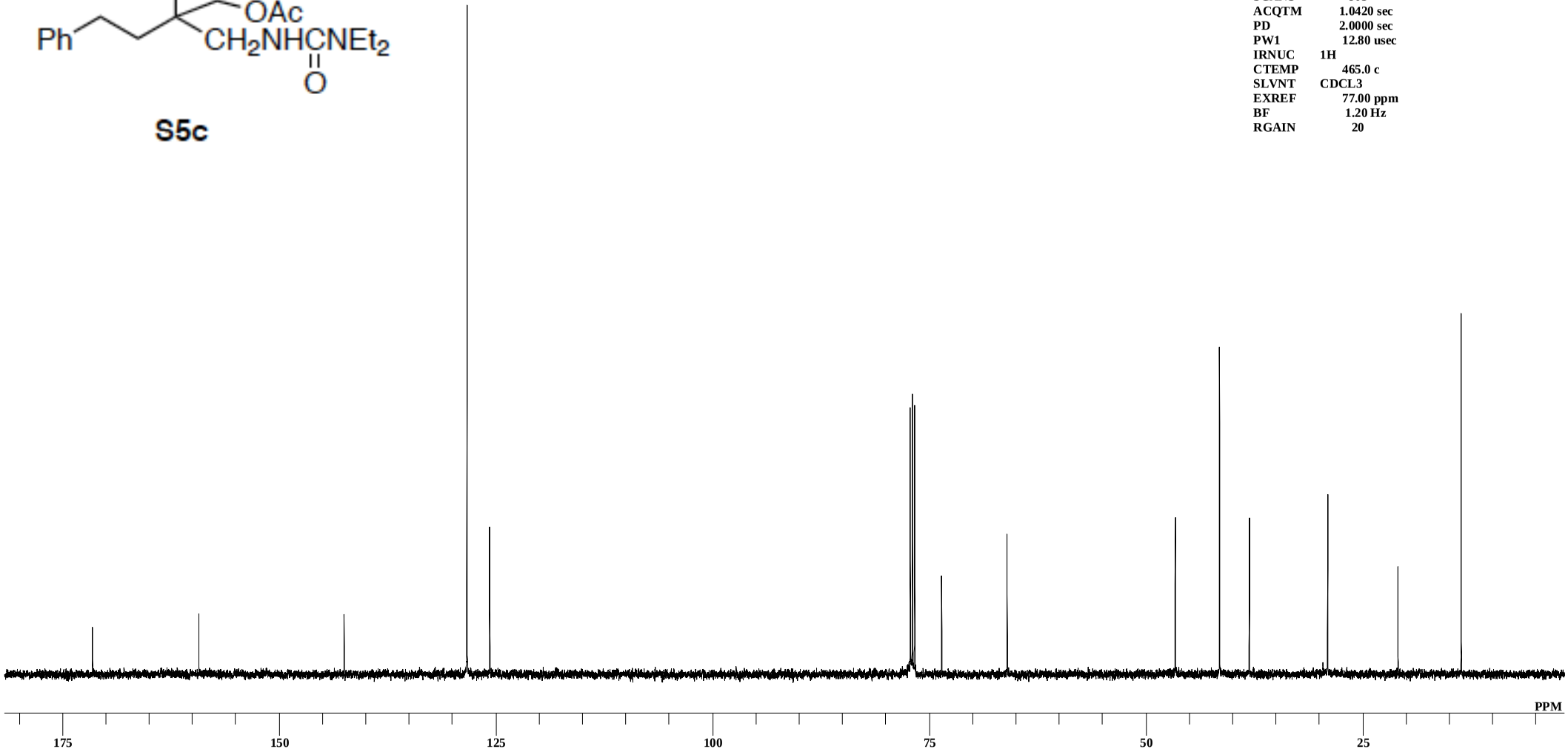
TMT-II-365B



S5c

DFILE	TMT-II-365B.1
COMNT	TMT-II-365B
DATIM	16-07-2011 14:00:28
OBNUC	13C
EXMOD	single_pulse_dec
OBFRQ	125.77 MHz
OBSET	7.87 KHz
OBFIN	4.21 Hz
POINT	32768
FREQU	31446.54 Hz
SCANS	905
ACQTM	1.0420 sec
PD	2.0000 sec
PW1	12.80 usec
IRNUC	1H
CTEMP	465.0 c
SLVNT	CDCL3
EXREF	77.00 ppm
BF	1.20 Hz
RGAIN	20



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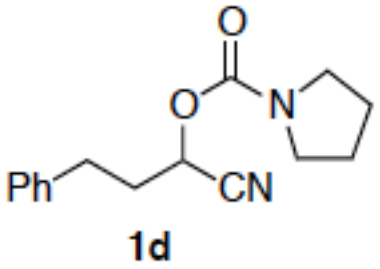
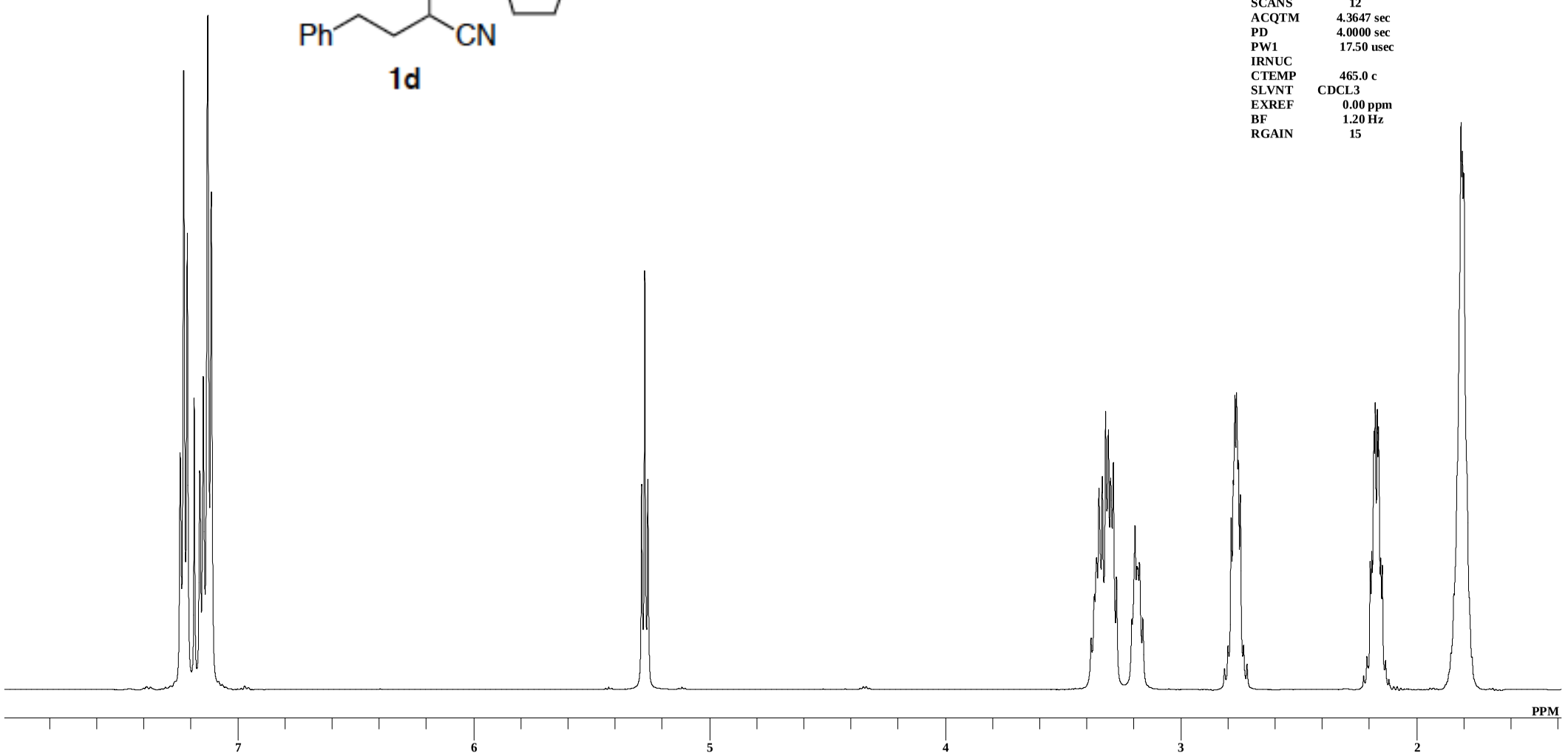
TMT-II-381B



1d

DFILE	TMT-II-381B.als
COMNT	TMT-II-381B
DATIM	09-07-2011 16:20:56
OBNUC	1H
EXMOD	single_pulse.exp
OBFRQ	500.16 MHz
OBSET	2.41 KHz
OBFIN	6.01 Hz
POINT	131072
FREQU	7507.51 Hz
SCANS	12
ACQTM	4.3647 sec
PD	4.0000 sec
PW1	17.50 usec
IRNUC	
CTEMP	465.0 c
SLVNT	CDCL3
EXREF	0.00 ppm
BF	1.20 Hz
RGAIN	15



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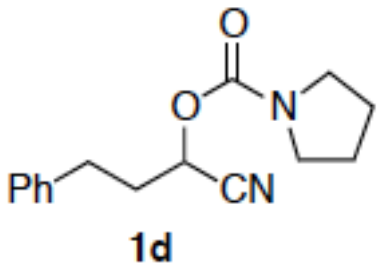
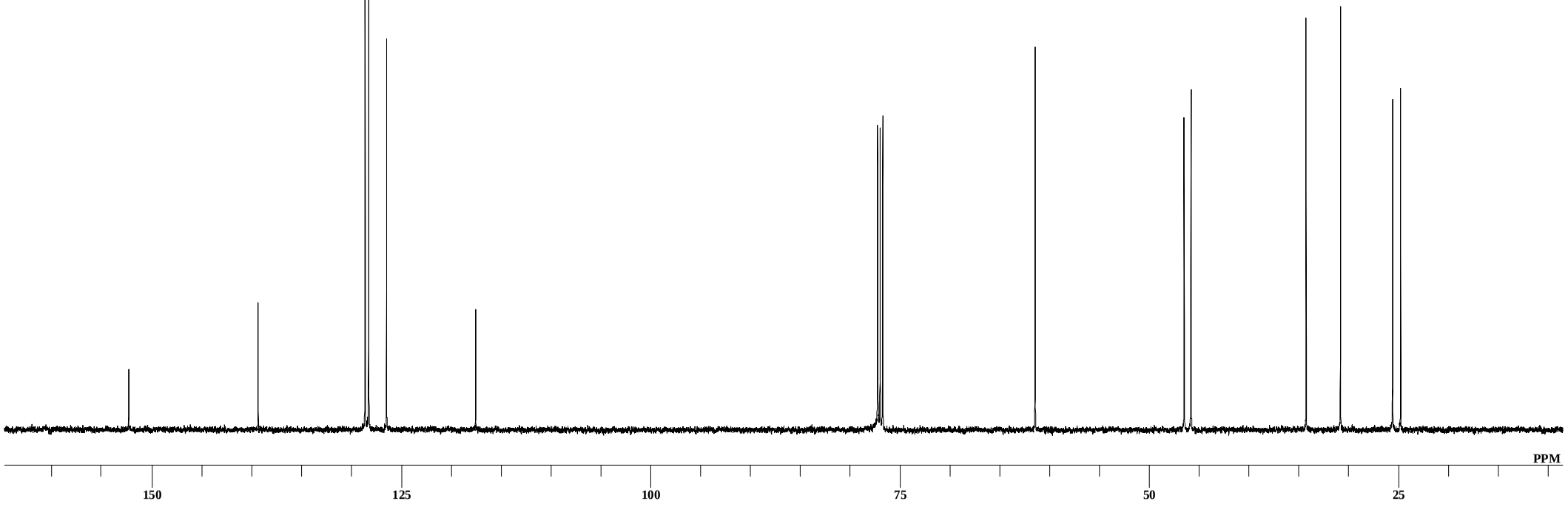
TMT-II-381B



1d

DFILE	TMT-II-381B.2
COMNT	TMT-II-381B
DATIM	03-08-2011 22:39:03
OBNUC	13C
EXMOD	single_pulse_dec
OBFRQ	125.77 MHz
OBSET	7.87 KHz
OBFIN	4.21 Hz
POINT	32768
FREQU	31446.54 Hz
SCANS	2221
ACQTM	1.0420 sec
PD	2.0000 sec
PW1	12.80 usec
IRNUC	1H
CTEMP	465.0 c
SLVNT	CDCL3
EXREF	77.00 ppm
BF	1.20 Hz
RGAIN	20



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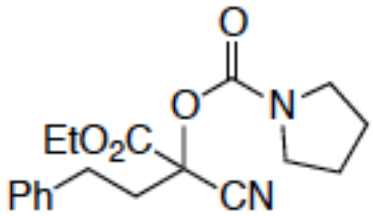
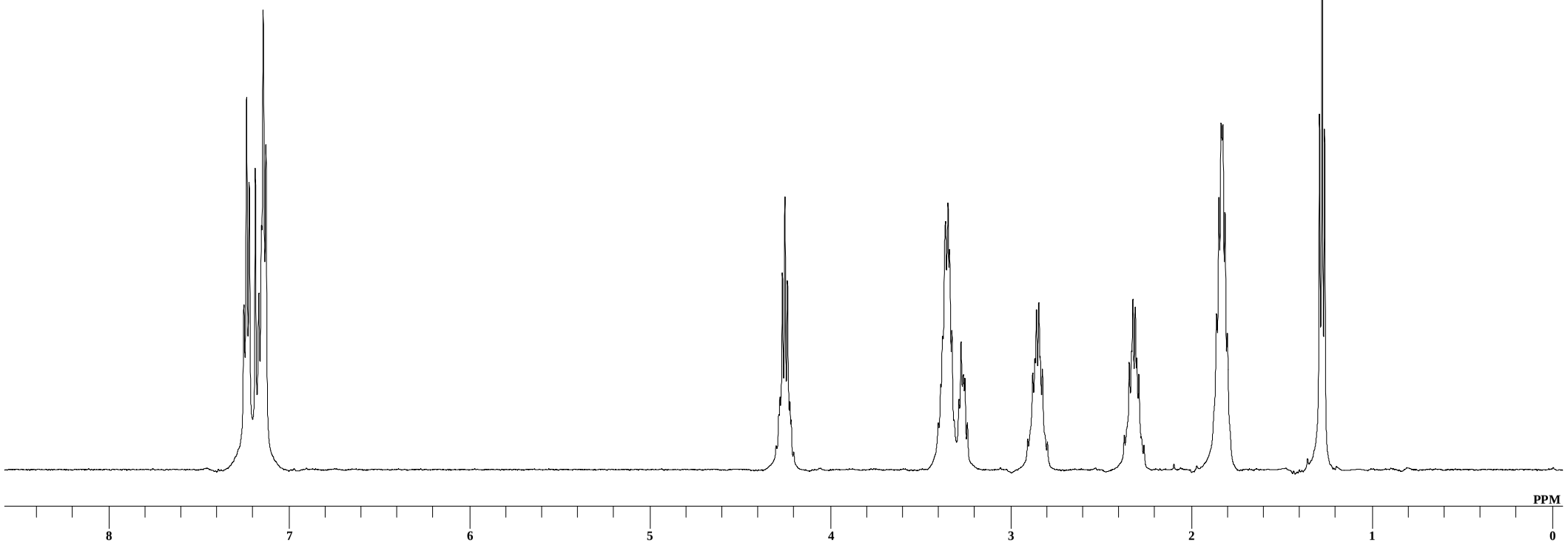
TMT-II-384D



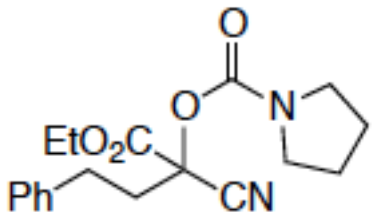
4d

DFILE	TMT-II-384D.als
COMNT	TMT-II-384D
DATIM	03-08-2011 23:04:57
OBNUC	1H
EXMOD	single_pulse.exp
OBFRQ	500.16 MHz
OBSET	2.41 KHz
OBFIN	6.01 Hz
POINT	32768
FREQU	7507.51 Hz
SCANS	4
ACQTM	4.3647 sec
PD	4.0000 sec
PW1	17.50 usec
IRNUC	
CTEMP	465.0 c
SLVNT	CDCL3
EXREF	0.00 ppm
BF	1.20 Hz
RGAIN	18



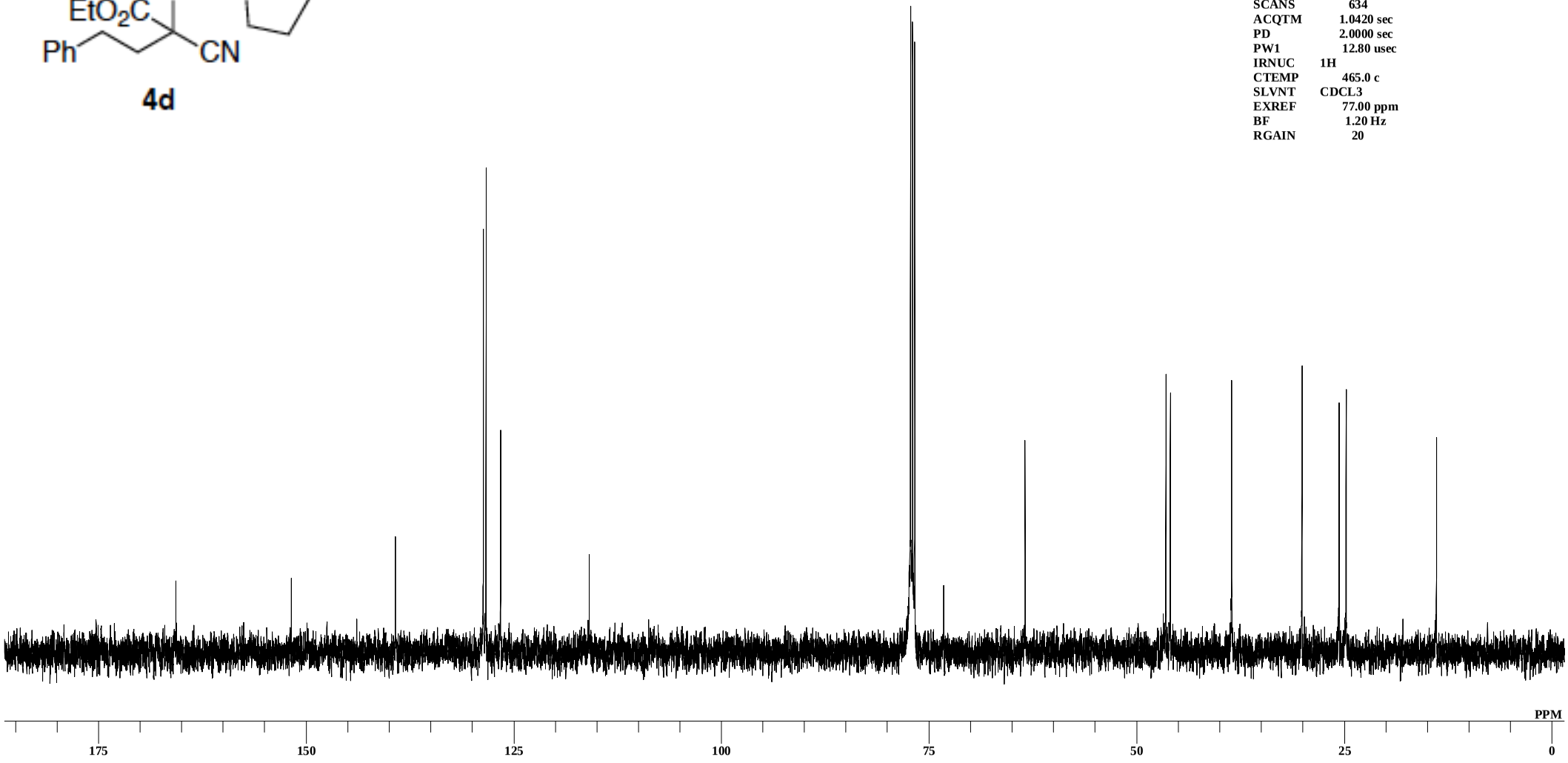
C:\Users\delta\Desktop\tmt\5pTMT-II-384B\TMT-II-384D.2

TMT-II-384D



4d

DFILE	TMT-II-384D.2
COMNT	TMT-II-384D
DATIM	04-08-2011 08:06:09
OBNUC	13C
EXMOD	single_pulse_dec
OBFRQ	125.77 MHz
OBSET	7.87 KHz
OBFIN	4.21 Hz
POINT	32768
FREQU	31446.54 Hz
SCANS	634
ACQTM	1.0420 sec
PD	2.0000 sec
PW1	12.80 usec
IRNUC	1H
CTEMP	465.0 c
SLVNT	CDCL3
EXREF	77.00 ppm
BF	1.20 Hz
RGAIN	20



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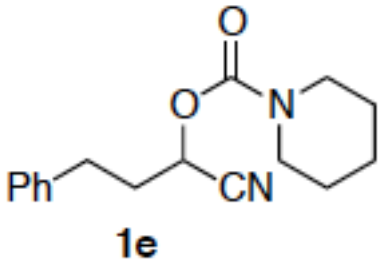
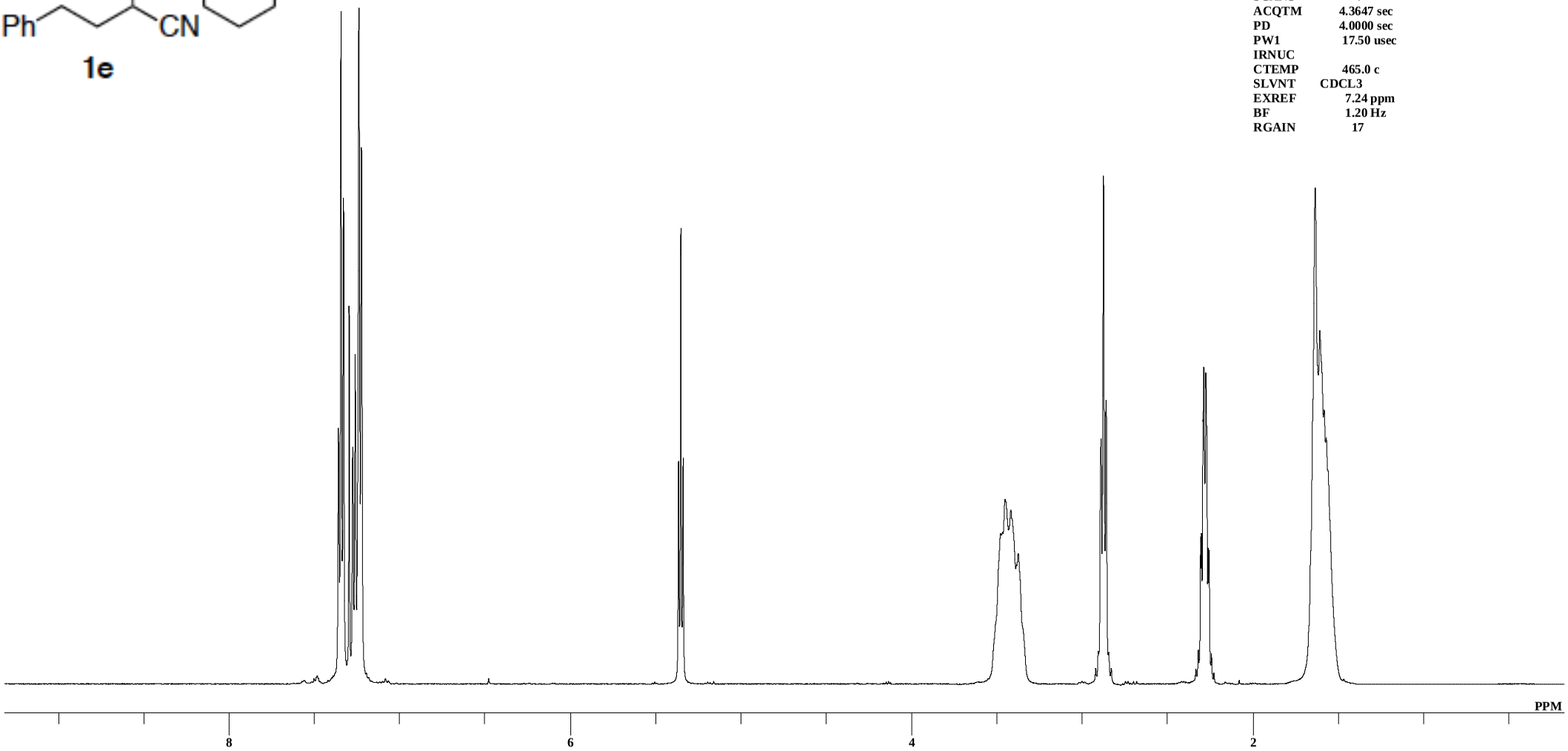
TMT-II-376B



1e

DFILE	TMT-II-376B.1
COMNT	TMT-II-376B
DATIM	10-08-2011 17:34:05
OBNUC	1H
EXMOD	single_pulse.exp
OBFRQ	500.16 MHz
OBSET	2.41 KHz
OBFIN	6.01 Hz
POINT	262144
FREQU	7507.51 Hz
SCANS	4
ACQTM	4.3647 sec
PD	4.0000 sec
PW1	17.50 usec
IRNUC	
CTEMP	465.0 c
SLVNT	CDCL3
EXREF	7.24 ppm
BF	1.20 Hz
RGAIN	17



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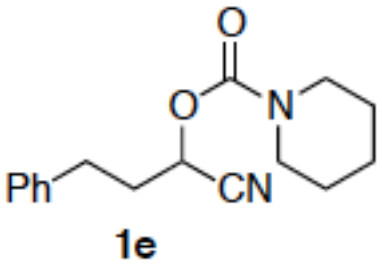
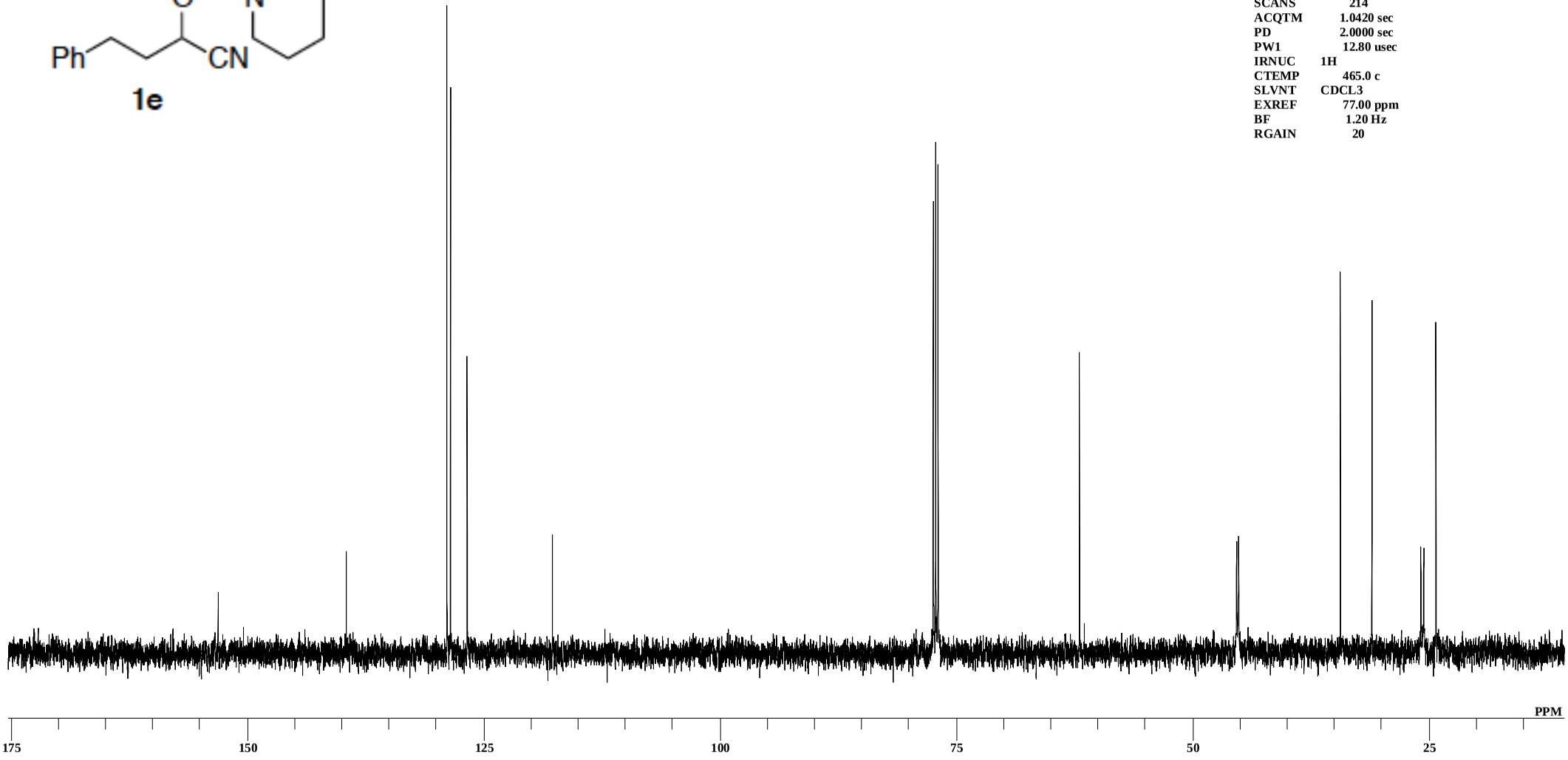
TMT-II-376B



1e

DFILE	TMT-II-376B.2
COMNT	TMT-II-376B
DATIM	10-08-2011 17:46:39
OBNUC	13C
EXMOD	single_pulse_dec
OBFRQ	125.77 MHz
OBSET	7.87 KHz
OBFIN	4.21 Hz
POINT	32768
FREQU	31446.54 Hz
SCANS	214
ACQTM	1.0420 sec
PD	2.0000 sec
PW1	12.80 usec
IRNUC	1H
CTEMP	465.0 c
SLVNT	CDCL3
EXREF	77.00 ppm
BF	1.20 Hz
RGAIN	20



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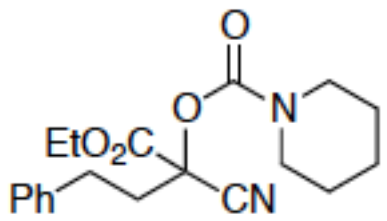
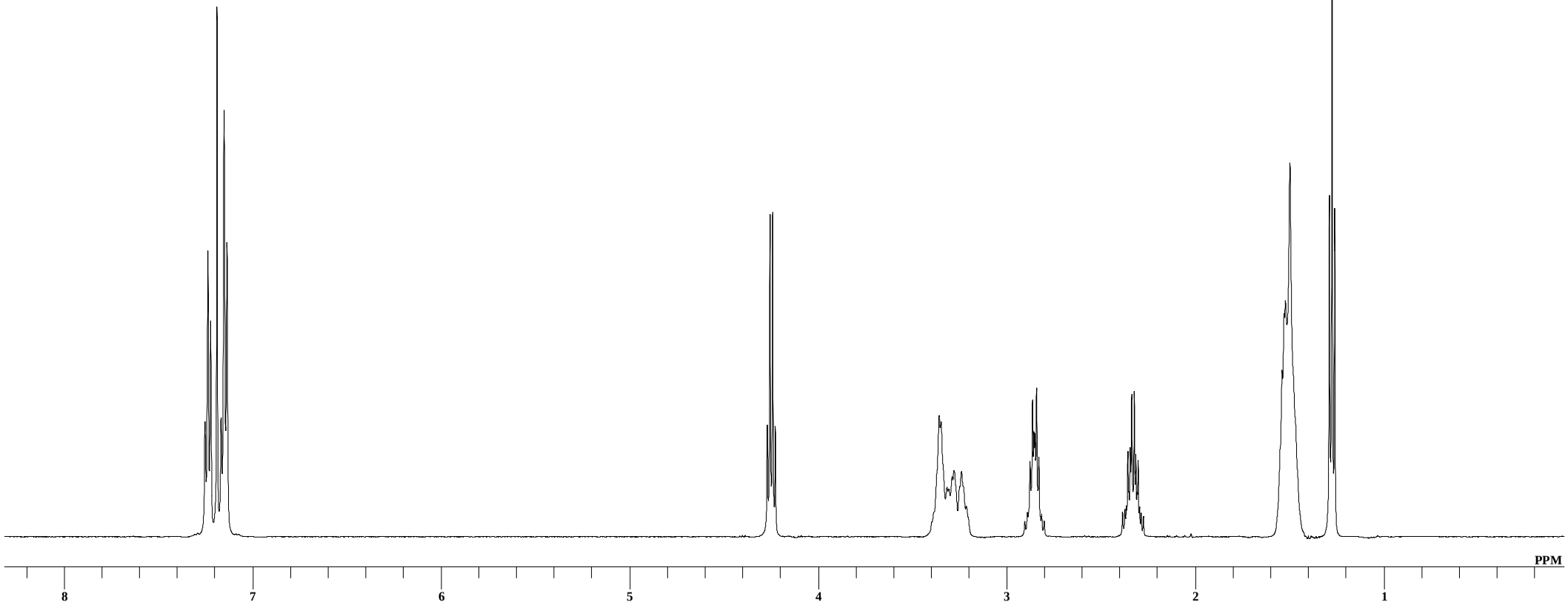
TMT-II-390B



4e

DFILE	TMT-III-390B.als
COMNT	TMT-II-390B
DATIM	09-07-2011 16:15:53
OBNUC	1H
EXMOD	single_pulse.exp
OBFRQ	500.16 MHz
OBSET	2.41 KHz
OBFIN	6.01 Hz
POINT	32768
FREQU	7507.51 Hz
SCANS	12
ACQTM	4.3647 sec
PD	4.0000 sec
PW1	17.50 usec
IRNUC	
CTEMP	465.0 c
SLVNT	CDCL3
EXREF	0.00 ppm
BF	1.20 Hz
RGAIN	20



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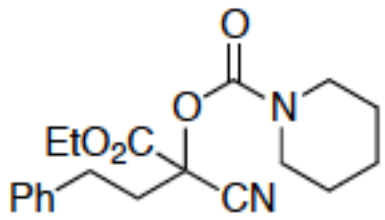
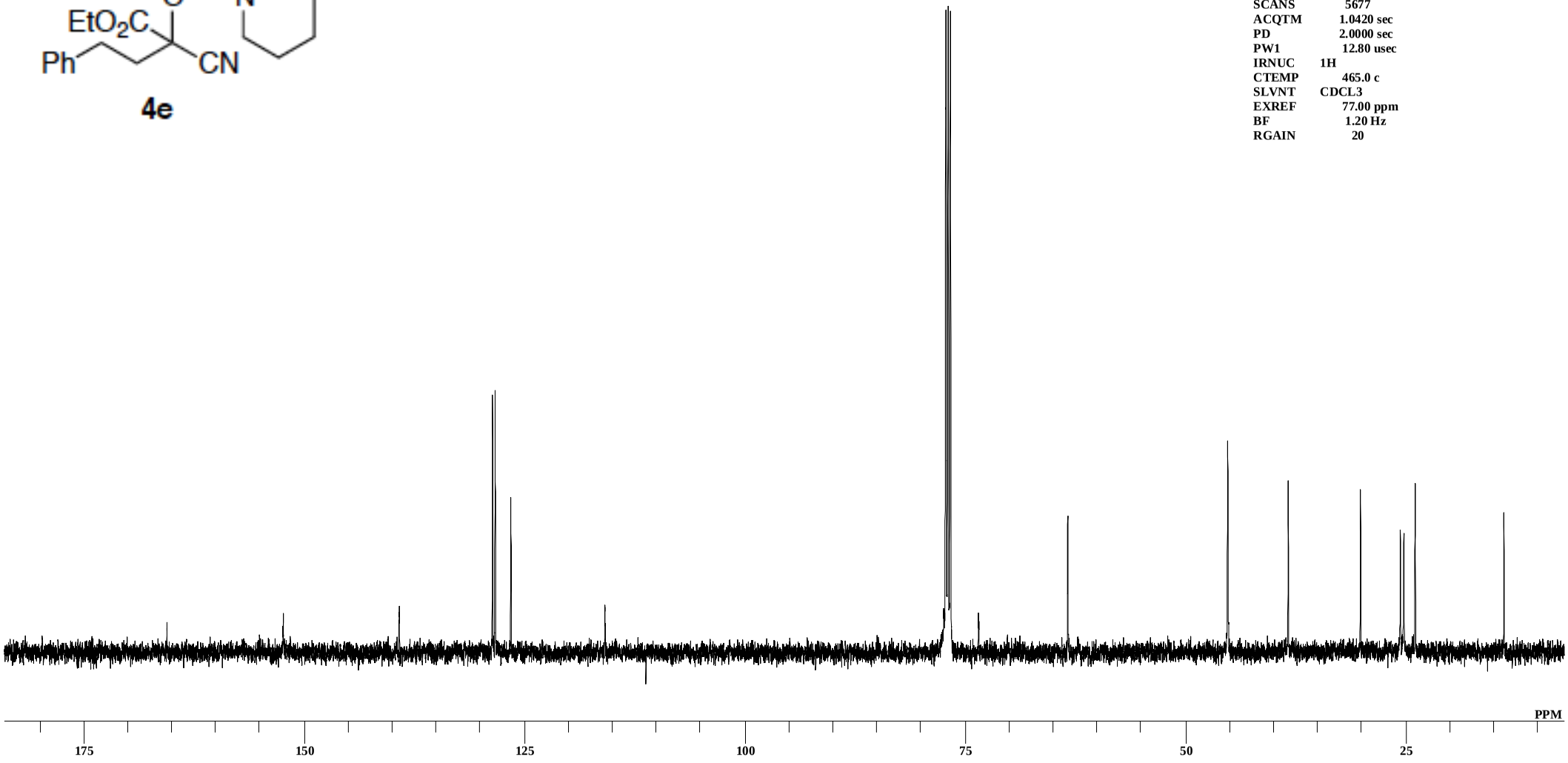
TMT-II-390B



4e

DFILE	TMT-II-390B.1
COMNT	TMT-II-390B
DATIM	10-07-2011 15:51:02
OBNUC	13C
EXMOD	single_pulse_dec
OBFRQ	125.77 MHz
OBSET	7.87 KHz
OBFIN	4.21 Hz
POINT	32768
FREQU	31446.54 Hz
SCANS	5677
ACQTM	1.0420 sec
PD	2.0000 sec
PW1	12.80 usec
IRNUC	1H
CTEMP	465.0 c
SLVNT	CDCL3
EXREF	77.00 ppm
BF	1.20 Hz
RGAIN	20



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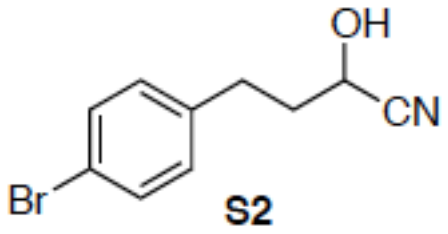
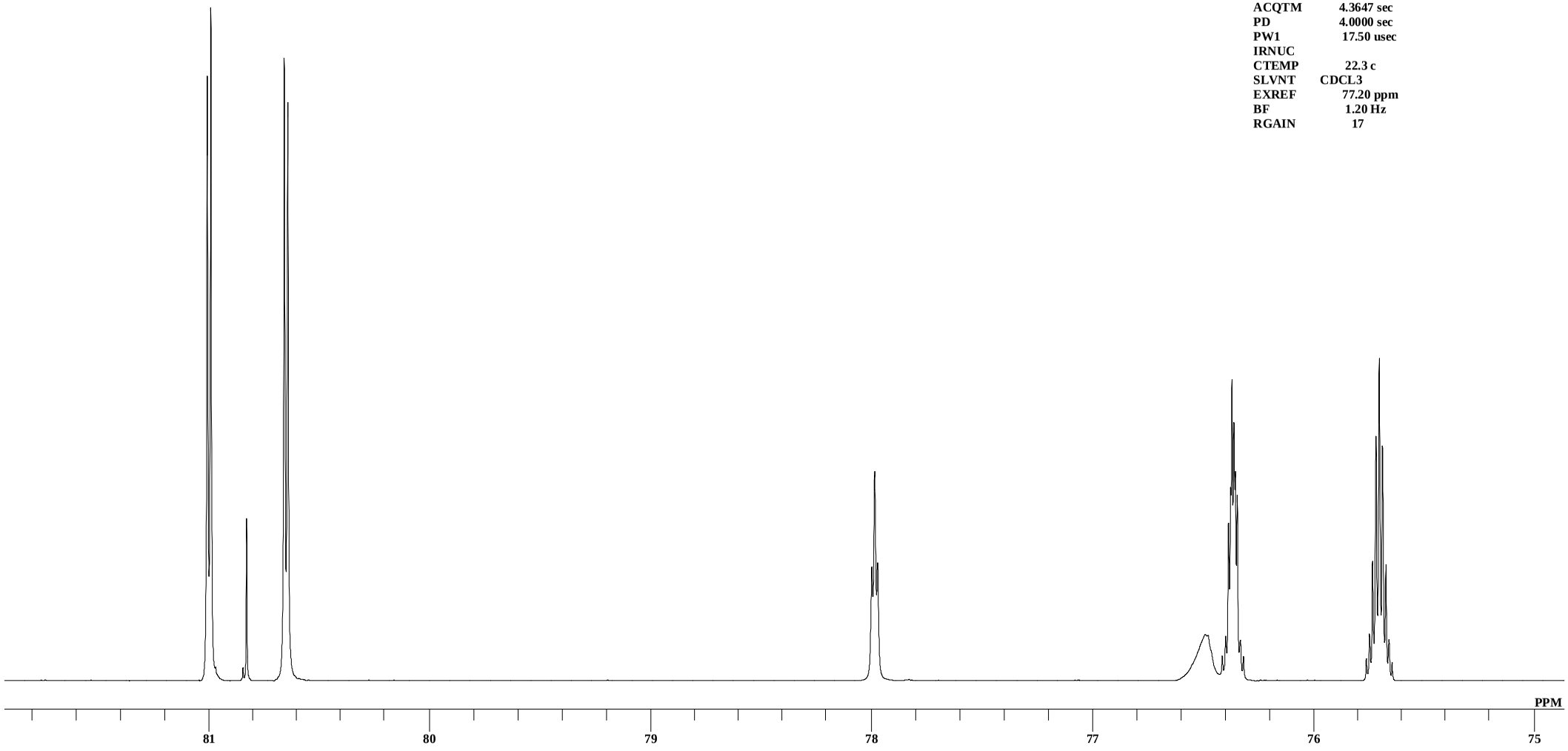
TMT-IV-673D



S2

DFILE	TMT-IV-673D.1
COMNT	TMT-IV-673D
DATIM	12-10-2011 18:23:33
OBNUC	1H
EXMOD	single_pulse.exp
OBFRQ	500.16 MHz
OBSET	2.41 KHz
OBFIN	6.01 Hz
POINT	32768
FREQU	7507.51 Hz
SCANS	4
ACQTM	4.3647 sec
PD	4.0000 sec
PW1	17.50 usec
IRNUC	
CTEMP	22.3 c
SLVNT	CDCL3
EXREF	77.20 ppm
BF	1.20 Hz
RGAIN	17



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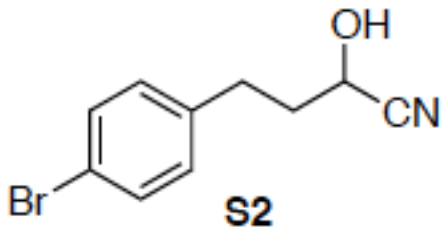
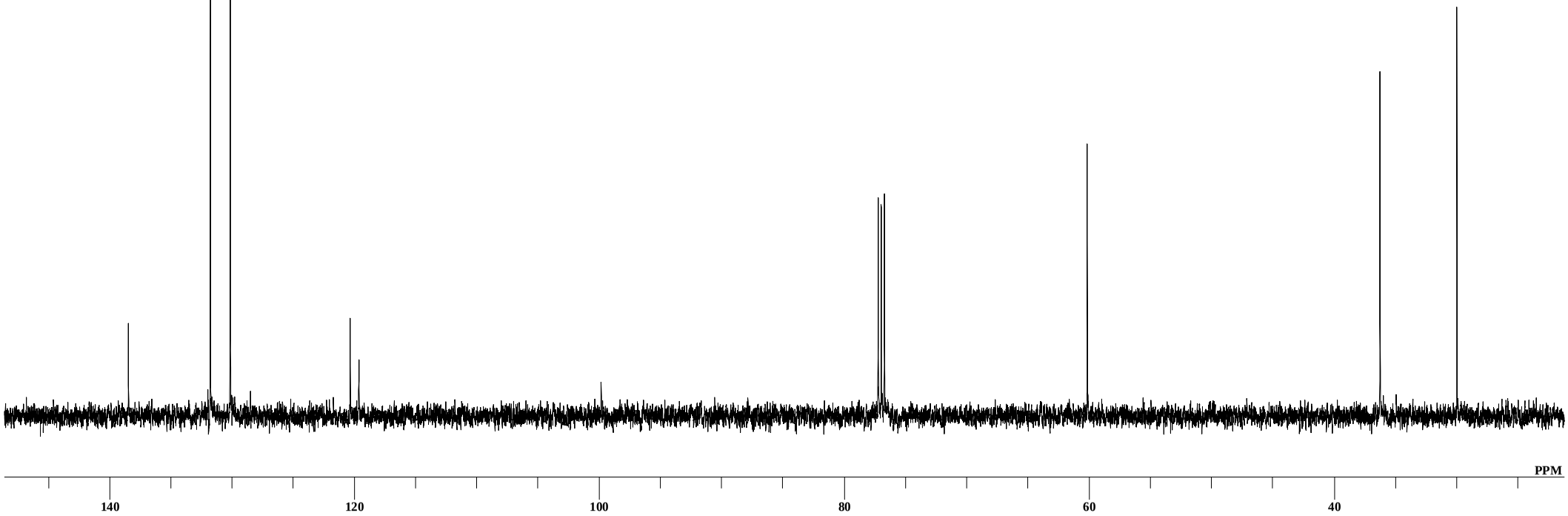
TMT-IV-673D



S2

DFILE	TMT-IV-673D.2
COMNT	TMT-IV-673D
DATIM	12-10-2011 18:27:37
OBNUC	13C
EXMOD	single_pulse_dec
OBFRQ	125.77 MHz
OBSET	7.87 KHz
OBFIN	4.21 Hz
POINT	32768
FREQU	31446.54 Hz
SCANS	73
ACQTM	1.0420 sec
PD	2.0000 sec
PW1	12.80 usec
IRNUC	1H
CTEMP	23.1 c
SLVNT	CDCL3
EXREF	77.00 ppm
BF	1.20 Hz
RGAIN	20



