

**Supporting Information**  
**for**  
**Application of  $\beta$ -Hydroxysulfoximines in Catalytic**  
**Asymmetric Phenyl Transfer Reactions for the**  
**Synthesis of Diarylmethanols**

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**General Experimental.** The NMR spectra were recorded in CDCl<sub>3</sub> at 300 or 400 MHz (<sup>1</sup>H NMR) and 75 or 100 MHz (<sup>13</sup>C NMR) using TMS or residual solvent peaks (at 7.26 ppm for <sup>1</sup>H NMR or 77 ppm for <sup>13</sup>C NMR) as internal standard. Chemical shifts are given in ppm and spin-spin coupling constants, *J*, are listed in Hz.

**General procedure for the synthesis of  $\beta$ -hydroxysulfoximines **2**.** *N*-substituted sulfoximines were prepared according to literature procedures.<sup>1</sup> In all cases reported here, the *S*-enantiomer of the sulfoximine was used. One equiv of *n*-butyllithium (1M in hexane) was added to a stirred solution of sulfoximine **1** in ether at -78 °C, and the reaction mixture was allowed to warm to 0 °C. The resulting suspension was stirred at this temperature for 0.5 h. Then the carbonyl compound (1.10 equiv in ether) was added slowly. The reaction mixture was stirred at ambient temperature over night and then quenched with water. After stirring for 0.5 h, the phases were separated and the ether phase was extracted with aqueous 3N HCl. The organic phase was washed with brine, dried over MgSO<sub>4</sub>, and concentrated in vacuo to yield the products, which were purified by column chromatography (EtOAc-pentane). In most cases a separation of the diastereomeric mixture was possible either by fractional crystallization or chromatography on silica gel.

**General procedure for the phenyl transfer onto aldehydes.** In a glovebox a 10 mL vial was charged with diphenylzinc (35.5 mg, 0.16 mmol). The vial was sealed with a septum and removed from the glovebox. Freshly distilled toluene was added (1.25 mL). After the addition of ZnEt<sub>2</sub> (1 M in heptane, 0.33 mL, 0.33 mmol), the mixture was stirred for 30 min at room temperature. Another vial was charged with  $\beta$ -hydroxysulfoximine **2** (10 mol %, 0.025 mmol), sealed with a septum, and flushed with argon. Toluene (1.0 mL) was added to dissolve **2** and the solution was transferred via syringe into the first vial. The resulting mixture was stirred for 0.5 h at room temperature, then cooled to 10 °C and stirred for an additional 10 min at this temperature. A third vial was charged with aldehyde **3** (0.25 mmol), closed with a septum, flushed with argon, and the substrate was dissolved in toluene (1.0 mL). After cooling to 10 °C the solution was transferred via syringe into the other reaction vial. The resulting mixture was stirred for 12-16 h at 10 °C. Then the reaction was quenched with water and the mixture extracted with dichloromethane. The organic layer was washed with water, dried over MgSO<sub>4</sub>, filtered, and the solvent was removed under reduced pressure. The product was purified by column chromatography to give the desired alcohol **4**.

**Synthesis of (S)-2-methyl-1-(S-phenylsulfonimidoyl)propan-2-ol (2ac):** Prepared according to the general procedure; 71% yield as a white solid. R<sub>f</sub> (pentane:EtOAc-1:1) = 0.34; <sup>1</sup>H NMR (CDCl<sub>3</sub>, 400 MHz):  $\delta$  1.28 (s, 3H), 1.61 (s, 3H), 3.14 (d, *J* = 14.1 Hz, 1H), 3.37 (d, *J* = 14.1 Hz, 1H), 7.59 (m, 3H), 7.97 (m, 2H); <sup>13</sup>C NMR (CDCl<sub>3</sub>, 100 MHz):  $\delta$  28.8, 30.8, 65.9, 70.2, 127.8, 129.4, 133.3, 144.3; mp: 103-106 °C; IR (KBr)  $\nu$ : 3414, 3290, 2962, 2909, 1474, 1451, 1370, 1220, 1171, 1130, 768, 715, 689, 591, 518, 491 cm<sup>-1</sup>; MS (EI, 70 eV): *m/z* 214 ([M+1]<sup>+</sup>, 10%), 198 (58%), 155 (72%), 142 (56%), 140 (63%), 125 (72%), 91 (100%), 77 (57%); Anal. calcd for C<sub>10</sub>H<sub>15</sub>NO<sub>2</sub>S: C, 56.31; H, 7.09; N, 6.57. Found: C, 56.47; H, 7.09; N, 6.57; [ $\alpha$ ]<sub>D</sub><sup>25</sup> -4.2 (*c* = 0.83, CHCl<sub>3</sub>).

**Synthesis of (S)-1-[(N-methyl-S-phenylsulfonimidoyl)methyl]cycloheptanol (2ca):** Prepared according to the general procedure; 80% yield as a colorless oil. R<sub>f</sub> (pentane:EtOAc-2:1) = 0.58; <sup>1</sup>H NMR (CDCl<sub>3</sub>, 400 MHz):  $\delta$  1.22 (m, 1H), 1.35-1.80 (m, 9H), 2.05 (m, 1H), 2.40 (dd, *J* = 14.5, 8.3 Hz, 1H), 2.61 (s, 3H), 3.12 (d, *J* = 13.8 Hz, 1H), 3.28 (d, *J* = 13.8 Hz, 1H), 7.59 (m, 3H), 7.87 (m, 2H); <sup>13</sup>C NMR (CDCl<sub>3</sub>, 100 MHz):  $\delta$  21.9, 22.2, 29.0, 29.9, 30.0, 39.9, 42.8, 65.8, 75.9, 128.9, 129.5, 133.0, 139.0; IR (KBr)  $\nu$ : 3276, 2932, 2857, 2796, 1442, 1233, 1153, 1121, 1077, 1045, 879, 805, 742, 619, 512 cm<sup>-1</sup>; MS (EI, 70 eV): *m/z* 282 ([M+1]<sup>+</sup>, 5%), 224 (14%), 156 (92%), 140 (43%), 125 (100%), 107 (33%), 91 (16%); Anal. calcd for C<sub>15</sub>H<sub>23</sub>NO<sub>2</sub>S: C, 64.02; H, 8.24; N, 4.98. Found: C, 63.90; H, 8.19; N, 4.89; [ $\alpha$ ]<sub>D</sub><sup>25</sup> 42.0 (*c* = 1.32, CHCl<sub>3</sub>).

**Synthesis of (S)-2-(N-methyl-S-phenylsulfonimidoyl)-1,1-diphenylethanol (2cb):** Prepared according to the general procedure; 79% yield as a yellow solid. R<sub>f</sub> (pentane:EtOAc-1:1) = 0.47; <sup>1</sup>H NMR (CDCl<sub>3</sub>, 400 MHz):  $\delta$  2.59 (s, 3H), 4.02 (bs, 2H), 7.09 (m, 3H), 7.18 (t, *J* = 7.2 Hz, 1H), 7.28 (m, 6H), 7.46 (m, 5H), 8.17 (bs, OH); <sup>13</sup>C NMR (CDCl<sub>3</sub>, 100 MHz):  $\delta$  29.1, 64.4, 76.4, 125.9, 126.1, 127.1, 127.3, 128.0, 128.1, 129.0, 129.3, 132.7, 138.1, 144.6, 144.9; mp: 89-90 °C; IR (KBr)  $\nu$ :

2914, 2875, 1658, 1582, 1490, 1449, 1279, 1226, 1143, 1110, 1075, 995, 872, 790, 746, 694, 601, 509  $\text{cm}^{-1}$ ; MS (EI, 70 eV):  $m/z$  352 ([M], 1%), 232 (19%), 231 (55%), 125 (10%), 107 (24%), 106 (100%), 105 (51%); Anal. calcd for  $\text{C}_{21}\text{H}_{21}\text{NO}_2\text{S}$ : C, 71.76; H, 6.02; N, 3.99. Found C, 71.40; H, 6.06; N, 3.91;  $[\alpha]_{\text{D}}^{25}$   $-17.4$  ( $c = 1.05$ ,  $\text{CHCl}_3$ ).

**Synthesis of (*S*)-2-methyl-1-(*N*-methyl-*S*-phenylsulfonimidoyl)propan-2-ol (2cc):**

Prepared according to the general procedure; 71% yield as a colorless oil.  $R_f$  (pentane:EtOAc-1:1) = 0.61;  $^1\text{H}$  NMR ( $\text{CDCl}_3$ , 400 MHz):  $\delta$  1.24 (s, 3H), 1.65 (s, 3H), 2.63 (s, 3H), 3.05 (d,  $J = 13.9$  Hz, 1H), 3.37 (d,  $J = 13.9$  Hz, 1H), 7.61 (m, 3H), 7.89 (m, 2H);  $^{13}\text{C}$  NMR ( $\text{CDCl}_3$ , 100 MHz):  $\delta$  28.6, 28.9, 31.2, 65.6, 70.2, 129.0, 129.6, 133.2, 139.0; IR (kap.)  $\nu$ : 3936, 3894, 3870, 3707, 3597, 3548, 3384, 3314, 3270, 2976, 2925, 2878, 2805, 2128, 1720, 1237, 1147, 975, 608, 520  $\text{cm}^{-1}$ ; MS (EI, 70 eV):  $m/z$  227 ([M], 18%), 212 (64%), 169 (26%), 154 (65%), 140 (87%), 132 (43%), 125 (100%), 106 (60%); Anal. calcd for  $\text{C}_{11}\text{H}_{17}\text{NO}_2\text{S}$ : C, 58.12; H, 7.54; N, 6.16. Found C, 57.95; H, 7.44; N, 6.54;  $[\alpha]_{\text{D}}^{25}$  93.8 ( $c = 1.39$ ,  $\text{CHCl}_3$ ).

**Synthesis of (*SS,R*)-3-methyl-1-(*N*-methyl-*S*-phenylsulfonimidoyl)-2-phenylbutan-2-ol (2cd):**

Prepared according to the general procedure; 51% yield as a white solid; the relative configuration was determined by  $^1\text{H}$  NMR spectroscopy.  $R_f$  (pentane:EtOAc-1:1) = 0.83;  $^1\text{H}$  NMR ( $\text{CDCl}_3$ , 400 MHz):  $\delta$  0.66 (d,  $J = 6.8$  Hz, 3H), 0.96 (d,  $J = 6.7$  Hz, 3H), 1.92 (m, 1H), 2.65 (s, 3H), 3.65 (d,  $J = 14.6$  Hz, 1H), 3.79 (d,  $J = 14.5$  Hz, 1H), 6.98-7.18 (m, 9H), 7.35 (m, 1H);  $^{13}\text{C}$  NMR ( $\text{CDCl}_3$ , 100 MHz):  $\delta$  16.8, 17.1, 28.9, 39.8, 63.5, 76.1, 126.2, 126.5, 127.4, 128.8, 128.9, 132.1, 137.6, 142.5; mp: 86-89  $^{\circ}\text{C}$ ; IR (KBr)  $\nu$ : 3487, 2968, 2929, 2874, 1449, 1389, 1229, 1148, 1075, 993, 868, 770, 689, 571, 524  $\text{cm}^{-1}$ ; MS (EI, 70 eV):  $m/z$  318 ( $[\text{M}+1]^+$ , 2%), 274 (33%), 231 (57%), 154 (33%), 125 (30%), 106 (100%), 91 (20%); Anal. calcd for  $\text{C}_{18}\text{H}_{23}\text{NO}_2\text{S}$ : C, 68.10; H, 7.30; N, 4.41. Found C, 68.14; H, 7.43; N, 4.38;  $[\alpha]_{\text{D}}^{25}$  60.3 ( $c = 0.68$ ,  $\text{CHCl}_3$ ).

**Synthesis of (*SS,S*)-3-methyl-1-(*N*-methyl-*S*-phenylsulfonimidoyl)-2-phenylbutan-2-ol [(*dia*)-2cd]:**

Prepared according to the general procedure; 25% yield as a white solid; the relative configuration was determined by  $^1\text{H}$  NMR spectroscopy of the diastereomeric compound.  $^1\text{H}$  NMR ( $\text{CDCl}_3$ , 300 MHz):  $\delta$  0.64 (d,  $J = 4.5$ , 1H), 0.96 (d,  $J = 4.50$  Hz, 1H), 1.87 (m, 1H), 2.48 (s, 3H), 3.65 (d,  $J = 14.1$  Hz, 1H), 3.78 (d,  $J = 14.1$  Hz, 1H), 6.67 (bs, 1H), 7.20 (m, 3H), 7.33 (m, 2H), 7.43 (m, 2H), 7.52 (m, 1H), 7.60 (m, 2H);  $^{13}\text{C}$  NMR ( $\text{CDCl}_3$ , 100 MHz):  $\delta$  16.5, 16.6, 28.9, 39.9, 62.8, 76.6, 126.4, 126.7, 127.4, 128.9, 129.4, 132.6, 138.6, 142.6; mp: 64-66  $^{\circ}\text{C}$ ; IR (KBr)  $\nu$ : 3487, 2968, 2929, 2874, 1449, 1389, 1229, 1148, 1075, 993, 868, 770, 689, 571, 524  $\text{cm}^{-1}$ ; MS (EI, 70 eV):  $m/z$  318 ( $[\text{M}+1]^+$ , 2%), 274 (33%), 231 (57%), 154 (33%), 125 (30%), 106 (100%), 91 (20%); Anal. calcd for  $\text{C}_{18}\text{H}_{23}\text{NO}_2\text{S}$ : C, 68.10; H, 7.30; N, 4.41. Found C, 67.87; H, 6.94; N, 4.37;  $[\alpha]_{\text{D}}^{25}$  47.5 ( $c = 1.30$ ,  $\text{CHCl}_3$ ).

**Synthesis of (*SS,S/R*)-1-(4-chlorophenyl)-2-(*N*-methyl-*S*-phenylsulfonimidoyl)ethanol (2ce):**

Prepared according to the general procedure; 75% yield as a white solid; the relative configuration was not determined.  $R_f$  (pentane:EtOAc-1:1) = 0.61;  $^1\text{H}$  NMR ( $\text{CDCl}_3$ , 300 MHz):  $\delta$  2.68 (s, 3H), 3.03 (dd,  $J = 13.5, 1.3$  Hz, 1H), 3.40 (dd,

$J = 13.5, 10.6$  Hz, 1H), 5.56 (bd, 1H), 6.50 (bs, 1H), 7.30 (m, 4H), 7.60 (m, 3H), 7.89 (m, 2H);  $^{13}\text{C}$  NMR ( $\text{CDCl}_3$ , 75 MHz):  $\delta$  29.0, 63.6, 67.4, 127.3, 128.8, 129.2, 129.8, 133.5, 133.7, 137.7, 139.9; mp: 107-109 °C; IR (KBr)  $\nu$ : 3254, 2936, 2870, 1491, 1446, 1404, 1230, 1148, 1109, 1083, 1062, 991, 882, 747, 714, 680, 502  $\text{cm}^{-1}$ ; MS (EI, 70 eV):  $m/z$  310 ([M], 1%), 265 (18%), 168 (11%), 166 (36%), 156 (42%), 154 (25%), 140 (54%), 131 (58%), 125 (100%); Anal. calcd for  $\text{C}_{15}\text{H}_{16}\text{ClNO}_2\text{S}$ : C, 58.15; H, 5.21; N, 4.52. Found C, 58.08; H, 5.32; N, 4.46;  $[\alpha]_{\text{D}}^{25}$  5.6 ( $c = 1.08$ ,  $\text{CHCl}_3$ ).

**Synthesis of (SS,S/R)-2,3,3-trimethyl-1-(N-methyl-S-phenylsulfonimidoyl)butan-2-ol (2cf):** Prepared according to the general procedure; 67% yield as a white solid; the relative configuration was not determined.  $R_f$  (pentane:EtOAc-2:1) = 0.75;  $^1\text{H}$  NMR ( $\text{CDCl}_3$ , 300 MHz):  $\delta$  0.92 (s, 9H), 1.67 (s, 3H), 2.61 (s, 3H), 3.03 (d,  $J = 13.5$  Hz, 1H), 3.38 (d,  $J = 13.6$  Hz, 1H), 6.71 (bs, 1H), 7.61 (m, 3H), 7.89 (m, 2H);  $^{13}\text{C}$  NMR ( $\text{CDCl}_3$ , 75 MHz):  $\delta$  21.7, 24.8, 28.8, 38.8, 61.3, 76.3, 128.9, 129.6, 133.0, 139.3; mp: 113-115 °C; IR (KBr)  $\nu$ : 3299, 2970, 2906, 2864, 1450, 1404, 1374, 1234, 1150, 1103, 1078, 939, 873, 776, 742, 596  $\text{cm}^{-1}$ ; MS (EI, 70 eV):  $m/z$  270 ( $[\text{M}+1]^+$ , 9%), 254 (7%), 213 (11%), 212 (100%), 156 (57%), 154 (56%), 125 (40%); Anal. calcd for  $\text{C}_{14}\text{H}_{23}\text{NO}_2\text{S}$ : C, 62.42; H, 8.61; N, 5.20. Found C, 62.35; H, 8.56; N, 5.09;  $[\alpha]_{\text{D}}^{25}$  62.8 ( $c = 0.78$ ,  $\text{CHCl}_3$ ).

**Synthesis of (SS,S/R)-1-(N-methyl-S-phenylsulfonimidoyl)-2,3-diphenylpropan-2-ol (2cg):** Prepared according to the general procedure; 78% yield as a white solid; the relative configuration was not determined.  $R_f$  (pentane:EtOAc-2:1) = 0.73;  $^1\text{H}$  NMR ( $\text{CDCl}_3$ , 300 MHz):  $\delta$  2.63 (s, 3H), 3.10 (d,  $J = 13.7$  Hz, 1H), 3.17 (d,  $J = 13.7$  Hz, 1H), 3.67 (d,  $J = 14.5$  Hz, 1H), 3.56 (d,  $J = 14.5$  Hz, 1H), 7.00-7.12 (m, 6H), 7.14-7.31 (m, 7H), 7.39 (m, 1H), 7.69 (m, 1H);  $^{13}\text{C}$  NMR ( $\text{CDCl}_3$ , 75 MHz):  $\delta$  28.8, 50.4, 64.0, 74.8, 125.7, 126.5, 126.8, 127.7, 127.8, 129.0, 130.9, 132.4, 135.9, 137.8, 143.5; mp: 103-105 °C; IR (KBr)  $\nu$ : 3244, 3058, 2918, 2880, 1494, 1443, 1414, 1276, 1236, 1139, 1113, 1078, 877, 772, 745, 699, 511  $\text{cm}^{-1}$ ; MS (EI, 70 eV):  $m/z$  366 ( $[\text{M}+1]^+$ , 4%), 275 (18%), 274 (100%), 231 (26%), 156 (12%), 154 (49%), 125 (20%), 106 (43%); Anal. calcd for  $\text{C}_{22}\text{H}_{23}\text{NO}_2\text{S}$ : C, 72.30; H, 6.34; N, 3.83. Found C, 72.12; H, 6.03; N, 3.69;  $[\alpha]_{\text{D}}^{25}$  54.1 ( $c = 0.89$ ,  $\text{CHCl}_3$ ).

**Synthesis of (SS,S/R)-1-(N-methyl-S-phenylsulfonimidoyl)-2-(1-naphthyl)propan-2-ol (2ch):** Prepared according to the general procedure; 39% yield as a white solid; the relative configuration was not determined.  $R_f$  (pentane:EtOAc-4:1) = 0.42;  $^1\text{H}$  NMR ( $\text{CDCl}_3$ , 300 MHz):  $\delta$  2.12 (s, 3H), 2.70 (s, 3H), 3.65 (d,  $J = 14.4$  Hz, 1H), 4.15 (d,  $J = 14.4$  Hz, 1H), 7.10-7.20 (m, 2H), 7.24-7.47 (m, 6H), 7.70 (m, 2H), 7.88 (m, 2H), 8.22 (m, 1H);  $^{13}\text{C}$  NMR ( $\text{CDCl}_3$ , 75 MHz):  $\delta$  28.9, 30.0, 64.6, 73.8, 124.5, 124.8, 124.9, 125.1, 125.6, 128.6, 128.8, 129.1, 129.4, 129.8, 132.5, 134.7, 137.7, 140.4; mp: 137-138 °C; IR (KBr)  $\nu$ : 3248, 3049, 1509, 1444, 1378, 1234, 1146, 1107, 917, 868, 804, 774, 743, 690, 597, 501  $\text{cm}^{-1}$ ; MS (EI, 70 eV):  $m/z$  340 ( $[\text{M}+1]^+$ , 1%), 281 (11%), 170 (7%), 157 (14%), 156 (100%), 141 (11%), 129 (14%); Anal. calcd for  $\text{C}_{20}\text{H}_{21}\text{NO}_2\text{S}$ : C, 70.77; H, 6.24; N, 4.13. Found C, 70.86; H, 6.53; N, 4.10;  $[\alpha]_{\text{D}}^{25}$  -19.9 ( $c = 0.98$ ,  $\text{CHCl}_3$ ).

**Synthesis of (SS,S/R)-1-(N-methyl-S-phenylsulfonimidoyl)-2-(2-naphthyl)propan-2-ol (2ci):** Prepared according to the general procedure; 44% yield as a yellow solid; the relative configuration was not determined.  $R_f$  (pentane:EtOAc-2:1) = 0.62;  $^1\text{H NMR}$  ( $\text{CDCl}_3$ , 400 MHz):  $\delta$  1.88 (s, 3H), 2.68 (s, 3H), 3.51 (d,  $J = 14.3$  Hz, 1H), 3.65 (d,  $J = 14.3$  Hz, 1H), 7.15 (m, 2H), 7.32 (m, 2H), 7.45 (m, 4H), 7.59 (bd,  $J = 8.7$  Hz, 2H), 7.75 (m, 2H), 7.90 (bd,  $J = 1.8$  Hz, 1H);  $^{13}\text{C NMR}$  ( $\text{CDCl}_3$ , 100 MHz):  $\delta$  28.9, 30.5, 66.0, 73.1, 122.8, 123.8, 125.9, 126.0, 127.3, 127.8, 128.2, 128.9, 129.0, 132.3, 132.6, 133.0, 137.9, 142.9; mp: 125-127 °C; IR (KBr)  $\nu$ : 3269, 3055, 2981, 2814, 1504, 1448, 1416, 1378, 1248, 1226, 1157, 908, 870, 821, 731, 688, 616, 592, 481  $\text{cm}^{-1}$ ; MS (EI, 70 eV):  $m/z$  340 ( $[\text{M}+1]^+$ , 1%), 281 (27%), 157 (15%), 156 (100%), 141 (13%); Anal. calcd for  $\text{C}_{20}\text{H}_{21}\text{NO}_2\text{S}$ : C, 70.77; H, 6.24; N, 4.13. Found C, 70.80; H, 6.35; N, 4.11;  $[\alpha]_{\text{D}}^{25}$  100.5 ( $c = 1.06$ ,  $\text{CHCl}_3$ ).

**Synthesis of (SS,S/R)-1-(N-methyl-S-phenylsulfonimidoyl)-2-(2-naphthyl)propan-2-ol [(dia)-2ci]:** Prepared according to the general procedure; 14% yield as a white solid; the relative configuration was not determined.  $R_f$  (pentane:EtOAc-2:1) = 0.26;  $^1\text{H NMR}$  ( $\text{CDCl}_3$ , 400 MHz):  $\delta$  1.61 (s, 3H), 2.56 (s, 3H), 3.78 (d,  $J = 1.0$  Hz, 2H), 7.34 (m, 3H), 7.44 (m, 3H), 7.62 (m, 2H), 7.67 (bd,  $J = 8.6$  Hz, 1H), 7.79 (m, 2H), 7.98 (d,  $J = 1.8$  Hz, 1H);  $^{13}\text{C NMR}$  ( $\text{CDCl}_3$ , 100 MHz):  $\delta$  29.0, 32.3, 65.1, 73.6, 123.4, 124.0, 125.8, 125.9, 127.4, 127.5, 128.3, 128.9, 129.2, 132.4, 132.8, 133.0, 138.1, 142.0; mp: 102-103 °C; IR (KBr)  $\nu$ : 3269, 3055, 2981, 2814, 1504, 1448, 1416, 1378, 1248, 1226, 1157, 908, 870, 821, 731, 688, 616, 592, 481  $\text{cm}^{-1}$ ; MS (EI, 70 eV):  $m/z$  340 ( $[\text{M}+1]^+$ , 1%), 281 (27%), 157 (15%), 156 (100%), 141 (13%); Anal. calcd for  $\text{C}_{20}\text{H}_{21}\text{NO}_2\text{S}$ : C, 70.77; H, 6.24; N, 4.13. Found C, 70.37; H, 6.33; N, 4.06;  $[\alpha]_{\text{D}}^{25}$  7.0 ( $c = 0.66$ ,  $\text{CHCl}_3$ ).

**Synthesis of (S)-1-[(N-methyl-S-phenylsulfonimidoyl)methyl]cyclopentanol (2cj):** Prepared according to the general procedure; 84% yield as a colorless oil.  $R_f$  (pentane:EtOAc-4:1) = 0.29;  $^1\text{H NMR}$  ( $\text{CDCl}_3$ , 300 MHz):  $\delta$  1.34-2.23 (m, 8H), 2.63 (s, 3H), 3.09 (d,  $J = 13.8$  Hz, 1H), 3.57 (d,  $J = 13.8$  Hz, 1H), 6.28 (bs, 1H), 7.59 (m, 3H), 7.88 (m, 2H);  $^{13}\text{C NMR}$  ( $\text{CDCl}_3$ , 75 MHz):  $\delta$  22.9, 24.0, 29.0, 38.9, 41.3, 64.8, 79.6, 129.1, 129.6, 133.1, 138.9; IR (kap.)  $\nu$ : 3289, 2958, 2876, 1443, 1237, 1150, 1081, 748, 580, 517  $\text{cm}^{-1}$ ; MS (EI, 70 eV):  $m/z$  254 ( $[\text{M}+1]^+$ , 3%), 224 (11%), 221 (17%), 175 (13%), 157 (11%), 156 (65%), 140 (40%), 125 (100%); Anal. calcd for  $\text{C}_{13}\text{H}_{19}\text{NO}_2\text{S}$ : C, 61.63; H, 7.56; N, 5.55. Found C, 61.27; H, 7.67; N, 5.94;  $[\alpha]_{\text{D}}^{25}$  68.8 ( $c = 1.39$ ,  $\text{CHCl}_3$ ).

**Synthesis of (S)-9-[(N-methyl-S-phenylsulfonimidoyl)methyl]-9H-fluoren-9-ol (2ck):** Prepared according to the general procedure; 83% yield as a white solid.  $R_f$  (pentane:EtOAc-4:1) = 0.78;  $^1\text{H NMR}$  ( $\text{CDCl}_3$ , 400 MHz):  $\delta$  2.83 (s, 3H), 3.03 (d,  $J = 14.0$  Hz, 1H), 3.98 (d,  $J = 14.0$  Hz, 1H), 7.23 (m, 1H), 7.36 (m, 3H), 7.49 (m, 1H), 7.59 (m, 5H), 7.90 (m, 2H), 8.26 (m, 1H);  $^{13}\text{C NMR}$  ( $\text{CDCl}_3$ , 100 MHz):  $\delta$  29.1, 63.6, 80.8, 119.8, 120.1, 123.7, 126.9, 127.5, 127.8, 128.9, 129.2, 129.6, 129.7, 133.3, 138.9, 139.0, 139.1, 146.3, 147.4; mp: 135-137 °C; IR (KBr)  $\nu$ : 3056, 2919, 2804, 1444, 1378, 1229, 1156, 1102, 864, 762, 739, 506  $\text{cm}^{-1}$ ; MS (EI, 70 eV):  $m/z$  349 ( $[\text{M}]$ , 3%), 224 (22%), 194 (11%), 180 (100%), 169 (13%), 154 (21%), 140 (10%),

125 (12%), 106 (19%); Anal. calcd for C<sub>21</sub>H<sub>19</sub>NO<sub>2</sub>S: C, 72.18; H, 5.48; N, 4.01. Found C, 72.22; H, 5.62; N, 3.92; [ $\alpha$ ]<sub>D</sub><sup>25</sup> 137.6 (c = 0.98, CHCl<sub>3</sub>).

**Synthesis of (SS,S/R)-1-cyclohexyl-2-(N-methyl-S-phenylsulfonimidoyl)-1-phenylethanol (2cl):** Prepared according to the general procedure; 26% yield as a white solid; the relative configuration was not determined. R<sub>f</sub> (pentane:EtOAc-1:1) = 0.67; <sup>1</sup>H NMR (CDCl<sub>3</sub>, 400 MHz):  $\delta$  0.94-1.29 (m, 7H), 1.58 (m, 3H), 1.75 (bd, *J* = 12.7 Hz, 1H), 1.92 (bd, *J* = 12.7 Hz, 1H), 2.62 (s, 3H), 3.64 (d, *J* = 14.5 Hz, 1H), 3.81 (d, *J* = 14.5 Hz, 1H), 6.96-7.11 (m, 5H), 7.16 (m, 3H), 7.31-7.40 (m, 1H), 7.46 (m, 1H); <sup>13</sup>C NMR (CDCl<sub>3</sub>, 100 MHz):  $\delta$  26.2, 26.4, 26.5, 26.6, 26.7, 28.8, 49.7, 63.1, 76.1, 126.2, 126.4, 127.4, 128.8, 128.9, 132.1, 137.9, 142.7; mp: 118-120 °C; IR (KBr)  $\nu$ : 3451, 3240, 2920, 2851, 1446, 1401, 1227, 1146, 1113, 1077, 1045, 991, 880, 753, 694, 565, 509 cm<sup>-1</sup>; MS (EI, 70 eV): *m/z* 358 (M+1, 2%), 274 (100%), 232 (13%), 231 (26%), 156 (27%), 125 (23%), 106 (45%); Anal. calcd for C<sub>21</sub>H<sub>27</sub>NO<sub>2</sub>S: C, 70.55; H, 7.61; N, 3.92. Found C, 70.40; H, 7.38; N, 3.81; [ $\alpha$ ]<sub>D</sub><sup>25</sup> 31.9 (c = 1.22, CHCl<sub>3</sub>).

**Synthesis of (SS,S/R)-1-cyclohexyl-2-(N-methyl-S-phenylsulfonimidoyl)-1-phenylethanol [(dia)-2cl]:** Prepared according to the general procedure; 13% yield as a white solid; the relative configuration was not determined. R<sub>f</sub> (pentane:EtOAc-4:1) = 0.33; <sup>1</sup>H NMR (CDCl<sub>3</sub>, 400 MHz):  $\delta$  0.95-1.28 (m, 6H), 1.53 (m, 3H), 1.76 (m, 2H), 2.47 (s, 3H), 3.64 (d, *J* = 14.1 Hz, 1H), 3.80 (d, *J* = 14.1 Hz, 1H), 6.72 (s, 1H), 7.21 (m, 3H), 7.32 (m, 2H), 7.43 (m, 2H), 7.53 (m, 1H), 7.62 (m, 2H); <sup>13</sup>C NMR (CDCl<sub>3</sub>, 100 MHz):  $\delta$  26.0, 26.2, 26.4, 26.5, 28.9, 49.9, 62.6, 126.4, 126.7, 127.4, 128.8, 129.3, 132.6, 138.8, 142.6; mp: 134-135 °C; IR (KBr)  $\nu$ : 3451, 3240, 2920, 2851, 1446, 1401, 1227, 1146, 1113, 1077, 1045, 991, 880, 753, 694, 565, 509 cm<sup>-1</sup>; MS (EI, 70 eV): *m/z* 358 ([M+1]<sup>+</sup>, 2%), 274 (100%), 232 (13%), 231 (26%), 156 (27%), 125 (23%), 106 (45%); Anal. calcd for C<sub>21</sub>H<sub>27</sub>NO<sub>2</sub>S: C, 70.55; H, 7.61; N, 3.92. Found C, 70.18; H, 7.69; N, 3.73; [ $\alpha$ ]<sub>D</sub><sup>25</sup> 47.9 (c = 0.73, CHCl<sub>3</sub>).

**Synthesis of (S)-2-(N-methyl-S-phenylsulfonimidoyl)-1,1-bis[4-(trifluoromethyl)-phenyl]ethanol (2cm):** Prepared according to the general procedure; 75% yield as a colorless oil. R<sub>f</sub> (pentane:EtOAc-4:1) = 0.30; <sup>1</sup>H NMR (CDCl<sub>3</sub>, 400 MHz):  $\delta$  2.63 (s, 3H), 3.99 (s, 2H), 7.26 (m, 1H), 7.41 (m, 5H), 7.53 (m, 4H), 7.65 (m, 2H), 7.83 (s, 1H), 8.52 (s, 1H); <sup>13</sup>C NMR (CDCl<sub>3</sub>, 100 MHz):  $\delta$  28.9, 63.6, 75.8, 122.4, 122.9, 124.3, 124.5, 128.7, 128.8, 129.0, 129.1, 129.4, 129.5, 130.5, 130.9, 133.2, 137.7, 145.1, 145.3; IR (kap.)  $\nu$ : 3074, 2921, 1443, 1329, 1240, 1126, 1080, 1010, 808, 757, 565, 513 cm<sup>-1</sup>; MS (EI, 70 eV): *m/z* 488 ([M], 10%), 300 (44%), 299 (87%), 175 (30%), 174 (100%), 173 (51%), 145 (30%), 126 (20%), 125 (70%); Anal. calcd for C<sub>23</sub>H<sub>19</sub>F<sub>6</sub>NO<sub>2</sub>S: C, 56.67; H, 3.93; N, 2.87. Found C, 56.33; H, 3.74; N, 3.23; [ $\alpha$ ]<sub>D</sub><sup>25</sup> 10.0 (c = 1.08, CHCl<sub>3</sub>).

**Synthesis of (SS,S/R)-1-(N-methyl-S-phenylsulfonimidoyl)-2-phenylpropan-2-ol (2cn):** Prepared according to the general procedure; 69% yield as a white solid; the relative configuration was not determined. R<sub>f</sub> (pentane:EtOAc-4:1) = 0.34; <sup>1</sup>H NMR (CDCl<sub>3</sub>, 400 MHz):  $\delta$  1.82 (s, 3H), 2.67 (s, 3H), 3.38 (d, *J* = 14.2 Hz, 1H), 3.54 (d, *J*

= 14.2 Hz, 1H), 7.19 (m, 3H), 7.36 (m, 4H), 7.51 (m, 3H);  $^{13}\text{C}$  NMR ( $\text{CDCl}_3$ , 100 MHz):  $\delta$  28.9, 30.3, 66.1, 73.0, 124.7, 126.9, 128.2, 128.9, 129.2, 132.8, 138.1, 145.8; mp: 113-114 °C; IR (KBr.)  $\nu$ : 3164, 2977, 1469, 1442, 1264, 1233, 1142, 1115, 1084, 948, 923, 869, 746, 685, 577, 514  $\text{cm}^{-1}$ ; MS (EI, 70 eV):  $m/z$  290 ( $[\text{M}+1]^+$ , 5%), 274 (18%), 232 (17%), 231 (55%), 154 (15%), 125 (20%), 107 (24%), 106 (100%), 77 (17%); Anal. calcd for  $\text{C}_{16}\text{H}_{19}\text{NO}_2\text{S}$ : C, 66.41; H, 6.62; N, 4.84. Found C, 66.49; H, 6.94; N, 4.73;  $[\alpha]_D^{25}$  42.0 ( $c = 0.84$ ,  $\text{CHCl}_3$ ).

