

Supporting Information for:

Copper-Catalyzed Enantioselective Carbenoid Insertion into S–H Bonds

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Contents:

Typical Procedure for Cu-Catalyzed S–H Insertion

Analytical Data for S–H Insertion Products

Preparation of (+)-Benzyl 2-Mercaptopropionate

NMR Spectra of New S–H Insertion Products

HPLC and SFC Charts for S–H Insertion Products

General. All reactions and manipulations were performed using standard Schlenk techniques. THF was distilled from sodium benzophenone ketyl. CH₂Cl₂, CHCl₃, DCE were distilled over CaH₂ under nitrogen atmosphere. CuCl and CuPF₆(MeCN)₄ were prepared according to the literature procedure.¹ Spirobox ligands ² were prepared according to the previous procedure. Mercaptans, CuBr₂ and Cu(OTf)₂ were purchased from Aldrich and used directly. NMR spectra were recorded with a Bruker AV 300 spectrometer at 300/400 MHz (¹H NMR), 75/100 MHz (¹³C NMR) or a Varian Mercury Plus 400 spectrometer at 400 MHz (¹H NMR), 100 MHz (¹³C NMR). Chemical shifts were reported in ppm down field from internal Me₄Si. Optical rotations were measured using a Perkin Elmer Model 341 polarimeter. HRMS were recorded on IonSpec FT-ICR mass spectrometer with ESI resource. HPLC analyses were performed on a Hewlett Packard Model HP 1100 Series or Waters 2996 chromatography. SFC (Super Fluent Chromatography) analyses were performed on Agilent 1200 Series.

¹ R. N. Keller, H. Wycoff, D. *Inorg. Synth.* **1946**, 2, 1–4.

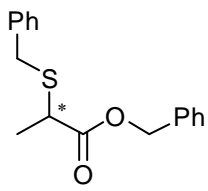
² B. Liu, S.-F. Zhu, W. Zhang, C. Chen, Q.-L. Zhou, *J. Am. Chem. Soc.* **2007**, 129, 5834–5835.

1. Typical Procedure for Cu-Catalyzed S–H Insertion

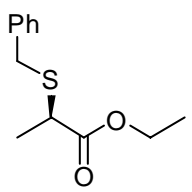
A solution of CuCl (1.0 mg, 0.01 mmol, 5 mol%), NaBAR_F (11.3 mg, 0.012 mmol, 6 mol%) and (*S,S,S,S*)-**4a** (6.1 mg, 0.012 mmol, 6 mol%) in CHCl₃ (2 mL) was stirred for 2 hours under an argon atmosphere. The solution was heated to 80 °C, mercaptan (0.2 mmol, 1 equiv.) and diazo compound (0.2 mmol, 1 equiv.) were added subsequently. The resulting solution was stirred at 80 °C for 0.5–2 hours until the diazo compound disappeared. The product was purified by flash chromatography with ethyl acetate/petroleum ether (1:20, v/v).

2. Analytical Data for S–H Insertion Products

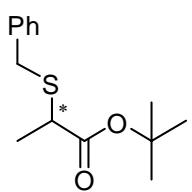
(+)-benzyl 2-(benzylthio)propionate (**3a**)

 Colorless oil; 82% yield; ¹H NMR (400 MHz, CDCl₃) δ 7.39–7.22 (m, 10H), 5.18 (d, *J* = 12.4 Hz, 1H), 5.12 (d, *J* = 12.4 Hz, 1H), 3.79 (d, *J* = 12.4 Hz, 1H), 3.73 (d, *J* = 12.4 Hz, 1H), 3.32 (q, *J* = 7.2 Hz, 1H), 1.40 (d, *J* = 7.2 Hz, 3H); ¹³C NMR (100 MHz, CDCl₃) δ 172.9, 137.5, 135.8, 129.1, 128.6, 128.5, 128.4, 128.3, 127.2, 66.8, 40.4, 35.9, 16.9; HRMS (ESI) Calcd for (C₁₇H₁₈O₂S + Na)⁺: 309.0920, Found 309.0925; 81% ee [HPLC condition: Chiralcel OJ-H column, *n*-Hexane/*i*-PrOH = 90:10, flow rate = 1.0 mL/min, wavelength = 220 nm, *t*_R = 14.28 min for major isomer, *t*_R = 15.47 min for minor isomer]; [α]_D²⁰ = +170.6 (*c* 1.0, MeOH).

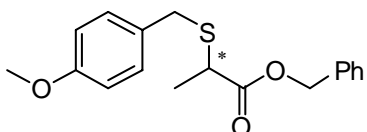
(*R*)-ethyl 2-(benzylthio)propionate (**3b**)³

 Colorless oil; 91% yield; ¹H NMR (400 MHz, CDCl₃) δ 7.28–7.15 (m, 5H), 4.16–4.05 (m, 2H), 3.80 (d, *J* = 13.2 Hz, 1H), 3.72 (d, *J* = 13.2 Hz, 1H), 3.21 (q, *J* = 7.2 Hz, 2H), 1.31 (d, *J* = 7.2 Hz, 3H), 1.23 (t, *J* = 7.2 Hz, 3H); 73 % ee [HPLC condition: Chiralcel OJ-H column, *n*-Hexane/*i*-PrOH = 90:10, flow rate = 1.0 mL/min, wavelength = 210 nm, *t*_R = 7.78 min for minor isomer, *t*_R = 8.79 min for major isomer]; [α]_D²⁰ = +170.6 (*c* 1.0, MeOH), [α]_D³⁰ = +146.7 (*c* 1.0, CH₂Cl₂) [lit: [α]_D²⁰ = +228 (*c* 1.0, CH₂Cl₂) for (*R*) with 95% ee].

(+)-*tert*-butyl 2-(benzylthio)propionate (**3c**)

 Colorless oil; 62% yield; ¹H NMR (300 MHz, CDCl₃) δ 7.36–7.22 (m, 5H), 3.88 (d, *J* = 13.2 Hz, 1H), 3.78 (d, *J* = 13.2 Hz, 1H), 3.17 (q, *J* = 7.2 Hz, 1H), 1.56 (s, 9H), 1.33 (d, *J* = 7.2 Hz, 3H); ¹³C NMR (75 MHz, CDCl₃) δ 172.3, 137.8, 129.1, 128.5, 127.1, 81.2, 41.2, 35.9, 28.1, 16.9; HRMS (ESI) Calcd for (C₁₄H₂₀O₂S + Na)⁺: 275.1076, Found 275.1073; 83% ee [HPLC condition: Chiralcel OJ-H column, *n*-Hexane/*i*-PrOH = 90:10, flow rate = 1.0 mL/min, wavelength = 210 nm, *t*_R = 4.75 min for minor isomer, *t*_R = 5.36 min for major isomer]; [α]_D²⁰ = +215.8 (*c* 1.0, MeOH).

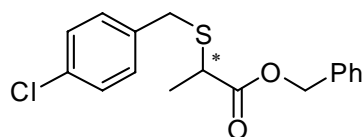
(+)-benzyl 2-(4-methoxybenzylthio)propionate (**3d**)

 Colorless oil; 73% yield; ¹H NMR (400 MHz, CDCl₃) δ 7.39–7.33 (m, 5H), 7.16 (d, *J* = 8.4 Hz, 2H), 6.80 (d, *J* = 8.8 Hz, 2H), 5.20 (d, *J* = 12.4 Hz, 1H), 5.13 (d, *J* = 12.4 Hz, 1H),

³ A. M. Ponce, L. E. Overman, *J. Am. Chem. Soc.* **2000**, *122*, 8672–8676.

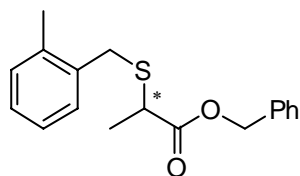
3.79–3.67 (m, 5H), 3.32 (q, $J = 7.2$ Hz, 1H), 1.40 (d, $J = 7.2$ Hz, 3H); ^{13}C NMR (100 MHz, CDCl_3) δ 172.9, 158.7, 135.9, 130.2, 129.4, 128.6, 128.4, 128.3, 113.9, 66.8, 55.3, 40.3, 35.3, 16.9; HRMS (ESI) Calcd for $(\text{C}_{18}\text{H}_{20}\text{O}_3\text{S} + \text{Na})^+$: 339.1025, Found 339.1022; 85% ee [HPLC condition: Chiralcel OJ-H column, *n*-Hexane/*i*-PrOH = 90:10, flow rate = 1.0 mL/min, wavelength = 220 nm, $t_{\text{R}} = 34.12$ min for major isomer, $t_{\text{R}} = 38.73$ min for minor isomer]; $[\alpha]_{\text{D}}^{20} = +167.6$ (*c* 1.0, MeOH).

(+)-benzyl 2-(4-chlorobenzylthio)propionate (3e)



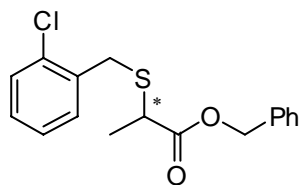
Colorless oil; 86% yield; ^1H NMR (400 MHz, CDCl_3) δ 7.31–7.26 (m, 5H), 7.17–7.07 (m, 4H), 5.11 (d, $J = 12.0$ Hz, 1H), 5.04 (d, $J = 12.0$ Hz, 1H), 3.67 (d, $J = 13.2$ Hz, 1H), 3.59 (d, $J = 13.2$ Hz, 1H), 3.21 (q, $J = 7.2$ Hz, 1H), 1.32 (d, $J = 7.2$ Hz, 3H); ^{13}C NMR (100 MHz, CDCl_3) δ 171.6, 135.0, 134.7, 131.9, 129.3, 127.6, 127.4, 127.3, 65.8, 39.2, 34.1, 15.7; HRMS (ESI) Calcd for $(\text{C}_{17}\text{H}_{17}\text{ClO}_2\text{S} + \text{Na})^+$: 343.0530, Found 343.0532; 83% ee [HPLC condition: Chiralcel OJ-H column, *n*-Hexane/*i*-PrOH = 90:10, flow rate = 1.0 mL/min, wavelength = 215 nm, $t_{\text{R}} = 18.68$ min for minor isomer, $t_{\text{R}} = 20.48$ min for major isomer]; $[\alpha]_{\text{D}}^{20} = +152.5$ (*c* 1.0, MeOH).

(+)-benzyl 2-(2-methylbenzylthio)propionate (3f)



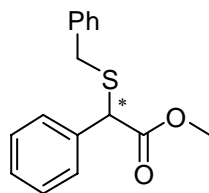
Colorless oil; 87% yield; ^1H NMR (300 MHz, CDCl_3) δ 7.31–6.98 (m, 9H), 5.13 (d, $J = 12.3$ Hz, 1H), 5.07 (d, $J = 12.3$ Hz, 1H), 3.72 (d, $J = 12.6$ Hz, 1H), 3.67 (d, $J = 12.6$ Hz, 1H), 3.31 (q, $J = 7.2$ Hz, 1H), 2.23 (s, 3H), 1.36 (d, $J = 7.2$ Hz, 3H); ^{13}C NMR (75 MHz, CDCl_3) δ 172.9, 136.9, 135.8, 135.0, 130.6, 129.9, 128.7, 128.4, 128.3, 127.5, 125.9, 66.9, 40.8, 33.8, 19.1, 17.0; HRMS (ESI) Calcd for $(\text{C}_{18}\text{H}_{20}\text{O}_2\text{S} + \text{Na})^+$: 323.1076, Found 323.1080; 68% ee [HPLC condition: Chiralcel OJ-H column, *n*-Hexane/*i*-PrOH = 90:10, flow rate = 1.0 mL/min, wavelength = 210 nm, $t_{\text{R}} = 13.79$ min for minor isomer, $t_{\text{R}} = 17.71$ min for major isomer]; $[\alpha]_{\text{D}}^{20} = +121.0$ (*c* 1.0, MeOH).

(+)-benzyl 2-(2-chlorobenzylthio)propionate (3g)



Colorless oil; 70% yield; ^1H NMR (300 MHz, CDCl_3) δ 7.29–7.07 (m, 9H), 5.11 (d, $J = 12.3$ Hz, 1H), 5.06 (d, $J = 12.3$ Hz, 1H), 3.82 (s, 2H), 3.33 (q, $J = 7.2$ Hz, 1H), 1.36 (d, $J = 7.2$ Hz, 3H); ^{13}C NMR (75 MHz, CDCl_3) δ 172.8, 135.7, 135.3, 134.2, 130.9, 129.9, 128.6, 128.4, 128.3, 126.8, 66.9, 40.9, 33.5, 16.9; HRMS (ESI) Calcd for $(\text{C}_{17}\text{H}_{17}\text{ClO}_2\text{S} + \text{Na})^+$: 343.0530, Found 343.0524; 78% ee [HPLC condition: Chiralcel OJ-H column, *n*-Hexane/*i*-PrOH = 90:10, flow rate = 1.0 mL/min, wavelength = 220 nm, $t_{\text{R}} = 10.89$ min for minor isomer, $t_{\text{R}} = 11.78$ min for major isomer]; $[\alpha]_{\text{D}}^{20} = +144.7$ (*c* 1.0, MeOH).

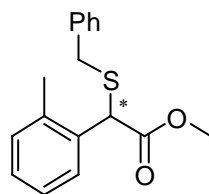
(-)-methyl 2-(benzylthio)-2-phenylacetate (3h)



Colorless oil; 59% yield; ^1H NMR (400 MHz, CDCl_3) δ 7.41–7.25 (m, 10H), 4.42 (s, 1H), 3.78–3.59 (m, 5H); ^{13}C NMR (100 MHz, CDCl_3) δ 171.2, 137.1, 135.8, 129.1, 128.7, 128.6, 128.2, 127.3, 52.7, 51.5, 36.2; HRMS (ESI) Calcd for $(\text{C}_{16}\text{H}_{15}\text{O}_2\text{S} + \text{Na})^+$: 295.0763, Found 295.0766; 44% ee [SFC condition: Chiralcel OD-H column, *sc* CO_2 /*i*-PrOH = 95:5, $P_{\text{CO}_2} = 100$ bar, 2.0 mL/min,

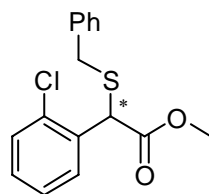
oven 40 °C, wavelength = 220 nm, t_R = 10.56 min for major isomer, t_R = 12.02 min for minor isomer]; $[\alpha]_D^{20}$ = -56.2 (c 1.0, MeOH).

(-)-methyl 2-(benzylthio)-2-*o*-tolylacetate (3i)



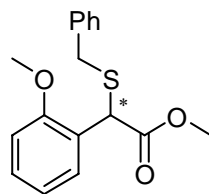
Colorless oil; 64% yield; ^1H NMR (400 MHz, CDCl_3) δ 7.51 (d, J = 7.6 Hz, 1H), 7.33–7.10 (m, 8H), 4.58 (s, 1H), 3.83–3.66 (m, 5H), 2.11 (s, 3H); ^{13}C NMR (100 MHz, CDCl_3) δ 170.5, 136.2, 135.2, 132.8, 129.6, 128.0, 127.5, 127.2, 127.0, 126.2, 125.4, 52.0, 46.4, 35.5, 18.1; HRMS (ESI) Calcd for $(\text{C}_{17}\text{H}_{18}\text{O}_2\text{S} + \text{Na})^+$: 309.0920, Found 309.0923; 77% ee [SFC condition: Chiralpak AD-H column, $\text{sc CO}_2/i\text{-PrOH}$ = 90:10, P_{CO_2} = 100 bar, 2.0 mL/min, oven 40 °C, wavelength = 220 nm, t_R = 5.63 min for minor isomer, t_R = 6.89 min for major isomer]; $[\alpha]_D^{20}$ = -30.6 (c 1.0, MeOH).

(-)-methyl 2-(benzylthio)-2-(2-chlorophenyl)acetate (3j)



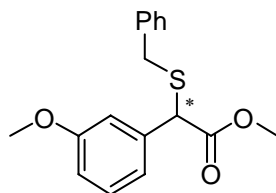
Colorless oil; 83% yield; ^1H NMR (300 MHz, CDCl_3) δ 7.65–7.62 (m, 1H), 7.35–7.19 (m, 8H), 4.97 (s, 1H), 3.87–3.69 (m, 5H); ^{13}C NMR (75 MHz, CDCl_3) δ 170.8, 136.9, 133.8, 130.2, 129.6, 129.3, 129.1, 128.6, 127.4, 127.2, 52.9, 47.6, 36.8; HRMS (ESI) Calcd for $(\text{C}_{16}\text{H}_{15}\text{ClO}_2\text{S} + \text{Na})^+$: 329.0374, Found 329.0377; 73% ee [HPLC condition: Chiralcel OJ-H column, $n\text{-Hexane}/i\text{-PrOH}$ = 90:10, flow rate = 1.0 mL/min, wavelength = 220 nm, t_R = 18.65 min for major isomer, t_R = 26.86 min for minor isomer]; $[\alpha]_D^{20}$ = -10.4 (c 1.0, MeOH).

(-)-methyl 2-(benzylthio)-2-(2-methoxyphenyl)acetate (3k)



Colorless oil; 88% yield; ^1H NMR (300 MHz, CDCl_3) δ 7.51–7.48 (m, 1H), 7.31–7.23 (m, 6H), 6.98–6.83 (m, 2H), 4.92 (s, 1H), 3.86–3.68 (m, 8H); ^{13}C NMR (75 MHz, CDCl_3) δ 170.6, 155.5, 136.3, 128.3, 128.2, 128.1, 127.4, 126.1, 123.4, 119.8, 109.7, 54.6, 51.6, 43.5, 35.5; HRMS (ESI) Calcd for $(\text{C}_{17}\text{H}_{18}\text{O}_3\text{S} + \text{Na})^+$: 325.0869, Found 325.0861; 77% ee [SFC condition: Chiralcel OJ-H column, $\text{sc CO}_2/i\text{-PrOH}$ = 90:10, P_{CO_2} = 100 bar, 2.0 mL/min, oven 40 °C, wavelength = 220 nm, t_R = 8.34 min for major isomer, t_R = 10.34 min for minor isomer]; $[\alpha]_D^{20}$ = -35.3 (c 1.0, MeOH).

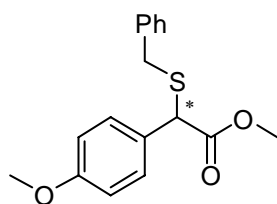
(-)-methyl 2-(benzylthio)-2-(3-methoxyphenyl)acetate (3l)



Colorless oil; 71% yield; ^1H NMR (400 MHz, CDCl_3) δ 7.25–7.14 (m, 6H), 6.90–6.88 (m, 2H), 6.77–6.75 (m, 1H), 4.32 (s, 1H), 3.71–3.52 (m, 8H); ^{13}C NMR (100 MHz, CDCl_3) δ 170.0, 158.8, 136.2, 136.1, 128.6, 128.0, 127.5, 126.2, 119.9, 112.9, 54.2, 51.7, 50.5, 35.2; HRMS (ESI) Calcd for $(\text{C}_{17}\text{H}_{18}\text{O}_3\text{S} + \text{Na})^+$: 325.0869, Found 325.0873; 52% ee [SFC condition: Chiralcel AD-H column, $\text{sc CO}_2/i\text{-PrOH}$ = 90:10, P_{CO_2} = 100 bar, 2.0 mL/min, oven 40 °C, wavelength = 220 nm, t_R = 7.68 min for minor isomer, t_R = 8.03 min for major isomer]; $[\alpha]_D^{20}$ = -67.4 (c 1.0, MeOH).

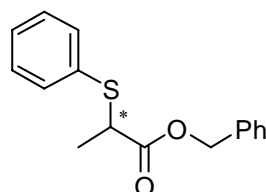
(-)-methyl 2-(benzylthio)-2-(4-methoxyphenyl)acetate (3m)

Colorless oil; 61% yield; ^1H NMR (400 MHz, CDCl_3) δ 7.26–7.16 (m, 7H), 6.78 (d, J = 8.8 Hz,



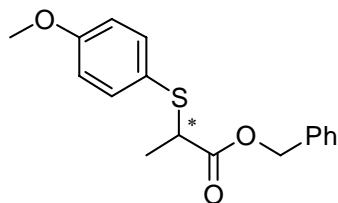
2H), 4.31 (s, 1H), 3.71–3.50 (m, 8H); ^{13}C NMR (100 MHz, CDCl_3) δ 171.4, 159.5, 137.3, 129.8, 129.1, 128.6, 127.7, 127.3, 114.1, 55.3, 52.7, 50.9, 36.2; HRMS (ESI) Calcd for $(\text{C}_{17}\text{H}_{18}\text{O}_3\text{S} + \text{Na})^+$: 325.0869, Found 325.0861; 61% ee [HPLC condition: Chiralcel OJ-H column, *n*-Hexane/*i*-PrOH = 80:20, flow rate = 1.0 mL/min, wavelength = 210 nm, $t_{\text{R}} = 30.23$ min for major isomer, $t_{\text{R}} = 43.09$ min for minor isomer]; $[\alpha]_{\text{D}}^{20} = -95.1$ (*c* 1.0, MeOH).

(+)-benzyl 2-(phenylthio)propionate (3n)



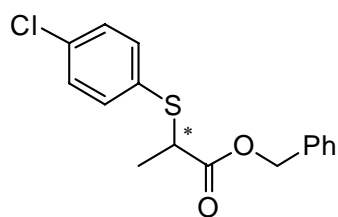
Colorless oil; 90% yield; ^1H NMR (400 MHz, CDCl_3) δ 7.40–7.23 (m, 10H), 5.11 (d, $J = 12.4$ Hz, 1H), 5.07 (d, $J = 12.4$ Hz, 1H), 3.83 (q, $J = 7.2$ Hz, 1H), 1.49 (d, $J = 7.2$ Hz, 3H); ^{13}C NMR (100 MHz, CDCl_3) δ 172.5, 135.5, 133.2, 133.0, 129.0, 128.5, 128.3, 128.1, 66.9, 45.2, 17.4; HRMS (ESI) Calcd for $(\text{C}_{16}\text{H}_{16}\text{O}_2\text{S} + \text{Na})^+$: 295.0763, Found 295.0766; 69% ee [SFC condition: Chiralcel OJ-H column, *sc* CO_2 /*i*-PrOH = 90:10, $P_{\text{CO}_2} = 100$ bar, 2.0 mL/min, oven 40 °C, wavelength = 210 nm, $t_{\text{R}} = 6.83$ min for minor isomer, $t_{\text{R}} = 7.57$ min for major isomer]; $[\alpha]_{\text{D}}^{20} = +85.6$ (*c* 1.0, MeOH).

(+)-benzyl 2-(4-methoxyphenylthio)propionate (3o)



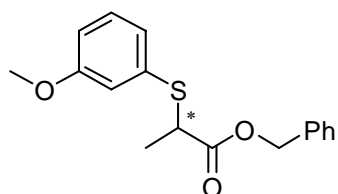
Colorless oil; 83% yield; ^1H NMR (400 MHz, CDCl_3) δ 7.35–7.29 (m, 7H), 6.80–6.78 (m, 2H), 5.14–5.07 (m, 2H), 3.80 (s, 1H), 3.69 (q, $J = 5.6$ Hz, 1H), 1.45 (d, $J = 5.6$ Hz, 3H); ^{13}C NMR (100 MHz, CDCl_3) δ 172.5, 160.2, 136.6, 135.6, 128.5, 128.3, 128.2, 122.8, 114.5, 66.7, 55.3, 45.9, 17.1; HRMS (ESI) Calcd for $(\text{C}_{17}\text{H}_{18}\text{O}_3\text{S} + \text{Na})^+$: 325.0869, Found 325.0867; 72% ee [SFC condition: Chiralcel OJ-H column, *sc* CO_2 /*i*-PrOH = 90:10, $P_{\text{CO}_2} = 100$ bar, 2.0 mL/min, oven 40 °C, wavelength = 235 nm, $t_{\text{R}} = 8.63$ min for minor isomer, $t_{\text{R}} = 9.42$ min for major isomer]; $[\alpha]_{\text{D}}^{20} = +51.0$ (*c* 1.0, MeOH).

(+)-benzyl 2-(4-chlorophenylthio)propionate (3p)



Colorless oil; 80% yield; ^1H NMR (400 MHz, CDCl_3) δ 7.36–7.19 (m, 9H), 5.13 (d, $J = 12.0$ Hz, 1H), 5.06 (d, $J = 12.0$ Hz, 1H), 3.79 (q, $J = 7.2$, 1H), 1.49 (d, $J = 7.2$, 3H); ^{13}C NMR (75 MHz, CDCl_3) δ 172.2, 135.4, 134.6, 134.4, 131.4, 129.1, 128.5, 128.3, 67.0, 45.3, 17.2; HRMS (ESI) Calcd for $(\text{C}_{16}\text{H}_{15}\text{ClO}_2\text{S} + \text{Na})^+$: 329.0374, Found 329.0380; 62% ee [SFC condition: Chiralcel OJ-H column, *sc* CO_2 /*i*-PrOH = 90:10, $P_{\text{CO}_2} = 100$ bar, 2.0 mL/min, oven 40 °C, wavelength = 220 nm, $t_{\text{R}} = 6.54$ min for minor isomer, $t_{\text{R}} = 7.17$ min for major isomer]; $[\alpha]_{\text{D}}^{20} = +74.3$ (*c* 1.0, MeOH).

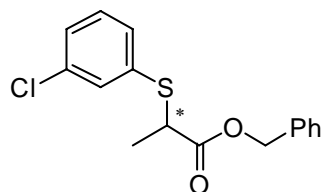
(+)-benzyl 2-(3-methoxyphenylthio)propionate (3q)



Colorless oil; 76% yield; ^1H NMR (400 MHz, CDCl_3) δ 7.36–7.25 (m, 5H), 7.18–7.14 (m, 1H), 6.98–6.96 (m, 2H), 6.79 (d, $J = 9.2$ Hz, 1H), 5.12 (d, $J = 12.4$ Hz, 1H), 5.08 (d, $J = 12.4$ Hz, 1H), 3.86 (q, $J = 7.2$ Hz, 1H), 3.72 (s, 3H), 1.50 (d, $J = 7.2$ Hz, 3H); ^{13}C

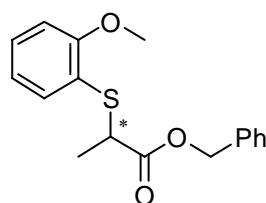
NMR (100 MHz, CDCl₃) δ 171.5, 158.6, 134.5, 133.4, 128.7, 127.5, 127.2, 127.1, 123.8, 116.6, 112.9, 65.9, 54.2, 44.1, 16.4; HRMS (ESI) Calcd for (C₁₇H₁₈O₃S + Na)⁺: 325.0869, Found 325.0874; 62% ee [HPLC condition: Chiralcel OJ-H column, *n*-Hexane/*i*-PrOH = 90:10, flow rate = 1.0 mL/min, wavelength = 220 nm, *t*_R = 18.02 min for major isomer, *t*_R = 20.07 min for minor isomer]; [α]_D²⁰ = +75.0 (*c* 1.0, MeOH).

(+)-benzyl 2-(3-chlorophenylthio)propionate (3r)



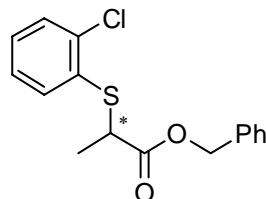
Colorless oil; 85% yield; ¹H NMR (400 MHz, CDCl₃) δ 7.32–7.06 (m, 9H), 5.05 (d, *J* = 12.0 Hz, 1H), 5.00 (d, *J* = 12.0 Hz, 1H), 3.77 (q, *J* = 7.2 Hz, 1H), 1.36 (d, *J* = 6.8 Hz, 3H); ¹³C NMR (100 MHz, CDCl₃) δ 171.1, 134.3, 134.2, 133.5, 131.1, 129.5, 128.9, 127.5, 127.3, 127.2, 127.0, 66.0, 43.9, 16.2; HRMS (ESI) Calcd for (C₁₆H₁₅ClO₂S + Na)⁺: 329.0374, Found 329.0371; 60% ee [HPLC condition: Chiralcel OJ-H column, *n*-Hexane/*i*-PrOH = 90:10, flow rate = 1.0 mL/min, wavelength = 220 nm, *t*_R = 9.72 min for major isomer, *t*_R = 10.80 min for minor isomer]; [α]_D²⁰ = +58.2 (*c* 1.0, MeOH).

(+)-benzyl 2-(2-methoxyphenylthio)propionate (3s)



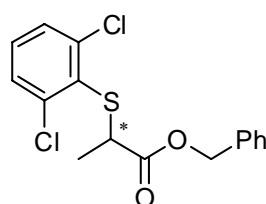
Colorless oil; 76% yield; ¹H NMR (400 MHz, CDCl₃) δ 7.29–7.12 (m, 7H), 6.78–6.75 (m, 2H), 4.98 (d, *J* = 12.4 Hz, 1H), 4.94 (d, *J* = 12.4 Hz, 1H), 3.92 (q, *J* = 7.2 Hz, 1H), 3.75 (s, 3H), 1.42 (d, *J* = 7.2 Hz, 3H); ¹³C NMR (100 MHz, CDCl₃) δ 171.7, 158.1, 134.6, 133.7, 128.8, 127.4, 127.1, 120.0, 119.8, 109.8, 65.7, 54.7, 42.1, 16.0; HRMS (ESI) Calcd for (C₁₇H₁₈O₃S + Na)⁺: 325.0869, Found 325.0863; 60% ee [HPLC condition: Chiralcel OD-H column, *n*-Hexane/*i*-PrOH = 90:10, flow rate = 1.0 mL/min, wavelength = 286 nm, *t*_R = 9.05 min for major isomer, *t*_R = 10.36 min for minor isomer]; [α]_D²⁰ = +126.5 (*c* 1.0, MeOH).

(+)-benzyl 2-(2-chlorophenylthio)propionate (3t)



Colorless oil; 92% yield; ¹H NMR (400 MHz, CDCl₃) δ 7.33–7.01 (m, 9H), 5.00 (s, 2H), 3.88 (q, *J* = 7.2 Hz, 1H), 1.47 (d, *J* = 7.2 Hz, 3H); ¹³C NMR (100 MHz, CDCl₃) δ 171.1, 135.6, 134.4, 132.8, 131.7, 128.9, 127.9, 127.4, 127.2, 126.1, 66.0, 42.9, 16.0; HRMS (ESI) Calcd for (C₁₆H₁₅ClO₂S + Na)⁺: 329.0374, Found 329.0376; 60% ee [HPLC condition: Chiralcel OJ-H column, *n*-Hexane/*i*-PrOH = 85:15, flow rate = 1.0 mL/min, wavelength = 230 nm, *t*_R = 10.65 min for minor isomer, *t*_R = 12.30 min for major isomer]; [α]_D²⁰ = +77.4 (*c* 1.0, MeOH).

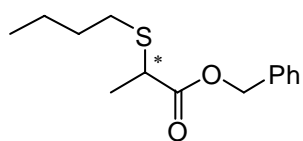
(+)-benzyl 2-(2,6-dichlorophenylthio)propionate (3u)



Colorless oil; 81% yield; ¹H NMR (400 MHz, CDCl₃) δ 7.33–7.11 (m, 8H), 5.10 (d, *J* = 12.4 Hz, 1H), 5.00 (d, *J* = 12.4 Hz, 1H), 3.92 (q, *J* = 7.2 Hz, 1H), 1.54 (d, *J* = 7.2 Hz, 3H); ¹³C NMR (100 MHz, CDCl₃) δ 171.9, 141.8, 135.3, 131.4, 130.6, 128.6, 128.4, 128.2, 128.1, 67.2, 44.2, 16.4; HRMS (ESI) Calcd for (C₁₆H₁₄Cl₂O₂S + Na)⁺: 362.9984, Found 362.9978; 67% ee [HPLC condition: Chiralcel OJ-H column,

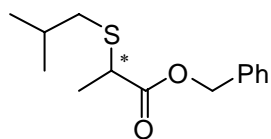
n-Hexane/*i*-PrOH = 95:5, flow rate = 1.0 mL/min, wavelength = 210 nm, t_R = 15.26 min for minor isomer, t_R = 19.85 min for major isomer]; $[\alpha]_D^{20}$ = +97.5 (*c* 1.0, MeOH).

(+)-benzyl 2-(butylthio)propionate (3v)



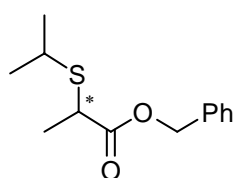
Colorless oil; 86% yield; ^1H NMR (400 MHz, CDCl_3) δ 7.38–7.32 (m, 5H), 5.21 (d, J = 12.4 Hz, 1H), 5.15 (d, J = 12.4 Hz, 1H), 3.44 (q, J = 7.2 Hz, 1H), 2.63–2.51 (m, 2H), 1.56–1.26 (m, 7H), 0.87 (t, J = 7.2 Hz, 3H); ^{13}C NMR (100 MHz, CDCl_3) δ 172.1, 134.8, 127.5, 127.2, 127.1, 65.7, 40.0, 30.3, 30.0, 20.9, 16.2, 12.6; HRMS (ESI) Calcd for $(\text{C}_{14}\text{H}_{20}\text{O}_2\text{S} + \text{Na})^+$: 275.1076, Found 275.1076; 17% ee [The ee value was determined by converting the title product into the corresponding amide as the following procedure: the product was dissolved in ethanol and treated with aq. NaOH (1.25 M) under 0 °C for *ca.* 2 hours. After an acidic workup the crude acid was obtained and was reacted with aniline (1.1 eq) in the presences of DMAP (6 mol%) and DCC (1.1 eq) in THF for 30 min. The reaction mixture was filtered through celite. The filtrate was diluted with Et_2O , washed with 3 N HCl, saturated NaHCO_3 and dried with Na_2SO_4 . The desired amide was obtained after a flash chromatography on Al_2O_3 column. HPLC condition for the corresponding amide: Chiralcel OD-H column, *n*-Hexane/*i*-PrOH = 95:5, flow rate = 1.0 mL/min, wavelength = 230 nm, t_R = 11.69 min for major isomer, t_R = 12.68 min for minor isomer]; $[\alpha]_D^{20}$ = +48.4 (*c* 1.0, MeOH).

(+)-benzyl 2-(isobutylthio)propionate (3w)



Colorless oil; 84% yield; ^1H NMR (300 MHz, CDCl_3) δ 7.36–7.34 (m, 5H), 5.21 (d, J = 12.3 Hz, 1H), 5.13 (d, J = 12.3 Hz, 1H), 3.41 (q, J = 7.2 Hz, 1H), 2.52–2.38 (m, 2H), 1.81–1.67 (m, 1H), 1.45 (d, J = 7.2 Hz, 3H), 0.94–0.91 (m, 6H); ^{13}C NMR (75 MHz, CDCl_3) δ 172.1, 134.8, 127.5, 127.2, 65.7, 40.3, 39.1, 27.3, 21.0, 20.8, 16.2; HRMS (ESI) Calcd for $(\text{C}_{14}\text{H}_{20}\text{O}_2\text{S} + \text{Na})^+$: 275.1076, Found 275.1077; 32% ee [The ee value was determined by converting the title product into the corresponding amide as the procedure described above. SFC condition for the corresponding amide: Chiralpak AD-H column, *sc* CO_2 /*i*-PrOH = 85:15, P_{CO_2} = 100 bar, 2.0 mL/min, oven 40 °C, wavelength = 254 nm, t_R = 4.28 min for major isomer, t_R = 4.91 min for minor isomer]; $[\alpha]_D^{20}$ = +56.7 (*c* 1.0, MeOH).

