Electronic Supplementary Material (ESI) for Organic & Biomolecular Chemistry.

An improved procedure to prepare 3-methyl-4-nitroalkylenethylisoxazoles and their reactivity in catalytic enantioselective Michael addition with nitromethane.

Maria Moccia, Robert J. Wells and Mauro F. A. Adamo **

Centre for Synthesis and Chemical Biology (CSCB), Department of Pharmaceutical and Medicinal Chemistry, the Royal College of Surgeons in Ireland, 123 St. Stephen's Green, Dublin 2, Ireland
Fax: (+353) 1 4022168
E-mail: madamo@rcsi.ie,

E-mail: mariamoccia@rcsi.ie

Supporting Information

General Experimental Details

^{1}H, ^{13}C, NMR spectra were recorded on a Varian AS 300, Bruker 400 and 600 spectrometer. Chemical shifts (δ) are reported in ppm relative to residual solvent signals for ^{1}H and ^{13}C NMR (^{1}H NMR: 7.26 ppm for CDCl3; ^{13}C NMR: 77.0 ppm for CDCl3. ^{13}C NMR spectra were acquired with 1H broad band decoupled mode. DMSO-d6 (referenced to 2.52 and 3.35 ppm for 1H and 40.0 for ^{13}C). Coupling constants (*J*) are in Hz. Multiplicities are reported as follows: s, singlet, d, doublet, dd, doublets of doublets, t, triplet, q, quartet, m, multiplet, c, complex, and br, broad. 1H-NMR spectral assignments are supported by ^{1}H-^{1}H COSY and ^{13}C-^{1}H-COSY where necessary. Carbon spectra are supported by DEPT analysis where necessary.

Melting points were determined using a Stuart scientific melting point apparatus and are uncorrected. Infrared spectra (IR) were recorded as KBr discs using a Bruker Tensor27 FT-IR instrument. Absorption maximum (ν_{max}) was reported in wave numbers (cm^{-1}) and only selected peaks are reported. High resolution mass spectra were obtained on a Waters Micro mass LCT and low resolution mass spectra were recorded on Waters Micro mass Quattro LC-MS spectrometers at 70 eV. Tetrahydrofuran was freshly distilled over sodium benzophenone prior to use according to standard procedure. All other reagents and solvents were used as purchased from Aldrich. Reactions were checked for completion by TLC (EM Science, silica gel 60 F254) which were visualized by quenching of u.v. fluorescence (λ_{max} = 254nm) or by staining with either 10% w/v ammonium molybdate in 2M sulphuric acid or basic potassium permanganate solution (followed by heat) as appropriate. Flash chromatography was performed using silica gel 60 (0.040- 0.063 mm, 230-400 mesh).

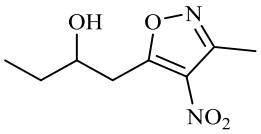
The enantiomeric excess (*ee*) of the products was determined by chiral stationary phase HPLC (Daicel Chiralpak AD, Chiracel OJ,

Chiracel OD, Chiralpak AS columns), using a UV detector operating at 254 nm. Retention factors (Rf) are reported to ±0.05.

General procedure for the synthesis of alcohol: compounds 6a-i

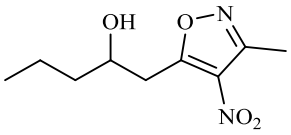
In a round bottomed flask fitted with a magnetic stirrer 5 mmol of 3,5-dimethyl-4-nitroisoxazole **1** (710 mg, 5 mmol) was dissolved in THF (4mL) then a H_2O/MeOH mixture (3:7, 12mL) was added. To the cloudy solution NaOH powder (40 mg, 1.0 mmol, 0.2 equiv) was added. The solution turned deep yellow and was stirred at room temperature for 30 minutes then aldehydes **5a-i** (6 mmol, 1,2 equivalents) were added dropwise over 30 minutes. The reaction mixture was stirred at room temperature for 36h-60h, then the THF was removed under vacuum, the mixture extracted with dichloromethane (x3) dried over sodium sulphate and the solvent removed under reduced pressure. The crude compounds were purified by column chromatography using Petroleum Ether/Ethyl Acetate 95:5 as a solvents combination.

Preparation of 1-(3-methyl-4-nitroisoxazol-5-yl)-butan-2-ol **(6a)**



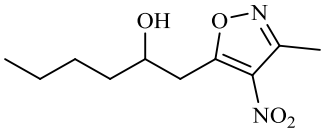
Prepared following general procedure using 3,5-dimethyl-4-nitroisoxazole **1** (5 mmol, 710 mg) and propionaldehyde **5a** (1,2 eq, 6 mmol, 348.5 mg, 430 µl). Pale yellow oil 900 mg, 90% yield; R_f = 0.2 (Petroleum Ether/Ethyl Acetate, 90:10); δ_H (400 MHz, $CDCl_3$) 4.01-3.95 (m, 1H), 3.32-3.22 (m, 2H), 2.83 (bs, 1H, OH), 2.47 (s, 3H), 1.59-1.49 ppm (m, 2H), 0.94 ppm (t, 3H). δ_C (100.6 MHz, $CDCl_3$) 173.0, 155.6, 130.0, 70.7, 35.1, 30.3, 11.5, 9.7. HRMS: *m/z* found $[M+H]^+$ 201.0797, $C_{10}H_{17}N_2O_3$ requires 201.0870.

Preparation of 1-(3-methyl-4-nitroisoxazol-5-yl)-pentan-2-ol **(6b)**



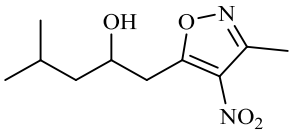
Prepared following general procedure using of 3,5-dimethyl-4-nitroisoxazole **1** (5 mmol, 710 mg) and butyraldehyde **5b** (1.2 eq, 6 mmol, 432,7 mg, 540 µl). Yellow oil 942 mg, 88 % yield; R_f = 0.2 (Petroleum Ether/Ethyl Acetate, 90:10); δ_H (400 MHz, $CDCl_3$) 4.10 (bs, 1 H), 3.32 - 3.29 (m, 2 H), 2.51 (s, 3 H), 1.57 - 1.47 (m, 3 H), 1.45 - 1.38 (m, 1 H),0.94 ppm (t, 3 H); δ_C (100.6 MHz, $CDCl_3$) 173.2, 155.9, 130.9, 69.5, 39.9, 35.9, 18.9, 14.1, 11.9. HRMS: *m/z* found $[M+H]^+$ 215.1022 requires 215.1026.

Preparation of 1-(3-methyl-4-nitroisoxazol-5-yl)-hexan-2-ol **(6c)**



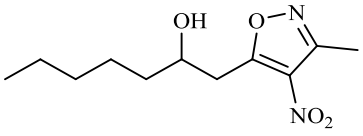
Prepared following general procedure using 3,5-dimethyl-4-nitroisoxazole **1** (5 mmol, 710 mg) and valeraldehyde **5c** (1.2 eq, 6 mmol, 517 mg, 639 µl). Colourless oil, 1g, 88 % yield; R_f = 0.2 (Petroleum Ether/Ethyl Acetate, 90:10; δ_H (400 MHz, $CDCl_3$) 4.17-4.10 (m, 1 H), 3.39 - 3.30 (m, 2 H), 2.57 (s, 3 H), 1.72 (d, 1H) 1.61 - 1.56 (m, 2 H), 1.37 - 1.35 (m, 3 H), 0.92 (t, 3 H); δ_C (100.6 MHz, $CDCl_3$) 173.1, 156.0, 70.1, 37.7, 35.9, 27.9, 22.8, 14.3, 12.0. HRMS: *m/z* found $[M+H]^+$ 229.1179, $C_{10}H_{16}N_2O_3$ requires 229.1183.

Preparation of 4-methyl-1-(3-methyl-4-nitroisoxazol-5-yl)-pentan-2-ol **(6d)**



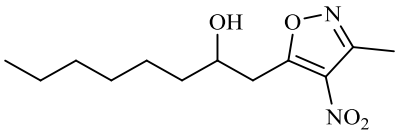
Prepared following general procedure using 3,5-dimethyl-4-nitroisoxazole **1** (5 mmol, 710 mg) and isovaleraldehyde **5d** (1.2 eq, 6 mmol, 517mg, 658 µl). Colourless oil, 1,0 g; 92 % yield; R_f = 0.2 (Petroleum Ether/Ethyl Acetate, 90:10); δ_H (400 MHz, $CDCl_3$) 4.23-4.20 (1H, m), 3.38-3.27 (2H, m), 2.55 (3H, s), 1.88-1.76 (1H, m), 1.58-1.53 (1H, m), 1.40-1.34 (1H, m), 0.96 (3H, d, *J* = 7), δ_C (100.6 MHz, $CDCl_3$) 172.9, 155.8, 130.9, 68.0, 46.8, 36.1, 24.8, 23.3, 22.0, 11.8. HRMS: *m/z* found $[M+H]^+$ 229.1181, $C_{10}H_{17}N_2O_3$ requires 229.1183.

Preparation of 1-(3-methyl-4nitroisoxazol-5-yl)heptan-2-ol **(6e)**



Prepared following general procedure using 3,5-dimethyl-4-nitroisoxazole **1** (5 mmol, 710 mg) and hexanal **5e** (1.2 eq, 6 mmol, 601mg, 737µl). Pale yellow oil 1,26 g; 87 % yield; R_f = 0.2 (Petroleum Ether/Ethyl Acetate, 90:10; δ_H 4.1-4.00 (m, 2 H), 3.37 - 3.34 (m, 2 H), 2.57 (s, 3 H), 1.63 - 1.57 (m, 3 H), 1.33 - 1.31 (m, 4 H), 0.92-0.88 (m, 4 H); δ_C 172.8, 155.7, 69.8, 37.6, 35.6, 31.6, 25.1, 22.6, 14.0, 11.7 ppm. HRMS: *m/z* found $[M+H]^+$ 243.1340, $C_{11}H_{18}N_2O_4$ requires 243.1339.

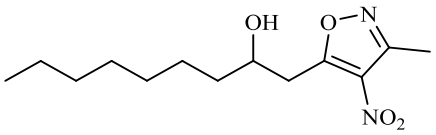
Preparation of 1-(3-methyl-4-nitroisoxazol-5-yl)octan-2-ol **(6 f)**



Prepared following general procedure using 3,5-dimethyl-4-nitroisoxazole **1** (5 mmol, 710 mg) and heptanal **5f** (1.2 eq, 6 mmol,

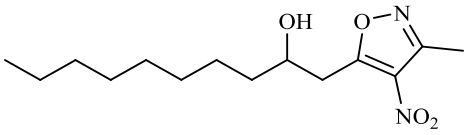
685 mg, 847µl). Pale yellow oil 1,13 g; 88 % yield; R_f = 0.2 (Petroleum Ether/Ethyl Acetate, 90:10; δ_H 4.16-4.08 (m, 1 H), 3.38 - 3.28 (m, 2 H), 2.57 (s, 3 H), 2.06-1.99 (m, 1H), 1.59 - 1.51 (m, 2 H), 1.51 - 1.45 (m, 1 H), 1.34 - 1.30 (m, 7 H),0.87(t, 3 H); δ_C 173.2, 155.9, 131.0, 70.2, 37.9, 35.9, 32.0, 29.4, 25.76, 22.9, 14.3, 11.9 ppm. HRMS: *m/z* found $[M+H]^+$ 257.1493, $C_{12}H_{20}N_2O_4$ requires 257.1496.

Preparation of 1-(3-methyl-4-nitroisoxazol-5-yl)nonan-2-ol **(6 g)**



Prepared following general procedure using 3,5-dimethyl-4-nitroisoxazole **1** (5 mmol, 710 mg) and octanal **5g** (1.2 eq, 6 mmol, 769 mg, 937 µl). Pale yellow solid; p.f.= 57-58°C 1,37 g, 85% yield , δ_H (400 MHz, $CDCl_3$) 4.17-4.10 (m, 1H), 3.4-3.3 (m, 2H), 2.56 (s, 3H), 1.62-1.52 (m,1H), 1.52-1.37 (m, 3H), 1.32-1.25(m, 9 H), 0.89-0.86 (m, 3H), 173.1, 156.0, 131.1, 70.1, 37.9, 35.9, 32.1, 29.7, 29.5, 25.7, 22.9, 14.4, 11.9. HRMS: *m/z* found $[M+H]^+$ 271.1650, $C_{13}H_{22}N_2O_4$, requires 271.1652.

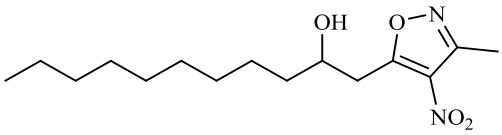
Preparation of 1-(3-methyl-4-nitroisoxazol-5-yl)decan-2-ol **(6 h)**



Prepared following general procedure using of 3,5-dimethyl-4-nitroisoxazole **1** (5 mmol, 710 mg) and nonanal **5h** (1.2 eq, 6 mmol, 853 mg, 1,0 ml). Pale yellow solid; p.f= 64-66°C, 1,13 g, 83% yield; R_f = 0.2(Petroleum Ether/Ethyl Acetate, 90:10; δ_H (400 MHz, $CDCl_3$) 4.17-4.10 (m, 1H), 3.4-3.3 (m, 2H), 2.56 (s, 3H), 1.62-1.56 (m ,2H), 1.51-1.45 (m, 1H), 1.33-1.27(m, 14 H), 0.87 (t, 3H), 172.9, 155.8, 130.9, 69.9, 37.8, 35.7, 31.9, 29.6, 29.5, 25.6,

22.8, 14.2, 11.8. HRMS: *m/z* found $[M+H]^+$ 285.1807, $C_{14}H_{24}N_2O_4$ requires 285.1809.

Preparation of 1-(3-methyl-4-nitroisoxazol-5-yl)undecan-2-ol **(6i)**

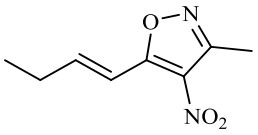


Prepared following general procedure using of 3,5-dimethyl-4-nitroisoxazole **1** (5 mmol, 710 mg) and decanal **5i** (1.2 eq, 6 mmol, 937 mg, 1.1 ml). Pale yellow solid; p.f.= 66-68°C, 1.13 g 84% yield; R_f = 0.2(Petroleum Ether/Ethyl Acetate, 90:10; δ_H (400 MHz, $CDCl_3$) 4.14 (bs, 1H), 3.40-3.30 (m, 2H), 2.56 (s, 3H), 1.60-1.56 (m ,4H), 1.33-1.27 (m, 14 H), 0.88 (t, J=6.8, 3H), 172.9, 155.8, 130.9, 69.9, 37.8, 35.7, 31.9, 31.0, 29.6, 29.4, 25.6, 22.8, 14.2, 11.8. HRMS: *m/z* found $[M+H]^+$ 299.1962, $C_{15}H_{26}N_2O_4$ requires 299.1965.

General procedure for the synthesis of alkenethenyl isoxazole: compounds 7a-i

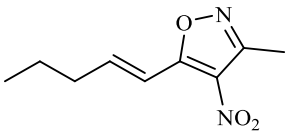
In a round-bottomed flask fitted with a magnetic stirring bar and inert atmosphere, a solution of alcohol **6a-i** (1 mmol) in dry DCM (7 mL/mmol) was prepared. The solution was cooled down to 0°C and then methanesulfonyl chloride, (1.2 equivalents) was added. The mixture was allowed to stir for 30 minutes and then triethylamine (2 equivalents) was added drop wise at 0°C. The mixture was left stirring for 2 hours at RT. The reaction mixture was extracted with CH_2Cl_2 (x3). The organic phase was recovered, dehydrated with Na_2SO_4, filtered off and the solvent removed under vacuum. The crude product obtained (yellow oil) was subjected to column chromatography (SiO_2, Petroleum Ether/Ethyl Acetate 97:3) to provide the desired alkene **7a-i**.

Preparation of (E)-5-(but-1-enyl)-3-methyl-4-nitroisoxazole(**7a**)



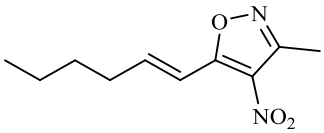
Prepared following general procedure using 1-(3-methyl-4-nitroisoxazol-5-yl)-butan-2-ol (1 mmol, 201 mg) as starting material, methanesulfonyl chloride, (137.5 mg, 93 µl), triethylamine (203 mg, 280 µl). Pale yellow oil 184 mg, 98% yield; R_f = 0.7 (Petroleum Ether/Ethyl Acetate, 90:10; δ_H (400 MHz, $CDCl_3$) 7.2-7.01 (m, 2H), 2.54 (s, 3H), 2.44-2.37 (m, 2H), 1.26-1.22 (m, 3H); δ_C (100.6 MHz, $CDCl_3$) 167.5, 156.2, 150.4, 113.9, 112.0, 27.1, 12.6, 12.1. HRMS: *m/z* found $[M+H]^+$ 183.0762, $C_8H_{10}N_2O_3$ requires 183.0764

Preparation of (E)-3-methyl-4-nitro-5-(pent-1-enyl)isoxazole (**7b)**



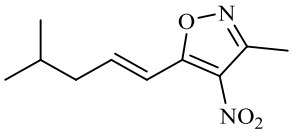
Prepared following general procedure using 1-(3-methyl-4-nitroisoxazol-5-yl)-pentan-2-ol (1 mmol, 214.2 mg) as starting material, methanesulfonyl chloride, (137.5 mg, 93 µl), triethylamine (203 mg, 280 µl). Pale yellow oil 188 mg, 96% yield; R_f = 0.7 (Petroleum Ether/Ethyl Acetate, 90:10**)**; δ_H (400 MHz, $CDCl_3$) 7.09-7.01 (m, 2H), 2.56 (s, 3H), 2.39-2.34 (m, 2H), 1.63-1.54 (m ,2H), 0.99(t, 3H); δ_C (100.6 MHz, $CDCl_3$) 167.1, 156.0, 148.8, 114.8,113.1, 35.8, 21.6, 13.8, 11.9. HRMS: *m/z* found $[M+H]^+$ 197.0920, $C_9H_{12}N_2O_3$ requires 197.0921.

Preparation of (E)-5-(hex-1-enyl)-3-methyl-4-nitroisoxazole(**7c)**



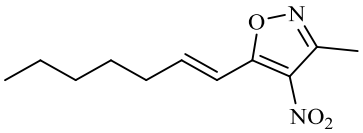
Prepared following general procedure using (1 mmol, 228.2 mg) 1-(3-methyl-4-nitroisoxazol-5-yl)-hexan-2-ol as starting material, methanesulfonyl chloride, (137.5 mg, 93 µl), triethylamine (203 mg, 280 µl). Pale yellow oil 202 mg, 97% yield; R_f = 0.7 (Petroleum Ether/Ethyl Acetate, 90:10); δ_H (400 MHz, $CDCl_3$) 7.13-7.01 (m, 2H), 2.56 (s, 3H), 2.41-2.36 (m, 2H), 1.57-1.49 (m, 2H), 1.44-1.35 (m ,2H), 0.94(3H, t); δ_C (100.6 MHz, $CDCl_3$) 167.4, 156.3, 149.4, 114.8, 113.2, 33.8, 30.6, 22.6, 14.2, 12.2. HRMS: *m/z* found $[M+H]^+$ 211.0977, $C_{10}H_{14}N_2O_3$ requires 211.1077.

Preparation of (E)-3-methyl-5-(4-methylpent-1-enyl)-4-nitroisoxazole (**7d**)



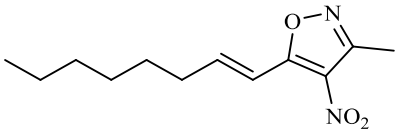
Prepared following general procedure using 4-methyl-1-(3-methyl-4-nitroisoxazol-5-yl)-pentan-2-ol (1 mmol, 228.2 mg) as starting material, methanesulfonyl chloride, (137.5 mg, 93 µl), triethylamine (203 mg, 280 µl). Pale yellow oil 199 mg, 95% yield; R_f = 0.7 (Petroleum Ether/Ethyl Acetate, 90:10); ^1H NMR (400 MHz, $CDCl_3$): δ_H 7.12-7.00 (m, 2H), 2.55 (s, 3H), 2.27 (t, 2H, J = 6) 1.89-1.82 (m, 1H), 0.97 (d, 6H, J = 7), δ_C (100.6 MHz, $CDCl_3$) 166.9 155.9, 147.9, 115.4, 113.2, 42.9, 39.7, 28.7, 22.4, 11.8, HRMS found: $[M-H^+]$ 211.1074, $C_{10}H_{14}N_2O_3$ requires 211.1077.

Preparation of (E)-5-(hept-1-enyl)-3-methyl-4-nitroisoxazole (**7e**)



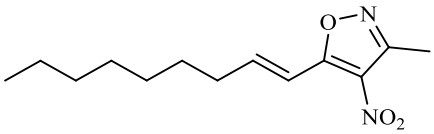
Prepared following general procedure using (1 mmol, 242.3 mg) 1-(3-methyl-4-nitroisoxazol-5-yl)-heptan-2-ol as starting material, methanesulfonyl chloride, (137.5 mg, 93 µl), triethylamine (203 mg, 280 µl). Pale yellow oil 215 mg, 96% yield; R_f = 0.7 (Petroleum Ether/Ethyl Acetate, 90:10); δ_H (400 MHz, $CDCl_3$) 7.14-7.01 (m, 2H), 2.58 (s, 3H), 2.41-2.33 (m, 2H), 1.57-1.53 (m, 2H), 1.36-1.25 (m ,4H), 0.91(t, 3H); δ_C (100.6 MHz, $CDCl_3$) 167.4, 156.3, 149.4, 114.8, 113.2, 34.0, 31.7, 28.2, 22.8, 14.3, 12.2. HRMS: *m/z* found $[M+H]^+$ 225.1231, $C_{11}H_{16}N_2O_3$ requires 225.1234.

Preparation of (E)-3-methyl-4-nitro-5-(oct-1-enyl)isoxazole (**7f**)



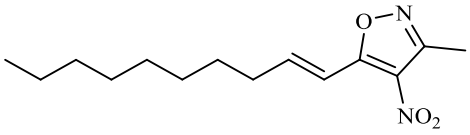
Prepared following general procedure using (1 mmol, 256.3 mg) 1-(3-methyl-4-nitroisoxazol-5-yl)octan-2-ol as starting material, methanesulfonyl chloride, (137.5 mg, 93 µl), triethylamine (203 mg, 280 µl). Pale yellow oil 223 mg, 94% yield; R_f = 0.7 (Petroleum Ether/Ethyl Acetate, 90:10); δ_H (400 MHz, $CDCl_3$) 7.1-6.99 (m, 2H), 2.54 (s, 3H), 2.39-2.34 (m, 2H), 1.56-1.49 (m, 2H), 1.35-1.23 (m ,6H), 0.88(t, 3H); δ_C (100.6 MHz, $CDCl_3$) 167.1, 155.9, 149.0, 114.5, 112.5, 33.8, 31.6, 28.9, 28.2, 22.6, 14.1, 11.8. HRMS: *m/z* found $[M+H]^+$ 239.1380, $C_{12}H_{18}N_2O_3$ requires 239.1390.

Preparation of(E)-3-methyl-4-nitro-5-(non-1-enyl)isoxazole(**7g**)



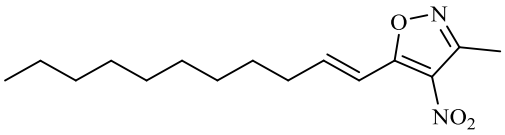
Prepared following general procedure using (1 mmol, 270.3 mg) 1-(3-methyl-4-nitroisoxazol-5-yl)nonan-2-ol as starting material, methanesulfonyl chloride, (137.5 mg, 93 µl), triethylamine (203 mg, 280 µl). Pale yellow oil 227 mg, 90% yield; R_f = 0.7 (Petroleum Ether/Ethyl Acetate, 90:10); δ_H (400 MHz, $CDCl_3$) 7.13-6.96 (m, 2H), 2.56 (s, 3H), 2.40-2.35 (m, 2H), 1.55-1.50 (m, 2H), 1.37-1.24 (m, 8H), 0.90-0.87(m, 3H); δ_C (100.6 MHz, $CDCl_3$) 167.2, 156.0, 149.2, 127.3, 114.6, 33.9, 31.9, 29.3, 28.3, 22.8, 14.2. HRMS: *m/z* found $[M+H]^+$ 253.1542, $C_{13}H_{20}N_2O_3$ requires 253.1547.

Preparation of (E)-5-(dec-1-enyl)-3-methyl-4-nitroisoxazole (**7h**)



Prepared following general procedure using (1 mmol, 284.4 mg) 1-(3-methyl-4-nitroisoxazol-5-yl)decan-2-ol as starting material, methanesulfonyl chloride, (137.5 mg, 93 µl), triethylamine (203 mg, 280 µl). Pale yellow oil 234 mg, 88% yield; R_f = 0.7 (Petroleum Ether/Ethyl Acetate, 90:10); δ_H (400 MHz, $CDCl_3$) 7.13-7.00 (m, 2H), 2.55(s, 3H), 2.40-2.35(m, 2H), 1.57-1.48 (m, 2H), 1.37-1.27(m ,10H), 0.87(t, 3H); δ_C (100.0 MHz, $CDCl_3$) 167.2, 156.0, 149.2, 127.3, 114.6, 33.9, 31.9, 29.5, 29.3, 28.3, 22.8, 14.2, 11.9. HRMS: *m/z* found $[M+H]^+$ 267.1602, $C_{14}H_{22}N_2O_3$ requires 267.1703.

Preparation of(E)-3-methyl-4-nitro-5-(undec-1-enyl)isoxazole (**7i**)



Prepared following general procedure using (1 mmol, 298.4 mg) 1-(3-methyl-4-nitroisoxazol-5-yl)octan-2-ol as starting material, methanesulfonyl chloride, (137.5 mg, 93 µl), triethylamine (203

mg, 280 µl). Pale yellow oil 246 mg, 88% yield; R_f = 0.7 (Petroleum Ether/Ethyl Acetate, 90:10); δ_H (400 MHz, $CDCl_3$) 7.14-7.01 (m, 2H), 2.56(s, 3H), 2.41-2.36(m, 2H), 1.55-1.50 (m, 2H), 1.48-1.24 (m, 12H), 0.88(3H, t, J=7.2 Hz); δ_C (100.6 MHz, $CDCl_3$) 167.2, 156.0, 149.5, 114.8, 112.5, 34.1, 32.2, 29.8, 29.7, 29.6, 29.5, 28.5, 22.8, 14.5, 12.2. HRMS: *m/z* found $[M+H]^+$ 281.1855, $C_{15}H_{24}N_2O_3$ requires 281.1860.

Procedure for the enantioselective Michael addition of nitromethane to compound 7d (Optimization, Table 3)

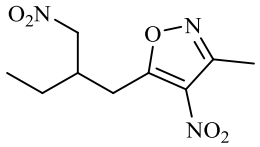
In a test tube equipped with a magnetic stirring bar were sequentially added the aliphatic styryl isoxazole (0.1 mmol), catalyst **8-8.5** (10 mol%), nitromethane (0.5 mmol) and toluene (1 mL). The test tube was placed at 0°C, then finely ground K_2CO_3 (0.5 mmol) was added in one portion. The mixture was then vigorously stirred at the same temperature, with no precautions to exclude moisture or air. After 72 h, the reaction was quenched with sat NH_4Cl (10 mL), extracted with toluene (2 x 5 mL), dried over $MgSO_4$, filtered over celite and evaporated to give pure compound **9d** in the reported yields and enantiomeric excess.

General Procedure for generation of nitroadducts 9 a-i (Reaction scope-Table 4)

In a test tube fitted with a magnetic stirring bar a solution of the alkene **7a-i** (0.2 mmol) in toluene (6.7 mL, 0.03 M) was prepared. To this solution, the catalyst **8**, (0.02 mmol, 12 mg) and nitromethane (54 µL, 61 mg, 1 mmol) were added. Then, the mixture was left stirring for 5 minutes. The potassium carbonate (138 mg, 1 mmol) was added at 0°C. The mixture was left stirring for the stated time. The reaction mixture was treated with a saturated

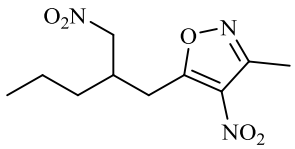
solution of NH_4Cl until pH =3 and extracted with toluene (x 3). The organic phase was recovered and dehydrated with $MgSO_4$. Then, it was filtered and the solvent was evaporated under vacuum. The crude oils obtained were subjected to column chromatography (SiO_2, Petroleum Ether/Ethyl acetate 95:5) to provide the desired nitro-adducts **9a-i** in the reported yield and enantiomeric excess.

(R)-3-methyl-4-nitro-5-(2-(nitromethyl)butyl)isoxazole (**9a**)



Prepared following general procedure using (E)-5-(but-1-enyl)-3-methyl-4-nitroisoxazole (36.4 mg, 0.2 mmol) and catalyst **8**. Reaction time: 48 h. After work up and purification compound **9a** was obtained as a yellow oil (44 mg, 91% yield). The *ee* of the product was determined by CSP-HPLC using a Chiralcel OD column (*n*-hexane/*i*-PrOH 90:10, flow rate 1 mL/min, t_{maj} = 23.8 min, t_{min} = 29.1 min, 93% *ee*); R_f = 0.6 (Petroleum Ether/Ethyl Acetate, 80:20; $[\alpha]^{D}_{20}$= -3.5 (c 0.7, MeOH); δ_H (400 MHz, $CDCl_3$) 4.48-4.39 (m, 2H), 3.36 (dd, 2H, *J* = 6.8; *J* = 15.2), 3.29 (dd, 2H, *J* = 7.2; *J* = 15.2), 2.78-2.72 (m, 1H), 2.56 (s, 3H), 1.55-1.48(m, 2H), 1.01 (t, 3H), δ_C (100.6 MHz, $CDCl_3$) 172.1, 155.9, 130.3, 77.9, 37.2, 29.4, 24.5, 11.6, 10.6. HRMS found: [M-H^+] 244.0926, $C_9H_{13}N_3O_5$ requires 244.0928.

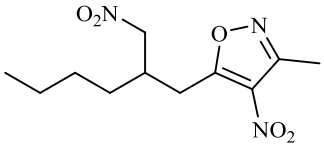
(R)-3-methyl-4-nitro-5-(2-(nitromethyl)pentyl)isoxazole (**9b**)



Prepared following general procedure using (E)-5-(but-1-enyl)-3-methyl-4-nitroisoxazole(39,3 mg, 0.2 mmol) and catalyst **8**.

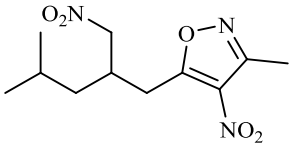
Reaction time: 48 h. After work up and purification compound **9b** was obtained as a yellow oil (47 mg, 91% yield). The *ee* of the product was determined by CSP-HPLC using a Chiralcel OD column (*n*-hexane/*i*-PrOH 90:10, flow rate 1 mL/min, t_{maj} = 19.1 min, t_{min} = 23.1 min, 87% *ee*); R_f = 0.6 (Petroleum Ether/Ethyl Acetate, 80:20; $[\alpha]^{D}_{20}$= -11.0 (c 1.8, MeOH); δ_H (400 MHz, $CDCl_3$) 4.47-4.39 (m, 2H),3.37 (dd, 1H, *J* = 6.8; *J* = 15.2), 3.30 (dd, 1H, *J* = 7.2; *J* = 15.2), 2.86-2.79 (m, 1H), 2.57 (s, 3H), 1.47-1.38(m, 4H), 0.93 (t, 3H), δ_C (100.6 MHz, $CDCl_3$) 172.3, 156.0, 130.3, 78.4, 36.5, 35.8, 32.2, 19.6, 13.9, 11.8. HRMS: *m/z* found $[M+H]^+$ 342.1951. HRMS found: $[M-H^+]$ 258.1080, $C_{10}H_{15}N_3O_5$ requires 258.1084.

(R)-3-methyl-4-nitro-5-(2-(nitromethyl)hexyl)isoxazole (**9c**)



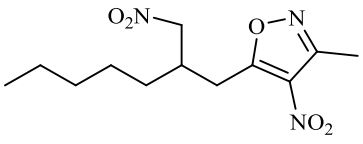
Prepared following general procedure using (E)-5-(but-1-enyl)-3-methyl-4-nitroisoxazole(42 mg, 0.2 mmol). Reaction time: 48 h. After work up and purification compound was obtained **9c** as a yellow oil (49 mg, 90% yield). The *ee* of the product was determined by CSP-HPLC using a Chiralpack AD column (*n*-hexane/*i*-PrOH 98:2, flow rate 0.75 mL/min, t_{maj} = 21 min, t_{min} = 24 min, 88% *ee*); R_f = 0.6 (Petroleum Ether/Ethyl Acetate, 80:20; $[\alpha]^{D}_{20}$= -6.0 (c 1.0, MeOH); δ_H (400 MHz, $CDCl_3$) 4.43-4.41 (m, 2H) 3.39-3.26 (m, 2H) 2.83-2.69 (m, 1H), 2.56 (3H, s), 1.47-1.33(m, 6H), 0.9 (t, 3H), δ_C (100.6 MHz, $CDCl_3$) 172.1, 156.1, 130.3, 78.4, 33.8, 29.5, 27.9, 22.8, 14.3, 11.6. HRMS: *m/z* found $[M+H]^+$ 272.1199, $C_{11}H_{17}N_3O_5$ requires 272.1241.

(R)-3-methyl-5-(4-methyl-2-(nitromethyl)pentyl)-4-nitroisoxazole (**9d**)



Prepared following general procedure using (E)-3methyl-5-(4-methylpent-1-enyl)-4nitroisoxazole(42 mg, 0.2 mmol). Reaction time: 48 h. After work up and purification compound was obtained **9d** as a yellow oil (48 mg, 90% yield). The *ee* of the product was determined by CSP-HPLC using a Chiralcel OD column (*n*-hexane/*i*-PrOH 95:5, flow rate 1 mL/min, t_{maj} = 19 min, t_{min} = 24 min, 89% *ee*); R_f = 0.6 (Petroleum Ether/Ethyl Acetate, 80:20; $[\alpha]^{D}_{20}$= -6.0 (c 1.0, MeOH); δ_H (400 MHz, $CDCl_3$) 4.38 (d, 2H, *J* = 6), 3.35 (dd, 1H, *J* = 15, *J* = 6), 3.28 (dd, 1H, *J* = 15, *J* = 7), 2.87 (sept, 1H, *J* = 7), 2.56 (s, 3H), 1.68 (sept, 1H, *J* = 7), 1.36-1.23 (m, 2H), 0.92 (d, 3H, *J* = 4), 0.90 (d, 3H, *J* = 4), δ_C (100.6 MHz, $CDCl_3$) 172.1, 155.6, 122.9, 78.5, 40.9, 33.9, 30.0, 25.1, 22.4, 22.3, 11.7. HRMS: *m/z* found $[M+H]^+$ 272.1212, $C_{11}H_{18}N_3O_5$ requires 272.1241.

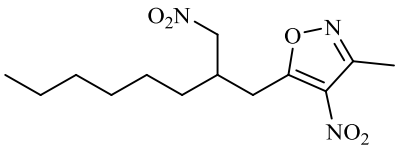
(R)-3-methyl-4-nitro-5-(2-(nitromethyl)heptyl)isoxazole (**9e**)



Prepared following general procedure using (E)-5-(hept-1-enyl)-3-methyl-4-nitroisoxazole (45 mg, 0.2 mmol)and catalyst **8**. Reaction time: 60 h. After work up and purification compound **9e** was as a yellow oil (52 mg, 91% yield). The *ee* of the product was

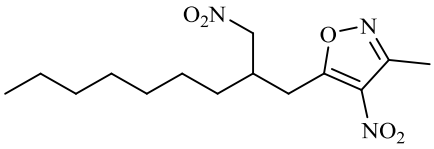
determined by CSP-HPLC using a Chiralpack AD column (*n*-hexane/*i*-PrOH 98:2, flow rate 0.75 mL/min, t_{maj} = 21.3 min, t_{min} = 27.2 min, 88% *ee*); R_f = 0.6 (Petroleum Ether/Ethyl Acetate, 80:20; $[\alpha]^{D}_{20}$= -20.0 (c 3.3, MeOH); δ_H (400 MHz, $CDCl_3$) 4.45-4.41 (m, 2H), 3.33 (dd, 1H, *J* = 6.8; *J* = 15.2), 3.29 (dd, 1H, *J* = 7.2; *J* = 15.2), 2.83-2.77 (m, 1H), 2.56 (s, 3H), 1.46-1.35(m, 4H), 1.29-1.26(m, 4H), 0.87 (t, 3H, *J* = 7.2), δ_C (100.6 MHz, $CDCl_3$)172.3, 155.9, 128.8, 78.3, 35.9,31.6, 31.5, 29.8, 25.9, 22.4, 14.0, 11.8. HRMS: *m/z* found: $[M-H^+]$ 286.1299, $C_{12}H_{19}N_3O_5$ requires 286.1397.

(R)-3-methyl-4-nitro-5-(2-(nitromethyl)octyl)isoxazole(**9f**)



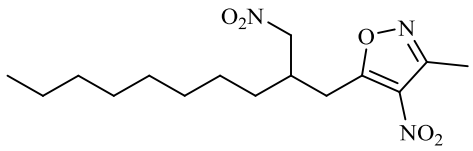
Prepared following general procedure using (E)-5-(hept-1-enyl)-3-methyl-4-nitroisoxazole (47,6 mg, 0.2 mmol) and catalyst **8**. Reaction time: 60 h. After work up and purification compound **9f** was as a pale yellow oil (54 mg, 90% yield). The *ee* of the product was determined by CSP-HPLC using a Chiralpack AD column (*n*-hexane/*i*-PrOH 98:2, flow rate 0.75 mL/min, t_{maj} = 22.9 min, t_{min} = 26.0 min, 86% *ee*); R_f = 0.6 (Petroleum Ether/Ethyl Acetate, 80:20; $[\alpha]^{D}_{20}$= -10.0 (c 1.6, MeOH); δ_H (400 MHz, $CDCl_3$) 4.44-4.36 (m, 2H), 3.31 (1H, dd, *J* = 6.8; *J* = 15.2), 3.28 (1H, dd, *J* = 7.2; *J* = 15.2), 2.82-2.75 (m, 1H), 2.55 (s, 3H), 1.50-1.40(m, 4H), 1.37-1.22(m ,6H), 0.86 (t, 3H), δ_C (100.6 MHz, $CDCl_3$) 172.3, 155.9, 130.8, 78.4, 36.0,31.6, 31.7, 31.6, 29.9,29.0, 26.3, 22.6, 14.1, 11.8. HRMS: *m/z* found $[M+H]^+$ 300.1549 $C_{13}H_{21}N_3O_5$ requires 300.1554.

(R)-3-methyl-4-nitro-5-(2-(nitromethyl)nonyl)isoxazole (**9g**)



Prepared following general procedure using (E)-3-methyl-4-nitro-5-(non-1-enyl)isoxazole (50 mg, 0.2 mmol)and catalyst **8**. Reaction time: 60 h. After work up and purification compound **9g** was obtained as a pale yellow oil (63 mg, 99% yield). The *ee* of the product was determined by CSP-HPLC using a Chiralpak AD column (*n*-hexane/*i*-PrOH 99:1, flow rate 0.75 mL/min, t_{maj} = 24.3 min, t_{min} = 26.02 min, 83% *ee*); R_f = 0.6 (Petroleum Ether/Ethyl Acetate, 80:20; $[\alpha]^{D}_{20}$= -15.0 (c 2.5, MeOH; δ_H (400 MHz, $CDCl_3$) 4.47-4.39 (m, 2H), 3.37 (dd, 1H, *J* =6.4; *J* = 15.2), 3.31 (dd, 1H, *J* = 8; *J* = 15.6), 2.84-2.78 (m, 1H), 2.58 (s, 3H), 1.49-1.43(m, 2H), 1.40-1.36 (m, 2H), 1.33-1.27(m, 8H), 0.88 (t, 3H, *J* = 6.8), 172.3, 156.0, 129.2, 78.4, 36.0, 31.8, 31.7, 29.9, 29.4, 29.1, 26.3, 22.7, 14.2, 11.8. HRMS: *m/z* [M-H^+] found: 314.1699, $C_{14}H_{23}N_3O_5$ requires 314.1710.

