

## Supporting Information

### An Effective Method to Prepare Imines from Aldehyde, Bromide/Epoxyde and Aqueous Ammonia

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## General methods

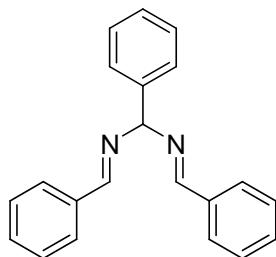
Commercial solvents and reagents were used without further purification with the following exceptions: benzaldehyde, furan-2-carbaldehyde, 1-bromobutane and butyraldehyde were distilled before use. crotyl bromide, 4-nitrobenzaldehyde, allyl bromide, Salicylaldehyde, furan-2-carbaldehyde, 3-bromopropionitrile, 4-methoxybenzaldehyde, 4-cyanobenzaldehyde, 2-hydroxybenzaldehyde, 2-bromobenzaldehyde, 4-chlorobenzaldehyde, cinnamaldehyde, benzyl bromide, benzaldehyde, 1-iodobutane, 1-chlorobutane, styrene oxide, propylene oxide, cyclohexene oxide and 28 % (w/w) aqueous ammonia were commercially supported.

Proton nuclear magnetic resonance ( $^1\text{H}$  NMR) and carbon nuclear magnetic resonance ( $^{13}\text{C}$  NMR) spectroscopy were performed 300 and 500 NMR spectrometers. Chemical shifts of  $^1\text{H}$  NMR spectra are reported as in units of parts per million (ppm) downfield from  $\text{SiMe}_4$  ( $\delta$  0.0) and relative to the signal of chloroform-*d* ( $J = 7.264$ , singlet). Multiplicities were given as: s (singlet); br s (broad singlet); d (doublet); t (triplet); q (quartet); dd (doublet of doublets); m (multiplets), etc. The number of protons (*n*) for a given resonance is indicated by *n*H. Carbon nuclear magnetic resonance spectra ( $^{13}\text{C}$  NMR) are reported as in units of parts per million (ppm) downfield from  $\text{SiMe}_4$  ( $\delta$  0.0) and relative to the signal of chloroform-*d* ( $J = 77.03$ , triplet).

## Experimental procedure

**General procedure for the preparation of 3:** A mixture of aldehyde (0.5 mmol), bromide (0.75 mmol) in 28 wt% aqueous ammonia (1.0 mL) was stirred in a sealed tube at 60 °C overnight. The reaction mixture was extracted with diethyl ether (2×10 mL). The combined organic layer was washed with water (5 mL), brine (5 mL) and then dried over anhydrous magnesium sulfate. The organic solvent was removed on a rotary evaporator under vacuum. The residue was purified by recrystallization for the solid products. And the oil products were purified by column chromatography on silica gel (hexane /ethyl acetate/ triethyl amine 100:10:1). The silica gel was pre-neutralized with 1 % (v/v) of triethyl amine in petroleum ether before packing.

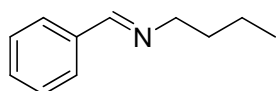
## Spectroscopic data of products



### (*NE,NE*)-*N,N'*-dibenzylidene-1-phenylmethanediamine (**6<sup>1</sup>**)

$\delta_{\text{H}}$  (300 MHz;  $\text{CDCl}_3$ ;  $\text{Me}_4\text{Si}$ ) 5.99 (1 H, m,  $1 \times \text{CH}$ ), 7.27–7.45 (9 H, m,  $9 \times \text{Ph}$ ), 7.51–7.53 (2 H, m,  $2 \times \text{Ph}$ ), 7.85–7.89 (4 H, m,  $4 \times \text{Ph}$ ), 8.59 (2 H, s,  $\text{N}=\text{CH}$ ).

$\delta_{\text{C}}$  (75 MHz;  $\text{CDCl}_3$ ;  $\text{Me}_4\text{Si}$ ) 93.9, 128.7, 129.2, 129.9, 130.9, 130.1, 132.4, 137.5, 143.2, 162.1.

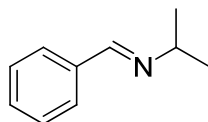


### (*E*)-*N*-benzylidenebutan-1-amine (**3a**, <sup>2</sup> 73 mg, 91%) colourless oil.

$\delta_{\text{H}}$  (300 MHz;  $\text{CDCl}_3$ ;  $\text{Me}_4\text{Si}$ ) 0.96 (3 H, t,  $J = 7.1$  Hz,  $3 \times \text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_3$ ), 1.34–1.46 (2 H, m,  $\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_3$ ), 1.65–1.75 (2 H, m,  $\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_3$ ), 3.63 (2 H, dt,  $J = 1.2$  Hz, 7.0 Hz,  $\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_3$ ), 7.40–7.42 (3 H, m,  $3 \times \text{Ph}$ ), 7.72–7.75 (2 H, m,  $2 \times \text{Ph}$ ), 8.28 (1 H, s,  $\text{N}=\text{CH}$ ).

$\delta_{\text{C}}$  (75 MHz;  $\text{CDCl}_3$ ;  $\text{Me}_4\text{Si}$ ) 13.8, 20.3, 32.9, 61.3, 127.9, 128.4, 130.3, 136.3, 160.5.

HRMS (ESI):  $m/z$  ( $\text{M} + \text{H}^+$ ) calcd. for  $\text{C}_{11}\text{H}_{16}\text{N}$ , 162.1283, found: 162.1278.

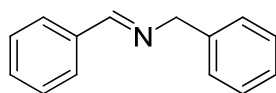


### (*E*)-*N*-benzylidenepropan-2-amine (**3b**, <sup>3</sup> 63mg, 86%) colourless oil

$\delta_{\text{H}}$  (300 MHz;  $\text{CDCl}_3$ ;  $\text{Me}_4\text{Si}$ ) 1.28 (6 H, d,  $J = 6.3$  Hz,  $2 \times \text{CH}_3$ ), 3.55 (1 H, hept,  $J = 6.3$  Hz,  $\text{CH}(\text{CH}_3)_2$ ), 7.39–7.43 (3 H, m,  $3 \times \text{Ph}$ ), 7.71–7.74 (2 H, m,  $2 \times \text{Ph}$ ), 8.31 (1 H, s,  $\text{N}=\text{CH}$ ).

$\delta_{\text{C}}$  (75 MHz;  $\text{CDCl}_3$ ;  $\text{Me}_4\text{Si}$ ) 24.1, 61.7, 128.0, 128.5, 130.2, 136.4, 158.3.

HRMS (ESI):  $m/z$  ( $\text{M} + \text{H}^+$ ) calcd. for  $\text{C}_{10}\text{H}_{14}\text{N}$ , 148.1126, found: 148.1126.

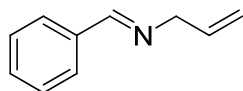


### (*E*)-*N*-benzylidene(phenyl)methanamine (**3c**, <sup>4</sup> 88 mg, 91%) colourless oil

$\delta_{\text{H}}$  (300 MHz;  $\text{CDCl}_3$ ;  $\text{Me}_4\text{Si}$ ) 4.86 (2 H, d,  $J = 1,2$  Hz,  $\text{NCH}_2$ ), 7.27–7.48 (8 H, m,  $8 \times \text{Ph}$ ), 7.81–7.84 (2 H, m,  $2 \times \text{Ph}$ ), 8.43 (1 H, s,  $\text{N}=\text{CH}$ )

$\delta_{\text{C}}$  (75 MHz;  $\text{CDCl}_3$ ;  $\text{Me}_4\text{Si}$ ) 64.9, 126.9, 127.9, 128.2, 128.4, 128.5, 130.7, 136.1, 139.2, 161.9.

HRMS (ESI):  $m/z$  ( $\text{M} + \text{H}^+$ ) calcd. for  $\text{C}_{14}\text{H}_{14}\text{N}$ , 196.1126, found: 196.1123.

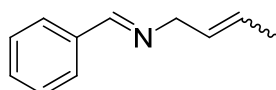


**(E)-N-benzylideneprop-2-en-1-amine (3d)**, <sup>5</sup> 66 mg, 90% colourless oil

$\delta_{\text{H}}$  (300 MHz;  $\text{CDCl}_3$ ;  $\text{Me}_4\text{Si}$ ) 4.26–4.28 (2 H, m,  $2 \times \text{CH}_2\text{CH}=\text{CH}_2$ ), 5.15–5.28 (2 H, m,  $2 \times \text{CH}_2\text{CH}=\text{CH}_2$ ), 6.02–6.15 (1 H, m,  $\text{CH}_2\text{CH}=\text{CH}_2$ ), 7.40–7.45 (3 H, m,  $3 \times \text{Ph}$ ), 7.73–7.79 (2 H, m,  $2 \times \text{Ph}$ ), 8.30 (1 H, s,  $\text{N}=\text{CH}$ ).

$\delta_{\text{C}}$  (75 MHz;  $\text{CDCl}_3$ ;  $\text{Me}_4\text{Si}$ ) 63.4, 115.9, 127.9, 128.6, 130.6, 135.7, 136.0, 161.8.

HRMS (ESI):  $m/z$  ( $\text{M} + \text{H}^+$ ) calcd. for  $\text{C}_{10}\text{H}_{12}\text{N}$ , 146.0976, found: 146.0967.



**(NE)-N-benzylidenebut-2-en-1-amine (3e)**, <sup>6</sup> 67 mg, 85% colourless oil

(2E,NE)-N-benzylidenebut-2-en-1-amine(main product):  $\delta_{\text{H}}$  (300 MHz;  $\text{CDCl}_3$ ;  $\text{Me}_4\text{Si}$ ) 1.72–1.74 (3 H, m,  $3 \times \text{CH}_3$ ), 4.19–4.20 (2 H, m,  $2 \times \text{CH}_2$ ), 5.66–5.71 (2 H, m,  $\text{CH}=\text{CH}$  and  $\text{CH}=\text{CH}$ ), 7.39–7.43 (3 H, m,  $3 \times \text{Ph}$ ), 7.74–7.77 (2 H, m,  $2 \times \text{Ph}$ ), 8.28 (1 H, s,  $\text{N}=\text{CH}$ ).

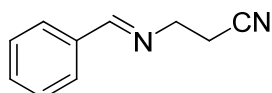
$\delta_{\text{C}}$  (75 MHz;  $\text{CDCl}_3$ ;  $\text{Me}_4\text{Si}$ ) 17.8, 62.9, 126.3, 127.5, 127.9, 128.4, 130.5, 136.1, 161.3.

(2Z,NE)-N-benzylidenebut-2-en-1-amine:  $\delta_{\text{H}}$  (300 MHz;  $\text{CDCl}_3$ ;  $\text{Me}_4\text{Si}$ ) 1.72–1.74 (3 H, m,  $3 \times \text{CH}_3$ ), 4.31–4.33 (2 H, m,  $2 \times \text{CH}_2$ ), 5.66–5.71 (2 H, m,  $\text{CH}=\text{CH}$  and  $\text{CH}=\text{CH}$ ), 5.52–5.76 (2 H, m,  $\text{CH}=\text{CH}$  and  $\text{CH}=\text{CH}$ ) 7.39–7.43 (3 H, m,  $3 \times \text{Ph}$ ), 7.74–7.77 (2 H, m,  $2 \times \text{Ph}$ ), 8.33 (1 H, s,  $\text{N}=\text{CH}$ ).

$\delta_{\text{C}}$  (75 MHz;  $\text{CDCl}_3$ ;  $\text{Me}_4\text{Si}$ ) 13.3, 57.6, 126.3, 127.5, 128.0, 128.5, 130.5, 136.2, 161.4.

HRMS (ESI):  $m/z$  ( $\text{M} + \text{H}^+$ ) calcd. for  $\text{C}_{11}\text{H}_{14}\text{N}$ , 160.1126, found: 160.1124.

IR (KBr,  $\text{cm}^{-1}$ ):  $\nu_{\text{C}=\text{N}} = 1644$

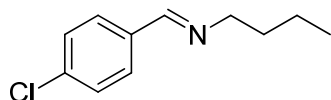


**(E)-3-(benzylideneamino)propanenitrile (3f)**, <sup>7</sup> 71 mg, 90% colourless oil

$\delta_{\text{H}}$  (300 MHz;  $\text{CDCl}_3$ ;  $\text{Me}_4\text{Si}$ ) 2.77 (2 H, t,  $J = 6.7$  Hz,  $2 \times \text{CH}_2\text{CN}$ ), 3.84 (2 H, td,  $J = 1.2$  Hz, 6.7 Hz,  $2 \times \text{CH}_2\text{CH}_2\text{CN}$ ), 7.42–7.46 (3 H, m,  $3 \times \text{Ph}$ ), 7.73–7.75 (2 H, m,  $2 \times \text{Ph}$ ), 8.36 (1 H, s,  $\text{N}=\text{CH}$ ).

$\delta_{\text{C}}$  (75 MHz;  $\text{CDCl}_3$ ;  $\text{Me}_4\text{Si}$ ) 19.5, 56.2, 118.3, 128.4, 128.6, 131.2, 135.3, 163.6.

HRMS (ESI):  $m/z$  ( $\text{M} + \text{H}^+$ ) calcd. for  $\text{C}_{10}\text{H}_{11}\text{N}_2$ , 159.0922, found: 159.0921.



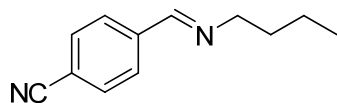
**(E)-N-(4-chlorobenzylidene)butan-1-amine (3g)**, <sup>8</sup> 87 mg, 89% colourless oil

$\delta_{\text{H}}$  (300 MHz;  $\text{CDCl}_3$ ;  $\text{Me}_4\text{Si}$ ) 0.94 (3 H, t,  $J = 7.3$  Hz,  $3 \times \text{CH}_3$ ), 1.31–1.43 (2 H, m,  $2 \times \text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_3$ ), 1.62–1.71 (2 H, m,  $2 \times \text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_3$ ), 3.59 (2 H, td,  $J = 1.2$  Hz, 7.0 Hz,  $2 \times \text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_3$ ), 7.33–7.37 (2 H, m,  $2 \times \text{Ph}$ ), 7.62–7.66 (2 H, m,  $2 \times \text{Ph}$ ), 8.20 (1 H, s,  $\text{N}=\text{CH}$ ).

$\delta_{\text{C}}$  (75 MHz;  $\text{CDCl}_3$ ;  $\text{Me}_4\text{Si}$ ) 13.9, 20.4, 32.9, 61.4, 128.8, 129.2, 134.8, 136.3, 159.4.

HRMS (ESI):  $m/z$  ( $\text{M} + \text{H}^+$ ) calcd. for  $\text{C}_{11}\text{H}_{15}\text{ClN}$ , 196.0893, found: 196.0890.

IR (KBr,  $\text{cm}^{-1}$ ):  $\nu_{\text{C=N}} = 1646$



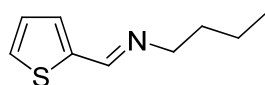
**(E)-4-((butylimino)methyl)benzonitrile (3h)**, <sup>9</sup> 73 mg, 78%) colourless oil

$\delta_{\text{H}}$  (300 MHz;  $\text{CDCl}_3$ ;  $\text{Me}_4\text{Si}$ ) 0.94 (3 H, t,  $J = 7.3$  Hz,  $3 \times \text{CH}_3$ ), 1.32–1.44 (2 H, m,  $2 \times \text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_3$ ), 1.63–1.73 (2 H, m,  $2 \times \text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_3$ ), 3.60 (2 H, td,  $J = 1.2$  Hz, 7.0 Hz,  $2 \times \text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_3$ ), 7.67–7.70 (2 H, m,  $2 \times \text{Ph}$ ), 7.80–7.83 (2 H, m,  $2 \times \text{Ph}$ ), 8.29 (1 H, s, N=CH).

$\delta_{\text{C}}$  (75 MHz;  $\text{CDCl}_3$ ;  $\text{Me}_4\text{Si}$ ) 13.8, 20.4, 32.7, 61.5, 113.6, 118.5, 128.4, 132.3, 140.1, 158.7.

HRMS (ESI):  $m/z$  ( $\text{M} + \text{H}^+$ ) calcd. for  $\text{C}_{12}\text{H}_{15}\text{N}_2$ , 187.1235, found: 187.1233.

IR (KBr,  $\text{cm}^{-1}$ ):  $\nu_{\text{C=N}} = 1647$



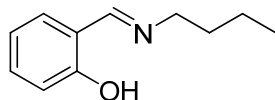
**(E)-N-(thiophen-2-ylmethylene)butan-1-amine (3i)**, <sup>10</sup> 68 mg, 82%) colourless oil

$\delta_{\text{H}}$  (300 MHz;  $\text{CDCl}_3$ ;  $\text{Me}_4\text{Si}$ ) 0.93 (3 H, t,  $J = 7.3$  Hz,  $3 \times \text{CH}_3$ ), 1.30–1.43 (2 H, m,  $2 \times \text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_3$ ), 1.61–1.71 (2 H, m,  $2 \times \text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_3$ ), 3.56 (2 H, t,  $J = 6.9$  Hz,  $2 \times \text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_3$ ), 7.02–7.05 (1 H, m, *thienvl*), 7.25 (1 H, m, *thienvl*), 7.34–7.36 (1 H, m, *thienvl*), 8.33 (1 H, s, N=CH).

$\delta_{\text{C}}$  (75 MHz;  $\text{CDCl}_3$ ;  $\text{Me}_4\text{Si}$ ) 13.8, 20.3, 32.8, 60.9, 127.1, 128.3, 128.9, 142.5, 153.8.

HRMS (ESI):  $m/z$  ( $\text{M} + \text{H}^+$ ) calcd. for  $\text{C}_9\text{H}_{14}\text{NS}$ , 168.0847, found: 168.0840.

IR (KBr,  $\text{cm}^{-1}$ ):  $\nu_{\text{C=N}} = 1635$



**(E)-2-((butylimino)methyl)phenol (3j)**, <sup>11</sup> 75 mg, 85%) yellow oil

$\delta_{\text{H}}$  (300 MHz;  $\text{CDCl}_3$ ;  $\text{Me}_4\text{Si}$ ) 0.94 (3 H, t,  $J = 7.3$  Hz,  $3 \times \text{CH}_3$ ), 1.36–1.49 (2 H, m,  $2 \times \text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_3$ ), 1.63–1.73 (2 H, m,  $2 \times \text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_3$ ), 3.58 (2 H, td,  $J = 1.1$  Hz, 6.8 Hz,  $2 \times \text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_3$ ), 6.84–6.98 (2 H, m,  $2 \times \text{Ph}$ ), 7.22–7.33 (2 H, m,  $2 \times \text{Ph}$ ), 8.32 (1 H, s, N=CH).

$\delta_{\text{C}}$  (75 MHz;  $\text{CDCl}_3$ ;  $\text{Me}_4\text{Si}$ ) 13.7, 20.2, 32.8, 59.1, 116.9, 118.3, 118.7, 130.9, 131.9, 161.3, 164.3.

HRMS (ESI):  $m/z$  ( $\text{M} + \text{H}^+$ ) calcd. for  $\text{C}_{11}\text{H}_{16}\text{NO}$ , 178.1232, found: 178.1233.

IR (KBr,  $\text{cm}^{-1}$ ):  $\nu_{\text{C=N}} = 1633$



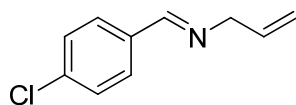
**(E)-N-(2-bromobenzylidene)prop-2-en-1-amine (3k)**, <sup>12</sup> 105 mg, 94%) colourless oil

$\delta_{\text{H}}$  (300 MHz;  $\text{CDCl}_3$ ;  $\text{Me}_4\text{Si}$ ) 4.29–4.31 (2 H, m,  $2 \times \text{CH}_2\text{CH}=\text{CH}_2$ ), 5.16–5.29 (2 H, m,  $2 \times \text{CH}_2\text{CH}=\text{CH}_2$ ), 6.01–6.14 (1 H, m,  $\text{CH}_2\text{CH}=\text{CH}_2$ ), 7.21–7.24 (1 H, m, *Ph*), 7.26–7.35 (1 H, m, *Ph*), 7.53–7.54 (1 H, m, *Ph*), 7.56 (1 H, dd,  $J = 1.8$  Hz, 7.7 Hz, *Ph*), 8.66 (1 H, s, N=CH).

$\delta_{\text{C}}$  (75 MHz;  $\text{CDCl}_3$ ;  $\text{Me}_4\text{Si}$ ) 63.4, 116.2, 124.9, 127.5, 128.7, 131.7, 132.9, 134.4, 135.5, 160.8.

HRMS (ESI):  $m/z$  ( $\text{M} + \text{H}^+$ ) calcd. for  $\text{C}_{10}\text{H}_{11}\text{BrN}$ , 224.0075, found: 224.0071.

IR (KBr,  $\text{cm}^{-1}$ ):  $\nu_{\text{C=N}} = 1637$



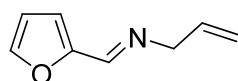
**(E)-N-(4-chlorobenzylidene)prop-2-en-1-amine (3l)**, <sup>13</sup> 82 mg, 92%) colourless oil

$\delta_{\text{H}}$  (300 MHz;  $\text{CDCl}_3$ ;  $\text{Me}_4\text{Si}$ ) 4.23–4.25 (2 H, m,  $2 \times \text{CH}_2\text{CH}=\text{CH}_2$ ), 5.14–5.26 (2 H, m,  $2 \times \text{CH}_2\text{CH}=\text{CH}_2$ ), 5.99–6.12 (1 H, m,  $\text{CH}_2\text{CH}=\text{CH}_2$ ), 7.36–7.39 (2 H, m,  $2 \times \text{Ph}$ ), 7.66–7.69 (2 H, m,  $2 \times \text{Ph}$ ), 8.23 (1 H, s,  $\text{N}=\text{CH}$ ).

$\delta_{\text{C}}$  (75 MHz;  $\text{CDCl}_3$ ;  $\text{Me}_4\text{Si}$ ) 63.4, 116.2, 128.8, 129.3, 134.6, 135.6, 136.6, 160.5.

HRMS (ESI):  $m/z$  ( $\text{M} + \text{H}^+$ ) calcd. for  $\text{C}_{10}\text{H}_{11}\text{ClN}$ , 180.0580, found: 180.0576.

