

# Supporting Information

for

## An efficient Pd–NHC catalyst system in situ generated from Na<sub>2</sub>PdCl<sub>4</sub> and PEG-functionalized imidazolium salts for Mizoroki–Heck reactions in water

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### Characterization data of Mizoroki–Heck products and copies of NMR spectra

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**(E)-4-Acetylstilbene (3aa)** (CAS No: 3112-03-6): Yield 96%, yellowish solid, mp: 141 °C (lit. [1] mp: 141.3-142 °C); <sup>1</sup>H NMR (CDCl<sub>3</sub>) δ 7.97 (d, *J* = 8.3 Hz, 2H), 7.61 (d, *J* = 8.3 Hz, 2H), 7.56 (d, *J* = 7.5 Hz, 2H), 7.42-7.39 (m, 2H), 7.34-7.31 (m, 1H), 7.25 (d, *J* = 16.4 Hz, 1H), 7.15 (d, *J* = 16.4 Hz, 1H), 2.63 (s, 3H); <sup>13</sup>C NMR (CDCl<sub>3</sub>) δ 197.5, 142.0, 136.7, 136.0, 131.5, 128.9, 128.8, 128.3, 127.5, 126.8, 126.5, 26.6; GC-EIMS *m/z*: 222 [*M*<sup>+</sup>, 55%], 207 (100%).

**(E)-4-Formylstilbene (3ba)** (CAS No: 40200-69-9): Yield 98%, yellow solid, mp 112 °C (lit. [1] mp: 116.0-116.8 °C); <sup>1</sup>H NMR (CDCl<sub>3</sub>) δ 10.01 (s, 1H), 7.89 (d, *J* = 8.2 Hz, 2H), 7.68 (d, *J* = 8.2 Hz, 2H), 7.57 (d, *J* = 7.4 Hz, 2H), 7.41 (t, *J* = 7.6 Hz, 2H), 7.33 (t, *J* = 7.4 Hz, 1H), 7.28 (d, *J* = 16.4 Hz, 1H), 7.16 (d, *J* = 16.4 Hz, 1H); <sup>13</sup>C NMR (CDCl<sub>3</sub>) δ 191.6, 143.5, 136.6, 135.4, 132.2, 130.3, 128.9, 128.5, 127.4, 126.9; GC-EIMS *m/z*: 208 [*M*<sup>+</sup>, 90%], 179 (100%).

**(E)-4-Nitrostilbene (3ca)** (CAS No: 1694-20-8): Yield 95%, yellow solid, mp 157 °C (lit. [1] mp: 154.2-155 °C); <sup>1</sup>H NMR (CDCl<sub>3</sub>) δ 8.13 (d, *J* = 8.8 Hz, 2H), 7.55 (d, *J* = 8.8 Hz, 2H), 7.47 (d, *J* = 7.5 Hz, 2H), 7.32 (t, *J* = 7.5 Hz, 2H), 7.25 (t, *J* = 7.3 Hz, 1H), 7.19 (d, *J* = 16.3 Hz, 1H), 7.06 (d, *J* = 16.3 Hz, 1H); <sup>13</sup>C NMR (CDCl<sub>3</sub>) δ 146.8, 143.9, 136.2, 133.4, 128.9, 128.8, 127.0, 126.9, 126.3, 124.2; GC-EIMS *m/z* 225: [*M*<sup>+</sup>, 55%], 179 (100%).

**(E)-4-Trifluoromethylstilbene (3da)** (CAS No: 1149-56-0): Yield 94%, white solid, mp 132 °C (lit. [1] mp: 132.1-133.4 °C); <sup>1</sup>H NMR (CDCl<sub>3</sub>) δ 7.69-7.60 (m, 4H), 7.57 (d, *J* = 7.4 Hz, 2H), 7.42 (t, *J* = 7.6 Hz, 2H), 7.35 (t, *J* = 7.3 Hz, 1H), 7.23 (d, *J* = 16.4 Hz, 1H), 7.15 (d, *J* = 16.4 Hz, 1H); <sup>13</sup>C NMR (CDCl<sub>3</sub>) δ 140.8, 136.6, 131.2, 129.2 (q, *J* = 32.2 Hz), 128.8, 128.3, 127.1, 126.8, 126.6, 125.6 (q, *J* = 3.8 Hz), 124.3 (q, *J* = 270.0 Hz); GC-EIMS *m/z*: 248 [*M*<sup>+</sup>, 91%], 179 (100%).

**(E)-4-Fluorostilbene (3ea)** (CAS No: 718-25-2): Yield 87%, white solid, mp 120 °C (lit. [2] mp: 123-124 °C); <sup>1</sup>H NMR (CDCl<sub>3</sub>) δ 7.37 (m, 4H), 7.25 (m, 2H), 7.16 (m, 1H), 6.93 (m, 4H); <sup>13</sup>C NMR

(CDCl<sub>3</sub>)  $\delta$  162.3 (d,  $J$  = 246.3 Hz), 137.2, 133.5 (d,  $J$  = 3.8 Hz), 128.7, 128.5, 128.0 (d,  $J$  = 7.5 Hz), 127.7, 127.5, 126.4, 115.6 (d,  $J$  = 21.3 Hz); GC-EIMS  $m/z$ : 198 [ $M^+$ , 100%].

**(E)-4-Chlorostilbene (3fa)** (CAS No: 1657-50-7): Yield 90%, white solid, mp 127 °C (lit. [3] mp: 126.2-128.3 °C); <sup>1</sup>H NMR (CDCl<sub>3</sub>)  $\delta$  7.56-7.50 (m, 2H), 7.49-7.43 (m, 2H), 7.39 (t,  $J$  = 7.7 Hz, 2H), 7.36-7.32 (m, 2H), 7.32-7.28 (m, 1H), 7.14-7.04 (m, 2H); <sup>13</sup>C NMR (CDCl<sub>3</sub>)  $\delta$  137.0, 135.9, 133.2, 129.3, 128.9, 128.8, 127.9, 127.7, 127.4, 126.6; GC-EIMS  $m/z$ : 214 [ $M^+$ , 63%], 216 [ $M+2$ , 21%], 179 (100%).

**(E)-4-Bromostilbene (3ga)** (CAS No: 13041-70-8): Yield 87%, white solid, mp 137 °C (lit. [3] mp: 136.5-139 °C); <sup>1</sup>H NMR (CDCl<sub>3</sub>)  $\delta$  7.54-7.49 (m, 4H), 7.44-7.36 (m, 4H), 7.31 (t,  $J$  = 7.4 Hz, 1H), 7.13 (d,  $J$  = 16.4 Hz, 1H), 7.06 (d,  $J$  = 16.4 Hz, 1H); <sup>13</sup>C NMR (CDCl<sub>3</sub>)  $\delta$  137.0, 136.3, 131.8, 129.4, 128.7, 128.0, 127.9, 127.4, 126.6, 121.3; GC-EIMS  $m/z$ : 258 [ $M^+$ , 46%], 260 [ $M+2$ , 47%], 179 (100%).

**(E)-Stilbene (3ha)** (CAS No: 103-30-0): Yield 76%, white solid, mp 122 °C (lit. [1] mp: 123.9-124.6 °C); <sup>1</sup>H NMR (CDCl<sub>3</sub>)  $\delta$  7.57 (d,  $J$  = 7.5 Hz, 4H), 7.41 (t,  $J$  = 7.5 Hz, 4H), 7.32 (d,  $J$  = 7.4 Hz, 2H), 7.17 (s, 2H); <sup>13</sup>C NMR (CDCl<sub>3</sub>)  $\delta$  137.3, 128.7, 127.6, 126.5; GC-EIMS  $m/z$ : 180 [ $M^+$ , 100%].

**(E)-4-Methylstilbene (3ia)** (CAS No: 1860-17-9): Yield 88%, white solid, mp 118 °C (lit. [1] mp: 121.7-122.3 °C); <sup>1</sup>H NMR (CDCl<sub>3</sub>)  $\delta$  7.55 (d,  $J$  = 8.3 Hz, 2H), 7.46 (d,  $J$  = 8.3 Hz, 2H), 7.40 (t,  $J$  = 7.7 Hz, 2H), 7.29 (t,  $J$  = 7.2 Hz, 1H), 7.21 (d,  $J$  = 7.9 Hz, 2H), 7.16-7.08 (m, 2H), 2.40 (s, 3H); <sup>13</sup>C NMR (CDCl<sub>3</sub>)  $\delta$  137.5, 134.6, 129.4, 128.65, 128.62, 127.7, 127.4, 126.43, 126.40, 21.3; GC-EIMS  $m/z$ : 194 [ $M^+$ , 79%], 179 (100%).

**(E)-4-Methoxostilbene (3ja)** (CAS No: 1694-19-5): Yield 53%, white solid, mp 128 °C (lit. [1] mp: 135.3-135.9 °C); <sup>1</sup>H NMR (CDCl<sub>3</sub>)  $\delta$  7.52-7.46 (m, 4H), 7.37 (t,  $J$  = 7.7 Hz, 2H), 7.25 (t,  $J$  = 7.4 Hz, 1H), 7.09 (d,  $J$  = 16.4 Hz, 1H), 7.00 (d,  $J$  = 16.4 Hz, 1H), 6.94-6.88 (m, 2H), 3.85 (s, 3H); <sup>13</sup>C NMR

(CDCl<sub>3</sub>)  $\delta$  159.3, 137.7, 130.2, 128.7, 128.2, 127.7, 127.2, 126.6, 126.3, 114.2, 55.4; GC-EIMS  $m/z$ : 210 [M<sup>+</sup>, 100%].

**(E)-4-Aminostilbene (3ka)** (CAS No: 4309-66-4): Yield 87%, yellowish solid, mp 149 °C (lit. [4] mp: 147-148 °C); <sup>1</sup>H NMR (CDCl<sub>3</sub>)  $\delta$  7.49 (d,  $J$  = 7.5 Hz, 2H), 7.32 (t,  $J$  = 7.7 Hz, 2H), 7.28 (d,  $J$  = 8.4 Hz, 2H), 7.18 (t,  $J$  = 7.3 Hz, 1H), 7.06 (d,  $J$  = 16.4 Hz, 1H), 6.89 (d,  $J$  = 16.4 Hz, 1H), 6.56 (d,  $J$  = 8.4 Hz, 2H), 5.33 (s, 2H); <sup>13</sup>C NMR (CDCl<sub>3</sub>)  $\delta$  148.8, 138.0, 129.1, 128.6, 127.7, 126.5, 125.8, 124.7, 122.8, 113.9; GC-EIMS  $m/z$ : 195 [M<sup>+</sup>, 100%].

**(E)-4-Hydroxystilbene (3la)** (CAS No: 6554-98-9): Yield 65%, yellowish solid, mp 188 °C (lit. [5] mp: 185-187 °C); <sup>1</sup>H NMR (DMSO)  $\delta$  9.58 (s, 1H), 7.54 (d,  $J$  = 8.5 Hz, 2H), 7.43 (d,  $J$  = 8.5 Hz, 2H), 7.35 (t,  $J$  = 7.7 Hz, 2H), 7.22 (t,  $J$  = 7.3 Hz, 1H), 7.15 (d,  $J$  = 16.4 Hz, 1H), 7.02 (d,  $J$  = 16.4 Hz, 1H), 6.79-6.76 (m, 2H); <sup>13</sup>C NMR (DMSO)  $\delta$  157.3, 137.5, 128.6, 128.4, 128.0, 127.8, 126.9, 126.0, 125.1, 115.5; ESI-MS:  $m/z$  195 [(M-H)<sup>-</sup>, 100%].