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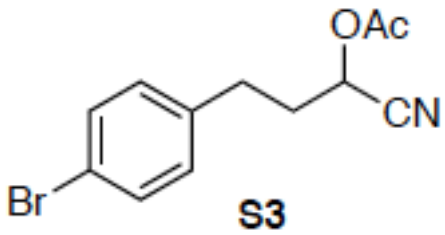
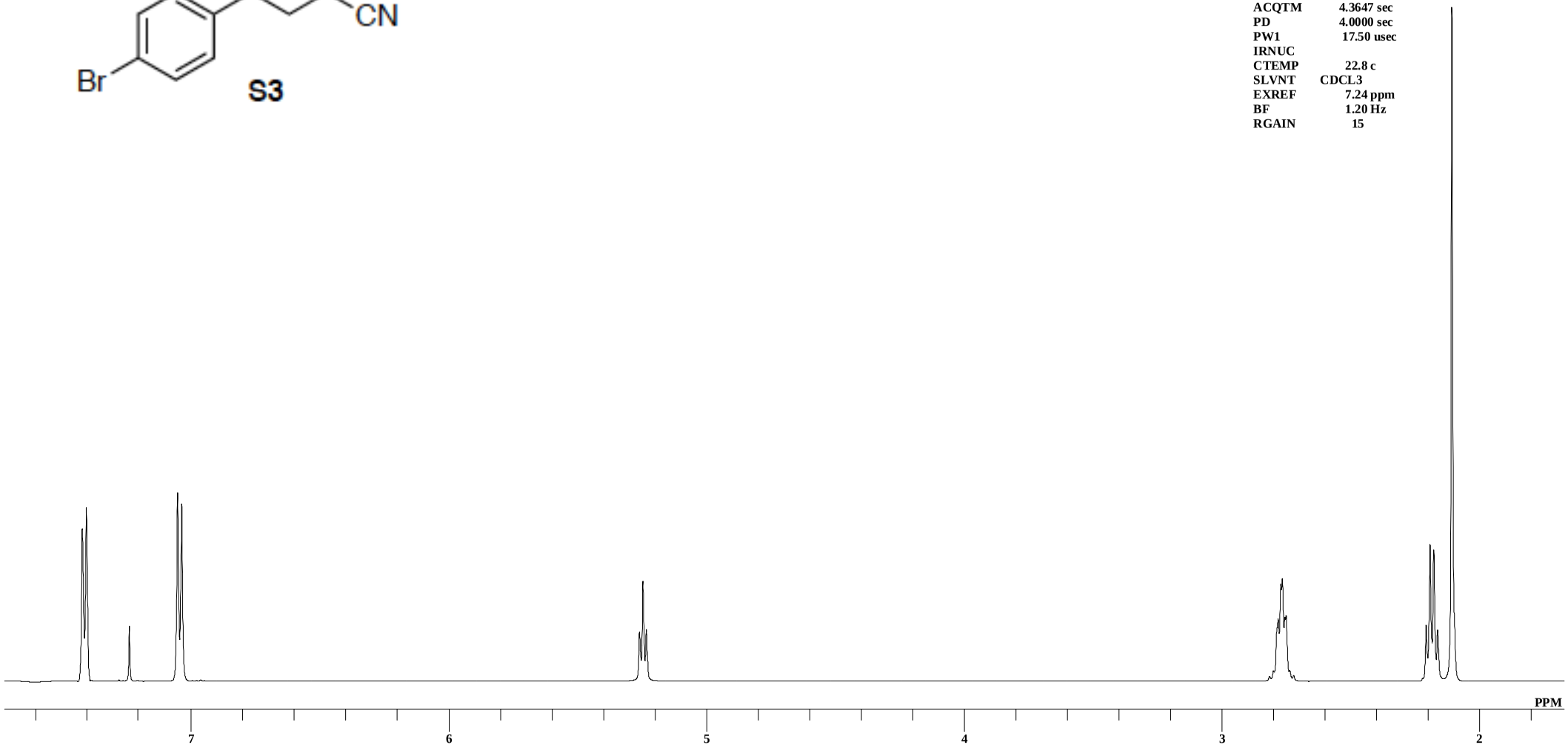
TMT-IV-679B



S3

DFILE	TMT-IV-679B.1
COMNT	TMT-IV-679B
DATIM	12-10-2011 19:25:51
OBNUC	1H
EXMOD	single_pulse.exp
OBFRQ	500.16 MHz
OBSET	2.41 KHz
OBFIN	6.01 Hz
POINT	32768
FREQU	7507.51 Hz
SCANS	4
ACQTM	4.3647 sec
PD	4.0000 sec
PW1	17.50 usec
IRNUC	
CTEMP	22.8 c
SLVNT	CDCL3
EXREF	7.24 ppm
BF	1.20 Hz
RGAIN	15



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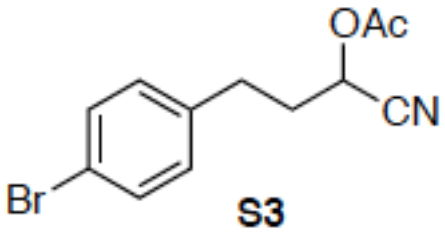
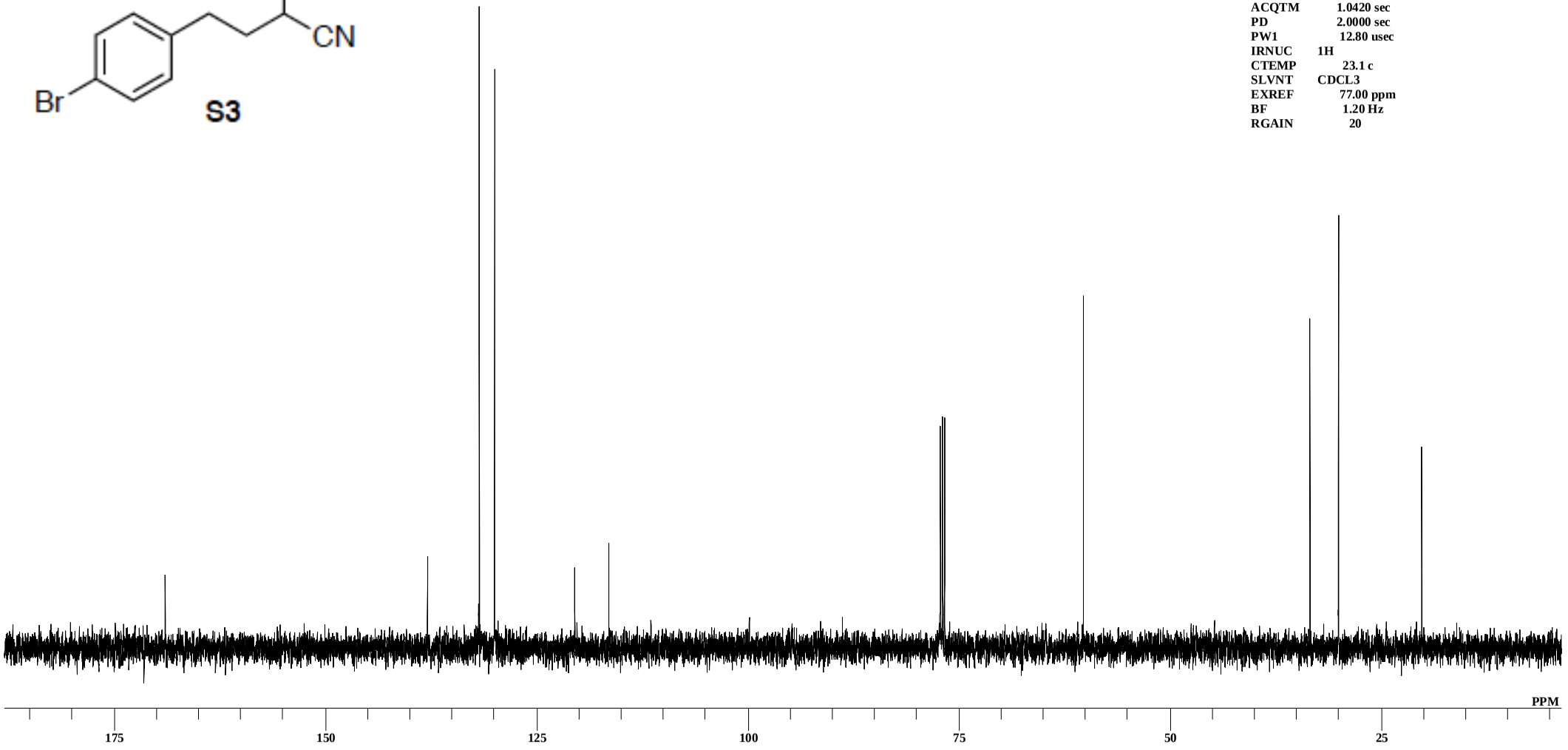
TMT-IV-679B



S3

DFILE	TMT-IV-679B.2
COMNT	TMT-IV-679B
DATIM	12-10-2011 19:28:45
OBNUC	13C
EXMOD	single_pulse_dec
OBFRQ	125.77 MHz
OBSET	7.87 KHz
OBFIN	4.21 Hz
POINT	32768
FREQU	31446.54 Hz
SCANS	50
ACQTM	1.0420 sec
PD	2.0000 sec
PW1	12.80 usec
IRNUC	1H
CTEMP	23.1 c
SLVNT	CDCL3
EXREF	77.00 ppm
BF	1.20 Hz
RGAIN	20



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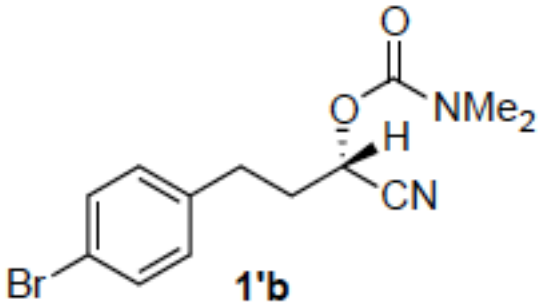
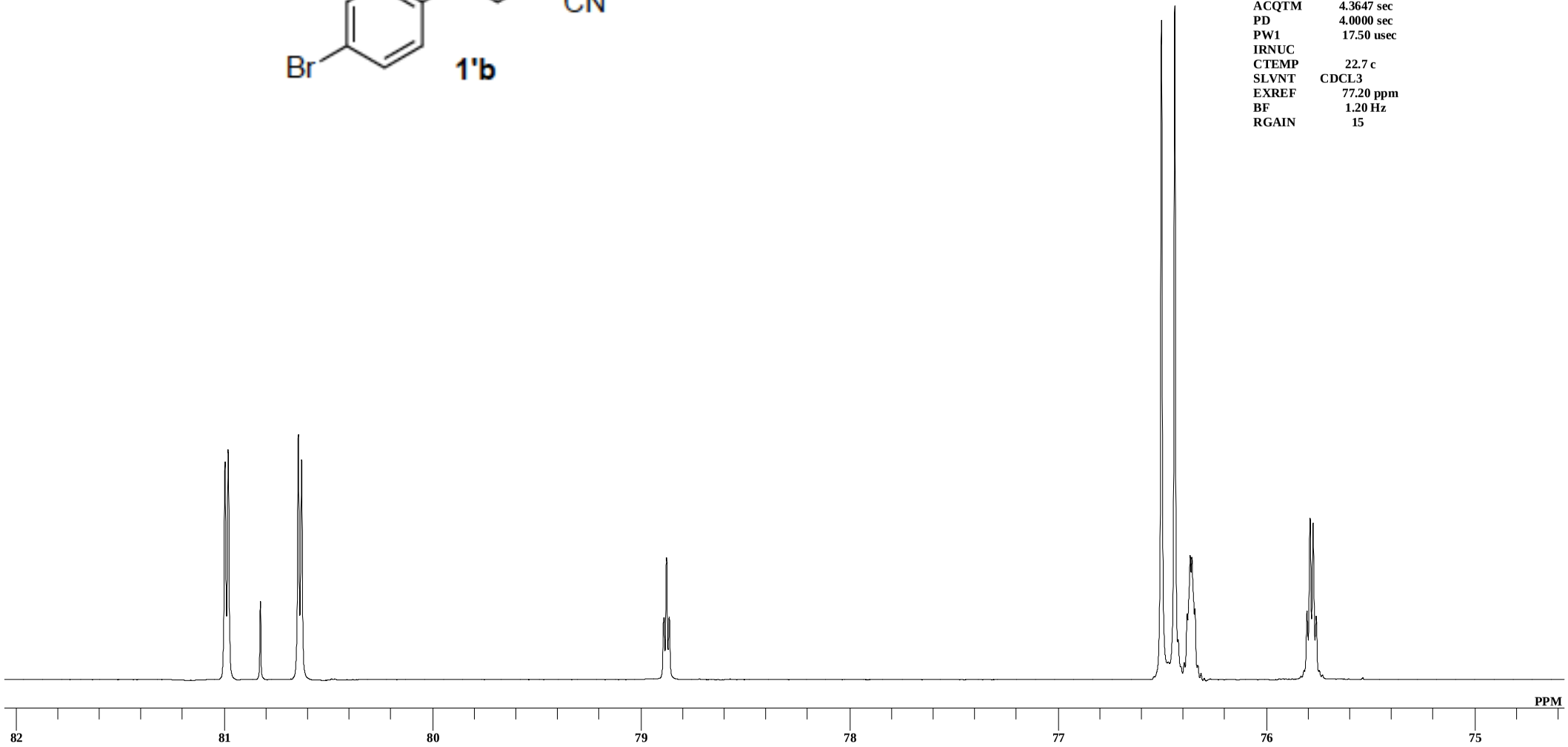
TMT-IV-678D



1'b

DFILE	TMT-IV-678D.1
COMNT	TMT-IV-678D
DATIM	12-10-2011 18:38:16
OBNUC	1H
EXMOD	single_pulse.exp
OBFRQ	500.16 MHz
OBSET	2.41 KHz
OBFIN	6.01 Hz
POINT	32768
FREQU	7507.51 Hz
SCANS	4
ACQTM	4.3647 sec
PD	4.0000 sec
PW1	17.50 usec
IRNUC	
CTEMP	22.7 c
SLVNT	CDCL3
EXREF	77.20 ppm
BF	1.20 Hz
RGAIN	15



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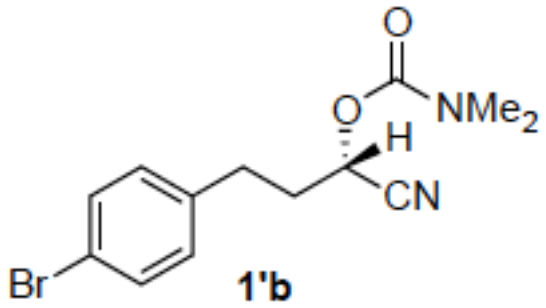
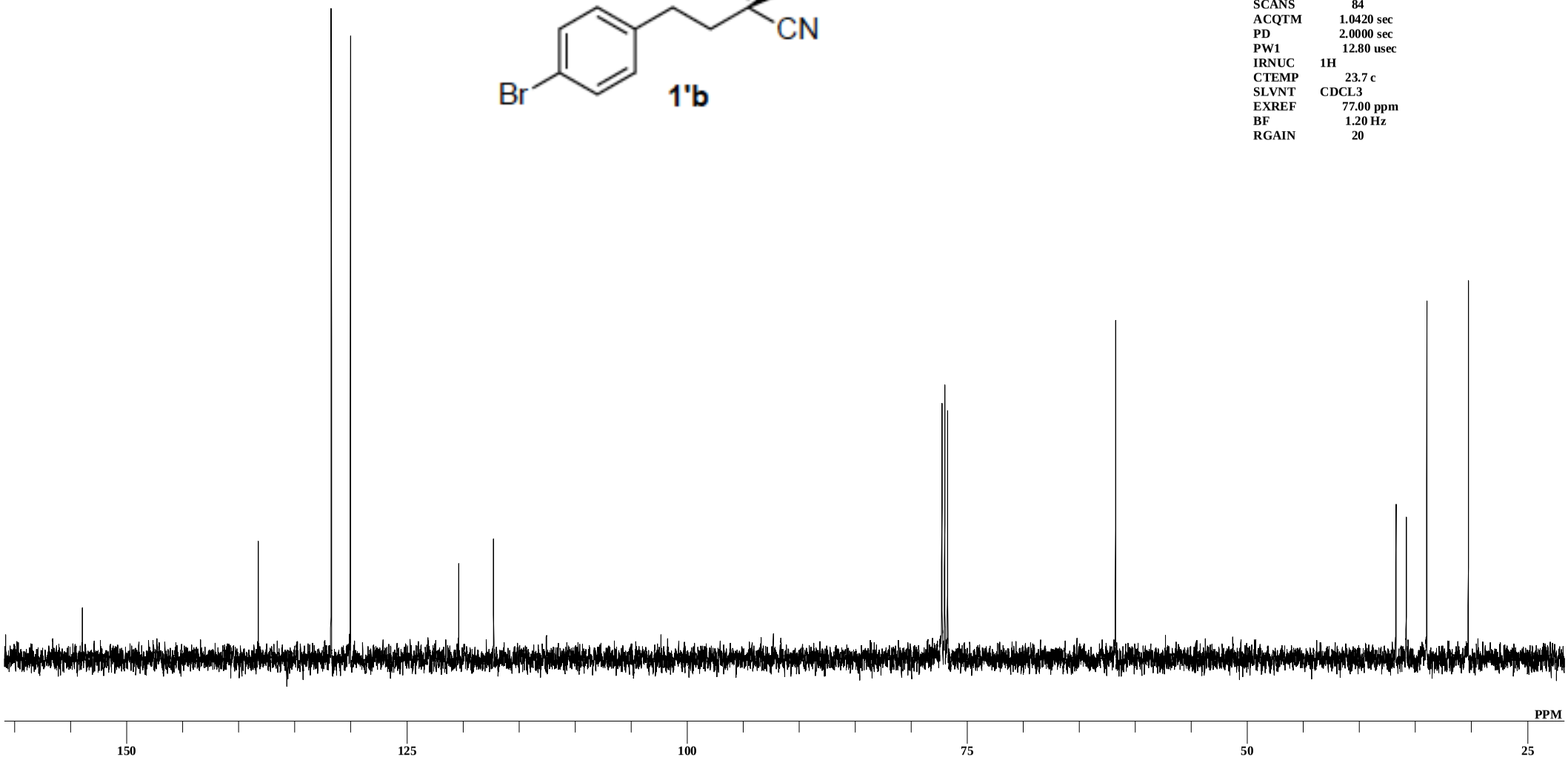
TMT-IV-678D



1'b

DFILE	TMT-IV-678D-13C.als
COMNT	TMT-IV-678D
DATIM	12-10-2011 18:42:54
OBNUC	13C
EXMOD	single_pulse_dec
OBFRQ	125.77 MHz
OBSET	7.87 KHz
OBFIN	4.21 Hz
POINT	32768
FREQU	31446.54 Hz
SCANS	84
ACQTM	1.0420 sec
PD	2.0000 sec
PW1	12.80 usec
IRNUC	1H
CTEMP	23.7 c
SLVNT	CDCL3
EXREF	77.00 ppm
BF	1.20 Hz
RGAIN	20



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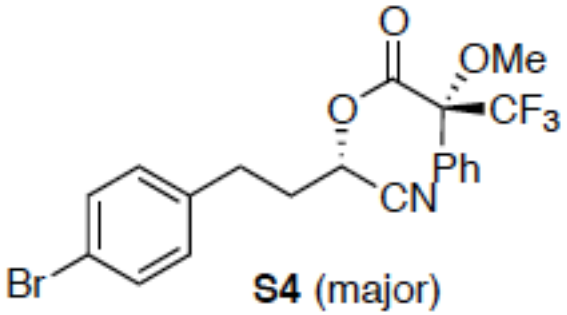
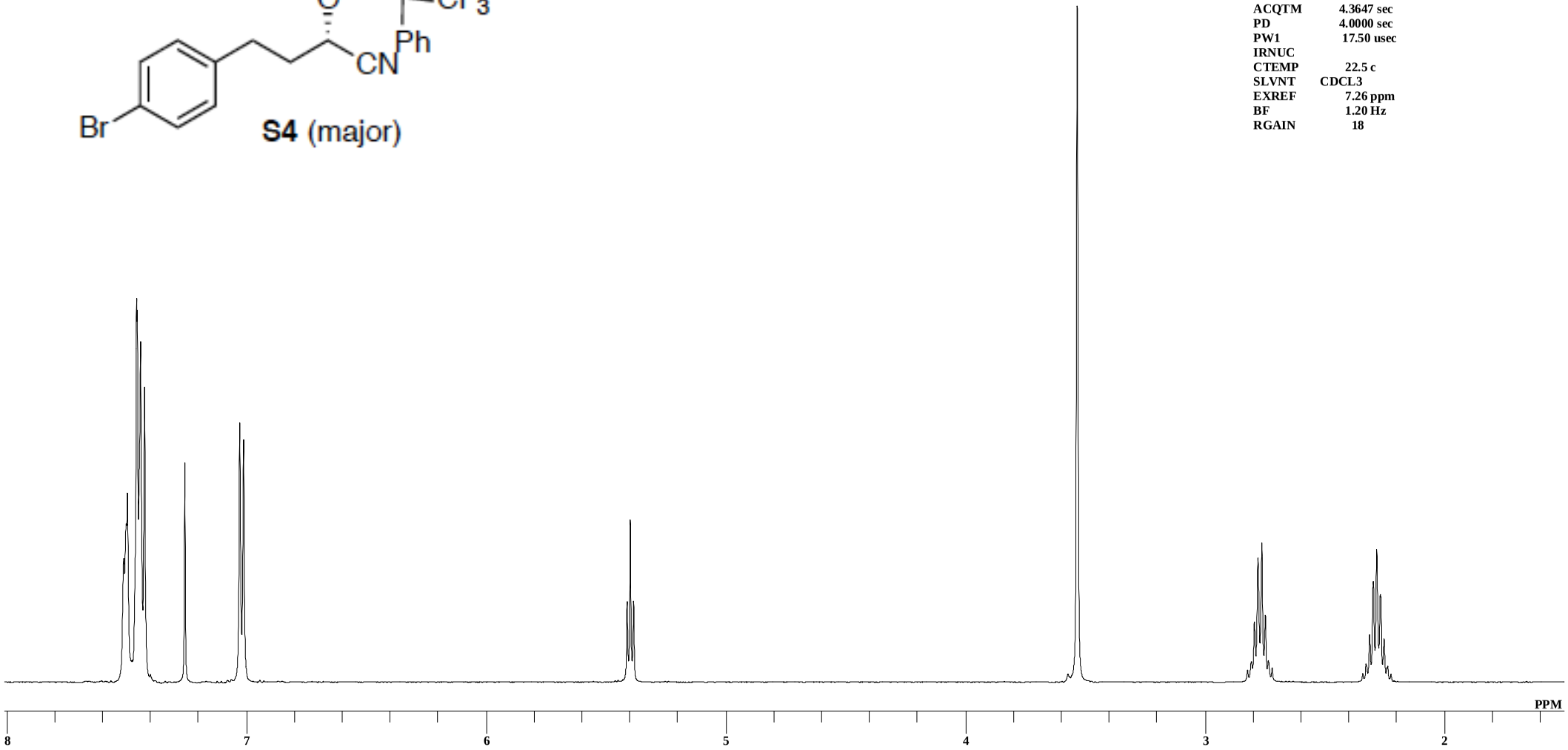
TMT-IV-686D



S4 (major)

DFILE	TMT-IV-686D.als
COMNT	TMT-IV-686D
DATIM	13-10-2011 14:45:11
OBNUC	1H
EXMOD	single_pulse.exp
OBFRQ	500.16 MHz
OBSET	2.41 KHz
OBFIN	6.01 Hz
POINT	32768
FREQU	7507.51 Hz
SCANS	4
ACQTM	4.3647 sec
PD	4.0000 sec
PW1	17.50 usec
IRNUC	
CTEMP	22.5 c
SLVNT	CDCL3
EXREF	7.26 ppm
BF	1.20 Hz
RGAIN	18



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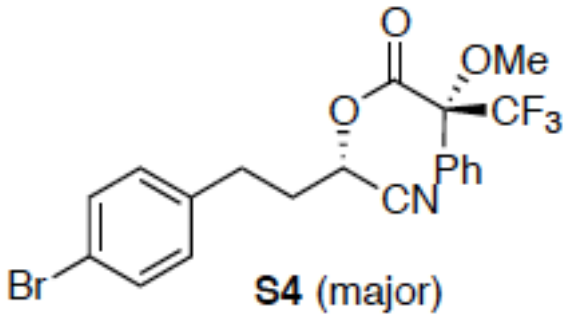
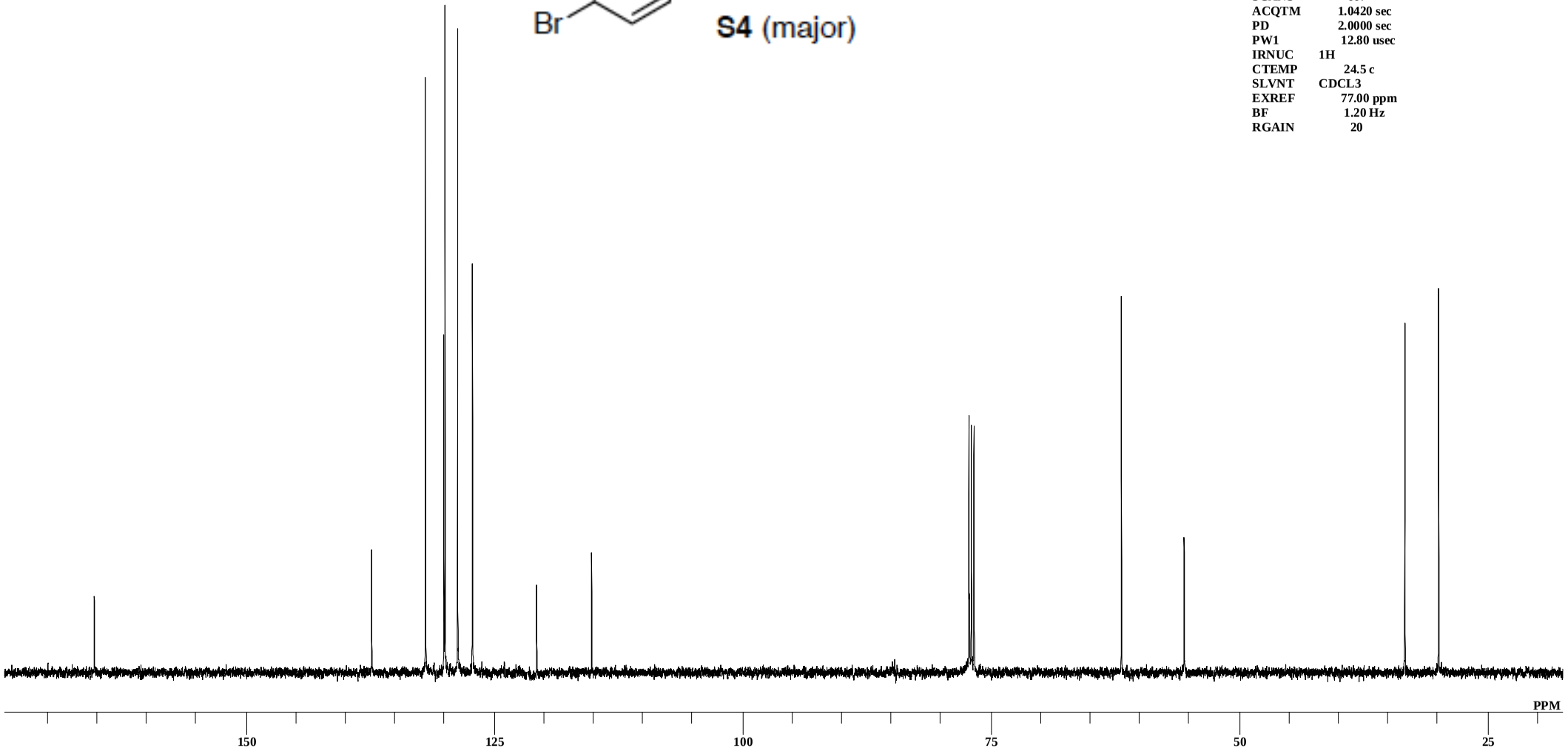
TMT-IV-686D



S4 (major)

DFILE	TMT-IV-686D.1
COMNT	TMT-IV-686D
DATIM	15-11-2011 20:49:18
OBNUC	13C
EXMOD	single_pulse_dec
OBFRQ	125.77 MHz
OBSET	7.87 KHz
OBFIN	4.21 Hz
POINT	32768
FREQU	31446.54 Hz
SCANS	667
ACQTM	1.0420 sec
PD	2.0000 sec
PW1	12.80 usec
IRNUC	1H
CTEMP	24.5 c
SLVNT	CDCL3
EXREF	77.00 ppm
BF	1.20 Hz
RGAIN	20



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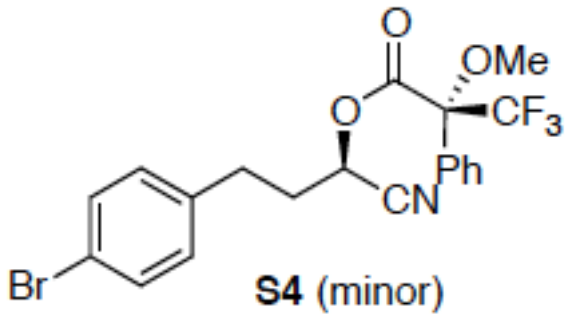
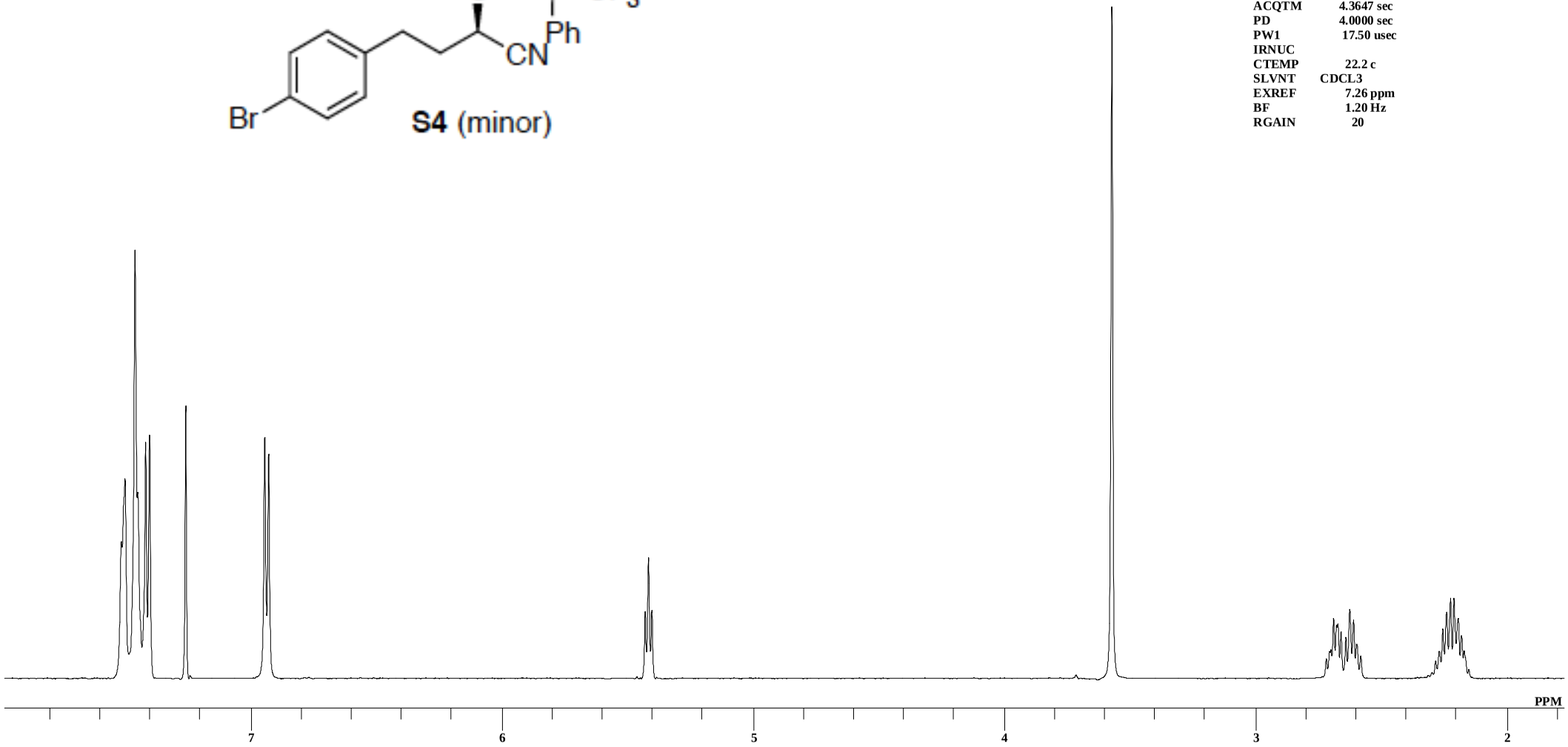
TMT-IV-686B



S4 (minor)

DFILE	TMT-IV-686B.als
COMNT	TMT-IV-686B
DATIM	13-10-2011 14:36:05
OBNUC	1H
EXMOD	single_pulse.exp
OBFRQ	500.16 MHz
OBSET	2.41 KHz
OBFIN	6.01 Hz
POINT	32768
FREQU	7507.51 Hz
SCANS	4
ACQTM	4.3647 sec
PD	4.0000 sec
PW1	17.50 usec
IRNUC	
CTEMP	22.2 c
SLVNT	CDCL3
EXREF	7.26 ppm
BF	1.20 Hz
RGAIN	20



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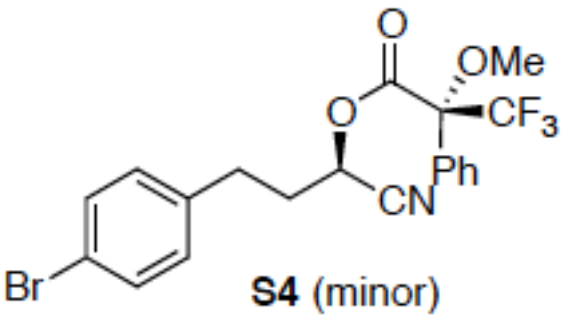
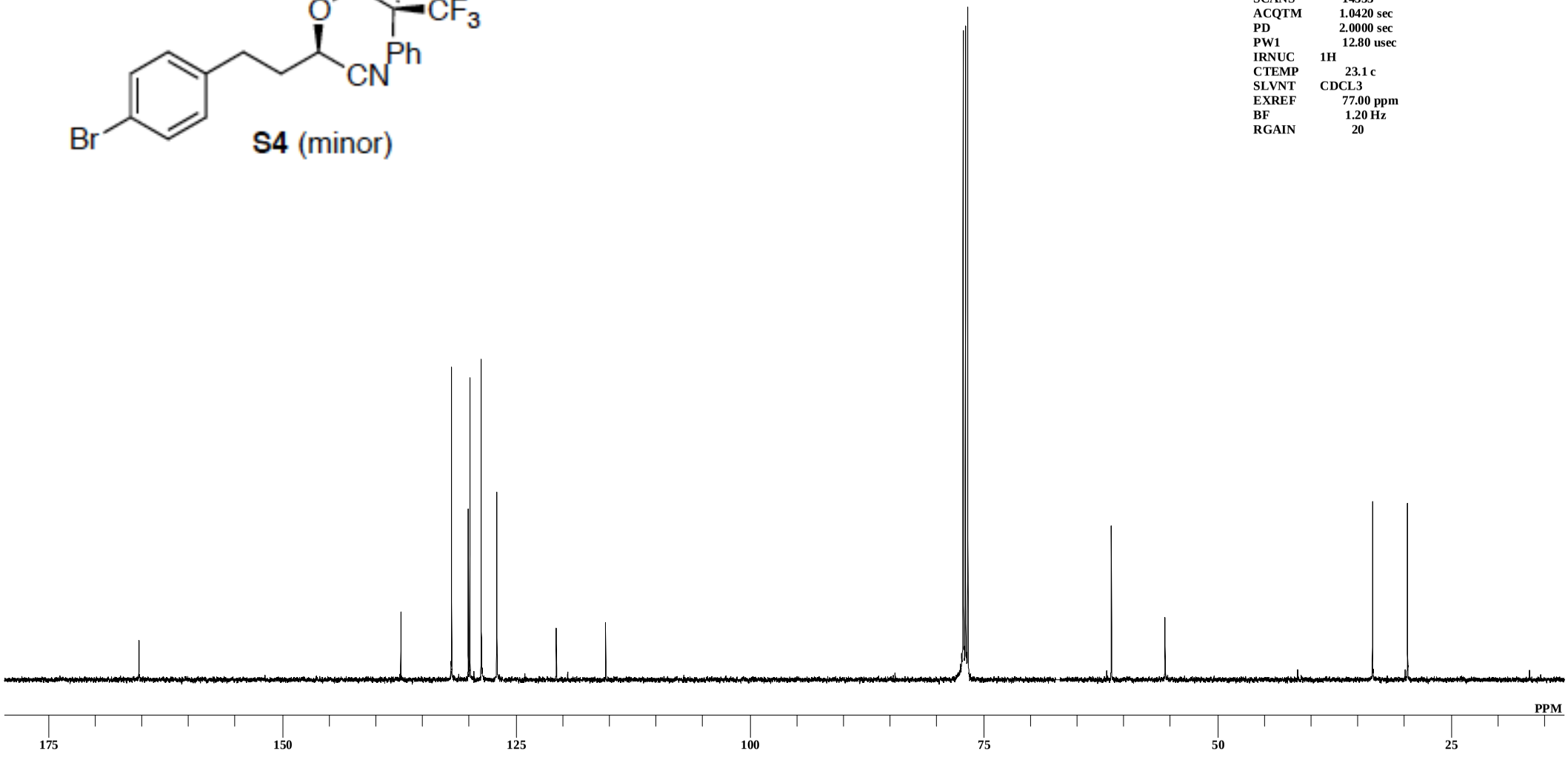
TMT-IV-686B



S4 (minor)

DFILE	TMT-IV-686B.3
COMNT	TMT-IV-686B
DATIM	14-10-2011 07:59:10
OBNUC	13C
EXMOD	single_pulse_dec
OBFRQ	125.77 MHz
OBSET	7.87 KHz
OBFIN	4.21 Hz
POINT	32768
FREQU	31446.54 Hz
SCANS	14333
ACQTM	1.0420 sec
PD	2.0000 sec
PW1	12.80 usec
IRNUC	1H
CTEMP	23.1 c
SLVNT	CDCL3
EXREF	77.00 ppm
BF	1.20 Hz
RGAIN	20



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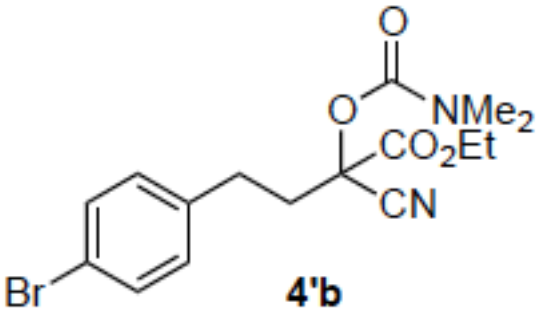
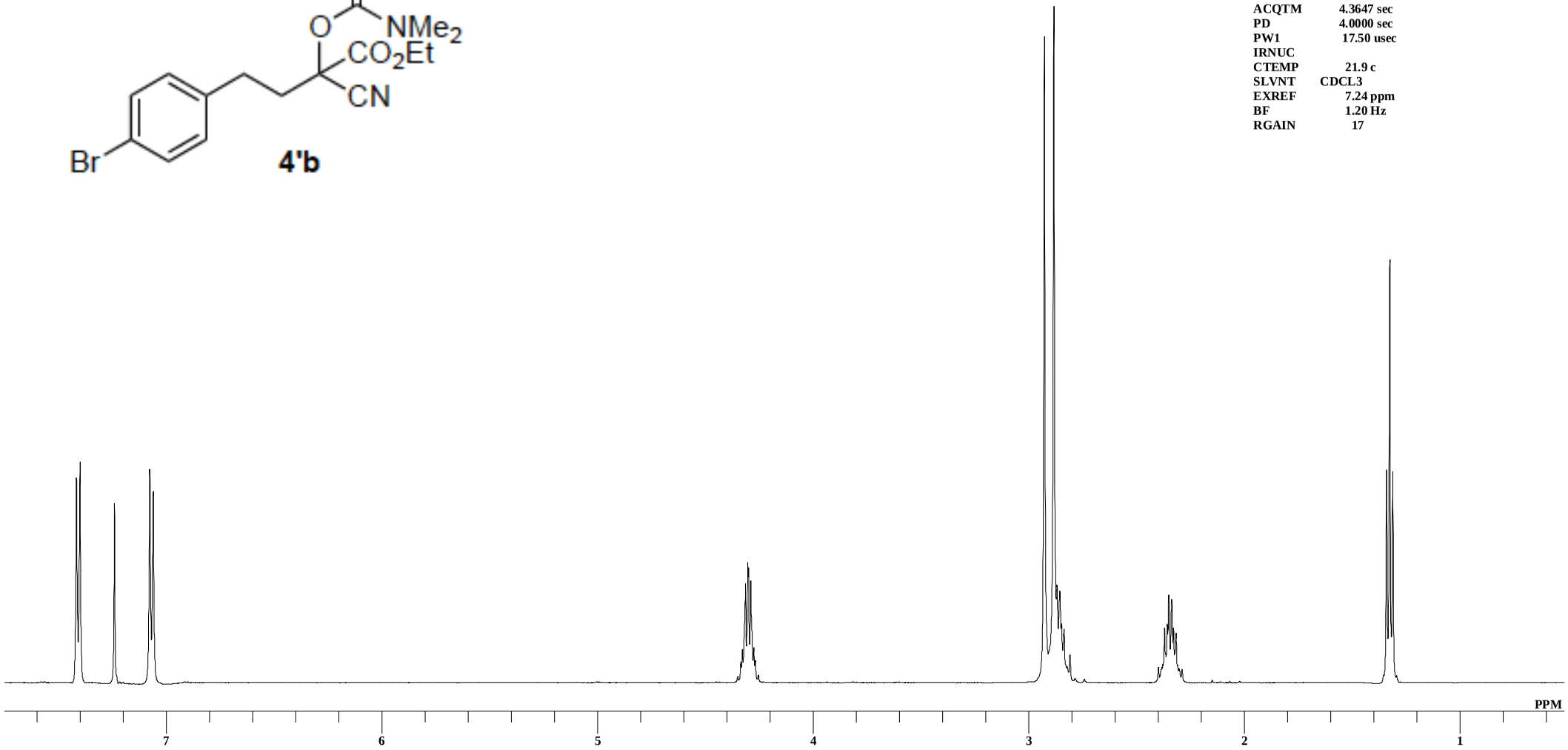
TMT-IV-681C



4'b

DFILE	TMT-IV-681C.1
COMNT	TMT-IV-681C
DATIM	12-10-2011 19:41:36
OBNUC	1H
EXMOD	single_pulse.exp
OBFRQ	500.16 MHz
OBSET	2.41 KHz
OBFIN	6.01 Hz
POINT	32768
FREQU	7507.51 Hz
SCANS	4
ACQTM	4.3647 sec
PD	4.0000 sec
PW1	17.50 usec
IRNUC	
CTEMP	21.9 c
SLVNT	CDCL3
EXREF	7.24 ppm
BF	1.20 Hz
RGAIN	17



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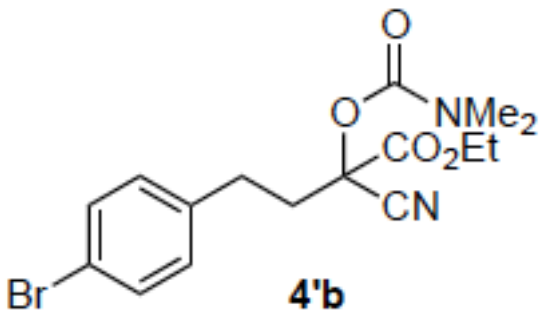
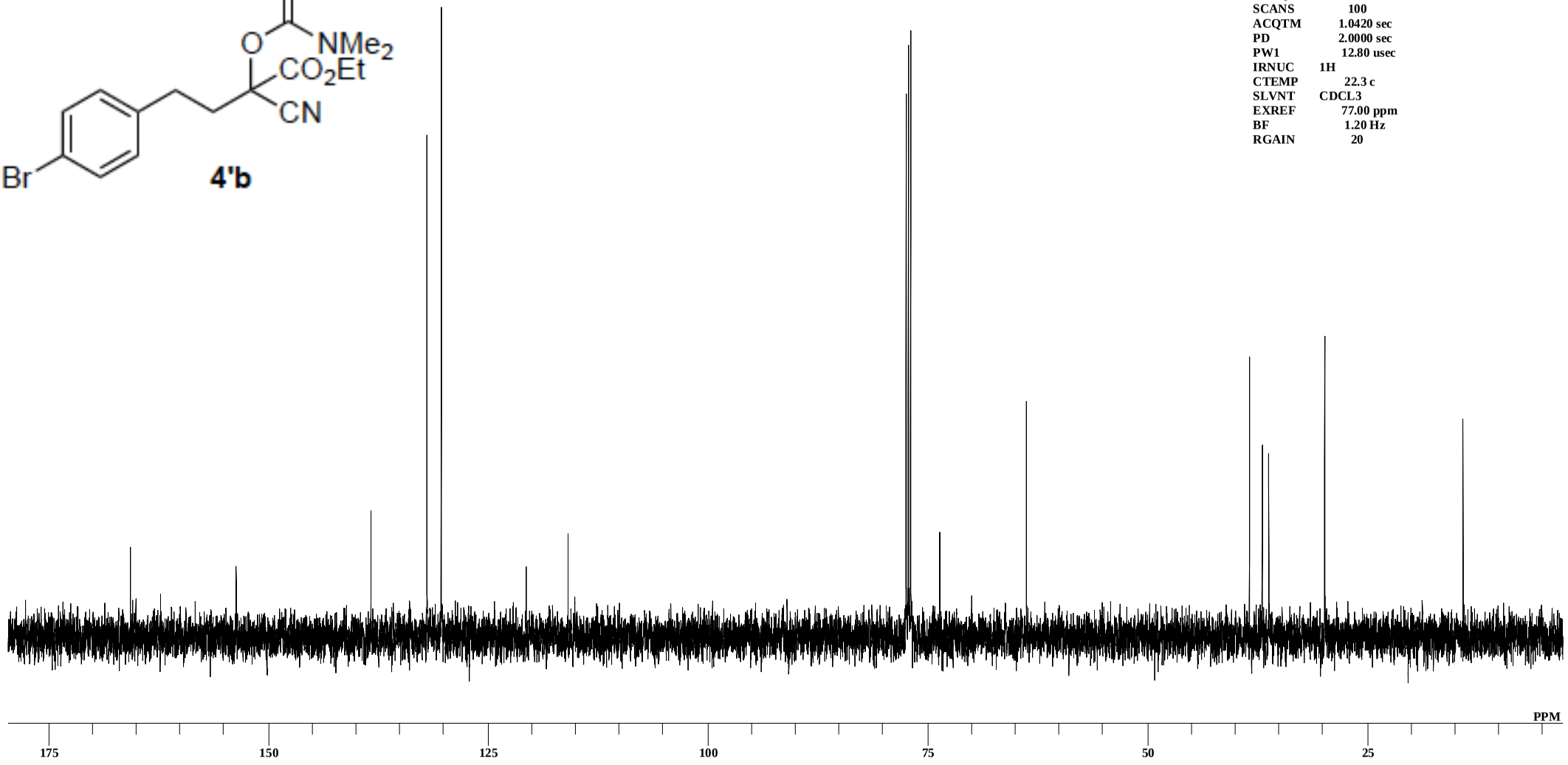
TMT-IV-681C

DFILE	TMT-IV-681C.2
COMNT	TMT-IV-681C
DATIM	12-10-2011 19:47:03
OBNUC	13C
EXMOD	single_pulse_dec
OBFRQ	125.77 MHz
OBSET	7.87 KHz
OBFIN	4.21 Hz
POINT	32768
FREQU	31446.54 Hz
SCANS	100
ACQTM	1.0420 sec
PD	2.0000 sec
PW1	12.80 usec
IRNUC	1H
CTEMP	22.3 c
SLVNT	CDCL3
EXREF	77.00 ppm
BF	1.20 Hz
RGAIN	20



