

SUPPORTING INFORMATION

Supported protic acid-catalyzed syntheis of 2,3-disubstituted thiazolidin-4-ones: enhancement of the catalytic potential of protic acid by adsorption on solid supports

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Spectral data

3-Phenyl-2-p-tolylthiazolidin-4-one (Entry 2, Table 5): Brown Solid; mp = 104-105 °C; IR (KBr) $\nu_{\max}$ = 3390, 2985, 2362, 1764, 1685, 1242, 1056 cm^{-1} ; ^1H NMR (400 MHz, CDCl_3): δ = 7.25-7.30 (m, 2H), 7.13-7.19 (m, 5H), 7.07-7.09 (d, J = 7.9 Hz, 2H), 6.07 (s, 1H), 3.96-4.01 (dd J = 15.8 Hz & 1.6 Hz, 1H), 3.84-3.88 (dd, J = 15.8 Hz & 0.44 Hz, 1H), 2.28 (s, 3H); MS (APCI) m/z = 270.28 (M+H) $^+$.

2-(4-Methoxyphenyl)-3-phenylthiazolidin-4-one (Entry 3, Table 5): Yellow Solid; mp = 97-99 °C; IR (KBr) $\nu_{\max}$ = 2939, 2833, 1686, 1609, 1512, 1496, 1378, 1345, 1248, 1175, 1030 cm^{-1} ; ^1H NMR (400 MHz, CDCl_3): δ = 7.13-7.29 (m, 7H), 6.78-6.82 (m, 2H), 6.08 (s, 1H), 3.96-4.01 (dd J = 15.8 Hz & 1.6 Hz, 1H), 3.86-3.90 (dd, J = 15.8 Hz & 0.6 Hz, 1H), 3.76 (s, 3H); MS (APCI) m/z = 286.28 (M+H) $^+$.

2-(4-Nitrophenyl)-3-phenylthiazolidin-4-one (Entry 4, Table 5): Yellow Solid; mp = 138-140 °C; IR (KBr) $\nu_{\max}$ = 2939, 2355, 1689, 1689, 1606, 1521, 1487, 1374, 1346, 1269, 1116 cm^{-1} ; ^1H NMR (400 MHz, CDCl_3): δ = 8.15-8.18 (m, 2H), 7.47-7.57 (m, 2H), 7.29-7.38 (m, 2H), 7.13-7.25 (m, 3H), 6.21 (s, 1H), 3.99-4.04 (dd, J = 15.8 Hz & 1.6 Hz, 1H), 3.90-3.94 (dd, J = 15.8 Hz & 0.6 Hz, 1H); MS (APCI) m/z = 299.25 (M+H) $^+$.

2-(4-Fluorophenyl)-3-phenylthiazolidin-4-one (Entry 5, Table 5): Brown Solid; mp = 132-133 °C; IR (KBr) $\nu_{\max}$ = 2729, 2362, 1765, 1679, 1600, 1374, 1251, 1055 cm^{-1} ; ^1H NMR (CDCl_3 , 400 MHz): δ = 7.25-7.29 (m, 4H), 7.11- 7.19 (m, 3H), 6.94-6.99 (m, 2H), 6.09 (s, 1H), 3.95-3.99 (dd, J = 15.8 Hz & 1.6 Hz, 1H), 3.86-3.90 (dd, J = 15.8 Hz & 0.7 Hz, 1H); MS (APCI) m/z = 274.32 (M+H) $^+$.

2-(4-Chlorophenyl)-3-phenylthiazolidin-4-one (Entry 6, Table 5): Yellow Solid; mp = 128-130 °C; IR (KBr) $\nu_{\max}$ = 2940, 2358, 1692 1687, 1595, 1492, 1377 cm^{-1} ; ^1H NMR (400 MHz, CDCl_3): δ = 7.07-7.46 (m, 9H), 6.09 (s, 1H), 3.97-4.01 (dd, J = 15.8 Hz & 1.52 Hz, 1H), 3.87-3.91 (d, J = 15.8 Hz, 1H); MS (APCI) m/z = 290.25 (M+H) $^+$.

2-(4-Bromophenyl)-3-phenylthiazolidin-4-one (Entry 7, Table 5): Yellow Solid; mp = 157-158 °C; IR (KBr) $\nu_{\max}$ = 1763, 1600, 1381, 1243, 1061 cm^{-1} ; ^1H NMR (CDCl_3 , 400 MHz): δ = 7.41-7.44 (m, 2H), 7.28- 7.33 (m, 2H), 7.14-7.21 (m, 5H), 6.07 (s, 1H), 3.96-4.01 (dd, J = 1.5 Hz & 15.8 Hz, 1H), 3.86-3.91 (dd, J = 15.8 Hz & 0.6 Hz, 1H); MS (APCI) m/z = 335.22 (M+H) $^+$.

2-(4-(Benzyloxy)phenyl)-3-phenylthiazolidin-4-one (Entry 8, Table 5): White Solid; mp = 132-133 °C; IR (KBr) $\nu_{\max}$ = 2965, 2355, 1732, 1593, 1275 cm^{-1} ; ^1H NMR (CDCl_3 , 400 MHz): δ = 7.12-7.36 (m, 12H), 6.86-6.88 (m, 2H), 6.06 (s, 1H), 4.99 (s, 2H), 3.95-3.99 (dd J = 15.8 Hz & 1.6 Hz, 1H), 3.84-3.88 (dd, J = 15.8 Hz & 0.6 Hz, 1H); ^{13}C NMR (CDCl_3 , 100 MHz): δ = 170.9, 159.1, 137.5, 136.6, 131.5, 129.0, 128.6, 128.5, 128.1, 127.0, 127.1, 125.8, 115.0, 70.0, 65.4, 33.6; MS (APCI) m/z = 262.36 (M+H) $^+$; HRMS (ESI) m/z calcd for $\text{C}_{22}\text{H}_{19}\text{NO}_2\text{S Na}^+$ [M + Na $^+$], 384.1029; found to be 384.1035.

2-(4-Hydroxy-3-methoxyphenyl)-3-phenylthiazolidin-4-one (Entry 9, Table 5): White solid; mp = 126-127 °C; IR (KBr) ν_{max} = 3241, 2923, 1672, 1522, 1321 cm^{-1} ; ^1H NMR (400 MHz, CDCl_3): δ = 7.26 (t, J = 7.6 Hz, 2H), 7.15 (t, J = 8.4 Hz, 3H), 6.90(s, 1H), 6.73 (d, J = 8.2 Hz, 1H), 6.67 (d, J = 4.5 Hz, 1H), 6.00 (s, 1H), 3.97 (d, J = 15.8 Hz, 1H), 3.86 (d, J = 7.6 Hz, 1H), 3.80 (s, 3H); ^{13}C NMR (100 MHz): 172.1, 146.9, 146.2, 137.5, 130.7, 129.0, 127.1, 125.8, 120.7, 114.3, 109.2, 65.8, 55.9, 33.6; MS (APCI) m/z = 302.08 ($\text{M}+\text{H}^+$); HRMS (ESI) m/z calcd for $\text{C}_{16}\text{H}_{15}\text{NO}_3\text{S Na}^+$ [$\text{M} + \text{Na}^+$], 324.0665; found to be 324.0668.

2-(3,4-Dimethoxyphenyl)-3-phenylthiazolidin-4-one (Entry 10, Table 5): White solid; mp = 146-147; IR (KBr) ν_{max} = 3214, 2869, 1680, 1532, 1232 cm^{-1} ; ^1H NMR (400 MHz, CDCl_3): δ = 7.25-7.27 (m, 2H), 7.14-7.16 (m, 3H), 6.81 (t, J = 1.9 Hz, 2H), 6.72 (d, J = 8, 1H), 6.06 (s, 1H), 3.96 (dd, J = 1.5 Hz, 1.5 Hz, 2H), 3.81 (s, 6H); ^{13}C NMR (100 MHz): 171.0, 149.4, 149.3, 131.5, 129.1, 127.1, 125.8, 119.9, 110.7, 109.7, 55.9, 55.5, 33.6; MS (APCI) m/z = 317.09 ($\text{M}+\text{H}^+$); HRMS (ESI) m/z calcd for $\text{C}_{17}\text{H}_{17}\text{NO}_3\text{S Na}^+$ [$\text{M} + \text{Na}^+$], 338.0821; found to be 338.0826.

2-(2,4,6-Trimethylphenyl)-3-phenylthiazolidin-4-one (Entry 11, Table 5): White solid; mp = 165-167; IR (KBr) ν_{max} = 3351, 2915, 1682, 1593, 1242 cm^{-1} ; ^1H NMR (400 MHz, CDCl_3): δ = 7.23-7.27 (m, 2H), 7.13-7.01 (m, 3H), 6.78 (s, 1H), 6.72 (d, J = 2.1 Hz, 2H), 3.93 (s, 2H), 2.47 (s, 3H), 2.34 (s, 3H), 2.17 (s, 3H); ^{13}C NMR (100 MHz): 170.6, 138.3, 137.7, 137.4, 136.1, 132.0, 129.5, 129.4, 128.8, 126.7, 124.3, 60.4, 34.1, 20.8, 20.4, 19.7; MS (APCI) m/z = 298.12 ($\text{M}+\text{H}^+$); HRMS (ESI) m/z calcd for $\text{C}_{18}\text{H}_{19}\text{NOS Na}^+$ [$\text{M} + \text{Na}^+$], 320.1080; found to be 320.1078.

3-(4-Methoxyphenyl)-2-phenylthiazolidin-4-one (Entry 12, Table 5): Yellow Solid; mp = 61-62 °C; IR (KBr) ν_{max} = 2932, 2833, 1683, 1511, 1454, 1381, 1248, 1023, 824 cm^{-1} ; ^1H NMR (CDCl_3 , 400 MHz): δ = 7.27-7.31(m, 5H), 7.02- 7.05 (m, 2H), 6.77-6.81 (m, 2H), 5.99 (s, 1H), 3.98-4.03 (dd, J = 15.7 Hz & 1.8, Hz, 1H), 3.86-3.90 (dd, J = 15.8 Hz & 0.4 Hz, 1H), 3.73 (s, 3H); MS (APCI) m/z = 286.36 ($\text{M}+\text{H}^+$).

3-(4-Nitrophenyl)-2-phenylthiazolidin-4-one (Entry 13, Table 5): Yellow Solid; mp = 81-83 °C; IR (KBr) ν_{max} = 2393, 2853, 2361, 1695, 1594, 1516, 1339, 1267, 1112, cm^{-1} ; ^1H NMR (CDCl_3 , 400 MHz): δ = 8.12-8.15 (d, J = 9.1 Hz, 2H), 7.46- 7.48 (d, J = 9.2 Hz, 2H), 7.26-7.34 (m, 5H), 6.22 (s, 1H), 3.96-4.00 (d, J = 16.7 Hz, 1H), 3.85-3.89 (d, J = 16.1 Hz, 1H); MS (APCI) m/z = 301.34 ($\text{M}+\text{H}^+$).

4-(4-Oxo-2-Phenylthiazolidin-3-yl)benzonitrile (Entry 14, Table 5): White solid; mp = 171 °C; IR (KBr) ν_{max} = 2925, 2223, 1700, 1601, 1521, 1321, 1240, 963 cm^{-1} ; ^1H NMR (400 MHz, CDCl_3): δ = 7.53 (d, J = 8.6 Hz, 2H), 7.45 (t, J = 4.9 Hz, 3H), 7.27-7.31 (m, 4H), 5.67 (s, 1H), 3.96 (d, J = 16.1 Hz, 1H), 3.85 (d, J = 16.0 Hz, 1H); ^{13}C NMR (100 MHz): 171.2, 141.6, 138.5, 132.8, 129.2, 128.4, 126.6, 124.4, 109.7, 64.6, 37.4; MS (APCI) m/z = 281.0 ($\text{M}+\text{H}^+$); HRMS (ESI) m/z calcd for $\text{C}_{16}\text{H}_{12}\text{N}_2\text{OS Na}^+$ [$\text{M} + \text{Na}^+$], 303.0563; found to be 303.0564.

3-(4-Trifluoromethylphenyl)-2-phenylthiazolidin-4-one (Entry 15, Table 5): Solid; mp = 84-85 °C; IR (KBr) ν_{max} = 2954, 2747, 1671, 1542, 1250, 1275, 1231 cm^{-1} ; ^1H NMR (CDCl_3 , 400 MHz): δ = 7.53

(s, $J = 8.4$ Hz, 2H), 7.35 (d, $J = 8.4$ Hz, 2H), 7.26-7.34 (m, 5H), 6.16 (s, 1H), 4.01 (d, $J = 1.4$ Hz, 1H), 3.97 (d, $J = 1.3$ Hz, 1H); MS (APCI) $m/z = 224.34$ (M+H)⁺.

3-(4-Ethoxycarbonylphenyl)-2-phenylthiazolidin-4-one (Entry 16, Table 5): Solid; mp = 126-128 °C; IR (KBr) $\nu_{\max} = 2942, 1695, 1580, 1512, 1282, 1260, 1012, 612$ cm⁻¹; ¹H NMR (CDCl₃, 400 MHz): $\delta = 7.99$ (dd, $J = 1.9$ Hz & $J = 8.1$ Hz, 1H), 7.78 (d, $J = 1.8$ Hz, 1H), 7.48-7.53 (m, 3H), 7.35-7.45 (m, 3H), 7.13 (d, $J = 8.2$ Hz, 1H), 5.69 (s, 1H), 4.34 (q, 2H), 3.30 (d, $J = 13.3$ Hz, 1H), 3.10 (dd, $J = 0.9$ Hz & $J = 12.2$ Hz, 1H), 1.36 (t, $J = 7.0$ Hz, 1H); MS (APCI) $m/z = 228.41$ (M+H)⁺.

3-(4-Fluorophenyl)-2-phenylthiazolidin-4-one (Entry 17, Table 5): White Solid; mp = 115-116 °C; IR (KBr) $\nu_{\max} = 2927, 2847, 1676, 1479, 1356, 1275, 1260, 1111$ cm⁻¹; ¹H NMR (CDCl₃, 400 MHz): $\delta = 7.85$ (s, 1H), 7.37- 7.49 (m, 5H), 7.26-7.36 (m, 1H), 6.99 (t, $J = 8.7$ Hz, 2H), 5.08 (s, 1H), 3.54 (d, $J = 16.3$ Hz, 1H), 3.54 (d, $J = 16.2$ Hz, 1H); MS (APCI) $m/z = 274.32$ (M+H)⁺.

3-(4-Chlorophenyl)-2-phenylthiazolidin-4-one (Entry 18, Table 5): White Solid; mp = 110-111 °C; IR (KBr) $\nu_{\max} = 2930, 2852, 1675, 1470, 1355, 1270, 1260, 1109$ cm⁻¹; ¹H NMR (CDCl₃, 400 MHz): $\delta = 8.25$ (s, 1H), 7.42- 7.47 (m, 3H), 7.24-7.27 (m, 1H), 7.02-7.04 (d, $J = 8.4$ Hz, 1H), 6.94-6.95 (d, $J = 2.3$ Hz, 1H), 5.65 (s, 1H), 3.30-3.33 (d, $J = 12.2$ Hz, 1H), 2.99-3.02 (dd, $J = 12.2$ Hz & 1.6 Hz, 1H); MS (APCI) $m/z = 290.26$ (M+H)⁺.

3-(4-Bromophenyl)-2-phenylthiazolidin-4-one (Entry 19, Table 5): White Solid; mp = 115-116 °C; IR (KBr) $\nu_{\max} = 3250, 2892, 2355, 1764, 1675, 1484, 1376, 1243$ cm⁻¹; ¹H NMR (CDCl₃, 400 MHz): $\delta = 7.36$ -7.54 (m, 7H), 7.10-7.11 (d, $J = 2.2$ Hz, 1H), 6.94-6.96 (d, $J = 8.3$ Hz, 1H), 5.63 (s, 1H), 3.28-3.31 (d, $J = 12.3$ Hz, 1H), 2.99-3.03 (dd, $J = 12.2$ Hz & 1.5 Hz, 1H); MS (APCI) $m/z = 334.279$ (M+H)⁺.

2-Phenyl-3-(3,4,5-trimethoxyphenyl)thiazolidin-4-one (Entry 20, Table 5): White solid; mp = 132-134 °C; IR (KBr) $\nu_{\max} = 3242, 2932, 1682, 1562, 1342, 1125$ cm⁻¹; ¹H NMR (400 MHz, CDCl₃): $\delta = 7.29$ (s, 5H), 6.28 (s, 2H), 5.95 (s, 1H), 4.00 (d, $J = 7.7$ Hz, 1H), 3.87 (d, $J = 15.8$ Hz, 1H), 3.76 (s, 3H), 3.66 (s, 6H); ¹³C NMR (100 MHz): 171.0, 153.3, 139.7, 137.1, 133.0, 129.0, 128.8, 127.2, 104.0, 66.2, 60.7, 56.0, 33.3; MS (APCI) $m/z = 346.10$ (M+H)⁺; HRMS (ESI) m/z calcd for C₁₈H₁₉NO₄Na⁺ [M + Na⁺], 368.0927; found to be 368.0926.

3-Benzyl-2-phenylthiazolidin-4-one (Entry 21, Table 5): White Solid; mp = 150-155 °C; IR (KBr) $\nu_{\max} = 2939, 2866, 1745, 1677, 1487, 1259, 1069$ cm⁻¹; ¹H NMR (CDCl₃, 400 MHz): $\delta = 7.21$ -7.41 (m, 8H), 7.07-7.12 (m, 2H), 5.38 (s, 1H), 5.14-5.18 (d, $J = 14.7$ Hz, 1H), 3.88-3.93 (dd, $J = 15.6$ Hz & 2.0 Hz, 1H), 3.74-3.78 (d, $J = 15.7$ Hz, 1H), 3.51-3.55 (d, $J = 14.7$ Hz, 1H); MS (APCI) $m/z = 270.41$ (M+H)⁺.

3-(2-Chlorobenzyl)-2-phenylthiazolidin-4-one (Entry 22, Table 5): White solid; mp = 124-125 °C; IR (KBr) $\nu_{\max} = 3434, 2918, 1736, 1679, 1541, 1321, 1242, 921$ cm⁻¹; ¹H NMR (400 MHz, CDCl₃): $\delta = 7.31$ -7.38 (m, 4H), 7.18-7.26 (m, 4H), 7.12 (t, $J = 5.3$ Hz, 1H), 5.44 (s, 1H), 5.09 (d, $J = 16.3$ Hz, 1H), 3.88-3.95 (m, 2H), 3.77 (d, $J = 15.6$ Hz, 1H); ¹³C NMR (100 MHz): 171.5, 139.3, 133.7, 132.7, 130.0,

129.7, 129.2, 129.1, 127.0, 126.7, 62.9, 44.1, 32.2; MS (APCI) $m/z = 304.05$ (M+H)⁺; HRMS (ESI) m/z calcd for C₁₆H₁₄ClNOS Na⁺ [M + Na⁺], 326.0377; found to be 326.0376.

3-(3-Chlorobenzyl)-2-phenylthiazolidin-4-one (Entry 23, Table 5): White solid; mp = 118-119 °C; IR (KBr) $\nu_{\max} = 3434, 2918, 1736, 1679, 1456, 1321, 1212, 962$ cm⁻¹; ¹H NMR (400 MHz, CDCl₃): $\delta = 7.25$ (s, 3H), 7.16 (s, 4H), 6.91 (d, $J = 16.6$ Hz, 2H), 5.45 (s, 1H), 3.71 (d $J = 15.1$ Hz, 2H), 4.71 (d, $J = 15.1$ Hz, 1H), 3.84 (d, $J = 15.8$ Hz, 1H); ¹³C NMR (100 MHz): 174.1, 140.1, 139.2, 135.5, 131.3, 130.4, 130.1, 129.2, 129.0, 128.6, 127.6, 64.8, 47.1, 33.4; MS (APCI) $m/z = 304.05$ (M+H)⁺; HRMS (ESI) m/z calcd for C₁₆H₁₄ClNOS Na⁺ [M + Na⁺], 326.0377; found to be 326.0382.

3-(4-Chlorobenzyl)-2-phenylthiazolidin-4-one (Entry 24, Table 5): White solid; mp = 119-120 °C; IR (KBr) $\nu_{\max} = 3434, 2918, 1736, 1679, 1492, 1321, 1142, 912$ cm⁻¹; ¹H NMR (400 MHz, CDCl₃): $\delta = 7.39$ (d, $J = 16.2$ Hz, 3H), 7.28 (t, $J = 4.4$ Hz, 2H), 7.21-7.25 (m, 2H), 7.02 (d, $J = 8.3$ Hz, 2H), 5.37 (s, 1H), 5.07 (d, $J = 14.8$ Hz, 1H), 3.91 (d, $J = 18.8$ Hz, 1H), 3.76 (d, $J = 15.6$ Hz, 1H), 3.56 (d, $J = 14.8$ Hz, 1H); ¹³C NMR (100 MHz, CDCl₃): $\delta = 171.3, 138.8, 133.8, 129.8, 129.3, 129.1, 128.9, 127.20, 62.8, 45.6, 33.9$; MS (APCI) $m/z = 304.14$ (M+H)⁺; HRMS (ESI) m/z calcd for C₁₆H₁₄ClNOS Na⁺ [M + Na⁺], 326.0377; found to be 326.0376.

3-(2-Fluorobenzyl)-2-phenylthiazolidin-4-one (Entry 25, Table 5): White solid; mp = 105-107 °C; IR (KBr) $\nu_{\max} = 3031, 2929, 1904, 1671, 1432, 1321, 1134$ cm⁻¹; ¹H NMR (400 MHz, CDCl₃): $\delta = 7.33$ -7.40 (m, 3H), 7.27 (d, $J = 2.1$ Hz, 1H), 7.20-7.25 (m, 3H), 7.11 (d, $J = 1.0$ Hz, 1H), 7.02 (d, $J = 1.6$ Hz, 1H), 5.43 (s, 1H), 4.99 (d, $J = 15.0$ Hz, 1H), 3.99-3.73 (m, 3H); ¹³C NMR (100 MHz): 171.4, 162.2, 139.2, 130.8, 129.8, 129.7, 129.0, 128.4, 127.4, 124.4, 122.2, 45.6, 63.2, 33.1, MS (APCI) $m/z = 288.08$ (M+H)⁺; HRMS (ESI) $m/z =$ calcd for C₁₆H₁₄FNOS Na⁺ [M + Na⁺], 310.0678; found to be 310.0669.

3-(3-Fluorobenzyl)-2-phenylthiazolidin-4-one (Entry 26, Table 5): White solid; mp = 115-117 °C; IR (KBr) $\nu_{\max} = 3031, 2929, 1904, 1671, 1532, 1472, 1231, 1154, 921$ cm⁻¹; ¹H NMR (400 MHz, CDCl₃): $\delta = 3.99$ -3.73 (m, 3H), 4.99 (d, $J = 15.3$ Hz, 1H), 5.43 (s, 1H), 7.02 (d, $J = 1.3$ Hz, 1H), 7.11 (d, $J = 1.5$ Hz, 1H), 7.20-7.25 (m, 3H), 7.27 (d, $J = 2.1$ Hz, 1H), 7.33-7.40 (m, 3H); ¹³C NMR (100 MHz): 171.4, 162.2, 139.2, 130.8, 129.8, 129.7, 129.0, 128.4, 127.4, 124.4, 122.2, 61.2, 45.6, 33.1, MS (APCI) $m/z = 288.08$ (M+H)⁺; HRMS (ESI) m/z calcd for C₁₆H₁₄FNOS Na⁺ [M + Na⁺], 310.0678 found to be 310.0678.

3-(4-Fuorobenzyl)-2-phenylthiazolidin-4-one (Entry 27, Table 5): White solid; mp = 118-120°C; IR (KBr) $\nu_{\max} = 3031, 2929, 1904, 1671, 1492, 1321, 1045, 921$ cm⁻¹; ¹H NMR (400 MHz, CDCl₃): $\delta = 7.33$ -7.40 (m, 3H), 7.27 (d, $J = 2.1$ Hz, 1H), 7.20-7.25 (m, 3H), 7.11 (d, $J = 1.6$ Hz, 1H), 7.02 (d, $J = 1.3$ Hz, 1H), 5.47 (d, $J = 1.7$ Hz, 1H), 4.99 (d, $J = 15.3$ Hz, 1H), 3.71-3.73 (m, 3H); ¹³C NMR (100 MHz): 171.3, 160.1, 143.1, 138.8, 137.8, 130.3, 127.2, 123.9, 62.6, 45.6, 33.1; MS (APCI) $m/z = 288.08$ (M+H)⁺; HRMS (ESI) m/z calcd for C₁₆H₁₄FNOS Na⁺ [M + Na⁺], 310.0678 ; found to be 310.0669

3-(2-Methylbenzyl)-2-phenylthiazolidin-4-one (Entry 28, Table 5): White solid; mp = 158-159; IR (KBr) $\nu_{\max}$ = 3435, 2942, 2918, 1676, 1245, 1132, 932 cm^{-1} ; ^1H NMR (400 MHz, CDCl_3): δ = 7.34-7.39 (m, 3H), 7.09-7.21 (m, 5H), 6.86 (d, J = 7.5 Hz, 1H), 5.29 (d, J = 2.6 Hz, 1H), 5.17 (d, J = 15.0 Hz, 1H), 3.94 (J = 2.7 Hz, 1H), 3.78 (d, J = 15.6 Hz, 1H), 2.10 (s, 3H), 3.63 (d, J = 15.0 Hz, 1H); ^{13}C NMR (100 MHz): 171.1, 139.5, 136.8, 130.7, 132.6, 129.1, 129.0, 128.9, 128.0, 126.7, 126.0, 62.9, 45.6, 33.9, 18.8; MS (APCI) m/z = 284.11 ($\text{M}+\text{H}^+$); HRMS (ESI) m/z calcd for $\text{C}_{17}\text{H}_{17}\text{NOS Na}^+$ [$\text{M} + \text{Na}^+$], 306.0929; found to be 306.0929.

3-(4-Methoxybenzyl)-2-phenylthiazolidin-4-one (Entry 29, Table 5): White solid; mp = 137-138 $^{\circ}\text{C}$; IR (KBr) $\nu_{\max}$ = 3435, 2956, 2929, 1739, 1456, 1029 cm^{-1} ; ^1H NMR (400 MHz, CDCl_3): δ = 7.36-7.42 (m, 3H), 7.22-7.024 (m, 2H), 7.01 (d, J = 8.9 Hz, 2H), 6.80-6.84 (m, 2H), 5.38 (s, 1H), 5.10 (d, J = 14.5 Hz, 1H), 3.47 (d, J = 14.7 Hz, 1H), 3.74 (d, J = 15.8, 1H), 3.89 (dd, J = 15.5 Hz, 15.5 Hz, 1H), 3.80 (s, 3H); ^{13}C NMR (100 MHz): 171.1, 159.2, 131.3, 129.8, 129.1, 129.1, 127.3, 127.1, 114.0, 62.8, 55.2, 45.6, 33.1; MS (APCI) m/z = 300.10 ($\text{M}+\text{H}^+$); HRMS (ESI) m/z calcd for $\text{C}_{17}\text{H}_{17}\text{NO}_2\text{S Na}^+$ [$\text{M} + \text{Na}^+$], 322.0878; found to be 322.0878.

3-Benzyl-2-(3,4-dimethoxyphenyl)thiazolidin-4-one (Entry 30, Table 5): White solid; mp = 142-143 $^{\circ}\text{C}$; IR (KBr) $\nu_{\max}$ = 3241, 2952, 1672, 1532, 1421, 1214, 932 cm^{-1} ; ^1H NMR (400 MHz, CDCl_3): δ = 3.64 (s, 3H), 3.66 (d, J = 6.2, 2H), 3.71 (s, 3H), 3.81 (d, J = 0.6 Hz, 1H), 4.72 (d, J = 17.6 Hz, 1H), 5.39 (s, 1H), 6.68-6.70 (m, 2H), 6.78 (d, 1.6 Hz, 1H), 6.93-6.95 (m, 2H), 7.17-7.12 (m, 3H); ^{13}C NMR (100 MHz): δ = 170.6, 151.3, 150.9, 137.1, 132.3, 129.7, 129.3, 128.8, 121.7, 111.9, 112.6, 64.8, 56.5, 56.4, 47.5, 33.6; MS (APCI) m/z = 330.11 ($\text{M}+\text{H}^+$); HRMS (ESI) m/z calcd for $\text{C}_{18}\text{H}_{19}\text{NO}_3\text{S Na}^+$ [$\text{M} + \text{Na}^+$], 352.0978; found to be 352.0981.

3-(Furan-2-ylmethyl)-2-phenylthiazolidin-4-one (Entry 31, Table 5): Yellow Solid; mp = 152-153 $^{\circ}\text{C}$; IR (KBr) $\nu_{\max}$ = 2992, 236, 1679, 1600, 1407, 1275, 963 cm^{-1} ; ^1H NMR (CDCl_3 , 400 MHz): δ = 7.29-7.42 (m, 6H), 6.28-6.29 (q, 1H), 6.10-6.11 (d, J = 3.1 Hz, 1H), 5.53-5.54 (d, J = 1.6 Hz, 1H), 4.97-5.01 (d, J = 15.4 Hz, 1H), 3.83-3.87 (dd, J = 15.6 Hz & 1.3 Hz, 1H), 3.71-3.75 (d, J = 15.6 Hz, 1H), 3.64-3.68 (d, J = 15.4 Hz, 1H); ^{13}C NMR (CDCl_3 , 100 MHz): δ = 171.0, 148.9, 142.7, 138.9, 129.2, 129.1, 127.3, 110.4, 109.2, 63.1, 38.9, 32.9; MS (APCI) m/z = 260.28 ($\text{M}+\text{H}^+$); HRMS (ESI) m/z calcd for $\text{C}_{14}\text{H}_{13}\text{NO}_2\text{S Na}^+$ [$\text{M} + \text{Na}^+$], 282.0559; found to be 282.0555.

2-(Benzo[d][1,3]dioxol-4-yl)-3-phenylthiazolidin-4-one (Entry 32, Table 5): Brown Solid; mp = 166-167 $^{\circ}\text{C}$; IR (KBr) $\nu_{\max}$ = 2929, 1738, 1687, 1461, 1365, 1229, 1217, 764 cm^{-1} ; ^1H NMR (CDCl_3 , 400 MHz): δ = 7.16-7.31 (m, 5H), 6.66-6.74 (m, 3H), 6.14-6.14 (d, J = 1.6 Hz, 1H), 5.95 (s, 2H), 4.03-4.07 (dd, J = 15.5 Hz & 1.6 Hz, 1H), 3.79-3.83 (d, J = 15.4 Hz, 1H); ^{13}C NMR (CDCl_3 , 100 MHz): δ = 170.9, 147.9, 144.6, 137.5, 129.1, 127.2, 125.4, 122.0, 121.9, 119.9, 109.0, 101.5, 61.0, 33.6; MS (APCI) m/z = 300.21 ($\text{M}+\text{H}^+$); HRMS (ESI) m/z calcd for $\text{C}_{14}\text{H}_{13}\text{NO}_2\text{S Na}^+$ [$\text{M} + \text{Na}^+$], 322.0508; found to be 322.0504.

3-Phenyl-2-(pyridin-2-yl)thiazolidin-4-one (Entry 33, Table 5): White Solid; mp = 152-153 °C; IR (KBr) ν_{max} = 2992, 2355, 1763, 1686, 1242, 1055 cm^{-1} ; ^1H NMR (CDCl_3 , 400 MHz): δ = 8.54-8.55 (m, 1H), 7.60-7.65 (m, 1H), 7.14-7.30 (m, 7H), 6.12 (s, 1H), 4.06-4.10 (dd, J = 15.6 Hz & 1.4 Hz, 1H), 3.77-3.81 (d, J = 15.6 Hz, 1H); MS (APCI) m/z = 257.29 ($\text{M}+\text{H}$) $^+$.

3-Phenyl-2-(thiophen-2-yl)thiazolidin-4-one (Entry 34, Table 5): Brown Solid; mp = 132-133 °C IR (KBr) ν_{max} = 2959, 2369, 1764, 1727, 1565, 1249 cm^{-1} ; ^1H NMR (CDCl_3 , 400 MHz): δ = 7.22-7.35 (m, 4H), 7.14-7.17 (m, 2H), 6.87-6.88 (m, 1H), 6.80-6.82 (m, 1H), 6.34 (s, 1H), 4.01-4.05 (dd, J = 15.7 Hz & 1.6 Hz, 1H), 3.86-3.90 (dd, J = 15.6 Hz & 0.4 Hz, 1H); MS (APCI) m/z = 262.33 ($\text{M}+\text{H}$) $^+$.

2-(Furan-2-yl)-3-phenylthiazolidin-4-one (Entry 35, Table 5): White Solid; mp = 131-132 °C; IR (KBr) ν_{max} = 2913, 1681, 1275, 1010 cm^{-1} ; ^1H NMR (CDCl_3 , 400 MHz): δ = 7.23-7.40 (m, 4H), 7.12-7.15 (m, 2H), 6.26-6.27 (m, 1H), 6.20-6.21 (dd, J = 3.2 Hz & 0.4 Hz, 1H), 5.98 (s, 1H), 4.05-4.09 (dd, J = 15.5 Hz & 1.4 Hz, 1H), 3.75-3.79 (d, J = 15.5 Hz, 1H); MS (APCI) m/z = 246.44 ($\text{M}+\text{H}$) $^+$.

2-Cyclohexyl-3-phenylthiazolidin-4-one (Entry 36, Table 5): Yellow Solid; mp = 134 °C IR (KBr) ν_{max} = 2928, 1737, 1607, 1448, 1365, 1229, 1217 cm^{-1} ; ^1H NMR (CDCl_3 , 400 MHz): δ = 7.42-7.46 (m, 2H), 7.28-7.34 (m, 3H), 5.10 (t, J = 2.3 Hz, 1H), 3.71-3.75 (dd, J = 15.6 Hz & 1.9 Hz, 1H), 3.61-3.65 (d, J = 15.7 Hz, 1H), 1.62-1.77 (m, 5H), 1.37-1.46 (m, 2H), 1.21-1.25 (m, 4H); ^{13}C NMR (CDCl_3 , 100 MHz): δ = 170.8, 137.6, 129.5, 127.5, 126.1, 69.4, 41.0, 33.1, 29.0, 26.1, 25.8, 25.2, 24.2; MS (APCI) m/z = 260.30 ($\text{M}+\text{H}$) $^+$; HRMS (ESI) m/z calcd for $\text{C}_{15}\text{H}_{19}\text{NOS Na}^+$ [$\text{M} + \text{Na}^+$], 284.1080; found to be 284.1083.

2-Isopropyl-3-phenylthiazolidin-4-one (Entry 37, Table 5): Semisolid; IR (KBr) ν_{max} = 2965, 2362, 1706, 1600, 1533, 1454, 1235 cm^{-1} ; ^1H NMR (CDCl_3 , 400 MHz): δ = 7.41-7.43 (m, 2H), 7.28-7.34 (m, 3H), 5.17-5.19 (q, 1H), 3.71-3.75 (dd, J = 15.7 Hz & 2.0 Hz, 1H), 3.63-3.67 (d, J = 15.7, 1H), 1.99-2.06 (m, 1H), 0.93-0.94 (d, J = 6.5 Hz, 3H), 0.88-0.89 (d, J = 6.8 Hz, 3H); ^{13}C NMR (CDCl_3 , 100 MHz): δ = 170.8, 137.5, 129.5, 128.9, 127.5, 126.1, 70.1, 32.9, 30.9, 18.5, 13.7; MS (APCI) m/z = 222.31 ($\text{M}+\text{H}$) $^+$; HRMS (ESI) m/z calcd for $\text{C}_{12}\text{H}_{15}\text{NOS Na}^+$ [$\text{M} + \text{Na}^+$], 244.0767; found to be 244.0772.

2-Phenyl-3-(pyridin-2-yl)thiazolidin-4-one (Entry 38, Table 5): Brown Solid; mp = 98-100 °C; IR (KBr) ν_{max} = 2972, 2375, 1742, 1599, 1440., 1371, 1224, 913 cm^{-1} ; ^1H NMR (CDCl_3 , 400 MHz): δ = 8.23-8.21 (m, 1H), 8.06-8.08 (m, 1H), 7.65-7.69 (m, 1H), 7.18-7.40 (m, 5H), 6.97-7.00 (m, 1H), 6.88 (s, 1H), 4.00-4.04 (dd, J = 16.0 Hz & 1.2 Hz, 1H), 3.78-3.82 (d, J = 16.0 Hz, 1H); MS (APCI) m/z = 257.37 ($\text{M}+\text{H}$) $^+$.

3-(Naphthalen-1-yl)-2-phenylthiazolidin-4-one (Entry 39, Table 5): White Solid; mp = 105-107 °C; IR (KBr) ν_{max} = 2958, 2929, 1727, 1593, 1460, 1277, 1124, 1072 cm^{-1} ; ^1H NMR (CDCl_3 , 400 MHz): δ = 7.99-8.01 (d, J = 8.3 Hz, 1H), 7.84-7.86 (d, J = 7.7 Hz, 2H), 7.71-7.73 (d, J = 8.7 Hz, 1H), 7.51-7.63 (m, 4H), 7.34-7.43 (m, 3H), 7.11-7.14 (d, J = 8.6 Hz, 1H), 5.94 (s, 1H), 3.23-3.26 (d, J = 11.9 Hz, 1H), 3.03-3.06 (d, J = 11.9 Hz, 1H); ; MS (APCI) m/z = 306.40 ($\text{M}+\text{H}$) $^+$.