(R)-3-methyl-4-nitro-5-(2-(nitromethyl)decyl)isoxazole (**9h**)

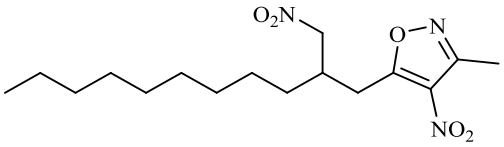


Prepared following general procedure using (E)-5-(dec-1-enyl)-3-methyl-4-nitroisoxazole(53 mg, 0.2 mmol) and catalyst **8**. Reaction time: 72 h. After work up and purification compound **9h** was obtained as a pale yellow oil (58 mg, 89% yield).

The *ee* of the product was determined by CSP-HPLC using a Chiralcel OD column (*n*-hexane/*i*-PrOH 95:5, flow rate 0.75 mL/min, t_{maj} = 25.3 min, t_{min} = 32.2 min, 87% *ee*); R_f = 0.6 (Petroleum Ether/Ethyl Acetate, 80:20; $[\alpha]^{D}_{20}$= -9.0 (c 1.5, MeOH); δ_H (400 MHz, $CDCl_3$)

4.46-4.39 (m, 2H), 3.37 (1H, dd, *J* = 6.8; *J* = 15.2), 3.31 (1H, dd, *J* = 7.2; *J* = 15.2), 2.84-2.78 (m, 1H), 2.58 (s, 3H), 1.48-1.43 (m ,2H), 1.39-1.37 (m, 2H), 1.35-1.26(m, 10H), 0.87 (t, 3H, *J* = 4), 172.3, 156.0, 78.4, 36.0, 31.9, 31.7, 29.9, 29.8, 29.4, 26.3, 22.8, 14.2, 11.8. HRMS: *m/z* found $[M+H]^+$ 328.1850 $C_{15}H_{25}N_3O_5$ requires 328.1867.

(R)-3-methyl-4-nitro-5-(nitromethyl)undecyl)isoxazole (**9i**)



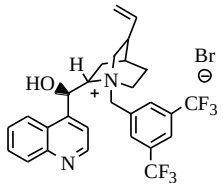
Prepared following general procedure using (E)-3-methyl-4-nitro-5-(undec-1-enyl)isoxazole (56 mg, 0.2 mmol) and catalyst **8**. Reaction time: 72 h. After work up and purification compound **9i** was obtained as a pale yellow oil (61 mg, 89% yield). The *ee* of the product was determined by CSP-HPLC using a Chiralpak OD column (*n*-hexane/*i*-PrOH 95:5, flow rate 0.75 mL/min, t_{maj} = 23.6 min, t_{min} = 29.09 min, 85% *ee*); R_f = 0.6 (Petroleum Ether/Ethyl Acetate, 80:20); $[\alpha]^{D}_{20}$= -18.0 (c 3.2, EtOH); δ_H (400 MHz, $CDCl_3$) 4.45-4.36 (m, 2H), 3.34 (dd, 1H, *J* = 6.8; *J* = 15.6), 3.27 (dd, 1H, *J* = 7.2; *J* = 15.2), 2.81-2.75 (m, 1H), 2.55 (s, 3H), 1.46-1.32 (m, 16H), 0.85 (t, 3H, *J* = 7), 172.2, 155.8, 78.2, 35.9, 31.8, 31.6, 29.7, 29.4, 29.3, 29.2, 26.1, 22.6, 14.0, 11.6. HRMS: *m/z* found $[M+H]^+$ 342.1951.

General procedure for the catalysts 8-8.5

To a stirred suspension of cinchonidine (1.0 mmol) in THF (3.0 mL), the corresponding benzyl bromide (1.3 mmol) was added. The resulting mixture was then heated at 60°C, and stirred for 36h at

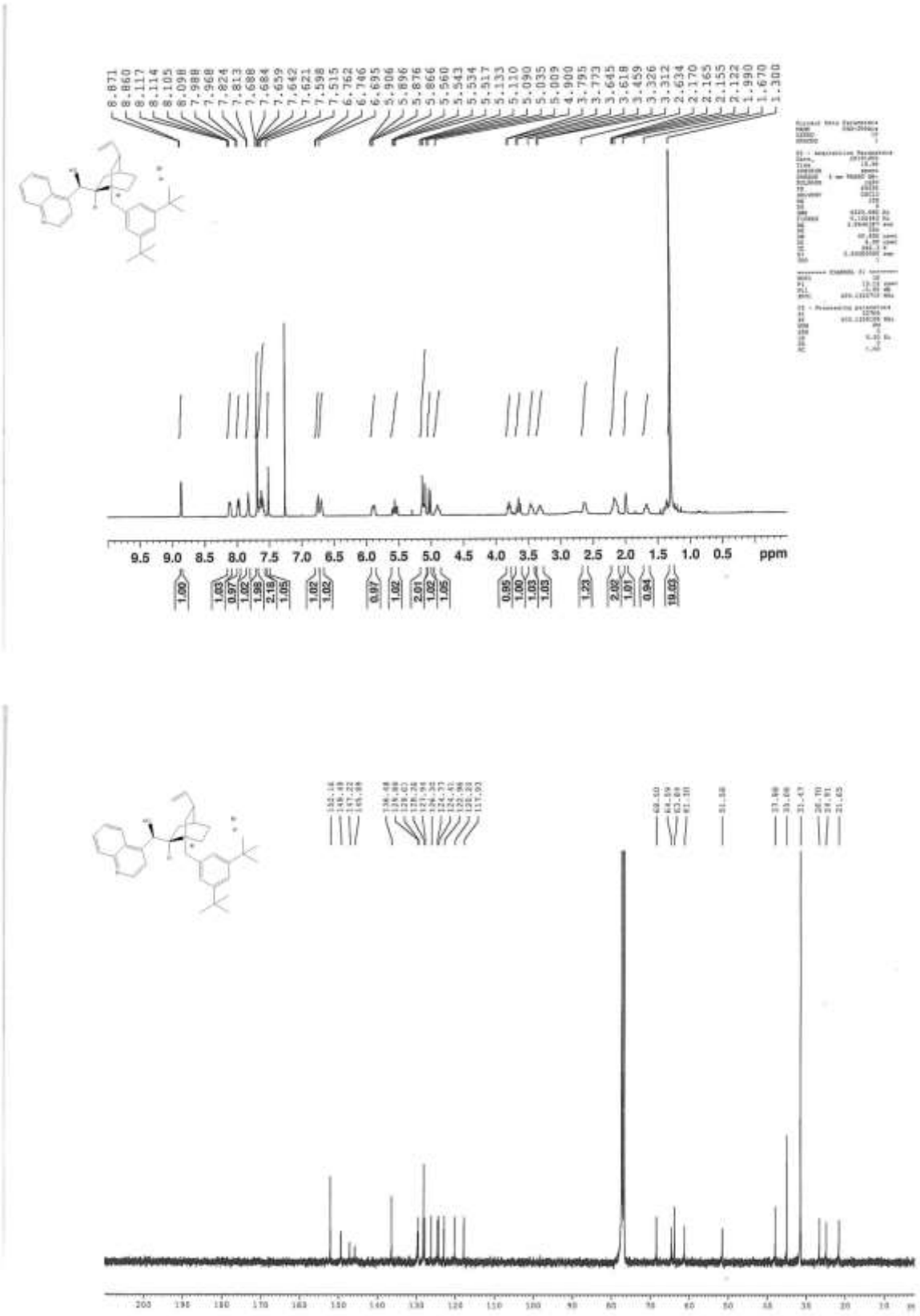
the same temperature. After cooling to rt, the precipitate was collected by Bückner filtration and washed several times with Et_2O, affording the title compound. All the catalysts have been synthesized using procedure already described in literature.

_N_-3,5-Bis(_tert_-butylbenzyl)cinchonidinium bromide (8)

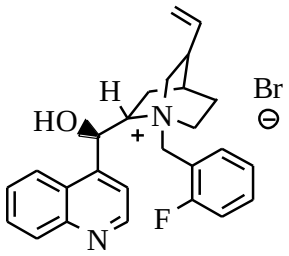


To a stirred suspension of cinchonidine (1.0 mmol) in THF (3.0 mL), 3,5-bis(trifluoromethyl)benzyl bromide (1.3 mmol) was added. The resulting mixture was then heated at 60°C, and stirred for 36h at the same temperature. After cooling to rt, the precipitate was collected by Bückner filtration and washed several times with Et_2O, affording the title compound as a white solid in 80% yield

$[\alpha]_D^{25}$ = -105.5 (c = 0.80, $CHCl_3$) ^{1}H NMR ($CDCl_3$, 400 MHz) δ 8.86 (d, J= 4.4, 1H), 8.12-8.10 (m, 1H), 7.98 (d, J= 8, 1H), 7.82-7.81 (m, 1H), 7.69 (d, J= 1.6, 2H), 7.66-7.58 (m, 2H), 7.51 (s, 1H), 6.76-6.68 (m, 2H), 5.90-5.87 (m, 1H), 5.60-5.52 (m, 1H), 5.13-5.09 (m, 2H), 5.02 (d, J= 10.4, 1H), 4.92-4.88 (b, 1H), 3.79 (t, J= 8.4, 1H), 3.68-3.62 (m, 1H), 3.49-3.43 (b, 1H), 3.33-3.31 (b, 1H), 2.63 (b, 1H), 2.17-2.12 (b, 2H), 1.99 (s, 1H), 1.67 (b, 1H), 1.33 (s, 18H); ^{13}C NMR ($CDCl_3$, 100.6 MHz) δ 152.2, 149.5, 147.2, 145.9, 136.5, 129.8, 129.6, 128.3, 127.9, 126.3, 124.8, 124.4, 123.0, 120.2, 117.9, 68.5, 64.6, 63.8, 61.3, 51.6, 38.0, 35.1, 31.47, 26.7, 24.9, 21.7.



***N*-(2-Fluorobenzyl) cinchonidinium bromide 8.1**



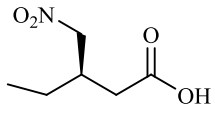
^{1}H NMR (300 MHz, CDCl3) δ 8.94 (d, J =4.6 Hz, 1H), 8.32 (d, J = 7.4 Hz, 1H), 8.16 (d, J = 8.4 Hz, 1H), 7.93-7.76 (m, 5H), 7.43 (t, J = 8.8 Hz, 2H), 6.82-6.73 (m, 1H), 6.52 (bs, 1H), 6.08-5.96 (m, 1H), 5.33-5.16 (m, 2H), 5.12-4.98 (m, 1H), 4.89-4.79 (m, 1H), 4.25-4.17 (m, 1H), 3.91 (t, J = 9.5 Hz, 2H), 3.46 (t, J = 11.4 Hz, 1H), 2.95 (dd, J = 20.9, 10.0 Hz, 1H), 2.69-2.61 (m, 1H), 2.44-2.31 (m, 1H), 1.91 (bs, 1H), 1.86-1.73 (m, 2H), 1.24- 1.11 (m, 1H).

All the catalysts have been synthesized using procedure already described in literature.

General procedure for the synthesis of nitroacids

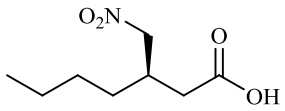
A solution of adducts (**9 a**, **c**, **d**, **e**, **f**, **i**), (0.25 mmol) in THF (0.5 mL) was charged in a round bottomed flask and treated with an aqueous solution of NaOH (1N, 1.25 mL, 5 equiv.). The resulting deep yellow solution was refluxed for 6h, then allowed to reach room temperature, the THF was evaporated in *vacuo*; to the aqueous solution ethyl acetate was added and the mixture brought to 0°C. The pH was adjusted to 3 by slow addition of 3N aqueous HCl. The mixture was extracted three times with ethylacetate, dried over Na_2SO_4 and the solvent removed under vacuum. Compounds **10 a**, **c**, **d**, **e**, **f**, **i** were obtained as a yellow oil in reported yields.

Preparation of (R)-3-methyl-4-pentanoic acid **(10a)**



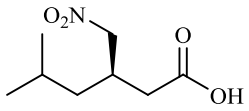
Prepared following general procedure using **9a** (0.25 mmol, 61mg) in THF (0.5 mL) treated with an aqueous solution of NaOH (1N, 1.25 mL, 5 equiv.) The crude mixture was submitted to column chromatography 8/2 Petroleum spirit/ Ethyl acetate and compound **10a** was obtained as pale yellow oil 37 mg, 92% yield; R_f =0.5 (Petroleum Ether/Ethyl Acetate, 3:7), ^{1}H NMR (400 MHz, $CDCl_3$) δ_H 4.50 (dd, 1H, *J* = 6, *J* = 12.4), 4.46 (dd, 1H, *J* = 5.6, *J* = 12.4), 2.60-2.54 (m, 1H), 2.51 (d, 2H, *J*= 6.4), 1.54-1.47 (m, 2H), 0.99 (t, 3H, *J* = 7.2), ^{13}C (100.6 MHz, $CDCl_3$) δ_C 177.2, 78.2, 35.5, 35.3, 24.4, 10.9. HRMS found: $[M-H]^-$ 160.0611, $C_6H_{11}NO_4$ requires 160.0615.

Preparation of (R)-3-(nitromethyl) heptanoic acid **(10c)**



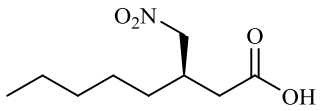
Prepared following general procedure using **9 c** (0.25 mmol, 68 mg) in THF (0,5 mL) treated with an aqueous solution of NaOH (1N, 1,25 mL, 5 equiv.) The crude mixture was submitted to column chromatography 8/2 Petroleum spirit/ Ethyl acetate and compound **10c** was obtained as pale yellow oil 34 mg, 90% yield; R_f = 0.5 (Petroleum Ether/Ethyl Acetate, 3:7); ^{1}H NMR (400 MHz, $CDCl_3$) δ_H 4.51 (dd, *J* = 6, *J* = 12.4, 1H), 4.46 (dd, *J* = 6.4, *J* = 12, 1H), 2.65-2.59 (m, 1H), 2.51 (d, *J*= 6.4, 2H), 1.47-1.42 (m, 2H), 1.34-1.32 (m, 4H), 0.92-0.88 (m, 3H), ^{13}C (100.6 MHz, $CDCl_3$) δ_C 176.6, 78.7, 35.5, 34.1, 31.1, 28.6, 22.6, 13.9. HRMS found: $[M-H]^-$ 188.0925, $C_8H_{15}NO_4$ requires 188.0928.

Preparation of (R)-5-methyl-3-(nitromethyl)hexanoic acid **(10d)**



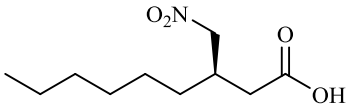
Prepared following general procedure using **9 d** (0.25 mmol, 68mg) in THF (0.5 mL) treated with an aqueous solution of NaOH (1N, 1,25 mL, 5 equiv.) The crude mixture was submitted to column chromatography 8/2 Petroleum spirit/ Ethyl acetate and compound **10d** was obtained as yellow oil 44 mg, 94% yield; R_f = 0.5 (Petroleum Ether/Ethyl Acetate, 3:7); ^{1}H NMR (400 MHz, MeOD) δ_H 9,27 (bs, 1H, OH), 4.46 (dd, *J* = 6.4, *J* = 12.4, 1H), 4.40 (dd, *J* = 5.6, *J* = 12.4, 1H), 2.67-2.61 (m, 1H), 2.46 (d, *J* =6.4, 2H) 1.65-1.59 (m, 1H), 1.26-1.19 (m, 2H), 0.89-0.86 (m, 6H), ^{13}C (100.6 MHz, MeOD) δ_C 177.1, 78.7, 40.5, 35.7, 31.9, 25.1, 22.5, 22.3, HRMS found: $[M-H]^-$ 188.0924, $C_8H_{15}NO_4$ requires 188.0928.

Preparation of (R)-3-(nitromethyl) octanoic acid **(10e)**



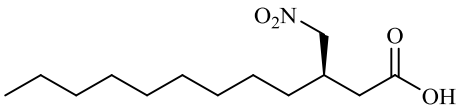
Prepared following general procedure using **9e** (0.25 mmol, 71 mg) in THF (0,5 mL) treated with an aqueous solution of NaOH (1N, 1,25 mL, 5 equiv.) The crude mixture was submitted to column chromatography 8/2 Petroleum spirit/ Ethyl acetate and compound **10e** was obtained as yellow oil 44 mg, 88% yield; R_f = 0.5 (Petroleum Ether/Ethyl Acetate, 3:7), ^{1}H NMR (400 MHz, $CDCl_3$) ^{1}H NMR (400 MHz, $CDCl_3$) δ_H 4.51 (dd, *J* = 6.4, *J* = 12.4, 1H), 4.46 (dd, *J* = 6, *J* = 12.4, 1H), 2.66-2.59 (m, 1H) 2.51 (d, 2H, *J*=6.4,), 1.44-1.40 (m, 2H), 1.33-1.27 (m, 6H), 0.89-0.86 (m, 3H), ^{13}C (100.6 MHz, $CDCl_3$) δ_C 176.7, 78.5, 35.5, 34.1, 31.5, 29.1, 26.5, 22.7, 14.1. HRMS found: $[M-H]^-$ 202.1081, $C_9H_{17}NO_4$ requires 202.1085.

Preparation of (R)-3-(nitromethyl) nonanoic acid **(10f)**



Prepared following general procedure using **9 f** (0.25 mmol, 75 mg) in THF (0,5 mL) treated with an aqueous solution of NaOH (1N, 1,25 mL, 5 equiv.) The crude mixture was submitted to column chromatography 8/2 Petroleum spirit/ Ethyl acetate and compound **10f** was obtained as pale yellow oil 47 mg, 87% yield; R_f = 0.5 (Petroleum Ether/Ethyl Acetate, 3:7), ^{1}H NMR (400 MHz, $CDCl_3$) ^{1}H NMR (400 MHz, $CDCl_3$) δ_H 4.45 (dd, *J* = 6.8, *J* = 12.4, 1H), 4.4 (dd, *J* = 6, *J* = 12.4, 1H),2.59-2.51 (1H, m) 2.45 (d, *J*=6.4, 2H), 1.39-1.35 (m, 2H), 1.25-1.19 (m, 8H), 0.82 (t, 3H), ^{13}C (100.6 MHz, $CDCl_3$) δ_C 176.9, 78.8, 35.5, 34.1, 31.7, 31.5, 29.1, 26.5, 22.7, 14.1. HRMS found: $[M-H]^-$ 216.1299, $C_{10}H_{20}NO_4$ requires 216.1241.

Preparation of (R)-3-(nitromethyl) dodecanoic acid **(10i).**



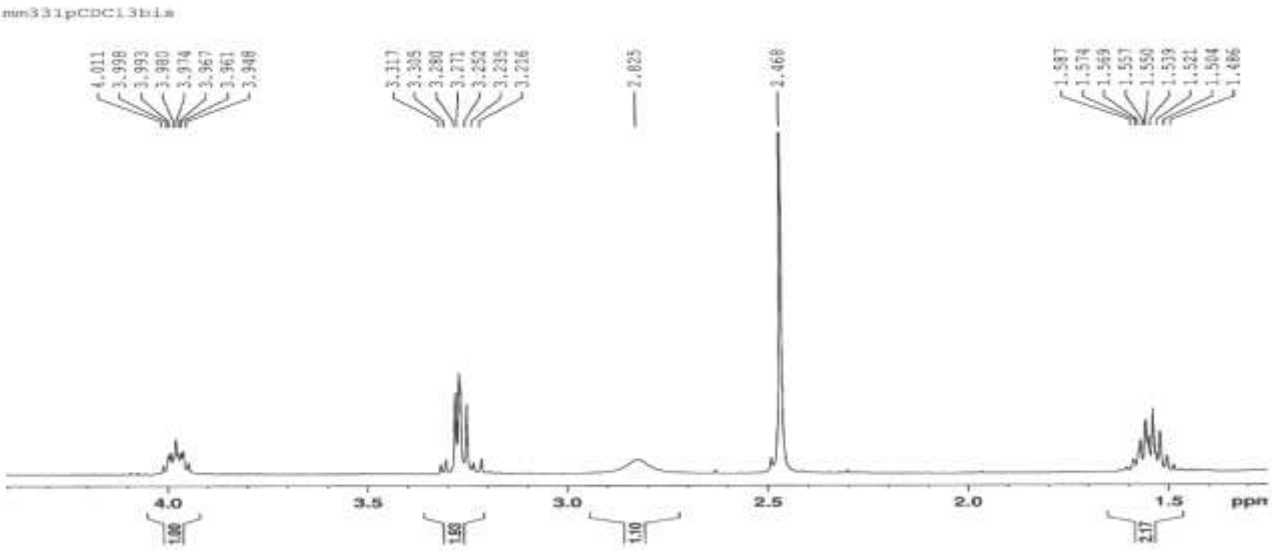
Prepared following general procedure using **9i** (0.25 mmol, 85 mg) in THF (0,5 mL) treated with an aqueous solution of NaOH (1N, 1,25 mL, 5 equiv.) The crude mixture was submitted to column chromatography 8/2 Petroleum spirit/ Ethyl acetate and compound **10i** was obtained as pale yellow oil 56.4 mg, 87% yield; R_f = 0.5 (Petroleum Ether/Ethyl Acetate, 3:7), ^{1}H NMR (400 MHz, $CDCl_3$) δ_H 4.51-4.41 (2H, m), 2.64-2.55 (1H, m), 2.51-2.49 (1H, m), 1.43-1.39 (14H, m) 0.87-0.84 (m, 3H), ^{13}C (100.6 MHz, $CDCl_3$) δ_C 177.5, 78.5, 35.7, 34.1, 32.0, 31.4, 29.9, 29.6, 29.5, 29.4, 26.6, 22.8, 14.2. HRMS found: $[M-H^-]$ 258.1712, $C_{13}H_{24}NO_4$ requires 258.1711.

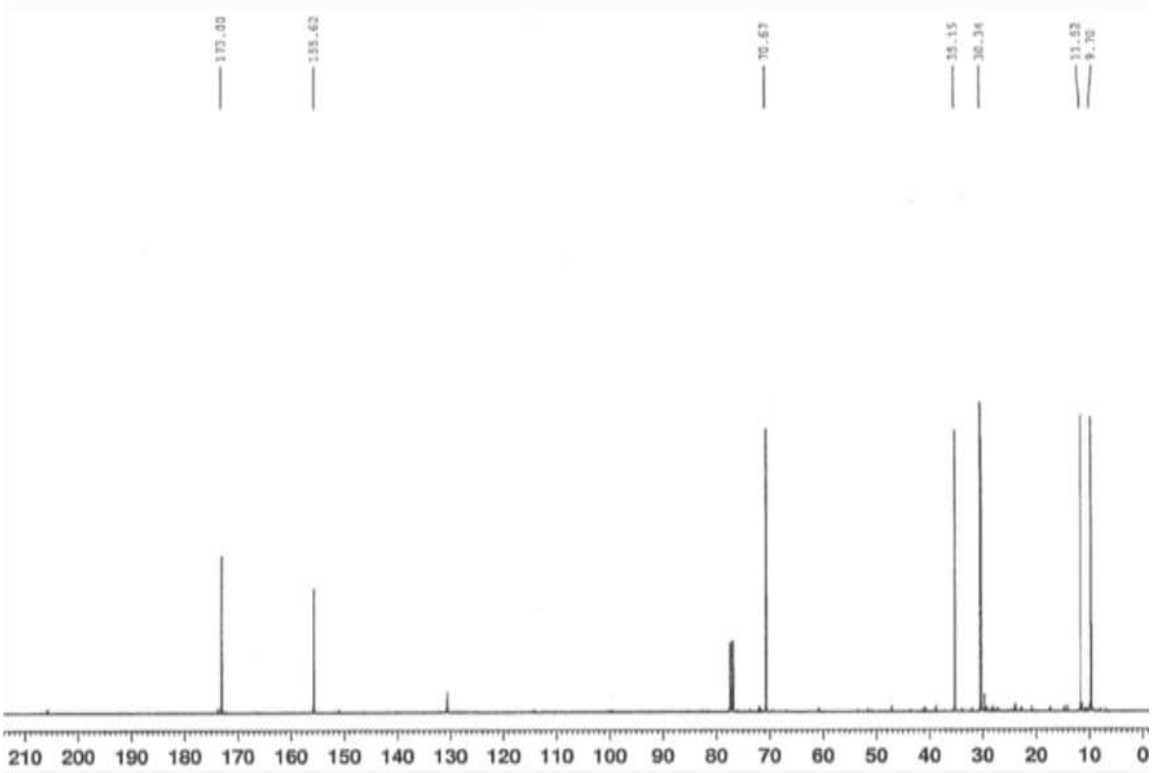
Preparation of (S)-Pregabalin **11**

In a 5 mL round bottomed flask were charged Raney-Ni (2 equiv, 1g), methanol (2.5 mL) and nitroacid *ent*-**10d** (0.5g). The suspension obtained was stirred at room temperature under H_2 (1 atm) for 6h, then the liquid phase decanted. The methanolic solution was evaporated to give pregabalin **7** (0.394g, 95% yield) as a colorless solid. Pregabalin was identified with published data.[1]

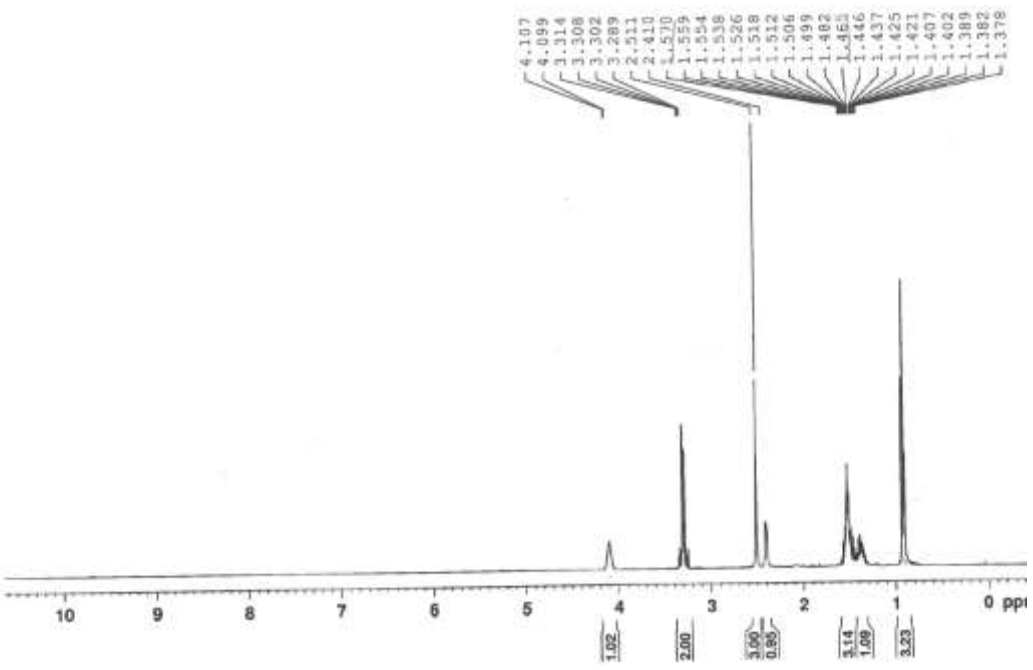
[1] H. Gotoh, H. Ishikawa, Y. Hayashi, *Org. Lett*., 2007, **9**, 25, 5307

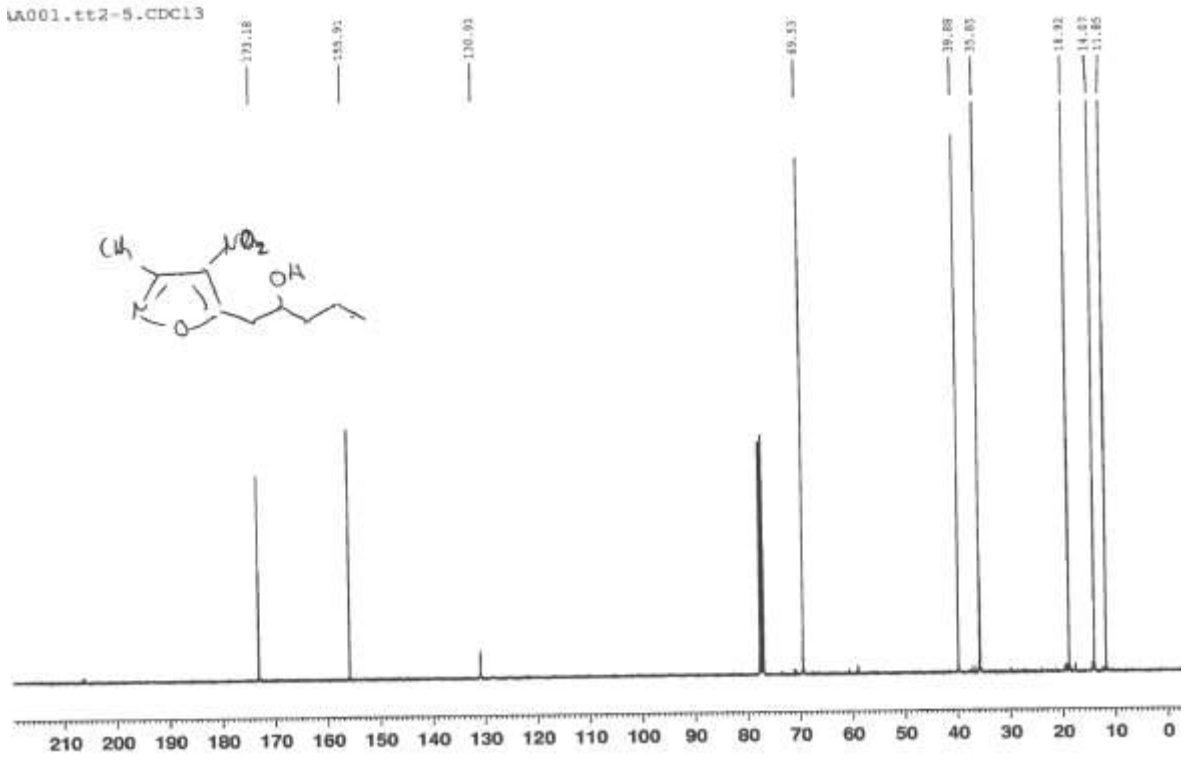
Compound 6a


mm331pCDCl3bia
4.011
3.998
3.993
3.980
3.974
3.967
3.961
3.948
3.317
3.305
3.280
3.271
3.252
3.235
3.216
2.625
2.468
1.587
1.574
1.569
1.557
1.550
1.539
1.521
1.504
1.486
4.0
3.5
3.0
2.5
2.0
1.5
ppm
1.00
1.69
1.10
2.17

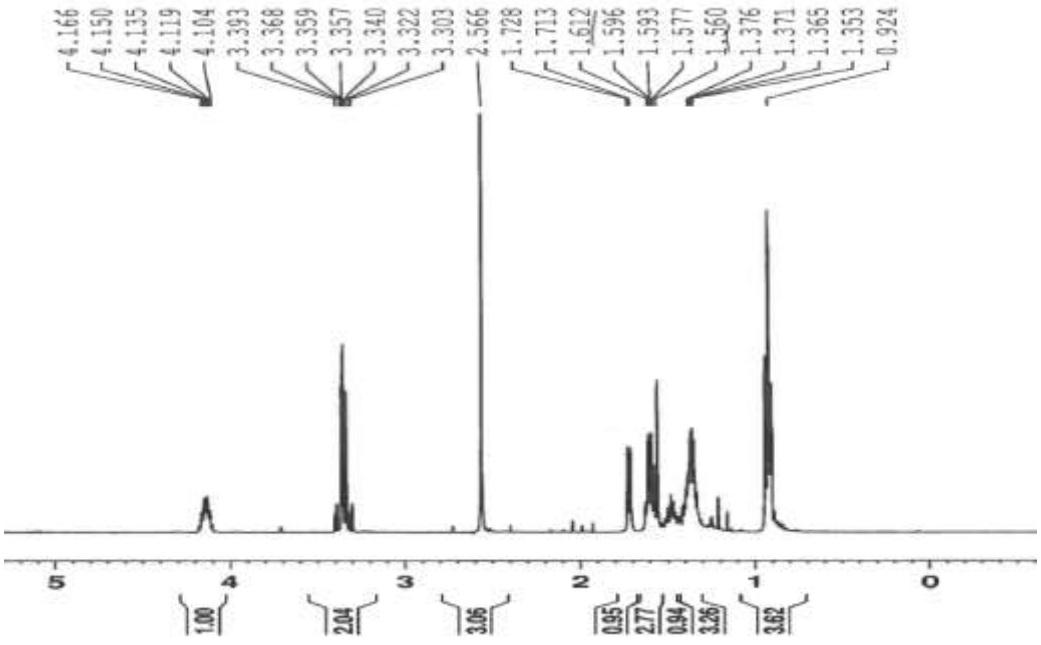

173.03
155.62
70.67
55.15
30.34
11.53
9.70
210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0

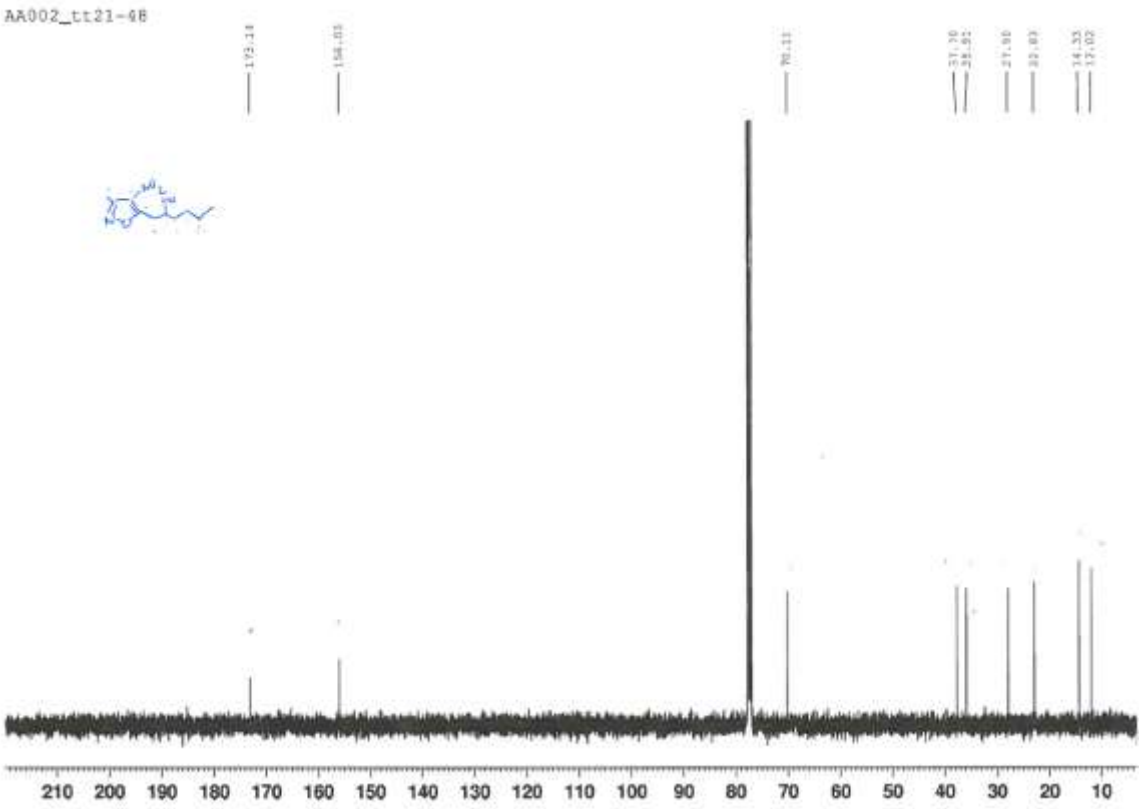
Compound 6b


4.107
4.099
3.314
3.308
3.302
3.289
2.511
2.410
1.570
1.559
1.554
1.538
1.526
1.518
1.512
1.506
1.499
1.482
1.465
1.446
1.437
1.425
1.421
1.407
1.402
1.389
1.382
1.378
10
9
8
7
6
5
4
3
2
1
0 ppm
1.02
2.00
3.00
0.95
3.14
1.00
3.23

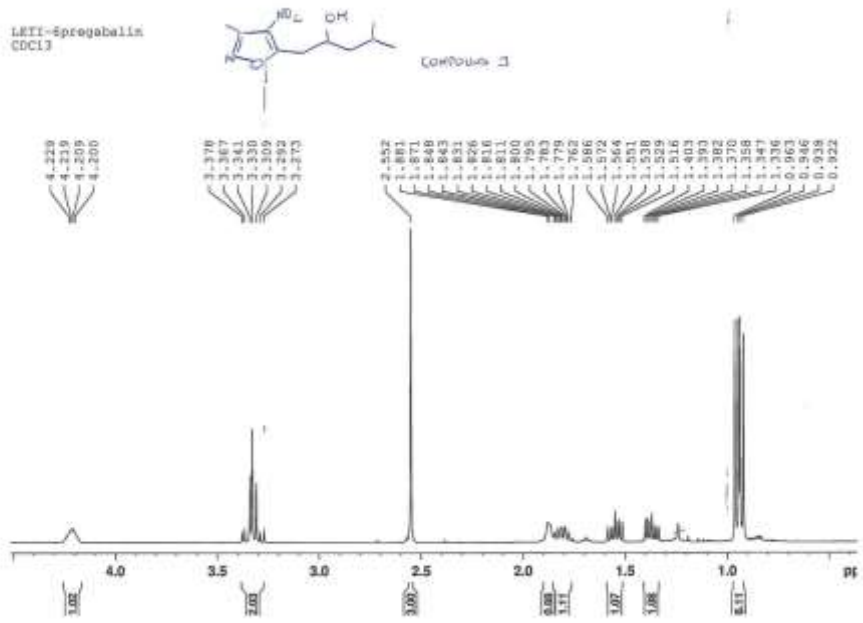

\A001.tt2-5.CDCl3
173.18
155.91
130.93
69.53
39.88
35.65
18.92
14.07
11.85
OH
210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0

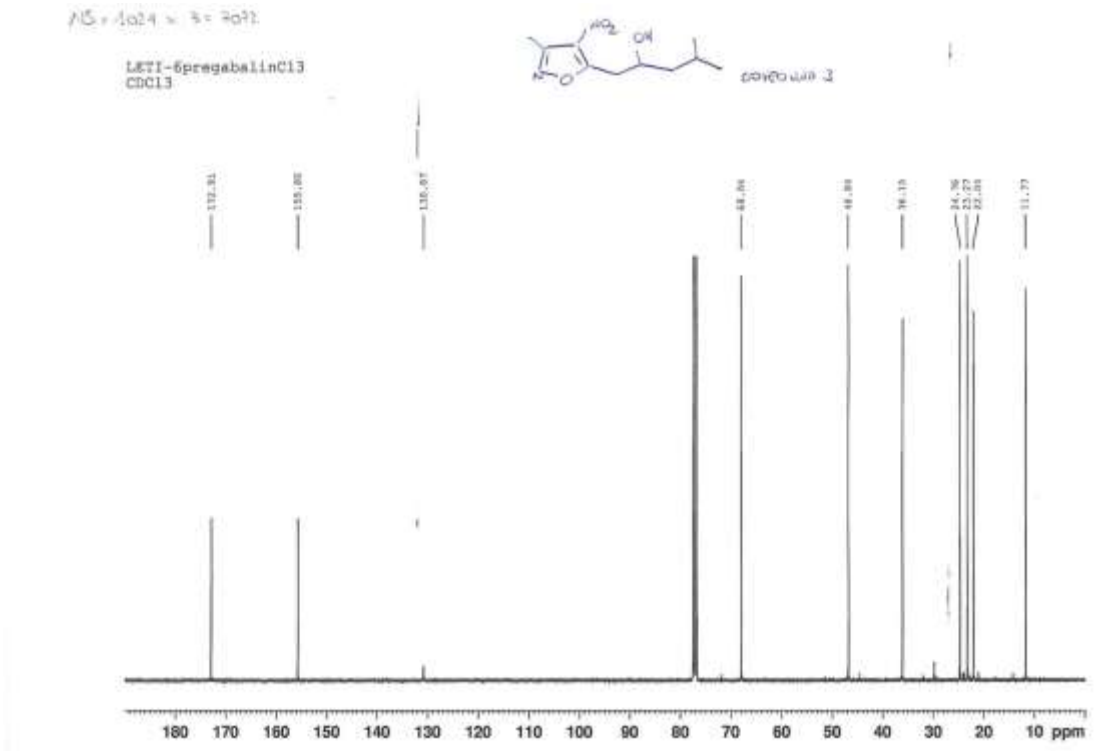
Compound 6c


4.166
4.150
4.135
4.119
4.104
3.393
3.368
3.359
3.357
3.340
3.322
3.303
2.566
1.728
1.713
1.612
1.596
1.593
1.577
1.560
1.376
1.371
1.365
1.353
0.924
5 4 3 2 1 0
1.00
2.04
3.06
0.95
2.77
0.94
3.26
3.62