4'b



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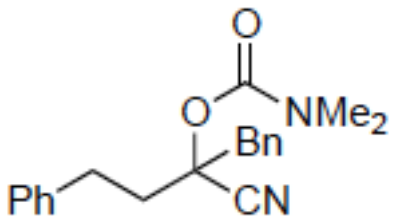
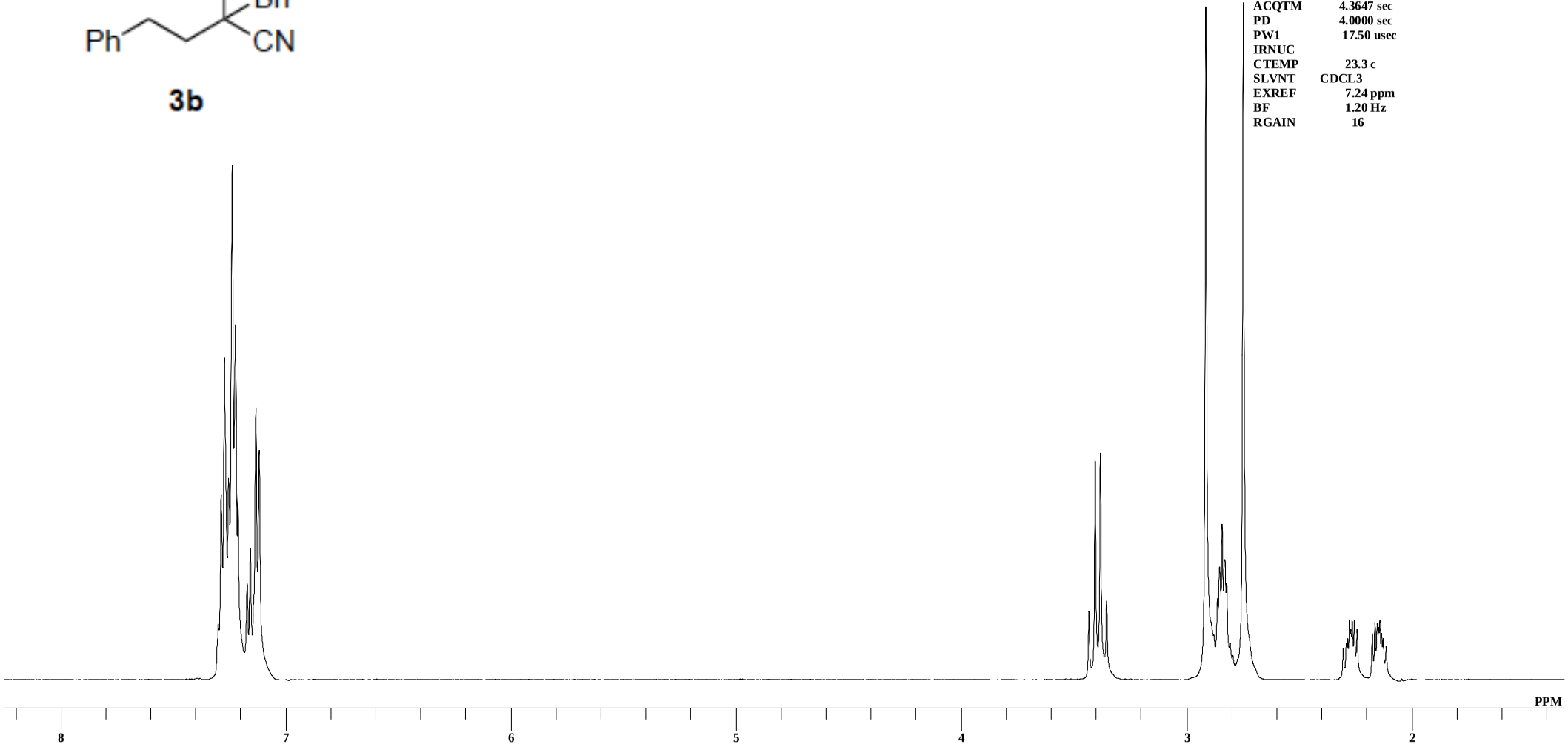
TMT-IV-706B



3b

DFILE	TMT-IV-706B.1
COMNT	TMT-IV-706B
DATIM	17-11-2011 07:33:06
OBNUC	1H
EXMOD	single_pulse.exp
OBFRQ	500.16 MHz
OBSET	2.41 KHz
OBFIN	6.01 Hz
POINT	32768
FREQU	7507.51 Hz
SCANS	4
ACQTM	4.3647 sec
PD	4.0000 sec
PW1	17.50 usec
IRNUC	
CTEMP	23.3 c
SLVNT	CDCL3
EXREF	7.24 ppm
BF	1.20 Hz
RGAIN	16



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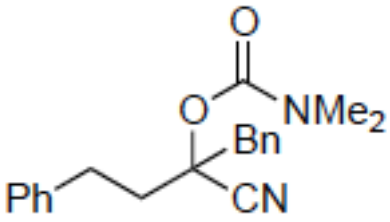
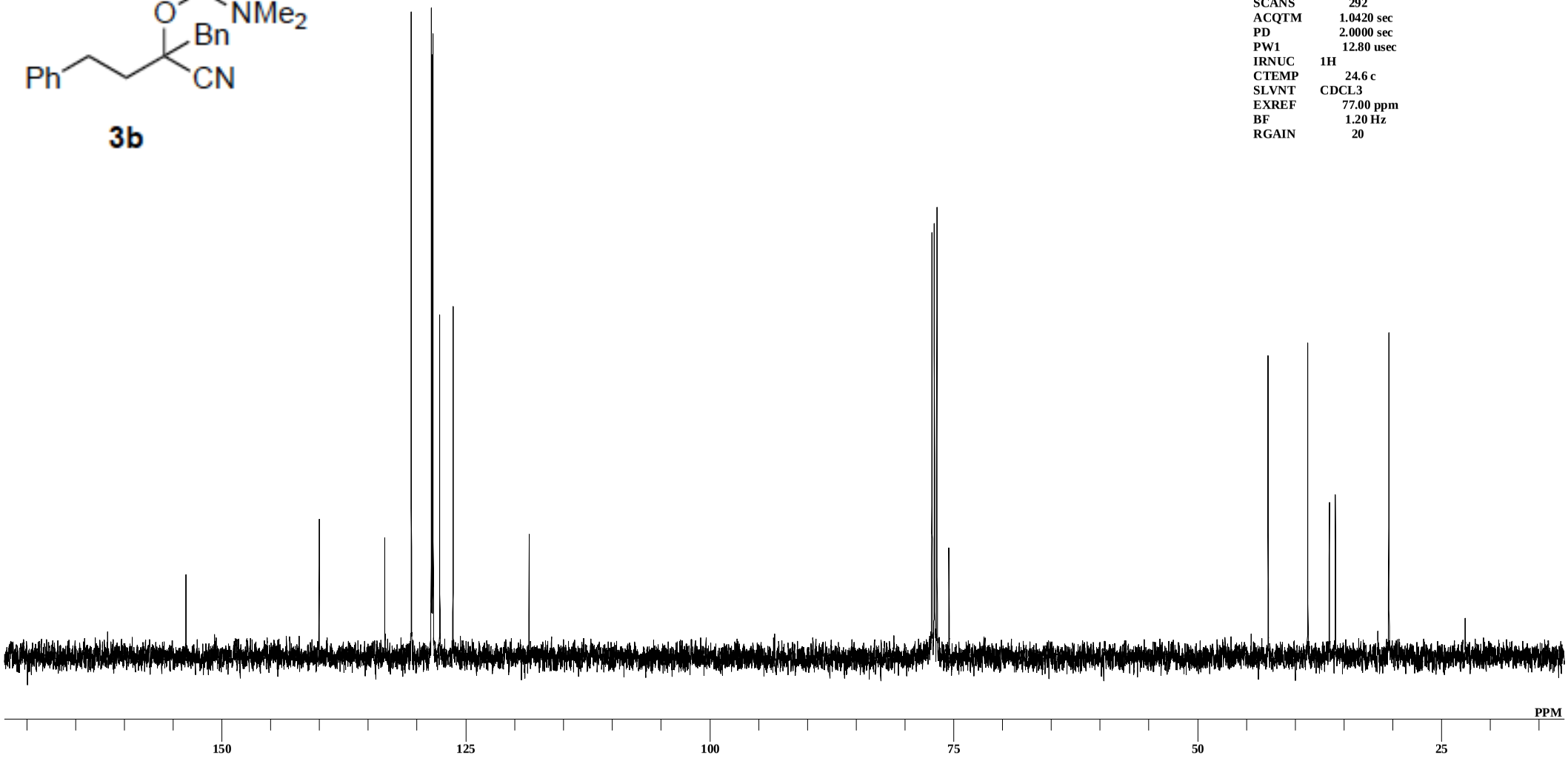
TMT-IV-706B



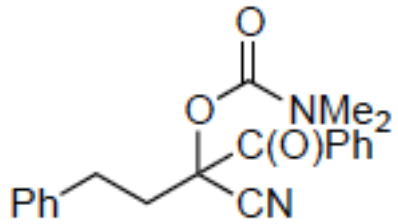
3b

DFILE	TMT-IV-706B.2
COMNT	TMT-IV-706B
DATIM	17-11-2011 07:48:19
OBNUC	13C
EXMOD	single_pulse_dec
OBFRQ	125.77 MHz
OBSET	7.87 KHz
OBFIN	4.21 Hz
POINT	32768
FREQU	31446.54 Hz
SCANS	292
ACQTM	1.0420 sec
PD	2.0000 sec
PW1	12.80 usec
IRNUC	1H
CTEMP	24.6 c
SLVNT	CDCL3
EXREF	77.00 ppm
BF	1.20 Hz
RGAIN	20



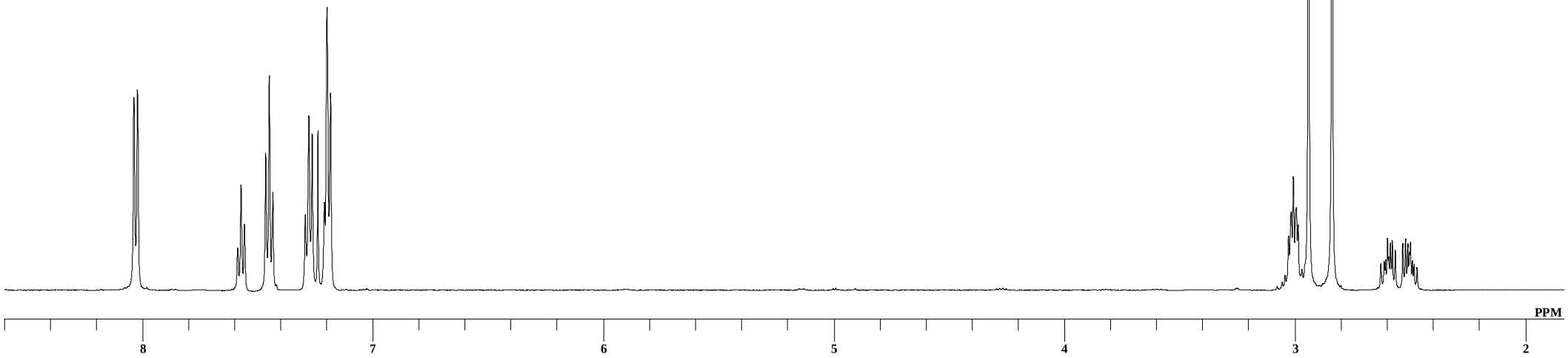
C:\ALICE\DATA\TMT\TMT-IV-684B.1

TMT-IV-688C



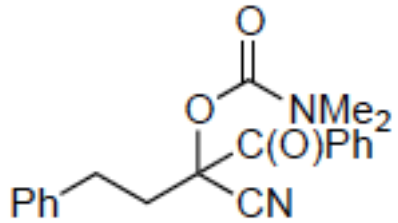
5b

DFILE	TMT-IV-684B.1
COMNT	TMT-IV-688C
DATIM	14-10-2011 15:07:00
OBNUC	1H
EXMOD	single_pulse.exp
OBFRQ	500.16 MHz
OBSET	2.41 KHz
OBFIN	6.01 Hz
POINT	32768
FREQU	7507.51 Hz
SCANS	4
ACQTM	4.3647 sec
PD	4.0000 sec
PW1	17.50 usec
IRNUC	
CTEMP	21.5 c
SLVNT	CDCL3
EXREF	7.24 ppm
BF	1.20 Hz
RGAIN	17



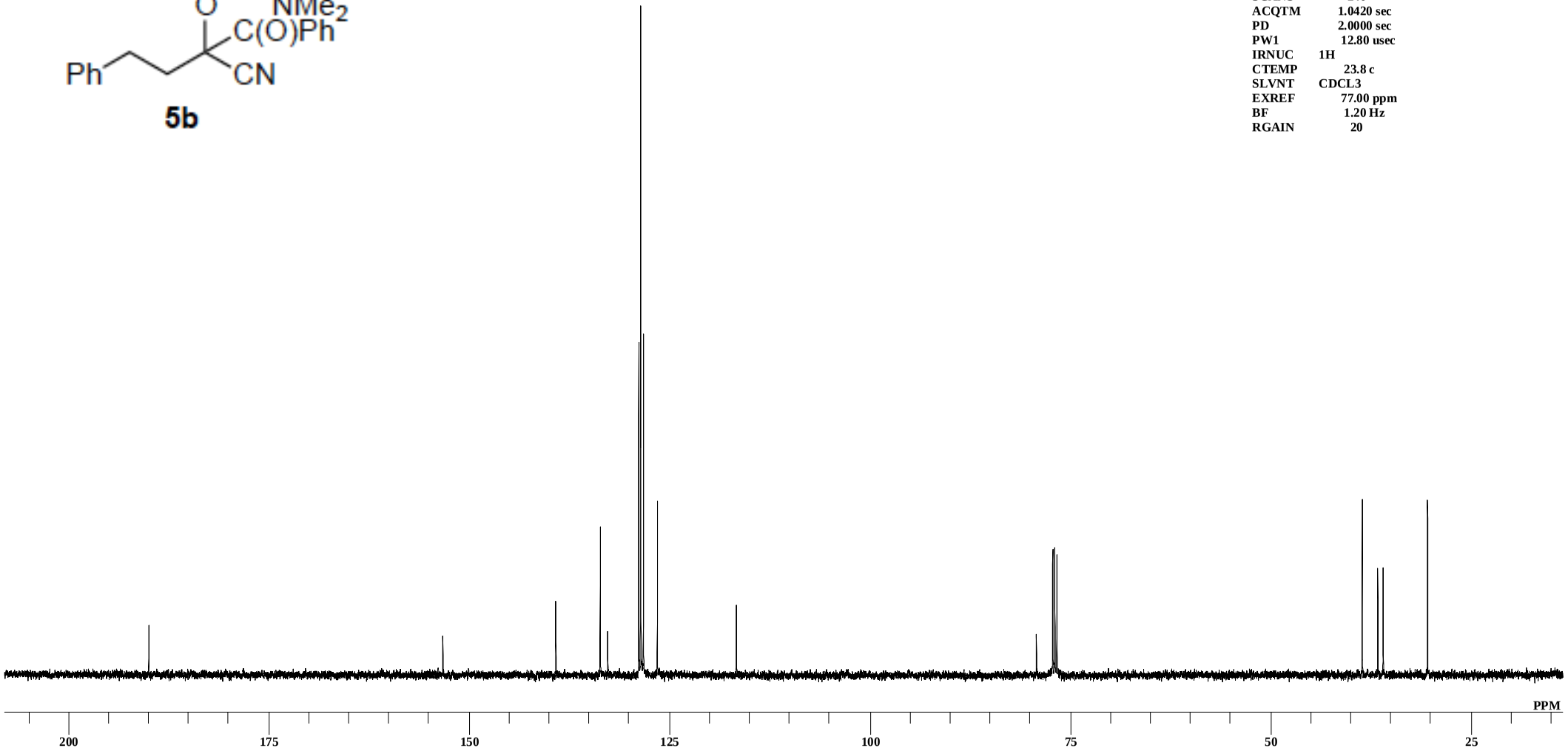
C:\ALICE\DATA\TMT\TMT-IV-688B.2

TMT-IV-688C



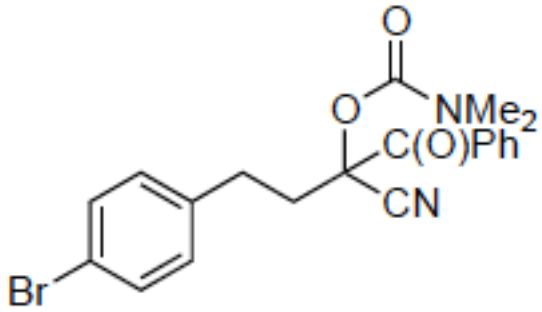
5b

DFILE	TMT-IV-688B.2
COMNT	TMT-IV-688C
DATIM	15-11-2011 21:27:48
OBNUC	13C
EXMOD	single_pulse_dec
OBFRQ	125.77 MHz
OBSET	7.87 KHz
OBFIN	4.21 Hz
POINT	32768
FREQU	31446.54 Hz
SCANS	240
ACQTM	1.0420 sec
PD	2.0000 sec
PW1	12.80 usec
IRNUC	1H
CTEMP	23.8 c
SLVNT	CDCL3
EXREF	77.00 ppm
BF	1.20 Hz
RGAIN	20



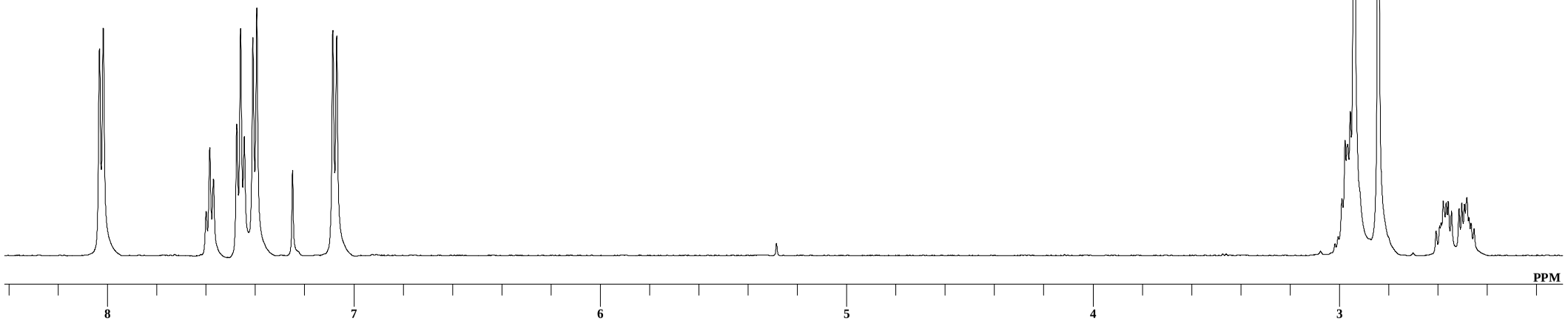
C:\ALICE\DATA\TMT\TMT-IV-711B.1

TMT-IV-711B



5'b

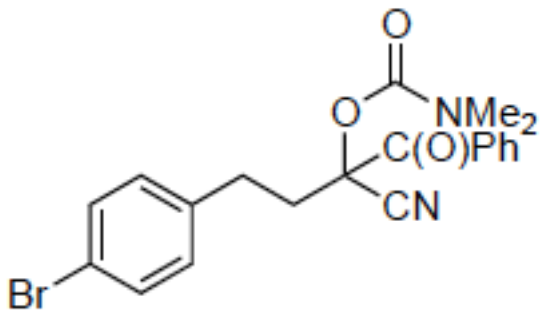
DFILE	TMT-IV-711B.1
COMNT	TMT-IV-711B
DATIM	16-11-2011 09:31:36
OBNUC	1H
EXMOD	single_pulse.exp
OBFRQ	500.16 MHz
OBSET	2.41 KHz
OBFIN	6.01 Hz
POINT	32768
FREQU	7507.51 Hz
SCANS	4
ACQTM	4.3647 sec
PD	4.0000 sec
PW1	17.50 usec
IRNUC	
CTEMP	23.1 c
SLVNT	CDCL3
EXREF	7.25 ppm
BF	1.20 Hz
RGAIN	16



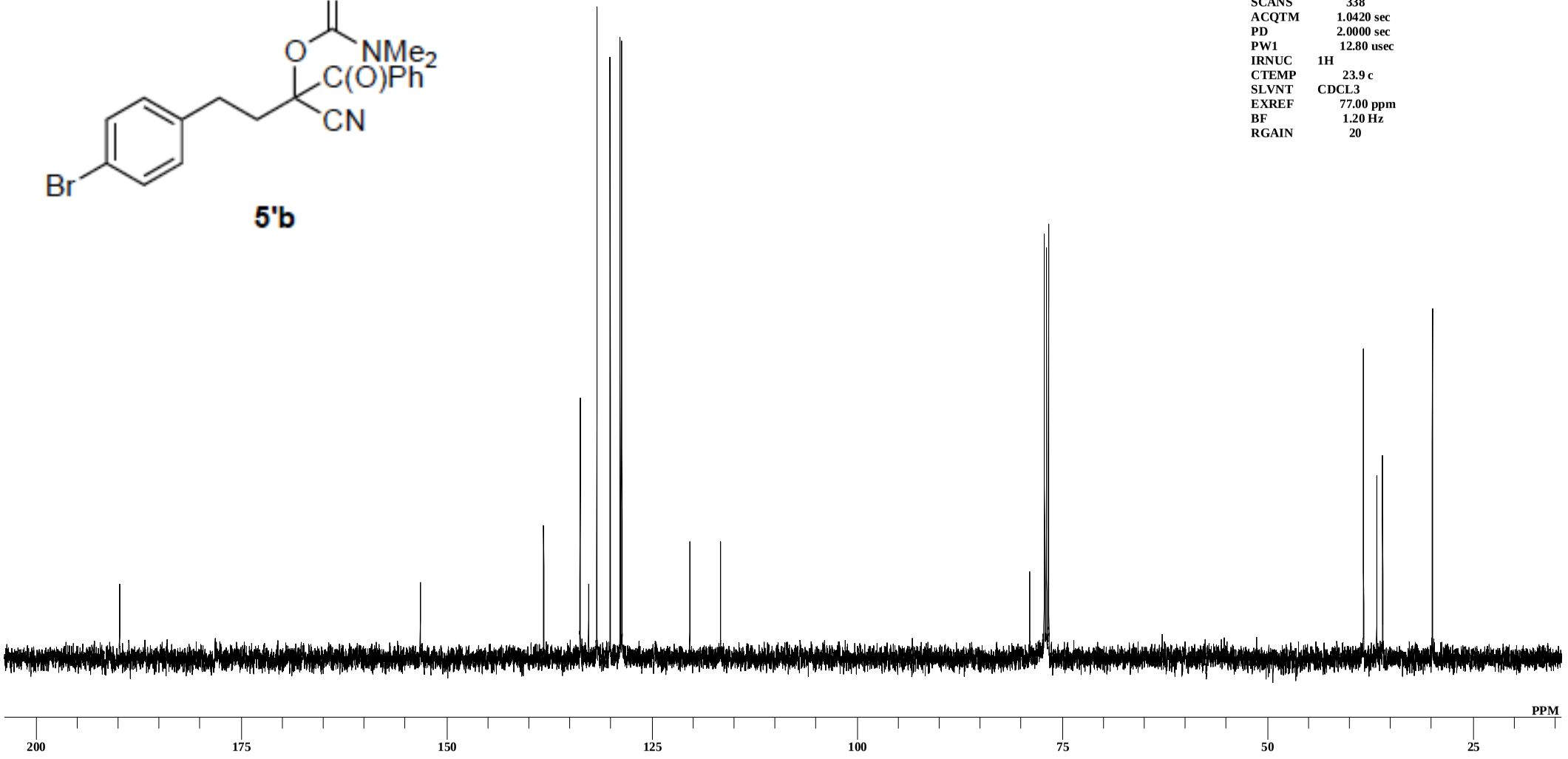
C:\ALICE\DATA\TMT\TMT-IV-711B.2

TMT-IV-711B

DFILE	TMT-IV-711B.2
COMNT	TMT-IV-711B
DATIM	16-11-2011 09:49:23
OBNUC	13C
EXMOD	single_pulse_dec
OBFRQ	125.77 MHz
OBSET	7.87 KHz
OBFIN	4.21 Hz
POINT	32768
FREQU	31446.54 Hz
SCANS	338
ACQTM	1.0420 sec
PD	2.0000 sec
PW1	12.80 usec
IRNUC	1H
CTEMP	23.9 c
SLVNT	CDCL3
EXREF	77.00 ppm
BF	1.20 Hz
RGAIN	20

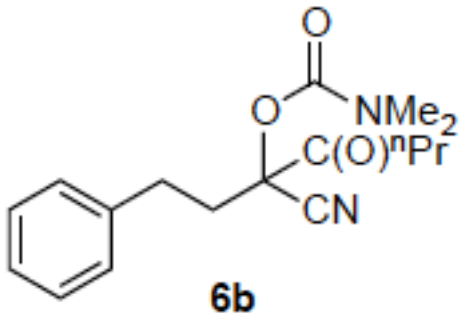


5'b



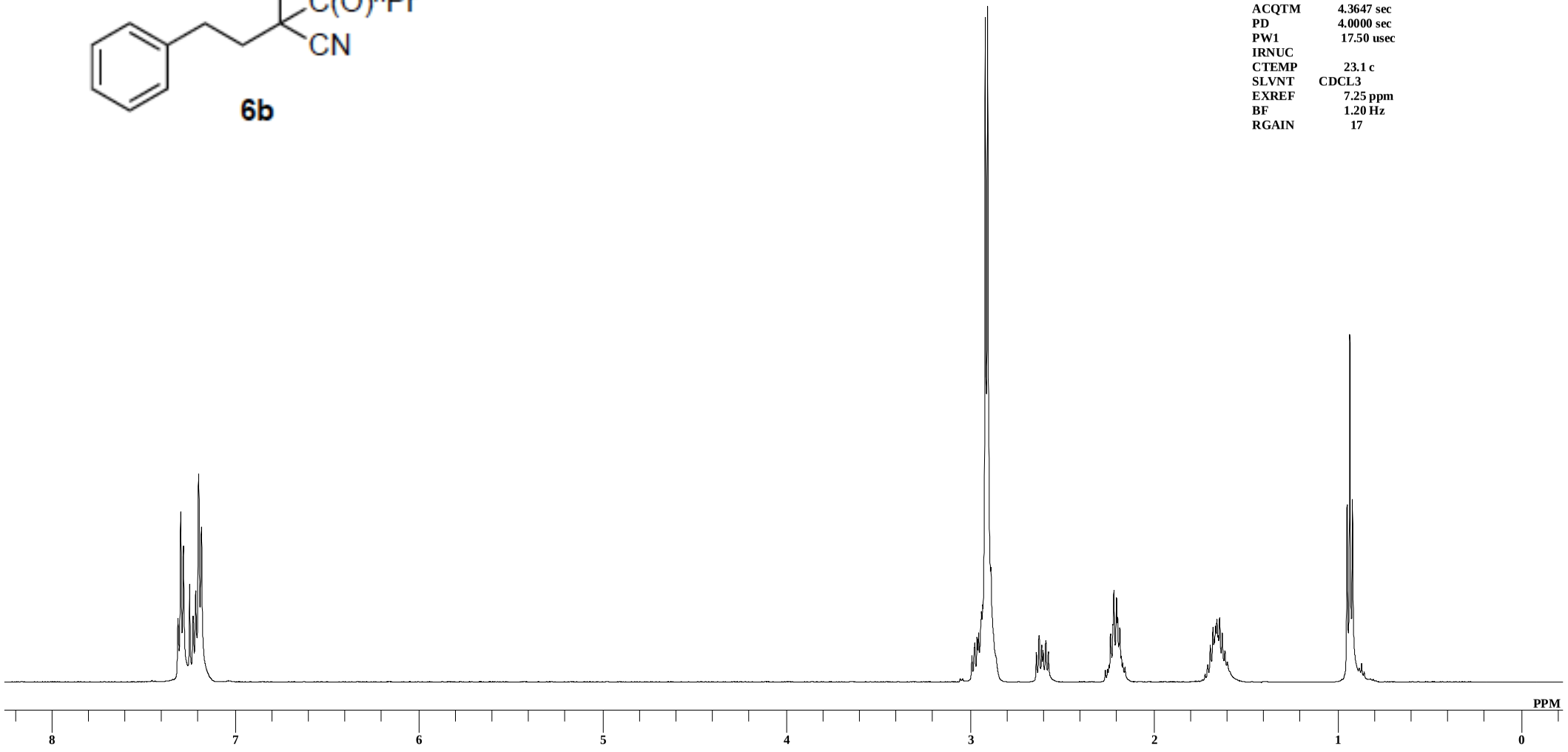
C:\ALICE\DATA\TMT\TMT-IV-699D.1

TMT-IV-699D



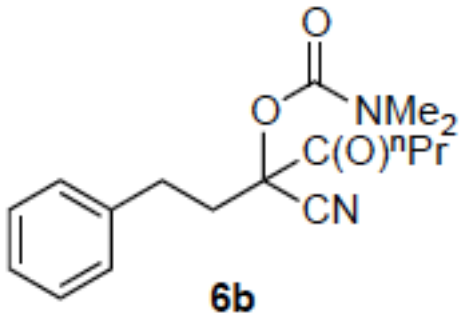
6b

DFILE	TMT-IV-699D.1
COMNT	TMT-IV-699D
DATIM	16-11-2011 20:25:50
OBNUC	1H
EXMOD	single_pulse.exp
OBFRQ	500.16 MHz
OBSET	2.41 KHz
OBFIN	6.01 Hz
POINT	32768
FREQU	7507.51 Hz
SCANS	4
ACQTM	4.3647 sec
PD	4.0000 sec
PW1	17.50 usec
IRNUC	
CTEMP	23.1 c
SLVNT	CDCL3
EXREF	7.25 ppm
BF	1.20 Hz
RGAIN	17



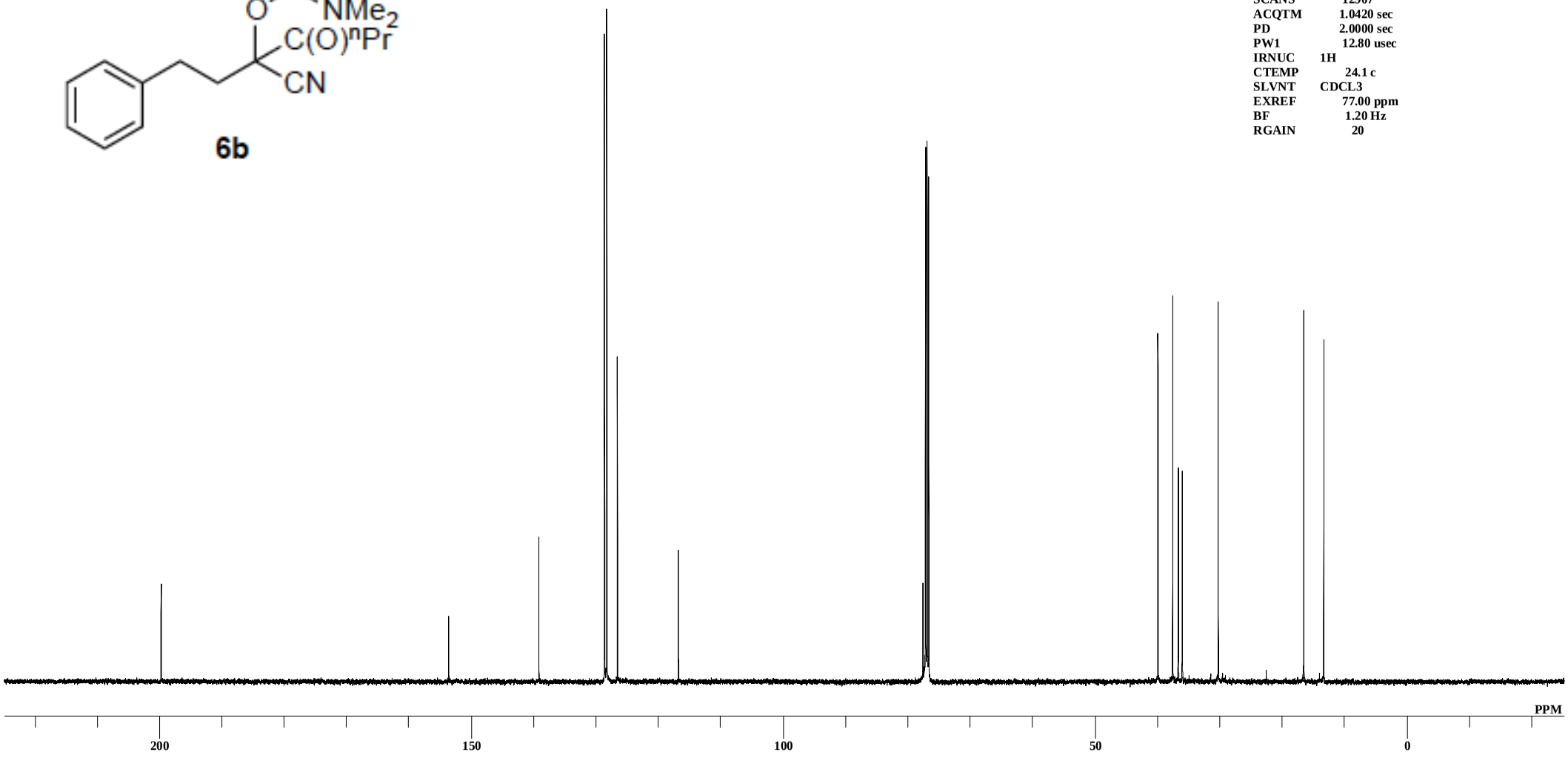
C:\ALICE\DATA\TMT\TMT-IV-699D.2

TMT-IV-699D



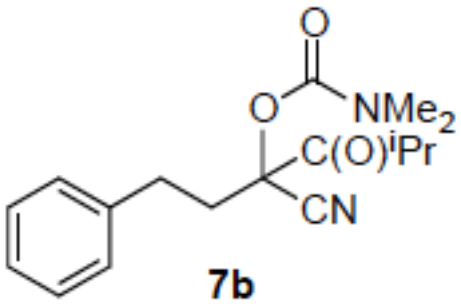
6b

DFILE	TMT-IV-699D.2
COMNT	TMT-IV-699D
DATIM	17-11-2011 07:20:37
OBNUC	13C
EXMOD	single_pulse_dec
OBFRQ	125.77 MHz
OBSET	7.87 KHz
OBFIN	4.21 Hz
POINT	32768
FREQU	31446.54 Hz
SCANS	12907
ACQTM	1.0420 sec
PD	2.0000 sec
PW1	12.80 usec
IRNUC	1H
CTEMP	24.1 c
SLVNT	CDCL3
EXREF	77.00 ppm
BF	1.20 Hz
RGAIN	20



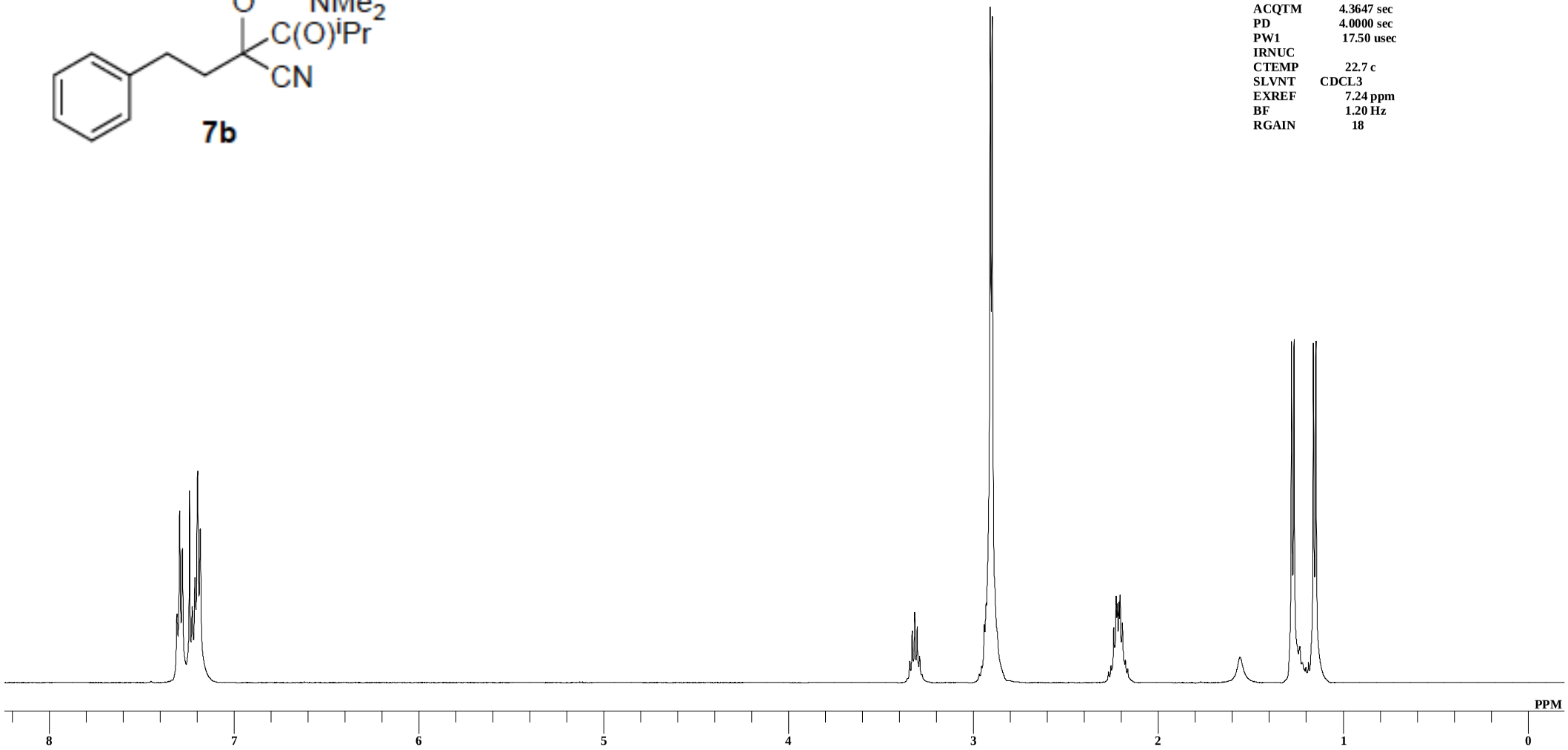
C:\ALICE\DATA\TMT\TMT-IV-697C.1

TMT-IV-697C



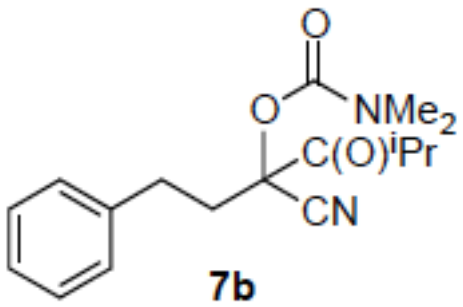
7b

DFILE	TMT-IV-697C.1
COMNT	TMT-IV-697C
DATIM	16-11-2011 07:23:25
OBNUC	1H
EXMOD	single_pulse.exp
OBFRQ	500.16 MHz
OBSET	2.41 KHz
OBFIN	6.01 Hz
POINT	32768
FREQU	7507.51 Hz
SCANS	4
ACQTM	4.3647 sec
PD	4.0000 sec
PW1	17.50 usec
IRNUC	
CTEMP	22.7 c
SLVNT	CDCL3
EXREF	7.24 ppm
BF	1.20 Hz
RGAIN	18



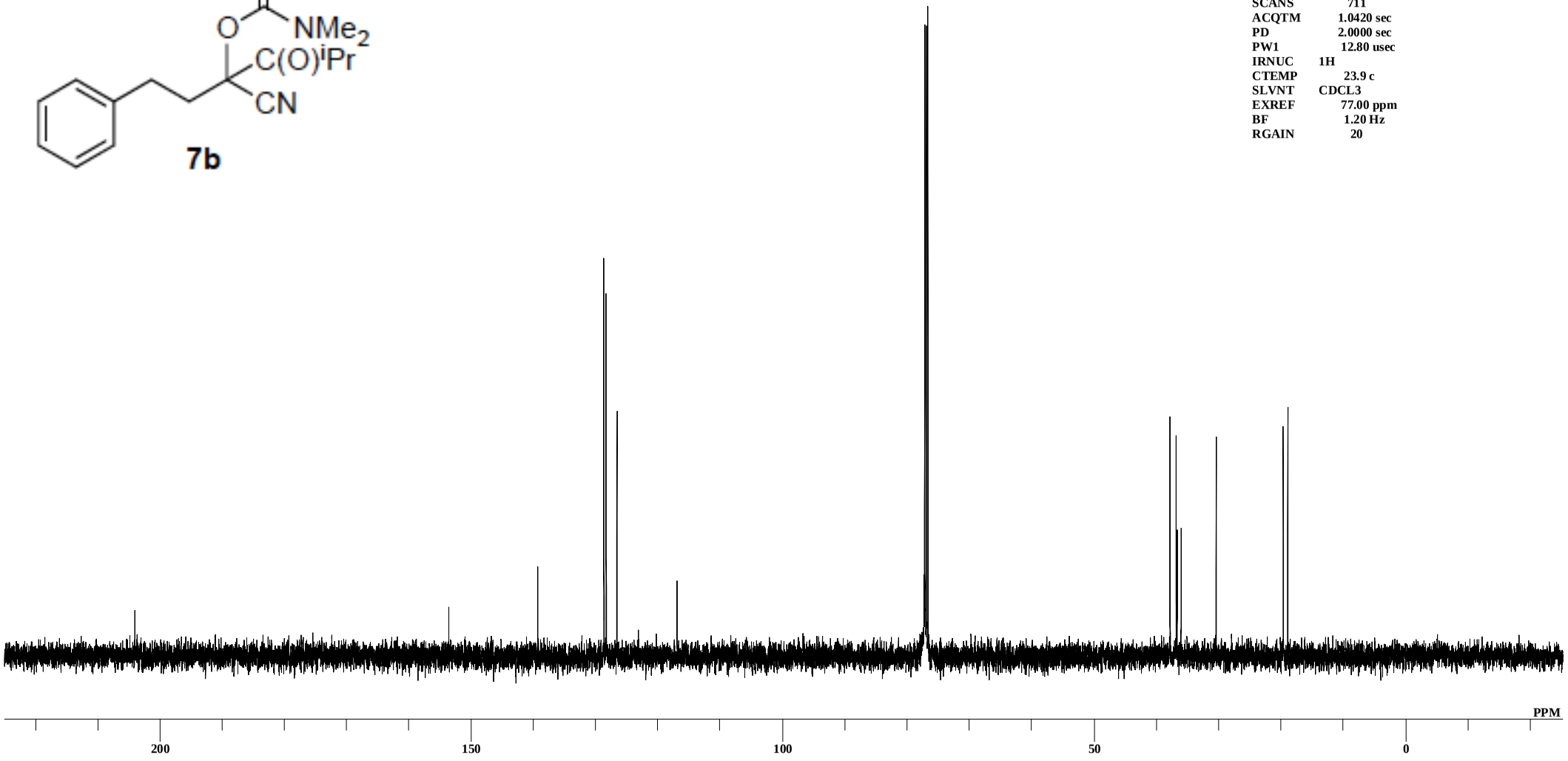
C:\ALICE\DATA\TMT\TMT-IV-697C.2

TMT-IV-697C



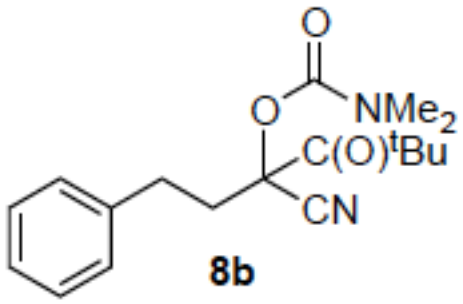
7b

DFILE	TMT-IV-697C.2
COMNT	TMT-IV-697C
DATIM	16-11-2011 07:59:51
OBNUC	13C
EXMOD	single_pulse_dec
OBFRQ	125.77 MHz
OBSET	7.87 KHz
OBFIN	4.21 Hz
POINT	32768
FREQU	31446.54 Hz
SCANS	711
ACQTM	1.0420 sec
PD	2.0000 sec
PW1	12.80 usec
IRNUC	1H
CTEMP	23.9 c
SLVNT	CDCL3
EXREF	77.00 ppm
BF	1.20 Hz
RGAIN	20



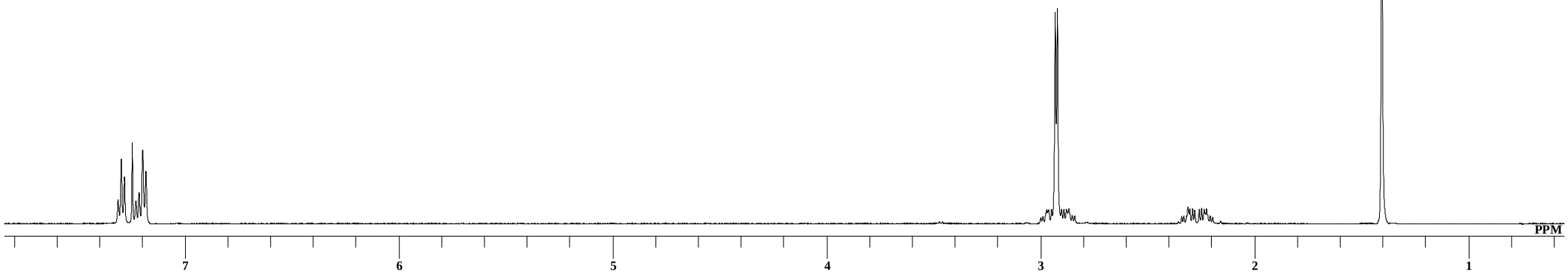
C:\ALICE\DATA\TMT\tmt696b.1

TMT-IV-696C



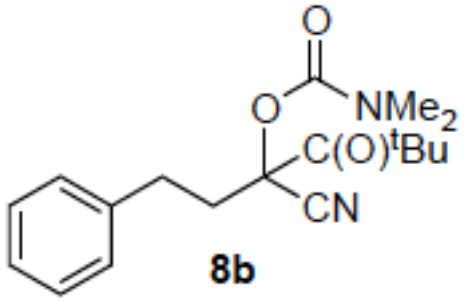
8b

DFILE	tmt696b.1
COMNT	TMT-IV-696C
DATIM	27-10-2011 08:48:40
OBNUC	1H
EXMOD	single_pulse.exp
OBFRQ	500.16 MHz
OBSET	2.41 KHz
OBFIN	6.01 Hz
POINT	32768
FREQU	7507.51 Hz
SCANS	4
ACQTM	4.3647 sec
PD	4.0000 sec
PW1	17.50 usec
IRNUC	
CTEMP	22.4 c
SLVNT	CDCL3
EXREF	7.25 ppm
BF	1.20 Hz
RGAIN	18