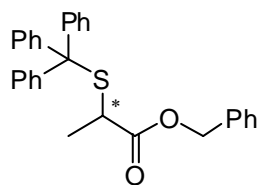
(+)-benzyl 2-(isopropylthio)propionate (3x)



Colorless oil; 85% yield; ^1H NMR (400 MHz, CDCl_3) δ 7.37–7.32 (m, 5H), 5.20 (d, J = 12.4 Hz, 1H), 5.15 (d, J = 12.4 Hz, 1H), 3.51 (q, J = 7.2 Hz, 1H), 3.06–2.99 (m, 1H), 1.45 (d, J = 6.8 Hz, 3H), 1.27 (d, J = 6.8 Hz, 3H), 1.19 (d, J = 6.8 Hz, 3H); ^{13}C NMR (100 MHz, CDCl_3) δ 172.4, 134.8, 127.5, 127.2, 127.1, 65.7, 39.3, 34.4, 22.5, 22.1, 16.5; HRMS (ESI) Calcd for $(\text{C}_{13}\text{H}_{18}\text{O}_2\text{S} + \text{Na})^+$: 261.0920, Found 261.0920; 61% ee [HPLC condition : Chiralcel OJ-H column, *n*-Hexane/*i*-PrOH = 99:1, flow rate = 1.0 mL/min, wavelength = 210 nm, t_R = 10.94 min for major isomer, t_R = 13.51 min for minor isomer]; $[\alpha]_D^{20}$ = +55.7 (*c* 1.0, MeOH).

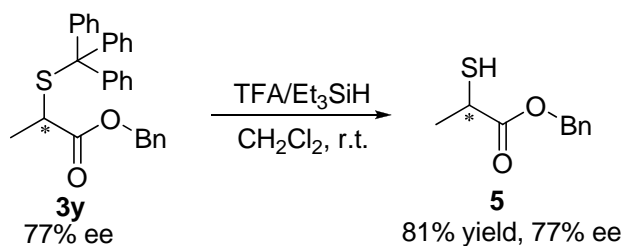
(+)-benzyl 2-(tritylthio)propionate (3y)

Viscous oil; 57% yield; ^1H NMR (400 MHz, CDCl_3) δ 7.44–7.42 (m, 6H), 7.34–7.33 (m, 3H),



7.25–7.16 (m, 11H), 4.98 (d, $J = 12.4$ Hz, 1H), 4.84 (d, $J = 12.4$ Hz, 1H), 2.99 (q, $J = 7.2$ Hz, 1H), 1.16 (d, $J = 7.2$ Hz, 3H); ^{13}C NMR (100 MHz, CDCl_3) δ 172.4, 143.2, 134.5, 128.6, 127.4, 127.2, 126.9, 125.7, 67.1, 65.8, 41.3, 17.6; HRMS (ESI) Calcd for $(\text{C}_{29}\text{H}_{26}\text{O}_2\text{S} + \text{Na})^+$: 461.1546, Found 461.1540; 77% ee [SFC condition: Chiralcel OJ-H column, sc $\text{CO}_2/i\text{-PrOH} = 80:20$, $P_{\text{CO}_2} = 100$ bar, 2.0 mL/min, oven 40 °C, wavelength = 220 nm, $t_{\text{R}} = 7.07$ min for major isomer, $t_{\text{R}} = 12.61$ min for minor isomer]; $[\alpha]_{\text{D}}^{20} = +136.7$ (c 1.0, MeOH).

3. Preparation of (+)-benzyl 2-mercaptopropionate (**5**)⁴

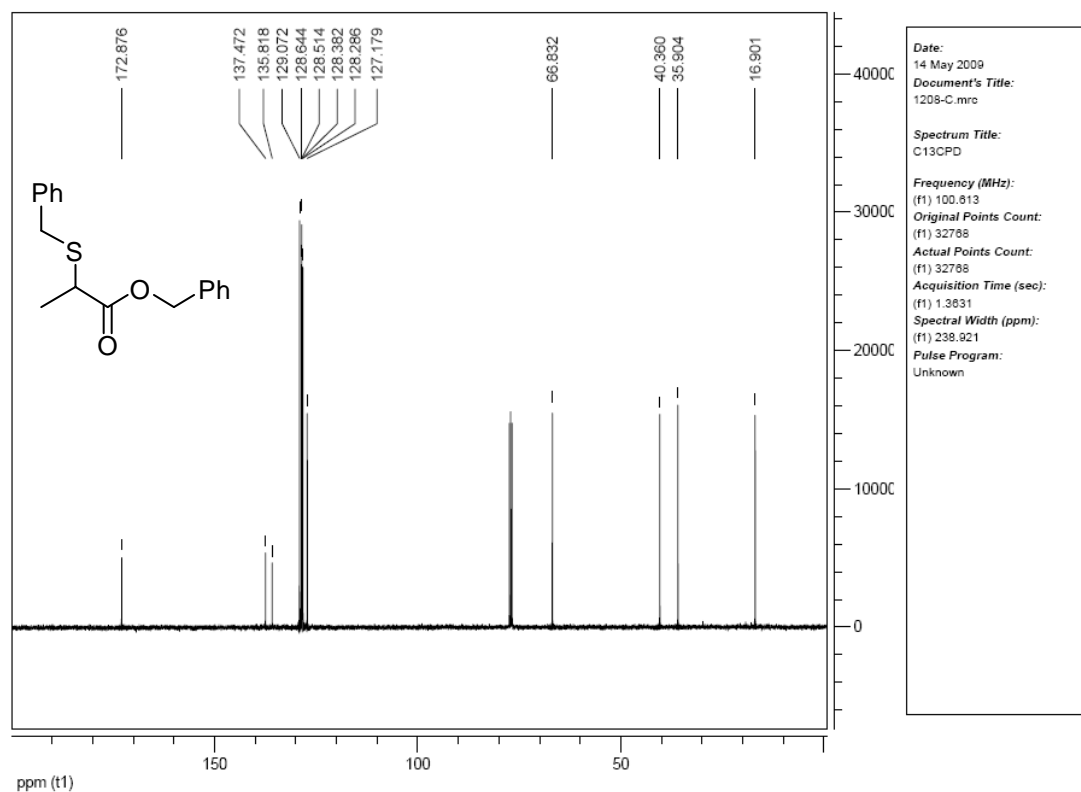
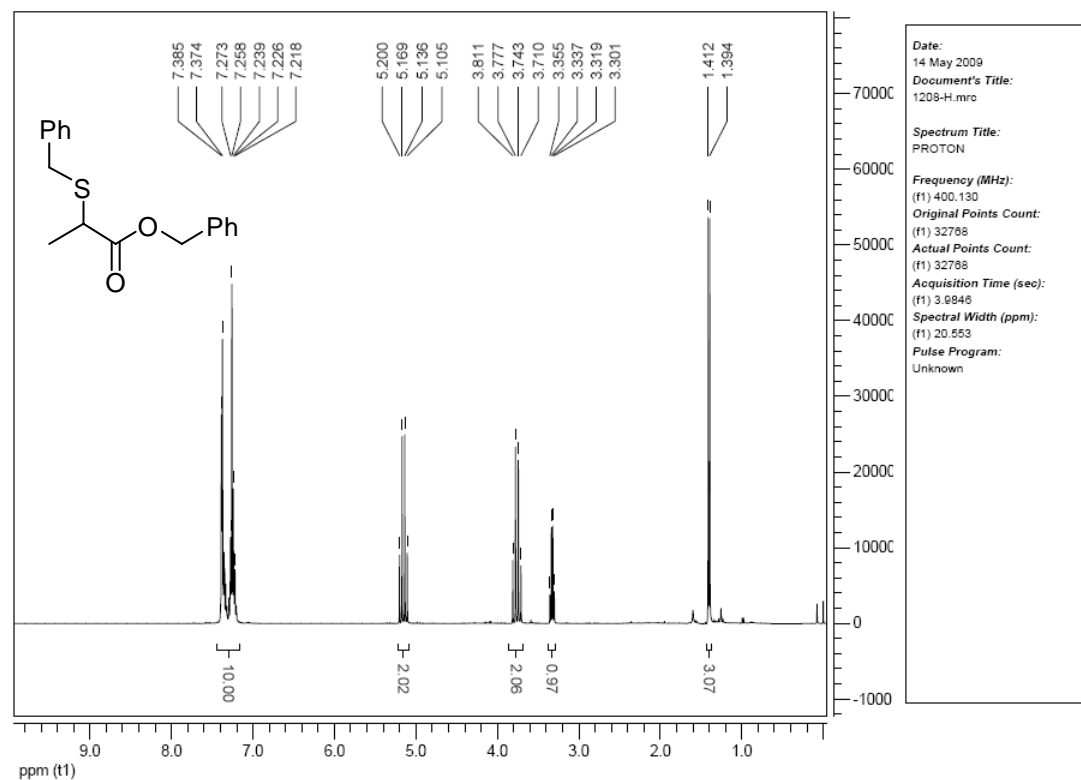


Benzyl 2-(tritylthio)propionate (**3y**) was dissolved in methylene chloride, trifluoroacetic acid and Et_3SiH (1.0 equiv.) were added subsequently. After stirring for 1 h at room temperature (TLC monitoring), the reaction mixture was concentrated and chromatographed on SiO_2 to give benzyl 2-mercaptopropionate (**5**) as a colorless oil in 81% yield. ^1H NMR (400 MHz, CDCl_3) δ 7.38–7.34 (m, 5H), 5.19 (d, $J = 12.4$ Hz, 1H), 5.15 (d, $J = 12.4$ Hz, 1H), 3.58–3.51 (m, 1H), 2.17 (d, $J = 8.4$ Hz, 1H), 1.54 (d, $J = 7.2$ Hz, 3H); ^{13}C NMR (100 MHz, CDCl_3) δ 173.5, 135.5, 128.6, 128.4, 128.2, 67.1, 35.7, 21.1. The ee value of **5** was determined by converting the title product into benzyl 2-(benzoylthio)propionate. 77% ee [SFC condition for benzyl 2-(benzoylthio)propionate: Chiralcel OJ-H column, sc $\text{CO}_2/i\text{-PrOH} = 90:10$, $P_{\text{CO}_2} = 100$ bar, 2.0 mL/min, oven 40 °C, wavelength = 254 nm, $t_{\text{R}} = 11.03$ min for minor isomer, $t_{\text{R}} = 11.81$ min for major isomer]; $[\alpha]_{\text{D}}^{30} = +16.2$ (c 1.0, MeOH).

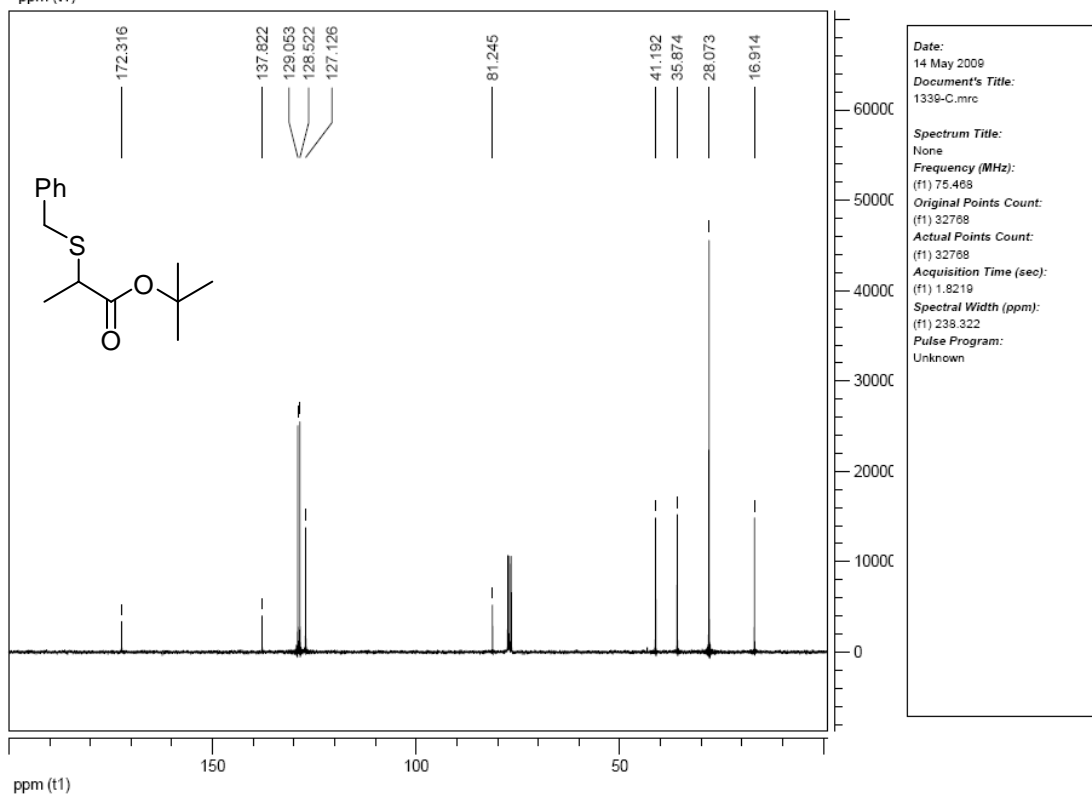
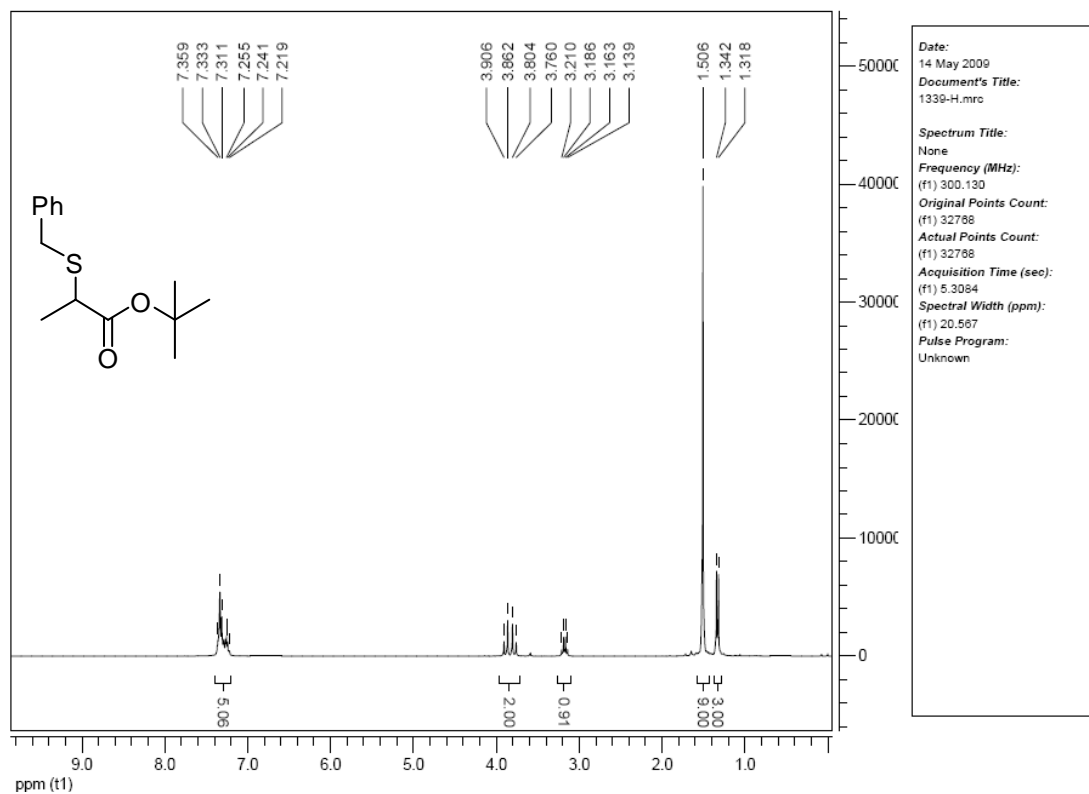
⁴ Y. Tanabe, H. Yamamoto, M. Murakami, K. Yanagi, Y. Kubota, H. Okumura, Y. Sanemitsu, G. Suzukamo, *J. Chem. Soc., Perkin Trans. 1* **1995**, 935.

4. NMR Spectra of New S-H Insertion Products

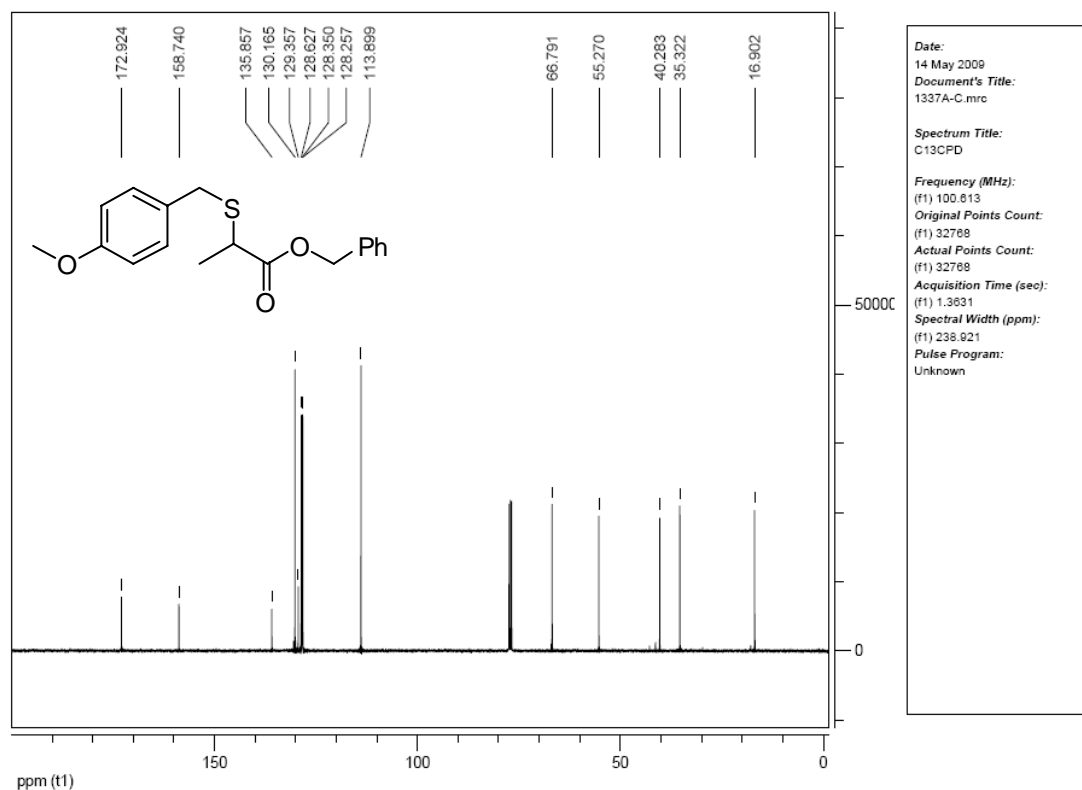
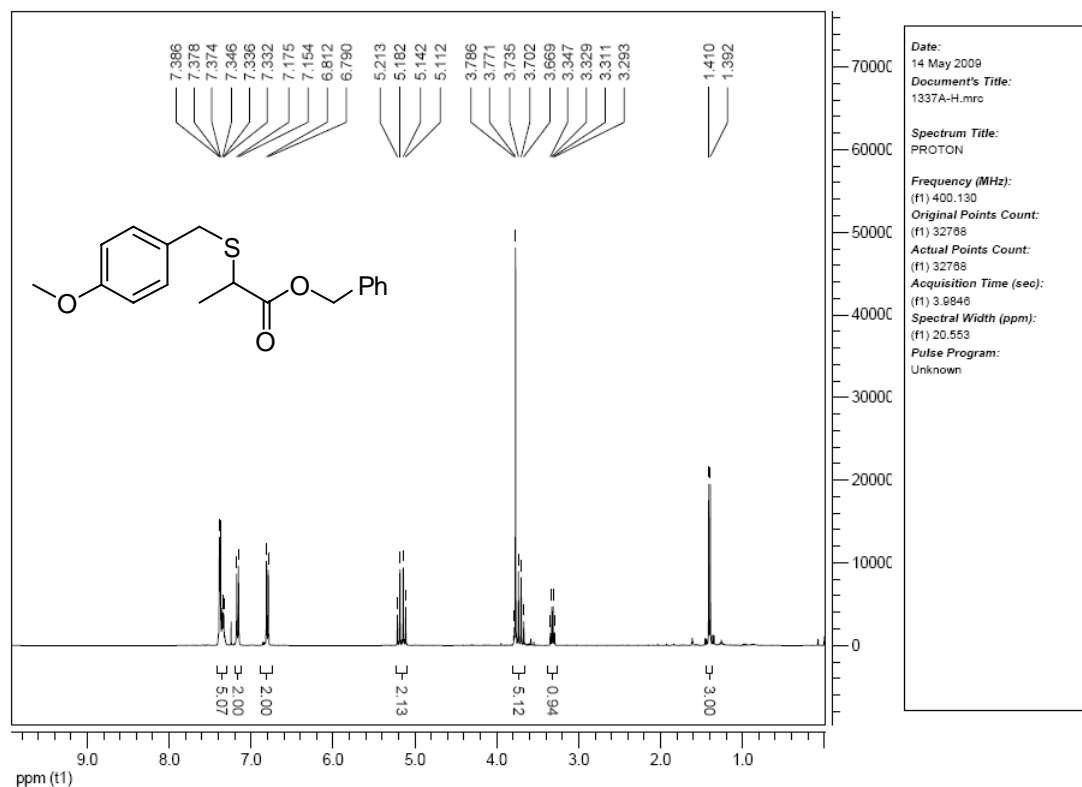
Benzyl 2-(benzylthio)propionate (3a)



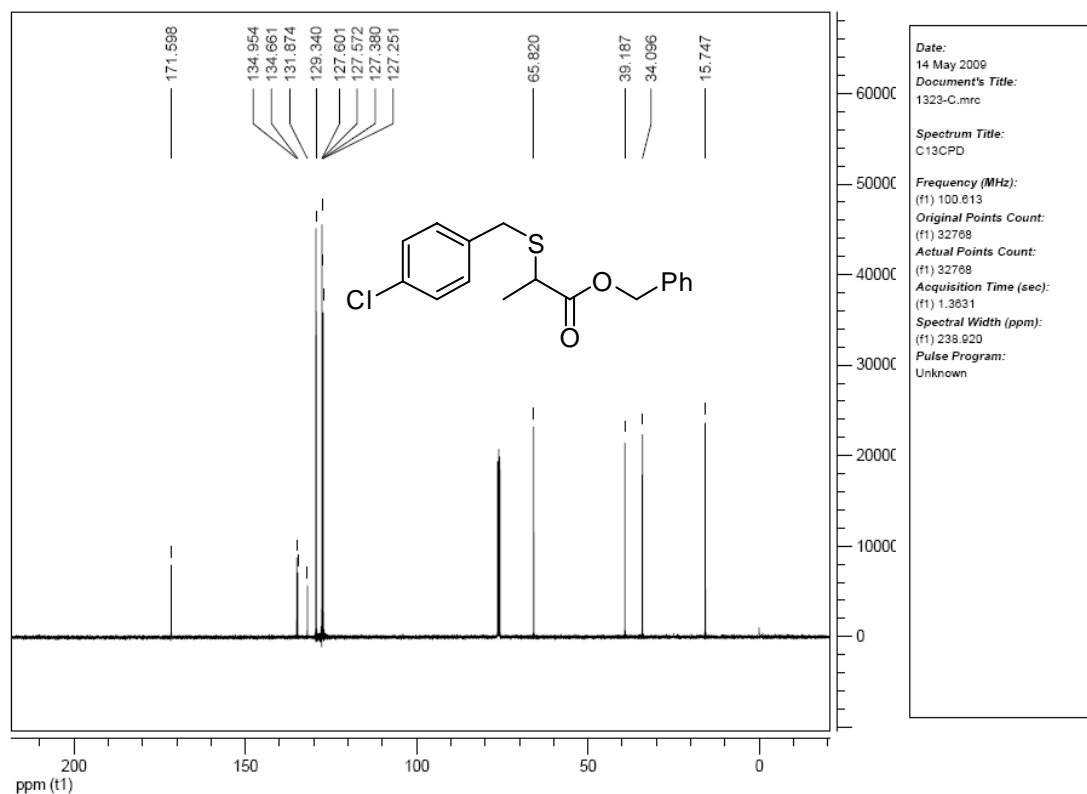
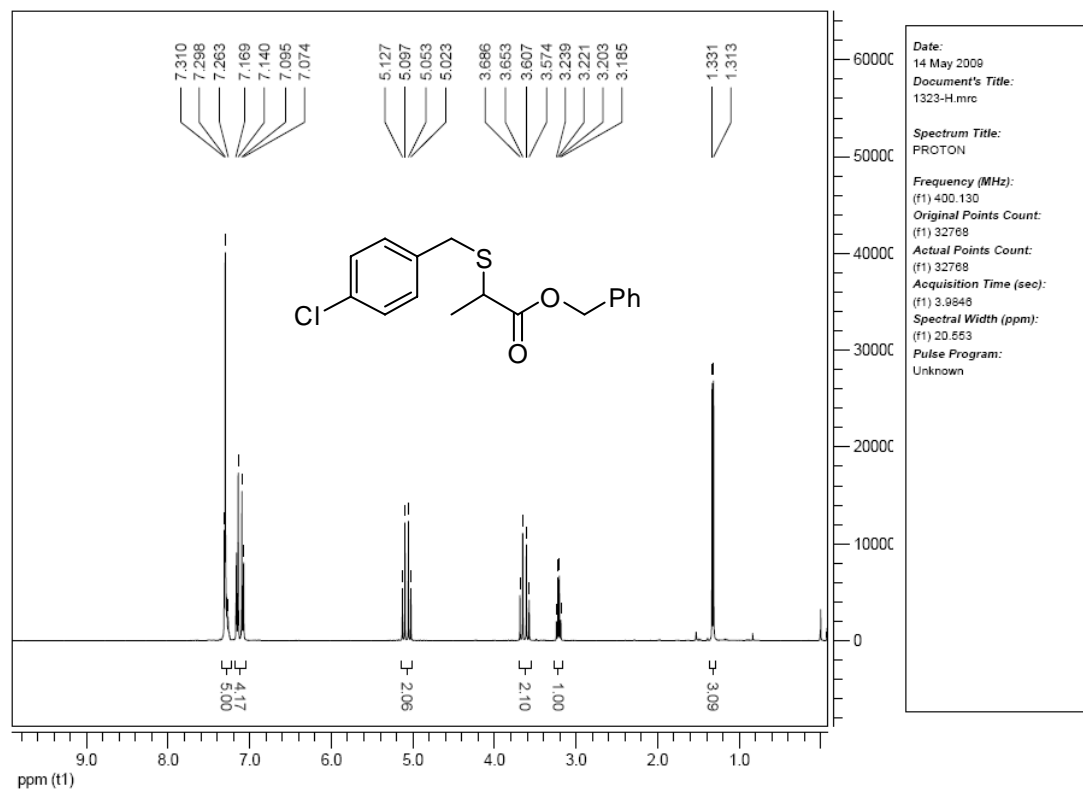
***tert*-Butyl 2-(benzylthio)propionate (3c)**



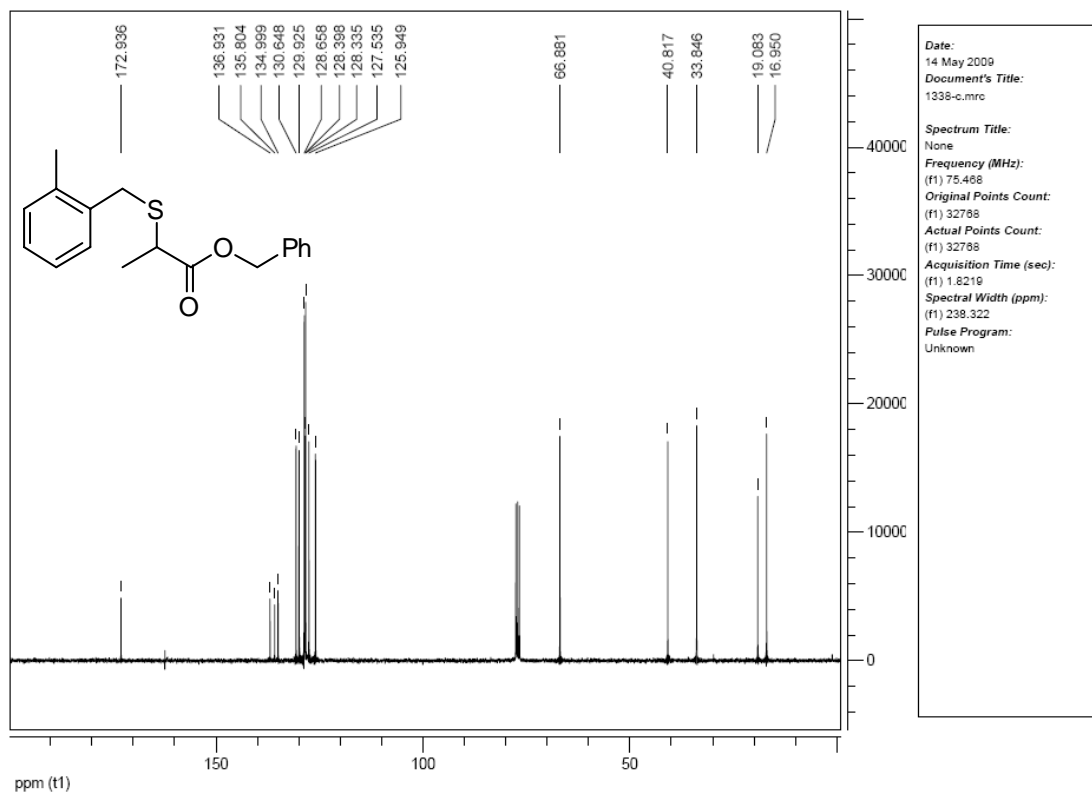
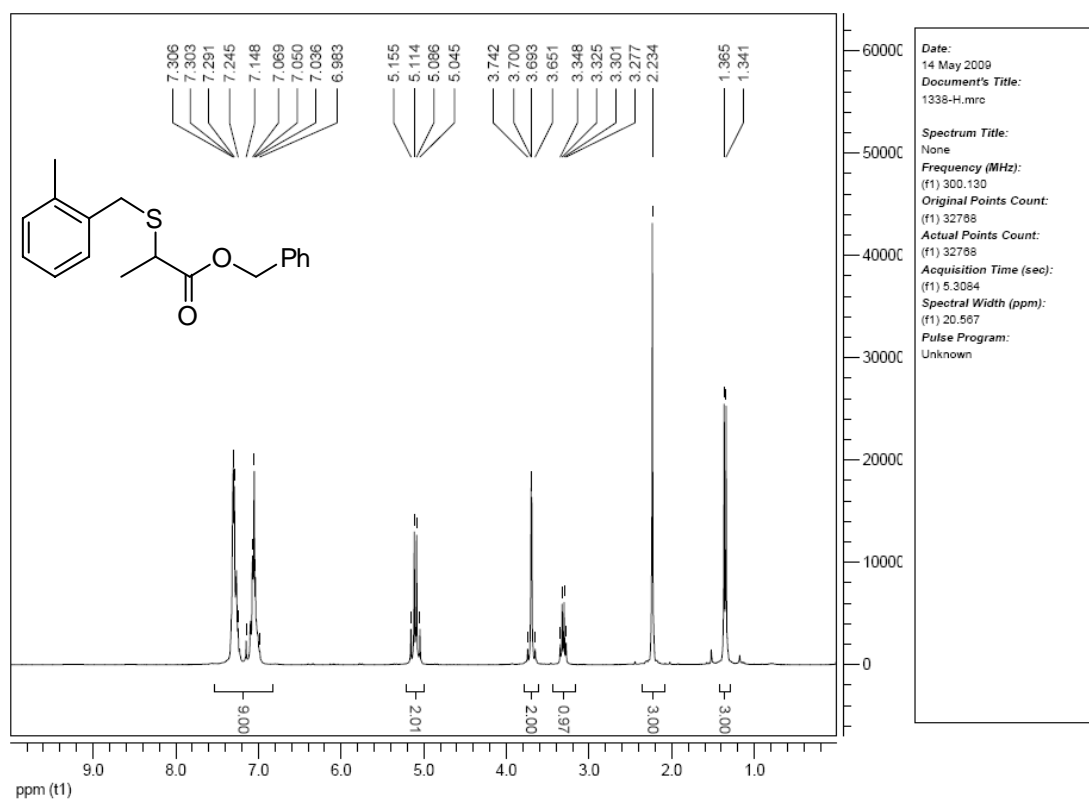
Benzyl 2-(4-methoxybenzylthio)propionate (3d)



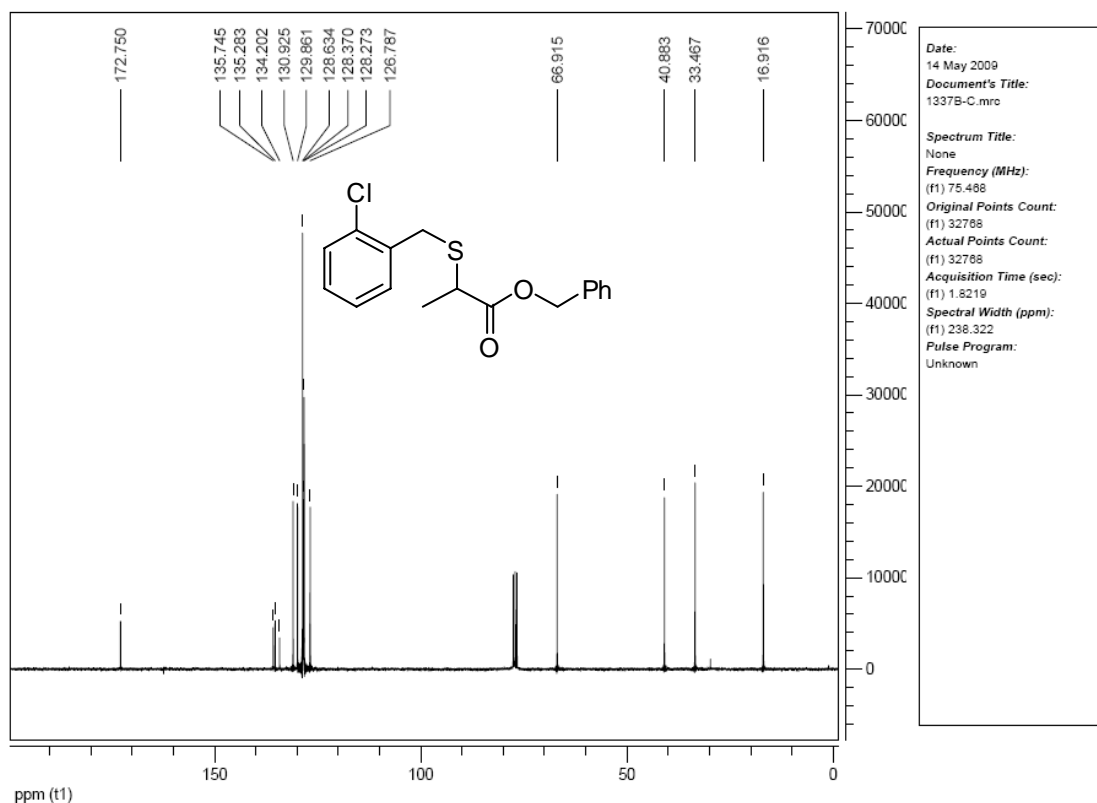
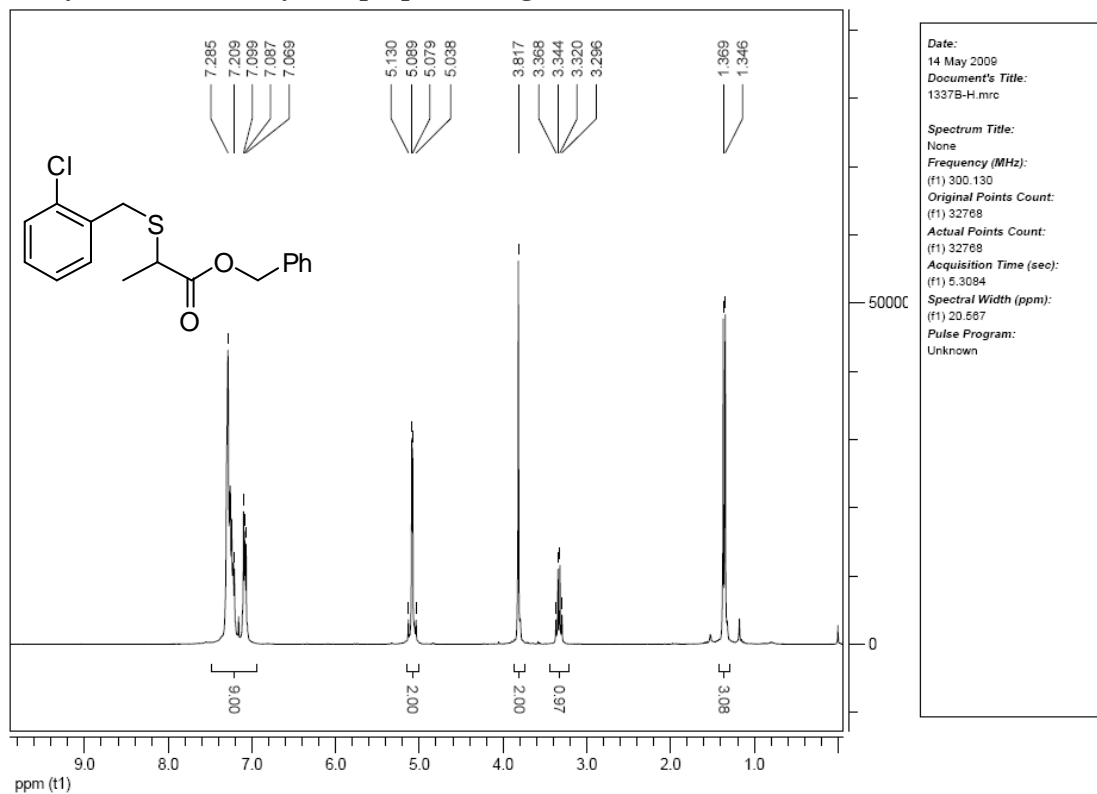
Benzyl 2-(4-chlorobenzylthio)propionate (3e)