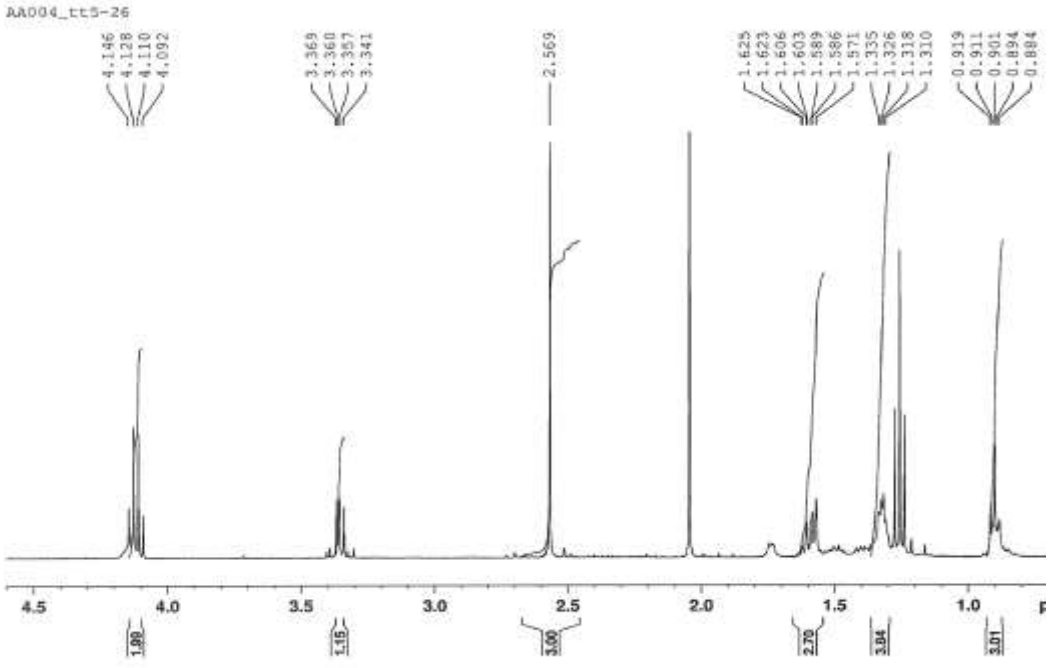

AA002_tt21-48
173.14
154.03
70.11
37.70
36.91
27.98
25.89
14.33
17.02
210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10

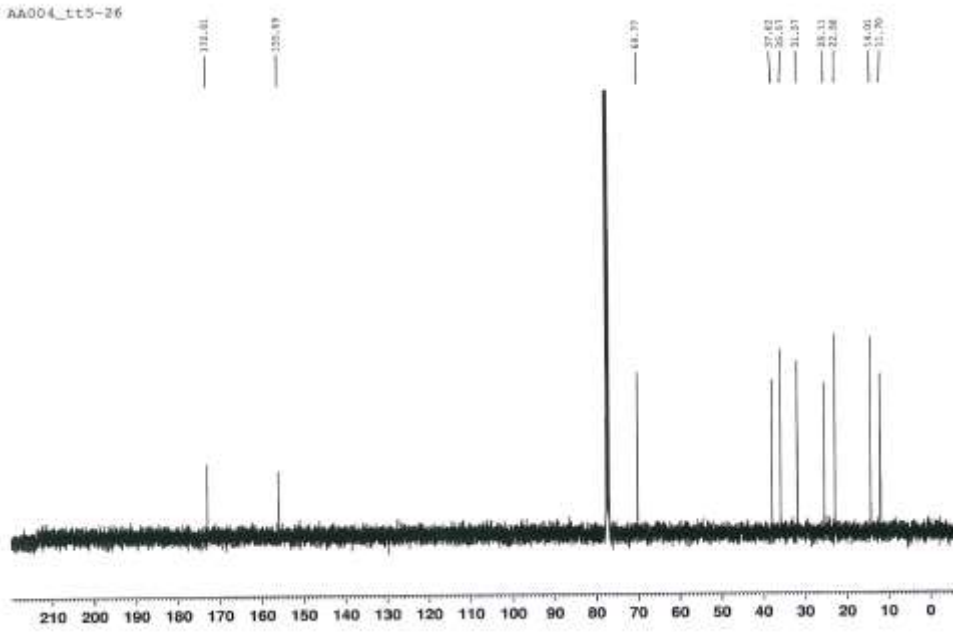
Compound 6d


LETI-Spregabalin
CDCl3
4.229
4.219
4.209
4.200
3.370
3.367
3.341
3.330
3.309
3.292
3.273
2.552
1.881
1.871
1.848
1.843
1.831
1.826
1.816
1.811
1.800
1.795
1.783
1.779
1.762
1.586
1.572
1.564
1.551
1.538
1.529
1.516
1.403
1.390
1.382
1.370
1.358
1.347
1.336
0.963
0.946
0.939
0.922
4.0
3.5
3.0
2.5
2.0
1.5
1.0

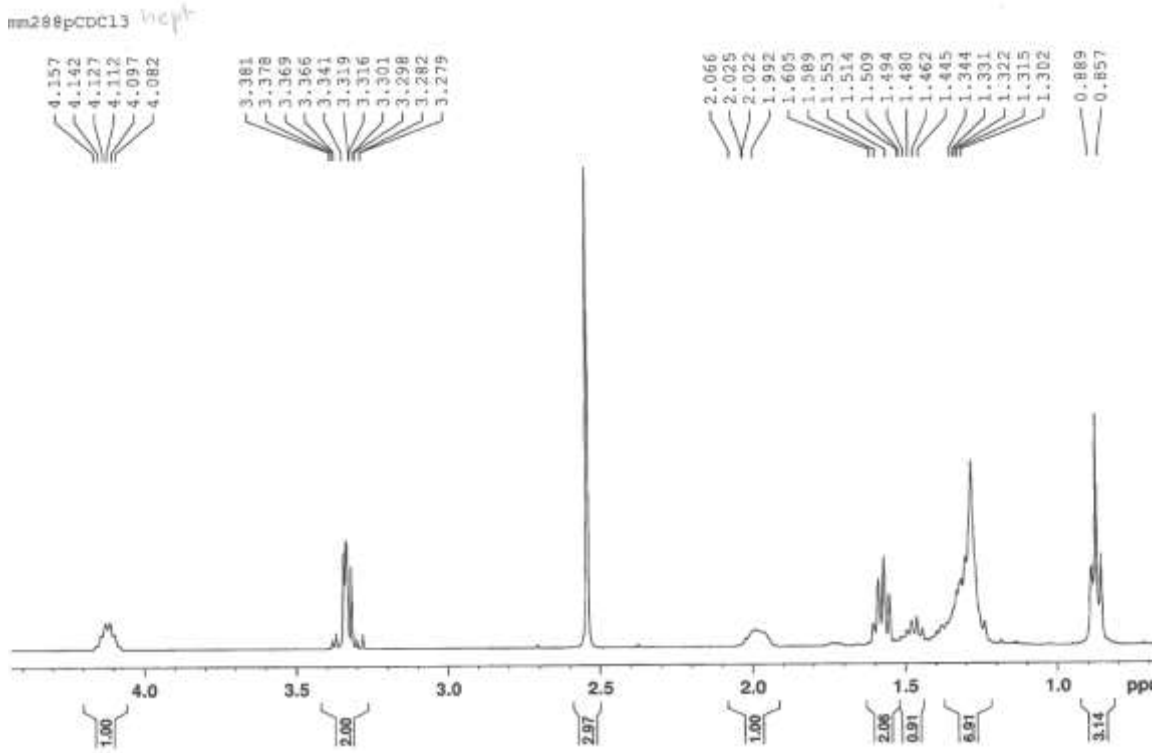

LETI-6pregabalinC13
CDCl3
172.91
155.88
136.87
68.84
48.84
39.19
24.36
23.27
22.04
11.77
180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 ppm

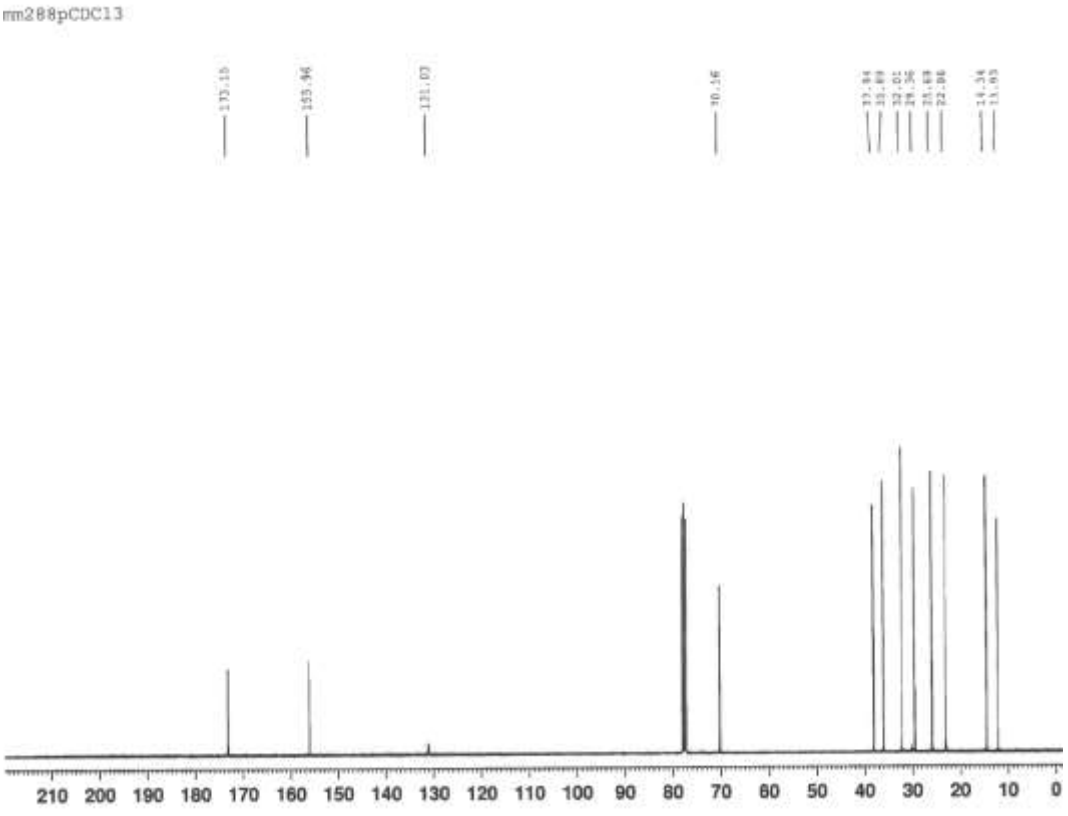
Compound 6e


AA004_tt5-26
4.146
4.128
4.110
4.092
3.369
3.360
3.357
3.341
2.569
1.625
1.623
1.606
1.603
1.589
1.586
1.571
1.335
1.326
1.318
1.310
0.919
0.911
0.901
0.894
0.884
4.5 4.0 3.5 3.0 2.5 2.0 1.5 1.0
1.00
1.15
3.00
2.70
3.04
3.01

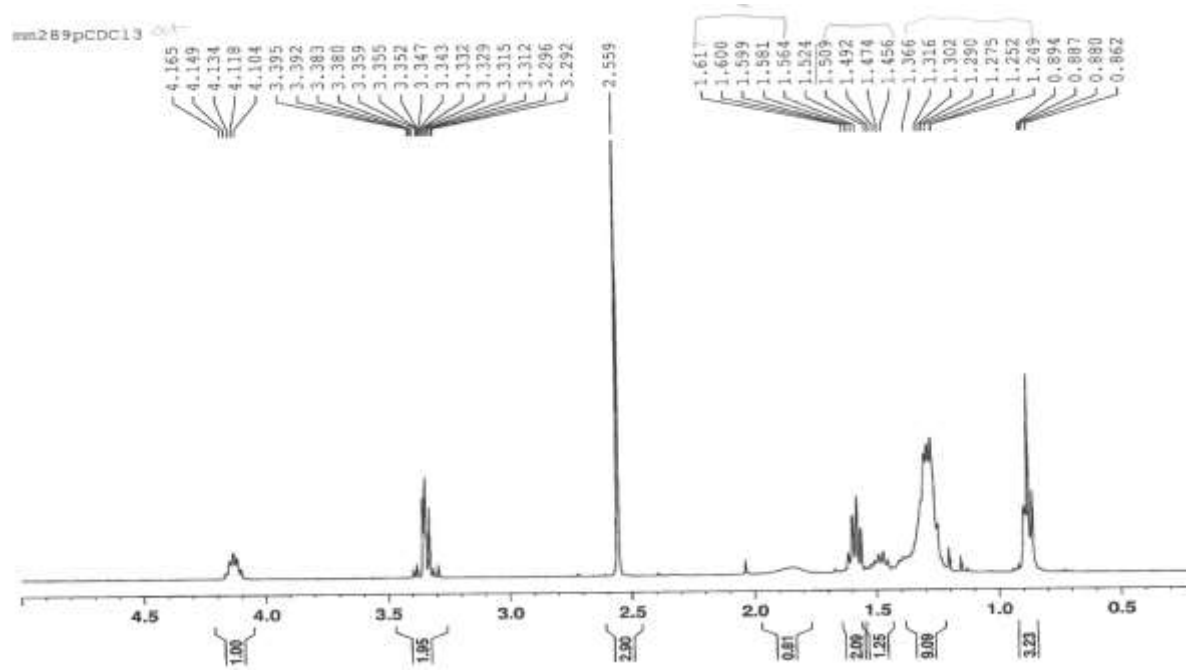

AA004_tt5-26
210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0

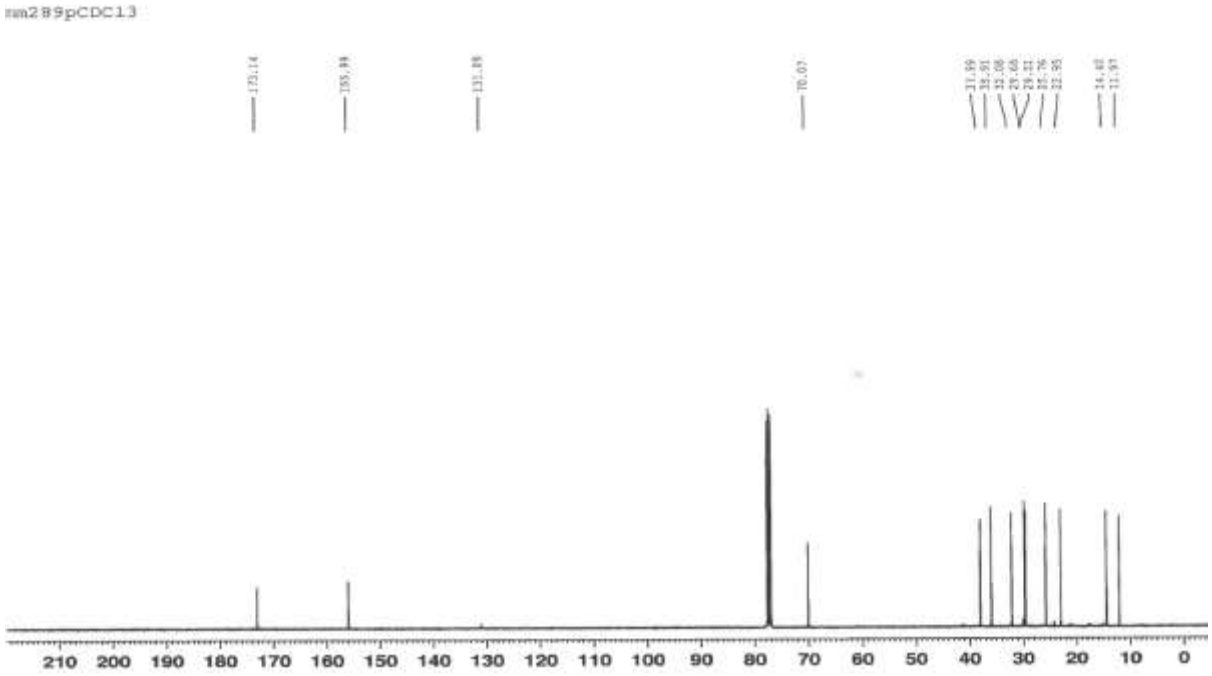
Compound 6f


mm288pCDCl3 hept
4.157
4.142
4.127
4.112
4.097
4.082
3.381
3.378
3.369
3.366
3.341
3.319
3.316
3.301
3.298
3.282
3.279
2.066
2.025
2.022
1.992
1.605
1.589
1.553
1.514
1.509
1.494
1.480
1.462
1.445
1.344
1.331
1.322
1.315
1.302
0.889
0.857
4.0
3.5
3.0
2.5
2.0
1.5
1.0
1.00
2.00
2.97
1.00
2.06
0.91
6.91
3.14

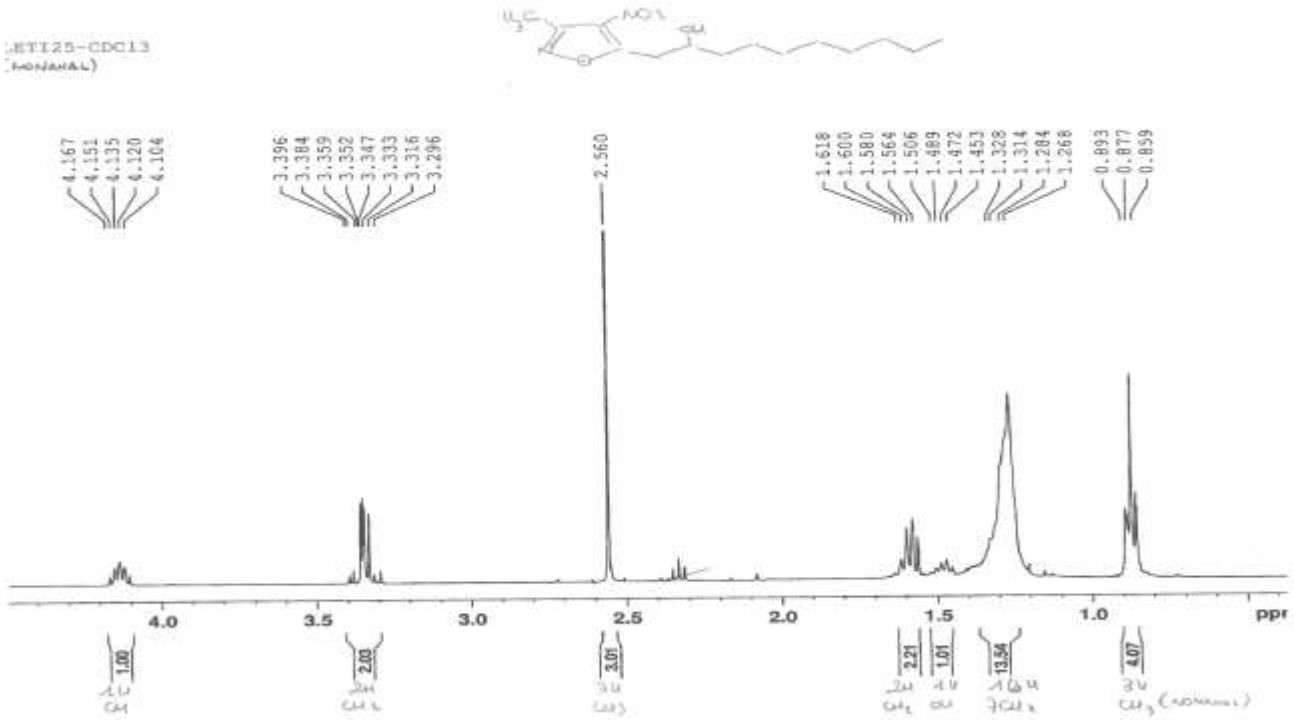

mm288pCDCl3
170.19
155.96
131.07
70.16
33.84
33.69
32.01
29.36
25.69
22.86
14.34
13.93
210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0

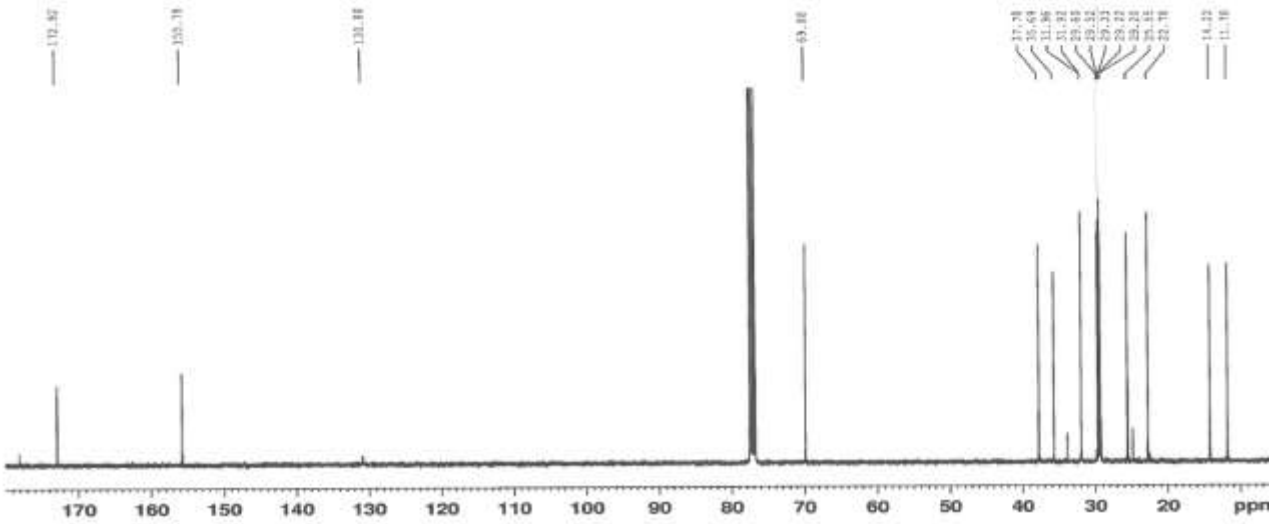
Compound 6g



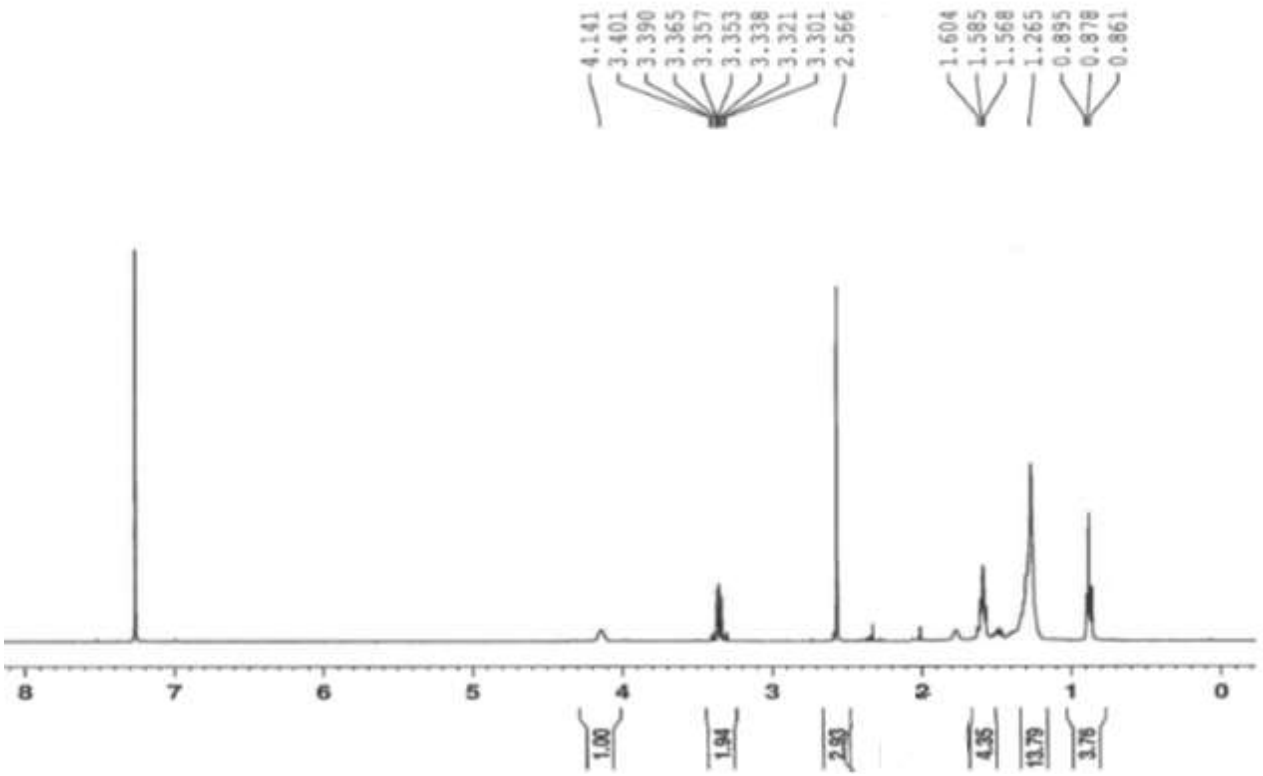


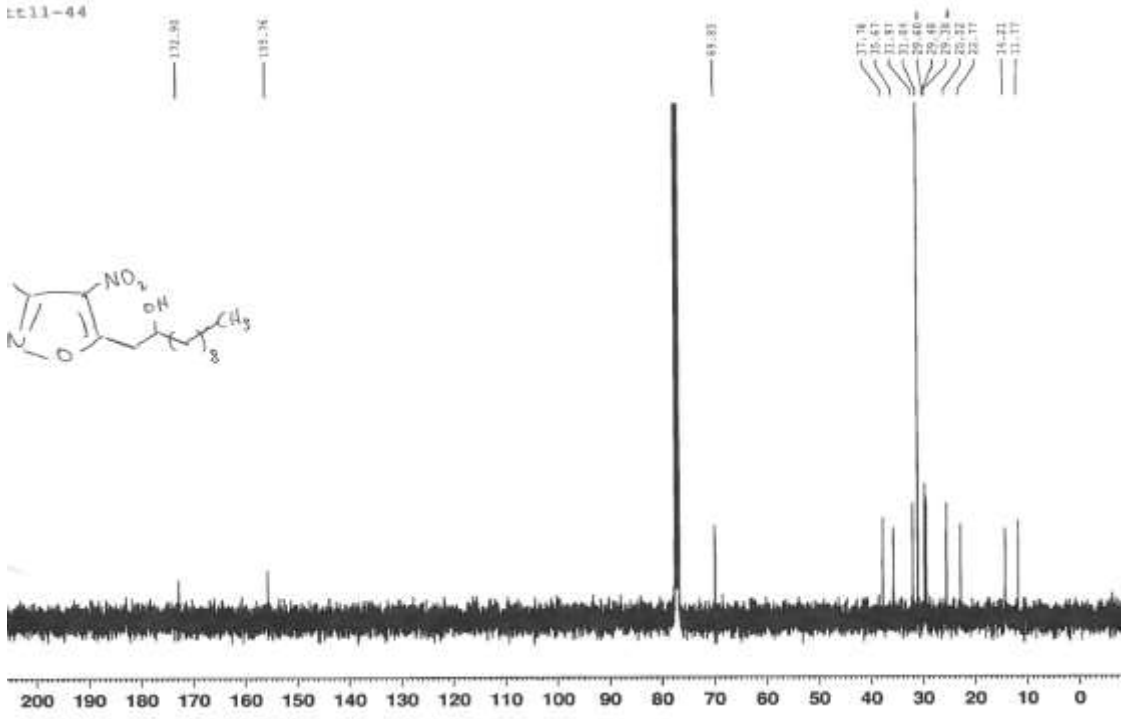
Compound 6h


ETI25-CDCl3
MONANAL)
4.167
4.151
4.135
4.120
4.104
3.396
3.384
3.359
3.352
3.347
3.333
3.316
3.296
2.560
1.618
1.600
1.580
1.564
1.506
1.489
1.472
1.453
1.328
1.314
1.284
1.268
0.893
0.877
0.859
4.0
3.5
3.0
2.5
2.0
1.5
1.0
1.00
2.03
3.01
2.21
1.01
13.54
4.07

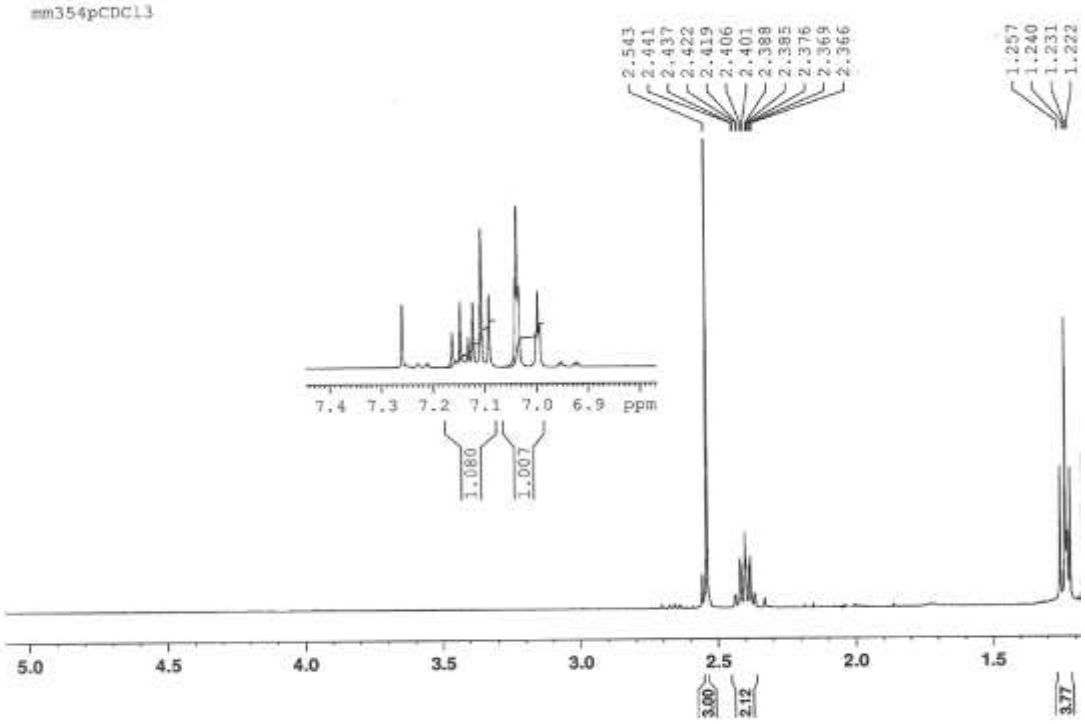

172.82
155.78
130.88
69.38
37.78
35.69
31.96
31.32
29.83
29.51
29.33
29.22
29.03
25.61
22.78
14.23
11.38
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
ppm

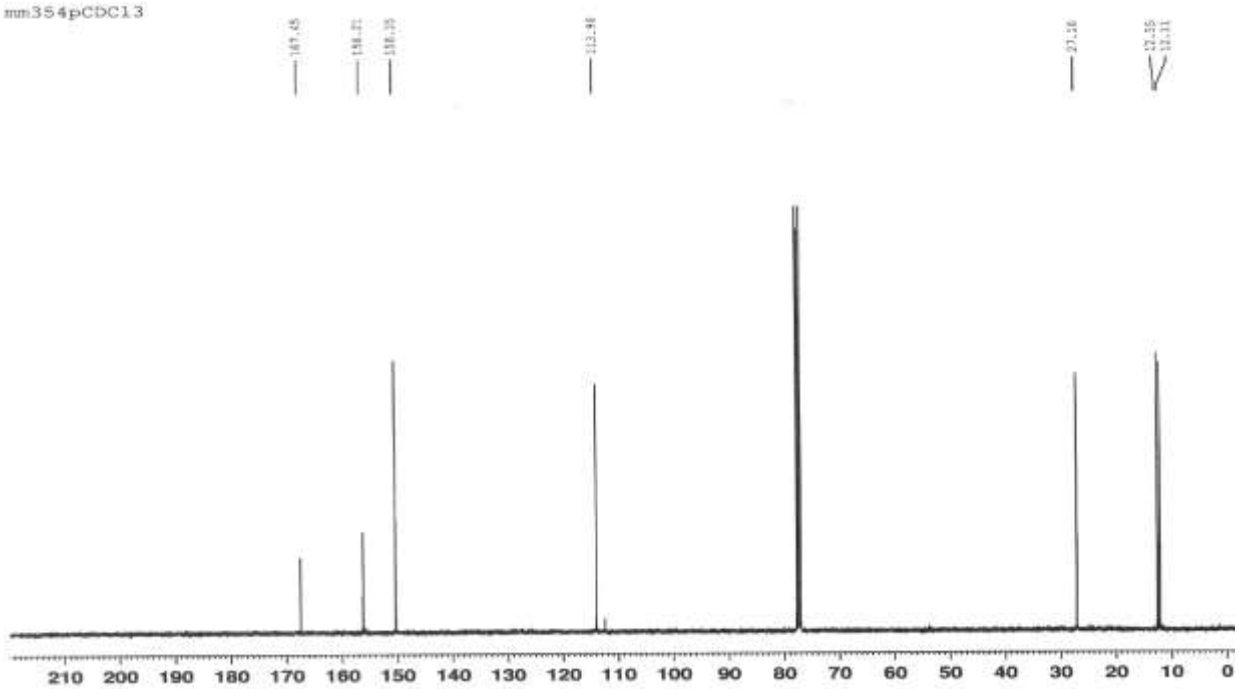
Compound 6i


4.141
3.401
3.390
3.365
3.357
3.353
3.338
3.321
3.301
2.566
1.604
1.585
1.568
1.265
0.895
0.878
0.861
8
7
6
5
4
3
2
1
0
1.00
1.94
2.93
4.35
13.79
3.76

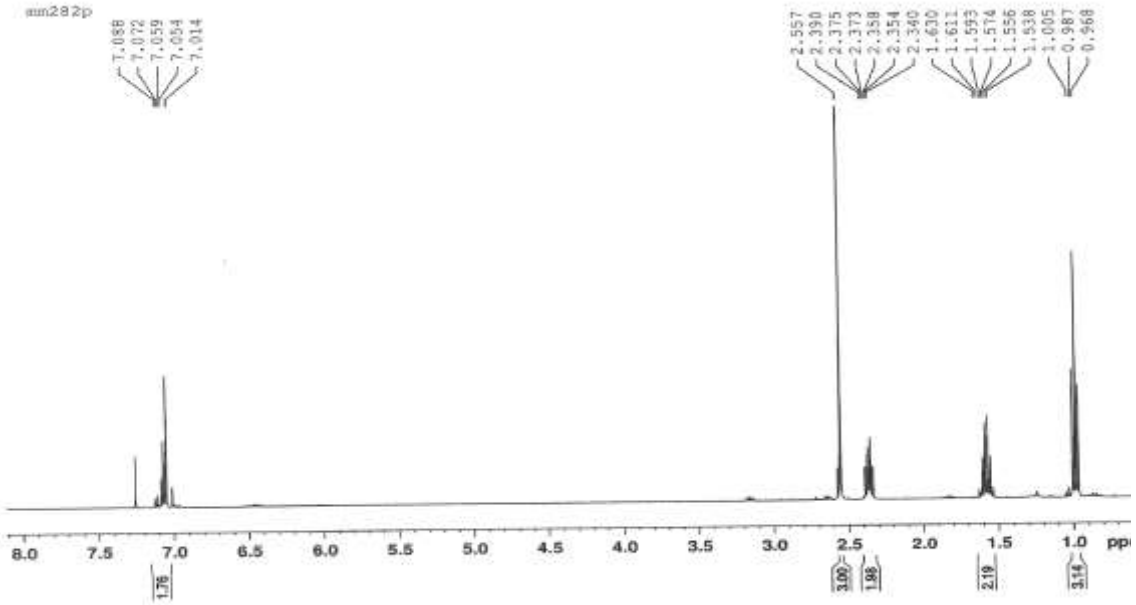

tt11-44
132.93
139.36
69.83
77.78
76.47
71.24
29.46
29.38
29.32
25.77
14.21
11.17
NO2
OH
CH3
8
N
O
200
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0

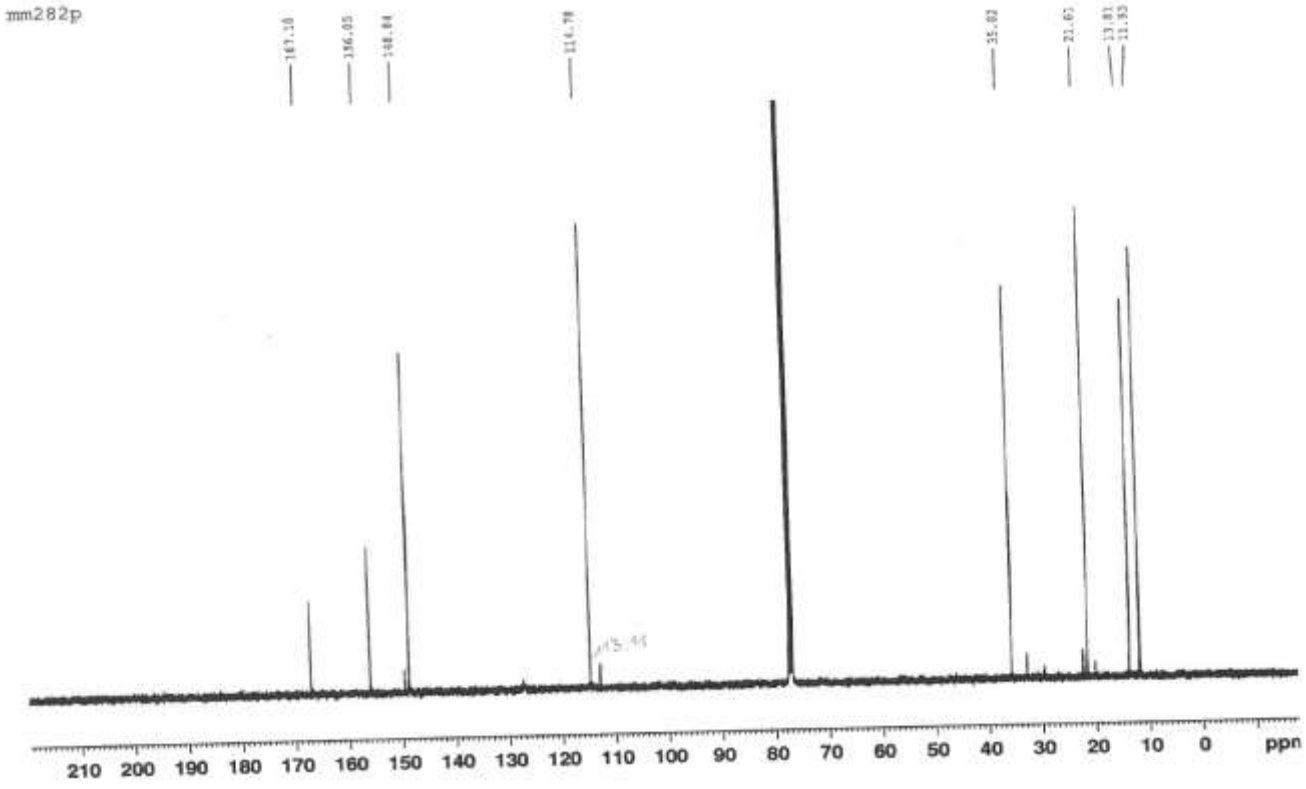
Compound 7a


mm354pCDCl3
2.543
2.441
2.437
2.422
2.419
2.406
2.401
2.389
2.385
2.376
2.369
2.366
1.257
1.240
1.231
1.222
7.4 7.3 7.2 7.1 7.0 6.9 ppm
1.080
1.007
5.0 4.5 4.0 3.5 3.0 2.5 2.0 1.5
3.00
2.12
3.77