IR (KBr,  $\text{cm}^{-1}$ ):  $\nu_{\text{C=N}} = 1649$



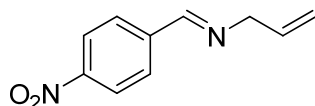
**(E)-N-(furan-2-ylmethylene)prop-2-en-1-amine (3m)**, <sup>14</sup> 63 mg, 93%) yellow oil

$\delta_{\text{H}}$  (300 MHz;  $\text{CDCl}_3$ ;  $\text{Me}_4\text{Si}$ ) 4.19–4.22 (2 H, m,  $2 \times \text{CH}_2\text{CH}=\text{CH}_2$ ), 5.11–5.24 (2 H, m,  $2 \times \text{CH}_2\text{CH}=\text{CH}_2$ ), 5.98–6.11 (1 H, m,  $\text{CH}_2\text{CH}=\text{CH}_2$ ), 6.45–6.47 (1 H, m, *furyl*), 6.74–6.75 (1 H, m, *furyl*), 7.49–7.50 (1 H, m, *furyl*), 8.08 (1 H, s,  $\text{N}=\text{CH}$ )

$\delta_{\text{C}}$  (75 MHz;  $\text{CDCl}_3$ ;  $\text{Me}_4\text{Si}$ ) 63.6, 111.5, 113.9, 116.4, 135.5, 144.7, 150.3, 151.5.

HRMS (ESI):  $m/z$  ( $\text{M} + \text{H}^+$ ) calcd. for  $\text{C}_8\text{H}_{10}\text{NO}$ , 136.0761, found: 136.0761.

IR (KBr,  $\text{cm}^{-1}$ ):  $\nu_{\text{C=N}} = 1648$



**(E)-N-(4-nitrobenzylidene)prop-2-en-1-amine (3n)**, <sup>15</sup> 87 mg, 92%) yellow solid. Mp. 62–63 °C.

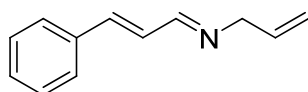
(recrystallized from ethyl acetate and petroleum ether)

$\delta_{\text{H}}$  (300 MHz;  $\text{CDCl}_3$ ;  $\text{Me}_4\text{Si}$ ) 4.25–4.27 (2 H, m,  $2 \times \text{CH}_2\text{CH}=\text{CH}_2$ ), 5.12–5.21 (2 H, m,  $2 \times \text{CH}_2\text{CH}=\text{CH}_2$ ), 5.94–6.05 (1 H, m,  $\text{CH}_2\text{CH}=\text{CH}_2$ ), 7.84–7.87 (2 H, m,  $2 \times \text{Ph}$ ), 8.19–8.22 (2 H, m,  $2 \times \text{Ph}$ ), 8.32 (1 H, s,  $\text{N}=\text{CH}$ ).

$\delta_{\text{C}}$  (75 MHz;  $\text{CDCl}_3$ ;  $\text{Me}_4\text{Si}$ ) 63.7, 116.8, 123.9, 128.3, 135.1, 141.6, 149.5, 159.6.

HRMS (ESI):  $m/z$  ( $\text{M} + \text{H}^+$ ) calcd. for  $\text{C}_{10}\text{H}_{11}\text{N}_2\text{O}_2$ , 191.0821, found: 191.0819.

IR (KBr,  $\text{cm}^{-1}$ ):  $\nu_{\text{C=N}} = 1645$



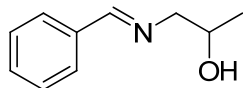
**(E)-N-((E)-3-phenylallylidene)prop-2-en-1-amine (3o)**, <sup>16</sup> 76 mg, 89%) yellow oil

$\delta_{\text{H}}$  (300 MHz;  $\text{CDCl}_3$ ;  $\text{Me}_4\text{Si}$ ) 4.13–4.18 (2 H, m,  $2 \times \text{CH}_2\text{CH}=\text{CH}_2$ ), 5.12–5.25 (2 H, m,  $2 \times \text{CH}_2\text{CH}=\text{CH}_2$ ), 5.96–6.09 (1 H, m,  $\text{CH}_2\text{CH}=\text{CH}_2$ ), 6.93–6.95 (2 H, m,  $\text{CH}=\text{CHCH}=\text{N}$  and  $\text{CH}=\text{CHCH}=\text{N}$ ), 7.30–7.38 (3 H, m,  $3 \times \text{Ph}$ ), 7.45–7.49 (2 H, m,  $2 \times \text{Ph}$ ), 8.00–8.04 (1 H, m,  $\text{N}=\text{CH}$ ).

$\delta_{\text{C}}$  (75 MHz;  $\text{CDCl}_3$ ;  $\text{Me}_4\text{Si}$ ) 63.3, 115.9, 127.1, 128.0, 128.7, 129.0, 135.5, 135.6, 141.7, 163.4.

HRMS (ESI):  $m/z$  ( $\text{M} + \text{H}^+$ ) calcd. for  $\text{C}_{12}\text{H}_{14}\text{N}$ , 172.1126, found: 172.1124.

IR (KBr,  $\text{cm}^{-1}$ ):  $\nu_{\text{C=N}} = 1636$



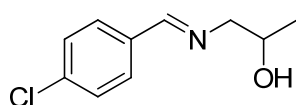
**(E)-1-(benzylideneamino)propan-2-ol (5a,** <sup>17</sup> 283 mg, 87%) white solid. Mp.74°C. (recrystallized from ethyl acetate and petroleum ether)

$\delta_{\text{H}}$  (300 MHz;  $\text{CDCl}_3$ ;  $\text{Me}_4\text{Si}$ ) 1.28 (3 H, d,  $J = 6.3$  Hz,  $3 \times \text{CH}_3$ ), 2.05 (1 H, br,  $1 \times \text{OH}$ ), 3.49 (1 H, ddd,  $J = 12.1$  Hz, 7.9 Hz, 1.0 Hz,  $\text{CH}_2\text{CHOH}$ ), 3.72 (1 H, ddd,  $J = 12.1$  Hz, 3.6 Hz, 1.2 Hz,  $\text{CH}_2\text{CHOH}$ ), 4.04–4.14 (1 H, m,  $\text{CH}_2\text{CHOH}$ ), 7.40–7.44 (3 H, m,  $3 \times \text{Ph}$ ), 7.73–7.76 (2 H, m,  $2 \times \text{Ph}$ ), 8.34 (1 H, s,  $\text{N}=\text{CH}$ ). 8.38 (1 H, s,  $\text{N}=\text{CH}$ , **5a'**).

$\delta_{\text{C}}$  (75 MHz;  $\text{CDCl}_3$ ;  $\text{Me}_4\text{Si}$ ) 20.5, 66.9, 68.5, 127.9, 128.2, 130.5, 135.5, 162.6.

HRMS (ESI):  $m/z$  ( $\text{M} + \text{H}^+$ ) calcd. for  $\text{C}_{10}\text{H}_{14}\text{NO}$ , 164.1075, found: 164.1067.

IR (KBr,  $\text{cm}^{-1}$ ):  $\nu_{\text{C}=\text{N}} = 1645$



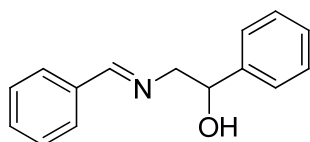
**(E)-1-(4-chlorobenzylideneamino)propan-2-ol (5b,** 319 mg, 81%) white solid. Mp.53–54 °C (recrystallized from ethyl acetate and petroleum ether)

$\delta_{\text{H}}$  (300 MHz;  $\text{CDCl}_3$ ;  $\text{Me}_4\text{Si}$ ) 1.27 (3 H, d,  $J = 6.3$  Hz,  $3 \times \text{CH}_3$ ), 2.59 (1 H, br,  $1 \times \text{OH}$ ), 3.47 (1 H, ddd,  $J = 12.3$  Hz, 8.0 Hz, 1.1 Hz,  $\text{CH}_2\text{CHOH}$ ), 3.69 (1 H, ddd,  $J = 12.3$  Hz, 3.4 Hz, 1.2 Hz,  $\text{CH}_2\text{CHOH}$ ), 4.05–4.13 (1 H, m,  $\text{CH}_2\text{CHOH}$ ), 7.37–7.40 (2 H, m,  $2 \times \text{Ph}$ ), 7.65–7.68 (2 H, m,  $2 \times \text{Ph}$ ), 8.27 (1 H, s,  $\text{N}=\text{CH}$ ), 8.43 (1 H, s,  $\text{N}=\text{CH}$ , **5b'**).

$\delta_{\text{C}}$  (75 MHz;  $\text{CDCl}_3$ ;  $\text{Me}_4\text{Si}$ ) 20.9, 67.0, 68.8, 123.7, 128.8, 141.3, 148.8, 160.4.

HRMS (ESI):  $m/z$  ( $\text{M} + \text{H}^+$ ) calcd. for  $\text{C}_{10}\text{H}_{13}\text{ClNO}$ , 198.0686, found: 198.0685

IR (KBr,  $\text{cm}^{-1}$ ):  $\nu_{\text{C}=\text{N}} = 1649$



**(E)-2-(benzylideneamino)-1-phenylethanol (5c,** <sup>18</sup> 292 mg, 65%) white solid. Mp.114 °C . (recrystallized from ethyl acetate and petroleum ether, reported Mp. from the following ref.: 114.5 °C).

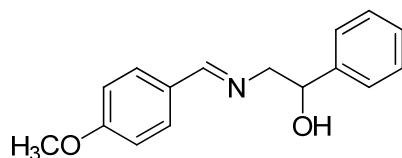
$\delta_{\text{H}}$  (300 MHz;  $\text{CDCl}_3$ ;  $\text{Me}_4\text{Si}$ ) 3.17 (1 H, s,  $1 \times \text{OH}$ ), 3.73 (1 H, ddd,  $J = 12.4$  Hz, 9.0 Hz, 1.0 Hz,  $\text{CH}_2\text{CHOH}$ ), 3.93 (1 H, ddd,  $J = 12.4$  Hz, 3.3 Hz, 1.2 Hz,  $\text{CH}_2\text{CHOH}$ ), 5.03 (1 H, d,  $J = 7.1$  Hz,  $\text{CH}_2\text{CHOH}$ ), 7.30–7.47 (8 H, m,  $8 \times \text{Ph}$ ), 7.74–7.78 (2 H, m,  $2 \times \text{Ph}$ ), 8.33 (1 H, s,  $\text{N}=\text{CH}$ ).

$\delta_{\text{C}}$  (75 MHz;  $\text{CDCl}_3$ ;  $\text{Me}_4\text{Si}$ ) 68.9, 73.7, 126.1, 127.7, 128.3, 128.4, 128.7, 131.0, 135.8, 142.0, 163.3.

HRMS (ESI):  $m/z$  ( $\text{M} + \text{H}^+$ ) calcd. for  $\text{C}_{15}\text{H}_{16}\text{NO}$ , 226.1232, found: 226.1223.

**5c'**  $\delta_{\text{H}}$  (300 MHz;  $\text{CDCl}_3$ ;  $\text{Me}_4\text{Si}$ ) 3.88–4.97 (2 H, m,  $\text{CH}_2\text{CHOH}$ ), 4.50 (1 H, d,  $J = 4.6$  Hz, 8.3 Hz,  $\text{CH}_2\text{CHOH}$ ), 7.34–7.78(m,  $10 \times \text{Ph}$ ), 8.40 (1 H, s,  $\text{N}=\text{CH}$ ).

IR (KBr,  $\text{cm}^{-1}$ ):  $\nu_{\text{C}=\text{N}} = 1647$



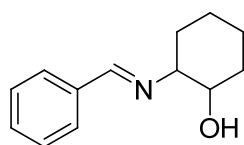
**(E)-2-(4-methoxybenzylideneamino)-1-phenylethanol (5d,** <sup>19</sup> 326 mg, 64%) white solid. Mp. 115 °C. (recrystallized from ethyl acetate and petroleum ether)

$\delta_{\text{H}}$  (300 MHz;  $\text{CDCl}_3$ ;  $\text{Me}_4\text{Si}$ ) 3.67 (1 H, ddd,  $J = 12.9$  Hz, 9.0 Hz, 1.2 Hz,  $\text{CH}_2\text{CHOH}$ ), 3.85 (3H, s,  $\text{OCH}_3$ ), 3.89 (1 H, ddd,  $J = 12.6$  Hz, 3.6 Hz, 1.5 Hz,  $\text{CH}_2\text{CHOH}$ ), 5.02 (1 H, dd,  $J = 3.3$  Hz, 9.1 Hz,  $\text{CH}_2\text{CHOH}$ ), 4.45 (1 H, dd,  $J = 4.0$  Hz, 8.6 Hz,  $\text{CH}_2\text{CHOH}$ , **5d'**), 6.92–6.95 (2 H, m,  $2 \times Ph$ ), 7.29–7.46 (5 H, m,  $5 \times Ph$ ), 7.68–7.71 (2 H, m,  $2 \times Ph$ ), 8.26 (1 H, s,  $\text{N}=\text{CH}$ ), 8.31 (1 H, s,  $\text{N}=\text{CH}$ , **5d'**).

$\delta_{\text{C}}$  (75 MHz;  $\text{CDCl}_3$ ;  $\text{Me}_4\text{Si}$ ) 55.4, 68.9, 73.7, 114.1, 126.1, 127.6, 128.4, 129.9, 141.1, 161.9, 162.6.

HRMS (ESI):  $m/z$  ( $\text{M} + \text{H}^+$ ) calcd. for  $\text{C}_{16}\text{H}_{18}\text{NO}_2$ , 256.1338, found: 256.1333.

IR (KBr,  $\text{cm}^{-1}$ ):  $\nu_{\text{C}=\text{N}} = 1661$



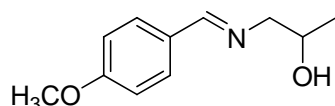
**(E)-2-(benzylideneamino)cyclohexanol (5e,** <sup>20</sup> 365 mg, 90%) white solid Mp. 90 °C (recrystallized from ethyl acetate and petroleum ether, reported Mp. from the following ref.: 90–92 °C)

$\delta_{\text{H}}$  (300 MHz;  $\text{CDCl}_3$ ;  $\text{Me}_4\text{Si}$ ) 1.33–2.11 (8 H, m,  $8 \times \text{CH}_2$ ), 2.31 (1 H, br,  $1 \times \text{OH}$ ), 2.98–3.06 (1 H, m,  $\text{NCHCHOH}$ ), 3.69–3.77 (1 H, m,  $\text{NCHCHOH}$ ), 7.38–7.42 (3 H, m,  $3 \times Ph$ ), 7.70–7.74 (2 H, m,  $2 \times Ph$ ), 8.34 (1 H, s,  $\text{N}=\text{CH}$ ).

$\delta_{\text{C}}$  (75 MHz;  $\text{CDCl}_3$ ;  $\text{Me}_4\text{Si}$ ) 23.9, 24.1, 32.3, 32.5, 72.4, 76.3, 127.9, 128.0, 130.0, 135.3, 161.3.

HRMS (ESI):  $m/z$  ( $\text{M} + \text{H}^+$ ) calcd. for  $\text{C}_{13}\text{H}_{18}\text{NO}$ , 204.1388, found: 204.1383.

IR (KBr,  $\text{cm}^{-1}$ ):  $\nu_{\text{C}=\text{N}} = 1644$

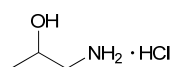


**(E)-1-(4-methoxybenzylideneamino)propan-2-ol (5f,** <sup>21</sup> 355 mg (a yellow oil, crude product), 92% yield as determined by <sup>1</sup>H NMR (internal standard: nitrobenzene))

$\delta_{\text{H}}$  (300 MHz;  $\text{CDCl}_3$ ;  $\text{Me}_4\text{Si}$ ) 1.15 (3 H, d,  $J = 6.3$  Hz,  $3 \times \text{CH}_3$ ), 3.35 (1 H, ddd,  $J = 12.0$  Hz, 7.8 Hz, 1.0 Hz,  $\text{CH}_2\text{CHOH}$ ), 3.53 (1 H, ddd,  $J = 12.0$  Hz, 3.9 Hz, 1.5 Hz,  $\text{CH}_2\text{CHOH}$ ), 3.93–4.05 (1 H, m,  $\text{CH}_2\text{CHOH}$ ), 6.77–6.80 (2 H, m,  $2 \times Ph$ ), 7.52–7.54 (2 H, m,  $2 \times Ph$ ), 8.04 (1 H, s,  $\text{N}=\text{CH}$ ), 8.08 (1 H, s,  $\text{N}=\text{CH}$ , **5f'**)

$\delta_{\text{C}}$  (75 MHz;  $\text{CDCl}_3$ ;  $\text{Me}_4\text{Si}$ ) 20.5, 55.4, 67.6, 68.4, 114.0, 128.9, 129.7, 161.8, 162.0.

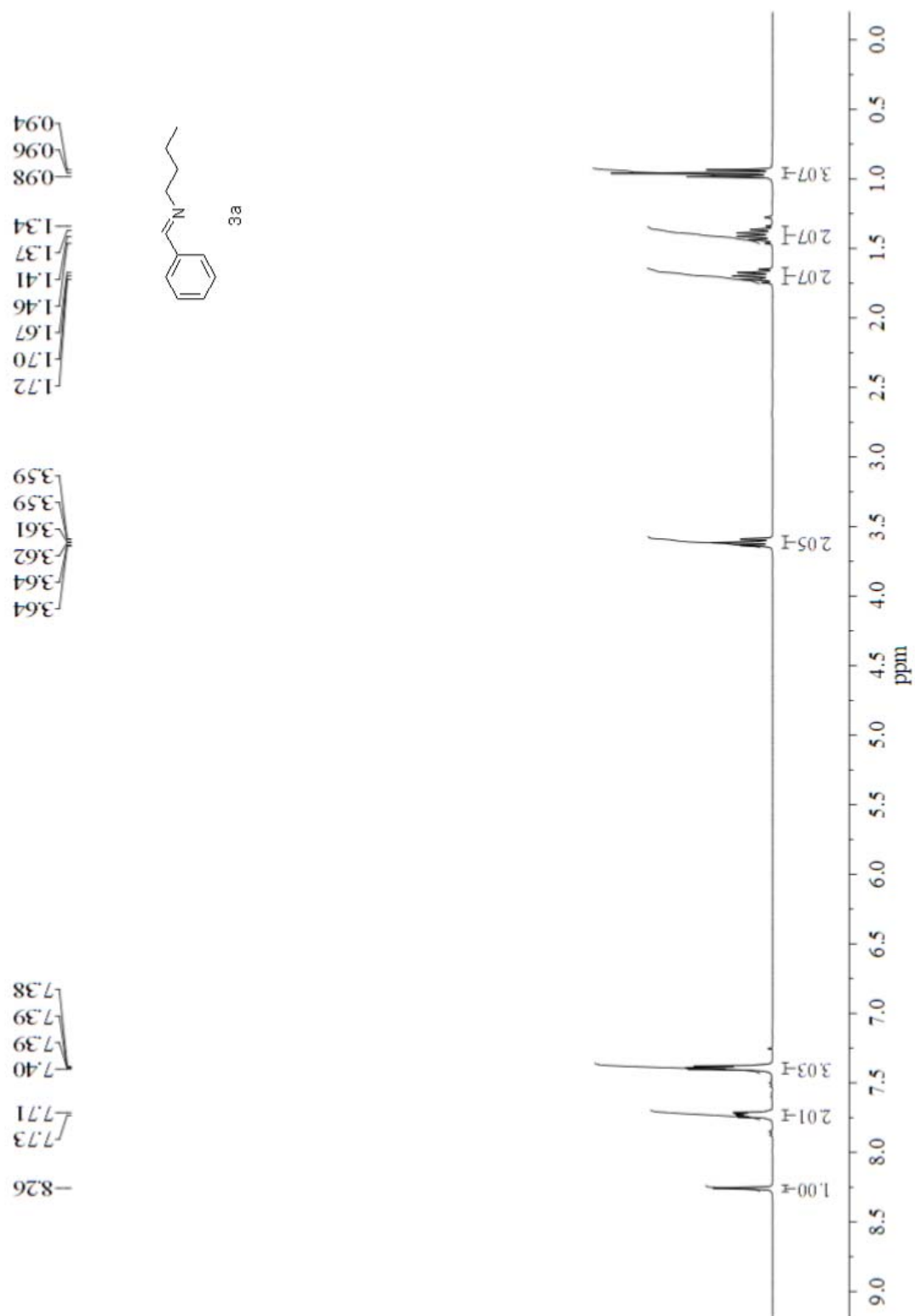
HRMS (ESI):  $m/z$  ( $\text{M} + \text{H}^+$ ) calcd. for  $\text{C}_{11}\text{H}_{16}\text{NO}_2$ , 194.1181, found: 194.1176.