**Synthesis of (SS,S/R)-1-(N-methyl-S-phenylsulfonimidoyl)-2-phenylpropan-2-ol [(dia)-2cn]:** Prepared according to the general procedure; 11% yield as a white solid; the relative configuration was not determined.  $R_f$  (pentane:EtOAc-4:1) = 0.13;  $^1\text{H}$  NMR ( $\text{CDCl}_3$ , 400 MHz):  $\delta$  1.54 (s, 3H), 2.56 (s, 3H), 3.62 (d,  $J = 14.3$  Hz, 1H), 3.67 (d,  $J = 14.3$  Hz, 1H), 6.89 (bs, 1H), 7.20 (m, 1H), 7.27 (m, 2H), 7.44 (m, 4H), 7.55 (m, 1H), 7.68 (m, 2H);  $^{13}\text{C}$  NMR ( $\text{CDCl}_3$ , 100 MHz):  $\delta$  29.1, 32.3, 65.4, 73.4, 125.1, 126.9, 127.9, 128.9, 129.4, 132.8, 138.6, 144.7; mp: 111-112 °C; IR (KBr.)  $\nu$ : 3164, 2977, 1469, 1442, 1264, 1233, 1142, 1115, 1084, 948, 923, 869, 746, 685, 577, 514  $\text{cm}^{-1}$ ; MS (EI, 70 eV):  $m/z$  290 ( $[\text{M}+1]^+$ , 5%), 274 (18%), 232 (17%), 231 (55%), 154 (15%), 125 (20%), 107 (24%), 106 (100%), 77 (17%) HRMS calcd for  $\text{C}_{16}\text{H}_{20}\text{NO}_2\text{S}$  ( $[\text{M}]$ ) 290.1215. Found 290.1213;  $[\alpha]_D^{25}$  43.6 ( $c = 0.67$ ,  $\text{CHCl}_3$ ).

**Synthesis of (S)-1-[(N-ethyl-S-phenylsulfonimidoyl)methyl]cyclopentanol (2dj):** Prepared according to the general procedure; 89% yield as a colorless oil.  $R_f$  (pentane:EtOAc-6:1) = 0.36;  $^1\text{H}$  NMR ( $\text{CDCl}_3$ , 300 MHz):  $\delta$  1.18 (t,  $J = 7.2$  Hz, 3H), 1.38 (m, 1H), 1.56 (m, 1H), 1.66-2.01 (m, 6H), 2.21 (m, 1H), 2.83 (m, 1H), 3.03 (m, 1H), 3.08 (d,  $J = 13.7$  Hz, 1H), 3.60 (d,  $J = 13.7$  Hz, 1H), 6.51 (bs, 1H), 7.57 (m, 3H), 7.91 (m, 2H);  $^{13}\text{C}$  NMR ( $\text{CDCl}_3$ , 75 MHz):  $\delta$  18.3, 23.0, 24.1, 38.1, 38.9, 41.5, 65.0, 79.6, 121.9, 128.9, 129.4, 133.1, 139.7; IR (KBr)  $\nu$ : 3305, 2963, 2866, 1442, 1227, 1132, 1017, 747, 574, 526  $\text{cm}^{-1}$ ; MS (EI, 70 eV):  $m/z$  267 ( $[\text{M}]$ , 4%), 225 (13%), 175 (15%), 170 (43%), 168 (15%), 140 (37%), 125 (100%); HRMS calcd for  $\text{C}_{14}\text{H}_{21}\text{NO}_2\text{S}$  ( $[\text{M}]$ ) 267.1293. Found 267.1293;  $[\alpha]_D^{25}$  71.3 ( $c = 0.42$ ,  $\text{CHCl}_3$ ).

**Synthesis of (SS,S/R)-1-(N-ethyl-S-phenylsulfonimidoyl)-2-(2-naphthyl)propan-2-ol (2di):** Prepared according to the general procedure; 73% yield as a yellow oil; the relative configuration was not determined.  $R_f$  (pentane:EtOAc-4:1) = 0.42;  $^1\text{H}$  NMR ( $\text{CDCl}_3$ , 300 MHz):  $\delta$  1.25 (t,  $J = 7.2$  Hz, 3H), 1.88 (s, 3H), 2.85 (dq,  $J = 12.2$ , 7.2 Hz, 1H), 3.07 (dq,  $J = 12.2$ , 7.2 Hz, 1H), 3.49 (d,  $J = 14.2$  Hz, 1H), 3.63 (d,  $J = 14.2$  Hz, 1H), 7.12 (m, 2H), 7.30 (m, 2H), 7.44 (m, 4H), 7.59 (m, 1H), 7.74 (m, 2H), 7.91 (m, 1H);  $^{13}\text{C}$  NMR ( $\text{CDCl}_3$ , 75 MHz):  $\delta$  18.5, 30.5, 38.0, 66.1, 73.1, 122.9, 123.9, 125.9, 126.1, 127.3, 127.8, 128.2, 128.7, 128.9, 132.3, 132.6, 133.0, 138.7, 143.0; IR (kap.)  $\nu$ : 3196, 3058, 2974, 2860, 1680, 1445, 1280, 1230, 1134, 1079, 862, 823, 746, 690, 478  $\text{cm}^{-1}$ ; MS (EI, 70 eV):  $m/z$  338 ( $[\text{M}-\text{CH}_3]$ , 9%), 295 (22%), 171 (15%), 170 (100%), 168 (38%), 155 (46%), 141 (22%), 127 (32%), 125 (22%); Anal. calcd for  $\text{C}_{21}\text{H}_{23}\text{NO}_2\text{S}$ : C, 71.36; H, 6.56; N, 3.96. Found C, 71.61; H, 6.37; N, 3.93;  $[\alpha]_D^{25}$  77.3 ( $c = 0.90$ ,  $\text{CHCl}_3$ ).

**Synthesis of (S)-1-[(N-ethyl-S-phenylsulfonimidoyl)methyl]cycloheptanol (2da):**

Prepared according to the general procedure; 81% yield as a colorless oil.  $R_f$  (pentane:EtOAc-4:1) = 0.52;  $^1\text{H}$  NMR ( $\text{CDCl}_3$ , 400 MHz):  $\delta$  1.17 (t,  $J = 7.2$ , 3H), 1.24 (m, 1H), 1.38-1.76 (m, 9H), 2.09 (dd,  $J = 14.8$ , 10.1 Hz, 1H), 2.45 (dd,  $J = 14.7$ , 8.6 Hz, 1H), 2.80 (m, 1H), 3.02 (m, 1H), 3.10 (d,  $J = 13.8$  Hz, 1H), 3.28 (d,  $J = 13.8$  Hz, 1H), 6.69 (s, 1H), 7.59 (m, 3H), 7.89 (m, 2H);  $^{13}\text{C}$  NMR ( $\text{CDCl}_3$ , 100 MHz):  $\delta$  18.3, 21.9, 22.3, 29.9, 23.0, 38.1, 39.9, 42.8, 65.9, 75.8, 128.8, 129.4, 132.9, 139.9; IR (kap.)  $\nu$ : 3299, 2926, 2858, 1446, 1228, 1146, 1082, 740, 612, 526  $\text{cm}^{-1}$ ; MS (EI, 70 eV):  $m/z$  296 ( $[\text{M}+1]^+$ , 5%), 295 (4%), 238 (17%), 186 (11%), 185 (15%), 170 (90%), 168 (17%), 140 (45%), 125 (100%); HRMS calcd for  $\text{C}_{16}\text{H}_{25}\text{NO}_2\text{S}$  ( $[\text{M}]$ ) 295.1606. Found 295.1606;  $[\alpha]_D^{25}$  54.2 ( $c = 0.76$ ,  $\text{CHCl}_3$ ).

**Synthesis of (S)-1-[(S-phenyl-N-propylsulfonimidoyl)methyl]cyclopentanol (2ej):**

Prepared according to the general procedure; 82% yield as a colorless oil.  $R_f$  (pentane:EtOAc-4:1) = 0.47;  $^1\text{H}$  NMR ( $\text{CDCl}_3$ , 300 MHz):  $\delta$  0.94 (t,  $J = 7.4$  Hz, 3H), 1.40-2.13 (m, 10H), 2.73 (dt,  $J = 12.0$ , 6.8 Hz, 1H), 2.95 (dt,  $J = 12.0$ , 6.8 Hz, 1H), 3.11 (d,  $J = 13.7$  Hz, 1H), 3.60 (d,  $J = 13.7$  Hz, 1H), 7.59 (m, 3H), 7.90 (m, 2H);  $^{13}\text{C}$  NMR ( $\text{CDCl}_3$ , 75 MHz):  $\delta$  11.8, 22.9, 24.0, 25.7, 38.8, 41.4, 44.9, 64.9, 79.6, 128.9, 129.5, 133.0, 139.7; IR (kap)  $\nu$ : 3279, 2959, 2872, 1444, 1223, 1137, 1085, 1014, 747, 693, 577, 527  $\text{cm}^{-1}$ ; MS (EI, 70 eV):  $m/z$  281 ( $[\text{M}+1]^+$ , 3%), 252 (34%), 184 (20%), 154 (15%), 140 (16%), 125 (100%), 81 (14%); HRMS calcd for  $\text{C}_{15}\text{H}_{23}\text{NO}_2\text{S}$  ( $[\text{M}]$ ) 281.1449. Found 281.1449;  $[\alpha]_D^{25}$  42.0 ( $c = 1.32$ ,  $\text{CHCl}_3$ ).

**Synthesis of (SS,S/R)-2-(2-naphthyl)-1-(S-phenyl-N-propylsulfonimidoyl)propan-2-ol (2ei):**

Prepared according to the general procedure; 81% yield as a yellow oil; the relative configuration was not determined.  $R_f$  (pentane:EtOAc-4:1) = 0.59;  $^1\text{H}$  NMR ( $\text{CDCl}_3$ , 300 MHz):  $\delta$  1.00 (t,  $J = 7.4$  Hz, 3H), 1.64 (m, 2H), 1.89 (s, 3H), 2.76 (dt,  $J = 12.0$ , 6.8 Hz, 1H), 2.98 (dt,  $J = 12.0$ , 6.8 Hz, 1H), 3.50 (d,  $J = 14.2$  Hz, 1H), 3.64 (d,  $J = 14.2$  Hz, 1H), 7.12(m, 2H), 7.30 (m, 2H), 7.44 (m, 3H), 7.59 (m, 1H), 7.74 (m, 2H), 7.90 (m, 2H);  $^{13}\text{C}$  NMR ( $\text{CDCl}_3$ , 75 MHz):  $\delta$  10.9, 24.7, 29.7, 43.8, 65.0, 72.0, 121.9, 122.8, 124.9, 125.1, 126.3, 126.8, 127.1, 127.7, 127.9, 131.1, 131.6, 132.1, 137.7, 142.0; IR (kap.)  $\nu$ : 3230, 2963, 2929, 2863, 1680, 1447, 1373, 1262, 1224, 1136, 1080, 824, 746, 480  $\text{cm}^{-1}$ ; MS (EI, 70 eV):  $m/z$  352 ( $[\text{M}-\text{CH}_3]$ , 4%), 184 (36%), 170 (55%), 168 (83%), 155 (100%), 141 (36%), 127 (53%), 125 (27%); HRMS calcd for  $\text{C}_{22}\text{H}_{25}\text{NO}_2\text{S}$  ( $[\text{M}-\text{CH}_3]$ ) 352.1371. Found 352.1370;  $[\alpha]_D^{25}$  59.1 ( $c = 1.06$ ,  $\text{CHCl}_3$ ).

**Synthesis of (SS,S/R)-2-(1-naphthyl)-1-(S-phenyl-N-propylsulfonimidoyl)propan-2-ol (2eh):**

Prepared according to the general procedure; 86% yield as a yellow oil; the relative configuration was not determined.  $R_f$  (pentane:EtOAc-4:1) = 0.58;  $^1\text{H}$  NMR ( $\text{CDCl}_3$ , 400 MHz):  $\delta$  1.01 (t,  $J = 7.4$ , 3H), 1.65 (m, 2H), 2.11 (s, 3H), 2.78 (dt,  $J = 12.0$ , 6.8 Hz, 1H), 3.00 (dt,  $J = 12.0$ , 6.8 Hz, 1H), 3.67 (d,  $J = 14.4$ , 1H), 4.13 (d,  $J = 14.4$ , 1H), 7.07 (bt,  $J = 7.4$  Hz, 2H), 7.19 (t,  $J = 7.3$  Hz, 1H), 7.25-7.37 (m, 4H), 7.42 (t,  $J = 7.7$  Hz, 1H), 7.63-7.75 (m, 2H), 7.91 (d,  $J = 7.3$  Hz, 1H), 8.18 (d,  $J = 7.7$  Hz, 1H);  $^{13}\text{C}$  NMR ( $\text{CDCl}_3$ , 100 MHz):  $\delta$  12.0, 25.8, 30.1, 44.9, 64.8, 73.7, 124.6, 124.7, 124.8, 125.1, 125.6, 128.4, 128.7, 129.1, 129.4, 129.8, 132.4, 134.7, 138.3, 140.5; IR (kap.)  $\nu$ : 3359, 2930, 2867, 1679, 1446, 1228, 1137, 1085, 778,

520  $\text{cm}^{-1}$ ; MS (EI, 70 eV):  $m/z$  368 (M, 1%), 185 (16%), 184 (100%), 155 (10%), 141 (11%), 125 (18%); HRMS calcd for  $\text{C}_{22}\text{H}_{25}\text{NO}_2\text{S}$  ([M]) 367.1606. Found 367.1606;  $[\alpha]_{\text{D}}^{25}$  39.2 ( $c = 0.86$ ,  $\text{CHCl}_3$ ).

**Synthesis of (SS,S/R)-1-(N-isobutyl-S-phenylsulfonimidoyl)-2-(2-naphthyl)propan-2-ol (2fi):** Prepared according to the general procedure; 29% yield as a light yellow oil; the relative configuration was not determined.  $R_f$  (pentane:EtOAc-4:1) = 0.55;  $^1\text{H}$  NMR ( $\text{CDCl}_3$ , 400 MHz):  $\delta$  1.00 (t,  $J = 6.5$  Hz, 6H), 1.84 (m, 1H), 1.90 (s, 3H), 2.57 (dd,  $J = 11.8, 6.7$  Hz, 1H), 2.85 (dd,  $J = 11.8, 6.5$  Hz, 1H), 3.51 (d,  $J = 14.2$  Hz, 1H), 3.64 (d,  $J = 14.2$  Hz, 1H), 7.14 (m, 2H), 7.33 (m, 2H), 7.45 (m, 3H), 7.60 (d,  $J = 8.8$  Hz, 1H), 7.75 (m, 2H), 7.92 (m, 2H);  $^{13}\text{C}$  NMR ( $\text{CDCl}_3$ , 100 MHz):  $\delta$  20.7, 30.5, 30.8, 50.7, 66.1, 73.2, 122.9, 123.8, 125.9, 126.1, 127.3, 127.8, 128.1, 128.8, 128.9, 132.2, 132.5, 133.0, 138.8, 143.0; IR (kap.)  $\nu$ : 3922, 3815, 3744, 3220, 3139, 3058, 2957, 1446, 1383, 1273, 1229, 1130, 1078, 822, 749, 691, 608, 508  $\text{cm}^{-1}$ ; MS (EI, 70 eV):  $m/z$  382 ([M], 6%), 366 (20%), 338 (29%), 324 (12%), 323 (43%), 199 (10%), 198 (56%), 167 (12%), 154 (53%), 125 (100%); HRMS calcd for  $\text{C}_{23}\text{H}_{27}\text{NO}_2\text{S}$  ([M-CH<sub>3</sub>]) 366.1528. Found 366.1528;  $[\alpha]_{\text{D}}^{25}$  72.9 ( $c = 0.62$ ,  $\text{CHCl}_3$ ).

**Synthesis of (SS,S/R)-1-(N-isobutyl-S-phenylsulfonimidoyl)-2-(2-naphthyl)propan-2-ol [(dia)-2fi]:** Prepared according to the general procedure; 34% yield as a yellow oil; the relative configuration was not determined.  $R_f$  (pentane:EtOAc-1:1) = 0.29;  $^1\text{H}$  NMR ( $\text{CDCl}_3$ , 400 MHz):  $\delta$  0.86 (d,  $J = 6.7$  Hz, 3H), 0.90 (d,  $J = 6.7$  Hz, 3H), 1.60 (s, 3H), 1.71 (m, 1H), 2.47 (dd,  $J = 11.8, 6.6$  Hz, 1H), 2.61 (dd,  $J = 11.8, 6.5$  Hz, 1H), 3.74 (s, 2H), 7.46 (m, 6H), 7.72 (m, 3H), 7.81 (m, 2H), 8.06 (bd,  $J = 1.6$  Hz, 1H);  $^{13}\text{C}$  NMR ( $\text{CDCl}_3$ , 100 MHz):  $\delta$  20.5, 20.6, 30.7, 32.5, 50.8, 65.3, 73.7, 123.6, 124.1, 125.7, 125.9, 127.5, 128.3, 128.8, 129.3, 132.4, 132.8, 133.1, 139.4, 142.2; IR (kap.)  $\nu$ : 3922, 3815, 3744, 3220, 3139, 3058, 2957, 1446, 1383, 1273, 1229, 1130, 1078, 822, 749, 691, 608, 508  $\text{cm}^{-1}$ ; MS (EI, 70 eV):  $m/z$  382 ([M], 6%), 366 (20%), 338 (29%), 324 (12%), 323 (43%), 199 (10%), 198 (56%), 167 (12%), 154 (53%), 125 (100%); HRMS calcd for  $\text{C}_{23}\text{H}_{27}\text{NO}_2\text{S}$  ([M-CH<sub>3</sub>]) 366.1528. Found 366.1527;  $[\alpha]_{\text{D}}^{25}$  31.9 ( $c = 0.51$ ,  $\text{CHCl}_3$ ).

**Synthesis of (S)-1-[(N-isobutyl-S-phenylsulfonimidoyl)methyl]cyclopentanol (2fj):**

Prepared according to the general procedure; 63% yield as a yellow oil.  $R_f$  (pentane:EtOAc-4:1) = 0.55;  $^1\text{H}$  NMR ( $\text{CDCl}_3$ , 400 MHz):  $\delta$  0.93 (d,  $J = 5.0$  Hz, 3H), 0.94 (d,  $J = 5.0$  Hz, 3H), 1.40 (m, 1H), 1.55 (m, 1H), 1.67-2.06 (m, 6H), 2.23 (m, 1H), 2.54 (dd,  $J = 11.8, 6.6$  Hz, 1H), 2.80 (dd,  $J = 11.8, 6.4$  Hz, 1H), 3.08 (d,  $J = 13.6$  Hz, 1H), 3.61 (d,  $J = 13.4$  Hz, 1H), 6.65 (bs, 1H), 7.60 (m, 3H), 7.89 (m, 2H);  $^{13}\text{C}$  NMR ( $\text{CDCl}_3$ , 100 MHz):  $\delta$  20.6, 23.1, 24.2, 30.7, 38.9, 41.6, 50.7, 64.9, 79.7, 122.9, 129.0, 129.4, 133.0, 186.4; IR (kap)  $\nu$ : 3288, 2957, 2873, 1444, 1226, 1134, 1081, 1017, 746, 580  $\text{cm}^{-1}$ ; MS (EI, 70 eV):  $m/z$  295 ([M], 3%), 253 (15%), 252 (89%), 154 (17%), 126 (14%), 125 (100%); HRMS calcd for  $\text{C}_{16}\text{H}_{25}\text{NO}_2\text{S}$  ([M]) 295.1606. Found 295.1607;  $[\alpha]_{\text{D}}^{25}$  81.4 ( $c = 0.88$ ,  $\text{CHCl}_3$ ).

**Synthesis of (SS,S/R)-1-(N,S-diphenylsulfonimidoyl)-2-phenylpropan-2-ol (2gn):**

Prepared according to the general procedure; 81% yield as a brown solid; the relative configuration was not determined.  $R_f$  (pentane:EtOAc-4:1) = 0.39;  $^1\text{H NMR}$  ( $\text{CDCl}_3$ , 300 MHz):  $\delta$  1.59 (s, 3H), 3.74 (d,  $J = 14.3$  Hz, 1H), 3.92 (d,  $J = 14.3$  Hz, 1H), 6.85 (m, 3H), 7.08 (m, 2H), 7.16-7.28 (m, 3H), 7.34-7.43 (m, 4H), 7.49 (m, 1H), 7.68 (m, 2H);  $^{13}\text{C NMR}$  ( $\text{CDCl}_3$ , 75 MHz):  $\delta$  32.1, 66.2, 73.6, 122.1, 123.3, 125.1, 127.2, 128.1, 128.8, 129.0, 129.4, 133.1, 139.0, 143.7, 144.3; mp: 143-146 °C; IR (KBr)  $\nu$ : 3856, 3675, 3480, 3413, 3064, 2368, 2345, 1588, 1486, 1444, 1386, 1266, 1167, 1091, 1010, 848, 793, 694  $\text{cm}^{-1}$ ; MS (EI, 70 eV):  $m/z$  351 ( $[\text{M}+1]^+$ , 82%), 217 (25%), 169 (44%), 168 (77%), 125 (66%), 106 (11%), 92 (100%). Anal. calcd for  $\text{C}_{21}\text{H}_{21}\text{NO}_2\text{S}$ : C, 71.76; H, 6.02; N, 3.99. Found C, 71.48; H, 6.04; N, 4.02;  $[\alpha]_D^{25}$  5.6 ( $c = 0.80$ ,  $\text{CHCl}_3$ ).

**(S)-(4-Biphenyl)phenylmethanol (4b):**<sup>2</sup> Obtained from aldehyde (3b) (45.6 mg, 0.25 mmol) according to the general procedure; yield: 62 mg (95%, 0.238 mmol, 93% ee);  $^1\text{H NMR}$  ( $\text{CDCl}_3$ , 300 MHz):  $\delta$  2.39 (brs, 1H), 5.83 (s, 1H), 7.22-7.44 (m, 10H), 7.51-7.58 (m, 4H);  $^{13}\text{C NMR}$  ( $\text{CDCl}_3$ , 75 MHz):  $\delta$  76.1, 126.7, 127.1, 127.2, 127.3, 127.4, 127.7, 128.7, 128.8, 140.6, 140.9, 142.9, 143.9; HPLC (Chiralcel OD, 25 °C, 230 nm, 98:2 heptane/*i*-PrOH, 1.0 mL/min):  $t_R = 68.2$  min (*R*), 71.9 min (*S*).

**(S)-(4-Methylphenyl)phenylmethanol (4c):**<sup>3</sup> Obtained from aldehyde (3c) (29.6  $\mu\text{L}$ , 0.25 mmol) according to the general procedure; yield: 45 mg (90%, 0.227 mmol, 86% ee);  $^1\text{H NMR}$  ( $\text{CDCl}_3$ , 300 MHz):  $\delta$  2.04 (s, 1H), 2.31 (s, 3H), 5.76 (s, 1H), 7.08-7.37 (m, 9H);  $^{13}\text{C NMR}$  ( $\text{CDCl}_3$ , 75 MHz):  $\delta$  21.2, 76.2, 126.6, 126.7, 127.5, 128.5, 129.3, 137.3, 141.0, 144.0; HPLC (Chiralcel OD-H, 25 °C, 230 nm, 97.5:2.5 heptane/*i*-PrOH, 1.0 mL/min):  $t_R = 24.4$  min (*S*), 27.5 min (*R*).

**(S)-Mesitylphenylmethanol (4d):**<sup>4</sup> Obtained from aldehyde (3d) (37  $\mu\text{L}$ , 0.25 mmol) according to the general procedure; yield: 56 mg (99%, 0.247 mmol, 80% ee);  $^1\text{H NMR}$  ( $\text{CDCl}_3$ , 300 MHz):  $\delta$  2.13 (brs, 1H), 2.23 (s, 6H), 2.28 (s, 3H), 6.32 (s, 1H), 6.85 (m, 2H), 7.17-7.33 (m, 5H);  $^{13}\text{C NMR}$  ( $\text{CDCl}_3$ , 75 MHz):  $\delta$  20.6, 20.9, 71.1, 125.5, 126.6, 128.2, 130.1, 136.6, 137.1, 137.4, 143.2; HPLC (Chiralcel OD-H, 25 °C, 254 nm, 95:5 heptane/*i*-PrOH, 0.7 mL/min):  $t_R = 12.8$  min (*R*), 14.4 min (*S*).

**(S)-(2-Chlorophenyl)phenylmethanol (4e):**<sup>5</sup> Obtained from aldehyde (3e) (28.1  $\mu\text{L}$ , 0.25 mmol) according to the general procedure; yield: 48 mg (88%, 0.219 mmol, 84% ee);  $^1\text{H NMR}$  (400 MHz,  $\text{CDCl}_3$ ):  $\delta$  2.63 (d,  $J = 3.8$  Hz, 1H), 6.22 (d,  $J = 3.8$  Hz, 1H), 7.20-7.41 (m, 9H), 7.61 (m, 1H);  $^{13}\text{C NMR}$  (100 MHz,  $\text{CDCl}_3$ ):  $\delta$  72.8, 126.9, 127.1, 127.8, 128.0, 128.5, 128.7, 129.5, 132.5, 140.9, 142.2; HPLC (Chiralcel OD-H, 25 °C, 254 nm, 90:10 heptane/*i*-PrOH, 0.7 mL/min):  $t_R = 11.7$  min (*R*), 14.2 min (*S*).

**(S)-(4-Fluorophenyl)phenylmethanol (4f):**<sup>6</sup> Obtained from aldehyde (3f) (26.8  $\mu\text{L}$ , 0.25 mmol) according to the general procedure; yield: 45 mg (89%, 0.223 mmol, 85% ee);  $^1\text{H NMR}$  ( $\text{CDCl}_3$ , 300 MHz):  $\delta$  2.35 (d,  $J = 3.2$  Hz, 1H), 5.78 (d,  $J = 3.2$  Hz, 1H), 7.02 (t,  $J = 8.7$  Hz, 2H), 7.29-7.37 (m, 7H);  $^{13}\text{C NMR}$  (75 MHz,  $\text{CDCl}_3$ ):  $\delta$  75.6,

115.3 (d,  $J = 28.6$  Hz), 126.5, 127.8, 128.3 (d,  $J = 11.1$  Hz), 128.6, 139.6 ( $J = 4.0$  Hz), 143.7, 162.2 (d,  $J = 325.2$  Hz); HPLC (Chiralcel OB-H, 25 °C, 254 nm, 80:20 heptane/*i*-PrOH, 0.5 ml/min):  $t_R = 22.9$  min (*R*), 26.5 min (*S*).

**(*S*)-(4-Dimethylamino)phenylmethanol (4g):**<sup>7</sup> Obtained from aldehyde (**3g**) (37.3 mg, 0.25 mmol) according to the general procedure; yield: 48 mg (84%, 0.211 mmol, 91% ee); <sup>1</sup>H NMR (CDCl<sub>3</sub>, 300 MHz):  $\delta$  2.20 (brs, 1H), 2.91 (s, 6H), 5.74 (s, 1H), 6.68 (m, 2H), 7.16-7.40 (m, 7H); <sup>13</sup>C NMR (CDCl<sub>3</sub>, 75 MHz):  $\delta$  40.6, 76.0, 112.5, 126.4, 127.2, 127.8, 128.3, 132.1, 144.3, 150.2; HPLC (Chiralcel OD, 25 °C, 254 nm, 98:2 heptane/*i*-PrOH, 0.9 ml/min):  $t_R = 52.6$  min (*R*), 56.0 min (*S*).

**(*S*)-(4-Methoxyphenyl)phenylmethanol (4h):**<sup>8</sup> Obtained from aldehyde (**3h**) (30.4  $\mu$ l, 0.25 mmol) according to the general procedure; yield: 46 mg (86%, 0.215 mmol, 90% ee); <sup>1</sup>H NMR (CDCl<sub>3</sub>, 300 MHz):  $\delta$  2.19 (bs, 1H), 3.78 (s, 3H), 5.80 (s, 1H), 6.84-6.89 (m, 2H), 7.24-7.39 (m, 7H); <sup>13</sup>C NMR (CDCl<sub>3</sub>, 75 MHz):  $\delta$  55.2, 75.6, 113.7, 126.2, 127.2, 127.7, 128.2, 136.0, 143.8, 158.8; HPLC (Chiralcel OJ, 25 °C, 254 nm, 90:10 heptane/*i*-PrOH, 0.8 mL/min):  $t_R = 45.7$  min (*R*), 50.4 min (*S*).

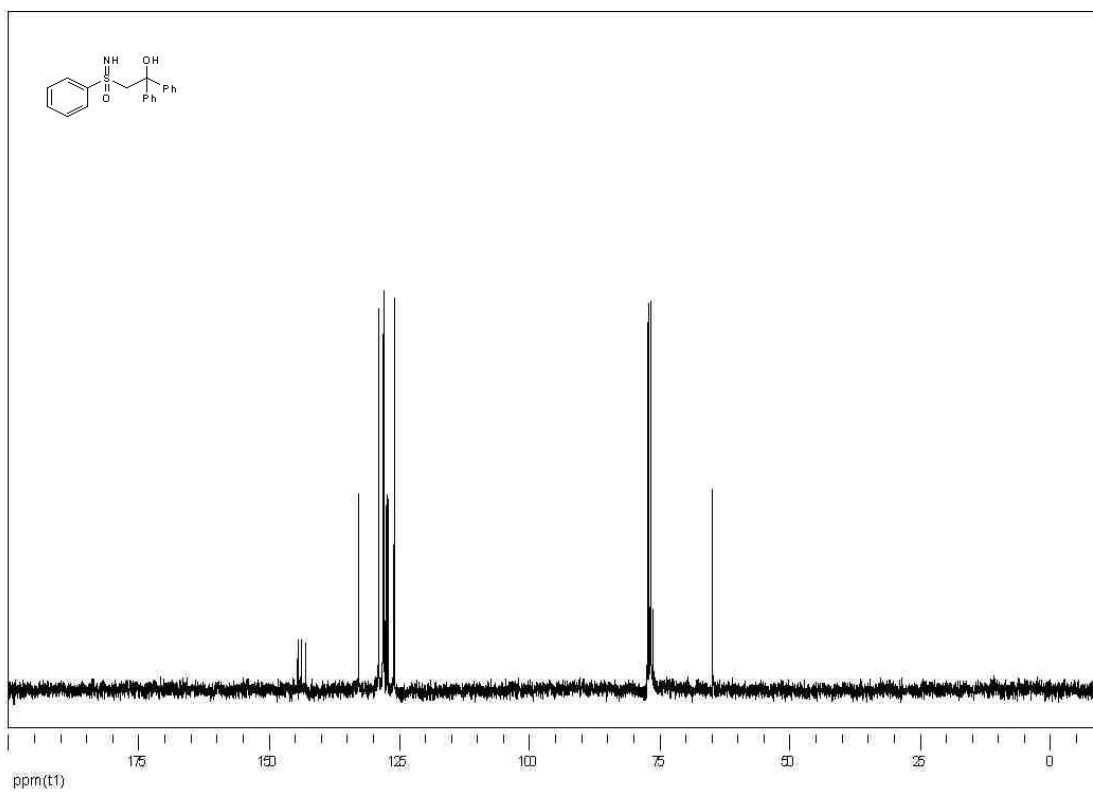
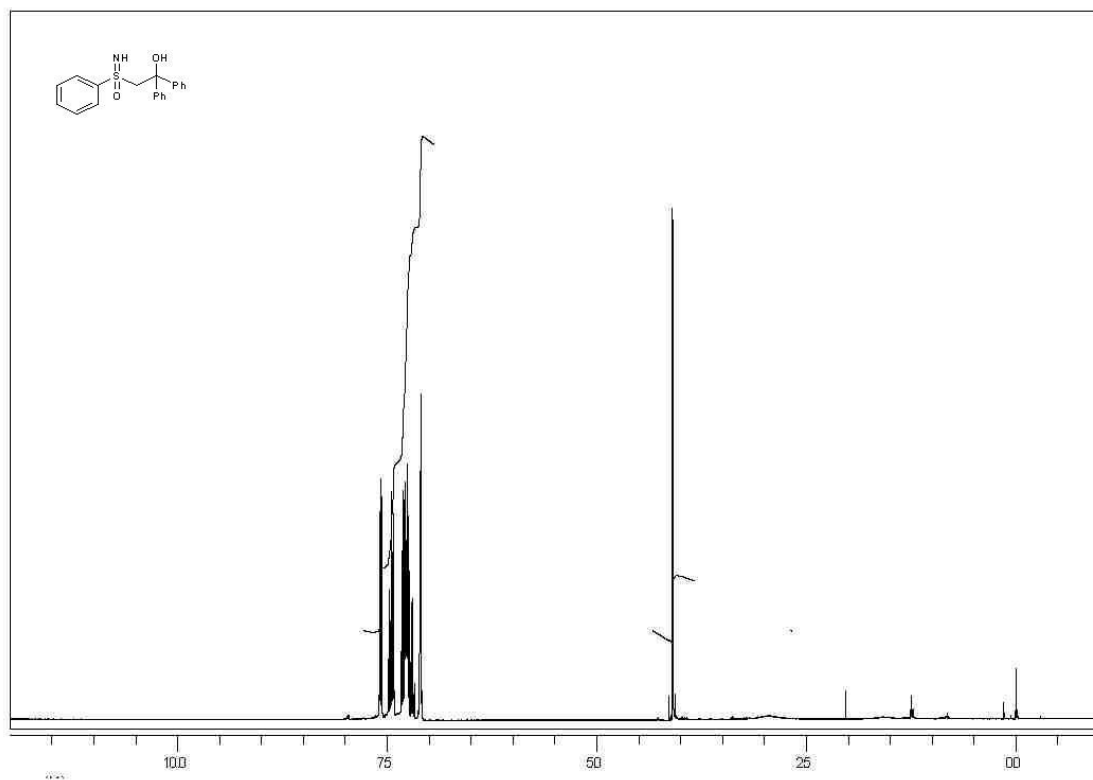
**(*S*)-(2-Furyl)phenylmethanol (6):**<sup>9</sup> Obtained from aldehyde (**5**) (20.7  $\mu$ l, 0.25 mmol) according to the general procedure; yield: 42 mg (96%, 0.241 mmol, 87% ee); <sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>):  $\delta$  2.41 (brs, 1H), 5.82 (d,  $J = 4.4$  Hz, 1H), 6.12 (d,  $J = 3.0$  Hz, 1H), 6.31 (dd,  $J = 3.0$  Hz, 1.7 Hz, 1H), 7.29-7.45 (m, 6H); <sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>):  $\delta$  70.2, 107.5, 110.2, 126.6, 128.1, 128.5, 140.8, 142.5, 155.9; HPLC (Chiralcel OD, 25 °C, 254 nm, 97:3 heptane/*i*-PrOH, 1.0 ml/min):  $t_R = 21.50$  min (*S*), 25.7 min (*R*).