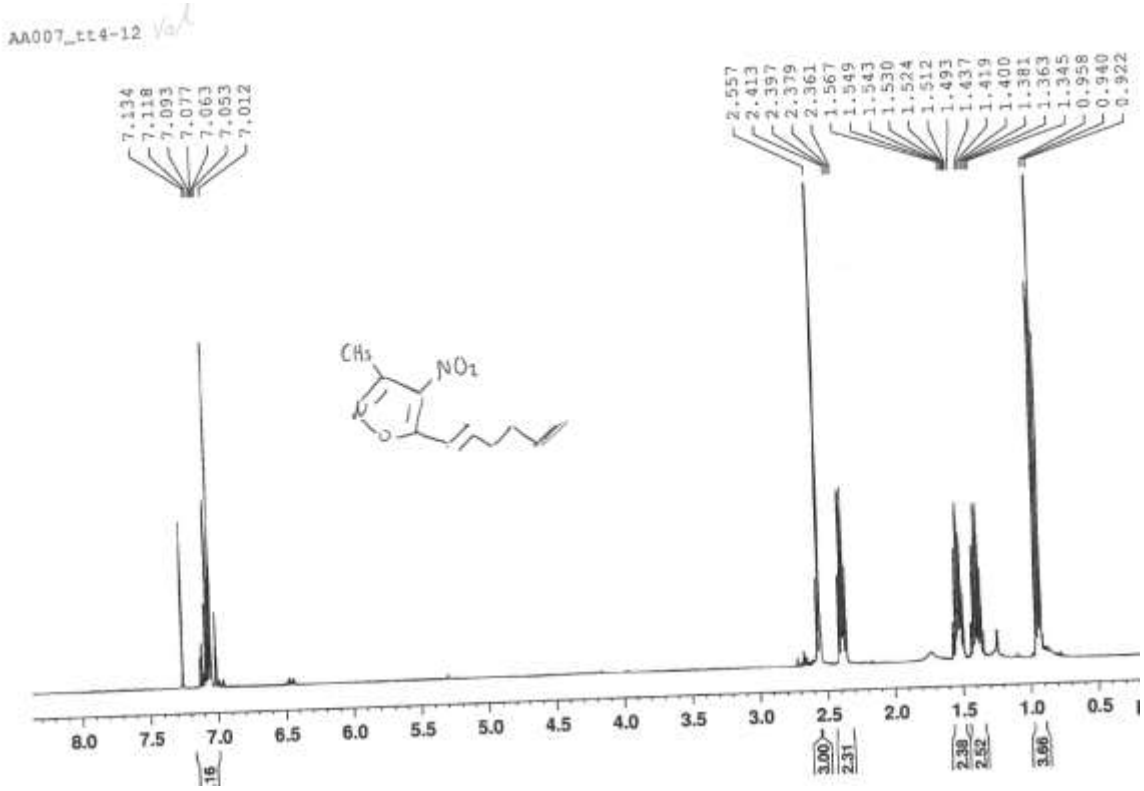

mm354pCDCl3
167.45
158.21
158.19
113.48
27.16
13.35
13.11
210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0

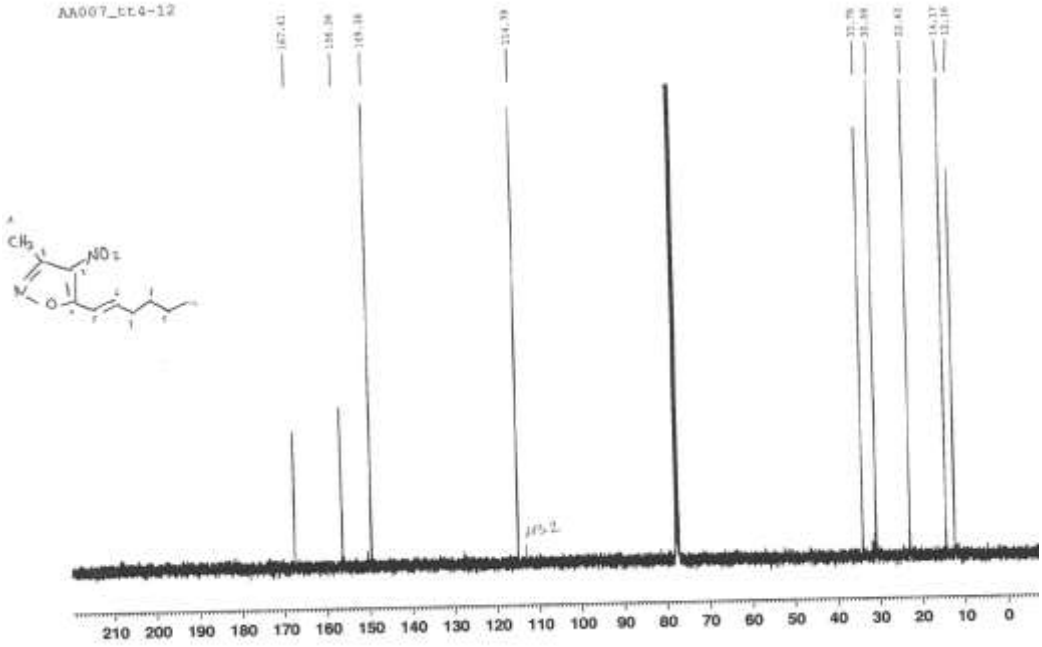
Compound 7b


mm282p
7.088
7.072
7.059
7.054
7.014
2.557
2.390
2.375
2.373
2.358
2.354
2.340
1.630
1.611
1.593
1.574
1.556
1.538
1.005
0.987
0.968
8.0
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
1.76
3.00
1.98
2.19
3.14

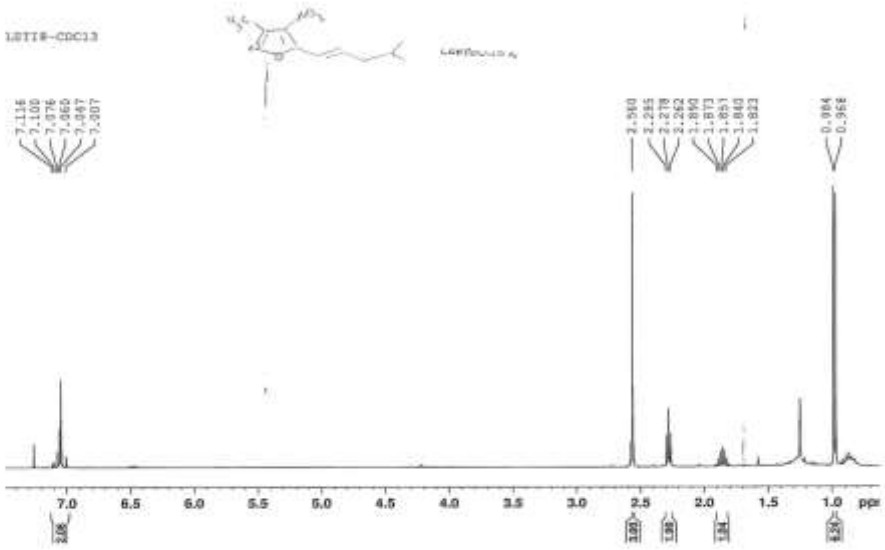

mm282p
169.10
156.05
148.84
114.79
35.02
21.67
13.81
11.93
210
200
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
ppm

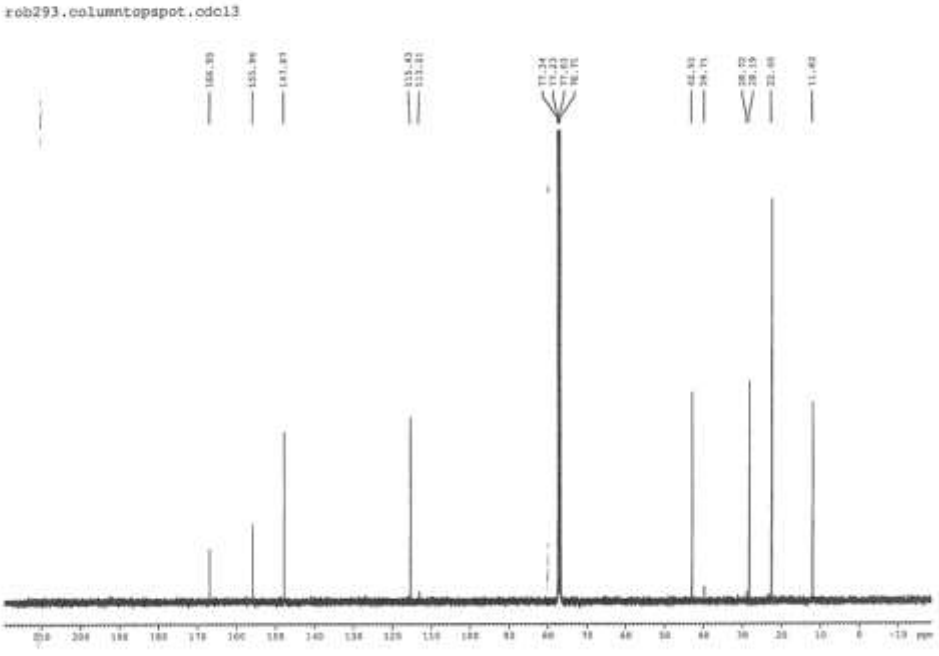
Compound 7c


AA007_tt4-12
7.134
7.118
7.093
7.077
7.063
7.053
7.012
2.557
2.413
2.397
2.379
2.361
1.567
1.549
1.543
1.530
1.524
1.512
1.493
1.437
1.419
1.400
1.381
1.363
1.345
0.958
0.940
0.922
CH3
NO2
8.0
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
1.6
3.00
2.31
2.38
2.52
3.60

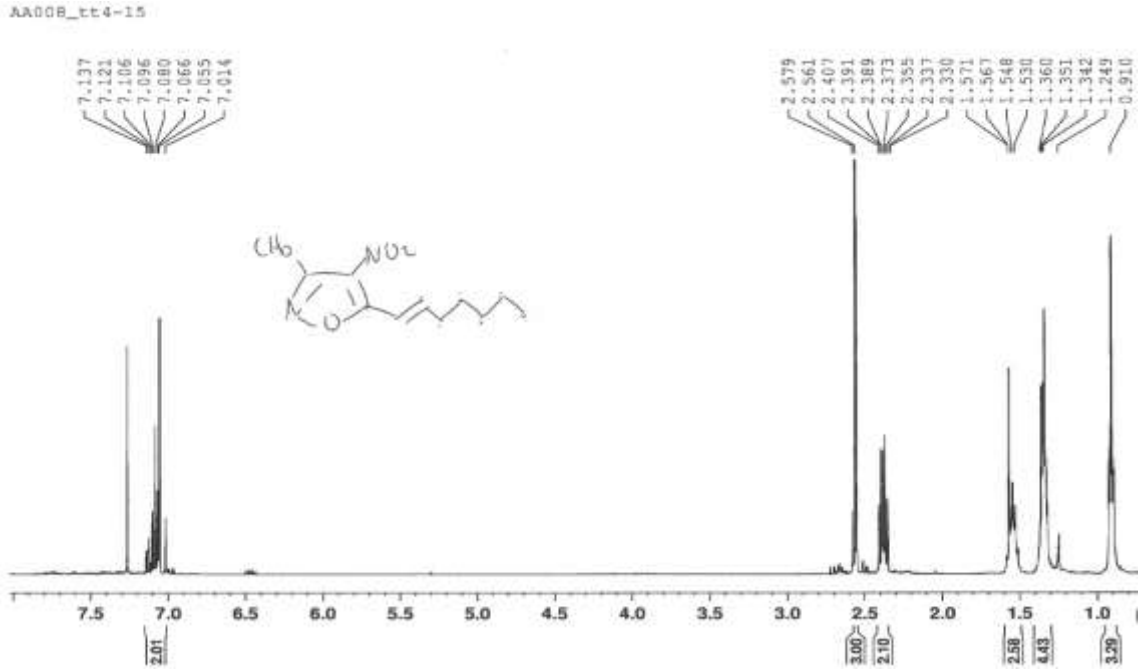

AA007_tt4-12
167.41
156.36
149.38
114.59
77.79
77.58
77.37
33.43
14.17
13.16
CH3
NO2
210
200
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0

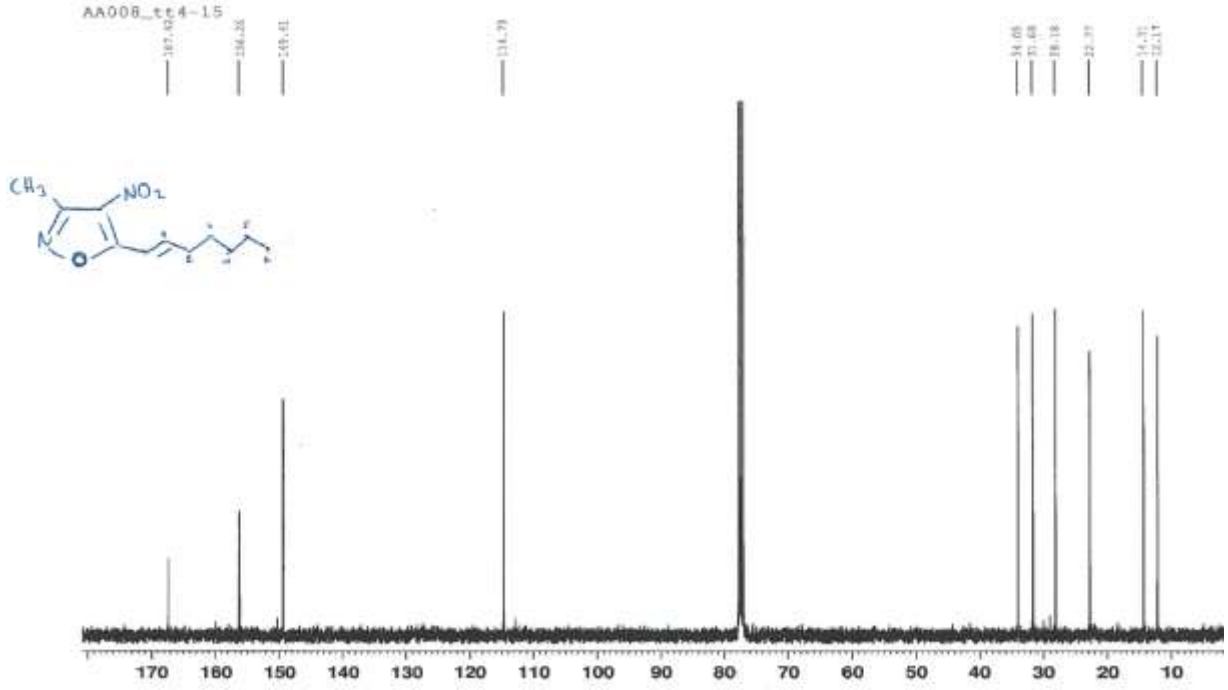
Compound 7d


LSTI#-CDCl3
7.116
7.100
7.076
7.060
7.047
7.007
2.560
2.285
2.278
2.262
1.890
1.873
1.851
1.840
1.823
0.984
0.968
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
ppm

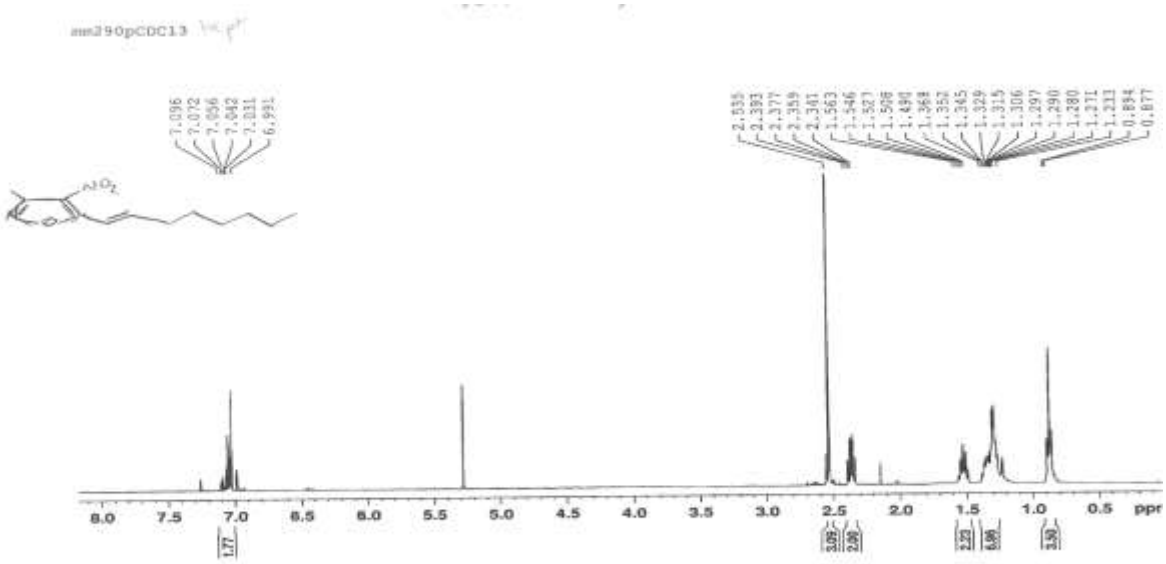

rob293.columntopspot.cdcl3
166.59
155.96
147.87
115.42
113.31
77.24
77.03
76.81
62.92
34.71
28.72
28.19
22.48
11.48

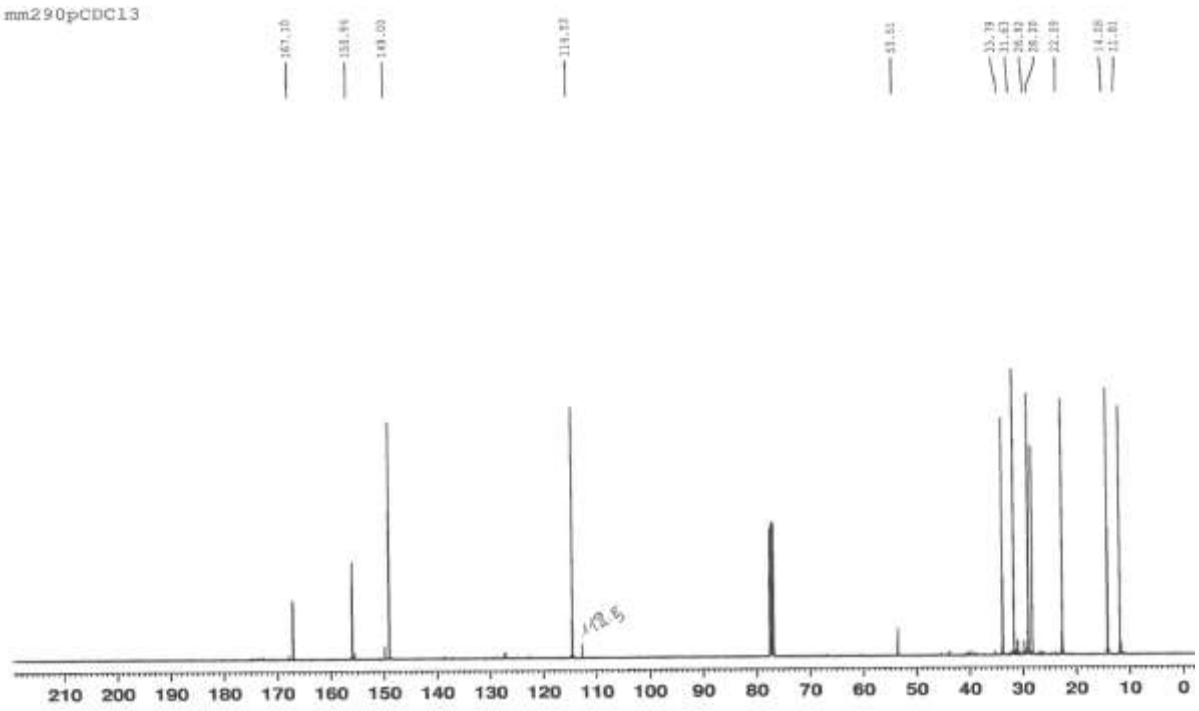
Compound 7e


AA008_tt4-15
7.137
7.121
7.106
7.096
7.080
7.066
7.055
7.014
2.579
2.561
2.407
2.391
2.389
2.373
2.355
2.337
2.330
1.571
1.567
1.548
1.530
1.360
1.351
1.342
1.249
0.910
CH3
NO2
O
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
2.01
3.00
2.10
2.58
4.43
3.29

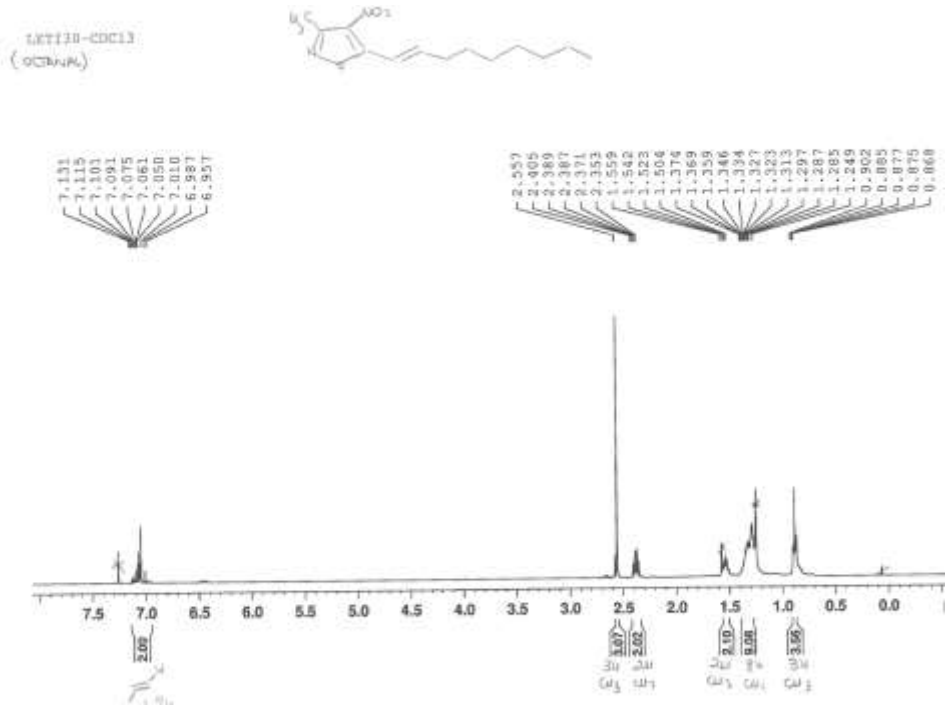

AA008_tt4-15
CH3
NO2
170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10

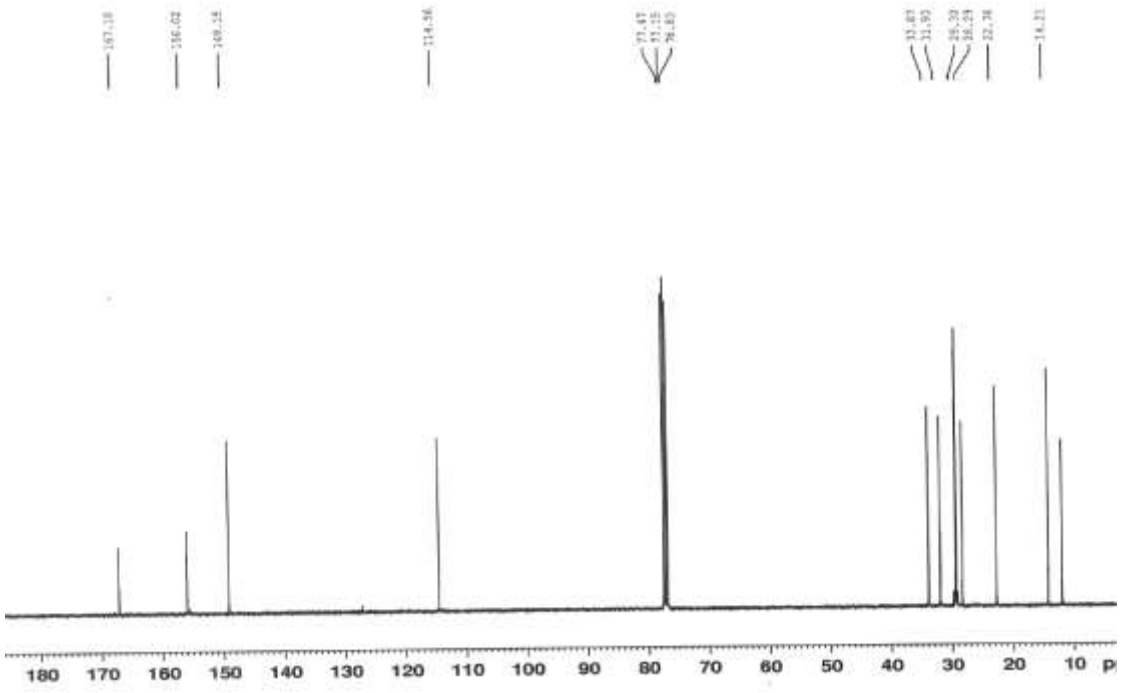
Compound 7f


NO2
8.0 7.5 7.0 6.5 6.0 5.5 5.0 4.5 4.0 3.5 3.0 2.5 2.0 1.5 1.0 0.5 ppm

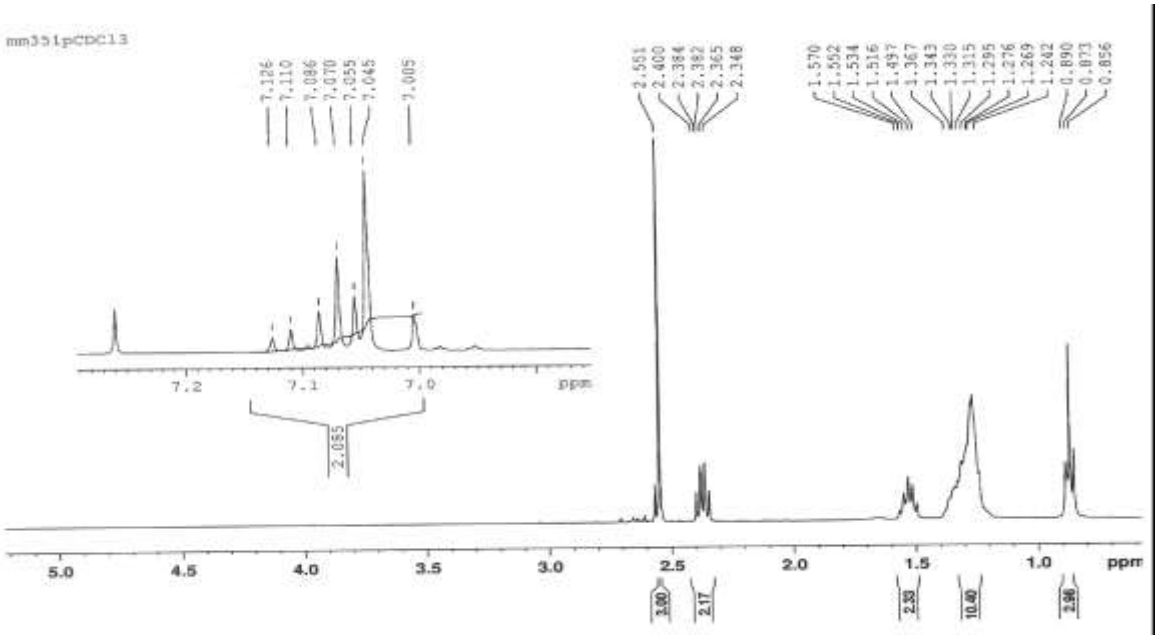

mm290pCDCl3
167.10
138.96
149.00
119.57
53.51
33.79
31.63
26.93
26.39
22.89
14.26
11.81
210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0

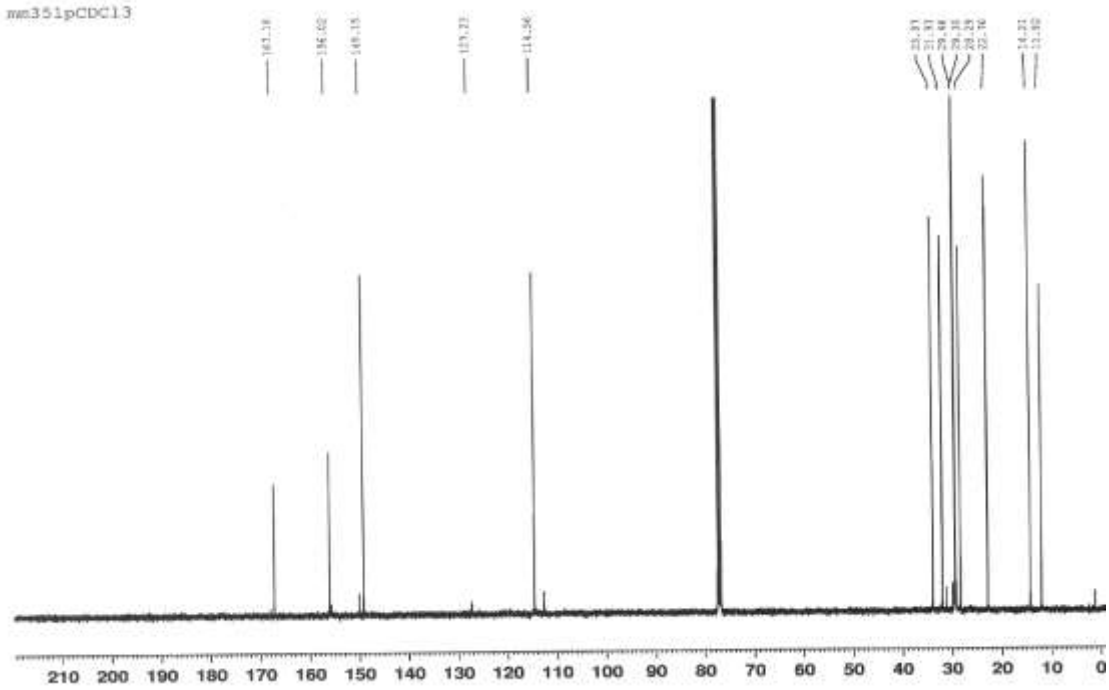
Compound 7g


LKT138-CDCl3
(OCTANAL)
7.151
7.115
7.101
7.091
7.075
7.061
7.050
7.010
6.987
6.957
2.559
2.406
2.389
2.387
2.371
2.353
1.559
1.542
1.523
1.504
1.374
1.369
1.359
1.346
1.334
1.327
1.323
1.313
1.297
1.287
1.285
1.249
0.902
0.885
0.877
0.875
0.860
7.5 7.0 6.5 6.0 5.5 5.0 4.5 4.0 3.5 3.0 2.5 2.0 1.5 1.0 0.5 0.0
2.09
3.07
2.02
2.10
9.06
3.56

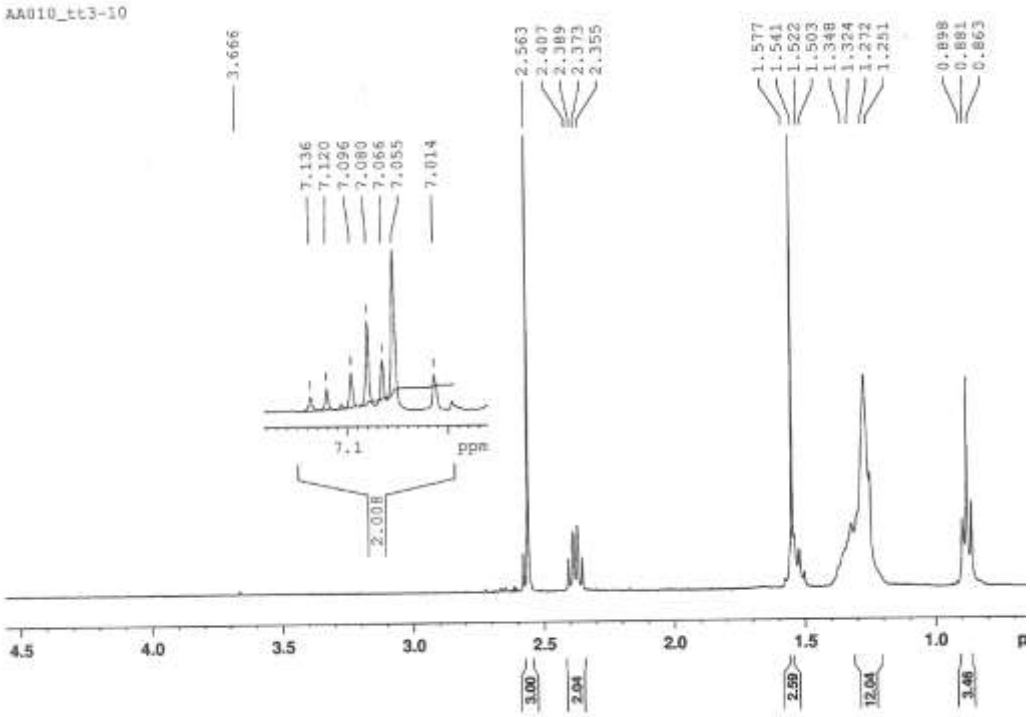


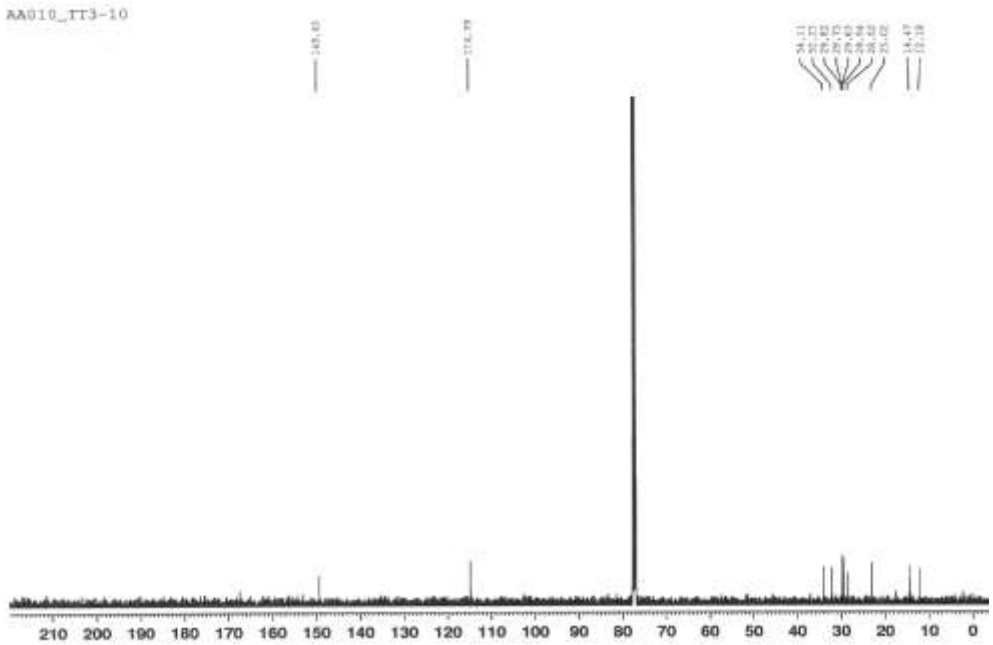
Compound 7h



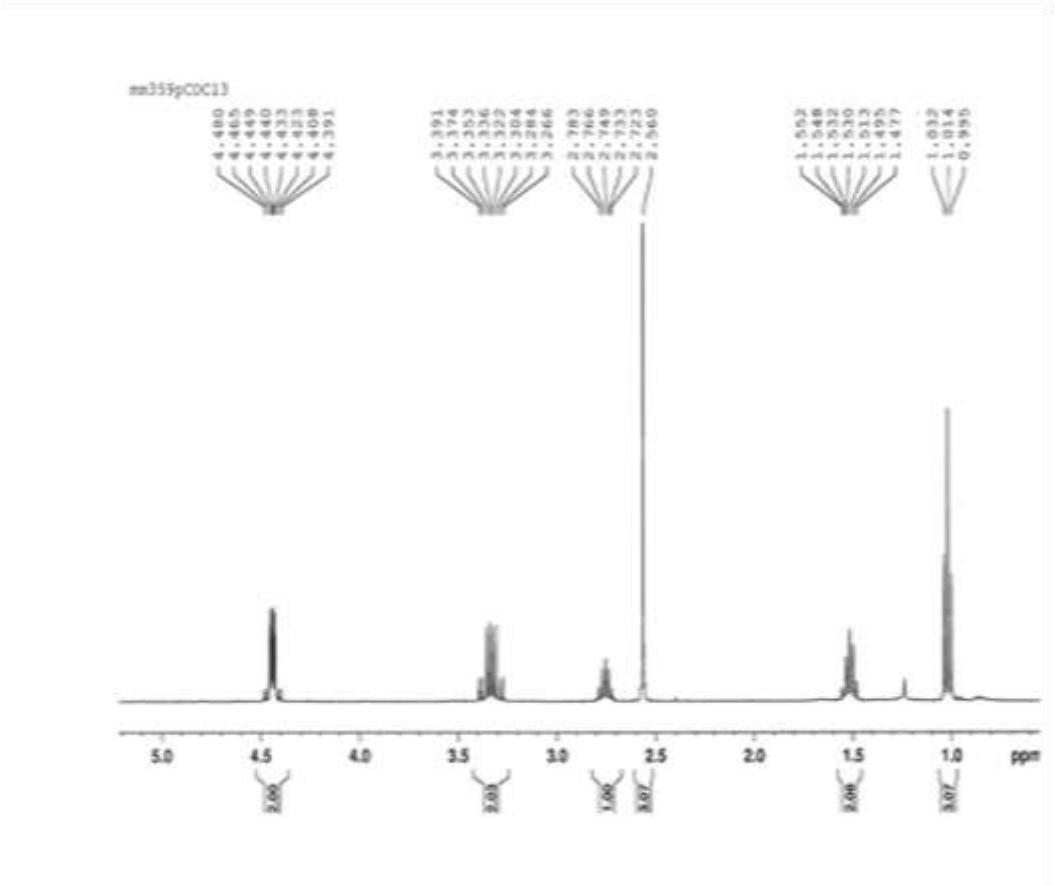

mm351pCDCl3
210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10

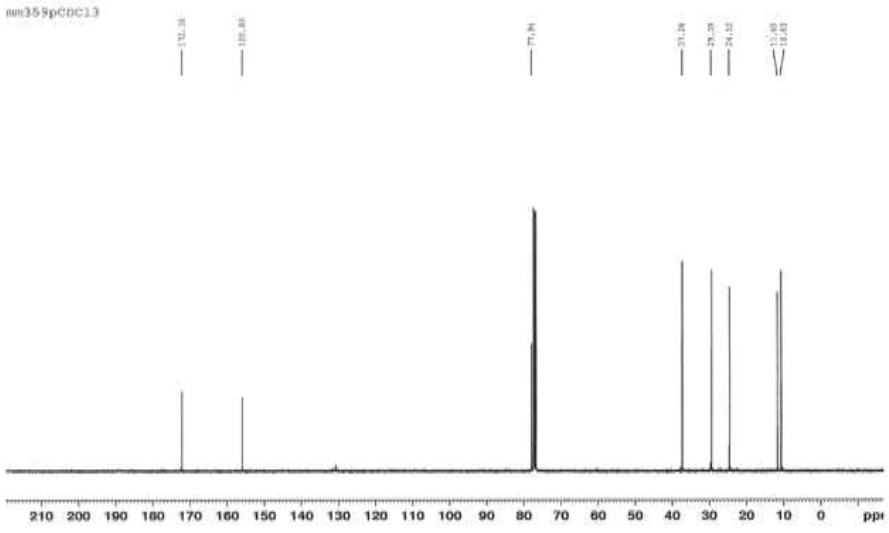
Compound 7i


AA010_tt3-10
3.666
7.136
7.120
7.096
7.080
7.066
7.055
7.014
2.563
2.407
2.389
2.373
2.355
1.577
1.541
1.522
1.503
1.348
1.324
1.272
1.251
0.898
0.881
0.863
7.1
ppm
2.008
4.5 4.0 3.5 3.0 2.5 2.0 1.5 1.0
3.00
2.04
2.59
12.04
3.46