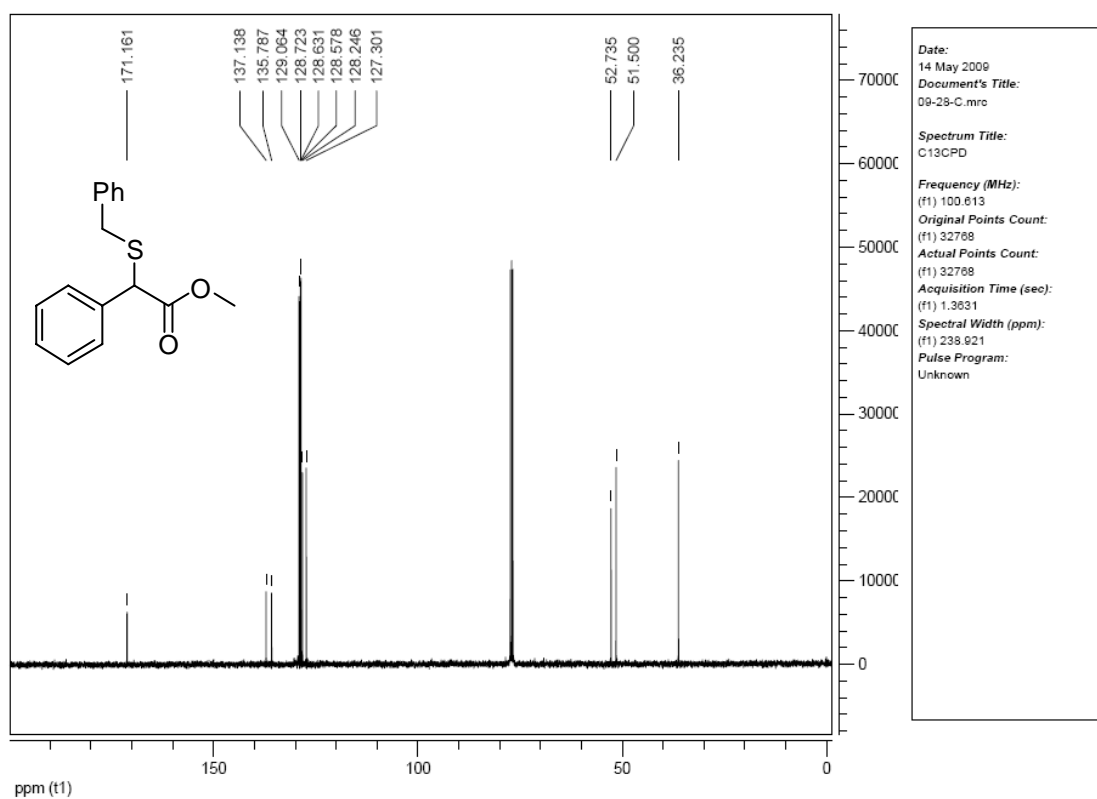
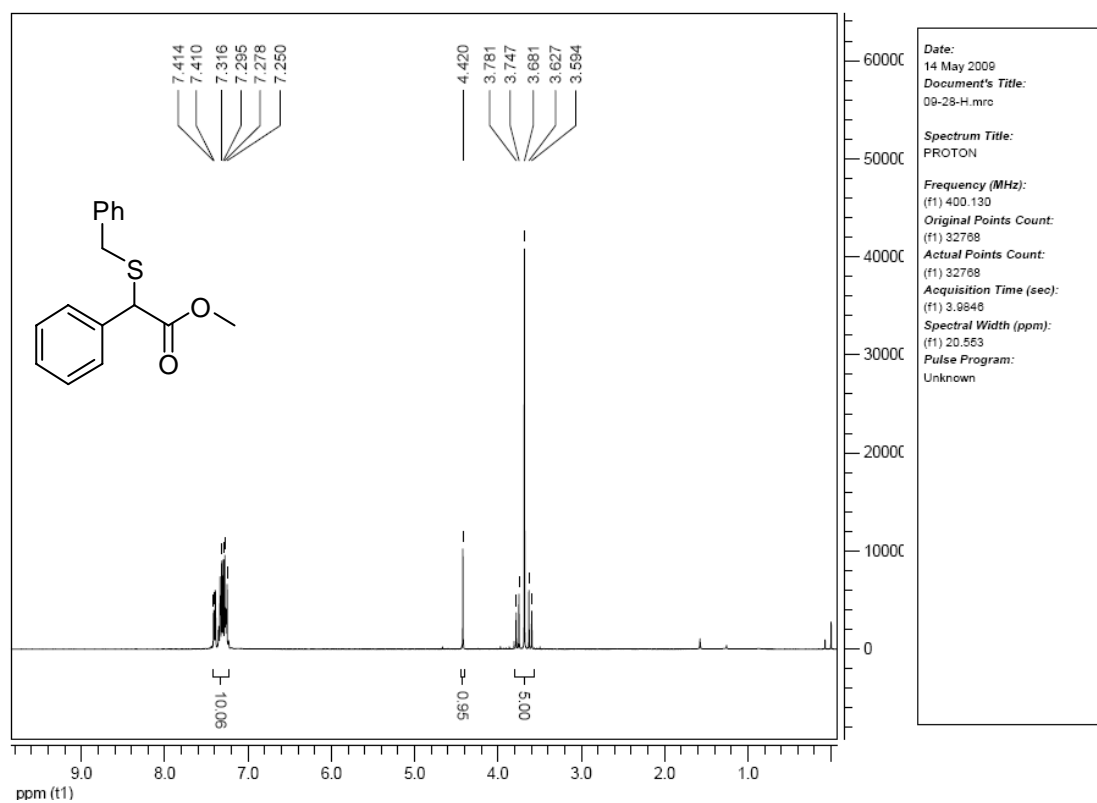
Benzyl 2-(2-methylbenzylthio)propionate (3f)



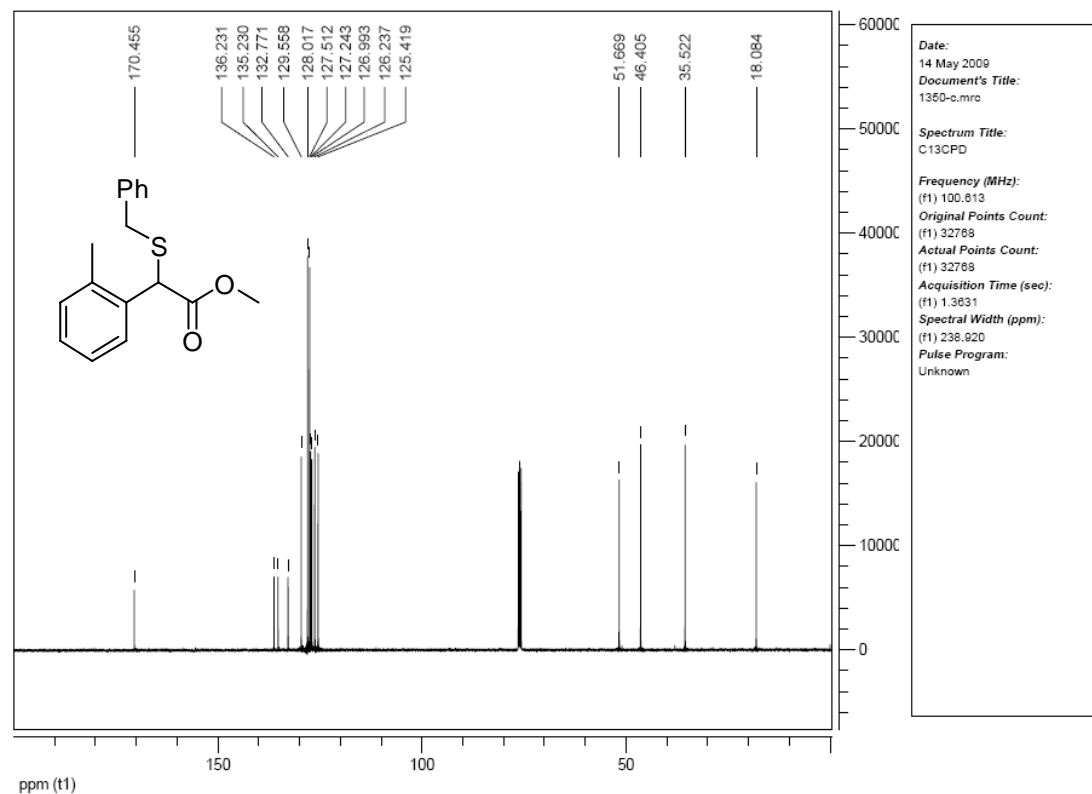
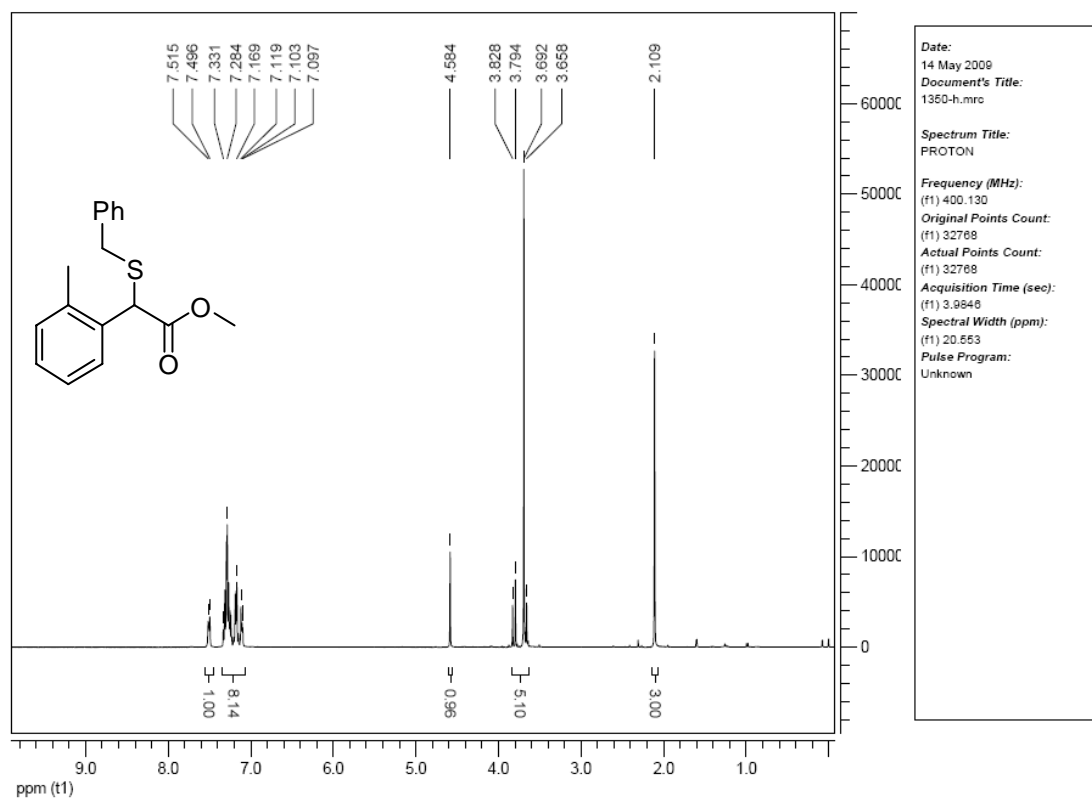
Benzyl 2-(2-chlorobenzylthio)propionate (3g)



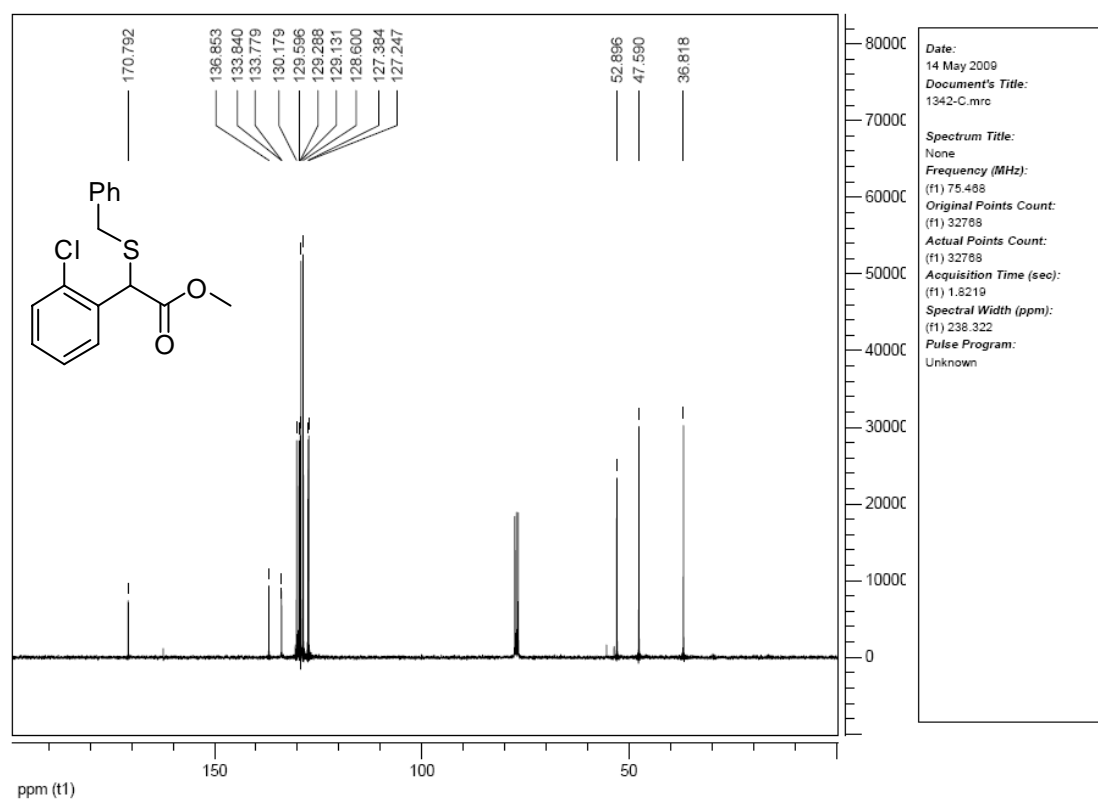
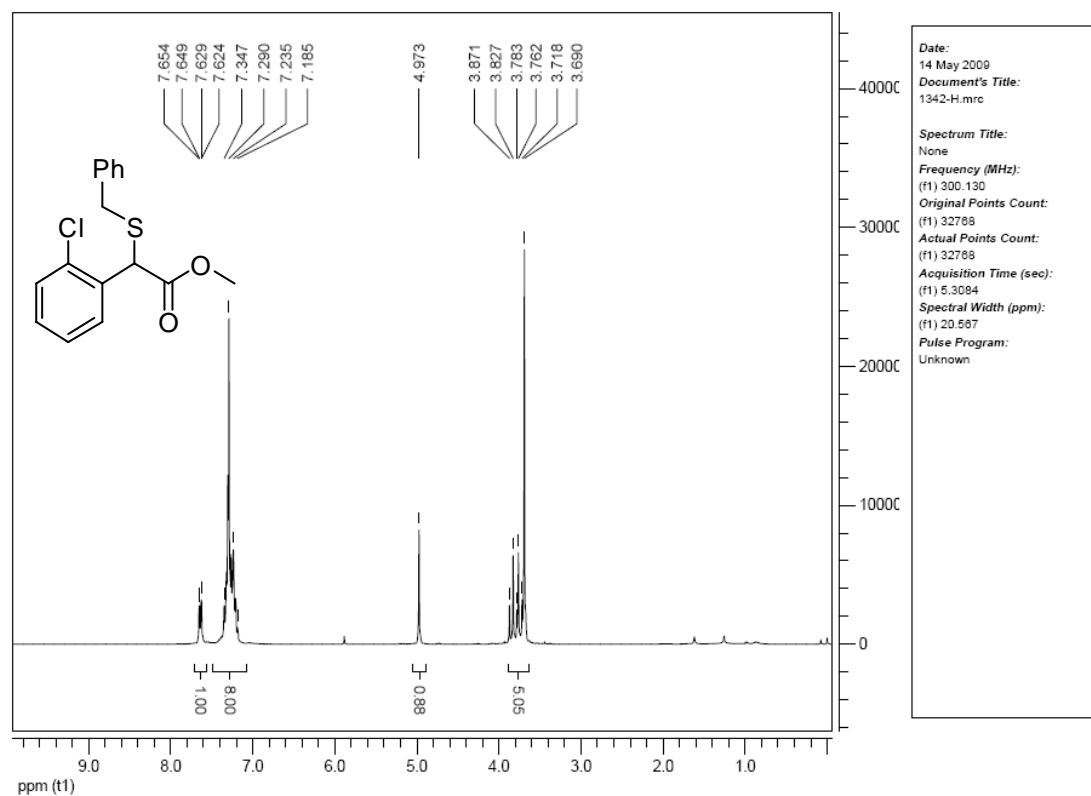
Methyl 2-(benzylthio)-2-phenylacetate (3h)



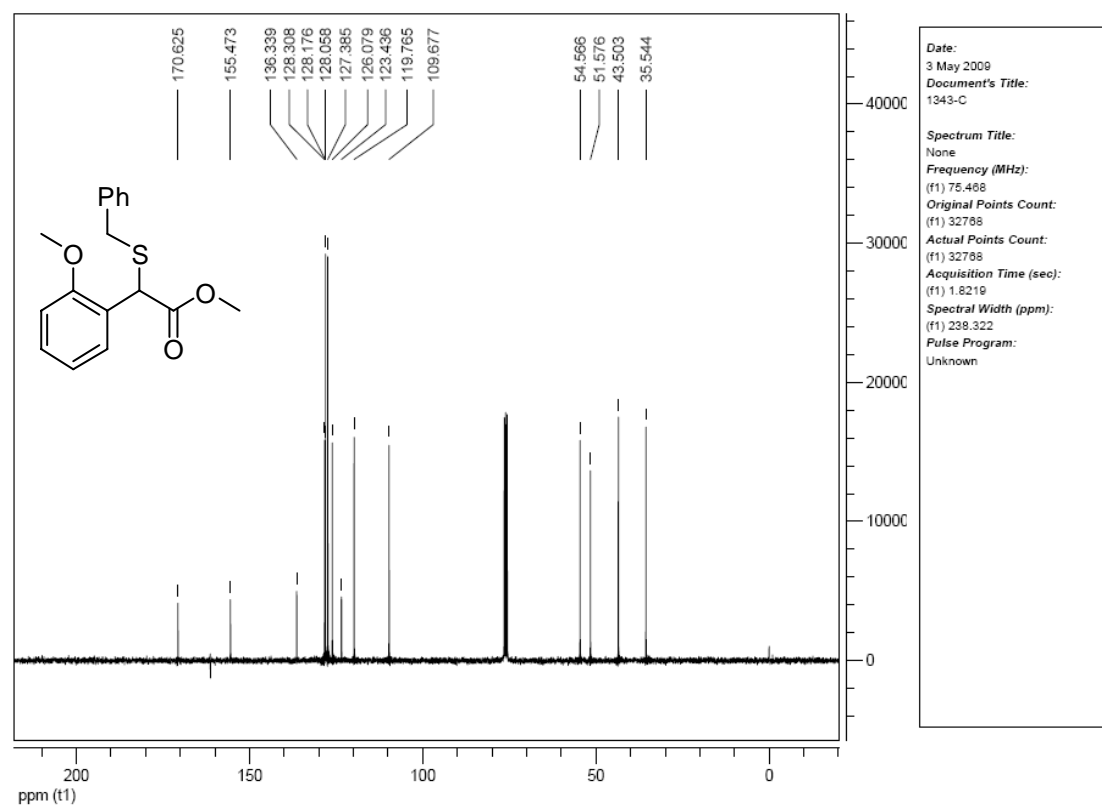
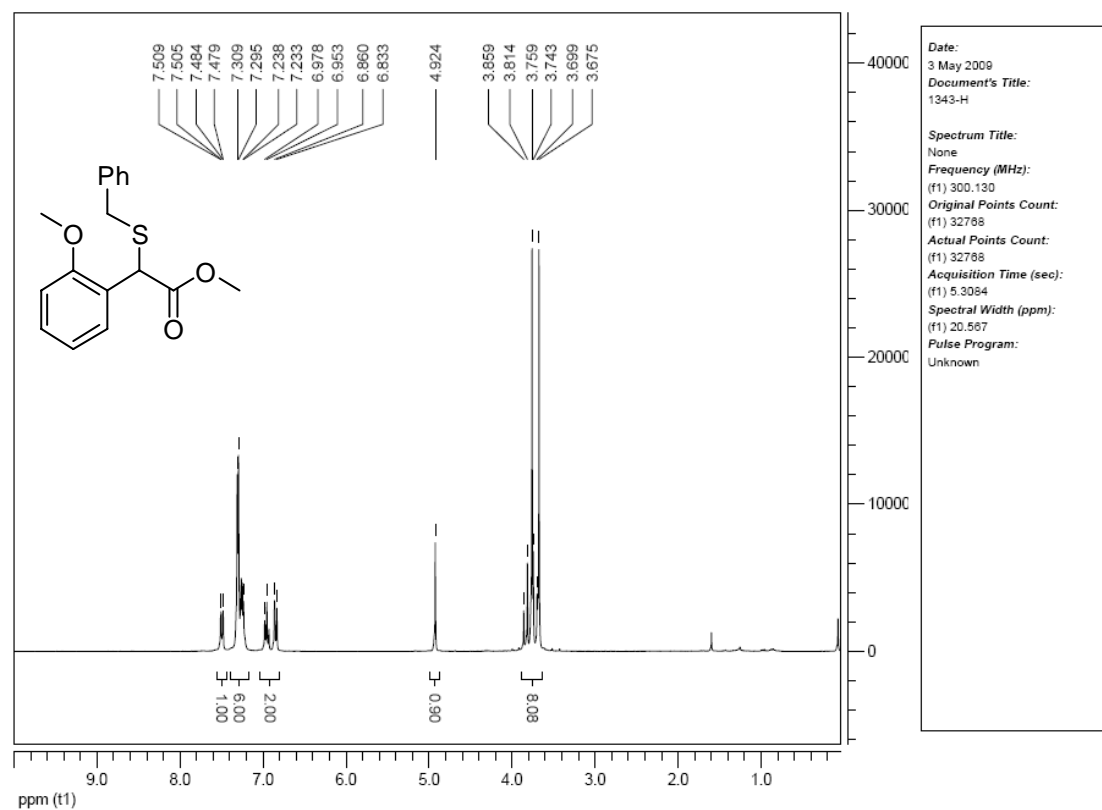
Methyl 2-(benzylthio)-2-o-tolylacetate (3i)



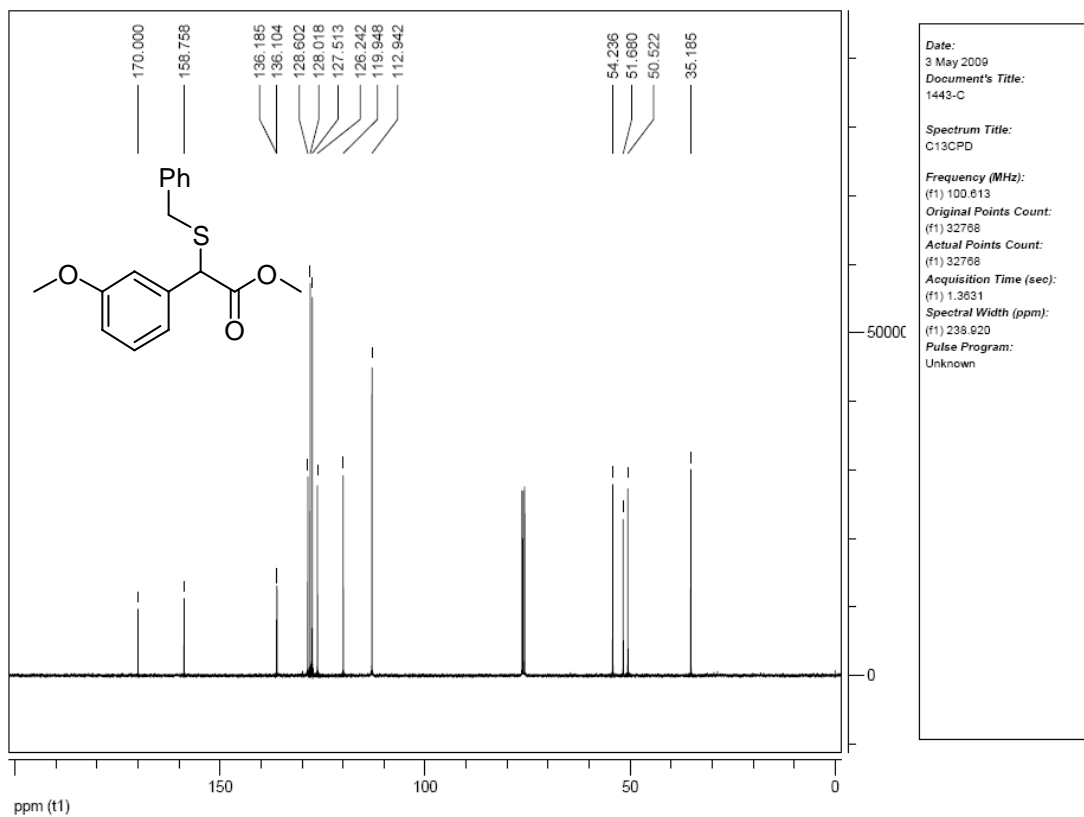
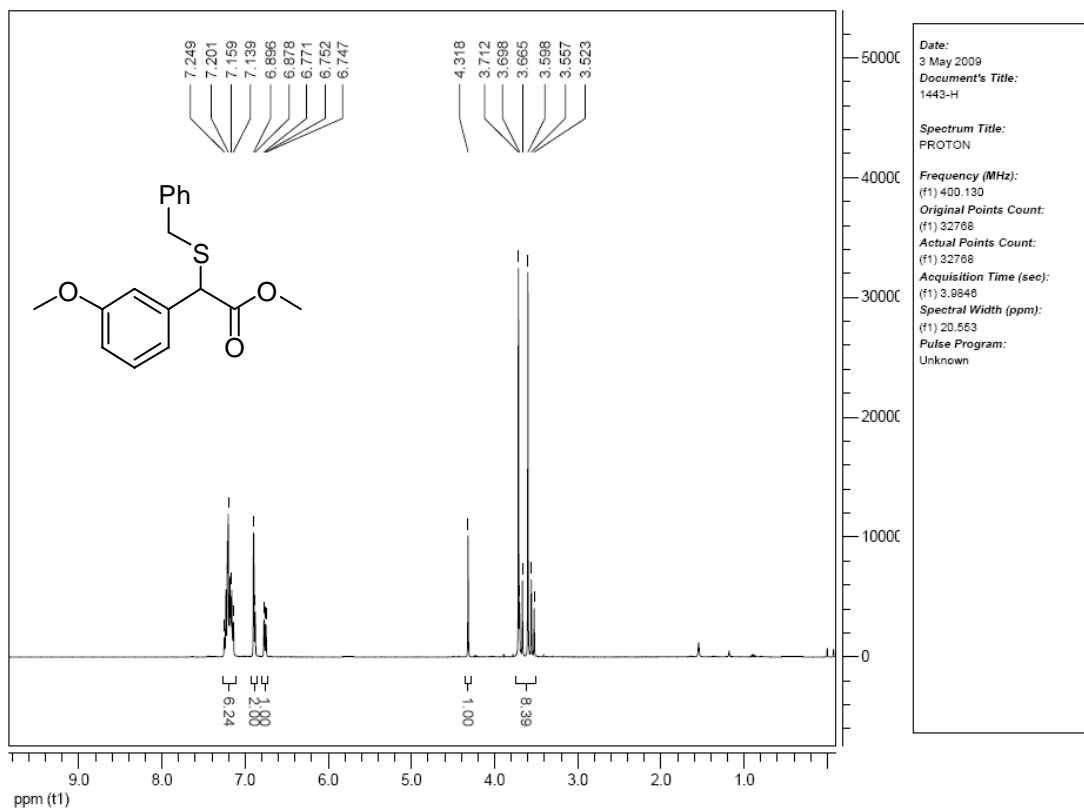
Methyl 2-(benzylthio)-2-(2-chlorophenyl)acetate (3j)



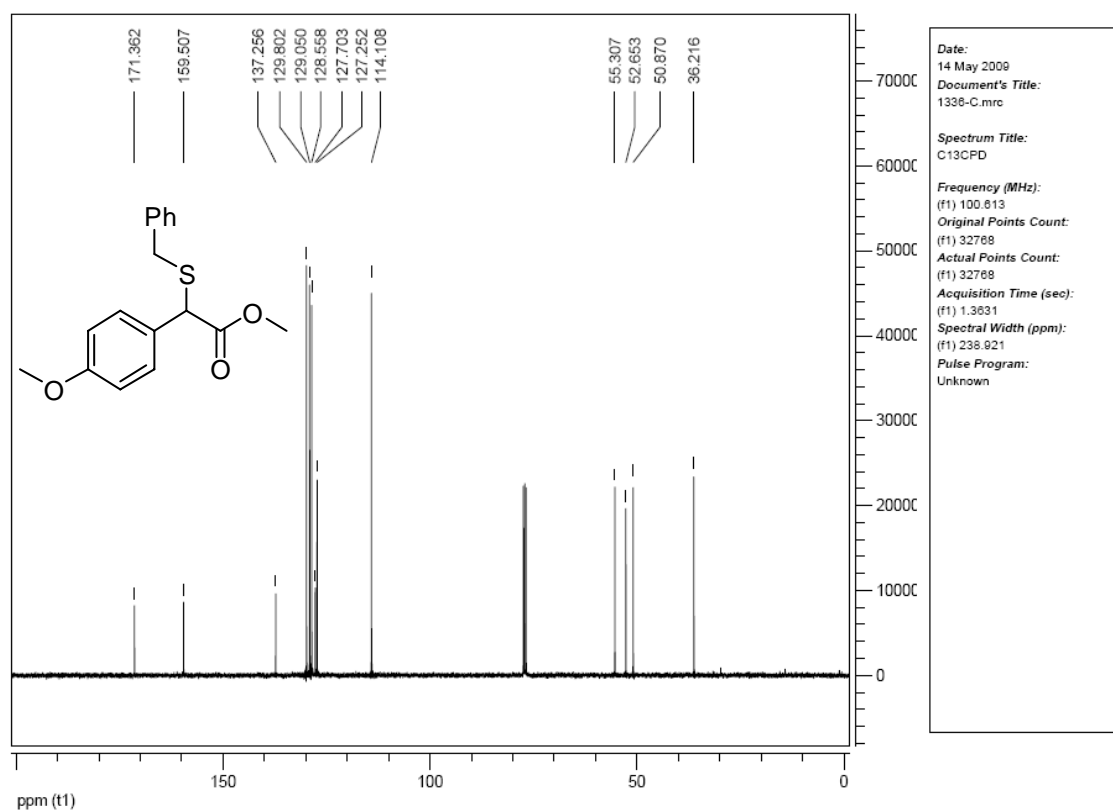
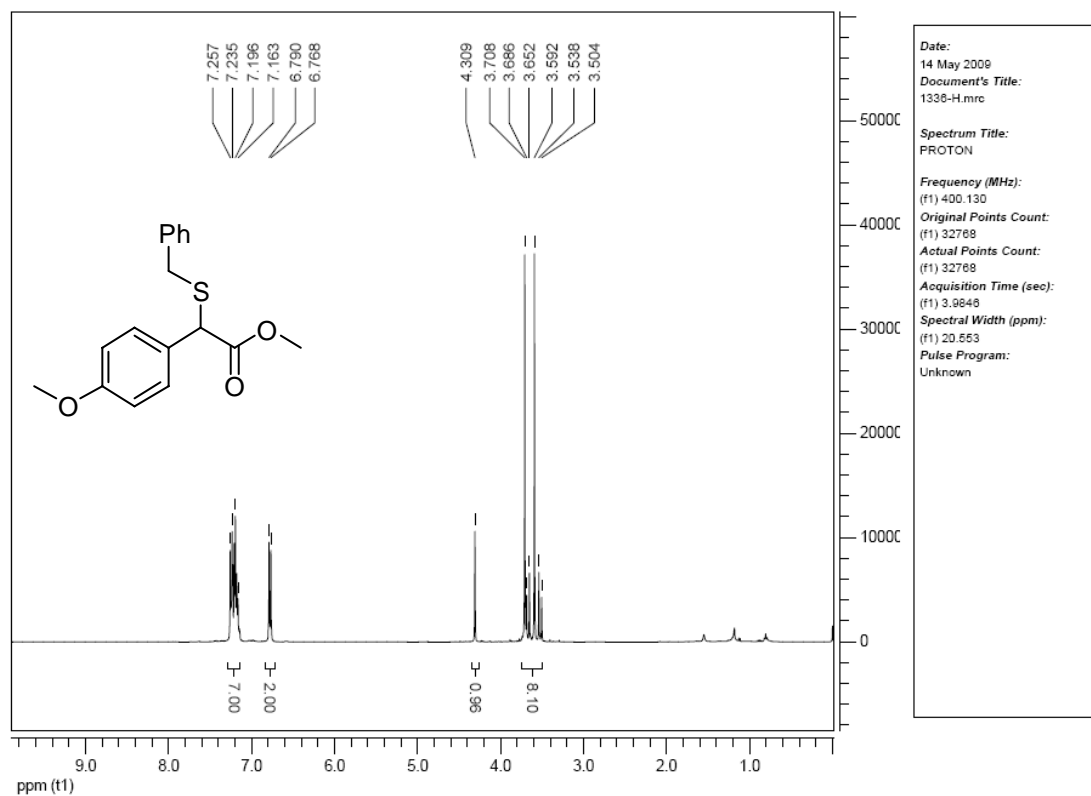
Methyl 2-(benzylthio)-2-(2-methoxyphenyl)acetate (3k)