**(E)-3-Acetylstilbene (3ma)** (CAS No: 116702-87-5): Yield 91%, white solid, mp 78 °C (lit. [6] mp: 70-74 °C); <sup>1</sup>H NMR (CDCl<sub>3</sub>)  $\delta$  8.12 (s, 1H), 7.86 (d,  $J$  = 7.7 Hz, 1H), 7.73 (d,  $J$  = 7.7 Hz, 1H), 7.55 (d,  $J$  = 7.5 Hz, 2H), 7.48 (t,  $J$  = 7.7 Hz, 1H), 7.40 (t,  $J$  = 7.6 Hz, 2H), 7.28 (t,  $J$  = 7.4 Hz, 1H), 7.22 (d,  $J$  = 16.4 Hz, 1H), 7.16 (d,  $J$  = 16.4 Hz, 1H), 2.67 (s, 3H); <sup>13</sup>C NMR (CDCl<sub>3</sub>)  $\delta$  198.1, 137.9, 137.6, 136.9, 130.9, 130.1, 129.0, 128.8, 128.0, 127.6, 127.5, 126.7, 126.2, 26.6; GC-EIMS  $m/z$ : 222 [M<sup>+</sup>, 64%], 179 (100%).

**(E)-3-Formylstilbene (3na)** (CAS No: 71093-83-9): Yield 89%, yellowish solid, mp 103 °C (lit. [7] mp: 101-103 °C); <sup>1</sup>H NMR (CDCl<sub>3</sub>)  $\delta$  10.07 (s, 1H), 8.04 (s, 1H), 7.77 (t,  $J$  = 6.9 Hz, 2H), 7.58-7.52 (m, 3H), 7.41 (t,  $J$  = 7.6 Hz, 2H), 7.32 (t,  $J$  = 7.3 Hz, 1H), 7.23 (d,  $J$  = 16.4 Hz, 1H), 7.16 (d,  $J$  = 16.4 Hz, 1H); <sup>13</sup>C NMR (125 MHz)  $\delta$  192.3, 138.4, 136.8, 136.7, 132.3, 130.5, 129.4, 128.9, 128.8, 128.2, 127.2, 127.1, 126.7; GC-EIMS  $m/z$ : 208 [M<sup>+</sup>, 88%], 179 (100%).

**(E)-3-Methylstilbene (3oa)** (CAS No: 14064-48-3): Yield 77%, white solid, mp 49 °C (lit. [2] mp: 48.6-49.2 °C); <sup>1</sup>H NMR (CDCl<sub>3</sub>) δ 7.56-7.54 (m, 2H), 7.40-7.35 (m, 4H), 7.31-7.27 (m, 2H), 7.13-7.09 (m, 3H), 2.41 (s, 3H); <sup>13</sup>C NMR (CDCl<sub>3</sub>) δ 138.2, 137.4, 137.3, 128.8, 128.7, 128.6, 128.49, 128.47, 127.6, 127.2, 126.5, 123.7, 21.5; GC-EIMS *m/z*: 194 [M<sup>+</sup>, 90%], 179 (100%).

**(E)-2-Formylstilbene (3qa)** (CAS No: 52095-44-0): Yield 51%, yellow oil; <sup>1</sup>H NMR (CDCl<sub>3</sub>) δ 10.35 (s, 1H), 8.07 (d, *J* = 16.2 Hz, 1H), 7.87 (d, *J* = 7.8 Hz, 1H), 7.75 (d, *J* = 7.8 Hz, 1H), 7.63-7.57 (m, 3H), 7.48-7.45 (m, 1H), 7.41 (d, *J* = 7.6 Hz, 2H), 7.35-7.32 (m, 1H), 7.08 (d, *J* = 16.2 Hz, 1H); <sup>13</sup>C NMR (CDCl<sub>3</sub>) δ 192.7, 140.0, 136.9, 134.0, 133.7, 133.0, 132.3, 128.8, 128.3, 127.6, 127.2, 127.0, 124.8; GC-EIMS *m/z*: 208 [M<sup>+</sup>, 100%].

**(E)-2-Methylstilbene (3ra)** (CAS No: 22257-16-5): Yield 73%, white solid, mp 34 °C (lit. [2] mp: 31-32 °C); <sup>1</sup>H NMR (CDCl<sub>3</sub>) δ 7.64 (d, *J* = 7.3 Hz, 1H), 7.57 (d, *J* = 7.4 Hz, 2H), 7.42-7.36 (m, 3H), 7.31 (t, *J* = 7.4 Hz, 1H), 7.28-7.25 (m, 1H), 7.24-7.22 (m, 2H), 7.04 (d, *J* = 16.1 Hz, 1H), 2.47 (s, 3H); <sup>13</sup>C NMR (CDCl<sub>3</sub>) δ 137.7, 136.4, 135.8, 130.4, 130.0, 128.7, 127.61, 127.56, 126.6, 126.2, 125.4, 19.9; GC-EIMS *m/z*: 194 [M<sup>+</sup>, 76%], 179 (100%).

**(E)-2-Styrylnaphthalene (3sa)** (CAS No: 2840-89-3): Yield 84%, white solid, mp 145 °C (lit. [8] mp: 144-146 °C); <sup>1</sup>H NMR (CDCl<sub>3</sub>) δ 7.91-7.81 (m, 4H), 7.80 (d, *J* = 8.6 Hz, 1H), 7.63 (d, *J* = 7.5 Hz, 2H), 7.55-7.50 (m, 2H), 7.45 (t, *J* = 7.6 Hz, 2H), 7.36-7.31 (m, 3H); <sup>13</sup>C NMR (CDCl<sub>3</sub>) δ 137.4, 134.8, 133.7, 133.1, 129.0, 128.8, 128.75, 128.3, 128.0, 127.7, 127.6, 126.6, 126.5, 126.3, 125.9, 123.5; GC-EIMS *m/z*: 230 [M<sup>+</sup>, 100%].

**(E)-3-Styrylpyridine (3ta)** (CAS No: 5097-91-6): Yield 97%, white solid, mp 79 °C (lit. [9] mp: 78.6-81.6 °C); <sup>1</sup>H NMR (CDCl<sub>3</sub>) δ 8.74 (s, 1H), 8.54-8.50 (m, 1H), 7.86-7.84 (m, 1H), 7.55 (d, *J* = 7.4 Hz, 2H), 7.40 (t, *J* = 7.6 Hz, 2H), 7.33-7.29 (m, 2H), 7.18 (d, *J* = 16.4 Hz, 1H), 7.09 (d, *J* = 16.4 Hz,

1H); <sup>13</sup>C NMR (CDCl<sub>3</sub>) δ 148.6, 136.7, 133.0, 132.7, 130.9, 128.8, 128.2, 126.7, 124.9, 123.5; GC-EIMS *m/z*: 181 [M<sup>+</sup>, 42%], 180 (100%).

**(E)-3-Styrylquinoline (3ua)** (CAS No: 61064-99-1): Yield 86%, white solid, mp 99 °C (lit. [10] mp: 92-93 °C); <sup>1</sup>H NMR (CDCl<sub>3</sub>) δ 9.15 (s, 1H), 8.19 (s, 1H), 8.11 (d, *J* = 8.5 Hz, 1H), 7.84 (d, *J* = 8.2 Hz, 1H), 7.72-7.68 (m, 1H), 7.60 (d, *J* = 7.5 Hz, 2H), 7.57 (t, *J* = 3.8 Hz, 1H), 7.42 (t, *J* = 7.6 Hz, 2H), 7.34 (t, *J* = 3.7 Hz, 1H), 7.35 (d, *J* = 16.5 Hz, 1H), 7.26 (d, *J* = 16.4 Hz, 1H); <sup>13</sup>C NMR (CDCl<sub>3</sub>) δ 149.5, 147.5, 136.8, 132.3, 130.9, 130.3, 129.3, 129.2, 128.8, 128.3, 128.1, 127.8, 127.0, 126.7, 125.2; GC-EIMS *m/z*: 231 [M<sup>+</sup>, 76%], 230 (100%).

**(E)-1-Acetyl-4-(4-methoxystyryl)benzene (3ab)** (CAS No: 117760-54-0): Yield 97%, white solid, mp 171 °C (lit. [11] mp: 174.5-175 °C); <sup>1</sup>H NMR (CDCl<sub>3</sub>) δ 7.95 (d, *J* = 8.3 Hz, 2H), 7.57 (d, *J* = 8.3 Hz, 2H), 7.50 (d, *J* = 8.7 Hz, 2H), 7.20 (d, *J* = 16.3 Hz, 1H), 7.01 (d, *J* = 16.3 Hz, 1H), 6.93 (d, *J* = 8.7 Hz, 2H), 3.86 (s, 3H), 2.62 (s, 3H); <sup>13</sup>C NMR (CDCl<sub>3</sub>) δ 197.5, 159.9, 142.4, 135.6, 131.0, 129.5, 128.9, 128.2, 126.2, 125.3, 114.3, 55.4, 26.6; GC-EIMS *m/z*: 252 [M<sup>+</sup>, 100%].

**(E)-1-Acetyl-4-(4-methylstyryl)benzene (3ac)** (CAS No: 1022914-04-0): Yield 95%, yellowish solid, mp 172 °C; <sup>1</sup>H NMR (CDCl<sub>3</sub>) δ 7.96 (d, *J* = 8.4 Hz, 2H), 7.59 (d, *J* = 8.4 Hz, 2H), 7.45 (d, *J* = 8.1 Hz, 2H), 7.22 (d, *J* = 16.4 Hz, 1H), 7.21 (d, *J* = 7.9 Hz, 2H), 7.10 (d, *J* = 16.4 Hz, 1H), 2.62 (s, 3H), 2.39 (s, 3H); <sup>13</sup>C NMR (CDCl<sub>3</sub>) δ 197.5, 142.3, 138.4, 135.8, 133.9, 131.4, 129.5, 128.9, 126.8, 126.4, 126.3, 26.6, 21.3; GC-EIMS *m/z*: 236 [M<sup>+</sup>, 44%], 221 (100%).

**(E)-1-Acetyl-4-(4-chlorostyryl)benzene (3ad)** (CAS No: 63483-67-0): Yield 93%, yellow solid, mp 142 °C; <sup>1</sup>H NMR (CDCl<sub>3</sub>) δ 7.97 (d, *J* = 8.4 Hz, 2H), 7.58 (d, *J* = 8.4 Hz, 2H), 7.47 (d, *J* = 8.5 Hz, 2H), 7.36 (d, *J* = 8.5 Hz, 2H), 7.18 (d, *J* = 16.4 Hz, 1H), 7.10 (d, *J* = 16.4 Hz, 1H), 2.62 (s, 3H); <sup>13</sup>C NMR (CDCl<sub>3</sub>): δ 197.4, 141.6, 136.1, 135.2, 133.9, 130.1, 129.0, 128.9, 128.0, 127.9, 126.5, 26.6; GC-EIMS *m/z*: 256 [M<sup>+</sup>, 53%], 258 [M+2, 18%], 241 (100%).

**(E)-2-(4-Acetylstyryl)naphthalene (3ae):** Yield 96%, yellowish solid, mp 166-167 °C; <sup>1</sup>H NMR (CDCl<sub>3</sub>) δ 8.00 (d, *J* = 8.4 Hz, 2H), 7.92 (s, 1H), 7.87-7.84 (m, 3H), 7.89-7.77 (m, 1H), 7.66 (d, *J* = 8.4 Hz, 2H), 7.53-7.48 (m, 2H), 7.42 (d, *J* = 16.3 Hz, 1H), 7.28 (d, *J* = 16.3 Hz, 1H), 2.64 (s, 3H); <sup>13</sup>C NMR (CDCl<sub>3</sub>) δ 197.3, 142.1, 138.8, 136.0, 134.2, 133.7, 133.4, 131.6, 129.0, 128.5, 128.2, 127.8, 127.4, 126.6, 126.3, 123.4, 26.6; EI-HRMS *m/z*: calcd C<sub>20</sub>H<sub>16</sub>NO [M]<sup>+</sup>: 272.1201 found: 272.1209.