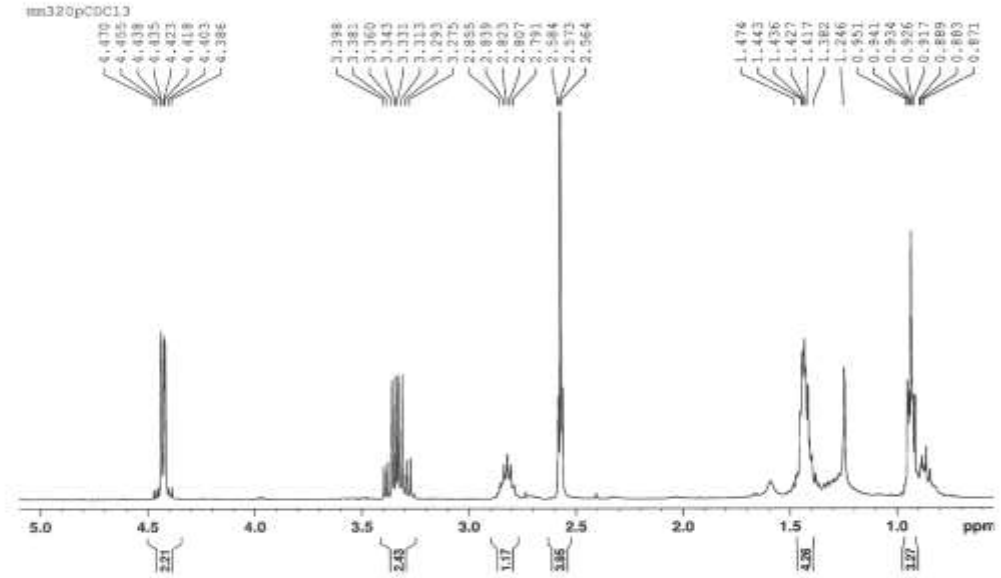

AA010_TT3-10
210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0

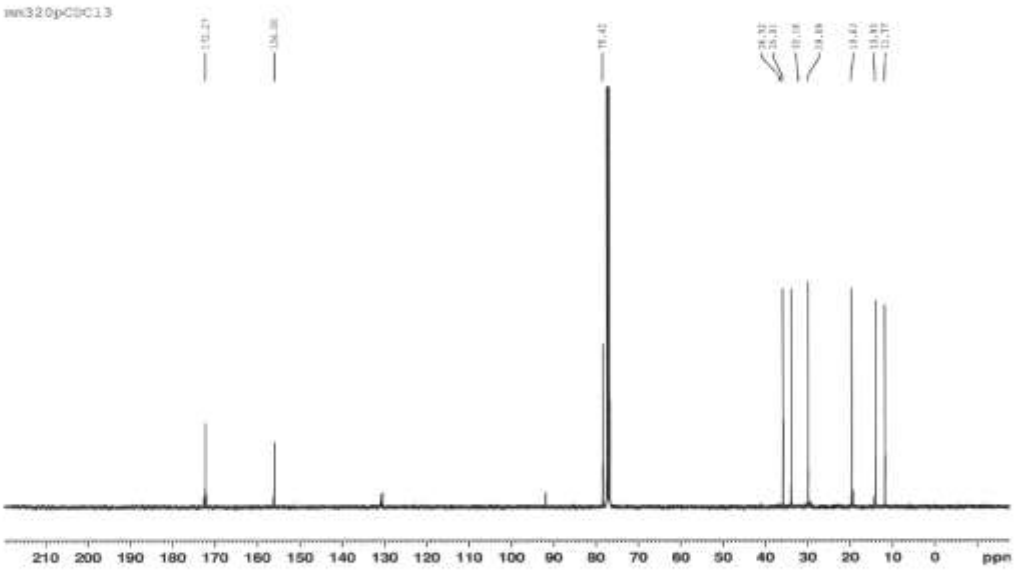
Compound 9a


mm359pCDCl3
4.480
4.465
4.449
4.440
4.433
4.423
4.408
4.391
3.391
3.374
3.353
3.336
3.322
3.304
3.284
3.266
2.783
2.766
2.749
2.733
2.723
2.560
1.552
1.548
1.532
1.530
1.513
1.495
1.477
1.032
1.014
0.995
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
ppm
2.00
2.07
1.00
3.07
2.08
3.07

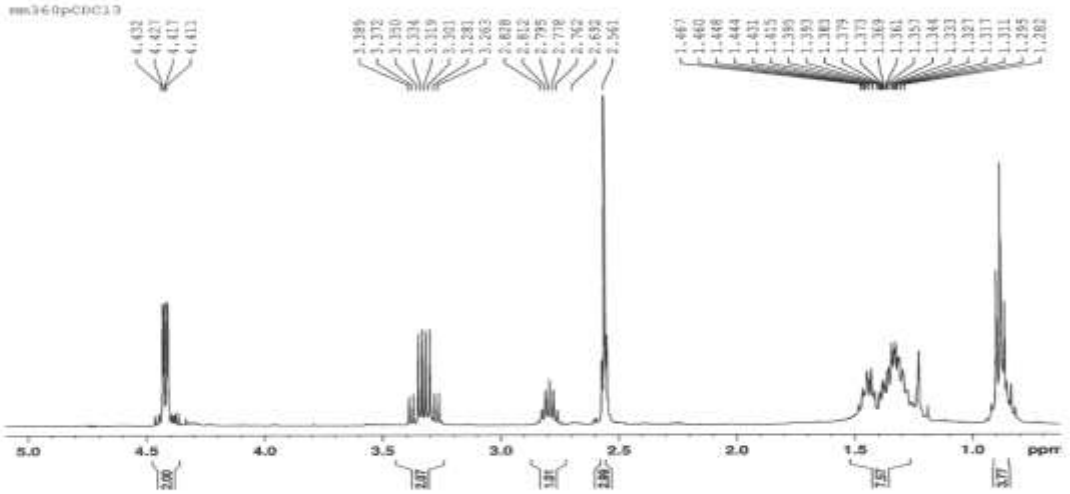

mm359pCDCl3
210
200
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0

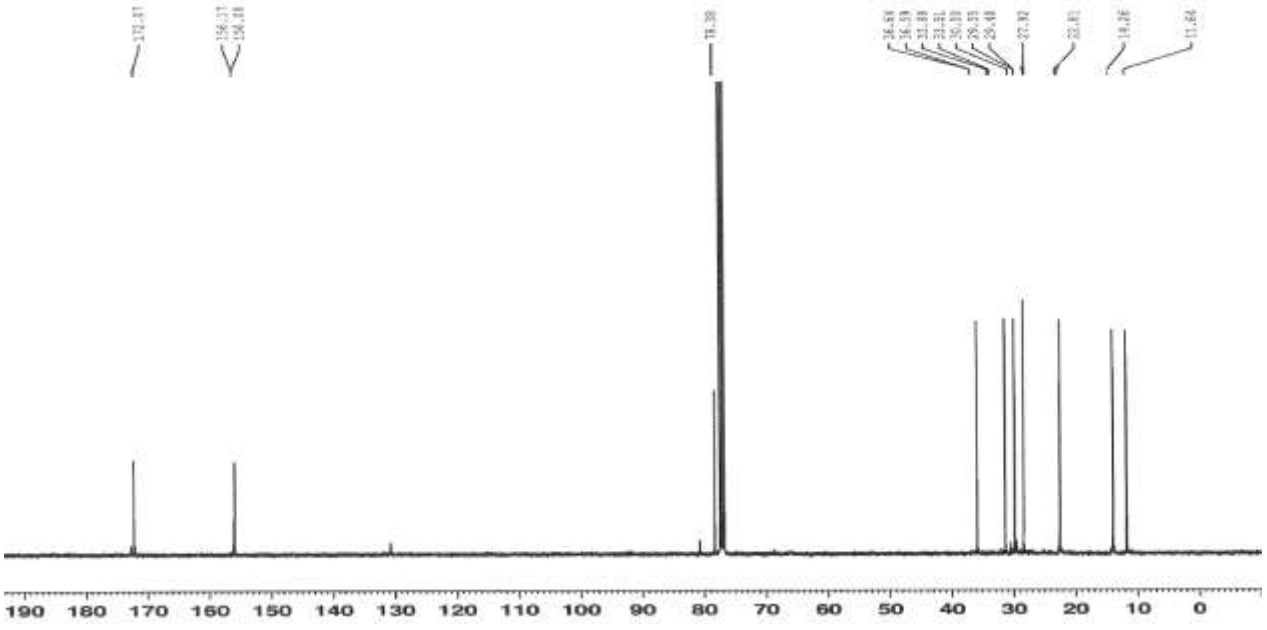
Compound 9b


mm320pCDCl3
4.470
4.465
4.438
4.435
4.423
4.418
4.403
4.398
3.398
3.381
3.360
3.343
3.331
3.313
3.293
3.275
2.855
2.839
2.823
2.807
2.791
2.584
2.573
2.564
1.476
1.443
1.436
1.427
1.417
1.382
1.246
0.951
0.941
0.934
0.926
0.917
0.889
0.883
0.871
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
ppm
2.21
2.48
1.17
3.85
4.26
3.27

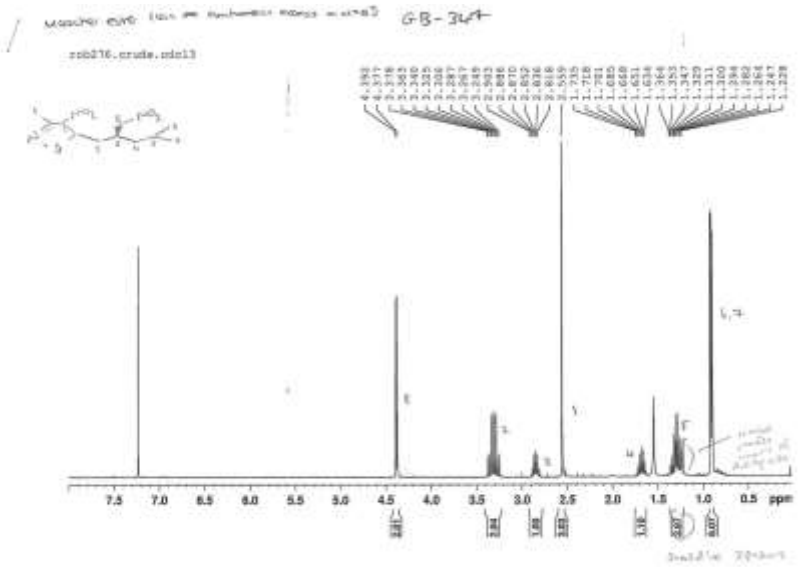

mm320pCDCl3
210
200
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
ppm

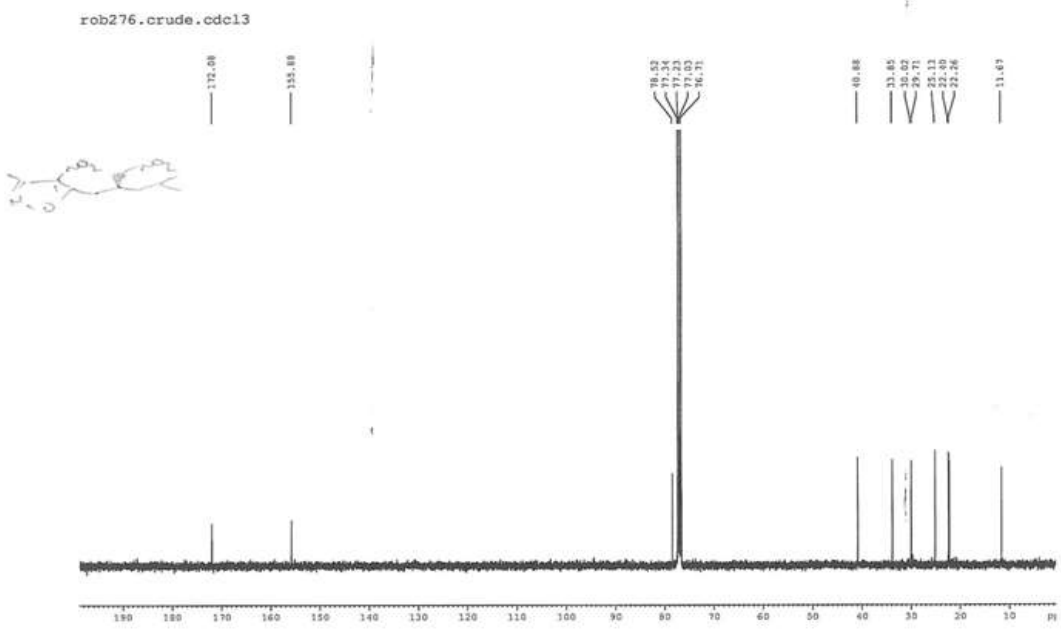
Compound 9c


5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
ppm

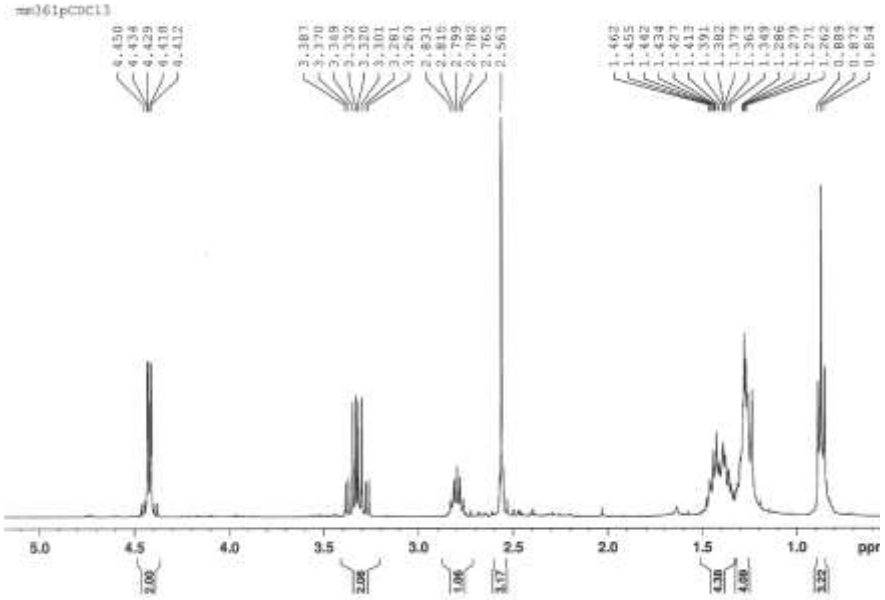

190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0

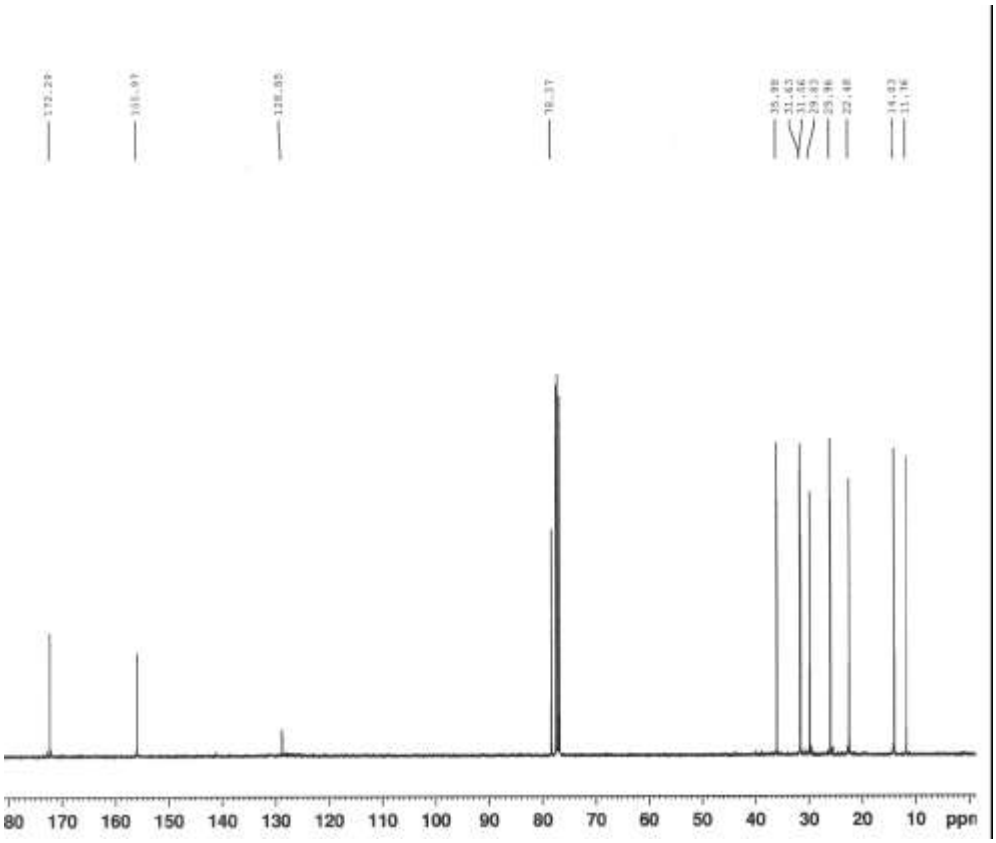
Compound 9d


GB-364
rob276.crude.cdcl3
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
ppm

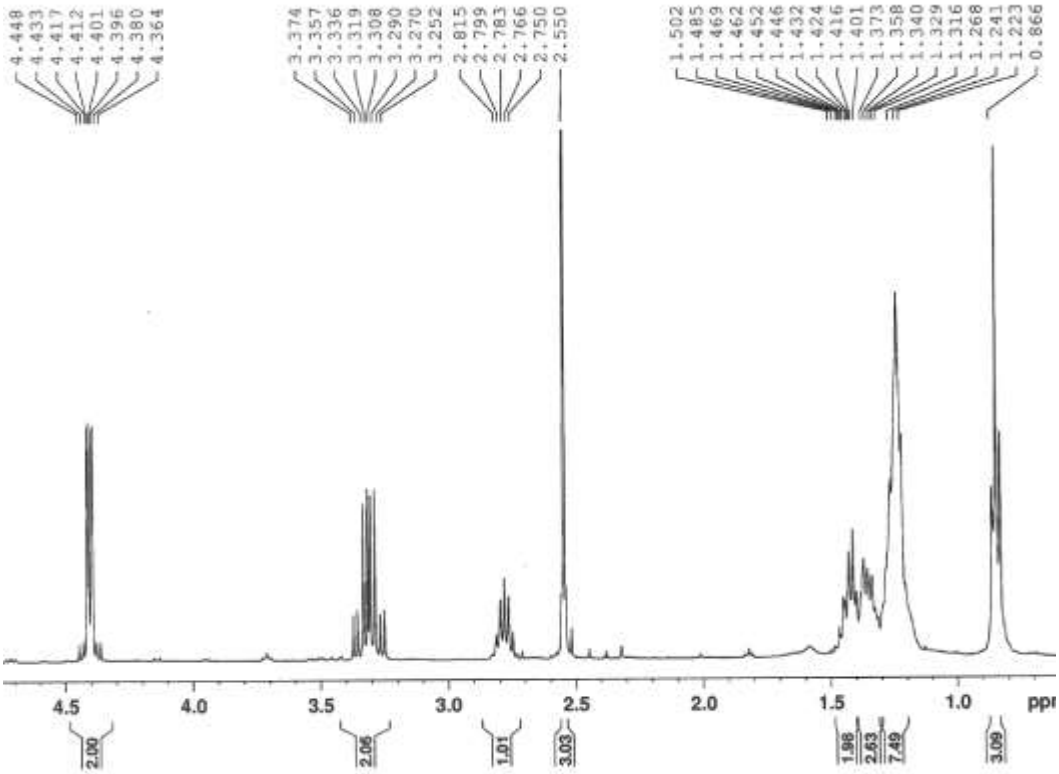

rob276.crude.cdcl3
172.08
155.88
78.82
77.32
77.23
77.03
76.71
40.88
33.85
30.02
29.71
25.13
22.40
22.26
11.67

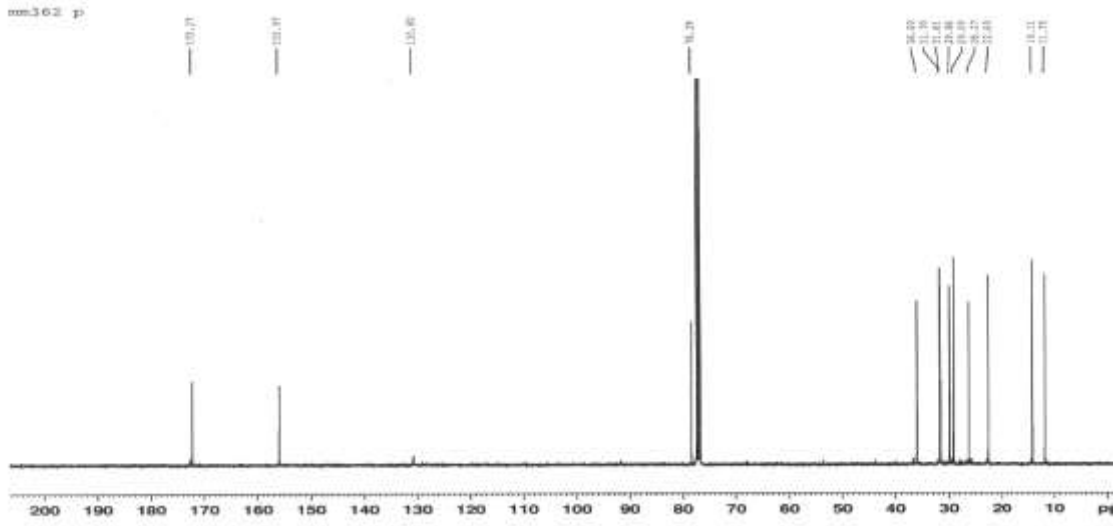
Compound 9e


mn361pCDCl3
6.450
6.434
6.429
6.418
6.412
3.387
3.370
3.349
3.332
3.320
3.301
3.281
3.263
2.831
2.815
2.799
2.782
2.765
2.563
1.462
1.455
1.442
1.434
1.427
1.413
1.391
1.382
1.377
1.363
1.349
1.286
1.279
1.271
1.262
0.889
0.872
0.854
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
ppm
2.00
2.08
1.06
5.17
4.30
4.00
3.22

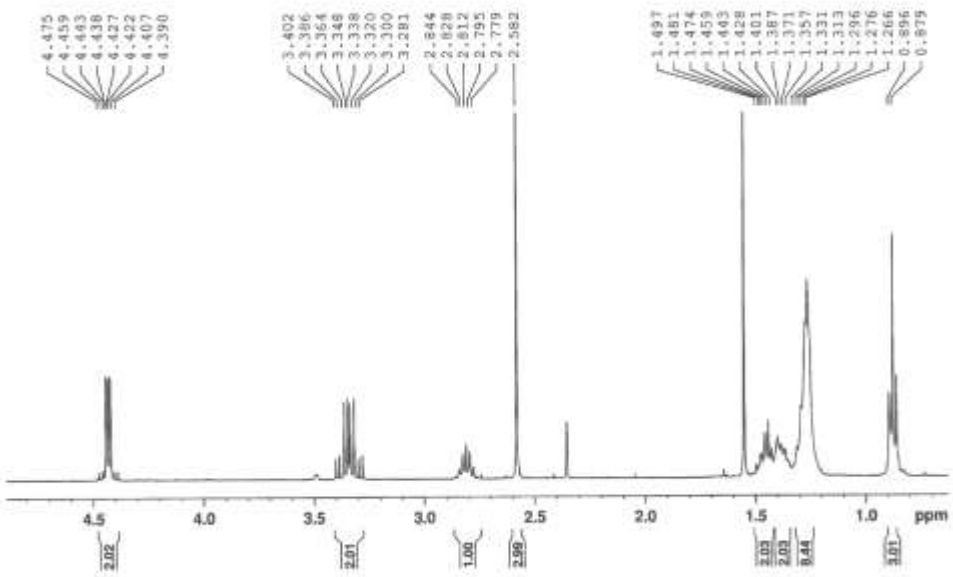

172.29
155.93
128.85
76.37
35.98
31.63
31.06
29.83
25.96
22.48
14.02
11.76
80
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
ppm

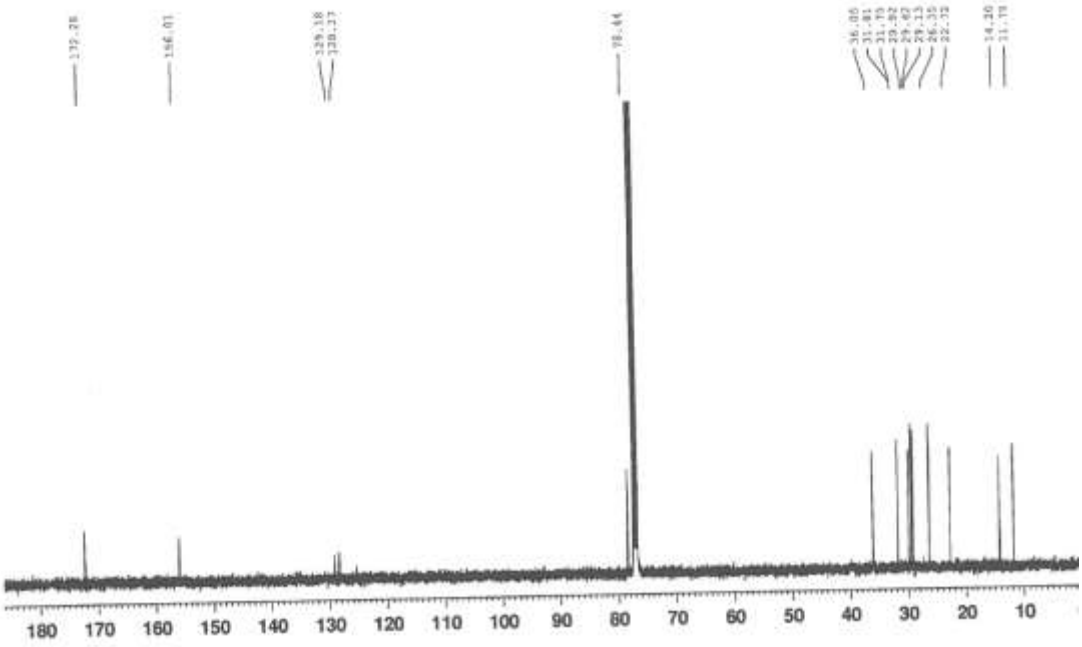
Compound 9f


4.448
4.433
4.417
4.412
4.401
4.396
4.380
4.364
3.374
3.357
3.336
3.319
3.308
3.290
3.270
3.252
2.815
2.799
2.783
2.766
2.750
2.550
1.502
1.485
1.469
1.462
1.452
1.446
1.432
1.424
1.416
1.401
1.373
1.358
1.340
1.329
1.316
1.268
1.241
1.223
0.866
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
2.00
2.06
1.01
3.03
1.98
2.63
7.49
3.09

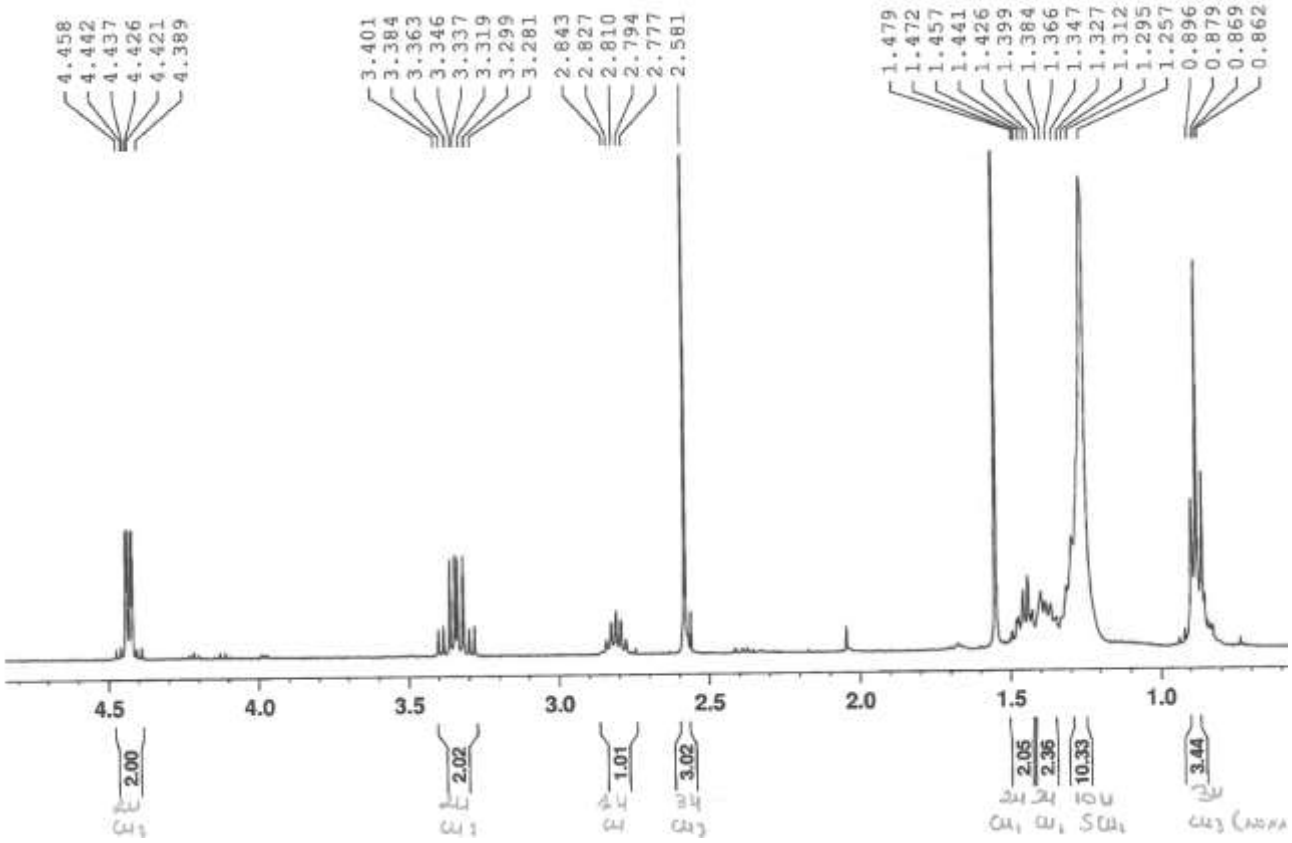

200
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10

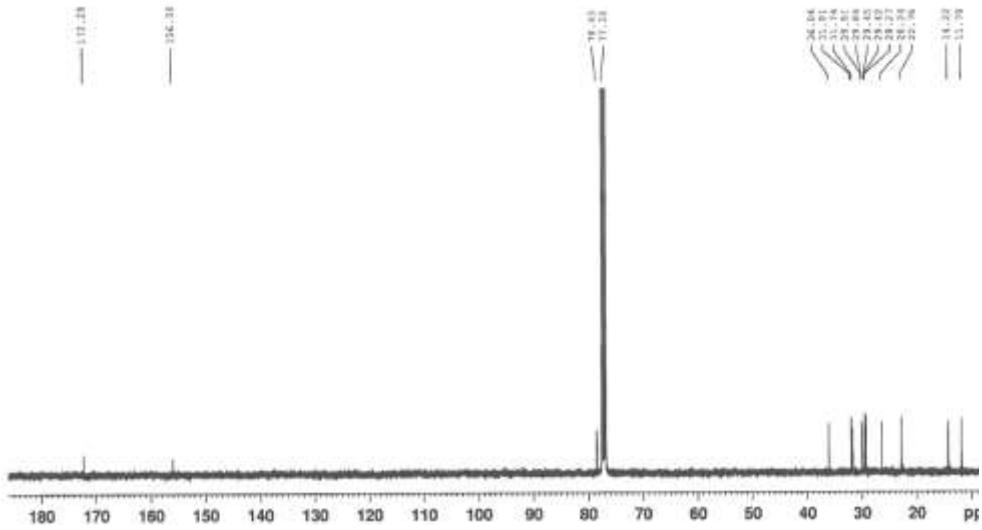
Compound 9g


4.475
4.459
4.443
4.438
4.427
4.422
4.407
4.390
3.402
3.386
3.364
3.348
3.338
3.320
3.300
3.281
2.844
2.828
2.812
2.795
2.779
2.582
1.497
1.481
1.474
1.459
1.443
1.428
1.401
1.387
1.371
1.357
1.331
1.313
1.296
1.276
1.266
0.896
0.879
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
ppm
2.02
2.01
1.00
2.99
2.03
2.09
9.44
3.01

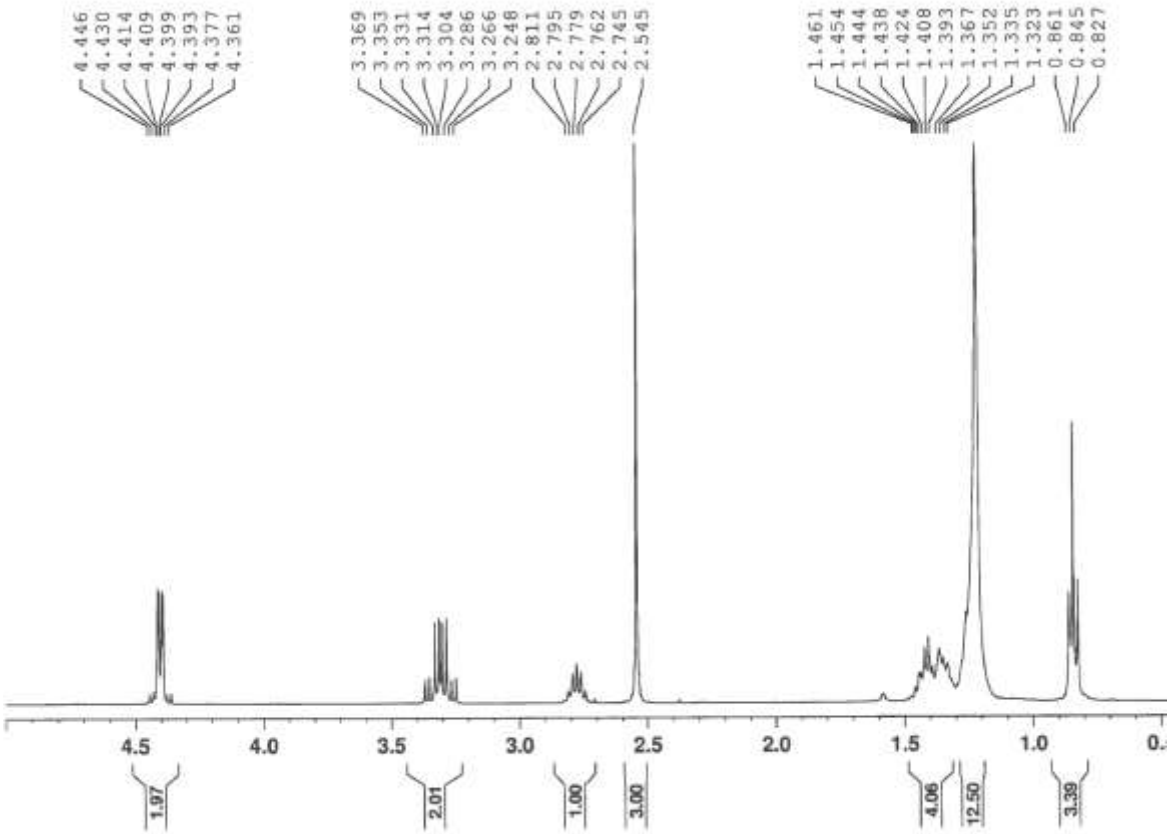

172.28
156.01
129.18
128.27
78.44
36.06
31.81
31.75
29.62
29.47
29.13
26.35
22.70
14.20
11.79
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10

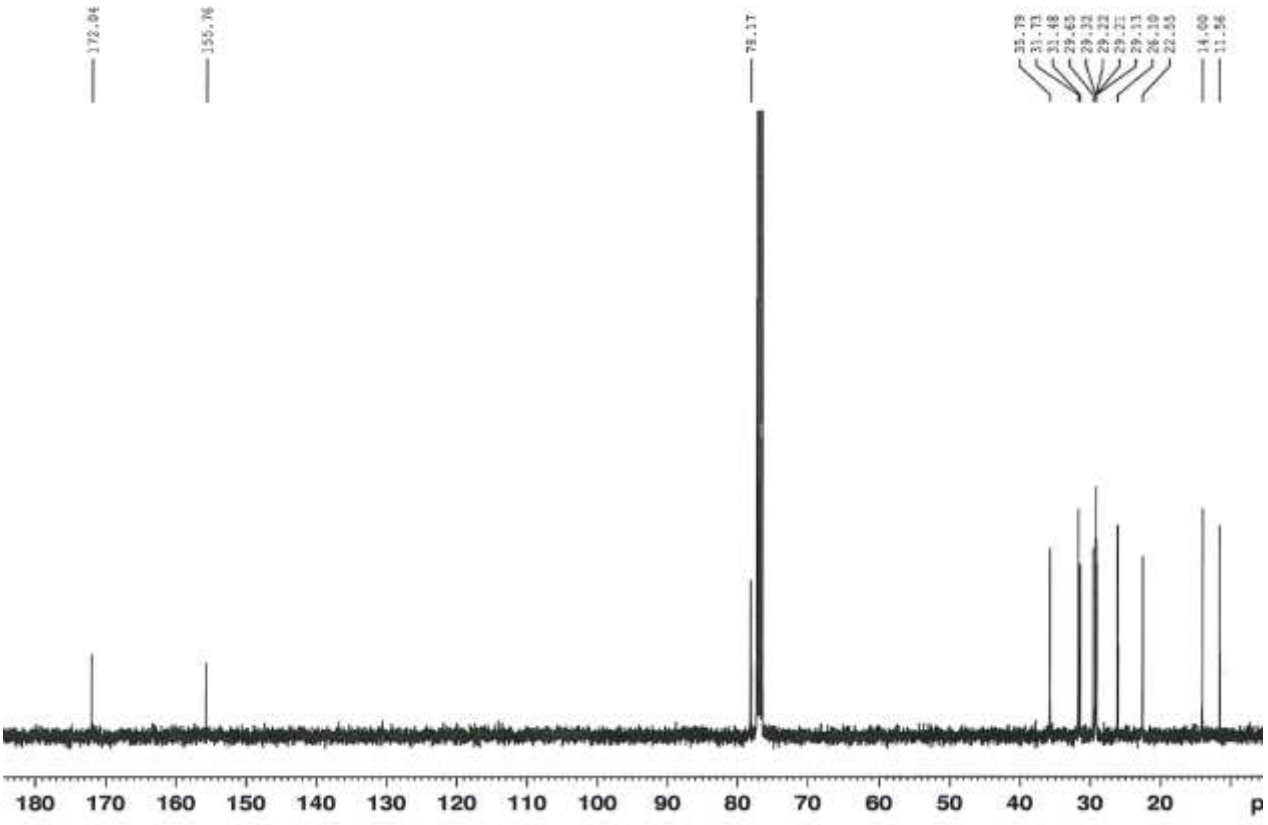
Compound 9h


4.458
4.442
4.437
4.426
4.421
4.389
3.401
3.384
3.363
3.346
3.337
3.319
3.299
3.281
2.843
2.827
2.810
2.794
2.777
2.581
1.479
1.472
1.457
1.441
1.426
1.399
1.384
1.366
1.347
1.327
1.312
1.295
1.257
0.896
0.879
0.869
0.862
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
2.00
2.02
1.01
3.02
2.05
2.36
10.33
3.44