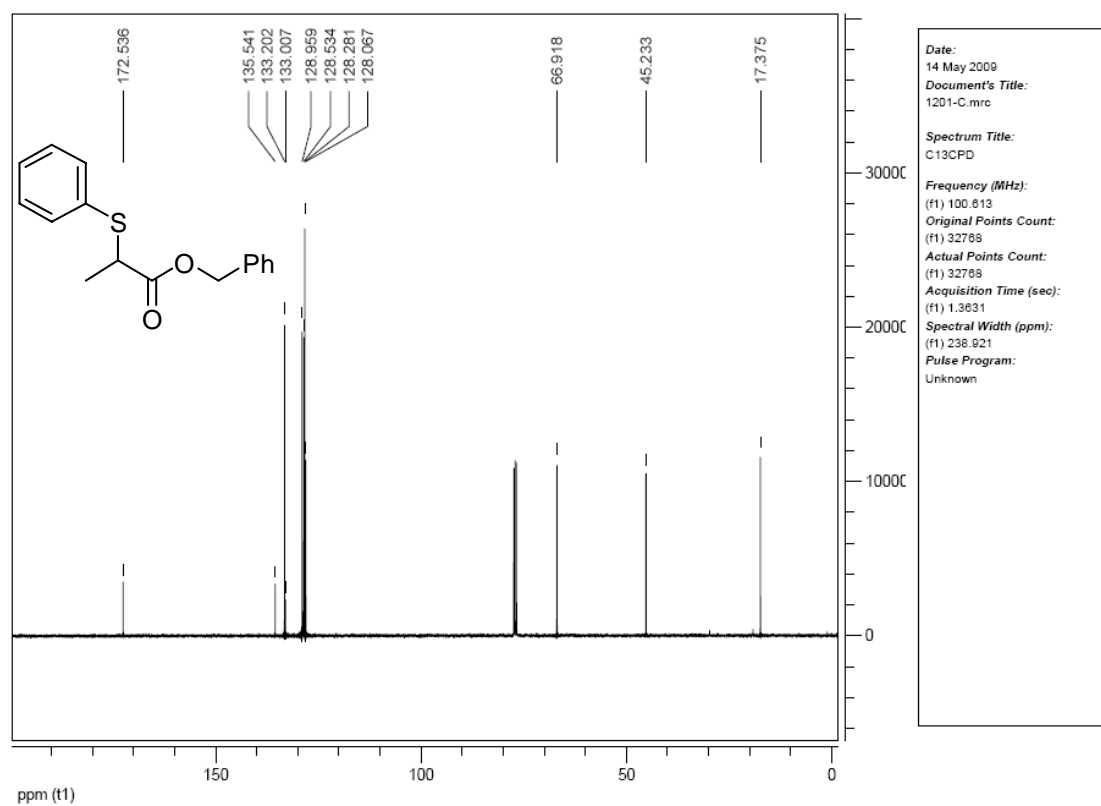
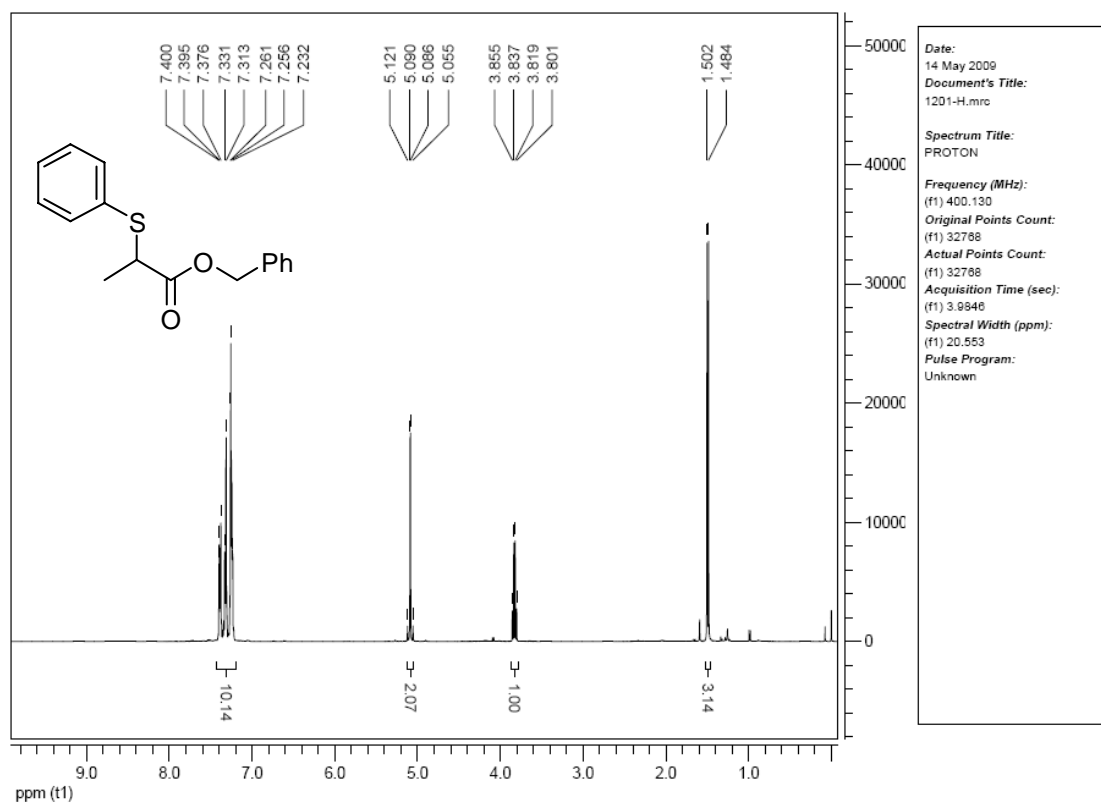
Methyl 2-(benzylthio)-2-(3-methoxyphenyl)acetate (3I)



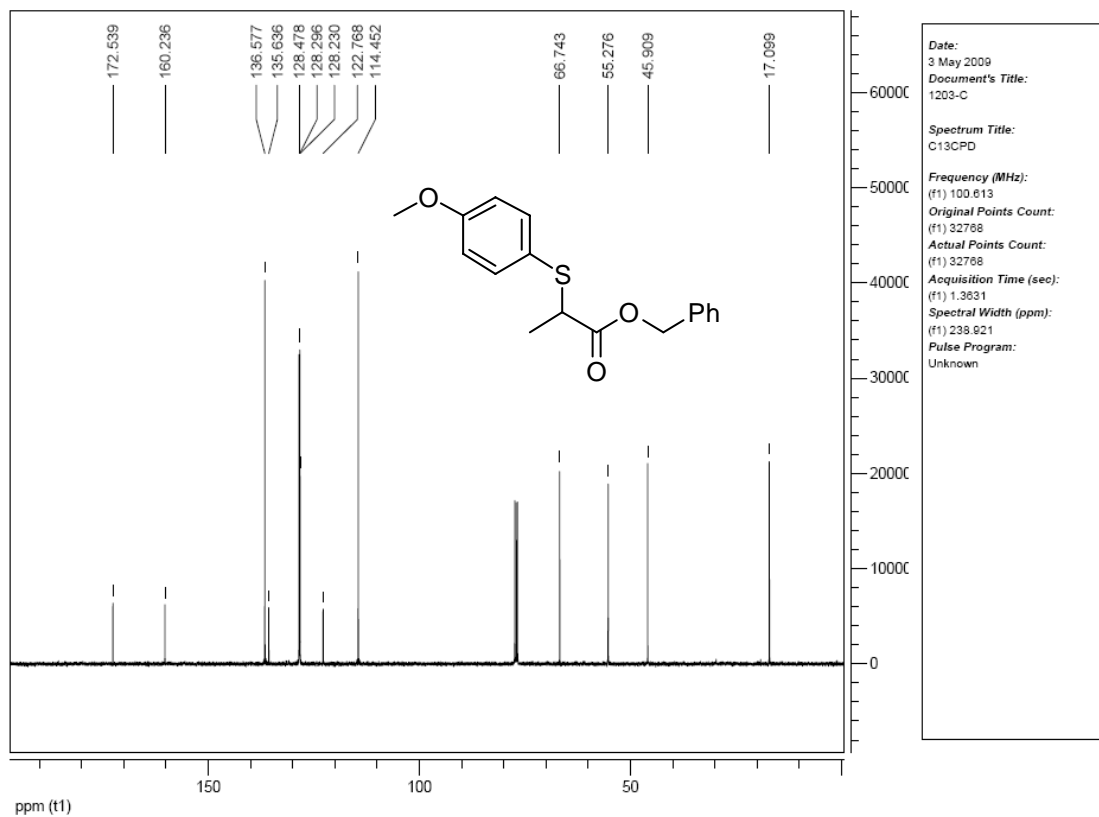
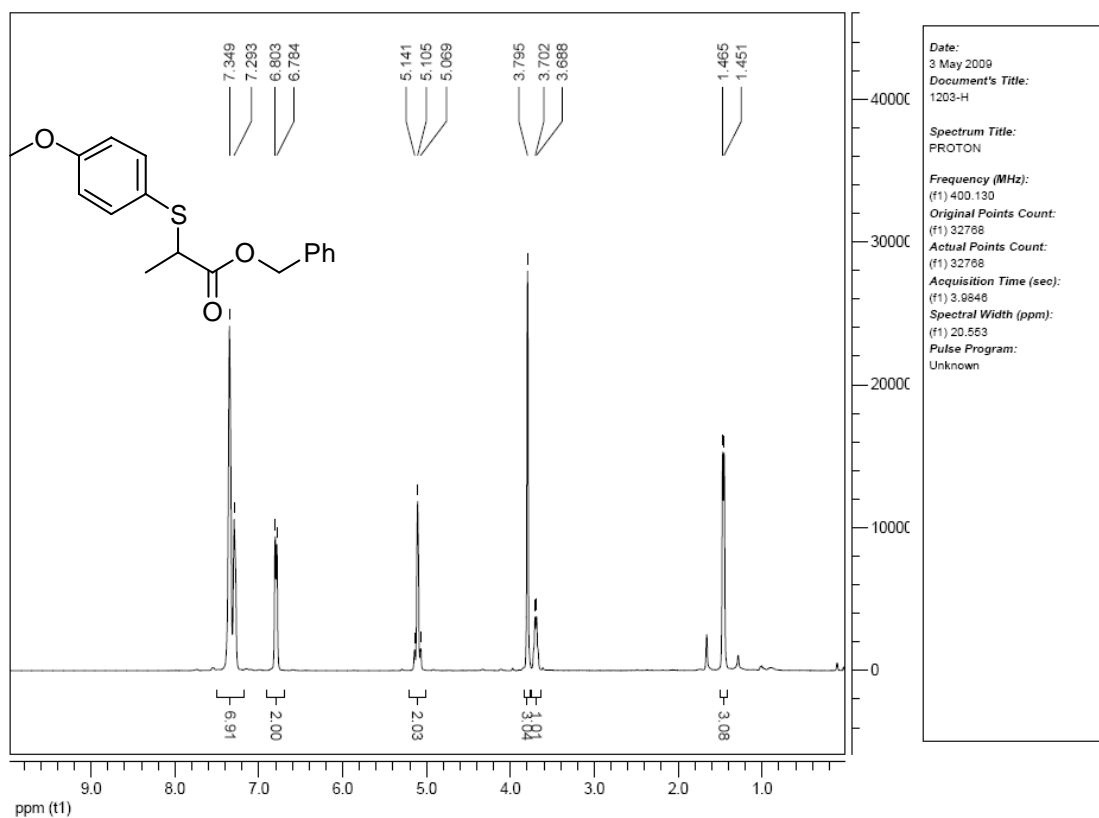
Methyl 2-(benzylthio)-2-(4-methoxyphenyl)acetate (3m)



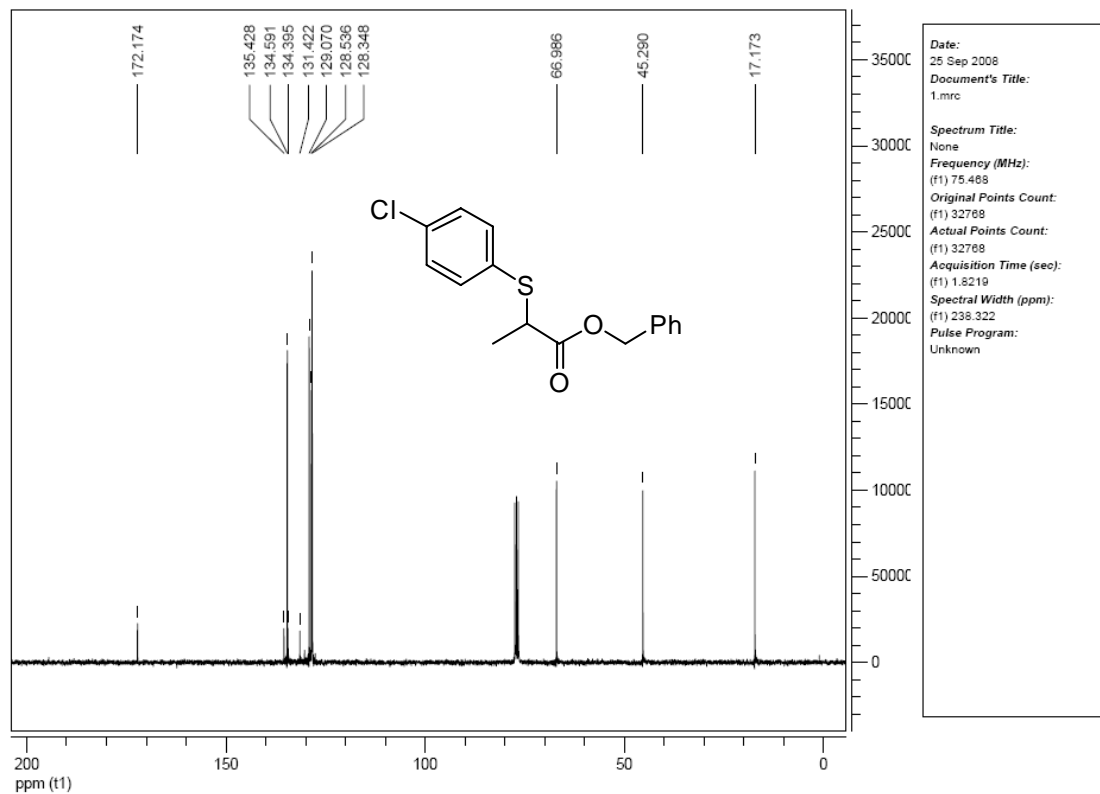
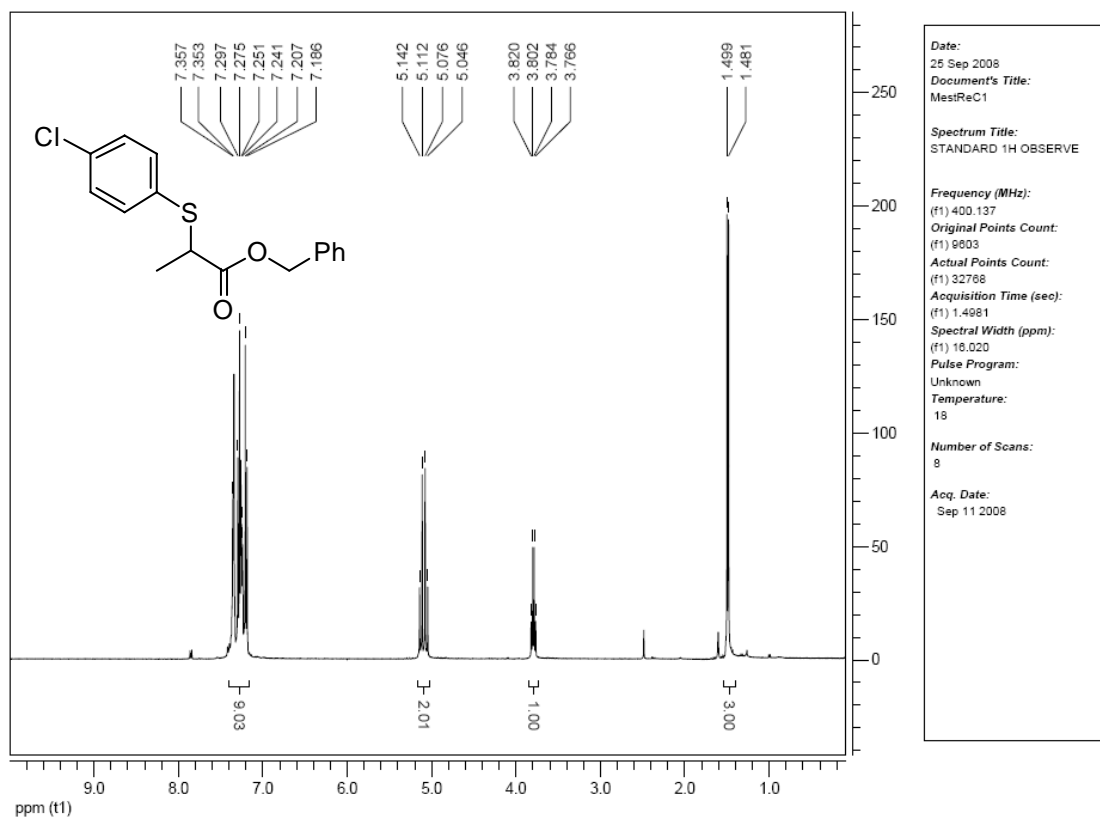
Benzyl 2-(phenylthio)propionate (3n)



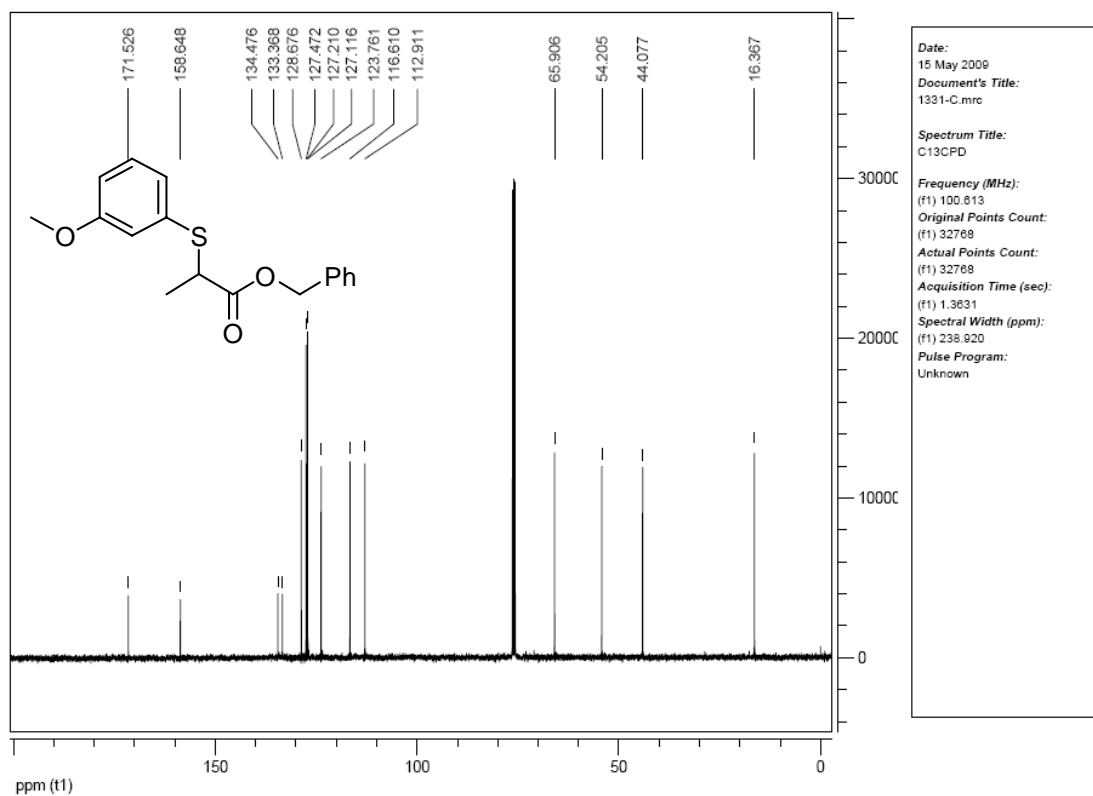
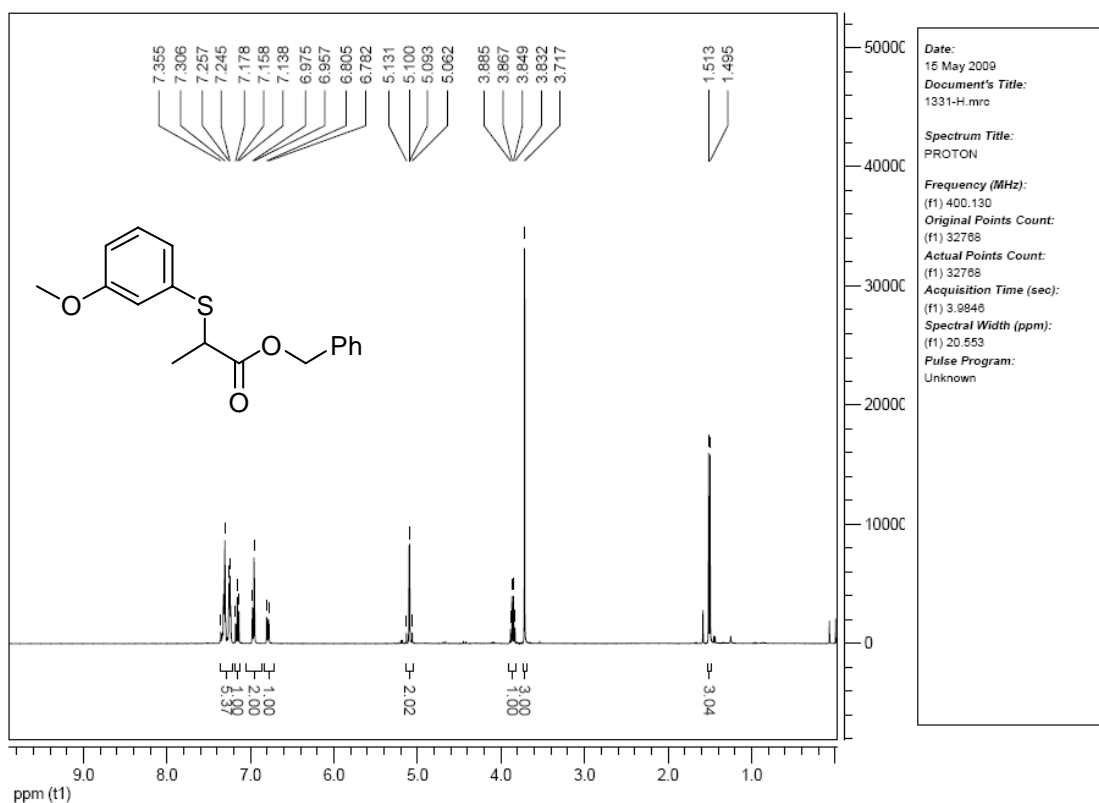
Benzyl 2-(4-methoxyphenylthio)propionate (3o)



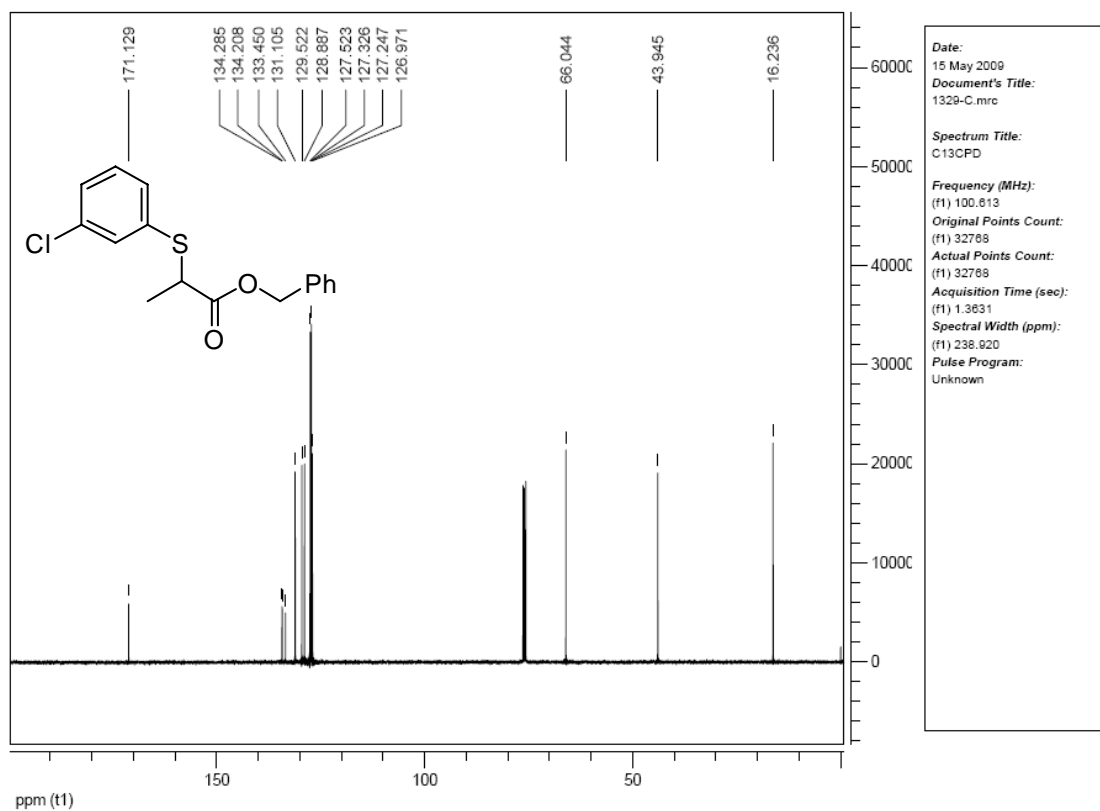
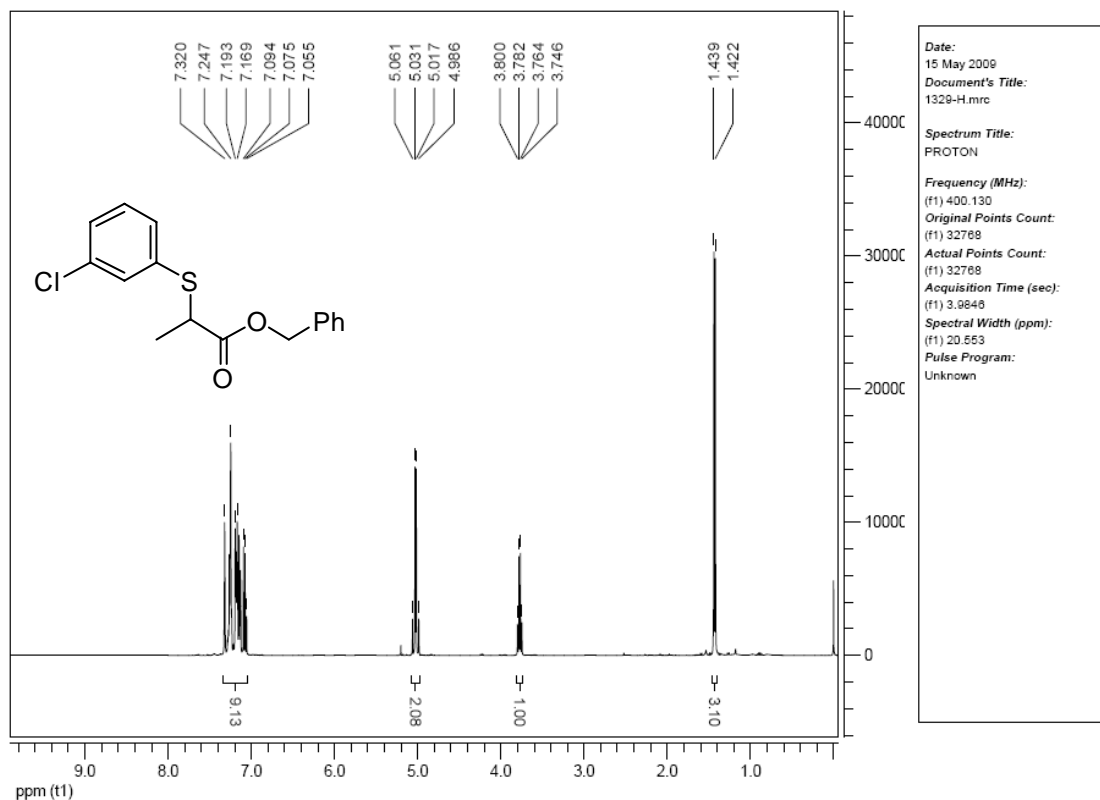
Benzyl 2-(4-chlorophenylthio)propionate (3p)



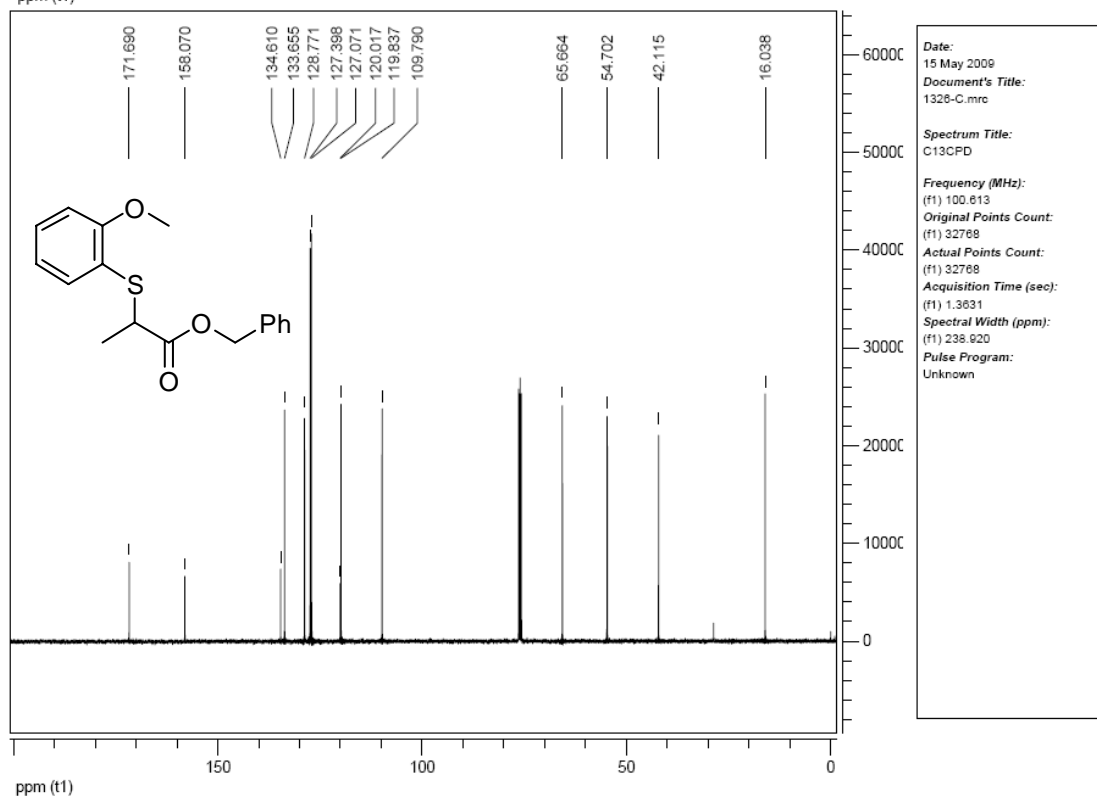
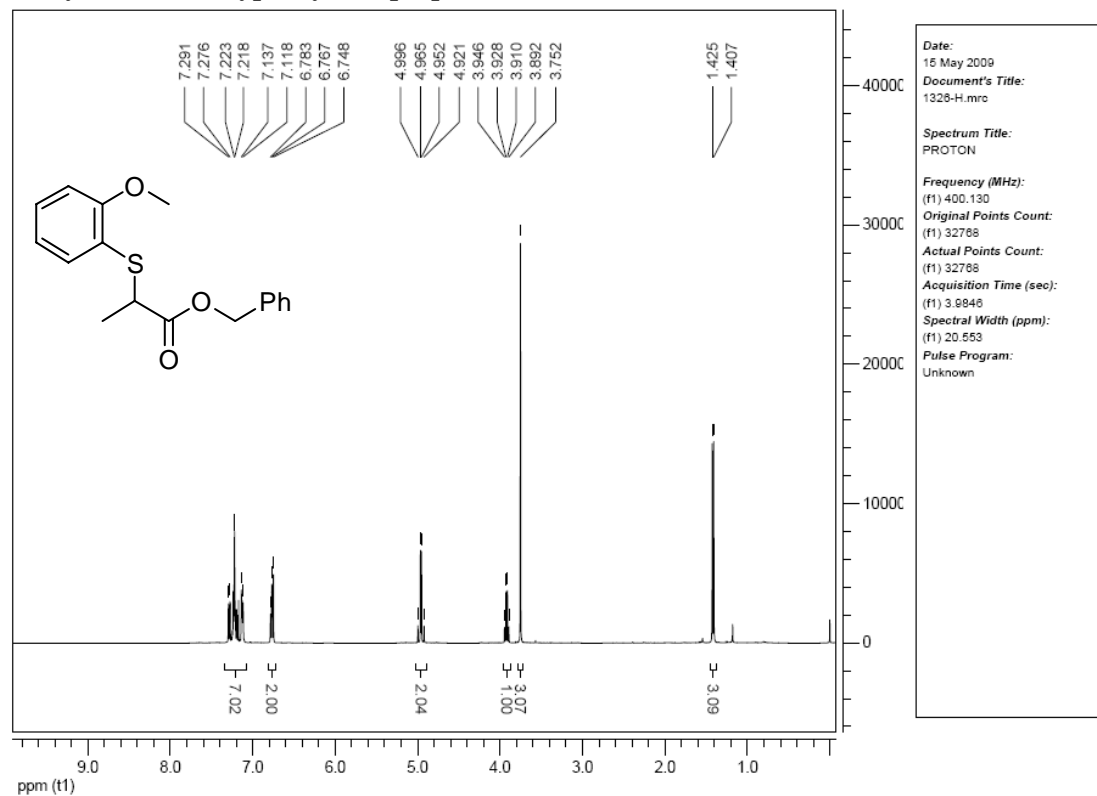
Benzyl 2-(3-methoxyphenylthio)propionate (3q)