3-(Benzo[d]thiazol-2-yl)-2-phenylthiazolidin-4-one (Entry 40, Table 5): Yellow Solid; mp = 152-153 °C; IR (KBr) $\nu_{\max}$ = ^1H NMR (CDCl_3 , 400 MHz): δ = 7.80-7.83 (dd, J = 7.4 Hz & 0.7 Hz, 1H), 7.71-7.73 (dd, J = 7.9 Hz & 0.7 Hz, 1H), 7.25-7.43 (m, 7H), 6.85 (s, 1H), 4.10-4.14 (dd, J = 16.5 Hz & 0.9 Hz, 1H), 3.83-3.87 (d, J = 16.5 Hz, 1H); MS (APCI) m/z = 313.28 (M+H)⁺.

3-(1*H*-Benzo[d]imidazol-2-yl)-2-phenylthiazolidin-4-one (Entry 41, Table 5): Brown Solid; mp = 248-250 °C; IR (KBr) $\nu_{\max}$ = ^1H NMR (CDCl_3 , 400 MHz) δ = 11.05 (s, 1H, NH), 7.53-7.55 (m, 1H), 7.39-7.41 (m, 1H), 7.26-7.35 (m, 5H), 7.16-7.22 (m, 2H), 6.78 (s, 1H), 4.07-4.11 (dd, J = 16.5 Hz, & 0.9 Hz, 1H), 3.78-3.82 (d, J = 16.5 Hz, 1H); MS (APCI) m/z = 296.37(M+H)⁺.

3-Cyclohexyl-2-phenylthiazolidin-4-one (Entry 42, Table 5): Brown Solid; mp = 116-119 °C; IR (KBr) $\nu_{\max}$ = 2931, 1743, 1669, 1370, 1211, 912 cm^{-1} ; ^1H NMR (CDCl_3 , 400 MHz): δ = 7.19-7.35 (m, 5H), 5.64 (s, 1H), 3.88-3.92 (dd, J = 15.5 Hz & 1.9 Hz, 1H), 3.76-3.84 (m, 1H), 3.57-3.61 (d, J = 15.5 Hz, 1H), 1.48-1.87 (m, 6H), 1.11-1.29 (m, 2H), 0.94-1.03 (m, 2H); MS (APCI) m/z = 262.41 (M+H)⁺.

2-Phenyl-3-propylthiazolidin-4-one (Entry 43, Table 5): White Solid; mp = 68-69 °C; IR (KBr) $\nu_{\max}$ = 2935, 1745, 1666, 1372, 1210, 963 cm^{-1} ; ^1H NMR (CDCl_3 , 400 MHz): δ = 7.34-7.42 (m, 3H), 7.28-7.31 (m, 2H), 5.63-5.64 (d, J = 1.9 Hz, 1H), 3.81-3.85 (dd, J = 15.4 Hz & 2.1 Hz, 1H), 3.69-3.73 (d, J = 15.3 Hz, 1H), 3.61-3.68 (m, 1H), 2.61-2.68 (m, 1H), 1.38-1.54 (m, 2H), 0.82-0.86 (t, J = 7.4 Hz, 3H); MS (APCI) m/z = 222.32 (M+H)⁺.

3,3'-(Ethane-1,2-diyl)bis(2-phenylthiazolidin-4-one): Yellow Solid; mp = 152-155 °C; IR (KBr) $\nu_{\max}$ = 3463, 2995, 1770, 1759, 1375, 1246, 1057 cm^{-1} ; ^1H NMR (CDCl_3 , 400 MHz): δ = 7.29-7.38 (m, 10H), 5.94 (s, 2H), 3.94-3.97 (d, J = 10.6 Hz, 2H), 3.73-3.78 (dd, J = 15.5 Hz & 1.6 Hz, 2H), 3.66-3.70 (dd, J = 15.6 Hz & 0.92 Hz, 2H), 2.48-2.51 (d, J = 10.6 Hz, 2H); MS (APCI) m/z = 386.40 (M+H)⁺.

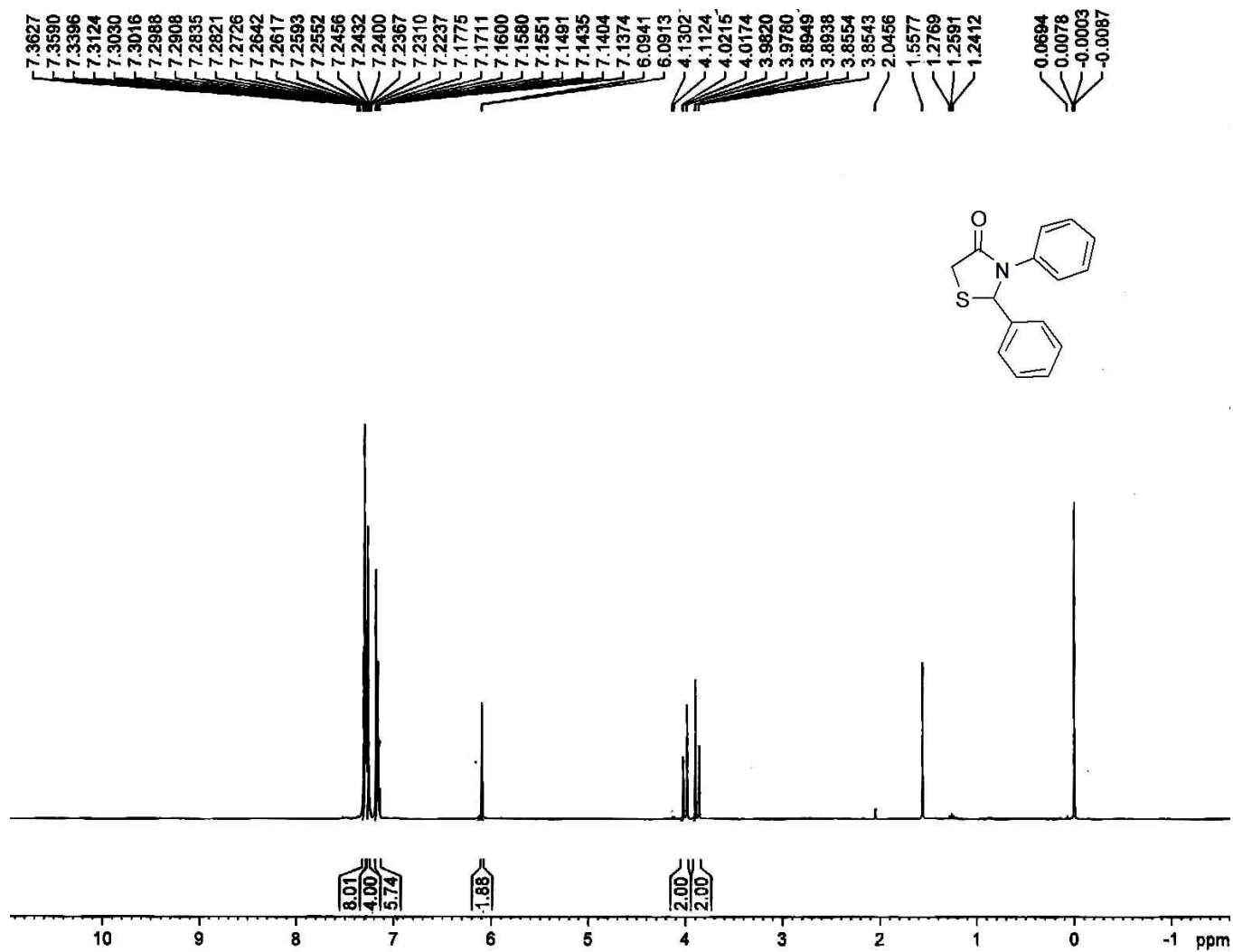
4-Phenyl-1-thia-4-azaspiro[4.5]decan-3-one: White Solid; mp = 168-170 °C; IR (KBr) $\nu_{\max}$ = 2939, 2853, 2362, 1692, 1639, 1374, 1261 cm^{-1} ; ^1H NMR (CDCl_3 , 400 MHz): δ = 7.39-7.48 (m, 3H), 7.14-7.16 (m, 2H), 3.68 (s, 2H), 1.97-2.00 (m, 2H), 1.56-1.74 (m, 7H), 0.88-0.92 (m, 1H); MS (APCI) m/z = 249.40 (M+H)⁺.

1-Benzyl-2-phenyl-1*H*-benzimidazole: White Solid; mp = 130-131 °C; IR (KBr) $\nu_{\max}$ = 3385, 1605, 1510, 1390, 1264, 1160, 1121, 1075 cm^{-1} ; ^1H NMR (CDCl_3 , 400 MHz): δ = 7.86 (d, J = 8.2 Hz, 1H), 7.64 (m, 2H), 7.46 (m, 3H), 7.22-7.30 (m, 6H), 7.11 (d, J = 7.3 Hz, 2H), 5.45 (s, 2H); MS (APCI) m/z = 285.24(M+H)⁺.

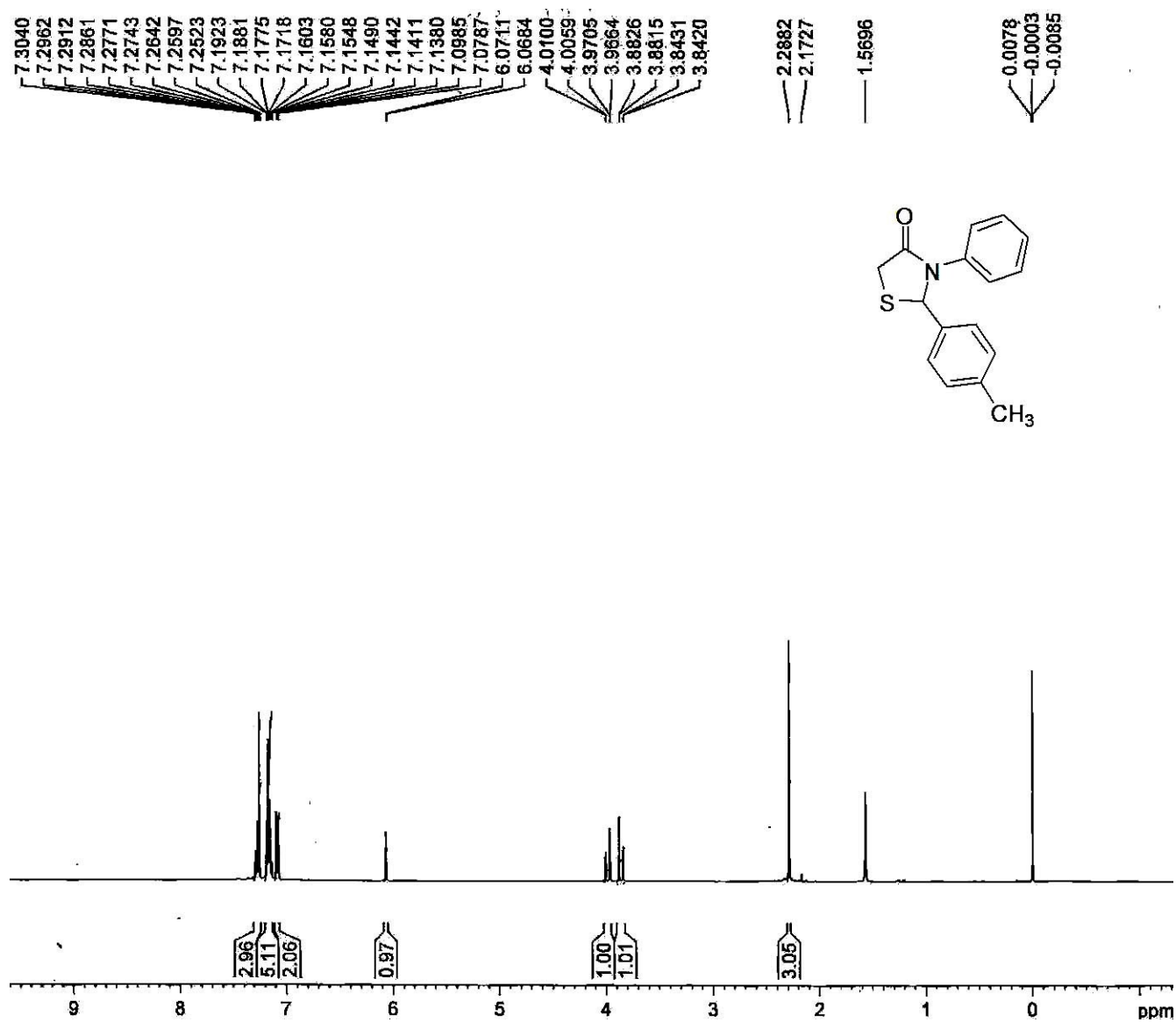
2-Phenyl benzimidazole: White Solid; mp = 265-267 °C; IR (KBr) $\nu_{\max}$ = 3261, 1653, 1624, 1472, 1266, cm^{-1} ; ^1H NMR (DMSO , 400 MHz): δ = 8.03 (d, J = 8.0 Hz, 2H), 7.54 (m, 2H), 7.32 (d, J = 8.1 Hz, 2H), 7.20 (m, 3H); MS (APCI) m/z = 195.21(M+H)⁺.

Scanned spectra (Table 5)

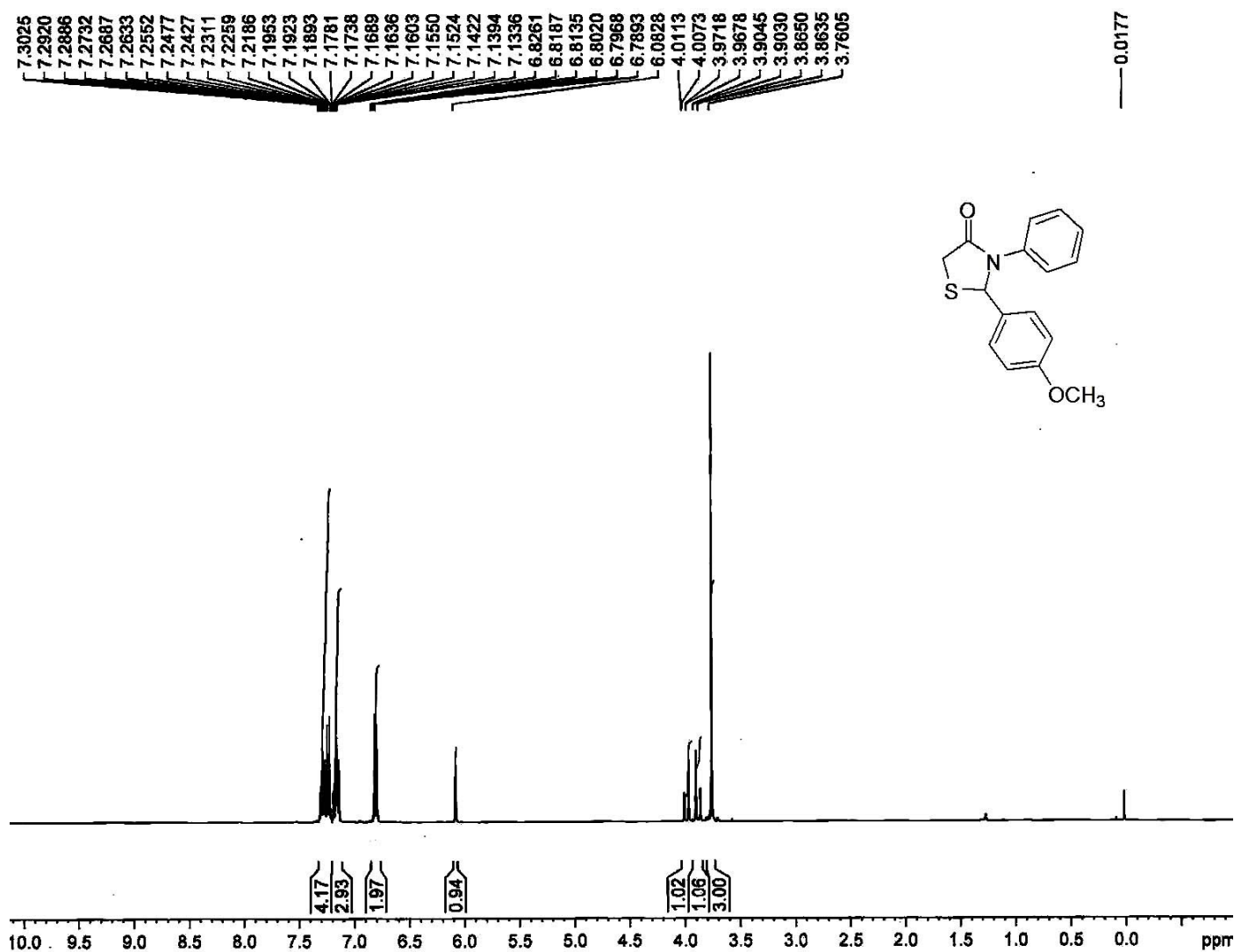
2,3-Diphenyl thiazolidin-4-one [Entry 1, Table 5, ¹H NMR]



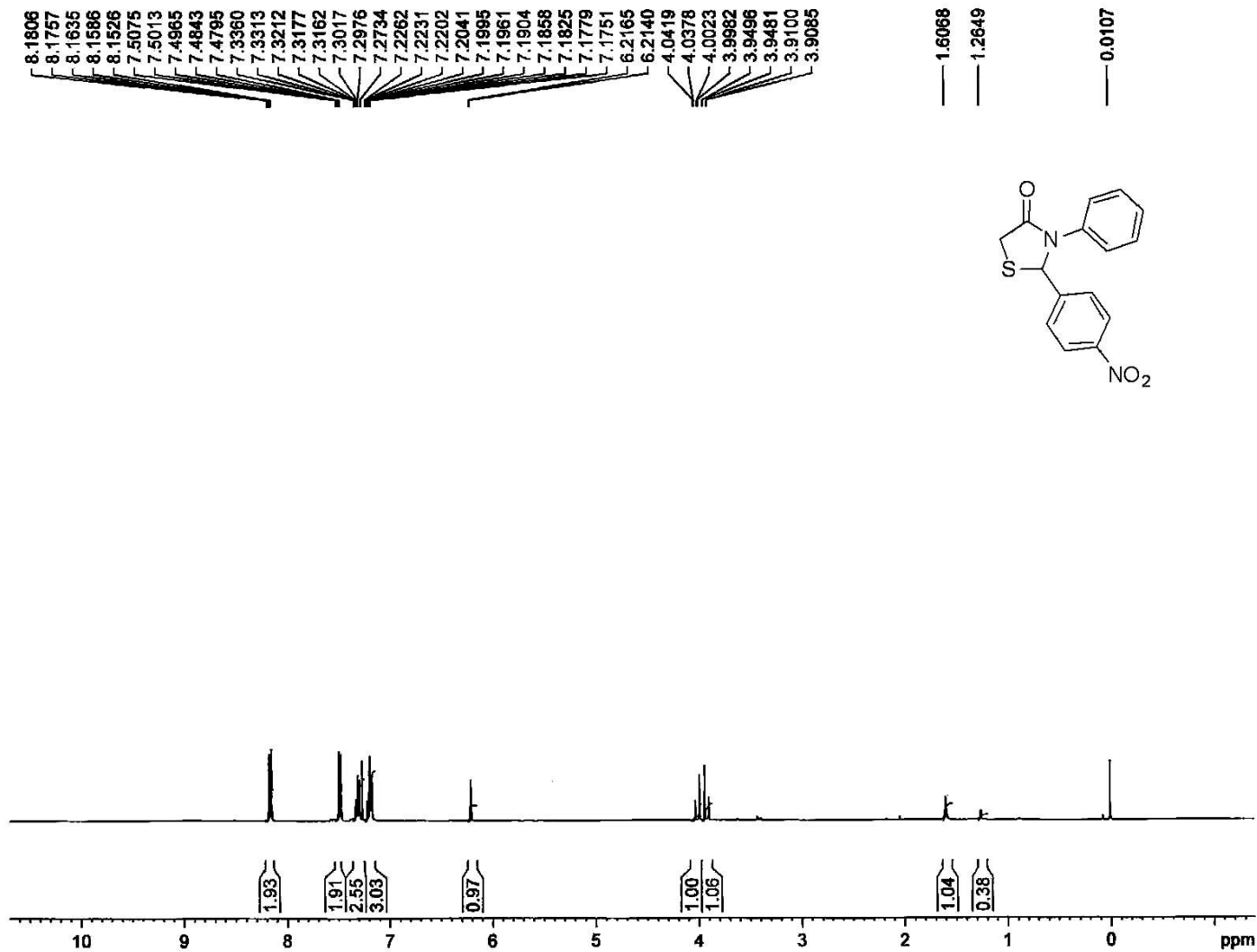
3-Phenyl-2-p-tolylthiazolidin-4-one [Entry 2, Table 5, ^1H NMR]



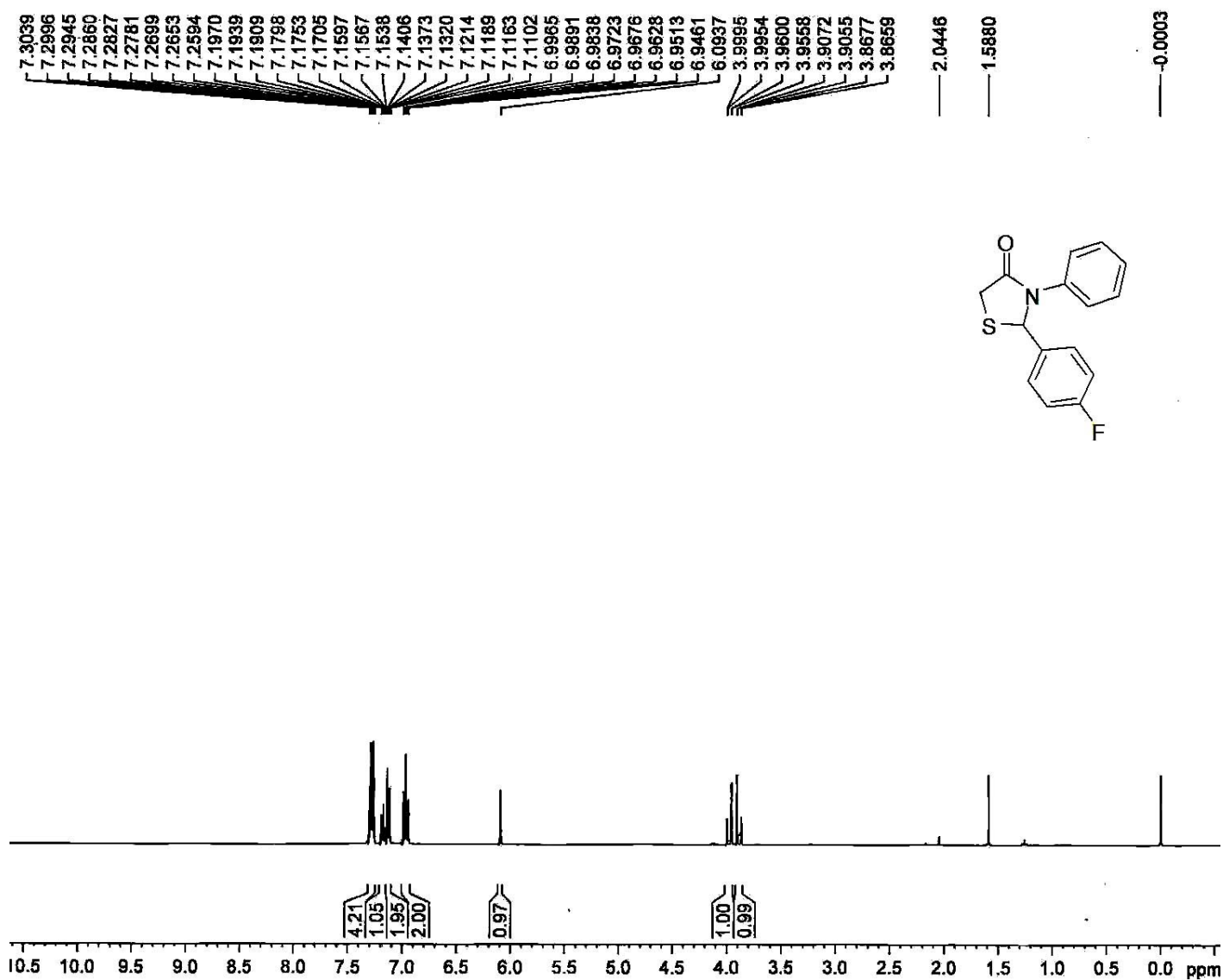
2-(4-Methoxyphenyl)-3-phenylthiazolidin-4-one [Entry 3, Table 5, ^1H NMR]



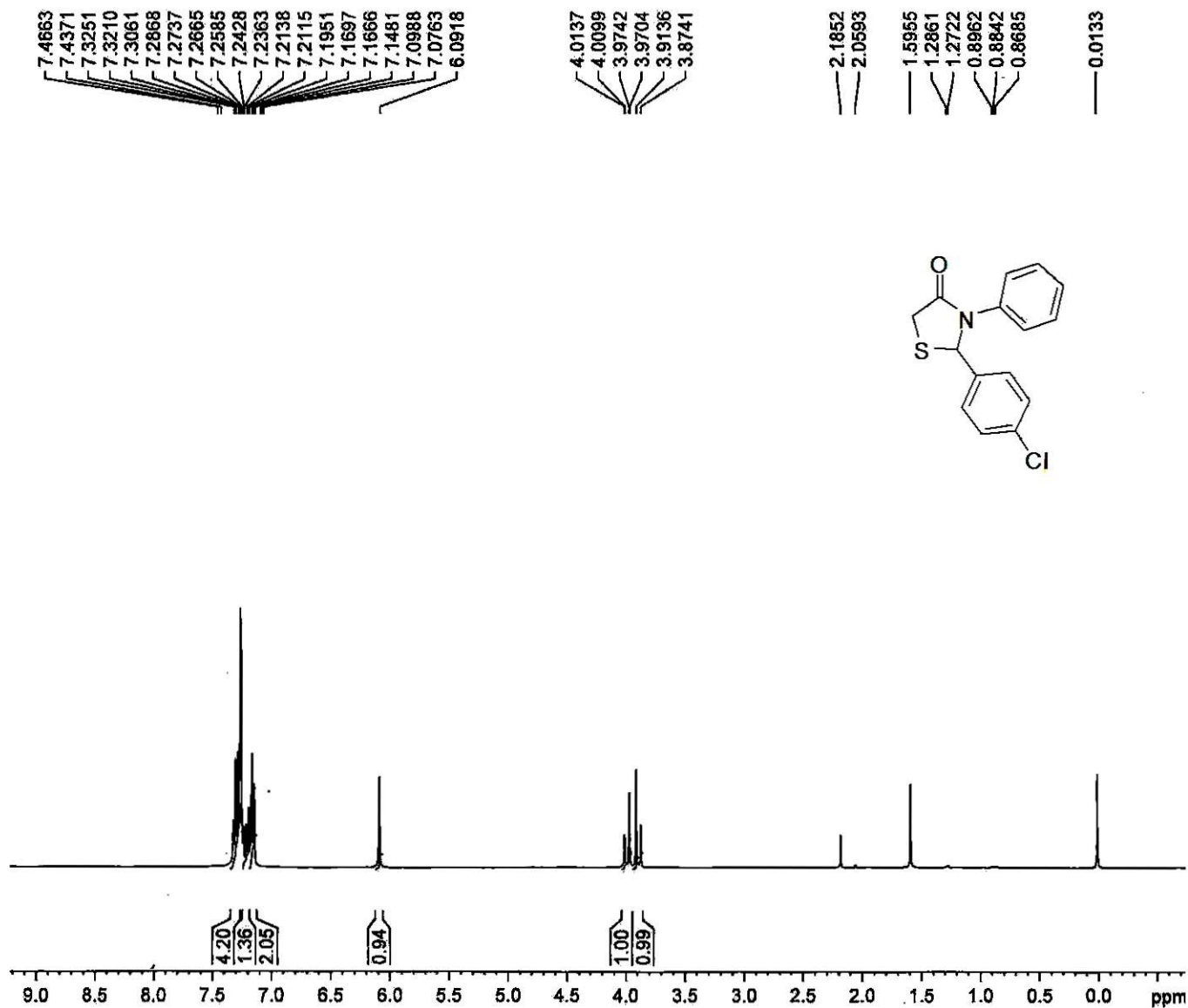
2-(4-Nitrophenyl)-3-phenylthiazolidin-4-one [Entry 4, Table 5, ^1H NMR]



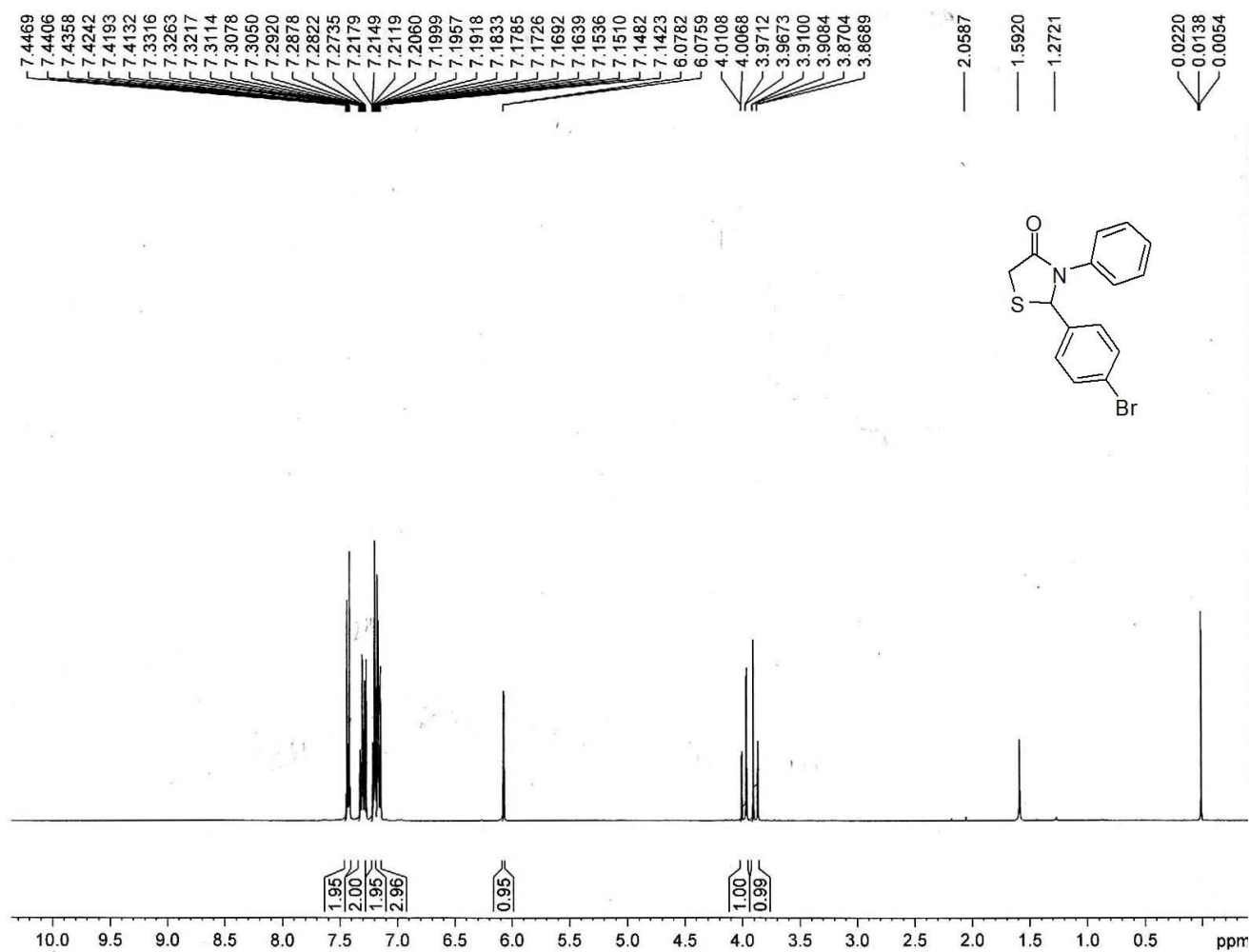
2-(4-Fluorophenyl)-3-phenylthiazolidin-4-one [Entry 5, Table 5, ^1H NMR]



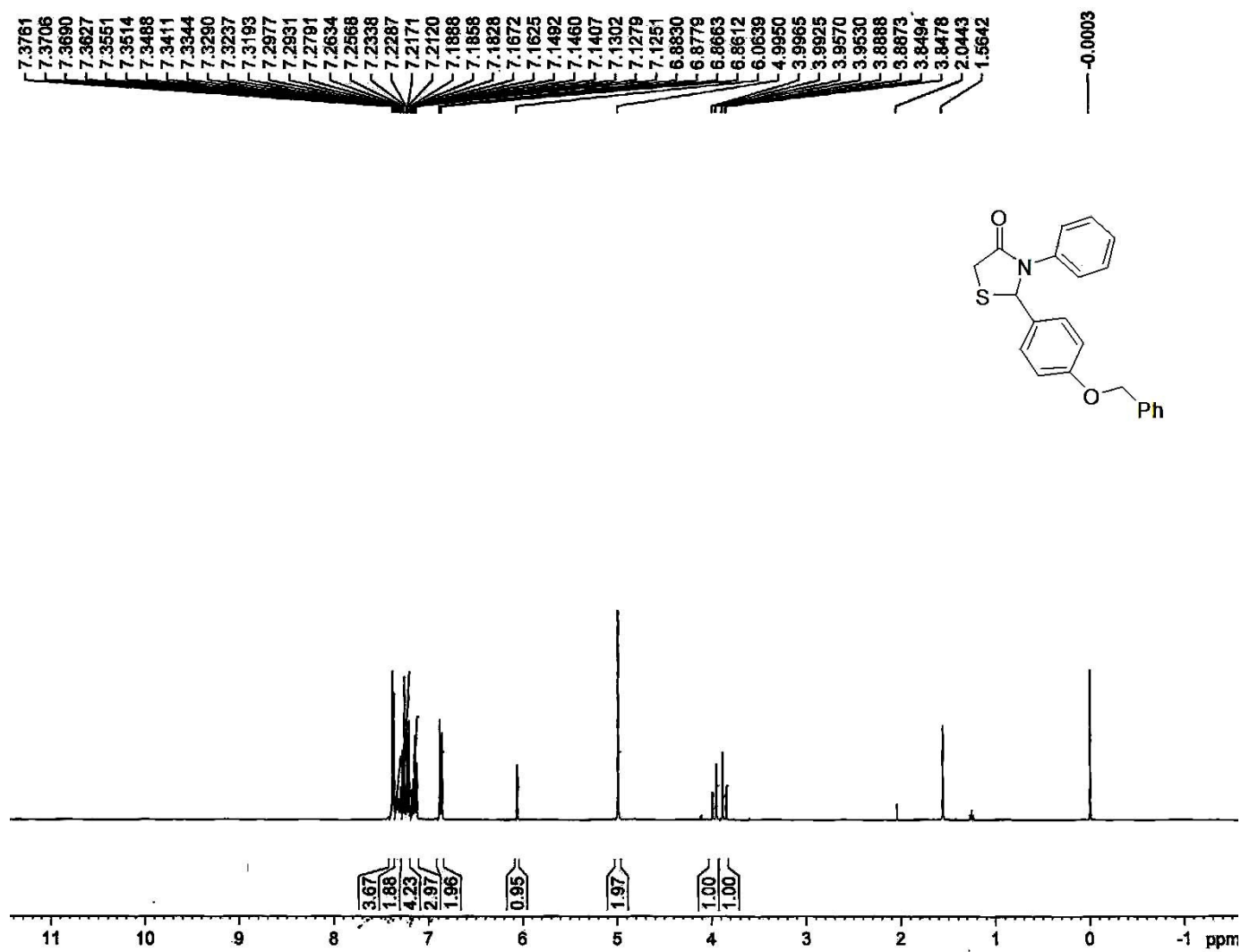
2-(4-Chlorophenyl)-3-phenylthiazolidin-4-one [Entry 6, Table 5, ^1H NMR]