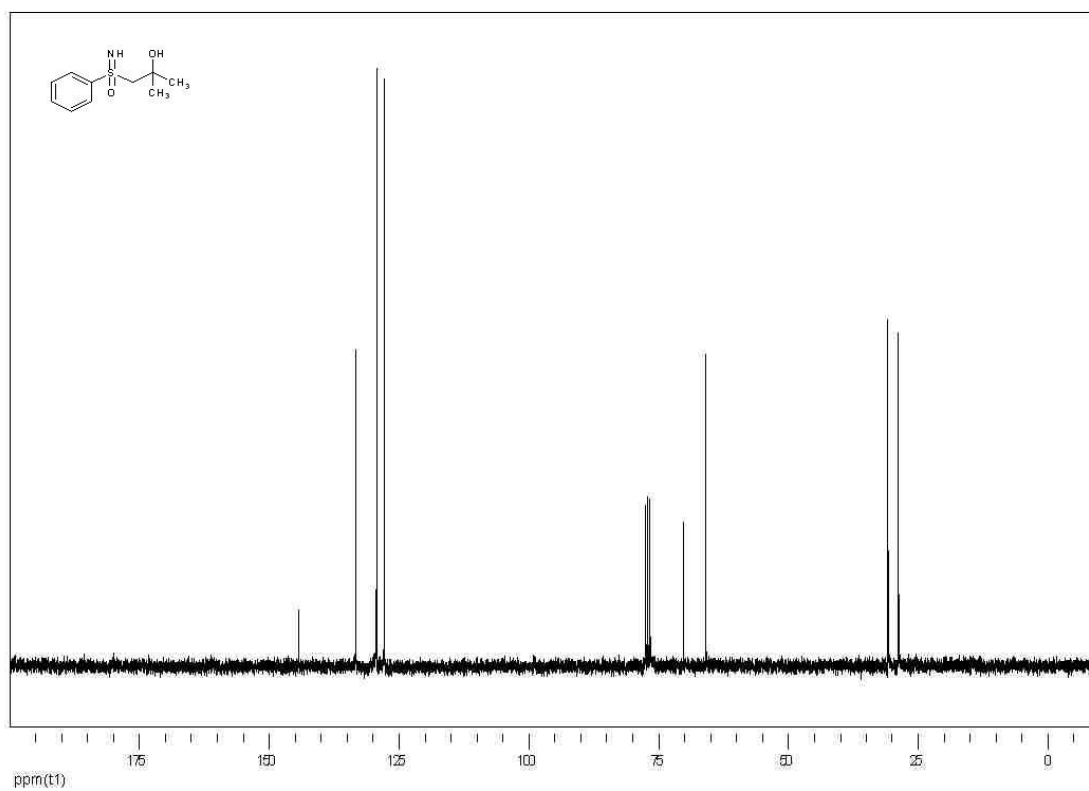
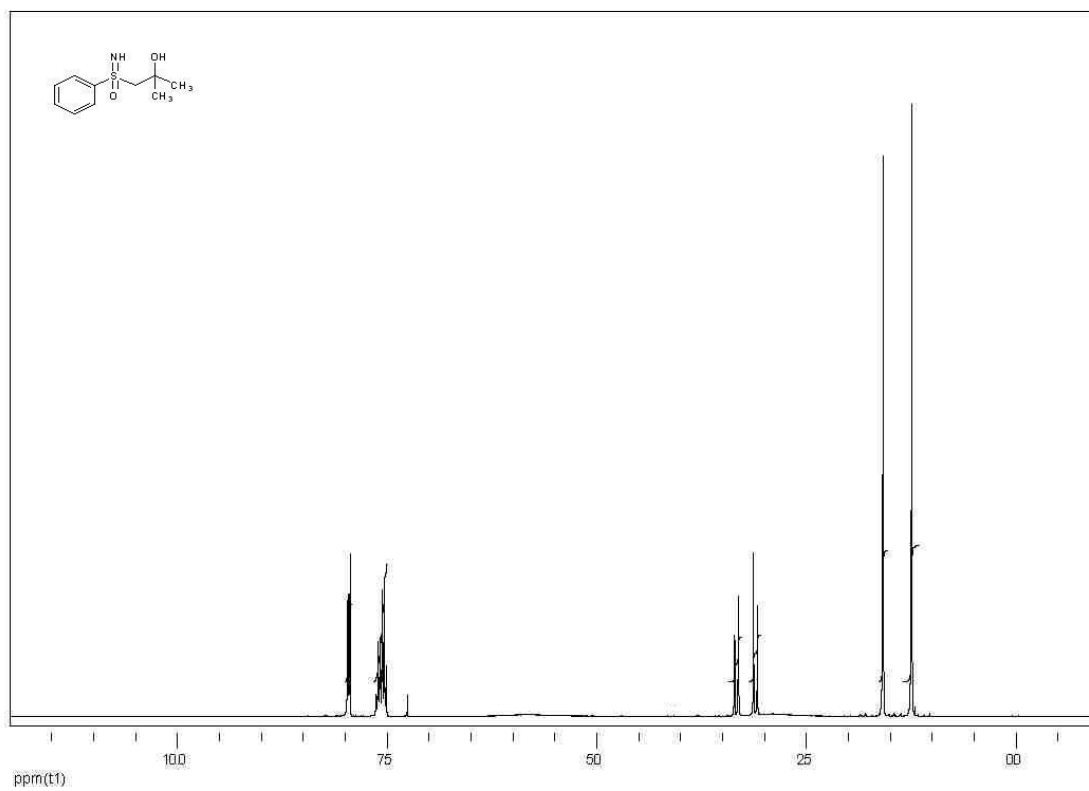
**(*R*)-2-Methyl-1-phenylpropanol (8):**<sup>10</sup> Obtained from aldehyde (**7**) (22.8  $\mu$ l, 0.25 mmol) according to the general procedure; yield: 17 mg (45%, 0.113 mmol, 33% ee); <sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>):  $\delta$  0.80 (d,  $J = 6.9$  Hz, 3H), 1.00 (d,  $J = 6.9$  Hz, 3H), 1.81 (brs, 1H), 1.96 (m, 1H), 4.36 (d,  $J = 6.9$  Hz, 1H), 7.24-7.37 (m, 5H); <sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>):  $\delta$  17.2, 18.0, 34.2, 79.0, 125.5, 126.4, 127.2, 142.6; HPLC Chiralcel OD, Heptan/*i*-PrOH = 98:2, 0.9 ml/min, 25 °C, 254 nm,  $t_R = 13.2$  min (*S*), 16.5 min (*R*).

## References

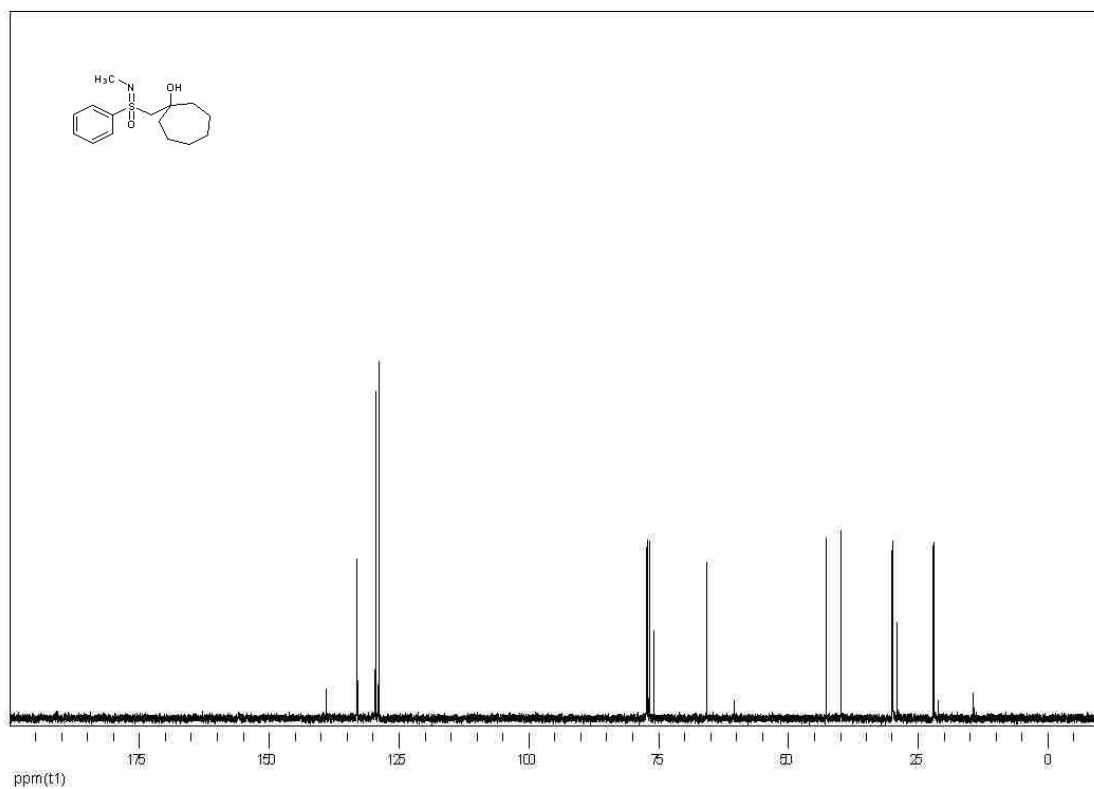
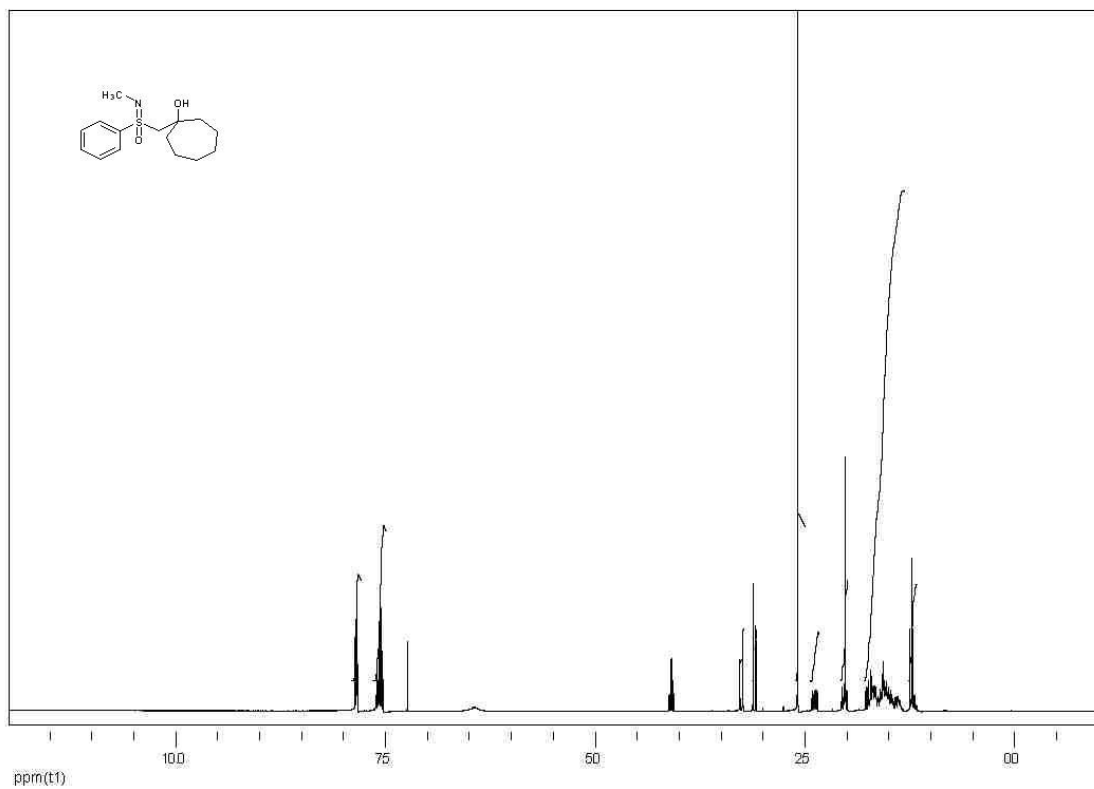
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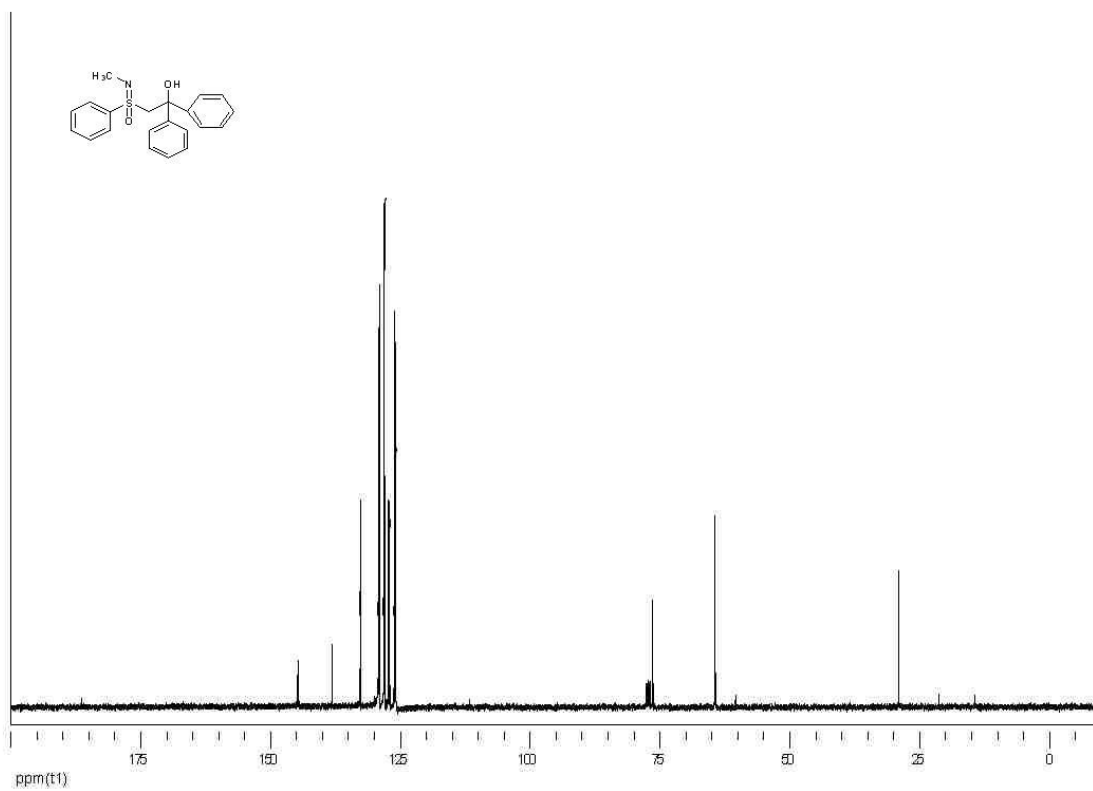
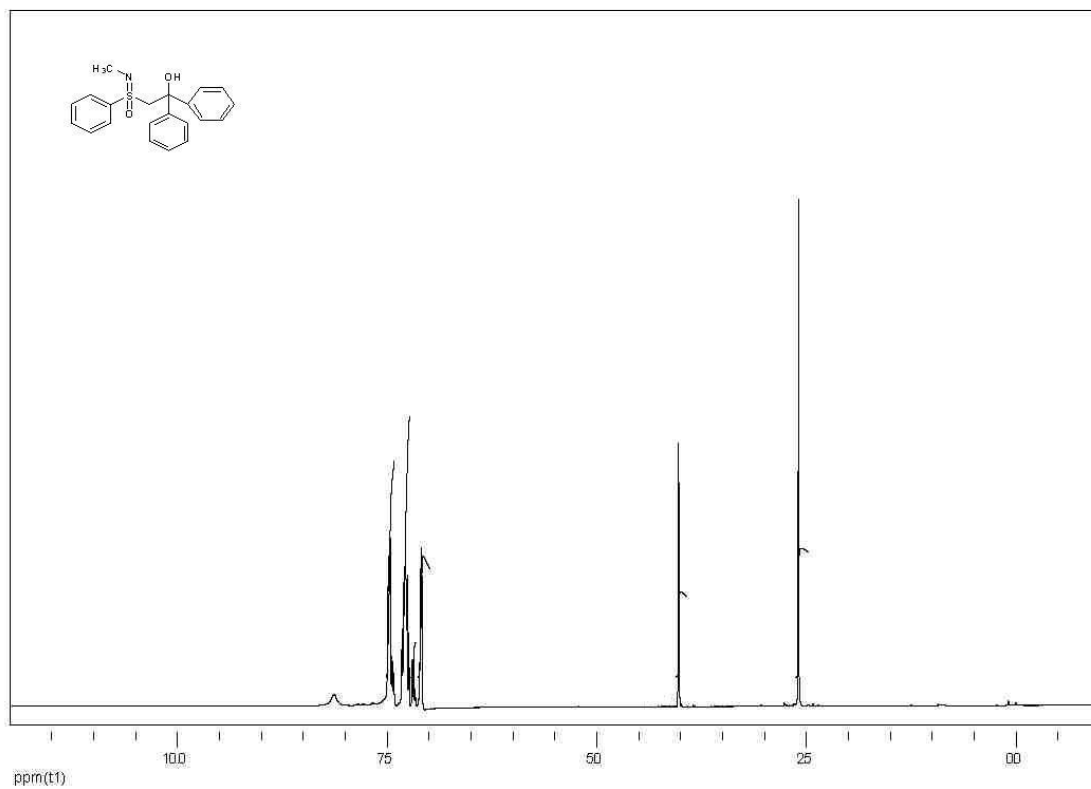
**(S)-1,1-diphenyl-2-(S-phenylsulfonimidoyl)ethanol (2ab):** (Table1, entry 1)

**(S)-2-methyl-1-(S-phenylsulfonimidoyl)propan-2-ol (2ac):** (Table1, entry 2)

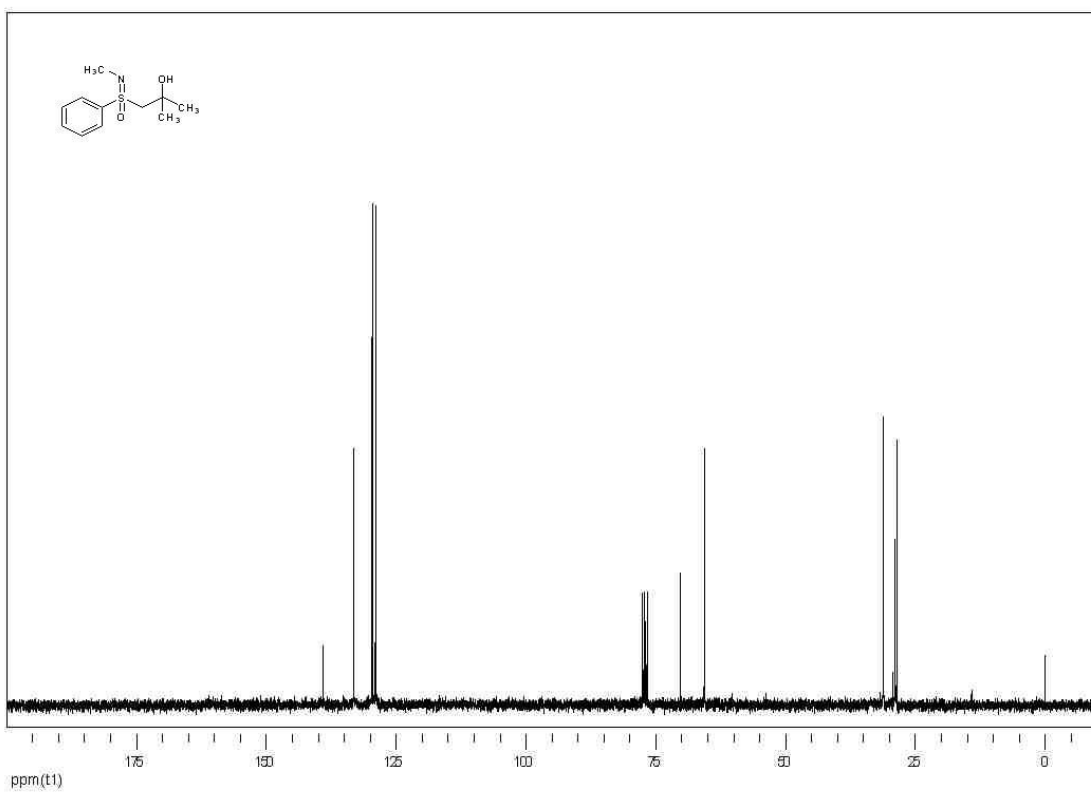
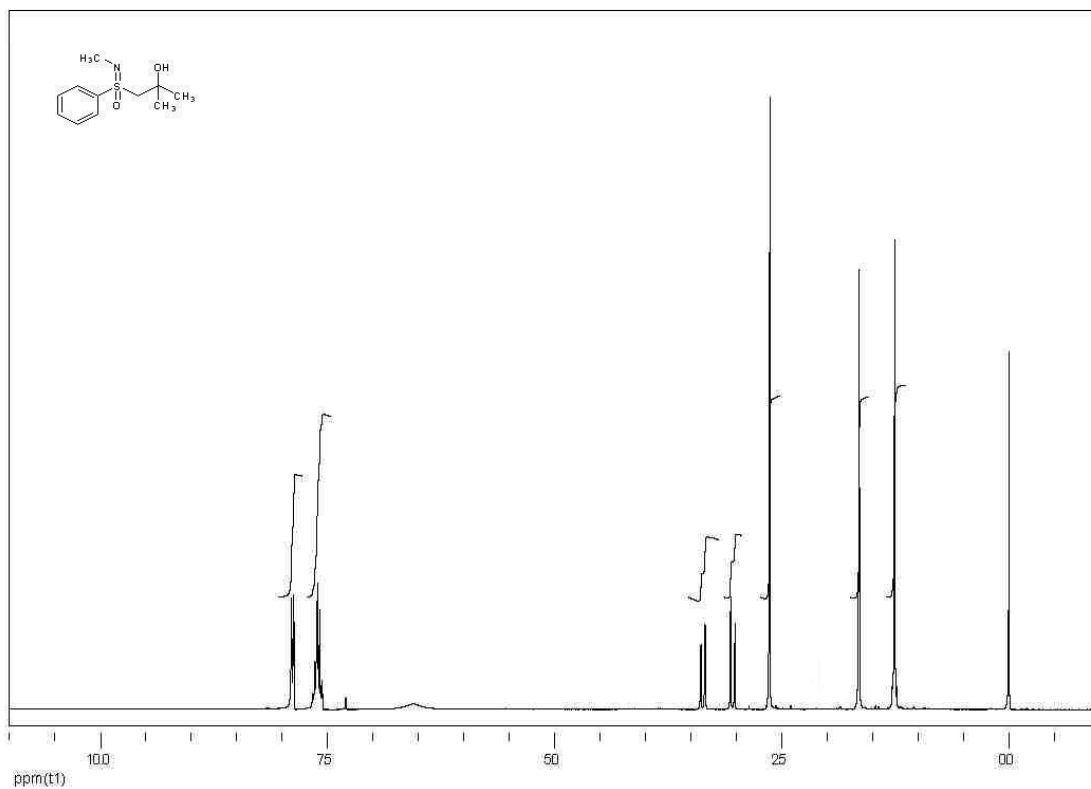
**(S)-1-[(N-methyl-S-phenylsulfonimidoyl)methyl]cycloheptanol (2ca):** (Table1, entry 3)



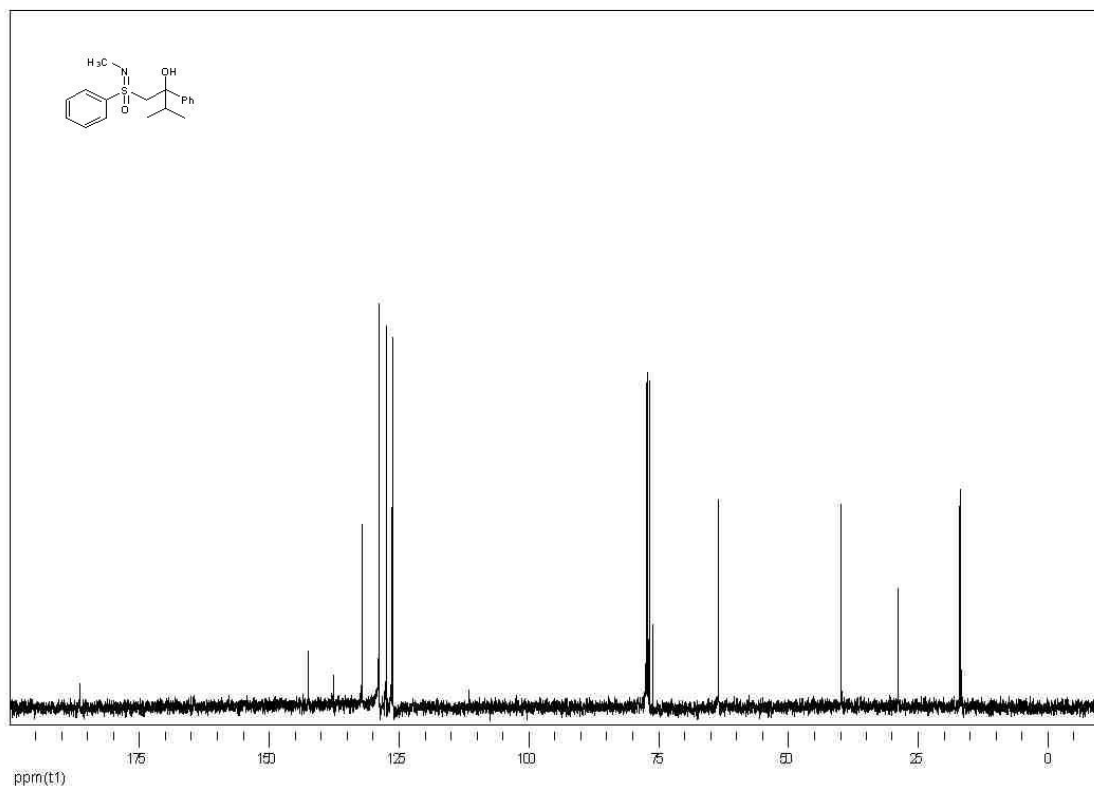
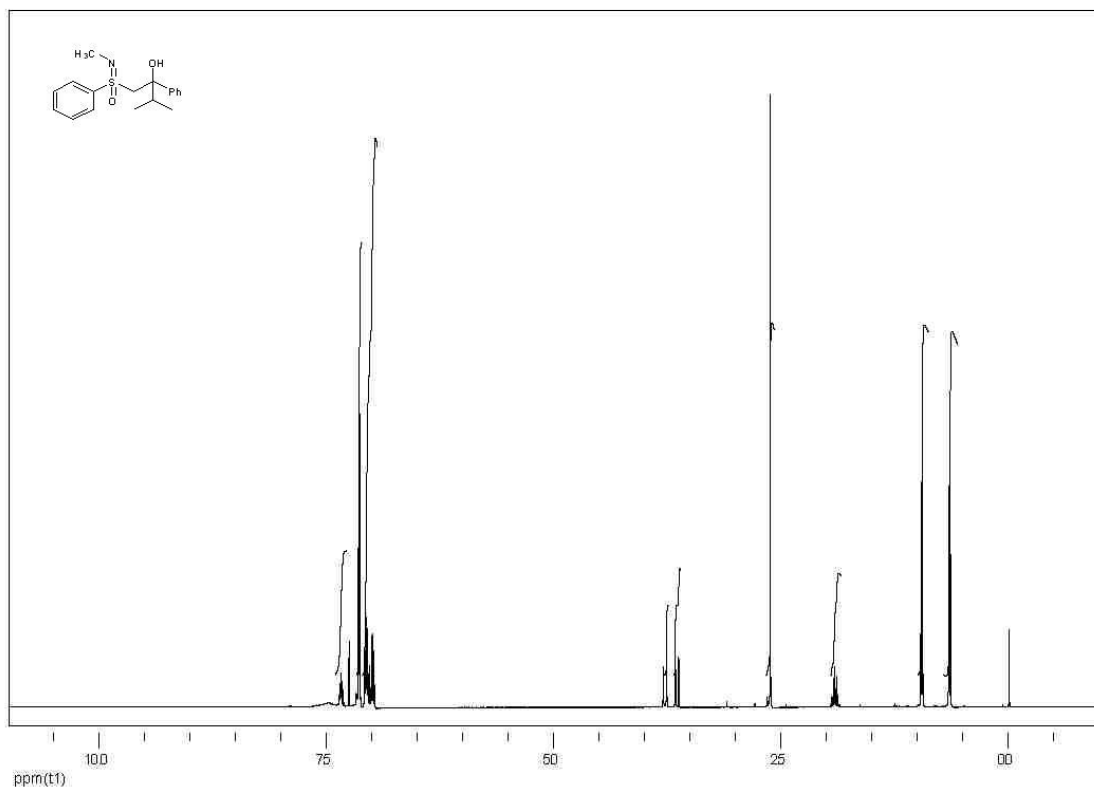
**(S)-2-(N-methyl-S-phenylsulfonimidoyl)-1,1-diphenylethanol (2cb):** (Table1, entry 4)



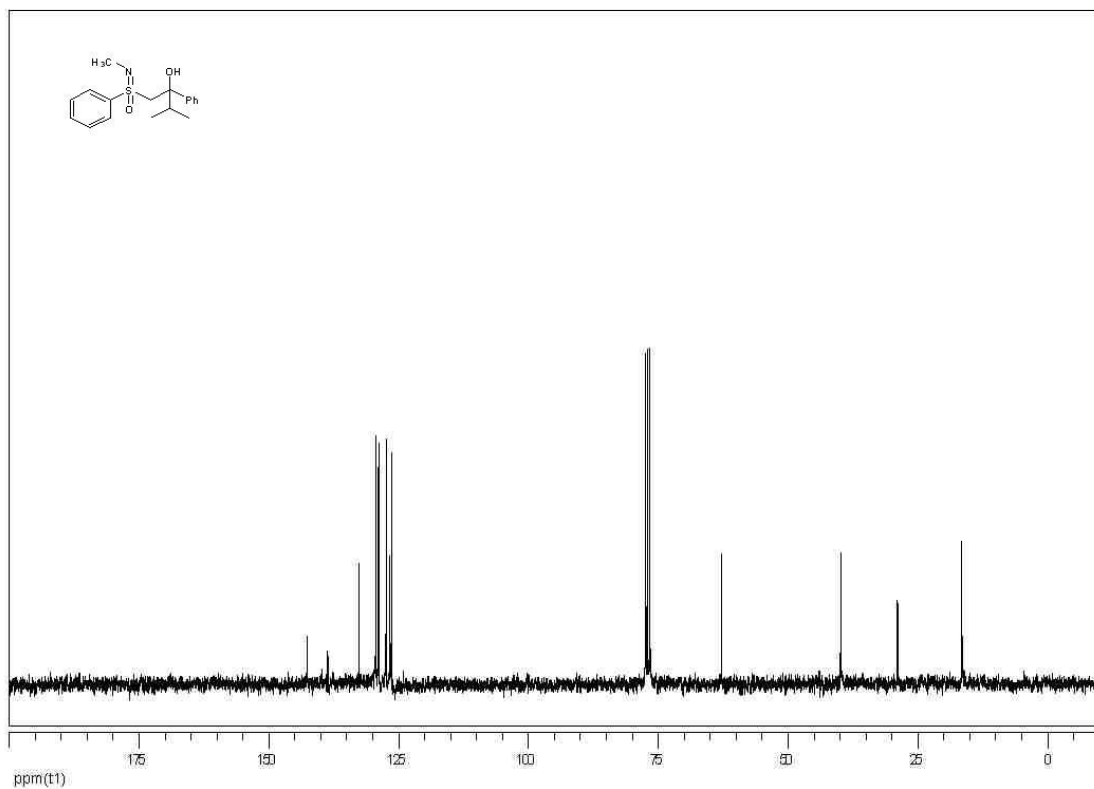
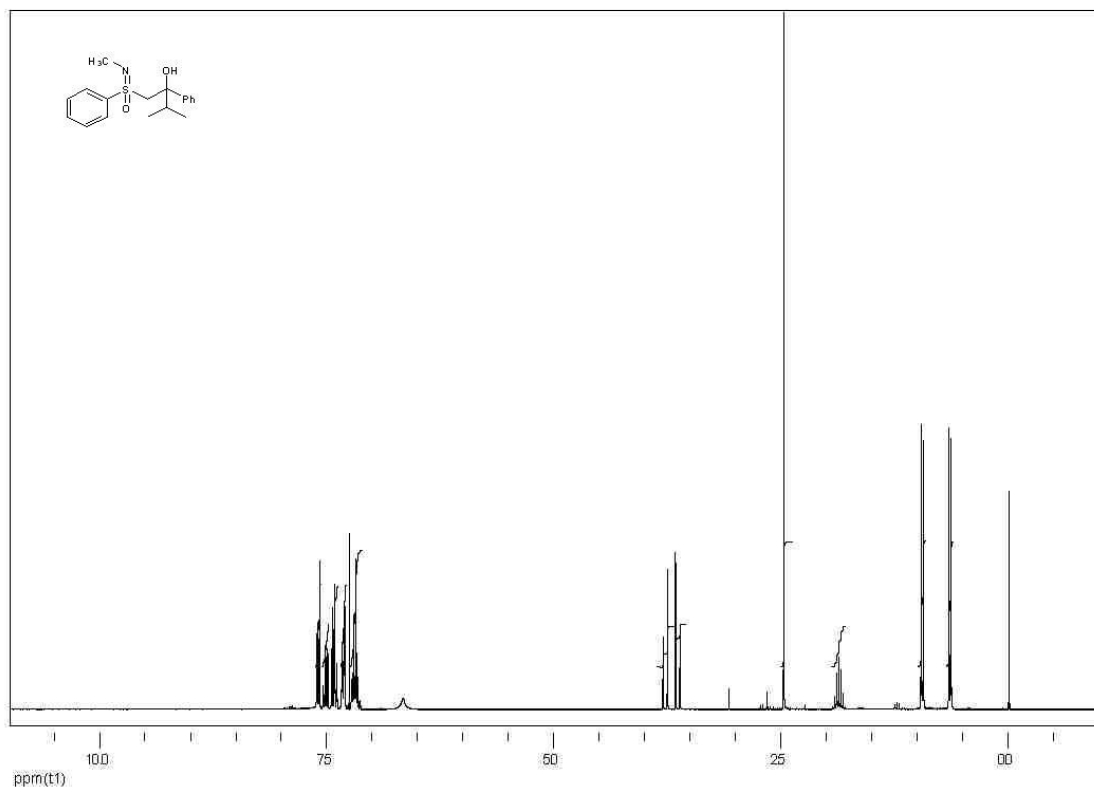
**(S)-2-methyl-1-(N-methyl-S-phenylsulfonimidoyl)propan-2-ol (2c)**: (Table 1, entry 5)