**(E)-3-(4-Acetylphenyl)acrylic acid 3(af)** (CAS No: 116868-96-3): Yield 89%, yellowish solid, mp 211 °C (lit. [12] mp 224-226 °C); <sup>1</sup>H NMR (DMSO) δ 2.51 (s, 1H), 7.98 (d, *J* = 8.4 Hz, 2H), 7.84 (d, *J* = 8.4 Hz, 2H), 7.65 (d, *J* = 16.1 Hz, 1H), 6.68 (d, *J* = 16.1 Hz, 1H), 2.60 (s, 3H); <sup>13</sup>C NMR (DMSO) δ 197.9, 167.7, 143.0, 139.0, 138.04, 129.1, 128.9, 122.3, 27.3; ESI-MS *m/z*: 189 [(M-H)<sup>-</sup>, 100%].

**(E)-4-(4-Acetylstyryl)pyridine (3ag):** Yield 85%, yellowish solid, mp 104 °C; <sup>1</sup>H NMR (CDCl<sub>3</sub>) δ 8.63 (d, *J* = 6.0 Hz, 2H), 8.00 (d, *J* = 8.3 Hz, 2H), 7.64 (d, *J* = 8.3 Hz, 2H), 7.41 (d, *J* = 6.0 Hz, 2H), 7.34 (d, *J* = 16.4 Hz, 1H), 7.15 (d, *J* = 16.4 Hz, 1H), 2.64 (s, 3H); <sup>13</sup>C NMR (CDCl<sub>3</sub>) δ 197.4, 150.3, 144.0, 140.6, 136.8, 131.9, 128.9, 128.7, 127.1, 121.0, 26.6; EI-HRMS *m/z* calcd C<sub>15</sub>H<sub>13</sub>NO [M]<sup>+</sup>: 223.0997 found: 223.1008.

**(E)-α-(4-Acetylphenyl)stilbene (3ah):** Yield 93%, yellowish solid, mp 135 °C; <sup>1</sup>H NMR (CDCl<sub>3</sub>) δ 7.75 (d, *J* = 8.4 Hz, 2H), 7.39-7.33 (m, 8H), 7.23-7.21 (m, 2H), 7.12 (d, *J* = 8.4 Hz, 2H), 7.01 (s, 1H), 2.55 (s, 3H); <sup>13</sup>C NMR (CDCl<sub>3</sub>) δ 197.5, 145.2, 142.9, 142.3, 139.8, 135.0, 130.2, 129.6, 128.8, 128.3, 128.1, 128.0, 127.8, 127.7, 127.0, 26.5; EI-HRMS *m/z* calcd C<sub>22</sub>H<sub>18</sub>O [M]<sup>+</sup>: 298.1358 found: 298.1371.

## References:

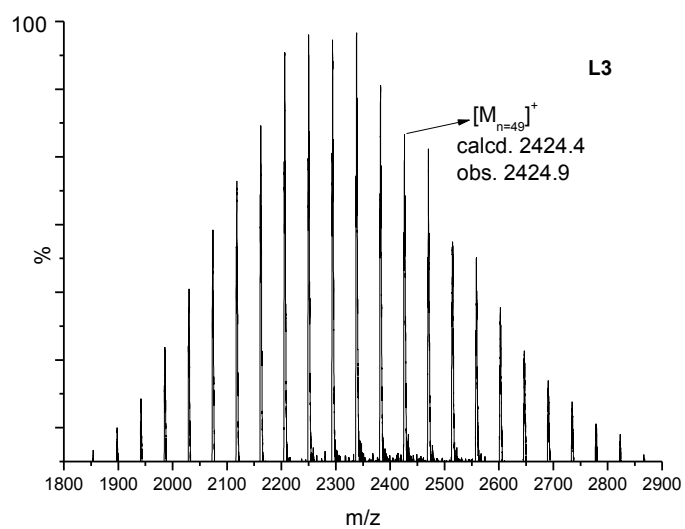
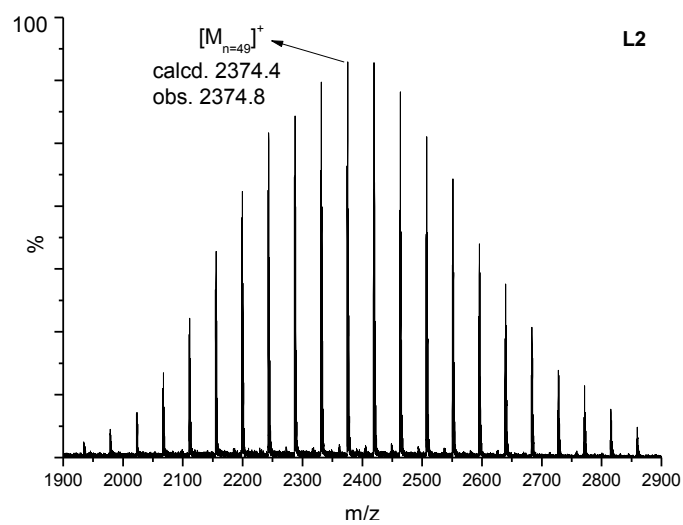
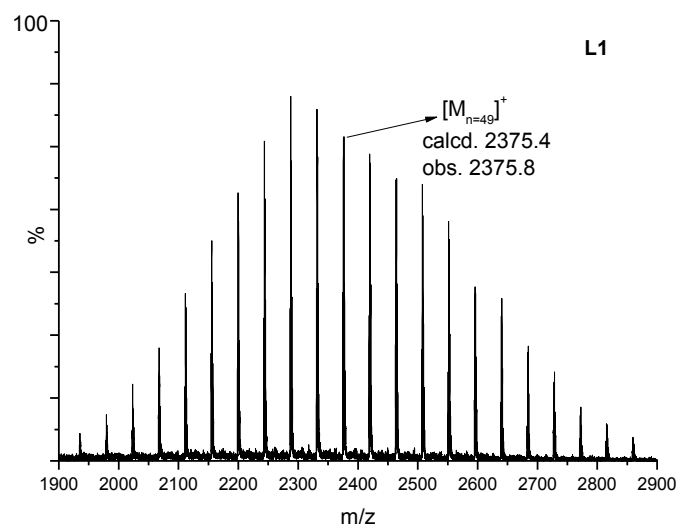
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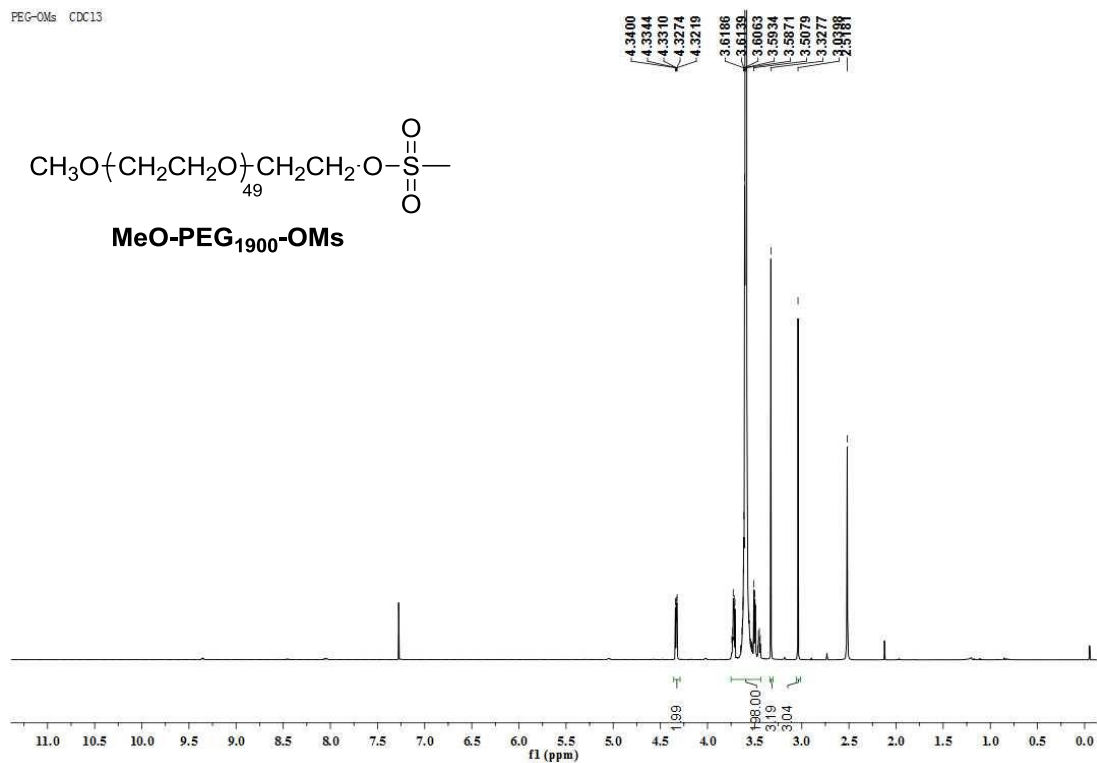