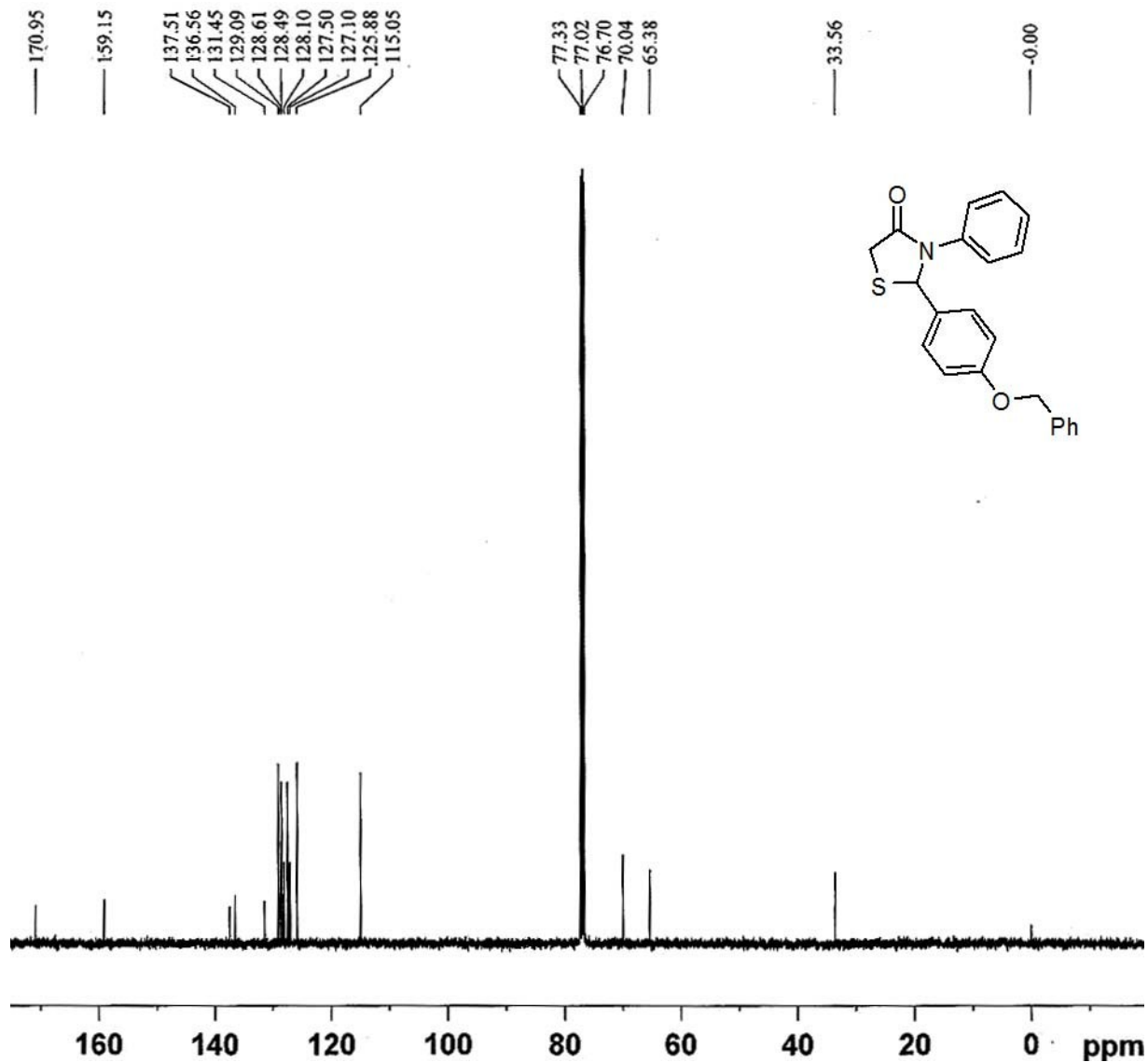
2-(4-Bromophenyl)-3-phenylthiazolidin-4-one [Entry 7, Table 5, ^1H NMR]



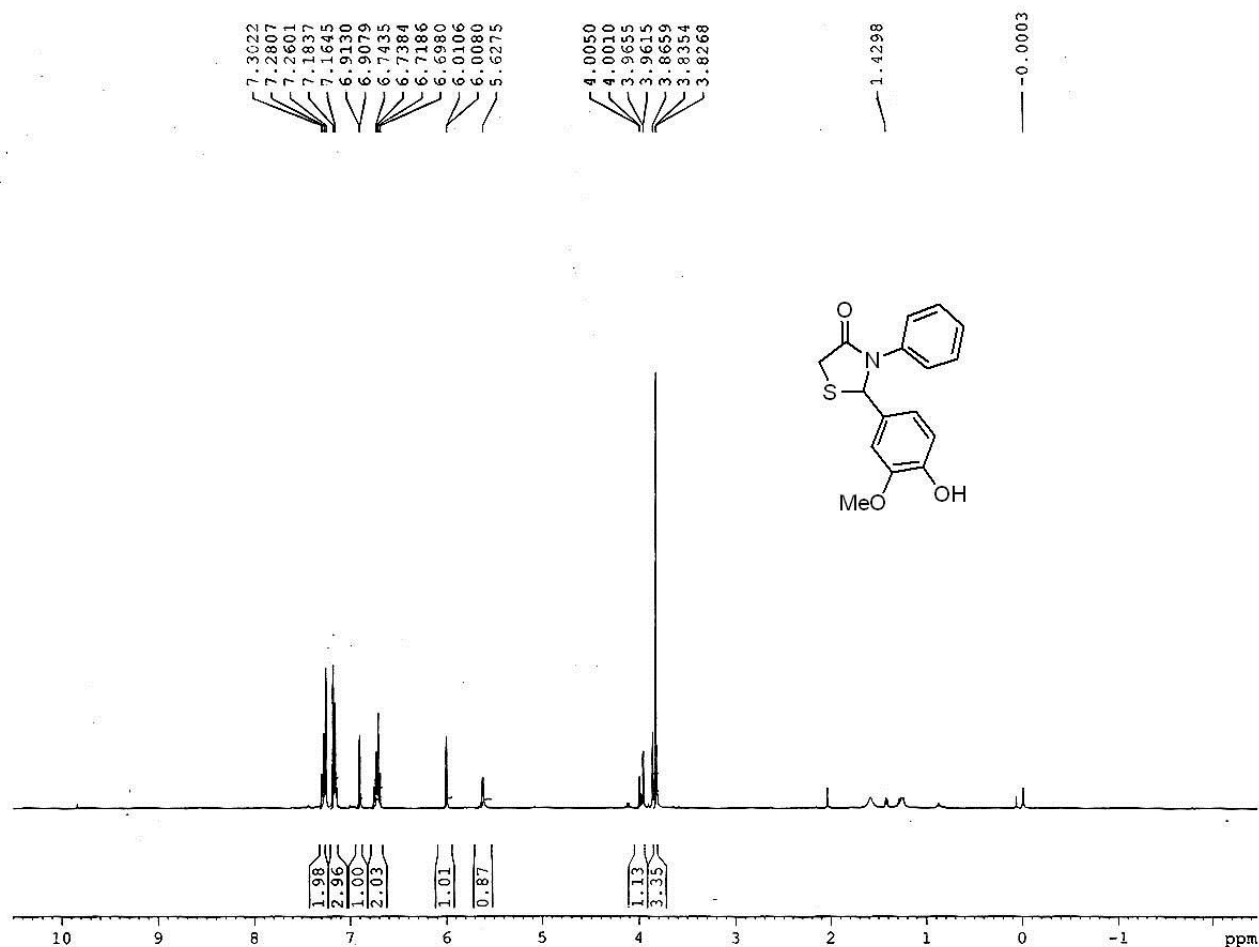
2-(4-(Benzyloxy)phenyl)-3-phenylthiazolidin-4-one [Entry 8, Table 5, ^1H NMR]



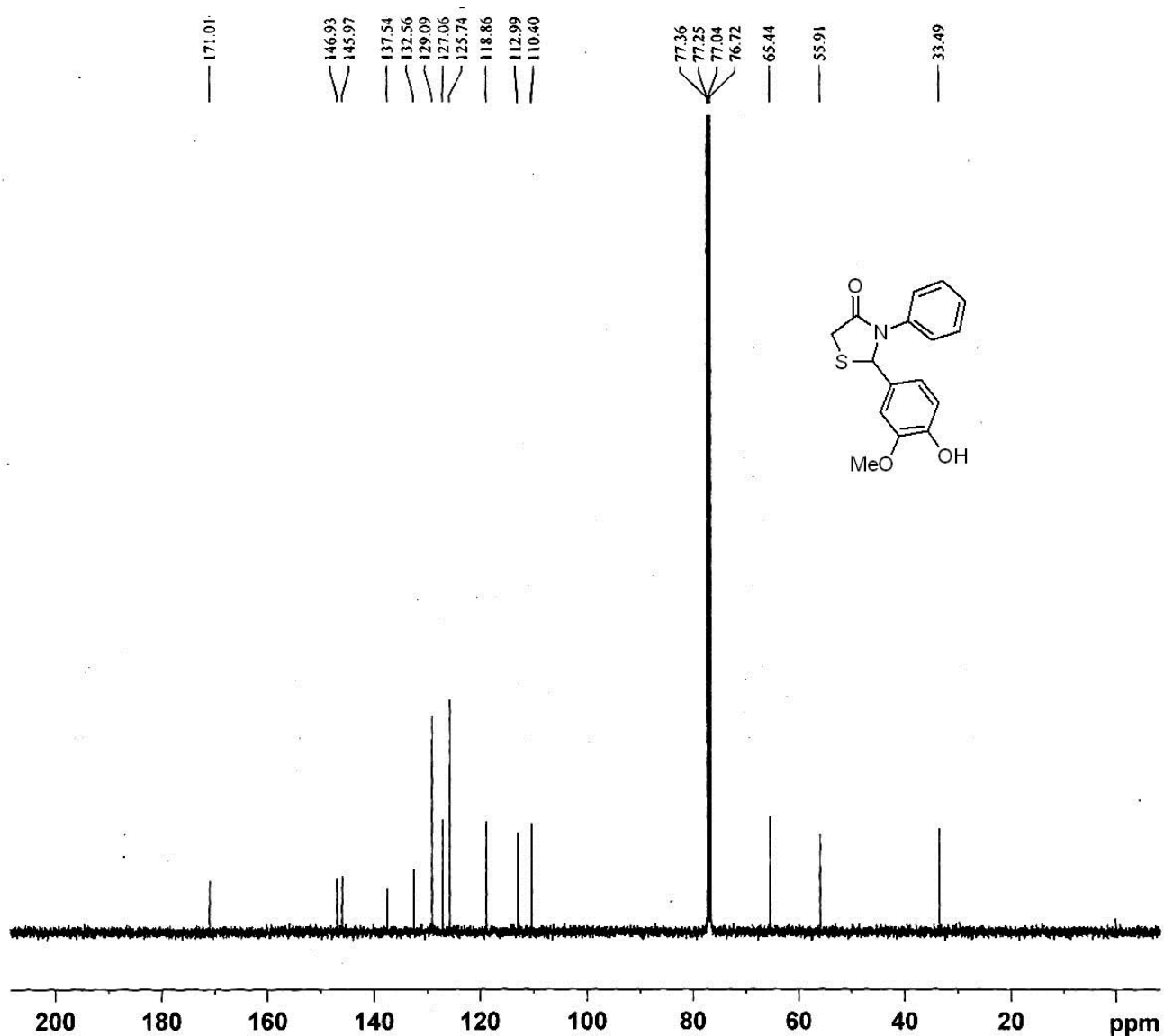
2-(4-(Benzyloxy)phenyl)-3-phenylthiazolidin-4-one [Entry 8, Table 5, ^{13}C NMR]



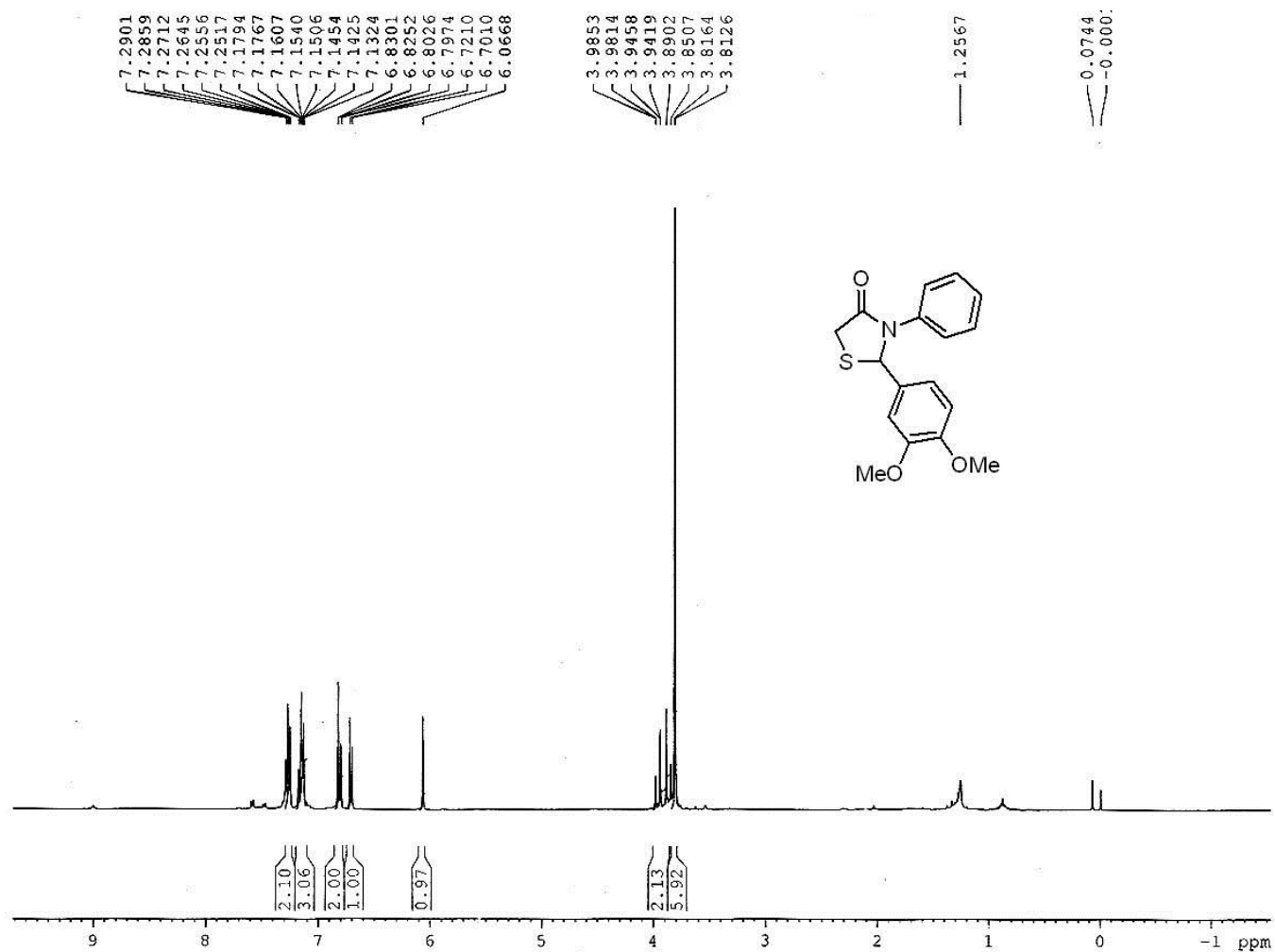
2-(4-Hydroxy-3-methoxyphenyl)-3-phenylthiazolidin-4-one [Entry 9, Table 5, ^1H NMR]



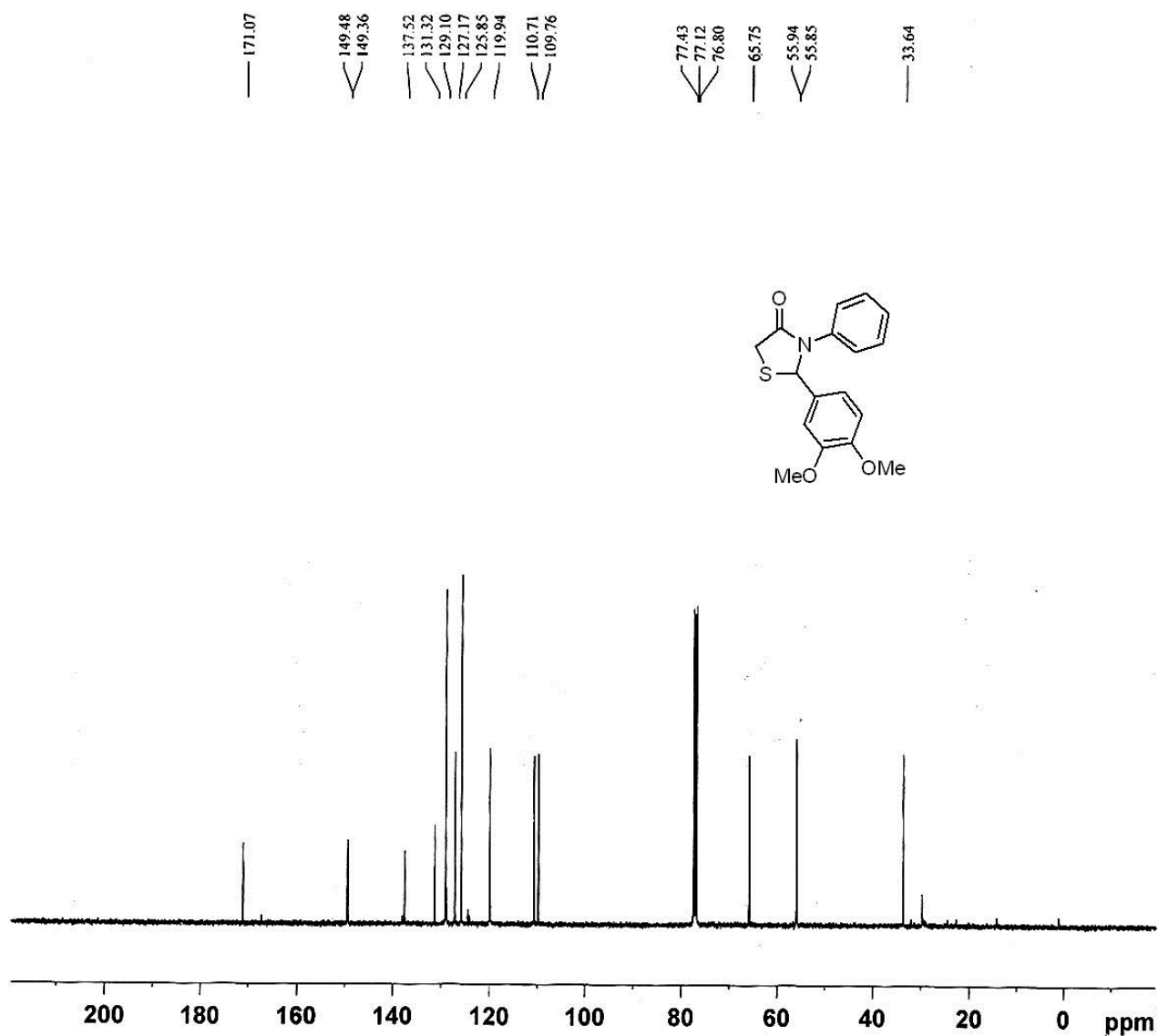
2-(4-Hydroxy-3-methoxyphenyl)-3-phenylthiazolidin-4-one [Entry 9, Table 5, ^{13}C NMR]



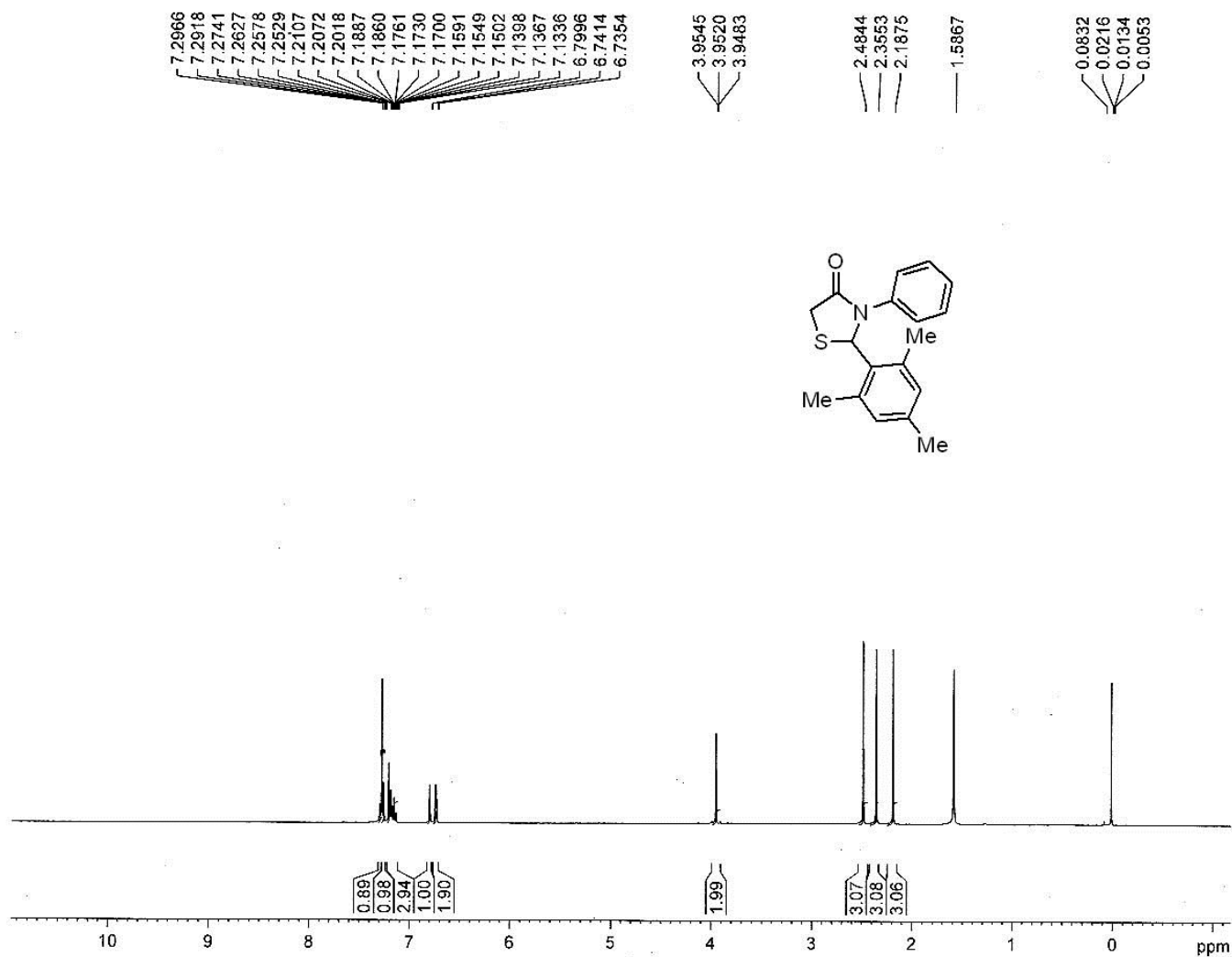
2-(3,4-Dimethoxyphenyl)-3-phenylthiazolidin-4-one [Entry 10, Table 5, ^1H NMR]



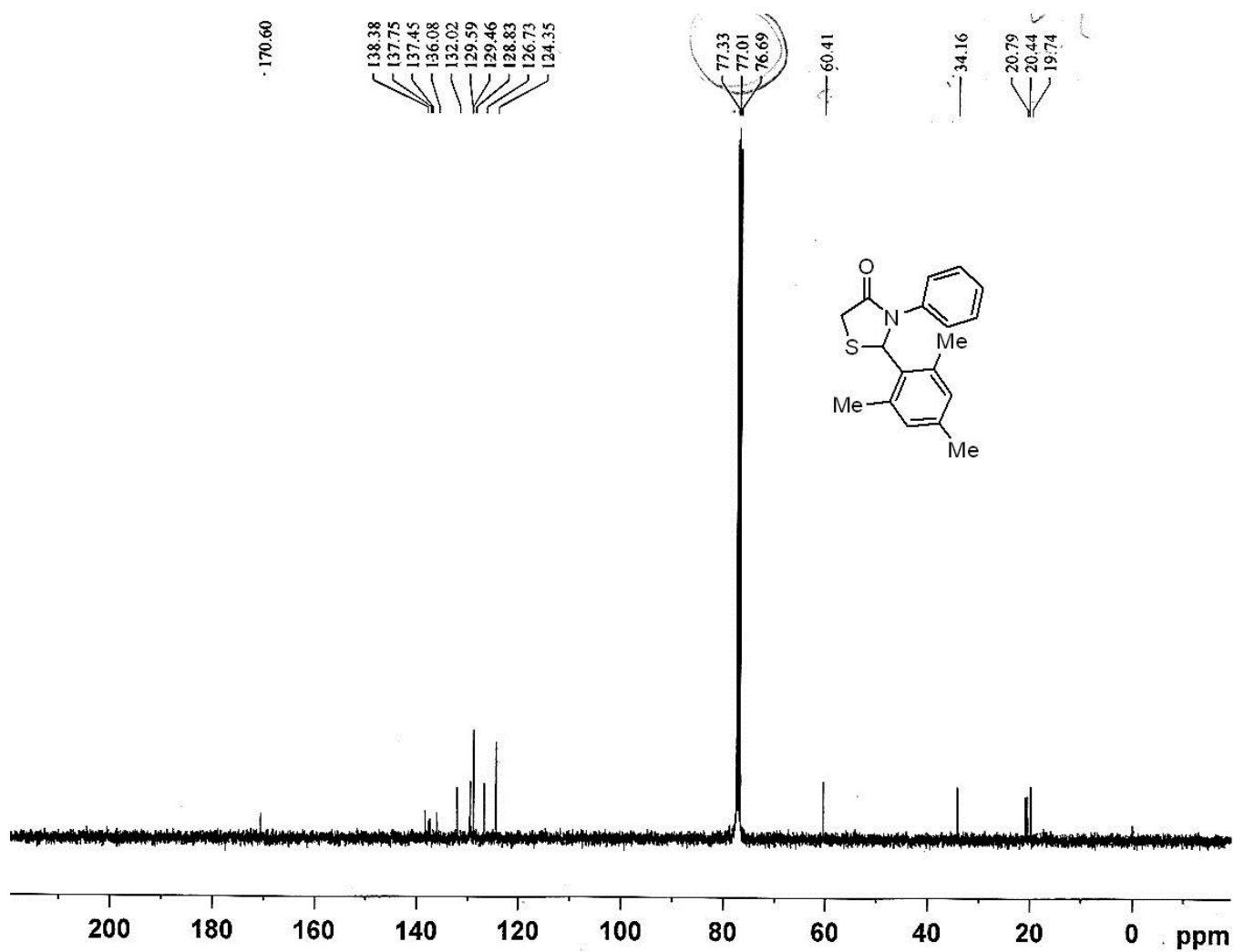
2-(3,4-Dimethoxyphenyl)-3-phenylthiazolidin-4-one [Entry 10, Table 5, ^{13}C NMR]



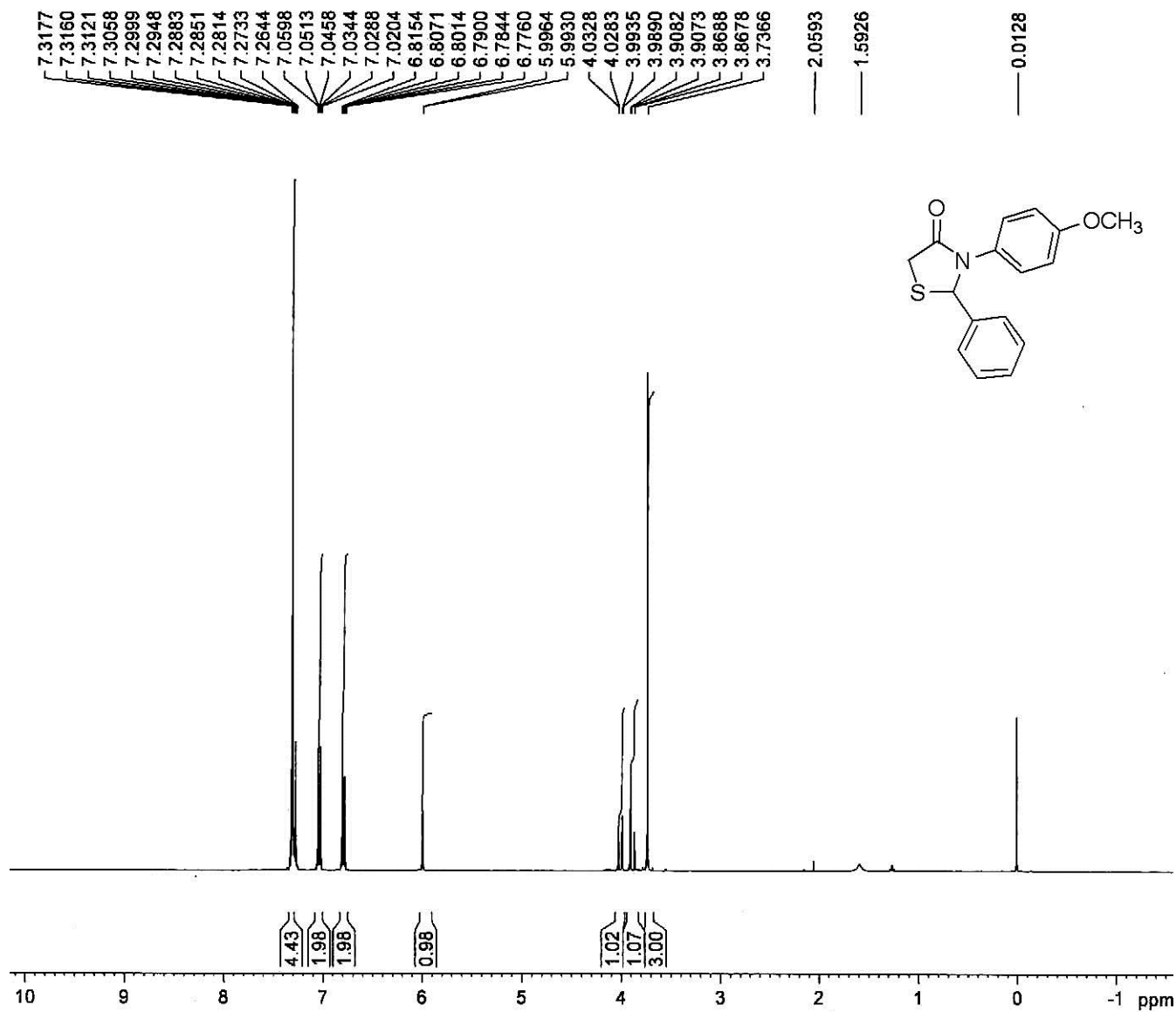
2-(2,4,6-Trimethylphenyl)-3-phenylthiazolidin-4-one [Entry 11, Table 5, ^1H NMR]



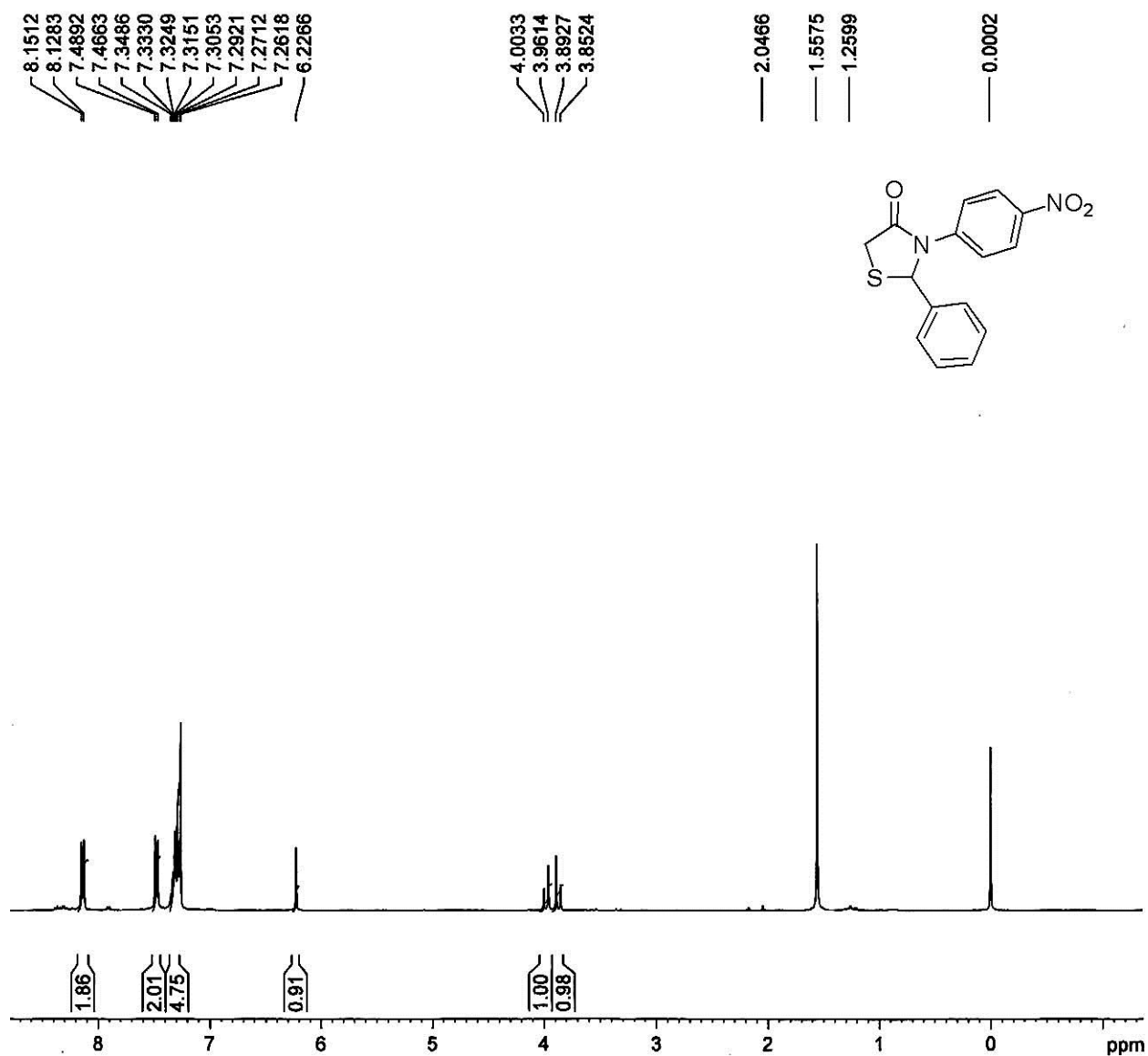
2-(2,4,6-Trimethylphenyl)-3-phenylthiazolidin-4-one [Entry 11, Table 5, ^{13}C NMR]



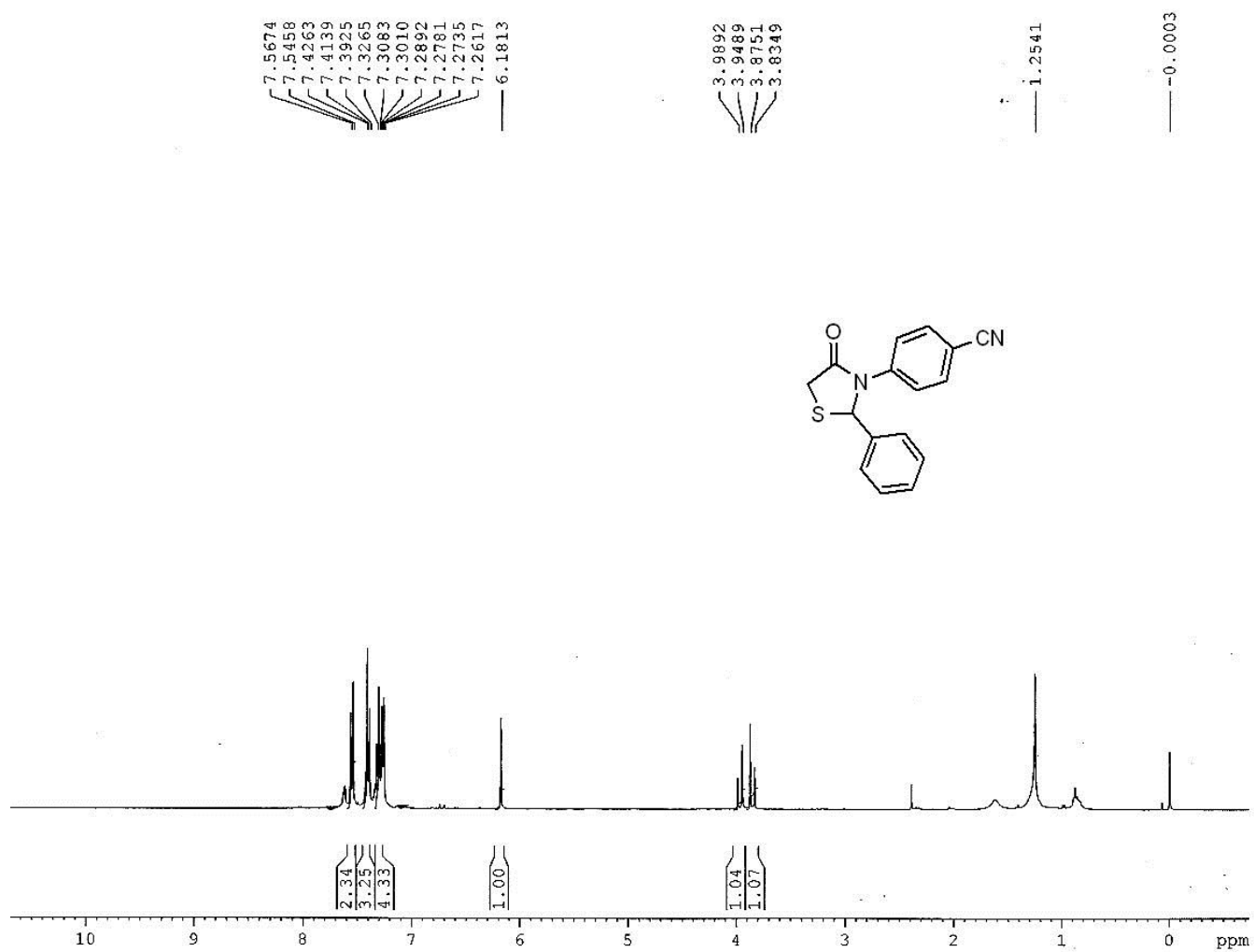
3-(4-Methoxyphenyl)-2-phenylthiazolidin-4-one [Entry 12, Table 5, ^1H NMR]