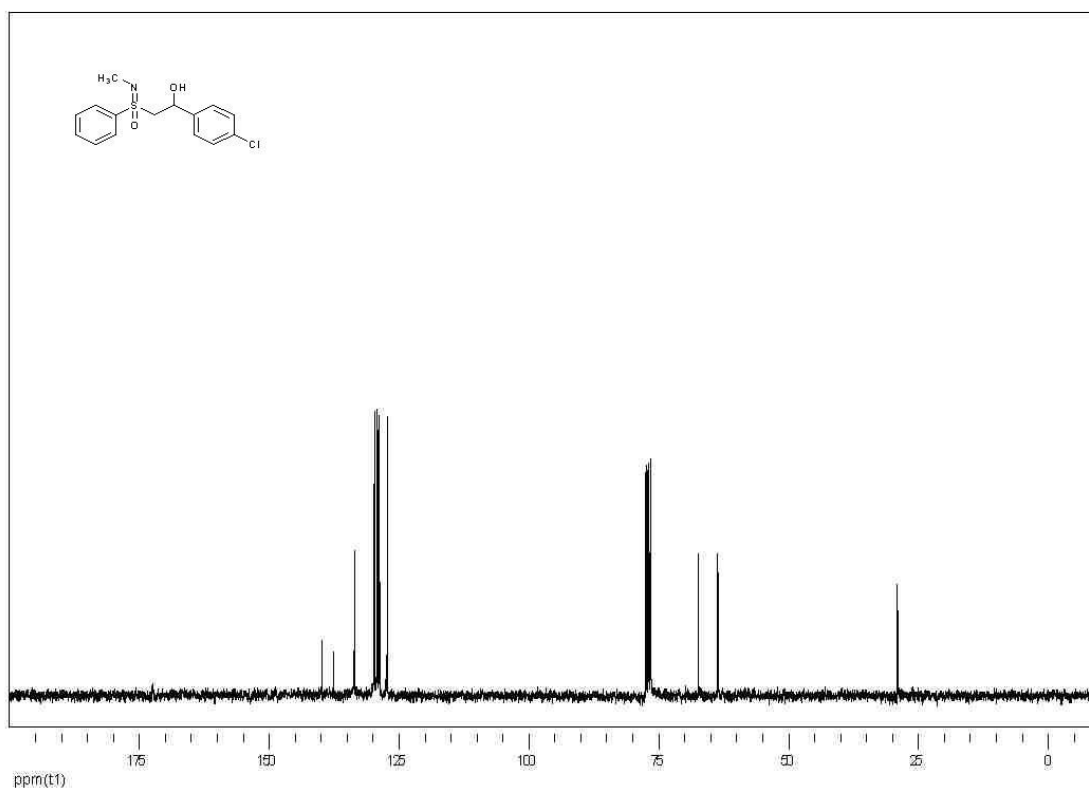
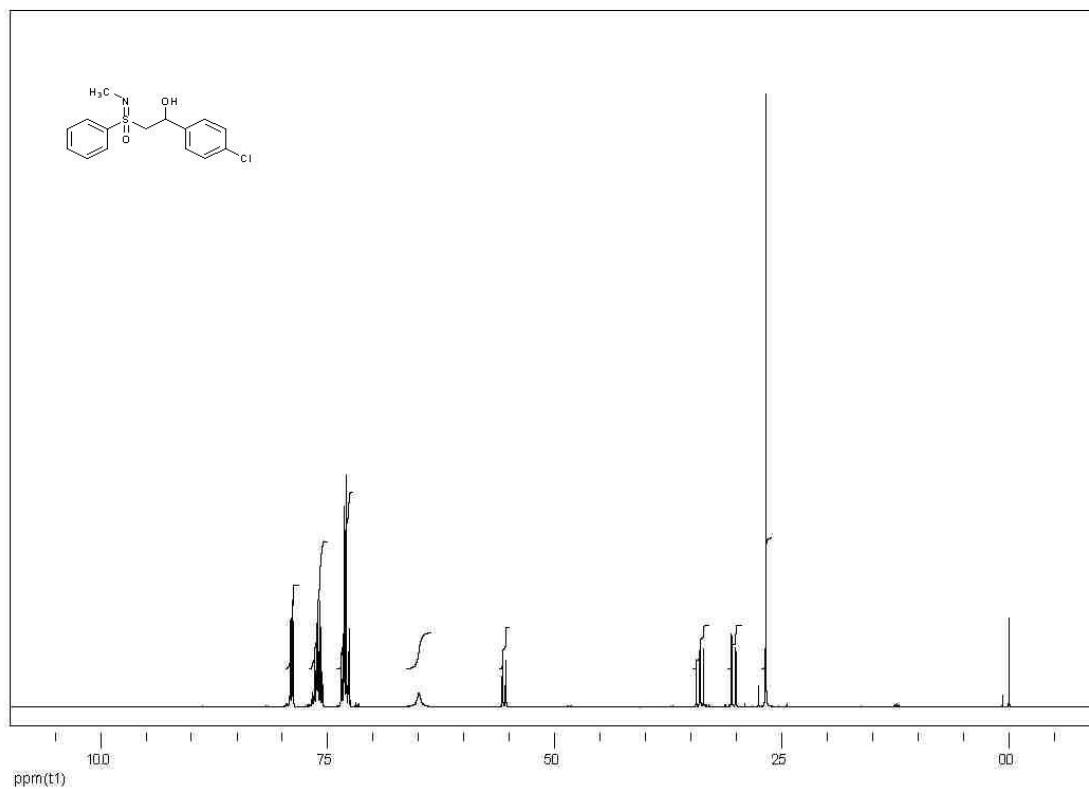
**(*SS,R*)-3-methyl-1-(*N*-methyl-*S*-phenylsulfonimidoyl)-2-phenylbutan-2-ol (2cd):**  
(Table 1, entry 6)



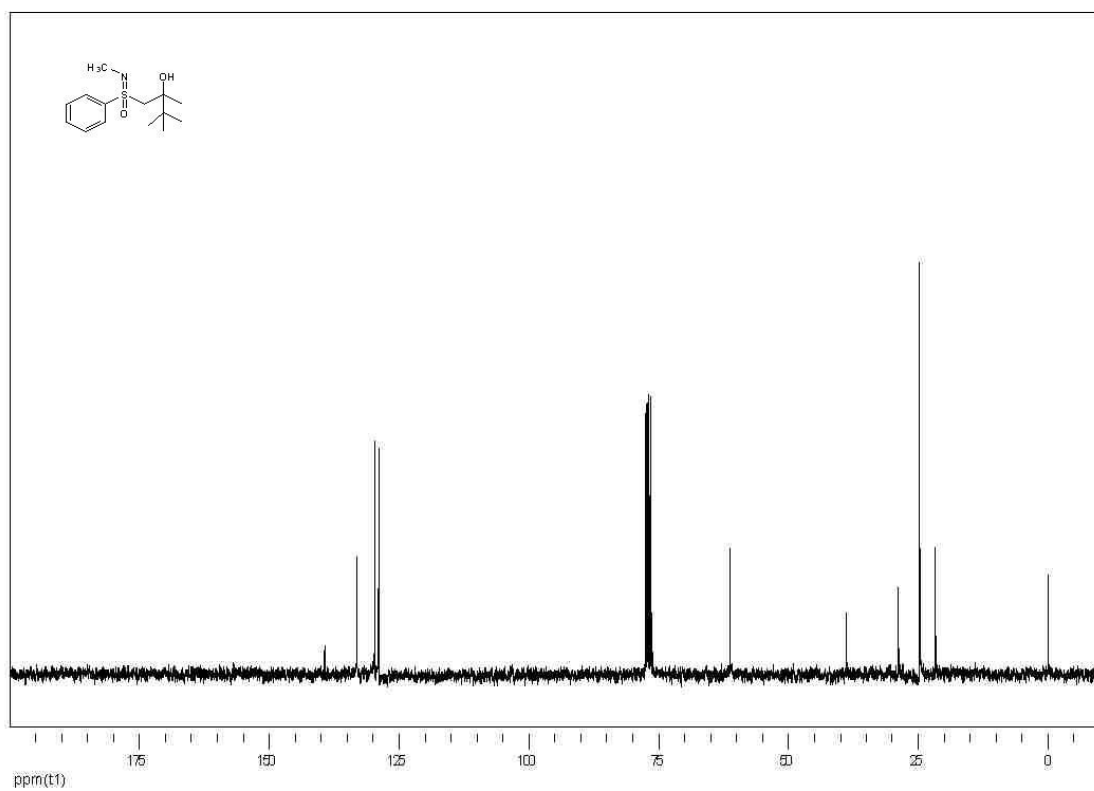
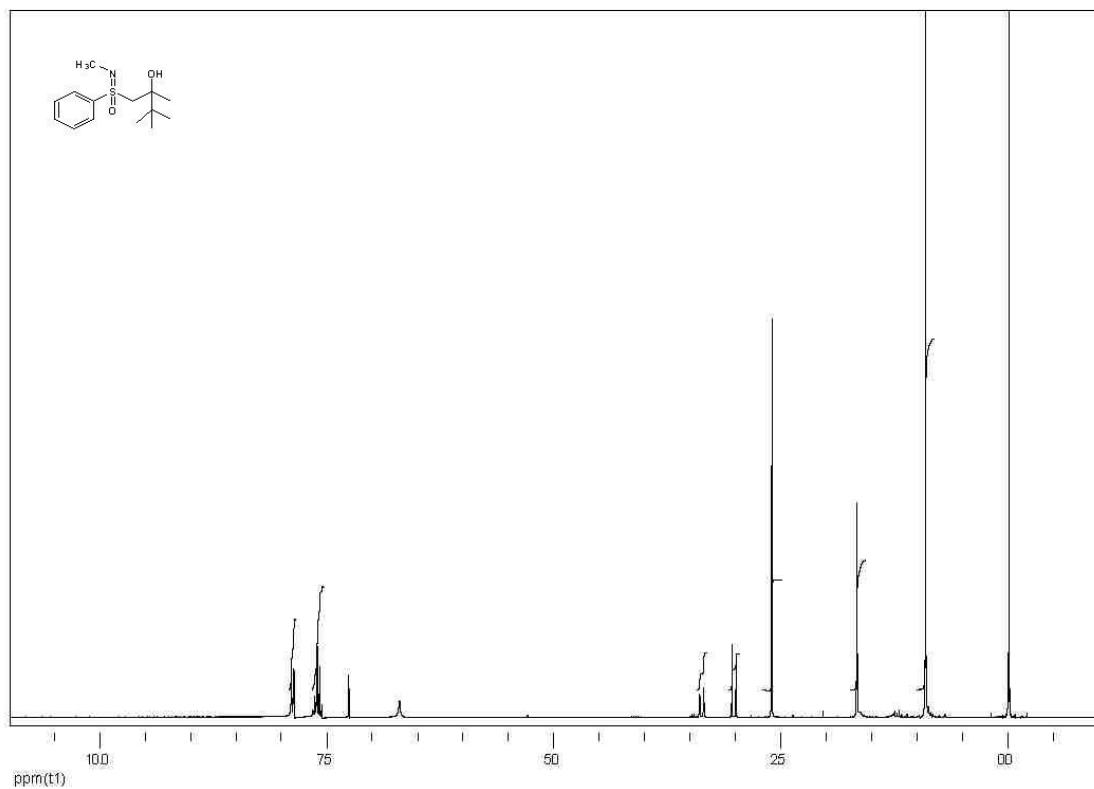
**(*SS,S*)-3-methyl-1-(*N*-methyl-*S*-phenylsulfonimidoyl)-2-phenylbutan-2-ol [(*dia*)-2cd]**: (Table1, entry 7)

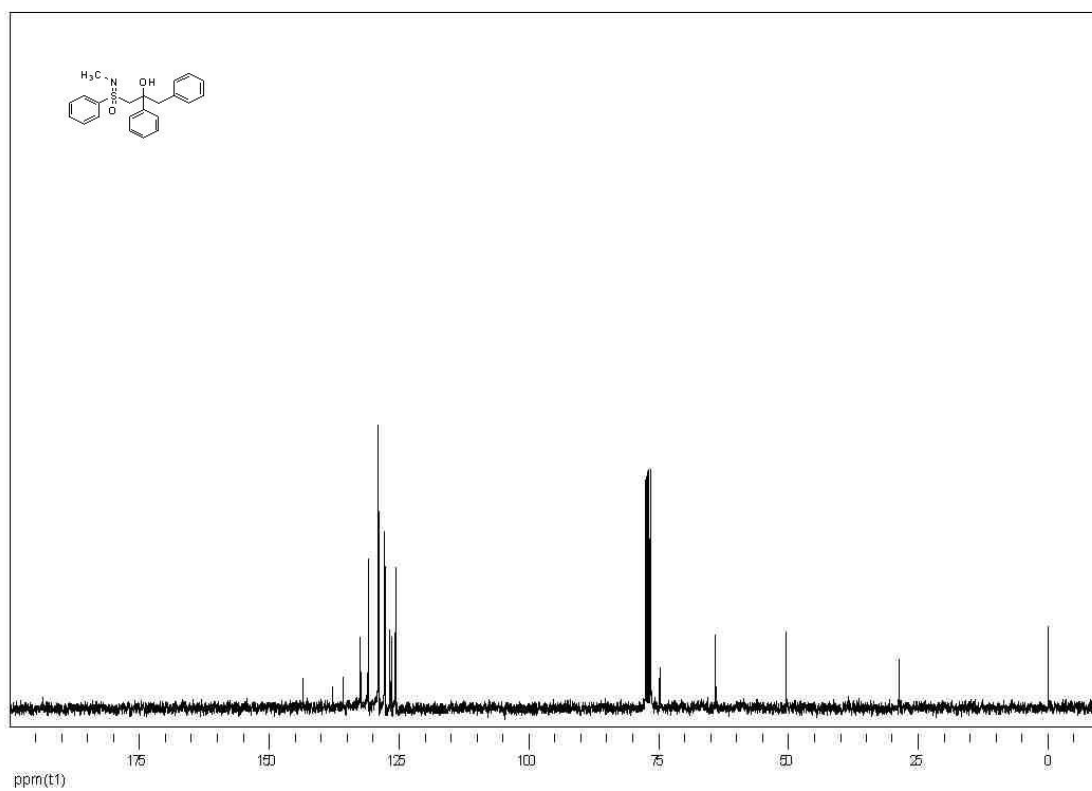
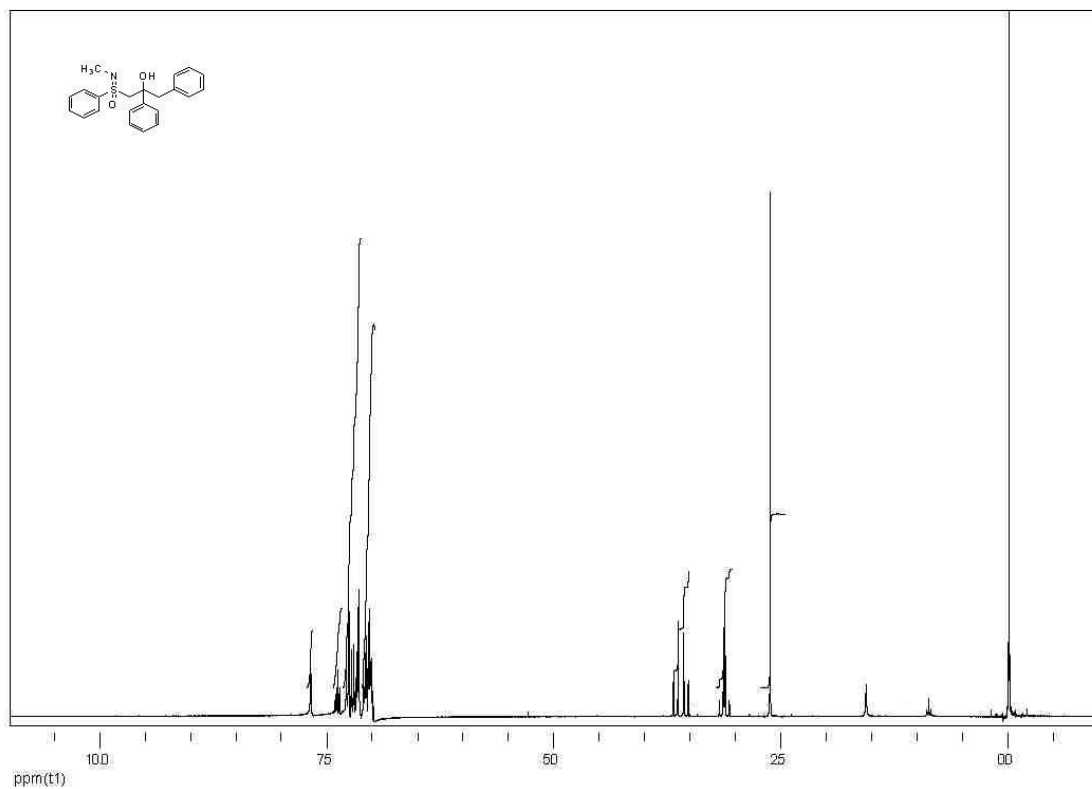


**(*SS,S/R*)-1-(4-chlorophenyl)-2-(*N*-methyl-*S*-phenylsulfonimidoyl)ethanol (2ce):**  
(Table 1, entry 8)

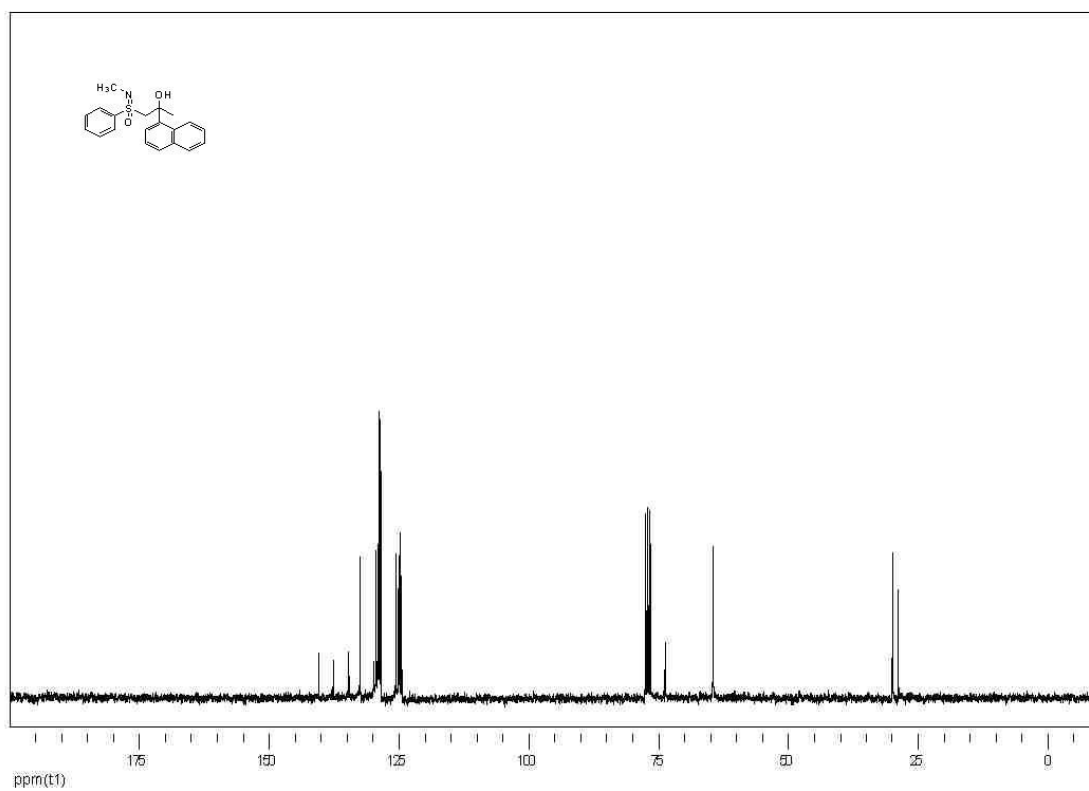
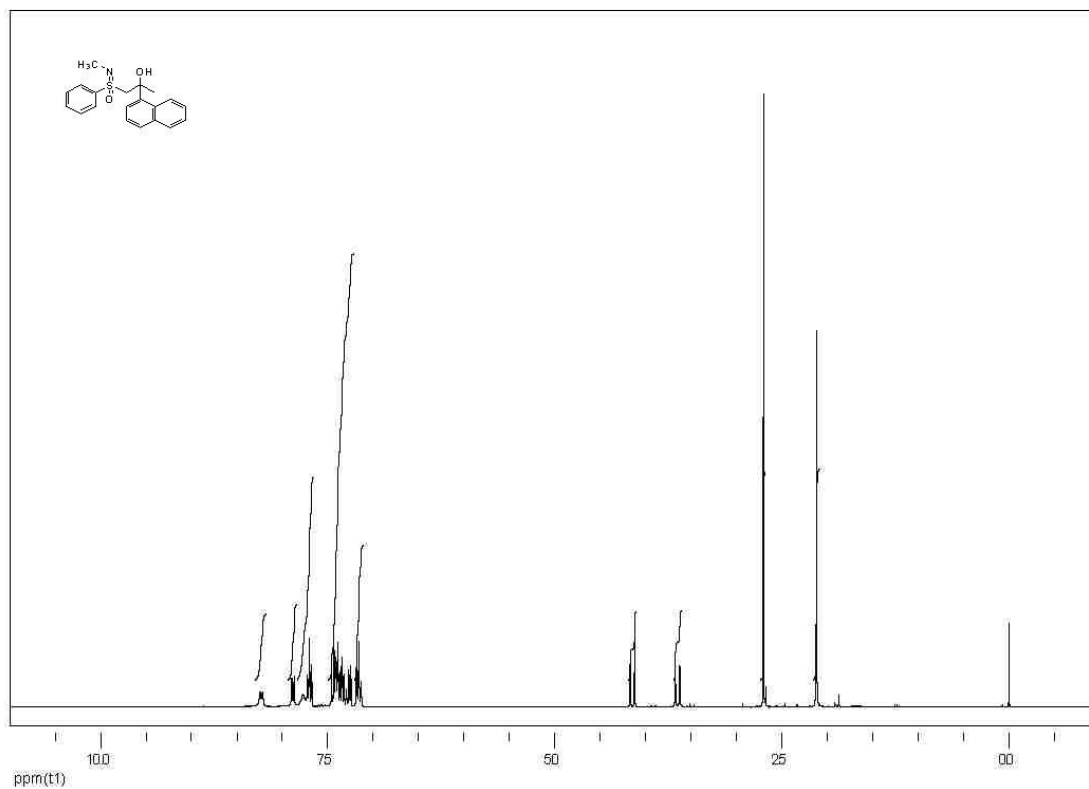


**(*SS,S/R*)-2,3,3-trimethyl-1-(*N*-methyl-*S*-phenylsulfonimidoyl)butan-2-ol (2cf):**  
(Table 1, entry 9)

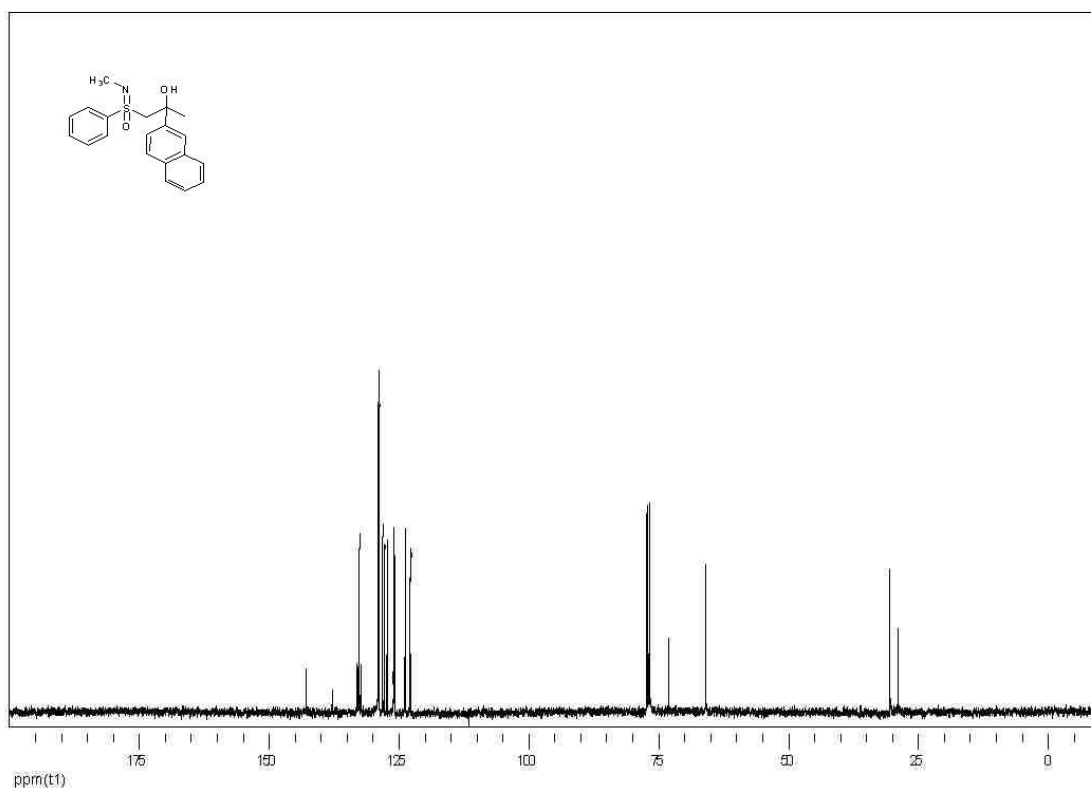
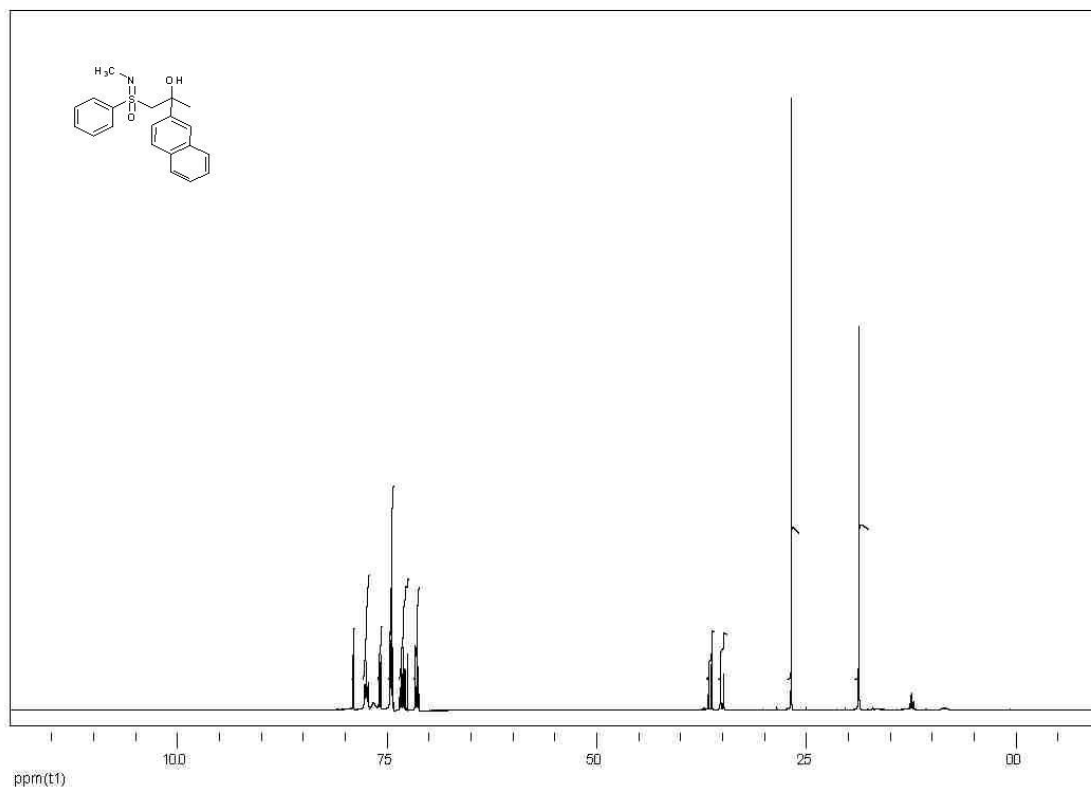


**Synthesis of (SS,S/R)-1-(N-methyl-S-phenylsulfonimidoyl)-2,3-diphenylpropan-2-ol (2cg):** (Table1, entry 10)

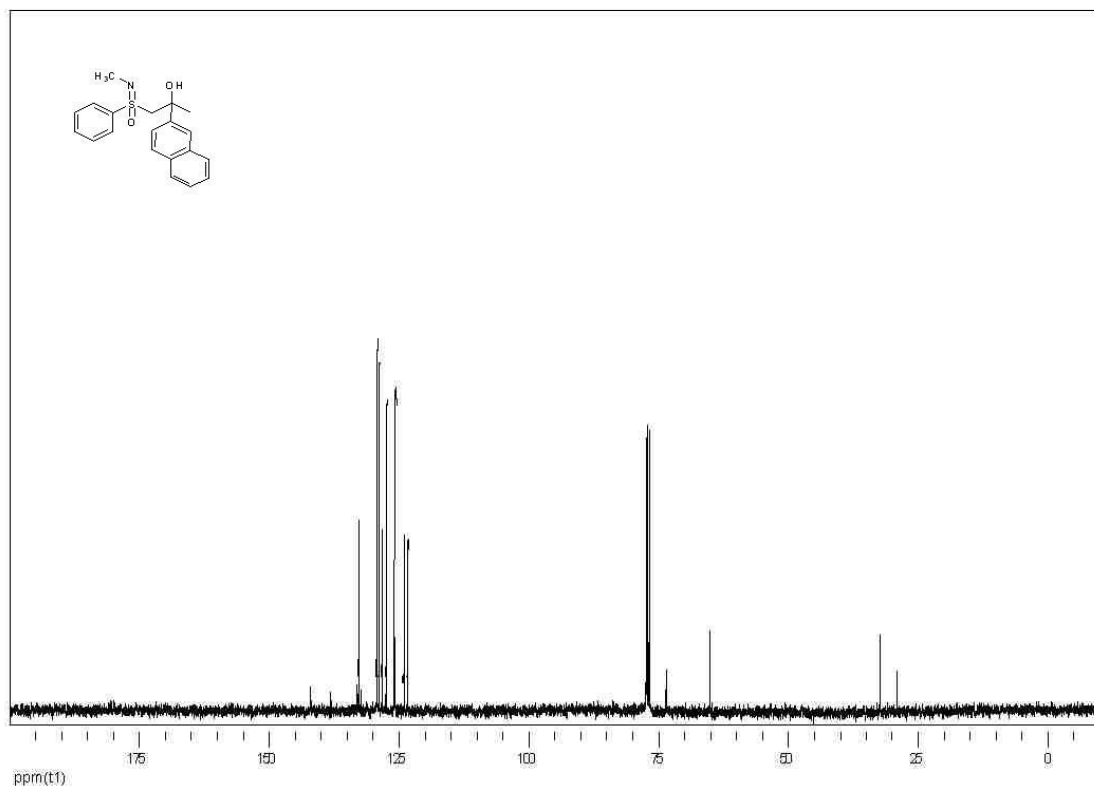
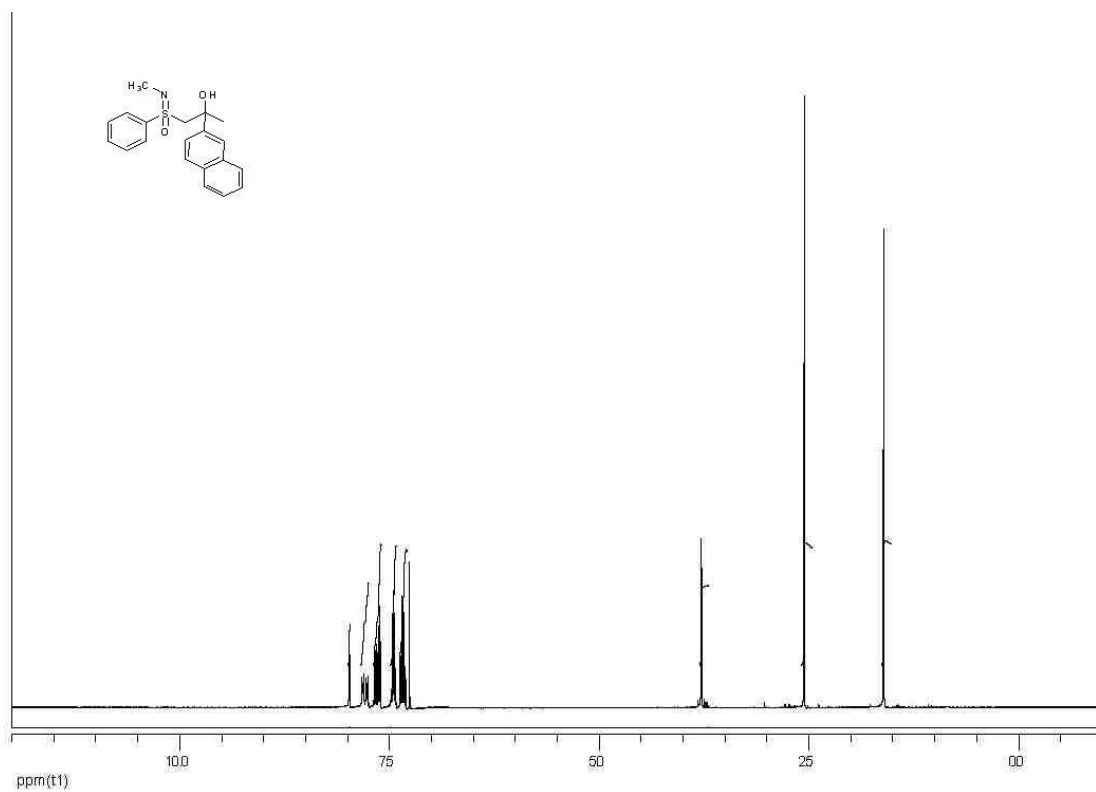
**(*SS,S/R*)-1-(*N*-methyl-*S*-phenylsulfonimidoyl)-2-(1-naphthyl)propan-2-ol (2ch):**  
(Table 1, entry 11)