## MALDI-TOF-MS spectra of L1, L2 and L3

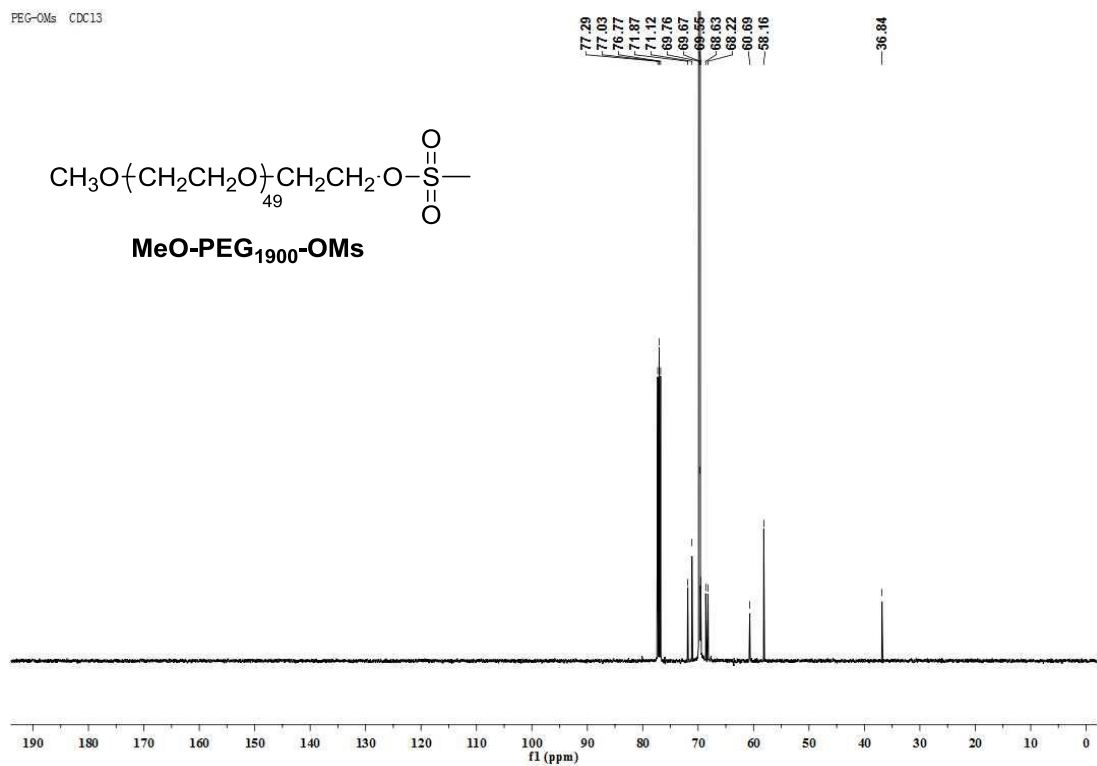


# Proton NMR and <sup>13</sup>C NMR spectra

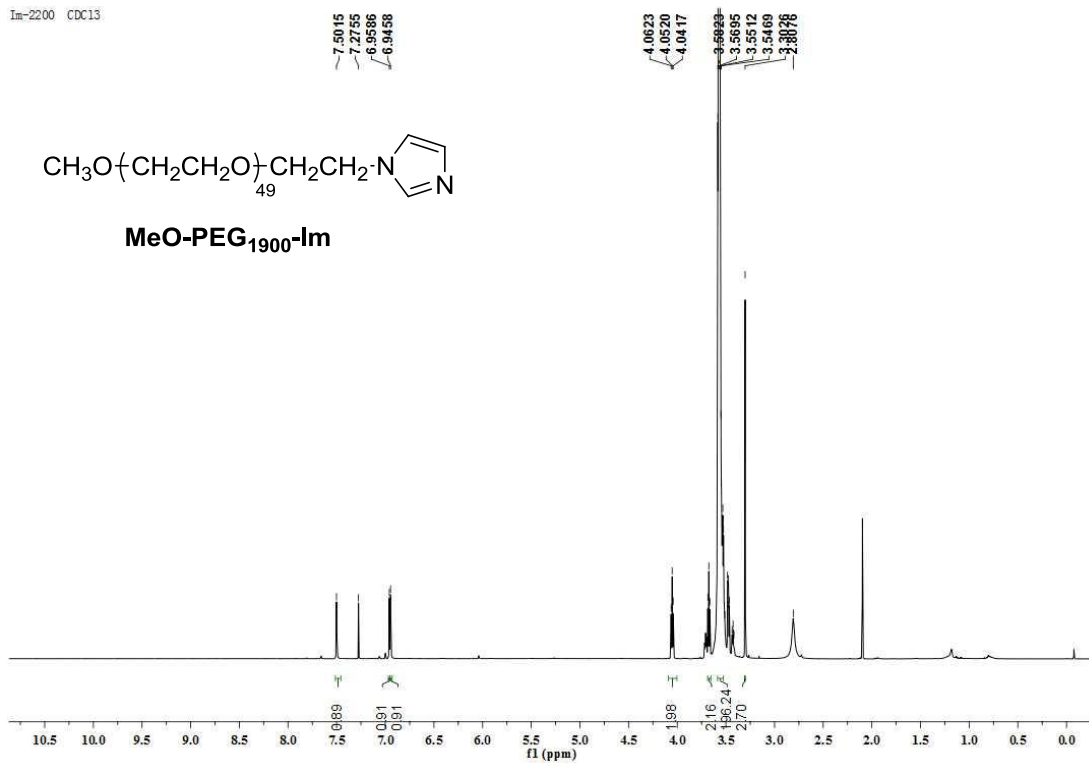
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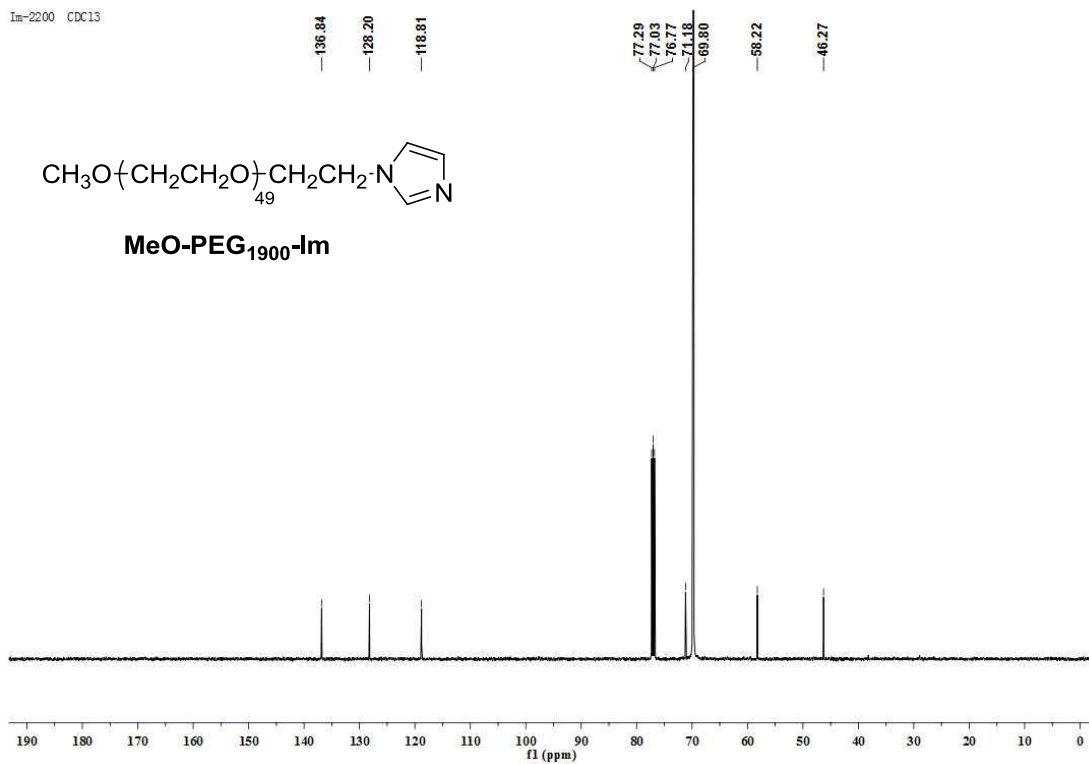
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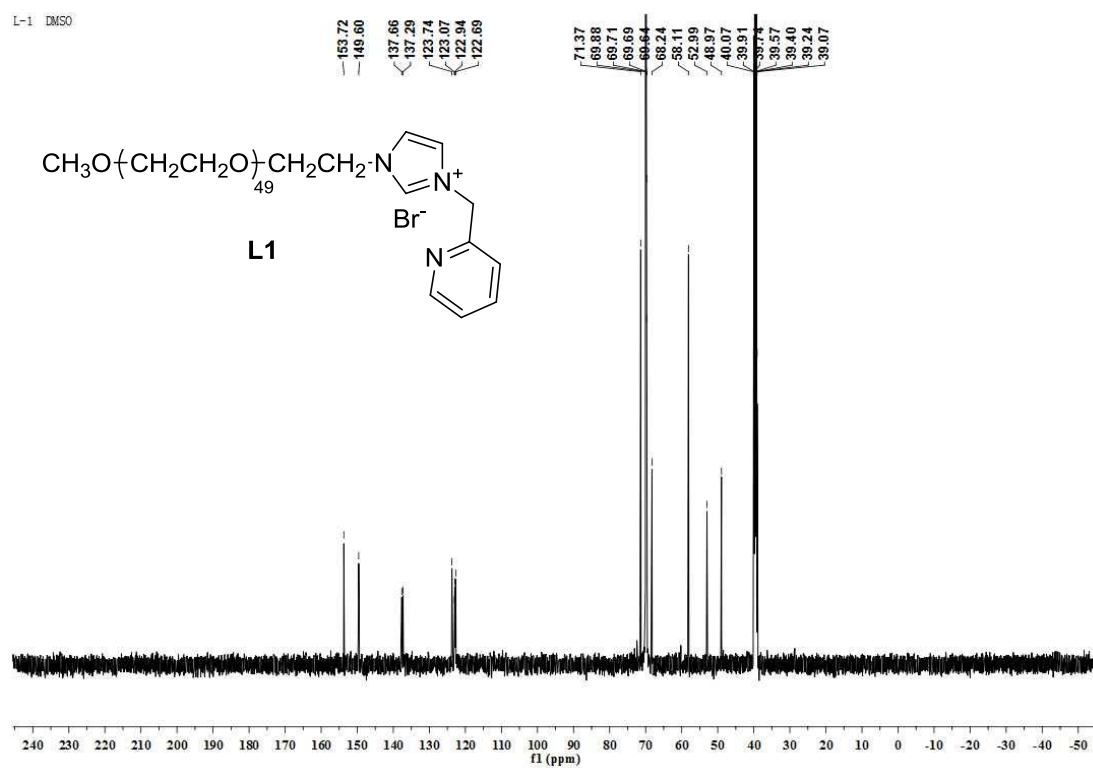
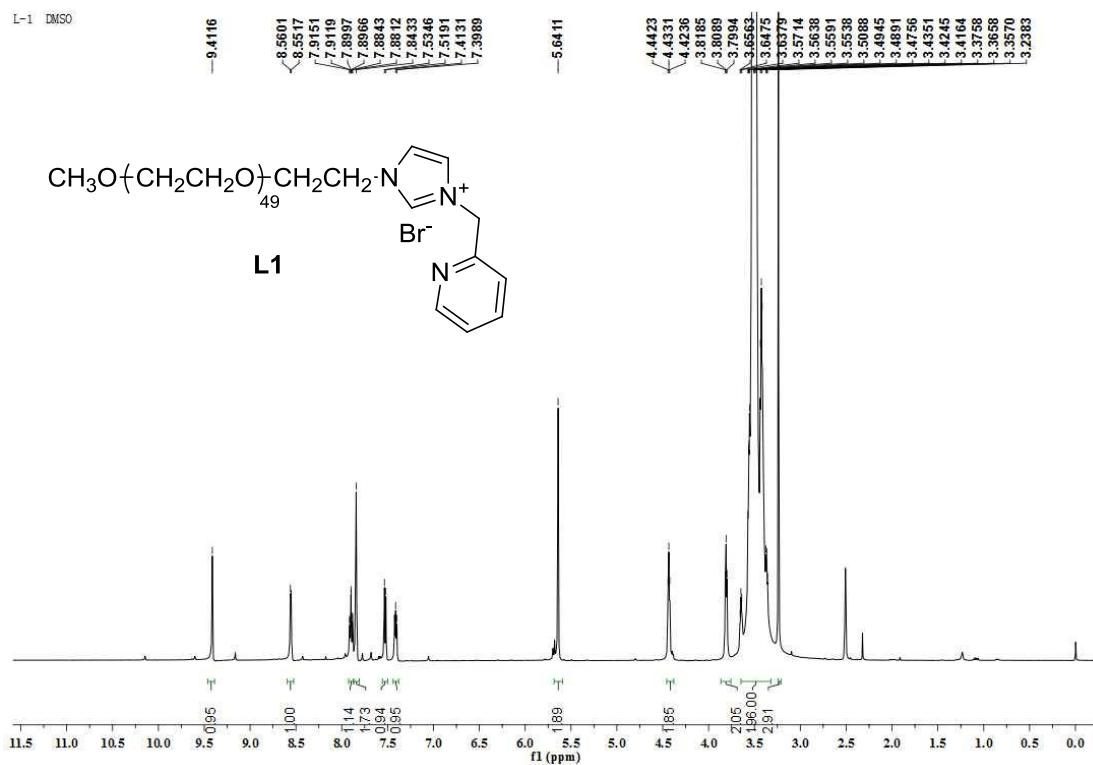