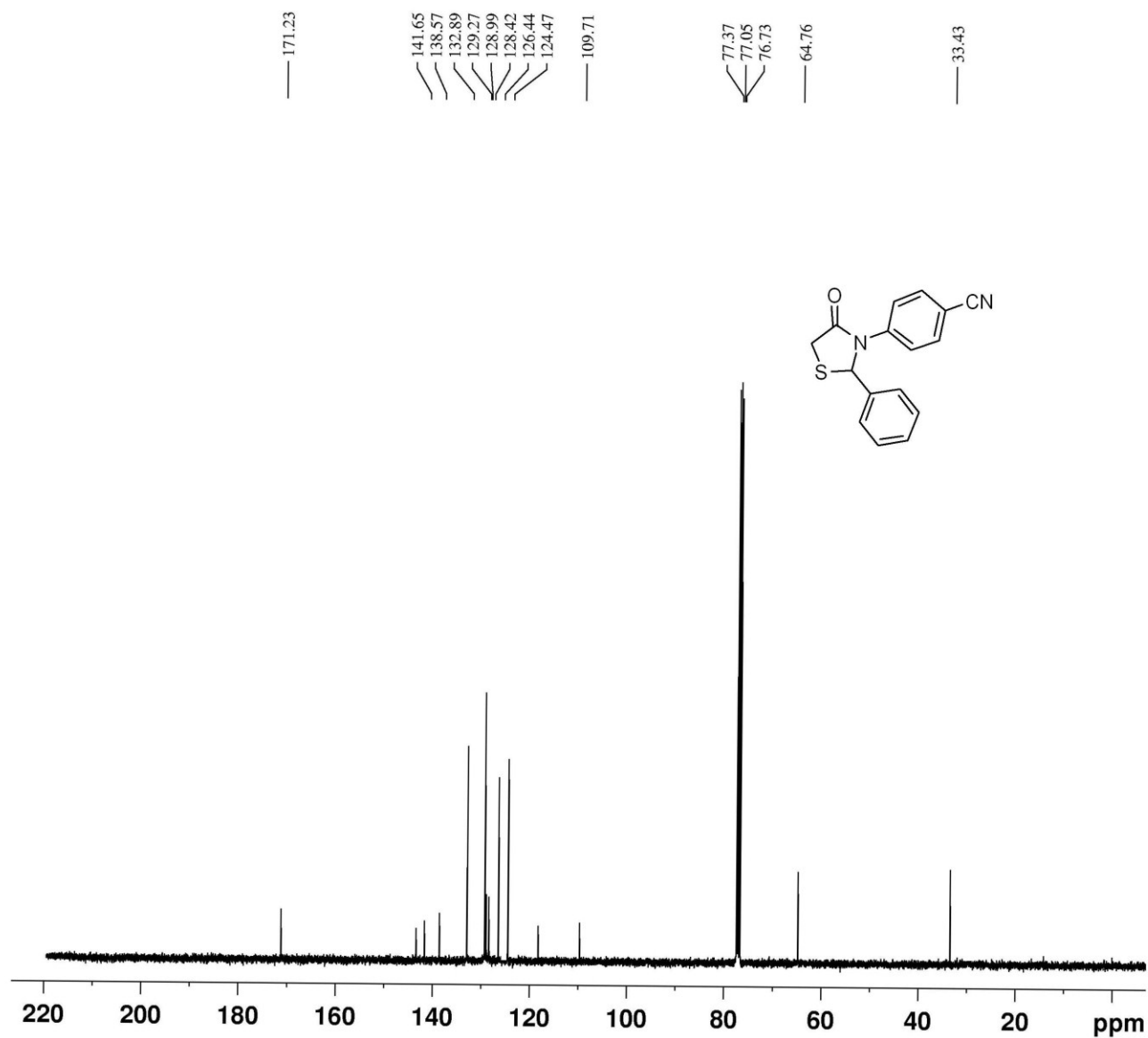
3-(4-Nitrophenyl)-2-phenylthiazolidin-4-one [Entry 13, Table 5, ^1H NMR]



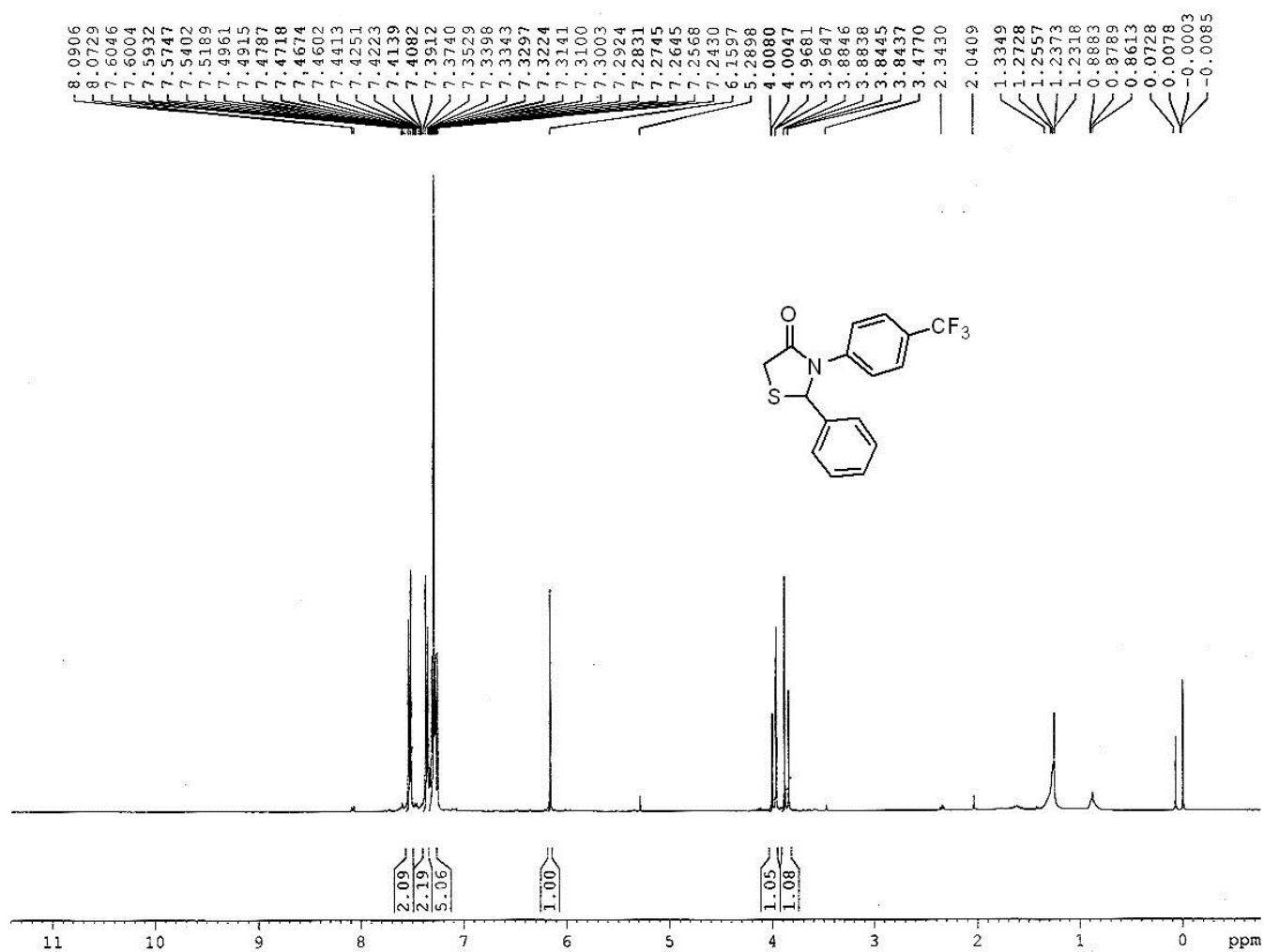
4-(4-Oxo-2-Phenylthiazolidin-3-yl)benzonitrile [Entry 14, Table 5, ^1H NMR]



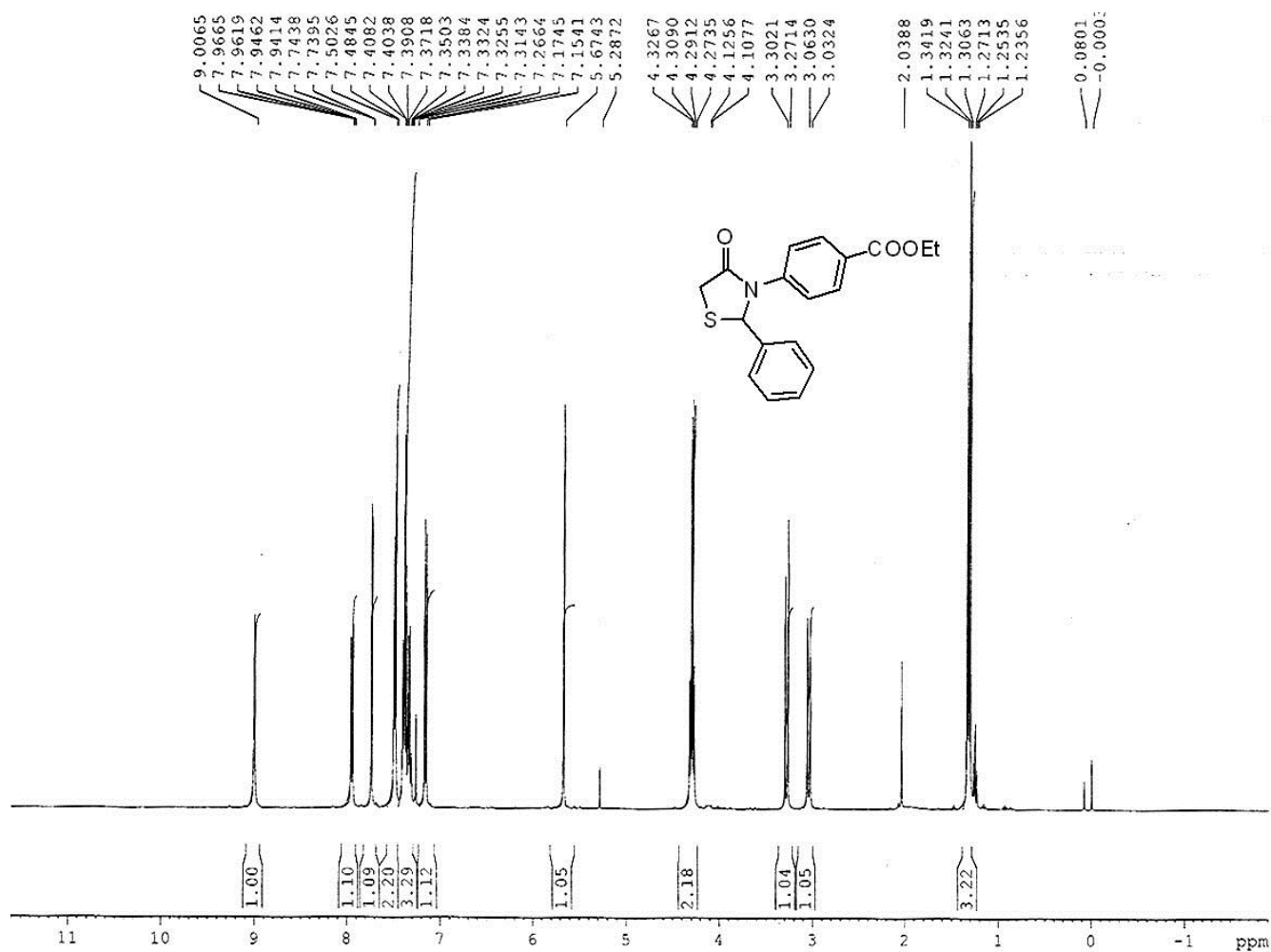
4-(4-Oxo-2-Phenylthiazolidin-3-yl)benzonitrile [Entry 14, Table 5, ^{13}C NMR]



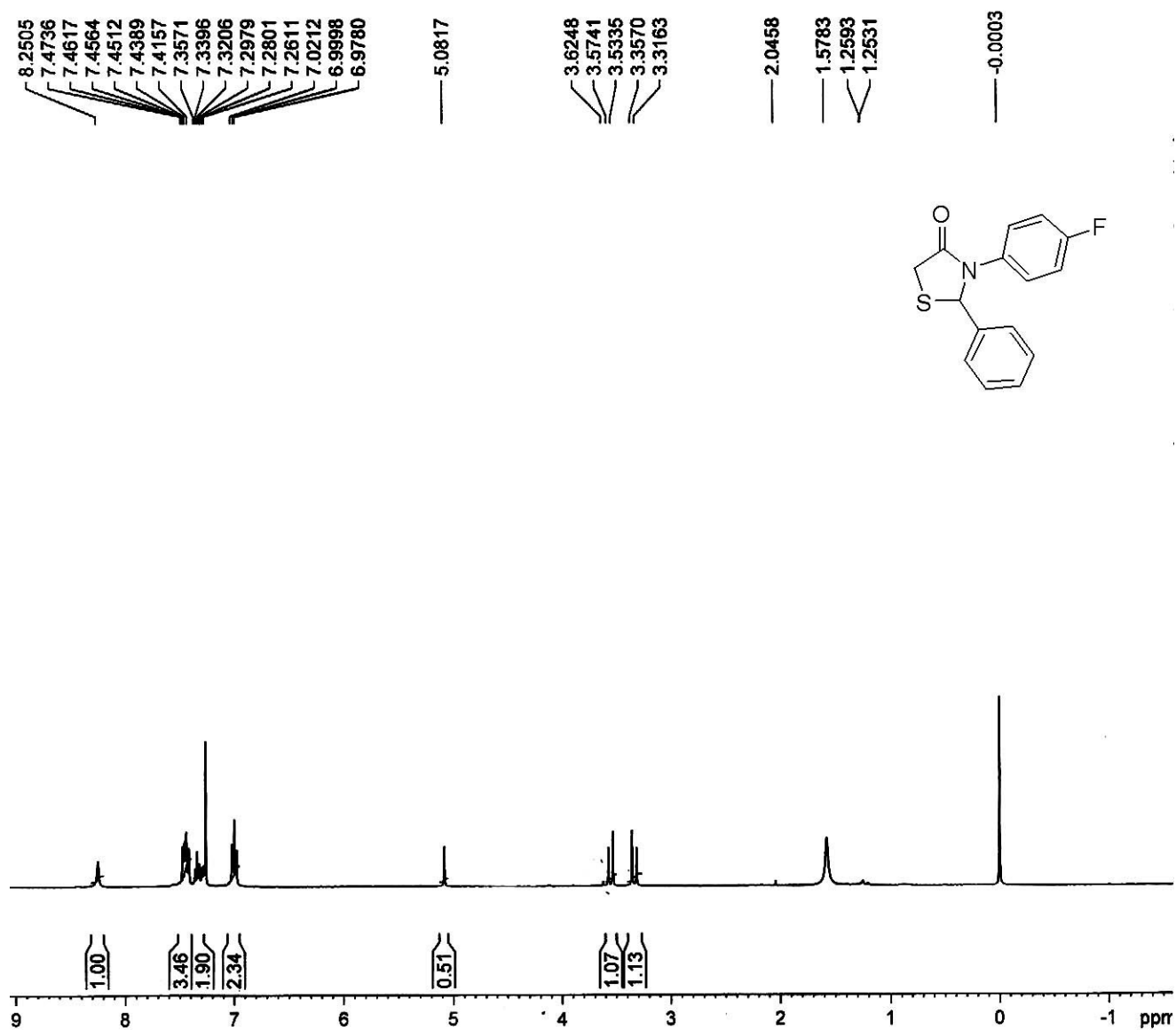
3-(4-Trifluoromethylphenyl)-2-phenylthiazolidin-4-one [Entry 15, Table 5, ^1H NMR]



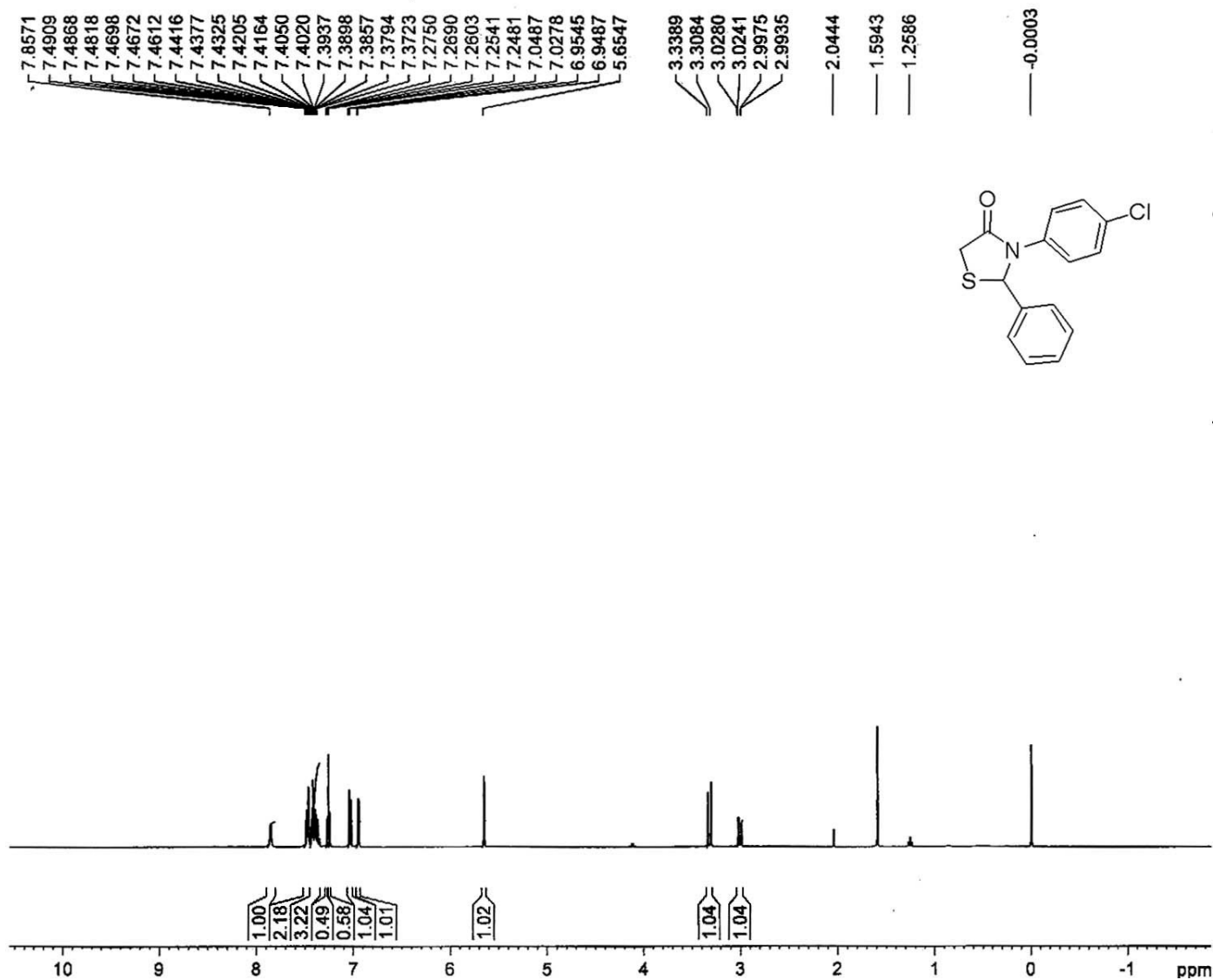
3-(4-Ethoxycarbonylphenyl)-2-phenylthiazolidin-4-one [Entry 16, Table 5, ^1H NMR]



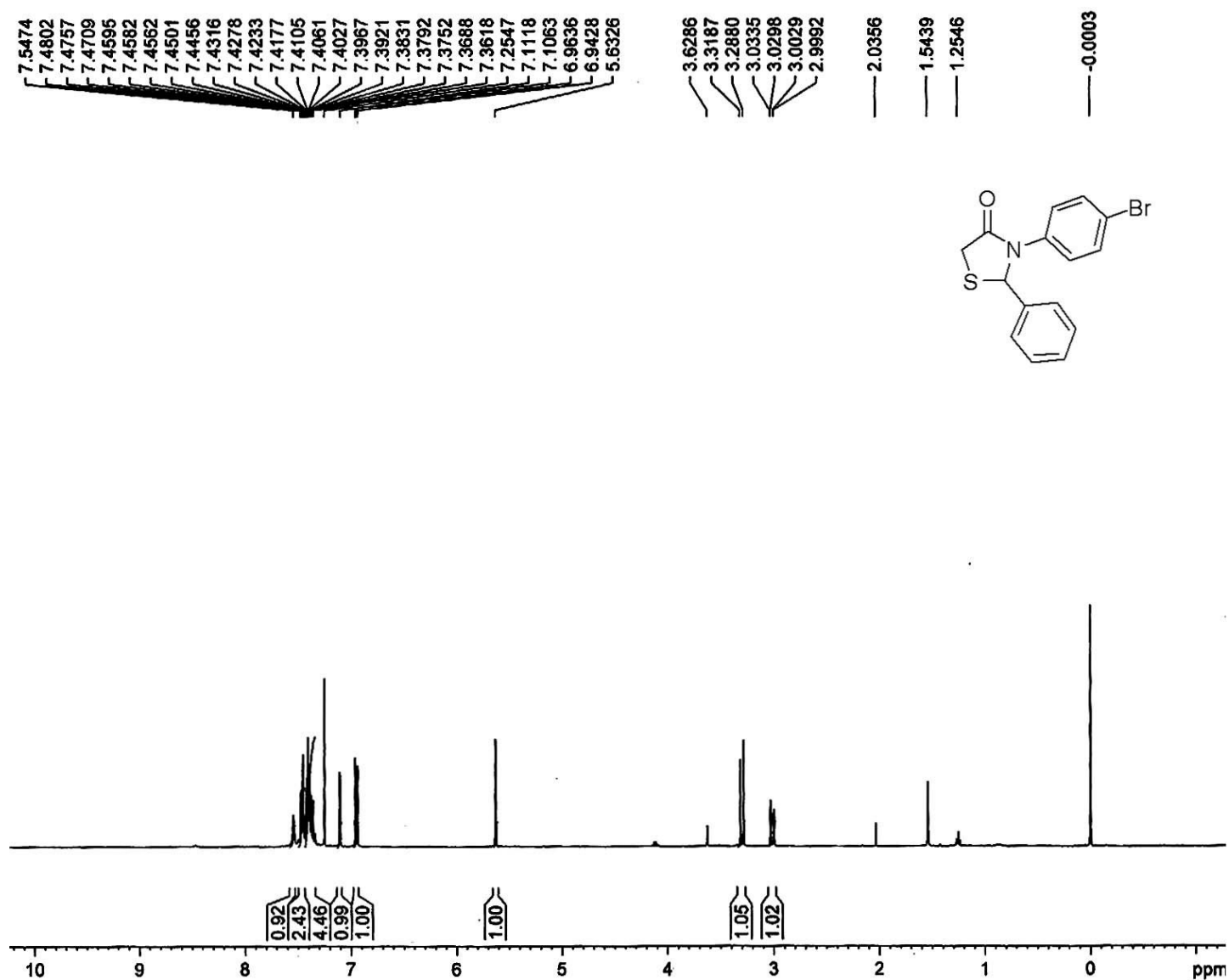
3-(4-Fluorophenyl)-2-phenylthiazolidin-4-one [Entry 17, Table 5, ^1H NMR]



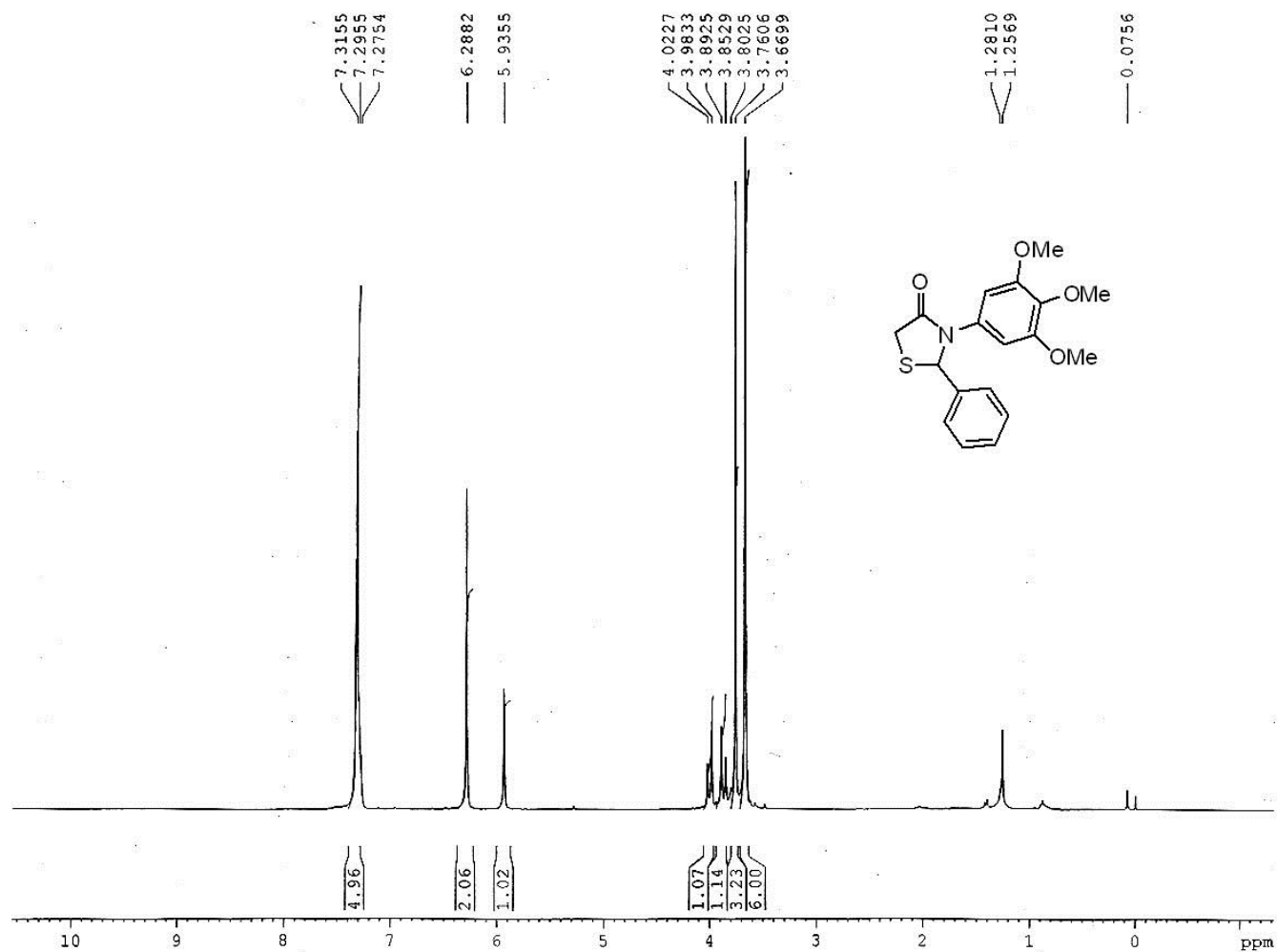
3-(4-Chlorophenyl)-2-phenylthiazolidin-4-one [Entry 18, Table 5, ^1H NMR]



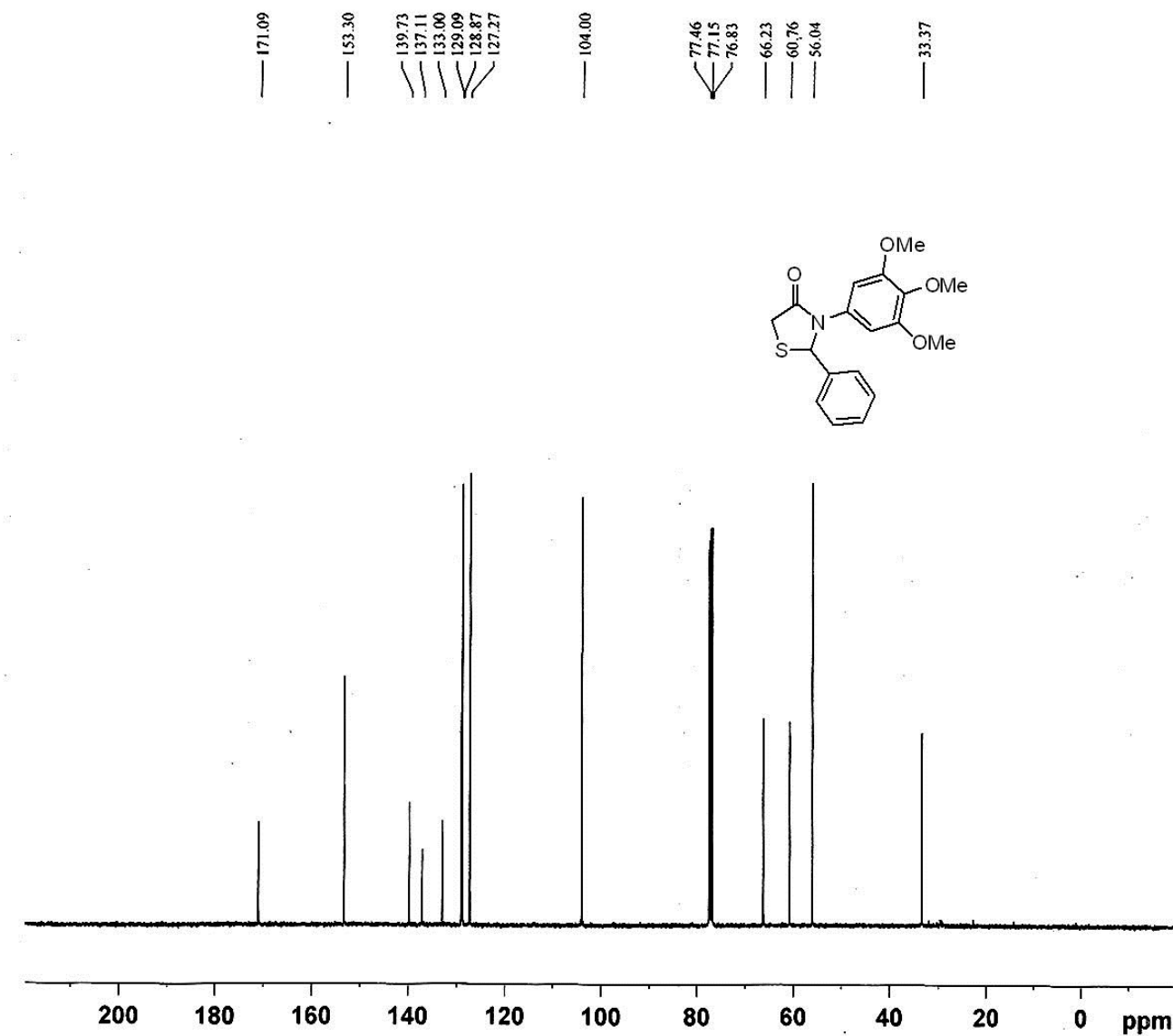
3-(4-Bromophenyl)-2-phenylthiazolidin-4-one [Entry 19, Table 5, ^1H NMR]



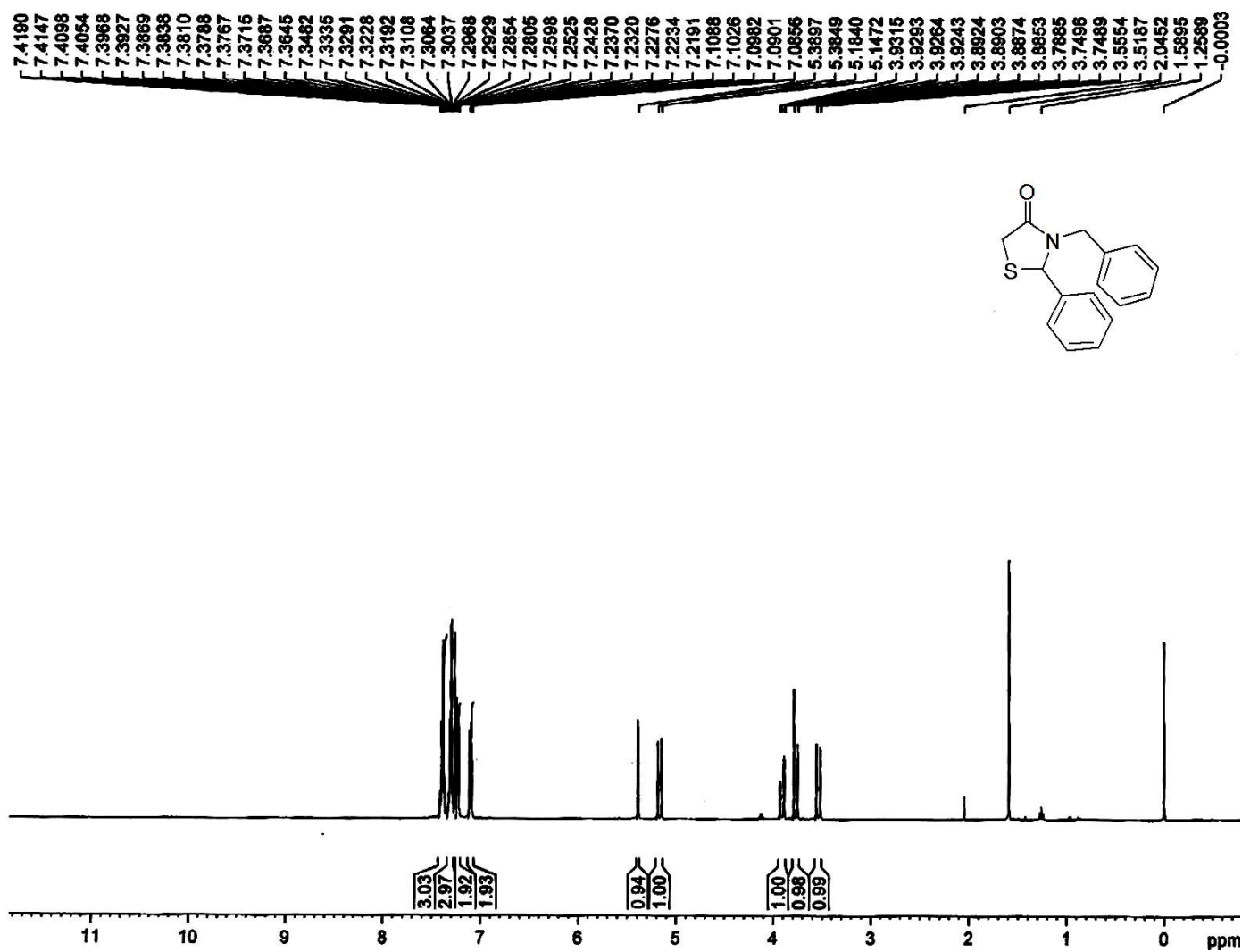
2-Phenyl-3-(3,4,5-trimethoxyphenyl)thiazolidin-4-one [Entry 20, Table 5, ^1H NMR]



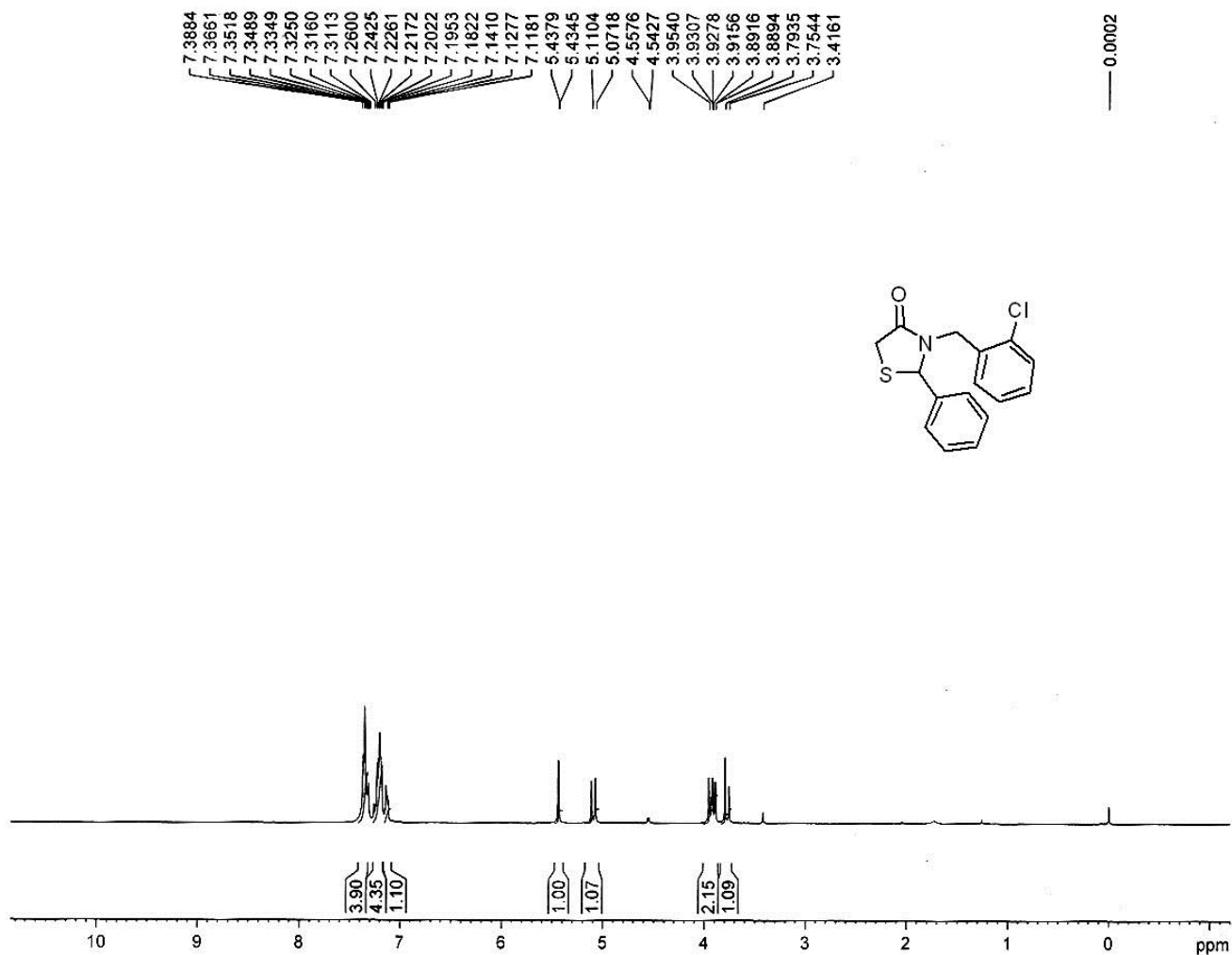
2-Phenyl-3-(3,4,5-trimethoxyphenyl)thiazolidin-4-one [Entry 20, Table 5, ^{13}C NMR]