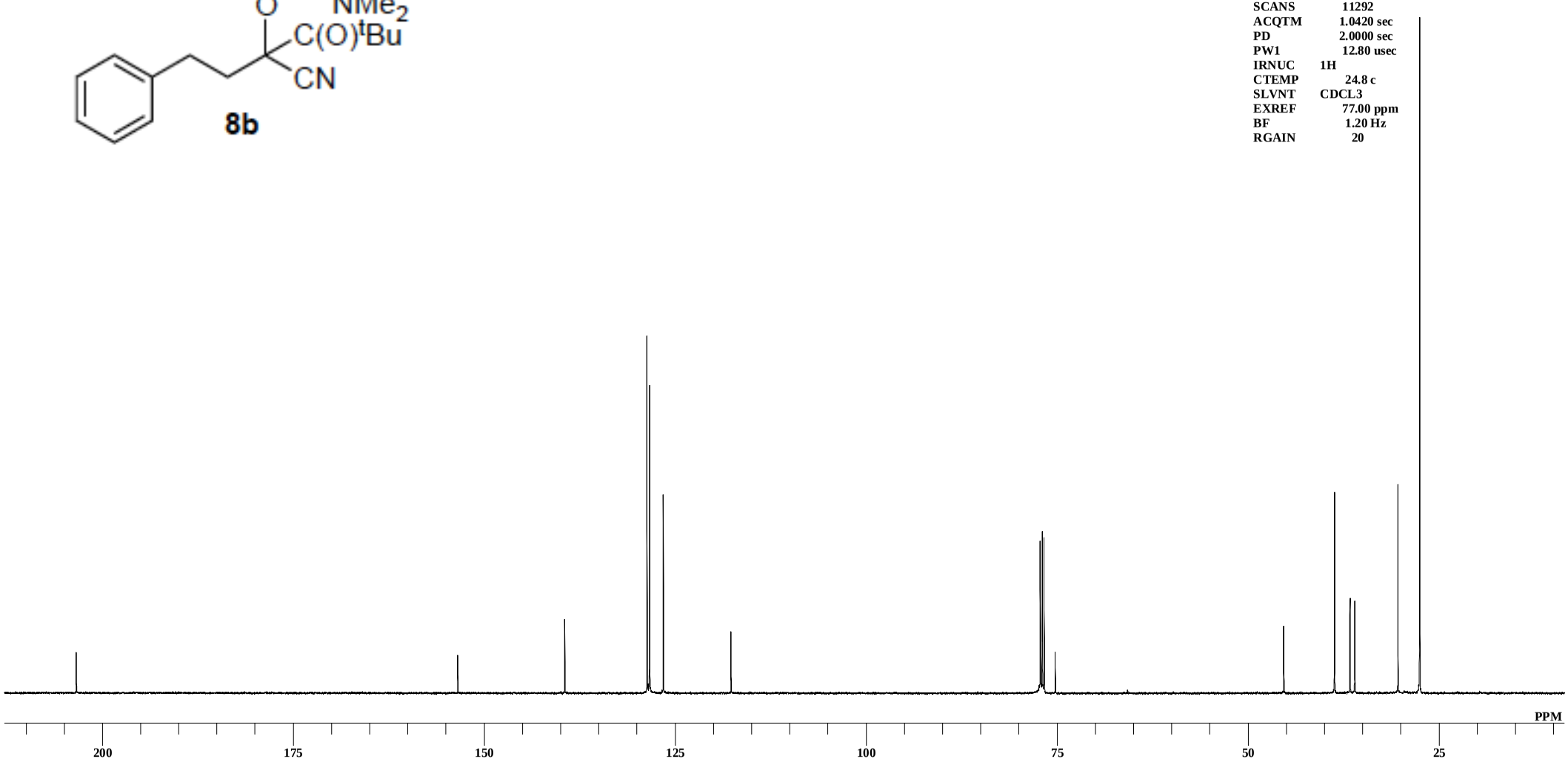
C:\ALICE\DATA\TMT\TMT-IV-696C.1

TMT-IV-696C



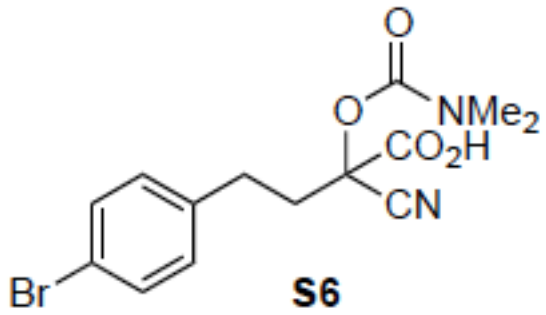
8b

DFILE	TMT-IV-696C.1
COMNT	TMT-IV-696C
DATIM	16-11-2011 07:10:03
OBNUC	13C
EXMOD	single_pulse_dec
OBFRQ	125.77 MHz
OBSET	7.87 KHz
OBFIN	4.21 Hz
POINT	32768
FREQU	31446.54 Hz
SCANS	11292
ACQTM	1.0420 sec
PD	2.0000 sec
PW1	12.80 usec
IRNUC	1H
CTEMP	24.8 c
SLVNT	CDCL3
EXREF	77.00 ppm
BF	1.20 Hz
RGAIN	20



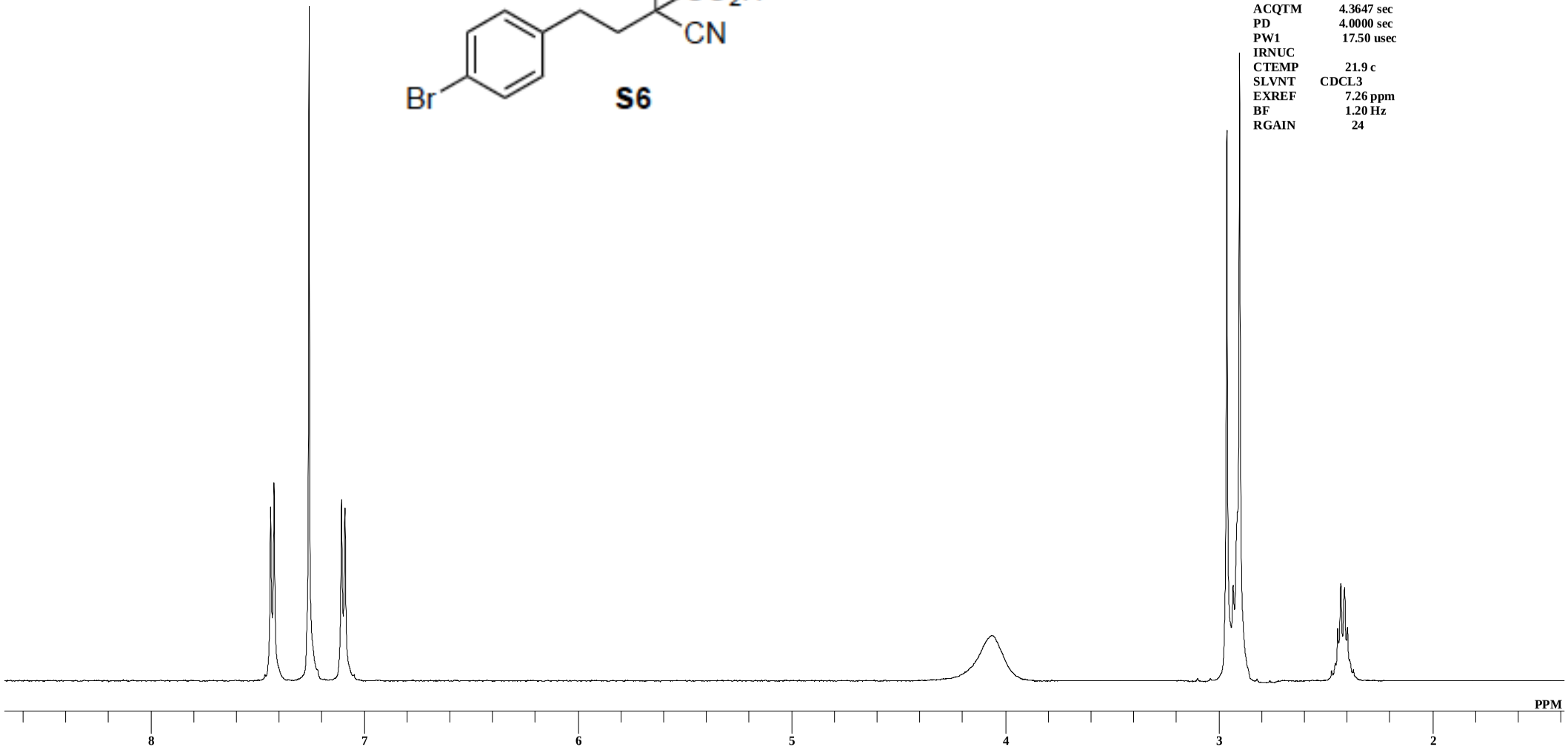
C:\Users\delta\Desktop\tmt\TMT-IV-685B\TMT-IV-685B.als

TMT-IV-685B



S6

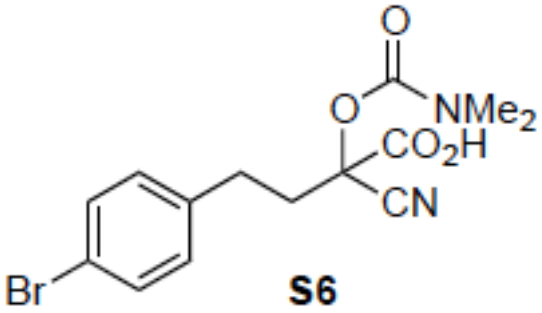
DFILE	TMT-IV-685B.als
COMNT	TMT-IV-685B
DATIM	08-11-2011 19:42:06
OBNUC	1H
EXMOD	single_pulse.exp
OBFRQ	500.16 MHz
OBSET	2.41 KHz
OBFIN	6.01 Hz
POINT	32768
FREQU	7507.51 Hz
SCANS	16
ACQTM	4.3647 sec
PD	4.0000 sec
PW1	17.50 usec
IRNUC	
CTEMP	21.9 c
SLVNT	CDCL3
EXREF	7.26 ppm
BF	1.20 Hz
RGAIN	24



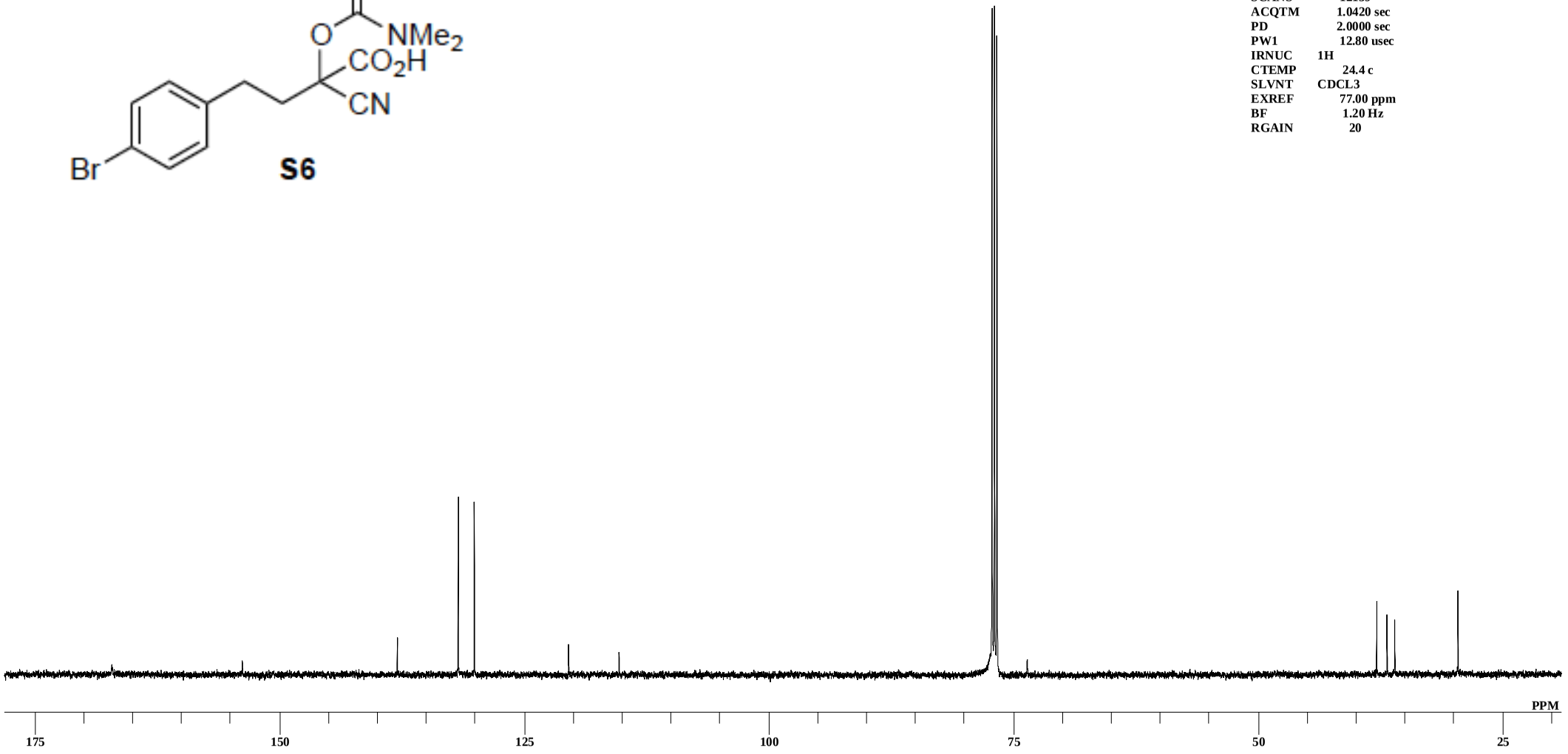
C:\ALICE\DATA\TMT\TMT-IV-685B.2

TMT-IV-685B

DFILE	TMT-IV-685B.2
COMNT	TMT-IV-685B
DATIM	09-11-2011 05:58:57
OBNUC	13C
EXMOD	single_pulse_dec
OBFRQ	125.77 MHz
OBSET	7.87 KHz
OBFIN	4.21 Hz
POINT	32768
FREQU	31446.54 Hz
SCANS	12159
ACQTM	1.0420 sec
PD	2.0000 sec
PW1	12.80 usec
IRNUC	1H
CTEMP	24.4 c
SLVNT	CDCL3
EXREF	77.00 ppm
BF	1.20 Hz
RGAIN	20

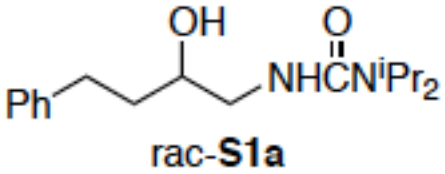


S6



ファイル名: TMT-1-115D0.CHR
試料注入,日付:06-01-2010　時間:10:51:08

Analysis method:　　Instrument:
Column :CHIRALPAK AD-H(25),AD-H(15)
Column Temperature (-C) :
Detector :UV, 254nm
Internal Standard :
Mobile Phase :
Flow rate(ml/Min.) :0.6　　Attenuation :
Solvent A :Hexane 10
B :IPA 1
C :
D :

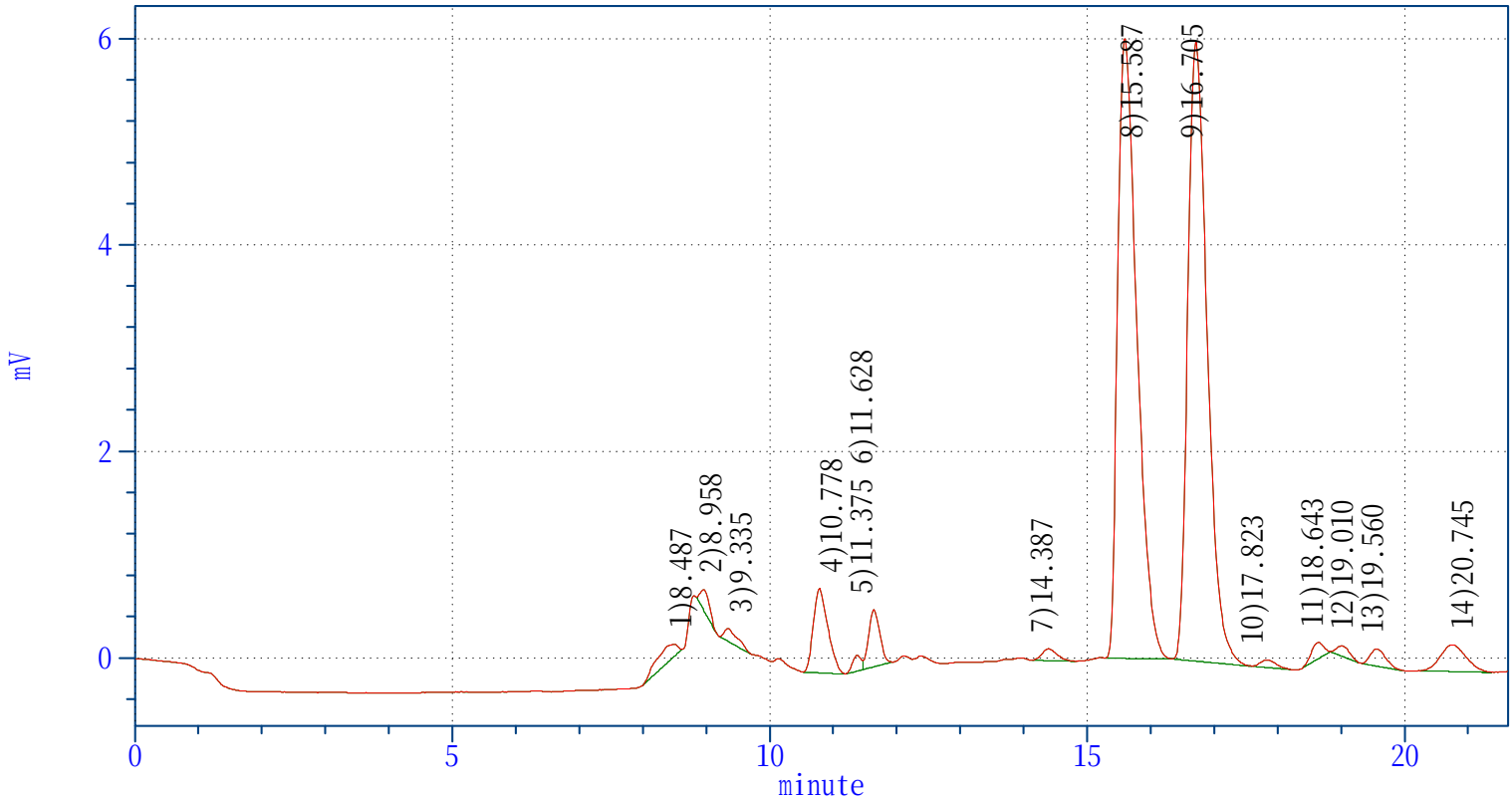


rac-**S1a**

Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:

データ処理パラメータ
アップスロープ= 5,ダウンスロープ= 5,最小ピーク幅= 10.00 sec , ベース感度= 5 points
計算範囲= 0.000 to 2000.000 min.,最小ピーク面積= 1000 uv*sec , ベースライン補正=0

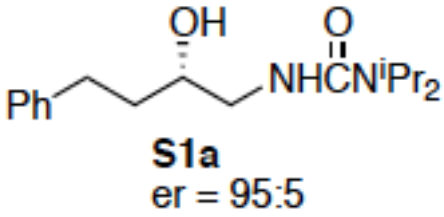
No.	R.T. (分)	面積 (uv*sec)	面積%	高さ (uv)	高さ%	濃度	濃度%	濃度単位	処理マーク	理論段数	ピーク名
1	8.487	3643	1.2168	119	0.8047	0.0000	0.0000		PP	2521	
2	8.958	2092	0.6987	206	1.3861	0.0000	0.0000		PP	16413	
3	9.335	1902	0.6353	123	0.8320	0.0000	0.0000		PP	6979	
4	10.778	12998	4.3413	818	5.5096	0.0000	0.0000		PP	10331	
5	11.375	1459	0.4873	152	1.0228	0.0000	0.0000		PV	0	
6	11.628	6776	2.2632	555	3.7404	0.0000	0.0000		VP	0	
7	14.387	1875	0.6263	114	0.7685	0.0000	0.0000		PP	17097	
8	15.587	126323	42.1919	6000	40.4342	0.0000	0.0000		PP	12445	
9	16.705	127388	42.5476	5997	40.4165	0.0000	0.0000		PP	14377	
10	17.823	1270	0.4242	75	0.5026	0.0000	0.0000		PP	23542	
11	18.643	2123	0.7091	152	1.0273	0.0000	0.0000		PP	39617	
12	19.010	1435	0.4793	102	0.6875	0.0000	0.0000		PP	35953	
13	19.560	2874	0.9599	168	1.1311	0.0000	0.0000		PP	27242	
14	20.745	7243	2.4192	258	1.7367	0.0000	0.0000		PP	12194	
	合計	299401		14839		0.0000	0.0000				



SIC-480II FOR WINDOWS TEST REPORT

ファイル名: TMT-III-566B.CHR
試料注入,日付:07-14-2011　時間:20:03:59

Analysis method:　　Instrument:
Column :CHIRALPAK AD-H(25)(15)
Column Temperature (-C) :
Detector :UV, 254nm
Internal Standard :
Mobile Phase :
 Flow rate(ml/Min.) :0.6　　Attenuation :
Solvent A :Hexane 10
　　B :IPA　　1
　　C :
　　D :

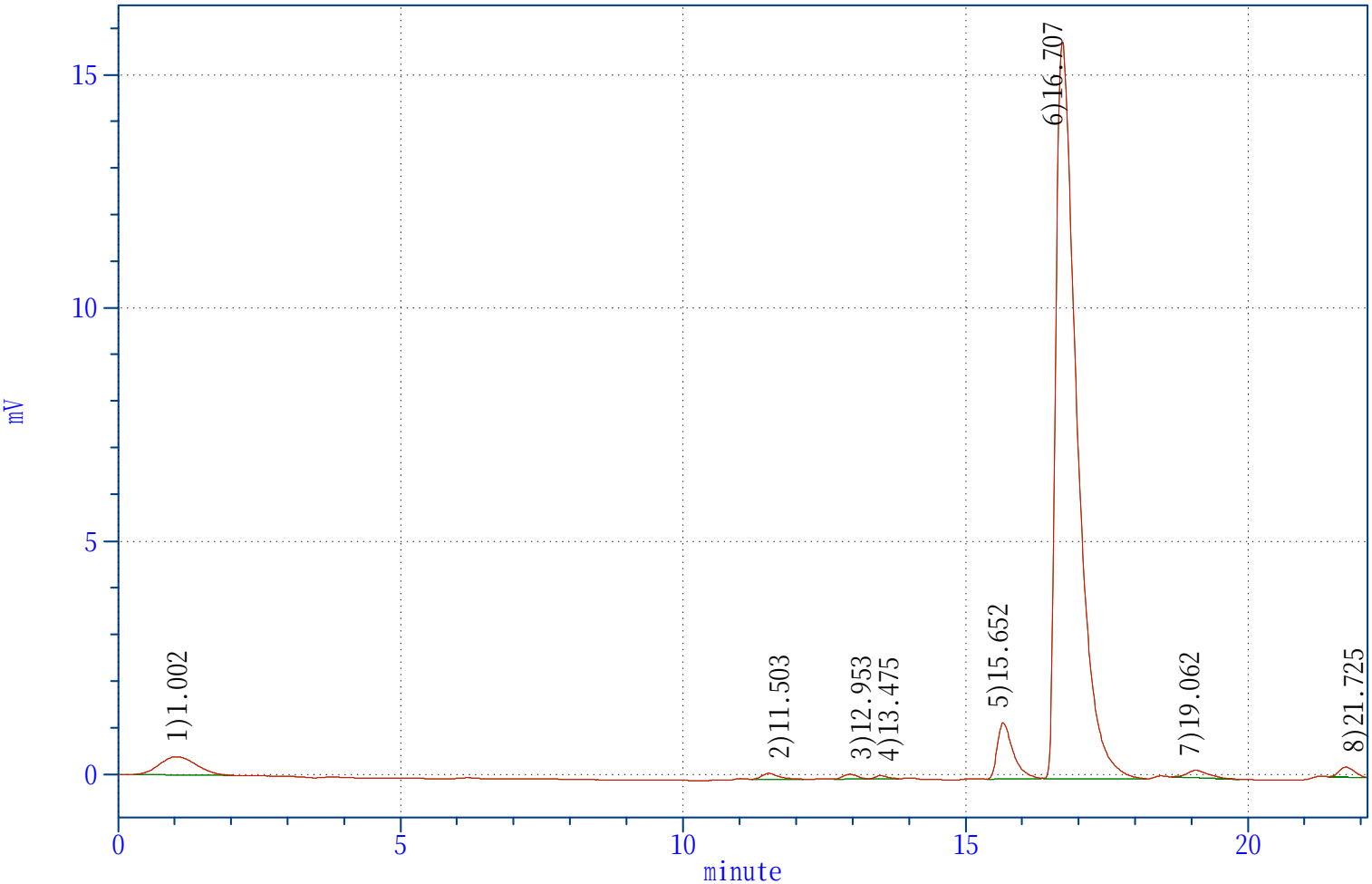


S1a
er = 95:5

Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:

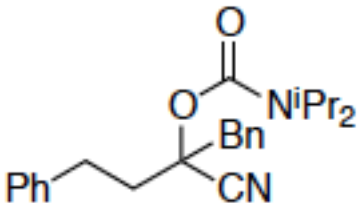
データ処理パラメータ
アップスロープ= 5,ダウンスロープ= 5,最小ピーク幅= 10.00 sec , ベース感度= 5 points
計算範囲= 0.000 to 2000.000 min.,最小ピーク面積= 1000 uv*sec , ベースライン補正=0

No.	R.T. (分)	面積 (uv*sec)	面積%	高さ (uv)	高さ%	濃度	濃度%	濃度単位	処理マーク	理論段数	ピーク名
1	1.002	17628	3.7906	389	2.1527	0.0000	0.0000		PP	11	
2	11.503	2599	0.5589	126	0.6980	0.0000	0.0000		PP	7918	
3	12.953	1832	0.3939	107	0.5909	0.0000	0.0000		PP	11872	
4	13.475	1006	0.2163	69	0.3817	0.0000	0.0000		PP	18415	
5	15.652	23345	5.0200	1202	6.6540	0.0000	0.0000		PP	16591	
6	16.707	410267	88.2211	15789	87.4303	0.0000	0.0000		PP	10381	
7	19.062	4225	0.9085	161	0.8928	0.0000	0.0000		PP	11947	
8	21.725	4142	0.8907	217	1.1995	0.0000	0.0000		PP	27748	
	合計	465044		18059		0.0000	0.0000				



ファイル名: TMT-III-564F0.CHR
試料注入,日付:07-14-2011　時間:18:44:10

Analysis method:　　Instrument:
Column :CHIRALPAK IC(25)
Column Temperature (-C) :
Detector :UV, 254nm
Internal Standard :
Mobile Phase :
Flow rate(ml/Min.) :1.0　　Attenuation :
Solvent A :Hexane 20
B :IPA　　1
C :
D :

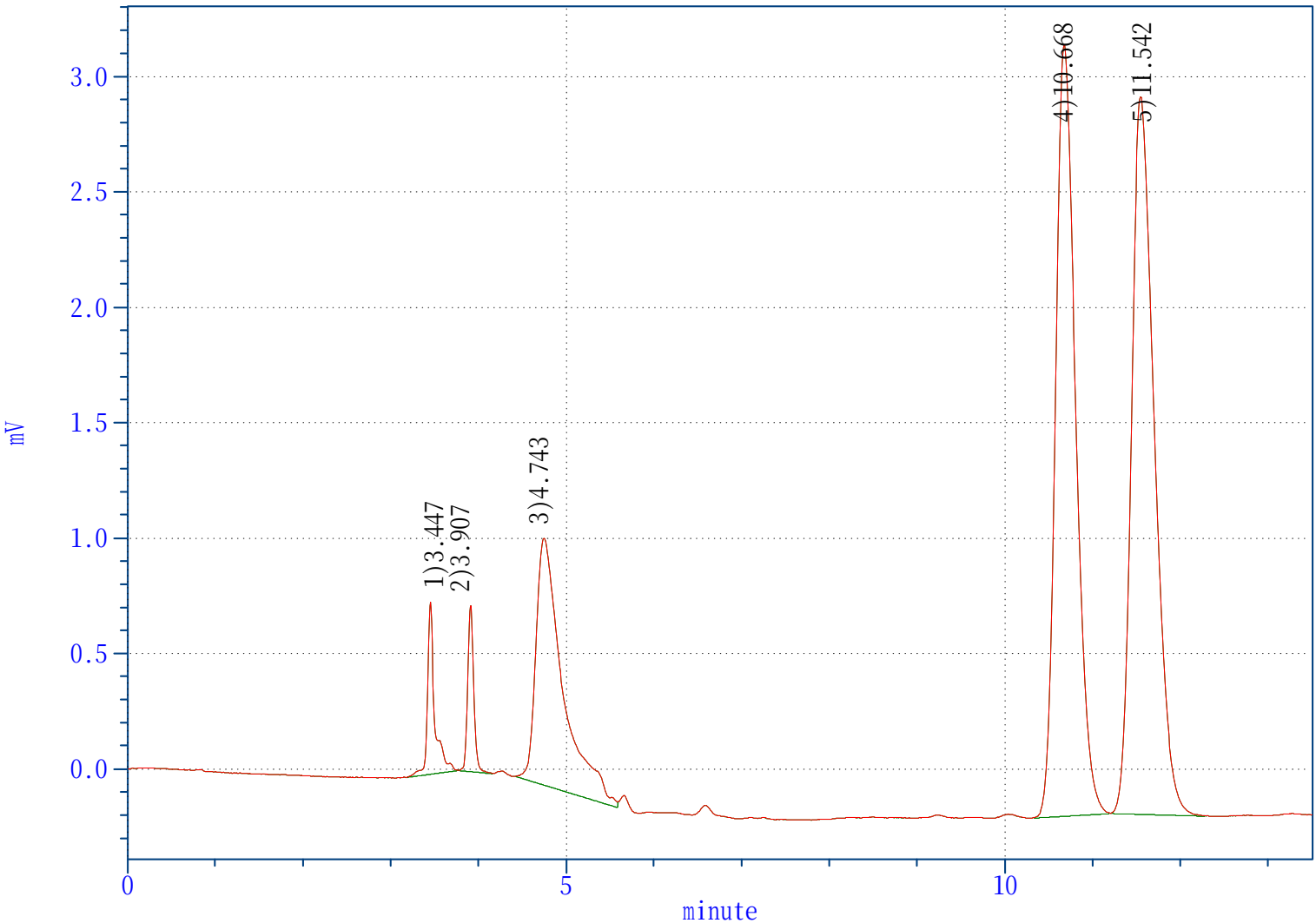


3 (er = 52:48)
Table 1 entry 1
(s.m.: er = 95:5)

Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:

データ処理パラメータ
アップスロープ= 5,ダウンスロープ= 5,最小ピーク幅= 10.00 sec , ベース感度= 5 points
計算範囲= 0.000 to 2000.000 min.,最小ピーク面積= 1000 uv*sec , ベースライン補正=0

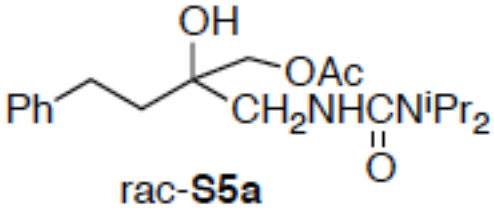
No.	R.T. (分)	面積 (uv*sec)	面積%	高さ (uv)	高さ%	濃度	濃度%	濃度単位	処理マーク	理論段数	ピーク名
1	3.447	4332	3.0990	745	8.2970	0.0000	0.0000		PP	14859	
2	3.907	3389	2.4244	718	7.9938	0.0000	0.0000		PP	17141	
3	4.743	22547	16.1297	1070	11.9130	0.0000	0.0000		PV	0	
4	10.668	53114	37.9967	3341	37.1899	0.0000	0.0000		PP	10534	
5	11.542	56404	40.3503	3109	34.6063	0.0000	0.0000		PP	9426	
	合計	139786		8984		0.0000	0.0000				



SIC-480II FOR WINDOWS TEST REPORT

ファイル名: TMT-2-224B0.CHR racemi
試料注入,日付:09-17-2010　時間:10:16:31

Analysis method:　　Instrument:
Column :CHIRALCEL AD-H(25),AD-H(15)
Column Temperature (-C) :
Detector :UV, 254nm
Internal Standard :
Mobile Phase :
Flow rate(ml/Min.) :0.45　　Attenuation :
Solvent A :Hexane 5
B :iPrOH 1
C :EtOH 0
D :

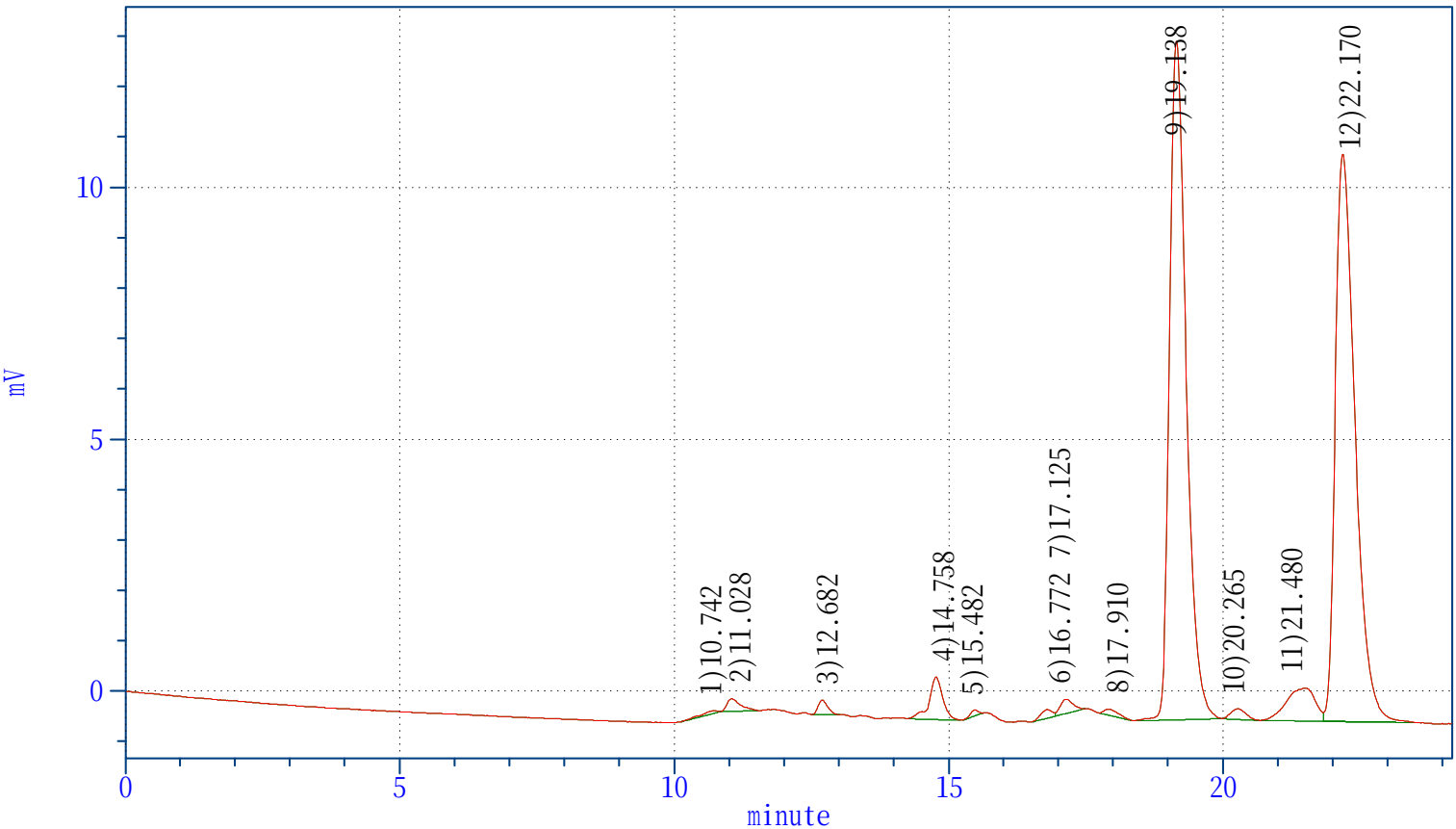


rac-**S5a**

Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:

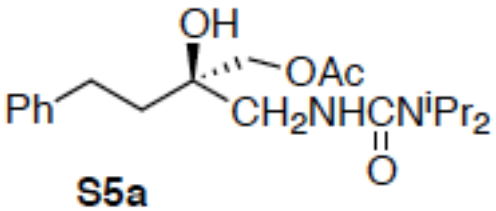
データ処理パラメータ
アップスロープ= 5,ダウンスロープ= 5,最小ピーク幅= 10.00 sec , ベース感度= 5 points
計算範囲= 0.000 to 2000.000 min.,最小ピーク面積= 1000 uv*sec , ベースライン補正=0

No.	R.T. (分)	面積 (uv*sec)	面積%	高さ (uv)	高さ%	濃度	濃度%	濃度単位	処理マーク	理論段数	ピーク名
1	10.742	1294	0.2068	44	0.1571	0.0000	0.0000		PP	4173	
2	11.028	4249	0.6790	251	0.9065	0.0000	0.0000		PP	11323	
3	12.682	3642	0.5820	288	1.0403	0.0000	0.0000		PP	21835	
4	14.758	14432	2.3063	839	3.0271	0.0000	0.0000		PP	22833	
5	15.482	1216	0.1943	106	0.3825	0.0000	0.0000		PP	43214	
6	16.772	2421	0.3869	178	0.6408	0.0000	0.0000		PV	0	
7	17.125	4673	0.7468	286	1.0303	0.0000	0.0000		VP	0	
8	17.910	2227	0.3559	123	0.4444	0.0000	0.0000		PP	19476	
9	19.138	282641	45.1668	13471	48.6014	0.0000	0.0000		PP	20087	
10	20.265	4005	0.6400	211	0.7614	0.0000	0.0000		PP	23779	
11	21.480	23972	3.8308	658	2.3751	0.0000	0.0000		PV	0	
12	22.170	280999	44.9044	11262	40.6331	0.0000	0.0000		VP	0	
	合計	625771		27717		0.0000	0.0000				



SIC 480II FOR WINDOWS TEST REPORT

ファイル名: TMT-II-247C2.CHR
試料注入,日付:07-15-2011　時間:20:46:19



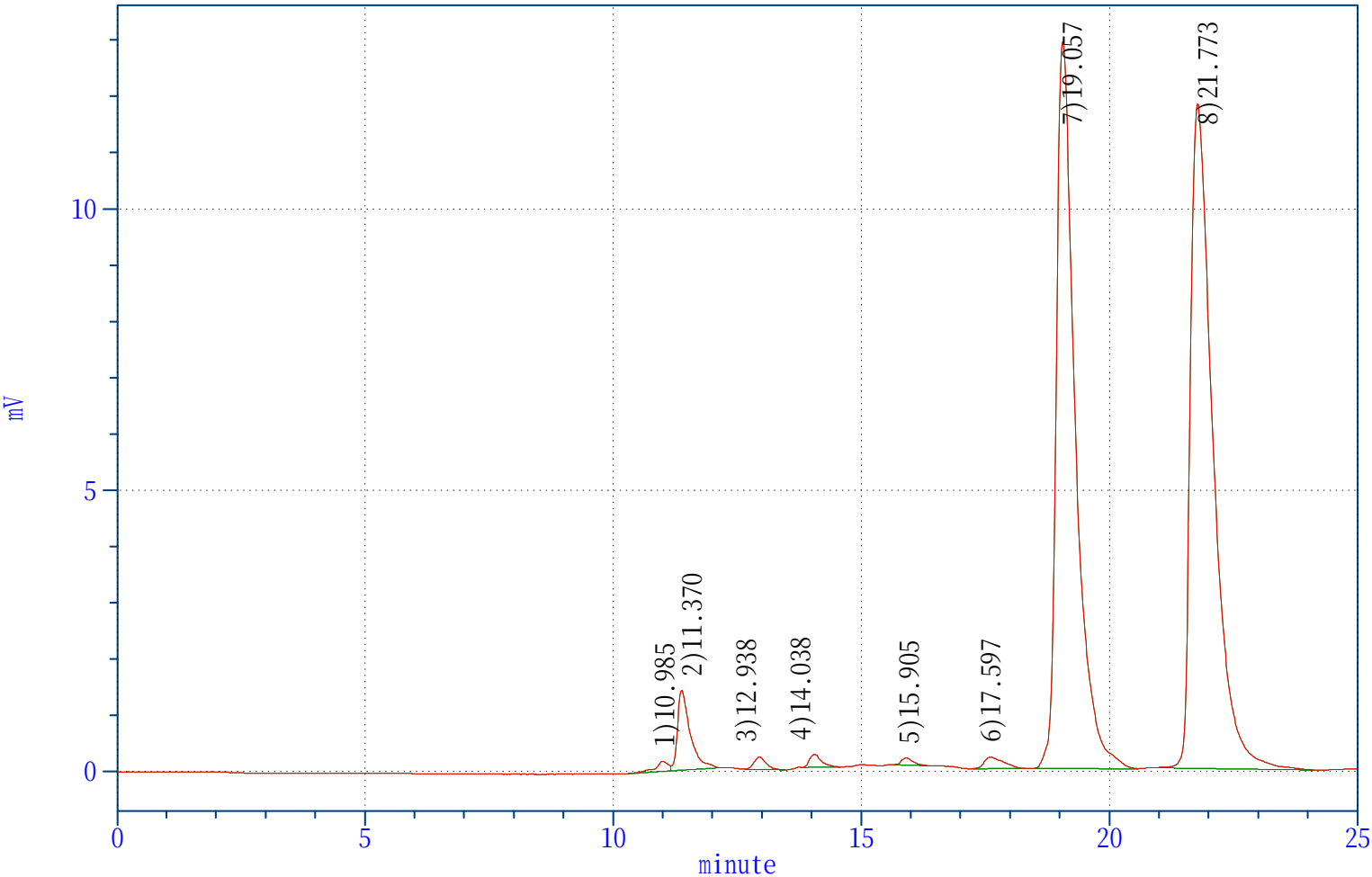
S5a
er = 52:48
Table 1 entry 2
(s.m.: er = 96:4)

Analysis method:　　Instrument:
Column :CHIRALPAK AD-H(25)(15)
Column Temperature (-C) :
Detector :UV, 254nm
Internal Standard :
Mobile Phase :
Flow rate(ml/Min.) :0.45　　Attenuation :
Solvent A :Hexane 5
B :IPA　1
C :
D :

Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:

データ処理パラメータ
アップスロープ= 5,ダウンスロープ= 5,最小ピーク幅= 10.00 sec , ベース感度= 5 points
計算範囲= 0.000 to 2000.000 min.,最小ピーク面積= 1000 uv*sec , ベースライン補正=0

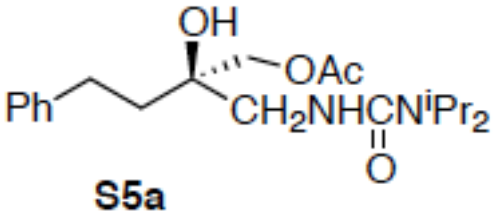
No.	R.T. (分)	面積 (uv*sec)	面積%	高さ (uv)	高さ%	濃度	濃度%	濃度単位	処理マーク	理論段数	ピーク名
1	10.985	3229	0.4254	179	0.6598	0.0000	0.0000		PV	0	
2	11.370	25193	3.3187	1415	5.2224	0.0000	0.0000		VP	0	
3	12.938	3788	0.4990	223	0.8246	0.0000	0.0000		PP	14380	
4	14.038	3884	0.5117	231	0.8507	0.0000	0.0000		PP	17799	
5	15.905	2083	0.2744	129	0.4771	0.0000	0.0000		PP	21968	
6	17.597	5517	0.7268	204	0.7521	0.0000	0.0000		PP	8855	
7	19.057	343284	45.2218	12914	47.6488	0.0000	0.0000		PP	14063	
8	21.773	372134	49.0223	11807	43.5646	0.0000	0.0000		PP	12169	
	合計	759112		27103		0.0000	0.0000				



SIC-480II FOR WINDOWS TEST REPORT

ファイル名: TMT-II-348C.CHR
試料注入,日付:12-24-2010　時間:11:30:52

Analysis method:　　Instrument:
Column :CHIRALCEL AD-H(25+15)
Column Temperature (-C) :
Detector :UV, 254nm
Internal Standard :
Mobile Phase :
Flow rate(ml/Min.) :0.45　　Attenuation :
Solvent A :Hexane 5
B :iPrOH 1
C :
D :

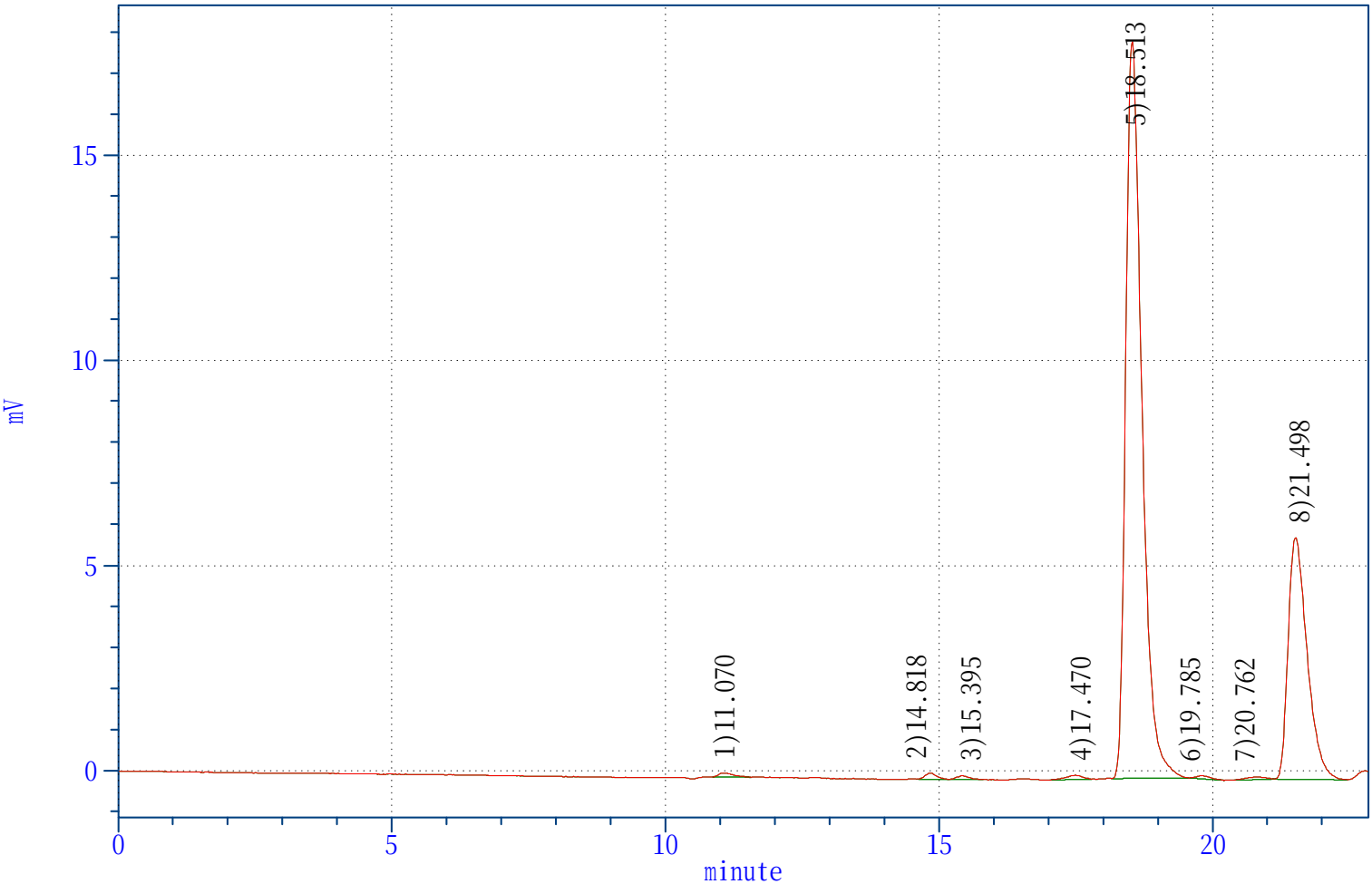


S5a
er = 72:28
Table 4 entry 2
(s.m.: er = 97:3)

Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:

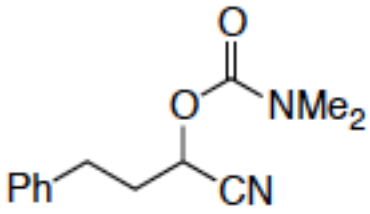
データ処理パラメータ
アップスロープ= 5,ダウンスロープ= 5,最小ピーク幅= 10.00 sec , ベース感度= 5 points
計算範囲= 0.000 to 2000.000 min.,最小ピーク面積= 1000 uv*sec , ベースライン補正=0

No.	R.T. (分)	面積 (uv*sec)	面積%	高さ (uv)	高さ%	濃度	濃度%	濃度単位	処理マーク	理論段数	ピーク名
1	11.070	1873	0.3601	99	0.4052	0.0000	0.0000		PP	8127	
2	14.818	2229	0.4285	150	0.6131	0.0000	0.0000		PP	23190	
3	15.395	1483	0.2851	95	0.3902	0.0000	0.0000		PP	22688	
4	17.470	2170	0.4172	106	0.4346	0.0000	0.0000		PP	17223	
5	18.513	367517	70.6590	17945	73.4756	0.0000	0.0000		PP	20023	
6	19.785	1354	0.2603	75	0.3072	0.0000	0.0000		PP	23591	
7	20.762	1589	0.3055	68	0.2775	0.0000	0.0000		PP	13989	
8	21.498	141913	27.2842	5885	24.0966	0.0000	0.0000		PP	18808	
	合計	520128		24422		0.0000	0.0000				



ファイル名: TMT-II-403D0.CHR
試料注入,日付:02-23-2011　時間:20:05:32

Analysis method:　　Instrument:
Column :CHIRALPAK IA
Column Temperature (-C) :
Detector :UV, 254nm
Internal Standard :
Mobile Phase :
 Flow rate(ml/Min.) :1　　Attenuation :
Solvent A :Hexane 30
　　B :iPrOH　0
　　C :EtOH　 1
　　D :

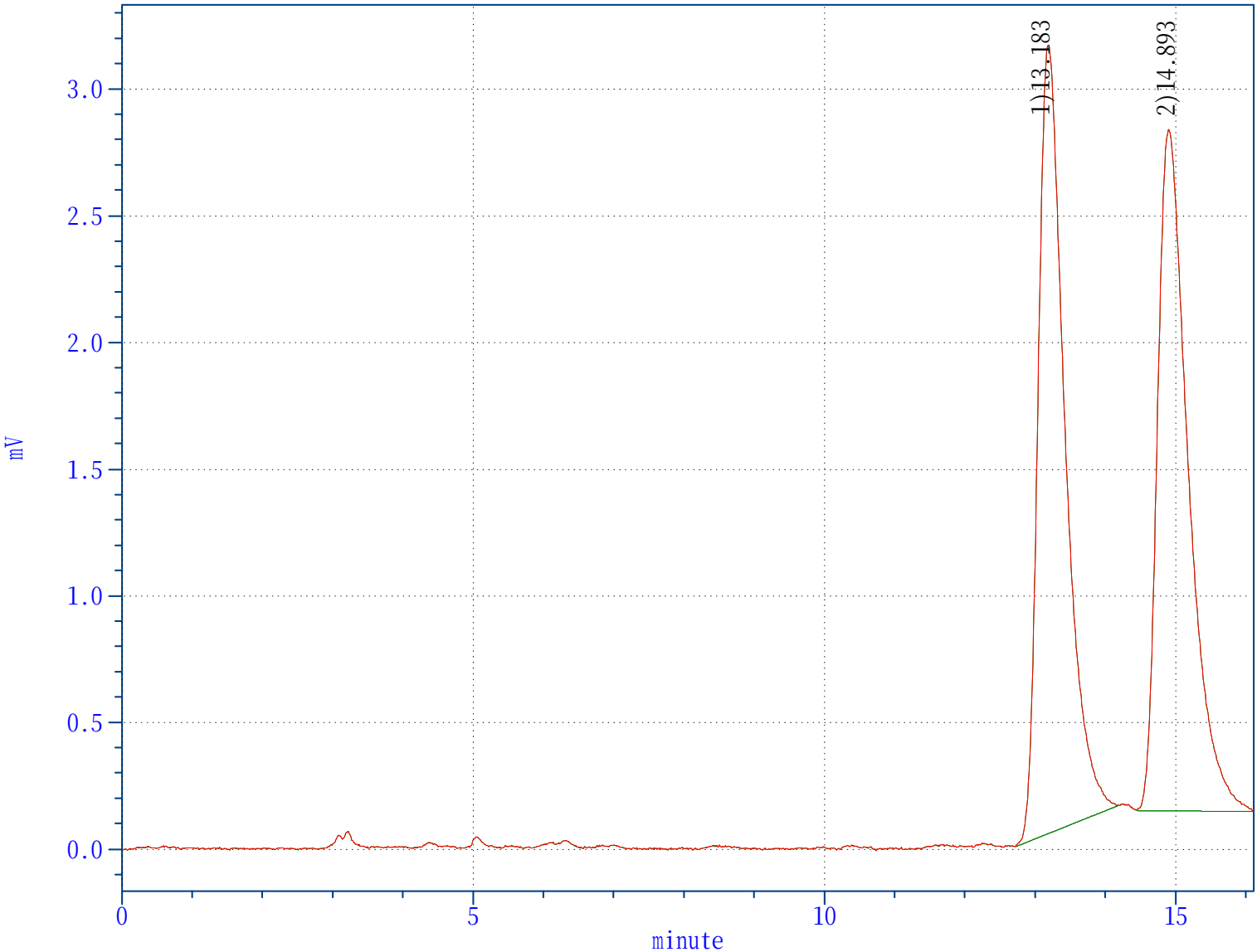


rac-**1b**

Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:

データ処理パラメータ
アップスロープ= 5,ダウンスロープ= 5,最小ピーク幅= 10.00 sec , ベース感度= 5 points
計算範囲= 0.000 to 2000.000 min.,最小ピーク面積= 1000 uv*sec , ベースライン補正=0

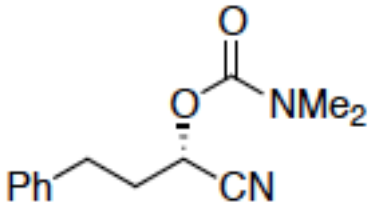
No.	R.T. (分)	面積 (uv*sec)	面積%	高さ (uv)	高さ%	濃度	濃度%	濃度単位	処理マーク	理論段数	ピーク名
1	13.183	83006	50.2859	3112	53.6532	0.0000	0.0000		PP	6248	
2	14.893	82062	49.7141	2688	46.3468	0.0000	0.0000		PP	5930	
	合計	165068		5800		0.0000	0.0000				



SIC 480II FOR WINDOWS TEST REPORT

ファイル名: TMT-II-399B.CHR
試料注入,日付:02-23-2011　時間:21:50:29

Analysis method:　　Instrument:
Column :CHIRALPAK IA
Column Temperature (-C) :
Detector :UV, 254nm
Internal Standard :
Mobile Phase :
 Flow rate(ml/Min.) :1　　Attenuation :
Solvent A :Hexane 30
　　B :iPrOH　0
　　C :EtOH　 1
　　D :

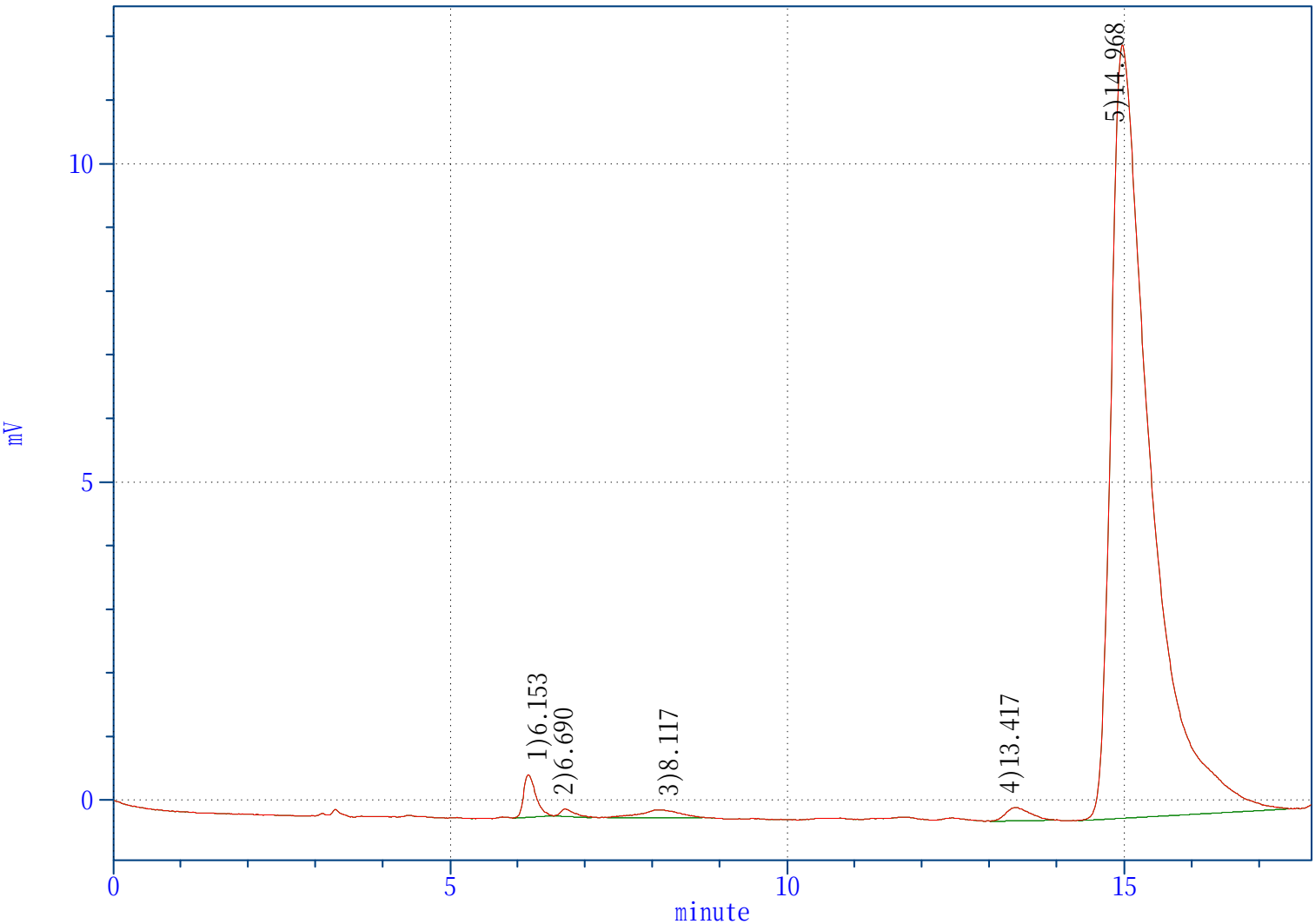


1b
er = 99:1

Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:

データ処理パラメータ
アップスロープ= 5,ダウンスロープ= 5,最小ピーク幅= 10.00 sec , ベース感度= 5 points
計算範囲= 0.000 to 2000.000 min.,最小ピーク面積= 1000 uv*sec , ベースライン補正=0

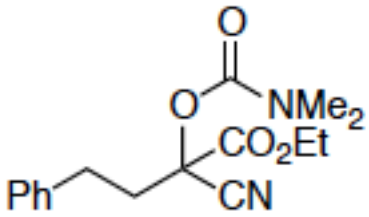
No.	R.T. (分)	面積 (uv*sec)	面積%	高さ (uv)	高さ%	濃度	濃度%	濃度単位	処理マーク	理論段数	ピーク名
1	6.153	8382	1.6373	672	5.0658	0.0000	0.0000		PP	5991	
2	6.690	1635	0.3194	118	0.8852	0.0000	0.0000		PP	6321	
3	8.117	4829	0.9433	125	0.9401	0.0000	0.0000		PP	1113	
4	13.417	5256	1.0267	210	1.5824	0.0000	0.0000		PP	6191	
5	14.968	491836	96.0733	12150	91.5265	0.0000	0.0000		PP	4014	
	合計	511938		13274		0.0000	0.0000				



SIC-480II FOR WINDOWS TEST REPORT

ファイル名: TMT-II-309C.CHR racemi
試料注入,日付:01-28-2011　時間:17:13:13

Analysis method:　　Instrument:
Column :CHIRALPAK AD-H(25)
Column Temperature (-C) :
Detector :UV, 254nm
Internal Standard :
Mobile Phase :
 Flow rate(ml/Min.) :0.8　　Attenuation :
Solvent A :Hexane 10
　　B :iPrOH　1
　　C :
　　D :

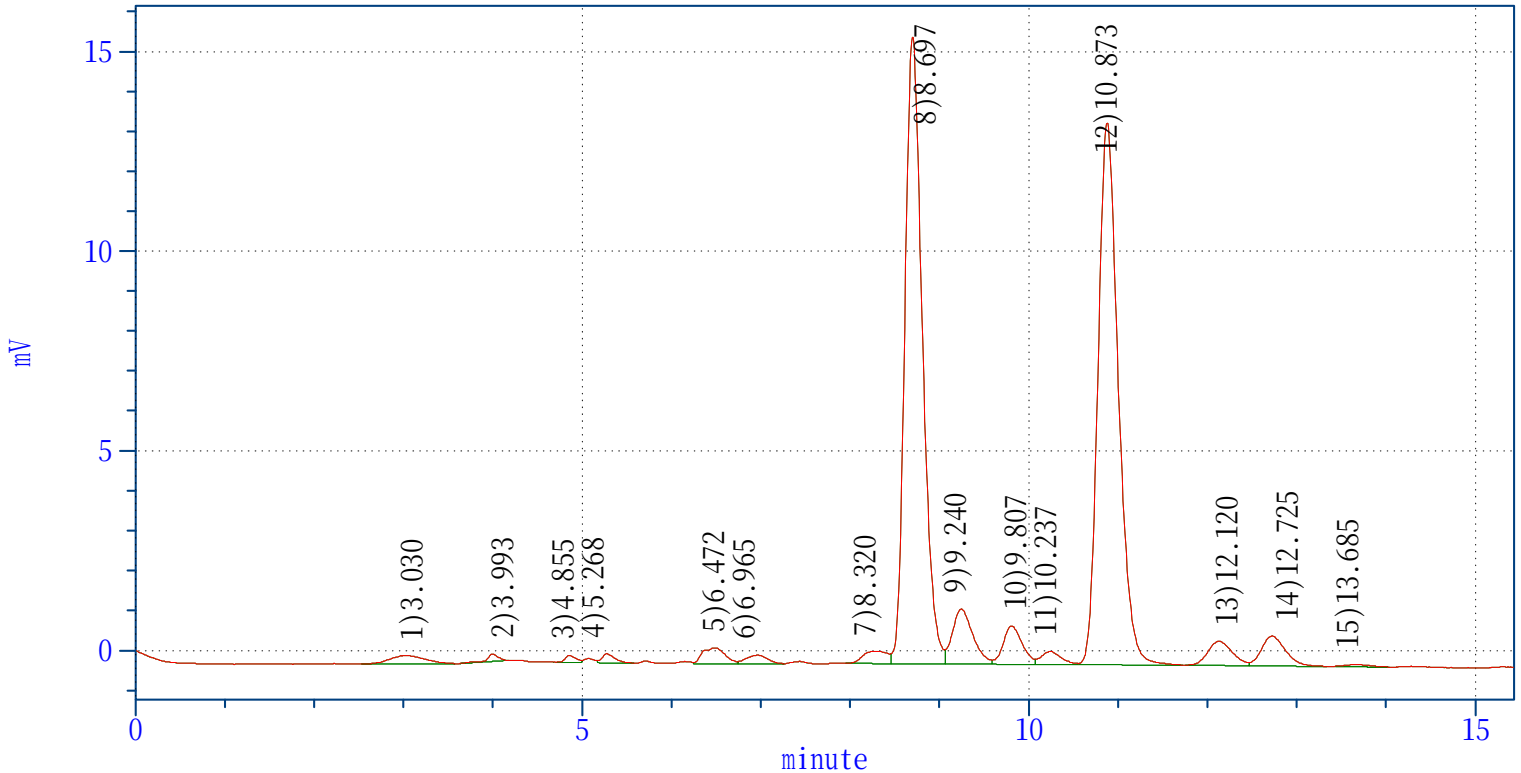


rac-**4b**

Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:

データ処理パラメータ
アップスロープ= 5,ダウンスロープ= 5,最小ピーク幅= 10.00 sec , ベース感度= 5 points
計算範囲= 0.000 to 2000.000 min.,最小ピーク面積= 1000 uv*sec , ベースライン補正=0

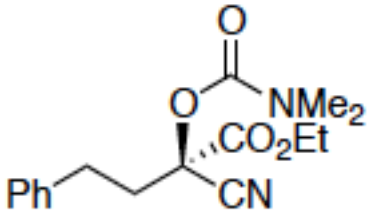
No.	R.T. (分)	面積 (uv*sec)	面積%	高さ (uv)	高さ%	濃度	濃度%	濃度単位	処理マーク	理論段数	ピーク名
1	3.030	5677	1.0902	206	0.5875	0.0000	0.0000		PP	264	
2	3.993	1612	0.3096	185	0.5275	0.0000	0.0000		PP	6409	
3	4.855	1456	0.2796	172	0.4915	0.0000	0.0000		PV	0	
4	5.268	2289	0.4396	229	0.6531	0.0000	0.0000		VP	0	
5	6.472	6828	1.3112	395	1.1286	0.0000	0.0000		VV	0	
6	6.965	3453	0.6631	216	0.6157	0.0000	0.0000		VP	0	
7	8.320	5793	1.1124	302	0.8620	0.0000	0.0000		PV	0	
8	8.697	212483	40.8034	15689	44.7758	0.0000	0.0000		VV	0	
9	9.240	22178	4.2589	1373	3.9190	0.0000	0.0000		VV	0	
10	9.807	14114	2.7103	957	2.7319	0.0000	0.0000		VV	0	
11	10.237	5072	0.9740	326	0.9305	0.0000	0.0000		VV	0	
12	10.873	213085	40.9190	13571	38.7301	0.0000	0.0000		VP	0	
13	12.120	11634	2.2341	608	1.7343	0.0000	0.0000		PV	0	
14	12.725	14016	2.6915	752	2.1466	0.0000	0.0000		VP	0	
15	13.685	1058	0.2032	58	0.1659	0.0000	0.0000		PP	11629	
	合計	520748		35040		0.0000	0.0000				



SIC-480II FOR WINDOWS TEST REPORT

ファイル名: TMT-III-604B.CHR
試料注入,日付:08-04-2011　時間:22:10:00

Analysis method:　　Instrument:
Column :CHIRALPAK AD-H(25)
Column Temperature (-C) :
Detector :UV, 254nm
Internal Standard :
Mobile Phase :
 Flow rate(ml/Min.) :0.8　　Attenuation :
Solvent A :Hexane 10
　　B :IPA　　1
　　C :EtOH　　0
　　D :

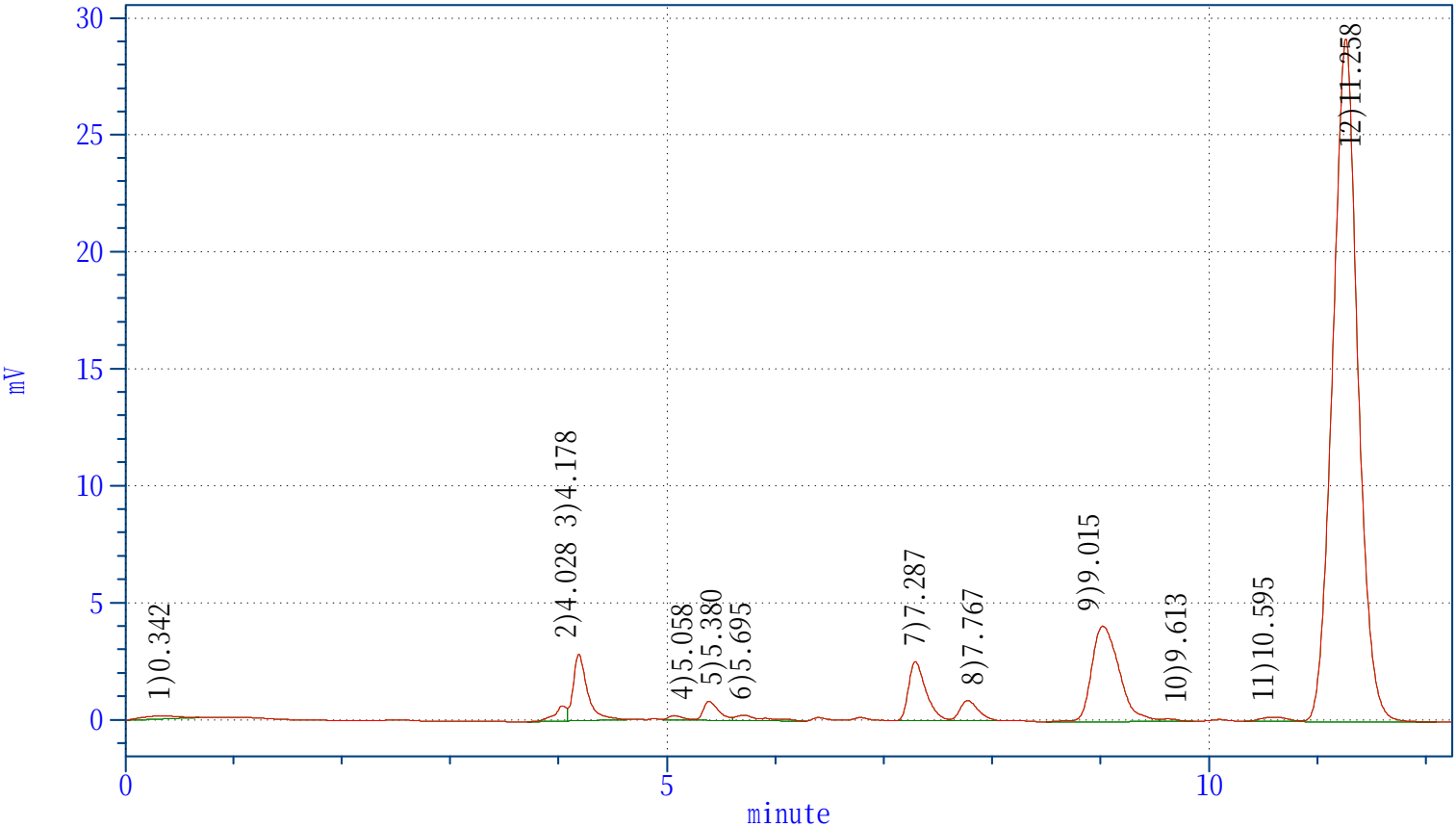


4b
er = 87:13
Scheme 1
(s.m.: er = 96:4)

Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:

データ処理パラメータ
アップスロープ= 5,ダウンスロープ= 5,最小ピーク幅= 10.00 sec , ベース感度= 5 points
計算範囲= 0.000 to 2000.000 min.,最小ピーク面積= 1000 uv*sec , ベースライン補正=0

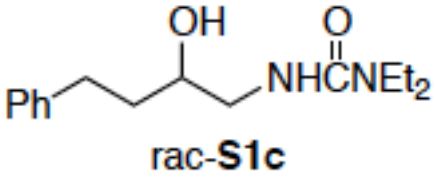
No.	R.T. (分)	面積 (uv*sec)	面積%	高さ (uv)	高さ%	濃度	濃度%	濃度単位	処理マーク	理論段数	ピーク名
1	0.342	3150	0.4999	128	0.3069	0.0000	0.0000		PP	4	
2	4.028	5124	0.8132	655	1.5664	0.0000	0.0000		PV	0	
3	4.178	25565	4.0574	2835	6.7831	0.0000	0.0000		VP	0	
4	5.058	1729	0.2744	185	0.4435	0.0000	0.0000		VV	0	
5	5.380	7878	1.2503	812	1.9435	0.0000	0.0000		VV	0	
6	5.695	4107	0.6518	233	0.5568	0.0000	0.0000		VP	0	
7	7.287	27970	4.4390	2532	6.0566	0.0000	0.0000		PV	0	
8	7.767	10198	1.6185	868	2.0774	0.0000	0.0000		VP	0	
9	9.015	71891	11.4096	4083	9.7687	0.0000	0.0000		PV	0	
10	9.613	1193	0.1893	111	0.2662	0.0000	0.0000		VP	0	
11	10.595	3195	0.5071	191	0.4582	0.0000	0.0000		PV	0	
12	11.258	468091	74.2894	29164	69.7726	0.0000	0.0000		VP	0	
	合計	630091		41798		0.0000	0.0000				



SIC 480II FOR WINDOWS TEST REPORT

ファイル名: TMT-II-282C5.CHR
試料注入,日付:11-08-2010　時間:16:13:51

Analysis method:　　Instrument:
Column :CHIRALPAK AY-H(25)
Column Temperature (-C) :
Detector :UV, 254nm
Internal Standard :
Mobile Phase :
Flow rate(ml/Min.) :0.6　　Attenuation :
Solvent A :Hexane 3
B :iPrOH 1
C :
D :

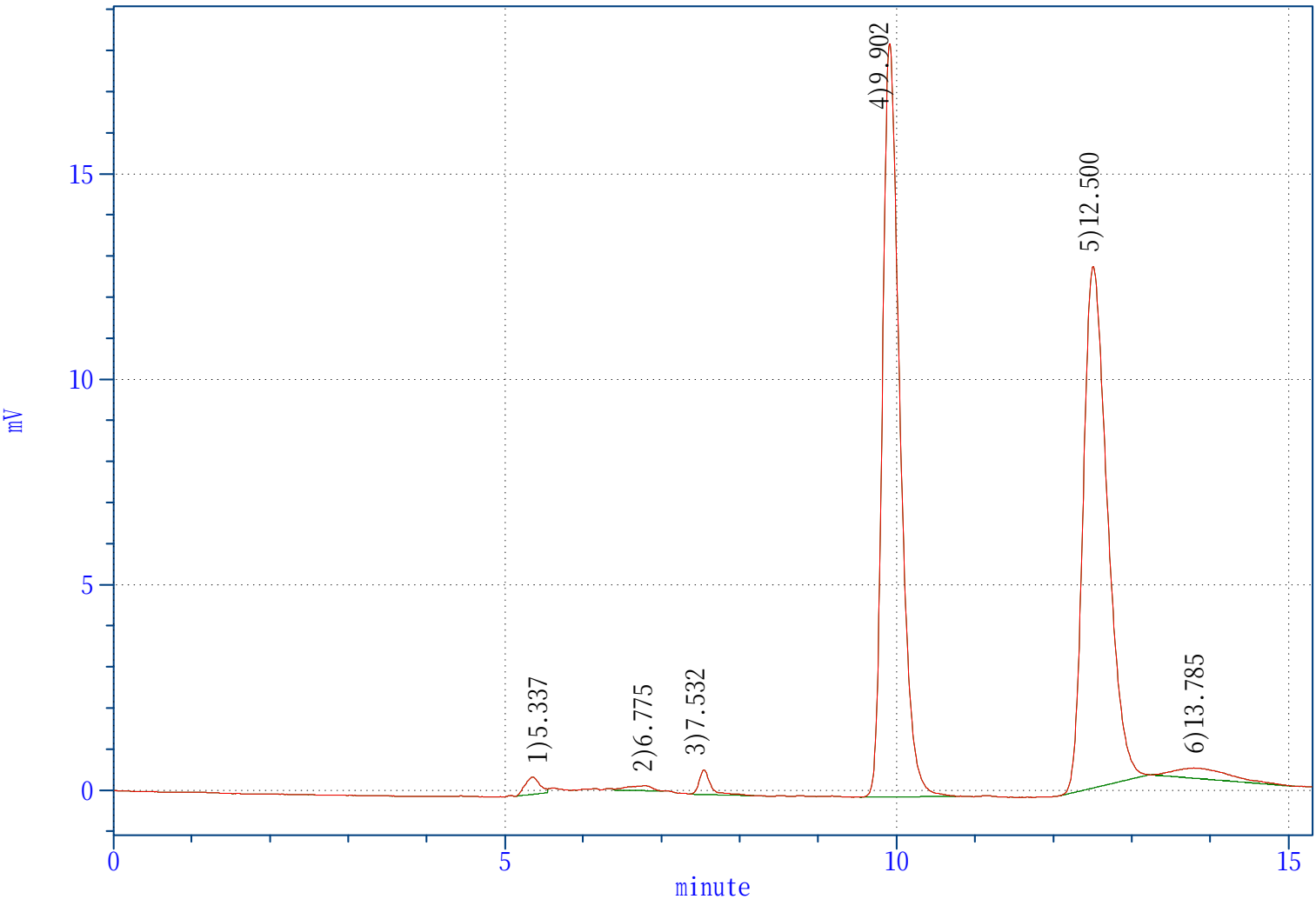


rac-**S1c**

Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:

データ処理パラメータ
アップスロープ= 5,ダウンスロープ= 5,最小ピーク幅= 10.00 sec , ベース感度= 5 points
計算範囲= 0.000 to 2000.000 min.,最小ピーク面積= 1000 uv*sec , ベースライン補正=0

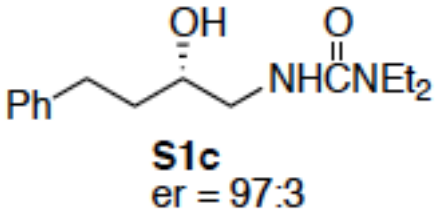
No.	R.T. (分)	面積 (uv*sec)	面積%	高さ (uv)	高さ%	濃度	濃度%	濃度単位	処理マーク	理論段数	ピーク名
1	5.337	5432	0.9344	413	1.2758	0.0000	0.0000		PV	0	
2	6.775	2609	0.4488	122	0.3779	0.0000	0.0000		VP	0	
3	7.532	6160	1.0596	597	1.8431	0.0000	0.0000		PP	16709	
4	9.902	283201	48.7140	18333	56.5638	0.0000	0.0000		PP	10025	
5	12.500	271342	46.6741	12695	39.1693	0.0000	0.0000		PP	8054	
6	13.785	12610	2.1691	250	0.7702	0.0000	0.0000		PP	1558	
	合計	581354		32410		0.0000	0.0000				



SIC-480II FOR WINDOWS TEST REPORT

ファイル名: TMT-II-303C2.CHR
試料注入,日付:11-18-2010　時間:18:47:08

Analysis method:　　Instrument:
Column :CHIRALPAK AY-H(25)
Column Temperature (-C) :
Detector :UV, 254nm
Internal Standard :
Mobile Phase :
 Flow rate(ml/Min.) :0.6　　Attenuation :
Solvent A :Hexane 3
　　B :iPrOH 1
　　C :
　　D :

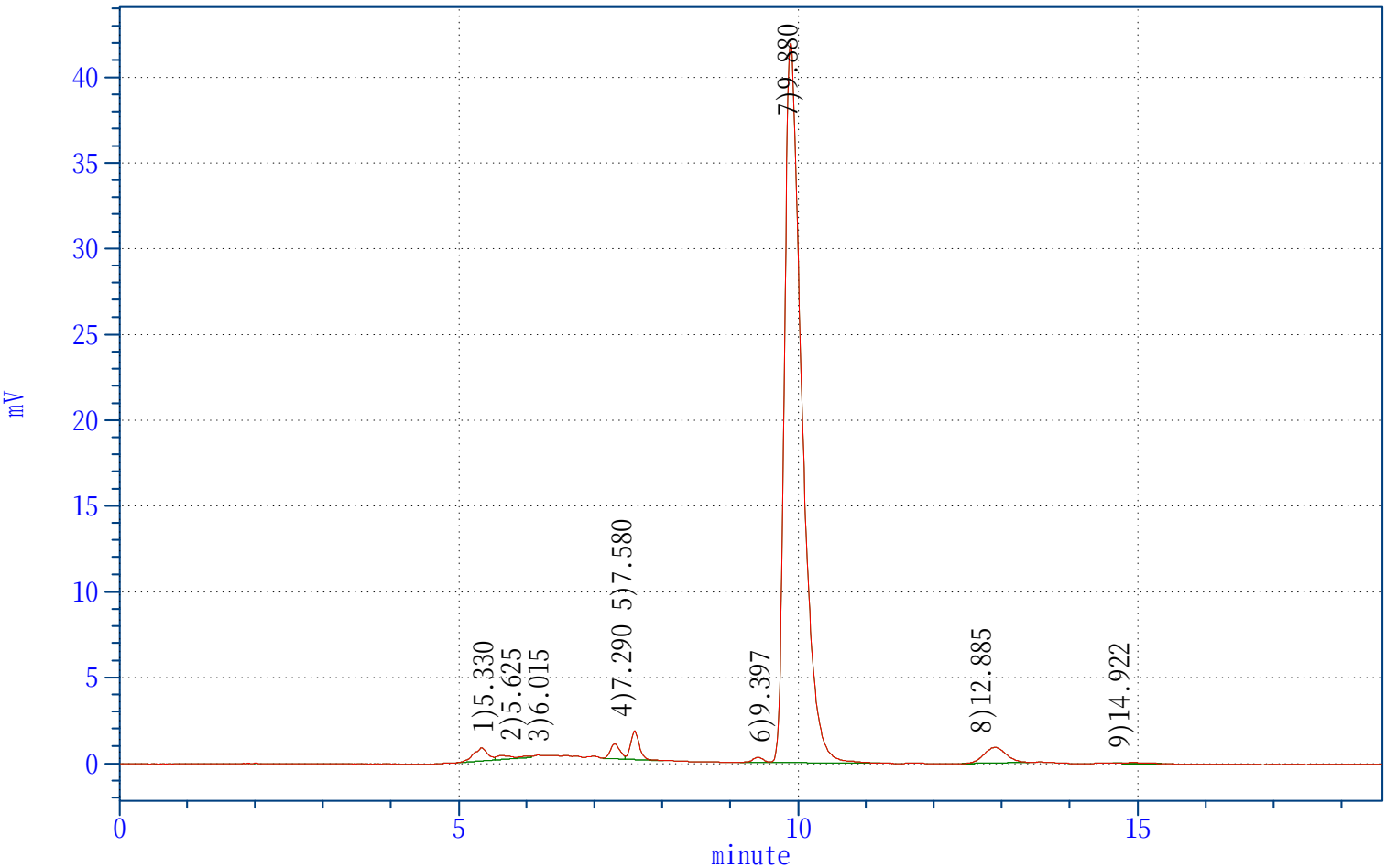


S1c
er = 97:3

Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:

データ処理パラメータ
アップスロープ= 5,ダウンスロープ= 5,最小ピーク幅= 10.00 sec , ベース感度= 5 points
計算範囲= 0.000 to 2000.000 min.,最小ピーク面積= 1000 uv*sec , ベースライン補正=0

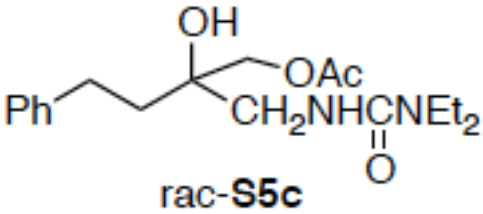
No.	R.T. (分)	面積 (uv*sec)	面積%	高さ (uv)	高さ%	濃度	濃度%	濃度単位	処理マーク	理論段数	ピーク名
1	5.330	10925	1.3586	766	1.6364	0.0000	0.0000		PV	0	
2	5.625	3399	0.4227	241	0.5142	0.0000	0.0000		VV	0	
3	6.015	1168	0.1452	99	0.2104	0.0000	0.0000		VV	0	
4	7.290	8552	1.0635	861	1.8379	0.0000	0.0000		PV	0	
5	7.580	14768	1.8365	1656	3.5357	0.0000	0.0000		VP	0	
6	9.397	3342	0.4156	312	0.6655	0.0000	0.0000		PV	0	
7	9.880	740153	92.0420	41945	89.5617	0.0000	0.0000		VP	0	
8	12.885	20556	2.5562	903	1.9272	0.0000	0.0000		PP	7252	
9	14.922	1284	0.1597	52	0.1110	0.0000	0.0000		PB	0	
	合計	804147		46834		0.0000	0.0000				



SIC-480II FOR WINDOWS TEST REPORT

ファイル名: TMT-II-299C.CHR
試料注入,日付:11-17-2010　時間:13:53:46

Analysis method:　　Instrument:
Column :CHIRALPAK AD-H(25),AD-H(15)
Column Temperature (-C) :
Detector :UV, 254nm
Internal Standard :
Mobile Phase :
Flow rate(ml/Min.) :0.44　　Attenuation :
Solvent A :Hexane 3
B :iPrOH 1
C :
D :

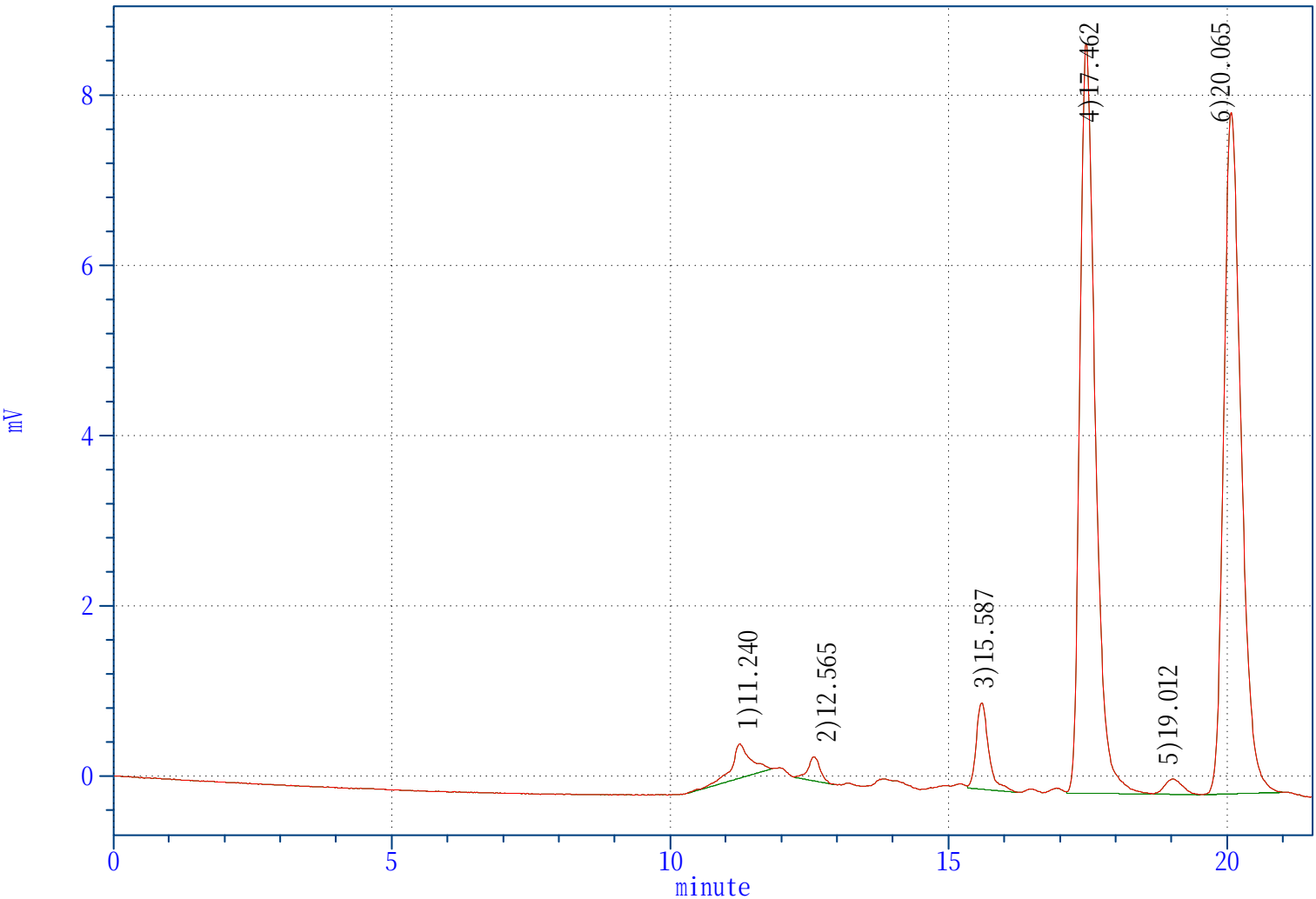


rac-**S5c**

Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:

データ処理パラメータ
アップスロープ= 5,ダウンスロープ= 5,最小ピーク幅= 10.00 sec , ベース感度= 5 points
計算範囲= 0.000 to 2000.000 min.,最小ピーク面積= 1000 uv*sec , ベースライン補正=0

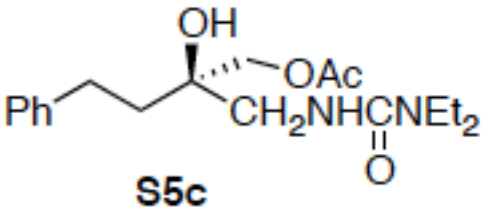
No.	R.T. (分)	面積 (uv*sec)	面積%	高さ (uv)	高さ%	濃度	濃度%	濃度単位	処理マーク	理論段数	ピーク名
1	11.240	9834	2.6109	403	2.1560	0.0000	0.0000		PP	8490	
2	12.565	4286	1.1379	281	1.5023	0.0000	0.0000		PP	18576	
3	15.587	15747	4.1807	1014	5.4285	0.0000	0.0000		VP	0	
4	17.462	168822	44.8214	8803	47.1120	0.0000	0.0000		VP	0	
5	19.012	3963	1.0522	182	0.9761	0.0000	0.0000		PP	15959	
6	20.065	174003	46.1969	8002	42.8251	0.0000	0.0000		PP	20487	
	合計	376655		18686		0.0000	0.0000				



SIC 480II FOR WINDOWS TEST REPORT

ファイル名: TMT-II-365B0.CHR
試料注入,日付:01-12-2011　時間:21:30:21

Analysis method:　　Instrument:
Column :CHIRALPAK AD-H(25)(15)
Column Temperature (-C) :
Detector :UV, 254nm
Internal Standard :
Mobile Phase :
Flow rate(ml/Min.) :0.44　　Attenuation :
Solvent A :Hexane 3
B :iPrOH 1
C :
D :

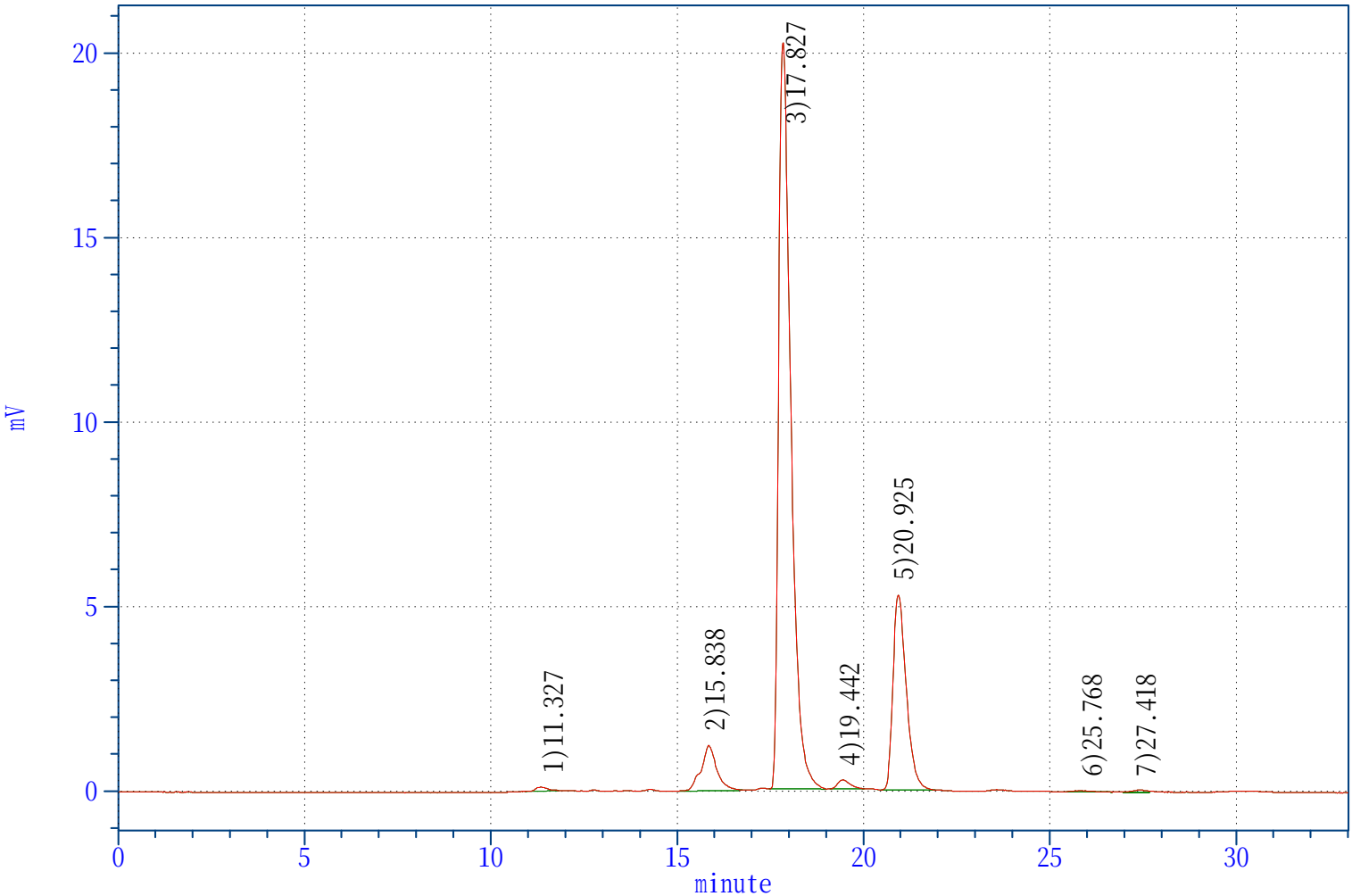


S5c
er = 78:22
Table 5 entry 3
(s.m.: er = 97:3)

Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:

データ処理パラメータ
アップスロープ= 5,ダウンスロープ= 5,最小ピーク幅= 10.00 sec , ベース感度= 5 points
計算範囲= 0.000 to 2000.000 min.,最小ピーク面積= 1000 uv*sec , ベースライン補正=0

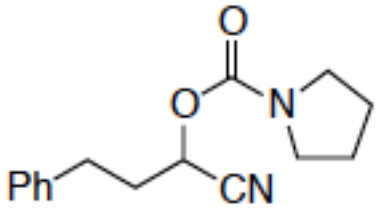
No.	R.T. (分)	面積 (uv*sec)	面積%	高さ (uv)	高さ%	濃度	濃度%	濃度単位	処理マーク	理論段数	ピーク名
1	11.327	2370	0.3725	108	0.3986	0.0000	0.0000		PP	6079	
2	15.838	35725	5.6153	1224	4.5061	0.0000	0.0000		PP	9631	
3	17.827	458821	72.1179	20213	74.3852	0.0000	0.0000		PP	15050	
4	19.442	5637	0.8860	250	0.9200	0.0000	0.0000		PP	17694	
5	20.925	130963	20.5849	5287	19.4551	0.0000	0.0000		PP	17084	
6	25.768	1215	0.1910	34	0.1261	0.0000	0.0000		PP	8907	
7	27.418	1479	0.2325	57	0.2090	0.0000	0.0000		PB	0	
	合計	636210		27173		0.0000	0.0000				