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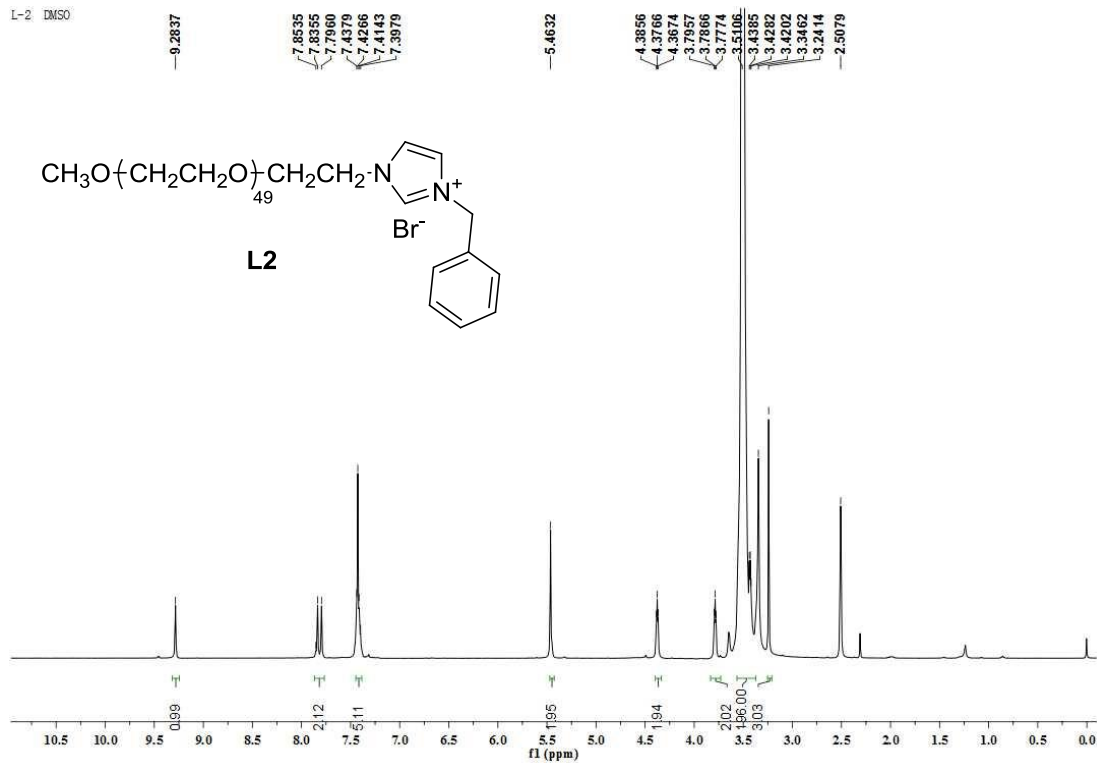


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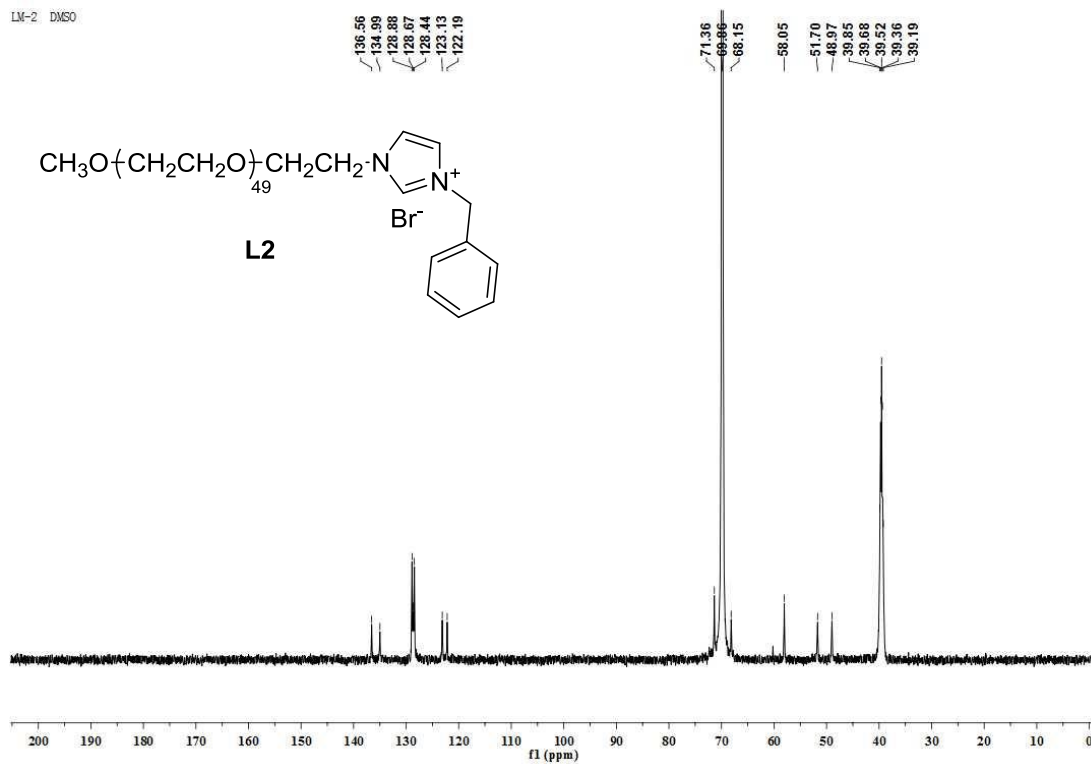




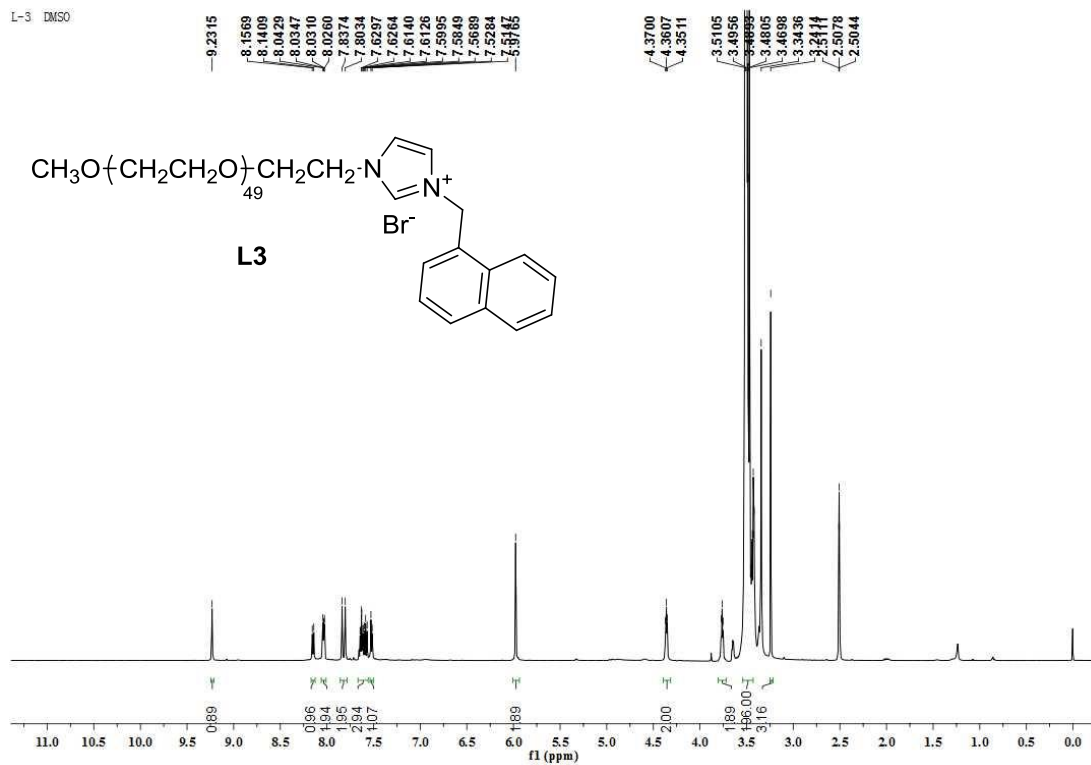
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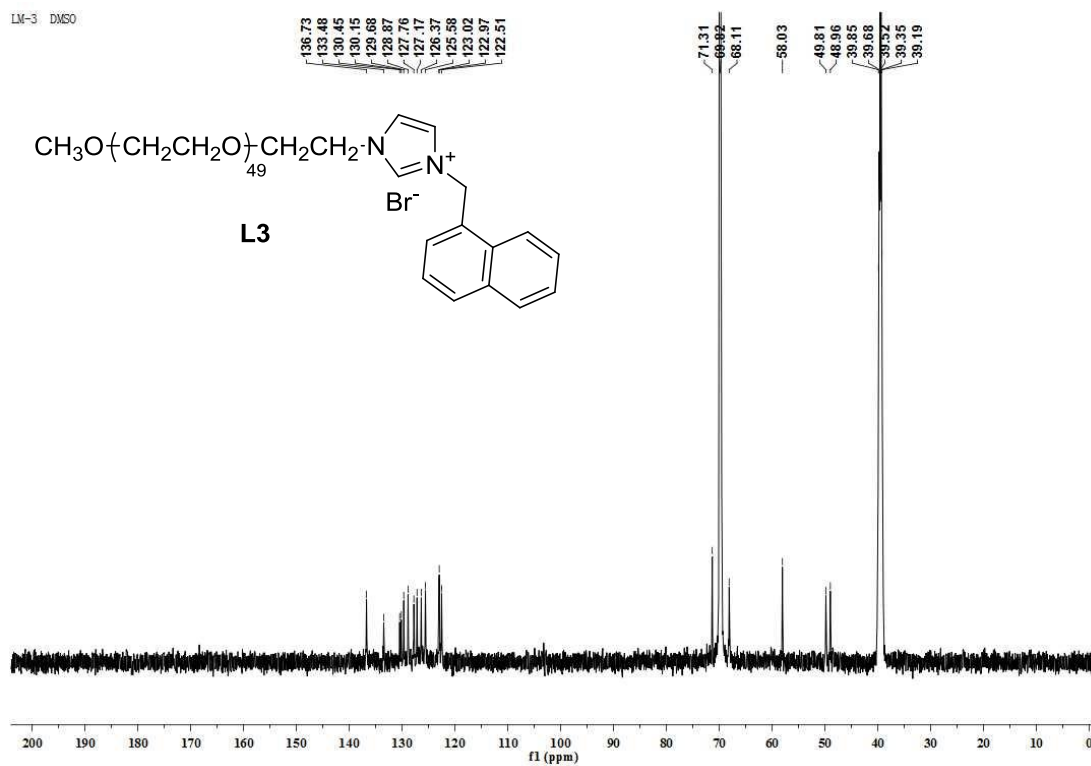
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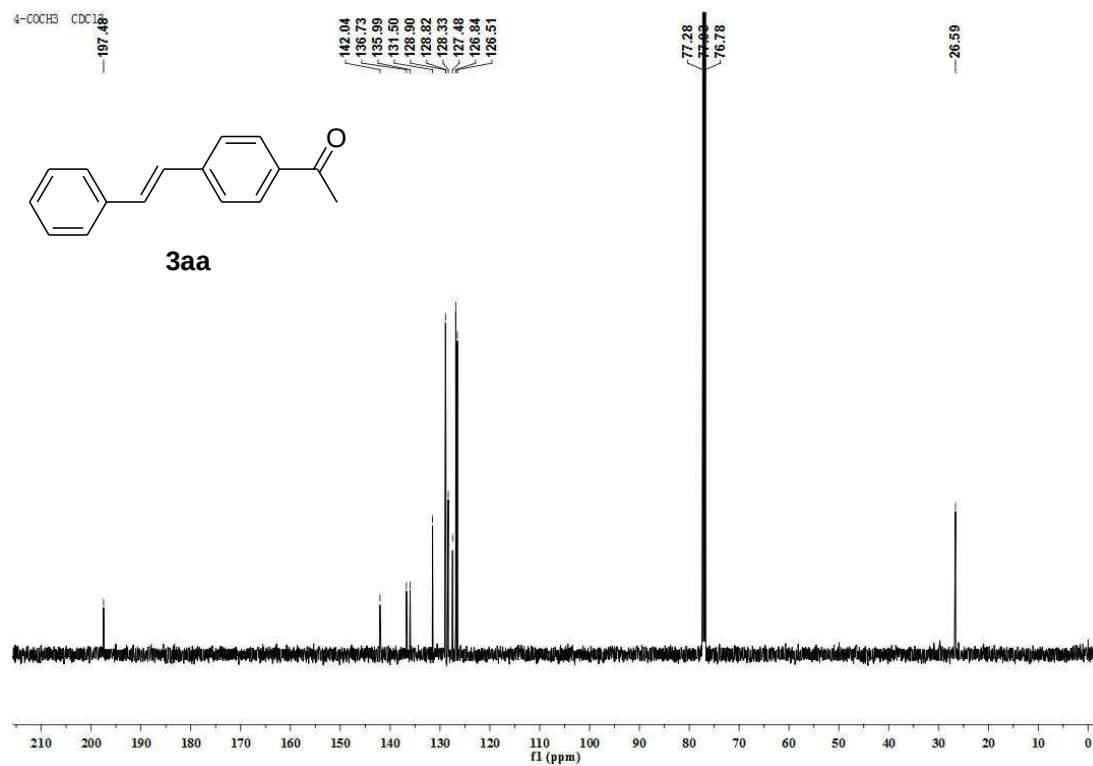
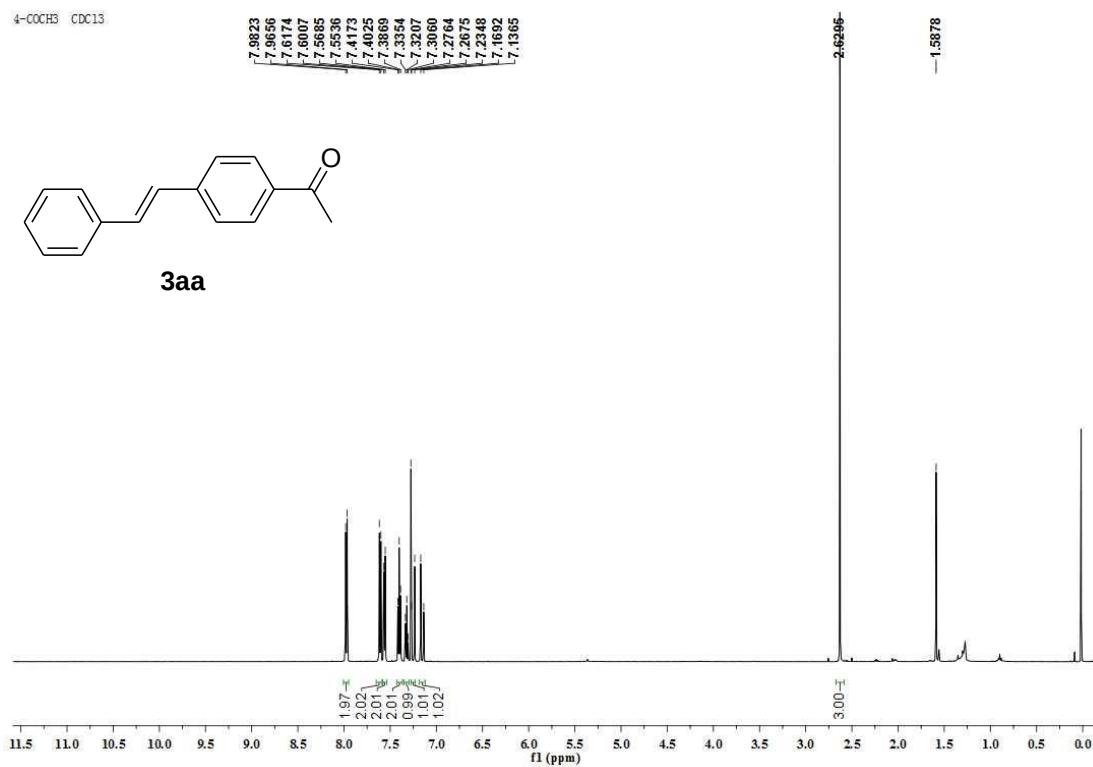