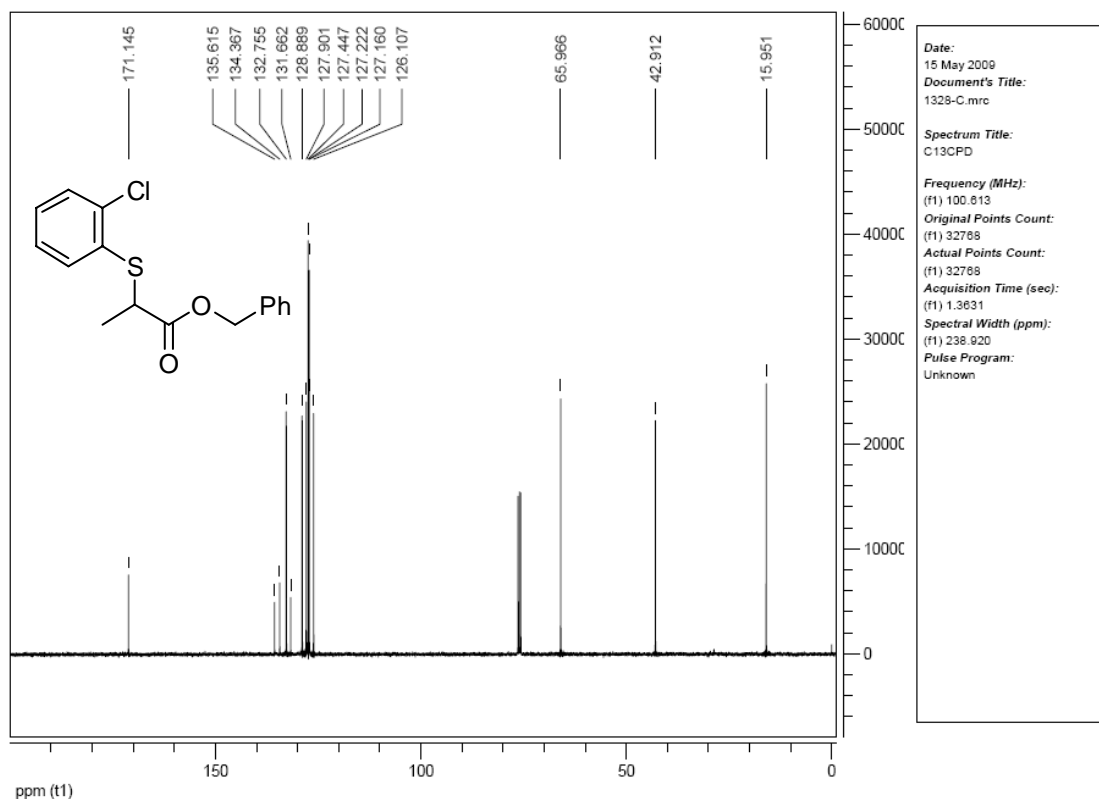
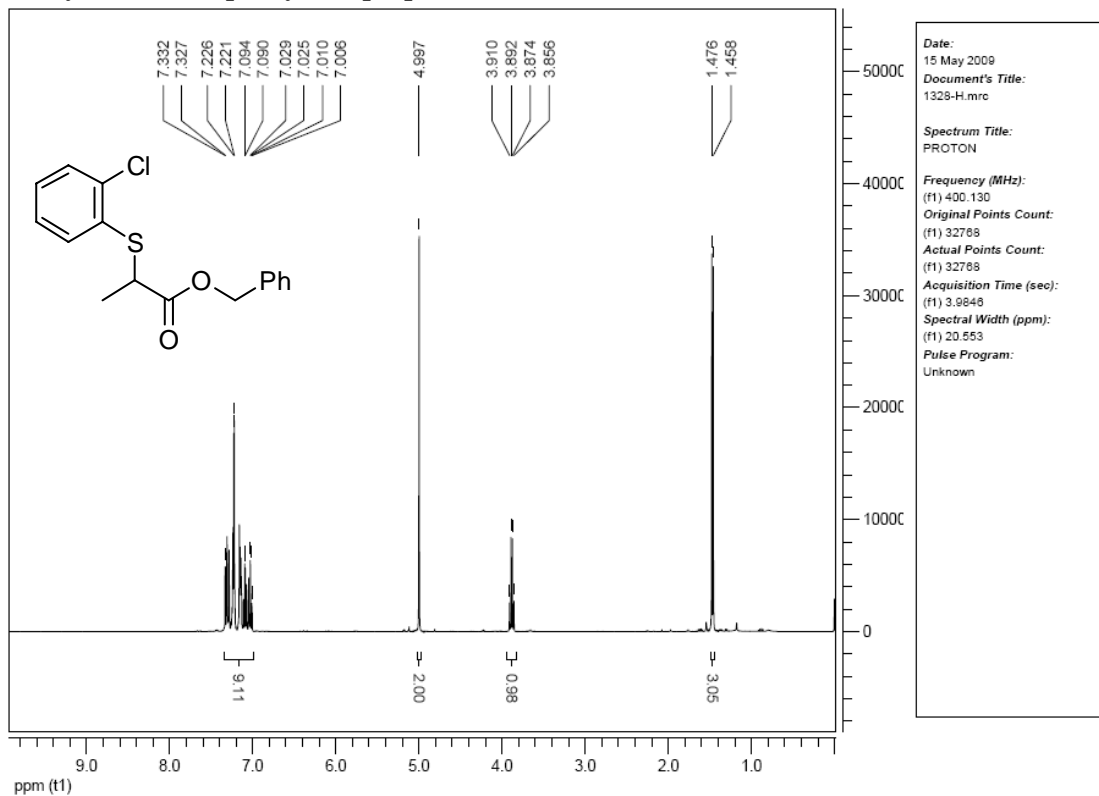
Benzyl 2-(3-chlorophenylthio)propionate (3r)



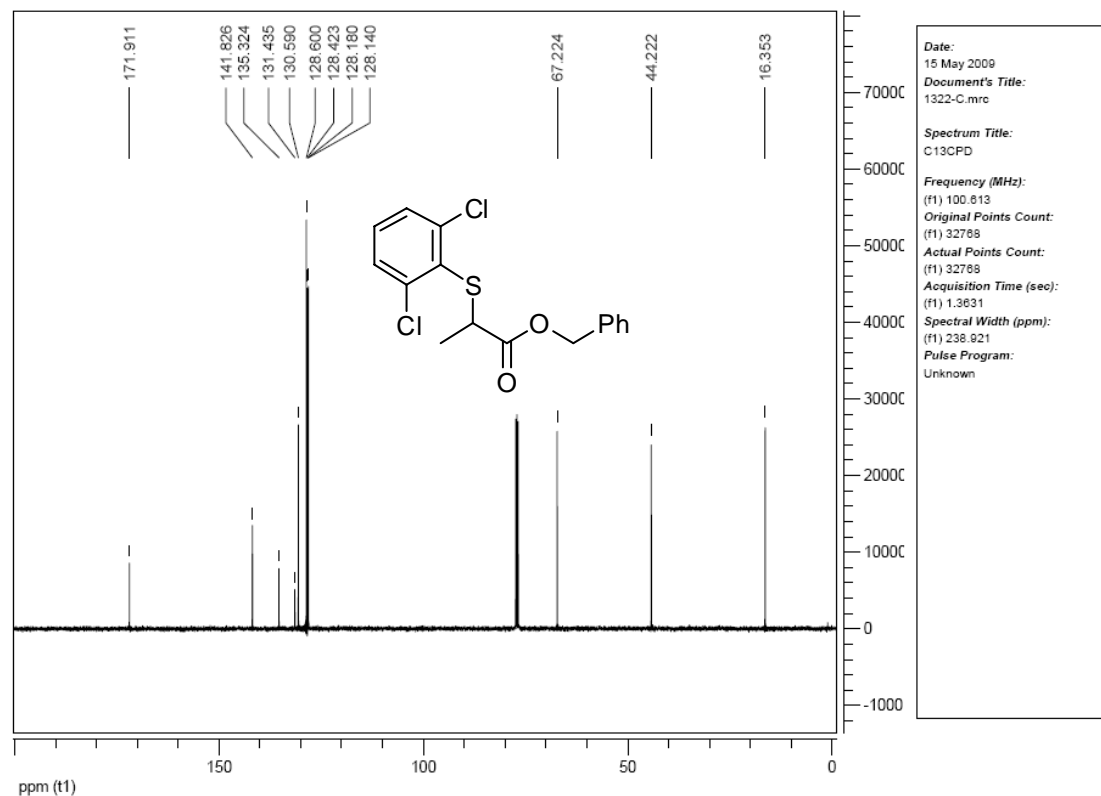
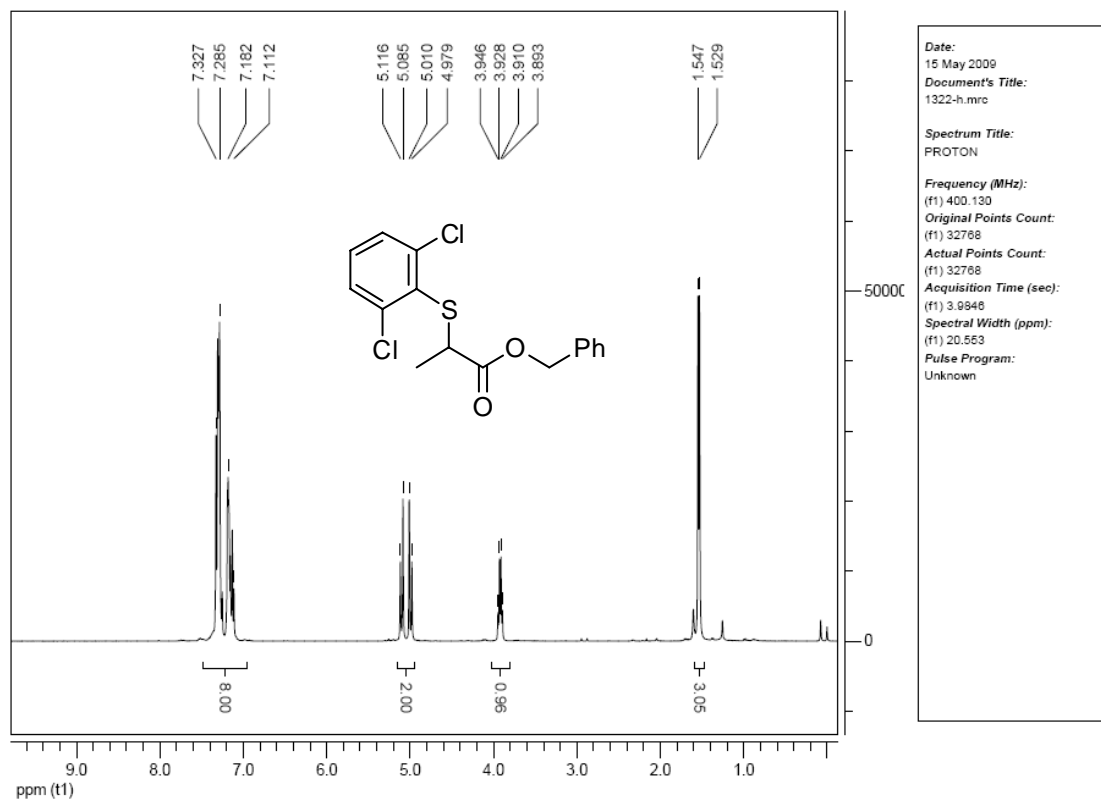
Benzyl 2-(2-methoxyphenylthio)propionate (3s)



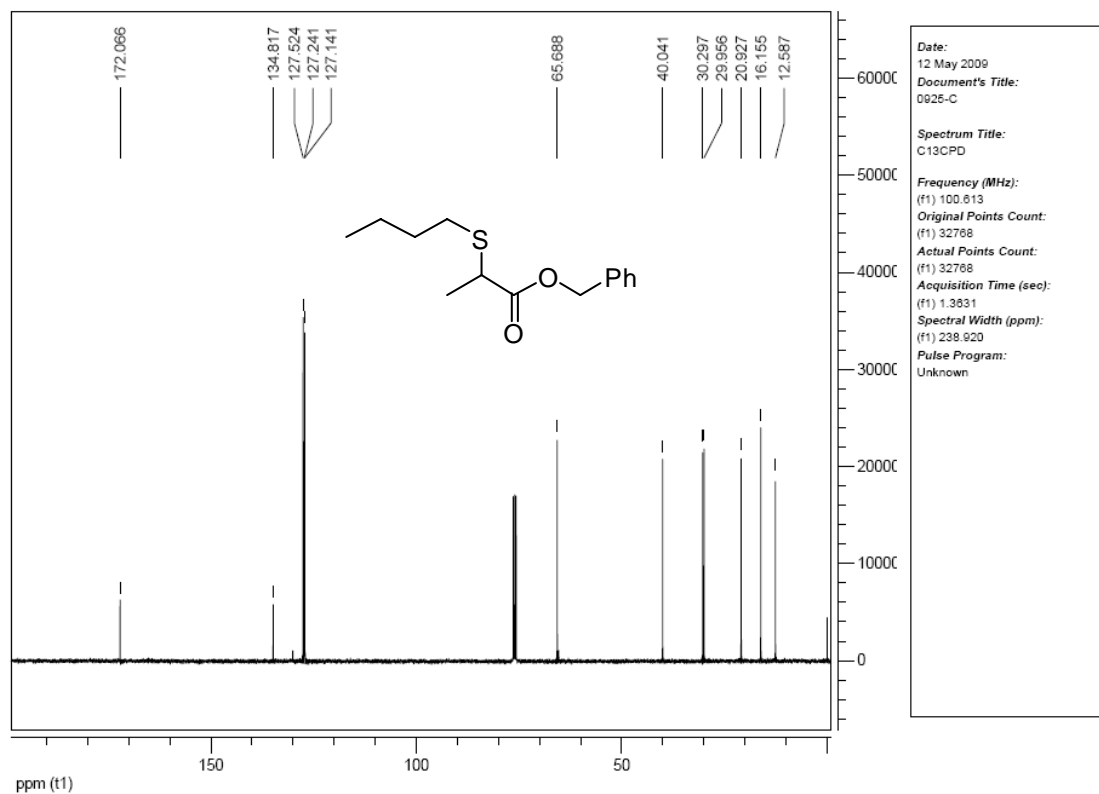
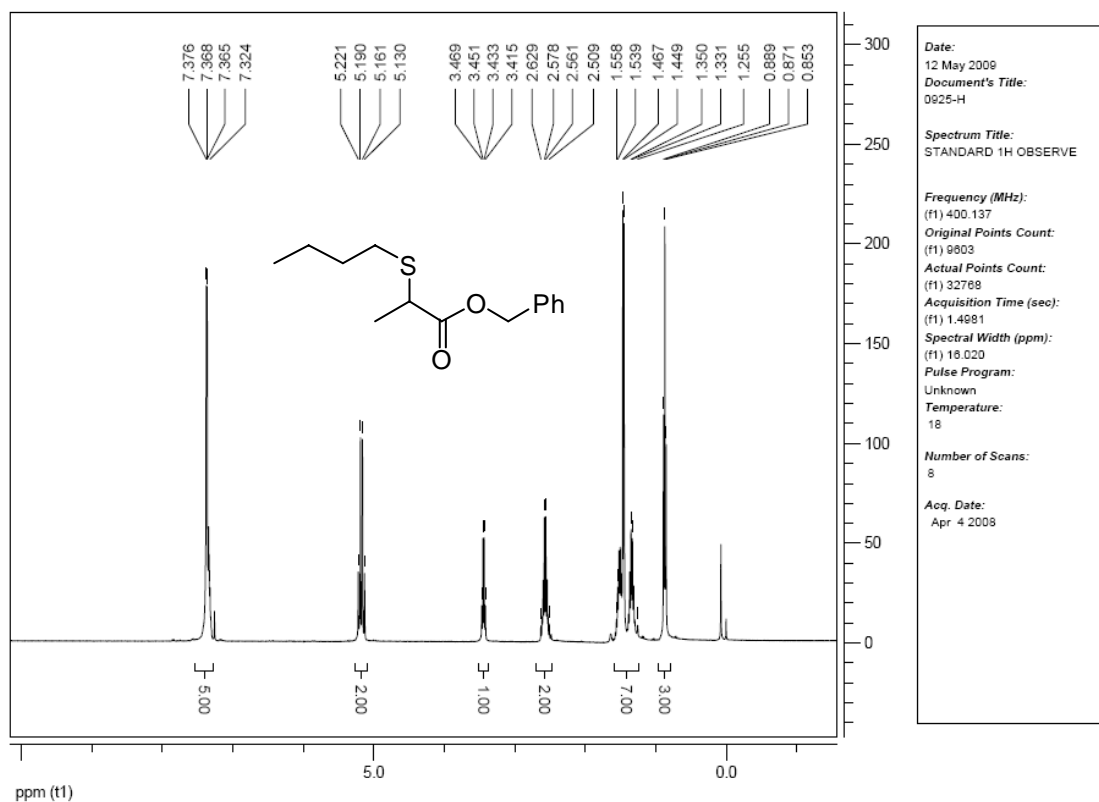
Benzyl 2-(2-chlorophenylthio)propionate (3t)



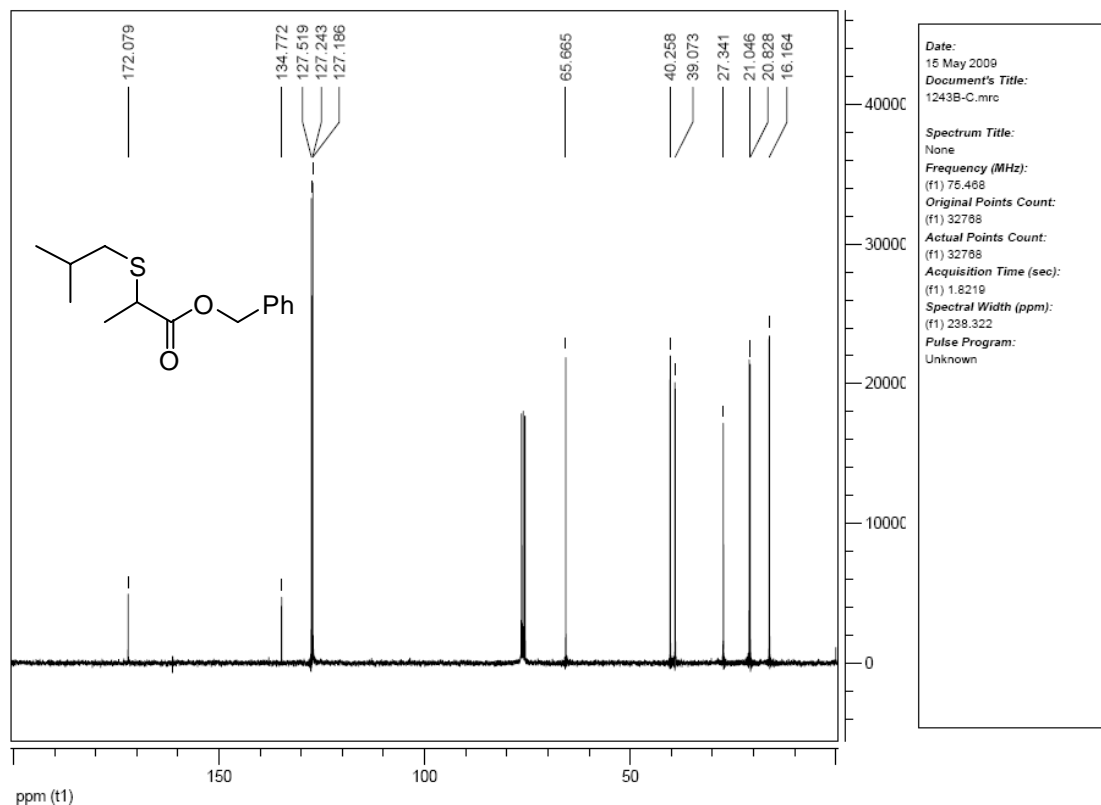
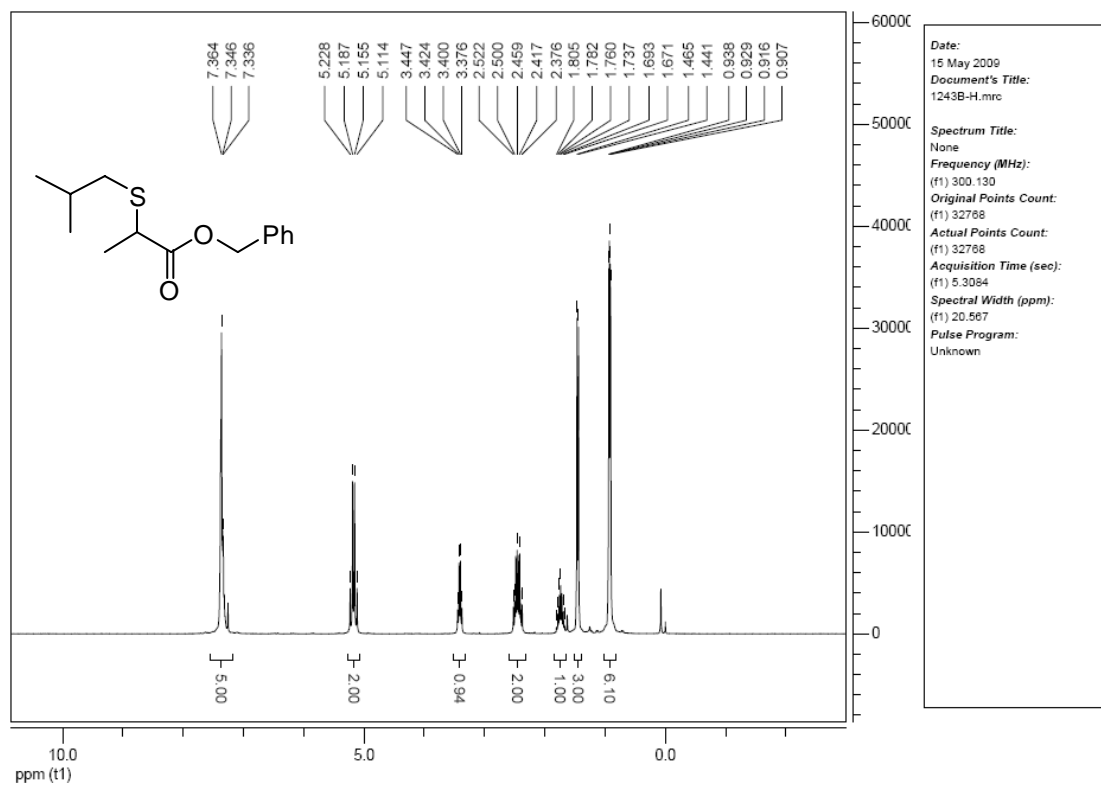
Benzyl 2-(2,6-dichlorophenylthio)propionate (3u)



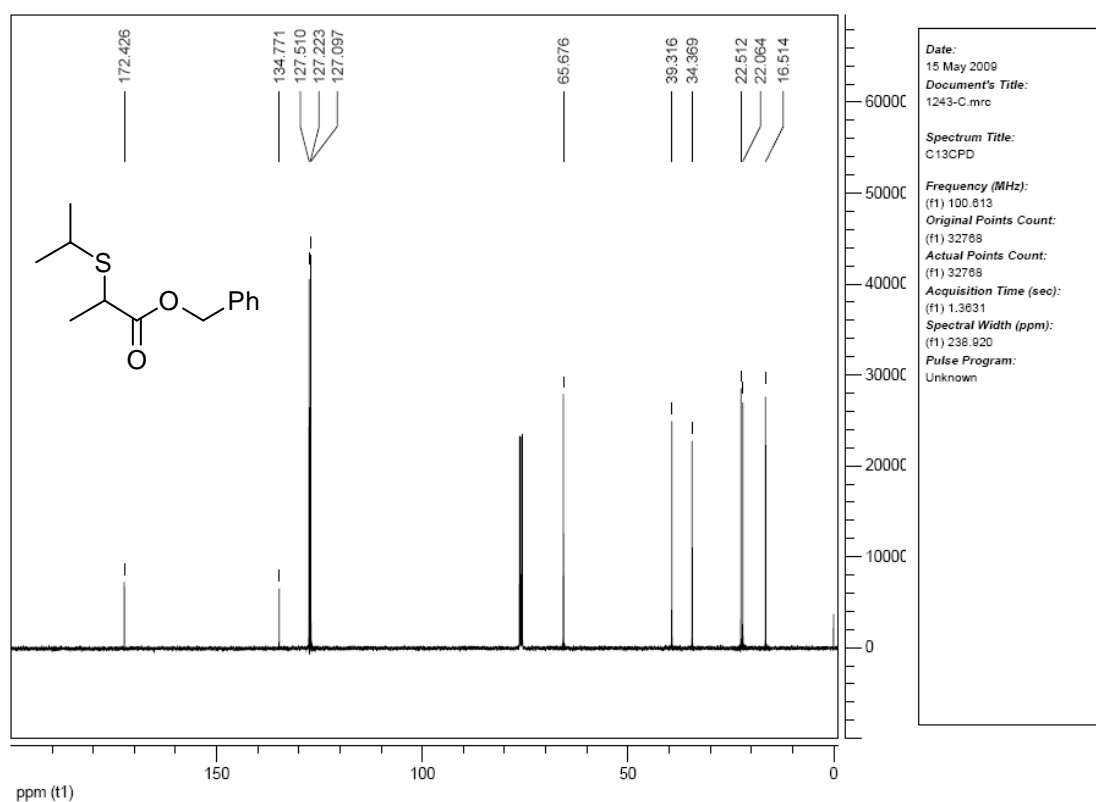
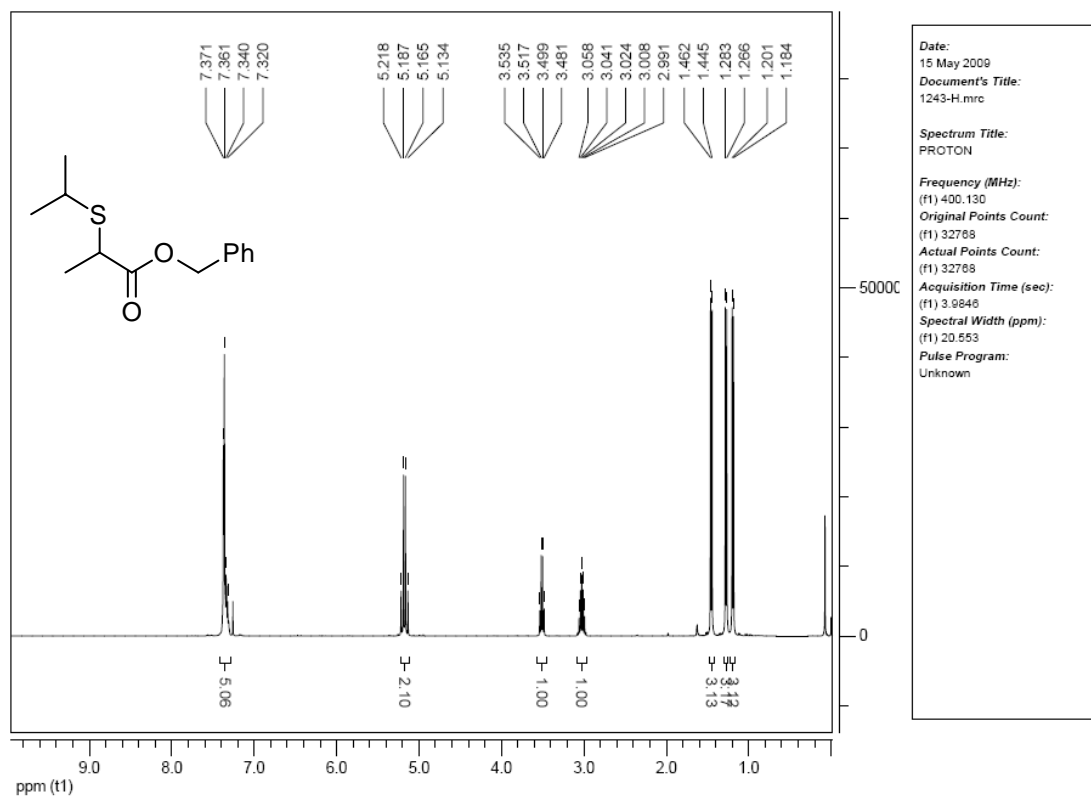
Benzyl 2-(butylthio)propionate (3v)



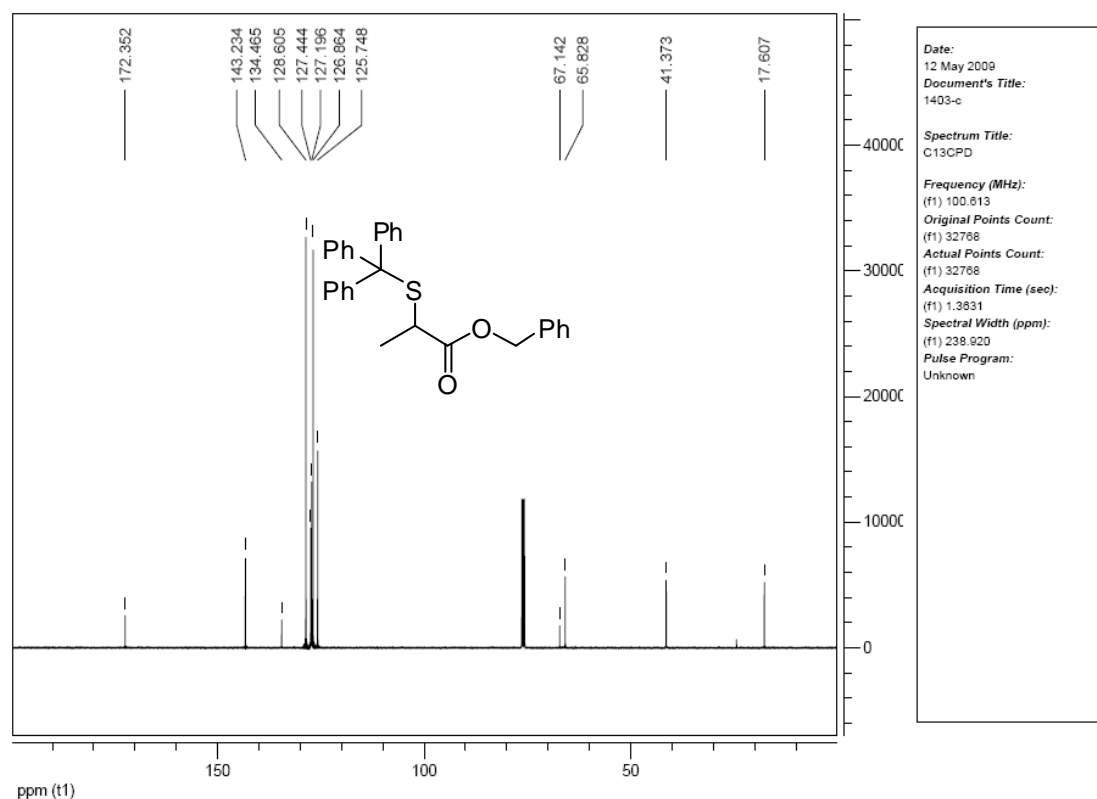
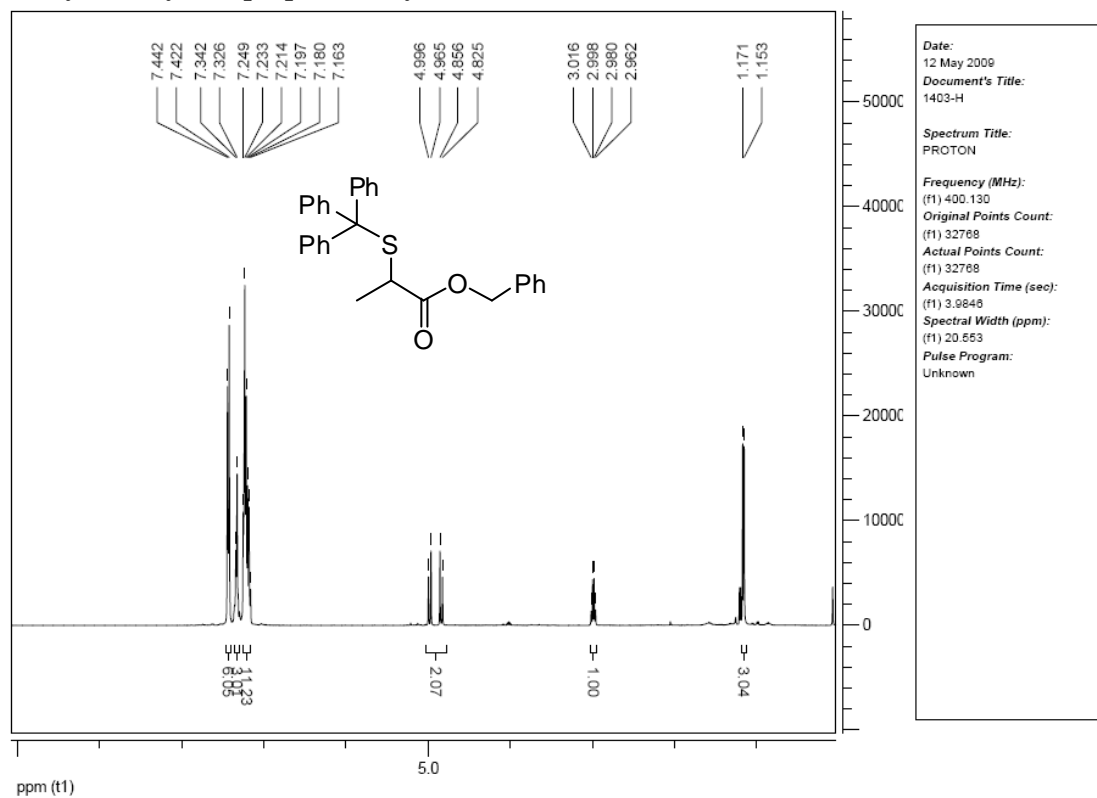
Benzyl 2-(isobutylthio)propionate (3w)



Benzyl 2-(isopropylthio)propionate (3x)

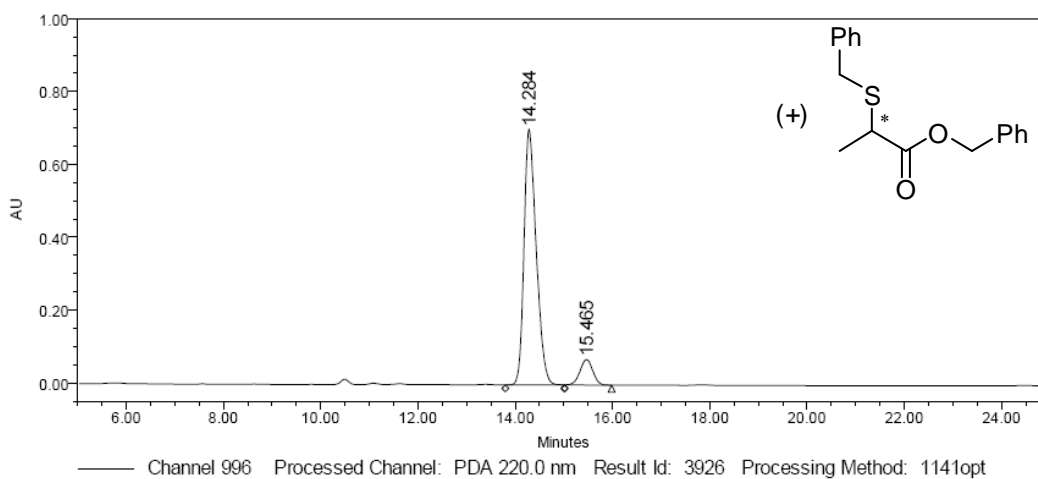
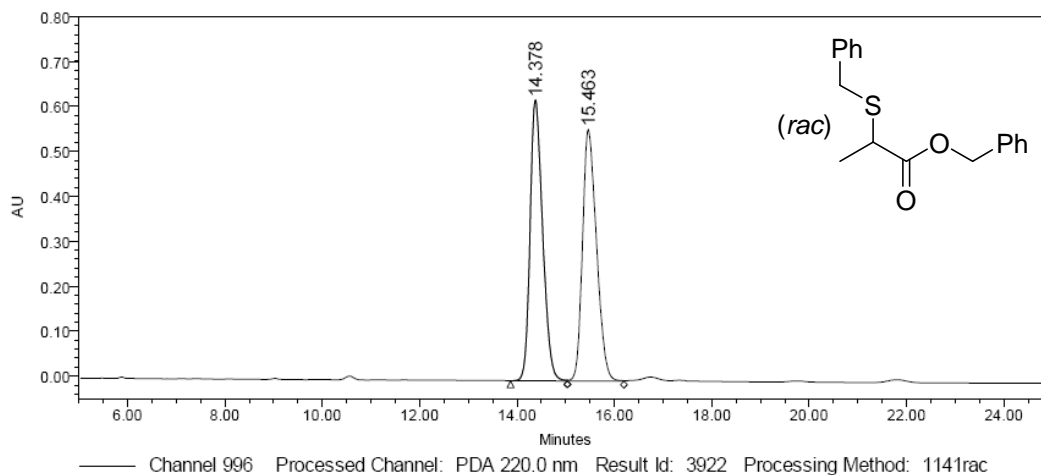