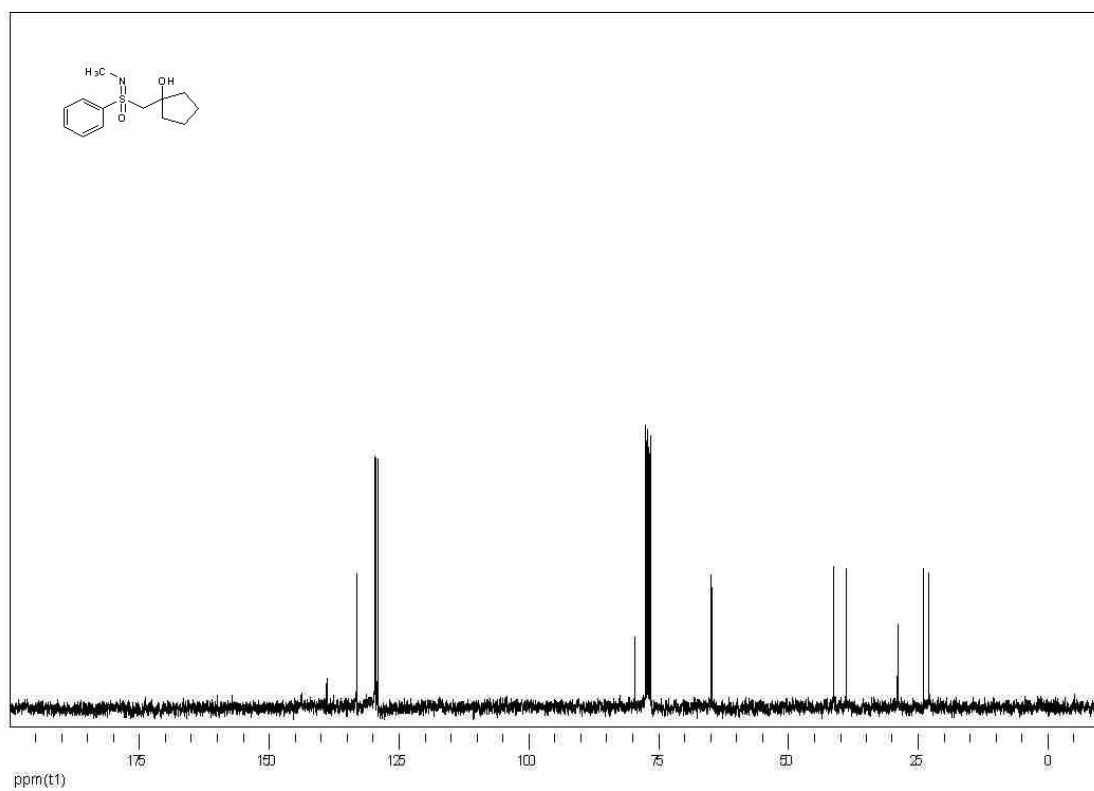
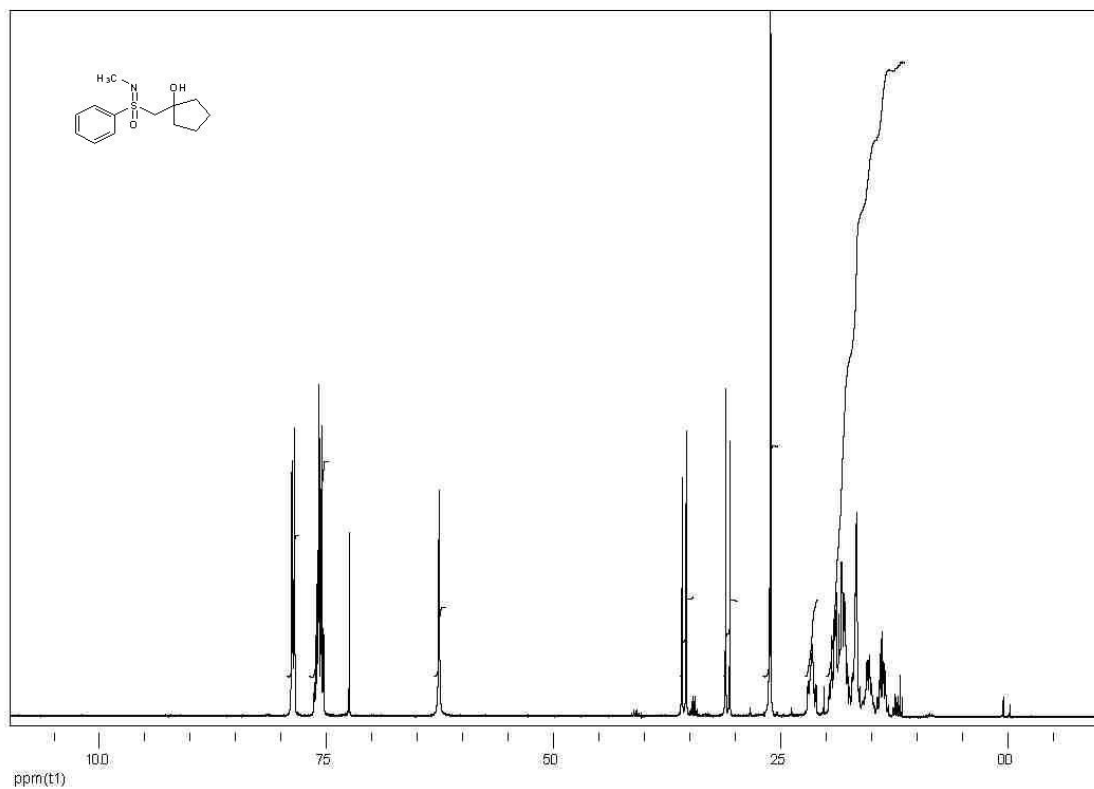
**(*SS,S/R*)-1-(*N*-methyl-*S*-phenylsulfonimidoyl)-2-(2-naphthyl)propan-2-ol (2ci):**  
(Table 1, entry 12)



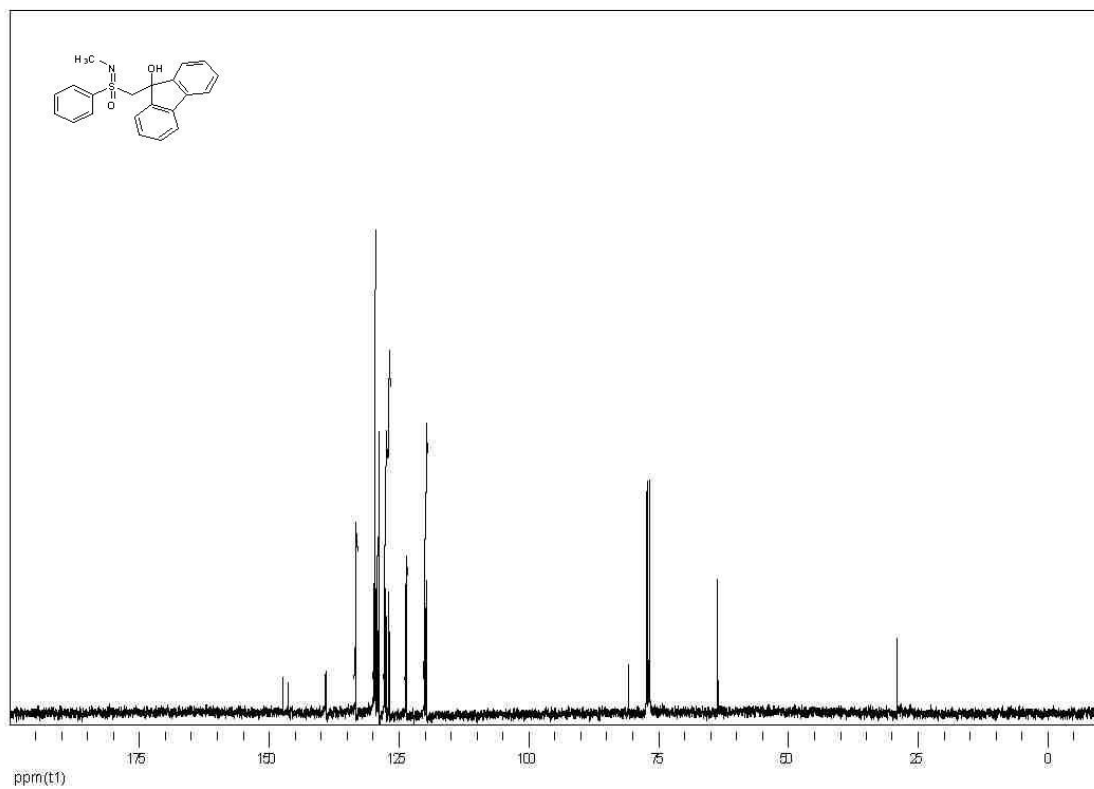
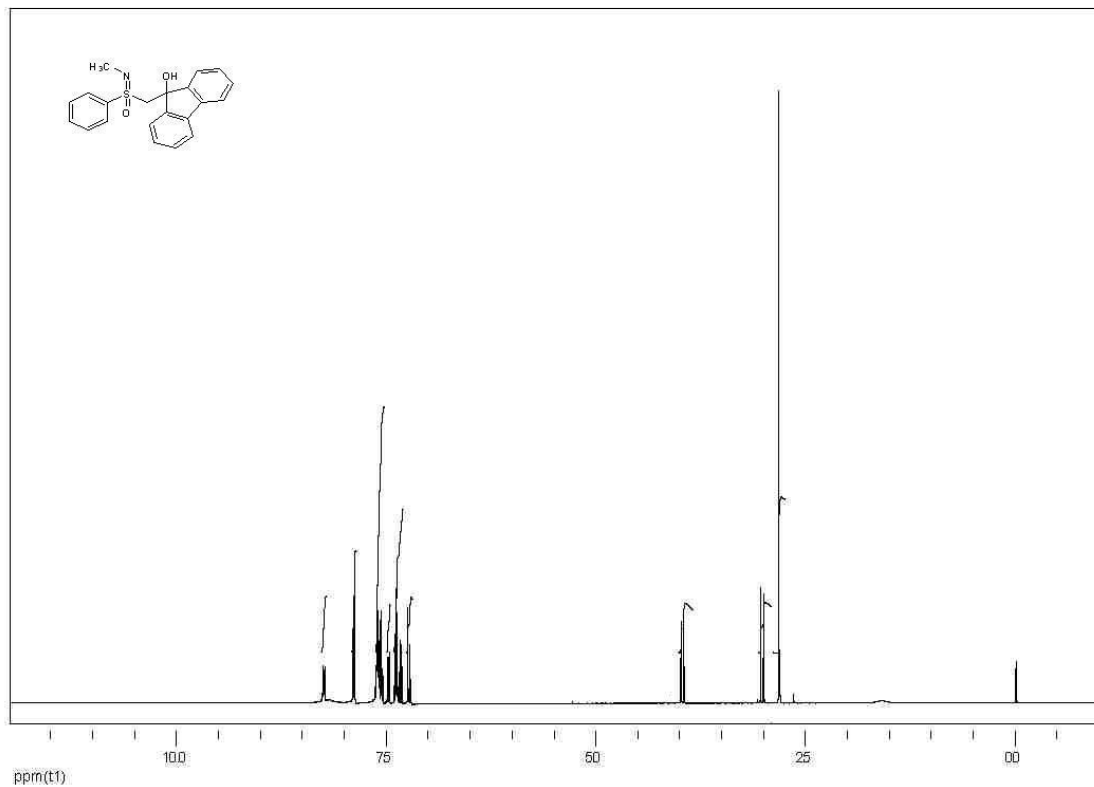
**(*SS,S/R*)-1-(*N*-methyl-*S*-phenylsulfonimidoyl)-2-(2-naphthyl)propan-2-ol [(*dia*)-2*ci*]:** (Table1, entry 13)



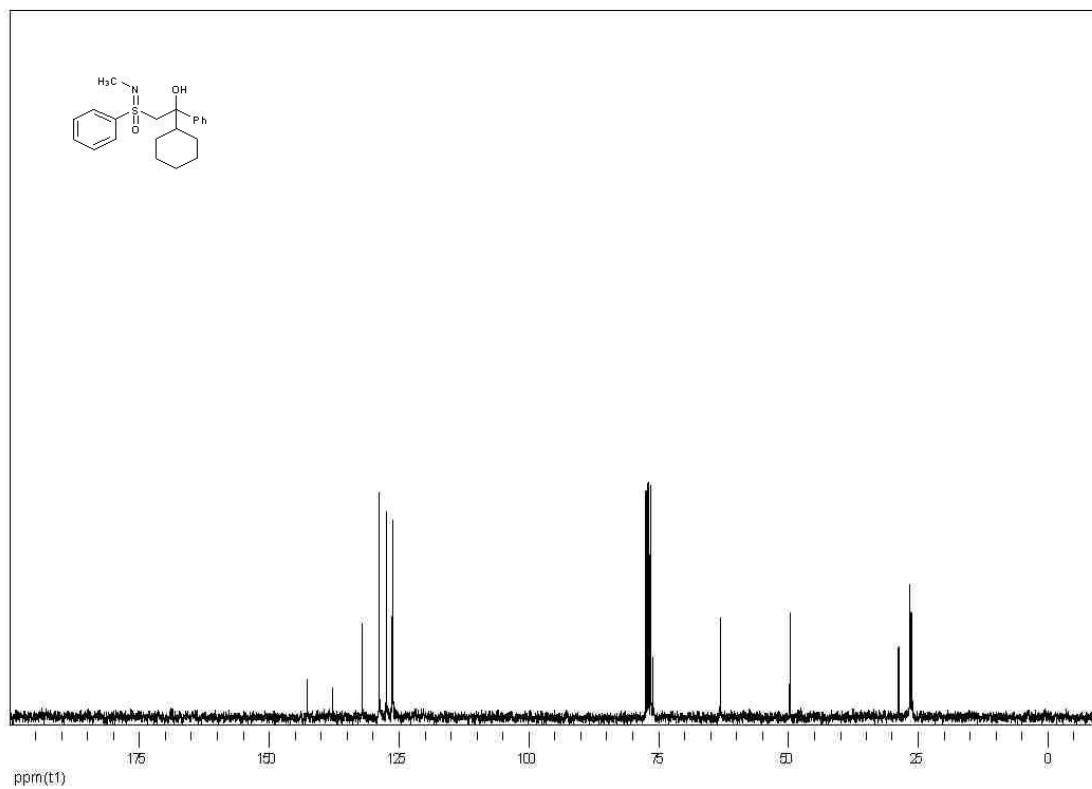
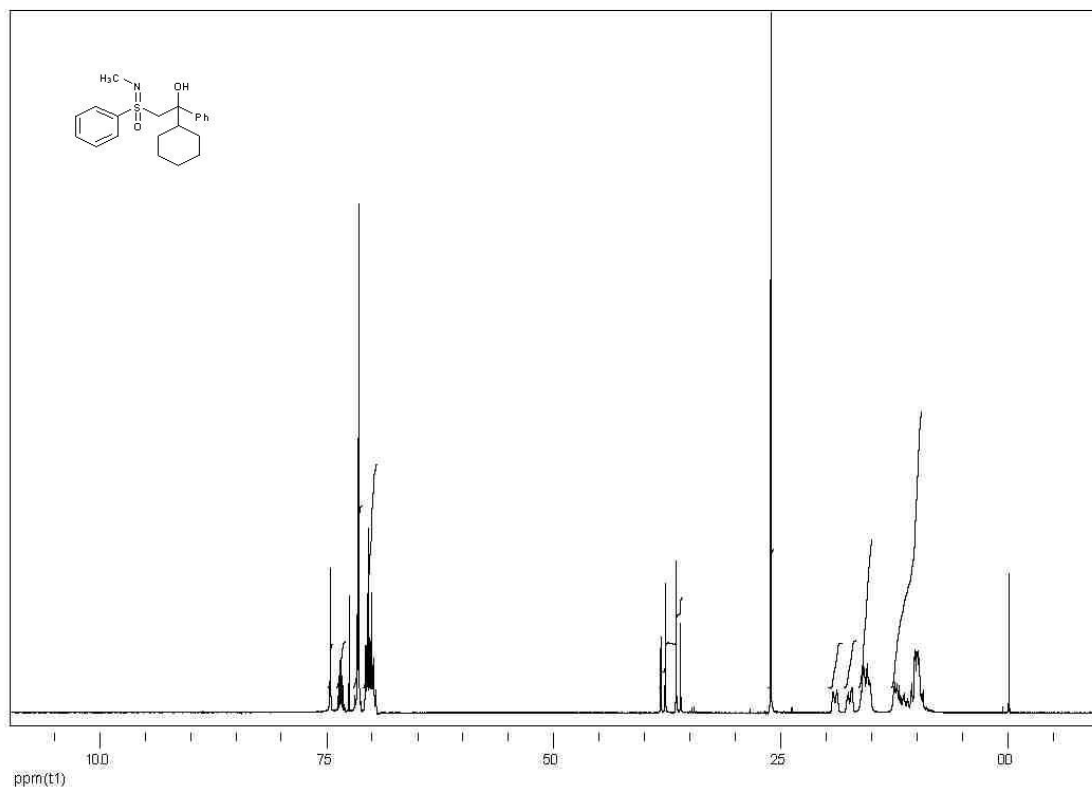
**(S)-1-[(N-methyl-S-phenylsulfonimidoyl)methyl]cyclopentanol (2cj):** (Table1, entry 14)



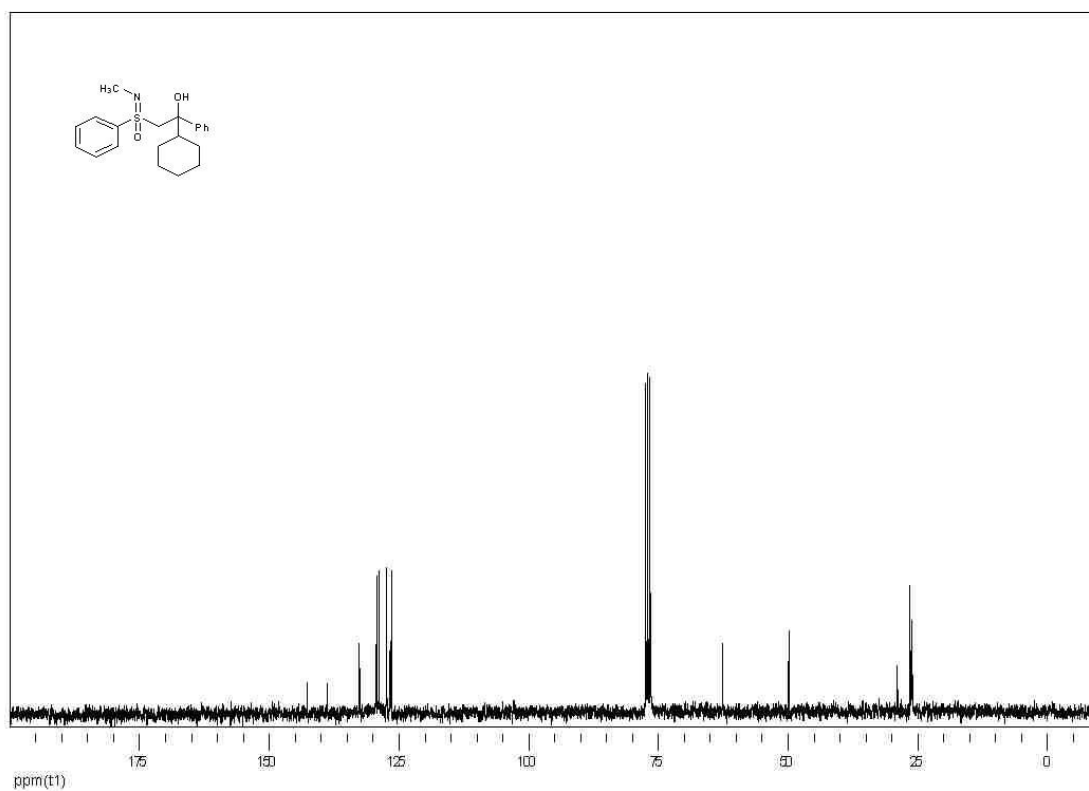
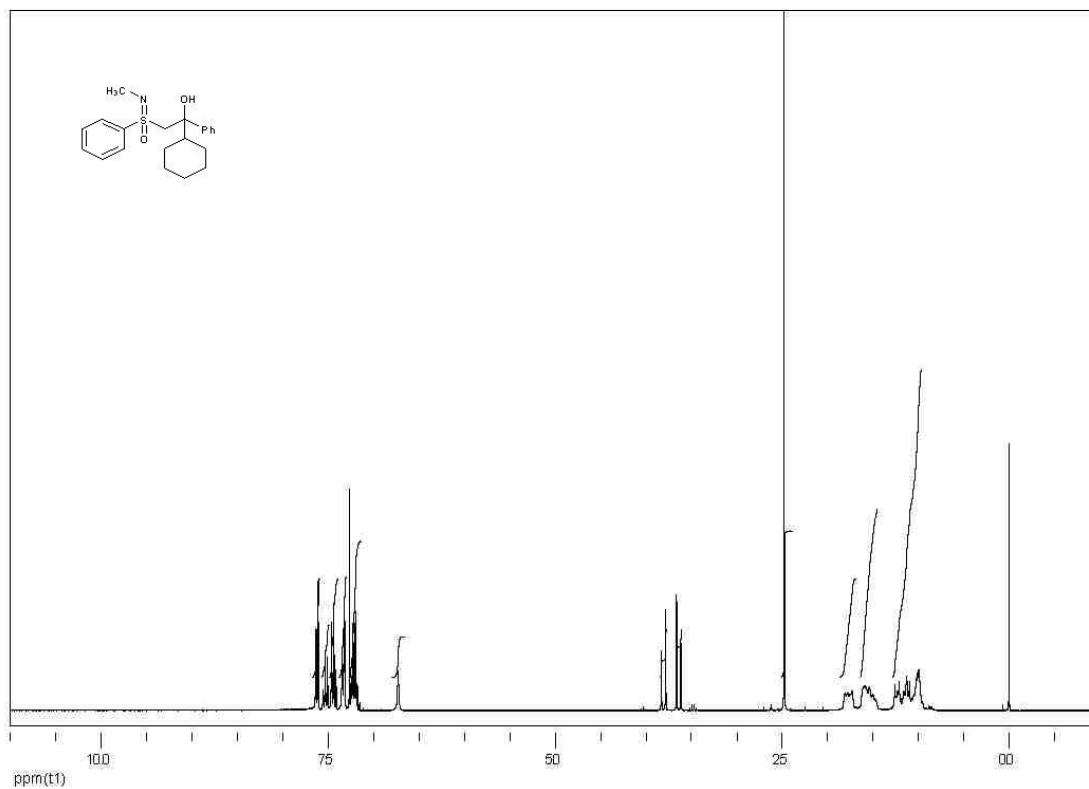
**(S)-9-[(N-methyl-S-phenylsulfonimidoyl)methyl]-9H-fluoren-9-ol (2ck):** (Table1, entry 15)



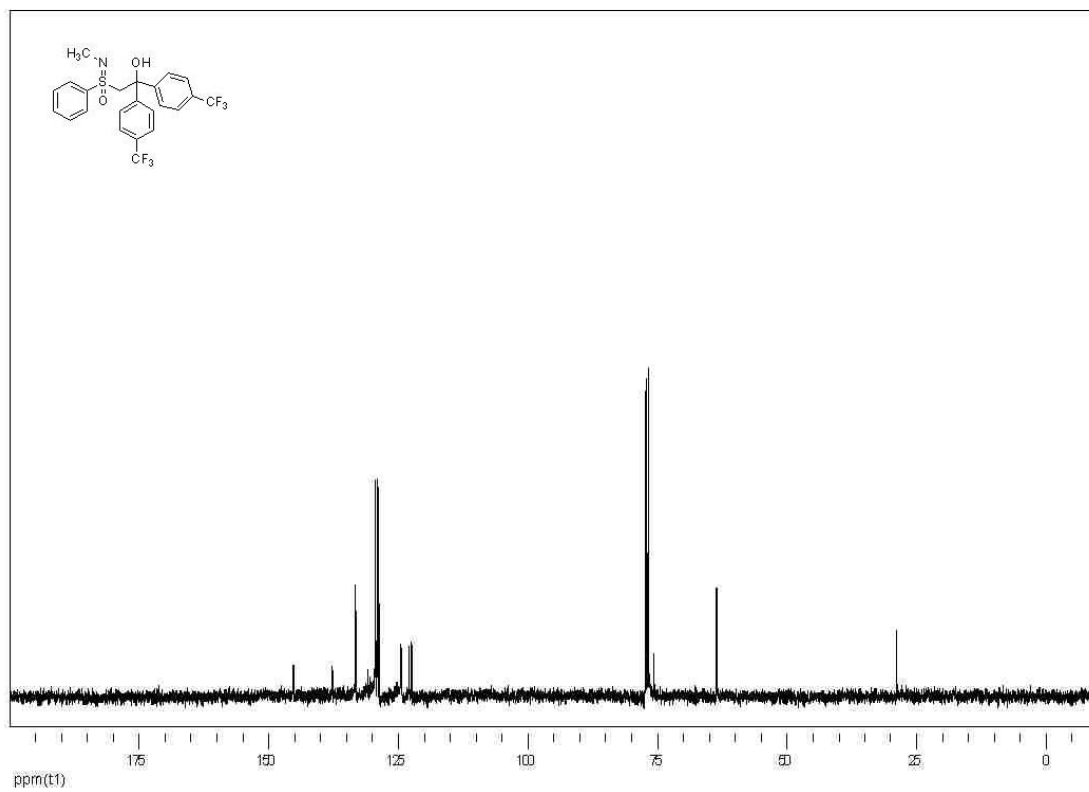
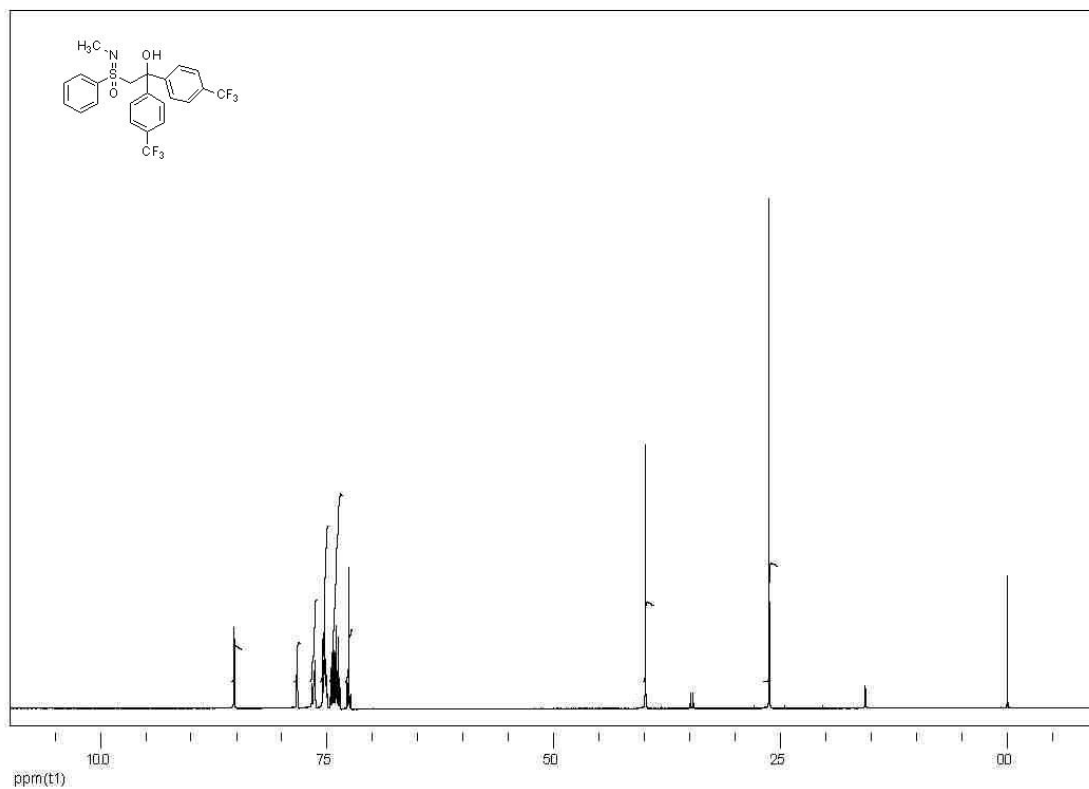
**(*SS,S/R*)-1-cyclohexyl-2-(*N*-methyl-*S*-phenylsulfonimidoyl)-1-phenylethanol (2c1):**  
(Table 1, entry 16)



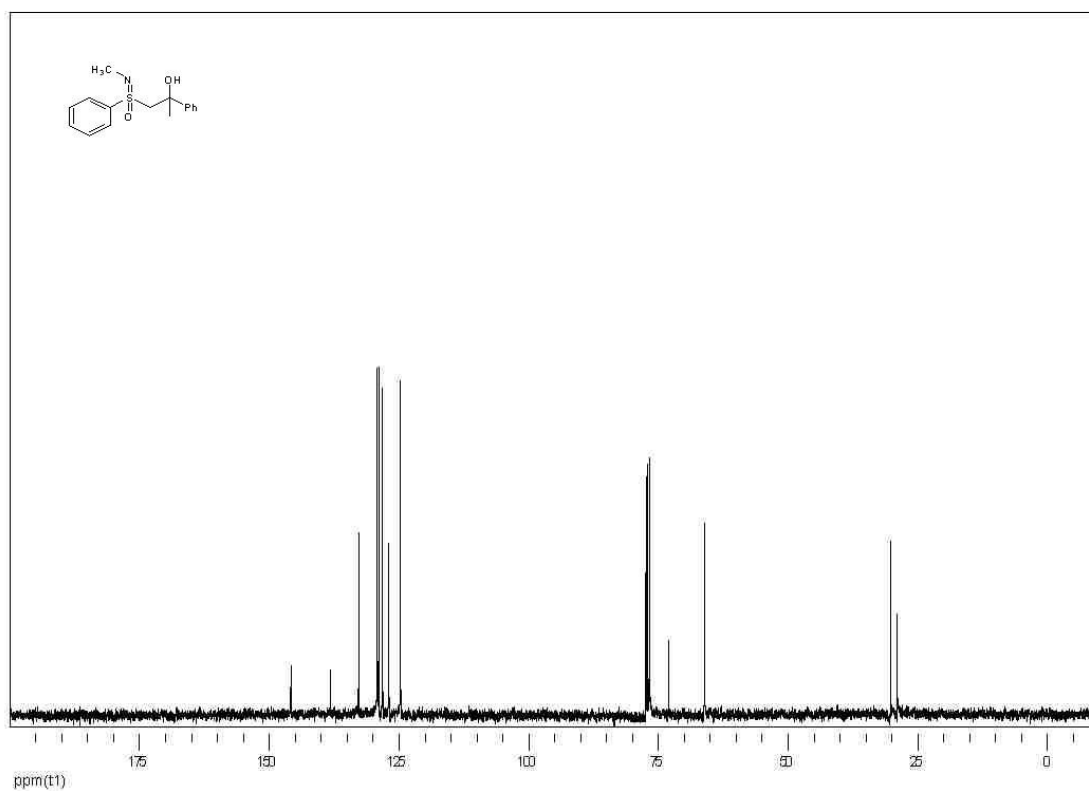
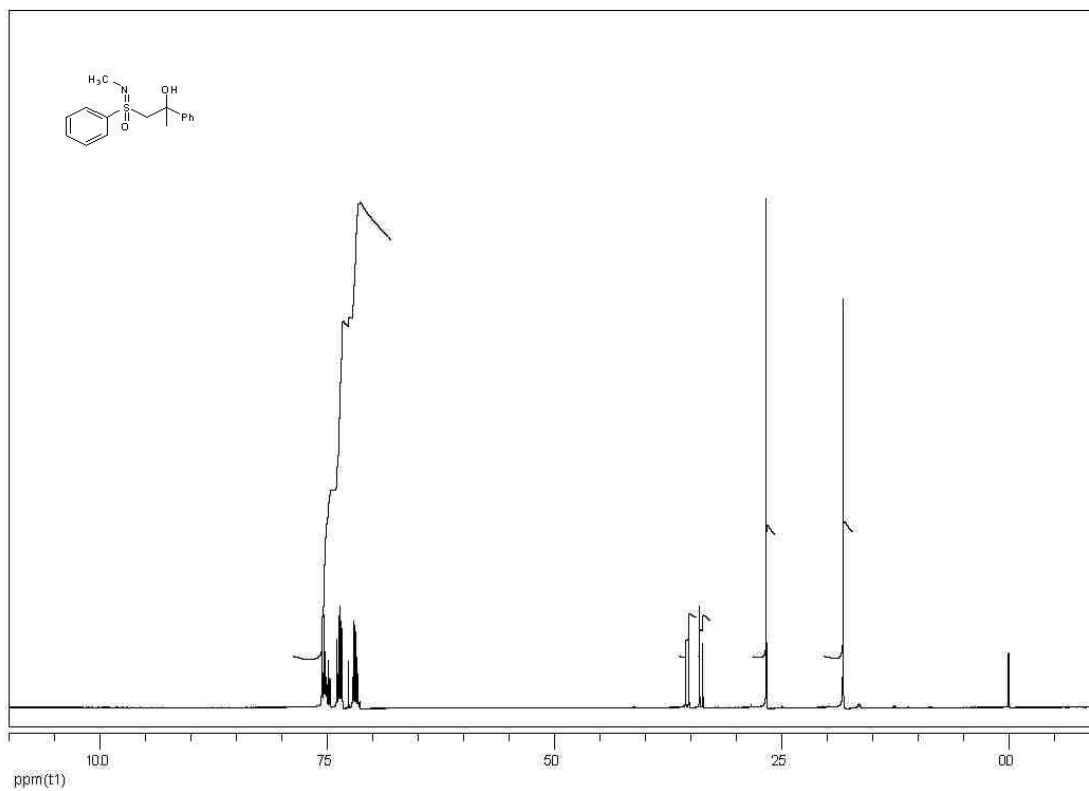
**(*SS,S/R*)-1-cyclohexyl-2-(*N*-methyl-*S*-phenylsulfonimidoyl)-1-phenylethanol**  
[(*dia*)-2cl]: (Table1, entry 17)