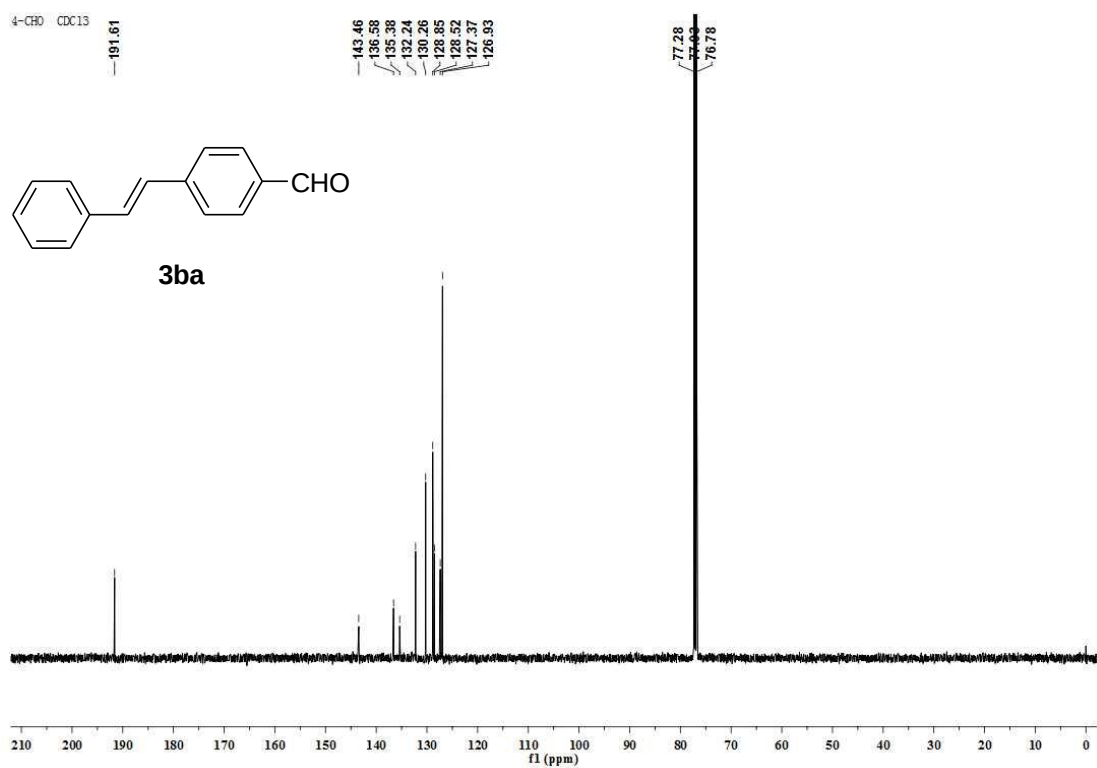
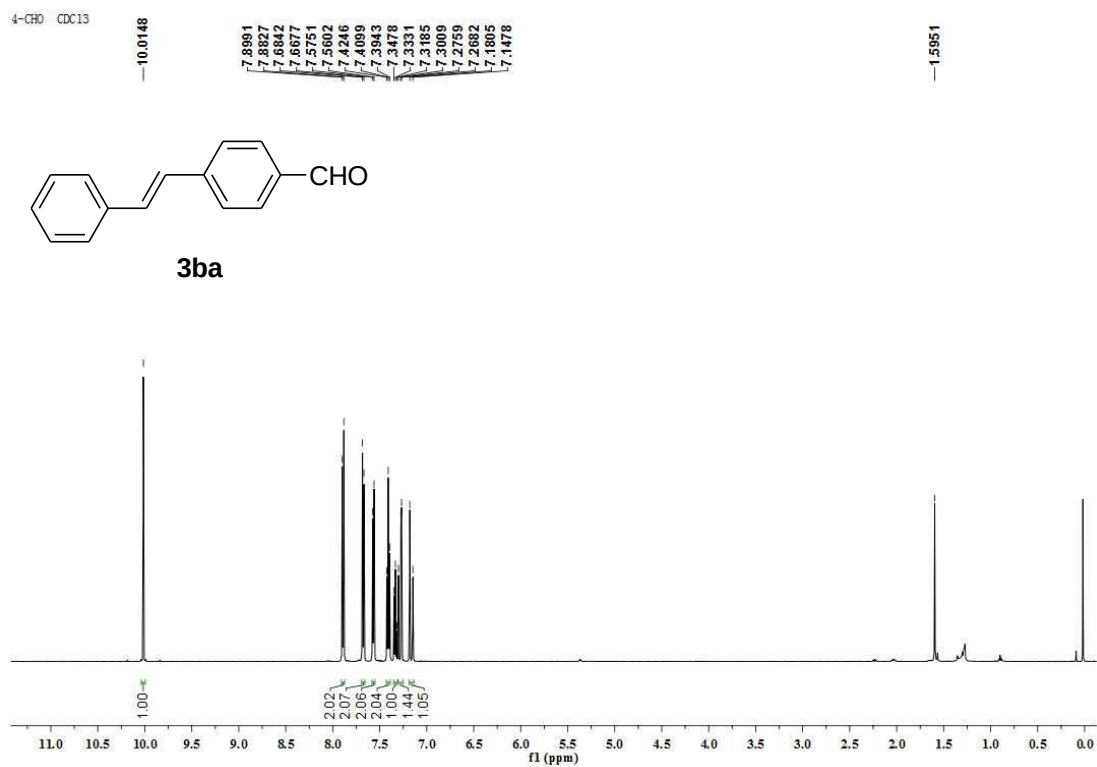
L-3 DMSO



L3-3 DMSO



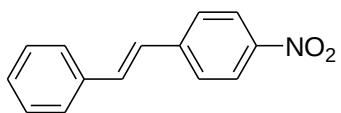




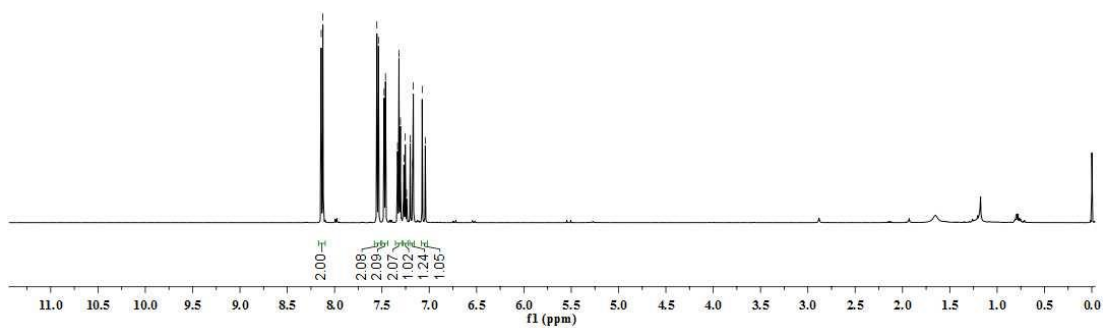


4-NO<sub>2</sub> CDCl<sub>3</sub>

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8.1241  
7.5539  
7.5364  
7.4770  
7.4621  
7.3348  
7.3203  
7.3048  
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7.2013  
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7.0419