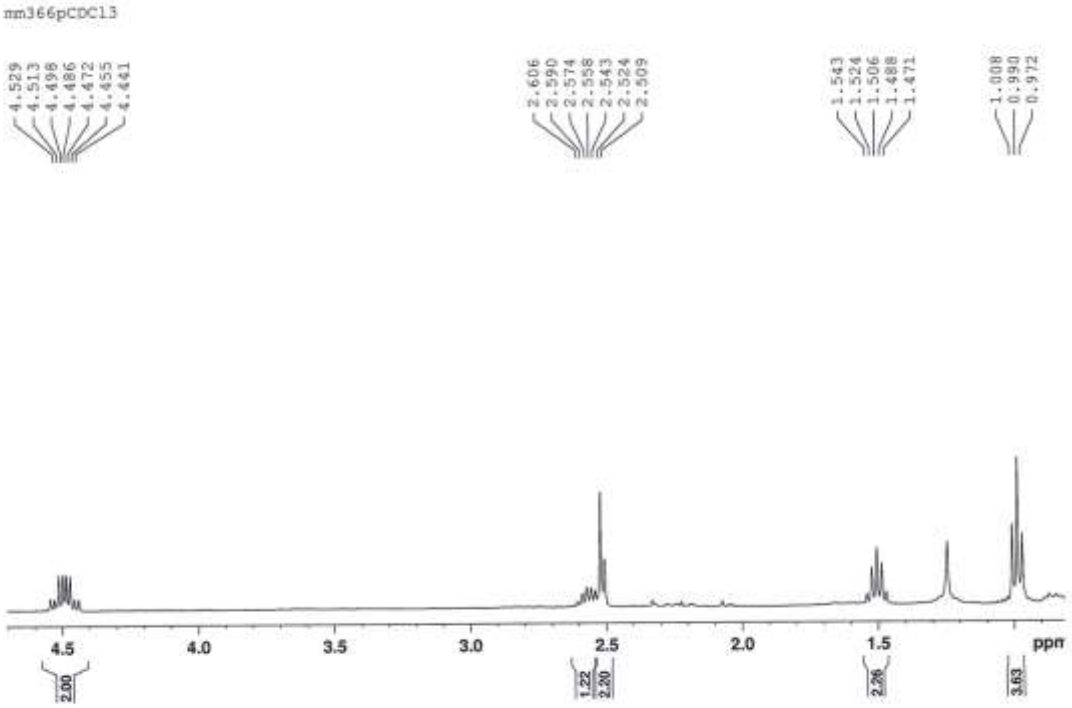

180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20

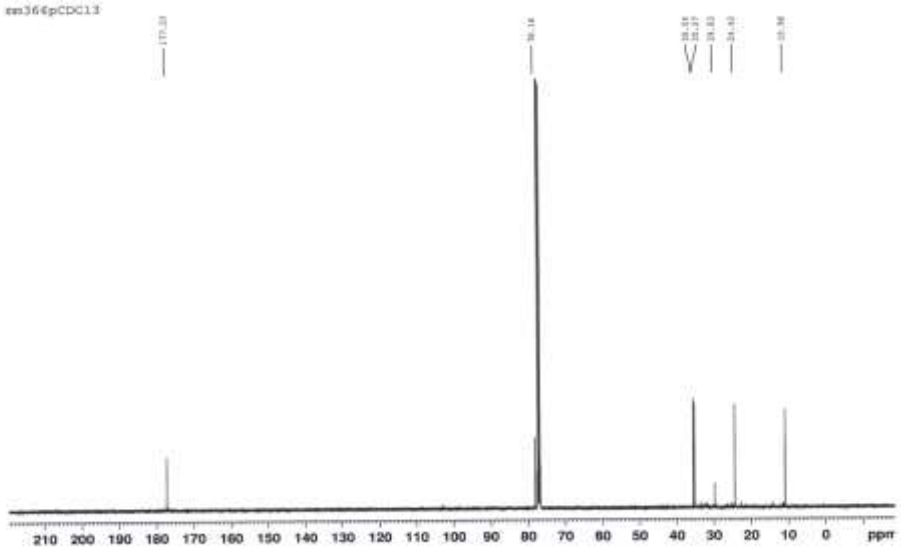
Compound 9i


4.446
4.430
4.414
4.409
4.399
4.393
4.377
4.361
3.369
3.353
3.331
3.314
3.304
3.286
3.266
3.248
2.811
2.795
2.779
2.762
2.745
2.545
1.461
1.454
1.444
1.438
1.424
1.408
1.393
1.367
1.352
1.335
1.323
0.861
0.845
0.827
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
1.97
2.01
1.00
3.00
4.06
12.50
3.39

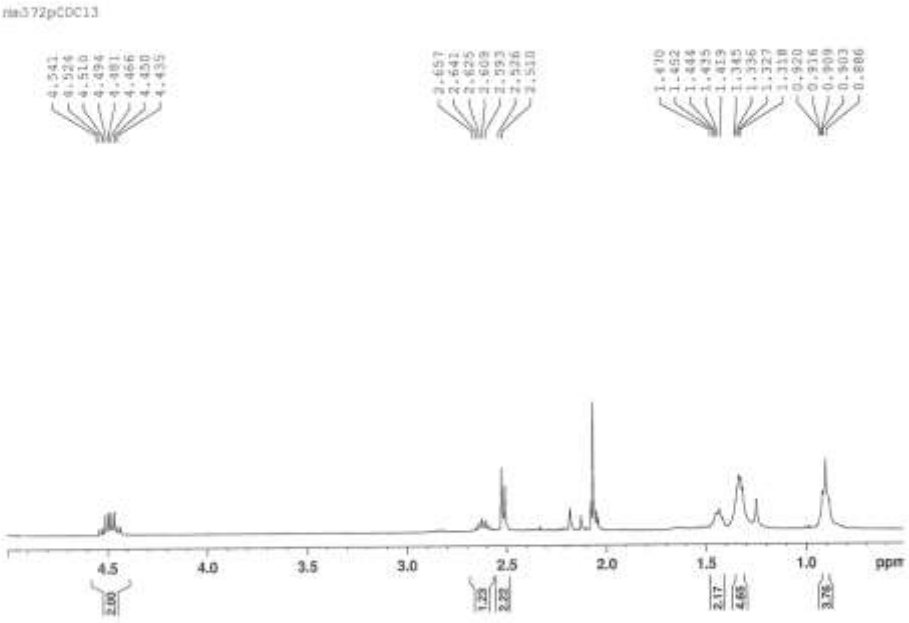

172.04
155.76
78.17
35.79
31.73
31.48
29.65
29.32
29.22
29.21
29.13
26.10
22.65
14.00
11.56
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
p

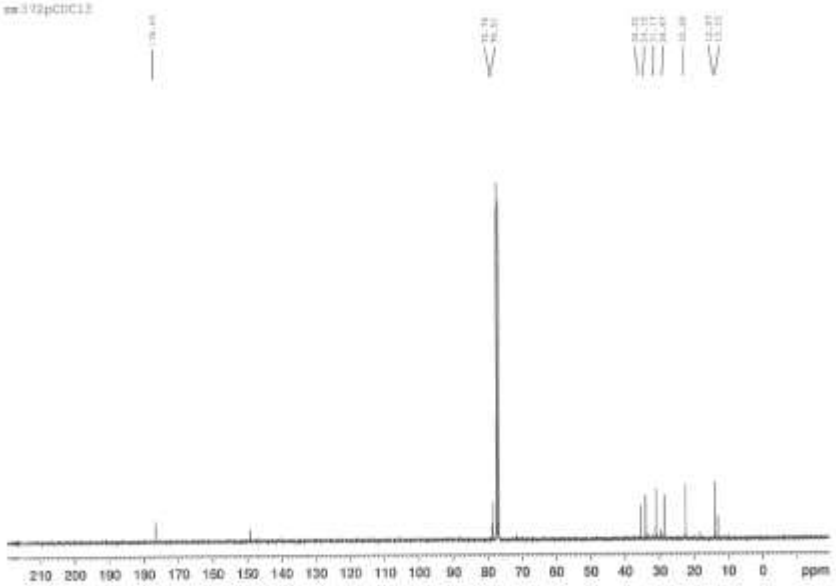
Compound 10a



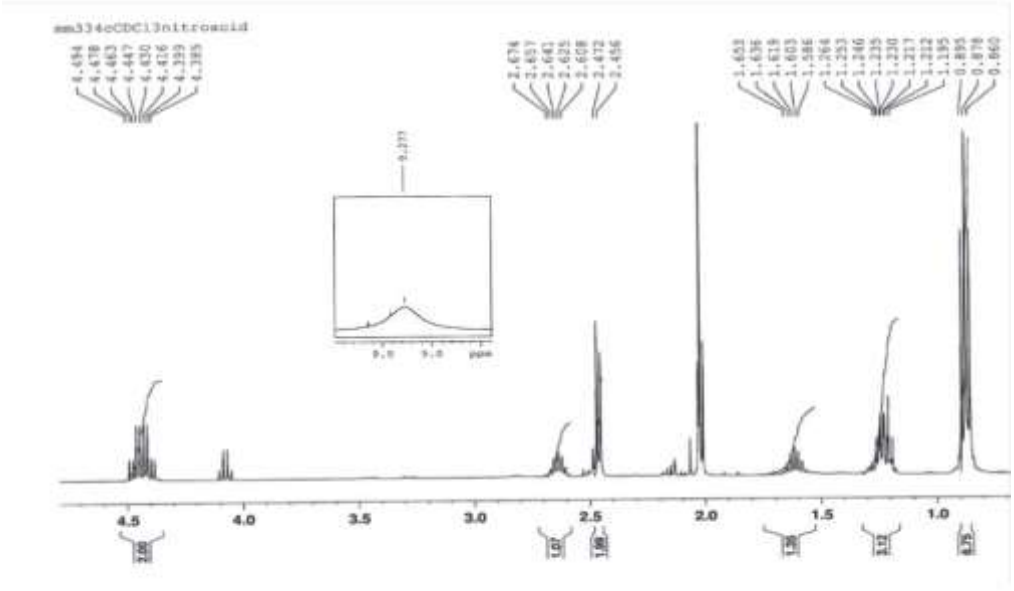


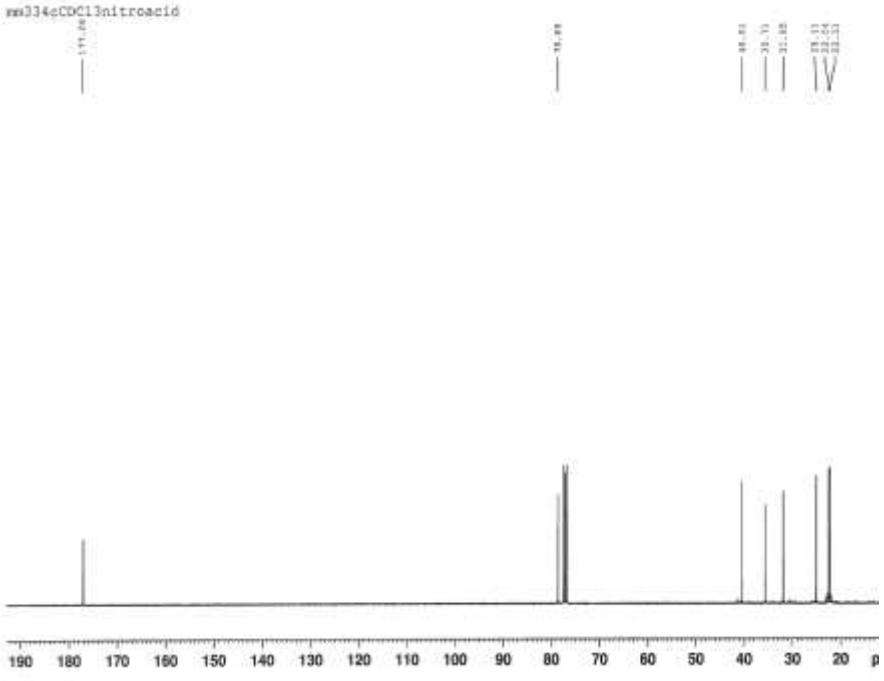
Compound 10c



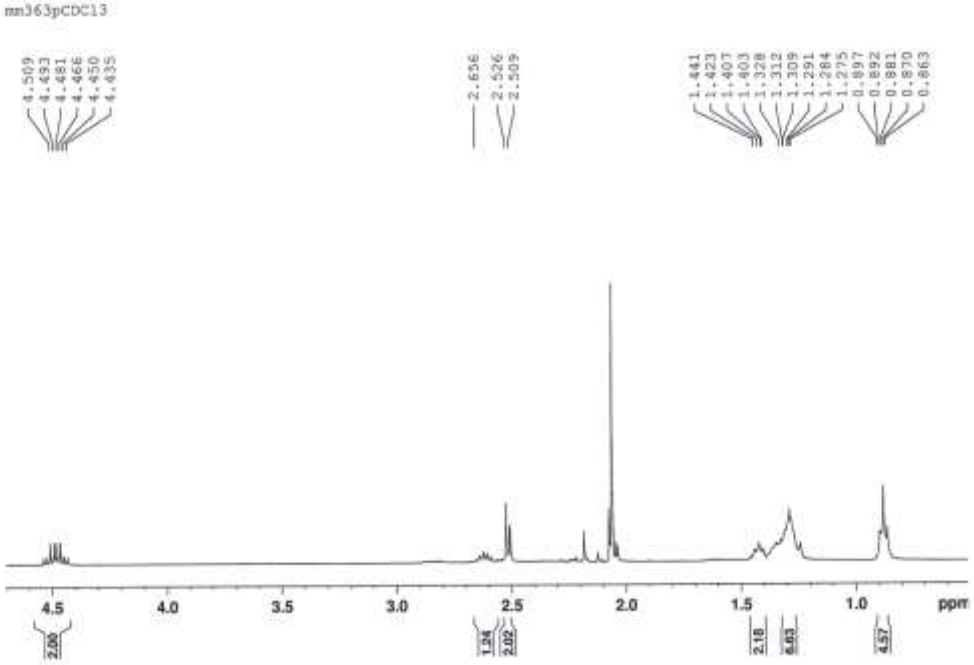


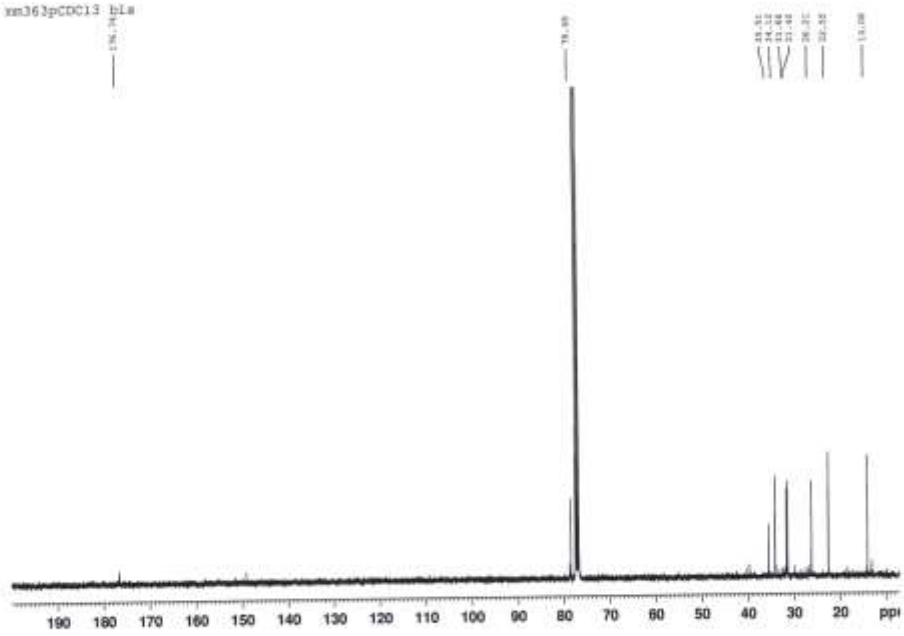
Compound 10d



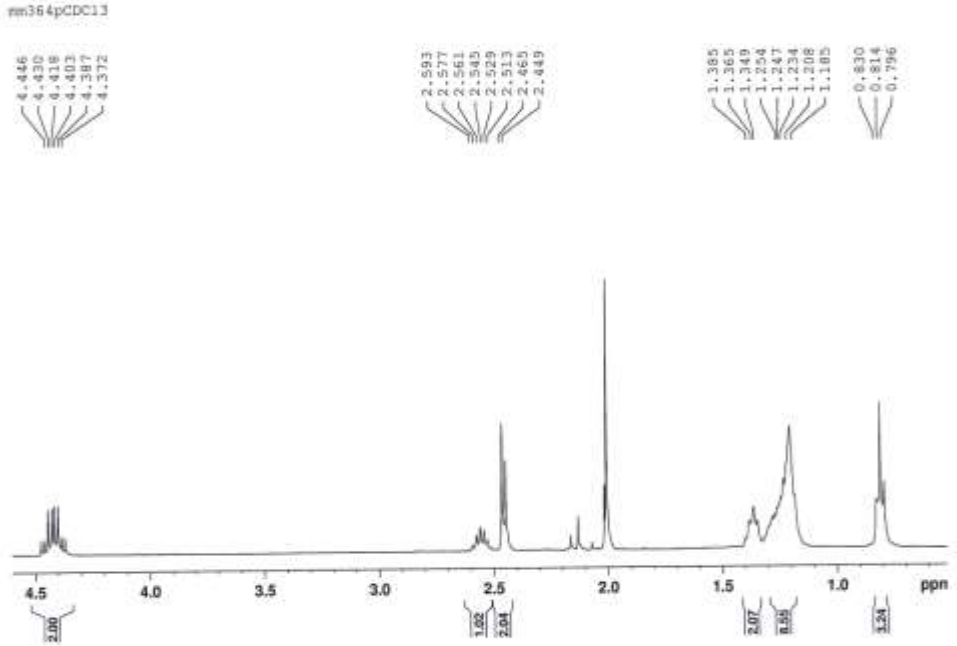


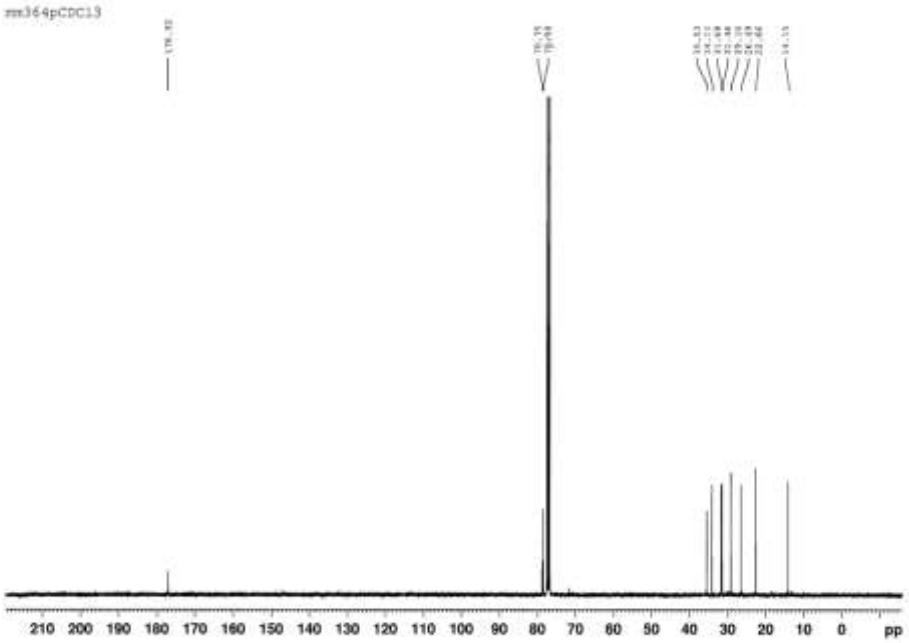
Compound 10f



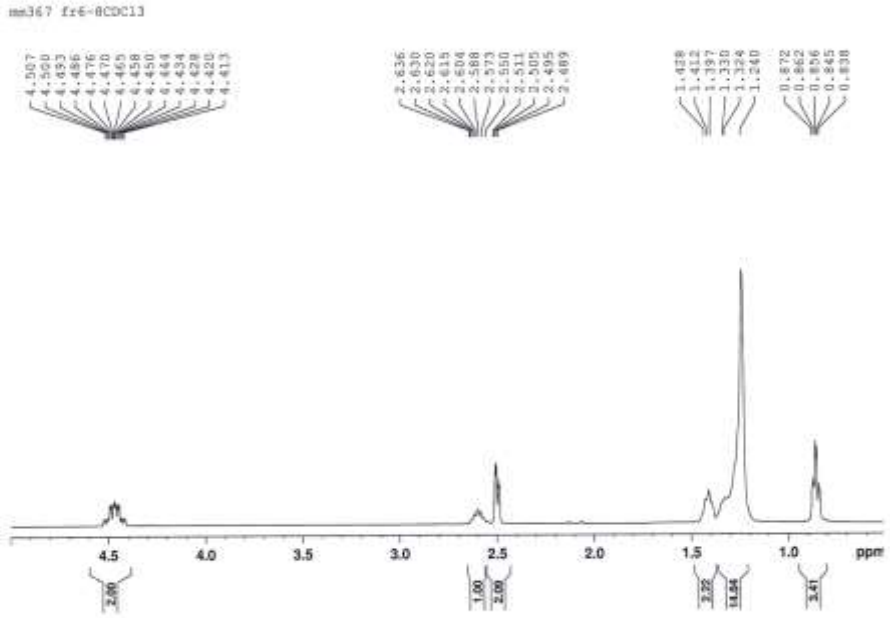


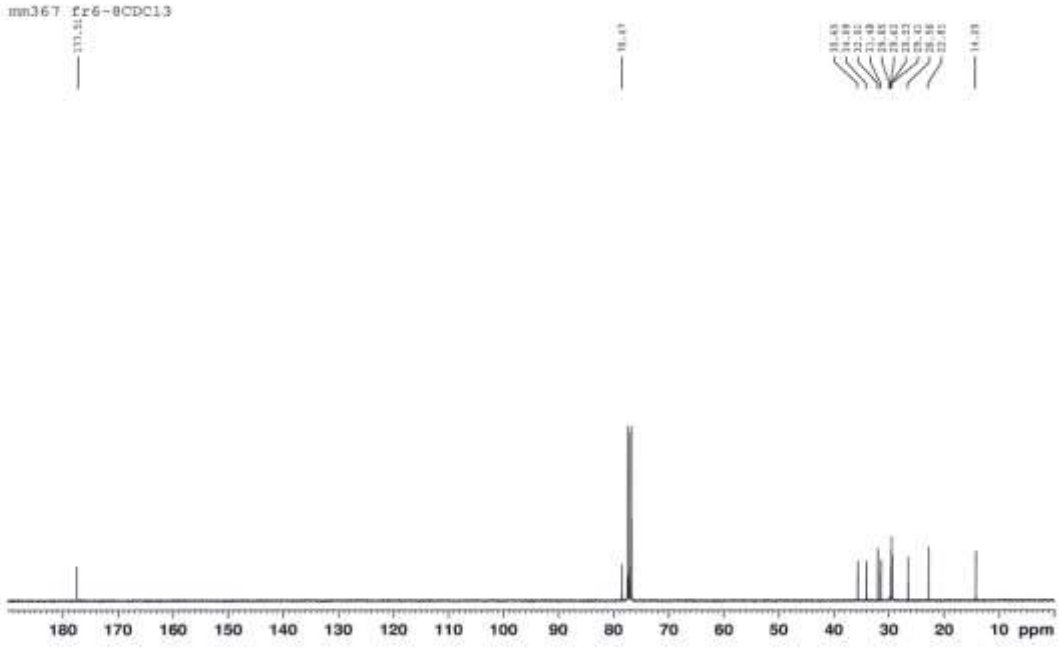
Compound 10f





Compound 10i





Compound 9a

Raw Data File : C:\TOTALCHROM DATA\Results\Maria\gamma AA\AA10racemo.od.B10%.1ml.A.001.raw
Result File : C:\TOTALCHROM DATA\Results\Maria\gamma AA\AA10racemo.od.B10%.1ml.A.001.rst [Editing in Progress]
Inst Method : C:\TOTALCHROM DATA\Methods\B10%-1mL-40min from C:\TOTALCHROM DATA\Results\Maria\gamma AA\AA10racemo.od.B10%.1 ml.A.001.raw
Proc Method : C:\TOTALCHROM DATA\Methods\B10%-1mL-40min from C:\TOTALCHROM DATA\Results\Maria\gamma AA\AA10racemo.od.B10%.1 ml.A.001.rst [Editing in Progress]
Calib Method : C:\TOTALCHROM DATA\Methods\B10%-1mL-40min from C:\TOTALCHROM DATA\Results\Maria\gamma AA\AA10racemo.od.B10%.1ml.A.001.rst [Editing in Progress]
Report Format File: C:\PenExe\TcWS\Ver6.3.1\Config\User\manager\Default.rpt
Sequence File : C:\TOTALCHROM DATA\Sequences\AA10racemo.od.B10%.1ml.-..seq

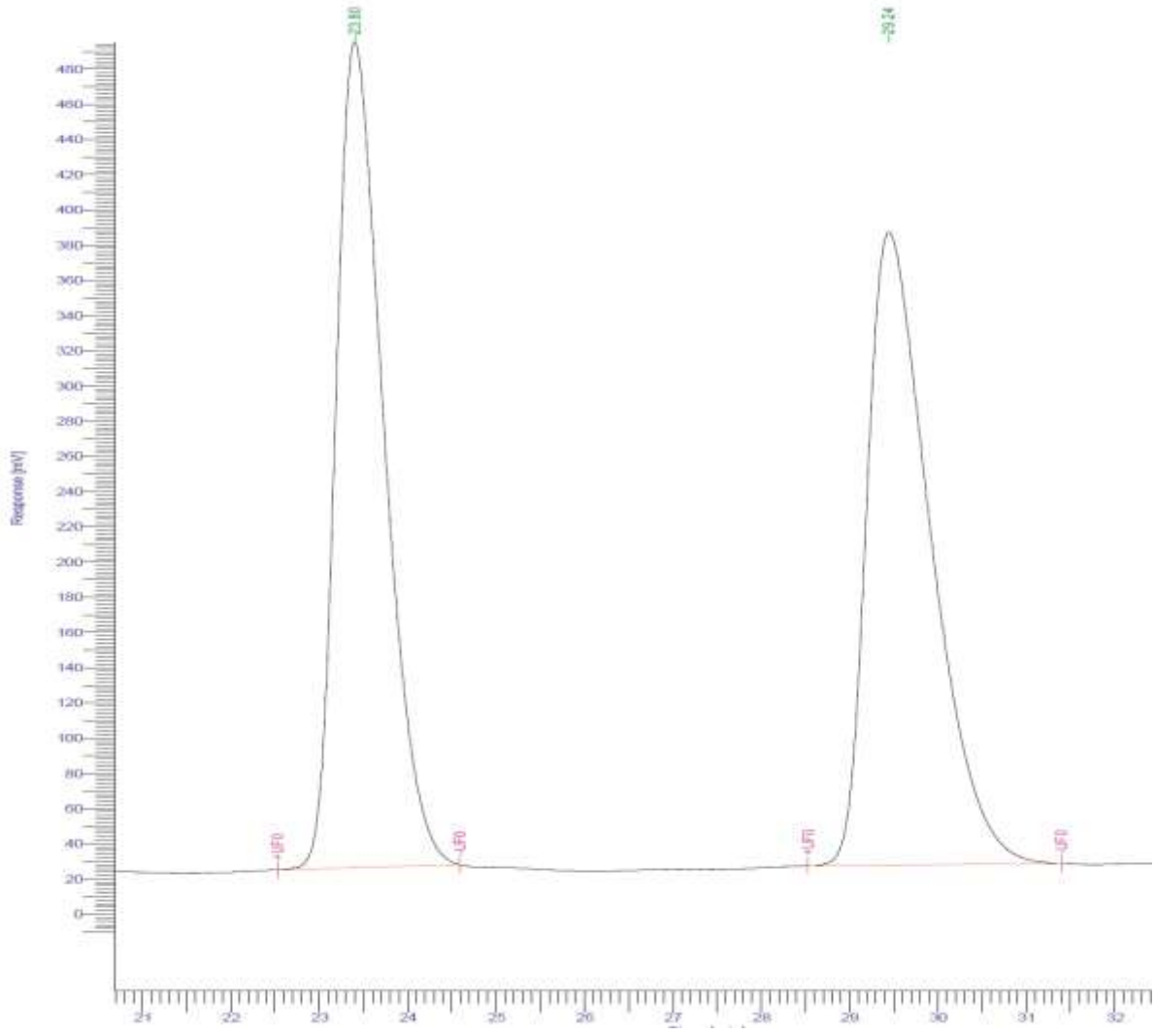
DEFAULT REPORT

Peak #	Component Name	Time [min]	Area [uV*sec]	Height [uV]	Area [%]	Norm. Area [%]	Cal. Range	Volt Range	BL	Raw Amount	Adjusted Amount
1		23.801	17722960.83	468715.45	49.70	49.70			*MM	17.7080	17.7080
2		29.243	17808678.68	359208.88	50.30	50.30			*MM	17.8247	17.8247
			35532639.50	827924.33	100.00	100.00				35.5326	35.5326

Missing Component Report

Component	Expected Retention (Calibration File)

All components were found



Software Version	: 6.3.1.0504	Date	: 12/06/2013 15:28:28
Operator	: manager	Sample Name	: mm359p
Sample Number	:	Study	:
AutoSampler	: SER200	Rack/Vial	: 0/1
Instrument Name	: PerkinElmer LC	Channel	: A
Instrument Serial #	: None	A/D mV Range	: 1000
Delay Time	: 0.00 min	End Time	: 40.00 min
Sampling Rate	: 2.2727 pts/s		
Sample Volume	: 1.000000 ul		
Sample Amount	: 1.0000	Area Reject	: 0.000000
Data Acquisition Time	: 12/06/2013 14:07:01	Dilution Factor	: 1.00
		Cycle	: 1

Raw Data File : C:\TOTALCHROM DATA\Results\Maria\gamma AA\359pmmpropA.od.B10%.1ml.A.001.raw
Result File : C:\TOTALCHROM DATA\Results\Maria\gamma AA\359pmmpropA.od.B10%.1ml.A.001.rst [Editing In Progress]
Inst Method : C:\TOTALCHROM DATA\Methods\B10%-1mL-40min from C:\TOTALCHROM DATA\Results\Maria\gamma AA\359pmmpropA.od.B10%.1ml.A.001.raw
Proc Method : C:\TOTALCHROM DATA\Methods\B10%-1mL-40min from C:\TOTALCHROM DATA\Results\Maria\gamma AA\359pmmpropA.od.B10%.1ml.A.001.rst [Editing In Progress]
Calib Method : C:\TOTALCHROM DATA\Methods\B10%-1mL-40min from C:\TOTALCHROM DATA\Results\Maria\gamma AA\359pmmpropA.od.B10%.1ml.A.001.rst [Editing In Progress]
Report Format File: C:\PerkinElmer\TotalChrom\Ver6.3.1\Config\User\manager\Default.rpt
Sequence File : C:\TOTALCHROM DATA\Sequences\359pmmpropA.od.B10%.1ml.-..seq

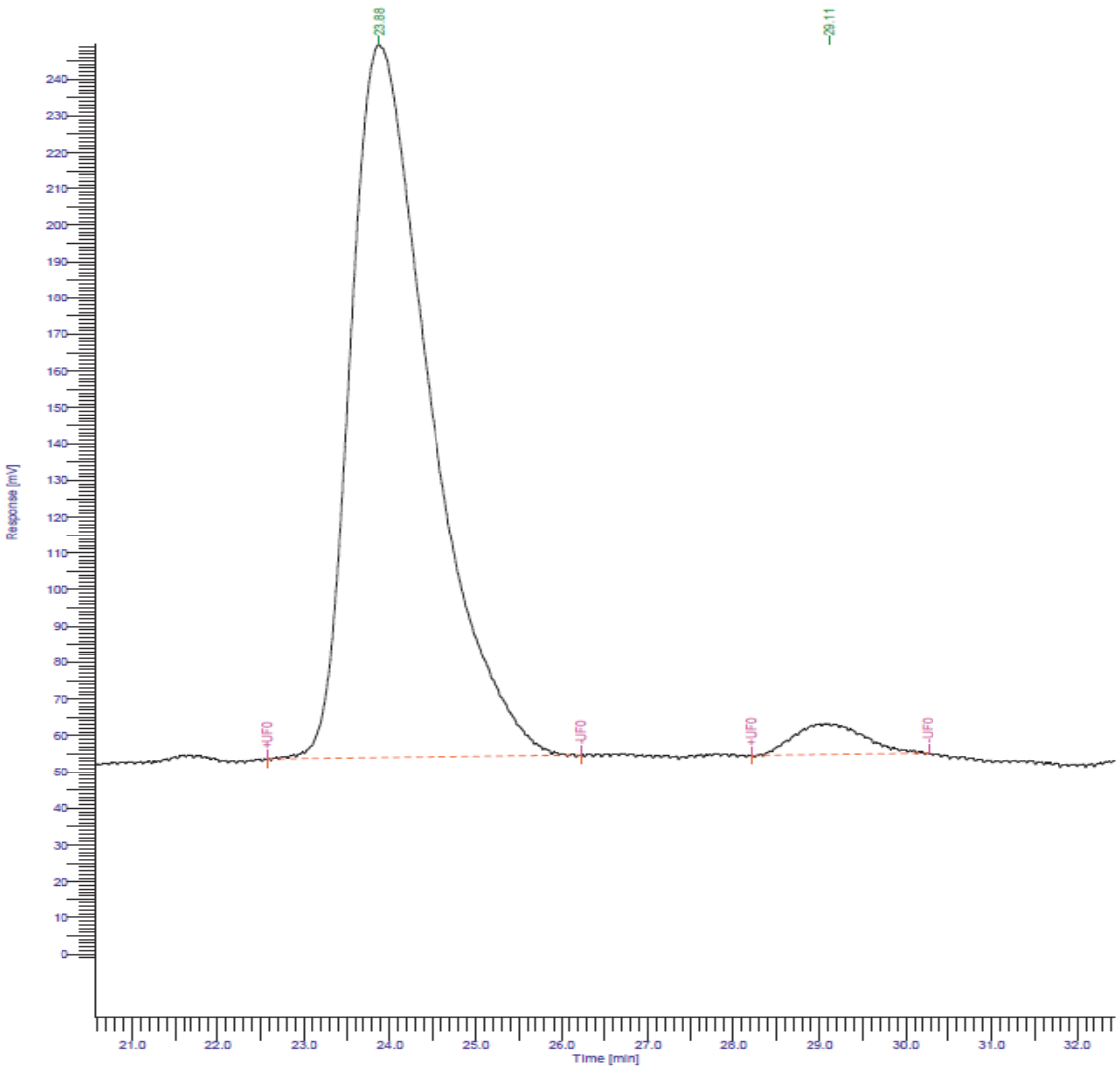
DEFAULT REPORT

Peak #	Component Name	Time [min]	Area [uV*sec]	Height [uV]	Area [%]	Norm. Area [%]	Cal. Range	Volt Range	BL	Raw Amount	Adjusted Amount
1		23.877	12514955.11	195648.28	96.34	96.34			*MM	12.5150	12.5150
2		29.113	474995.79	8422.94	3.66	3.66			*MM	0.4750	0.4750
			12989950.90	204071.22	100.00	100.00				12.9900	12.9900

Missing Component Report
Component Expected Retention (Calibration File)

All components were found

Sample Name : mm359p Sample #: Page 1 of 1
FileName : C:\TOTALCHROM DATA\Results\Maria\gamma AA\359pmmpropA.od.B10%.1ml.A.001.raw
Date : 12/06/2013 15:29:03
Method : Time of Injection: 12/06/2013 14:07:01
Start Time : 20.58 min End Time : 32.44 min Low Point : -1.71 mAU High Point : 249.70 mAU
Plot Offset: -1.71 mAU Plot Scale: 251.4 mAU



Compound 9b

Software Version	: 6.3.1.0504	Date	: 17/06/2013 10:54:04
Operator	: manager	Sample Name	: racemo buty
Sample Number	:	Study	:
AutoSampler	: SER200	Rack/Vial	: 0/0
Instrument Name	: PerkinElmer LC	Channel	: A
Instrument Serial #	: None	A/D mV Range	: 1000
Delay Time	: 0.00 min	End Time	: 35.57 min
Sampling Rate	: 2.2727 pts/s		
Sample Volume	: 1.000000 ul	Area Reject	: 0.000000
Sample Amount	: 1.0000	Dilution Factor	: 1.00
Data Acquisition Time	: 17/06/2013 10:17:11	Cycle	: 1

Raw Data File : c:\totalchrom data\results\maria\gamma aa\mmbutyracemo (daleti23) od b10% 1ml a 001.raw <Incomplete>
Inst Method : C:\TOTALCHROM DATA\Methods\B10%-1mL-45min from c:\totalchrom data\results\maria\gamma aa\mmbutyracemo (daleti23) od b10% 1ml a 001.raw
Proc Method : C:\TOTALCHROM DATA\Methods\B10%-1mL-45min.mth from
Calib Method : C:\TOTALCHROM DATA\Methods\B10%-1mL-45min.mth from
Report Format File: C:\PenExe\TcWS\Ver6.3.1\Config\User\manager\Default.rpt
Sequence File : C:\TOTALCHROM DATA\Sequences\mmbutyracemo (daleti23).od.B10% 1ml -..seq

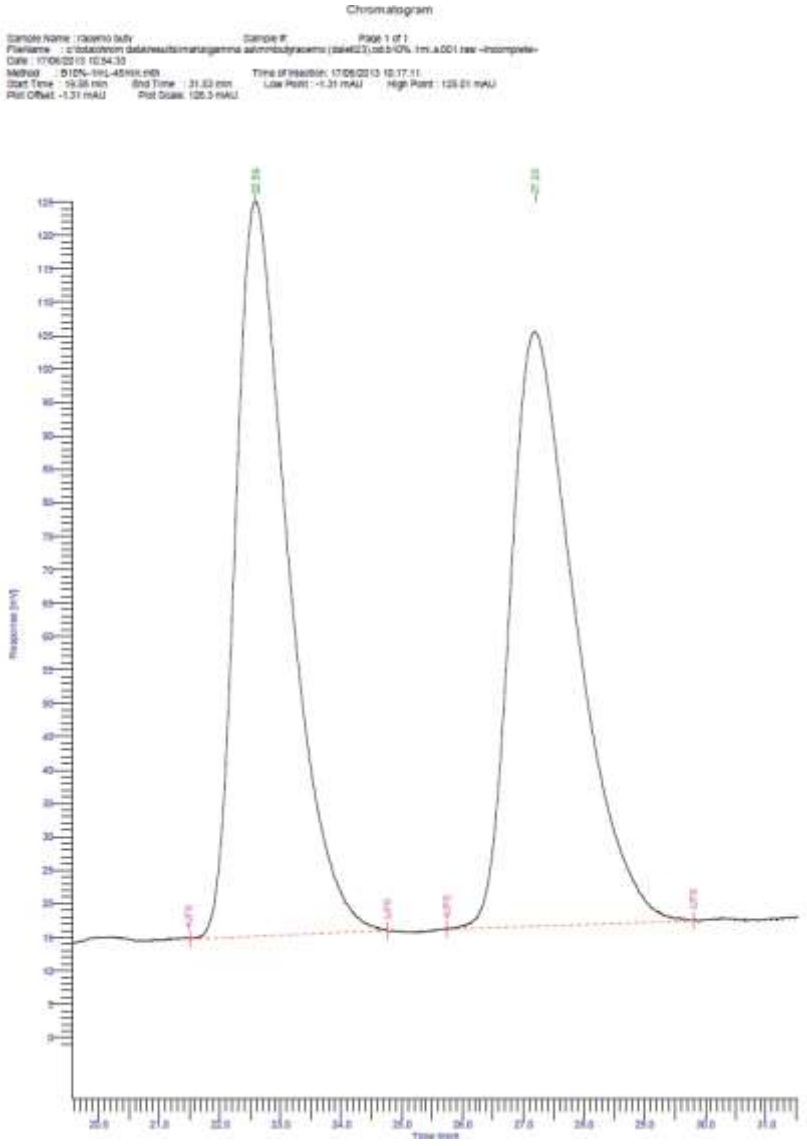
DEFAULT REPORT

Peak #	Component Name	Time [min]	Area [uV*sec]	Height [uV]	Area [%]	Norm. Area [%]	Cal. Range	Volt Range	BL	Raw Amount	Adjusted Amount
1		22.594	6632258.24	109851.95	50.03	50.03			*MM	6.6323	6.6323
2		27.199	6623439.76	88900.08	49.97	49.97			*MM	6.6234	6.6234
			13255698.00	198752.03	100.00	100.00				13.2557	13.2557