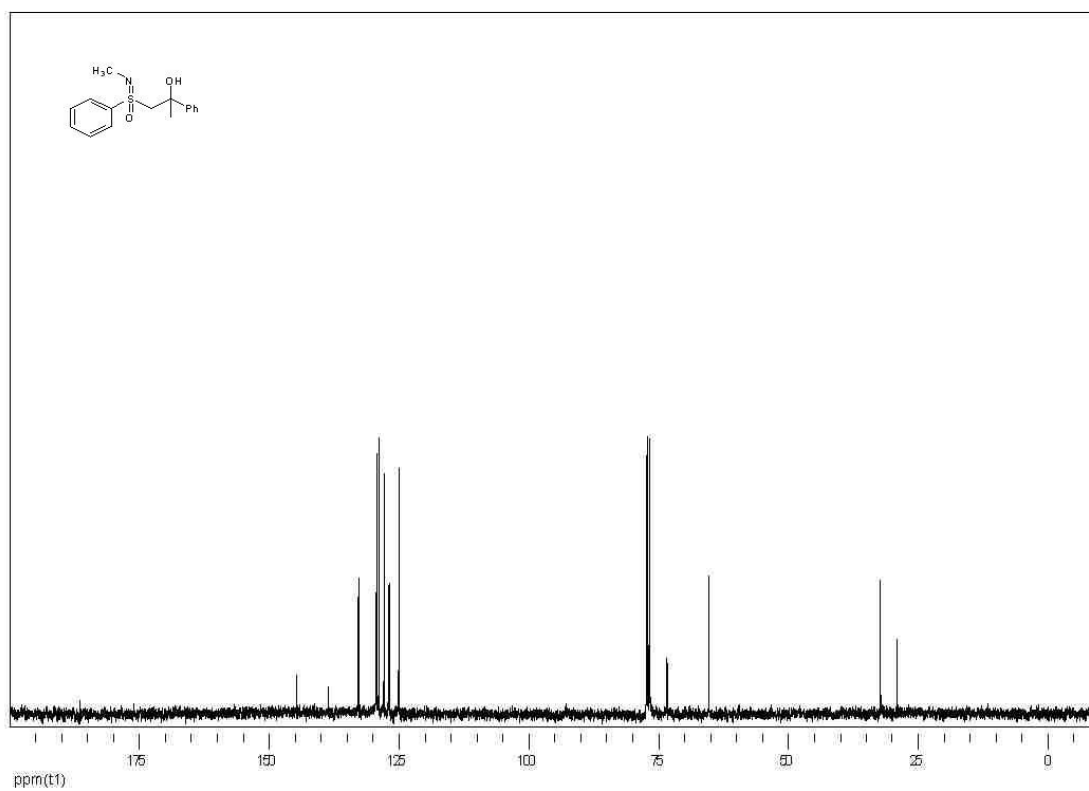
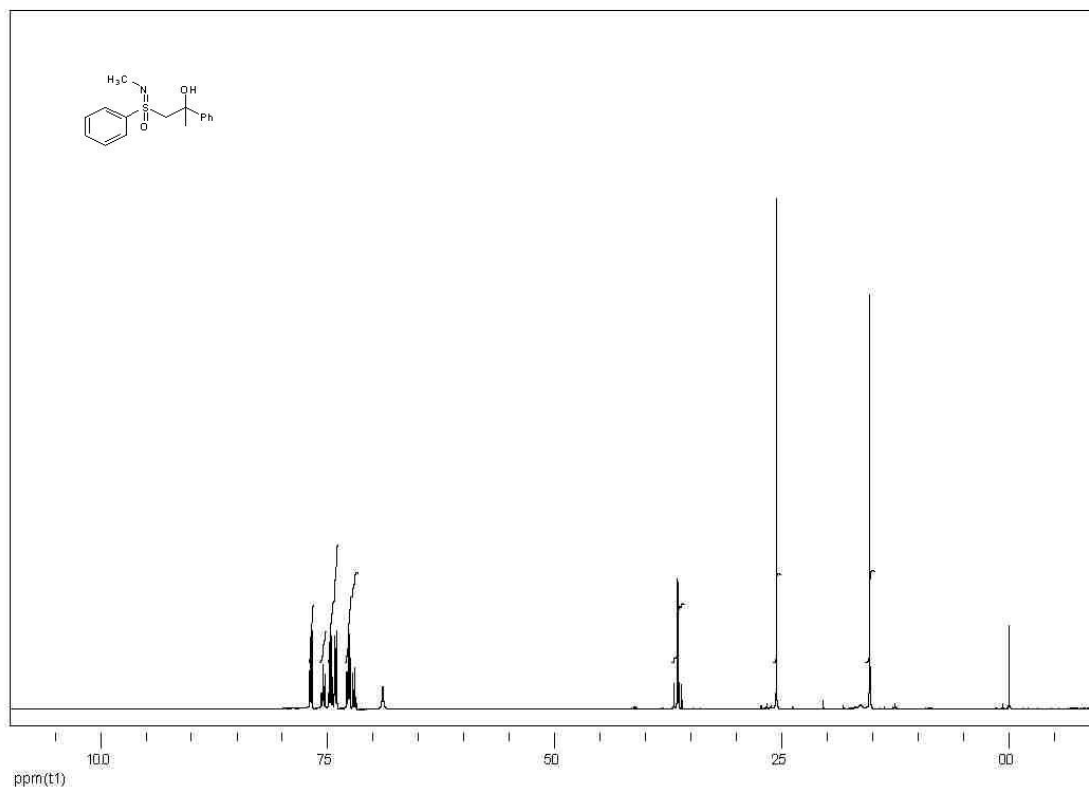
**(S)-2-(N-methyl-S-phenylsulfonimidoyl)-1,1-bis[4-(trifluoromethyl)phenyl]ethanol (2cm):** (Table1, entry 18)



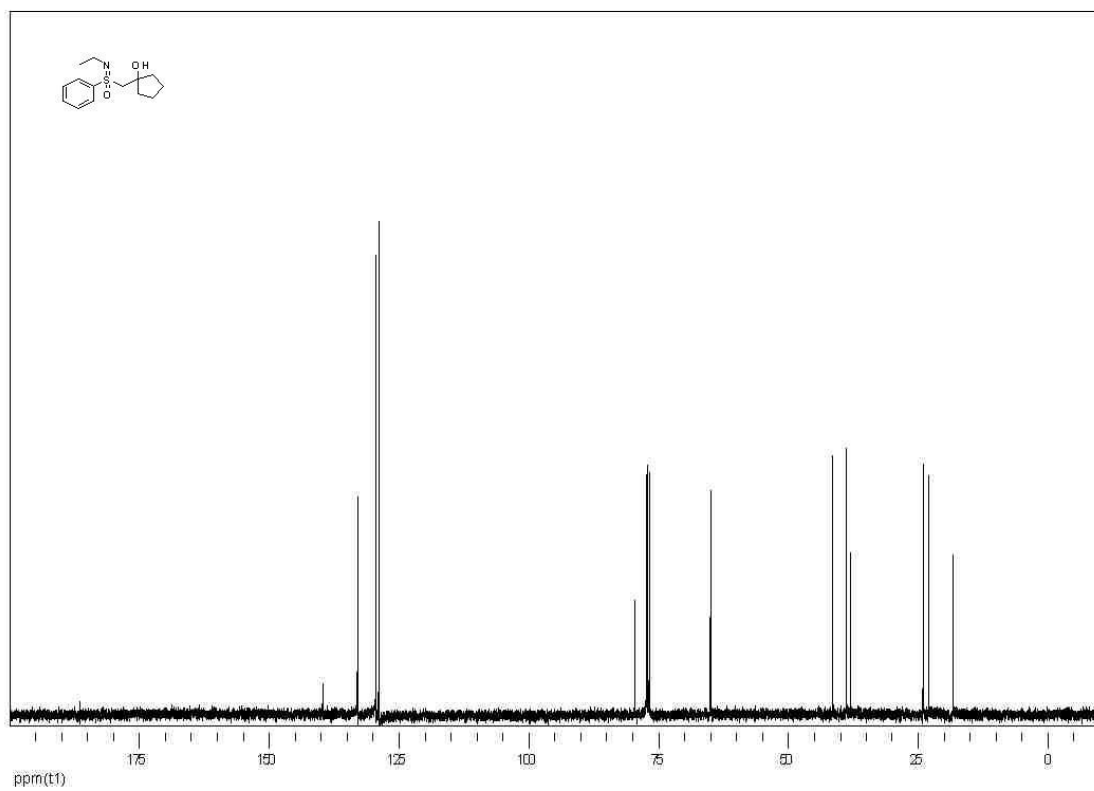
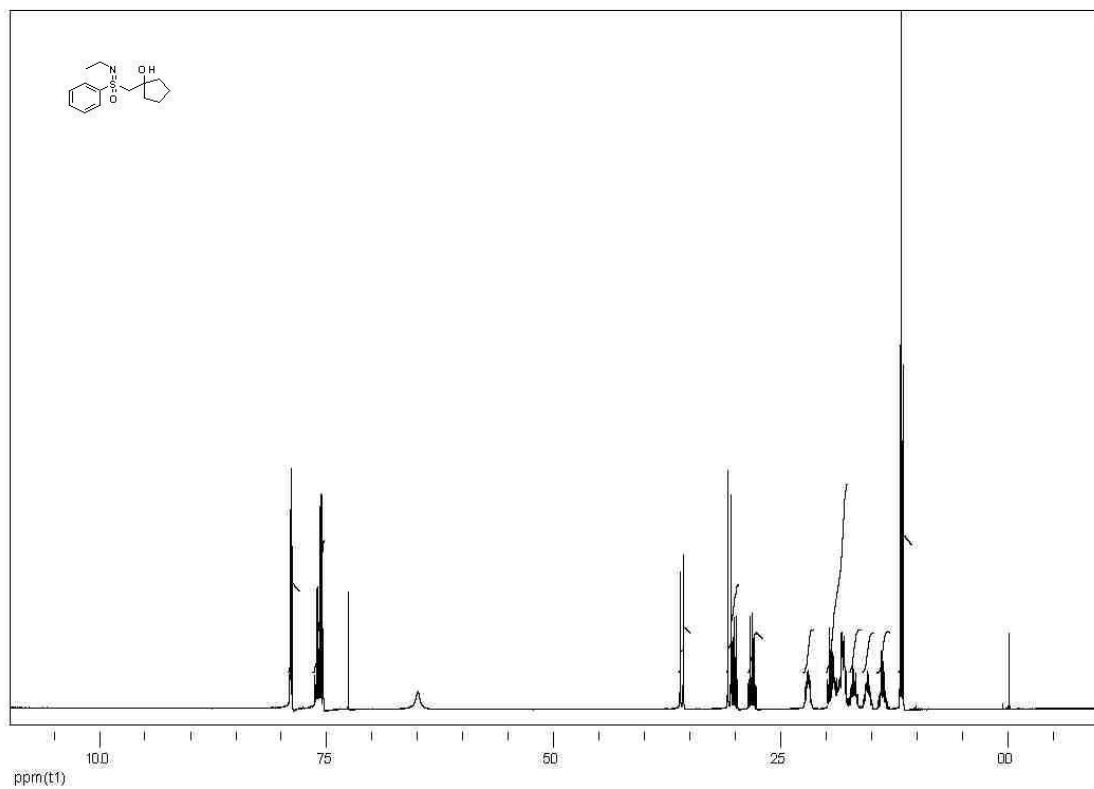
**(*SS,S/R*)-1-(*N*-methyl-*S*-phenylsulfonimidoyl)-2-phenylpropan-2-ol (2cn):**  
(Table 1, entry 19)



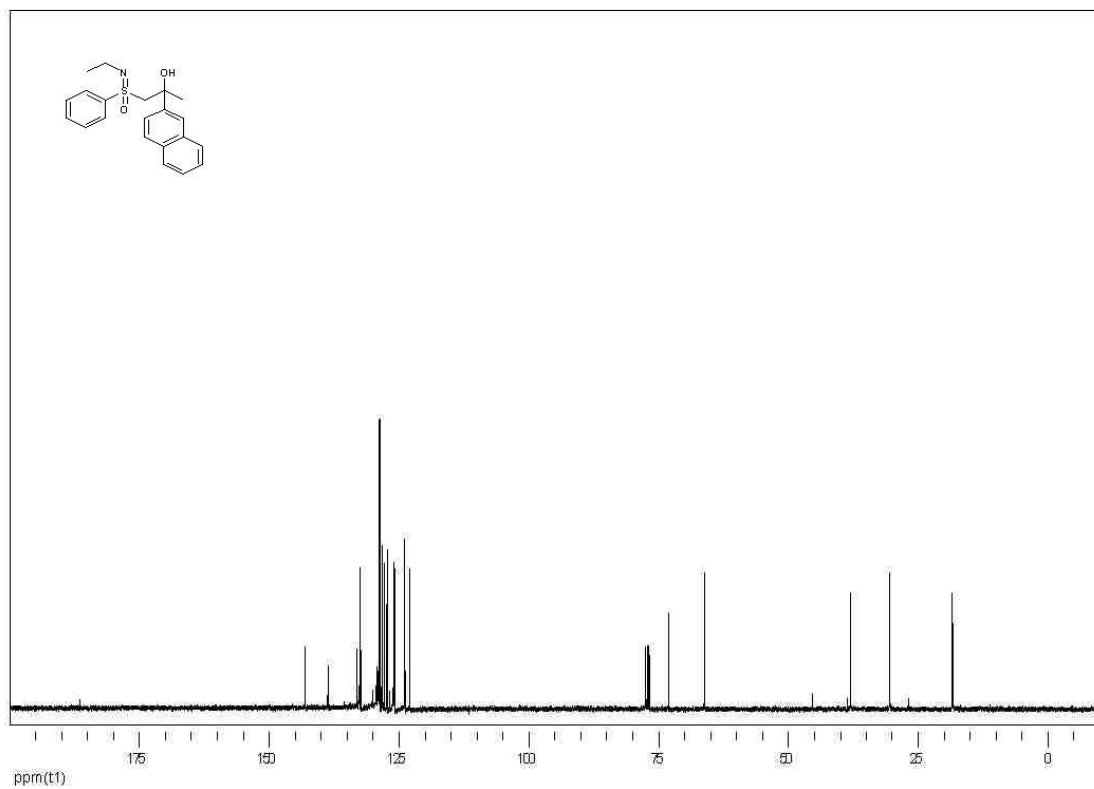
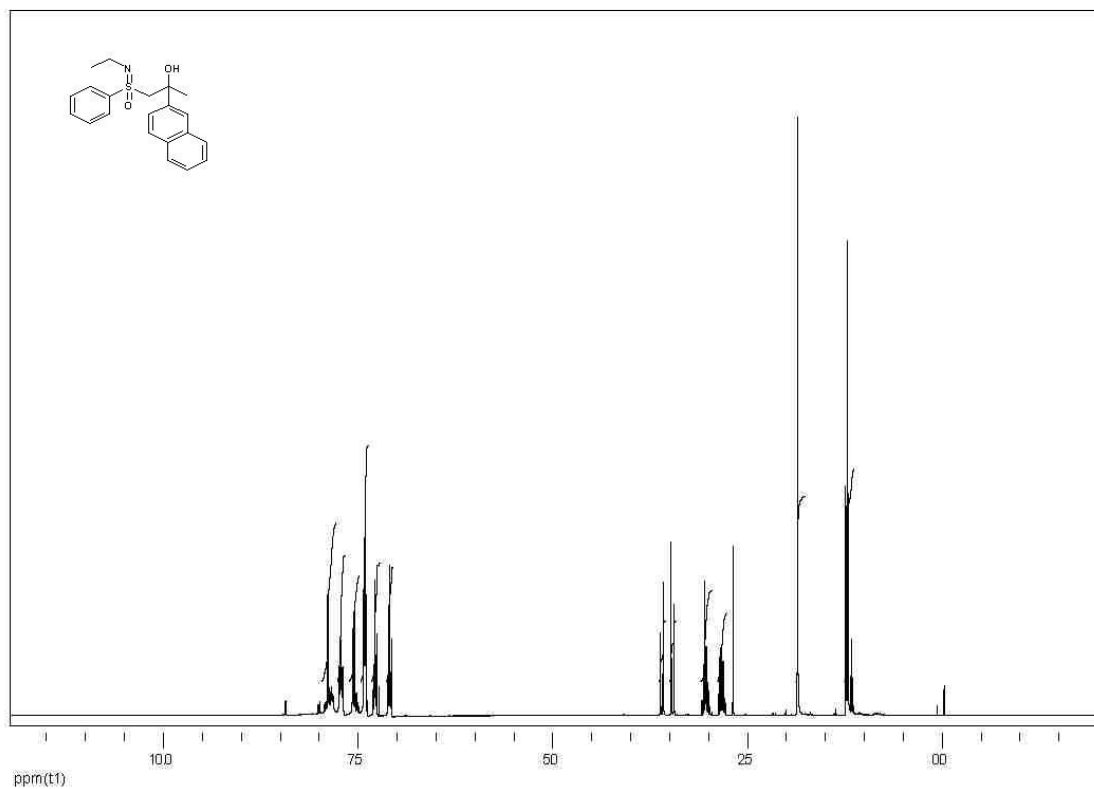
**(*SS,S/R*)-1-(*N*-methyl-*S*-phenylsulfonimidoyl)-2-phenylpropan-2-ol** [(*dia*)-2cn]:  
(Table 1, entry 20)



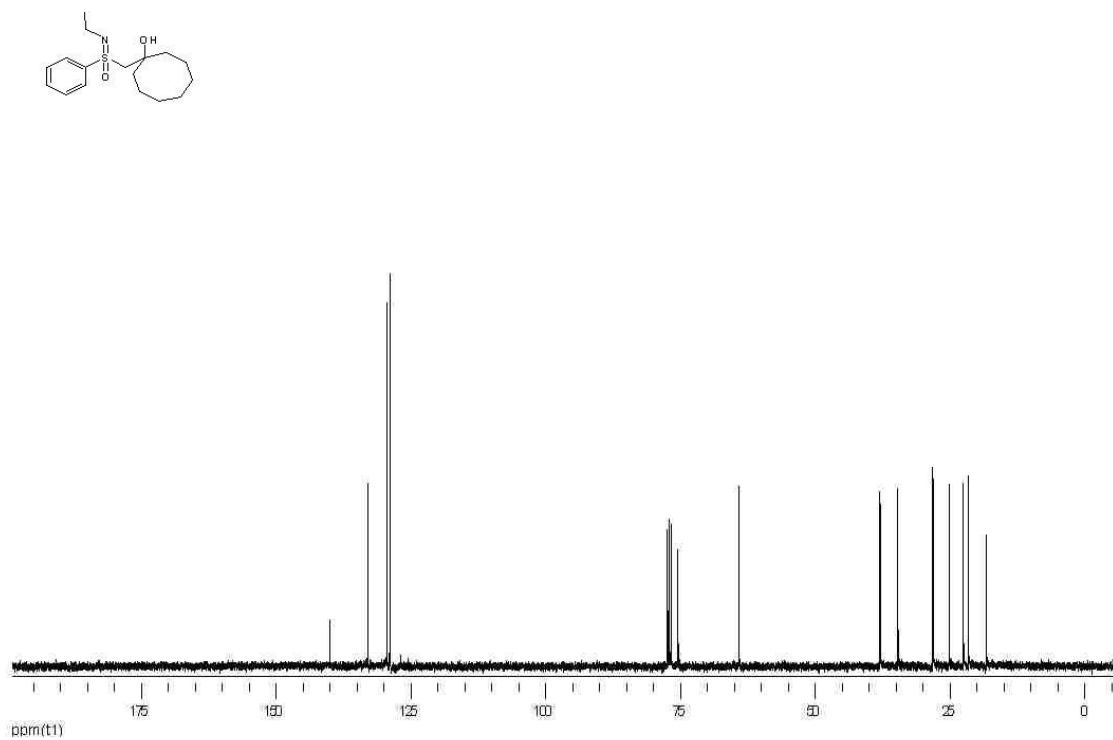
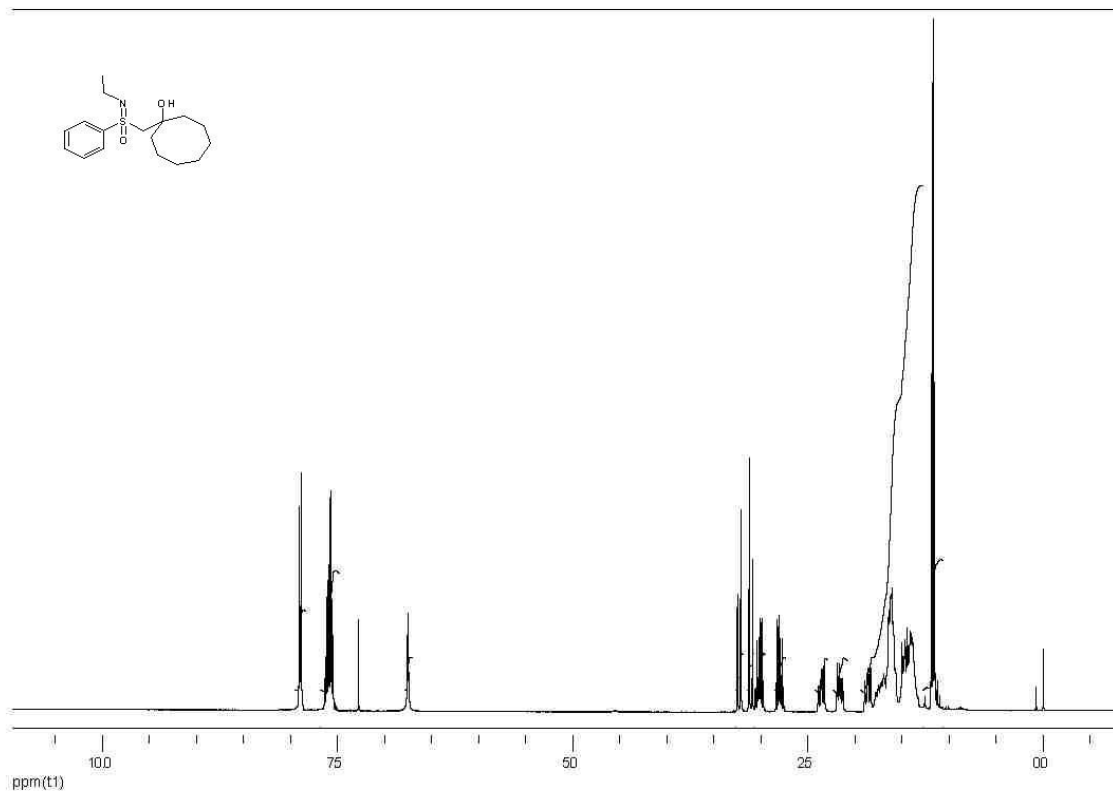
**(S)-1-[(N-ethyl-S-phenylsulfonimidoyl)methyl]cyclopentanol (2dj):** (Table1, entry 21)



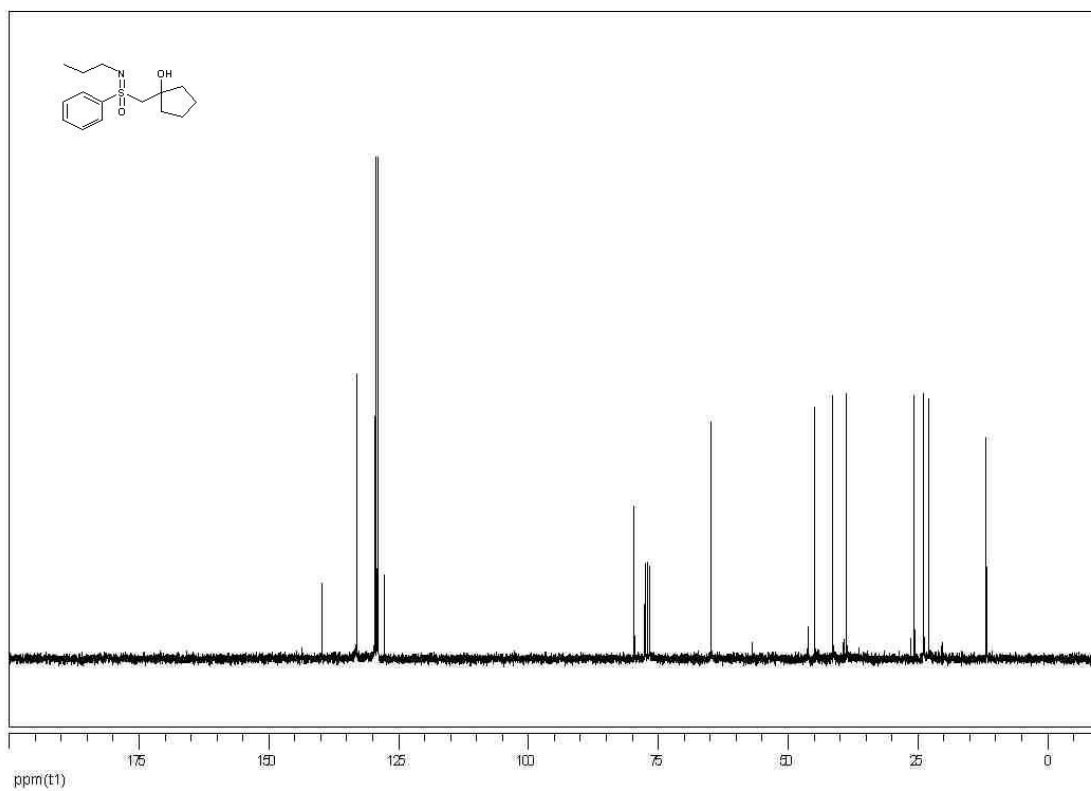
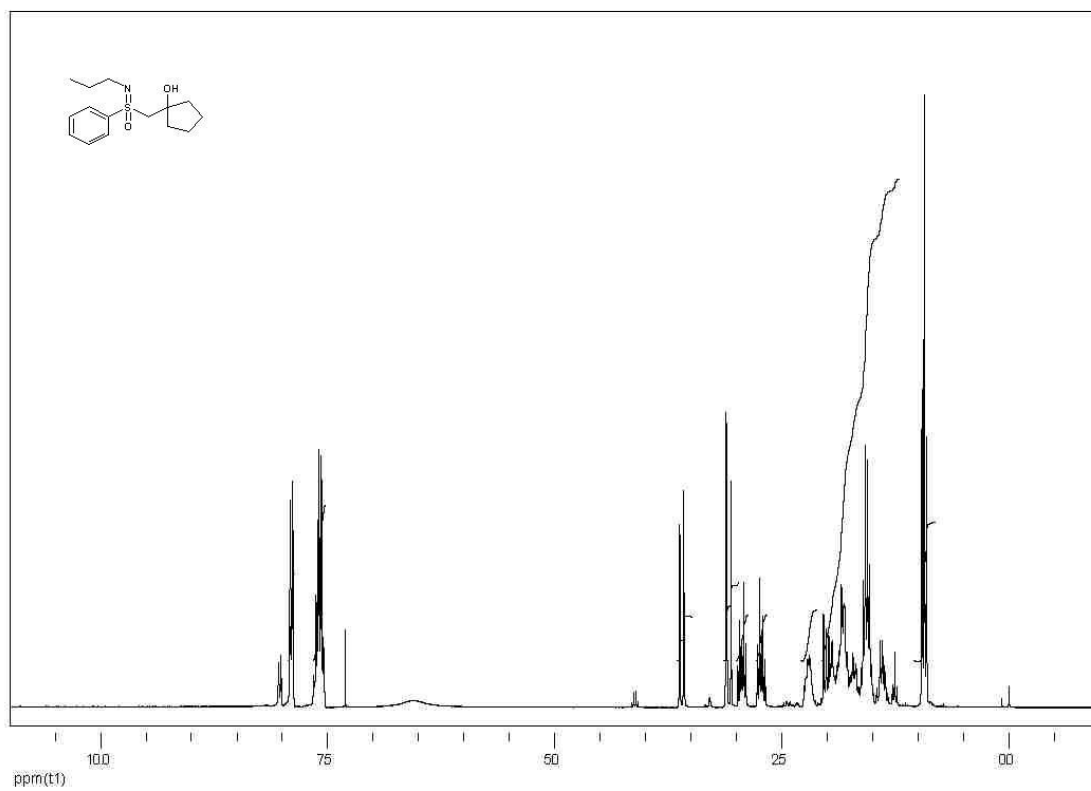
**(*SS,S/R*)-1-(*N*-ethyl-*S*-phenylsulfonimidoyl)-2-(2-naphthyl)propan-2-ol (2di):**  
(Table 1, entry 22)



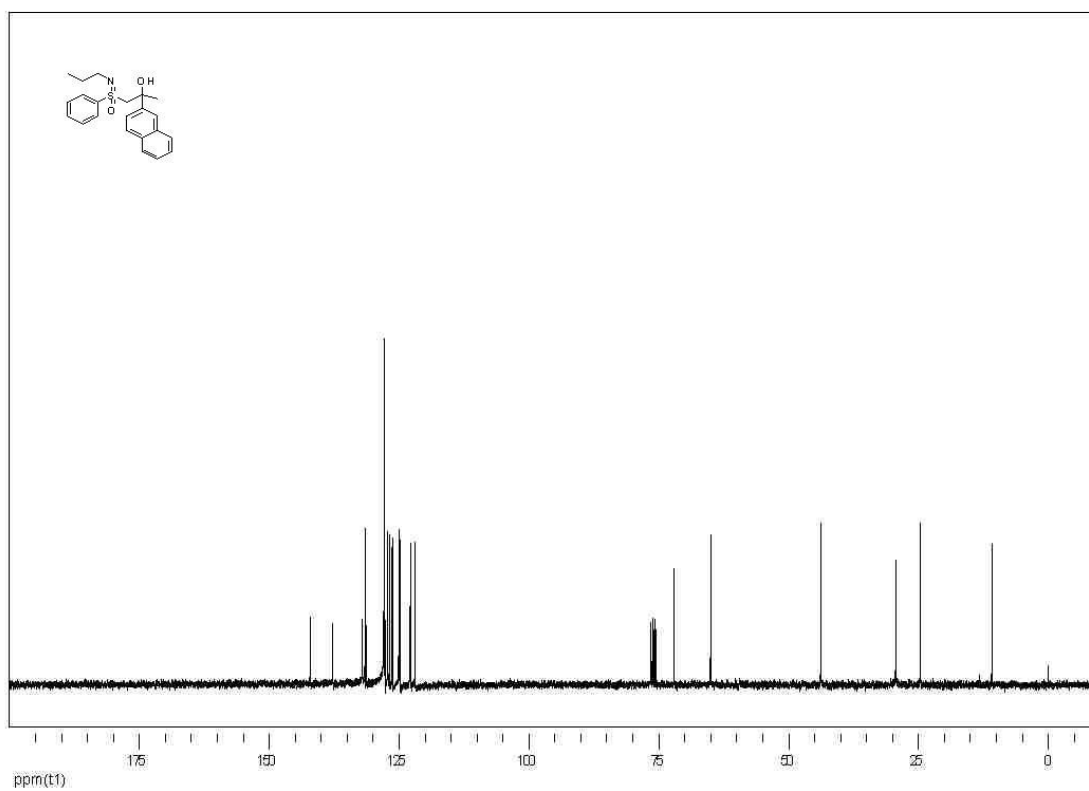
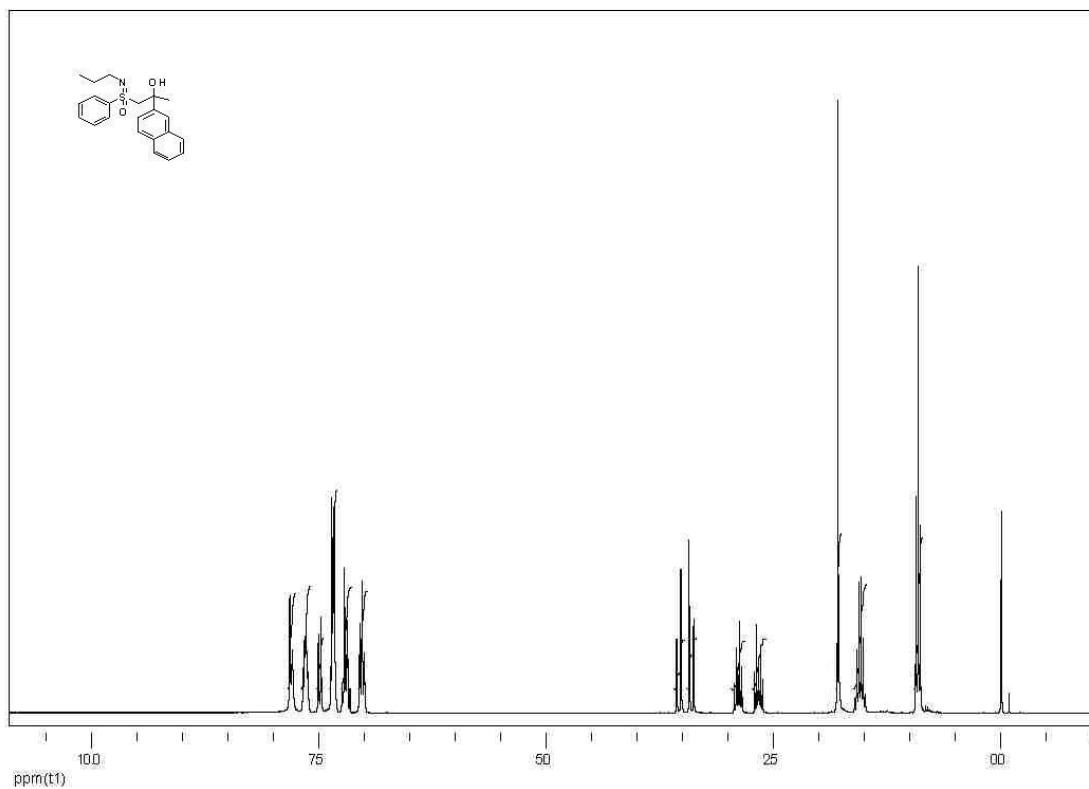
(S)-1-[(N-ethyl-S-phenylsulfonimidoyl)methyl]cycloheptanol (2da): (Table1, entry 23)