Benzyl 2-(tritylthio)propionate (3y)



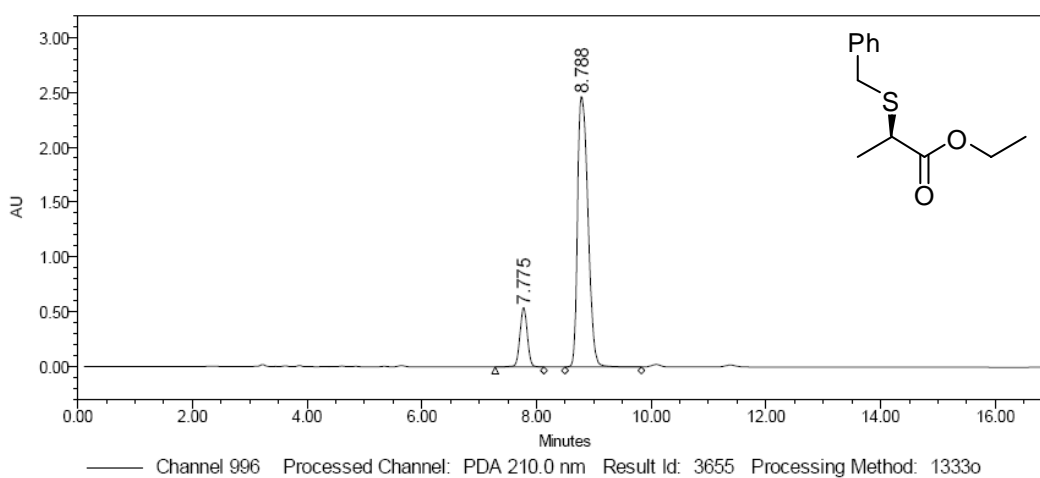
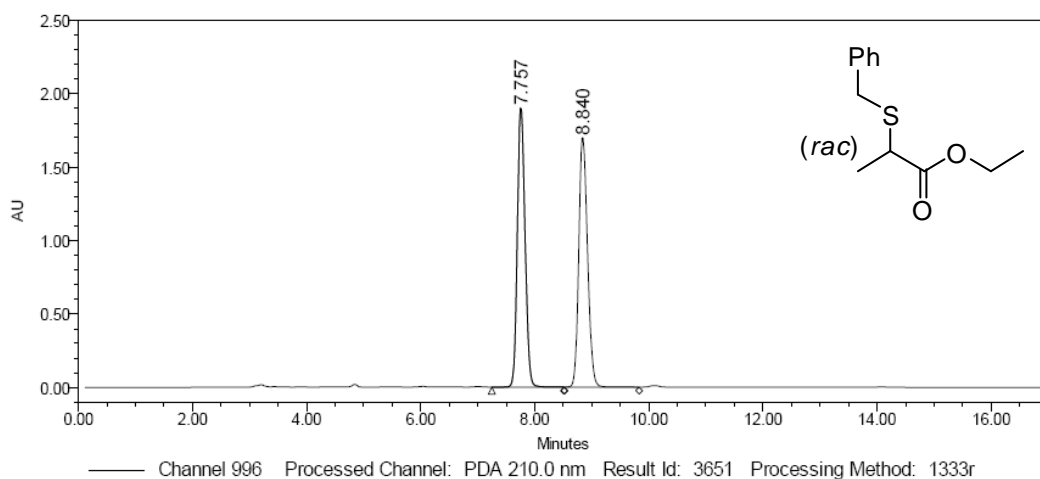
5. HPLC and SFC Charts for S-H insertion Products

(+)-Benzyl 2-(benzylthio)propionate (3a)



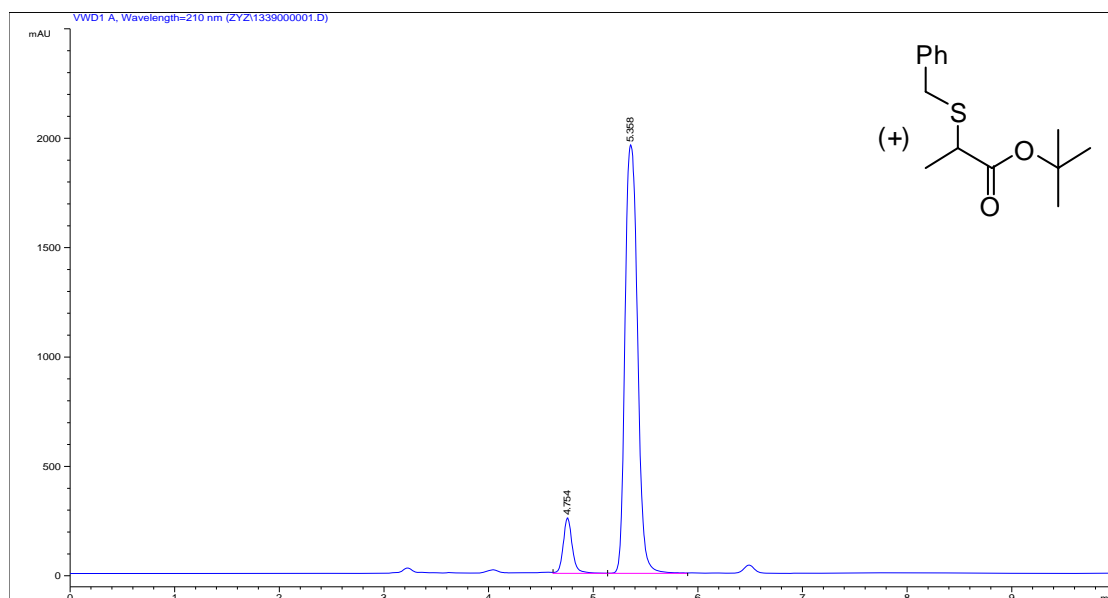
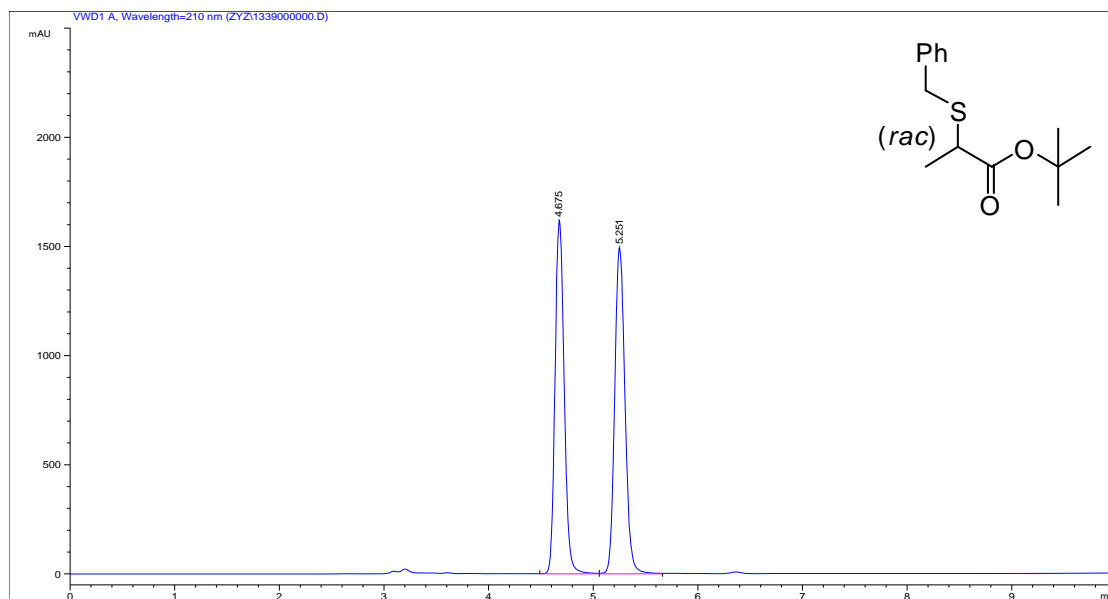
	Processed Channel Descr.	RT	Area	% Area	Height
1	PDA 220.0 nm	14.284	12235642	90.50	702233
2	PDA 220.0 nm	15.465	1283800	9.50	69724

(R)-Ethyl 2-(benzylthio)propionate (3b)



	Processed Channel Descr.	RT	Area	% Area	Height
1	PDA 210.0 nm	7.775	4802436	13.31	541278
2	PDA 210.0 nm	8.788	31276126	86.69	2481210

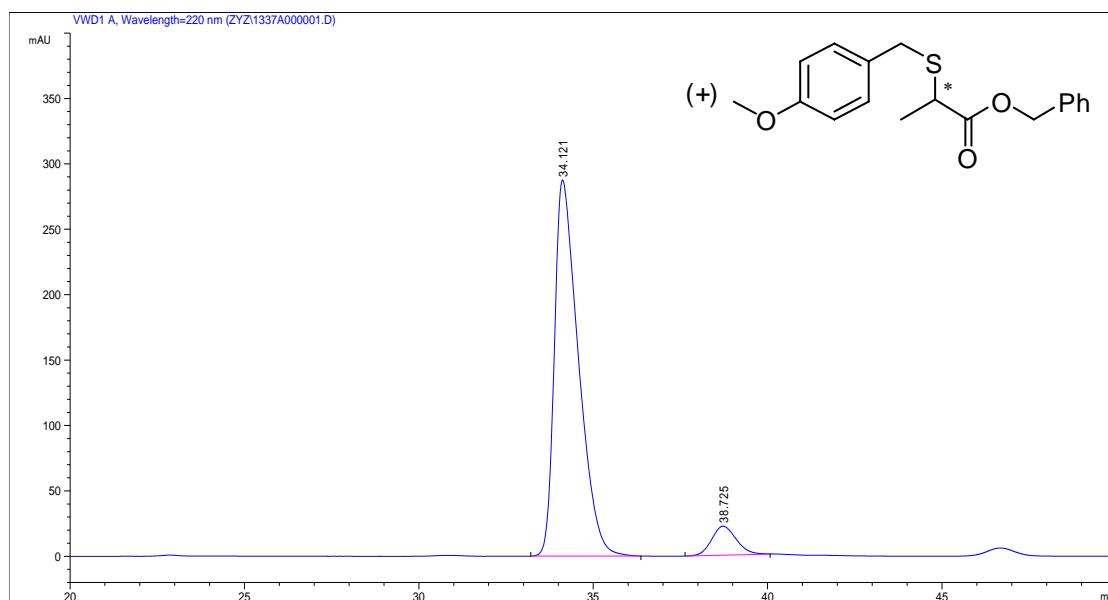
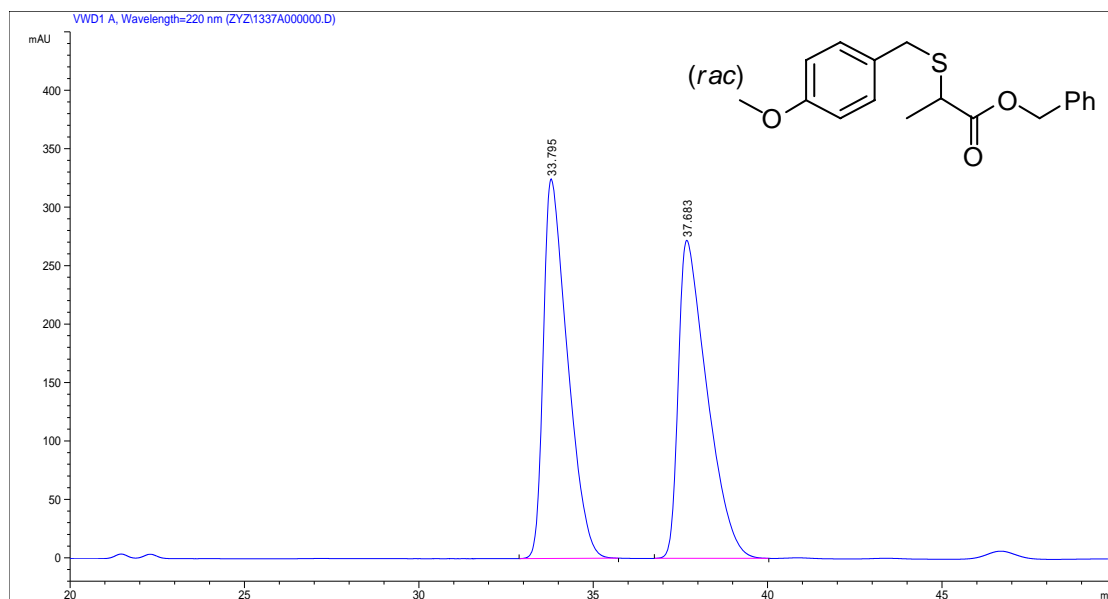
(+)-tert-Butyl 2-(benzylthio)propionate (3c)



Signal 1: VWD1 A, Wavelength=210 nm

Peak #	RetTime [min]	Type	Width [min]	Area mAU *s	Height [mAU]	Area %
1	4.754	VV	0.0907	1527.44092	253.56578	8.6250
2	5.358	VV	0.1328	1.61821e4	1958.29248	91.3750

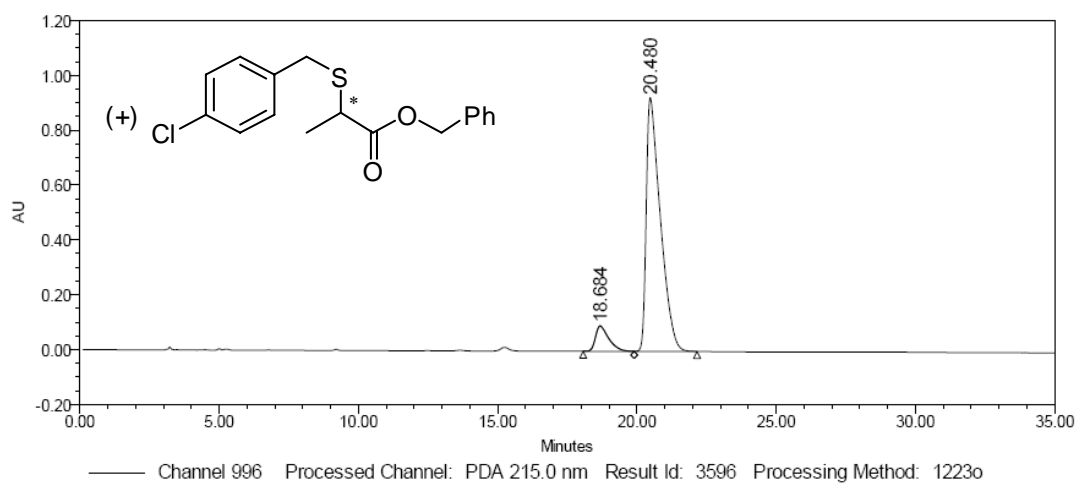
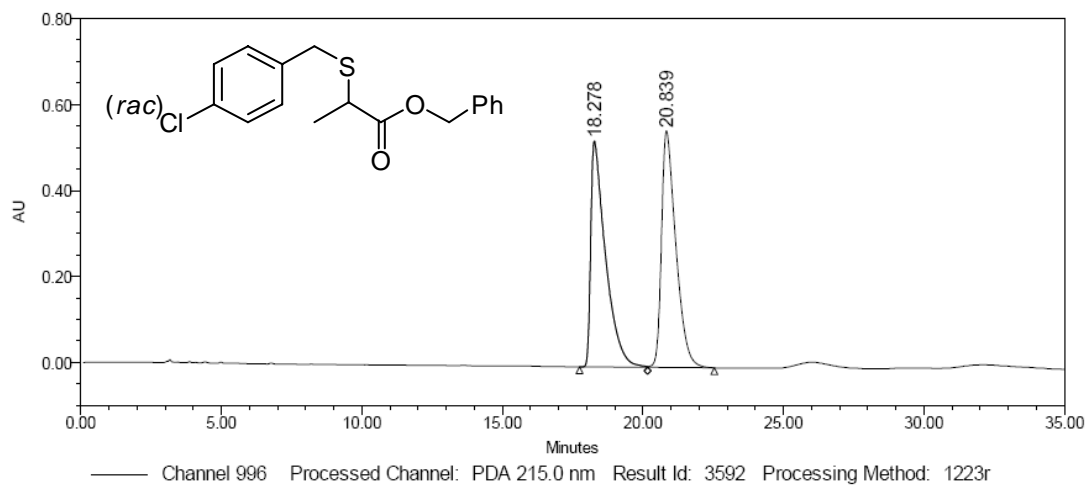
(+)-Benzyl 2-(4-methoxybenzylthio)propionate (3d)



Signal 1: VWD1 A, Wavelength=220 nm

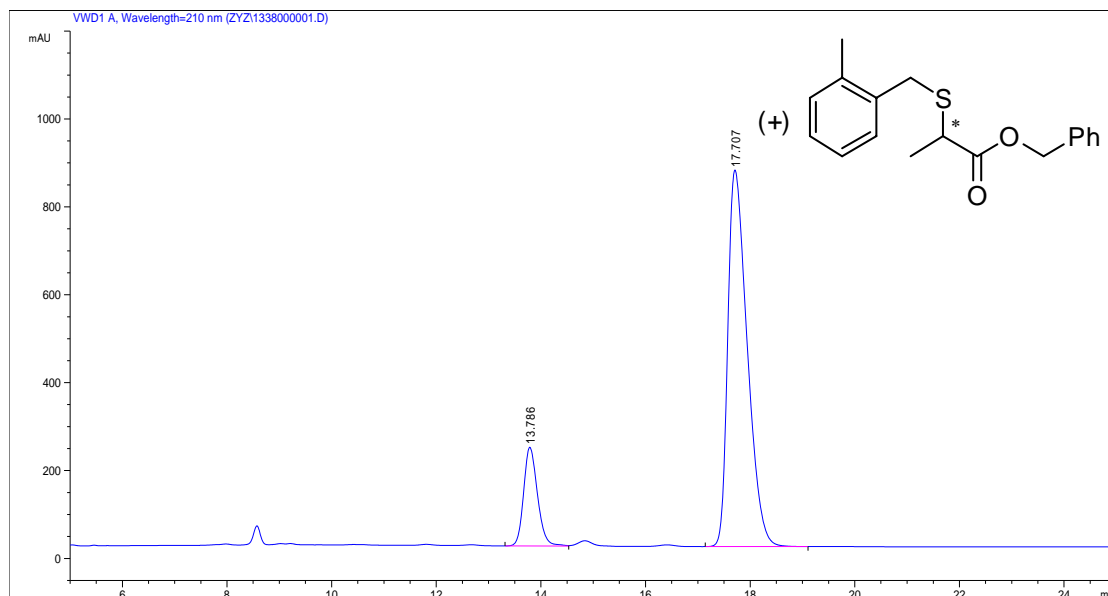
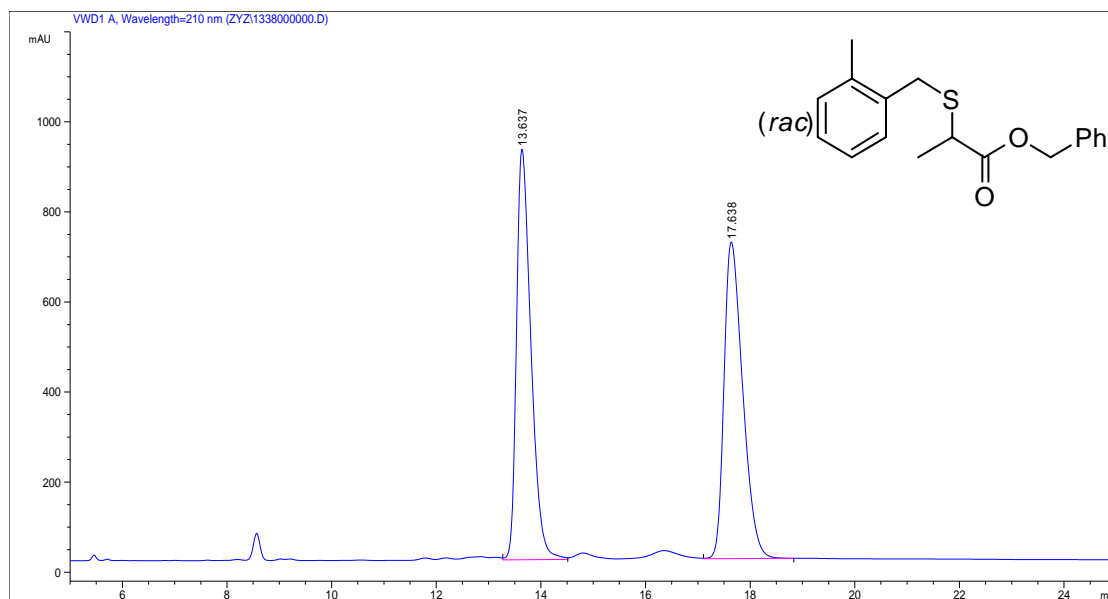
Peak #	RetTime [min]	Type	Width [min]	Area mAU	Height [mAU]	Area %
1	34.121	BB	0.7086	1.37386e4	287.69446	92.6446
2	38.725	BB	0.7455	1090.75757	22.18112	7.3554

(+)-Benzyl 2-(4-chlorobenzylthio)propionate (3e)



	Processed Channel Descr.	RT	Area	% Area	Height
1	PDA 215.0 nm	18.684	3083402	8.62	92495
2	PDA 215.0 nm	20.480	32668773	91.38	925162

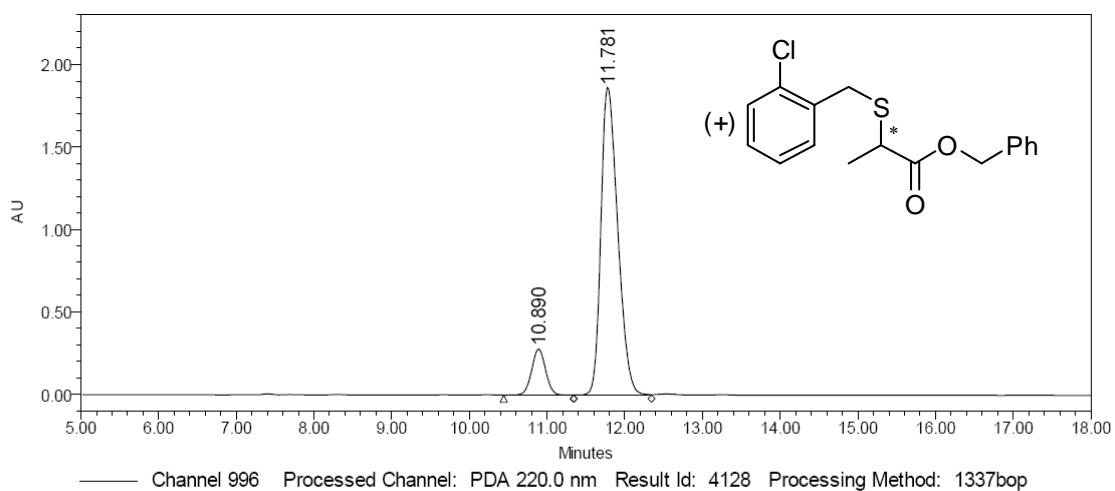
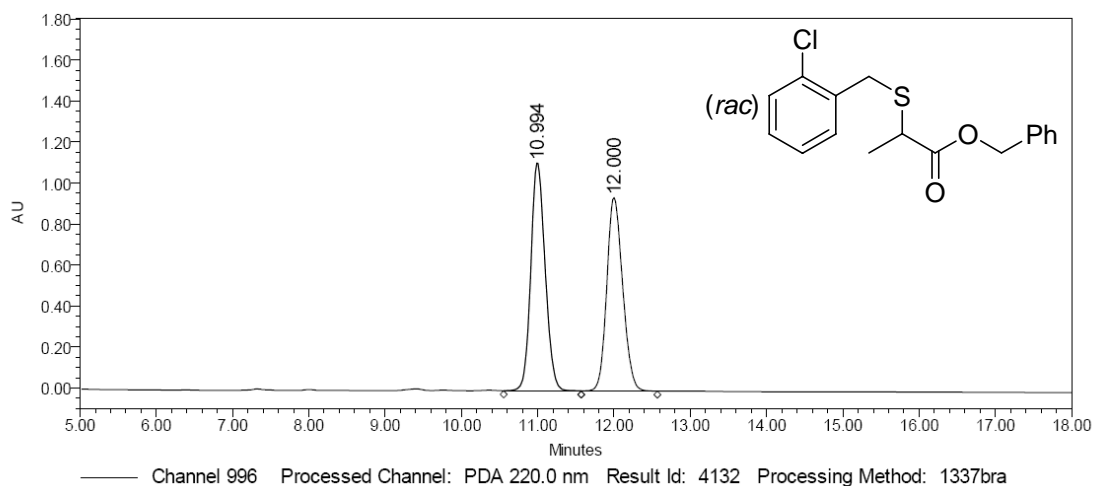
(+)-Benzyl 2-(2-methylbenzylthio)propionate (3f)



Signal 1: VWD1 A, Wavelength=210 nm

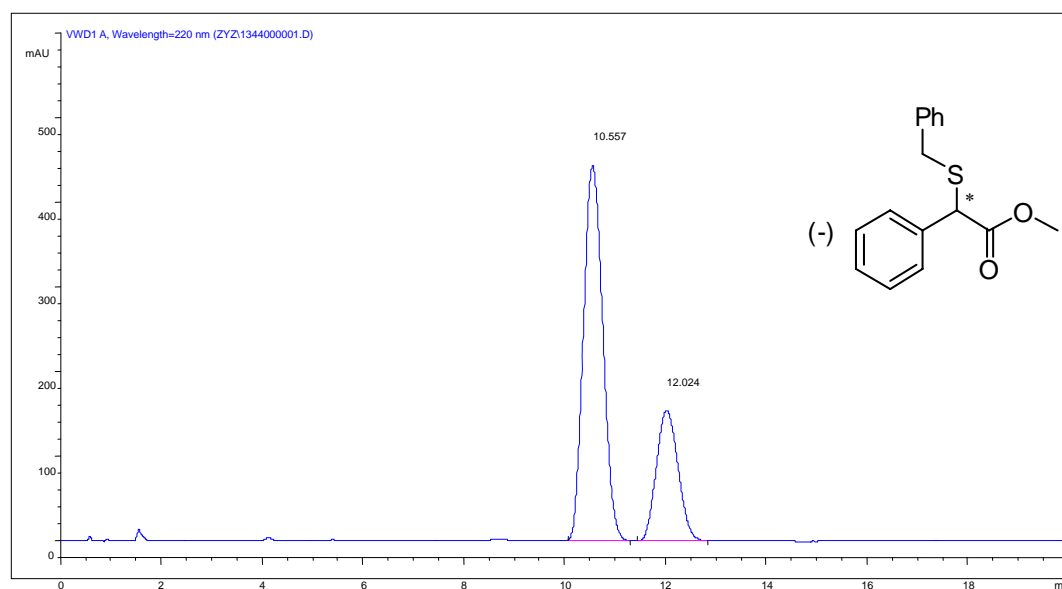
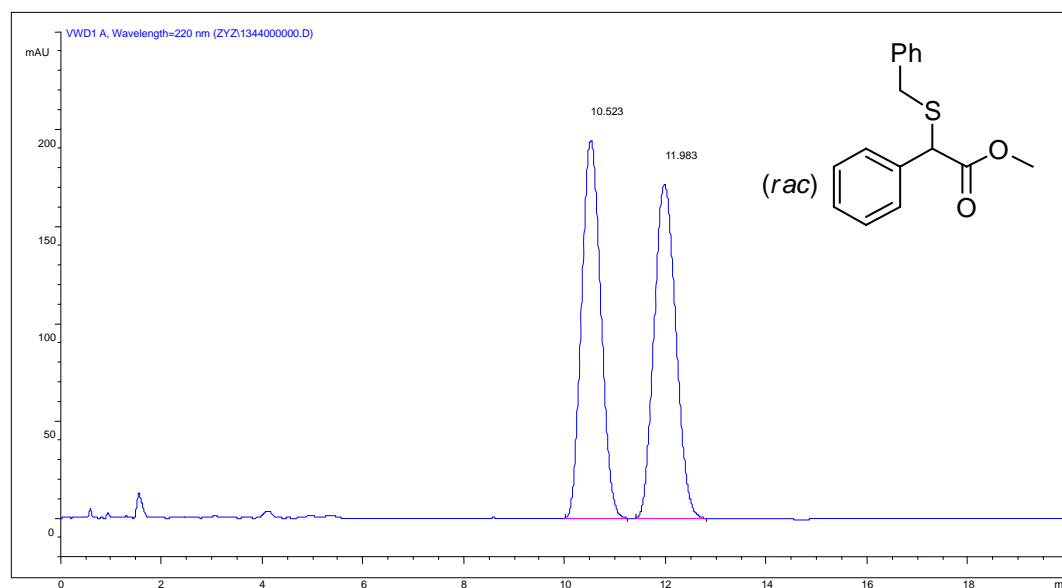
Peak #	RetTime [min]	Type	Width [min]	Area mAU *s	Height [mAU]	Area %
1	13.786	BV	0.2832	4135.66553	224.66208	15.7884
2	17.707	BB	0.3964	2.20587e4	856.96472	84.2116

(+)-Benzyl 2-(2-chlorobenzylthio)propionate (3g)



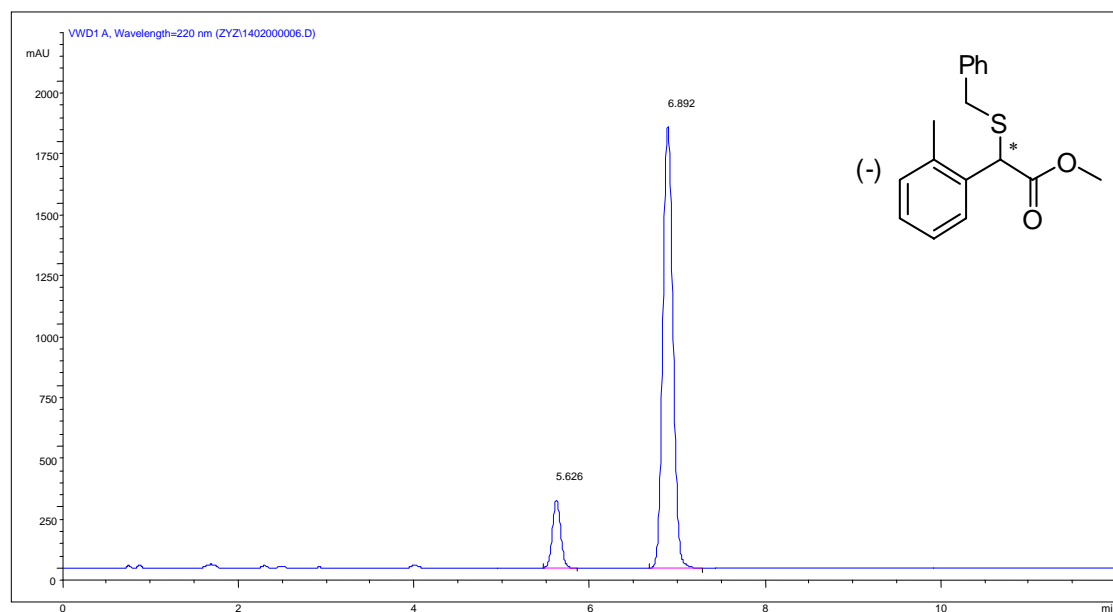
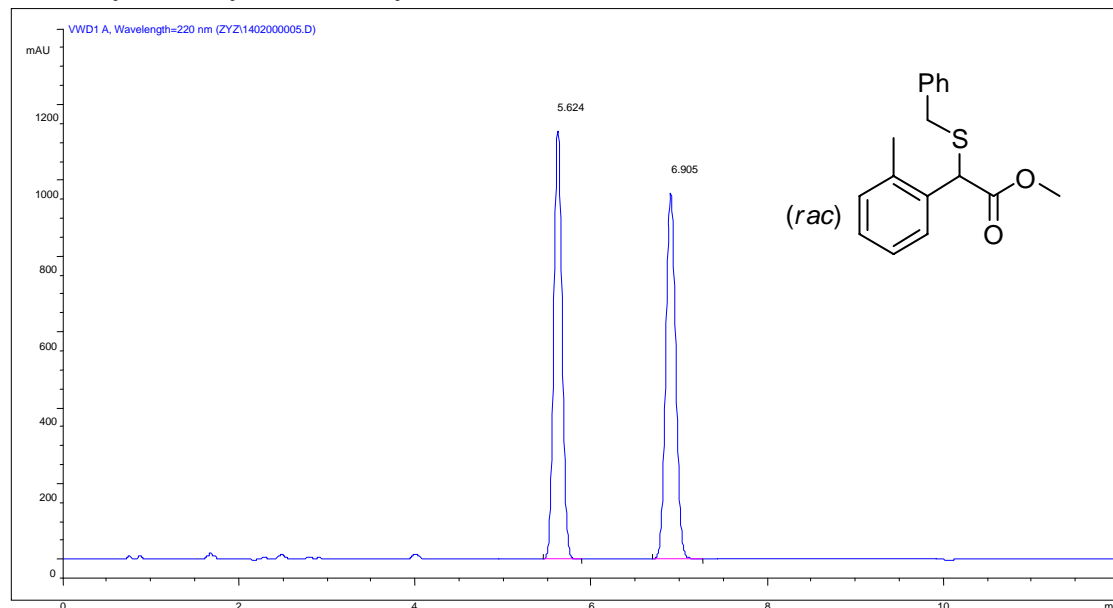
	Processed Channel Descr.	RT	Area	% Area	Height
1	PDA 220.0 nm	10.890	3473753	11.04	279164
2	PDA 220.0 nm	11.781	27993104	88.96	1870289

(-)-Methyl 2-(benzylthio)-2-phenylacetate (3h)



Peak #	RetTime [min]	Type	Width [min]	Area mAU *s	Area %
1	10.557	BB	0.4186	1.17970e4	71.8774
2	12.024	BB	0.4721	4615.64453	28.1226