Missing Component Report

Component	Expected Retention (Calibration File)

Chromatogram



Software Version	: 6.3.1.0504	Date	: 23/07/2013 10:54:38
Operator	: manager	Sample Name	: AA11buty
Sample Number	:	Study	:
AutoSampler	: SER200	Rack/Vial	: 0/0
Instrument Name	: PerkinElmer LC	Channel	: A
Instrument Serial #	: None	A/D mV Range	: 1000
Delay Time	: 0.00 min	End Time	: 25.97 min
Sampling Rate	: 2.2727 pts/s		
Sample Volume	: 1.000000 ul		
Sample Amount	: 1.0000	Area Reject	: 0.000000
Data Acquisition Time	: 23/07/2013 10:25:26	Dilution Factor	: 1.00
		Cycle	: 1

Raw Data File : c:\totalchrom data\results\maria\gamma aa\aa11buty.od.b10%.1ml.a.001.raw <Incomplete>
Inst Method : C:\TOTALCHROM DATA\Methods\B10%-1mL-35min from c:\totalchrom data\results\maria\gamma aa\aa11buty.od.b10%.1ml.a.001.raw
Proc Method : C:\TOTALCHROM DATA\Methods\B10%-1mL-35min.mth from
Calib Method : C:\TOTALCHROM DATA\Methods\B10%-1mL-35min.mth from
Report Format File: C:\PerkinElmer\TotalChrom Workstation 6.3.1\Config\User\manager\Default.rpt
Sequence File : C:\TOTALCHROM DATA\Sequences\bianco23\u\gmm.od.B10%.1ml.-..seq

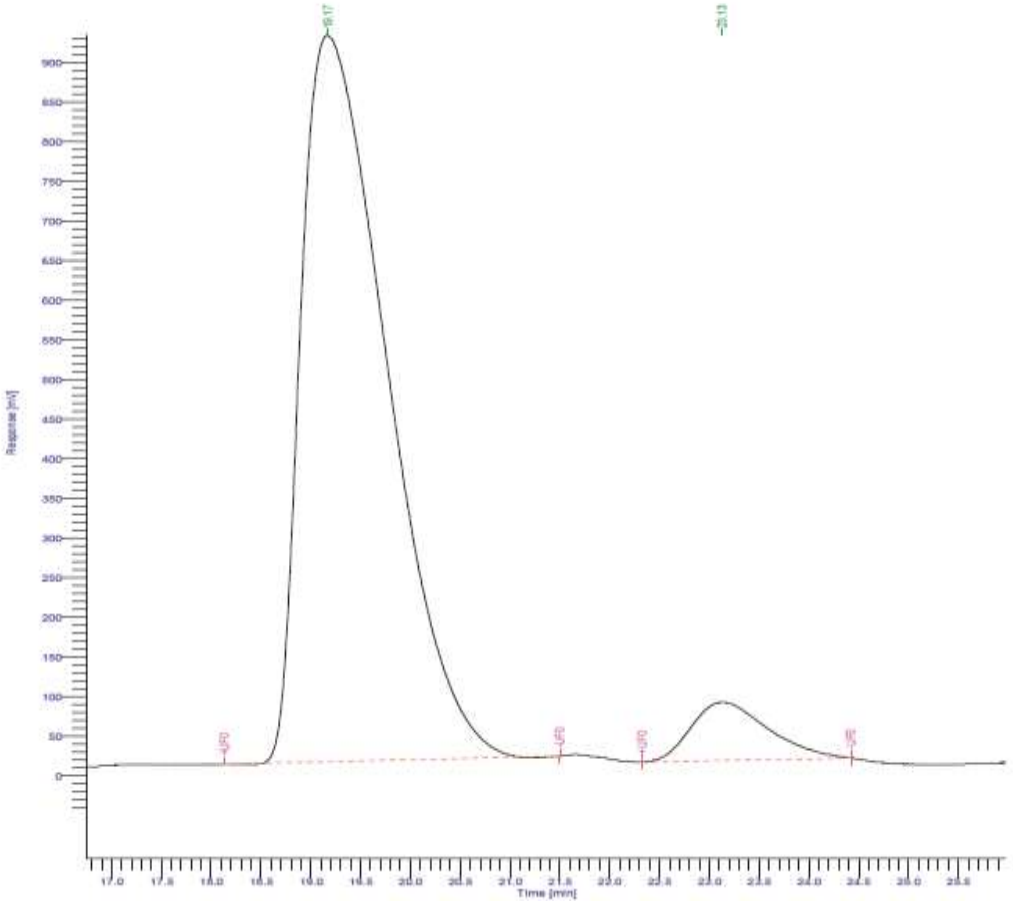
DEFAULT REPORT

Peak #	Component Name	Time [min]	Area [uV*sec]	Height [uV]	Area [%]	Norm. Area [%]	Cal. Range	Volt Range	BL	Raw Amount	Adjusted Amount
1		19.169	54715701.16	916129.20	93.32	93.32			*MM	54.7157	54.7157
2		23.129	3916337.26	73461.06	6.68	6.68			*MM	3.9163	3.9163
			58632038.43	989590.25	100.00	100.00				58.6320	58.6320

Missing Component Report
Component Expected Retention (Calibration File)

All components were found

Sample Name : AA11buty Sample #: Page 1 of 1
FileName : c:\totalchrom data\results\maria\gamma aa\aa11buty.od.b10%.1ml.a.001.raw <Incomplete>
Date : 23/07/2013 10:55:09
Method : B10%-1mL-35min.mth Time of Injection: 23/07/2013 10:25:26
Start Time : 16.76 min End Time : 25.97 min Low Point : -42.85 mAU High Point : 934.29 mAU
Plot Offset: -42.85 mAU Plot Scale: 977.1 mAU



Compound 9c

Software Version	: 6.3.1.0504	Date	: 31/05/2013 17:20:53
Operator	: manager	Sample Name	: racemval
Sample Number	:	Study	:
AutoSampler	: SER200	Rack/Vial	: 0/1
Instrument Name	: PerkinElmer LC	Channel	: A
Instrument Serial #	: None	A/D mV Range	: 1000
Delay Time	: 0.00 min	End Time	: 29.99 min
Sampling Rate	: 2.2727 pts/s		
Sample Volume	: 1.000000 ul		
Sample Amount	: 1.0000	Area Reject	: 0.000000
Data Acquisition Time	: 31/05/2013 16:44:48	Dilution Factor	: 1.00
		Cycle	: 1

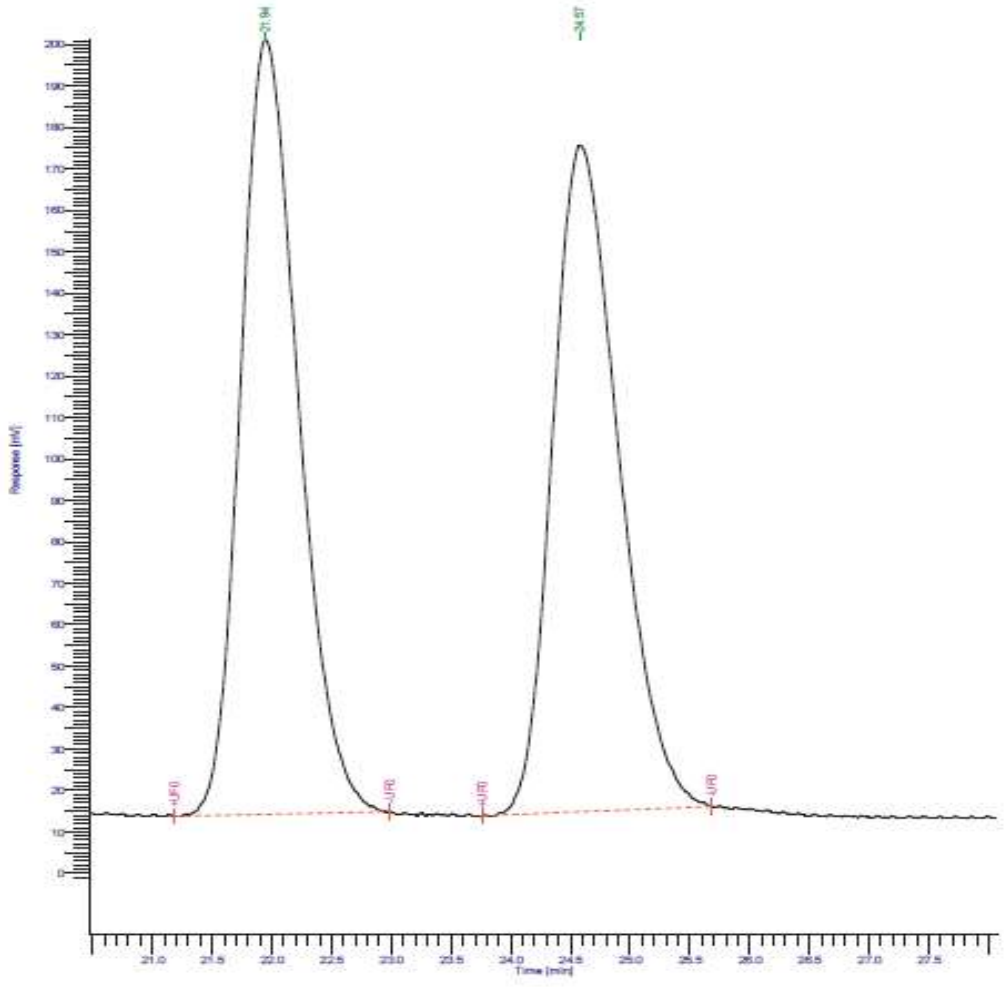
Raw Data File : C:\TOTALCHROM DATA\Results\Marla\gamma AA\mmracemval.ad.B2%.0.75.ml.A.001.raw
Result File : C:\TOTALCHROM DATA\Results\Marla\gamma AA\mmracemval.ad.B2%.0.75.ml.A.001.rst [Editing In Progress]
Inst Method : C:\TOTALCHROM DATA\Methods\B2%-0.75mL-30min from C:\TOTALCHROM DATA\Results\Marla\gamma AA\mmracemval.ad.B2%.0.75.ml.A.001.raw
Proc Method : C:\TOTALCHROM DATA\Methods\B2%-0.75mL-30min from C:\TOTALCHROM DATA\Results\Marla\gamma AA\mmracemval.ad.B2%.0.75.ml.A.001.rst [Editing In Progress]
Calib Method : C:\TOTALCHROM DATA\Methods\B2%-0.75mL-30min from C:\TOTALCHROM DATA\Results\Marla\gamma AA\mmracemval.ad.B2%.0.75.ml.A.001.rst [Editing In Progress]
Report Format File: C:\PerkinElmer\TcW5\Ver6.3.1\Config\User\manager\Default.rpt
Sequence File : C:\TOTALCHROM DATA\Sequences\mmracemval.ad.B2%.0.75.ml.-..seq

DEFAULT REPORT

Peak #	Component Name	Time [min]	Area [uV*sec]	Height [uV]	Area [%]	Norm. Area [%]	Cal. Range	Volt Range	BL	Raw Amount	Adjusted Amount
1		21.941	6287548.94	186949.92	50.41	50.41			*MM	6.2875	6.2875
2		24.574	6181519.17	160710.50	49.56	49.56			*MM	6.1815	6.1815
3		29.700	3276.32	419.23	0.03	0.03			*MM	0.0033	0.0033
			12472344.43	348079.64	100.00	100.00				12.4723	12.4723

Chromatogram

Sample Name : racemval Sample # Page 1 of 1
FileName : C:\TOTALCHROM DATA\Results\Marla\gamma AA\mmracemval.ad.B2%.0.75.ml.A.001.raw
Date : 31/05/2013 17:21:24
Method :
Start Time : 20.47 min End Time : 28.07 min Time of Injection: 31/05/2013 16:44:48
Plot Offset: -1.82 mAU Plot Scale: 203.0 mAU Low Point : -1.82 mAU High Point : 201.16 mAU



Software Version	: 6.3.1.0504	Date	: 26/04/2013 15:32:54
Operator	: manager	Sample Name	: mm360p
Sample Number	:	Study	:
AutoSampler	: SER200	Rack/Vial	: 0/0
Instrument Name	: PerkinElmer LC	Channel	: B
Instrument Serial #	: None	A/D mV Range	: 1000
Delay Time	: 0.00 min	End Time	: 25.30 min
Sampling Rate	: 2.2727 pts/s		
Sample Volume	: 1.000000 ul		
Sample Amount	: 1.0000	Area Reject	: 0.000000
Data Acquisition Time	: 26/04/2013 15:04:13	Dilution Factor	: 1.00
		Cycle	: 1

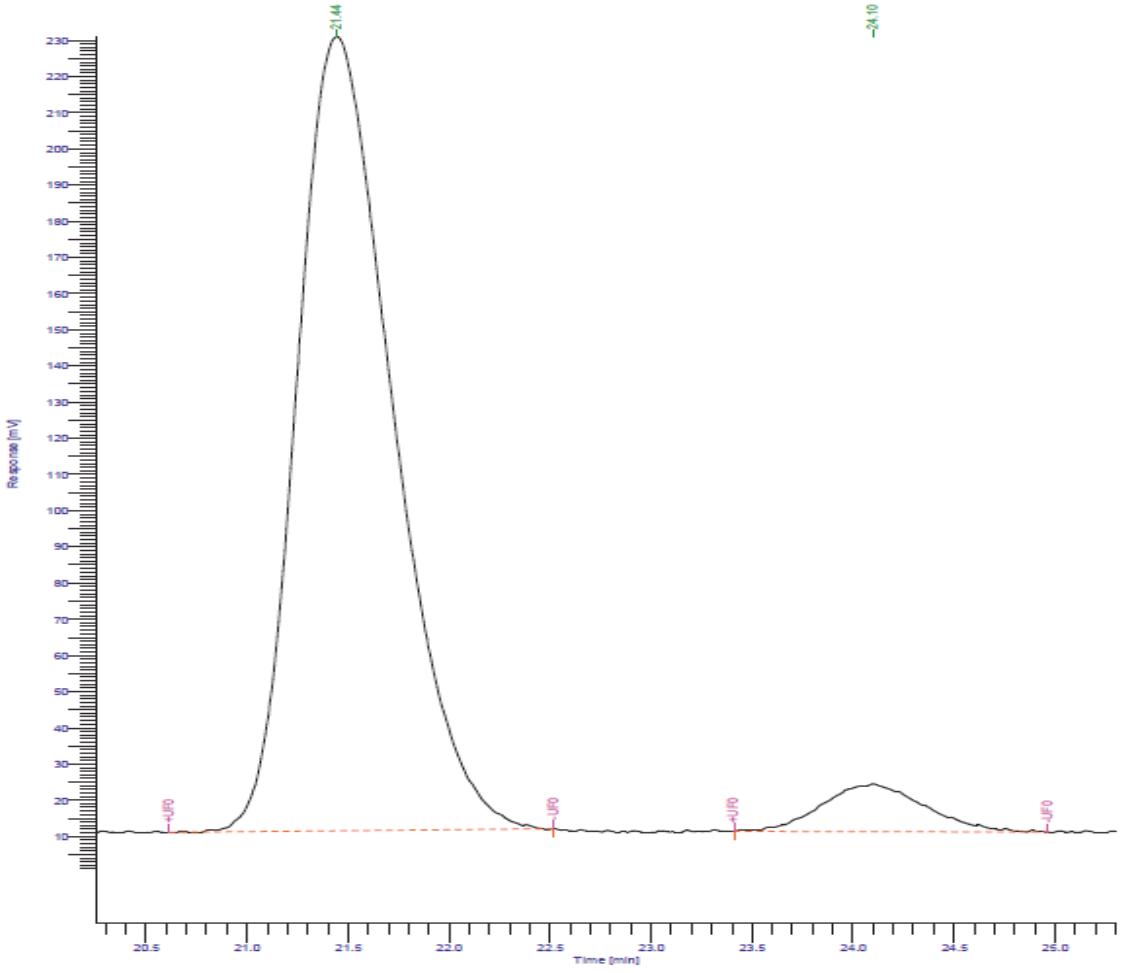
Raw Data File : c:\totalchrom data\results\maria\gamma aa\mm360pvala.ad.b2%.0.75ml.b.001.raw <incomplete>
Inst Method : C:\TOTALCHROM DATA\Methods\B2%-0.75mL-35min from c:\totalchrom data\results\maria\gamma aa\mm360pvala.ad.b2%.0.75ml.b.001.raw
Proc Method : C:\TOTALCHROM DATA\Methods\B2%-0.75mL-35min.mth from
Calib Method : C:\TOTALCHROM DATA\Methods\B2%-0.75mL-35min.mth from
Report Format File: C:\PenExe\TcW9\Ver6.3.1\Config\User\manager\Default.rpt
Sequence File : C:\TOTALCHROM DATA\Sequences\mm360pVaiA.ad.B2%.0.75ml.-..seq

DEFAULT REPORT

Peak #	Component Name	Time [min]	Area [uV*sec]	Height [uV]	Area [%]	Norm. Area [%]	Cal. Range	Volt Range	BL	Raw Amount	Adjusted Amount
1		21.443	7234762.04	219365.74	93.98	93.98			*MM	7.2348	7.2348
2		24.097	463818.33	13224.32	6.02	6.02			*MM	0.4638	0.4638
			7698580.37	232590.06	100.00	100.00				7.6986	7.6986

Chromatogram

Sample Name : mm360p Sample #: Page 1 of 1
FileName : c:\totalchrom data\results\maria\gamma aa\mm360pvala.ad.b2%.0.75ml.b.001.raw <Incomplete>
Date : 26/04/2013 15:33:48
Method : B2%-0.75mL-35min.mth Time of Injection: 26/04/2013 15:04:13
Start Time : 20.25 min End Time : 25.30 min Low Point : 0.67 mAU High Point : 230.93 mAU
Plot Offset: 0.67 mAU Plot Scale: 230.3 mAU



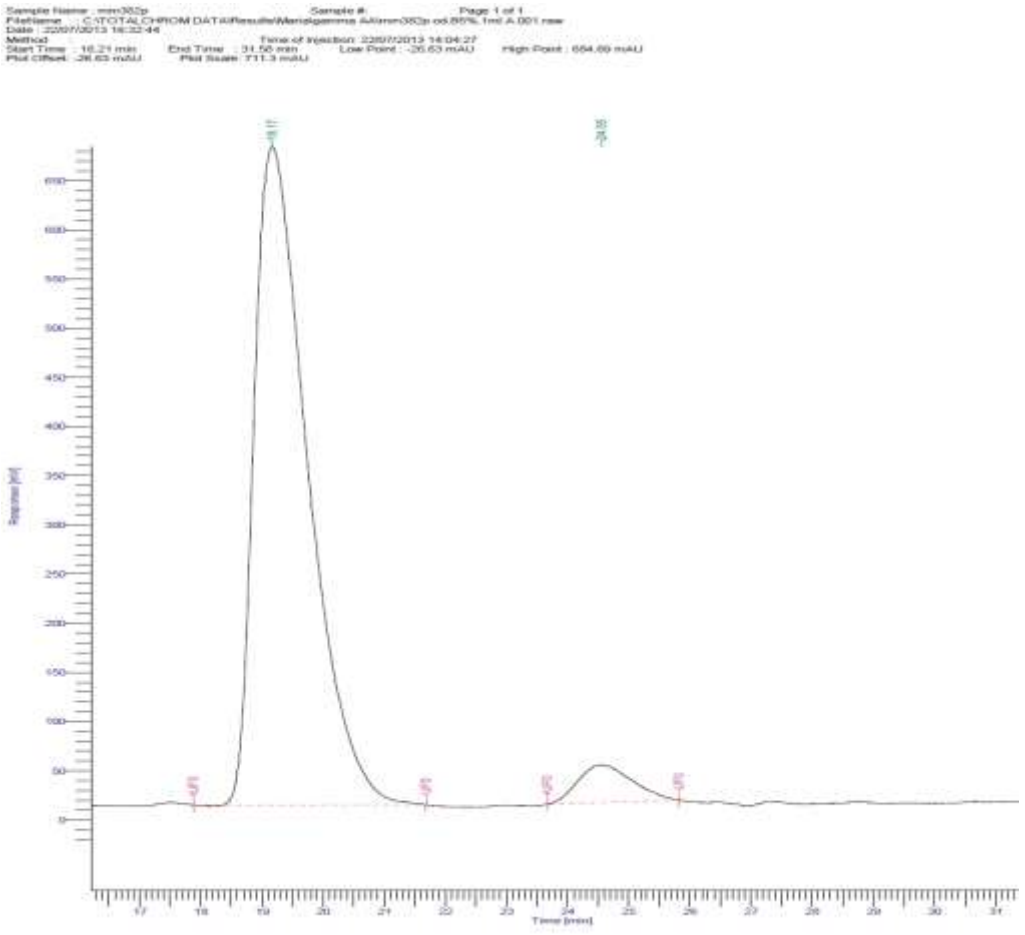
Compound 9d

Software Version	: 6.3.1.0504	Date	: 22/07/2013 16:33:04
Operator	: manager	Sample Name	: mm382p
Sample Number	:	Study	:
AutoSampler	: SER200	Rack/Vial	: 0/1
Instrument Name	: PerkinElmer LC	Channel	: A
Instrument Serial #	: None	A/D mV Range	: 1000
Delay Time	: 0.00 min	End Time	: 40.00 min
Sampling Rate	: 2.2727 pts/s		
Sample Volume	: 1.000000 ul		
Sample Amount	: 1.0000	Area Reject	: 0.000000
Data Acquisition Time	: 22/07/2013 14:04:27	Dilution Factor	: 1.00
		Cycle	: 1

Raw Data File : C:\TOTALCHROM DATA\Results\Maria\gamma AA\mm382p od.B5%.1ml.A.001.raw
Result File : C:\TOTALCHROM DATA\Results\Maria\gamma AA\mm382p od.B5%.1ml.A.001.rst [Editing in Progress]
Inst Method : C:\TOTALCHROM DATA\Methods\B5%-1mL-40min from C:\TOTALCHROM DATA\Results\Maria\gamma AA\mm382p od.B5%.1ml.A.001.raw
Proc Method : C:\TOTALCHROM DATA\Methods\B5%-1mL-40min from C:\TOTALCHROM DATA\Results\Maria\gamma AA\mm382p od.B5%.1ml.A.001.rst [Editing in Progress]
Calib Method : C:\TOTALCHROM DATA\Methods\B5%-1mL-40min from C:\TOTALCHROM DATA\Results\Maria\gamma AA\mm382p od.B5%.1ml.A.001.rst [Editing in Progress]
Report Format File: C:\PenExe\TcWS\Ver6.3.1\Config\User\manager\Default.rpt
Sequence File : C:\TOTALCHROM DATA\Sequences\bianco220d.B5%.1ml.-..seq

DEFAULT REPORT

Peak #	Component Name	Time [min]	Area [uV*sec]	Height [uV]	Area [%]	Norm. Area [%]	Cal. Range	Volt Range	BL	Raw Amount	Adjusted Amount
1		19.169	40669732.48	669668.25	94.53	94.53			*MM	40.6697	40.6697
2		24.552	2352787.04	38294.10	5.47	5.47			*MM	2.3528	2.3528
			43022519.52	707962.35	100.00	100.00				43.0225	43.0225



Compound 9e

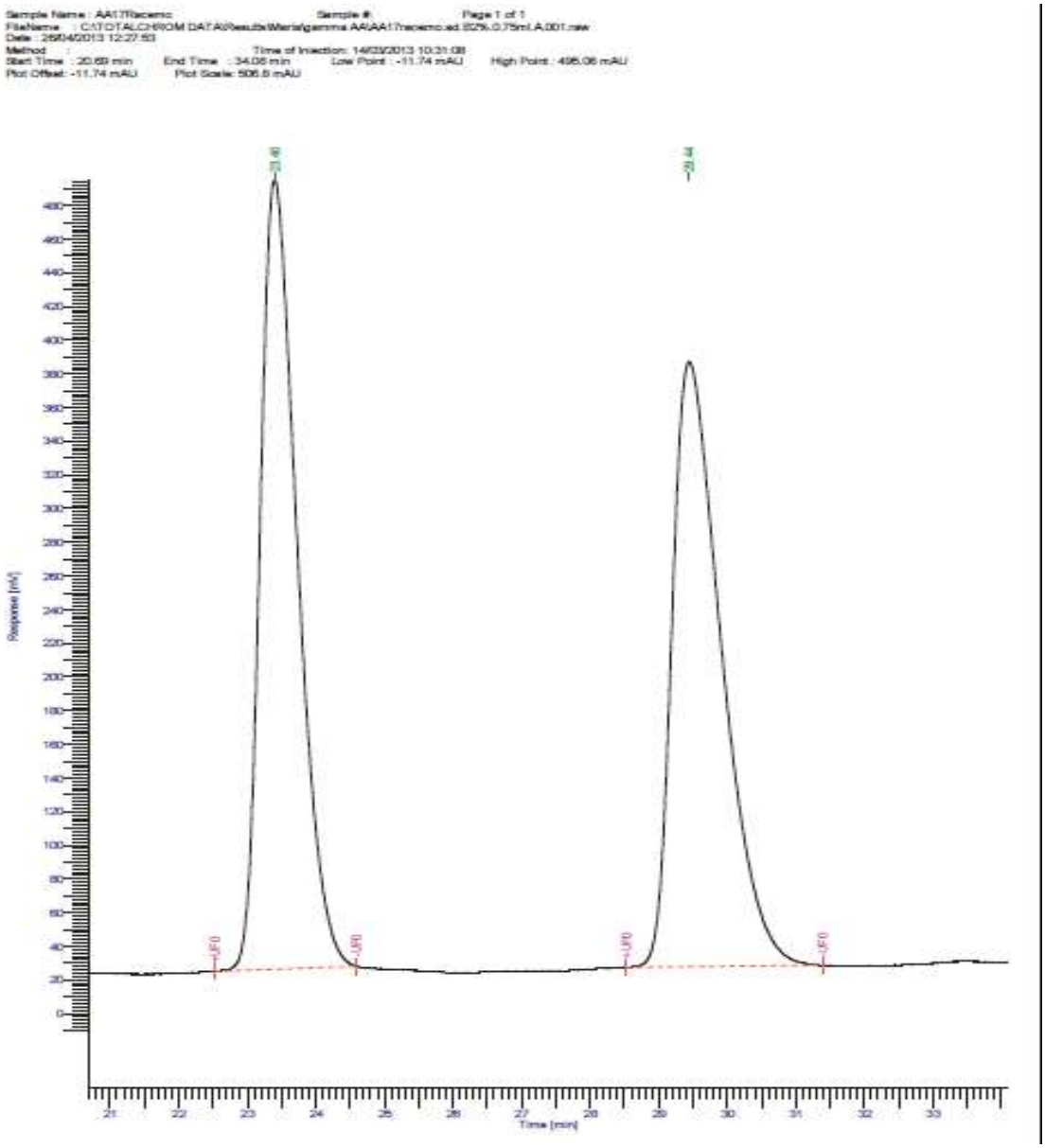
Software Version	: 6.3.1.0504	Date	: 26/04/2013 12:26:56
Operator	: manager	Sample Name	: AA17Racemo
Sample Number	:	Study	:
AutoSampler	: SER200	Rack/Vial	: 0/1
Instrument Name	: PerkinElmer LC	Channel	: A
Instrument Serial #	: None	A/D mV Range	: 1000
Delay Time	: 0.00 min	End Time	: 45.00 min
Sampling Rate	: 2.2727 pts/s		
Sample Volume	: 1.000000 ul		
Sample Amount	: 1.0000	Area Reject	: 0.000000
Data Acquisition Time	: 14/03/2013 10:31:08	Dilution Factor	: 1.00
		Cycle	: 1

Raw Data File : C:\TOTALCHROM DATA\Results\Maria\gamma AA\AA17racemo.ad.B2%.0.75ml.A.001.raw
Result File : C:\TOTALCHROM DATA\Results\Maria\gamma AA\AA17racemo.ad.B2%.0.75ml.A.001.rst [Editing In Progress]
Inst Method : C:\TOTALCHROM DATA\Methods\B2%-0.75mL-45min from C:\TOTALCHROM DATA\Results\Maria\gamma AA\AA17racemo.ad.B2%.0.75ml.A.001.raw
Proc Method : C:\TOTALCHROM DATA\Methods\B2%-0.75mL-45min from C:\TOTALCHROM DATA\Results\Maria\gamma AA\AA17racemo.ad.B2%.0.75ml.A.001.rst [Editing In Progress]
Calib Method : C:\TOTALCHROM DATA\Methods\B2%-0.75mL-45min from C:\TOTALCHROM DATA\Results\Maria\gamma AA\AA17racemo.ad.B2%.0.75ml.A.001.rst [Editing In Progress]
Report Format File: C:\PenExel\TcWS\Ver6.3.1\Config\User\manager\Default.rpt
Sequence File : C:\TOTALCHROM DATA\Sequences\AA17racemo.ad.B2%.0.75ml.-..seq

DEFAULT REPORT

Peak #	Component Name	Time [min]	Area [uV*sec]	Height [uV]	Area [%]	Norm. Area [%]	Cal. Range	Volt Range	BL	Raw Amount	Adjusted Amount
1		23.401	17622960.83	468715.45	49.60	49.60			*MM	17.6230	17.6230
2		29.443	17909678.68	359208.88	50.40	50.40			*MM	17.9097	17.9097
			35532639.50	827924.33	100.00	100.00				35.5326	35.5326

Sample Name : AA17Racemo Sample # Page 1 of 1
FileName : C:\TOTALCHROM DATA\Results\Maria\gamma AA\AA17racemo.ad.B2%.0.75ml.A.001.raw
Date : 26/04/2013 12:27:53
Method : Time of Injection: 14/03/2013 10:31:08
Start Time : 20.69 min End Time : 34.06 min Low Point : -11.74 mAU High Point : 496.06 mAU
Plot Offset: -11.74 mAU Plot Scale: 506.8 mAU



Software Version	: 6.3.1.0504	Date	: 26/04/2013 16:17:29
Operator	: manager	Sample Name	: mm361phex
Sample Number	:	Study	:
AutoSampler	: SER200	Rack/Vial	: 0/0
Instrument Name	: PerkinElmer LC	Channel	: B
Instrument Serial #	: None	A/D mV Range	: 1000
Delay Time	: 0.00 min	End Time	: 31.34 min
Sampling Rate	: 2.2727 pts/s		
Sample Volume	: 1.000000 ul		
Sample Amount	: 1.0000	Area Reject	: 0.000000
Data Acquisition Time	: 26/04/2013 15:44:33	Dilution Factor	: 1.00
		Cycle	: 1

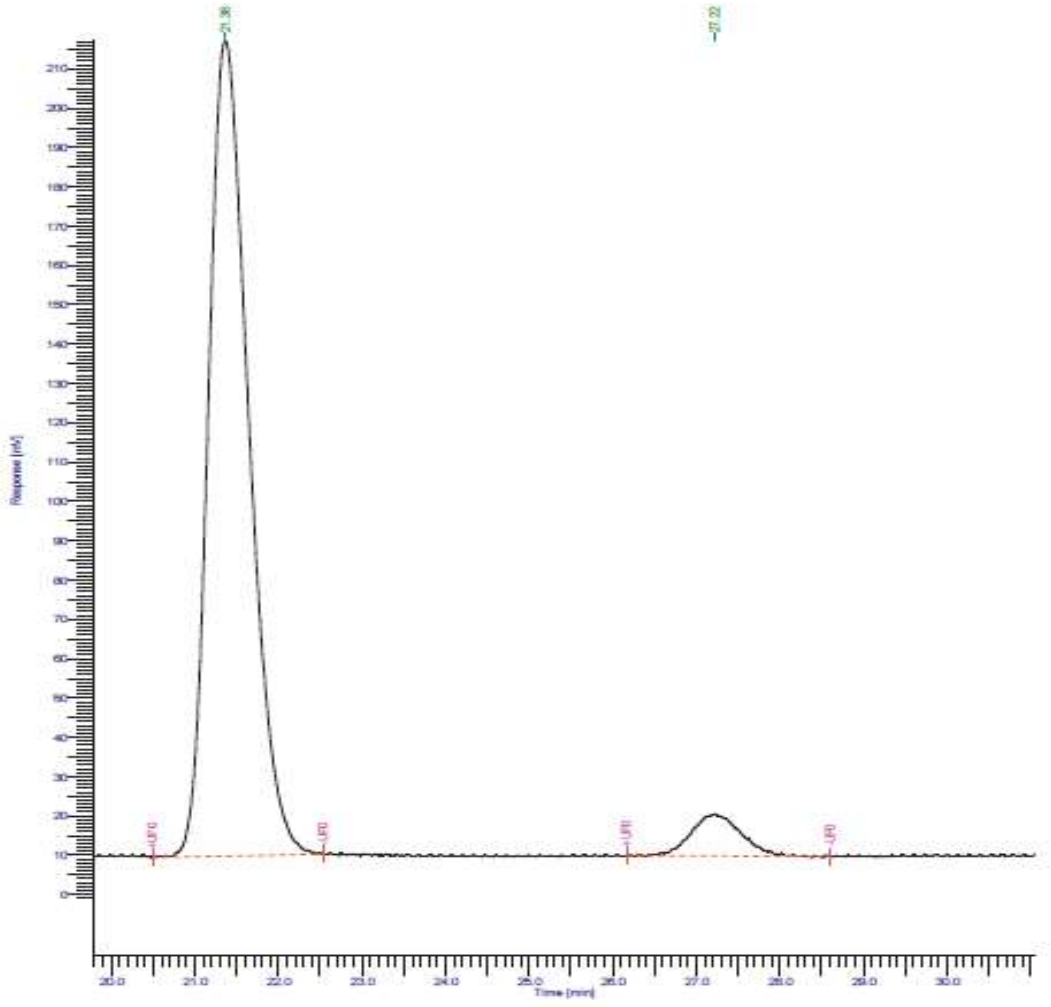
Raw Data File : c:\totalchrom data\results\maria\gamma aa\mm361phexch.ad.b2% 0.75ml.b.001.raw <Incomplete>
Inst Method : C:\TOTALCHROM DATA\Methods\B2%-0.75mL-40min from c:\totalchrom data\results\maria\gamma aa\mm361phexch.ad.b2% .0.75ml.b.001.raw
Proc Method : C:\TOTALCHROM DATA\Methods\B2%-0.75mL-40min.mth from
Calib Method : C:\TOTALCHROM DATA\Methods\B2%-0.75mL-40min.mth from
Report Format File: C:\PenExe\TcWS\Ver6.3.1\Config\User\manager\Default.rpt
Sequence File : C:\TOTALCHROM DATA\Sequences\mm361pHexCh.ad.B2%.0.75ml.-..seq

DEFAULT REPORT

Peak #	Component Name	Time [min]	Area [uV*sec]	Height [uV]	Area [%]	Norm. Area [%]	Cal. Range	Volt Range	BL	Raw Amount	Adjusted Amount
1		21.362	6942157.78	207445.23	94.08	94.08			*MM	6.9422	6.9422
2		27.221	436487.89	10585.65	5.92	5.92			*MM	0.4365	0.4365
			7378645.67	218030.89	100.00	100.00				7.3786	7.3786

Missing Component Report

Sample Name : mm361phex Sample # Page 1 of 1
FileName : c:\totalchrom data\results\maria\gamma aa\mm361phexch.ad.b2% 0.75ml.b.001.raw <Incomplete>
Date : 26/04/2013 16:17:59
Method : B2%-0.75mL-40min.mth Time of Injection: 26/04/2013 15:44:33
Start Time : 19.79 min End Time : 31.04 min Low Point : -1.56 mAU High Point : 217.23 mAU
Plot Offset: -1.56 mAU Plot Scale: 218.8 mAU



Compound 9f

Raw Data File : c:\totalchrom data\results\maria\gamma aa\mmheptracemo (daleti93).ad.B2%. 0.75ml.a.001.raw <Incomple
Inst Method : C:\TOTALCHROM DATA\Methods\B10%-1mL-45min from c:\totalchrom data\results\maria\gamma aa\mmhep
(daleti93).ad.b2%.ml.a.001.raw
Proc Method : C:\TOTALCHROM DATA\Methods\B2%-0.75mL-45min.mth from
Calib Method : C:\TOTALCHROM DATA\Methods\B2%- 0.75mL- 45min.mth from
Report Format File: C:\PenExe\TcWS\Ver6.3.1\Config\User\manager\Default.rpt
Sequence File : C:\TOTALCHROM DATA\Sequences\mmheptracemo (daleti93).ad.B2%. 0.75 ml.-..seq

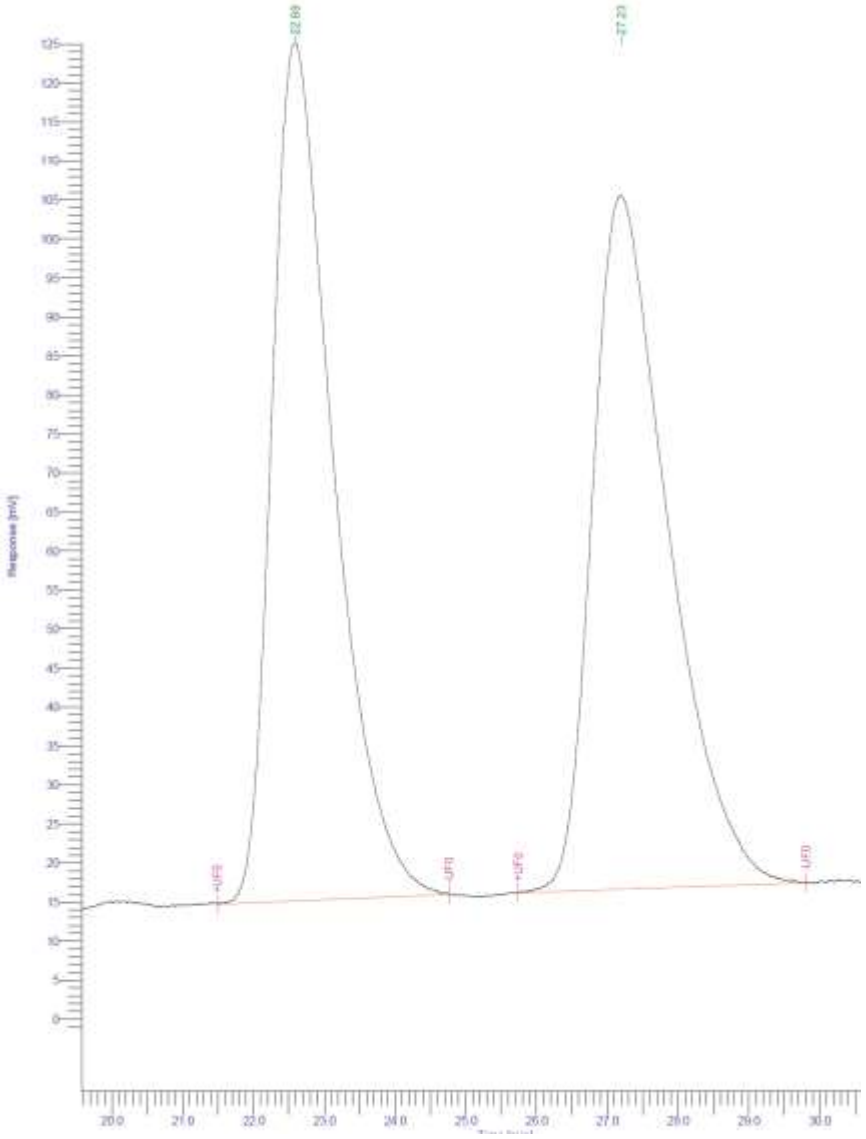
DEFAULT REPORT

Peak #	Component Name	Time [min]	Area [uV*sec]	Height [uV]	Area [%]	Norm. Area [%]	Cal. Range	Volt Range	BL	Raw Amount	Adjusted Amount
1		22.694	6632258.26	109851.95	50.07	50.07			*MM	6.6334	6.6334
2		27.239	6623439.74	88900.08	49.93	49.93			*MM	6.6232	6.6232
			13255698.00	198752.03	100.00	100.00				13.2557	13.2557