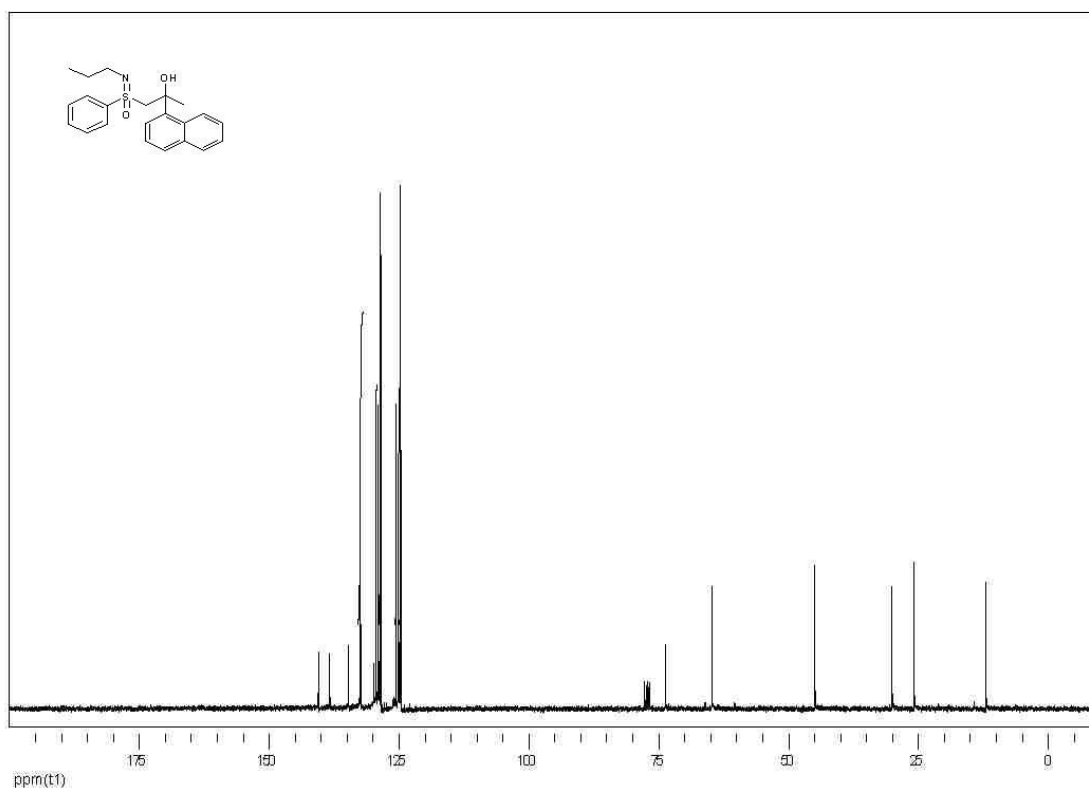
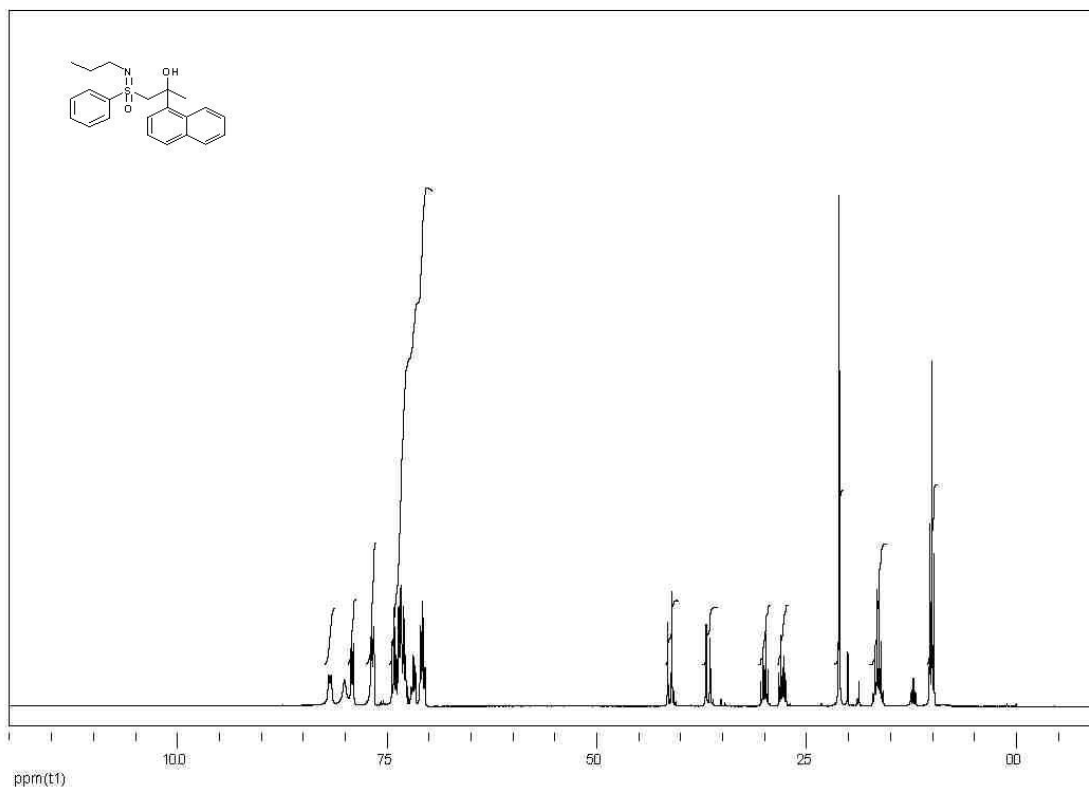
**(S)-1-[(S-phenyl-N-propylsulfonimidoyl)methyl]cyclopentanol (2ej):** (Table1, entry 24)



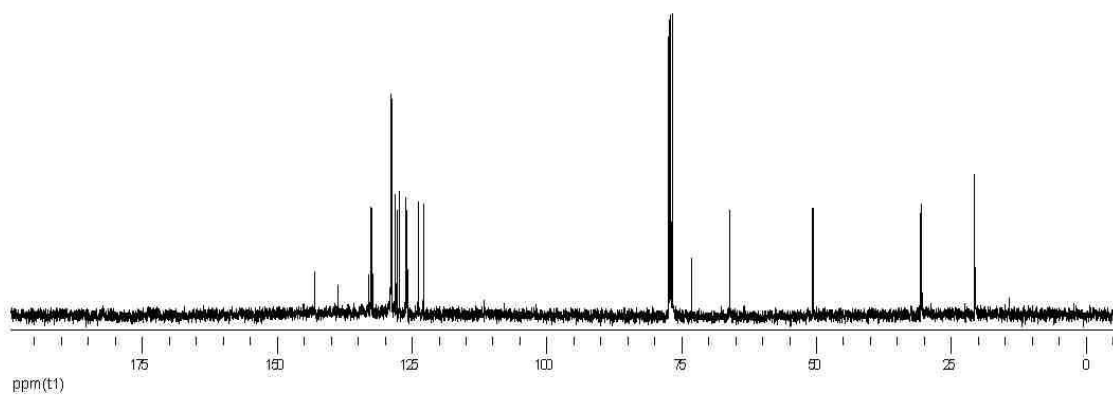
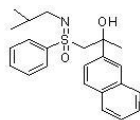
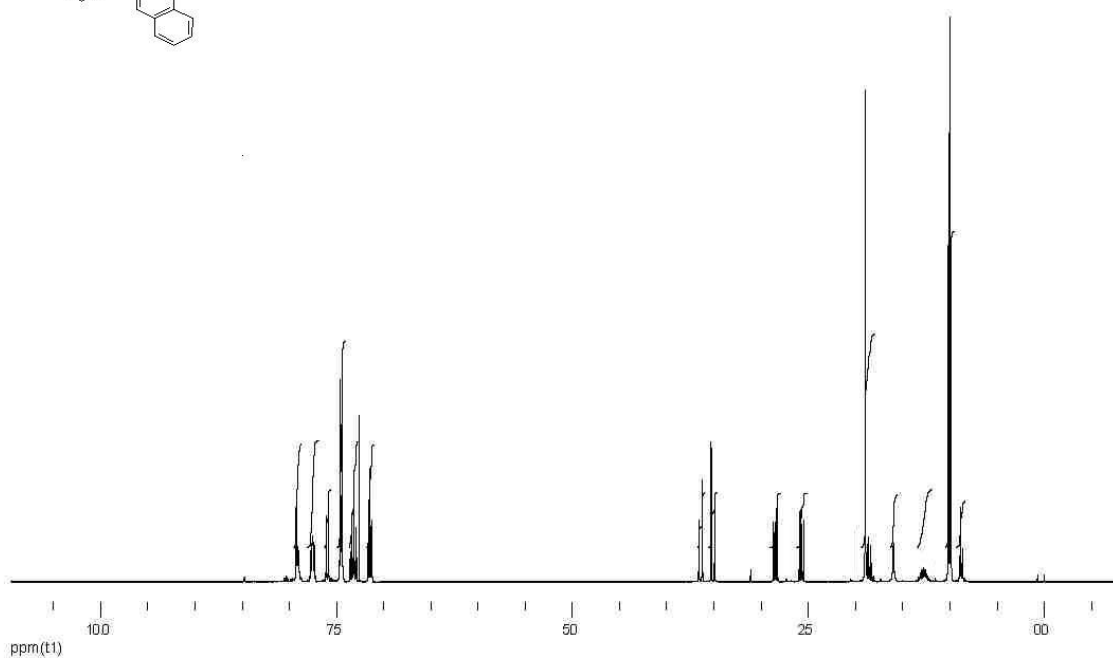
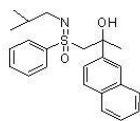
**(*SS,S/R*)-2-(2-naphthyl)-1-(*S*-phenyl-*N*-propylsulfonimidoyl)propan-2-ol (2ei):**  
(Table 1, entry 25)



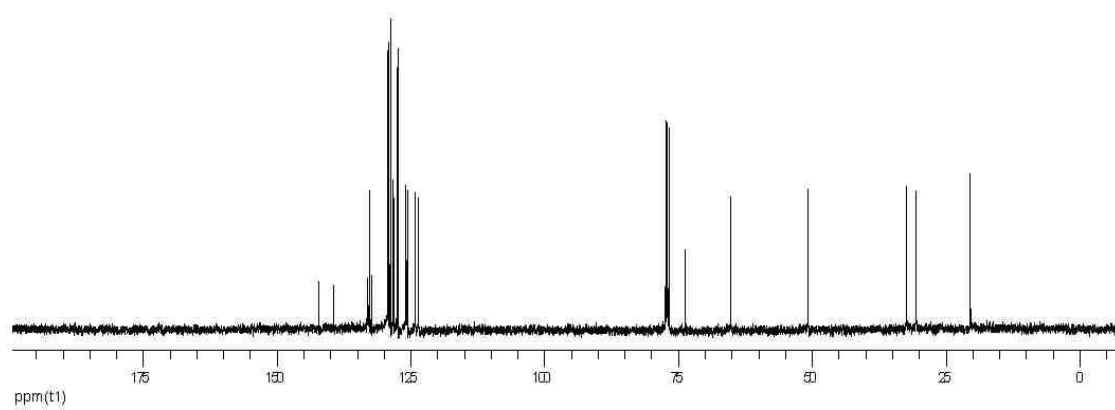
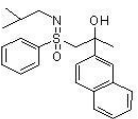
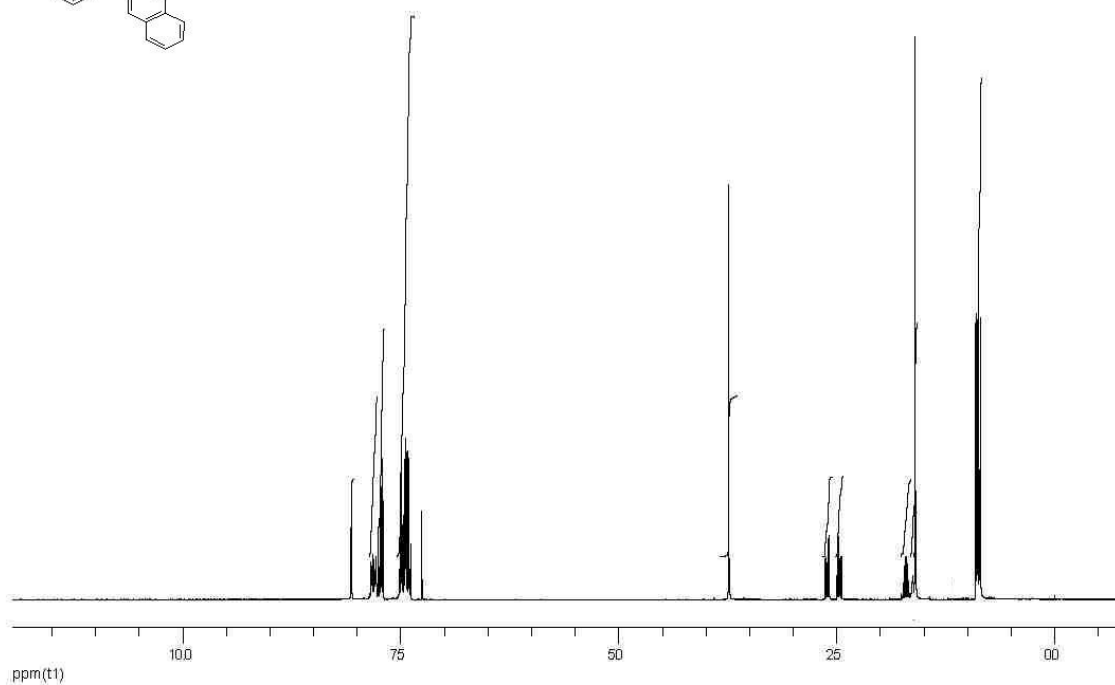
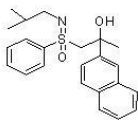
**(*SS,S/R*)-2-(1-naphthyl)-1-(*S*-phenyl-*N*-propylsulfonimidoyl)propan-2-ol (2eh):**  
(Table 1, entry 26)



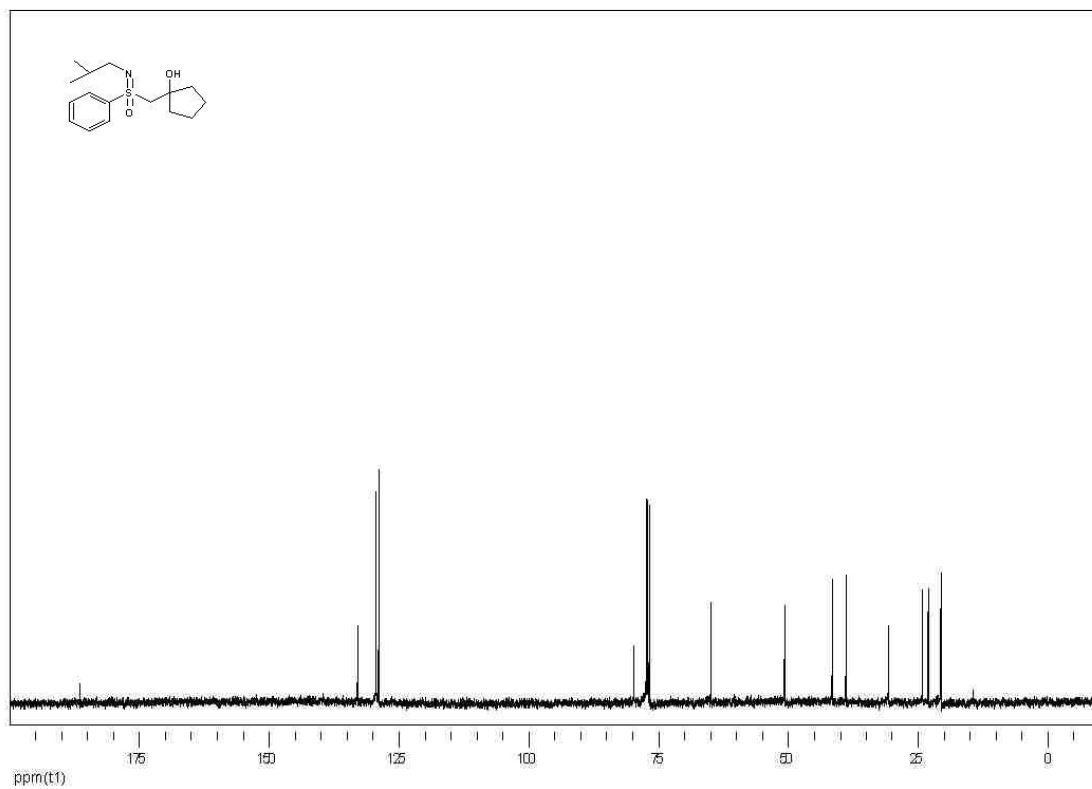
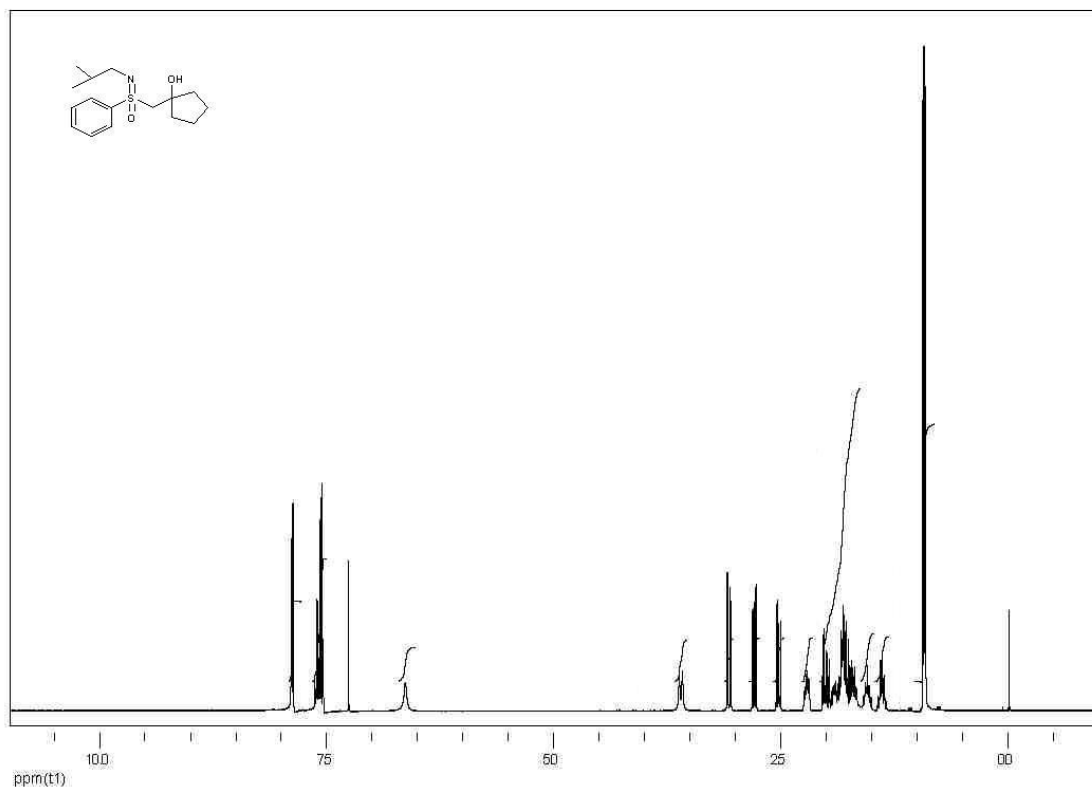
**(*SS,S/R*)-1-(*N*-isobutyl-*S*-phenylsulfonimidoyl)-2-(2-naphthyl)propan-2-ol (2fi):**  
(Table 1, entry 28)



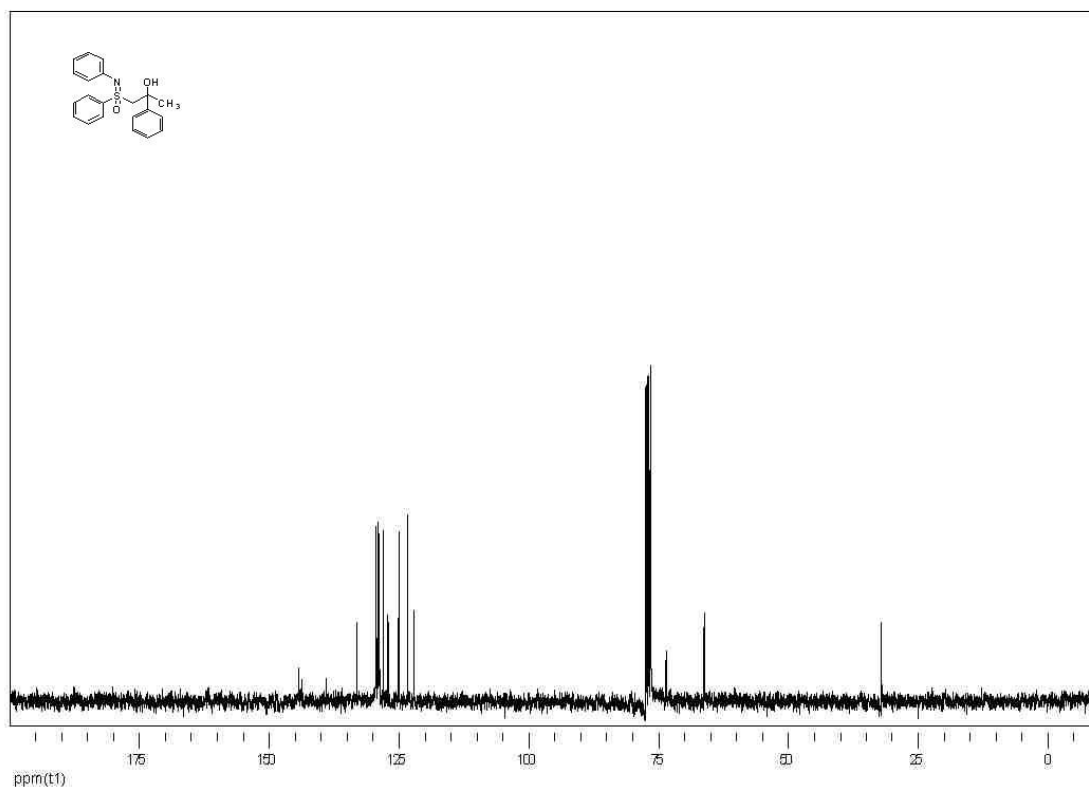
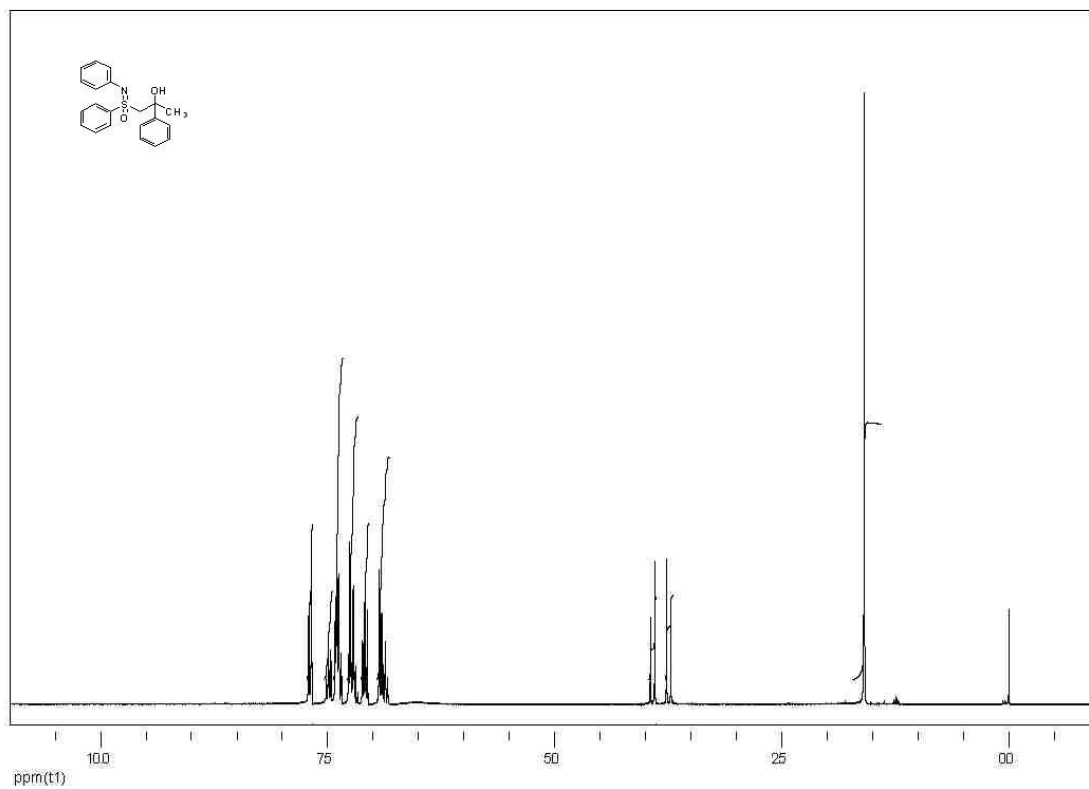
**(*SS,S/R*)-1-(*N*-isobutyl-*S*-phenylsulfonimidoyl)-2-(2-naphthyl)propan-2-ol [(*dia*)-2fi]:** (Table1, entry 29)

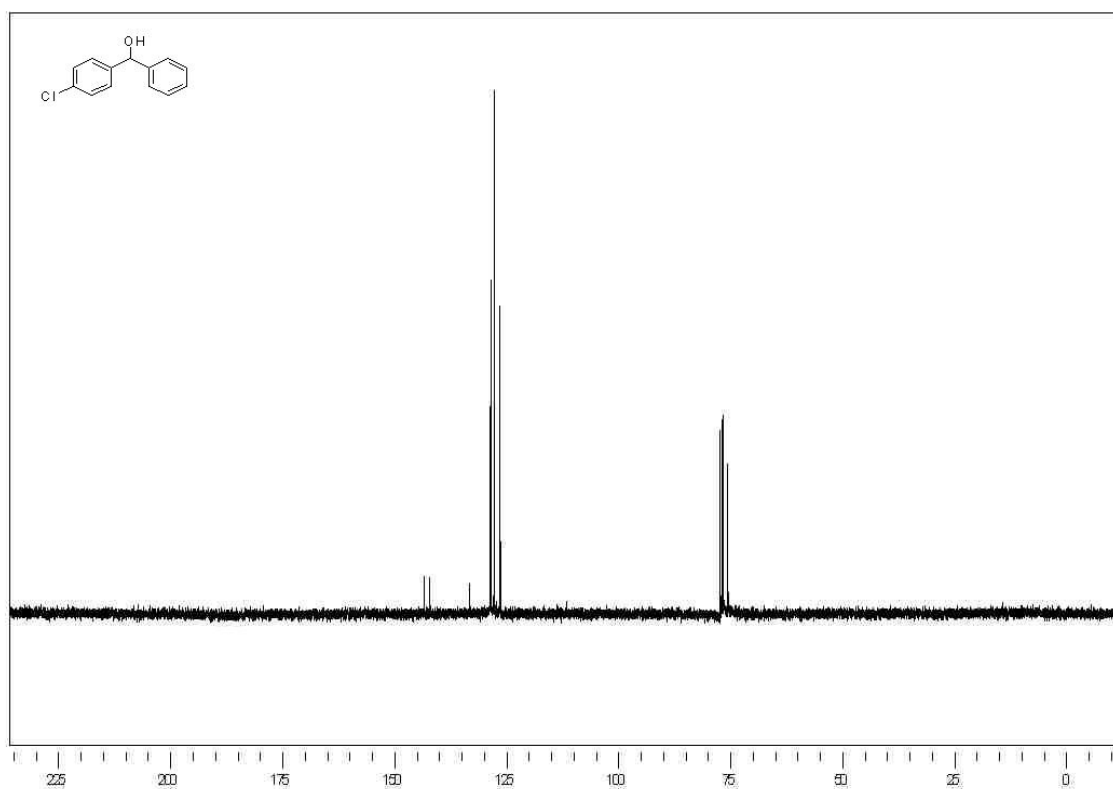
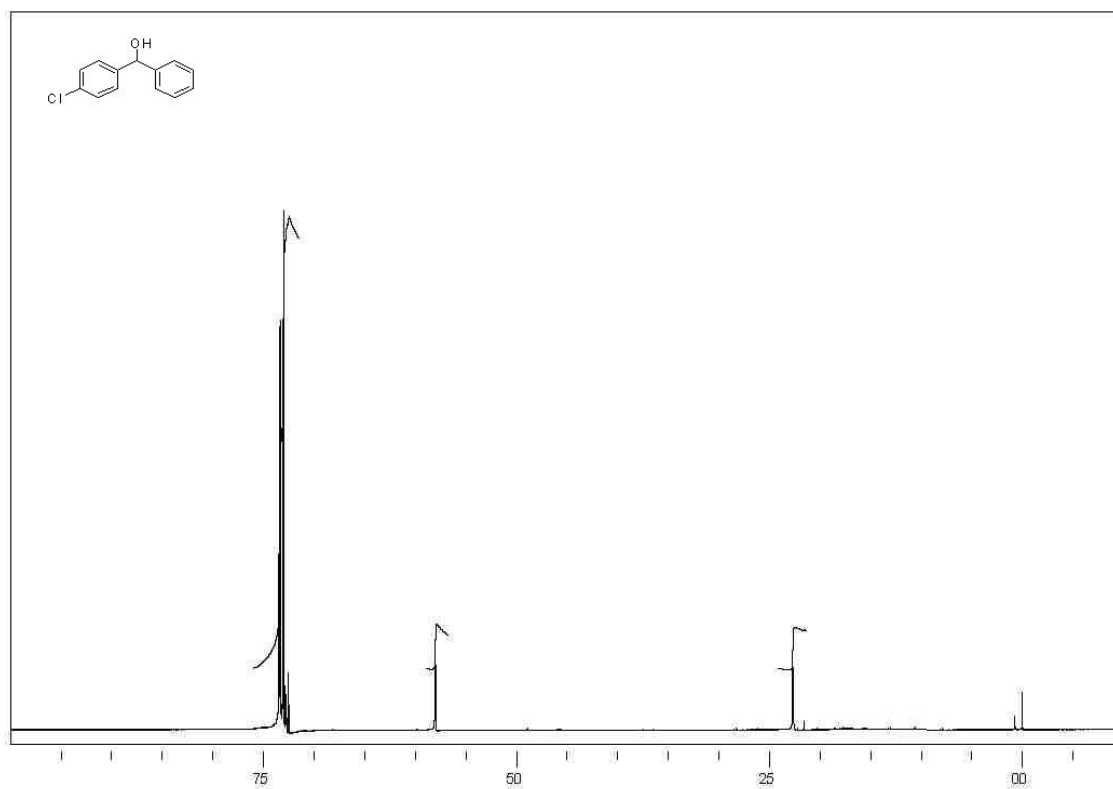


**(S)-1-[(N-isobutyl-S-phenylsulfonimidoyl)methyl]cyclopentanol (2fj):** (Table1, entry 27)

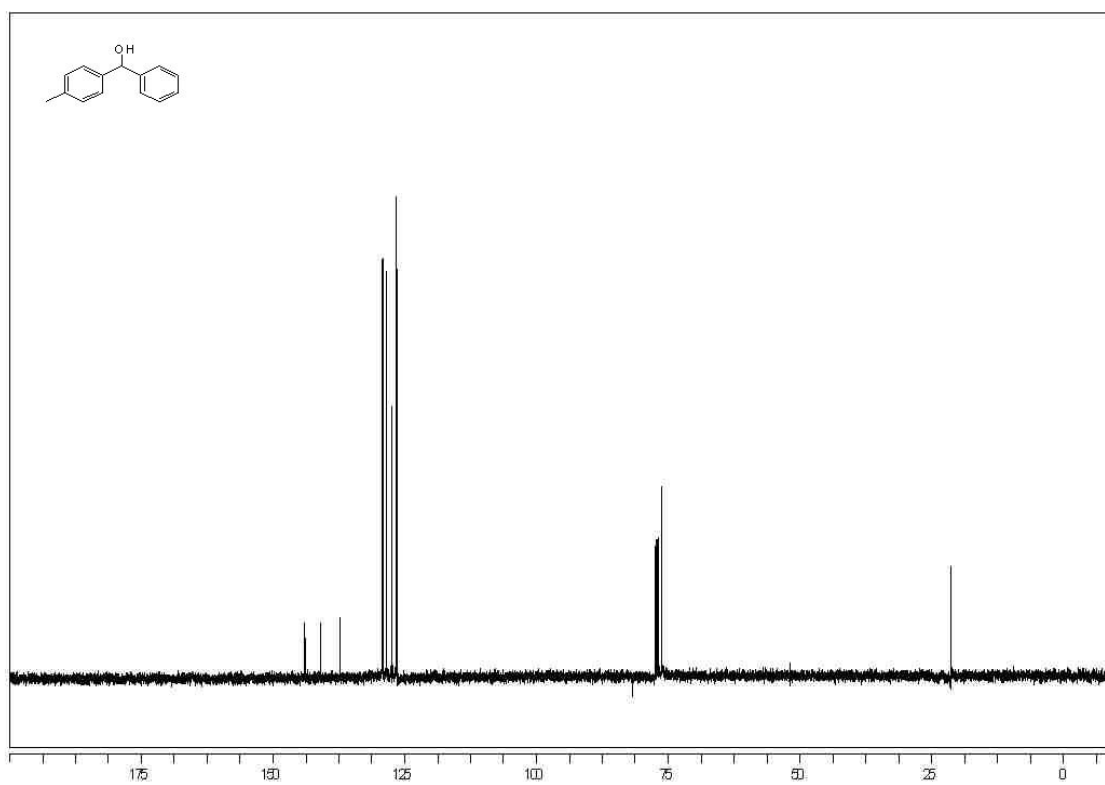
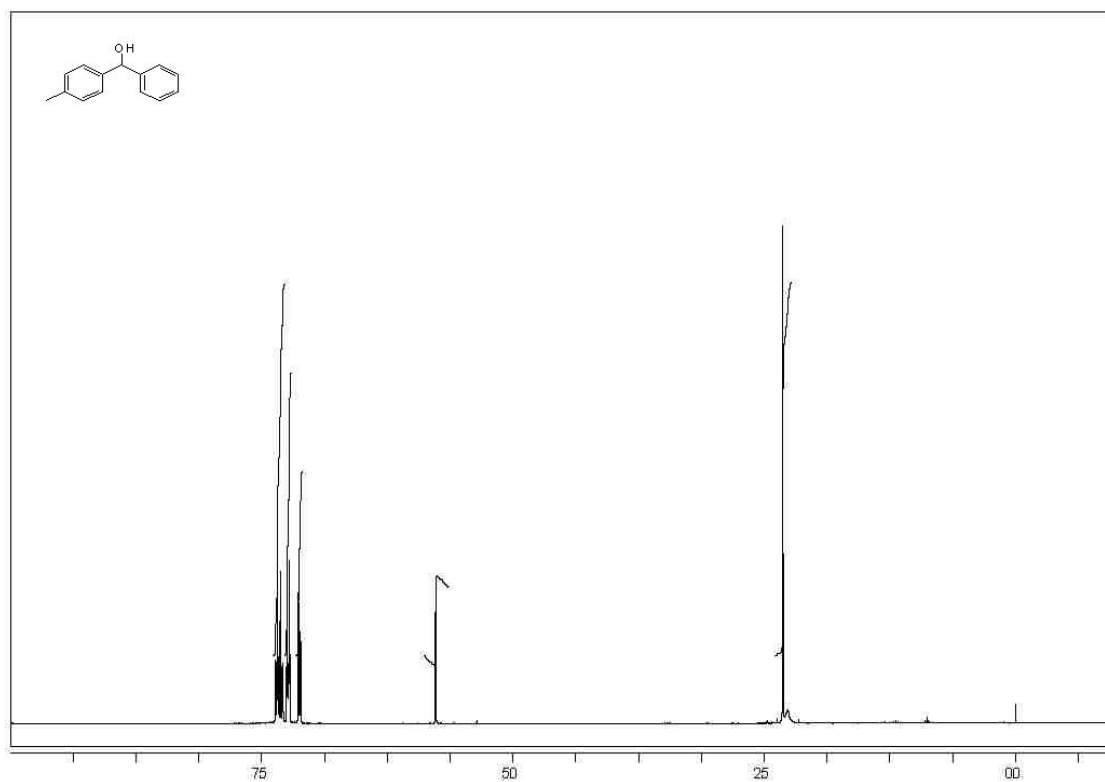