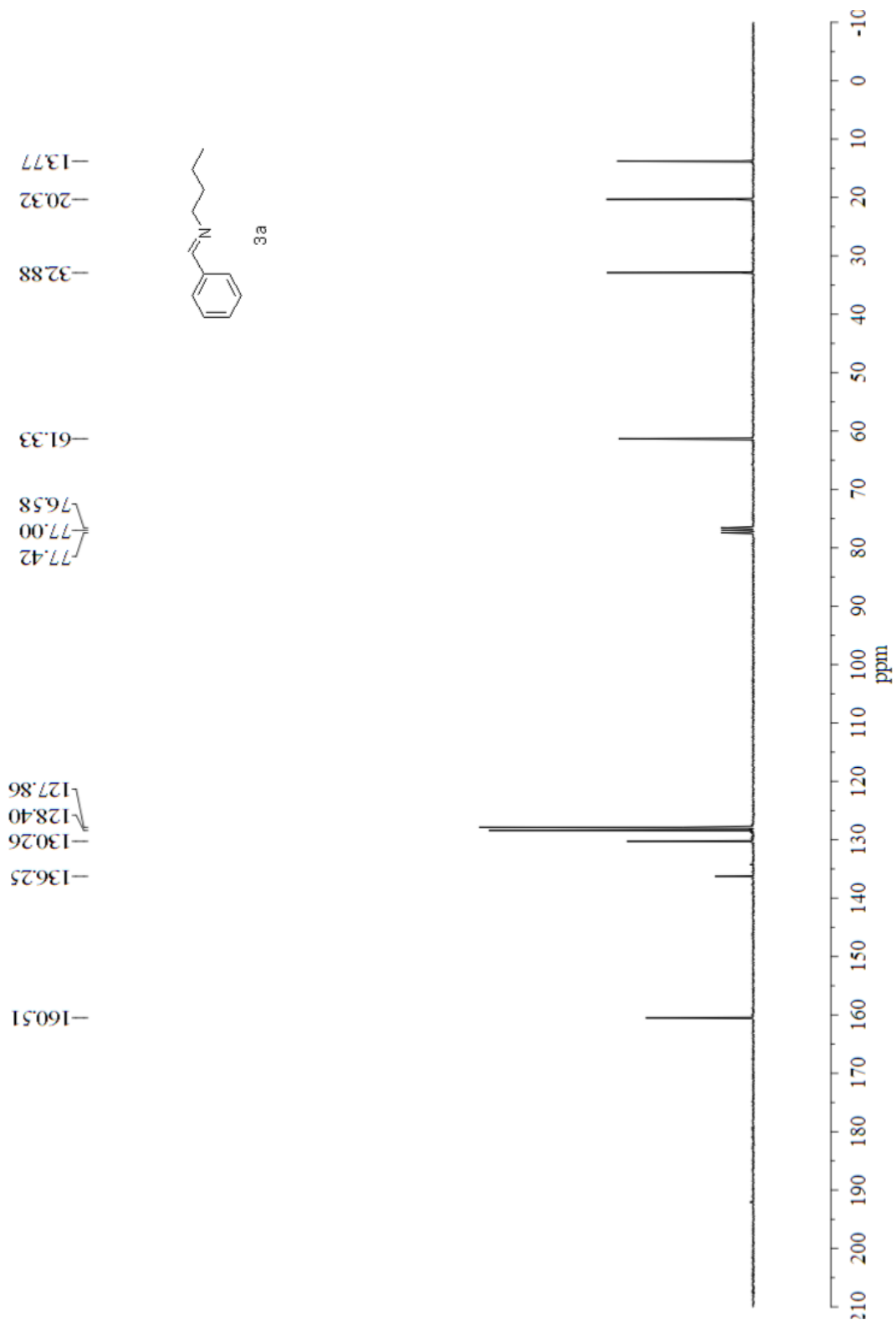


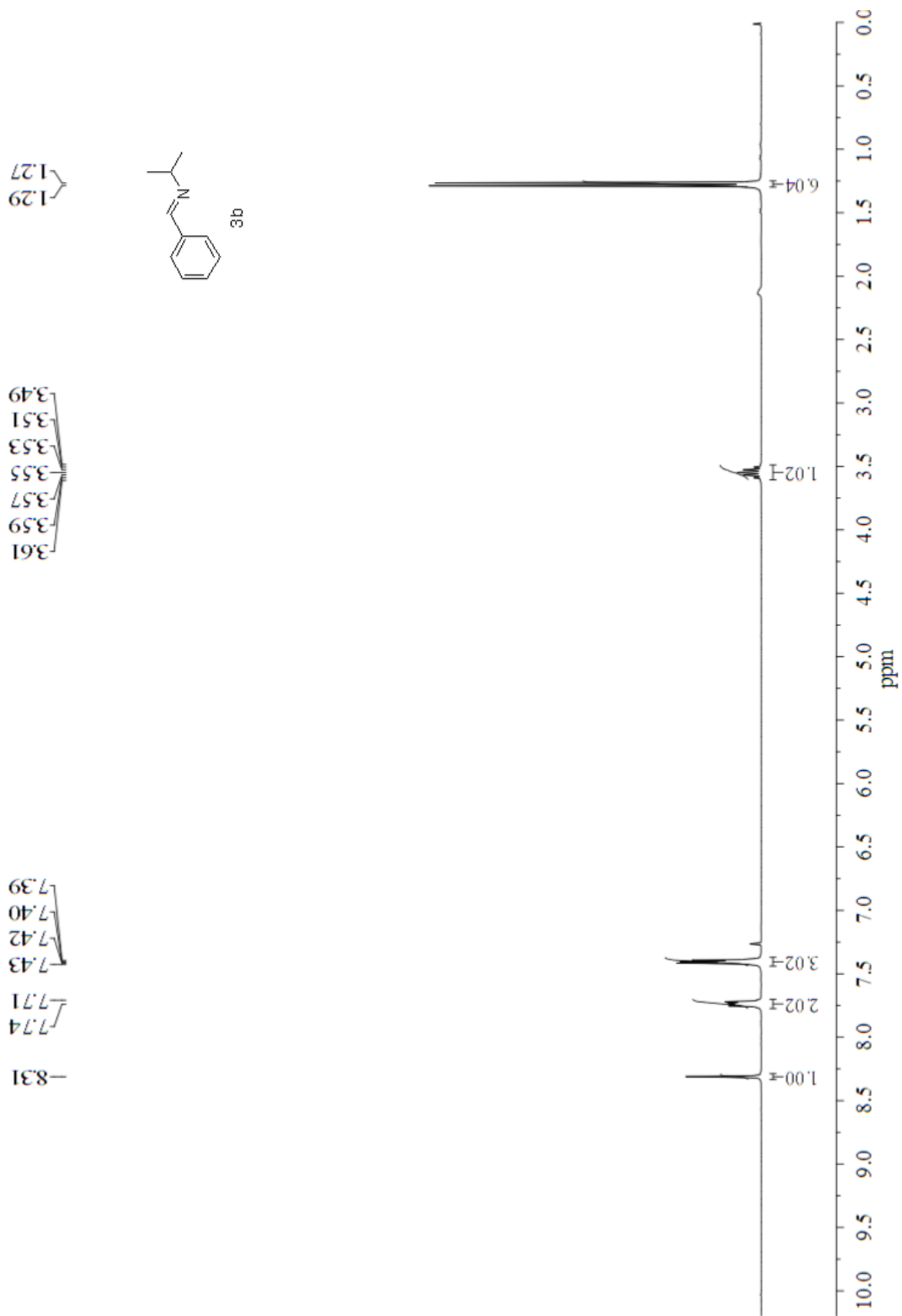
**1-aminopropan-2-ol hydrochloride (10** <sup>22</sup>)

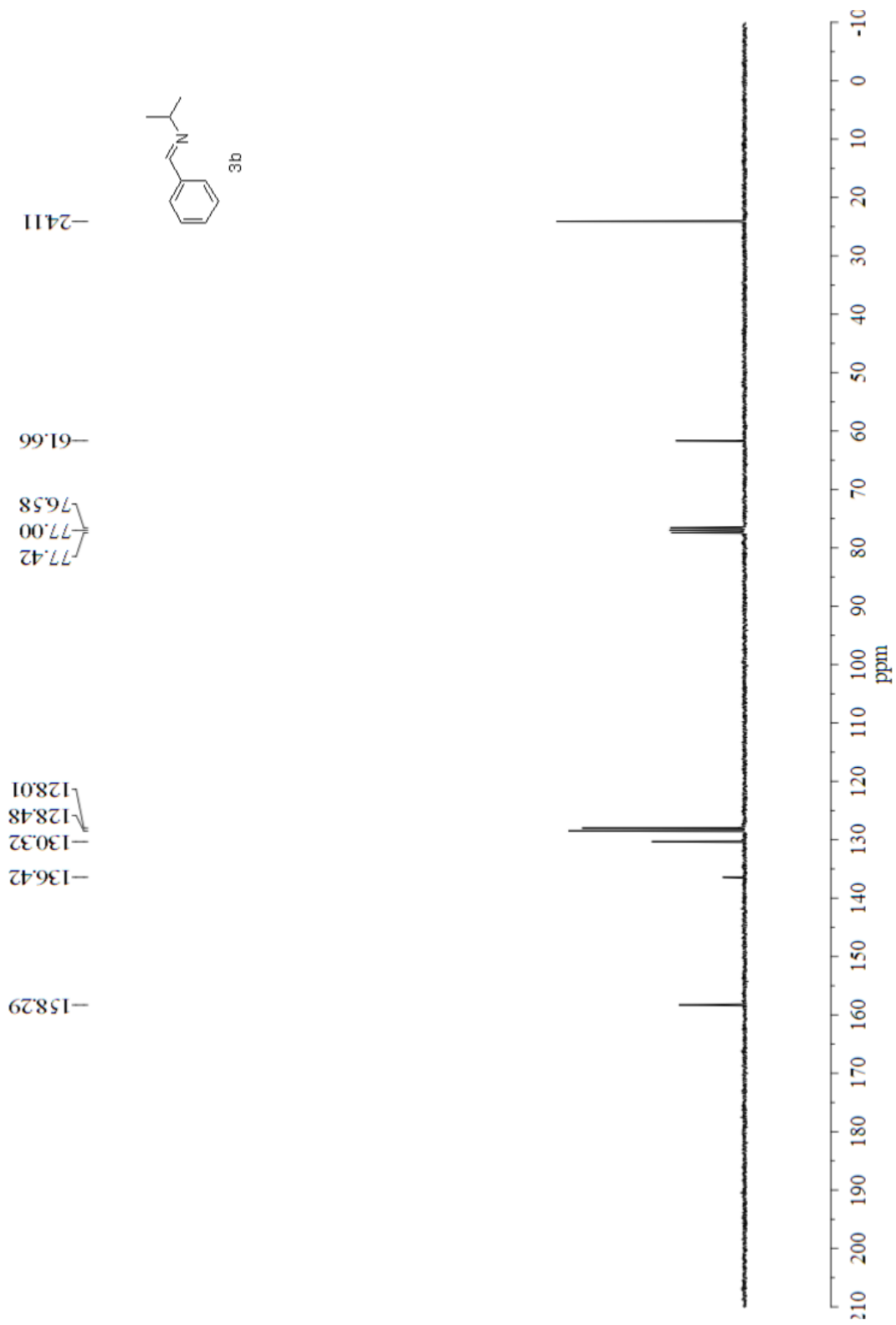
$\delta_{\text{H}}$  (300 MHz;  $\text{D}_2\text{O}$ ;  $\text{Me}_4\text{Si}$ ) 1.21–1.23 (3 H, d,  $J = 6.4$  Hz,  $3 \times \text{CH}_3$ ), 2.82–2.90 (1 H, m,  $\text{CHCH}_2\text{NH}_2$ ), 3.08 (1 H, dd,  $J = 13.1$  Hz, 2.7 Hz,  $\text{CHCH}_2\text{NH}_2$ ), 3.97–4.06 (1 H, m,  $\text{CHCH}_2\text{NH}_2$ )