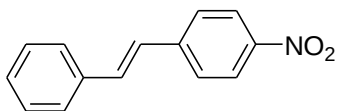


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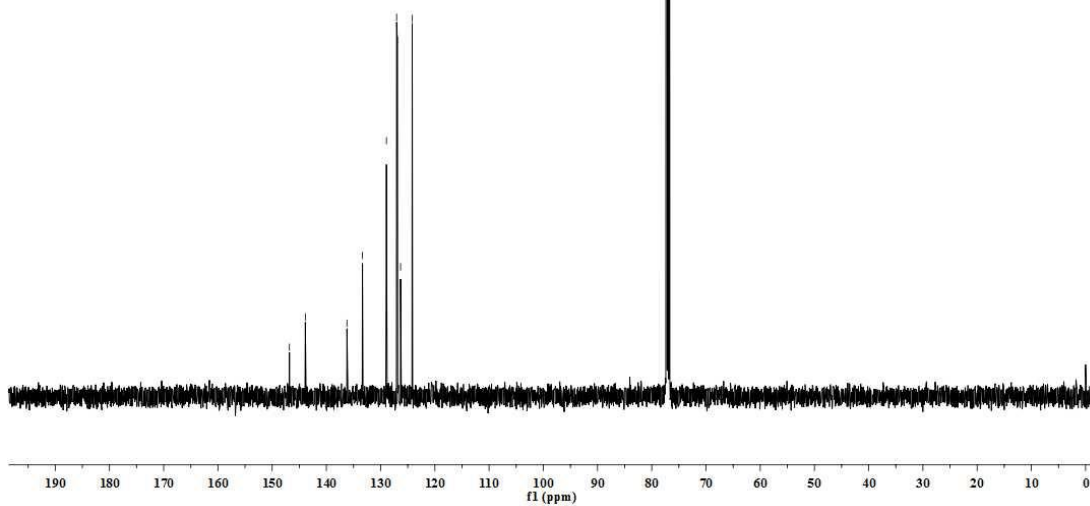


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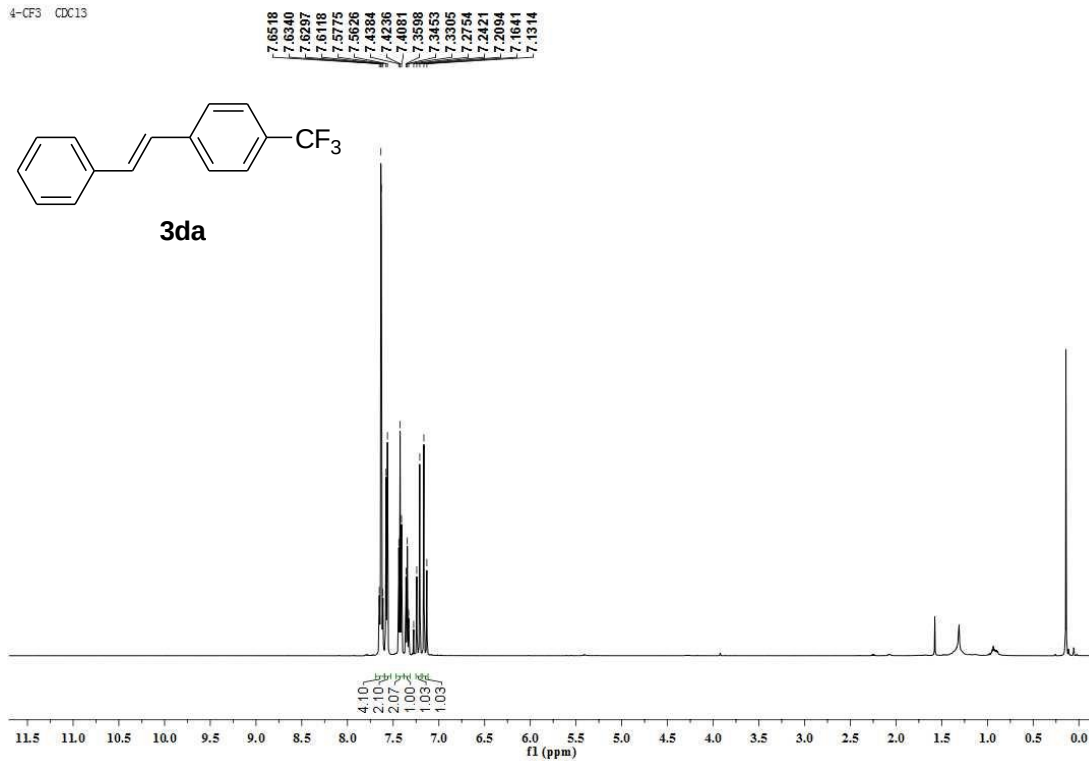
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128.86  
127.04  
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126.32  
124.17



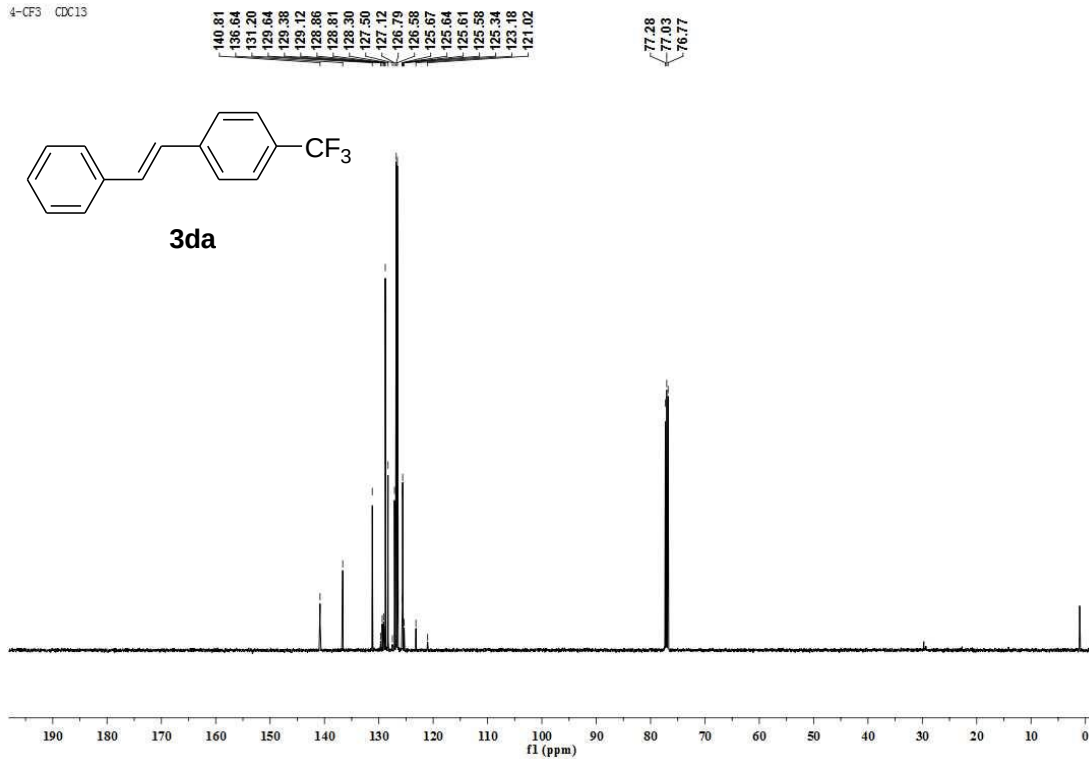
**3ca**

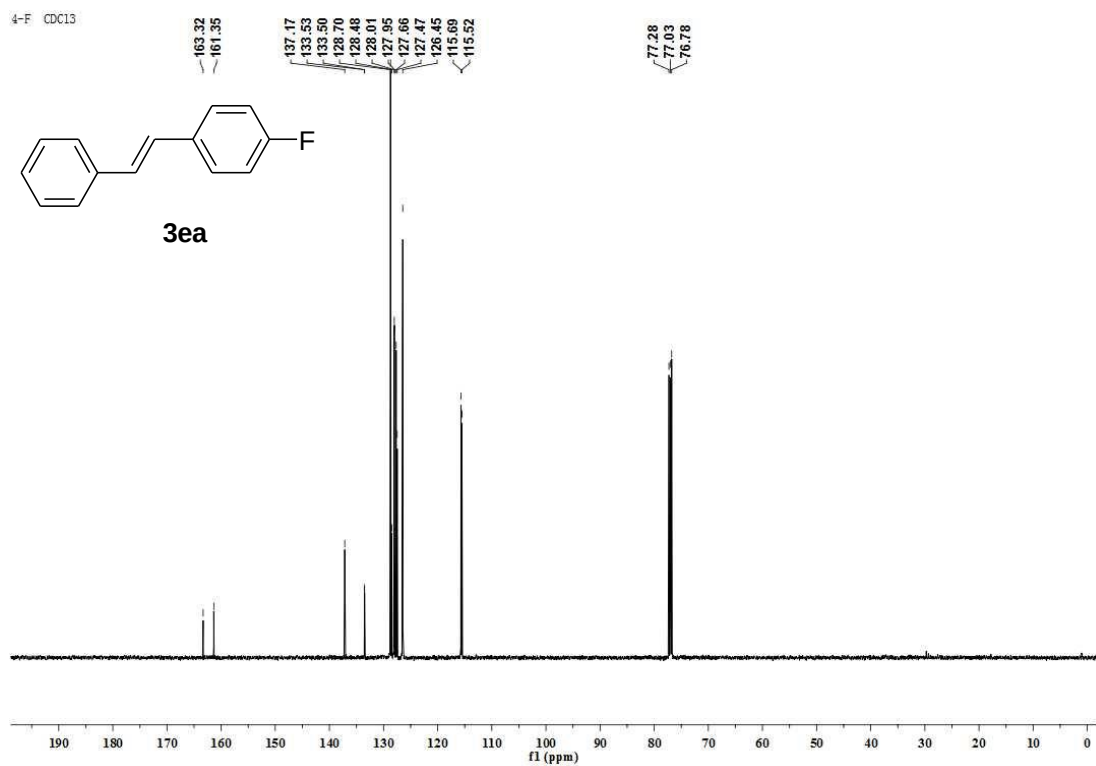
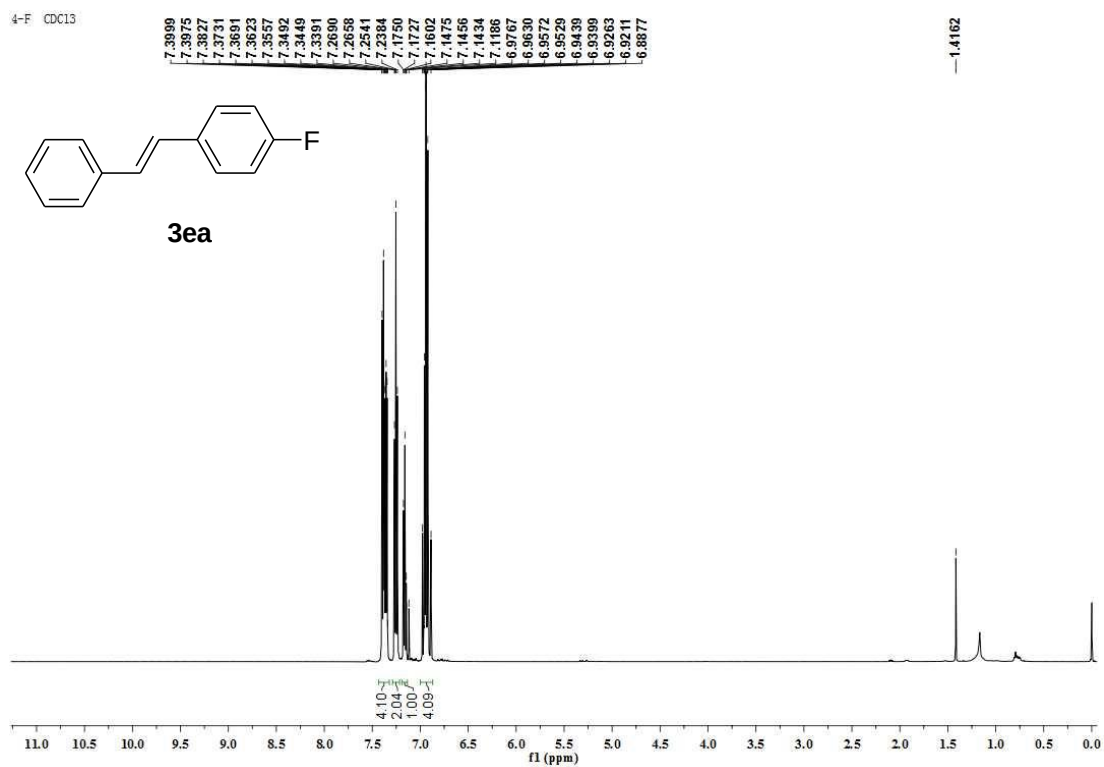