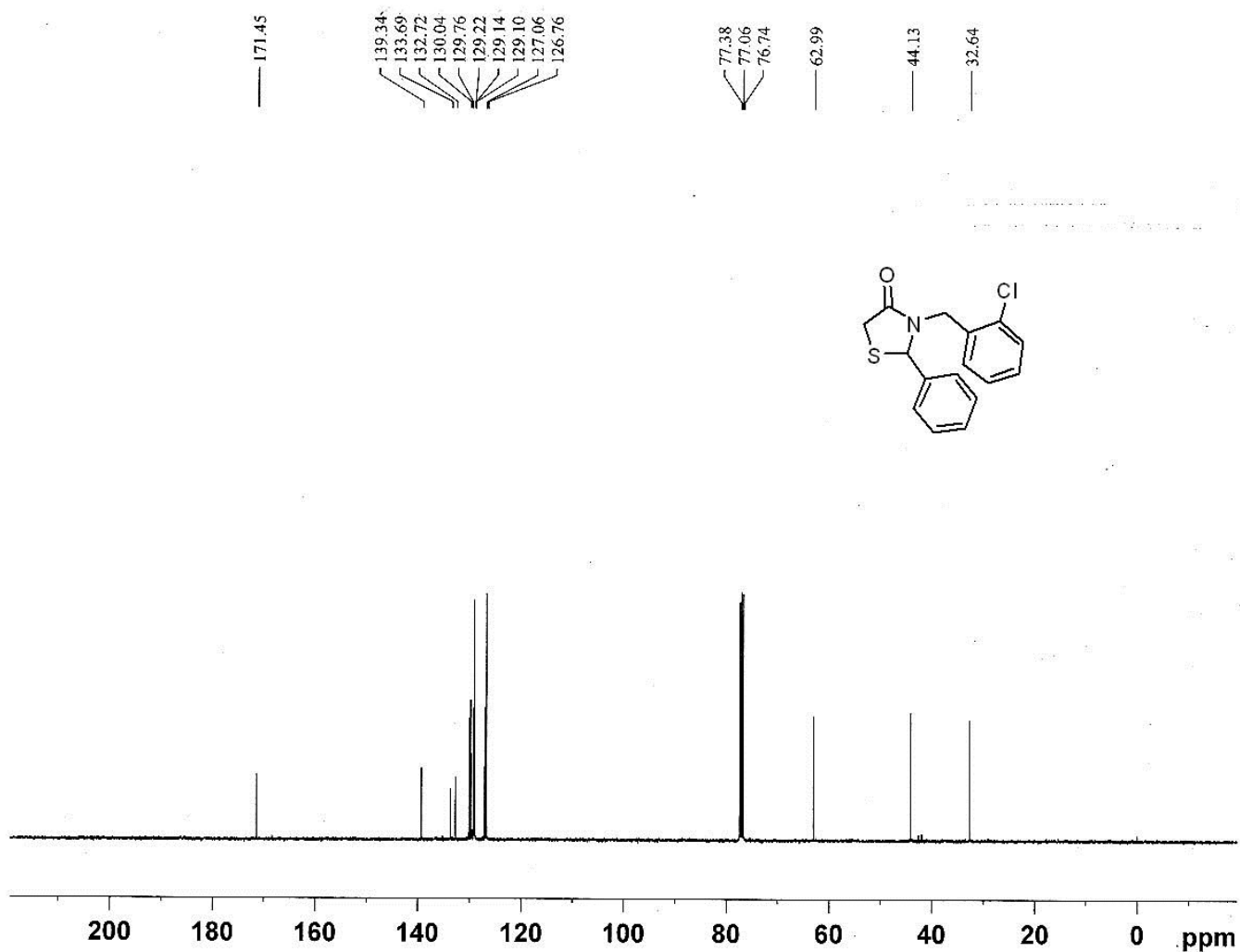
3-Benzyl-2-phenylthiazolidin-4-one [Entry 21, Table 5, ^1H NMR]



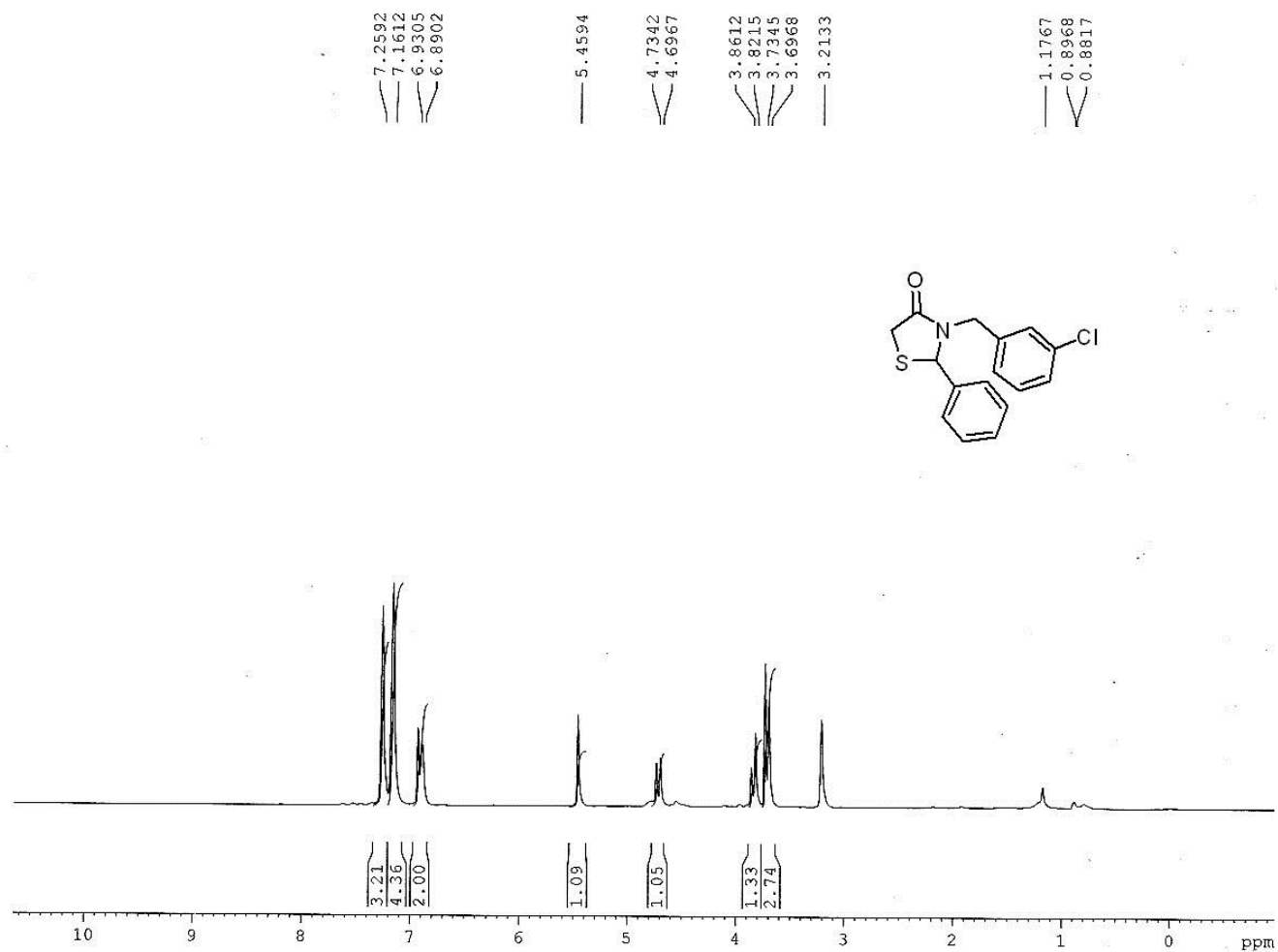
3-(2-Chlorobenzyl)-2-phenylthiazolidin-4-one [Entry 22, Table 5, ^1H NMR]



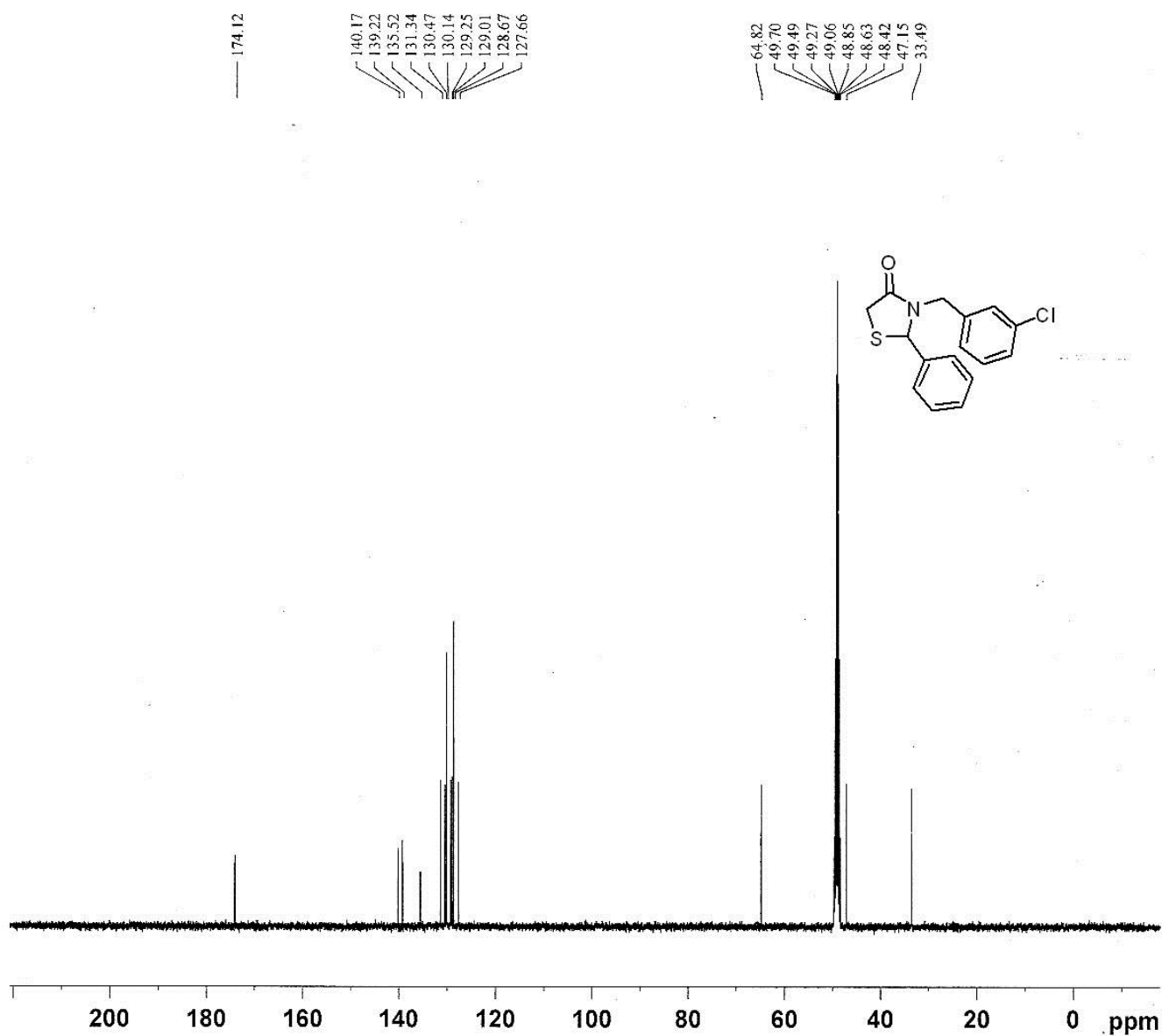
3-(2-Chlorobenzyl)-2-phenylthiazolidin-4-one [Entry 22, Table 5, ^{13}C NMR]



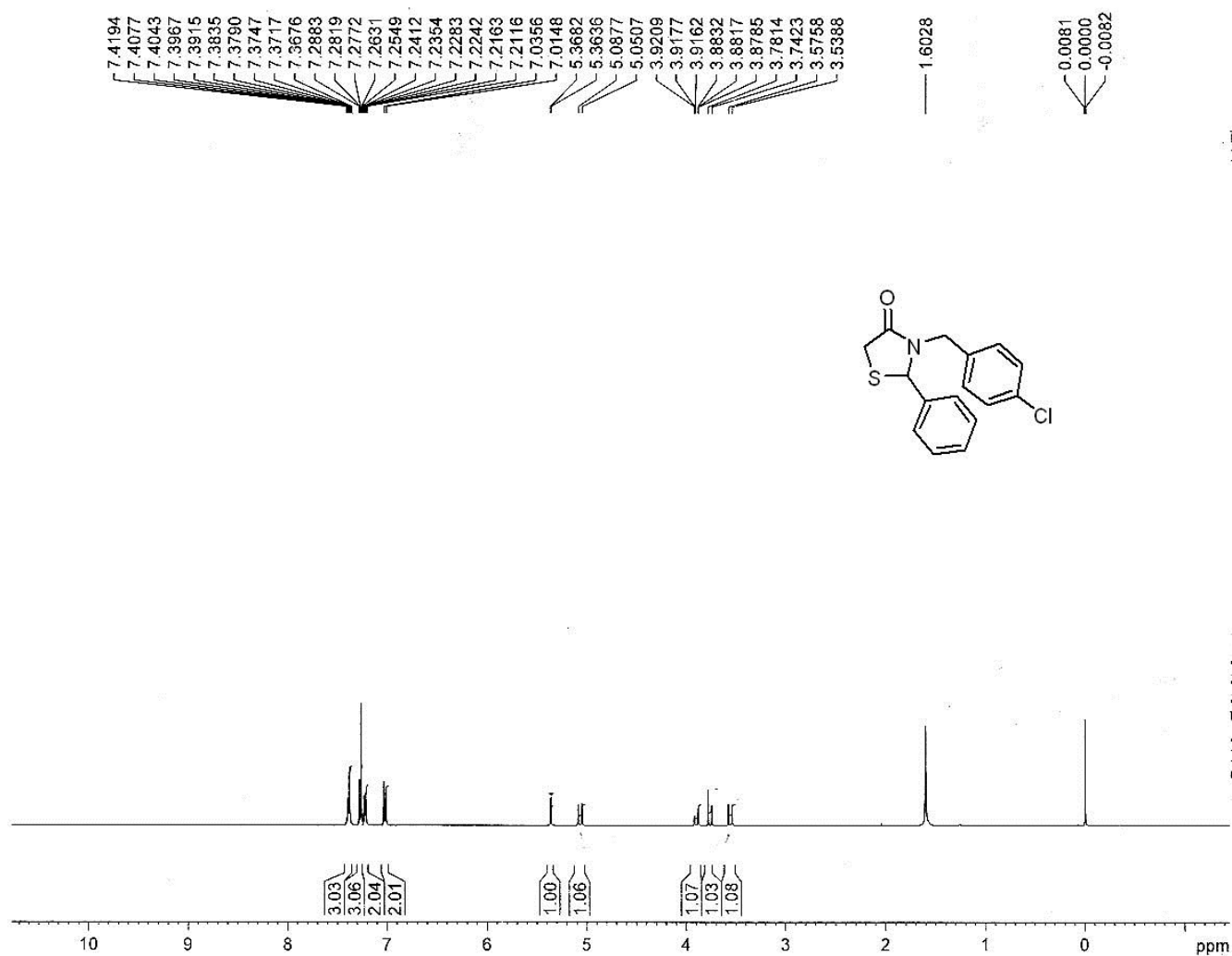
3-(3-Chlorobenzyl)-2-phenylthiazolidin-4-one [Entry 23, Table 5, ^1H NMR]



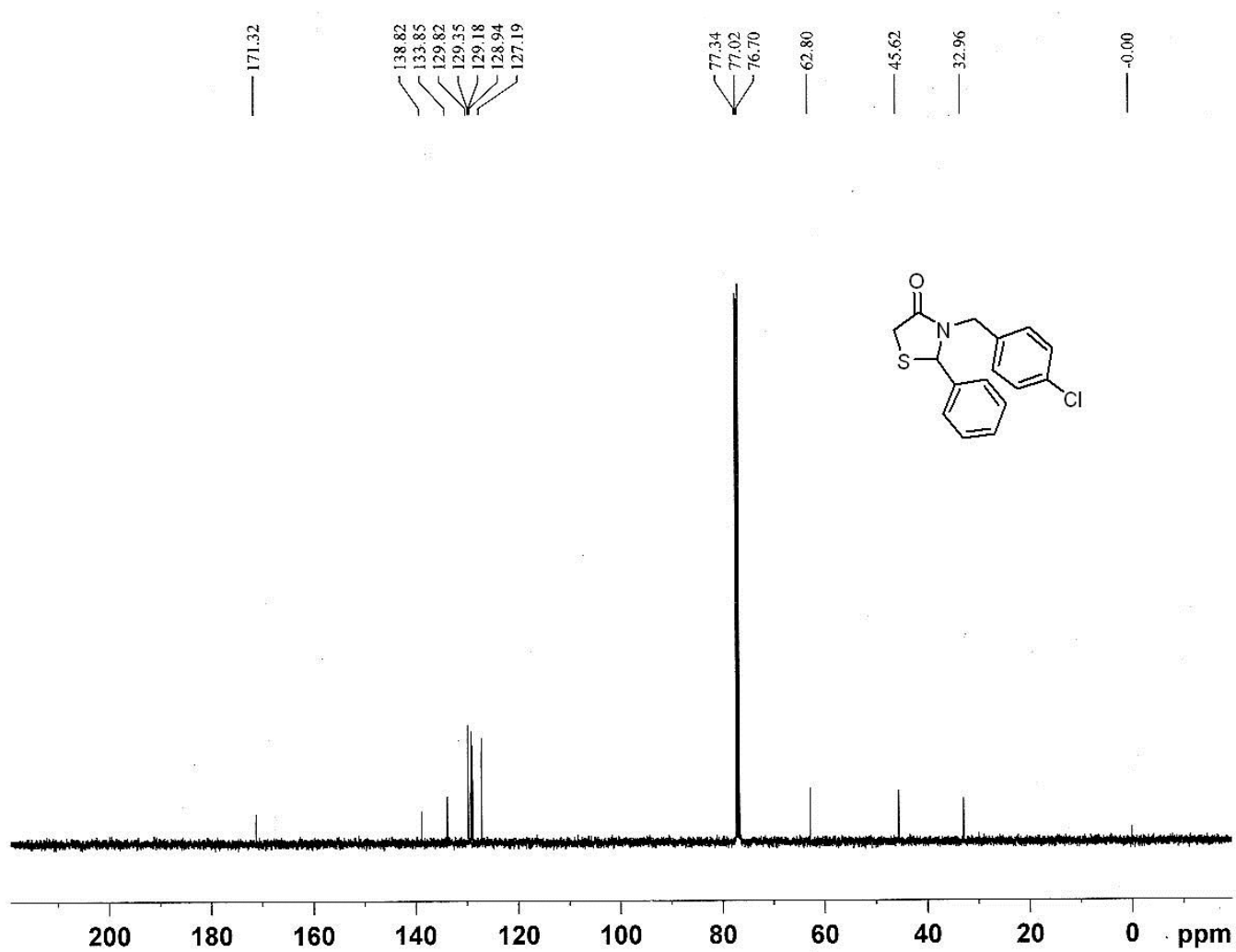
3-(3-Chlorobenzyl)-2-phenylthiazolidin-4-one [Entry 23, Table 5, ^{13}C NMR]



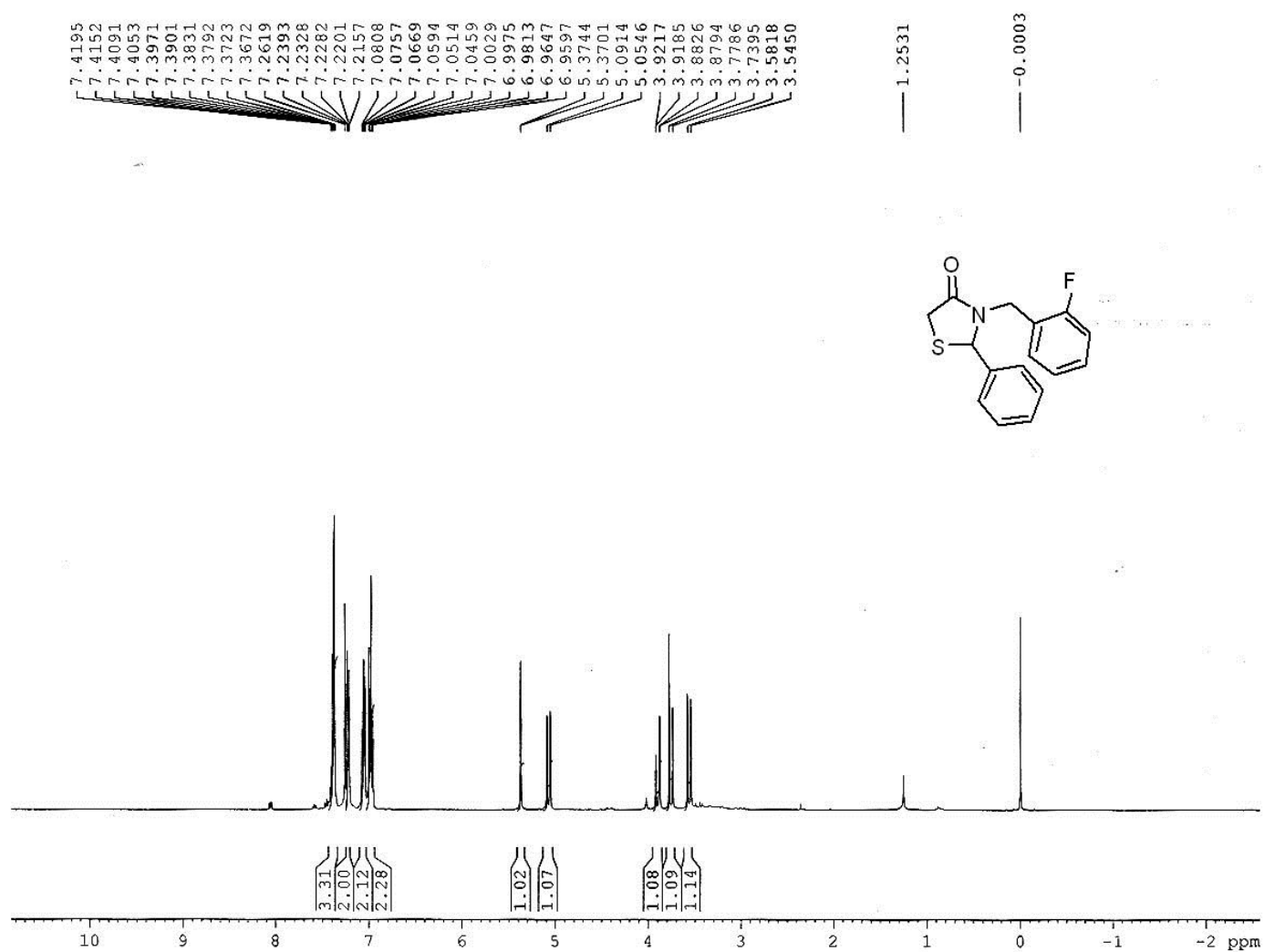
3-(4-Chlorobenzyl)-2-phenylthiazolidin-4-one [Entry 24, Table 5, ^1H NMR]



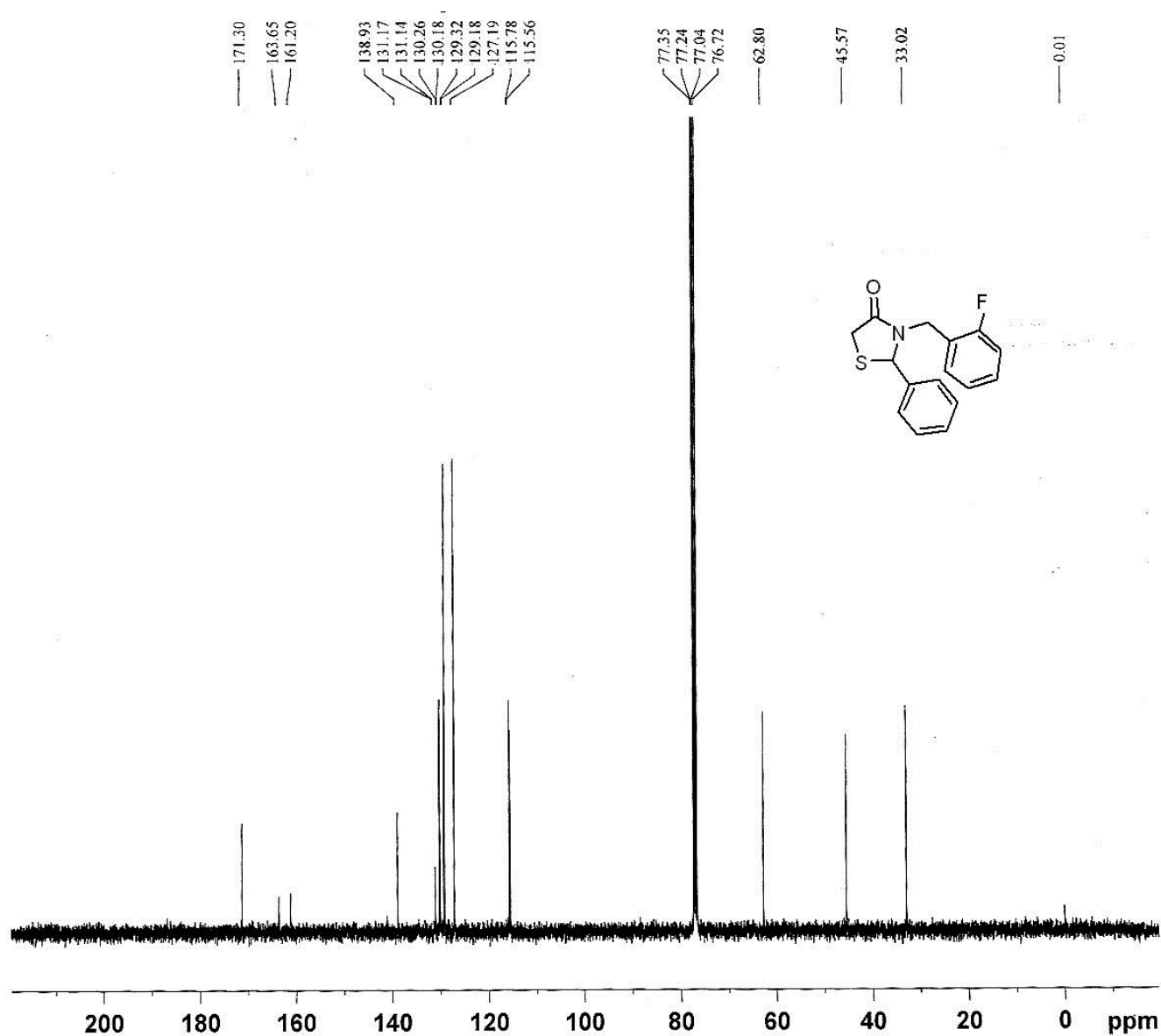
3-(4-Chlorobenzyl)-2-phenylthiazolidin-4-one [Entry 24, Table 5, ^{13}C NMR]



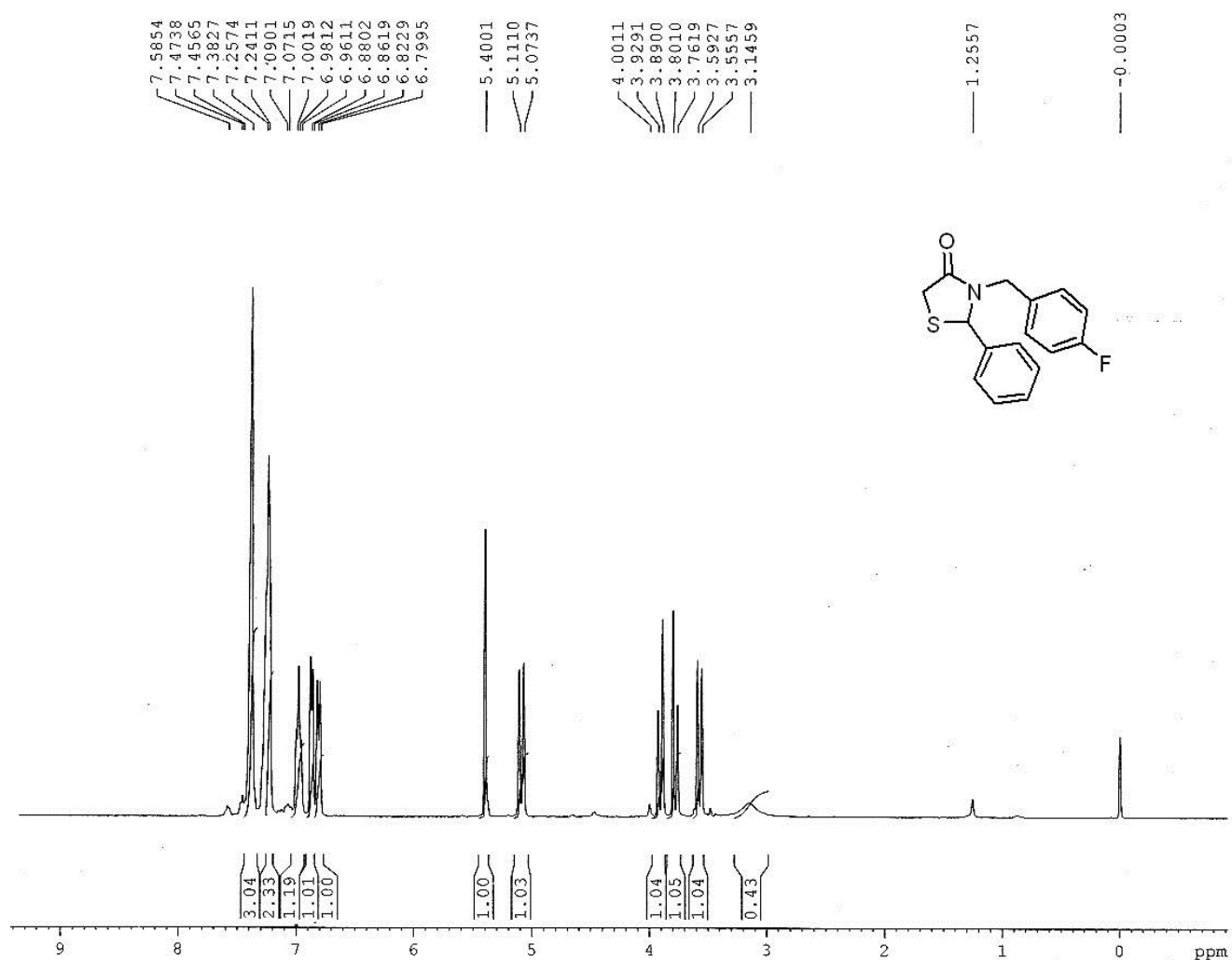
3-(2-Fluorobenzyl)-2-phenylthiazolidin-4-one [Entry 25, Table 5, ^1H NMR]



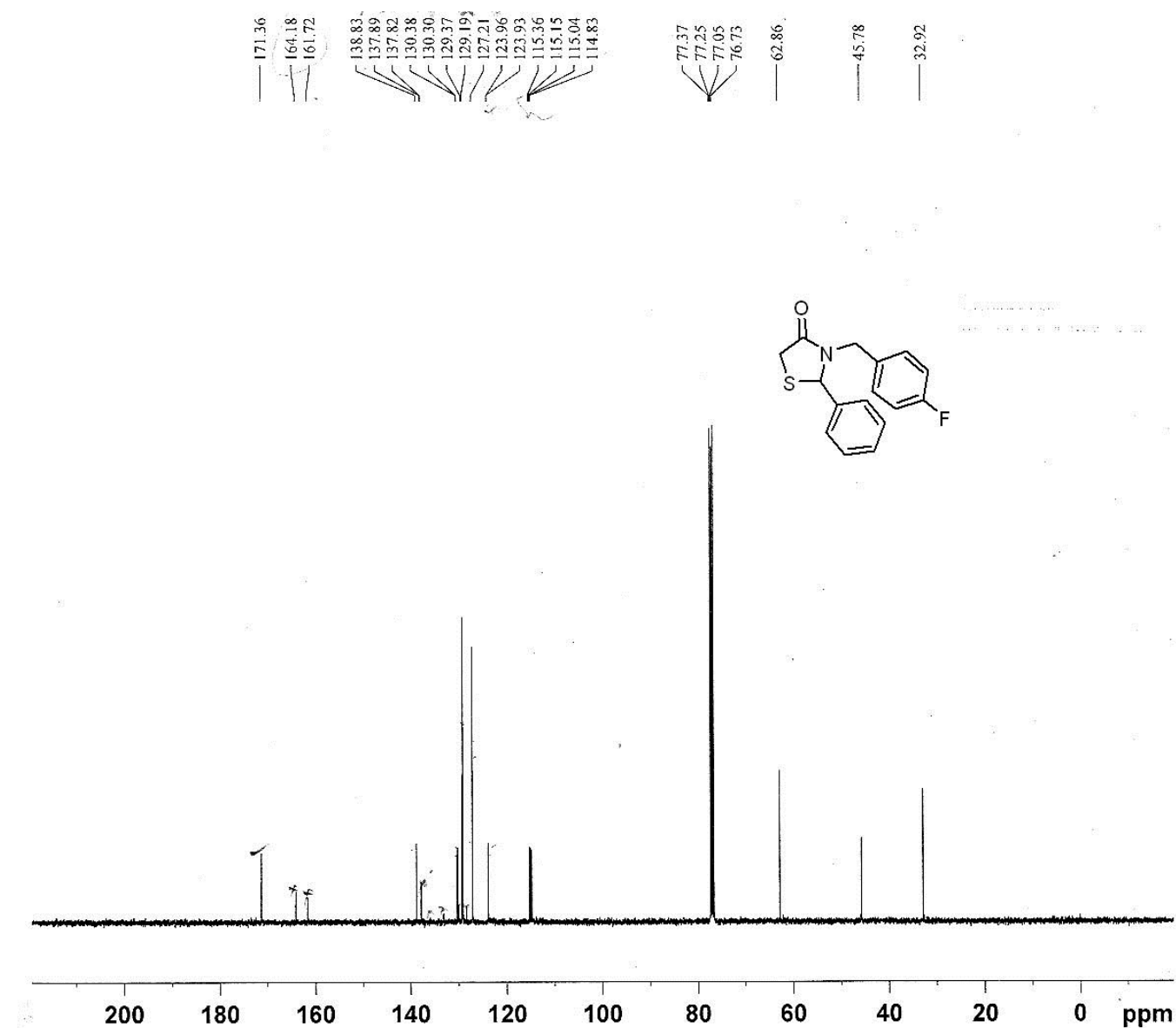
3-(2-Fluorobenzyl)-2-phenylthiazolidin-4-one [Entry 25, Table 5, ^{13}C NMR]