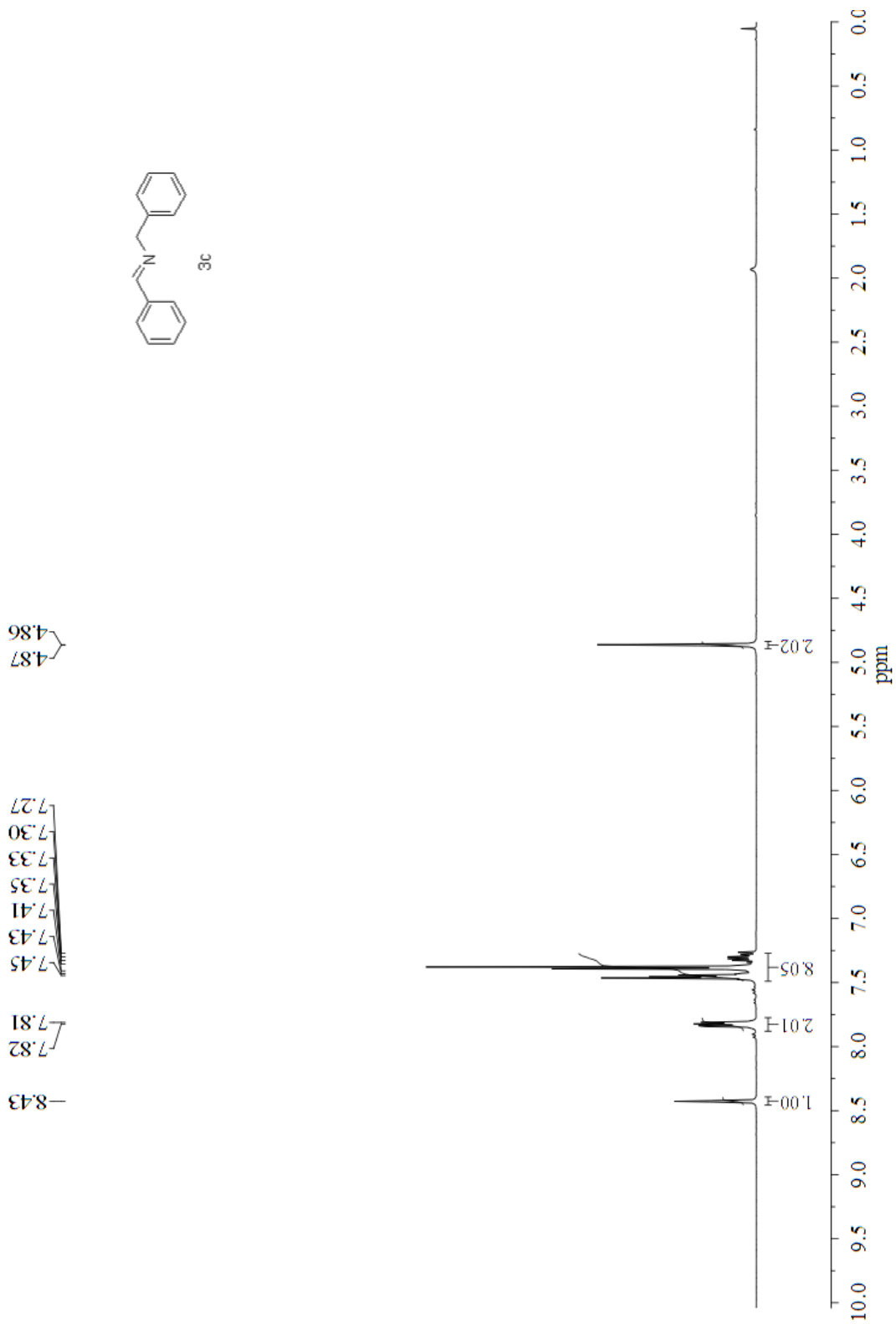
Copies of NMR spectra of products

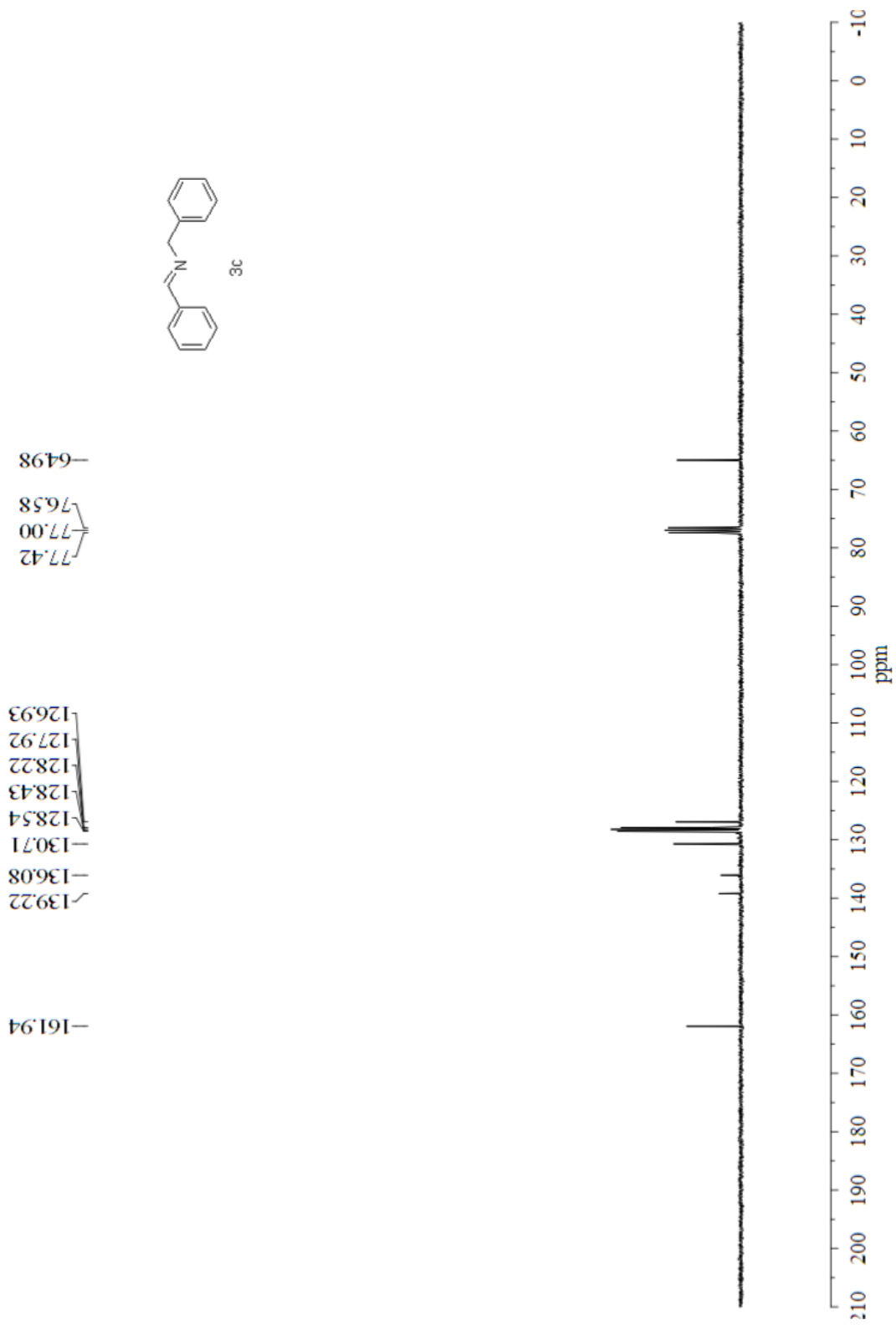


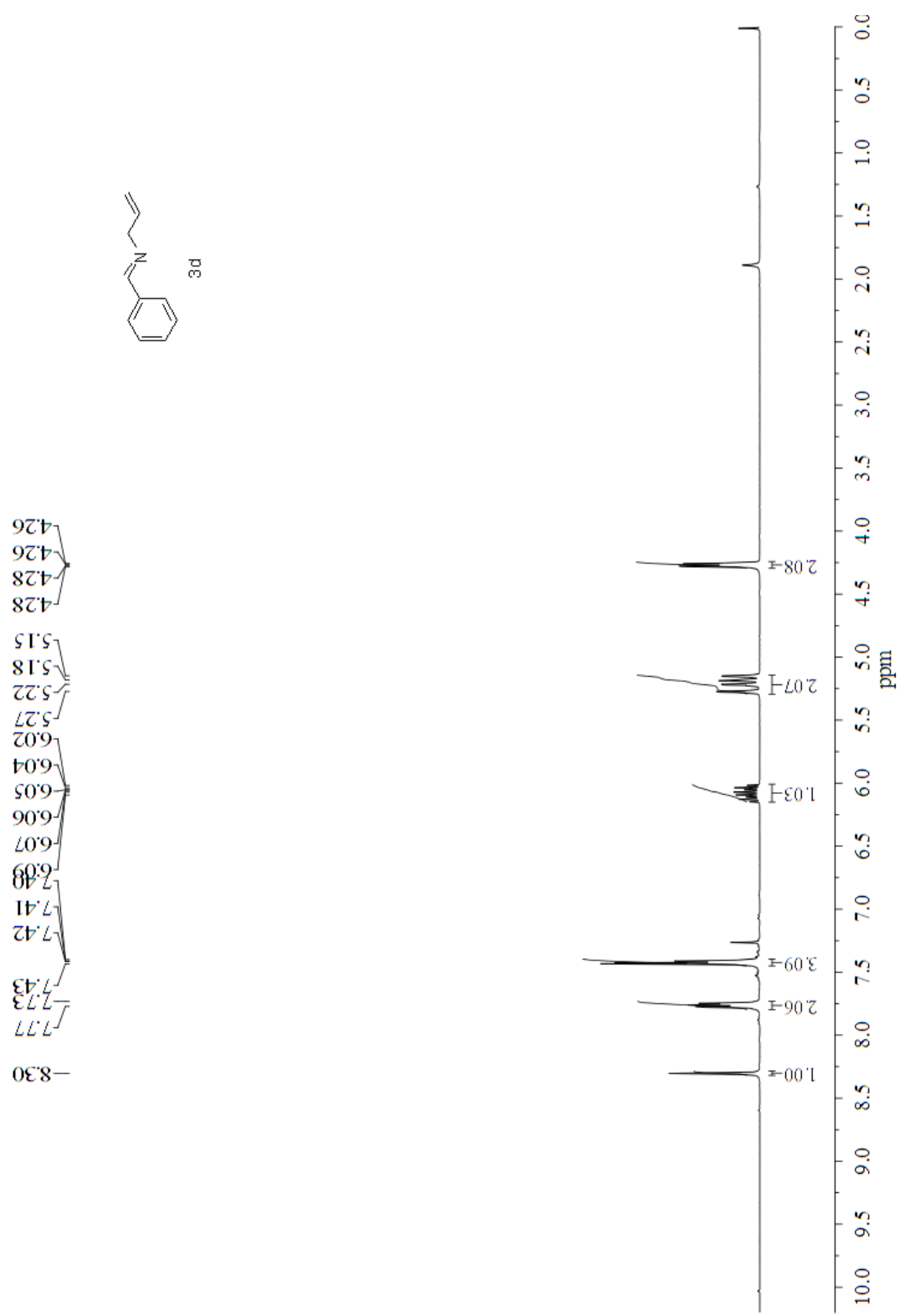


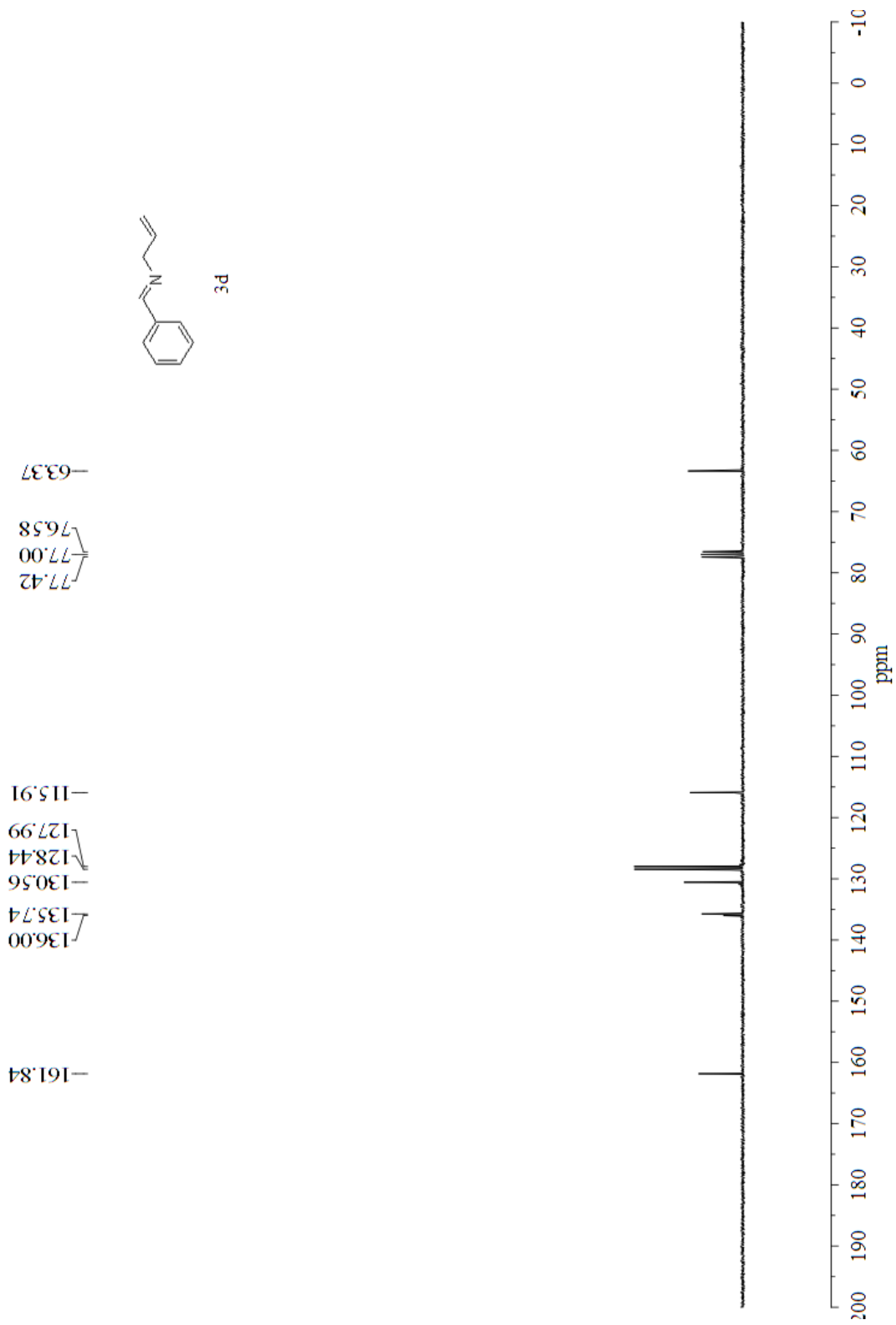


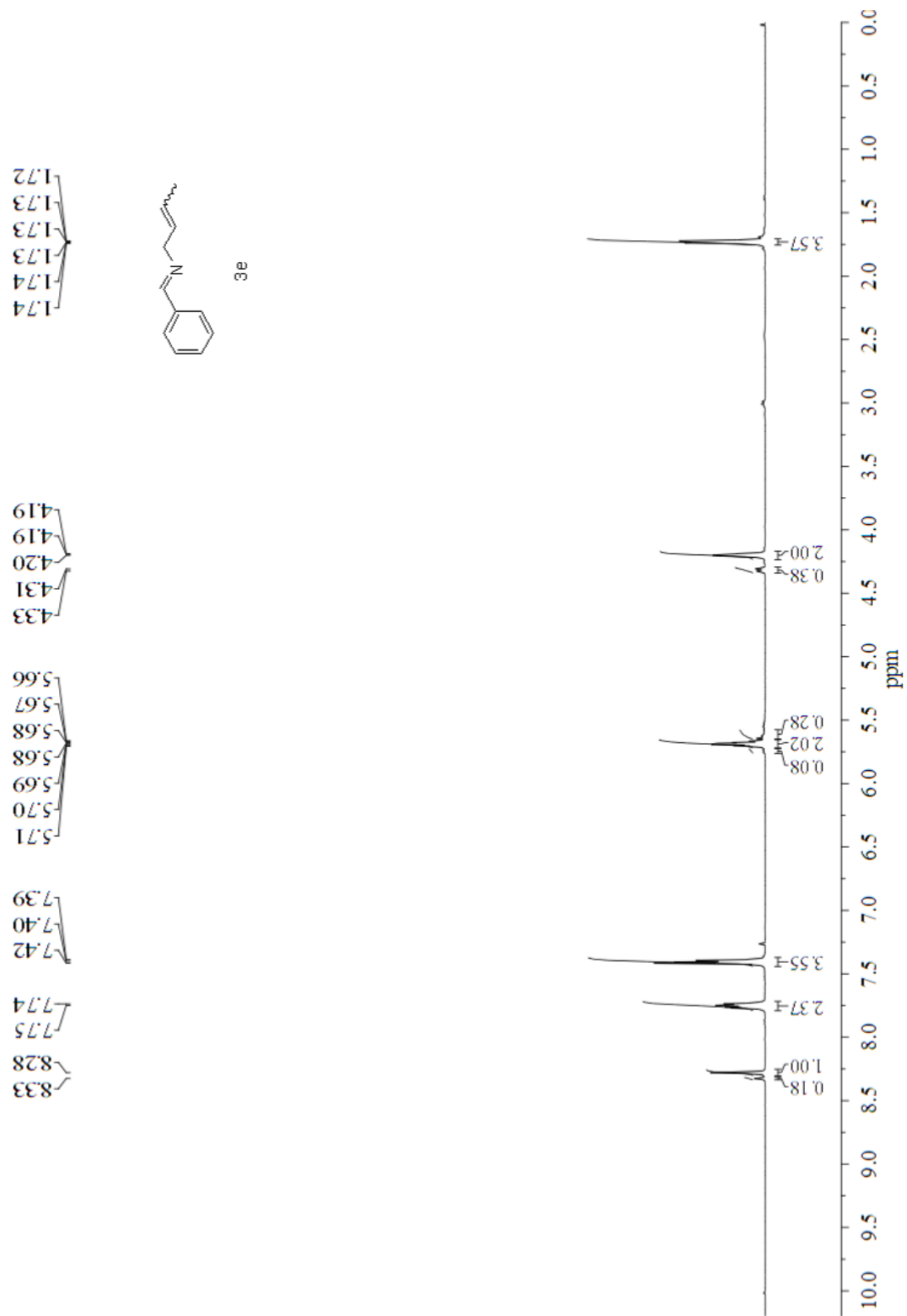


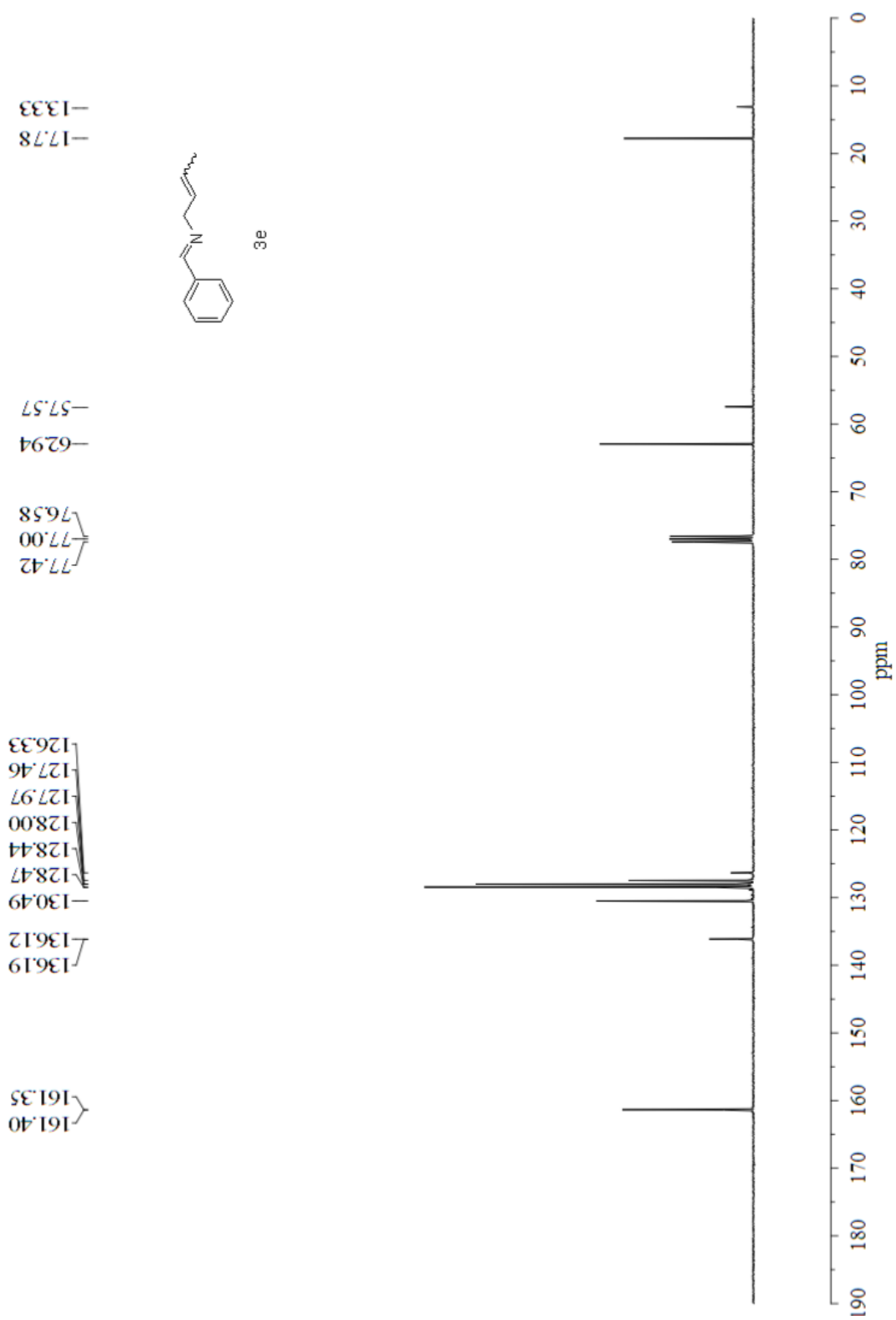


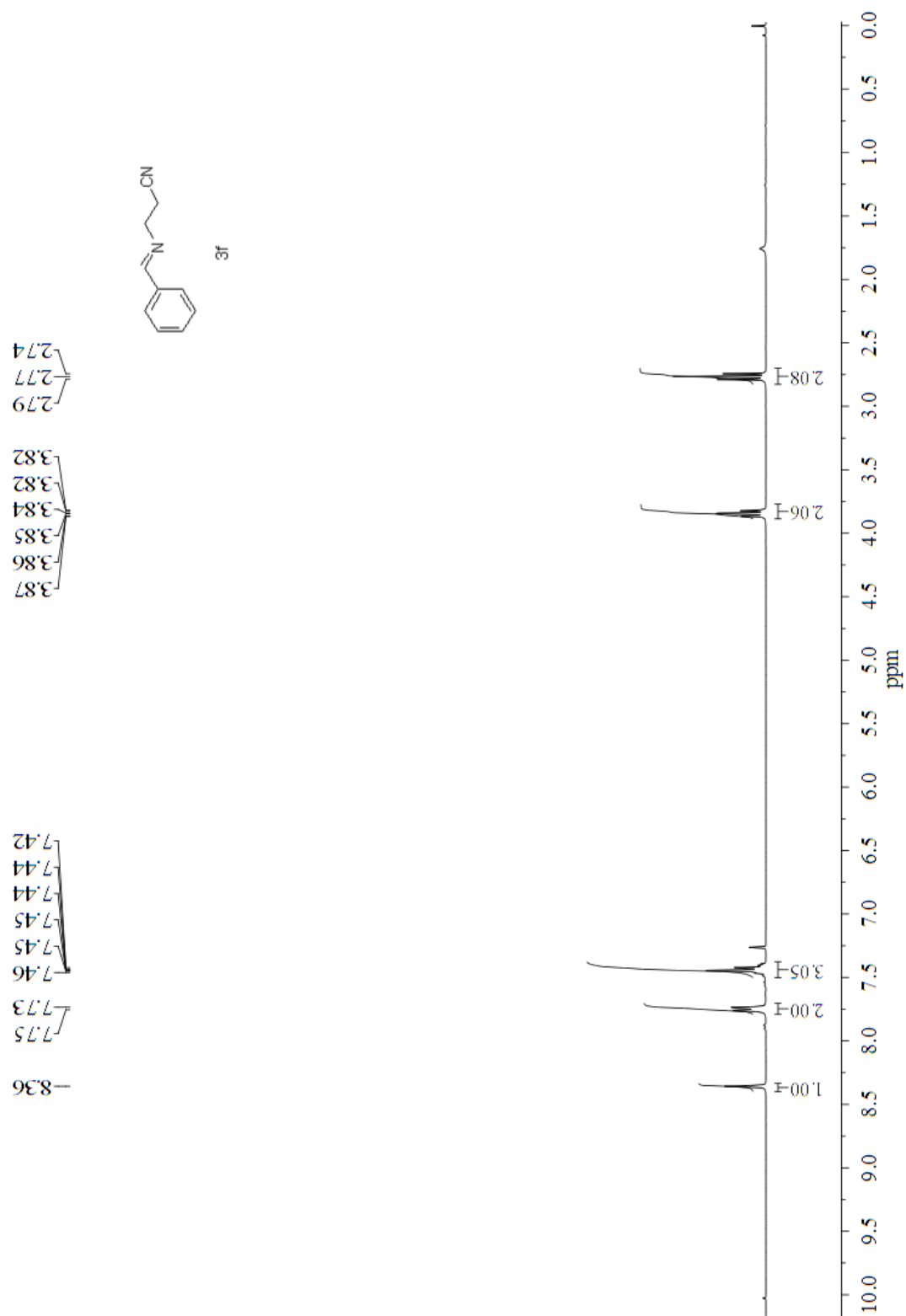


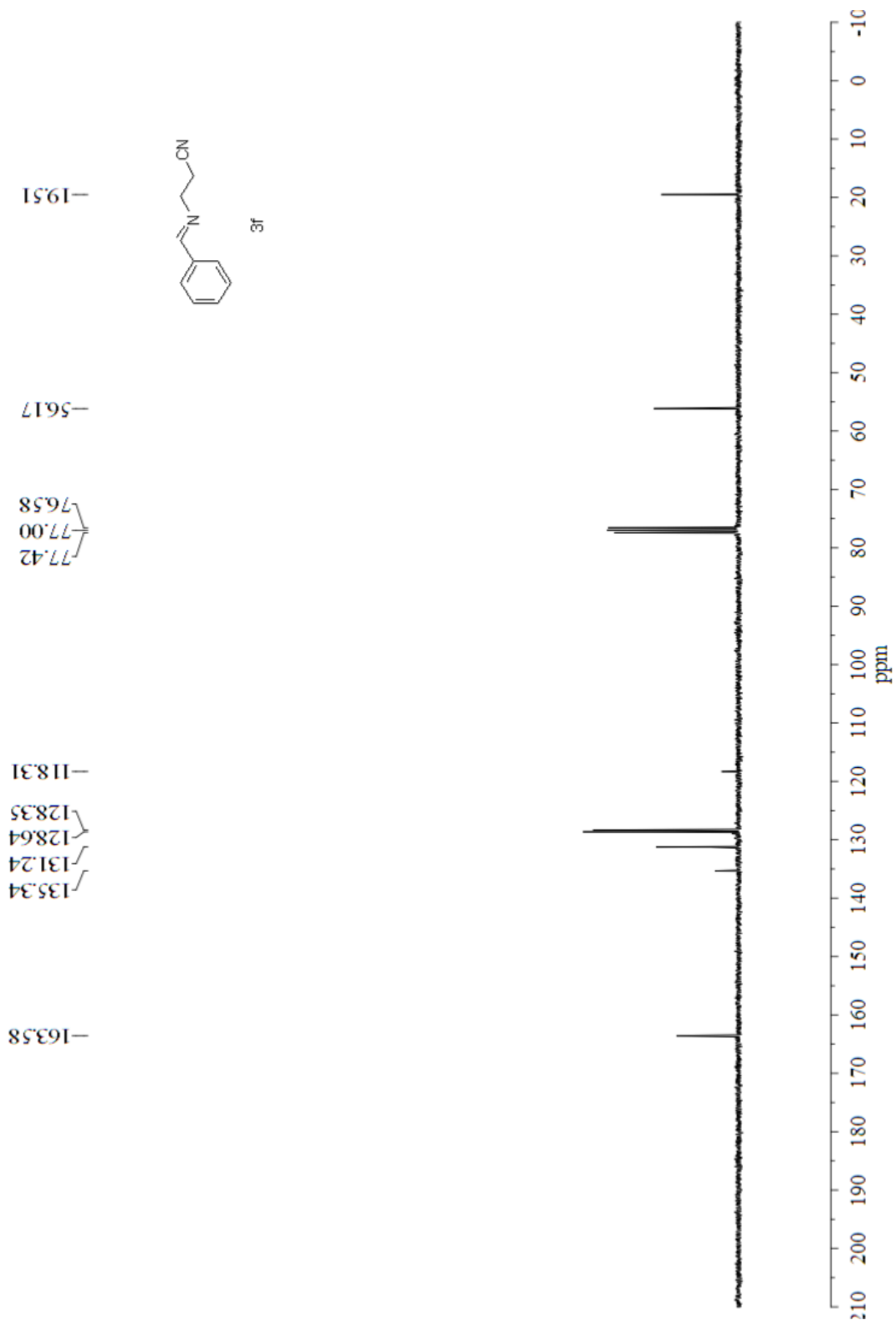


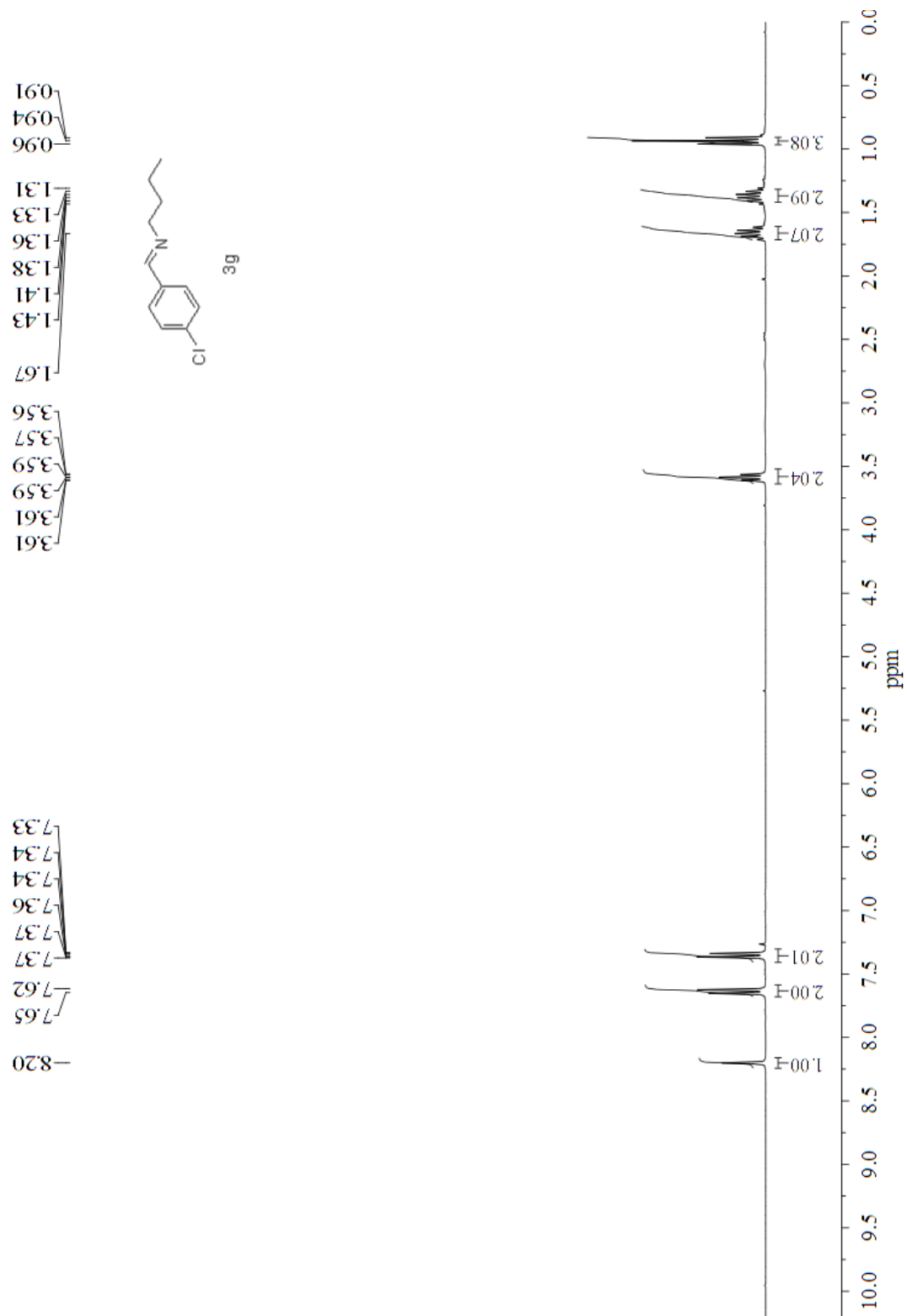