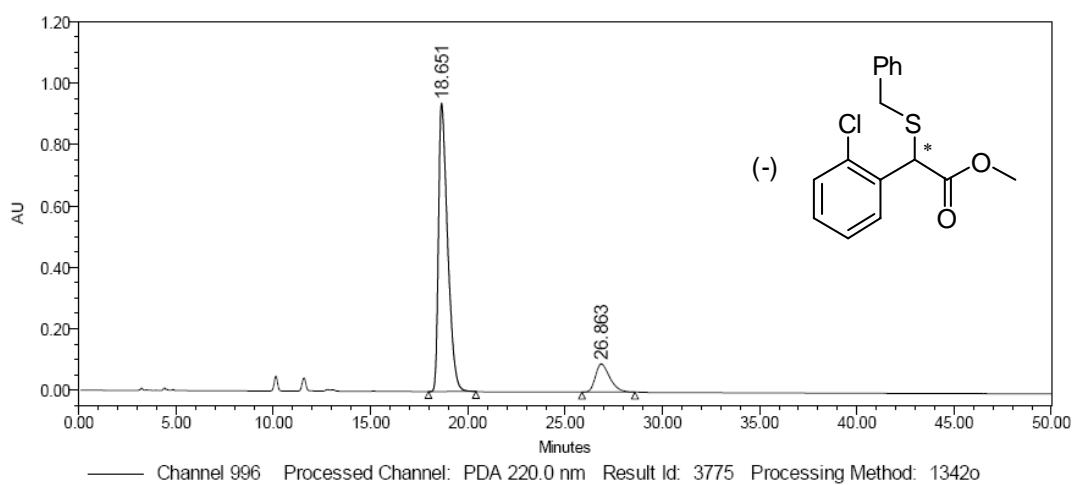
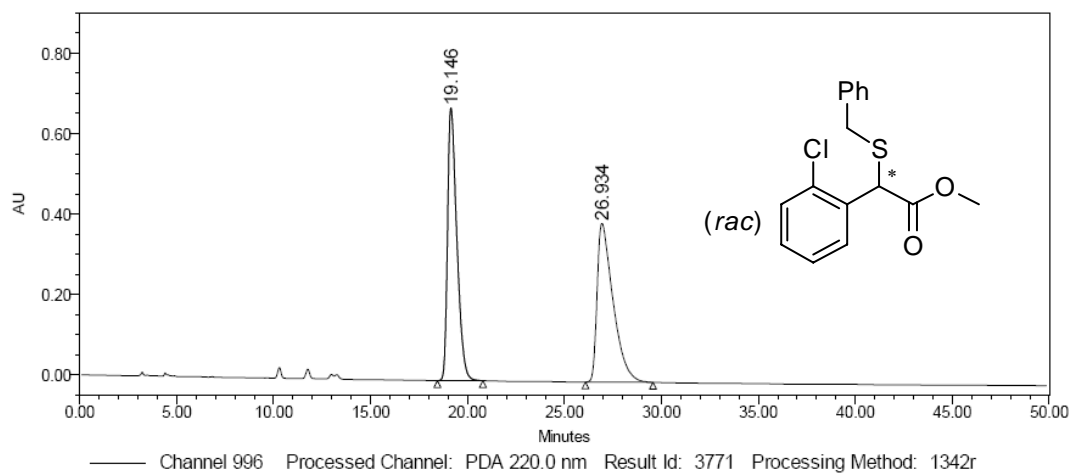
(-)-Methyl 2-(benzylthio)-2-o-tolylacetate (3i)



Signal 1: VWD1 A, Wavelength=220 nm

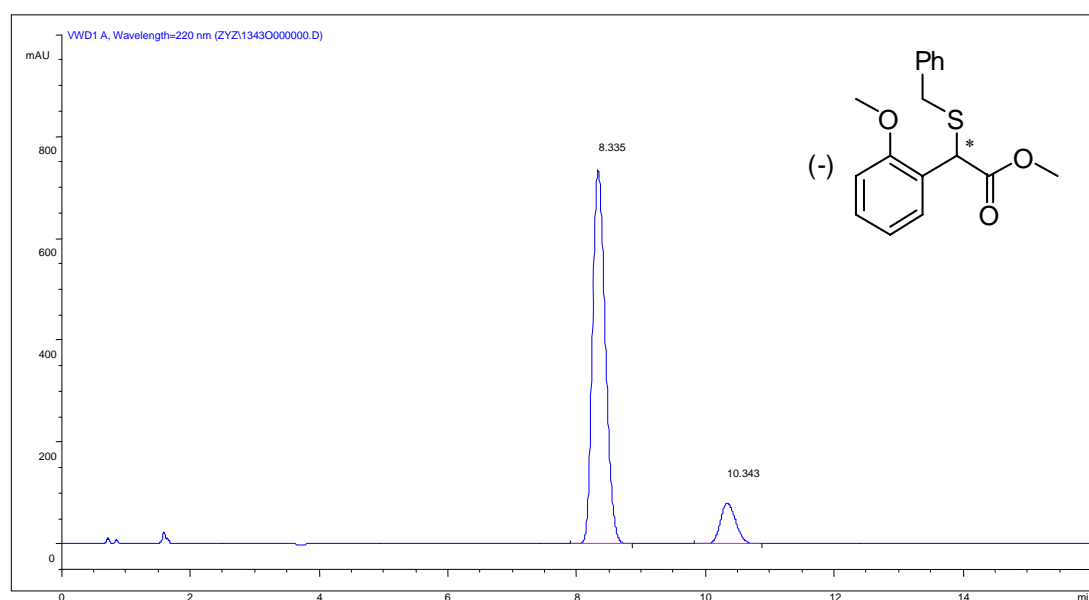
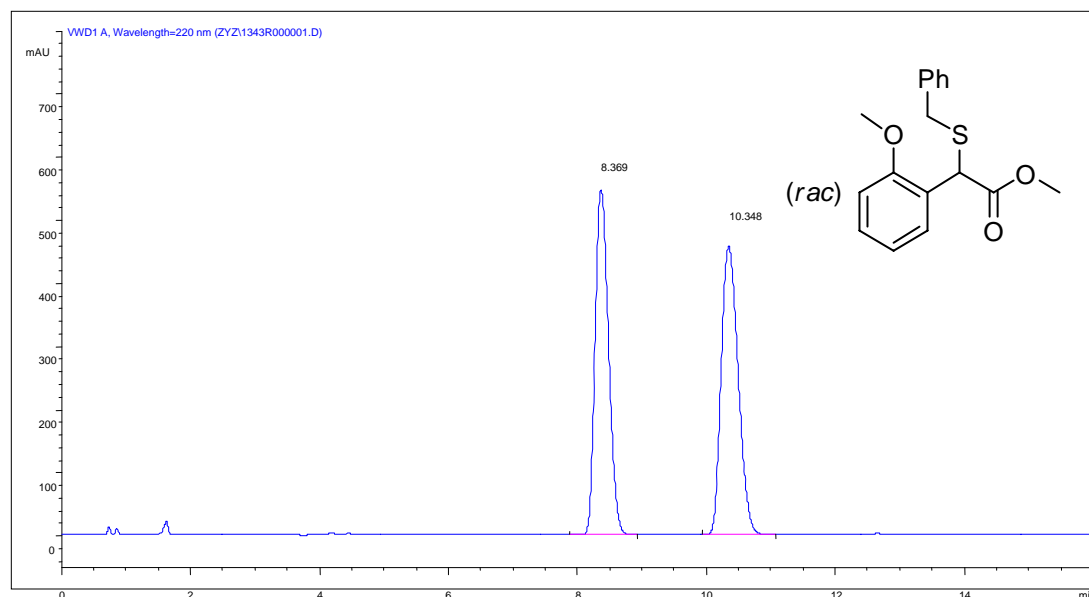
Peak #	RetTime [min]	Type	Width [min]	Area mAU	Area %
1	5.626	BB	0.1032	1830.85364	11.3029
2	6.892	BB	0.1245	1.43672e4	88.6971

(-)-Methyl 2-(benzylthio)-2-(2-chlorophenyl)acetate (3j)



	Processed Channel Descr.	RT	Area	% Area	Height
1	PDA 220.0 nm	18.651	30730602	86.68	938963
2	PDA 220.0 nm	26.863	4721589	13.32	91867

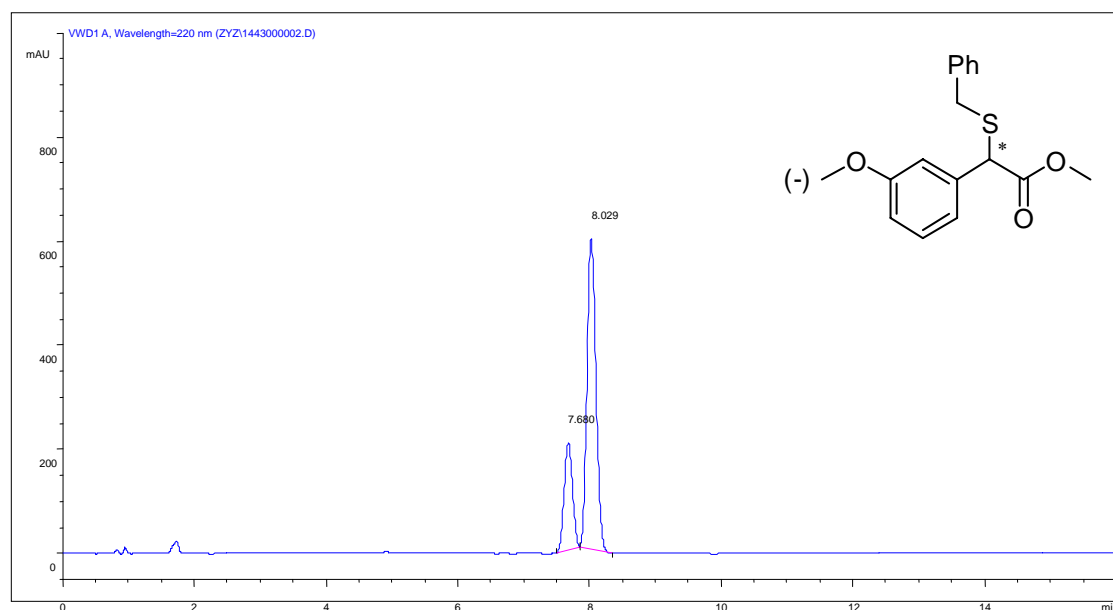
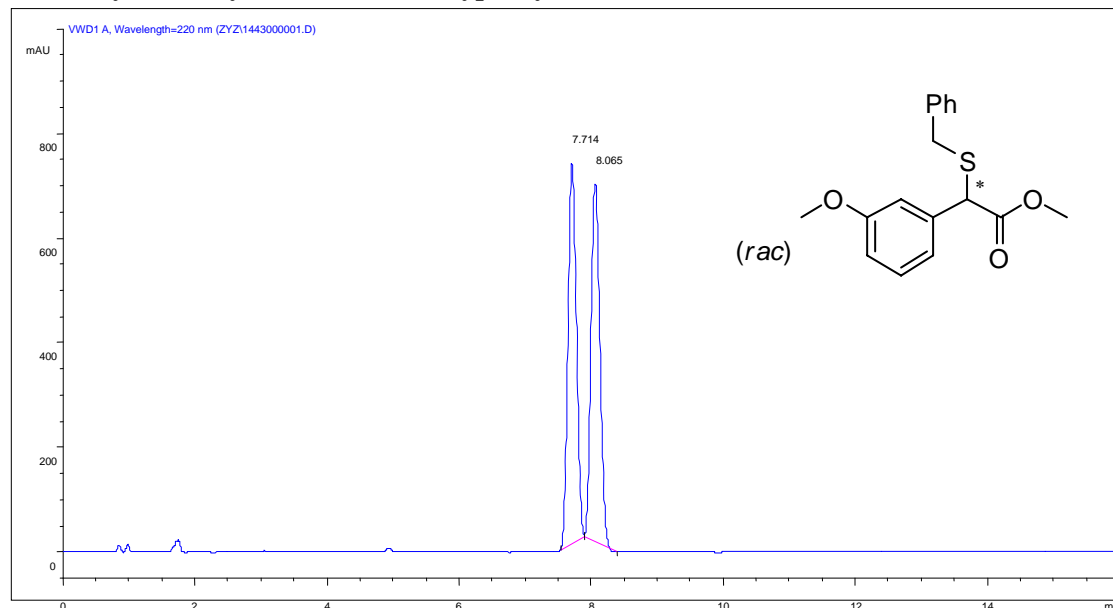
(-)-Methyl 2-(benzylthio)-2-(2-methoxyphenyl)acetate (3k)



Signal 1: VWD1 A, Wavelength=220 nm

Peak #	RetTime [min]	Type	Width [min]	Area mAU *s	Area %
1	8.335	VB	0.2190	1.01872e4	88.3502
2	10.343	VV	0.2609	1343.27637	11.6498

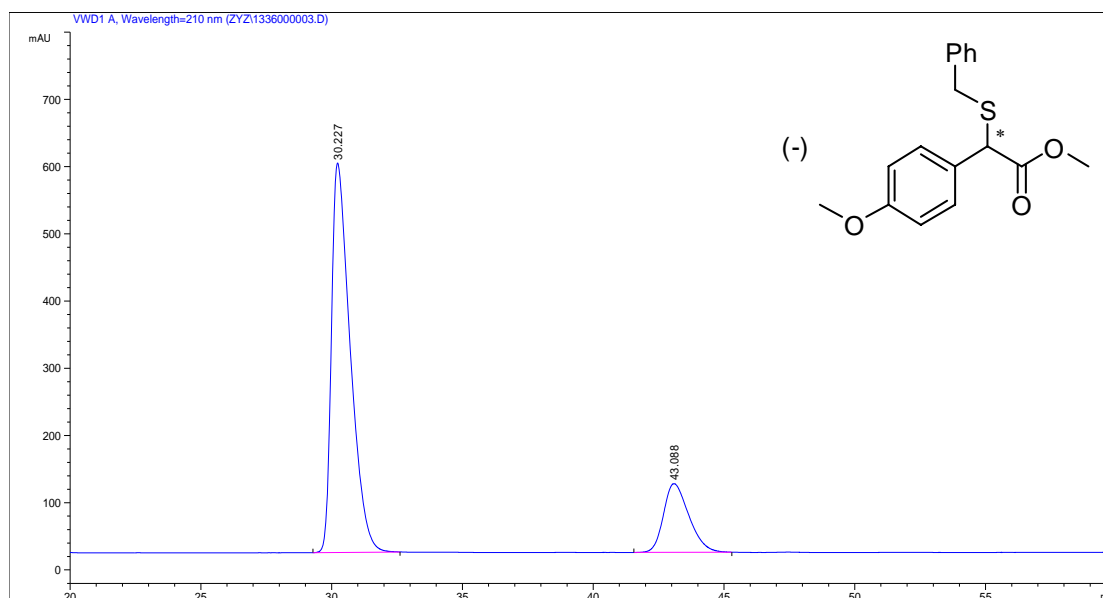
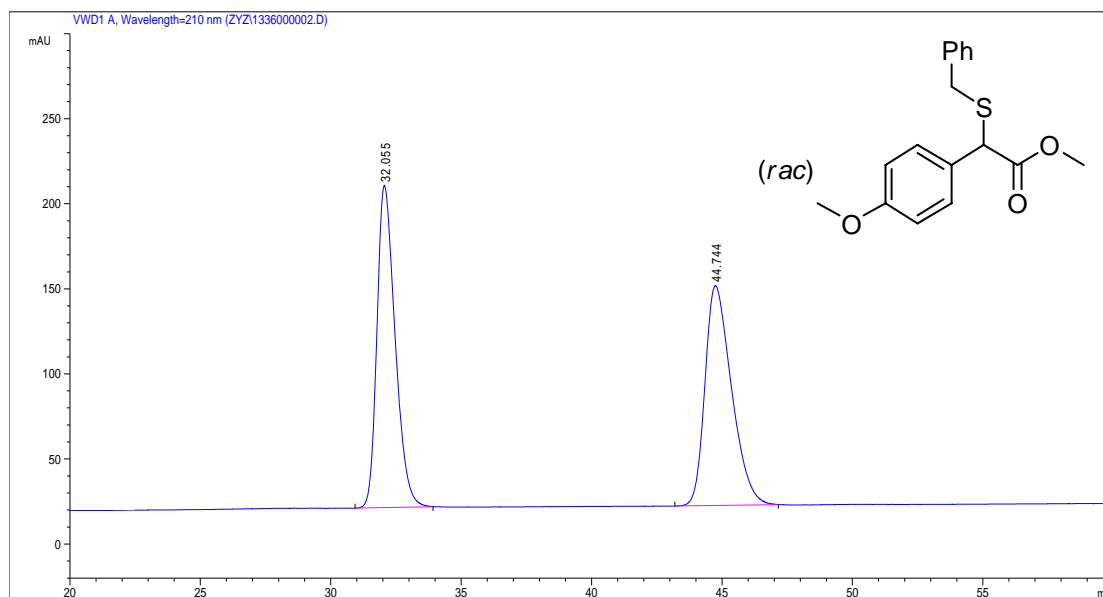
(-)-Methyl 2-(benzylthio)-2-(3-methoxyphenyl)acetate (3l)



Signal 1: VWD1 A, Wavelength=220 nm

Peak #	RetTime [min]	Type	Width [min]	Area mAU	Area %
1	7.680	BB	0.1395	1790.57605	24.1509
2	8.029	BB	0.1482	5623.53613	75.8491

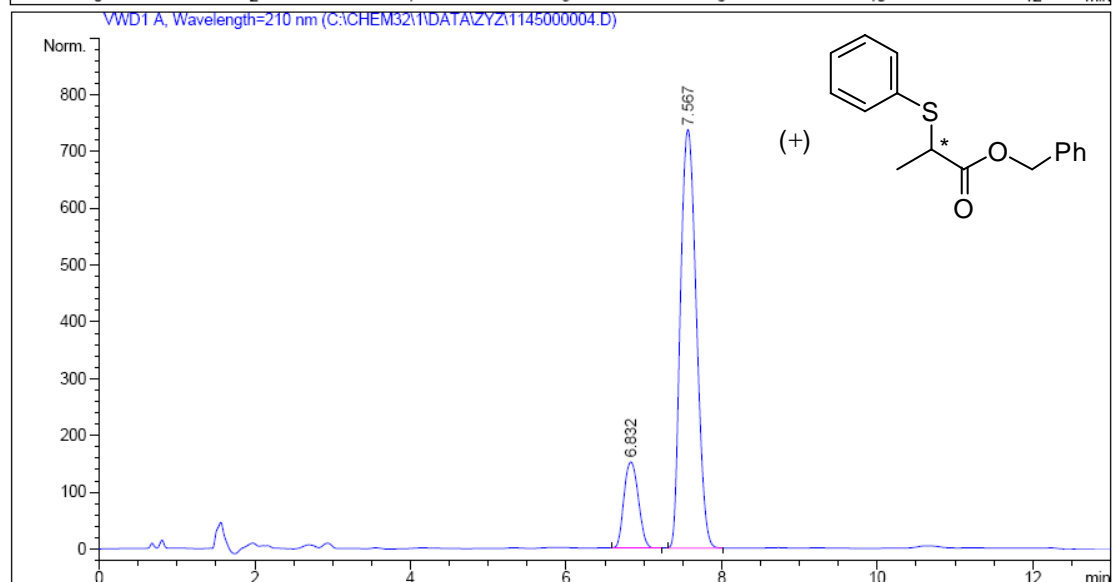
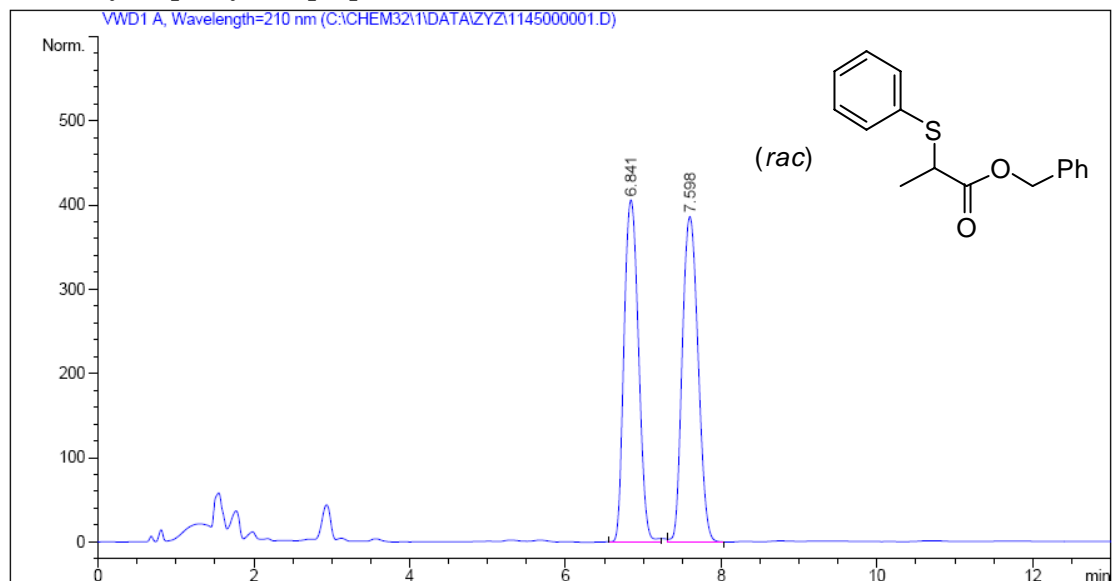
(-)-Methyl 2-(benzylthio)-2-(4-methoxyphenyl)acetate (3m)



Signal 1: VWD1 A, Wavelength=210 nm

Peak #	RetTime [min]	Type	Width [min]	Area mAU *s	Height [mAU]	Area %
1	30.227	BB	0.7478	2.88943e4	579.41577	80.7311
2	43.088	BB	1.0093	6896.48682	102.29810	19.2689

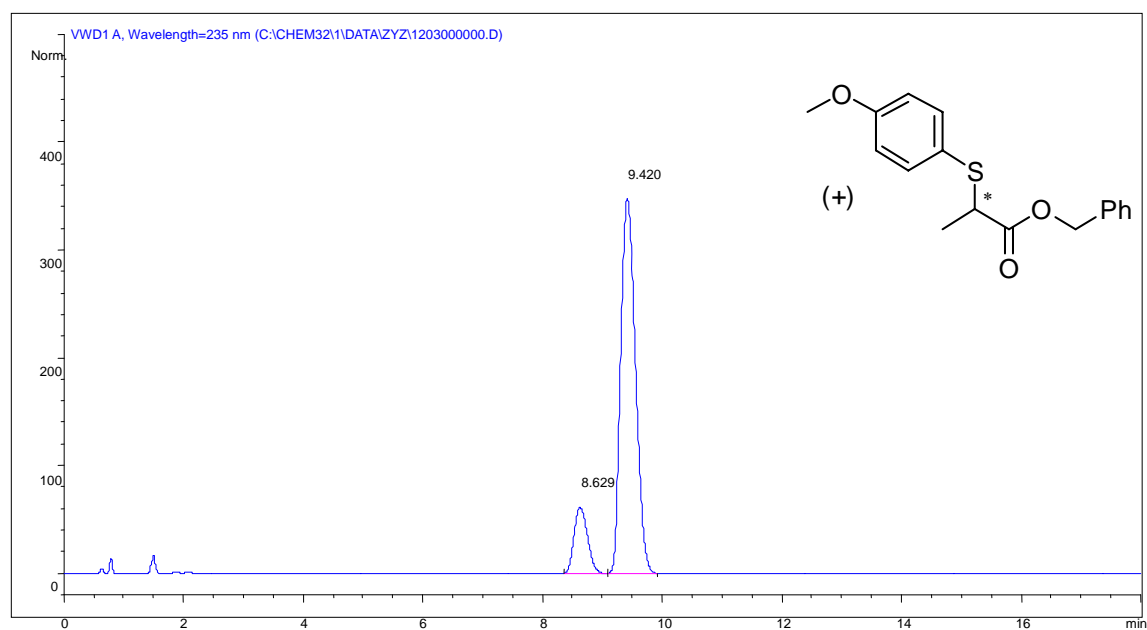
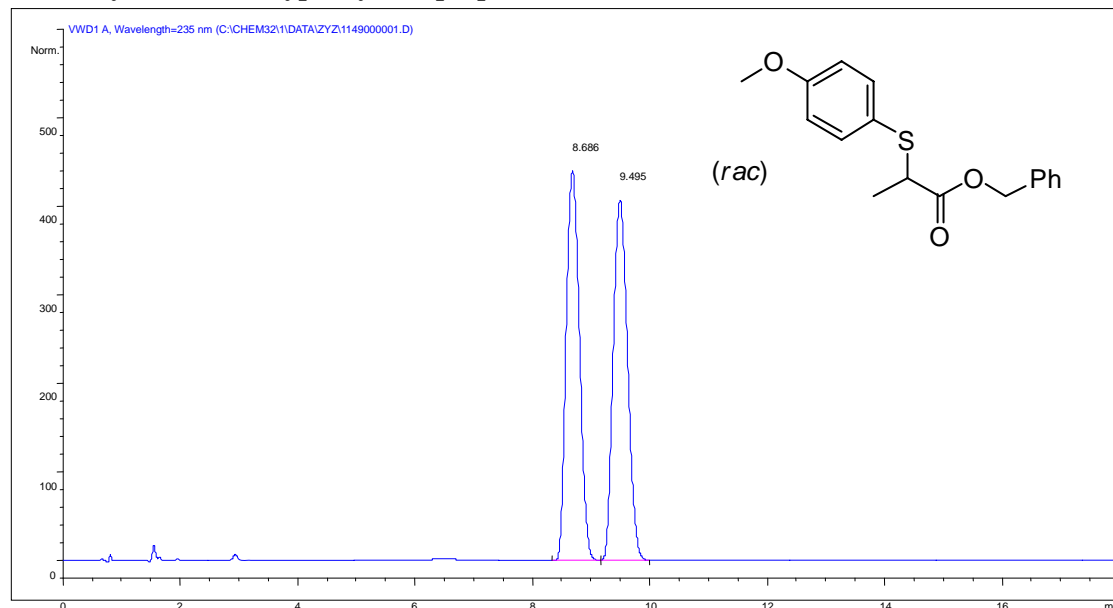
(+)-Benzyl 2-(phenylthio)propionate (3n)



Uncalibrated Peaks:

Peak #	RetTime [min]	Type	Width [min]	Area mAU	Area %
1	6.832	BB	0.2091	1937.87048	15.7010
2	7.567	BB	0.2302	1.04045e4	84.2990

(+)-benzyl 2-(4-methoxyphenylthio)propionate (3o)

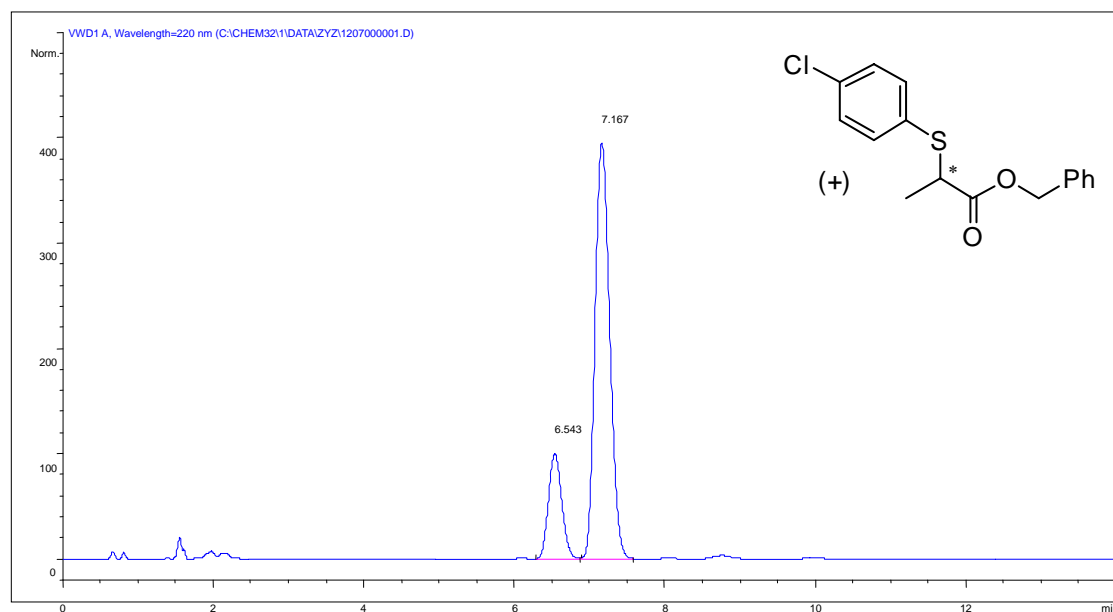
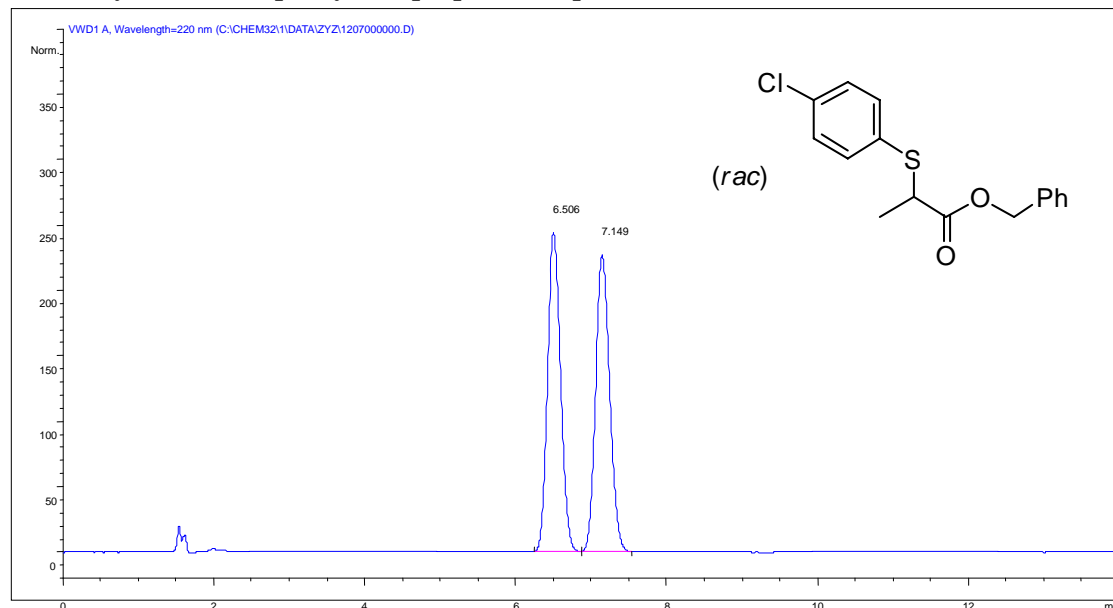


Signal 1: VWD1 A, Wavelength=235 nm

Uncalibrated Peaks:

Peak #	RetTime [min]	Type	Width [min]	Area mAU	Area %
1	8.629	BB	0.2526	960.95837	13.9023
2	9.420	BB	0.2759	5951.26123	86.0977

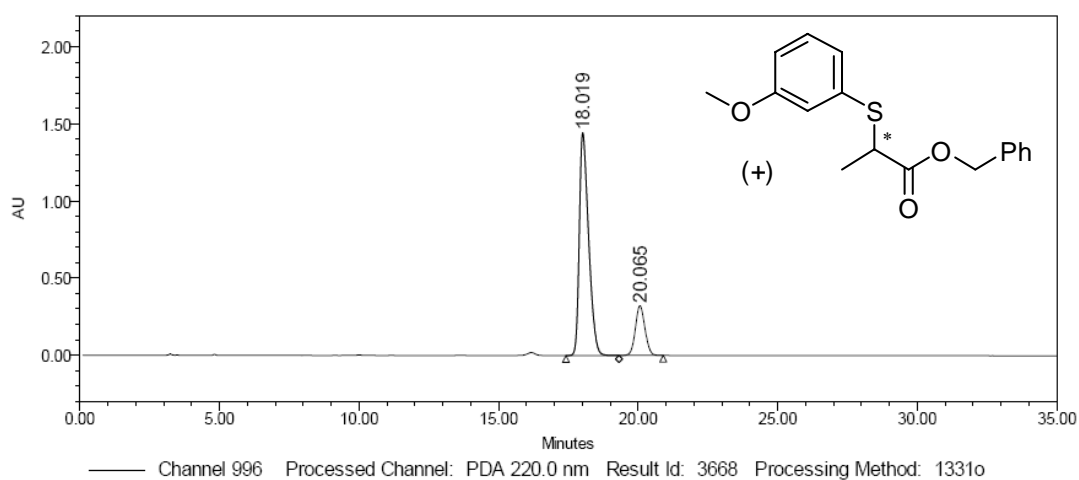
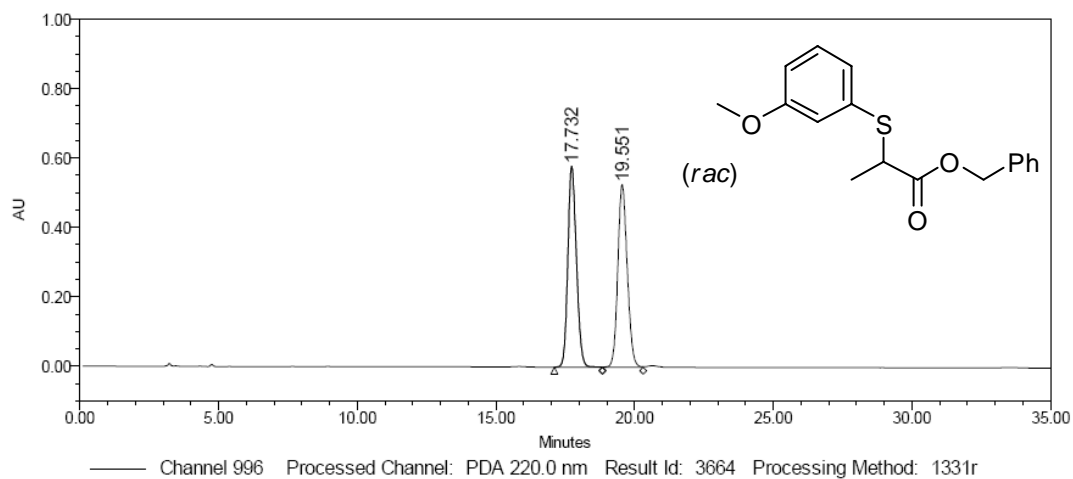
(+)-Benzyl 2-(4-chlorophenylthio)propionate (3p)



Signal 1: VWD1 A, Wavelength=220 nm

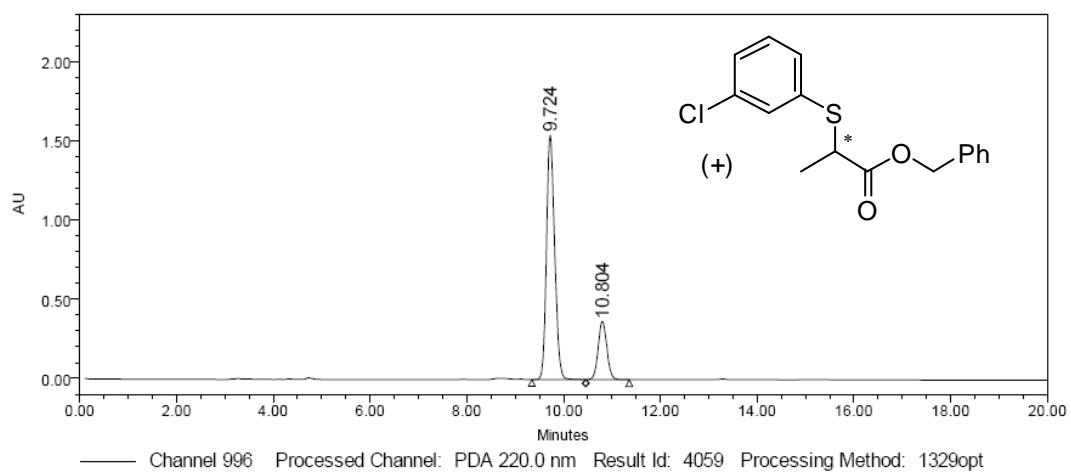
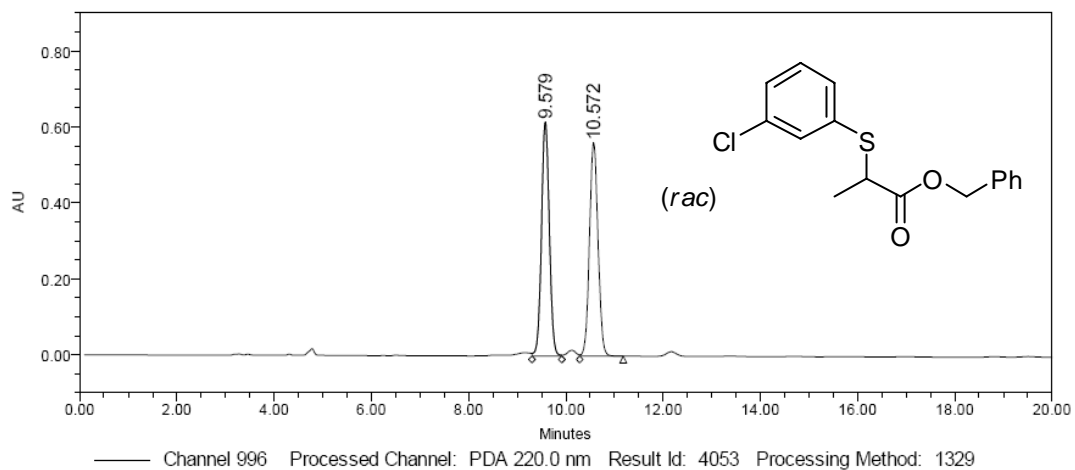
Peak #	RetTime [min]	Type	Width [min]	Area mAU	Area %
1	6.543	BB	0.1946	1236.89978	18.7225
2	7.167	BB	0.2127	5369.60156	81.2775