SIC-480II FOR WINDOWS TEST REPORT

ファイル名:TMT-II-380D.CHR racemidata
試料注入,日付:01-25-2011　時間:19:26:59

Analysis method:　　Instrument:
Column :CHIRALPAK IA
Column Temperature (-C) :
Detector :UV, 254nm
Internal Standard :
Mobile Phase :
Flow rate(ml/Min.) :0.8　　Attenuation :
Solvent A :Hexane 20
B :iPrOH 1
C :EtOH 1
D :

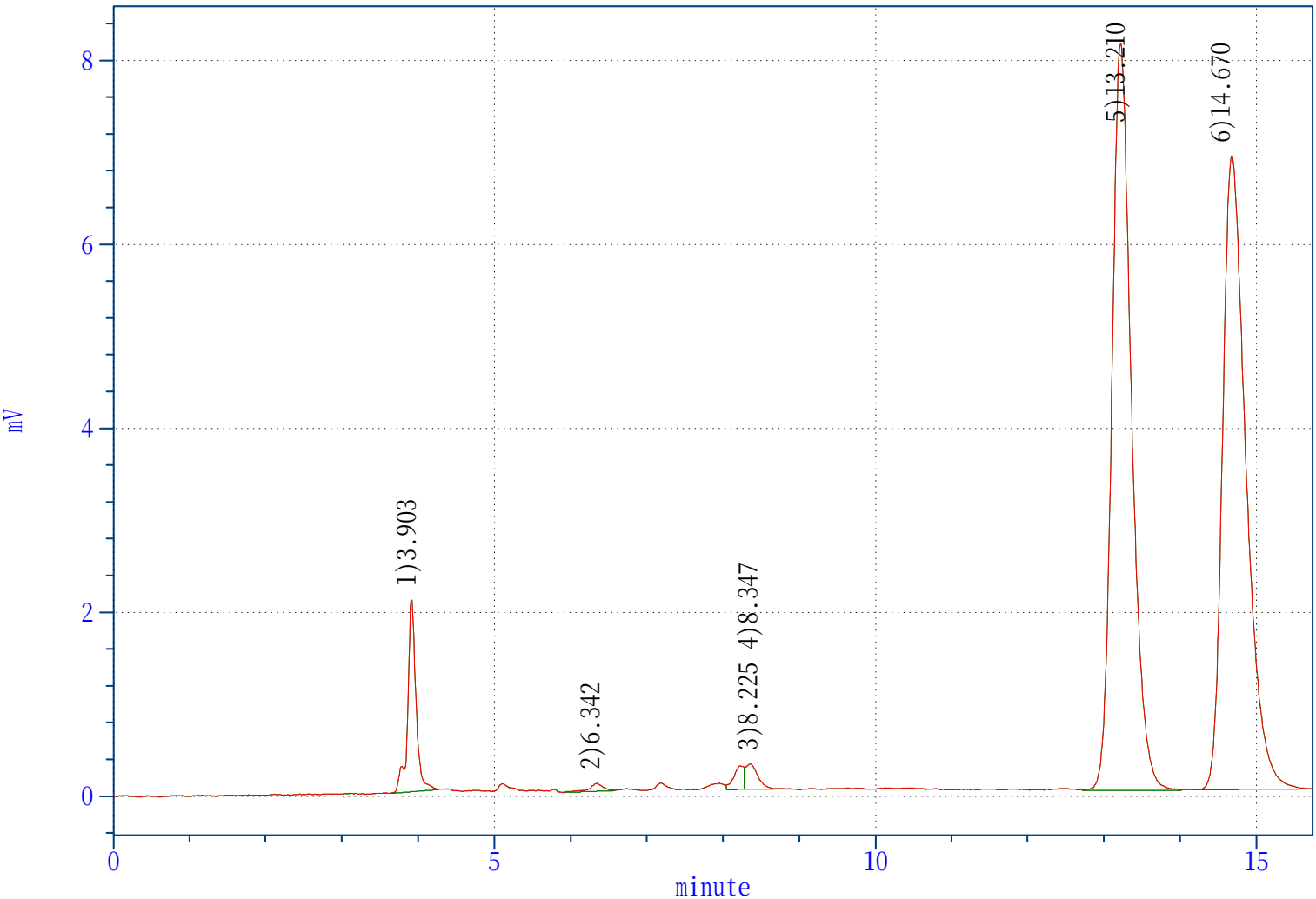


rac-**1d**

Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:

データ処理パラメータ
アップスロープ= 5,ダウンスロープ= 5,最小ピーク幅= 10.00 sec , ベース感度= 5 points
計算範囲= 0.000 to 2000.000 min.,最小ピーク面積= 1000 uv*sec , ベースライン補正=0

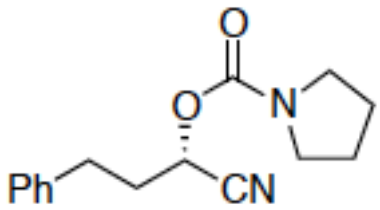
No.	R.T. (分)	面積 (uv*sec)	面積%	高さ (uv)	高さ%	濃度	濃度%	濃度単位	処理マーク	理論段数	ピーク名
1	3.903	15678	4.9964	2084	11.7764	0.0000	0.0000		PP	8694	
2	6.342	1079	0.3439	86	0.4876	0.0000	0.0000		PP	8992	
3	8.225	2377	0.7575	255	1.4397	0.0000	0.0000		VV	0	
4	8.347	3046	0.9707	276	1.5581	0.0000	0.0000		VP	0	
5	13.210	144816	46.1515	8116	45.8545	0.0000	0.0000		PP	13459	
6	14.670	146788	46.7799	6882	38.8838	0.0000	0.0000		PP	11587	
	合計	313784		17699		0.0000	0.0000				



SIC-480II FOR WINDOWS TEST REPORT

ファイル名: TMT-II-382B.CHR
試料注入,日付:01-25-2011　時間:19:07:42

Analysis method:　　Instrument:
Column :CHIRALPAK IA
Column Temperature (-C) :
Detector :UV, 254nm
Internal Standard :
Mobile Phase :
 Flow rate(ml/Min.) :0.8　　Attenuation :
Solvent A :Hexane 20
　　B :iPrOH　1
　　C :EtOH　1
　　D :

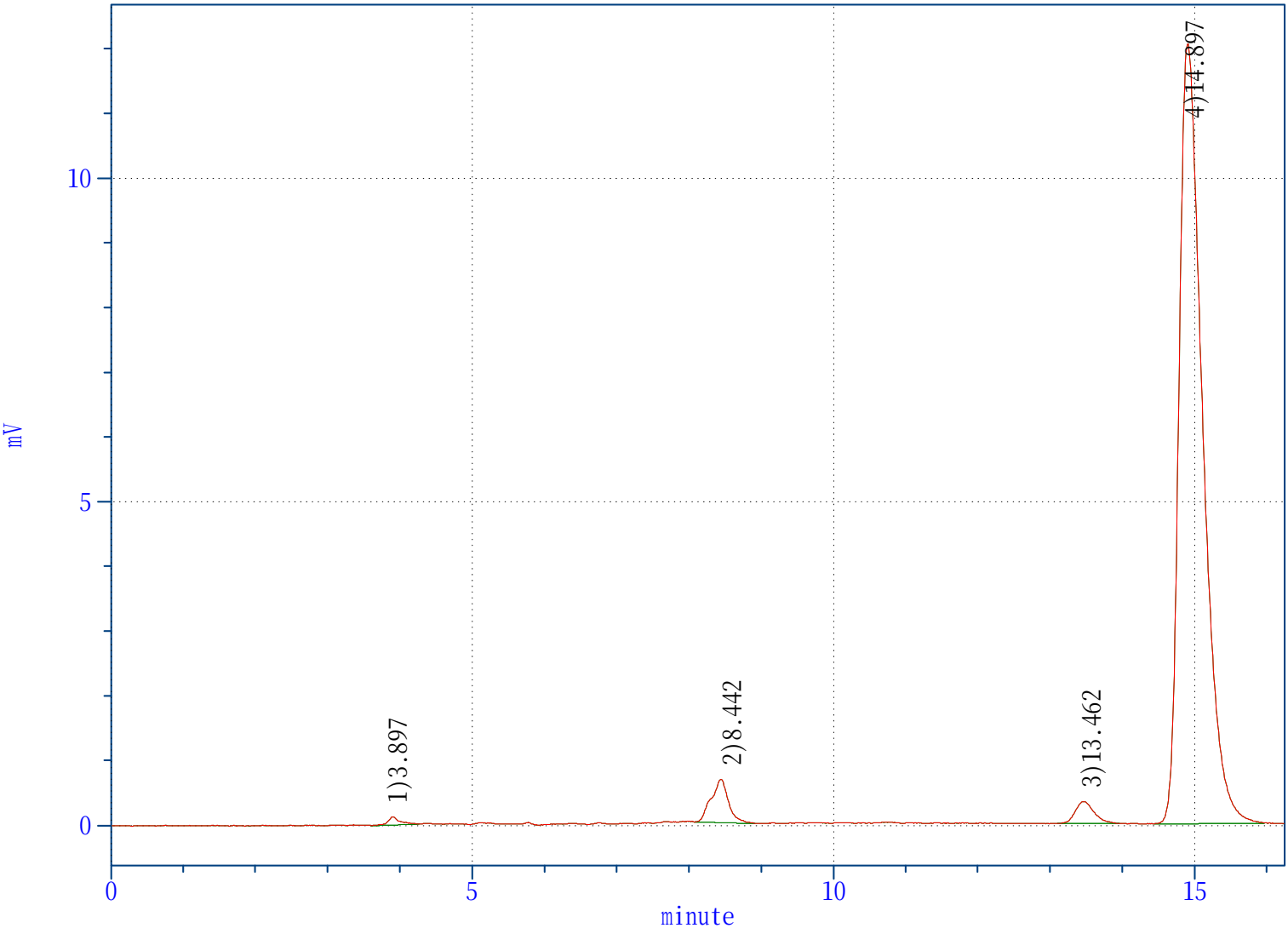


1d
er = 98:2

Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:

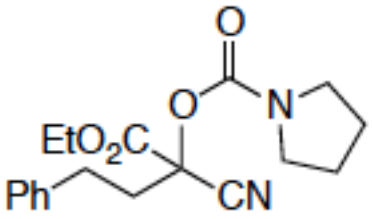
データ処理パラメータ
アップスロープ= 5,ダウンスロープ= 5,最小ピーク幅= 10.00 sec , ベース感度= 5 points
計算範囲= 0.000 to 2000.000 min.,最小ピーク面積= 1000 uv*sec , ベースライン補正=0

No.	R.T. (分)	面積 (uv*sec)	面積%	高さ (uv)	高さ%	濃度	濃度%	濃度単位	処理マーク	理論段数	ピーク名
1	3.897	1452	0.4983	128	0.9747	0.0000	0.0000		PP	4861	
2	8.442	11045	3.7906	668	5.0711	0.0000	0.0000		PP	5511	
3	13.462	6131	2.1042	338	2.5667	0.0000	0.0000		PP	13295	
4	14.897	272748	93.6069	12044	91.3875	0.0000	0.0000		PP	10469	
	合計	291376		13179		0.0000	0.0000				



ファイル名:TMT-II-396C .CHR
試料注入,日付:02-01-2011　時間:17:31:17

Analysis method:　　Instrument:
Column :CHIRALPAK AD-H(25)
Column Temperature (-C) :
Detector :UV, 254nm
Internal Standard :
Mobile Phase :
Flow rate(ml/Min.) :0.8　　Attenuation :
Solvent A :Hexane 10
B :iPrOH 1
C :EtOH 0
D :

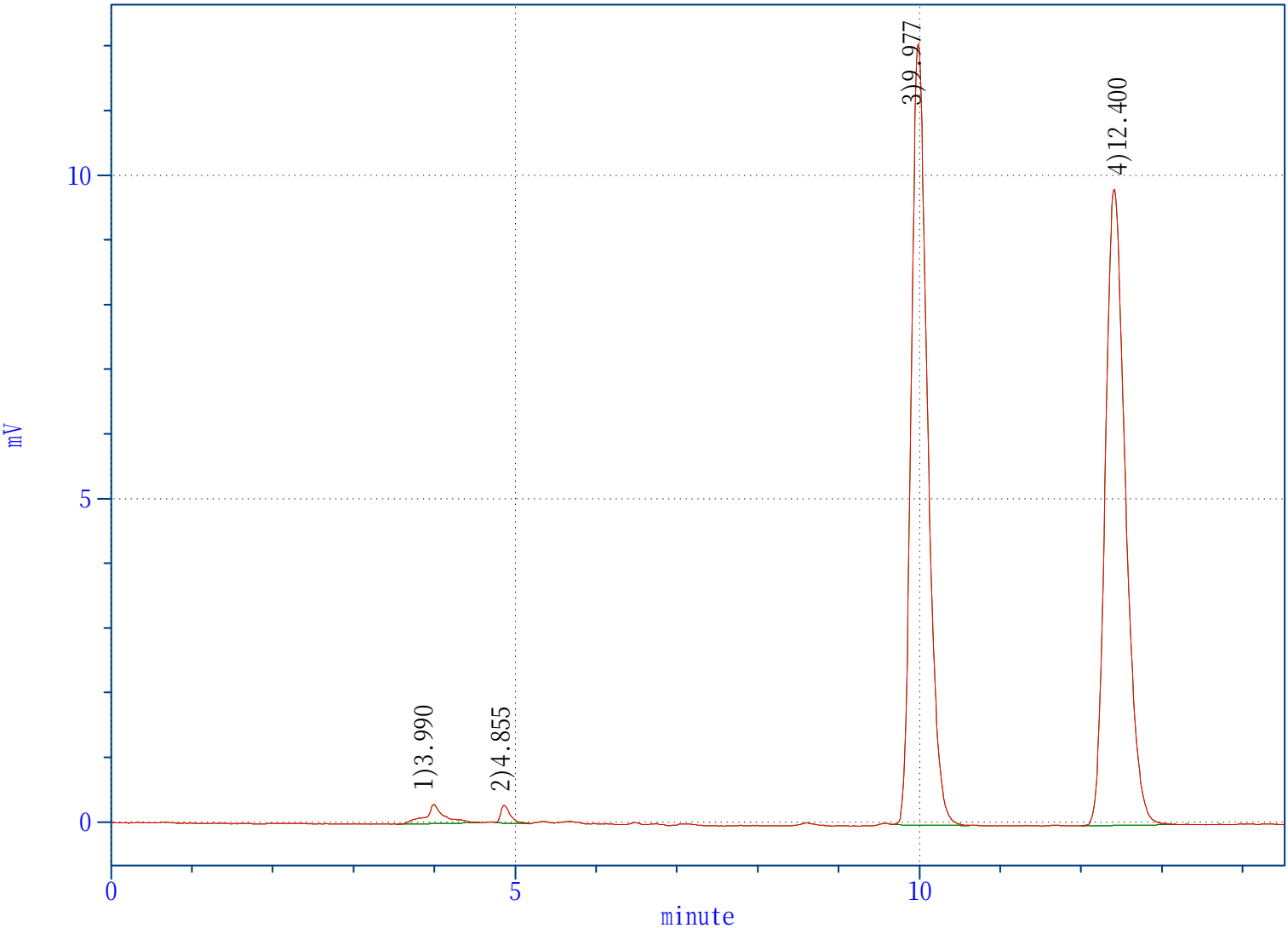


rac-**4d**

Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:

データ処理パラメータ
アップスロープ= 5,ダウンスロープ= 5,最小ピーク幅= 10.00 sec , ベース感度= 5 points
計算範囲= 0.000 to 2000.000 min.,最小ピーク面積= 1000 uv*sec , ベースライン補正=0

No.	R.T. (分)	面積 (uv*sec)	面積%	高さ (uv)	高さ%	濃度	濃度%	濃度単位	処理マーク	理論段数	ピーク名
1	3.990	4798	1.3850	294	1.3079	0.0000	0.0000		PP	4088	
2	4.855	2241	0.6469	273	1.2165	0.0000	0.0000		VP	0	
3	9.977	169347	48.8830	12074	53.7315	0.0000	0.0000		PP	12053	
4	12.400	170047	49.0851	9830	43.7441	0.0000	0.0000		PP	12114	
	合計	346433		22471		0.0000	0.0000				

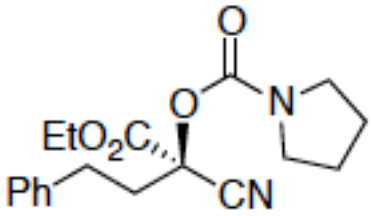


SIC-480II FOR WINDOWS TEST REPORT

ファイル名: TMT-II-384B.CHR
試料注入,日付:02-01-2011　時間:12:07:49

Analysis method:　　Instrument:
Column :CHIRALPAK AD-H(25)
Column Temperature (-C) :
Detector :UV, 254nm
Internal Standard :
Mobile Phase :
Flow rate(ml/Min.) :0.8　　Attenuation :
Solvent A :Hexane 10
B :iPrOH 1
C :EtOH 0
D :

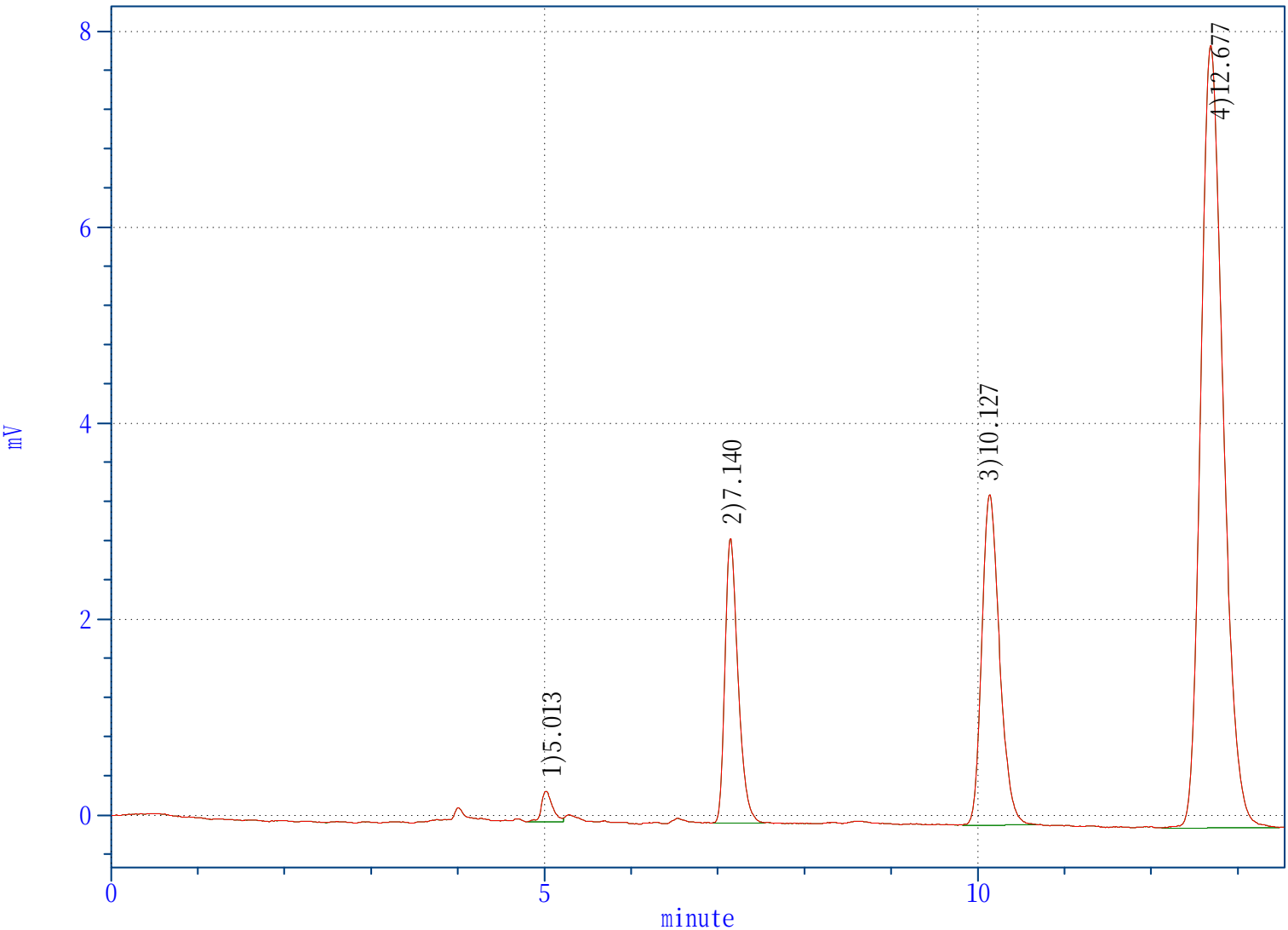
Time : Flow : (%A): (%B): (%C): (%D): Curve:
Time : Flow : (%A): (%B): (%C): (%D): Curve:
Time : Flow : (%A): (%B): (%C): (%D): Curve:
Time : Flow : (%A): (%B): (%C): (%D): Curve:
Time : Flow : (%A): (%B): (%C): (%D): Curve:



4d
er = 75:25
Table 5 entry 4
(s.m.: er = 98:2)

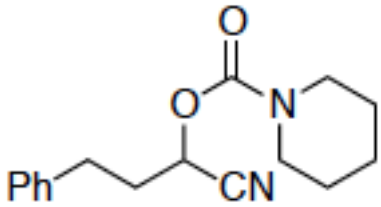
データ処理パラメータ
アップスロープ= 5,ダウンスロープ= 5,最小ピーク幅= 10.00 sec , ベース感度= 5 points
計算範囲= 0.000 to 2000.000 min.,最小ピーク面積= 1000 uv*sec , ベースライン補正=0

No.	R.T. (分)	面積 (uv*sec)	面積%	高さ (uv)	高さ%	濃度	濃度%	濃度単位	処理マーク	理論段数	ピーク名
1	5.013	2849	1.2631	315	2.1613	0.0000	0.0000		PV	0	
2	7.140	30098	13.3435	2905	19.9166	0.0000	0.0000		PP	11478	
3	10.127	48471	21.4889	3375	23.1448	0.0000	0.0000		PP	11857	
4	12.677	144145	63.9045	7989	54.7772	0.0000	0.0000		PP	11696	
	合計	225563		14584		0.0000	0.0000				



ファイル名: TMT-II-372B.CHR
試料注入,日付:02-01-2011　時間:18:05:30

Analysis method:　　Instrument:
Column :CHIRALPAK AD-H(25)
Column Temperature (-C) :
Detector :UV, 254nm
Internal Standard :
Mobile Phase :
 Flow rate(ml/Min.) :0.9　　Attenuation :
Solvent A :Hexane 10
　　B :iPrOH　1
　　C :EtOH　 0
　　D :

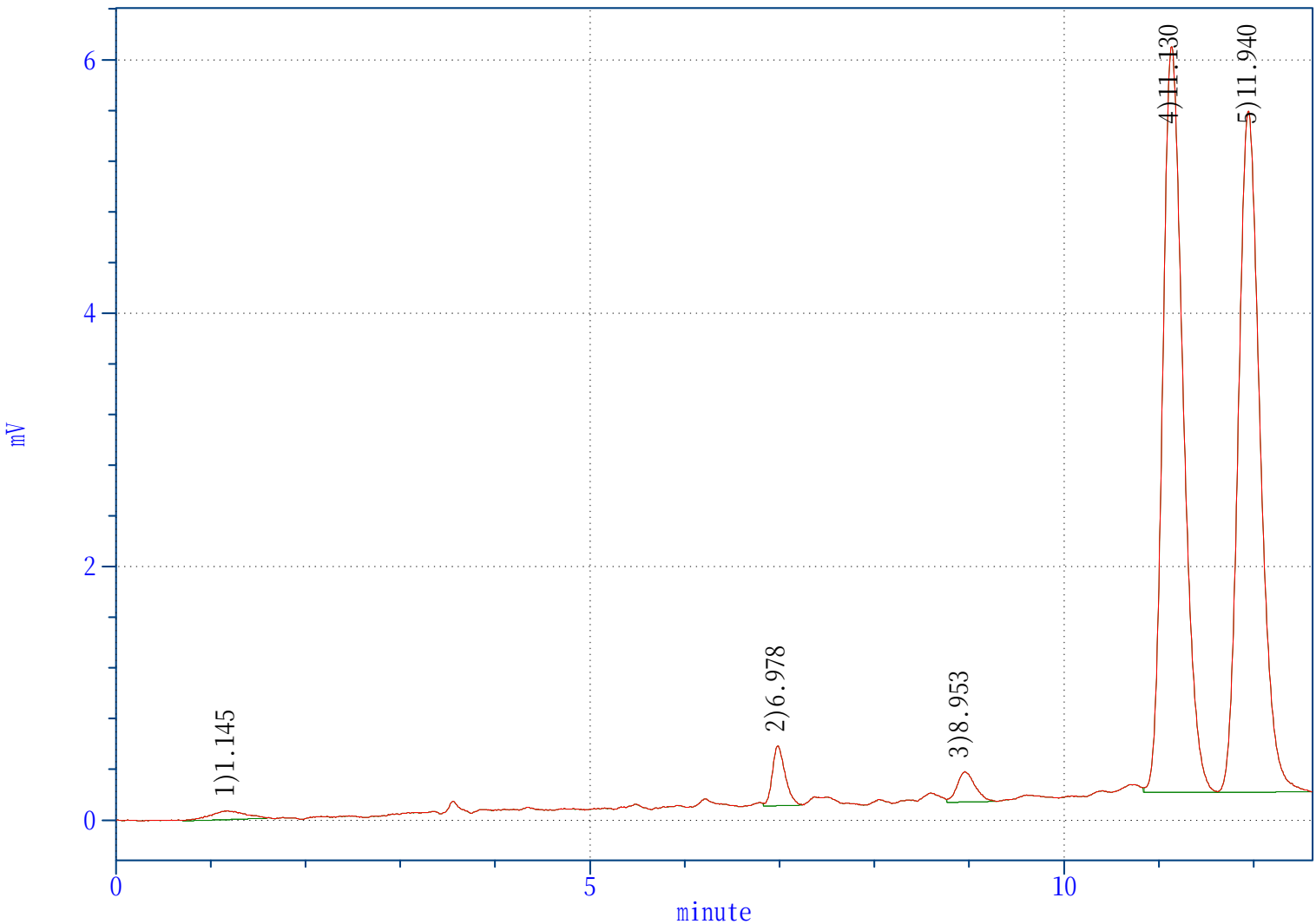


rac-**1e**

Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:

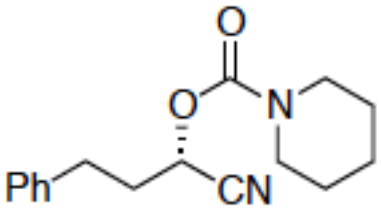
データ処理パラメータ
アップスロープ= 5,ダウンスロープ= 5,最小ピーク幅= 10.00 sec , ベース感度= 5 points
計算範囲= 0.000 to 2000.000 min.,最小ピーク面積= 1000 uv*sec , ベースライン補正=0

No.	R.T. (分)	面積 (uv*sec)	面積%	高さ (uv)	高さ%	濃度	濃度%	濃度単位	処理マーク	理論段数	ピーク名
1	1.145	1726	0.9436	68	0.5645	0.0000	0.0000		PP	48	
2	6.978	4387	2.3983	470	3.9079	0.0000	0.0000		VP	0	
3	8.953	3124	1.7078	239	1.9874	0.0000	0.0000		VP	0	
4	11.130	88178	48.2047	5885	48.8897	0.0000	0.0000		VV	0	
5	11.940	85509	46.7456	5375	44.6504	0.0000	0.0000		VP	0	
	合計	182924		12038		0.0000	0.0000				



ファイル名:TMT-II-376B.CHR
試料注入,日付:01-20-2011　時間:15:19:37

Analysis method:　　Instrument:
Column :CHIRALPAK AD-H(25)
Column Temperature (-C) :
Detector :UV, 254nm
Internal Standard :
Mobile Phase :
Flow rate(ml/Min.) :0.9　　Attenuation :
Solvent A :Hexane 10
B :iPrOH 1
C :EtOH 0
D :

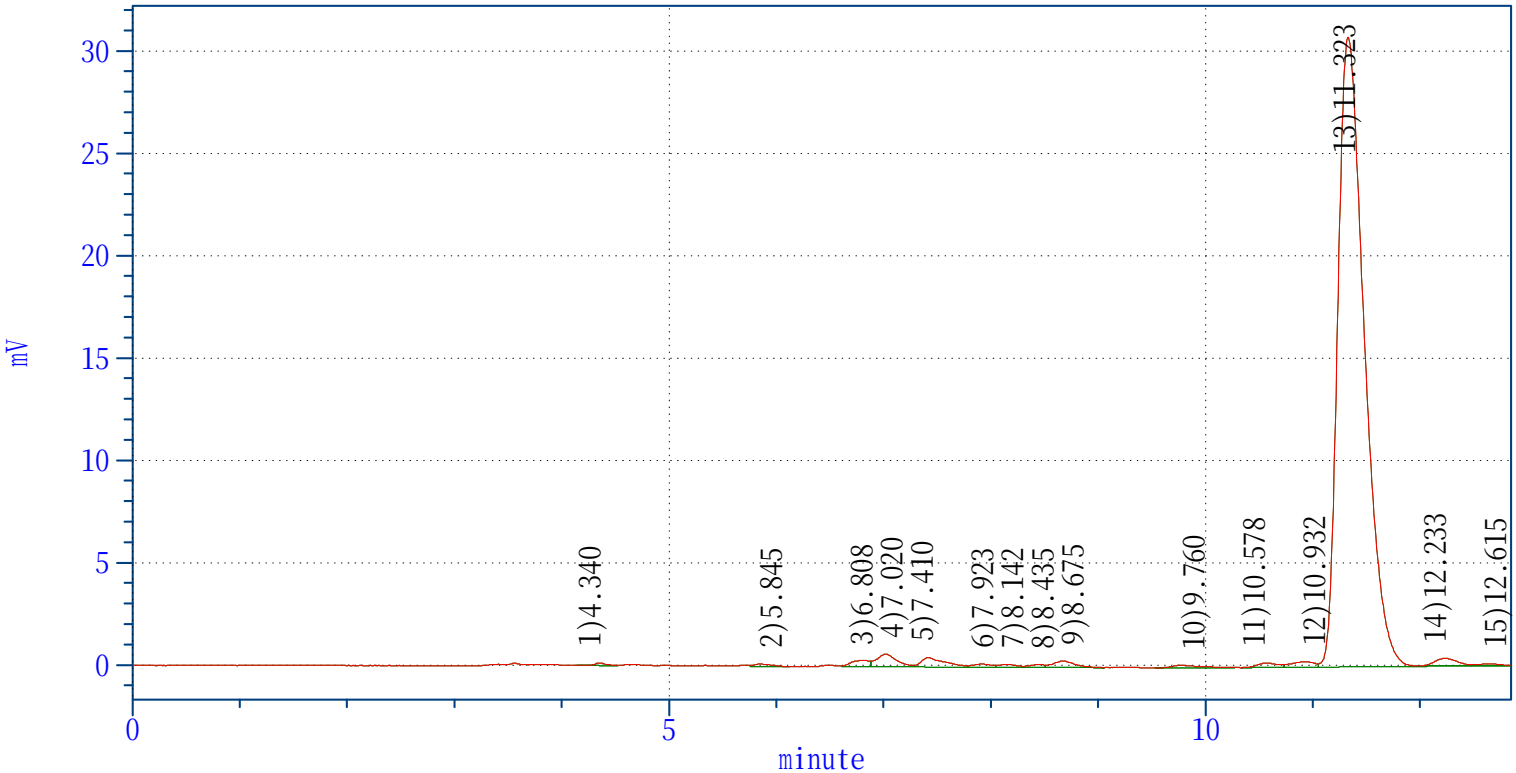


1e
er = 99:1

Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:

データ処理パラメータ
アップスロープ= 5,ダウンスロープ= 5,最小ピーク幅= 10.00 sec , ベース感度= 5 points
計算範囲= 0.000 to 2000.000 min.,最小ピーク面積= 1000 uv*sec , ベースライン補正=0

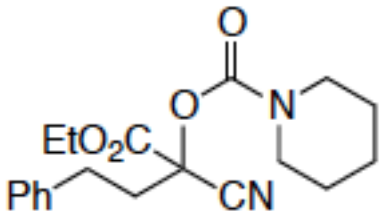
No.	R.T. (分)	面積 (uv*sec)	面積%	高さ (uv)	高さ%	濃度	濃度%	濃度単位	処理マーク	理論段数	ピーク名
1	4.340	1096	0.1927	132	0.3864	0.0000	0.0000		PV	0	
2	5.845	1323	0.2326	121	0.3535	0.0000	0.0000		VP	0	
3	6.808	3589	0.6310	305	0.8926	0.0000	0.0000		VV	0	
4	7.020	7988	1.4043	617	1.8051	0.0000	0.0000		VV	0	
5	7.410	6968	1.2250	457	1.3369	0.0000	0.0000		VV	0	
6	7.923	1796	0.3157	154	0.4506	0.0000	0.0000		VV	0	
7	8.142	1542	0.2711	138	0.4049	0.0000	0.0000		VV	0	
8	8.435	1319	0.2319	137	0.4016	0.0000	0.0000		VV	0	
9	8.675	4472	0.7862	315	0.9199	0.0000	0.0000		VP	0	
10	9.760	2237	0.3933	122	0.3575	0.0000	0.0000		PP	8145	
11	10.578	2841	0.4995	217	0.6337	0.0000	0.0000		PV	0	
12	10.932	4147	0.7291	270	0.7892	0.0000	0.0000		VV	0	
13	11.323	522462	91.8508	30738	89.8788	0.0000	0.0000		VV	0	
14	12.233	5717	1.0051	379	1.1093	0.0000	0.0000		VV	0	
15	12.615	1319	0.2319	96	0.2800	0.0000	0.0000		VP	0	
	合計	568816		34200		0.0000	0.0000				



SIC 480II FOR WINDOWS TEST REPORT

ファイル名:TMT-II-396A .CHR
試料注入,日付:02-01-2011　時間:17:15:35

Analysis method:　　Instrument:
Column :CHIRALPAK AD-H(25)
Column Temperature (-C) :
Detector :UV, 254nm
Internal Standard :
Mobile Phase :
 Flow rate(ml/Min.) :0.8　　Attenuation :
Solvent A :Hexane 10
　　B :iPrOH　1
　　C :EtOH　 0
　　D :

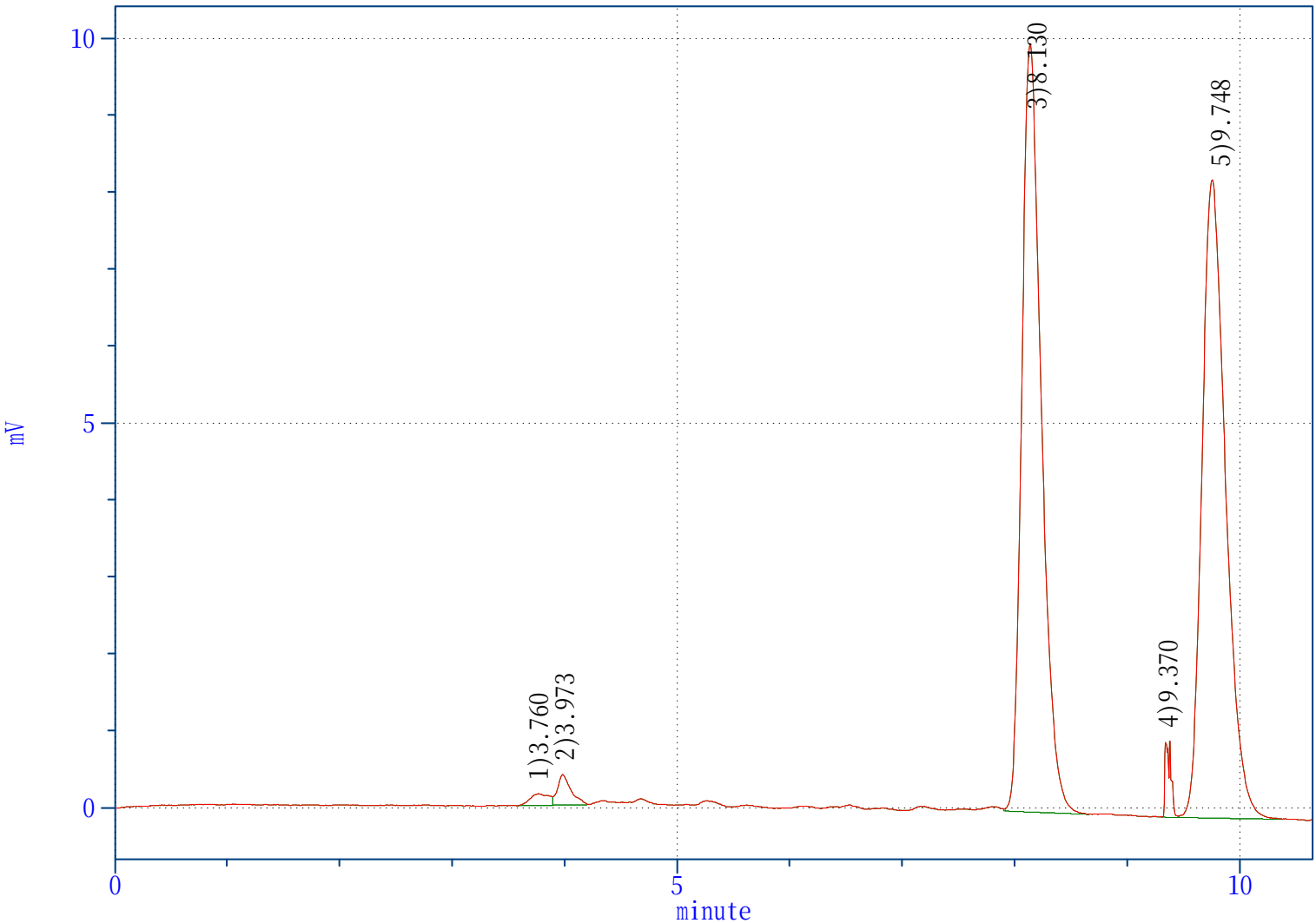


rac-**4e**

Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:

データ処理パラメータ
アップスロープ= 5,ダウンスロープ= 5,最小ピーク幅= 10.00 sec , ベース感度= 5 points
計算範囲= 0.000 to 2000.000 min.,最小ピーク面積= 1000 uv*sec , ベースライン補正=0

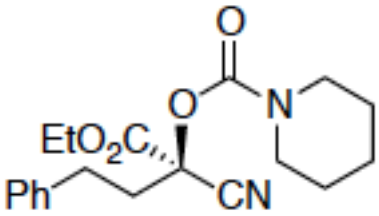
No.	R.T. (分)	面積 (uv*sec)	面積%	高さ (uv)	高さ%	濃度	濃度%	濃度単位	処理マーク	理論段数	ピーク名
1	3.760	1795	0.7168	152	0.7677	0.0000	0.0000		PV	0	
2	3.973	3335	1.3318	398	2.0109	0.0000	0.0000		VP	0	
3	8.130	120760	48.2228	9968	50.3490	0.0000	0.0000		VP	0	
4	9.370	3109	1.2415	986	4.9788	0.0000	0.0000		PV	0	
5	9.748	121422	48.4871	8294	41.8936	0.0000	0.0000		VP	0	
	合計	250421		19799		0.0000	0.0000				



SIC-480II FOR WINDOWS TEST REPORT

ファイル名: TMT-II-390B.CHR
試料注入,日付:01-28-2011　時間:15:13:50

Analysis method:　　Instrument:
Column :CHIRALPAK AD-H(25)
Column Temperature (-C) :
Detector :UV, 254nm
Internal Standard :
Mobile Phase :
Flow rate(ml/Min.) :0.8　　Attenuation :
Solvent A :Hexane 10
B :iPrOH 1
C :
D :

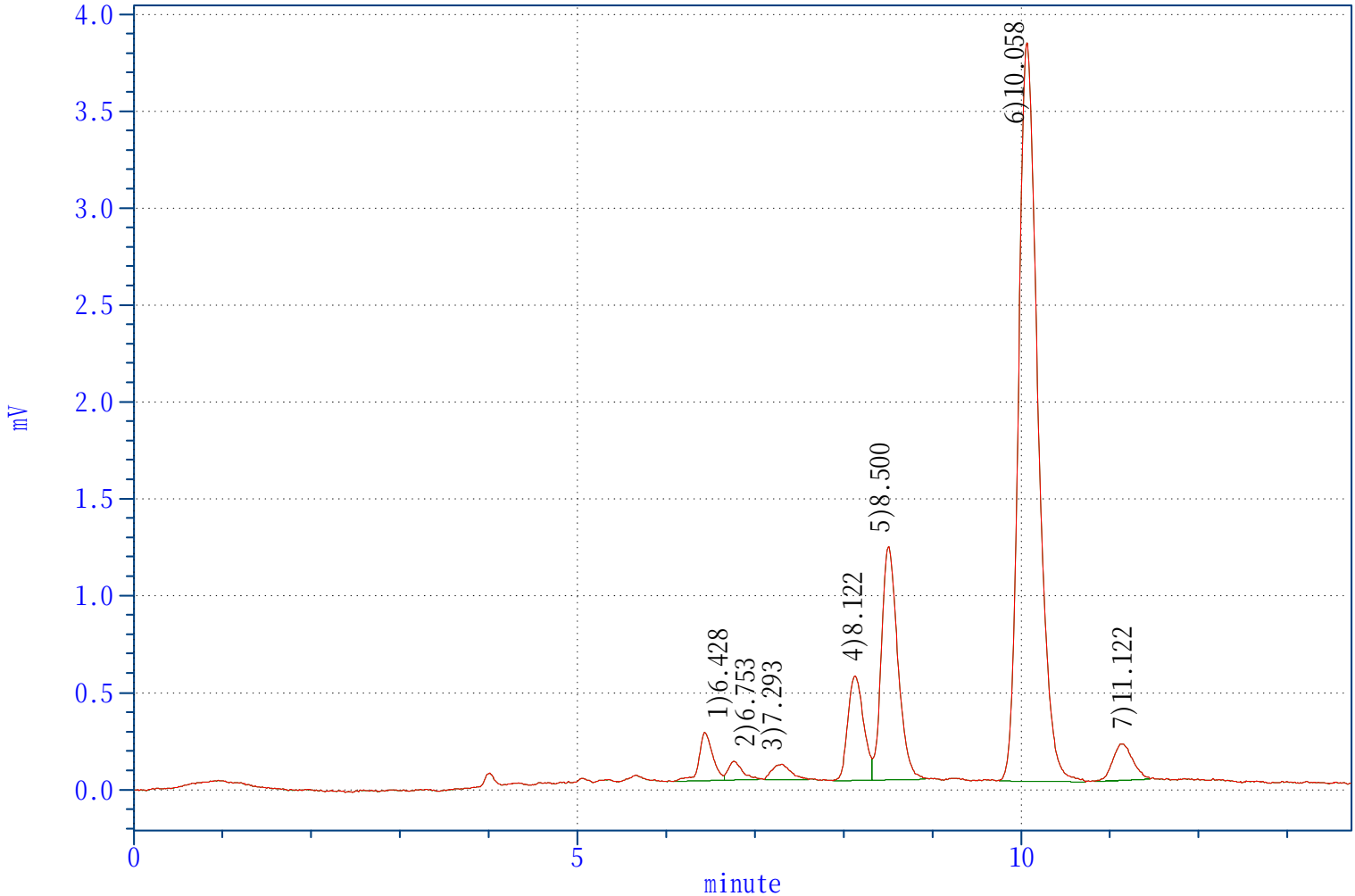


4e
er = 79:21
Table 5 entry 5
(s.m.: er = 99:1)

Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:

データ処理パラメータ
アップスロープ= 5,ダウンスロープ= 5,最小ピーク幅= 10.00 sec , ベース感度= 5 points
計算範囲= 0.000 to 2000.000 min.,最小ピーク面積= 1000 uv*sec , ベースライン補正=0

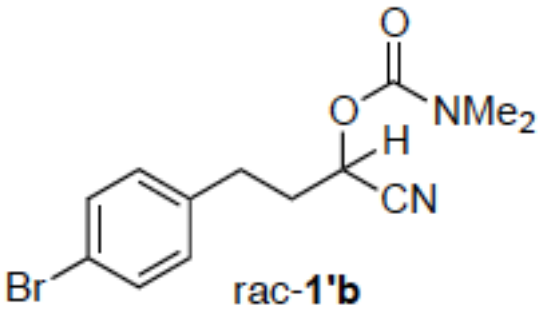
No.	R.T. (分)	面積 (uv*sec)	面積%	高さ (uv)	高さ%	濃度	濃度%	濃度単位	処理マーク	理論段数	ピーク名
1	6.428	2672	3.0575	248	4.0235	0.0000	0.0000		PV	0	
2	6.753	1021	1.1683	96	1.5518	0.0000	0.0000		VP	0	
3	7.293	1122	1.2839	77	1.2532	0.0000	0.0000		PP	5194	
4	8.122	6644	7.6025	540	8.7644	0.0000	0.0000		PV	0	
5	8.500	15435	17.6618	1202	19.5111	0.0000	0.0000		VP	0	
6	10.058	57559	65.8630	3809	61.8326	0.0000	0.0000		PP	10649	
7	11.122	2939	3.3630	189	3.0634	0.0000	0.0000		PP	11763	
	合計	87392		6161		0.0000	0.0000				



SIC-480II FOR WINDOWS TEST REPORT

ファイル名: TMT-IV-678D.CHR
試料注入,日付:10-11-2011　時間:11:35:54

Analysis method:　　Instrument:
Column :CHIRALPAK AD-H(25)
Column Temperature (-C) :
Detector :UV, 254nm
Internal Standard :
Mobile Phase :
Flow rate(ml/Min.) :0.8　　Attenuation :
Solvent A :Hexane 10
B :IPA　1
C :EtOH　0
D :