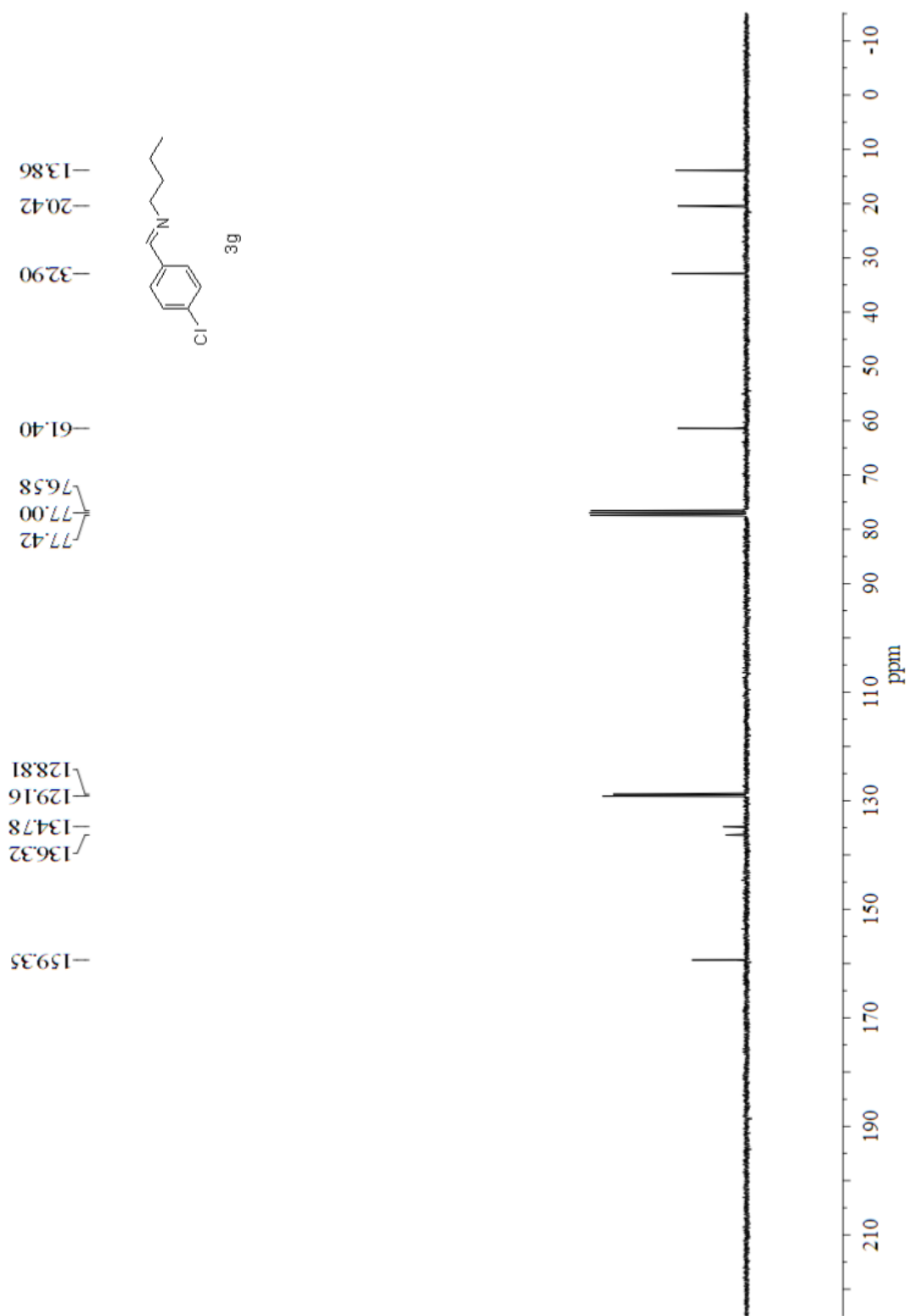


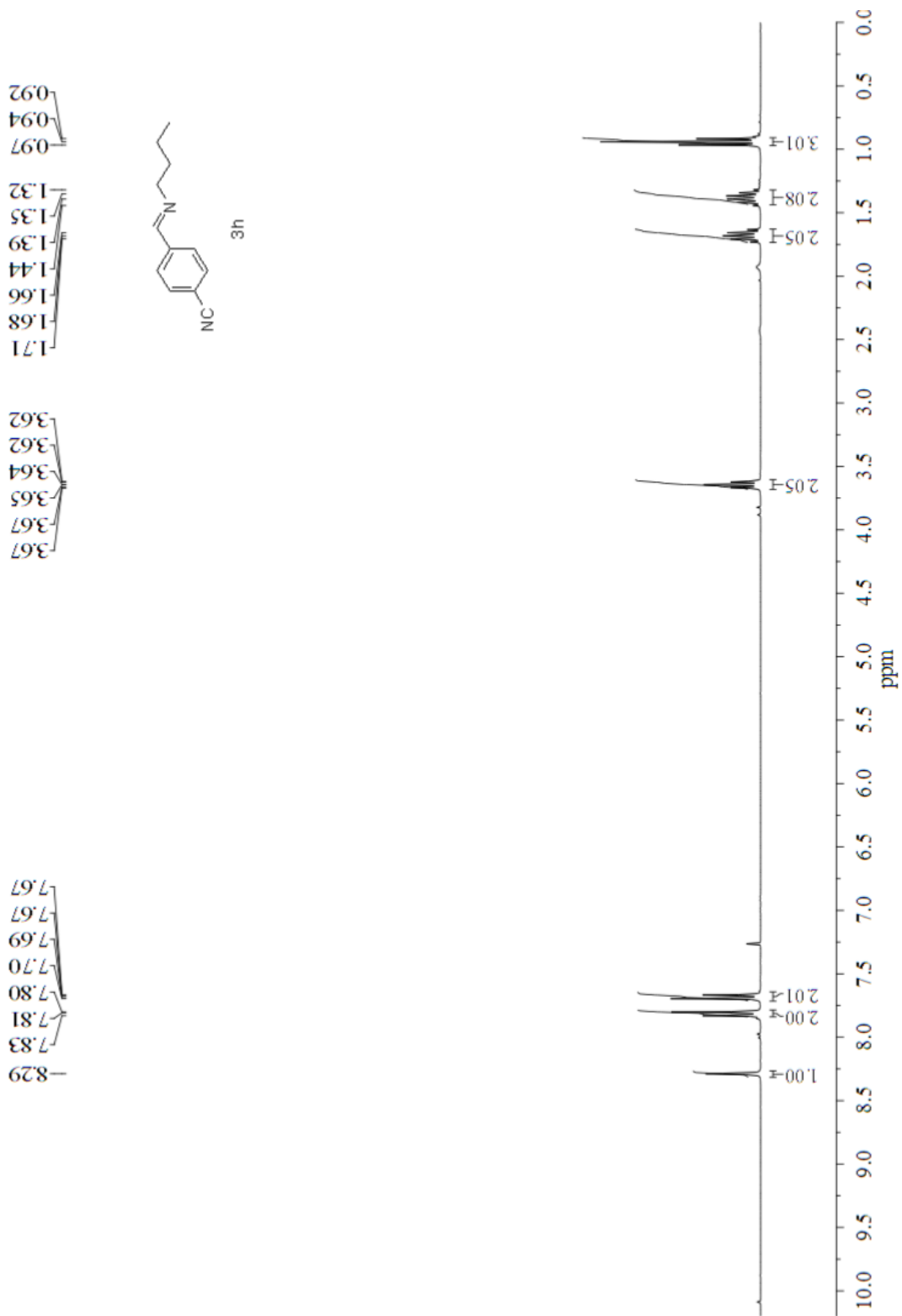


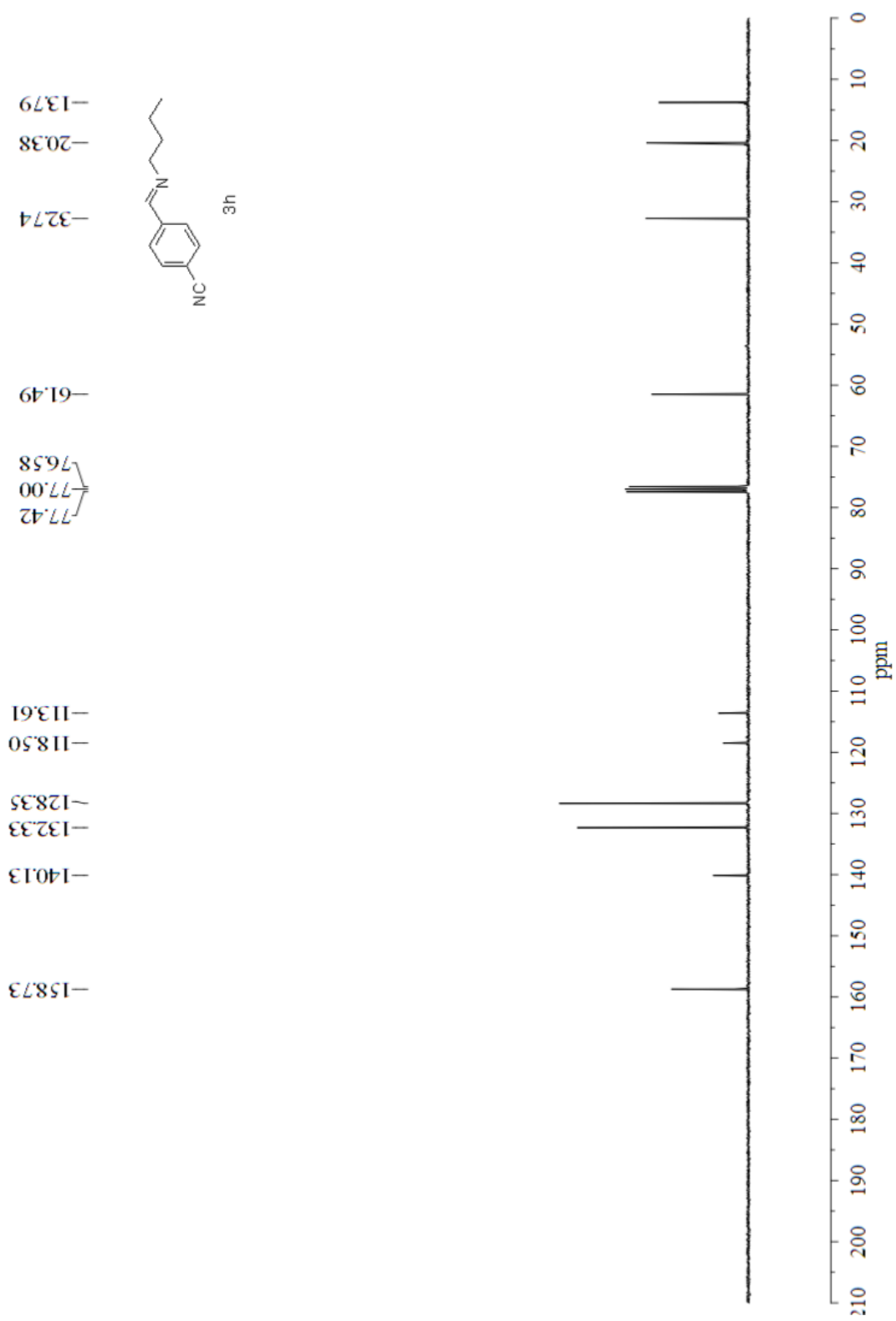


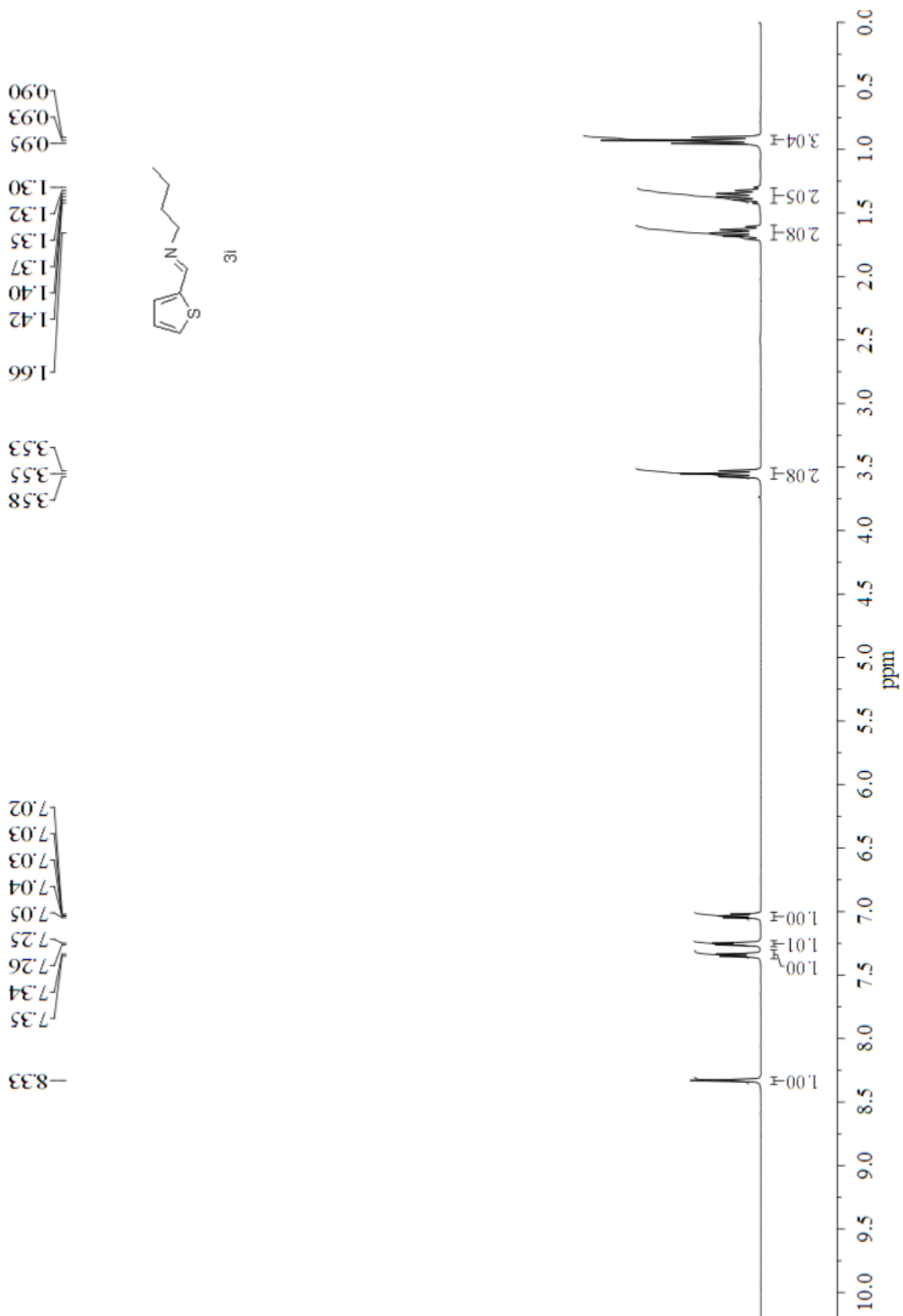


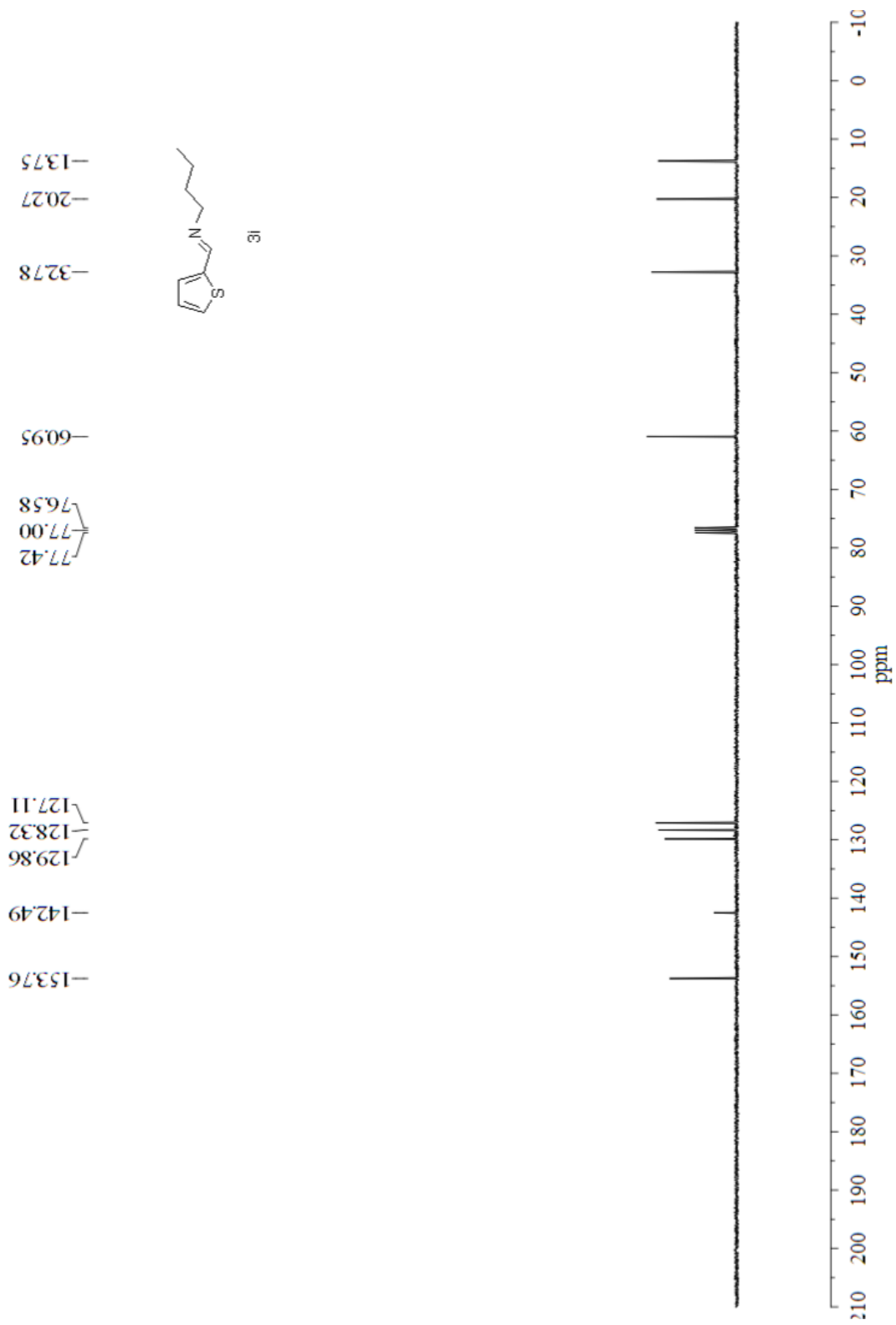


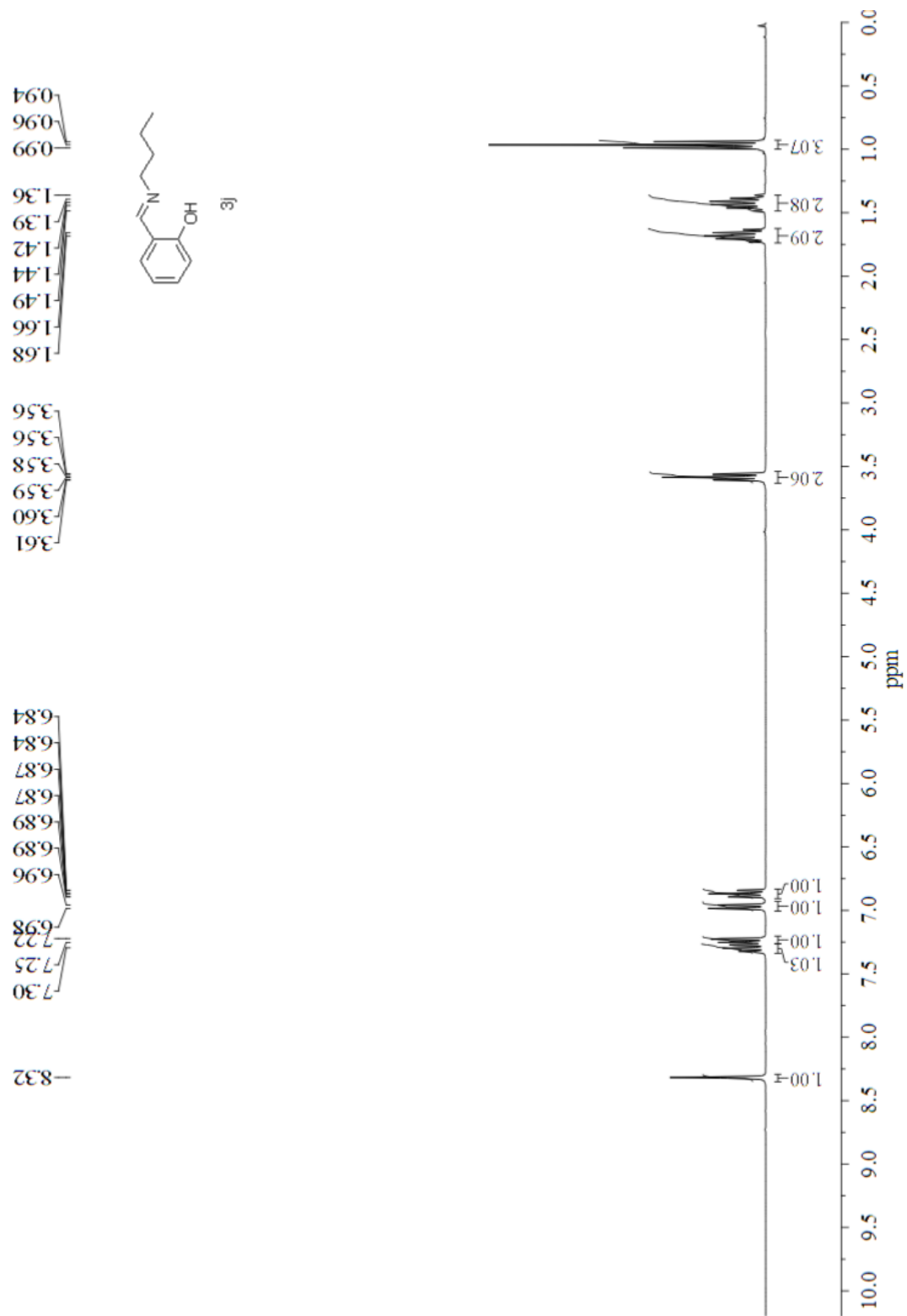


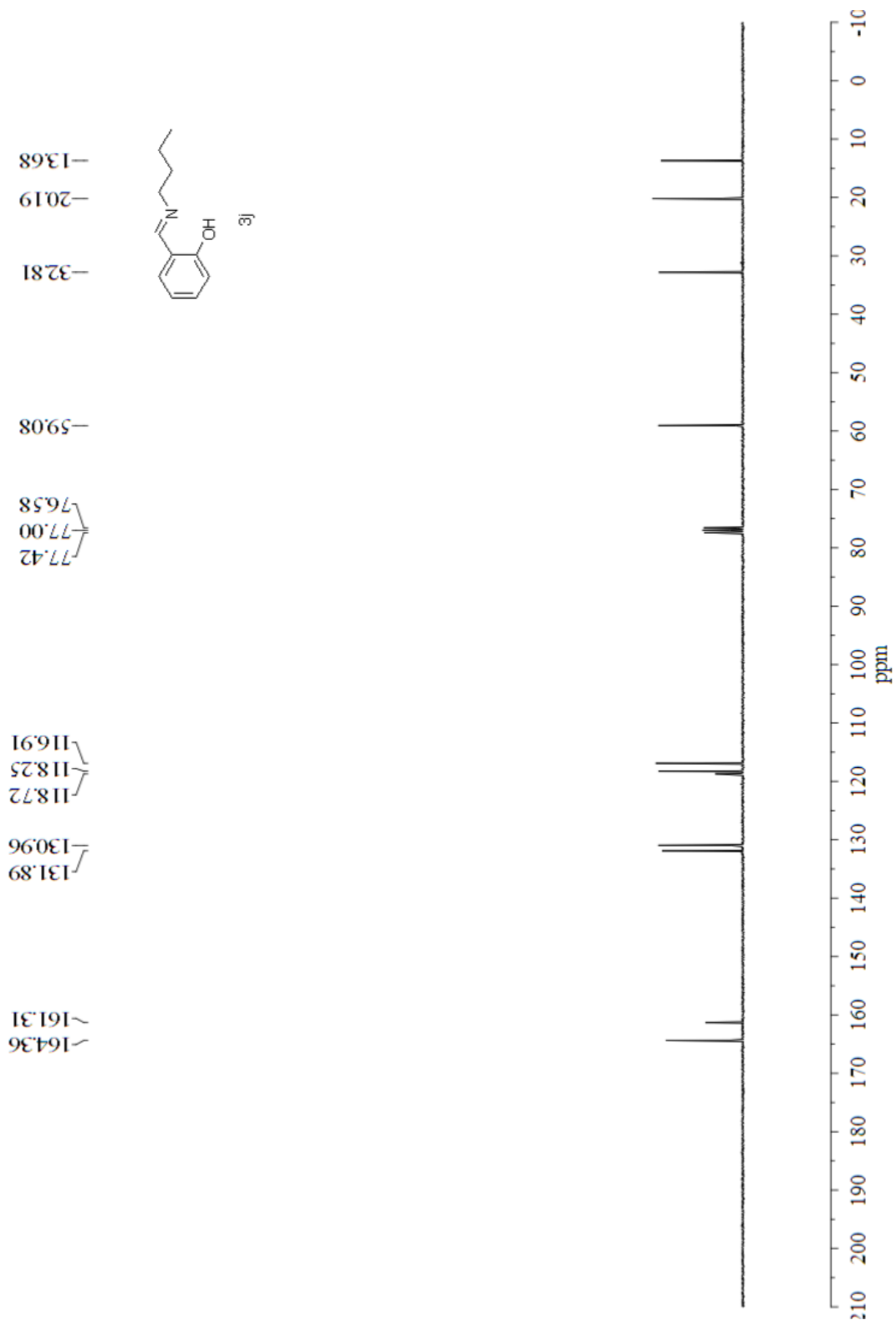


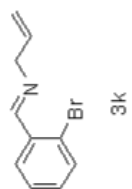




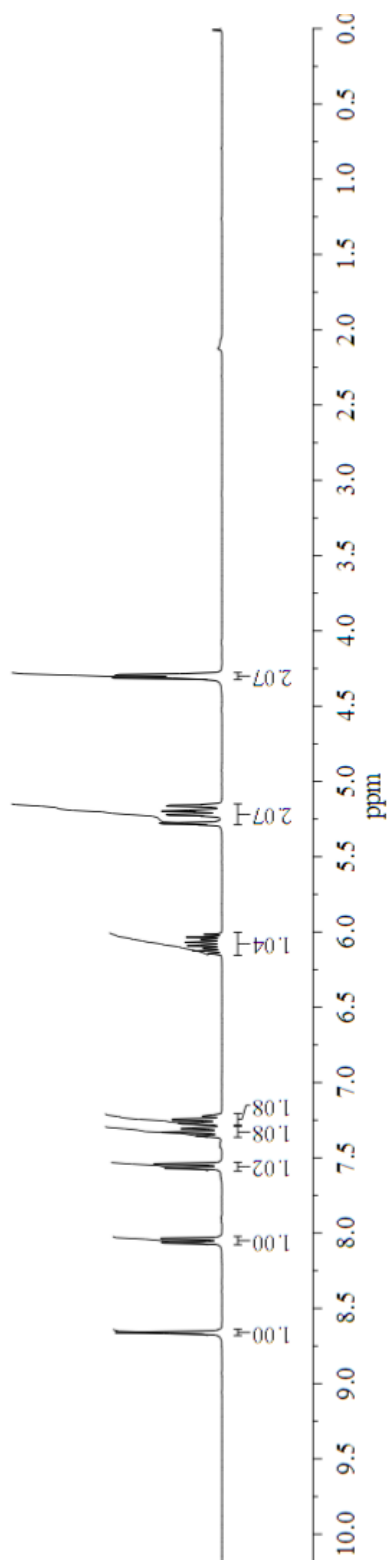


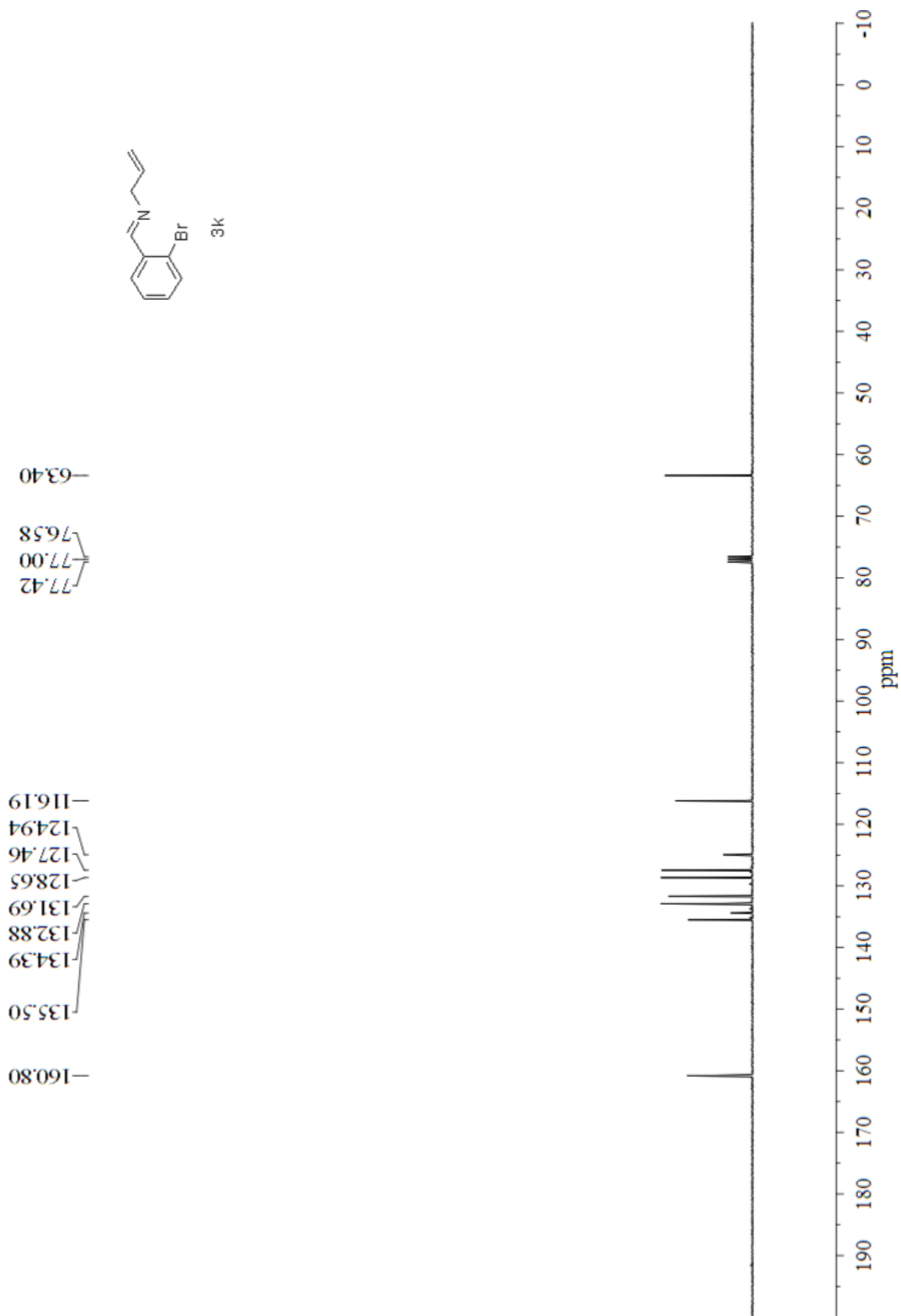