Missing Component Report

Component	Expected Retention (Calibration File)

All components were found

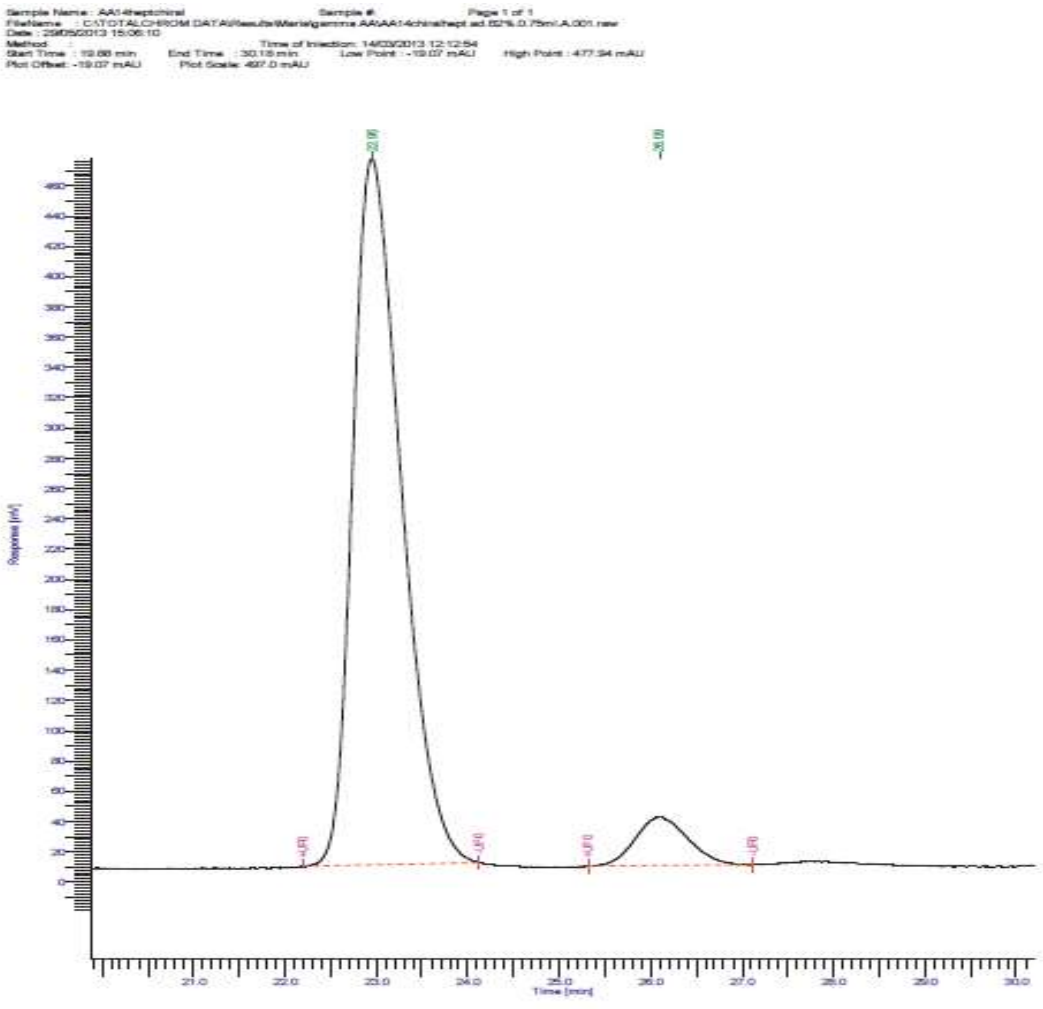


Software Version	: 6.3.1.0504	Date	: 29/05/2013 15:05:25
Operator	: manager	Sample Name	: AA14heptchiral
Sample Number	:	Study	:
AutoSampler	: 6ER200	Rack/Vial	: 0/1
Instrument Name	: PerkinElmer LC	Channel	: A
Instrument Serial #	: None	A/D mV Range	: 1000
Delay Time	: 0.00 min	End Time	: 50.00 min
Sampling Rate	: 2.2727 pts/s		
Sample Volume	: 1.000000 ul		
Sample Amount	: 1.0000	Area Reject	: 0.000000
Data Acquisition Time	: 14/03/2013 12:12:54	Dilution Factor	: 1.00
		Cycle	: 1

Raw Data File : C:\TOTALCHROM DATA\Results\Maria\gamma AA\AA14chiralhept.ad.B2%.0.75ml.A.001.raw
Result File : C:\TOTALCHROM DATA\Results\Maria\gamma AA\AA14chiralhept.ad.B2%.0.75ml.A.001.rst [Editing In Progress]
Inst Method : C:\TOTALCHROM DATA\Methods\B2%-0.75mL-50min from C:\TOTALCHROM DATA\Results\Maria\gamma AA\AA14chiralhept.ad.B2%.0.75ml.A.001.raw
Proc Method : C:\TOTALCHROM DATA\Methods\B2%-0.75mL-50min from C:\TOTALCHROM DATA\Results\Maria\gamma AA\AA14chiralhept.ad.B2%.0.75ml.A.001.rst [Editing In Progress]
Calib Method : C:\TOTALCHROM DATA\Methods\B2%-0.75mL-50min from C:\TOTALCHROM DATA\Results\Maria\gamma AA\AA14chiralhept.ad.B2%.0.75ml.A.001.rst [Editing In Progress]
Report Format File: C:\PenExe\TcWS\Ver6.3.1\Config\User\manager\Default.rpt
Sequence File : C:\TOTALCHROM DATA\Sequences\AA14chiralhept.ad.B2%.0.75ml.-..seq

DEFAULT REPORT

Peak #	Component Name	Time [min]	Area [uV*sec]	Height [uV]	Area [%]	Norm. Area [%]	Cal. Range	Volt Range	BL	Raw Amount	Adjusted Amount
1		22.953	17251136.75	466574.59	93.15	93.15			*MM	17.2511	17.2511
2		26.092	1268483.08	31827.25	6.85	6.85			*MM	1.2685	1.2685
			18519619.83	498401.84	100.00	100.00				18.5196	18.5196



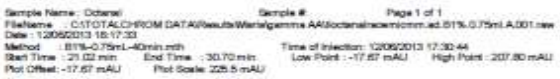
Compound 9g

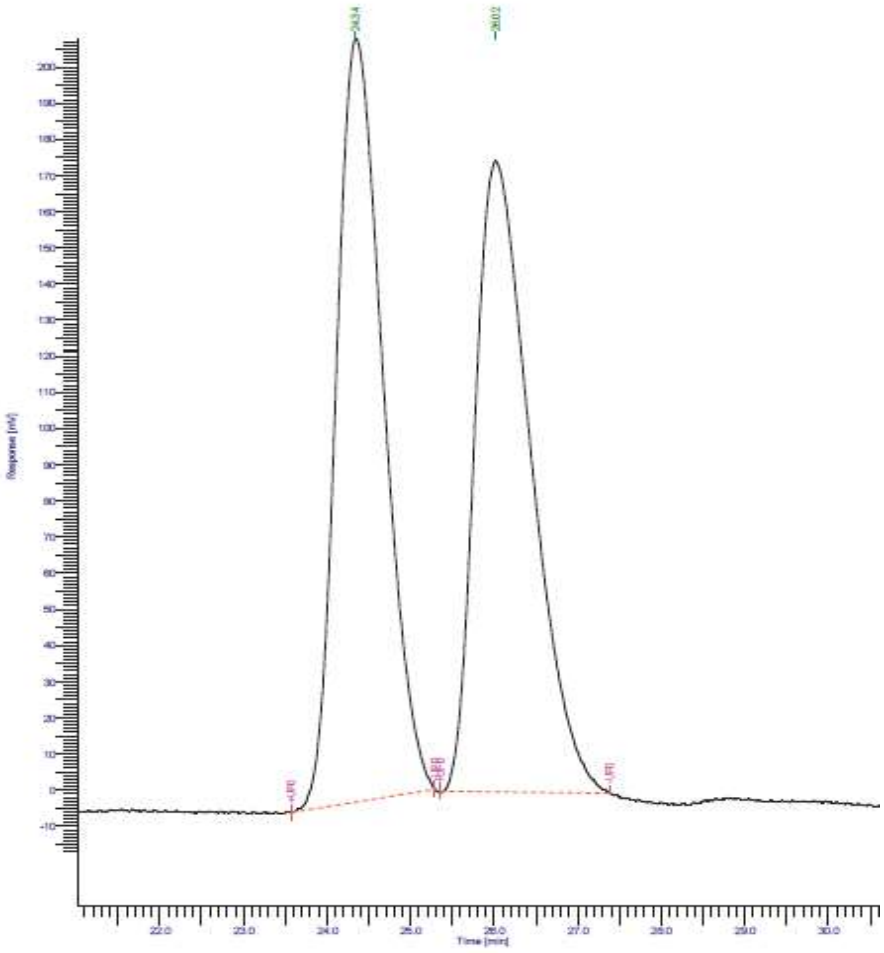
Software Version	: 6.3.1.0504	Date	: 12/06/2013 18:17:05
Operator	: manager	Sample Name	: Octanal
Sample Number	:	Study	:
AutoSampler	: SER200	Rack/Vial	: 0/1
Instrument Name	: PerkinElmer LC	Channel	: A
Instrument Serial #	: None	A/D mV Range	: 1000
Delay Time	: 0.00 min	End Time	: 40.00 min
Sampling Rate	: 2.2727 pts/s		
Sample Volume	: 1.000000 ul		
Sample Amount	: 1.0000	Area Reject	: 0.000000
Data Acquisition Time	: 12/06/2013 17:30:44	Dilution Factor	: 1.00
		Cycle	: 1

Raw Data File : C:\TOTALCHROM DATA\Results\Maria\gamma AA\\octanalracemicmm.ad.B1%.0.75ml.A.001.raw
Inst Method : C:\TOTALCHROM DATA\Methods\B1%-0.75mL-40min from C:\TOTALCHROM DATA\Results\Maria\gamma AA\\octanalracemicmm.ad.B1%.0.75ml.A.001.raw
Proc Method : C:\TOTALCHROM DATA\Methods\B1%-0.75mL-40min.mth from
Calib Method : C:\TOTALCHROM DATA\Methods\B1%-0.75mL-40min.mth from
Report Format File: C:\PenExe\TcW3\Ver6.3.1\Config\User\manager\Default.rpt
Sequence File : C:\TOTALCHROM DATA\Sequences\\octanalracemicmm.ad.B1%.0.75ml.-..seq

DEFAULT REPORT

Peak #	Component Name	Time [min]	Area [uV*sec]	Height [uV]	Area [%]	Norm. Area [%]	Cal. Range	Volt Range	BL	Raw Amount	Adjusted Amount
1		24.339	8216134.44	211074.47	50.39	50.39			*MM	8.2161	8.2161
2		26.019	8089013.65	174653.34	49.61	49.61			*MM	8.0890	8.0890
			16305148.09	385727.80	100.00	100.00				16.3051	16.3051





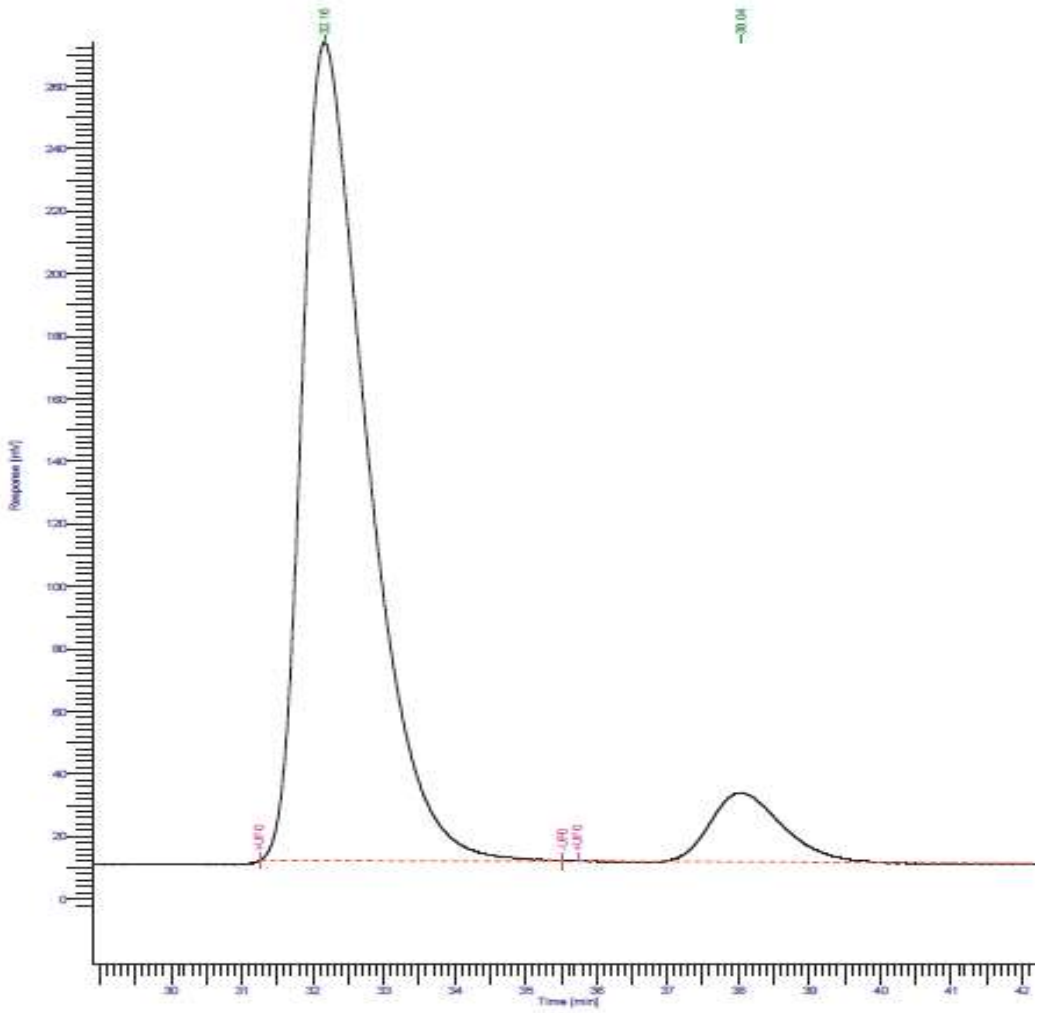
Software Version	: 6.3.1.0504	Date	: 13/06/2013 09:13:45
Operator	: manager	Sample Name	: Chiral Octanal
Sample Number	:	Study	:
AutoSampler	: SER200	Rack/Vial	: 0/1
Instrument Name	: PerkinElmer LC	Channel	: A
Instrument Serial #	: None	A/D mV Range	: 1000
Delay Time	: 0.00 min	End Time	: 29.99 min
Sampling Rate	: 2.2727 pts/s		
Sample Volume	: 1.000000 ul		
Sample Amount	: 1.0000	Area Reject	: 0.000000
Data Acquisition Time	: 12/06/2013 18:17:19	Dilution Factor	: 1.00
		Cycle	: 1

Raw Data File : C:\TOTALCHROM DATA\Results\Maria\gamma AA\chiral octanal44.ad.B1%.0.75ml.A.001.raw
Result File : C:\TOTALCHROM DATA\Results\Maria\gamma AA\chiral octanal44.ad.B1%.0.75ml.A.001.rst [Editing in Progress]
Inst Method : C:\TOTALCHROM DATA\Methods\B1%-0.75mL-30min from C:\TOTALCHROM DATA\Results\Maria\gamma AA\chiral octanal44.ad.B1%.0.75ml.A.001.raw
Proc Method : C:\TOTALCHROM DATA\Methods\B1%-0.75mL-30min from C:\TOTALCHROM DATA\Results\Maria\gamma AA\chiral octanal44.ad.B1%.0.75ml.A.001.rst [Editing in Progress]
Calib Method : C:\TOTALCHROM DATA\Methods\B1%-0.75mL-30min from C:\TOTALCHROM DATA\Results\Maria\gamma AA\chiral octanal44.ad.B1%.0.75ml.A.001.rst [Editing in Progress]
Report Format File: C:\PenExel\TcW9\Ver6.3.1\Config\User\manager\Default.rpt
Sequence File : C:\TOTALCHROM DATA\Sequences\chiral octanal44.ad.B1%.0.75ml.-..seq

DEFAULT REPORT

Peak #	Component Name	Time [min]	Area [uV*sec]	Height [uV]	Area [%]	Norm. Area [%]	Cal. Range	Volt Range	BL	Raw Amount	Adjusted Amount
1		24.413	13109186.34	308553.25	91.50	91.50			*MM	13.1092	13.1092
2		26.451	1218346.32	29562.20	8.50	8.50			*MM	1.2183	1.2183
			14327532.65	338115.46	100.00	100.00				14.3275	14.3275

Sample Name : ist44OCTADc Sample # Page 1 of 1
FileName : C:\TOTALCHROM DATA\Results\Lastz\ist44OCTADc\ist44OCTADc.ad.B1%.0.75ml.A.001.raw
Date : 29/05/2013 12:40:13
Method : Time of Injection: 03/06/2011 12:41:46
Start Time : 26.90 min End Time : 42.29 min Low Point : -3.19 mAU High Point : 273.92 mAU
Plot Offset: -3.19 mAU Plot Scale: 277.1 mAU



Compound 9h

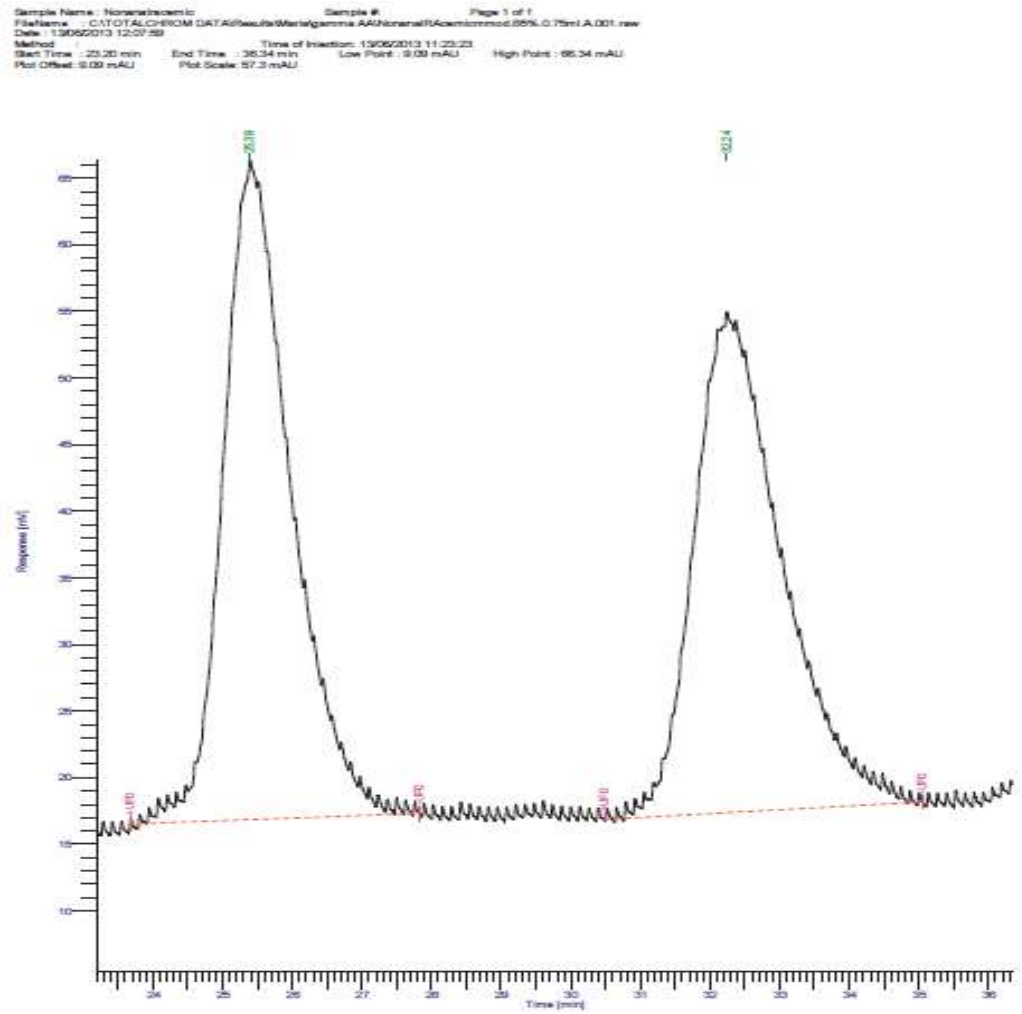
Software Version	: 6.3.1.0504	Date	: 13/06/2013 12:07:20
Operator	: manager	Sample Name	: Nonanalracemic
Sample Number	:	Study	:
AutoSampler	: SER200	Rack/Vial	: 0/1
Instrument Name	: PerkinElmer LC	Channel	: A
Instrument Serial #	: None	A/D mV Range	: 1000
Delay Time	: 0.00 min	End Time	: 40.00 min
Sampling Rate	: 2.2727 pts/s		
Sample Volume	: 1.000000 ul	Area Reject	: 0.000000
Sample Amount	: 1.0000	Dilution Factor	: 1.00
Data Acquisition Time	: 13/06/2013 11:23:23	Cycle	: 1

Raw Data File : C:\TOTALCHROM DATA\Results\Maria\gamma AA\NonanalRAcemicmmod.B5%.0.75ml.A.001.raw
Result File : C:\TOTALCHROM DATA\Results\Maria\gamma AA\NonanalRAcemicmmod.B5%.0.75ml.A.001.rst [Editing in Progress]
Inst Method : C:\TOTALCHROM DATA\Methods\B5%-0.75mL-40min from C:\TOTALCHROM DATA\Results\Maria\gamma AA\NonanalRAcemicmmod.B5%.0.75ml.A.001.raw
Proc Method : C:\TOTALCHROM DATA\Methods\B5%-0.75mL-40min from C:\TOTALCHROM DATA\Results\Maria\gamma AA\NonanalRAcemicmmod.B5%.0.75ml.A.001.rst [Editing in Progress]
Calib Method : C:\TOTALCHROM DATA\Methods\B5%-0.75mL-40min from C:\TOTALCHROM DATA\Results\Maria\gamma AA\NonanalRAcemicmmod.B5%.0.75ml.A.001.rst [Editing in Progress]
Report Format File: C:\PerkinElmer\TcW3\Ver6.3.1\Config\User\managen\Default.rpt
Sequence File : C:\TOTALCHROM DATA\Sequences\NonanalRAcemicmmod.B5%.0.75ml.-..seq

DEFAULT REPORT

Peak #	Component Name	Time [min]	Area [uV*sec]	Height [uV]	Area [%]	Norm. Area [%]	Cal. Range	Volt Range	BL	Raw Amount	Adjusted Amount
1		25.388	3354148.95	49492.29	50.55	50.55			*MM	3.3541	3.3541
2		32.237	3281323.32	37610.74	49.45	49.45			*MM	3.2813	3.2813
			6635472.27	87103.04	100.00	100.00				6.6355	6.6355

Missing Component Report



Software Version	: 6.3.1.0504	Date	: 13/06/2013 12:46:35
Operator	: manager	Sample Name	: Nonanalchiral
Sample Number	:	Study	:
AutoSampler	: SER200	Rack/Vial	: 0/0
Instrument Name	: PerkinElmer LC	Channel	: A
Instrument Serial #	: None	A/D mV Range	: 1000
Delay Time	: 0.00 min	End Time	: 37.17 min
Sampling Rate	: 2.2727 pts/s		
Sample Volume	: 1.000000 ul		
Sample Amount	: 1.0000	Area Reject	: 0.000000
Data Acquisition Time	: 13/06/2013 12:07:38	Dilution Factor	: 1.00
		Cycle	: 1

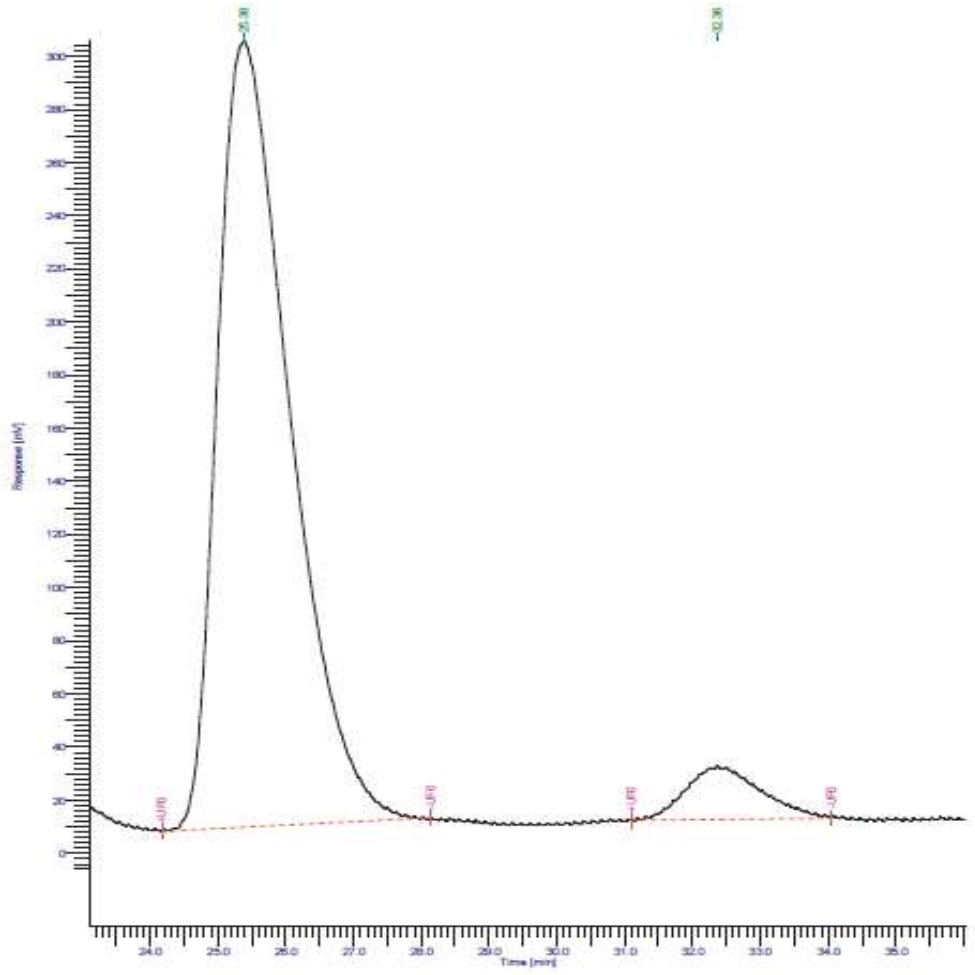
Raw Data File : c:\totalchrom data\results\maria\gamma aa\nonanalchiral\mmod.b5%.0.75ml.a.001.raw <Incomplete>
Inst Method : C:\TOTALCHROM DATA\Methods\B5%-0.75mL-40min from c:\totalchrom data\results\maria\gamma aa\nonanalchiral\mmod.b5%.0.75ml.a.001.raw
Proc Method : C:\TOTALCHROM DATA\Methods\B5%-0.75mL-40min.mth from
Calib Method : C:\TOTALCHROM DATA\Methods\B5%-0.75mL-40min.mth from
Report Format File: C:\PenExel\TcW8\Ver6.3.1\Config\User\manager\Default.rpt
Sequence File : C:\TOTALCHROM DATA\Sequences\Nonanal\RAcem\cmmod.B5%.0.75ml.-..seq

DEFAULT REPORT

Peak #	Component Name	Time [min]	Area [uV*sec]	Height [uV]	Area [%]	Norm. Area [%]	Cal. Range	Volt Range	BL	Raw Amount	Adjusted Amount
1		25.381	21944271.67	296133.17	93.47	93.47			*MM	21.9443	21.9443
2		32.362	1533612.60	20115.08	6.53	6.53			*MM	1.5336	1.5336
			23477884.28	316248.25	100.00	100.00				23.4779	23.4779

Missing Component Report
Component Expected Retention (Calibration File)

Sample Name : Nonanalchiral Sample # Page 1 of 1
FileName : c:\totalchrom data\results\maria\gamma aa\nonanalchiral\mmod.b5%.0.75ml.a.001.raw <Incomplete>
Date : 13/06/2013 12:47:09
Method : B5%-0.75mL-40min.mth Time of Injection: 13/06/2013 12:07:38
Start Time : 23.11 min End Time : 38.03 min Low Point : -7.42 mAU High Point : 305.97 mAU
Plot Offset: -7.42 mAU Plot Scale: 313.4 mAU



Compound 9i

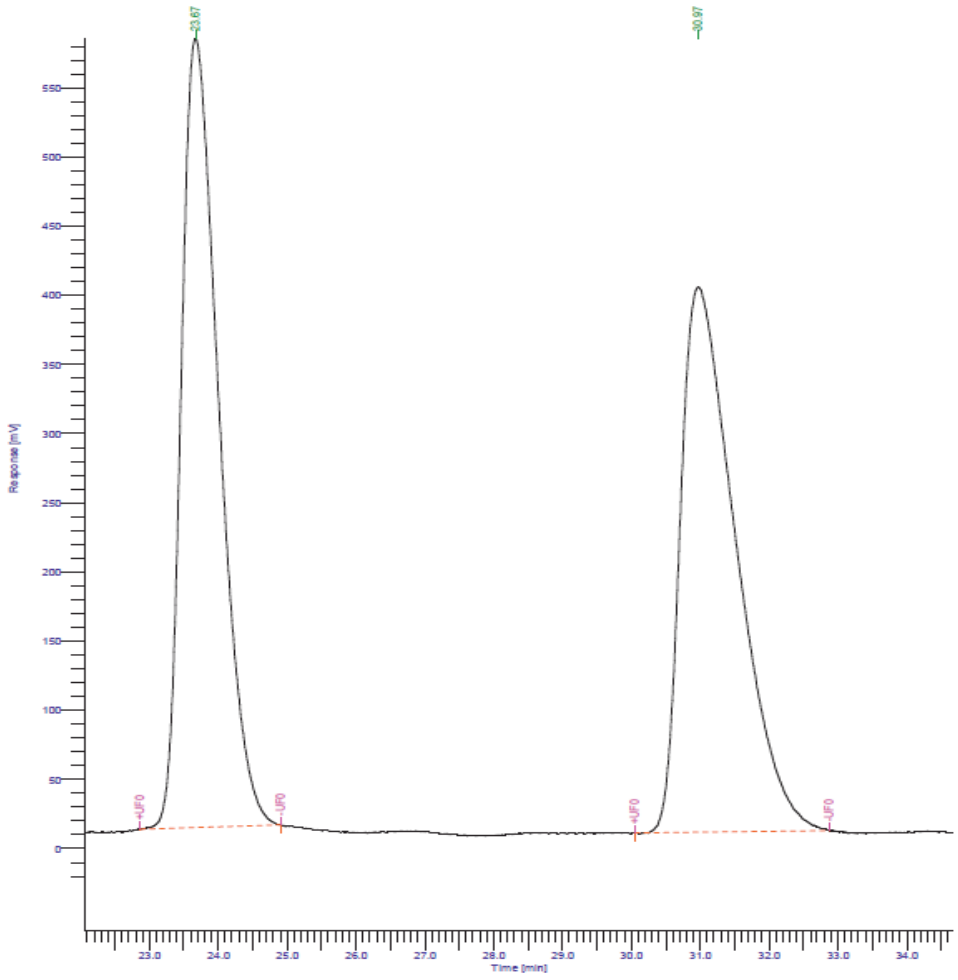
Software Version	: 6.3.1.0504	Date	: 29/05/2013 14:41:10
Operator	: manager	Sample Name	: AA18pracemo
Sample Number	:	Study	:
AutoSampler	: SER200	Rack/Vial	: 0/1
Instrument Name	: PerkinElmer LC	Channel	: A
Instrument Serial #	: None	A/D mV Range	: 1000
Delay Time	: 0.00 min	End Time	: 40.00 min
Sampling Rate	: 2.2727 pts/s		
Sample Volume	: 1.000000 ul		
Sample Amount	: 1.0000	Area Reject	: 0.000000
Data Acquisition Time	: 07/03/2013 12:30:43	Dilution Factor	: 1.00
		Cycle	: 1

Raw Data File : C:\TOTALCHROM DATA\Results\Maria\gamma AA\AA18pracem\AA18p.ad.B2%.0.75ml.A.001.raw
Result File : C:\TOTALCHROM DATA\Results\Maria\gamma AA\AA18pracem\AA18p.ad.B2%.0.75ml.A.001.rst [Editing In Progress]
Inst Method : C:\TOTALCHROM DATA\Methods\B2%-0.75mL-40min from C:\TOTALCHROM DATA\Results\Maria\gamma AA\AA18pracem\AA18p.ad.B2%.0.75ml.A.001.raw
Proc Method : C:\TOTALCHROM DATA\Methods\B2%-0.75mL-40min from C:\TOTALCHROM DATA\Results\Maria\gamma AA\AA18pracem\AA18p.ad.B2%.0.75ml.A.001.rst [Editing In Progress]
Calib Method : C:\TOTALCHROM DATA\Methods\B2%-0.75mL-40min from C:\TOTALCHROM DATA\Results\Maria\gamma AA\AA18pracem\AA18p.ad.B2%.0.75ml.A.001.rst [Editing In Progress]
Report Format File: C:\PenExe\TcW3\Ver6.3.1\Config\User\manager\Default.rpt
Sequence File : C:\TOTALCHROM DATA\Sequences\AA18pracem\AA18p.ad.B2%.0.75ml.-..seq

DEFAULT REPORT

Peak #	Component Name	Time [min]	Area [uV*sec]	Height [uV]	Area [%]	Norm. Area [%]	Cal. Range	Volt Range	BL	Raw Amount	Adjusted Amount
1		23.672	21620054.40	570272.39	49.64	49.64			*MM	21.6201	21.6201
2		30.969	21935519.94	394158.59	50.36	50.36			*MM	21.9355	21.9355
			43555574.34	964430.98	100.00	100.00				43.5556	43.5556

Sample Name : AA18pracemo Sample #: Page 1 of 1
FileName : C:\TOTALCHROM DATA\Results\Maria\gamma AA\AA18pracem\AA18p.ad.B2%.0.75ml.A.001.raw
Date : 29/05/2013 14:41:37
Method : Time of Injection: 07/03/2013 12:30:43
Start Time : 22.07 min End Time : 34.66 min Low Point : -20.72 mAU High Point : 585.50 mAU
Plot Offset: -20.72 mAU Plot Scale: 606.2 mAU



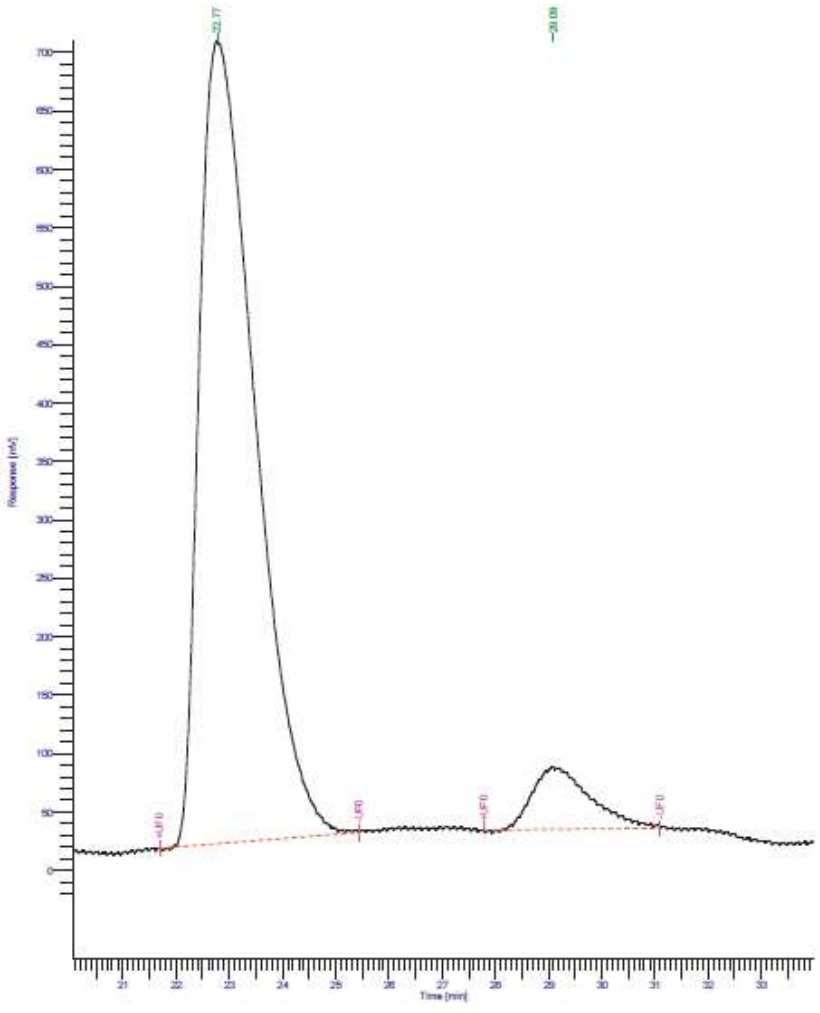
Software Version	: 6.3.1.0504	Date	: 29/05/2013 14:49:31
Operator	: manager	Sample Name	: chiral AA15
Sample Number	:	Study	:
AutoSampler	: SER200	Rack/Vial	: 0/1
Instrument Name	: PerkinElmer LC	Channel	: A
Instrument Serial #	: None	A/D mV Range	: 1000
Delay Time	: 0.00 min	End Time	: 40.00 min
Sampling Rate	: 2.2727 pts/s		
Sample Volume	: 1.000000 ul		
Sample Amount	: 1.0000	Area Reject	: 0.000000
Data Acquisition Time	: 14/03/2013 15:40:06	Dilution Factor	: 1.00
		Cycle	: 1

Raw Data File : C:\TOTALCHROM DATA\Results\Marla\gamma AA\Chiral\AA15.od.B5%.0.75ml.A.001.raw
Result File : C:\TOTALCHROM DATA\Results\Marla\gamma AA\Chiral\AA15.od.B5%.0.75ml.A.001.rst [Editing in Progress]
Inst Method : C:\TOTALCHROM DATA\Methods\B5%-0.75mL-40min from C:\TOTALCHROM DATA\Results\Marla\gamma AA\Chiral\AA15.od.B5%.0.75ml.A.001.raw
Proc Method : C:\TOTALCHROM DATA\Methods\B5%-0.75mL-40min from C:\TOTALCHROM DATA\Results\Marla\gamma AA\Chiral\AA15.od.B5%.0.75ml.A.001.rst [Editing in Progress]
Calib Method : C:\TOTALCHROM DATA\Methods\B5%-0.75mL-40min from C:\TOTALCHROM DATA\Results\Marla\gamma AA\Chiral\AA15.od.B5%.0.75ml.A.001.rst [Editing in Progress]
Report Format File: C:\PenExe\TcW9\Ver6.3.1\Config\User\manager\Default.rpt
Sequence File : C:\TOTALCHROM DATA\Sequences\RacemicAA18.od.B5%.0.75ml.-..seq

DEFAULT REPORT

Peak #	Component Name	Time [min]	Area [uV*sec]	Height [uV]	Area [%]	Norm. Area [%]	Cal. Range	Volt Range	BL	Raw Amount	Adjusted Amount
1		22.770	49759656.02	687281.34	92.50	92.50			*MM	49.7597	49.7597
2		29.091	4037363.70	53631.67	7.50	7.50			*MM	4.0374	4.0374
			53797019.72	740913.01	100.00	100.00				53.7970	53.7970

Sample Name : chiral AA15 Sample # Page 1 of 1
FileName : C:\TOTALCHROM DATA\Results\Marla\gamma AA\Chiral\AA15.od.B5%.0.75ml.A.001.raw
Date : 29/05/2013 14:50:01
Method Time of Injection: 14/03/2013 15:40:06
Start Time : 20.06 min End Time : 33.95 min Low Point : -28.70 mAU High Point : 709.88 mAU
Plot Offset: -28.70 mAU Plot Scale: 738.6 mAU



(S)-Pregabalin **11**