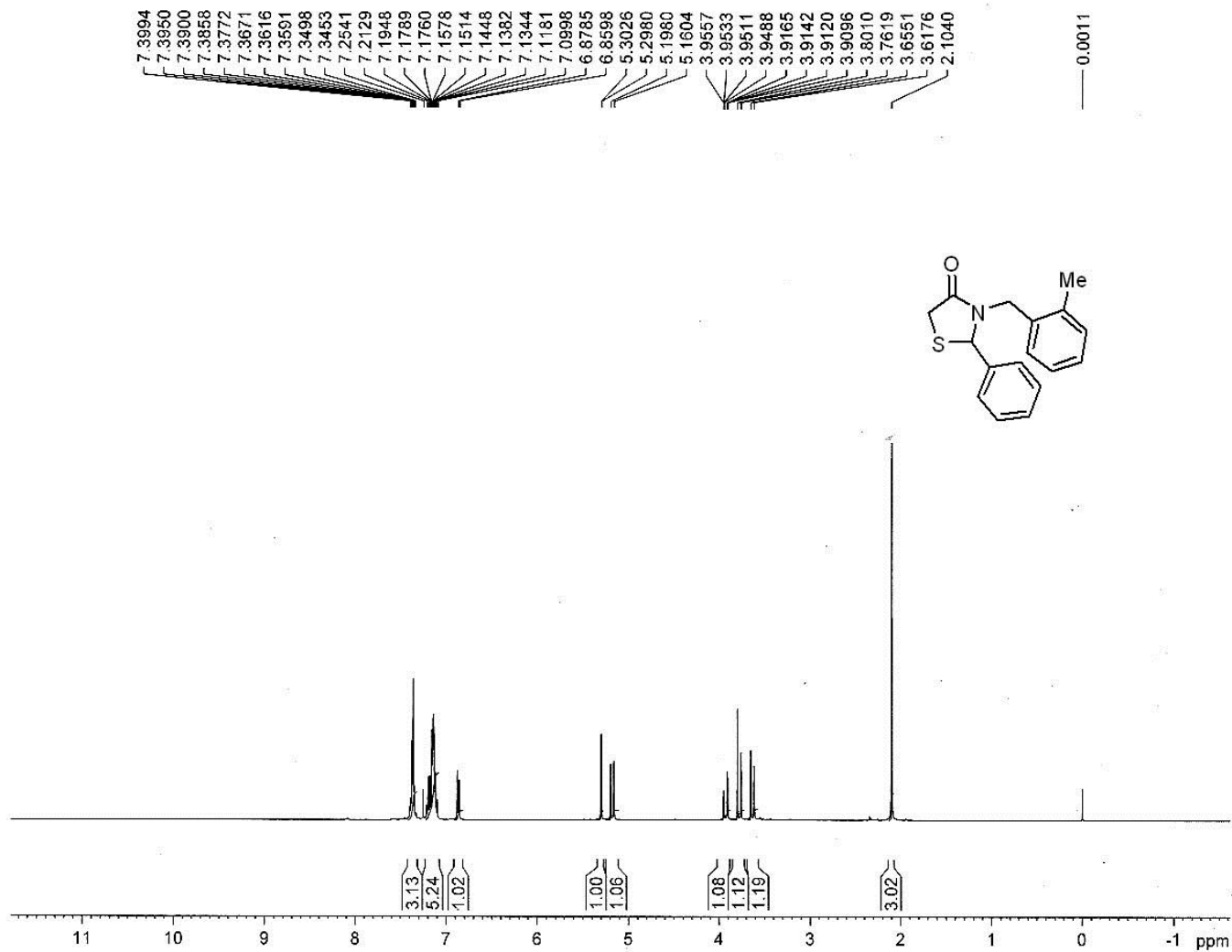
3-(4-Fluorobenzyl)-2-phenylthiazolidin-4-one [Entry 27, Table 5, ^1H NMR]



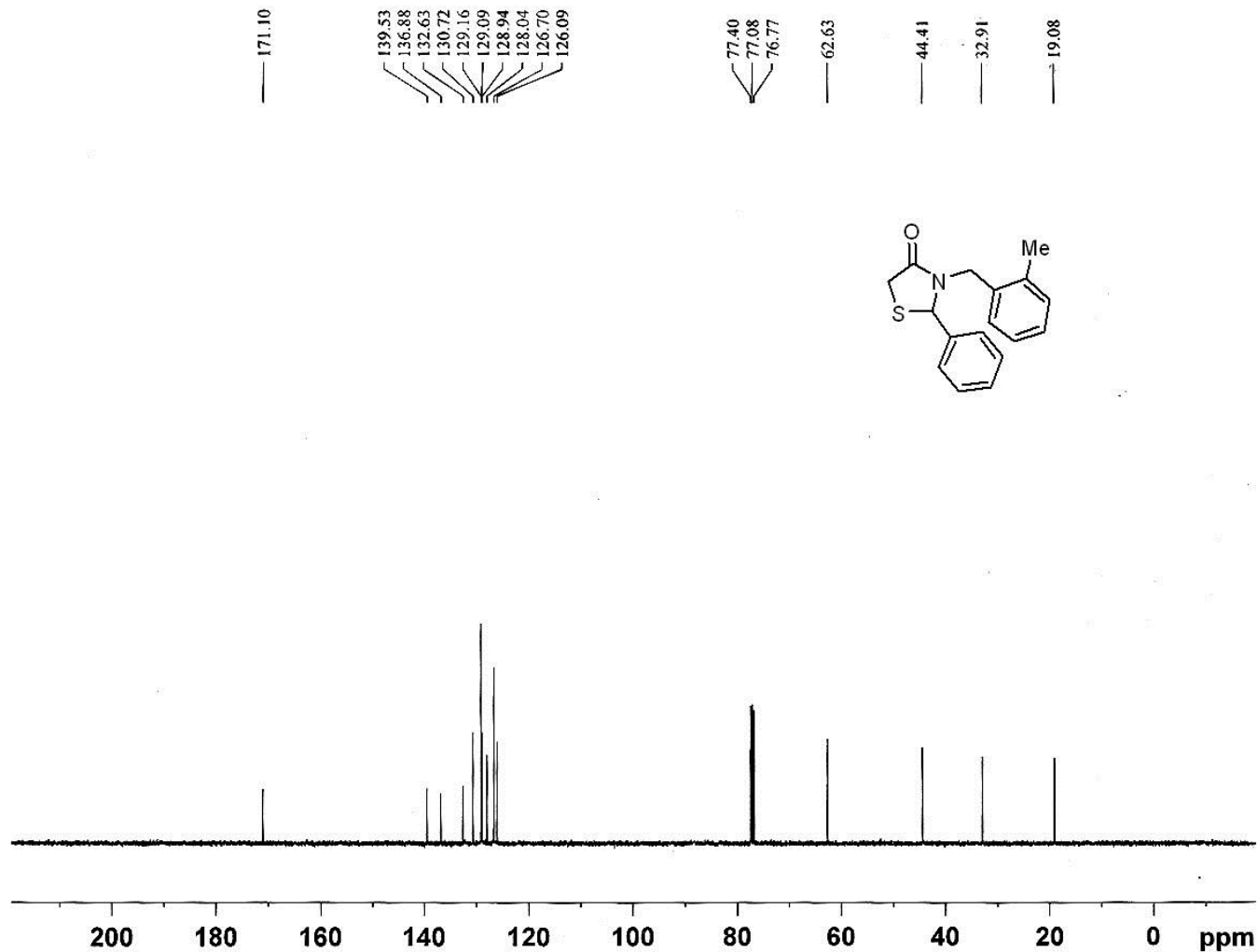
3-(4-Fluorobenzyl)-2-phenylthiazolidin-4-one [Entry 27, Table 5, ^{13}C NMR]



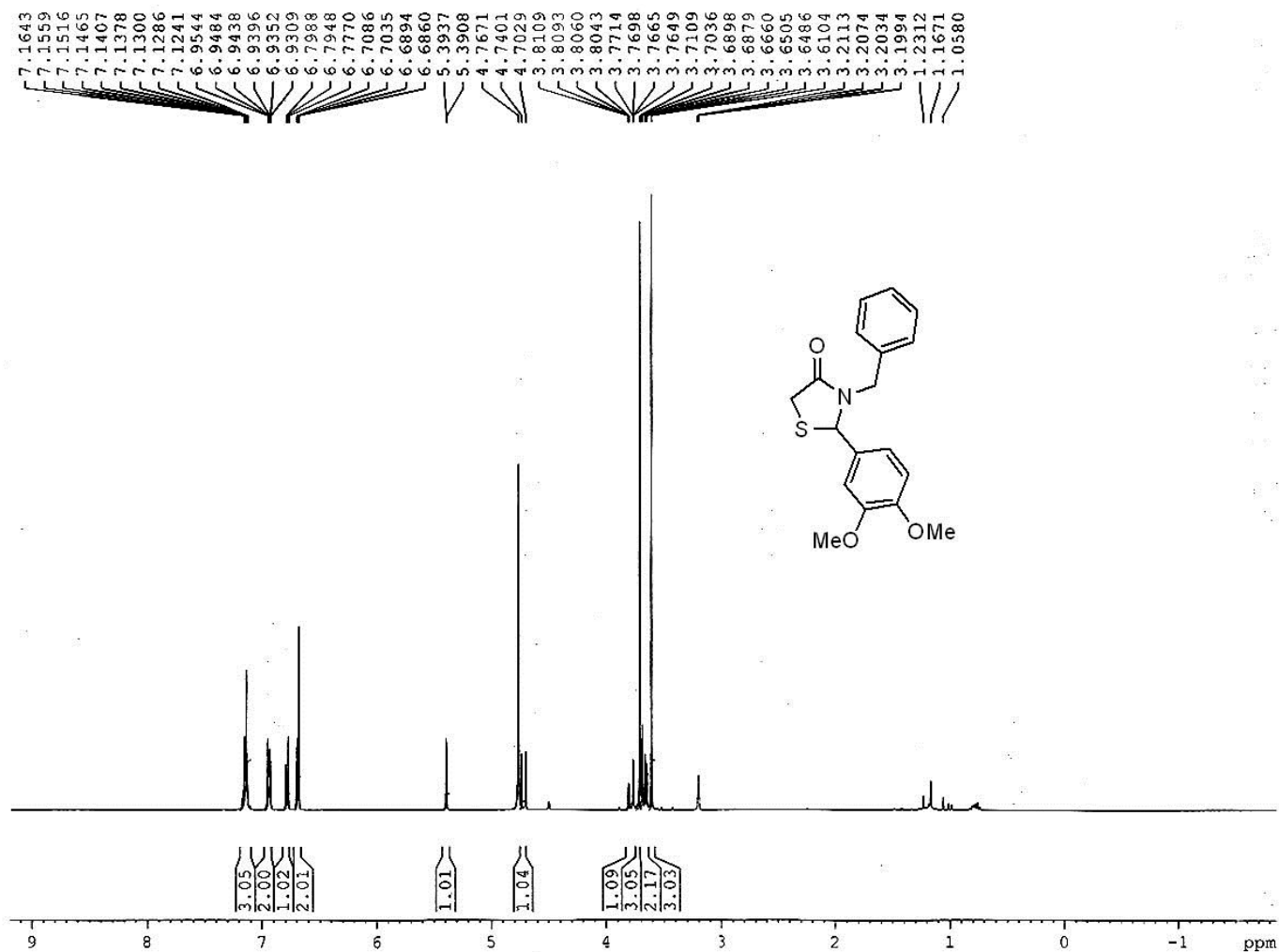
3-(2-Methylbenzyl)-2-phenylthiazolidin-4-one [Entry 28, Table 5, ^1H NMR]



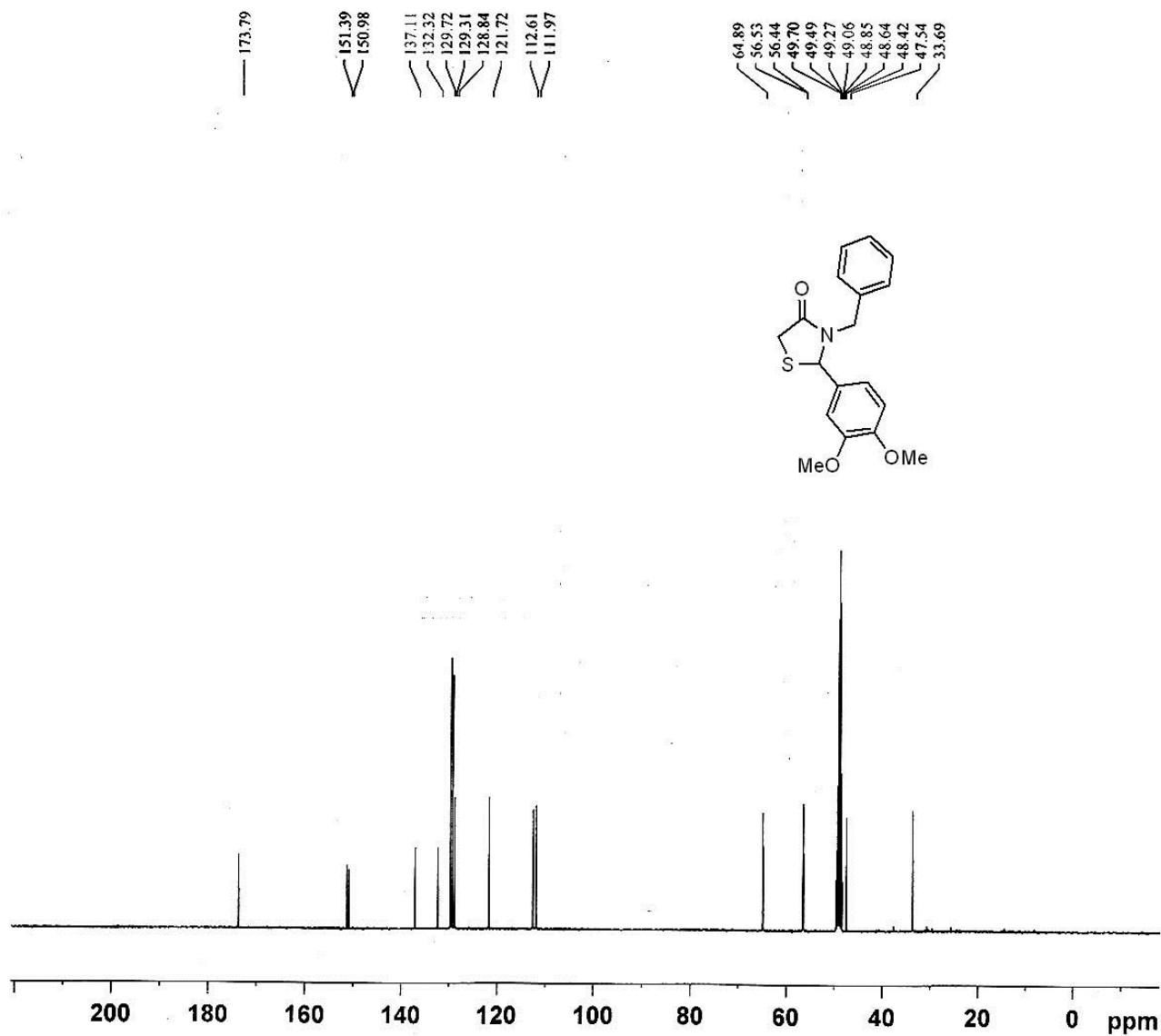
3-(2-Methylbenzyl)-2-phenylthiazolidin-4-one [Entry 28, Table 5, ^{13}C NMR]



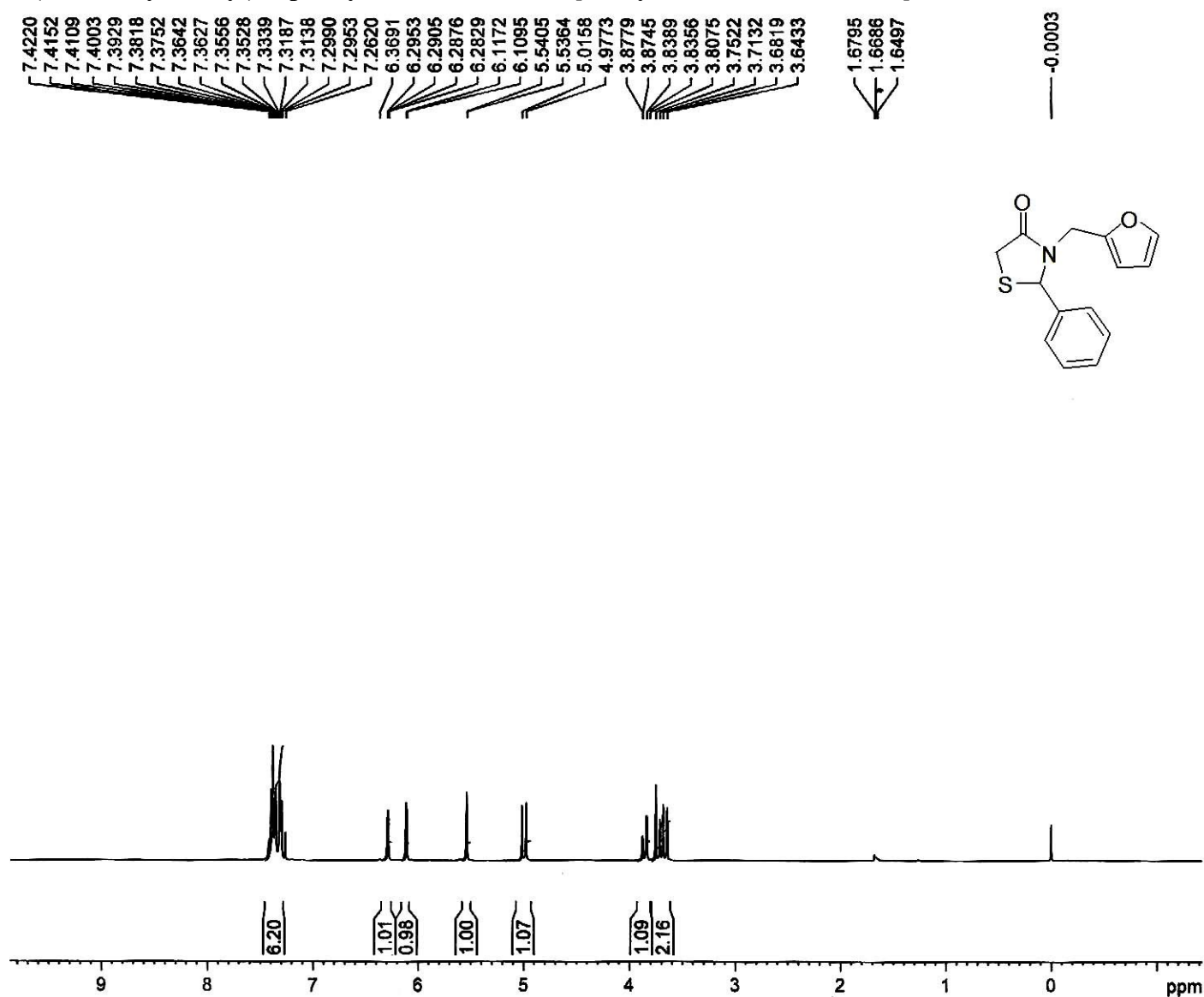
3-(4-Methoxybenzyl)-2-phenylthiazolidin-4-one [Entry 30, Table 5, ^1H NMR]



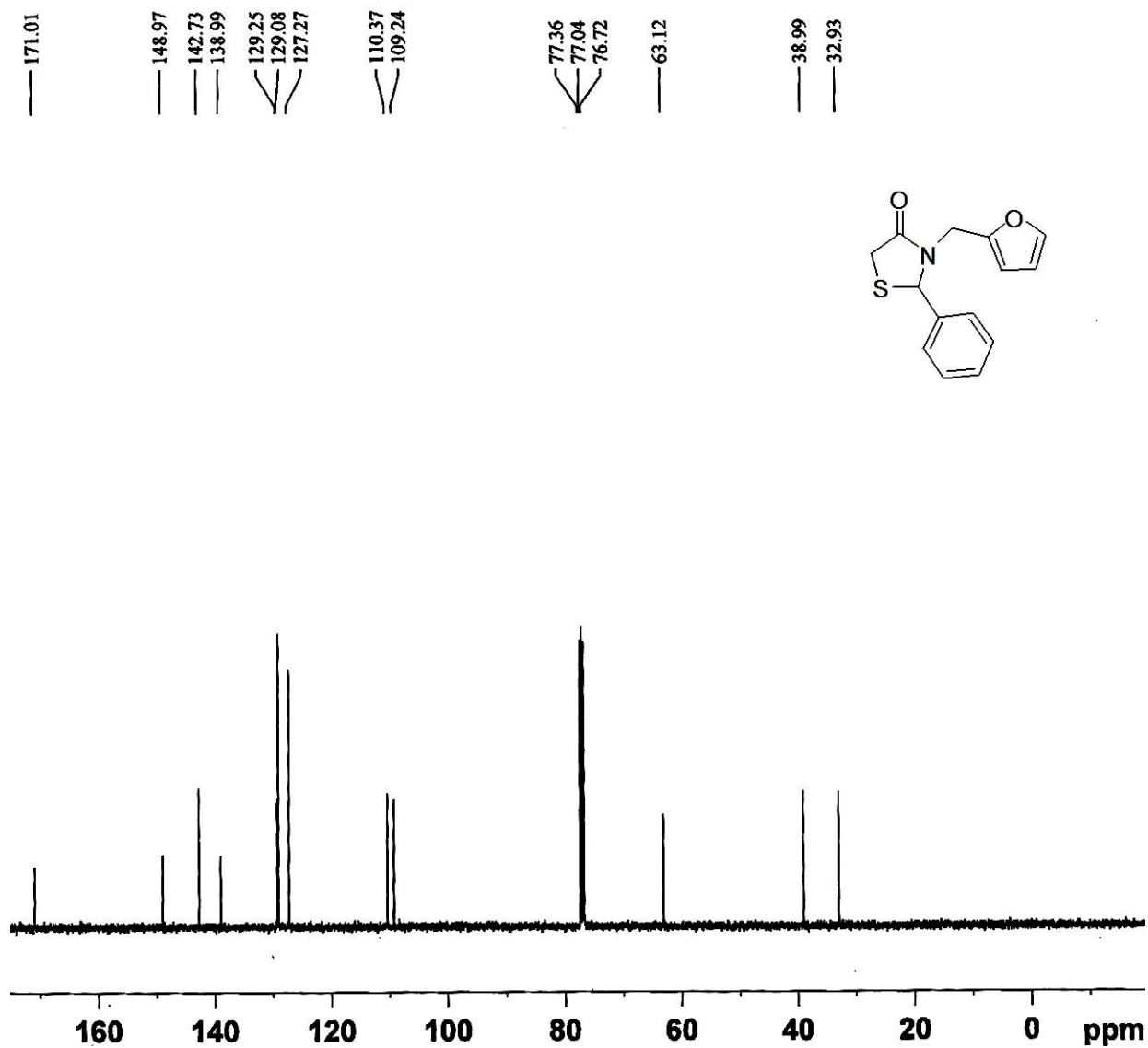
3-(4-Methoxybenzyl)-2-phenylthiazolidin-4-one [Entry 30, Table 5, ^{13}C NMR]



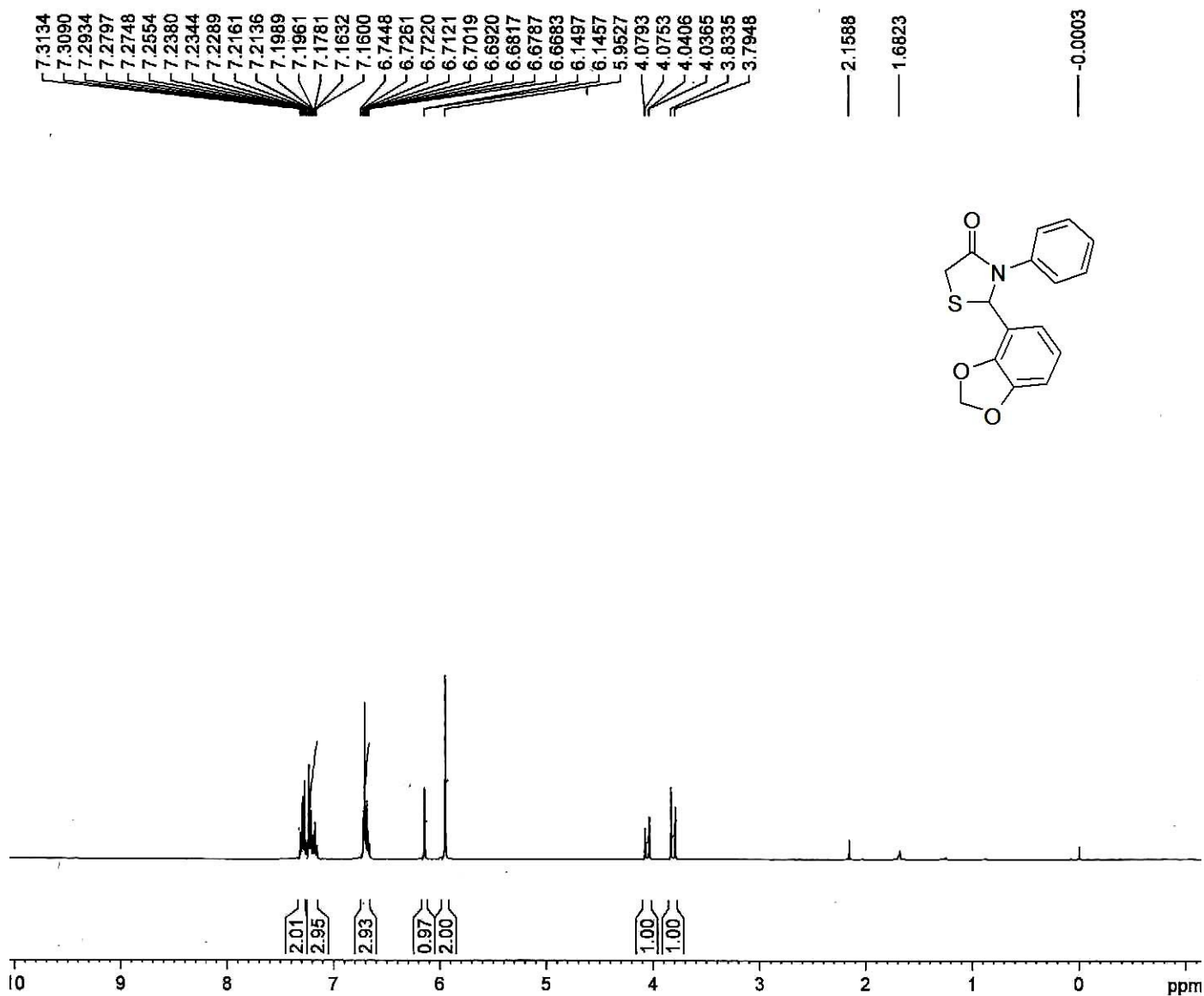
3-(Furan-2-ylmethyl)-2-phenylthiazolidin-4-one [Entry 31, Table 5, ¹H NMR]



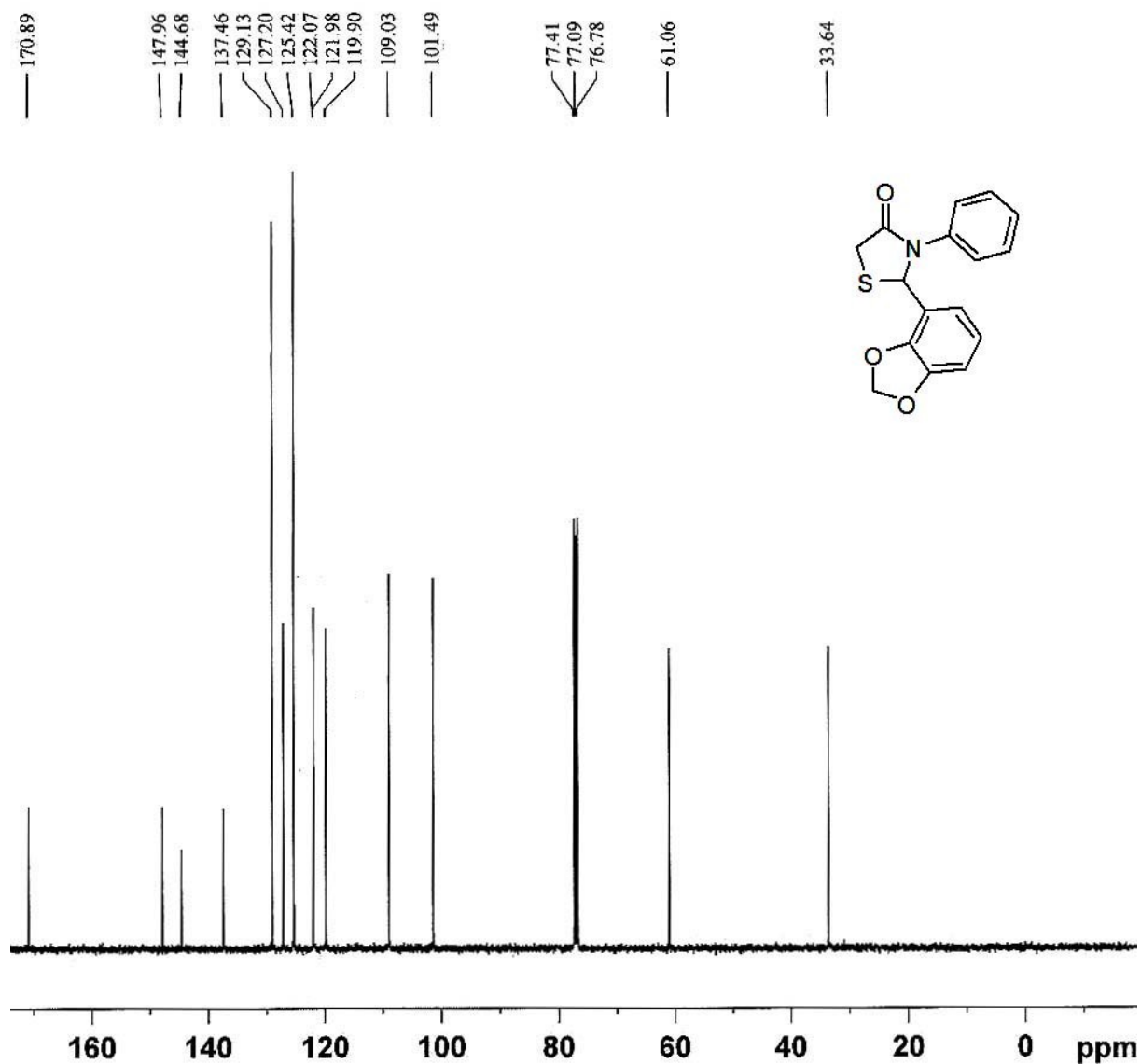
3-(Furan-2-ylmethyl)-2-phenylthiazolidin-4-one [Entry 31, Table 5, ^{13}C NMR]



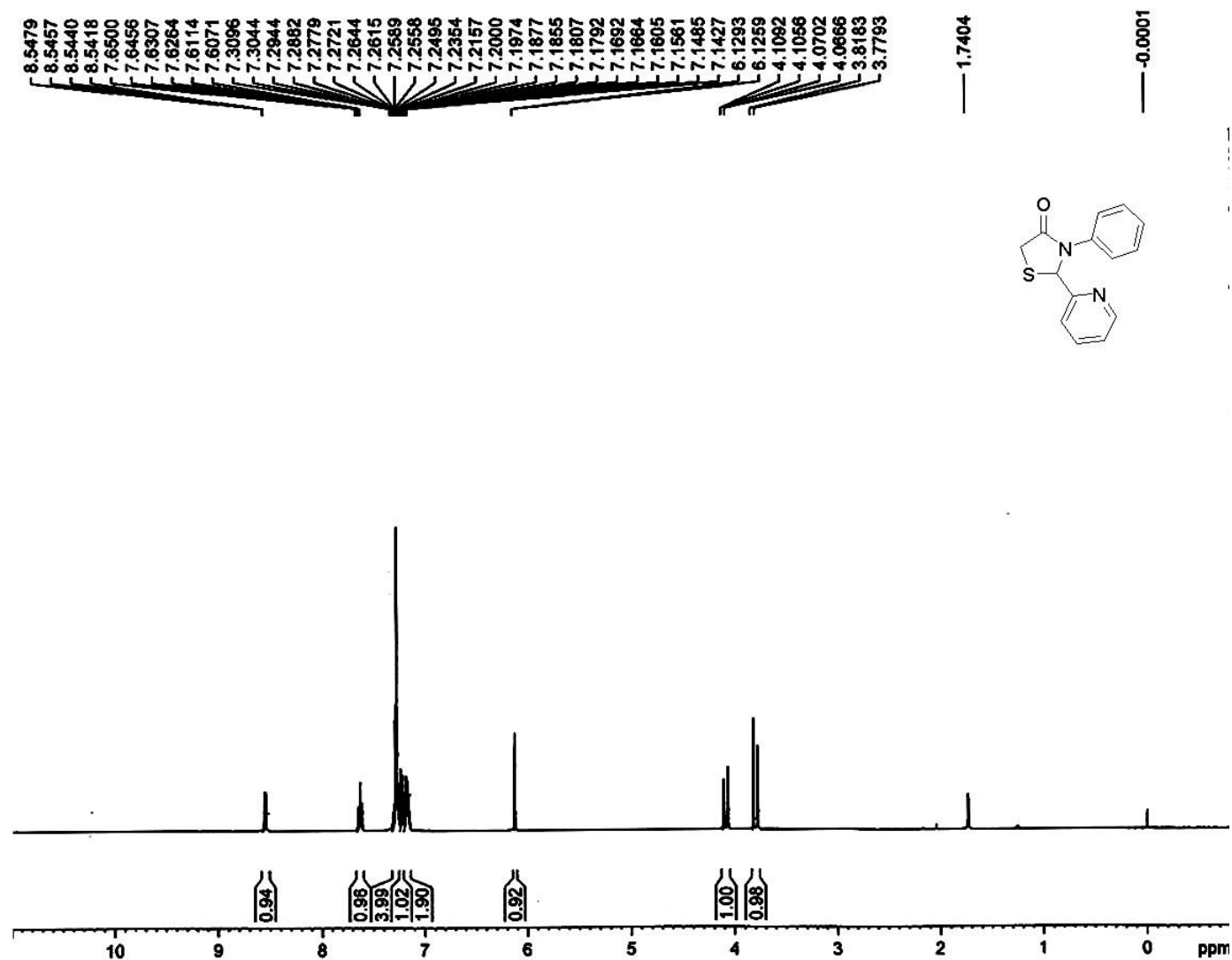
2-(Benzo[d][1,3]dioxol-4-yl)-3-phenylthiazolidin-4-one [Entry 32, Table 5, ^1H NMR]



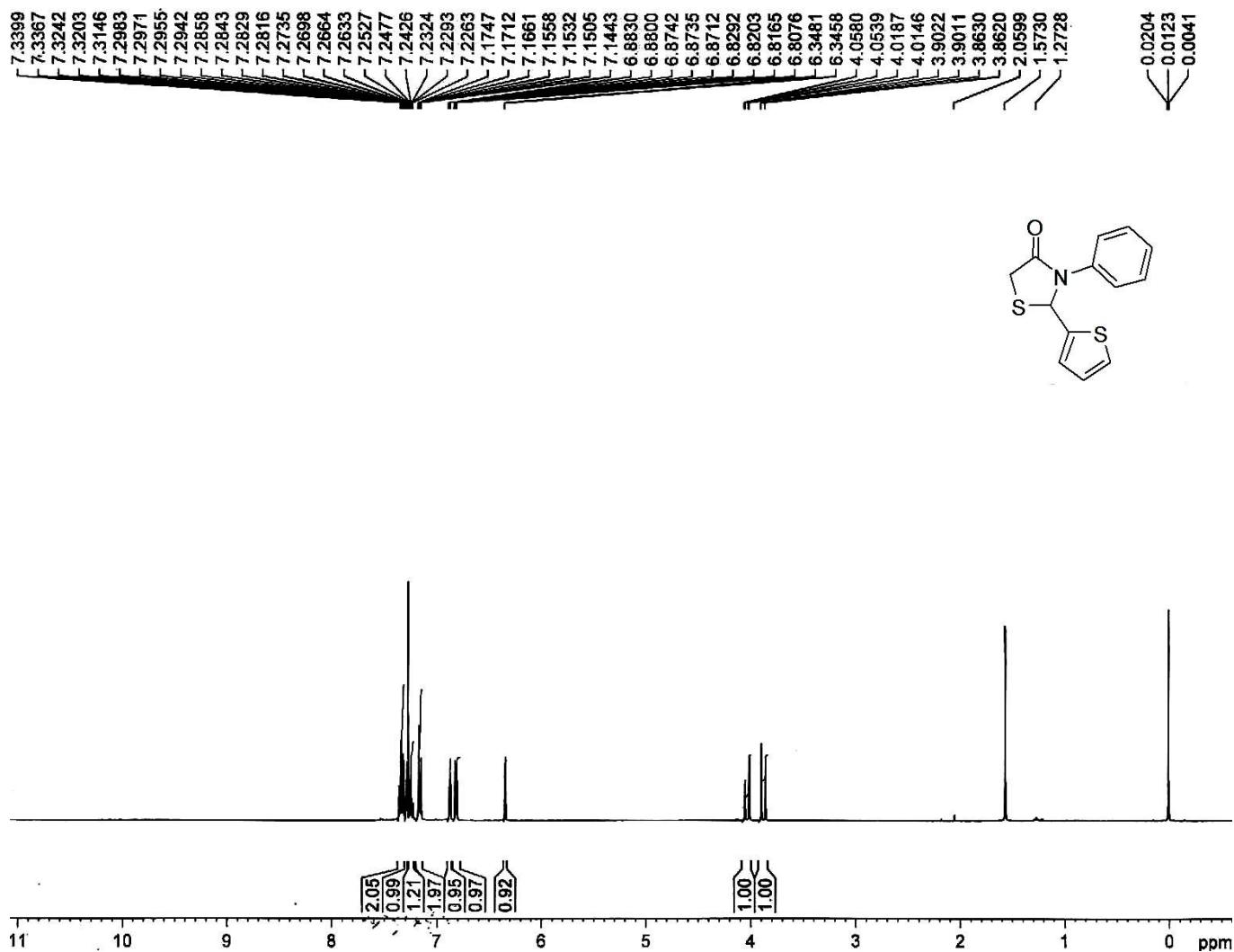
2-(Benzo[d][1,3]dioxol-4-yl)-3-phenylthiazolidin-4-one [Entry 32, Table 5, ^{13}C NMR]