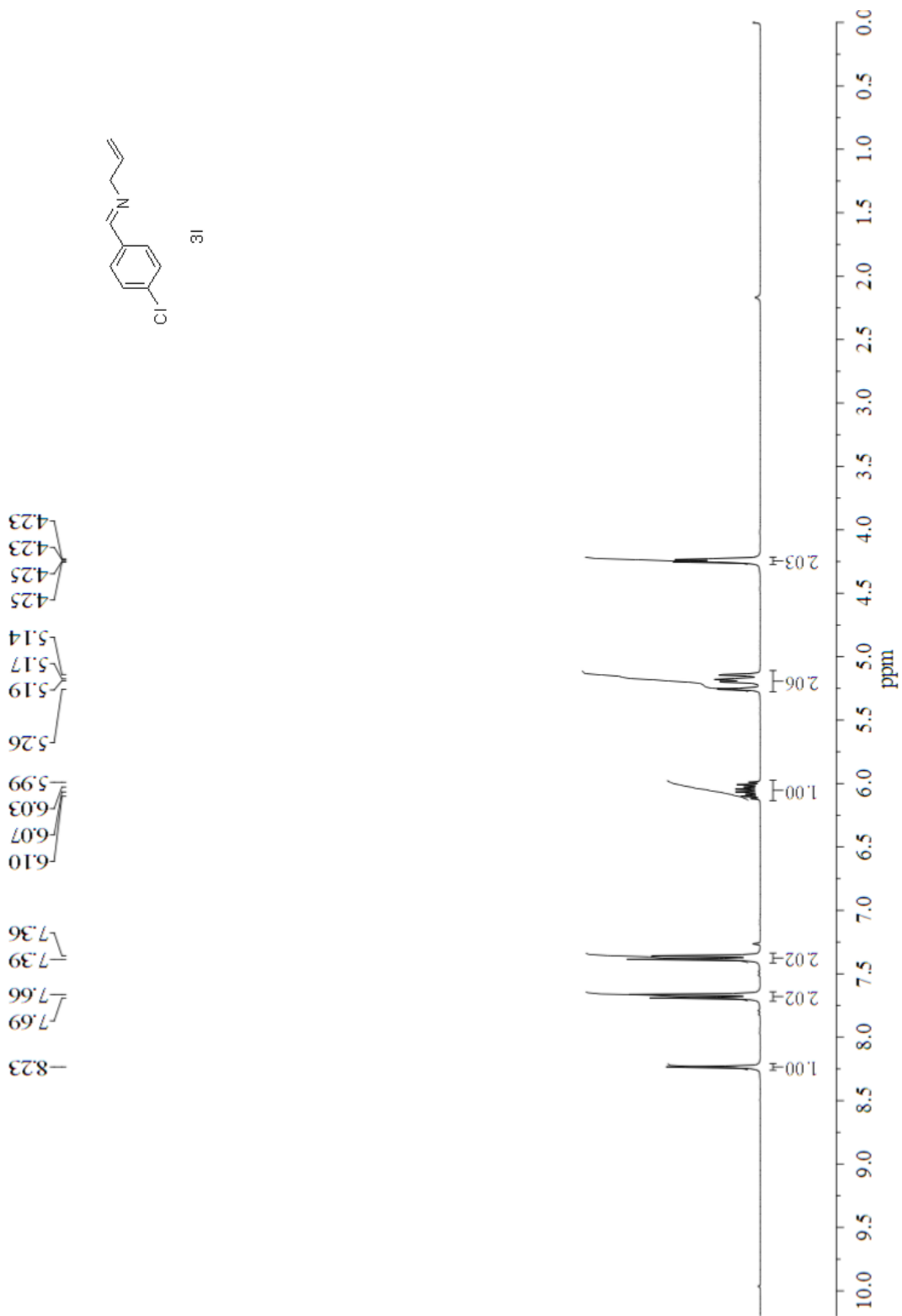


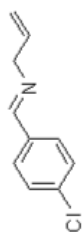


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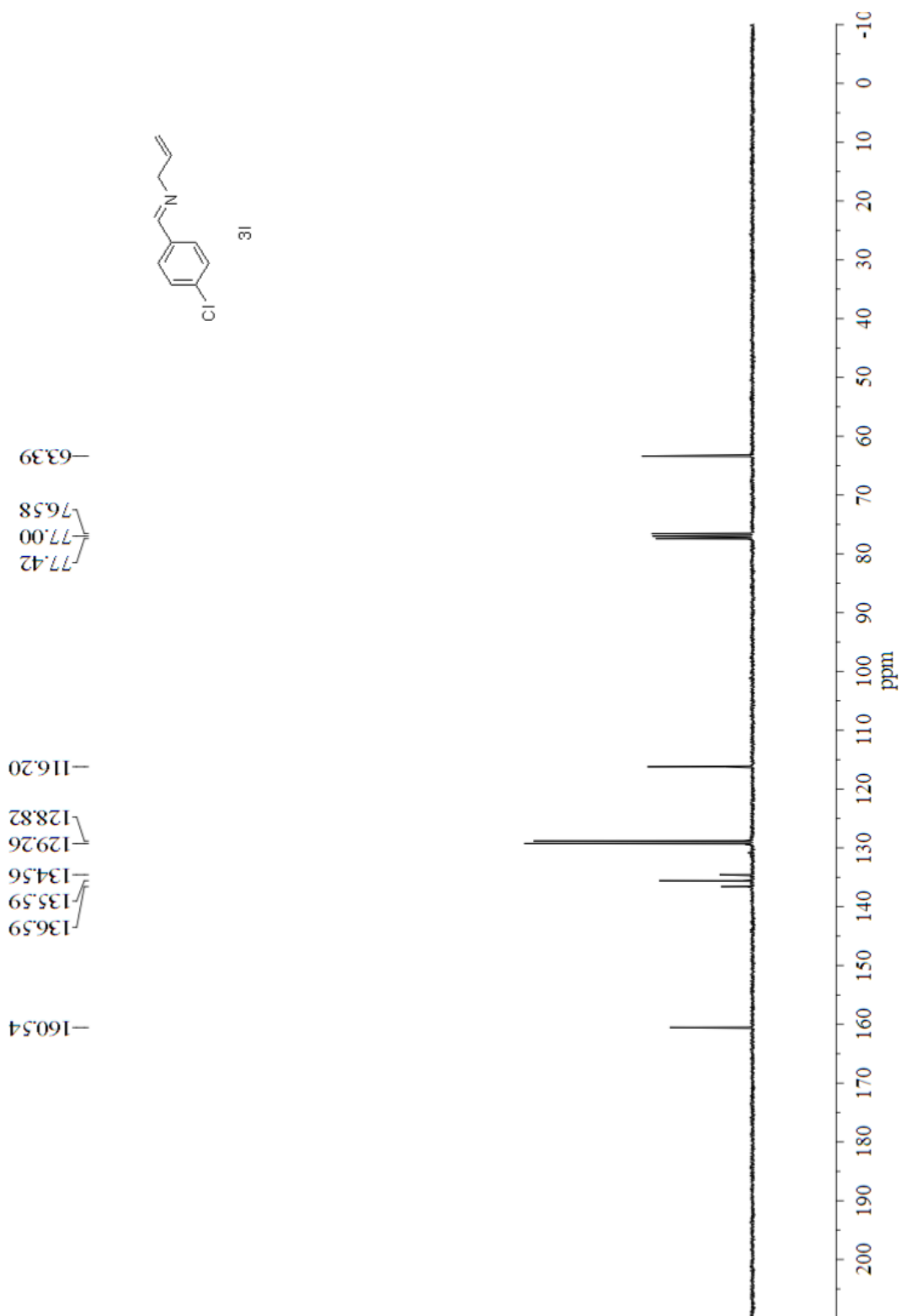


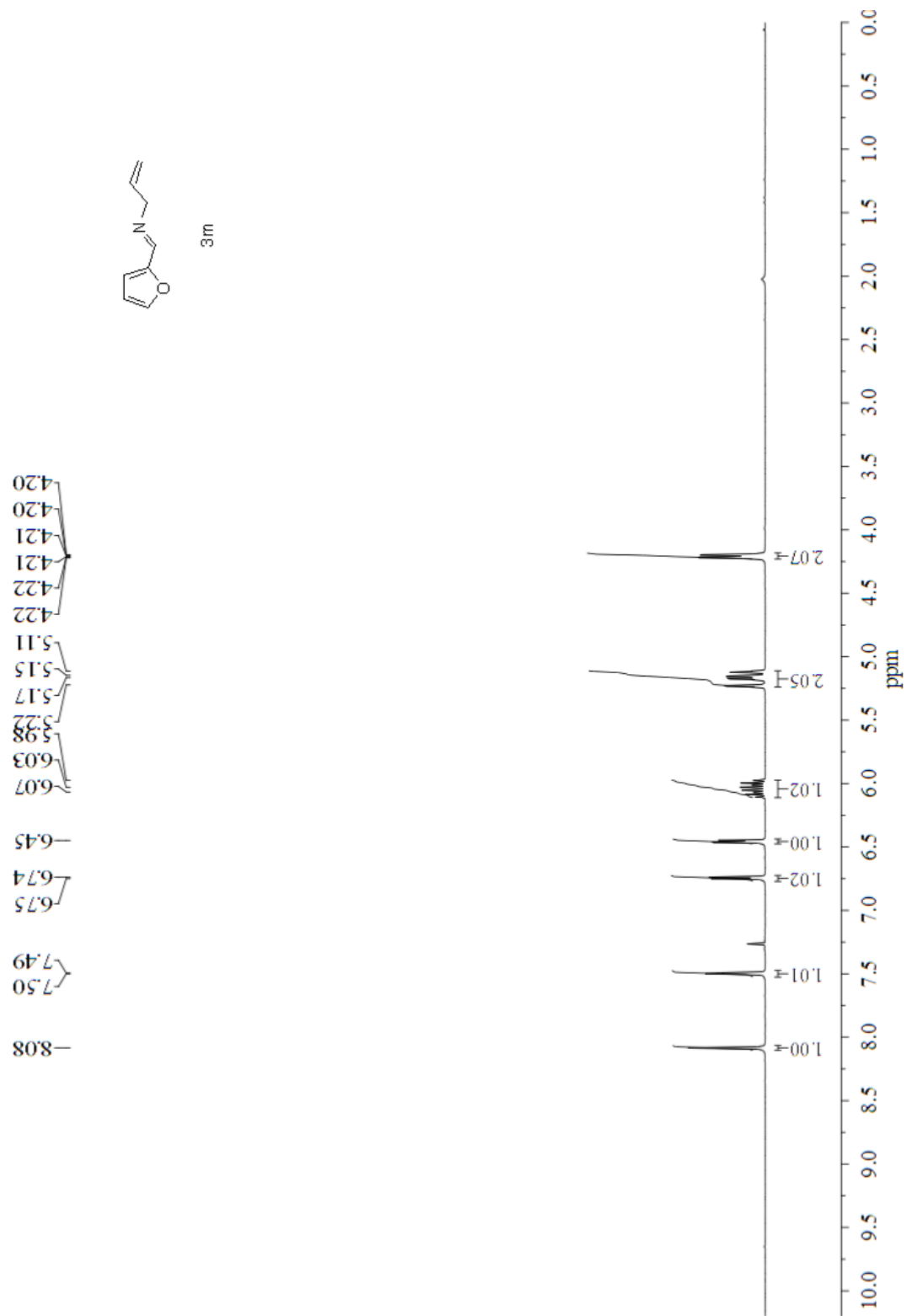


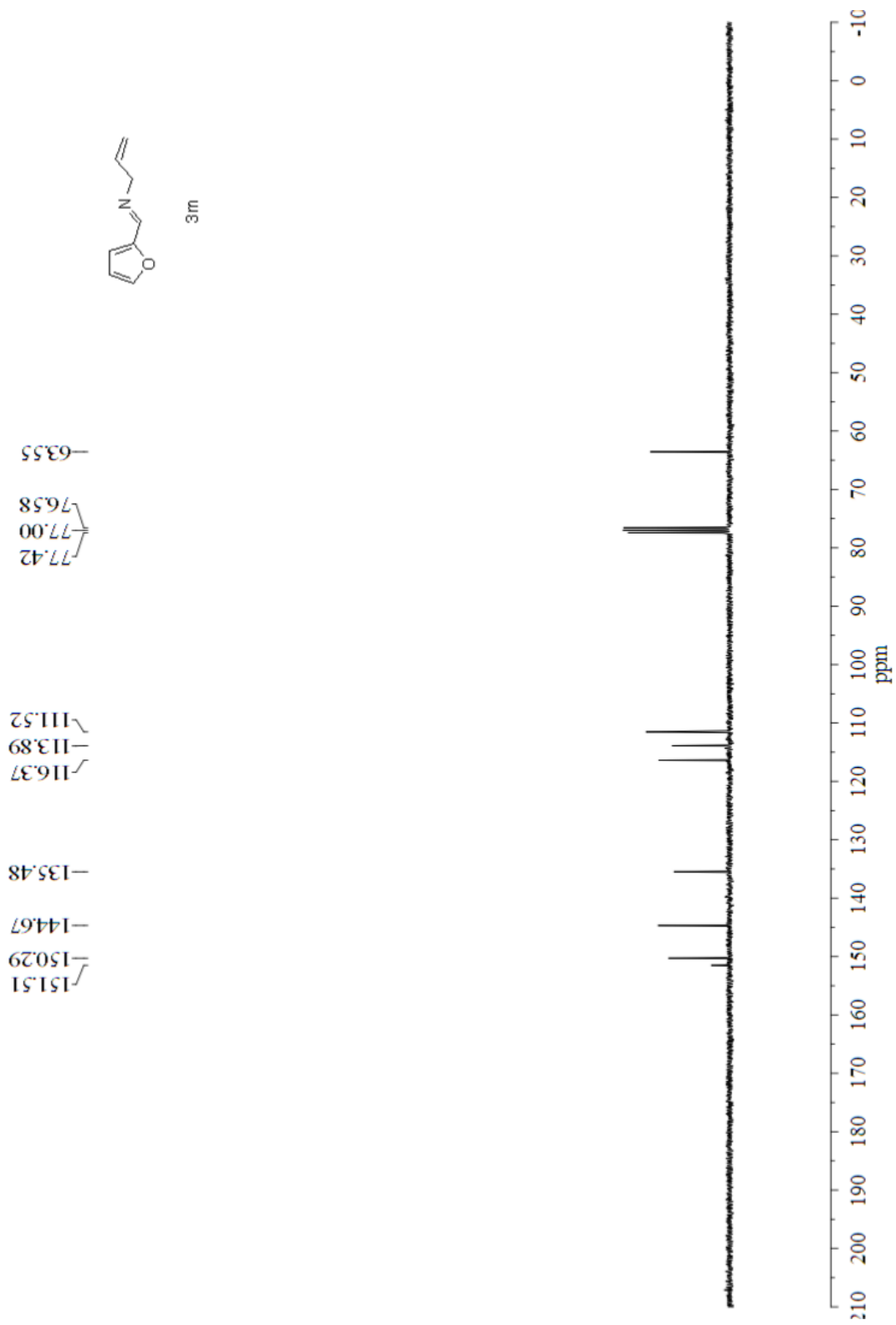


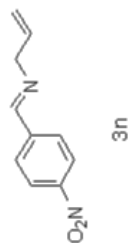


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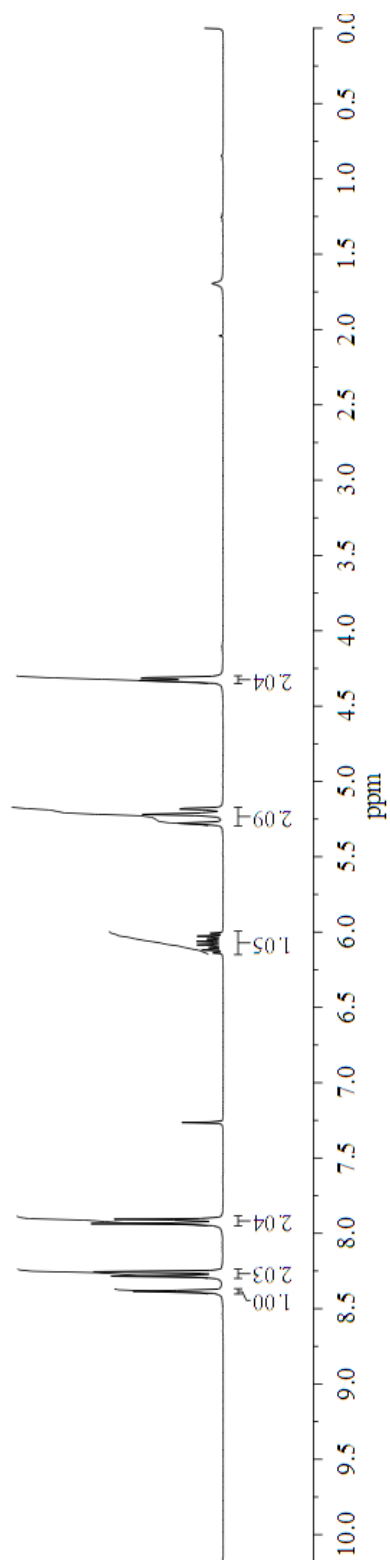