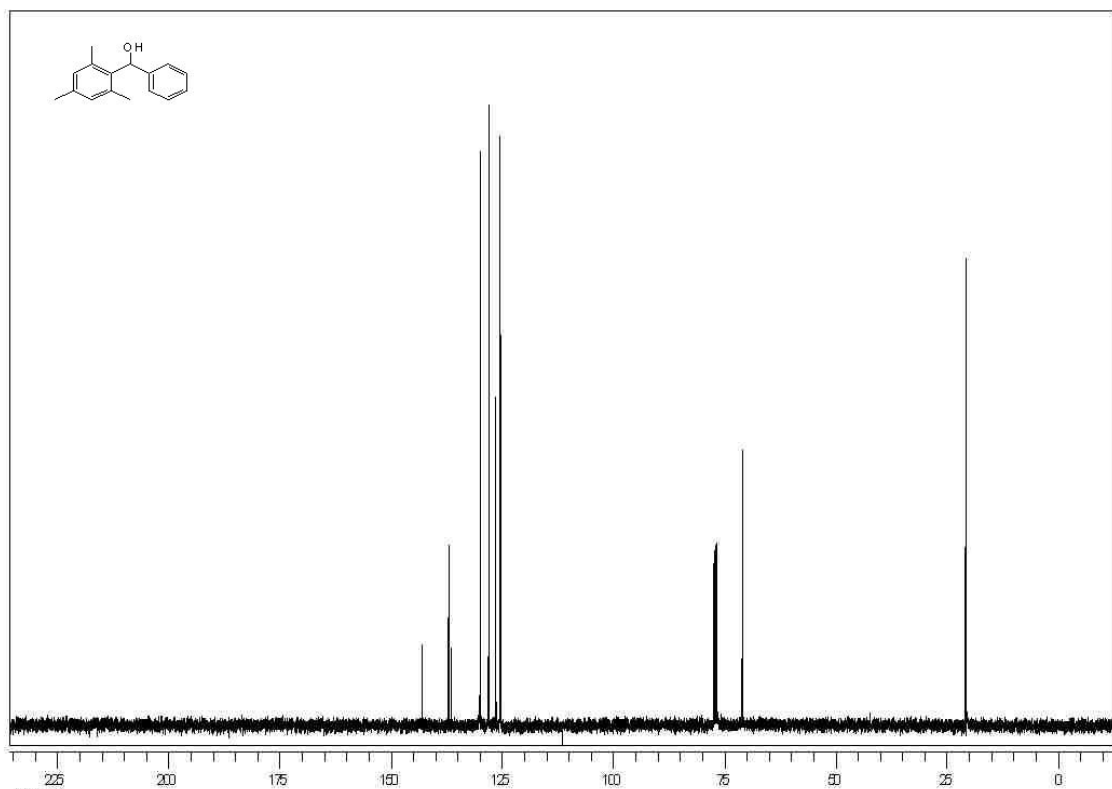
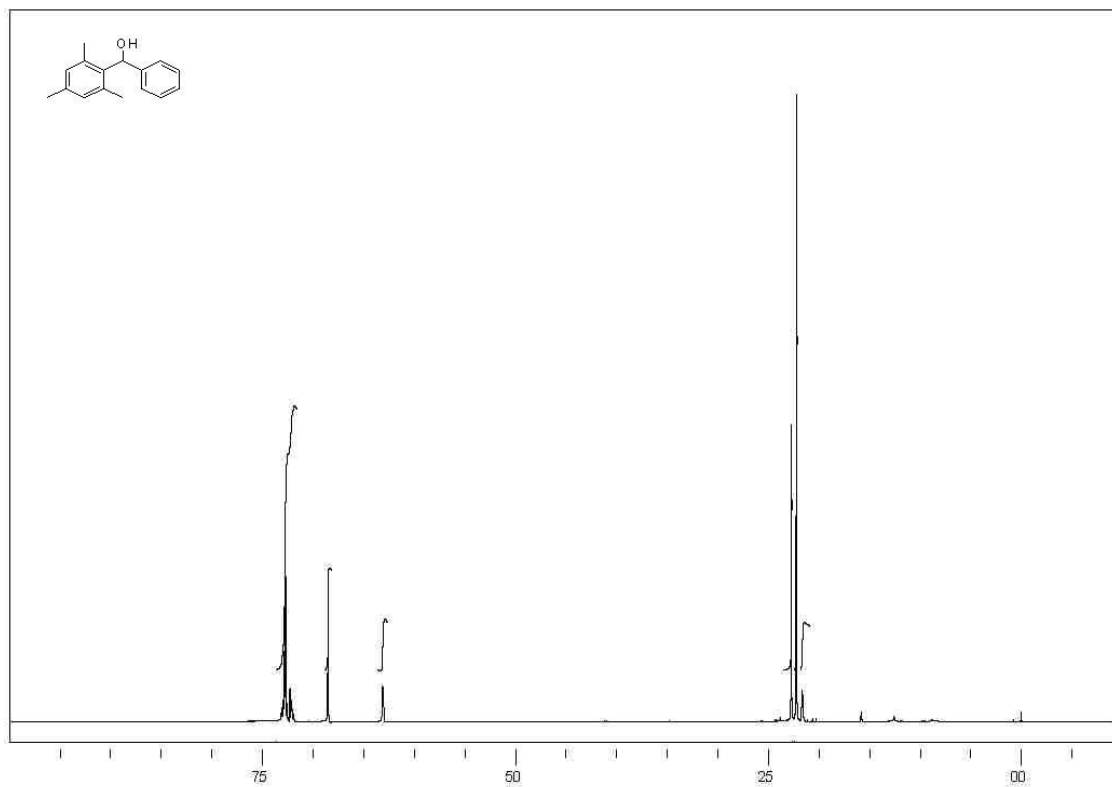
**(*SS,S/R*)-1-(*N,S*-diphenylsulfonimidoyl)-2-phenylpropan-2-ol (2gn):** (Table1, entry 30)

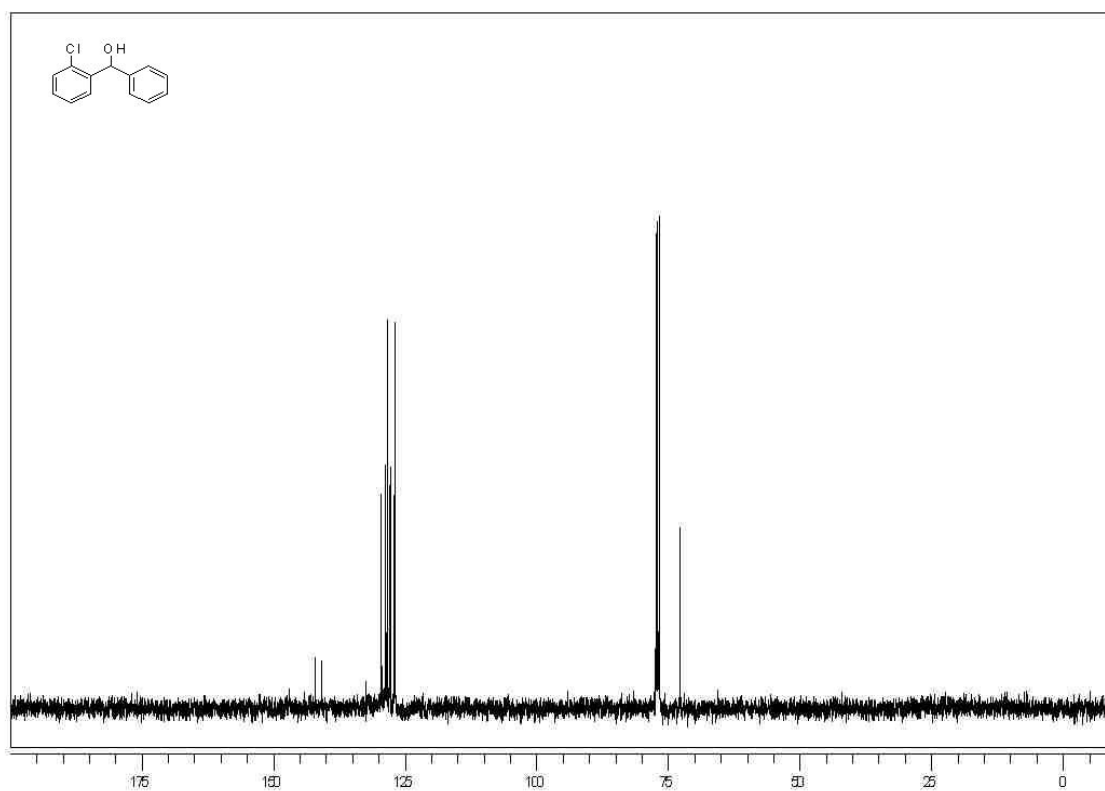
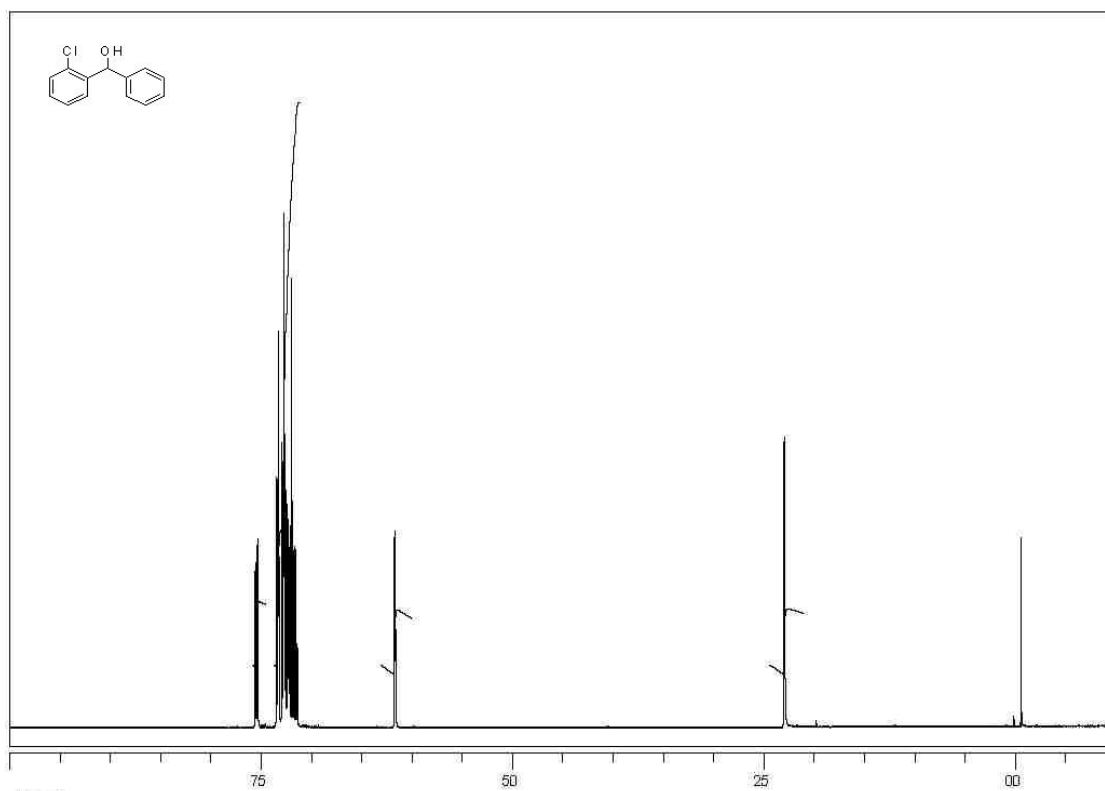


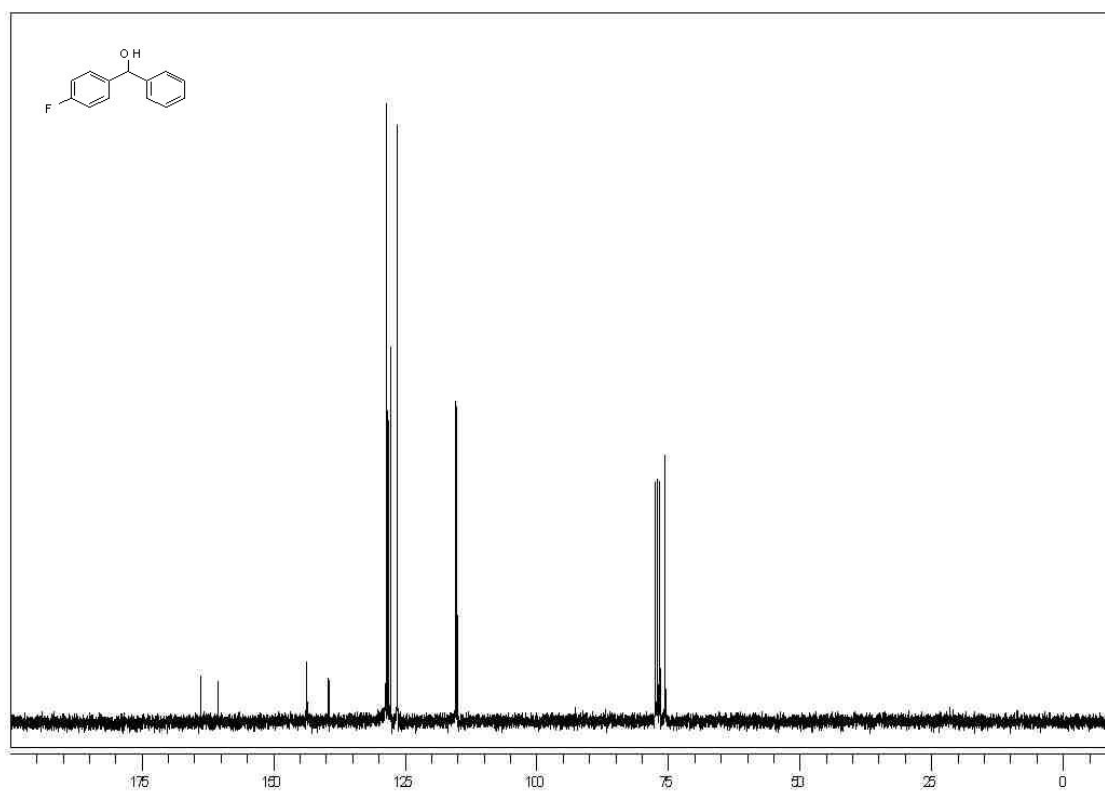
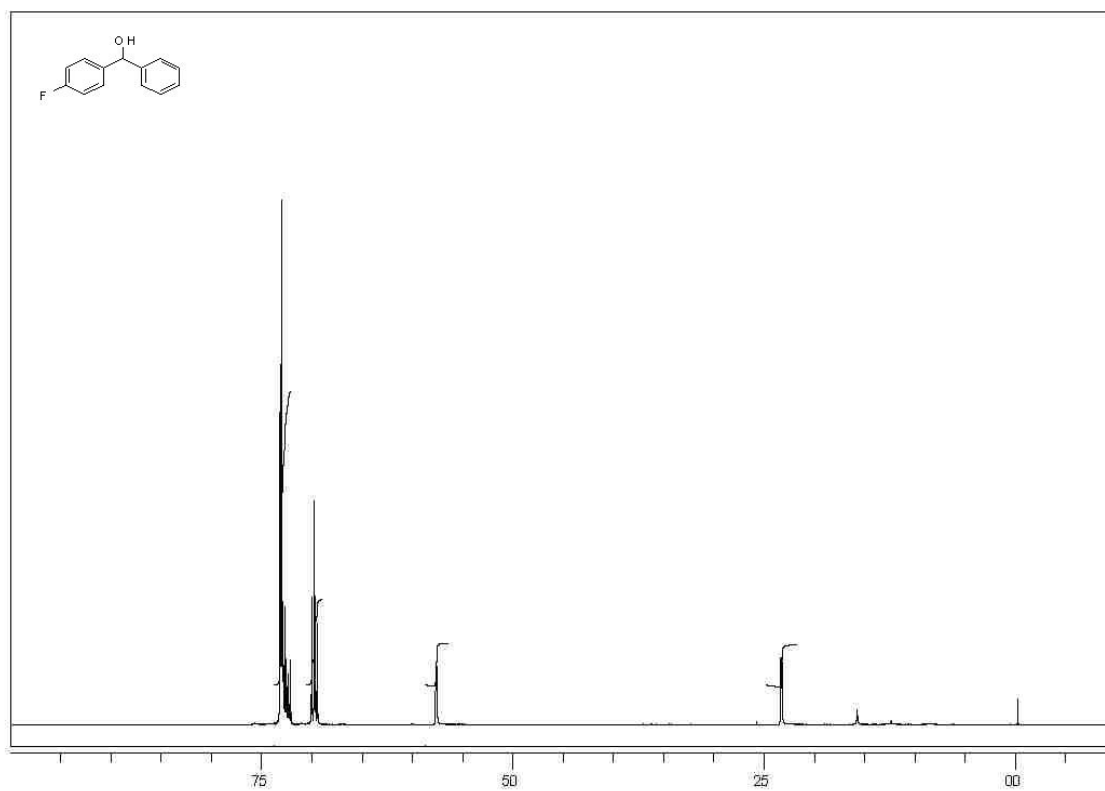
**(S)-4-Chlorophenylphenylmethanol (4a):** (Table 2, entry 1)

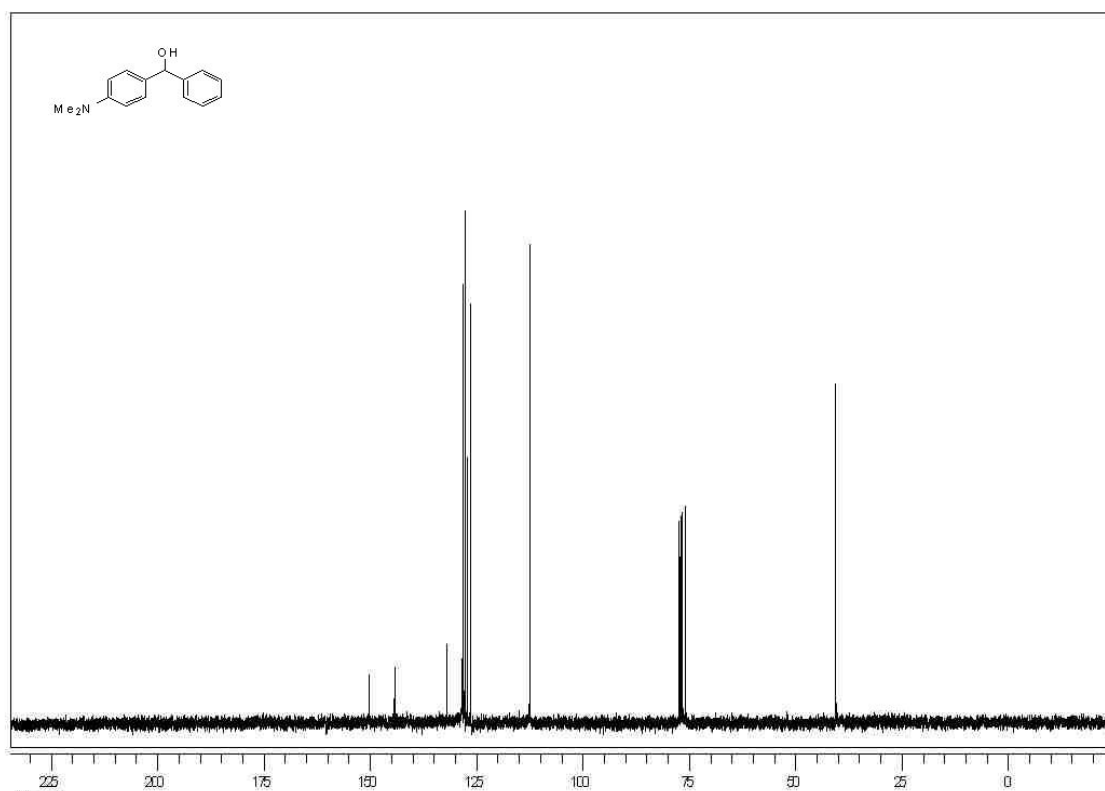
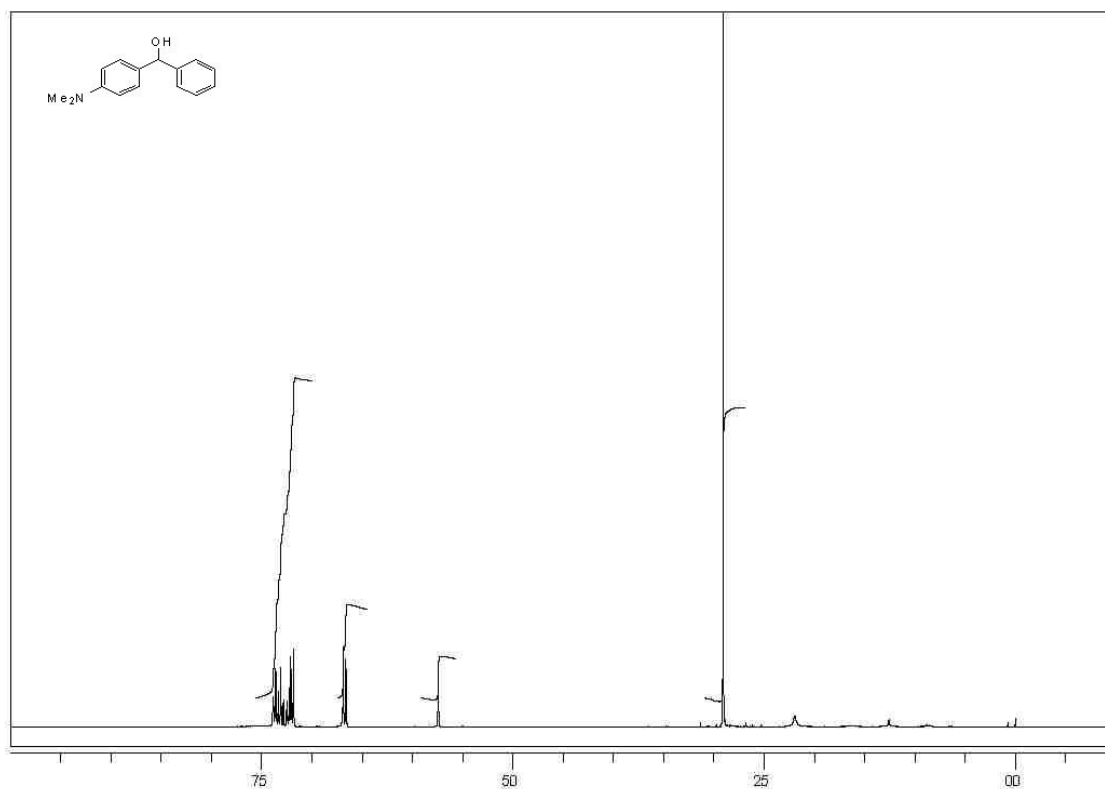


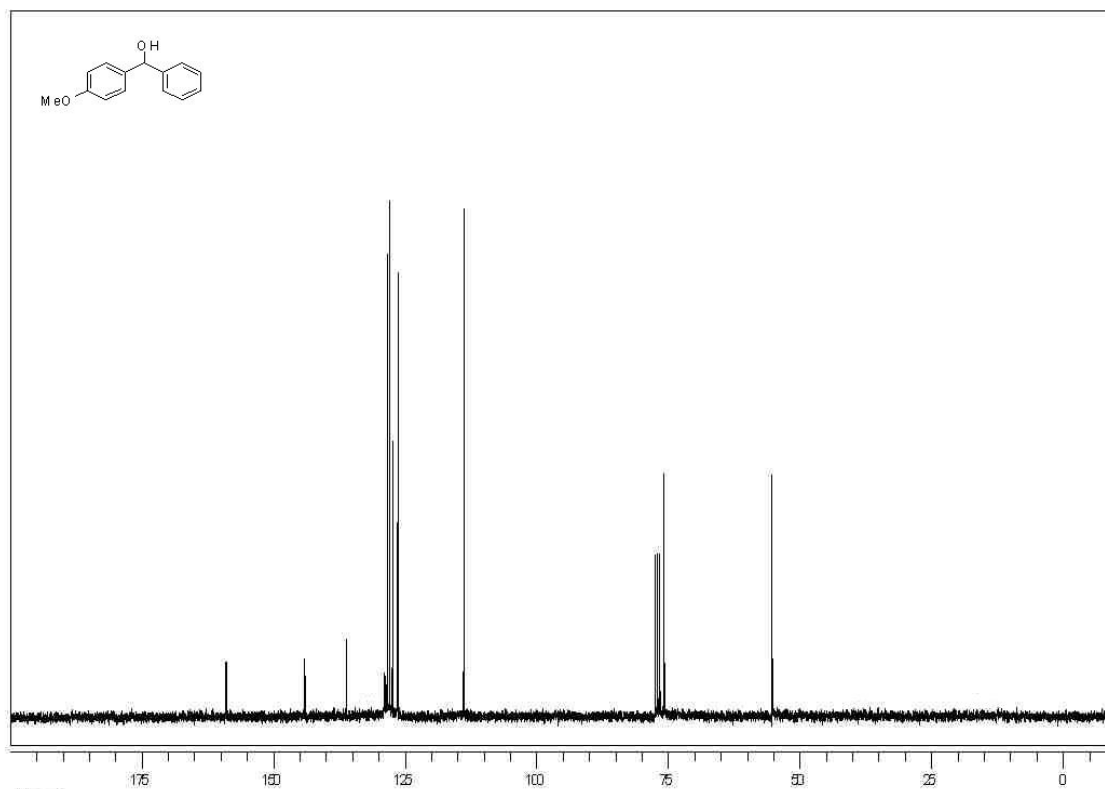
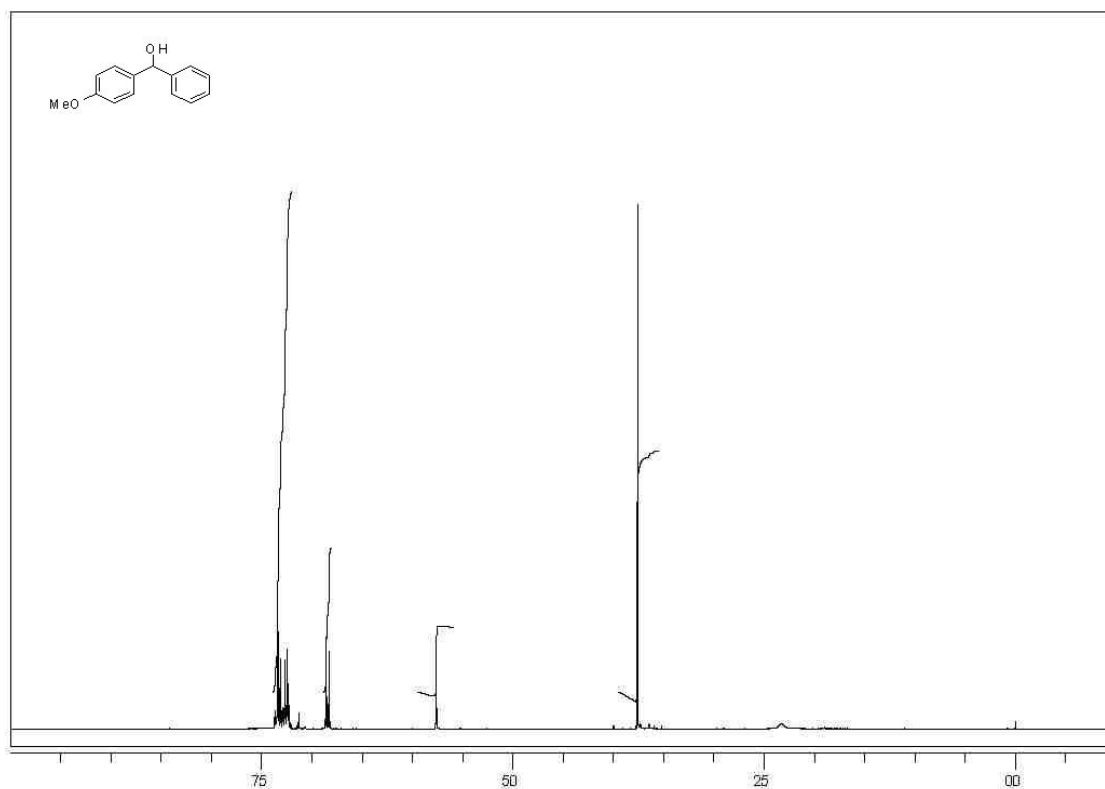
**(S)-(4-Methylphenyl)phenylmethanol (4c):** (Table 2, entry 3)

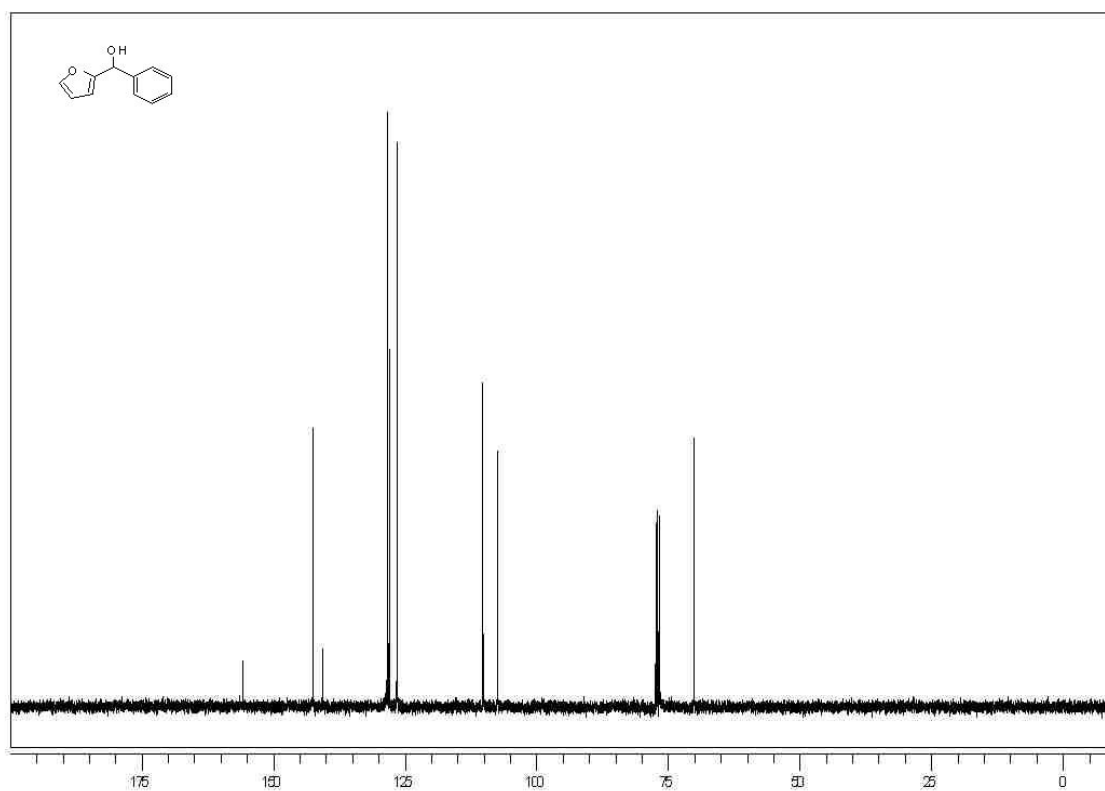
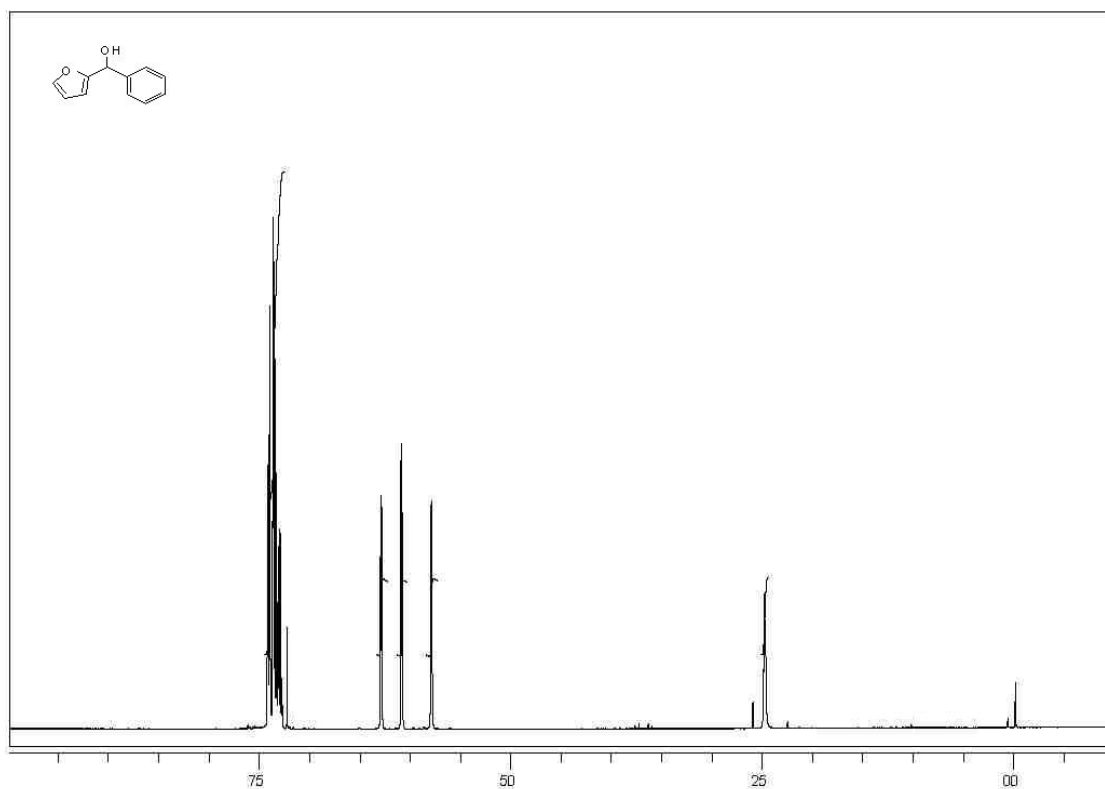
**(S)-Mesitylphenylmethanol (4d):** (Table 2, entry 4)

**(S)-(2-Chlorophenyl)phenylmethanol (4e):** (Table 2, entry 5)

**(S)-(4-Fluorophenyl)phenylmethanol (4f):** (Table 2, entry 6)

**(S)-(4-Dimethylamino)phenylmethanol (4g):** (Table 2, entry 7)

**(S)-(4-Methoxyphenyl)phenylmethanol (4h):** (Table2, entry 8)

**(S)-(2-Furyl)phenylmethanol (6):** (Table 2, entry 9)

**(R)-2-Methyl-1-phenylpropanol (8):** (Table 2, entry 10)