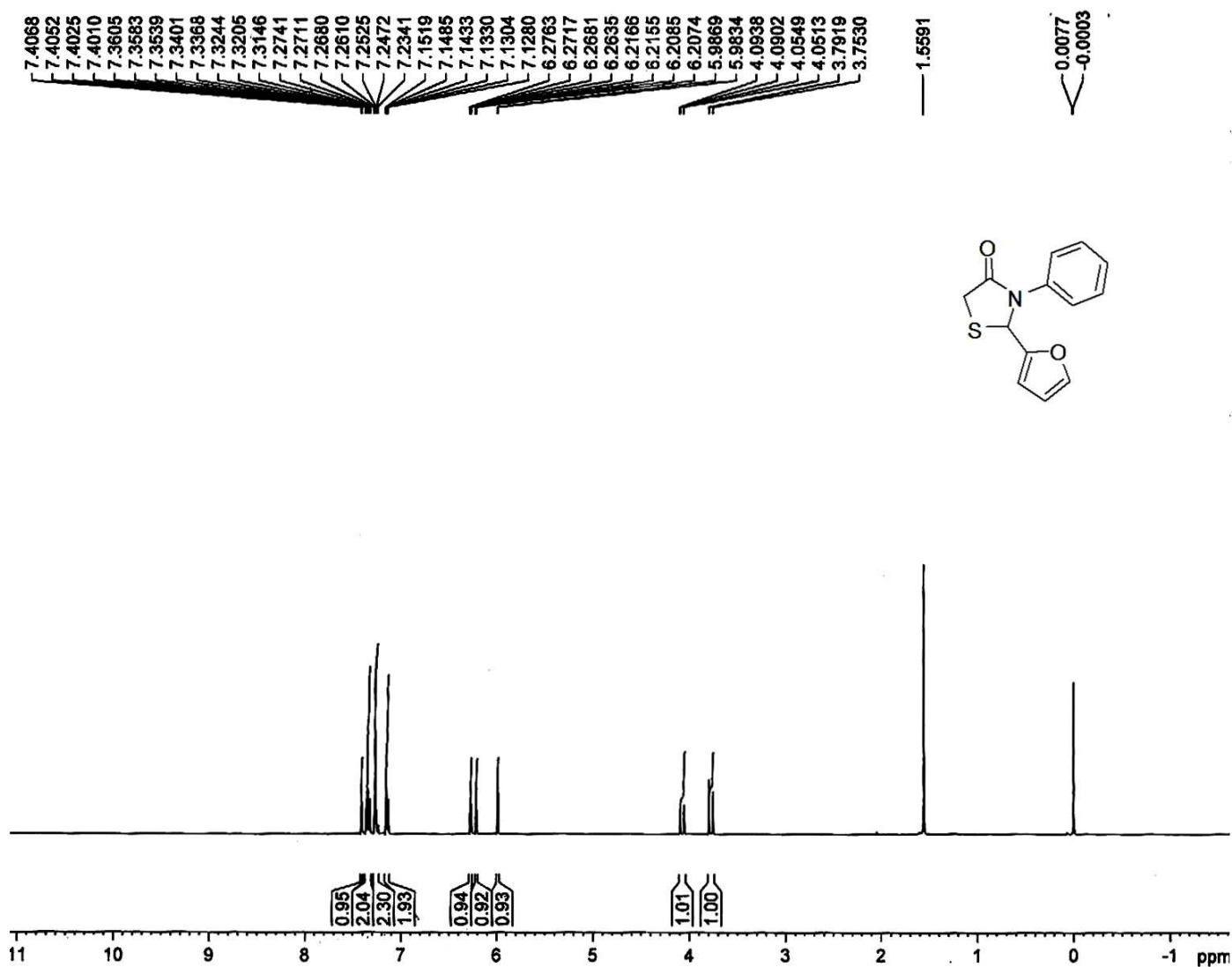
3-Phenyl-2-(pyridin-2-yl) thiazolidin-4-one [Entry 33, Table 5, ^1H NMR]



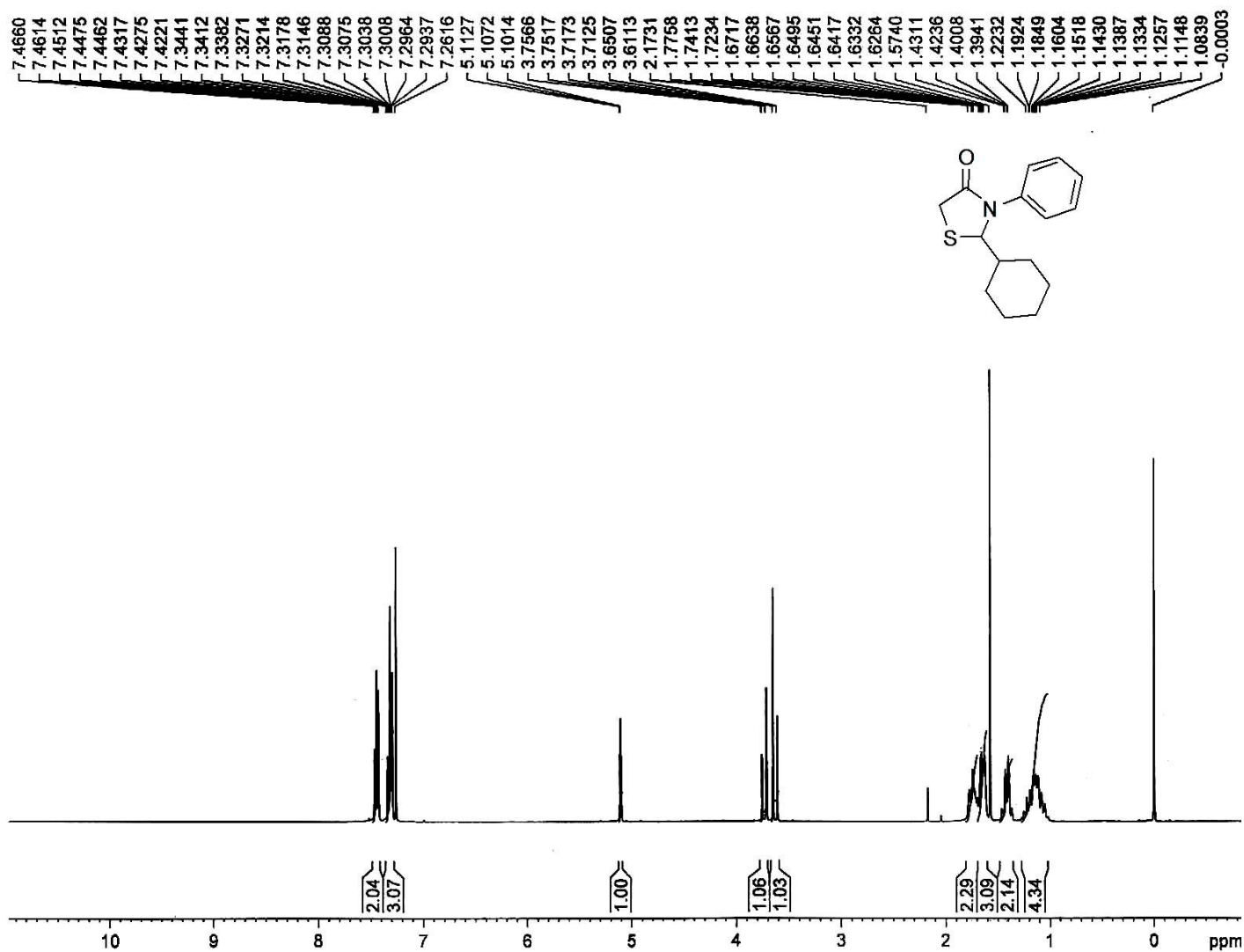
3-Phenyl-2-(thiophen-2-yl)thiazolidin-4-one [Entry 34, Table 5, ^1H NMR]



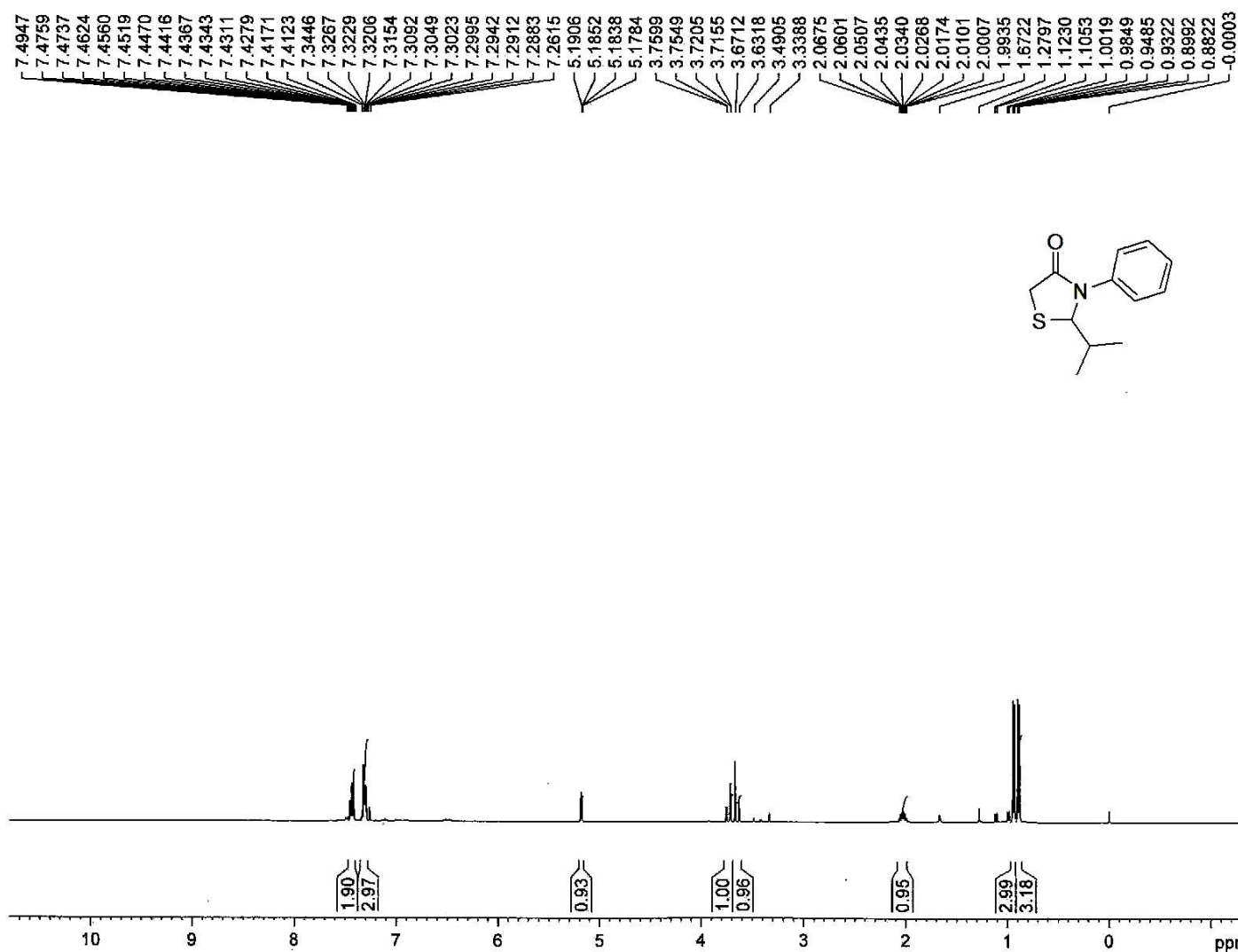
2-(Furan-2-yl)-3-phenylthiazolidin-4-one [Entry 35, Table 5, ^1H NMR]



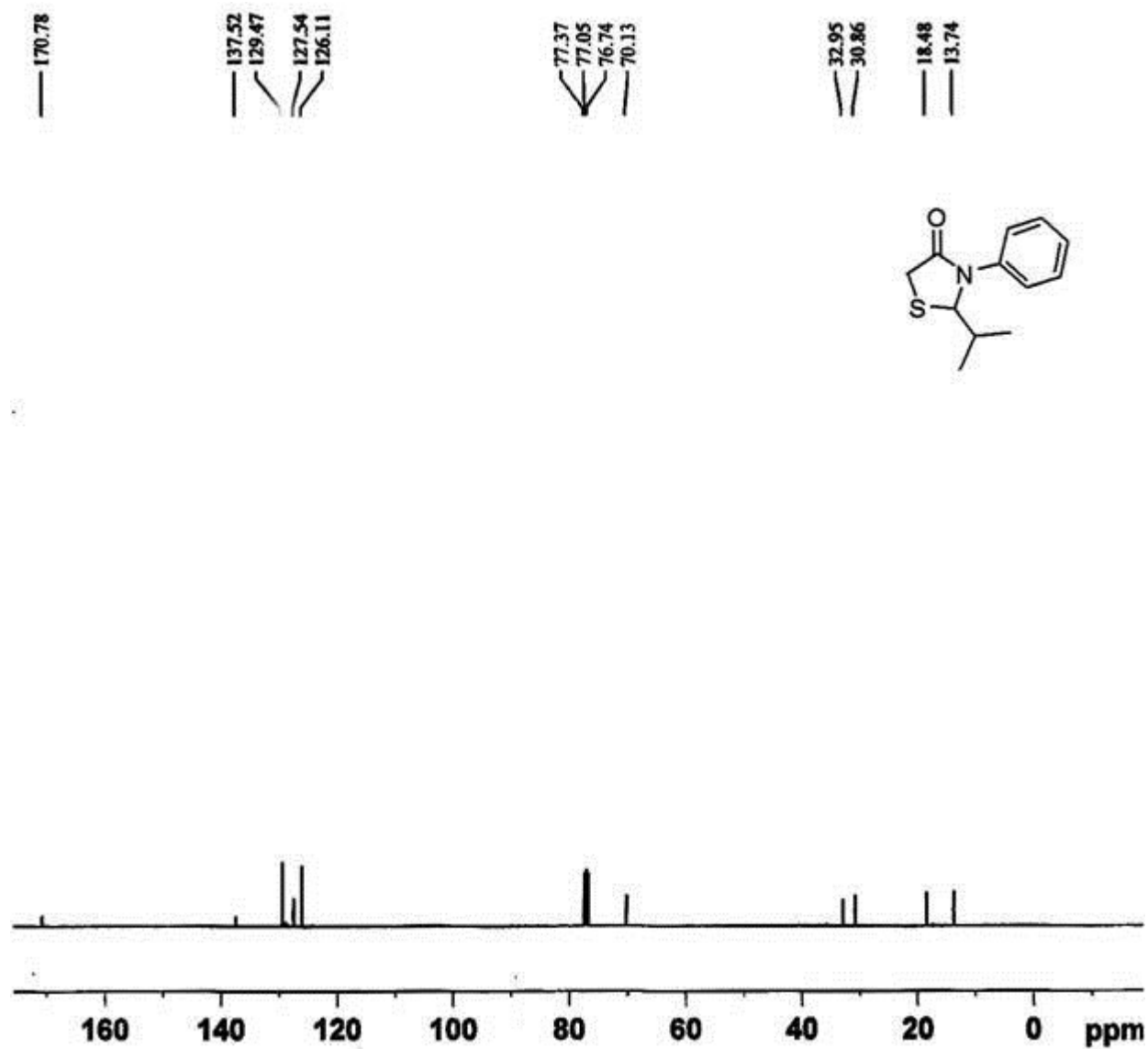
2-(Furan-2-yl)-3-phenylthiazolidin-4-one [Entry 36, Table 5, ^1H NMR]



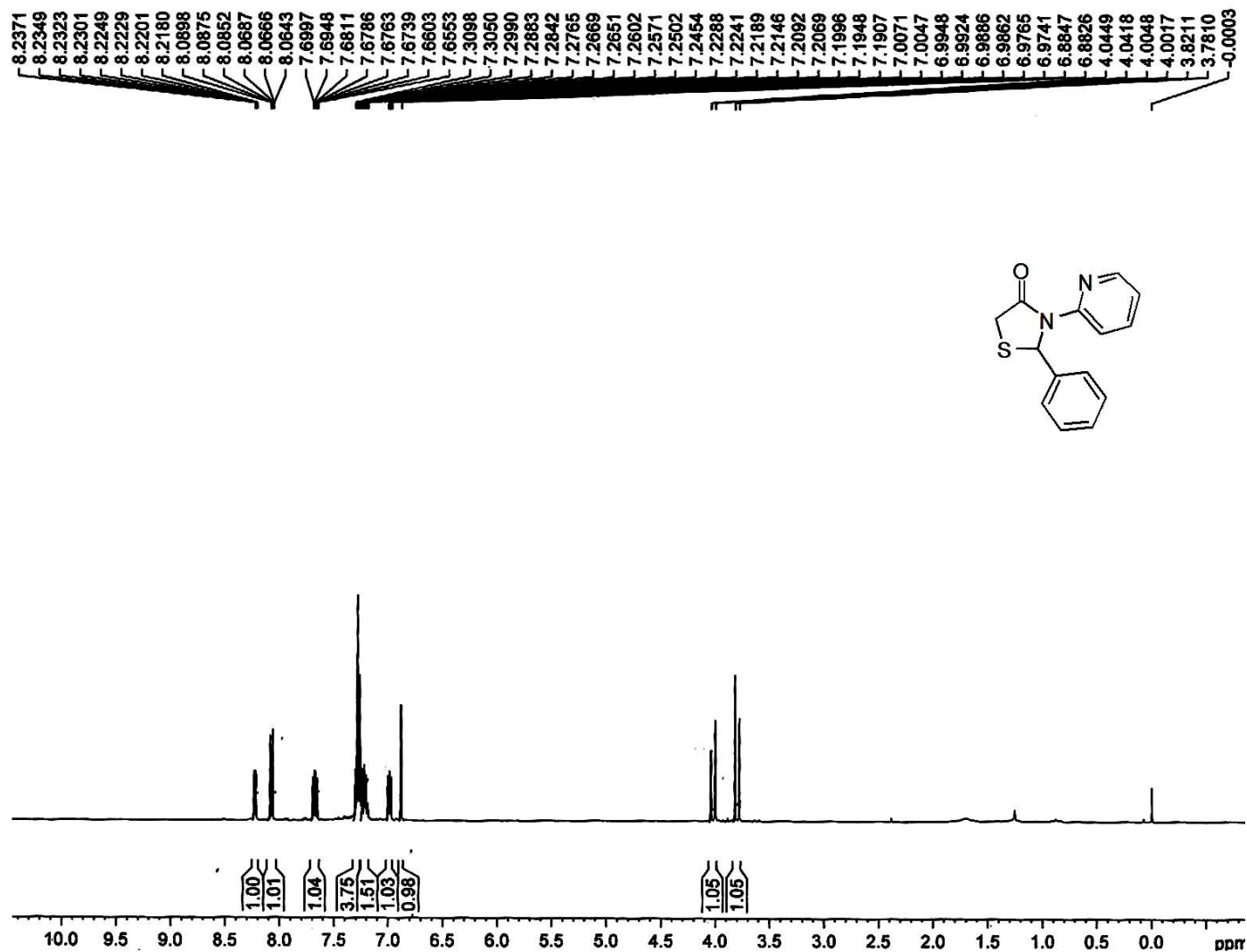
2-Isopropyl-3-phenylthiazolidin-4-one [Entry 37, Table 5, ¹H NMR]



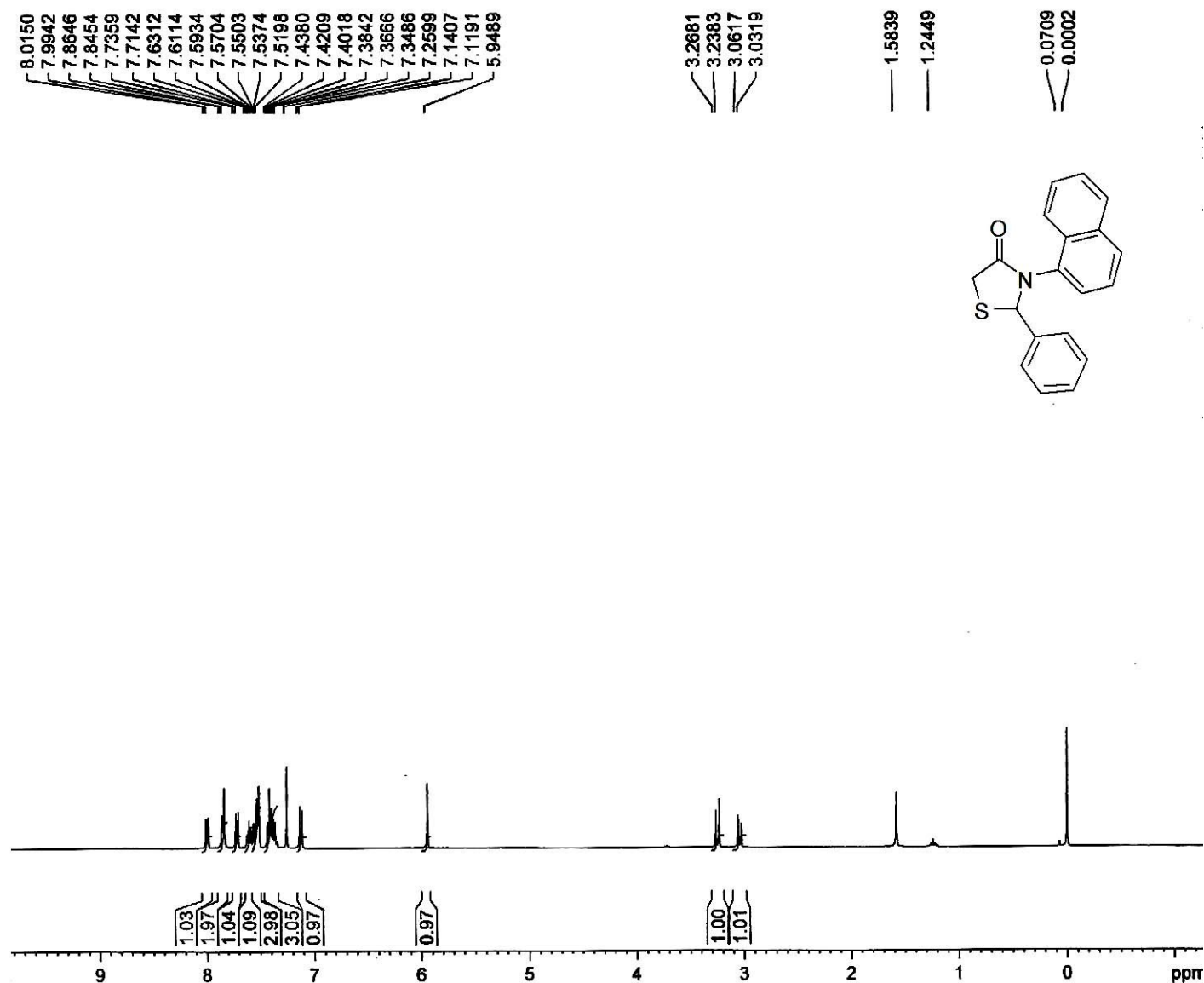
2-Isopropyl-3-phenylthiazolidin-4-one [Entry 37, Table 5, ^{13}C NMR]



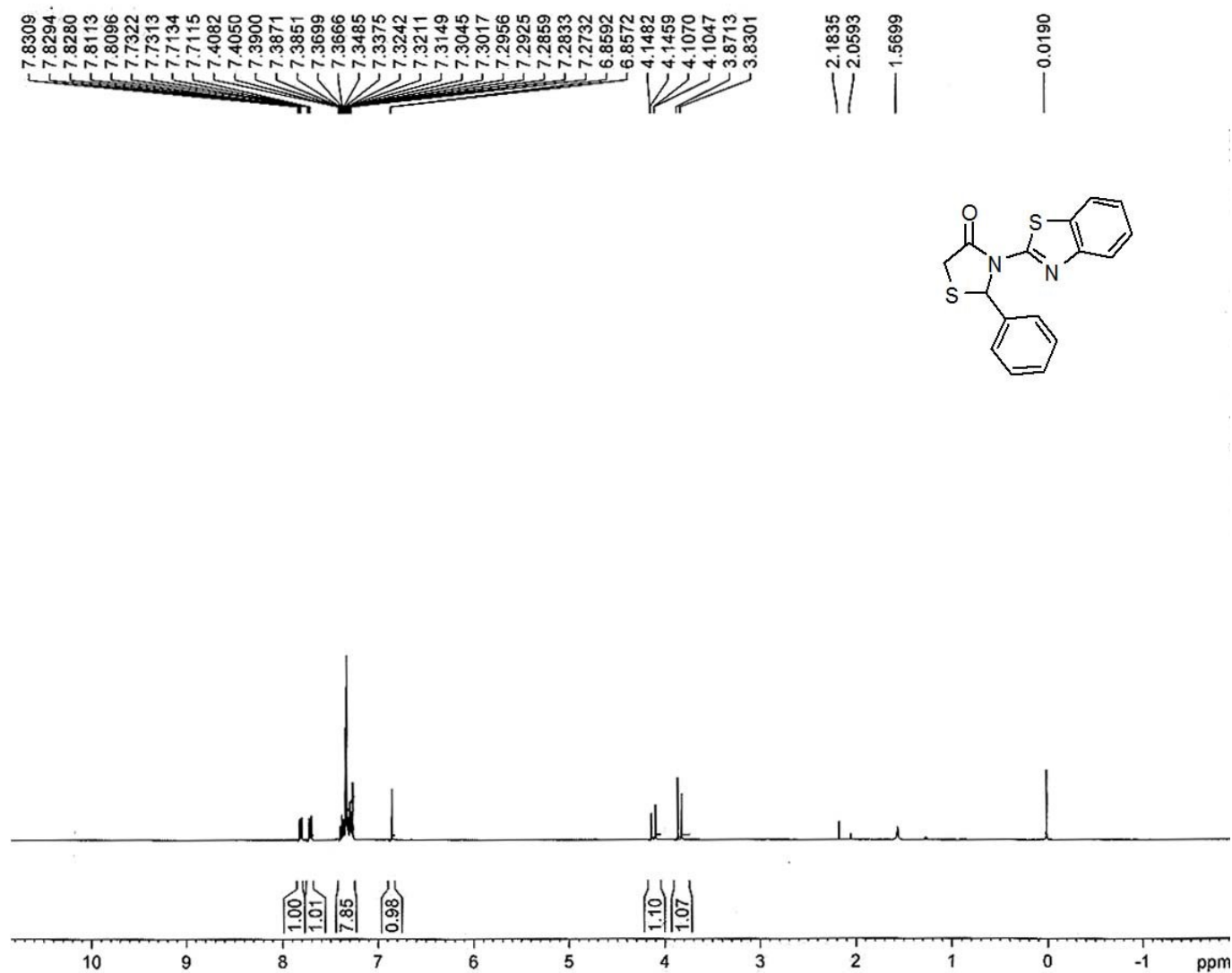
2-Phenyl-3-(pyridin-2-yl)thiazolidin-4-one [Entry 38, Table 5, ^1H NMR]



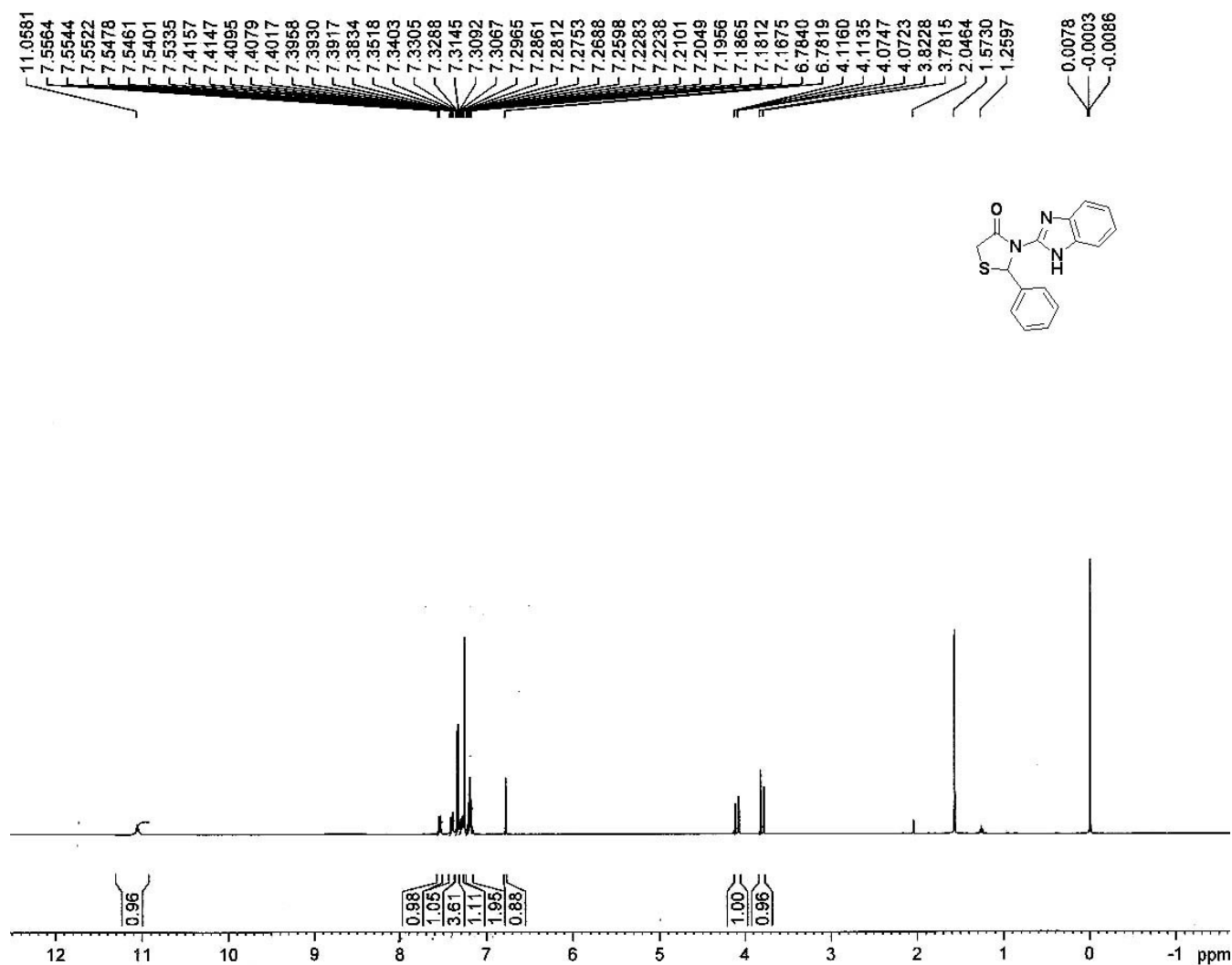
3-(Naphthalen-1-yl)-2-phenylthiazolidin-4-one [Entry 39, Table 5, ^1H NMR]



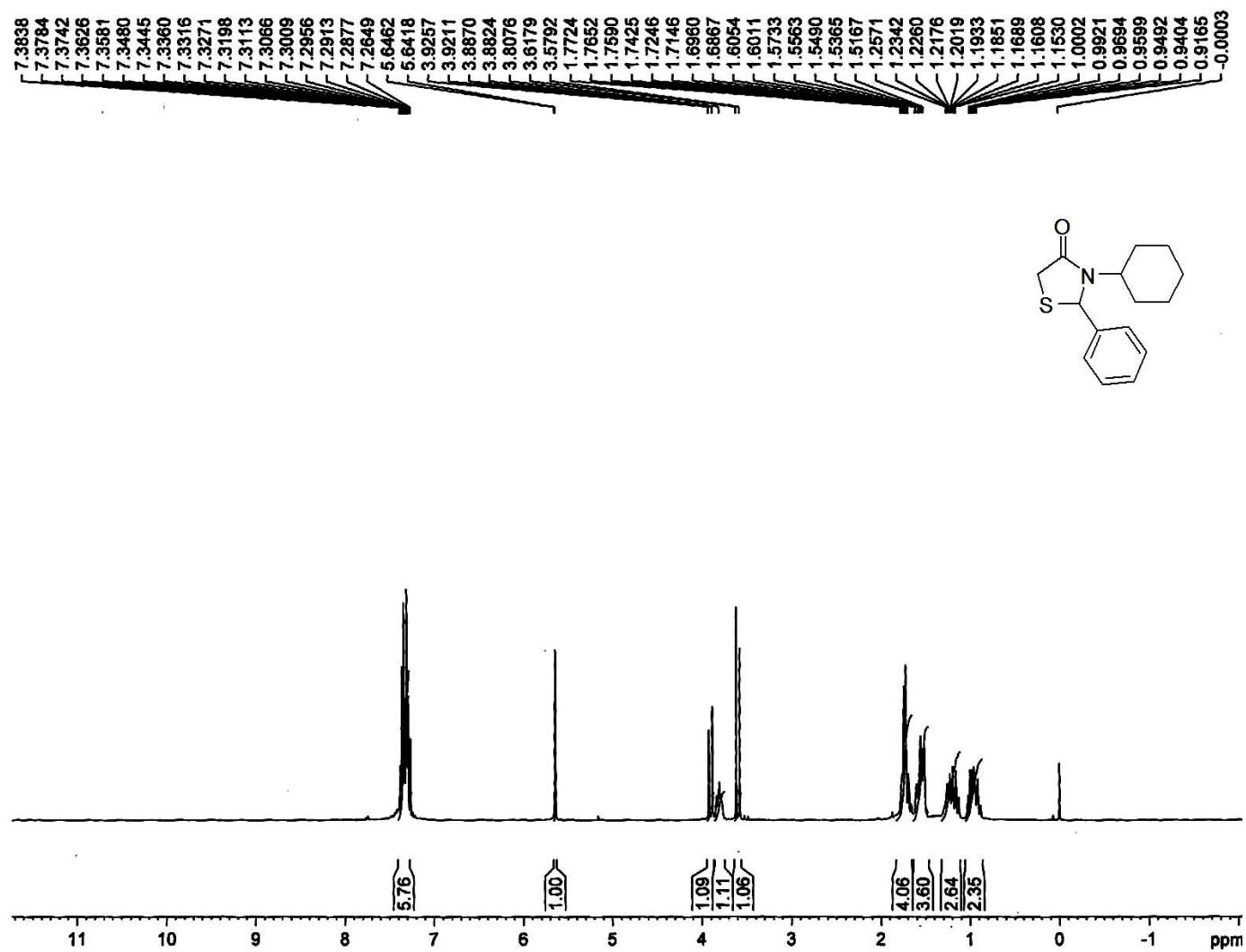
3-(Benzothiazol-2-yl)-2-phenylthiazolidin-4-one [Entry 40, Table 5, ^1H NMR]



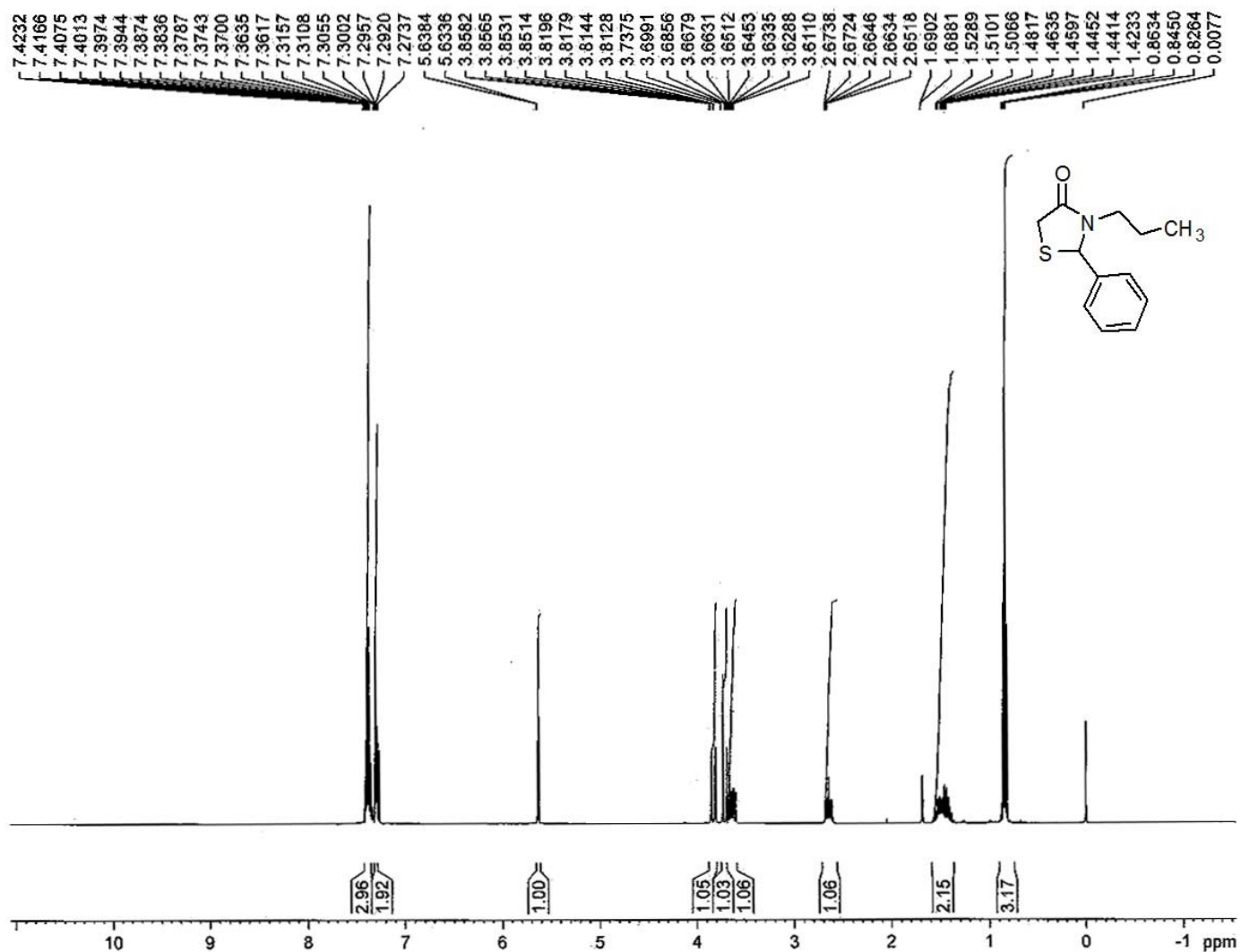
3-(1*H*-Benzidazol-2-yl)-2-phenylthiazolidin-4-one [Entry 41, Table 5, ¹H NMR]