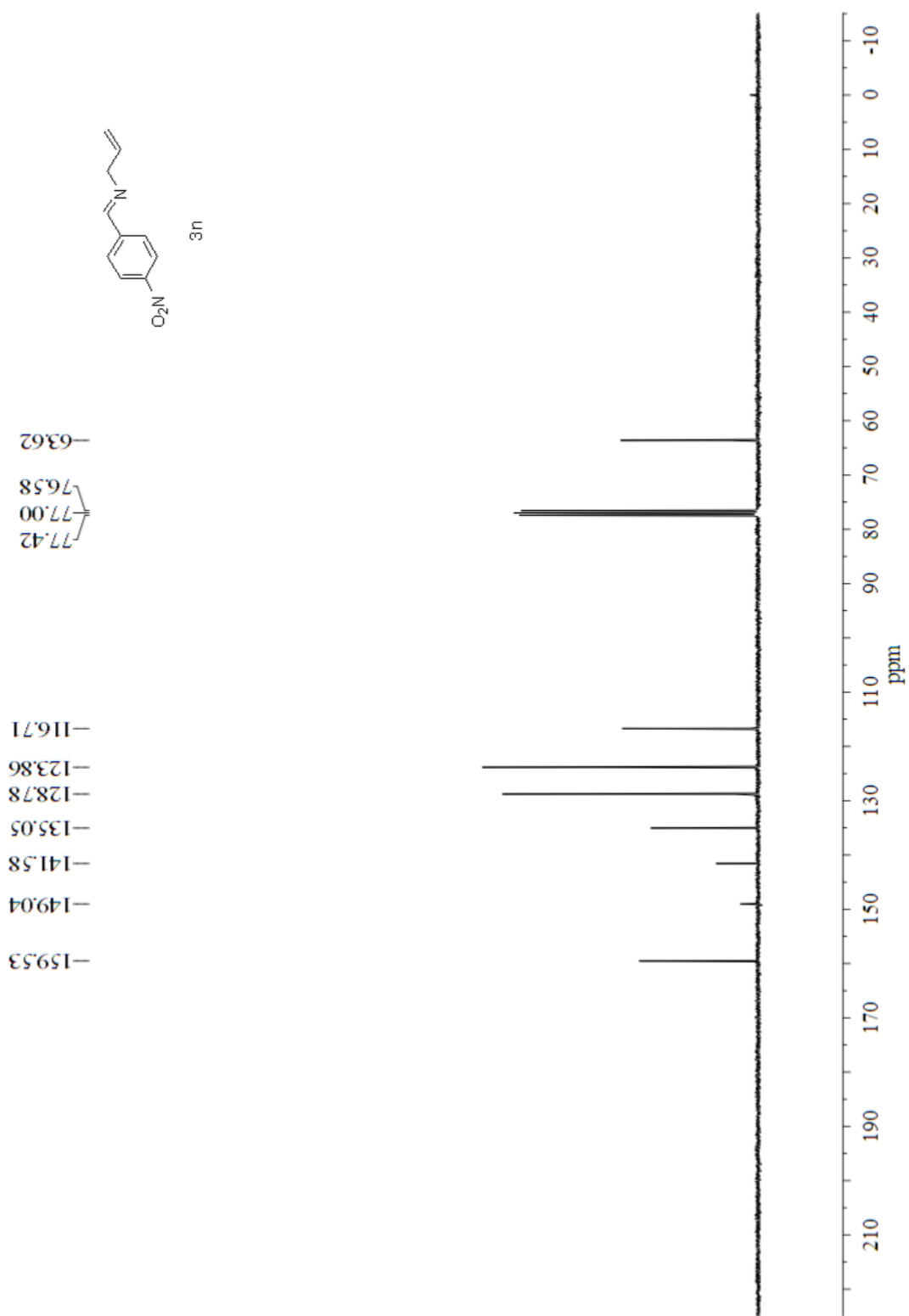


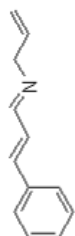




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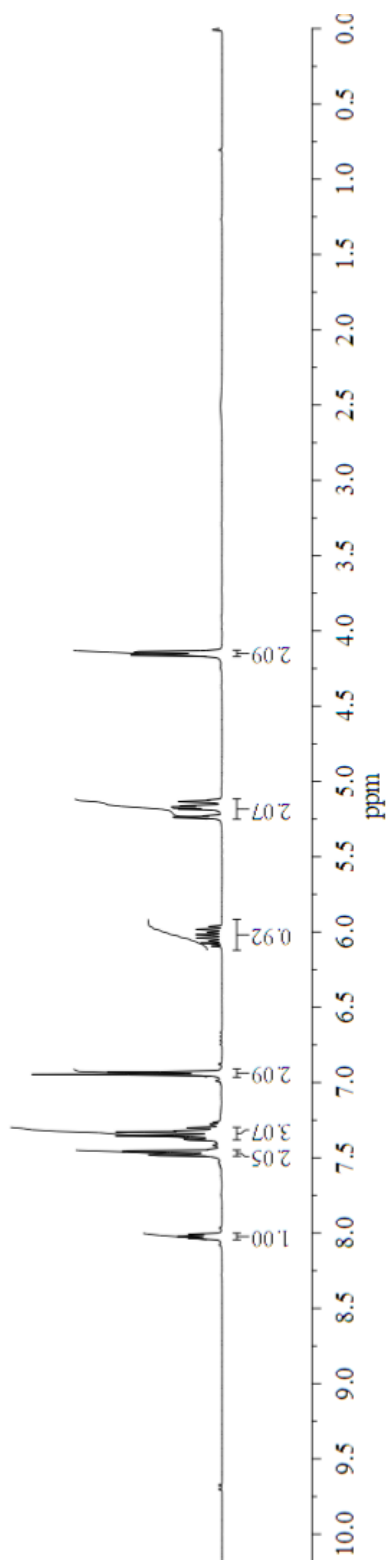


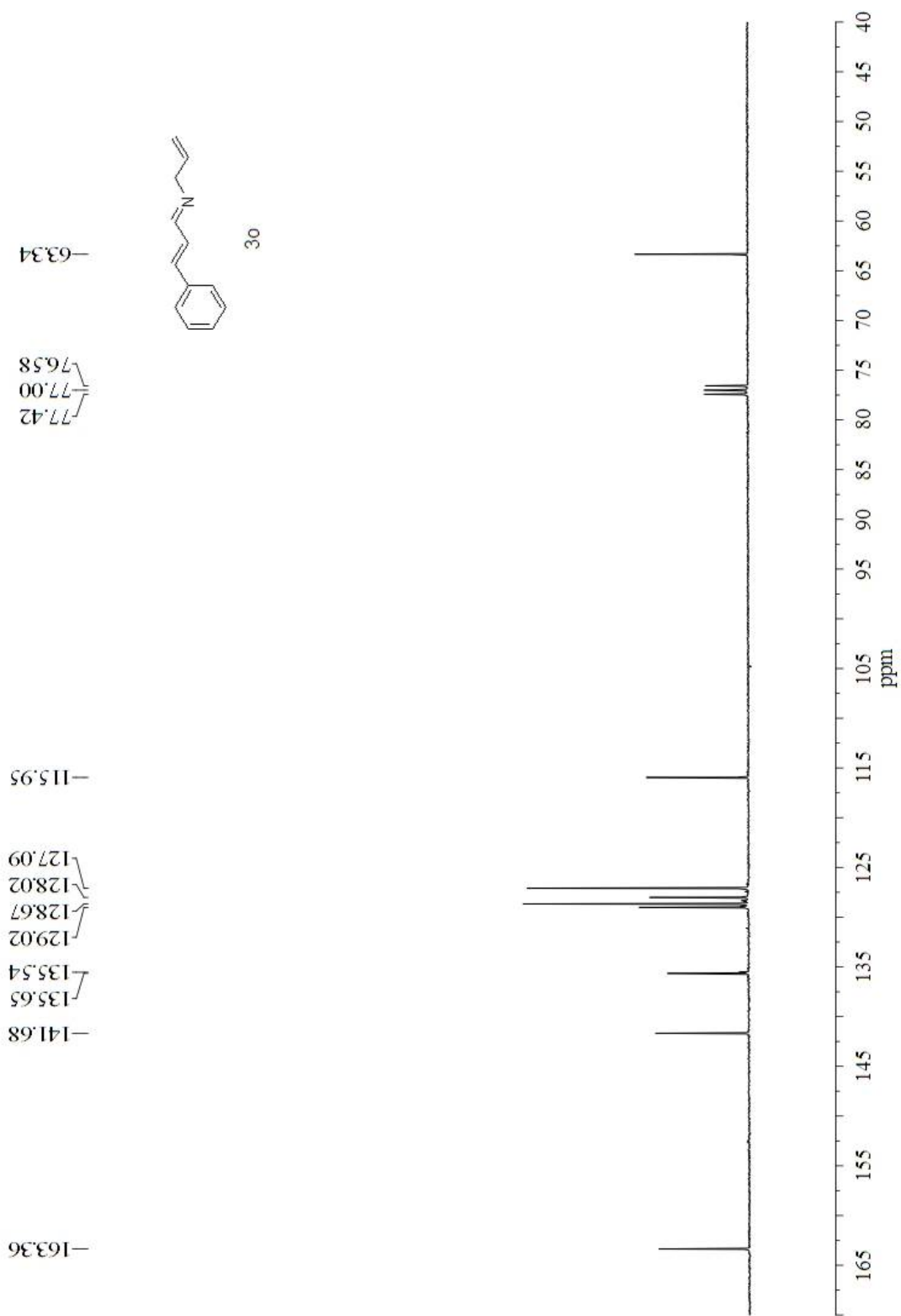


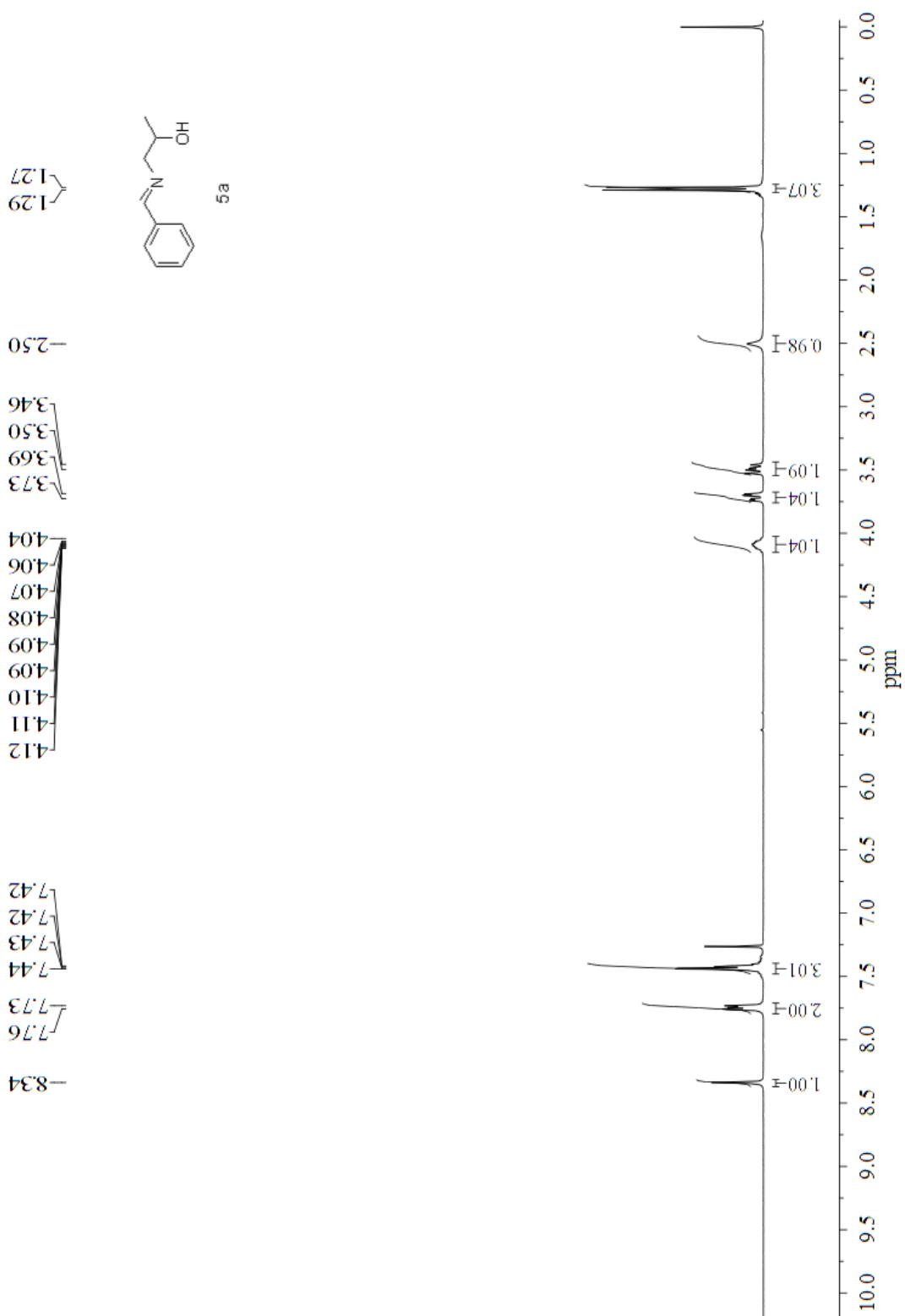


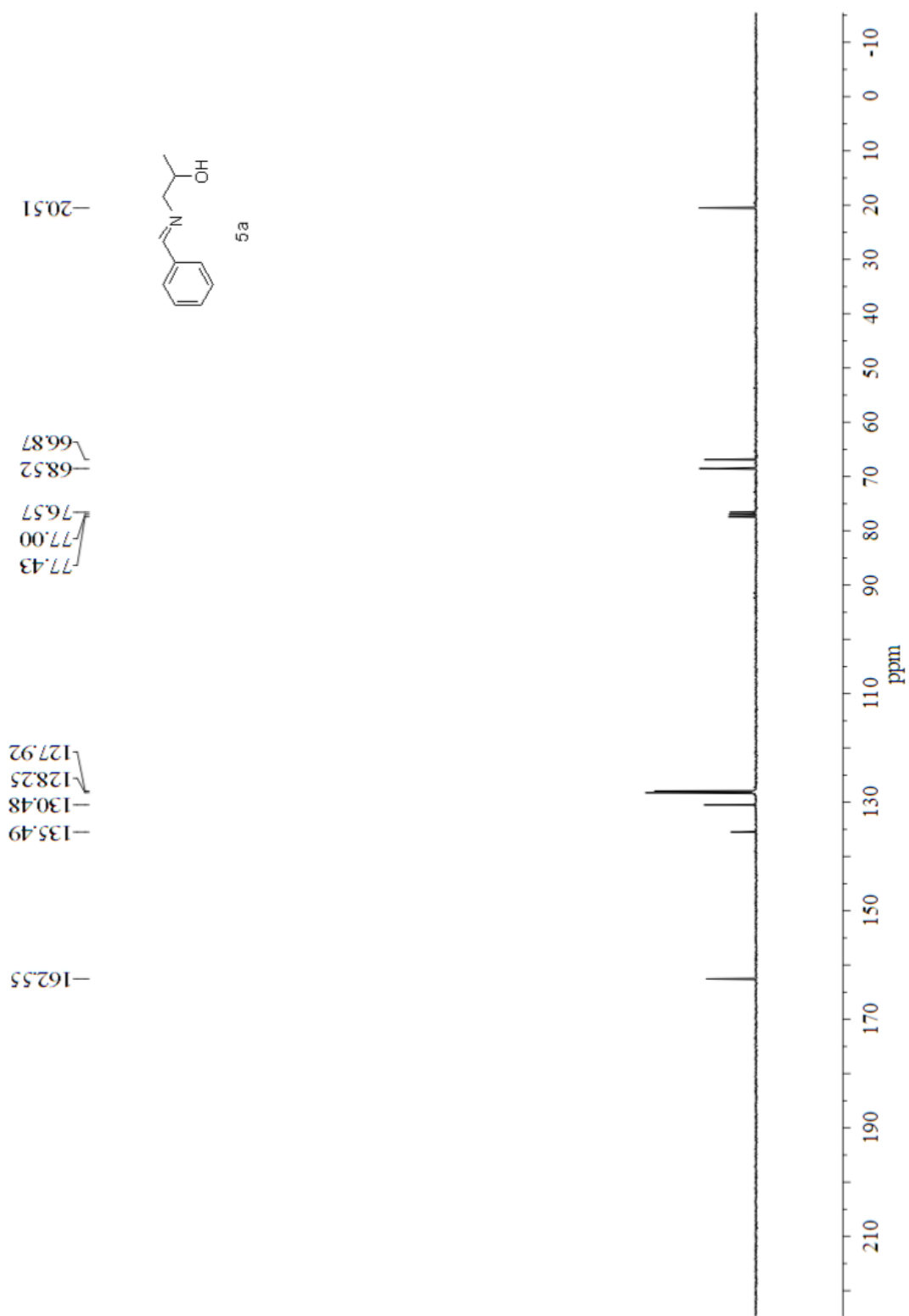
30

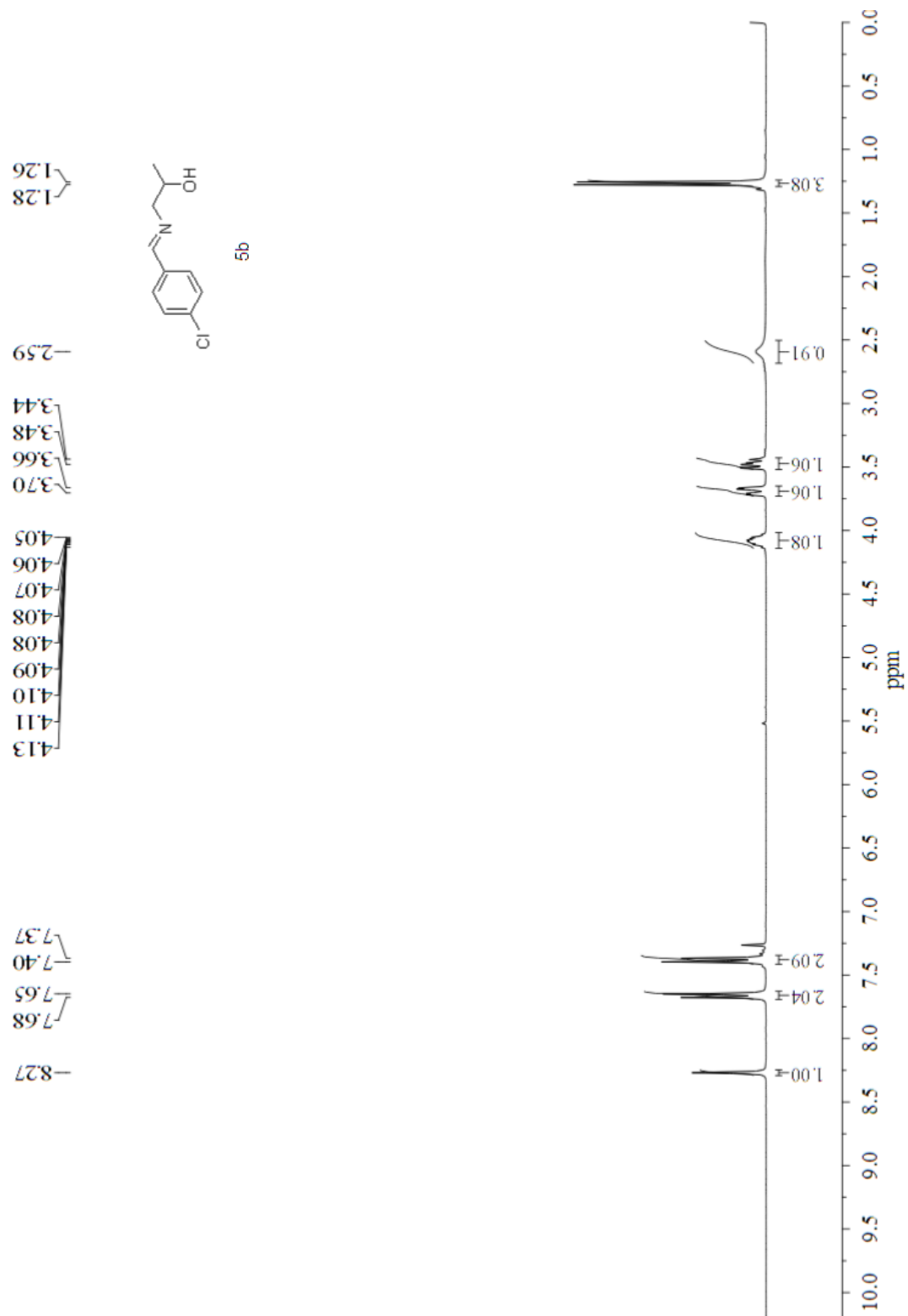
8.04  
8.04  
8.03  
8.02  
8.02  
8.01  
8.01  
8.00  
7.49  
7.32  
7.26  
6.95  
6.93  
6.97  
6.93  
6.04  
6.02  
6.00  
5.96  
5.92  
5.17  
5.14  
5.12  
4.17  
4.16  
4.16  
4.15  
4.15  
4.14  
4.14  
4.14  
4.13