(+)-Benzyl 2-(3-methoxyphenylthio)propionate (3q)



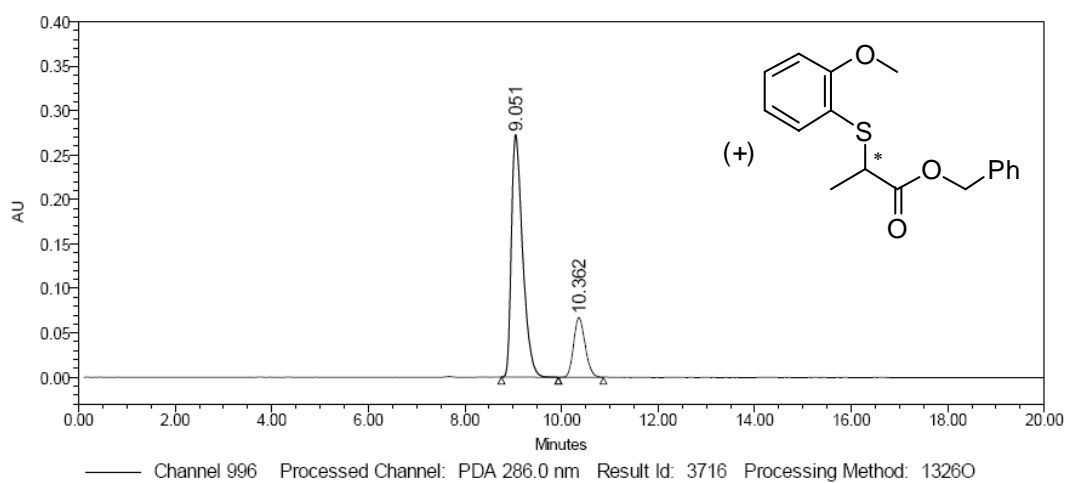
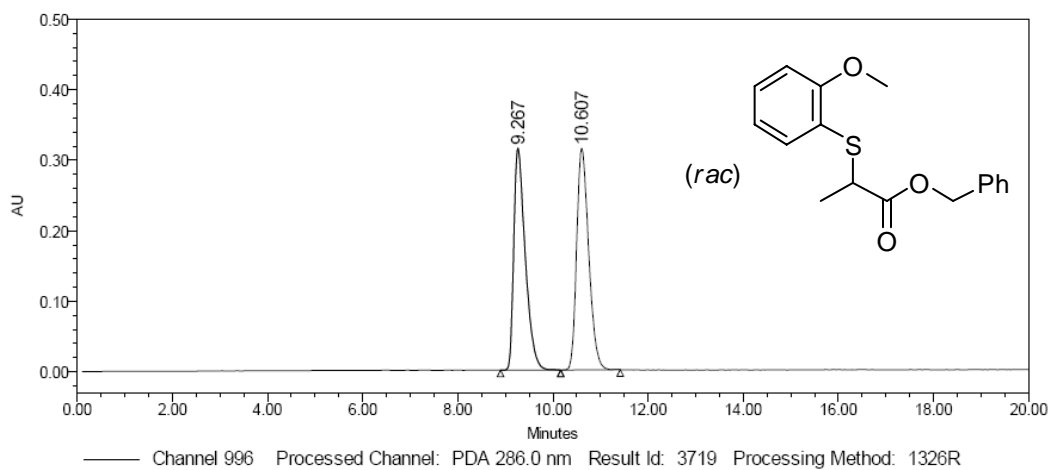
	Processed Channel Descr.	RT	Area	% Area	Height
1	PDA 220.0 nm	18.019	33407660	81.30	1444894
2	PDA 220.0 nm	20.065	7686691	18.70	322040

(+)-Benzyl 2-(3-chlorophenylthio)propionate (3r)



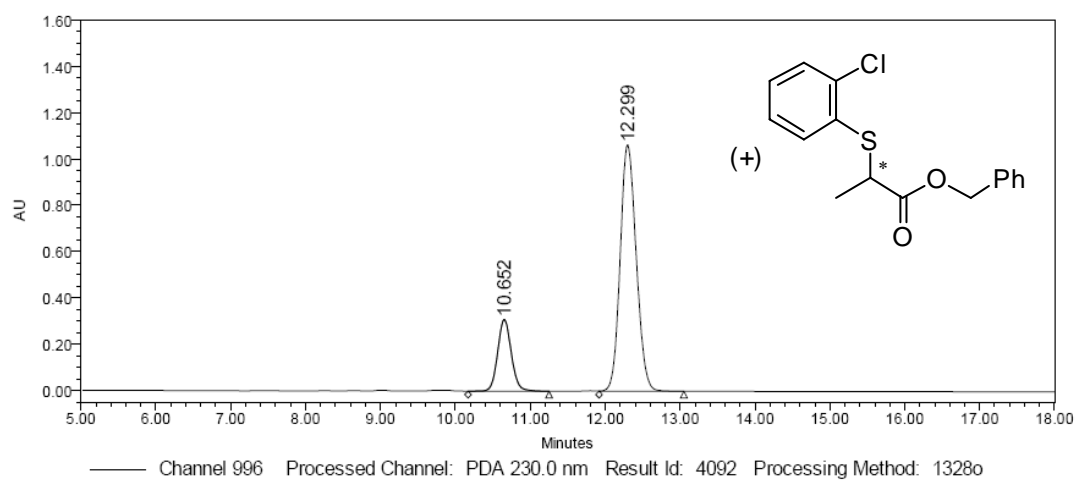
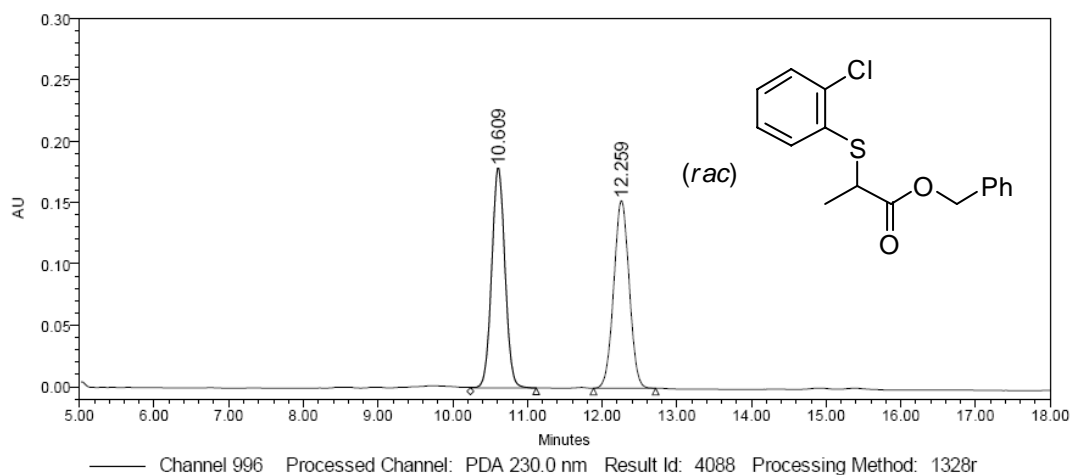
	Processed Channel Descr.	RT	Area	% Area	Height
1	PDA 220.0 nm	9.724	18086085	79.78	1541075
2	PDA 220.0 nm	10.804	4583959	20.22	367586

(+)-Benzyl 2-(2-methoxyphenylthio)propionate (3s)



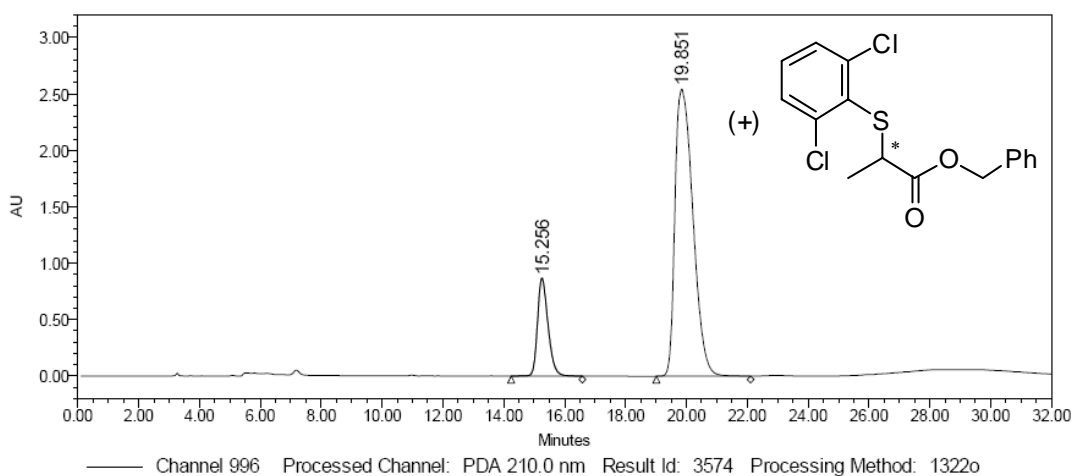
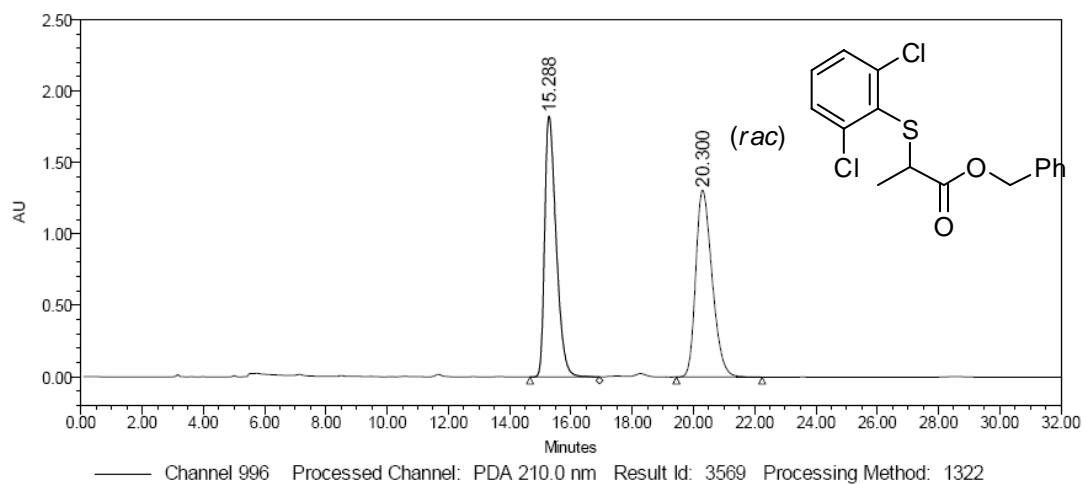
	Processed Channel Descr.	RT	Area	% Area	Height
1	PDA 286.0 nm	9.051	4409879	79.90	272965
2	PDA 286.0 nm	10.362	1109446	20.10	67157

(+)-Benzyl 2-(2-chlorophenylthio)propionate (3t)



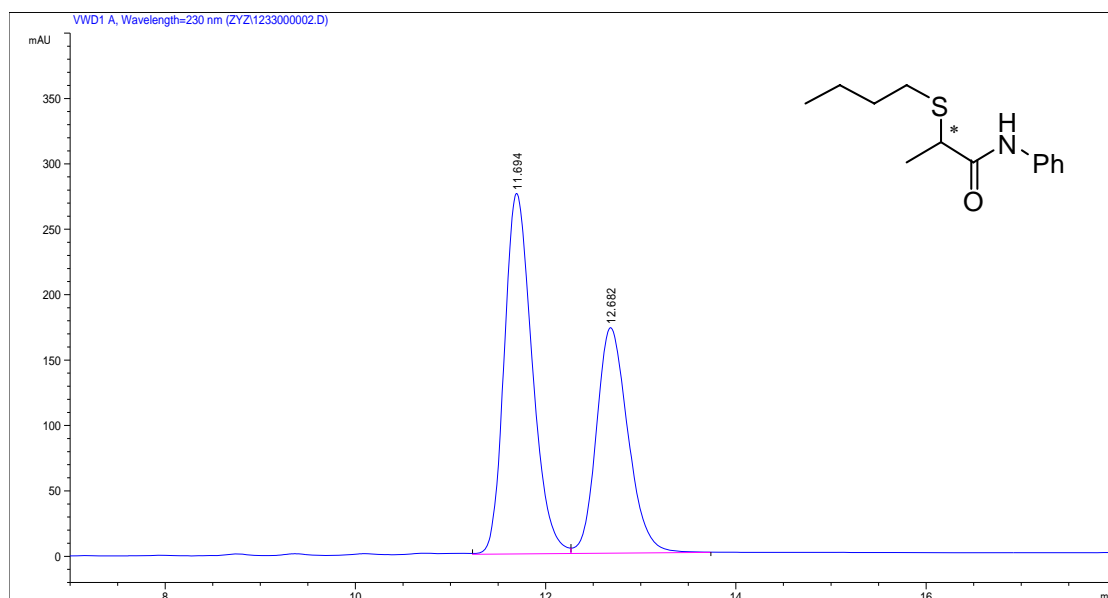
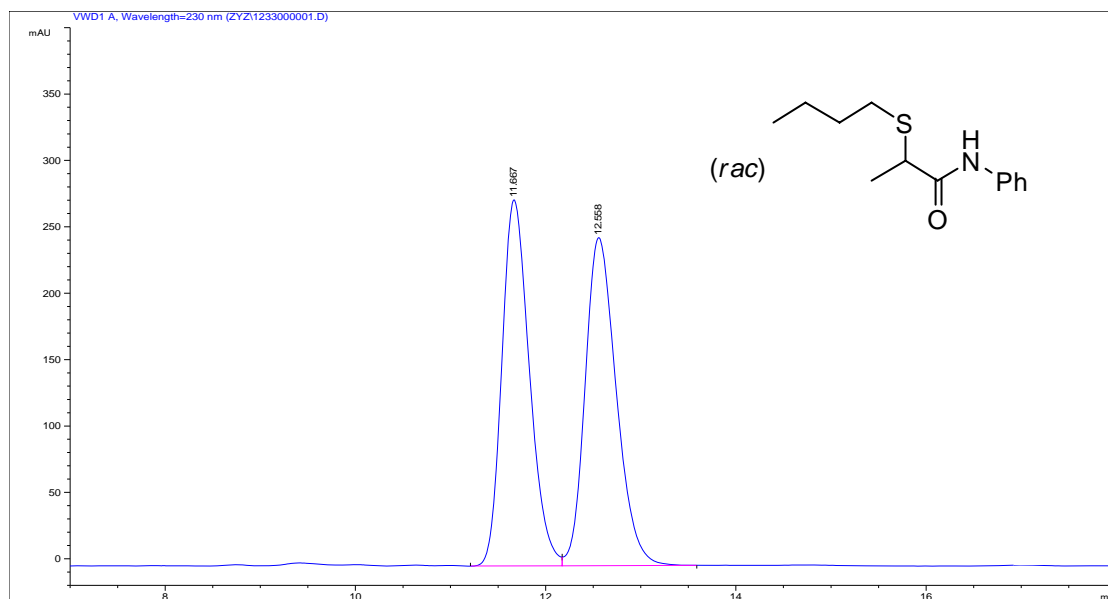
	Processed Channel Descr.	RT	Area	% Area	Height
1	PDA 230.0 nm	10.652	3892385	19.77	309703
2	PDA 230.0 nm	12.299	15794814	80.23	1063973

(+)-Benzyl 2-(2,6-dichlorophenylthio)propionate (3u)



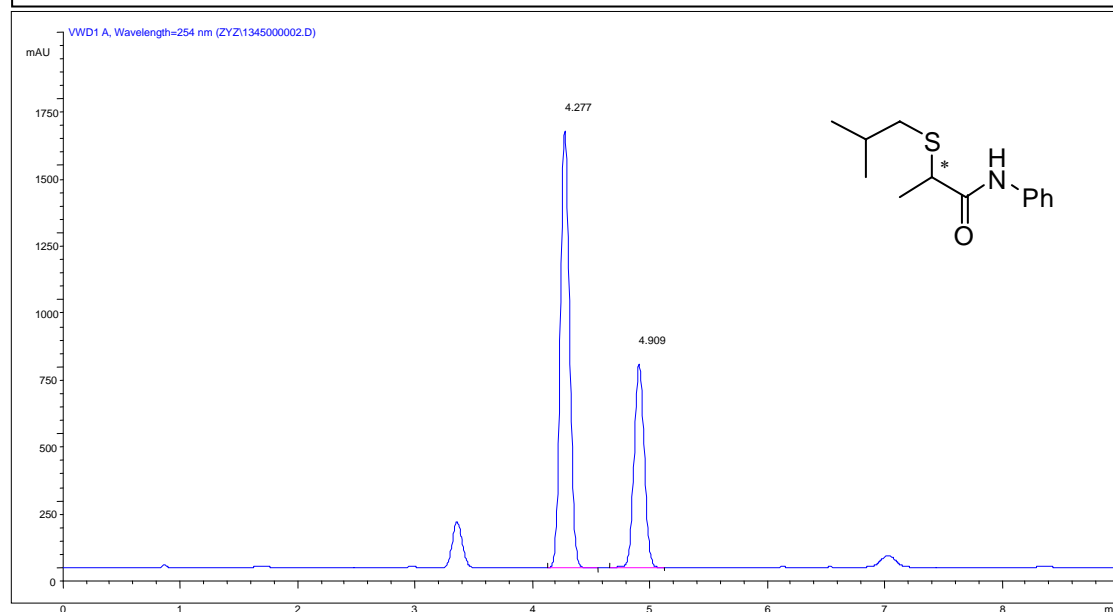
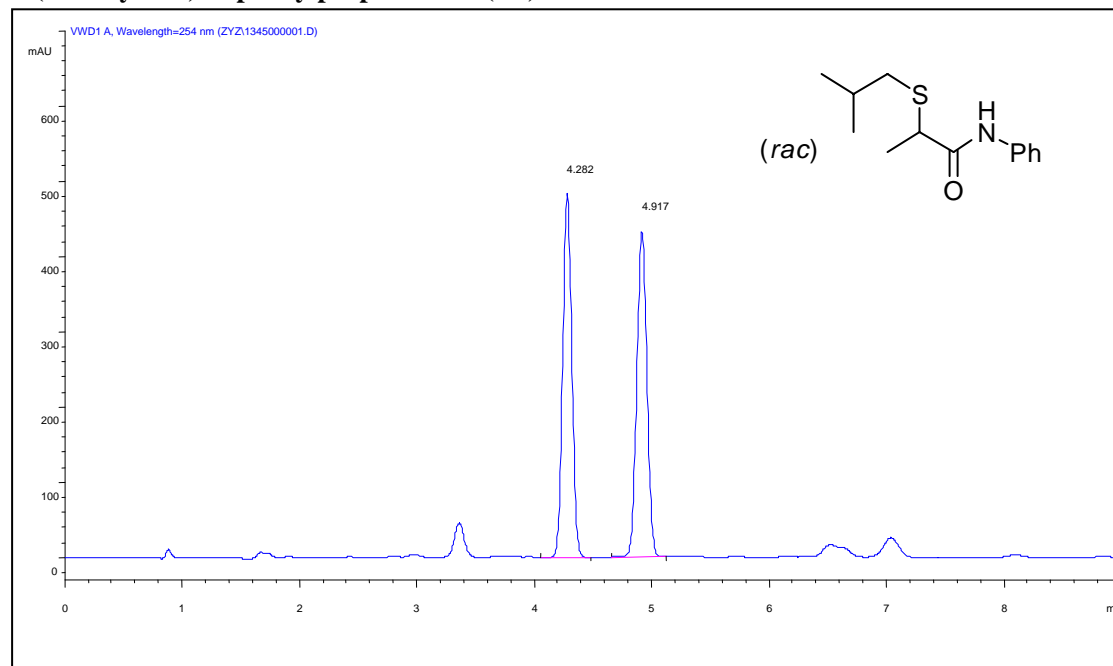
	Processed Channel Descr.	RT	Area	% Area	Height
1	PDA 210.0 nm	15.256	20908889	16.71	868938
2	PDA 210.0 nm	19.851	104247080	83.29	2542674

2-(Butylthio)-N-phenylpropanamide (3v)



Peak #	RetTime [min]	Type	Width [min]	Area mAU	Height [mAU]	Area %
1	11.694	VV	0.3149	5615.97607	275.63489	58.5500
2	12.682	VB	0.3564	3975.78467	172.42783	41.4500

2-(Isobutylthio)-N-phenylpropanamide (3w)

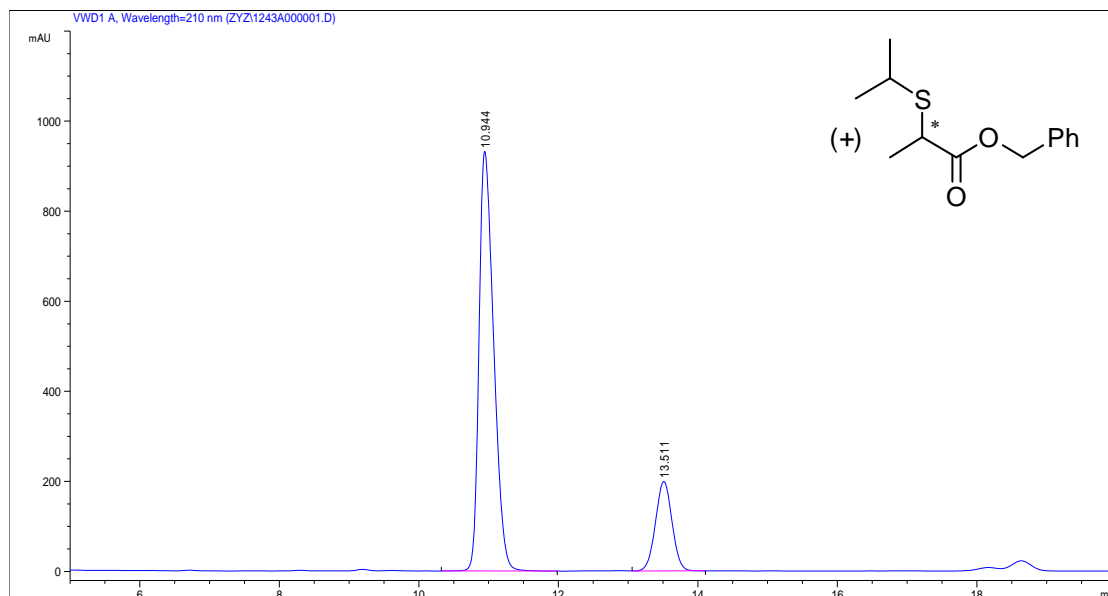
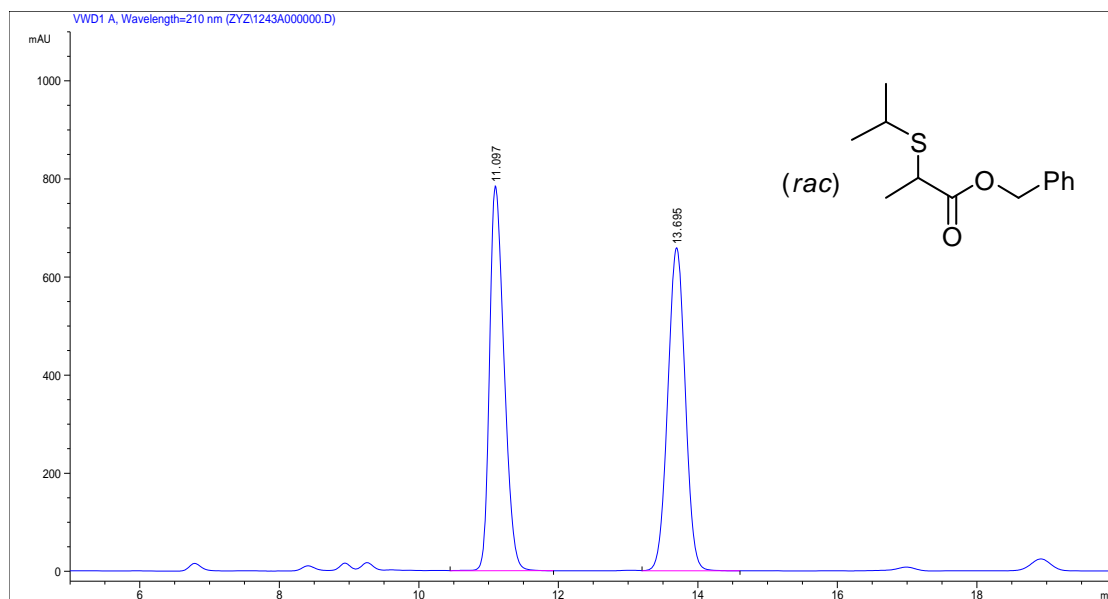


Signal 1: VWD1 A, Wavelength=254 nm

Uncalibrated Peaks:

Peak #	RetTime [min]	Type	Width [min]	Area mAU	Area %
1	4.277	BB	0.0876	8983.45703	65.9656
2	4.909	BB	0.0957	4634.93750	34.0344

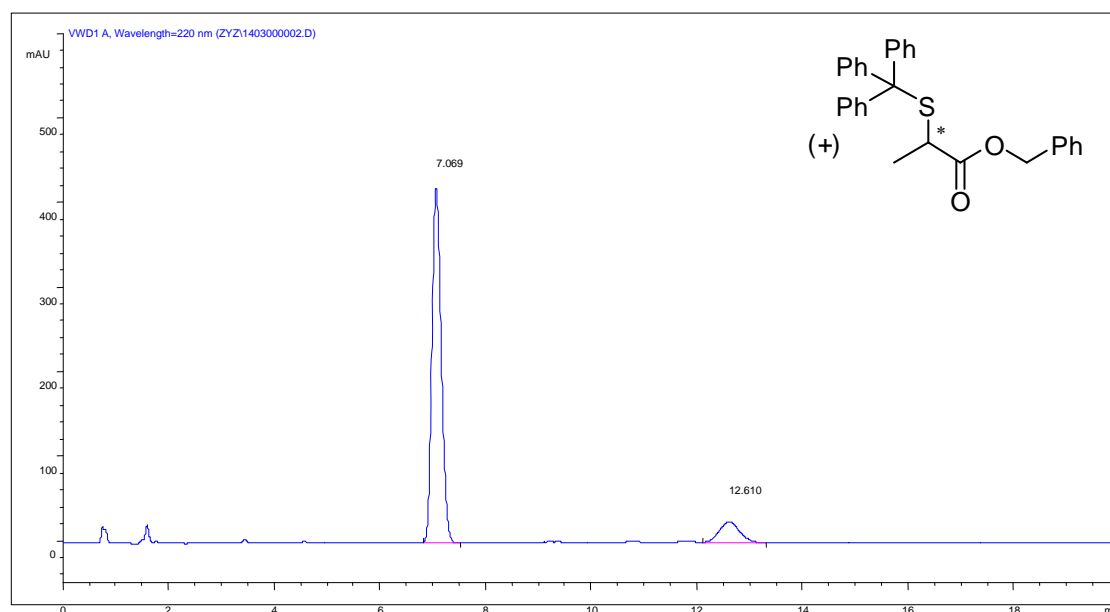
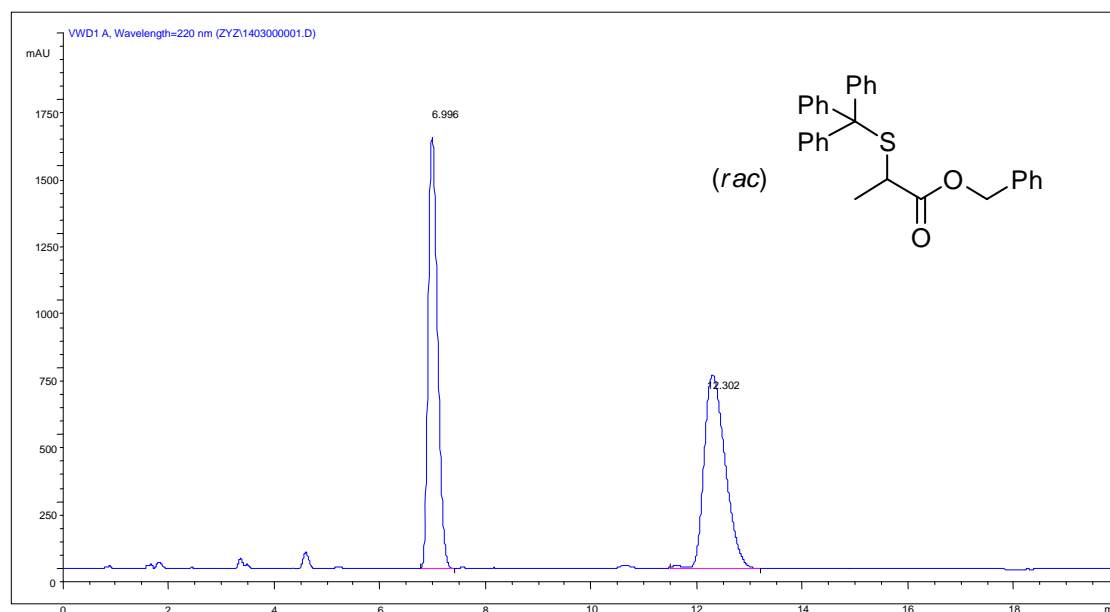
(+)-Benzyl 2-(isopropylthio)propionate (3x)



Signal 1: VWD1 A, Wavelength=210 nm

Peak #	RetTime [min]	Type	Width [min]	Area mAU *s	Height [mAU]	Area %
1	10.944	BB	0.2268	1.35780e4	931.71515	80.6082
2	13.511	VB	0.2558	3266.45288	198.72371	19.3918

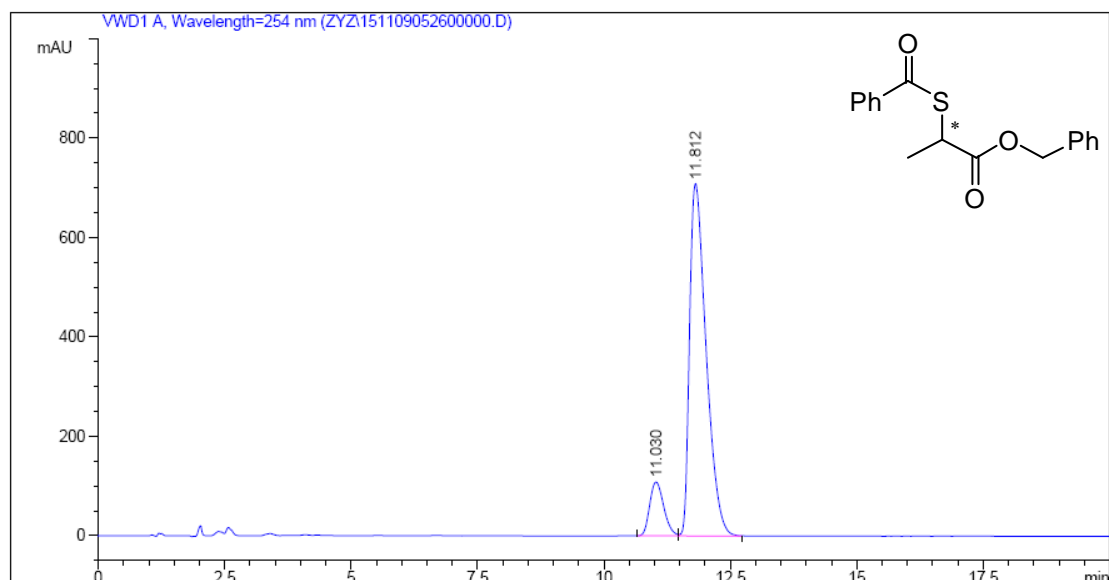
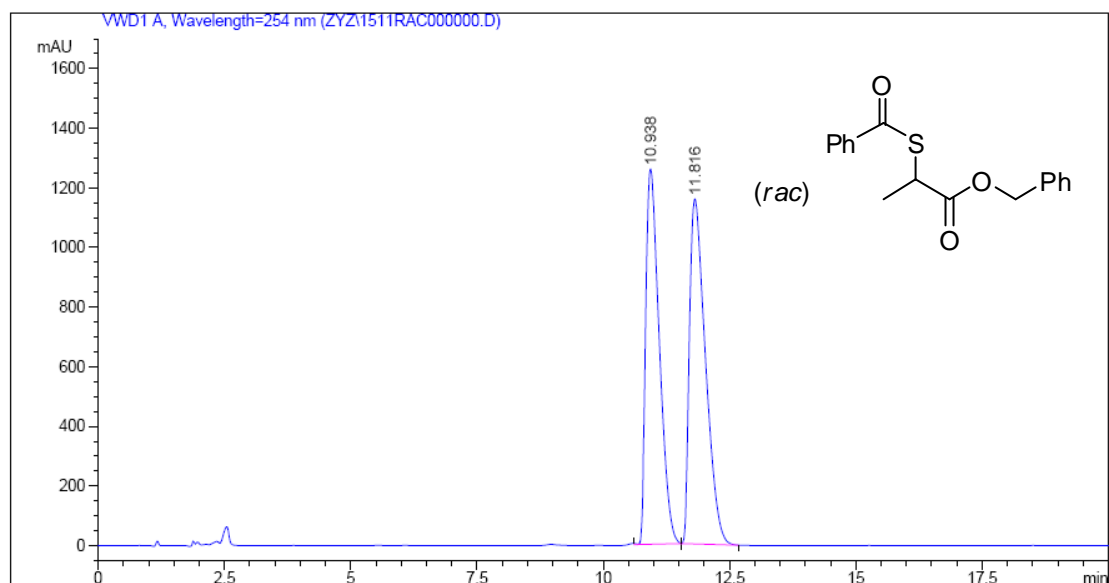
(+)-Benzyl 2-(tritylthio)propionate (3y)



Signal 1: VWD1 A, Wavelength=220 nm

Peak #	RetTime [min]	Type	Width [min]	Area mAU	Area %
1	7.069	BB	0.1905	5130.22949	88.5245
2	12.610	BB	0.4210	665.03790	11.4755

Benzyl 2-(benzoylthio)propionate



Signal 1: VWD1 A, Wavelength=254 nm

Uncalibrated Peaks:

Peak #	RetTime [min]	Type	Width [min]	Area mAU	Area %
1	11.030	BV	0.3039	2091.11401	11.4962
2	11.812	VB	0.3464	1.60984e4	88.5038