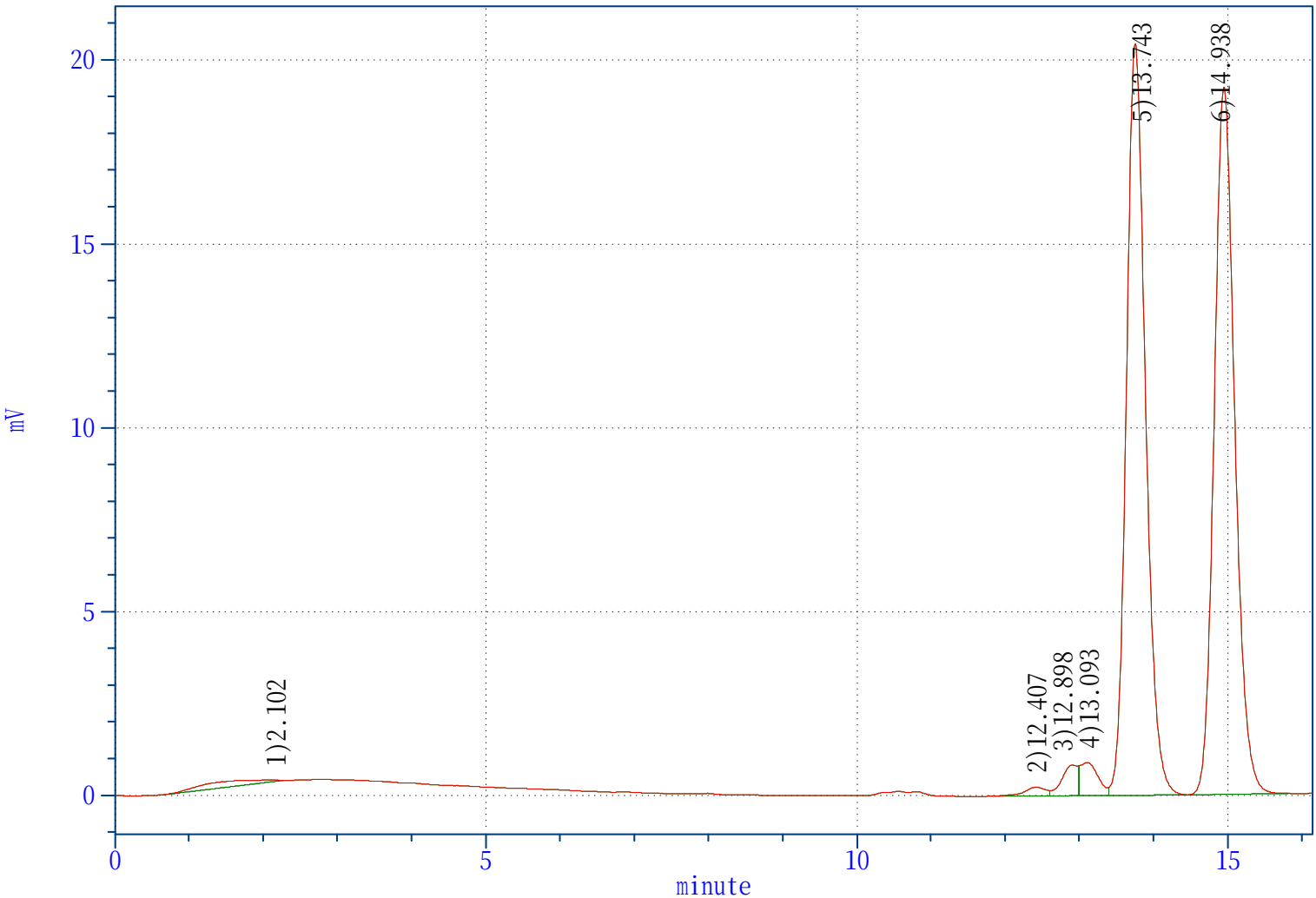


rac-**1'b**

Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:

データ処理パラメータ
アップスロープ= 5,ダウンスロープ= 5,最小ピーク幅= 10.00 sec , ベース感度= 5 points
計算範囲= 0.000 to 2000.000 min.,最小ピーク面積= 1000 uv*sec , ベースライン補正=0

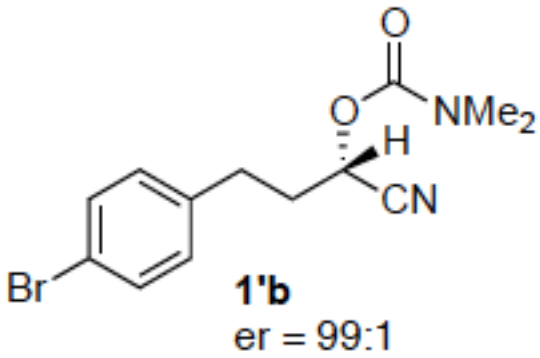
No.	R.T. (分)	面積 (uv*sec)	面積%	高さ (uv)	高さ%	濃度	濃度%	濃度単位	処理マーク	理論段数	ピーク名
1	2.102	8908	1.1514	47	0.1127	0.0000	0.0000		PP	18	
2	12.407	4909	0.6345	244	0.5846	0.0000	0.0000		PV	0	
3	12.898	11902	1.5383	832	1.9961	0.0000	0.0000		VV	0	
4	13.093	15421	1.9932	900	2.1592	0.0000	0.0000		VV	0	
5	13.743	364894	47.1624	20441	49.0230	0.0000	0.0000		VP	0	
6	14.938	367663	47.5203	19232	46.1243	0.0000	0.0000		PP	14576	
	合計	773697		41696		0.0000	0.0000				



SIC-480II FOR WINDOWS TEST REPORT

ファイル名: TMT-IV-685A1.CHR
試料注入,日付:10-11-2011　時間:16:52:59

Analysis method:　　Instrument:
Column :CHIRALPAK AD-H(25)
Column Temperature (-C) :
Detector :UV, 254nm
Internal Standard :
Mobile Phase :
Flow rate(ml/Min.) :0.8　　Attenuation :
Solvent A :Hexane 10
B :IPA　1
C :EtOH　0
D :

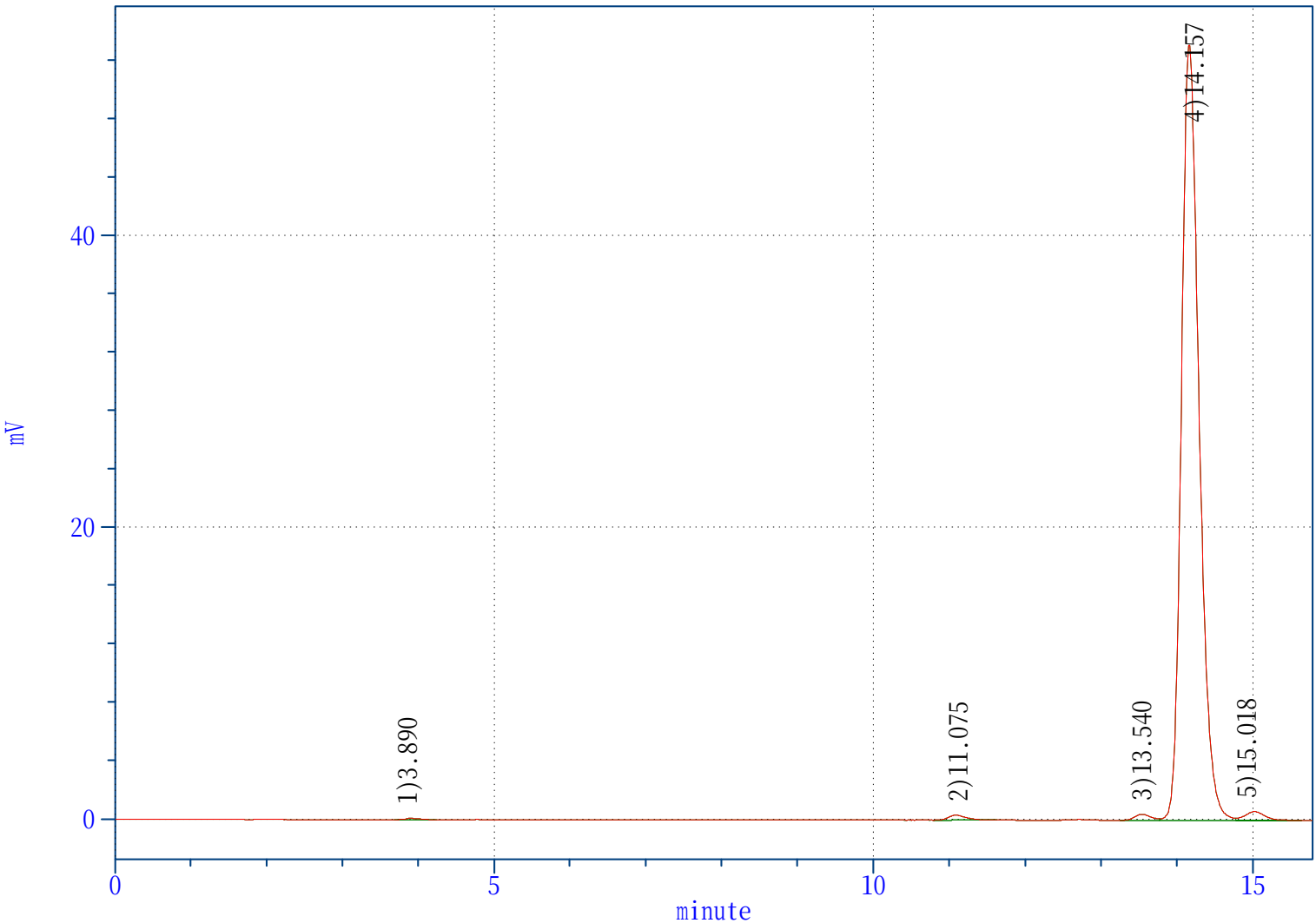


1'b
er = 99:1

Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:

データ処理パラメータ
アップスロープ= 5,ダウンスロープ= 5,最小ピーク幅= 10.00 sec , ベース感度= 5 points
計算範囲= 0.000 to 2000.000 min.,最小ピーク面積= 1000 uv*sec , ベースライン補正=0

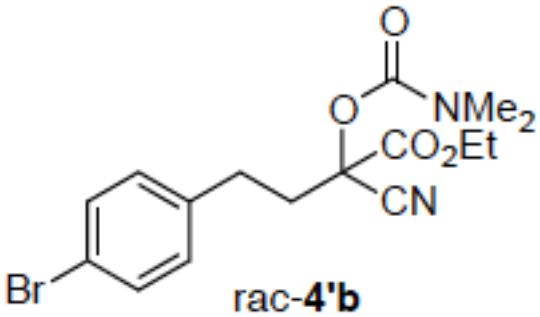
No.	R.T. (分)	面積 (uv*sec)	面積%	高さ (uv)	高さ%	濃度	濃度%	濃度単位	処理マーク	理論段数	ピーク名
1	3.890	1335	0.1510	112	0.2059	0.0000	0.0000		PP	2485	
2	11.075	5700	0.6448	343	0.6276	0.0000	0.0000		PP	10932	
3	13.540	6220	0.7037	409	0.7495	0.0000	0.0000		PV	0	
4	14.157	859523	97.2363	53122	97.3127	0.0000	0.0000		VV	0	
5	15.018	11175	1.2642	603	1.1043	0.0000	0.0000		VP	0	
	合計	883953		54589		0.0000	0.0000				



SIC-480II FOR WINDOWS TEST REPORT

ファイル名: TMT-IV-681C.CHR
試料注入,日付:10-11-2011　時間:12:19:46

Analysis method:　　Instrument:
Column :CHIRALPAK AD-H(25)
Column Temperature (-C) :
Detector :UV, 254nm
Internal Standard :
Mobile Phase :
Flow rate(ml/Min.) :0.8　　Attenuation :
Solvent A :Hexane 10
B :IPA　1
C :EtOH　0
D :

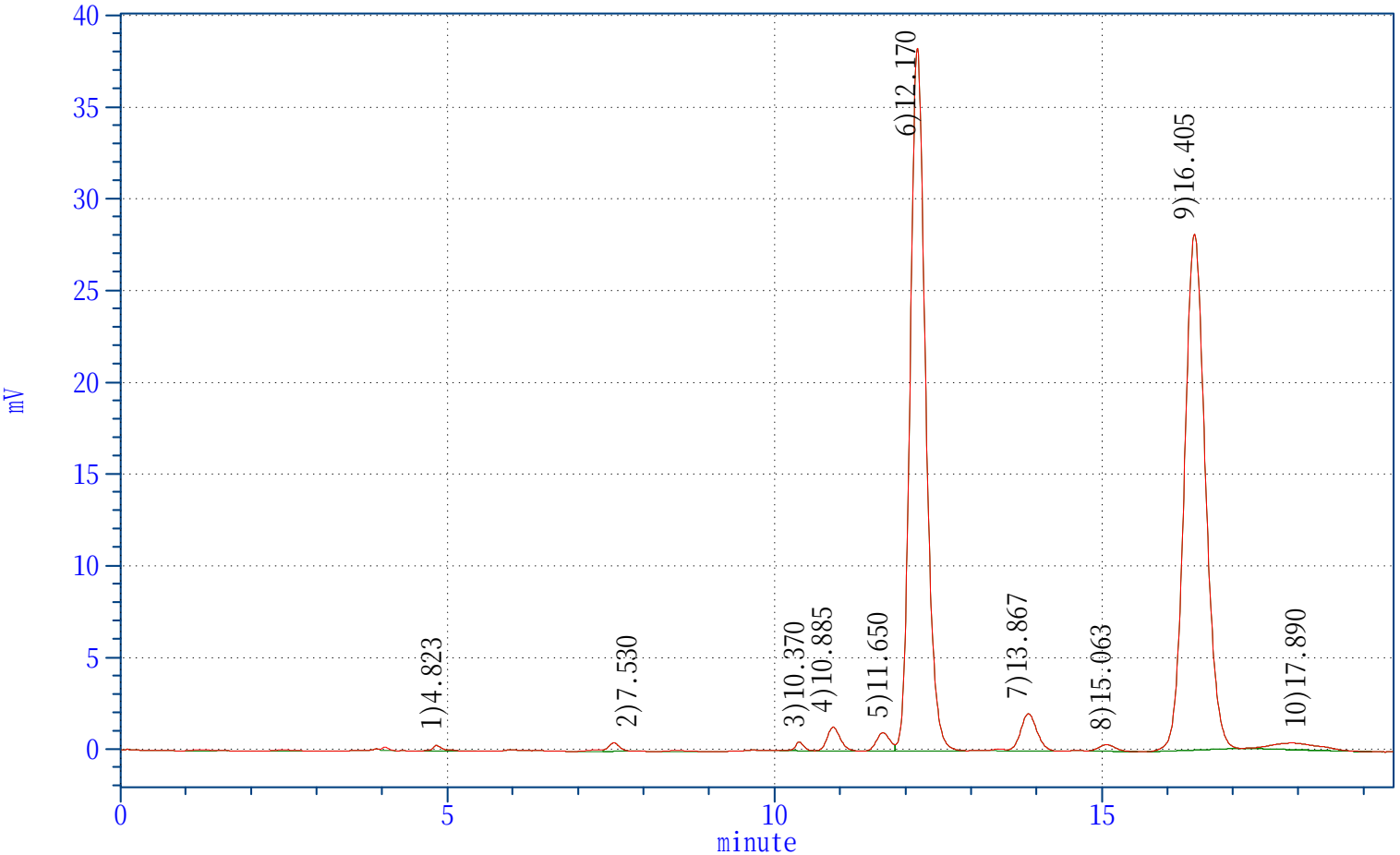


rac-**4'b**

Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:

データ処理パラメータ
アップスロープ= 5,ダウンスロープ= 5,最小ピーク幅= 10.00 sec , ベース感度= 5 points
計算範囲= 0.000 to 2000.000 min.,最小ピーク面積= 1000 uv*sec , ベースライン補正=0

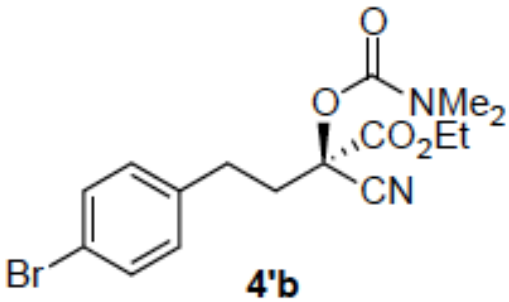
No.	R.T. (分)	面積 (uv*sec)	面積%	高さ (uv)	高さ%	濃度	濃度%	濃度単位	処理マーク	理論段数	ピーク名
1	4.823	3902	0.2877	319	0.4389	0.0000	0.0000		PP	6948	
2	7.530	5593	0.4124	470	0.6465	0.0000	0.0000		VP	0	
3	10.370	4344	0.3203	484	0.6661	0.0000	0.0000		PV	0	
4	10.885	18127	1.3367	1299	1.7867	0.0000	0.0000		VP	0	
5	11.650	14324	1.0563	1002	1.3779	0.0000	0.0000		PV	0	
6	12.170	626239	46.1794	38276	52.6498	0.0000	0.0000		VP	0	
7	13.867	35101	2.5884	2034	2.7976	0.0000	0.0000		VP	0	
8	15.063	6280	0.4631	356	0.4896	0.0000	0.0000		PP	16155	
9	16.405	623462	45.9747	28099	38.6512	0.0000	0.0000		PP	13002	
10	17.890	18727	1.3809	360	0.4956	0.0000	0.0000		PP	2191	
	合計	1356099		72699		0.0000	0.0000				



SIC-480II FOR WINDOWS TEST REPORT

ファイル名: TMT-IV-682B1.CHR
試料注入,日付:10-12-2011　時間:14:04:51

Analysis method:　　Instrument:
Column :CHIRALPAK AD-H(25)
Column Temperature (-C) :
Detector :UV, 254nm
Internal Standard :
Mobile Phase :
Flow rate(ml/Min.) :0.8　　Attenuation :
Solvent A :Hexane 10
B :IPA　1
C :EtOH　0
D :

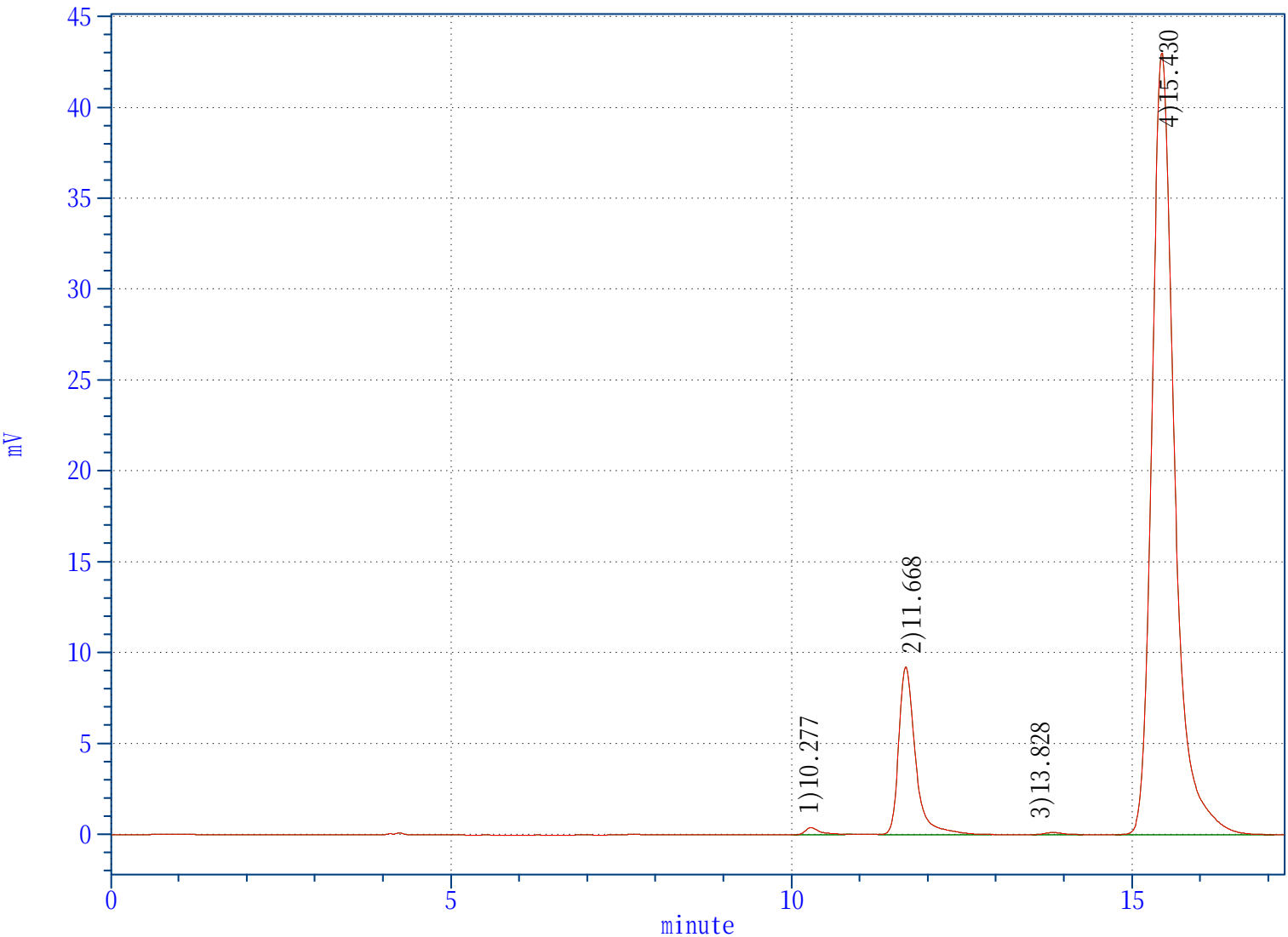


4'b
er = 87:13
Table 6 entry 2
(s.m.: er = 99:1)

Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:

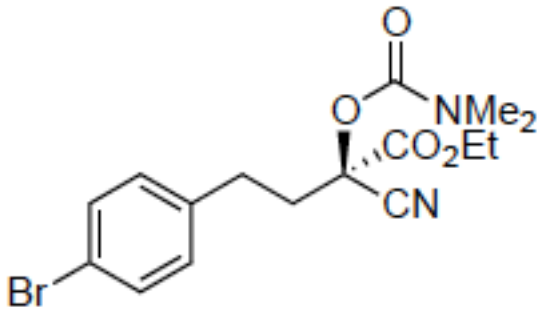
データ処理パラメータ
アップスロープ= 5,ダウンスロープ= 5,最小ピーク幅= 10.00 sec , ベース感度= 5 points
計算範囲= 0.000 to 2000.000 min.,最小ピーク面積= 1000 uv*sec , ベースライン補正=0

No.	R.T. (分)	面積 (uv*sec)	面積%	高さ (uv)	高さ%	濃度	濃度%	濃度単位	処理マーク	理論段数	ピーク名
1	10.277	5974	0.5180	396	0.7514	0.0000	0.0000		PP	14983	
2	11.668	156319	13.5549	9212	17.4715	0.0000	0.0000		PP	13078	
3	13.828	2052	0.1779	115	0.2189	0.0000	0.0000		PP	14300	
4	15.430	988880	85.7491	43003	81.5582	0.0000	0.0000		PP	11942	
	合計	1153225		52727		0.0000	0.0000				



ファイル名: TMT-IV-682D0.CHR
試料注入,日付:10-12-2011　時間:18:55:15

Analysis method:　　Instrument:
Column :CHIRALPAK AD-H(25)
Column Temperature (-C) :
Detector :UV, 254nm
Internal Standard :
Mobile Phase :
 Flow rate(ml/Min.) :0.8　　Attenuation :
Solvent A :Hexane 10
　　B :IPA　　1
　　C :EtOH　　0
　　D :

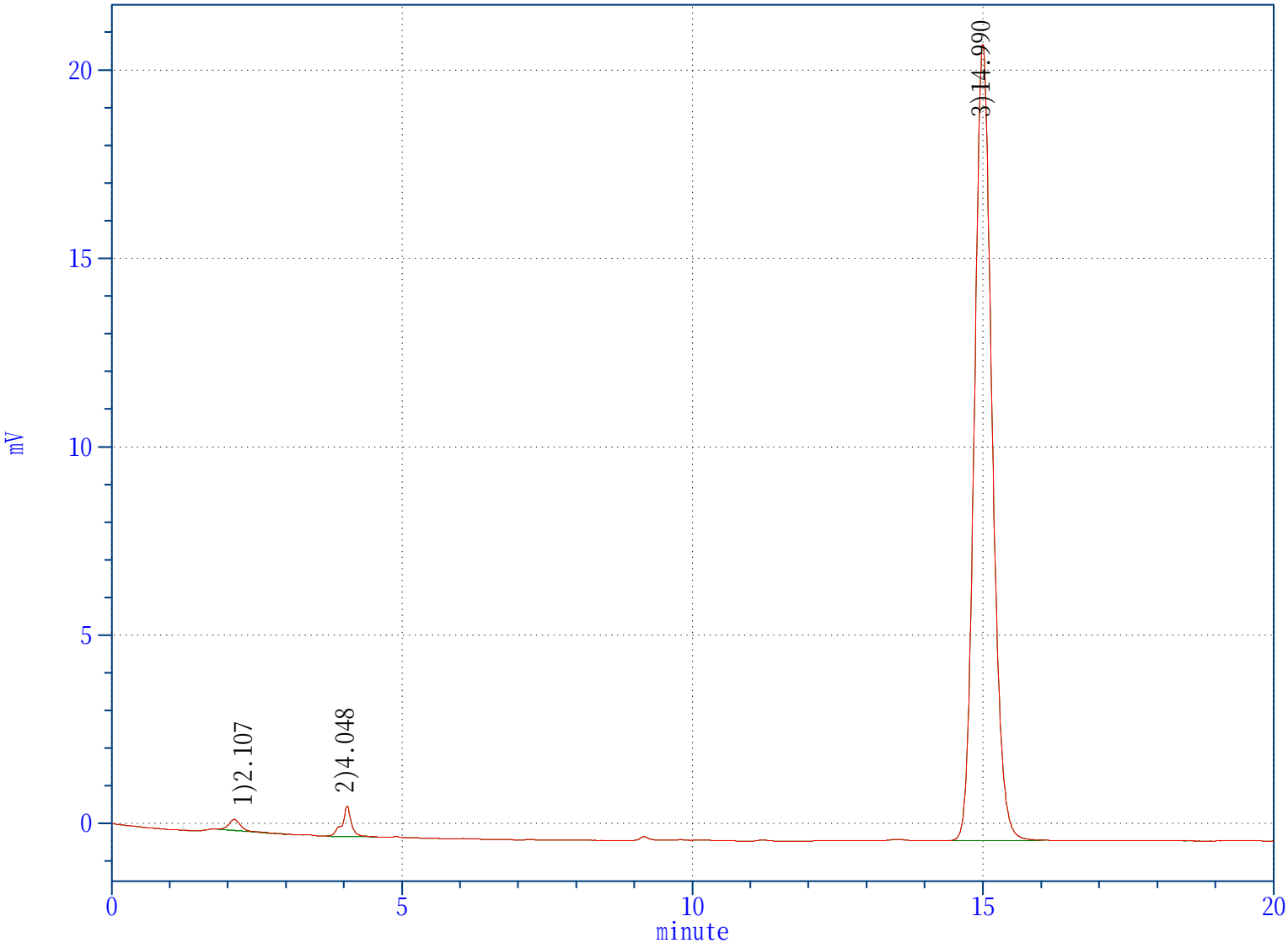


4'b
er = > 99:1

Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:

データ処理パラメータ
アップスロープ= 5,ダウンスロープ= 5,最小ピーク幅= 10.00 sec , ベース感度= 5 points
計算範囲= 0.000 to 2000.000 min.,最小ピーク面積= 1000 uv*sec , ベースライン補正=0

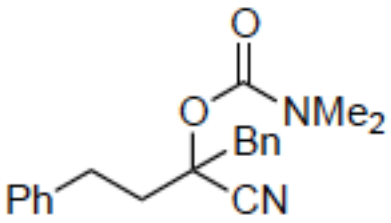
No.	R.T. (分)	面積 (uv*sec)	面積%	高さ (uv)	高さ%	濃度	濃度%	濃度単位	処理マーク	理論段数	ピーク名
1	2.107	4134	0.9013	297	1.3376	0.0000	0.0000		PP	509	
2	4.048	8882	1.9365	800	3.5998	0.0000	0.0000		PP	5563	
3	14.990	445658	97.1623	21136	95.0625	0.0000	0.0000		PP	12038	
	合計	458674		22234		0.0000	0.0000				



SIC-480II FOR WINDOWS TEST REPORT

ファイル名: TMT-IV-707B10.CHR
試料注入,日付:11-15-2011　時間:10:24:24

Analysis method:　　Instrument:
Column :CHIRALCEL IC(25)
Column Temperature (-C) :
Detector :UV, 254nm
Internal Standard :
Mobile Phase :
 Flow rate(ml/Min.) :0.9　　Attenuation :
Solvent A :Hexane 20
　　B :IPA　　1
　　C :EtOH　　1
　　D :

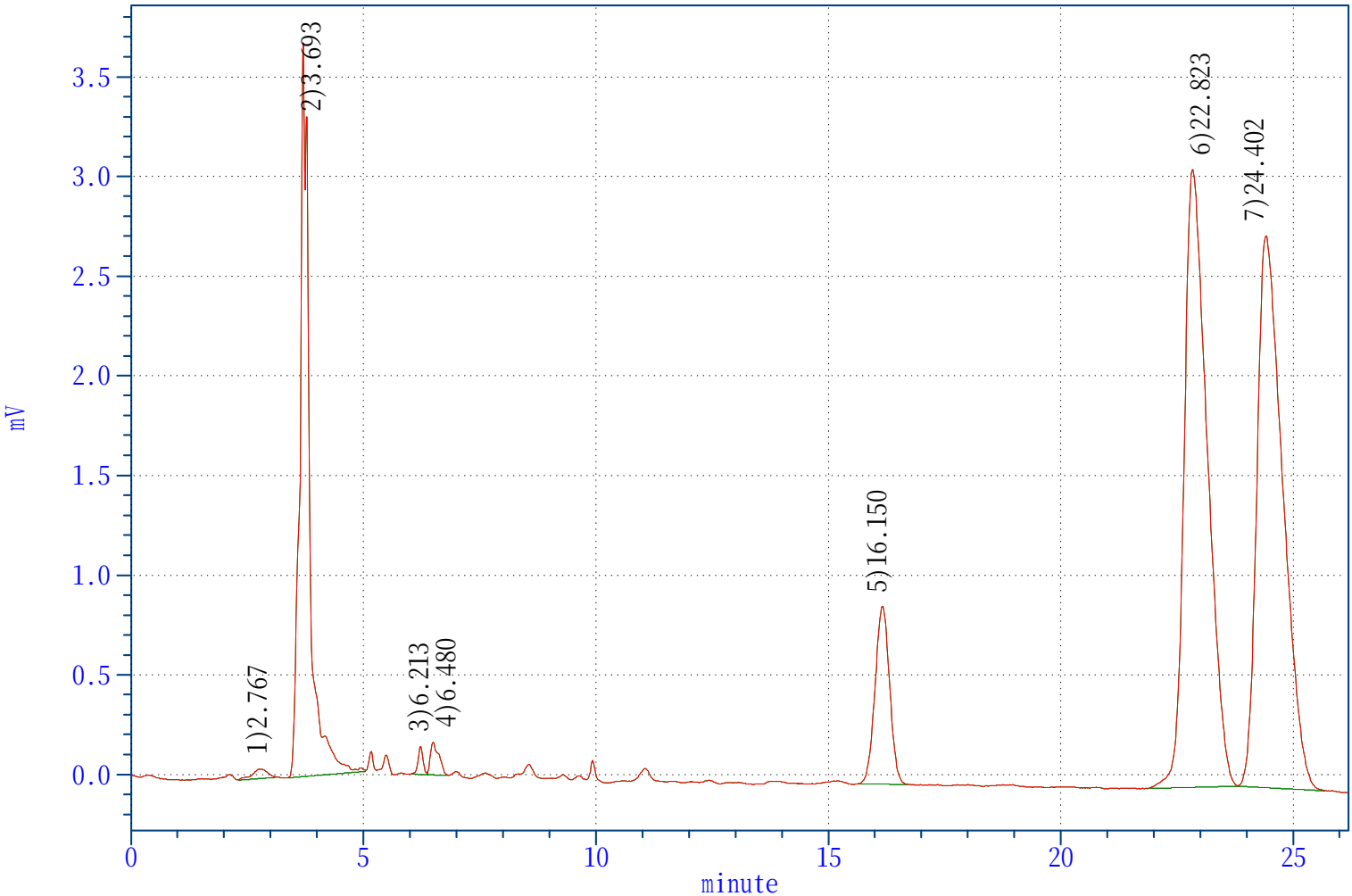


rac-**3b**

Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:

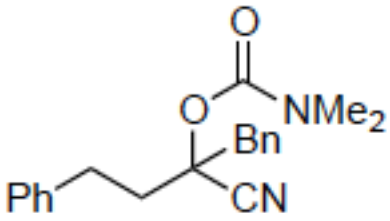
データ処理パラメータ
アップスロープ= 5,ダウンスロープ= 5,最小ピーク幅= 10.00 sec , ベース感度= 5 points
計算範囲= 0.000 to 2000.000 min.,最小ピーク面積= 1000 uv*sec , ベースライン補正=0

No.	R.T. (分)	面積 (uv*sec)	面積%	高さ (uv)	高さ%	濃度	濃度%	濃度単位	処理マーク	理論段数	ピーク名
1	2.767	1054	0.3634	48	0.4431	0.0000	0.0000		PP	394	
2	3.693	52477	18.0918	3681	34.1089	0.0000	0.0000		PV	0	
3	6.213	1013	0.3492	141	1.3091	0.0000	0.0000		PV	0	
4	6.480	2086	0.7192	165	1.5298	0.0000	0.0000		VP	0	
5	16.150	19341	6.6679	890	8.2432	0.0000	0.0000		PP	12556	
6	22.823	107132	36.9344	3098	28.7060	0.0000	0.0000		PP	10035	
7	24.402	106957	36.8741	2769	25.6599	0.0000	0.0000		PP	8950	
	合計	290060		10791		0.0000	0.0000				



ファイル名: TMT-IV-707B11.CHR
試料注入,日付:11-15-2011　時間:10:58:42

Analysis method:　　Instrument:
Column :CHIRALCEL IC(25)
Column Temperature (-C) :
Detector :UV, 254nm
Internal Standard :
Mobile Phase :
Flow rate(ml/Min.) :0.9　　Attenuation :
Solvent A :Hexane 20
B :IPA　1
C :EtOH　1
D :

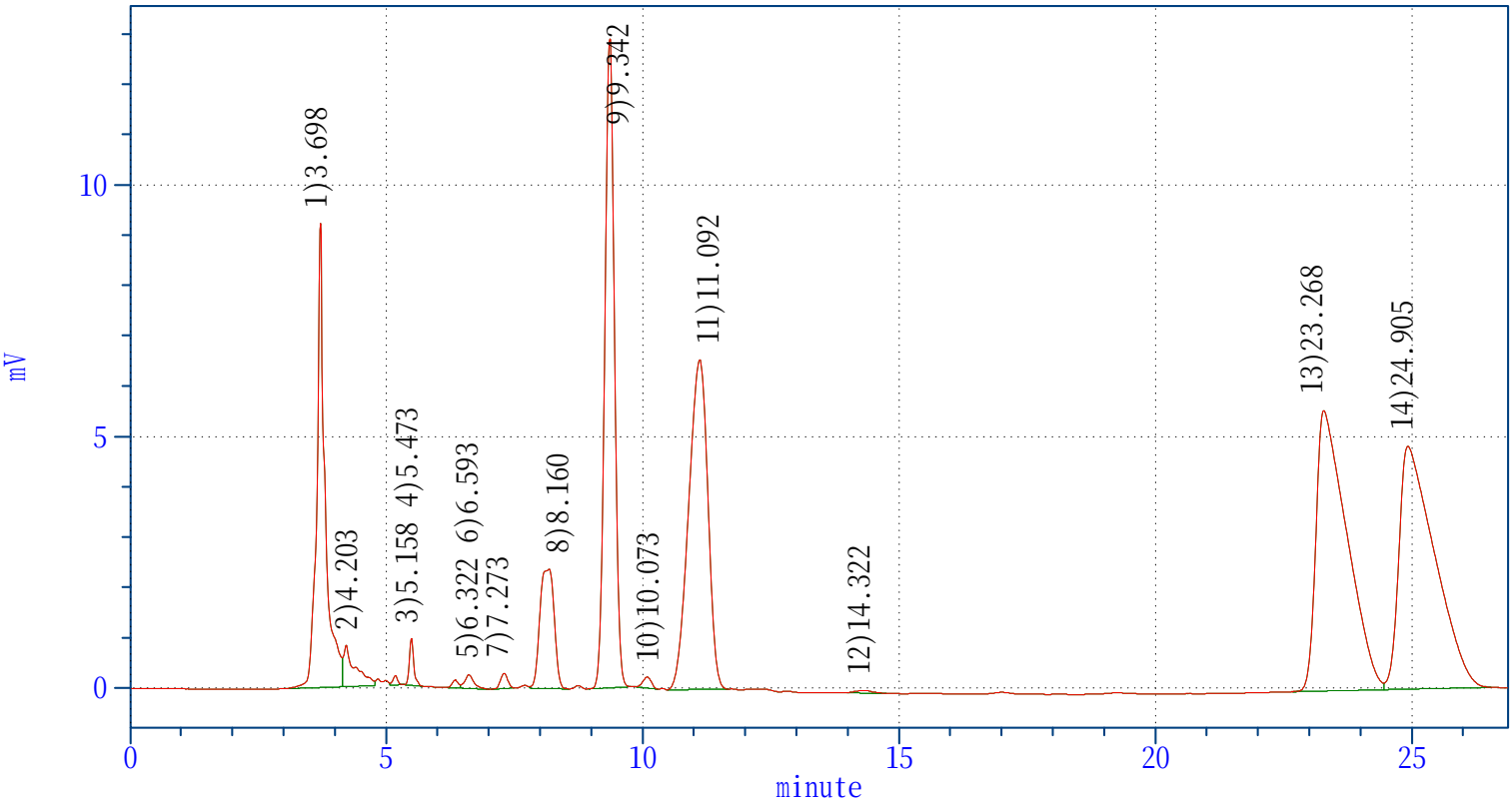


3b
er = 50:50
Table 6 entry 3
(s.m.: er = 96:4)

Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:

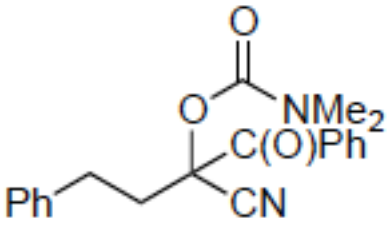
データ処理パラメータ
アップスロープ= 5,ダウンスロープ= 5,最小ピーク幅= 10.00 sec , ベース感度= 5 points
計算範囲= 0.000 to 2000.000 min.,最小ピーク面積= 1000 uv*sec , ベースライン補正=0

No.	R.T. (分)	面積 (uv*sec)	面積%	高さ (uv)	高さ%	濃度	濃度%	濃度単位	処理マーク	理論段数	ピーク名
1	3.698	102405	10.3943	9219	20.7694	0.0000	0.0000		PV	0	
2	4.203	13346	1.3546	819	1.8441	0.0000	0.0000		VV	0	
3	5.158	1151	0.1168	182	0.4096	0.0000	0.0000		VP	0	
4	5.473	5594	0.5678	931	2.0979	0.0000	0.0000		PP	22387	
5	6.322	1309	0.1329	158	0.3554	0.0000	0.0000		PV	0	
6	6.593	3454	0.3506	277	0.6235	0.0000	0.0000		VP	0	
7	7.273	2976	0.3021	307	0.6914	0.0000	0.0000		PP	12540	
8	8.160	45932	4.6622	2373	5.3459	0.0000	0.0000		VP	0	
9	9.342	167806	17.0326	12902	29.0661	0.0000	0.0000		PP	11847	
10	10.073	2526	0.2564	220	0.4961	0.0000	0.0000		PP	16837	
11	11.092	170592	17.3153	6545	14.7454	0.0000	0.0000		PP	3946	
12	14.322	1175	0.1193	49	0.1108	0.0000	0.0000		PP	7158	
13	23.268	233513	23.7019	5574	12.5581	0.0000	0.0000		PV	0	
14	24.905	233428	23.6933	4832	10.8865	0.0000	0.0000		VP	0	
	合計	985207		44389		0.0000	0.0000				



ファイル名: TMT-IV-684B8.CHR
試料注入,日付:10-14-2011　時間:21:36:43

Analysis method:　　Instrument:
Column :CHIRALPAK AY-H(25)
Column Temperature (-C) :
Detector :UV, 254nm
Internal Standard :
Mobile Phase :
Flow rate(ml/Min.) :0.6　　Attenuation :
Solvent A :Hexane 10
B :IPA　2
C :EtOH　1
D :

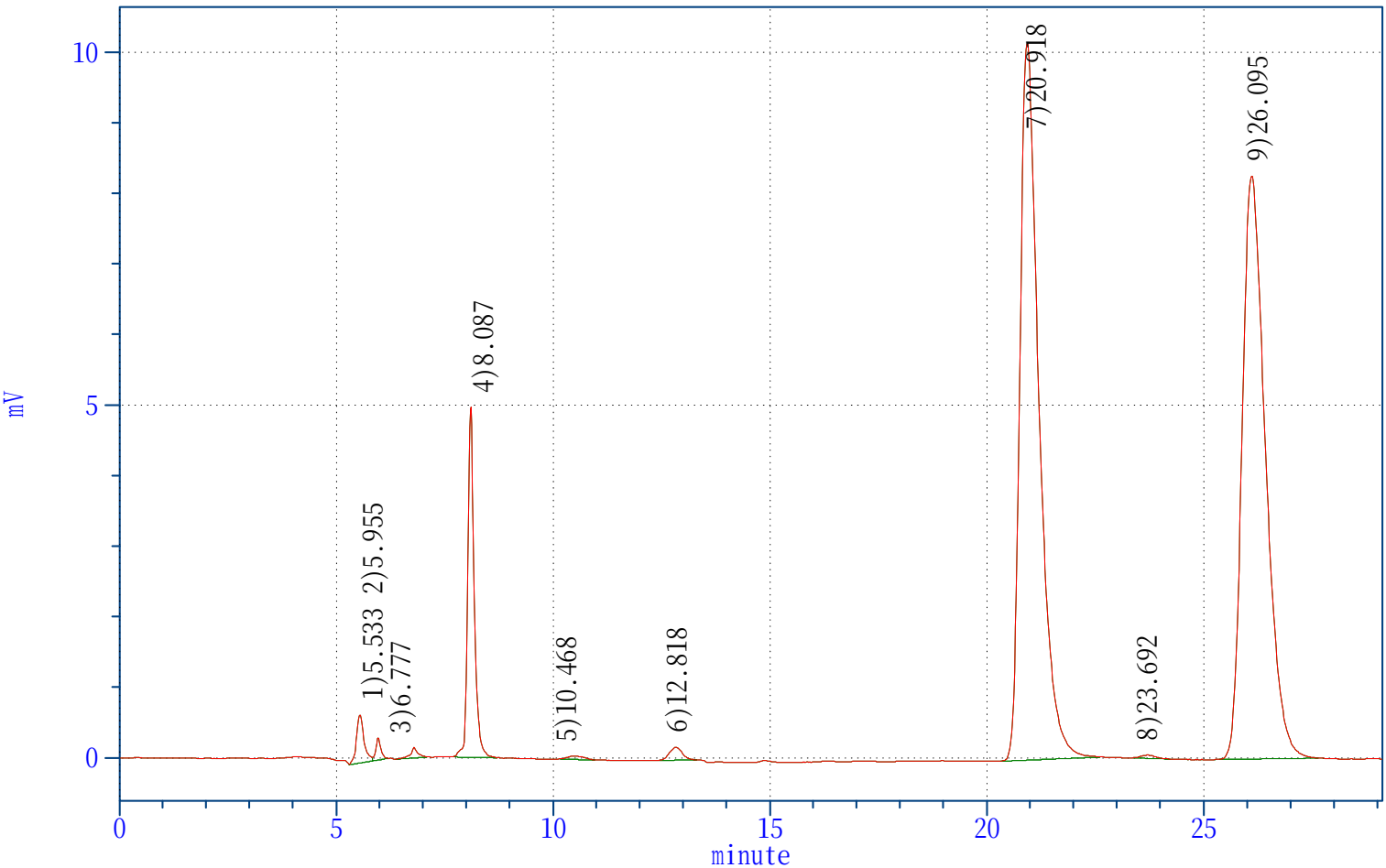


rac-**5b**

Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:

データ処理パラメータ
アップスロープ= 5,ダウンスロープ= 5,最小ピーク幅= 10.00 sec , ベース感度= 5 points
計算範囲= 0.000 to 2000.000 min.,最小ピーク面積= 1000 uv*sec , ベースライン補正=0

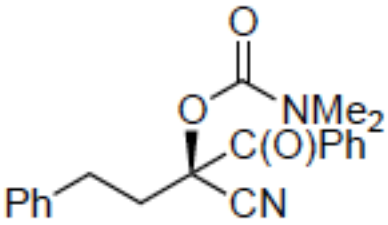
No.	R.T. (分)	面積 (uv*sec)	面積%	高さ (uv)	高さ%	濃度	濃度%	濃度単位	処理マーク	理論段数	ピーク名
1	5.533	8147	1.1808	682	2.7469	0.0000	0.0000		PV	0	
2	5.955	2583	0.3744	311	1.2540	0.0000	0.0000		VP	0	
3	6.777	1761	0.2552	149	0.5992	0.0000	0.0000		PP	13712	
4	8.087	51461	7.4587	4963	20.0017	0.0000	0.0000		PP	16677	
5	10.468	1281	0.1857	47	0.1897	0.0000	0.0000		PP	2904	
6	12.818	3725	0.5399	183	0.7385	0.0000	0.0000		PP	9114	
7	20.918	310563	45.0128	10167	40.9735	0.0000	0.0000		PP	11827	
8	23.692	1098	0.1591	47	0.1900	0.0000	0.0000		PP	21838	
9	26.095	309324	44.8333	8264	33.3066	0.0000	0.0000		PP	11483	
	合計	689943		24812		0.0000	0.0000				



SIC-480II FOR WINDOWS TEST REPORT

ファイル名: TMT-IV-688B.CHR
試料注入,日付:10-14-2011　時間:22:09:33

Analysis method:　　Instrument:
Column :CHIRALPAK AY-H(25)
Column Temperature (-C) :
Detector :UV, 254nm
Internal Standard :
Mobile Phase :
Flow rate(ml/Min.) :0.6　　Attenuation :
Solvent A :Hexane 10
B :IPA　2
C :EtOH　1
D :

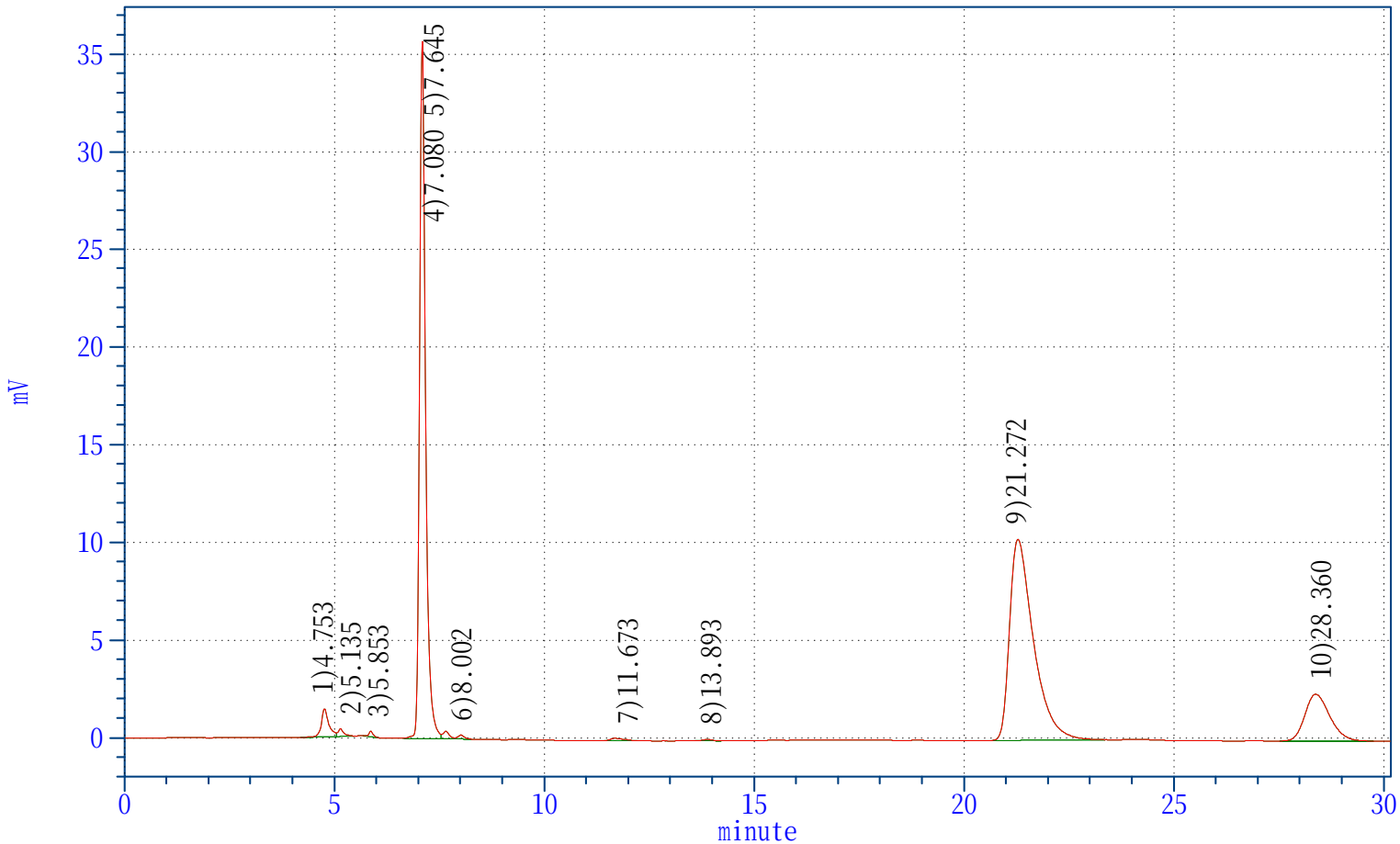


5b
er = 81:19
Table 6 entry 5
(s.m.: er = 96:4)

Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:

データ処理パラメータ
アップスロープ= 5,ダウンスロープ= 5,最小ピーク幅= 10.00 sec , ベース感度= 5 points
計算範囲= 0.000 to 2000.000 min.,最小ピーク面積= 1000 uv*sec , ベースライン補正=0

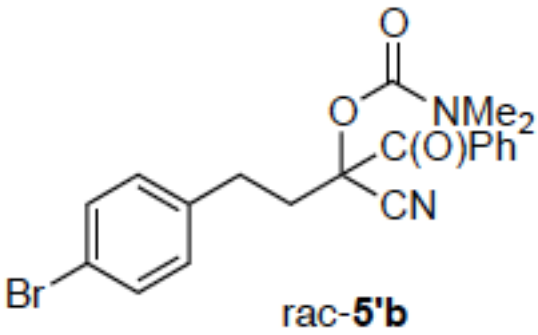
No.	R.T. (分)	面積 (uv*sec)	面積%	高さ (uv)	高さ%	濃度	濃度%	濃度単位	処理マーク	理論段数	ピーク名
1	4.753	17821	1.9897	1436	2.8021	0.0000	0.0000		PV	0	
2	5.135	3858	0.4307	391	0.7628	0.0000	0.0000		VP	0	
3	5.853	1943	0.2169	278	0.5426	0.0000	0.0000		PP	18542	
4	7.080	355792	39.7236	35666	69.5941	0.0000	0.0000		PV	0	
5	7.645	4185	0.4672	383	0.7470	0.0000	0.0000		VV	0	
6	8.002	2137	0.2386	197	0.3839	0.0000	0.0000		VP	0	
7	11.673	2621	0.2926	123	0.2396	0.0000	0.0000		PP	5923	
8	13.893	1231	0.1374	76	0.1480	0.0000	0.0000		PP	16216	
9	21.272	406425	45.3767	10294	20.0870	0.0000	0.0000		PP	7387	
10	28.360	99655	11.1263	2405	4.6931	0.0000	0.0000		PP	11010	
	合計	895668		51249		0.0000	0.0000				



SIC 480II FOR WINDOWS TEST REPORT

ファイル名: TMT-IV-711B-2.CHR
試料注入,日付:11-17-2011　時間:22:36:35

Analysis method:　　Instrument:
Column :CHIRALPAK AD-H(25)
Column Temperature (-C) :
Detector :UV, 254nm
Internal Standard :
Mobile Phase :
 Flow rate(ml/Min.) :0.6　　Attenuation :
Solvent A :Hexane 5
　　B :IPA　　1
　　C :EtOH　　0
　　D :

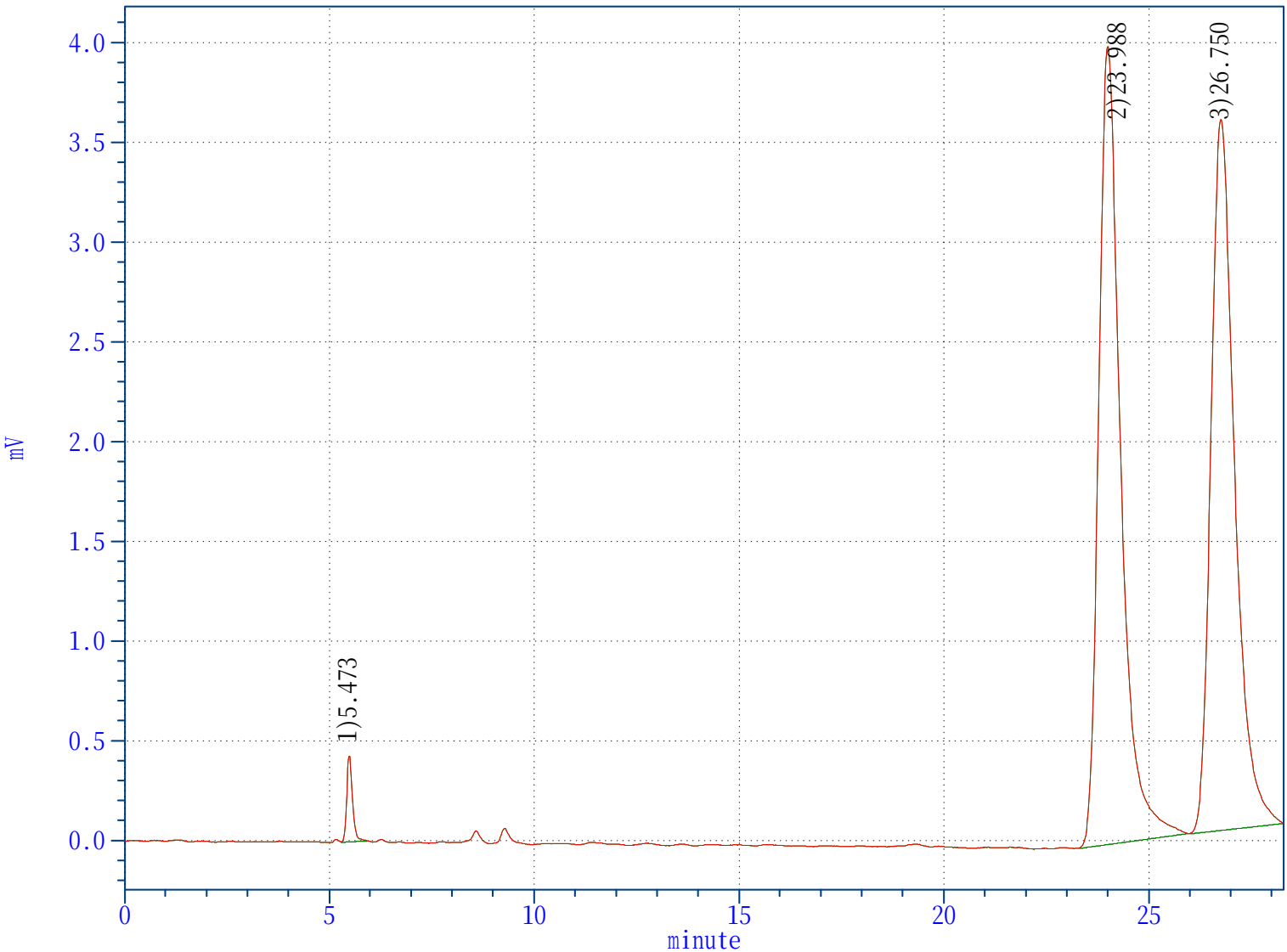


rac-**5'b**

Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:

データ処理パラメータ
アップスロープ= 5,ダウンスロープ= 5,最小ピーク幅= 10.00 sec , ベース感度= 5 points
計算範囲= 0.000 to 2000.000 min.,最小ピーク面積= 1000 uv*sec , ベースライン補正=0

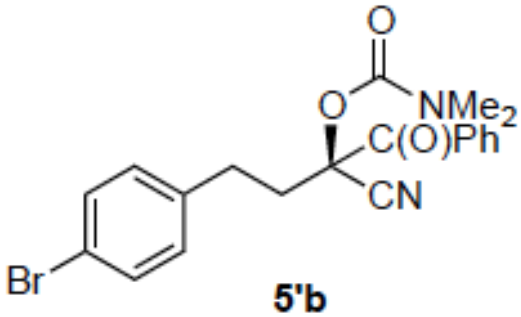
No.	R.T. (分)	面積 (uv*sec)	面積%	高さ (uv)	高さ%	濃度	濃度%	濃度単位	処理マーク	理論段数	ピーク名
1	5.473	4210	1.4215	430	5.3750	0.0000	0.0000		PP	7909	
2	23.988	148926	50.2863	3999	50.0410	0.0000	0.0000		PP	11014	
3	26.750	143020	48.2921	3563	44.5840	0.0000	0.0000		PP	11136	
	合計	296156		7992		0.0000	0.0000				



ファイル名: A201111172305(0).CHR
試料注入,日付:11-17-2011　時間:23:05:42

Analysis method:　　Instrument:
Column :CHIRALPAK AD-H(25)
Column Temperature (-C) :
Detector :UV, 254nm
Internal Standard :
Mobile Phase :
Flow rate(ml/Min.) :0.6　　Attenuation :
Solvent A :Hexane 5
B :IPA　1
C :EtOH　0
D :

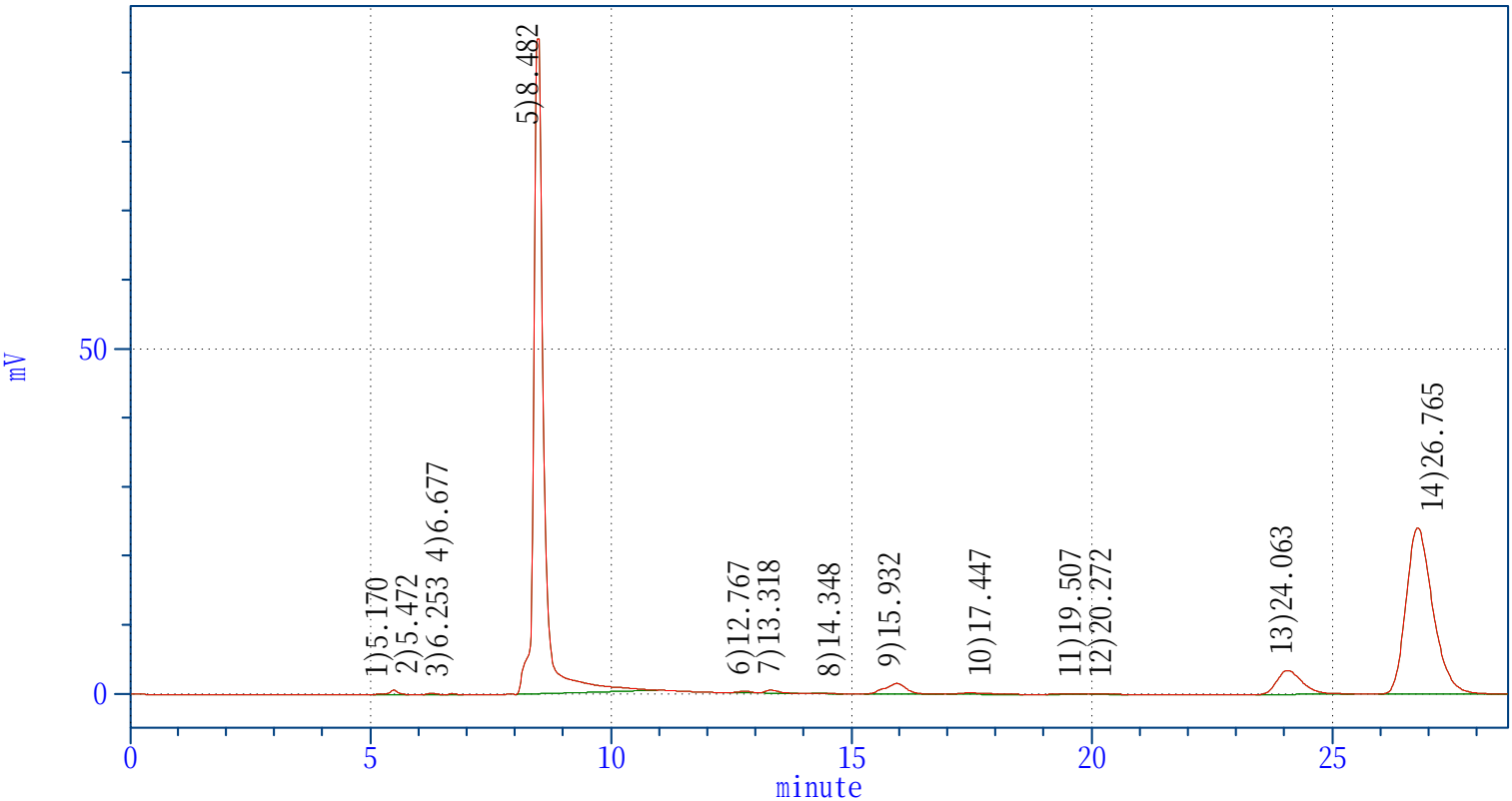
Time :　Flow :　(%A):　(%B):　(%C):　(%D):　Curve:
Time :　Flow :　(%A):　(%B):　(%C):　(%D):　Curve:
Time :　Flow :　(%A):　(%B):　(%C):　(%D):　Curve:
Time :　Flow :　(%A):　(%B):　(%C):　(%D):　Curve:
Time :　Flow :　(%A):　(%B):　(%C):　(%D):　Curve:



5'b
er = 88:12
Table 6 entry 6
(s.m.: er = 99:1)

データ処理パラメータ
アップスロープ= 5,ダウンスロープ= 5,最小ピーク幅= 10.00 sec , ベース感度= 5 points
計算範囲= 0.000 to 2000.000 min.,最小ピーク面積= 1000 uv*sec , ベースライン補正=0

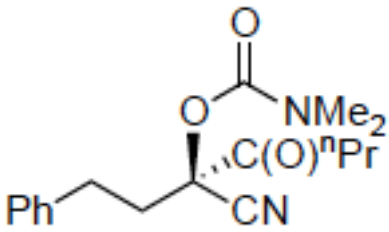
No.	R.T. (分)	面積 (uv*sec)	面積%	高さ (uv)	高さ%	濃度	濃度%	濃度単位	処理マーク	理論段数	ピーク名
1	5.170	1260	0.0500	137	0.1085	0.0000	0.0000		PV	0	
2	5.472	7719	0.3062	666	0.5268	0.0000	0.0000		VP	0	
3	6.253	2080	0.0825	181	0.1433	0.0000	0.0000		PP	6320	
4	6.677	1209	0.0480	151	0.1197	0.0000	0.0000		PP	16285	
5	8.482	1367477	54.2470	94964	75.1436	0.0000	0.0000		PP	11881	
6	12.767	4201	0.1667	220	0.1738	0.0000	0.0000		PV	0	
7	13.318	8223	0.3262	430	0.3399	0.0000	0.0000		VP	0	
8	14.348	1471	0.0584	75	0.0593	0.0000	0.0000		PP	11568	
9	15.932	48243	1.9138	1564	1.2379	0.0000	0.0000		PP	5978	
10	17.447	9459	0.3752	222	0.1760	0.0000	0.0000		PP	4017	
11	19.507	2047	0.0812	87	0.0690	0.0000	0.0000		PP	14823	
12	20.272	1589	0.0630	71	0.0558	0.0000	0.0000		PP	16340	
13	24.063	127915	5.0743	3490	2.7615	0.0000	0.0000		PP	10486	
14	26.765	937942	37.2076	24119	19.0848	0.0000	0.0000		PP	11421	
	合計	2520835		126377		0.0000	0.0000				



SIC 480II FOR WINDOWS TEST REPORT

ファイル名: TMT-IV-695F0.CHR
試料注入,日付:10-31-2011　時間:13:29:50

Analysis method:　　Instrument:
Column :CHIRALCEL AD-H(25)
Column Temperature (-C) :
Detector :UV, 254nm
Internal Standard :
Mobile Phase :
 Flow rate(ml/Min.) :0.8　　Attenuation :
Solvent A :Hexane 10
　　B :IPA　　1
　　C :EtOH　　0
　　D :

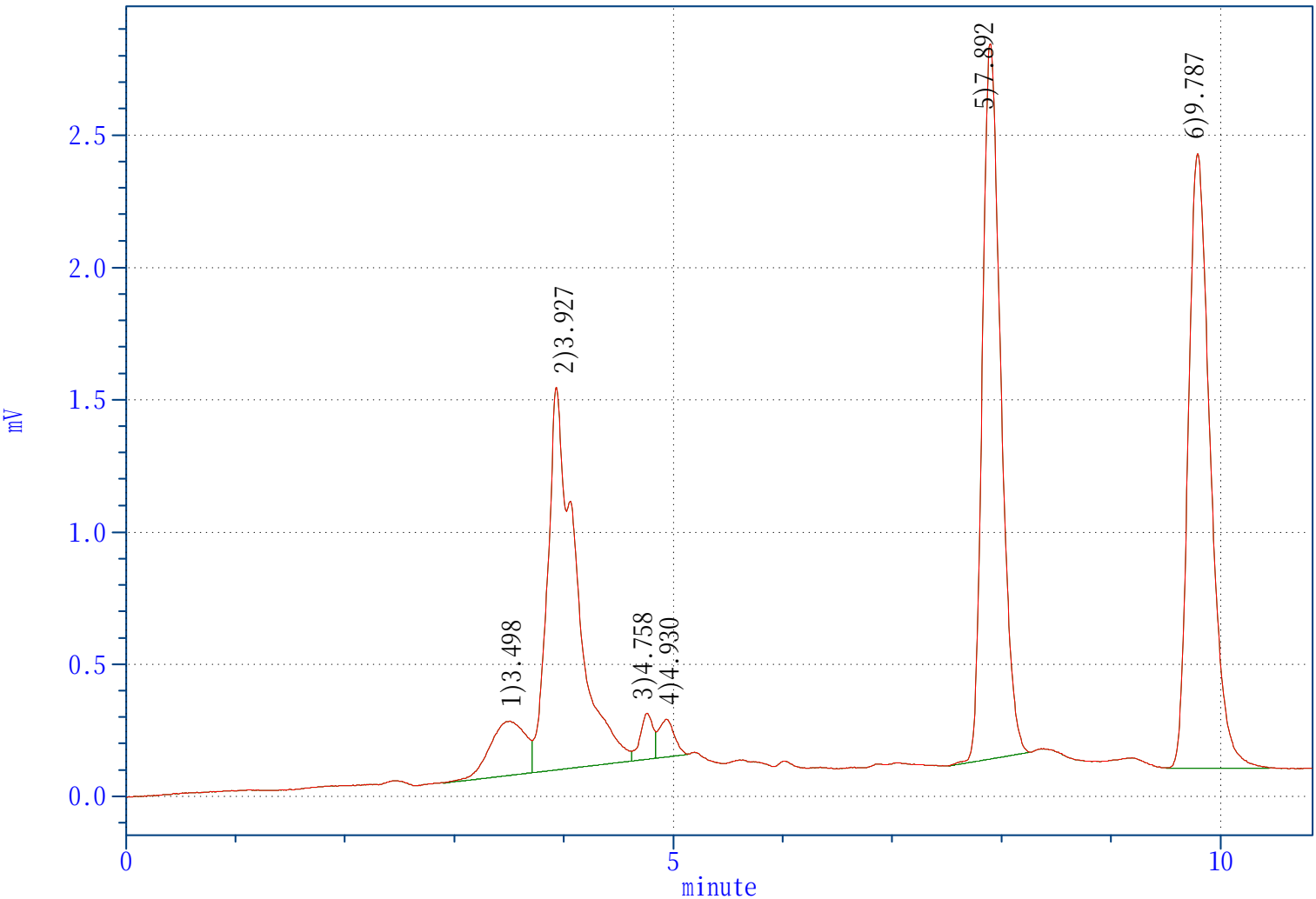


rac-**6b**

Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:

データ処理パラメータ
アップスロープ= 5,ダウンスロープ= 5,最小ピーク幅= 10.00 sec , ベース感度= 5 points
計算範囲= 0.000 to 2000.000 min.,最小ピーク面積= 1000 uv*sec , ベースライン補正=0

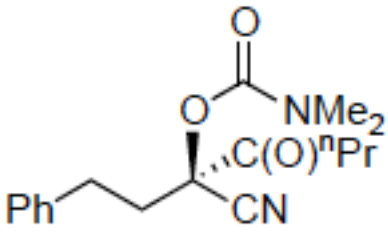
No.	R.T. (分)	面積 (uv*sec)	面積%	高さ (uv)	高さ%	濃度	濃度%	濃度単位	処理マーク	理論段数	ピーク名
1	3.498	4631	4.7354	205	2.9341	0.0000	0.0000		PV	0	
2	3.927	26316	26.9091	1446	20.6702	0.0000	0.0000		VV	0	
3	4.758	1436	1.4684	173	2.4738	0.0000	0.0000		VV	0	
4	4.930	1424	1.4561	143	2.0491	0.0000	0.0000		VP	0	
5	7.892	31570	32.2815	2704	38.6559	0.0000	0.0000		PP	10659	
6	9.787	32419	33.1496	2324	33.2169	0.0000	0.0000		PP	11885	
	合計	97796		6995		0.0000	0.0000				



SIC 480II FOR WINDOWS TEST REPORT

ファイル名: TMT-IV-699D.CHR
試料注入,日付:11-14-2011　時間:16:01:49

Analysis method:　　Instrument:
Column :CHIRALCEL AD-H(25)
Column Temperature (-C) :
Detector :UV, 254nm
Internal Standard :
Mobile Phase :
Flow rate(ml/Min.) :0.8　　Attenuation :
Solvent A :Hexane 10
B :IPA　1
C :EtOH　0
D :

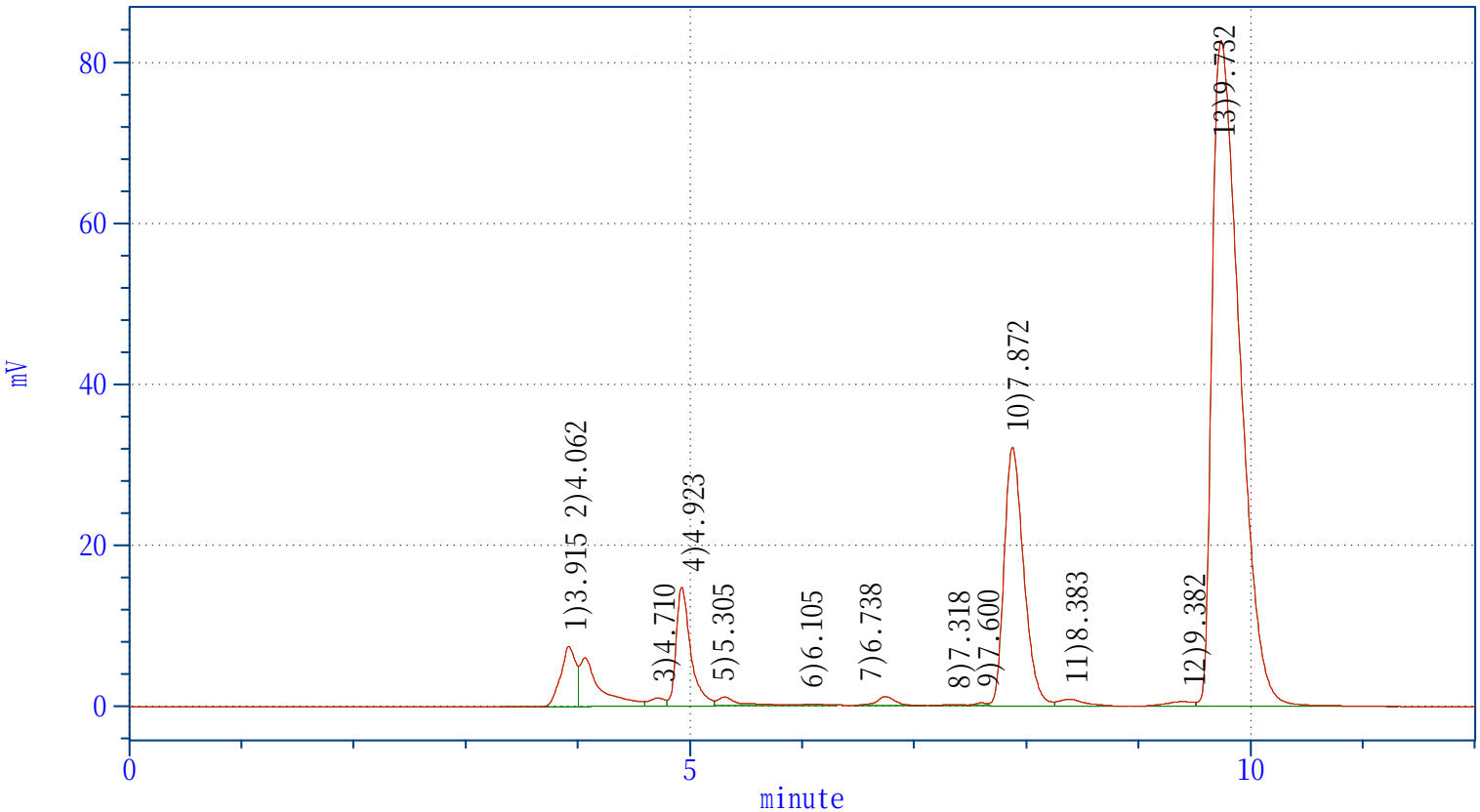


6b
er = 79:21
Table 6 entry 7
(s.m.: er = 96:4)

Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:

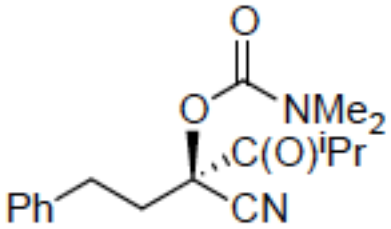
データ処理パラメータ
アップスロープ= 5,ダウンスロープ= 5,最小ピーク幅= 10.00 sec , ベース感度= 5 points
計算範囲= 0.000 to 2000.000 min.,最小ピーク面積= 1000 uv*sec , ベースライン補正=0

No.	R.T. (分)	面積 (uv*sec)	面積%	高さ (uv)	高さ%	濃度	濃度%	濃度単位	処理マーク	理論段数	ピーク名
1	3.915	70060	3.2665	7455	5.0262	0.0000	0.0000		PV	0	
2	4.062	76262	3.5556	6041	4.0730	0.0000	0.0000		VV	0	
3	4.710	9989	0.4657	1001	0.6748	0.0000	0.0000		VV	0	
4	4.923	132937	6.1981	14748	9.9426	0.0000	0.0000		VV	0	
5	5.305	14703	0.6855	1089	0.7345	0.0000	0.0000		VV	0	
6	6.105	1849	0.0862	155	0.1042	0.0000	0.0000		VP	0	
7	6.738	12675	0.5910	1125	0.7585	0.0000	0.0000		PP	10130	
8	7.318	1509	0.0704	123	0.0829	0.0000	0.0000		PV	0	
9	7.600	2601	0.1213	346	0.2333	0.0000	0.0000		VV	0	
10	7.872	389145	18.1435	32083	21.6304	0.0000	0.0000		VV	0	
11	8.383	14128	0.6587	846	0.5702	0.0000	0.0000		VP	0	
12	9.382	9858	0.4596	574	0.3871	0.0000	0.0000		PV	0	
13	9.732	1409102	65.6980	82740	55.7823	0.0000	0.0000		VP	0	
	合計	2144818		148326		0.0000	0.0000				



ファイル名: TMT-IV-693B.CHR
試料注入,日付:11-14-2011　時間:15:34:46

Analysis method:　　Instrument:
Column :CHIRALCEL AD-H(25)
Column Temperature (-C) :
Detector :UV, 254nm
Internal Standard :
Mobile Phase :
Flow rate(ml/Min.) :0.8　　Attenuation :
Solvent A :Hexane 10
B :IPA　1
C :EtOH　0
D :

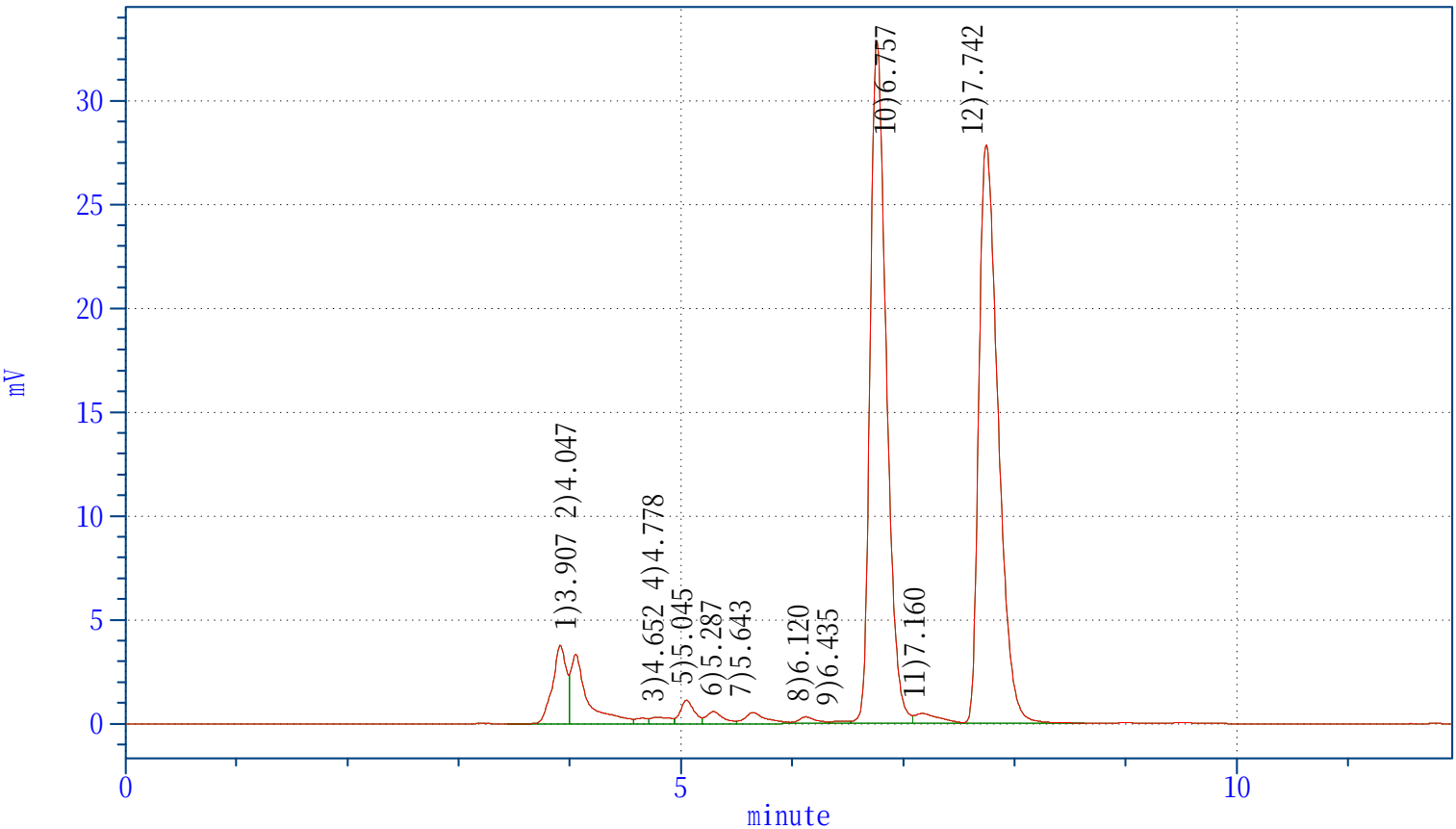


rac-7b

Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:

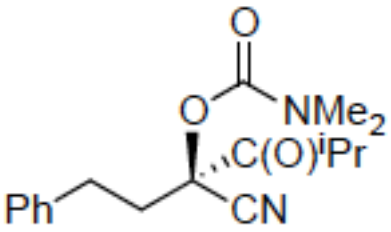
データ処理パラメータ
アップスロープ= 5,ダウンスロープ= 5,最小ピーク幅= 10.00 sec , ベース感度= 5 points
計算範囲= 0.000 to 2000.000 min.,最小ピーク面積= 1000 uv*sec , ベースライン補正=0

No.	R.T. (分)	面積 (uv*sec)	面積%	高さ (uv)	高さ%	濃度	濃度%	濃度単位	処理マーク	理論段数	ピーク名
1	3.907	32224	4.1594	3777	5.2756	0.0000	0.0000		PV	0	
2	4.047	36431	4.7025	3339	4.6640	0.0000	0.0000		VV	0	
3	4.652	2052	0.2649	268	0.3747	0.0000	0.0000		VV	0	
4	4.778	3786	0.4887	325	0.4538	0.0000	0.0000		VV	0	
5	5.045	9946	1.2838	1125	1.5716	0.0000	0.0000		VV	0	
6	5.287	6077	0.7844	579	0.8083	0.0000	0.0000		VV	0	
7	5.643	7187	0.9277	540	0.7549	0.0000	0.0000		VV	0	
8	6.120	3587	0.4630	322	0.4499	0.0000	0.0000		VV	0	
9	6.435	1157	0.1493	123	0.1712	0.0000	0.0000		VV	0	
10	6.757	330390	42.6462	32857	45.8971	0.0000	0.0000		VV	0	
11	7.160	7375	0.9520	480	0.6705	0.0000	0.0000		VV	0	
12	7.742	334511	43.1781	27854	38.9083	0.0000	0.0000		VP	0	
	合計	774723		71589		0.0000	0.0000				



ファイル名: TMT-IV-697B.CHR
試料注入,日付:11-14-2011　時間:15:48:49

Analysis method:　　Instrument:
Column :CHIRALCEL AD-H(25)
Column Temperature (-C) :
Detector :UV, 254nm
Internal Standard :
Mobile Phase :
Flow rate(ml/Min.) :0.8　　Attenuation :
Solvent A :Hexane 10
B :IPA　1
C :EtOH　0
D :

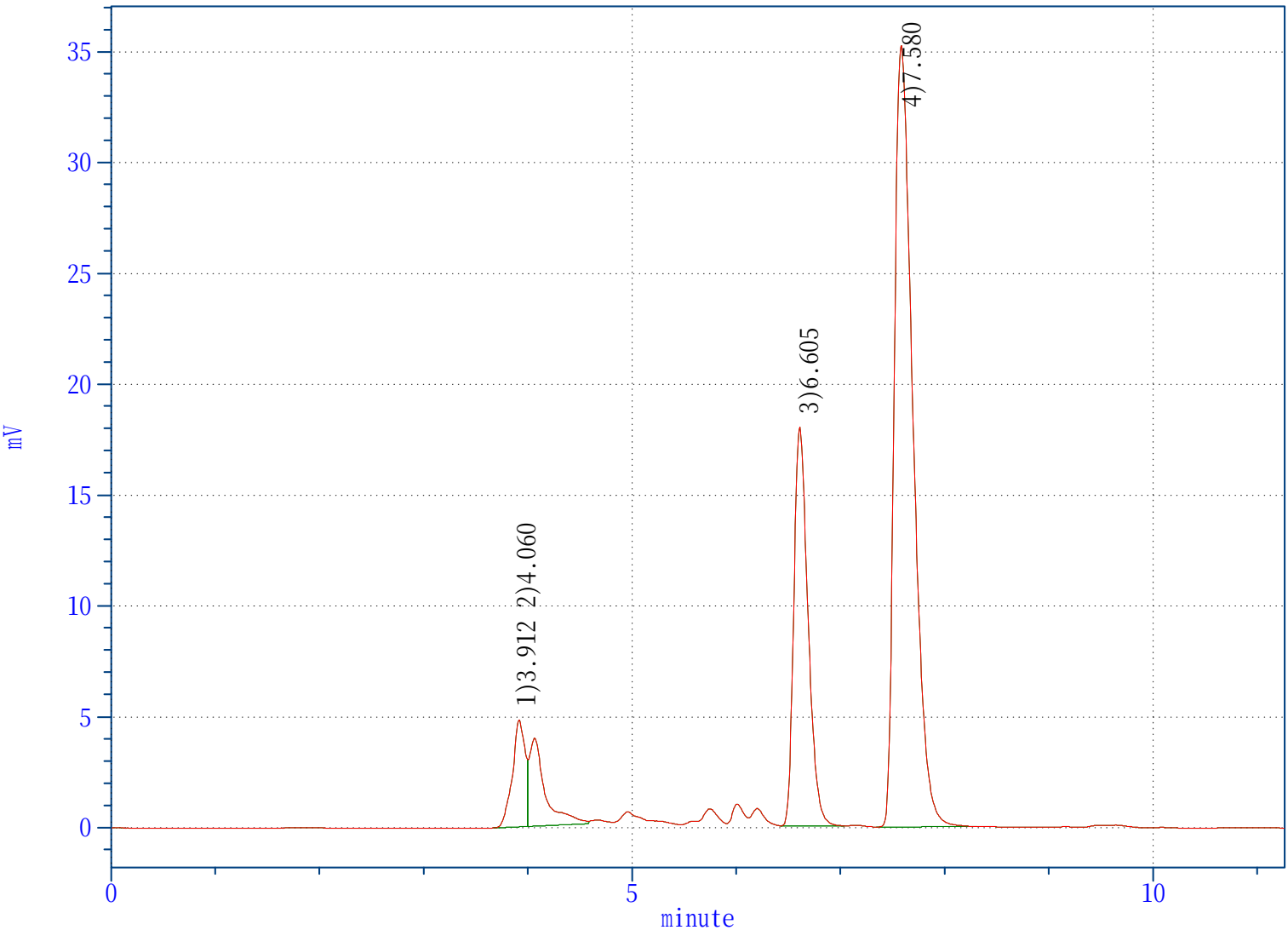


7b
er = 72:28
Table 6 entry 8
(s.m.: er = 96:4)

Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:

データ処理パラメータ
アップスロープ= 5,ダウンスロープ= 5,最小ピーク幅= 10.00 sec , ベース感度= 5 points
計算範囲= 0.000 to 2000.000 min.,最小ピーク面積= 10000 uv*sec , ベースライン補正=0

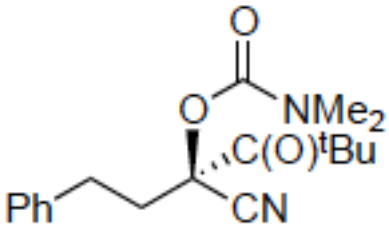
No.	R.T. (分)	面積 (uv*sec)	面積%	高さ (uv)	高さ%	濃度	濃度%	濃度単位	処理マーク	理論段数	ピーク名
1	3.912	41328	6.0008	4812	7.7600	0.0000	0.0000		PV	0	
2	4.060	42319	6.1447	3975	6.4102	0.0000	0.0000		VV	0	
3	6.605	169484	24.6089	17981	28.9942	0.0000	0.0000		PP	11567	
4	7.580	435578	63.2456	35247	56.8356	0.0000	0.0000		PP	8718	
	合計	688709		62015		0.0000	0.0000				



SIC-480II FOR WINDOWS TEST REPORT

ファイル名: TMT-IV-692B2.CHR
試料注入,日付:10-20-2011　時間:20:25:51

Analysis method:　　Instrument:
Column :CHIRALPAK AD-H(25)
Column Temperature (-C) :
Detector :UV, 254nm
Internal Standard :
Mobile Phase :
Flow rate(ml/Min.) :0.8　　Attenuation :
Solvent A :Hexane 10
B :IPA　1
C :EtOH　0
D :

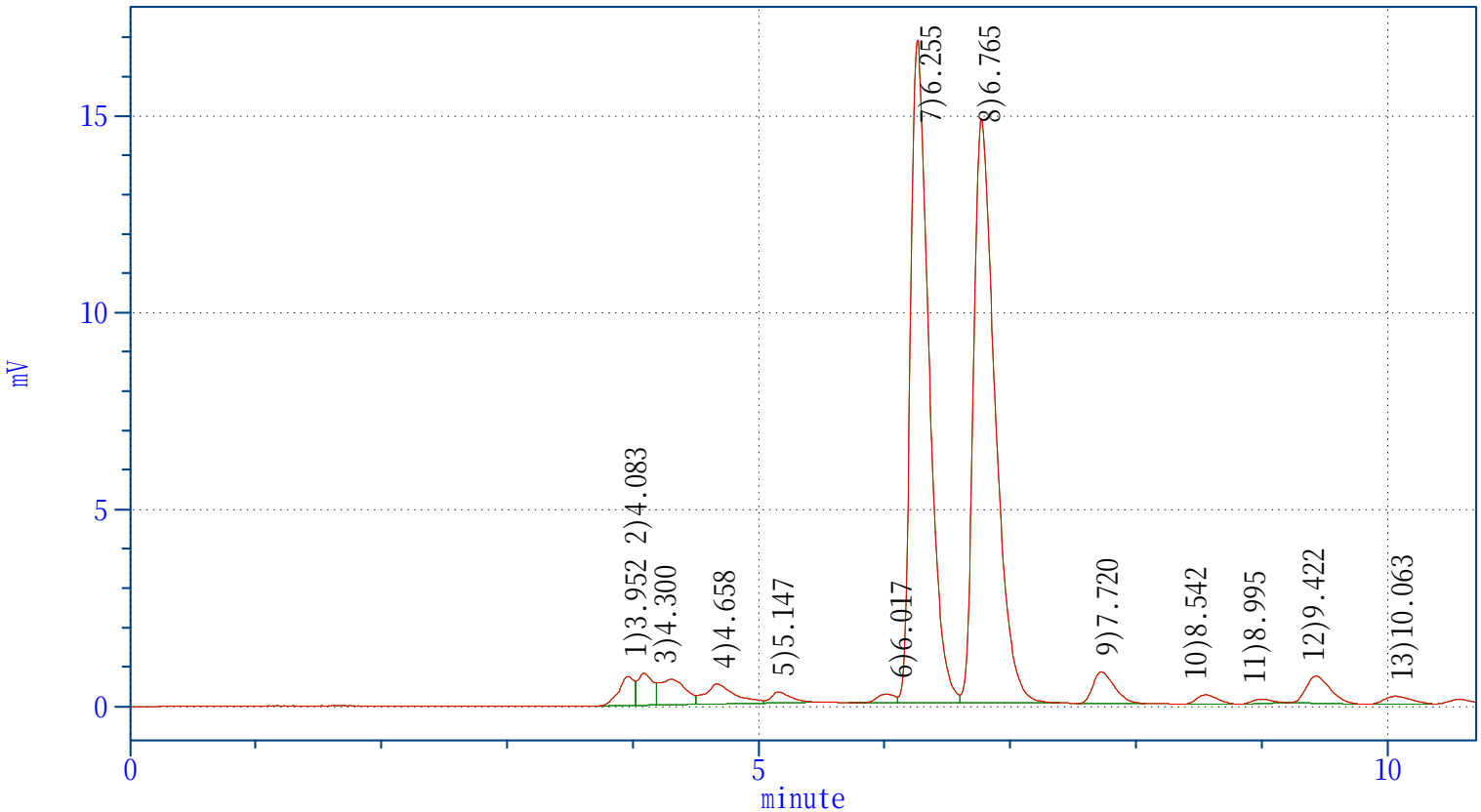


rac-**8b**

Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:
Time :	Flow :	(%A):	(%B):	(%C):	(%D):	Curve:

データ処理パラメータ
アップスロープ= 5,ダウンスロープ= 5,最小ピーク幅= 10.00 sec , ベース感度= 5 points
計算範囲= 0.000 to 2000.000 min.,最小ピーク面積= 1000 uv*sec , ベースライン補正=0

No.	R.T. (分)	面積 (uv*sec)	面積%	高さ (uv)	高さ%	濃度	濃度%	濃度単位	処理マーク	理論段数	ピーク名
1	3.952	6261	1.5311	740	2.0033	0.0000	0.0000		PV	0	
2	4.083	6803	1.6637	813	2.2001	0.0000	0.0000		VV	0	
3	4.300	9392	2.2968	649	1.7574	0.0000	0.0000		VV	0	
4	4.658	8206	2.0068	511	1.3825	0.0000	0.0000		VV	0	
5	5.147	3035	0.7422	281	0.7603	0.0000	0.0000		VP	0	
6	6.017	2320	0.5674	228	0.6164	0.0000	0.0000		PV	0	
7	6.255	170912	41.7970	16836	45.5868	0.0000	0.0000		VV	0	
8	6.765	176448	43.1508	14840	40.1828	0.0000	0.0000		VP	0	
9	7.720	9463	2.3142	802	2.1712	0.0000	0.0000		PP	9713	
10	8.542	2813	0.6879	239	0.6480	0.0000	0.0000		PP	11403	
11	8.995	1186	0.2900	111	0.2993	0.0000	0.0000		PP	15413	
12	9.422	9125	2.2315	686	1.8565	0.0000	0.0000		PP	11293	
13	10.063	2946	0.7205	198	0.5353	0.0000	0.0000		PP	9681	
	合計	408910		36932		0.0000	0.0000				

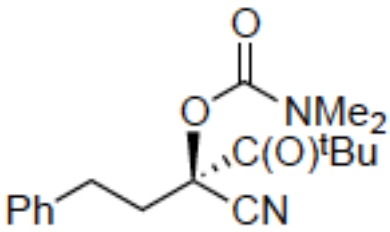


SIC-480II FOR WINDOWS TEST REPORT

ファイル名: TMT-IV-696C0.CHR
試料注入,日付:10-27-2011　時間:10:38:02

Analysis method:　　Instrument:
Column :CHIRALPAK AD-H(25)
Column Temperature (-C) :
Detector :UV, 254nm
Internal Standard :
Mobile Phase :
Flow rate(ml/Min.) :0.8　　Attenuation :
Solvent A :Hexane 10
B :IPA　1
C :EtOH　0
D :

Time :　Flow :　(%A):　(%B):　(%C):　(%D):　Curve:
Time :　Flow :　(%A):　(%B):　(%C):　(%D):　Curve:
Time :　Flow :　(%A):　(%B):　(%C):　(%D):　Curve:
Time :　Flow :　(%A):　(%B):　(%C):　(%D):　Curve:
Time :　Flow :　(%A):　(%B):　(%C):　(%D):　Curve:



8b
er = 60:40
Table 6 entry 9
(s.m.: er = 96:4)

データ処理パラメータ
アップスロープ= 5,ダウンスロープ= 5,最小ピーク幅= 10.00 sec , ベース感度= 5 points
計算範囲= 0.000 to 2000.000 min.,最小ピーク面積= 1000 uv*sec , ベースライン補正=0

No.	R.T. (分)	面積 (uv*sec)	面積%	高さ (uv)	高さ%	濃度	濃度%	濃度単位	処理マーク	理論段数	ピーク名
1	3.923	6870	3.6328	727	4.0338	0.0000	0.0000		PV	0	
2	4.063	8304	4.3911	642	3.5650	0.0000	0.0000		VV	0	
3	4.688	4627	2.4467	477	2.6479	0.0000	0.0000		VV	0	
4	4.935	2741	1.4494	231	1.2838	0.0000	0.0000		VV	0	
5	5.190	1116	0.5901	123	0.6835	0.0000	0.0000		VP	0	
6	6.290	66547	35.1896	6677	37.0555	0.0000	0.0000		PV	0	
7	6.838	98905	52.3002	9141	50.7305	0.0000	0.0000		VP	0	
	合計	189110		18018		0.0000	0.0000