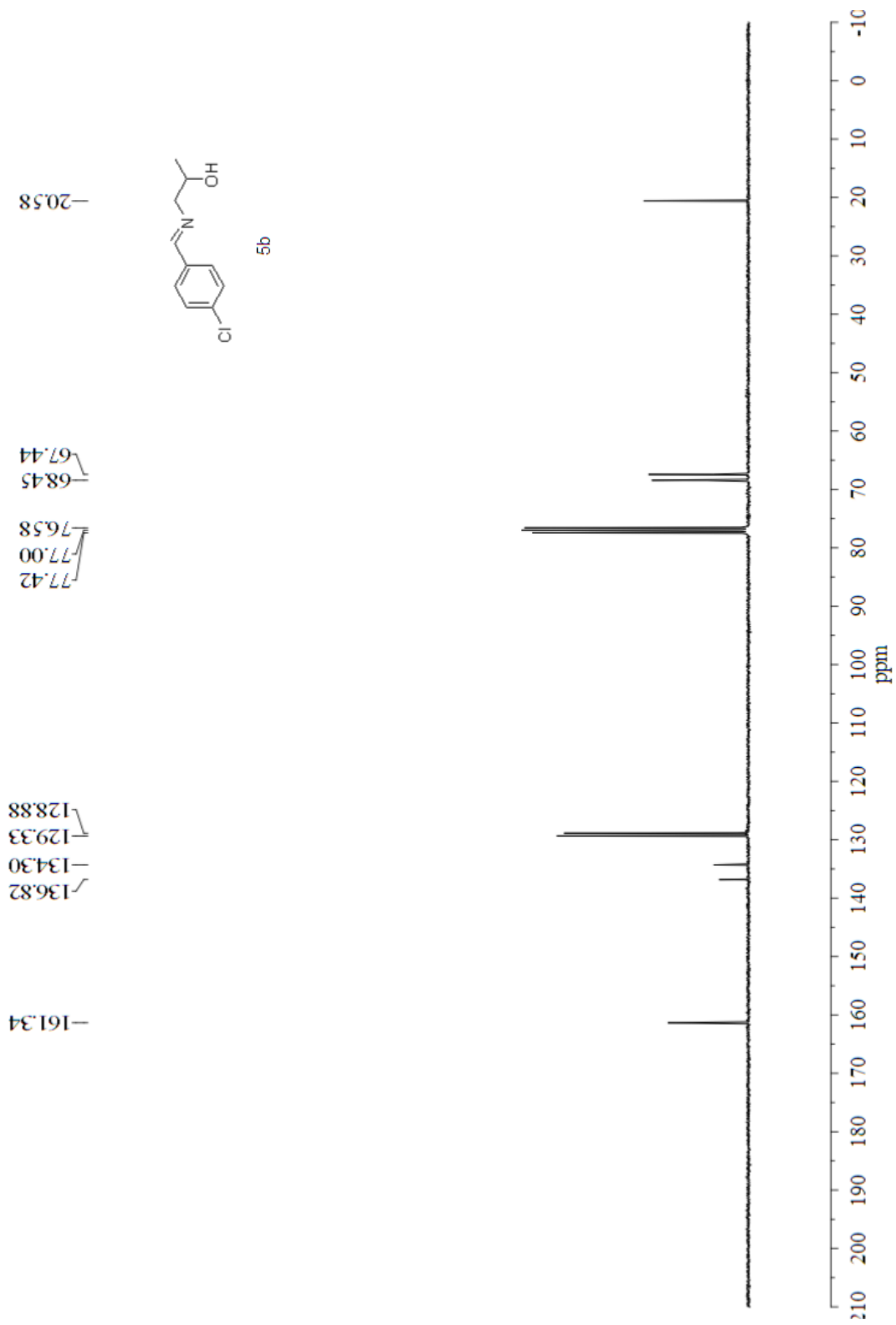


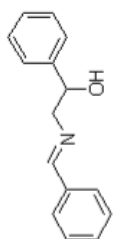






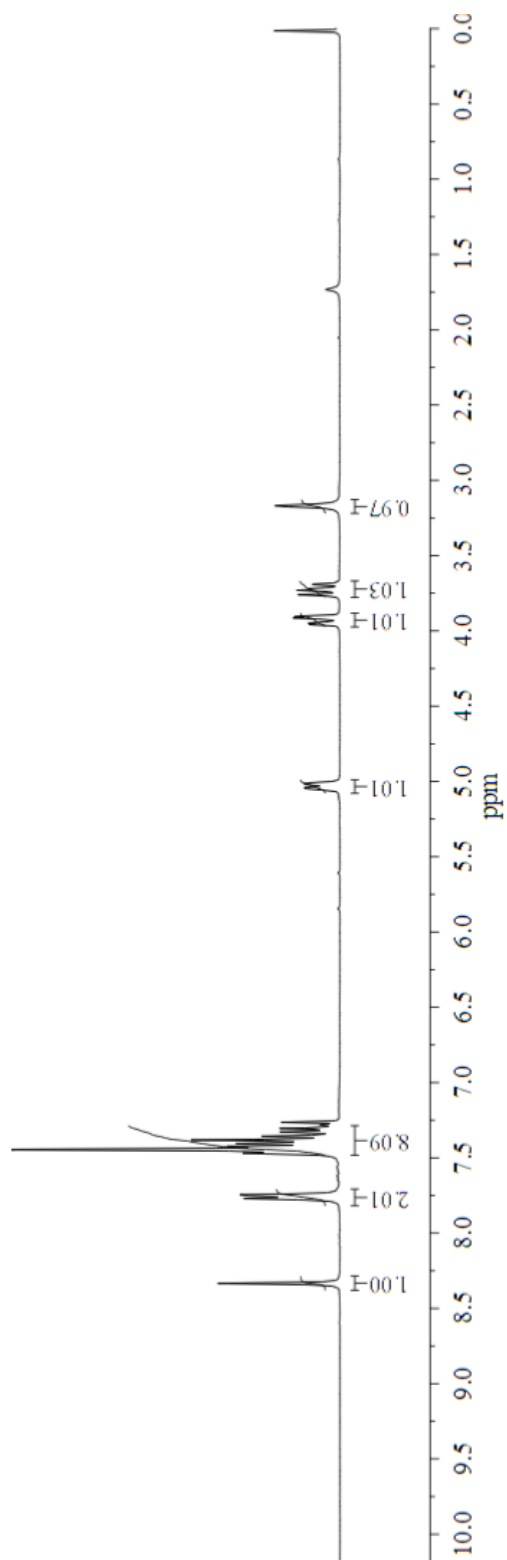


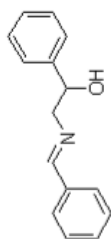




5c

8.33  
 7.77  
 7.74  
 7.49  
 7.41  
 7.38  
 7.36  
 7.33  
 7.31  
 7.30  
 5.04  
 5.02  
 3.91  
 3.90  
 3.76  
 3.73  
 3.72  
 3.69  
 3.17



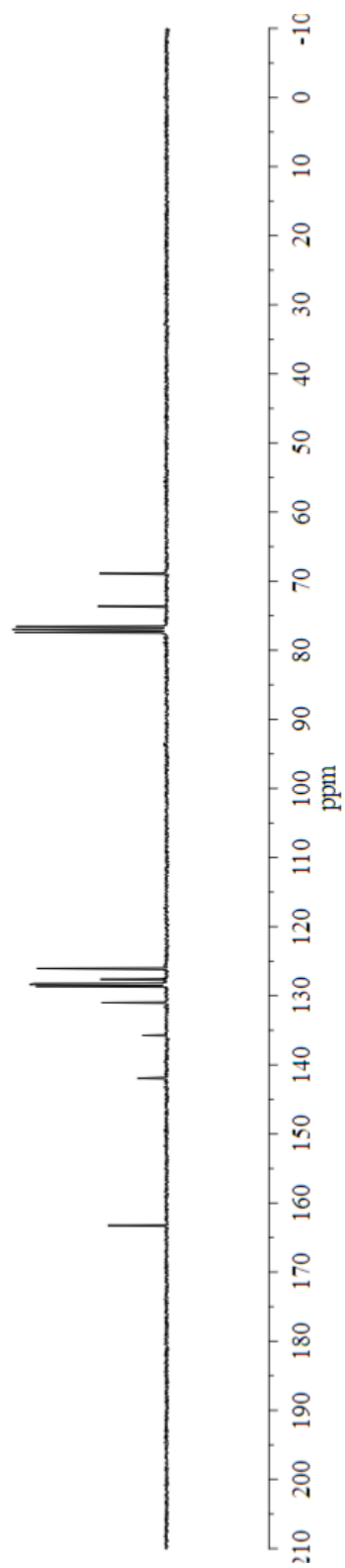


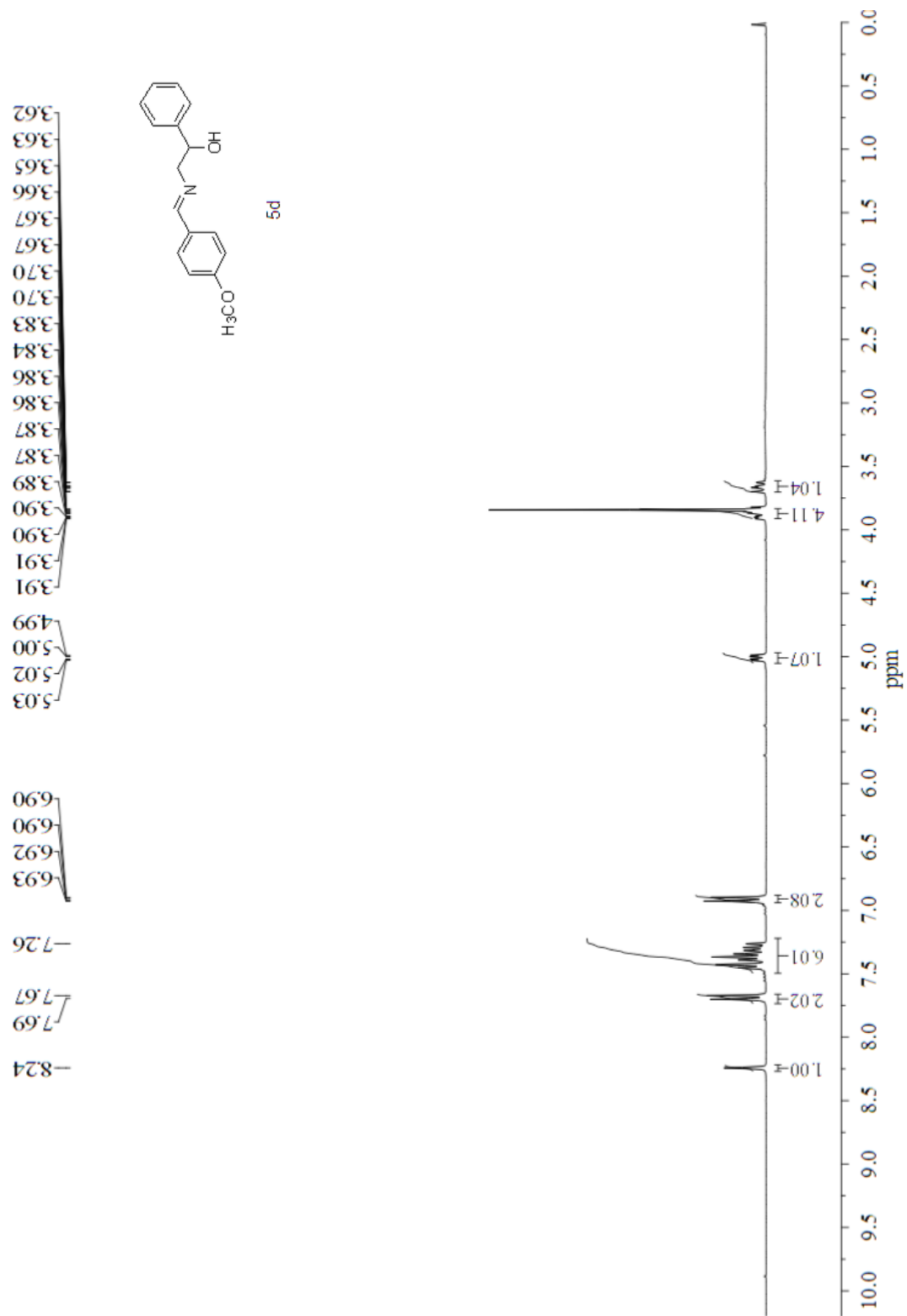
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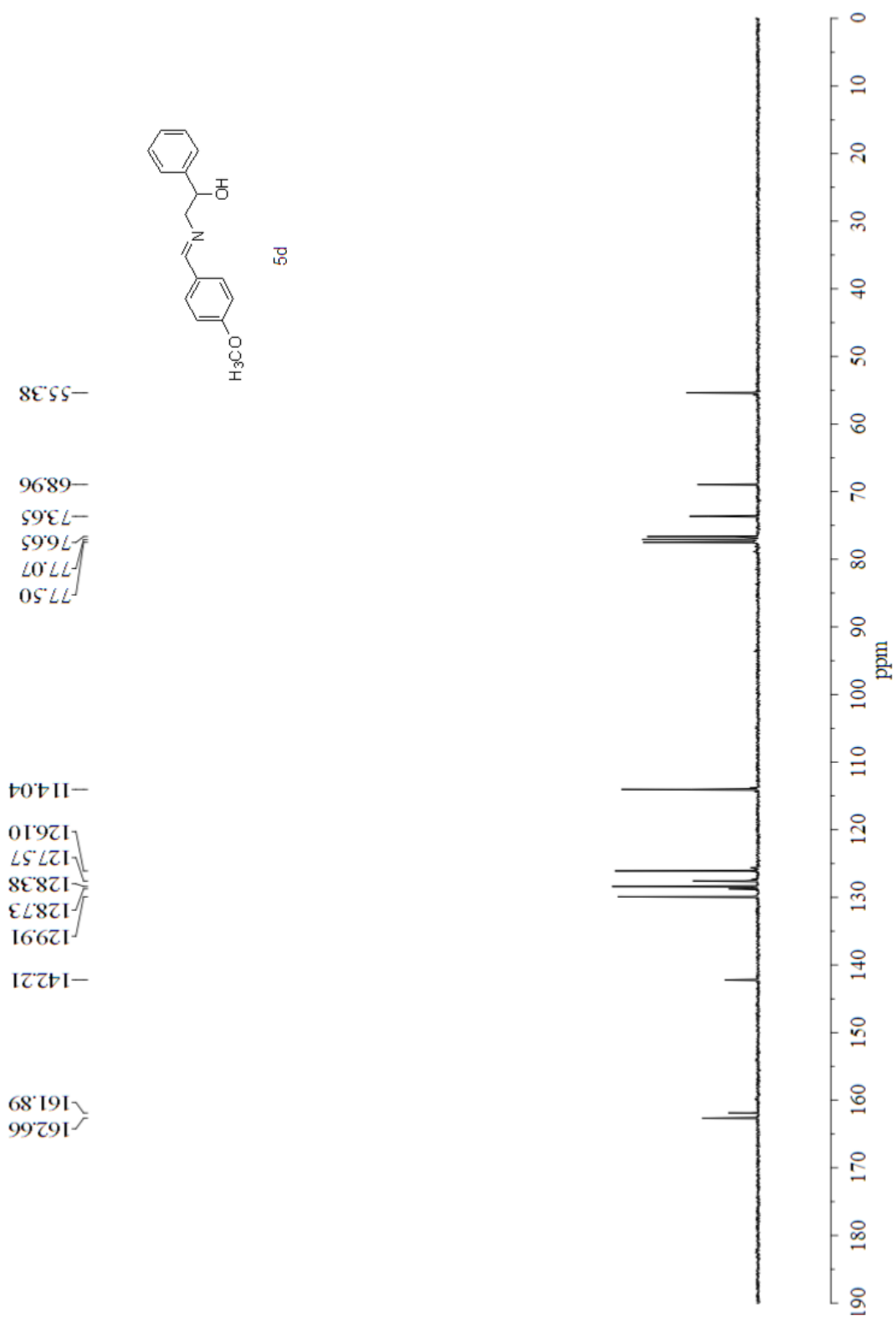
77.42  
77.00  
76.58  
73.64  
68.89

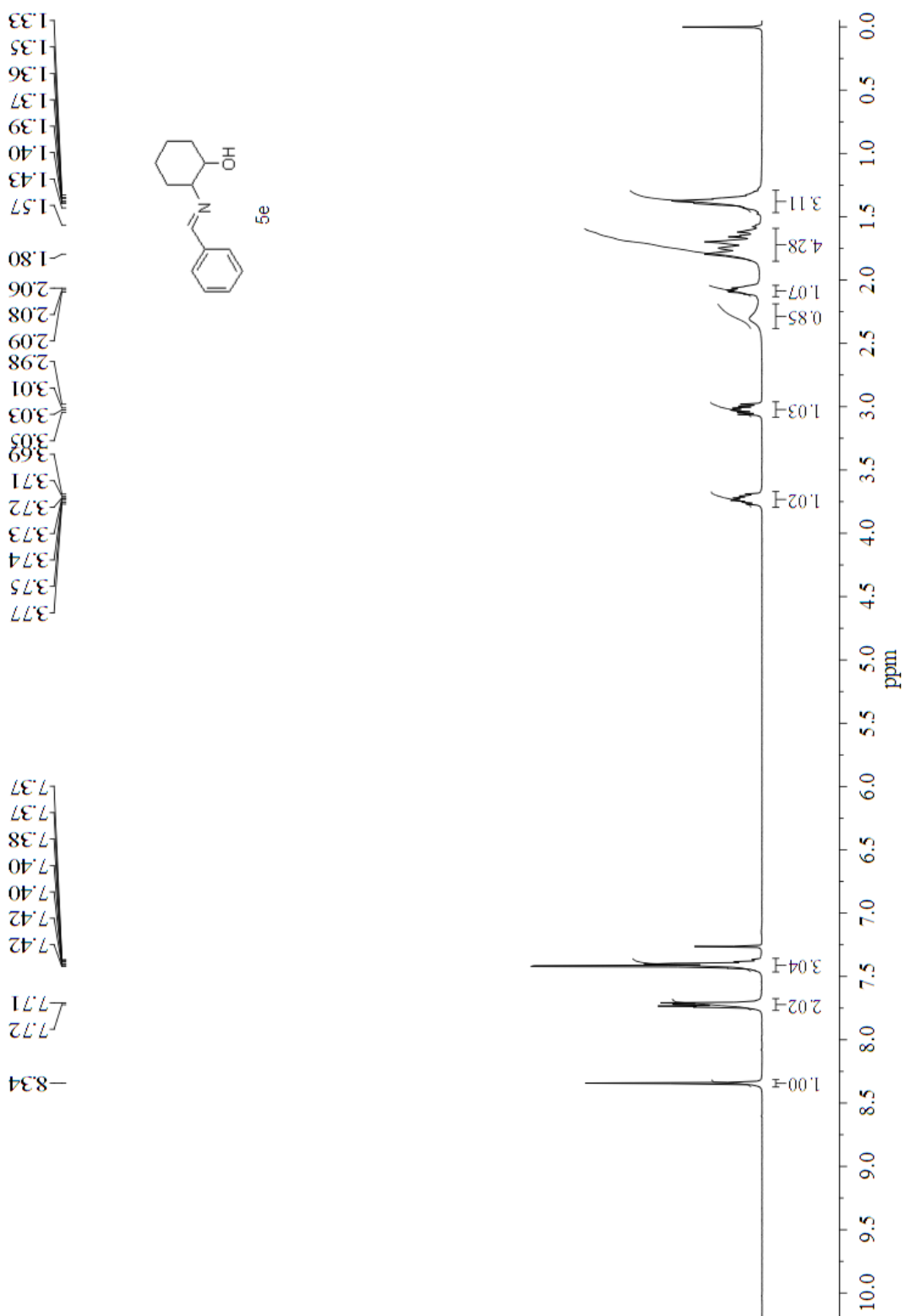
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128.23  
128.38  
128.63  
130.99  
135.74  
141.94

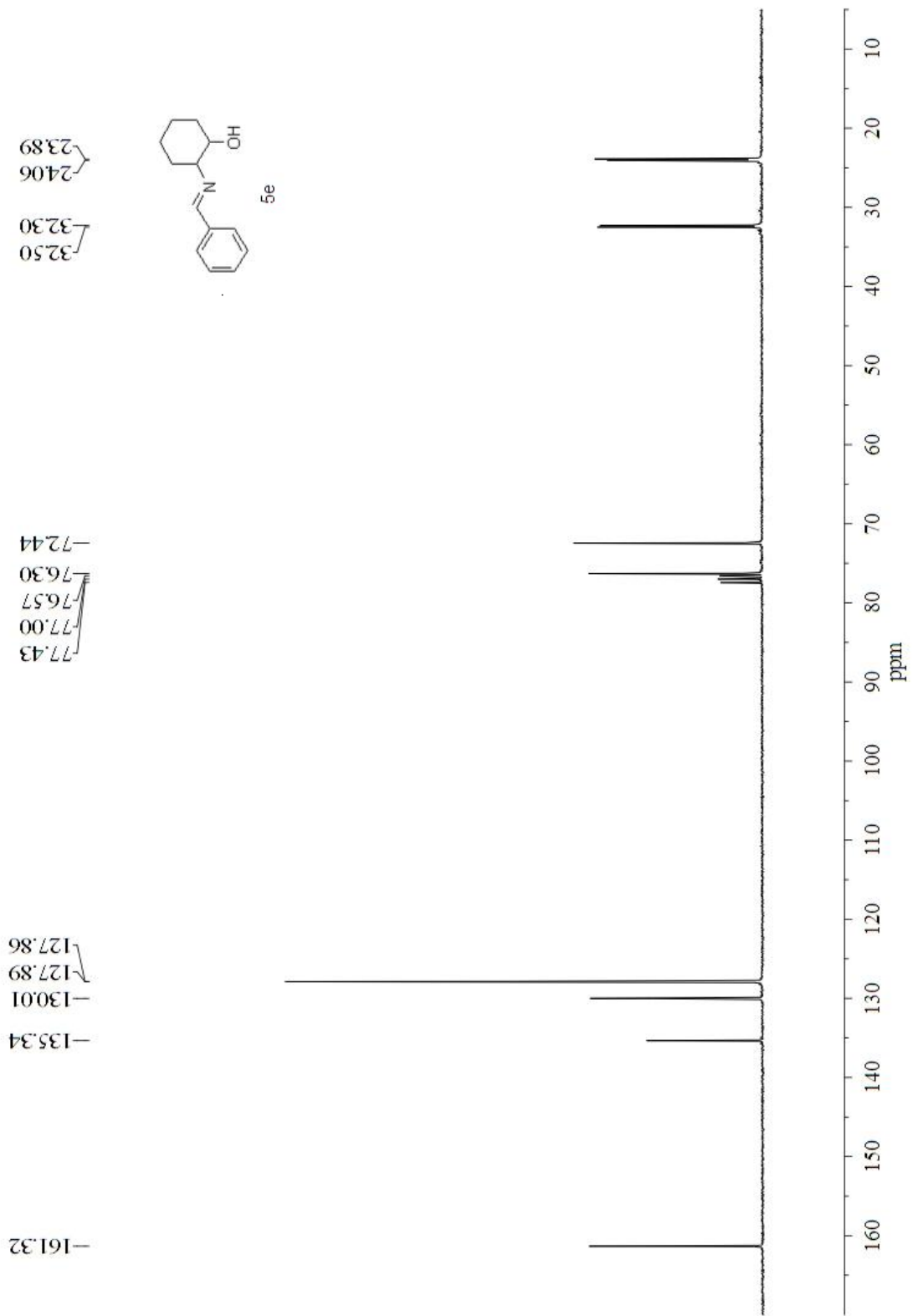
163.25











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