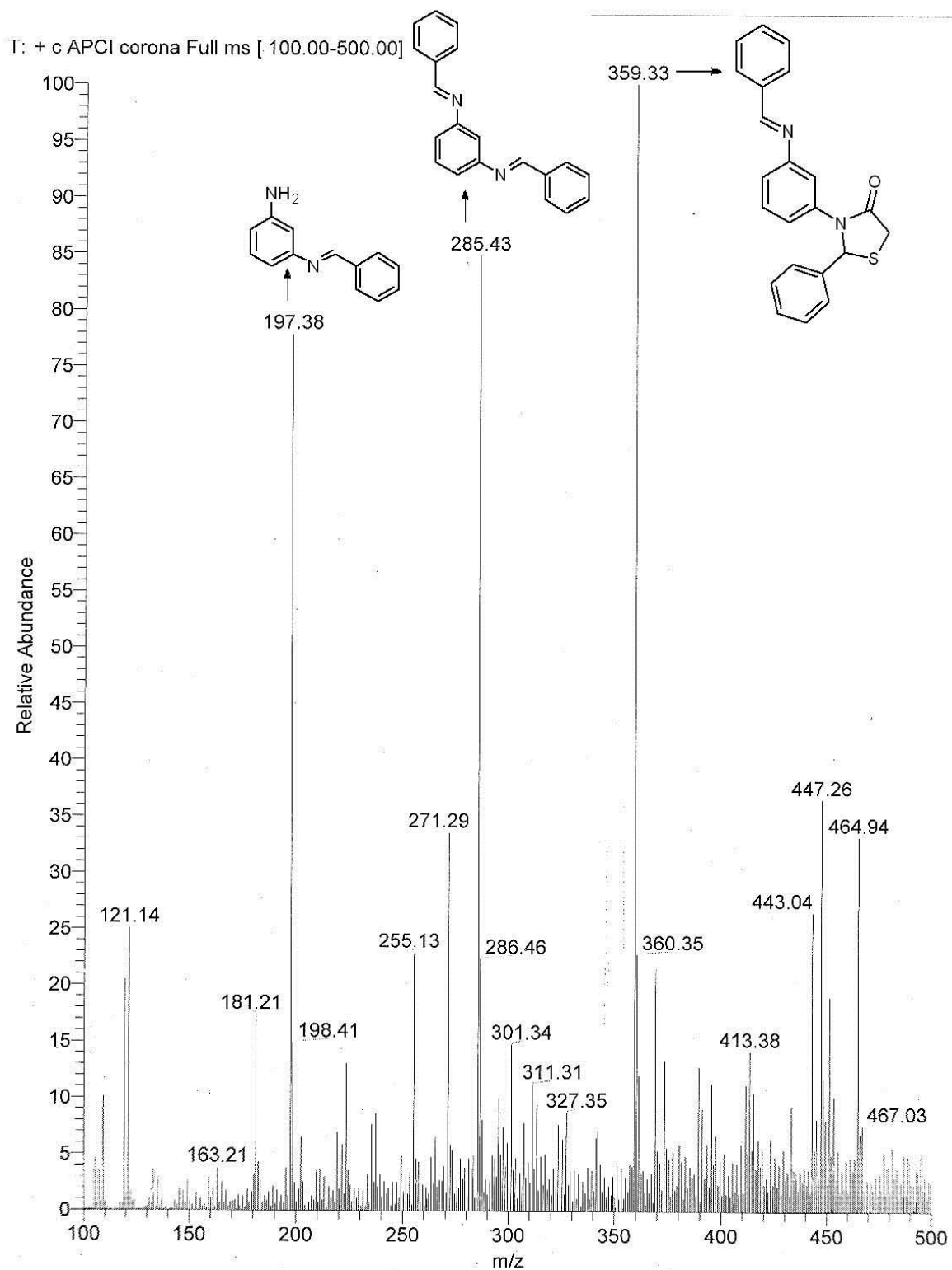
3-Cyclohexyl-2-phenylthiazolidin-4-one [Entry 42, Table 5, ^1H NMR]



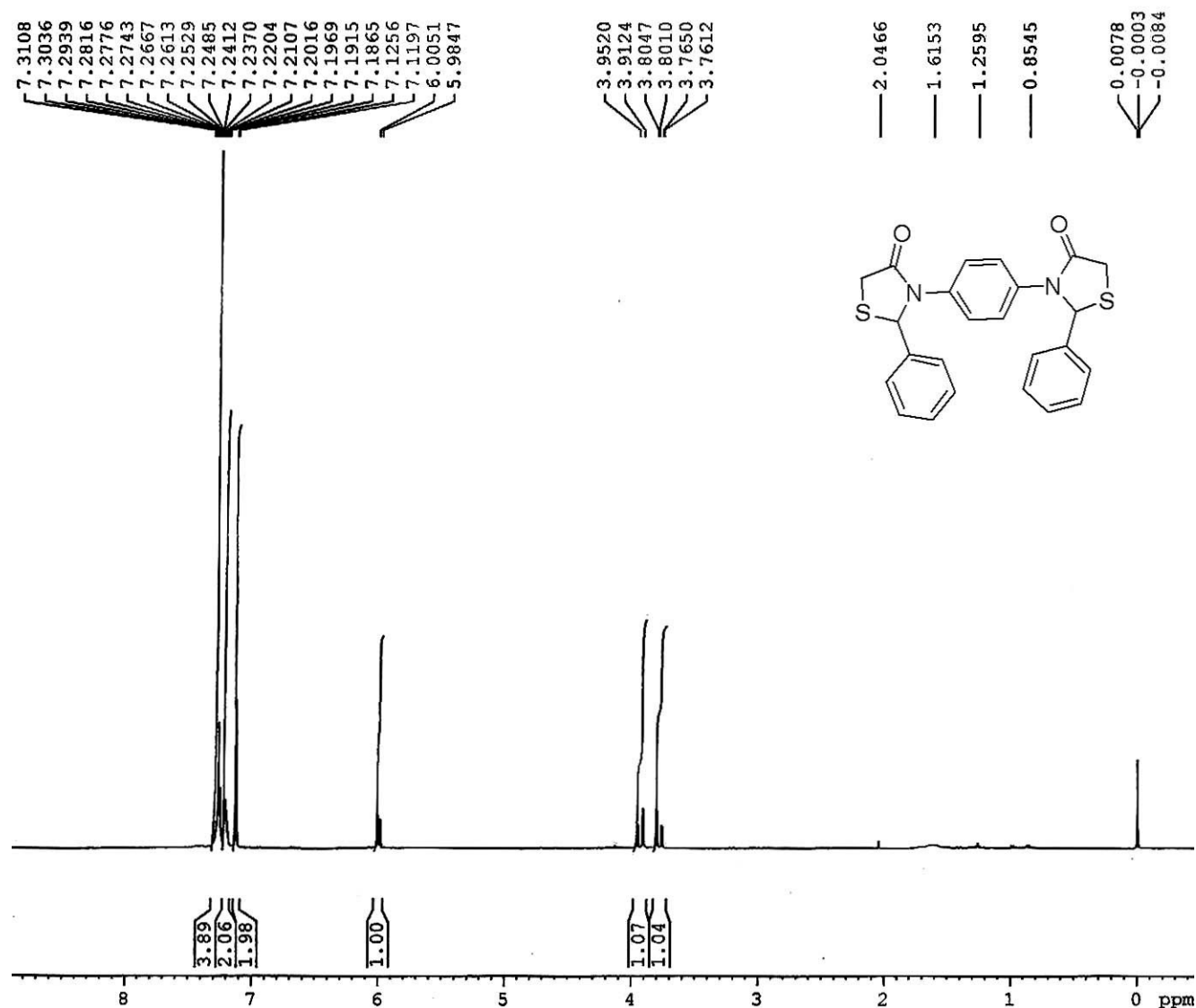
3-Cyclohexyl-2-phenylthiazolidin-4-one [Entry 43, Table 5, ^1H NMR]



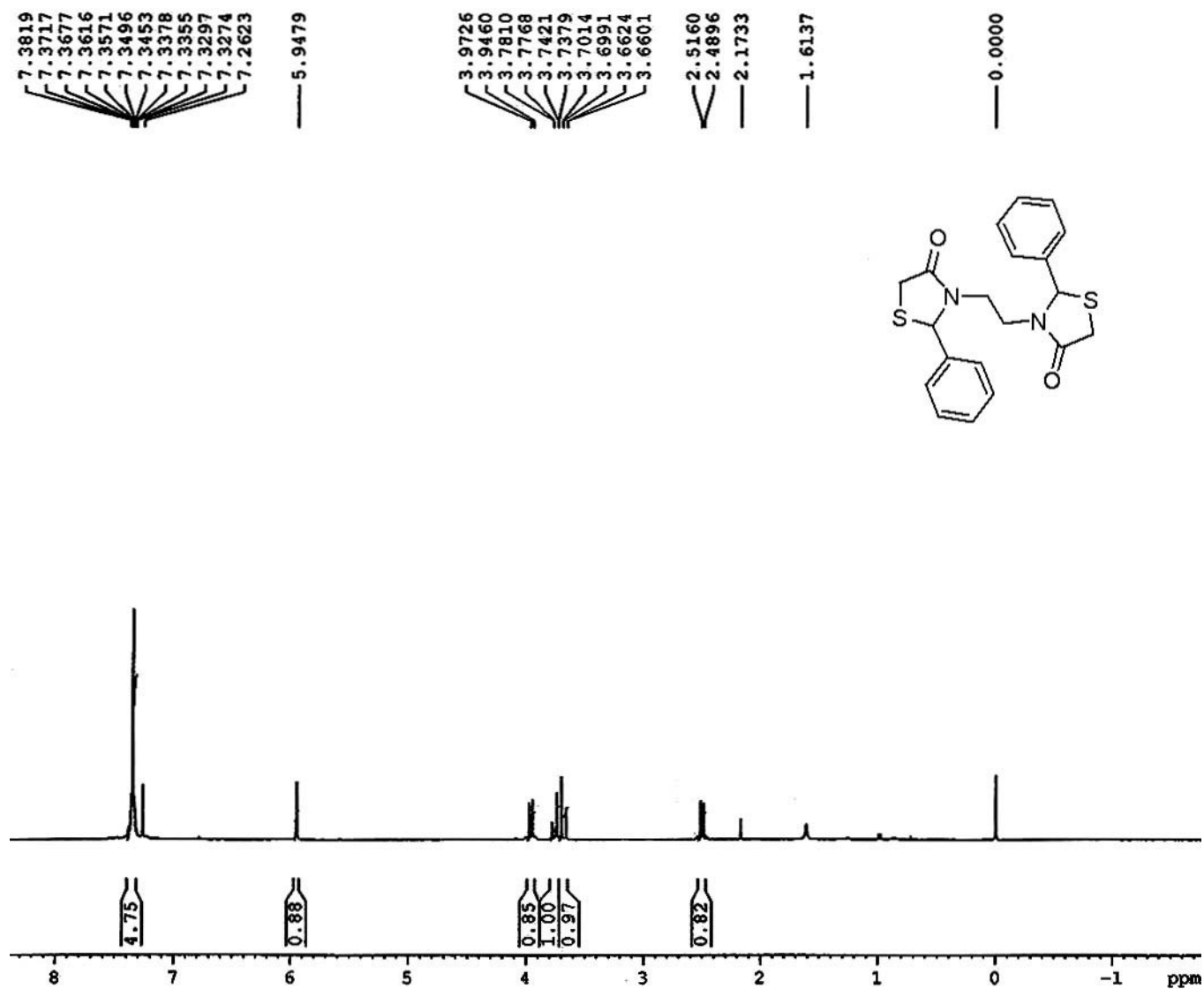
Mass Spectra of crude reaction mixture involving *m*-phenylenediamine, benzaldehyde (2 equiv) and thioglycolic acid (2 equiv)



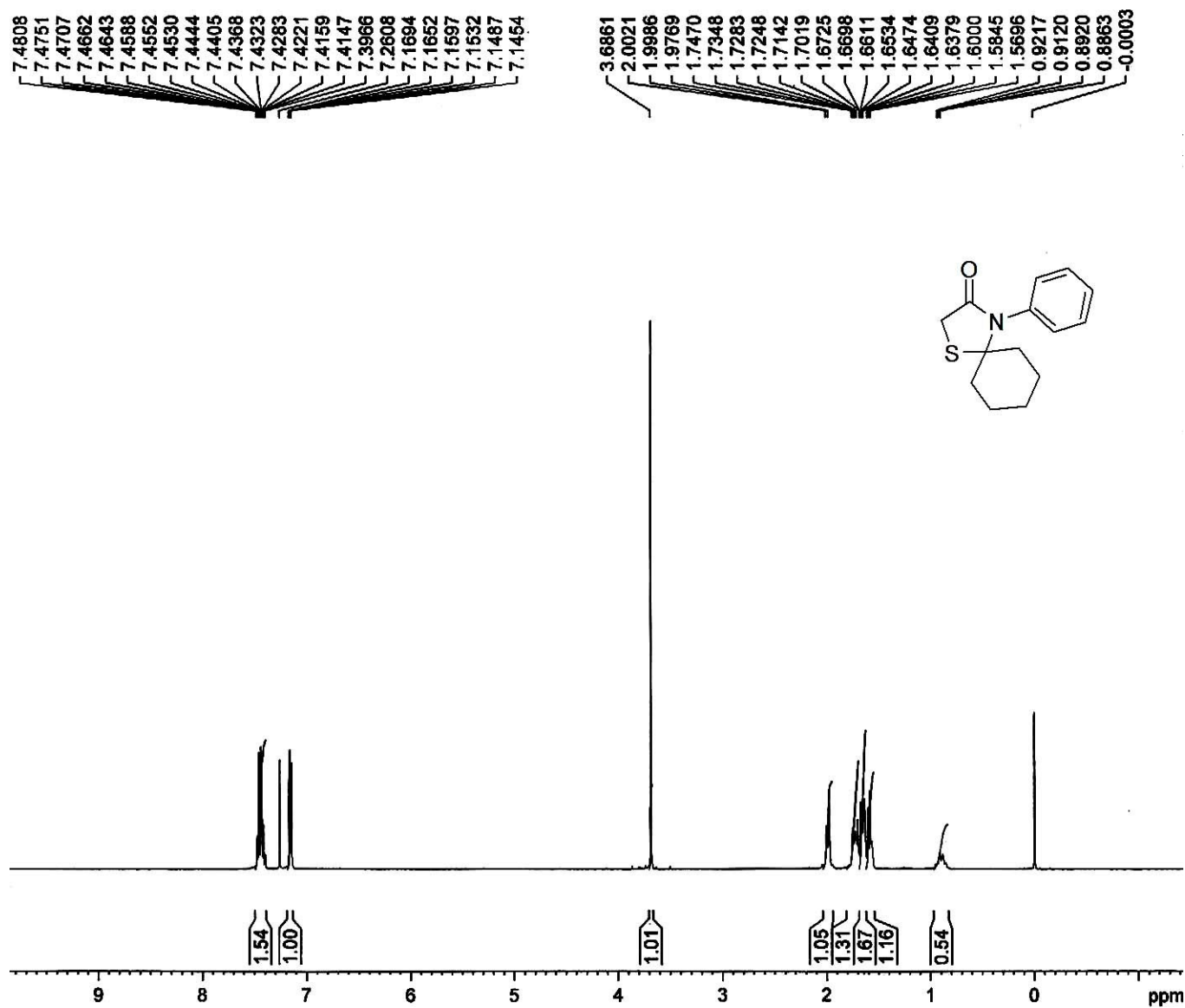
3,3'-(1,4-Phenylene)bis(5-phenylthiazolidin-4-one) [¹H NMR]



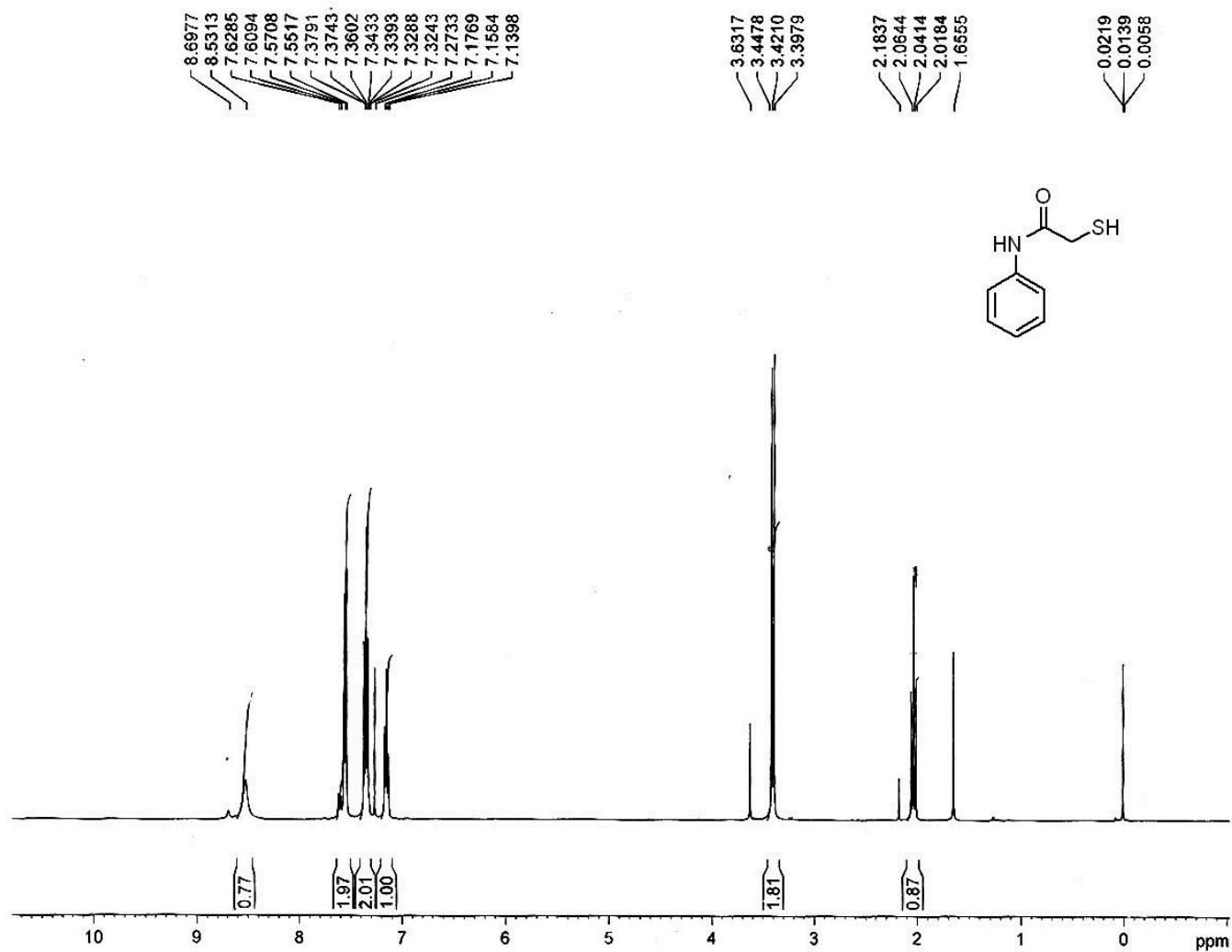
3,3'-(Ethane-1,2-diyl)bis(2-phenylthiazolidin-4-one) [¹H NMR]



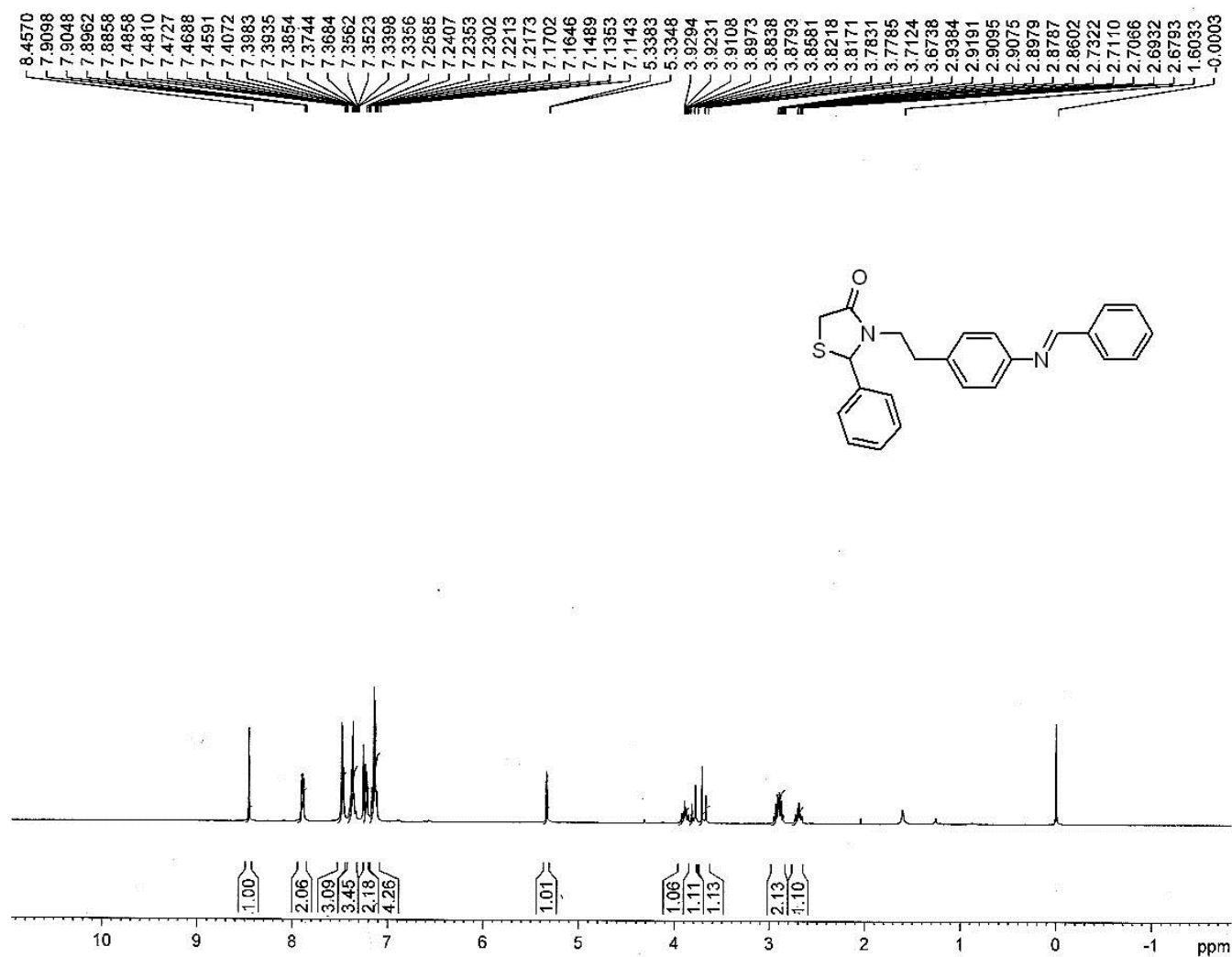
4-Phenyl-1-thia-4-azaspiro[4.5]decan-3-one [¹H NMR]



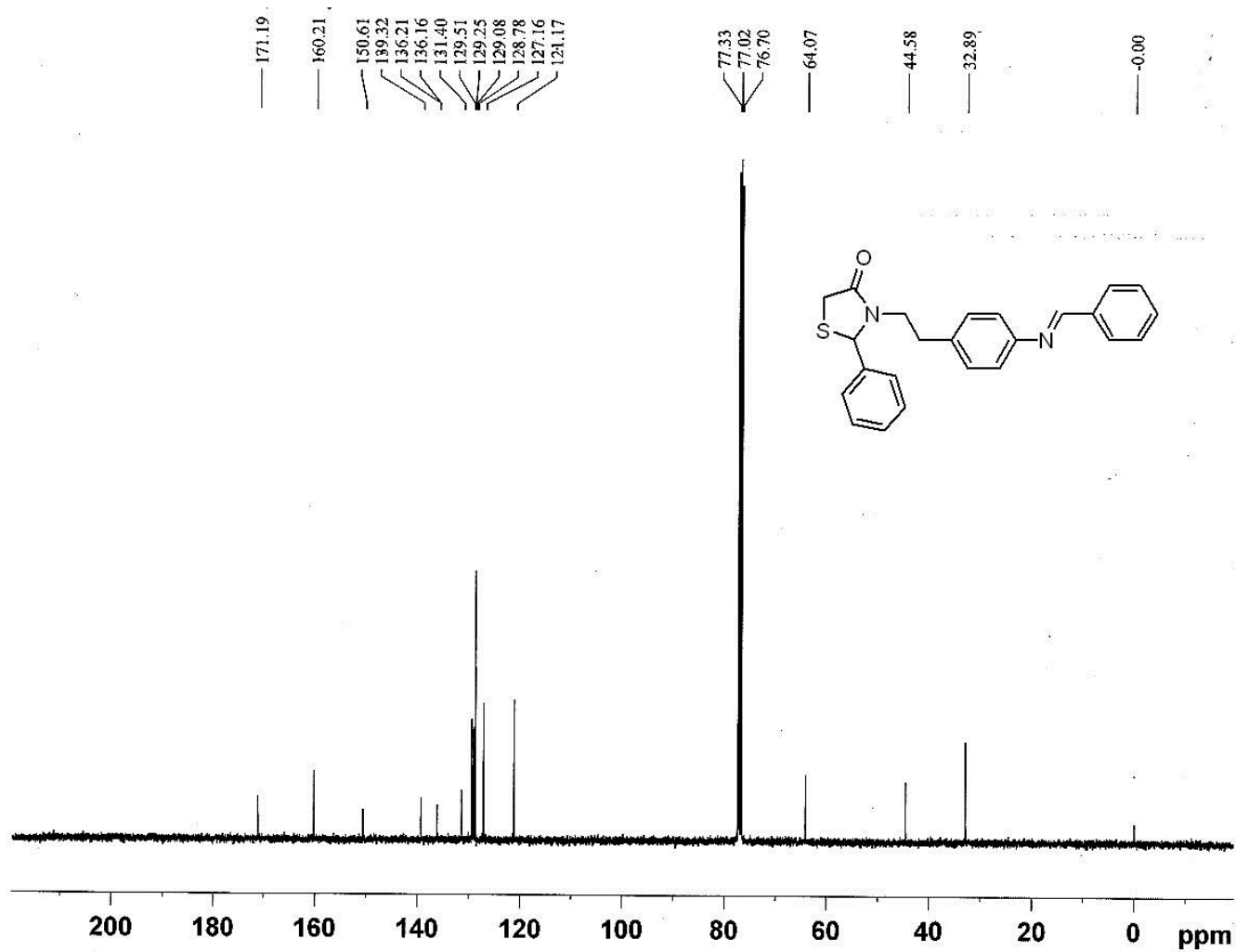
2-Mercapto-*N*-phenylacetamide [¹H-NMR]



3-(4-(Benzyldeneamino)phenethyl)-2-phenylthiazolidin-4-one [¹H NMR, Scheme 8]

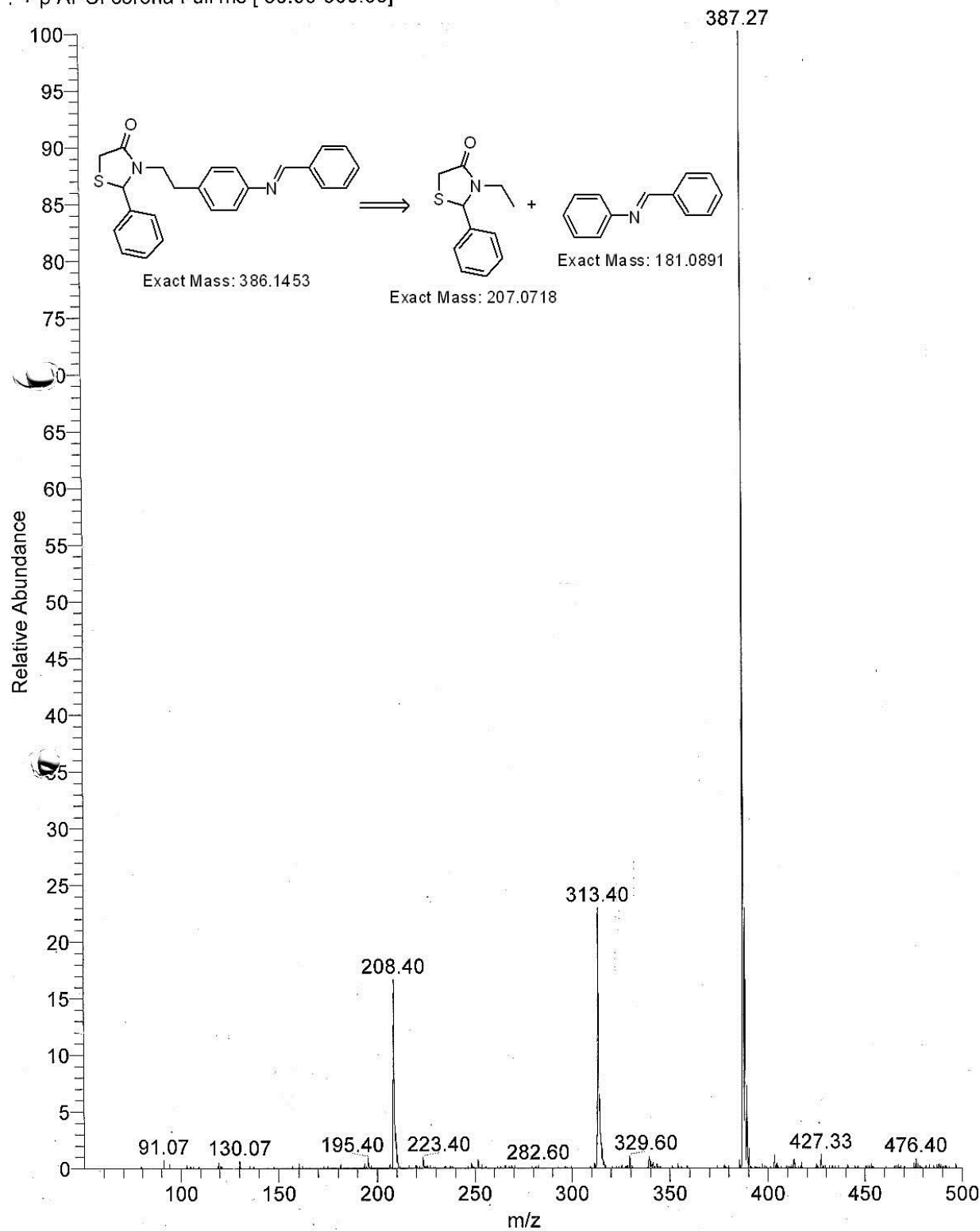


3-(4-(Benzyldeneamino)phenethyl)-2-phenylthiazolidin-4-one [¹³C NMR, Scheme 8]

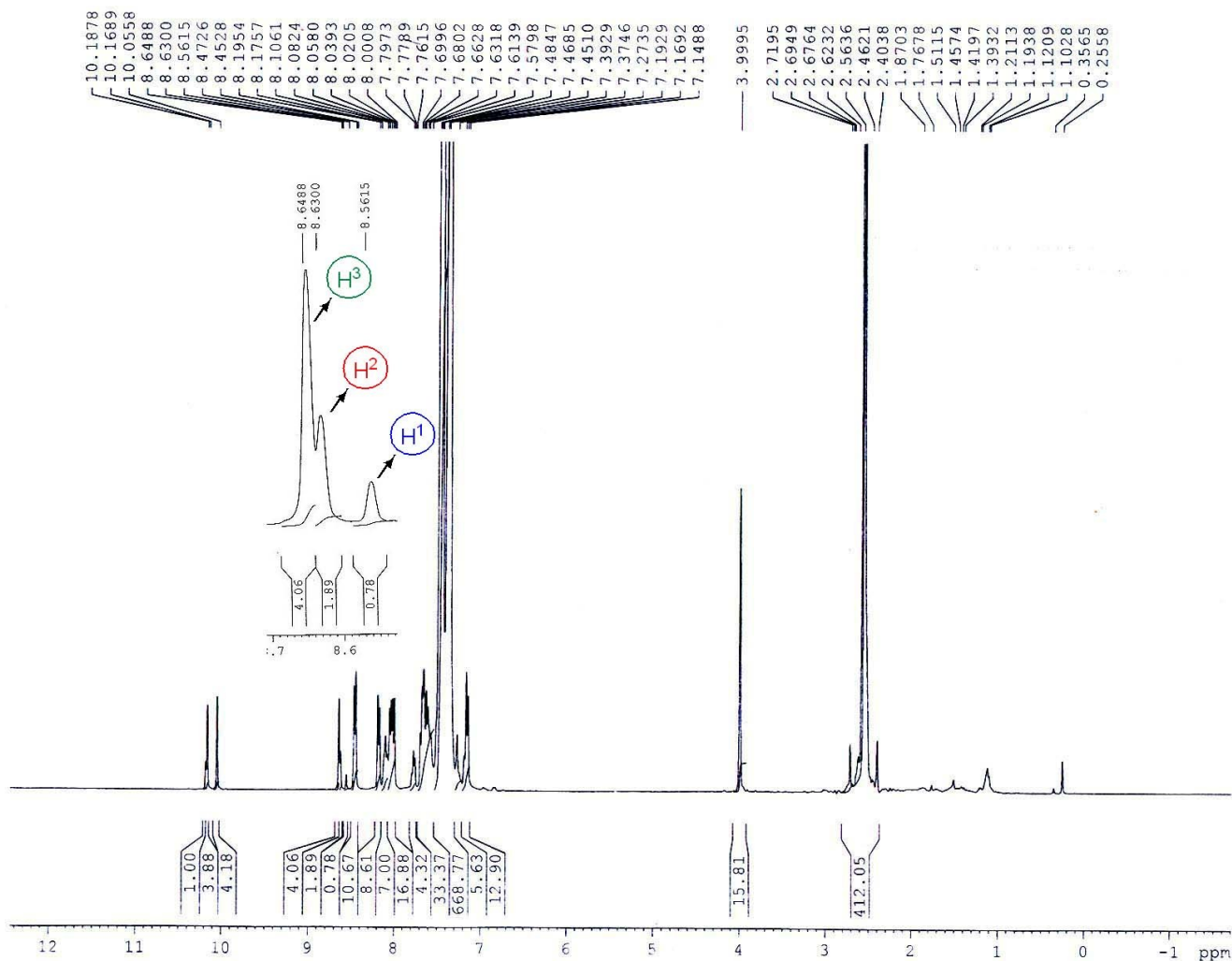
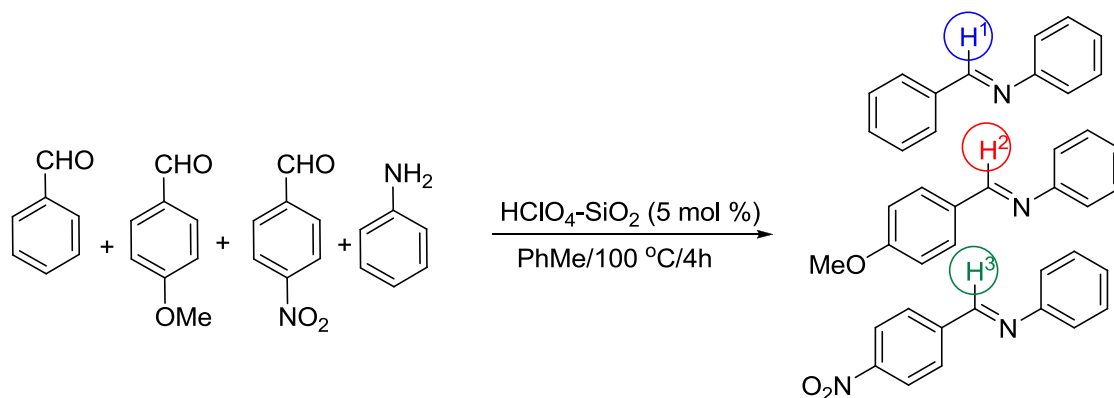


Mass spectra (APCI) of 3-(4-(benzylideneamino)phenethyl)-2-phenylthiazolidin-4-one [Scheme 8]

500-10 MS-120 70 101.010 70.0 1.000000
+ p APCI corona Full ms [50.00-500.00]



Intermolecular completion study involving more than two aldehydes: Amine selects the more electron-deficient aldehyde (Scheme 9)



Intermolecular completion study involving more than two amines: Aldehyde selects the more electron-rich amine (Scheme 10)