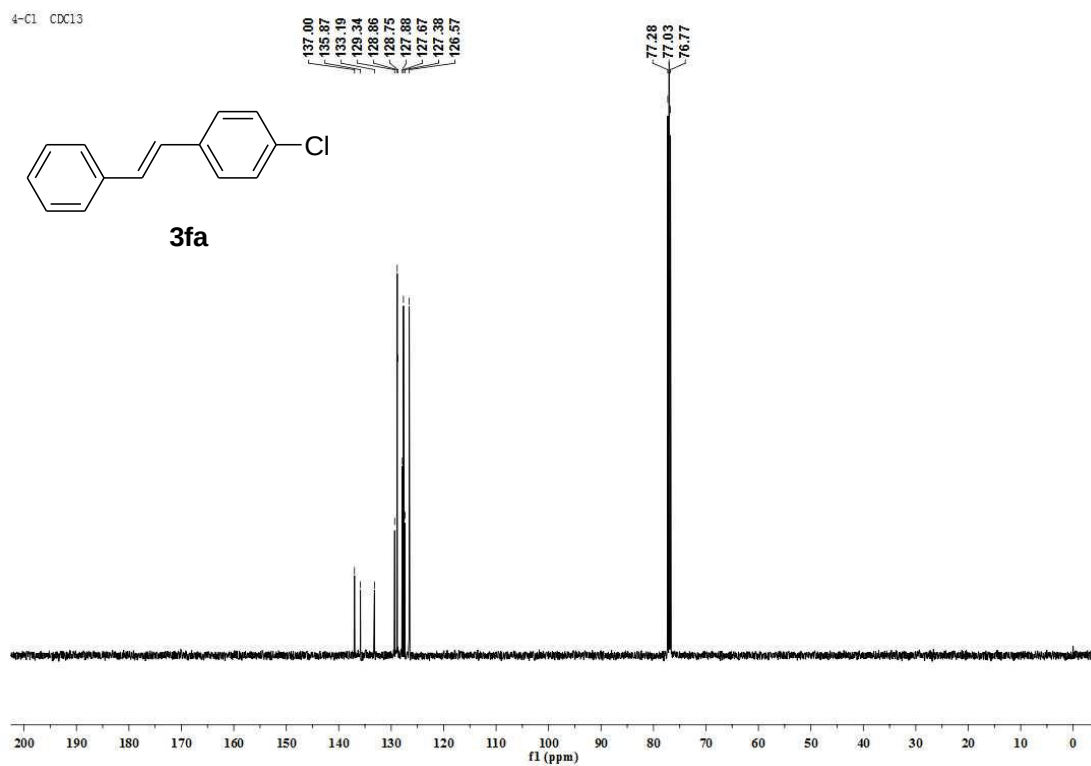
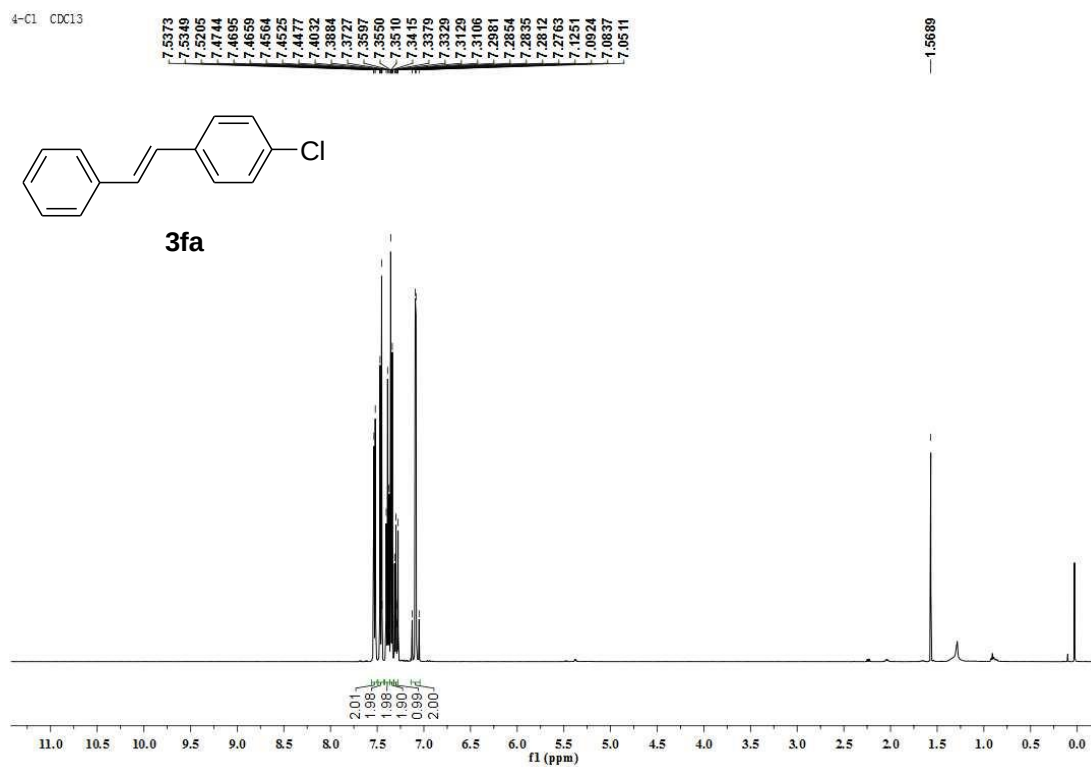
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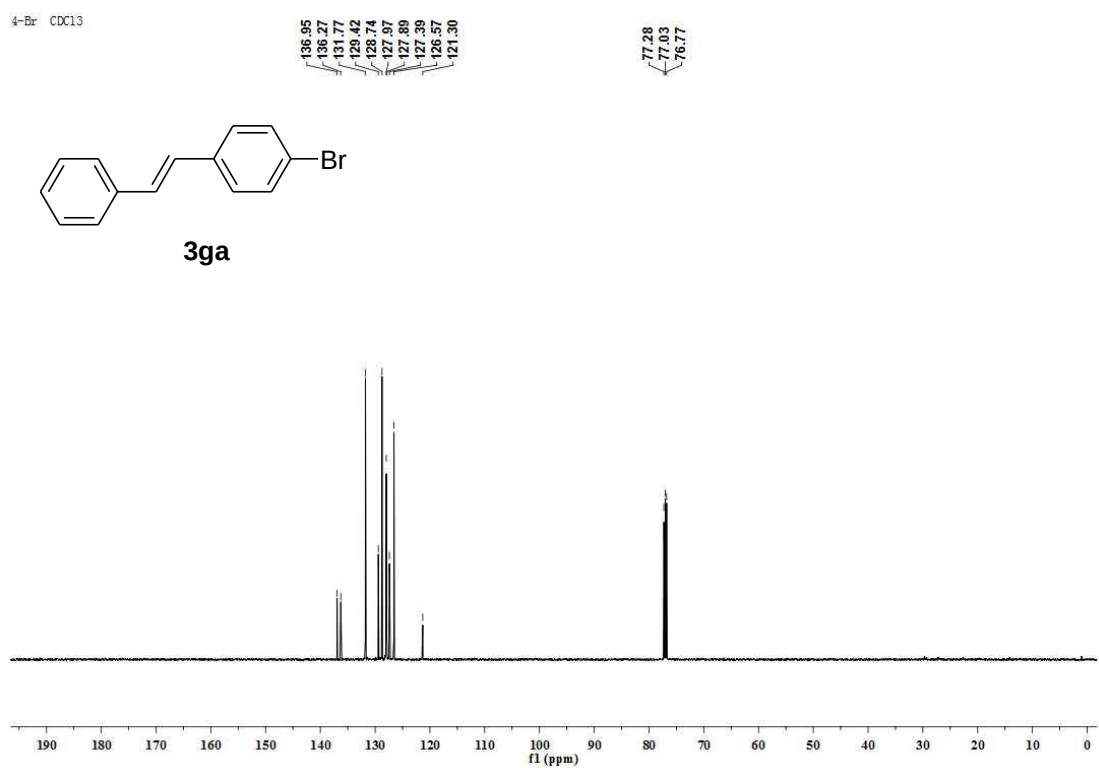
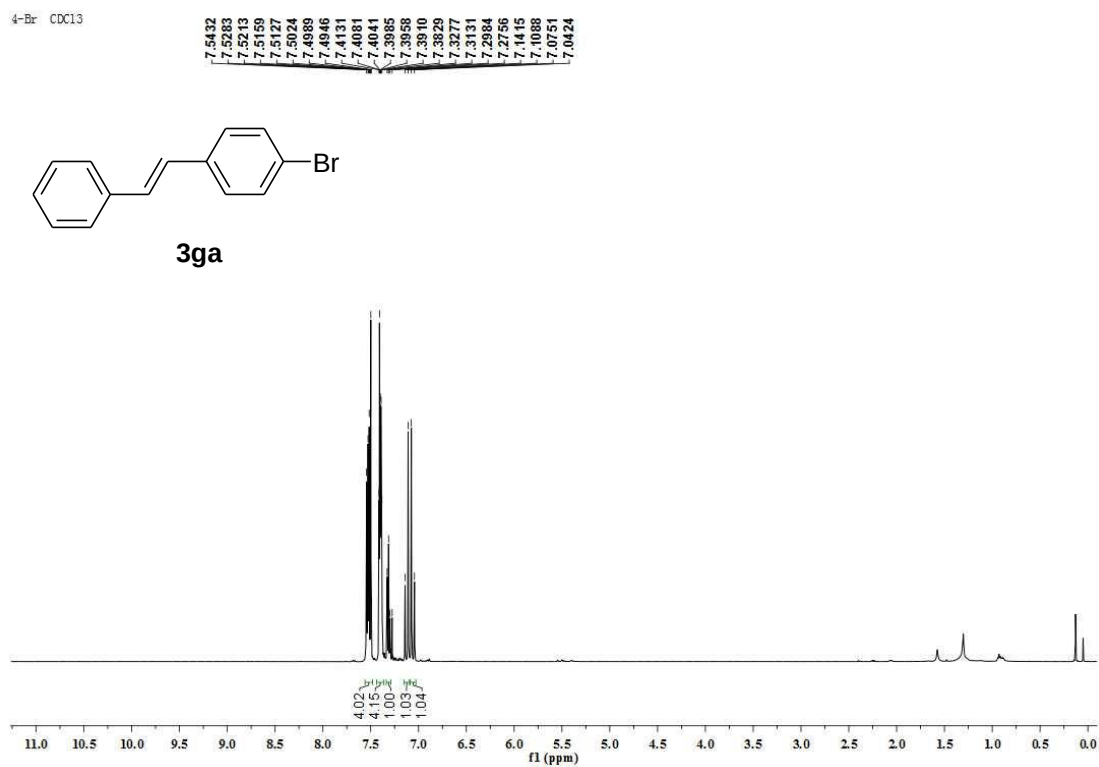


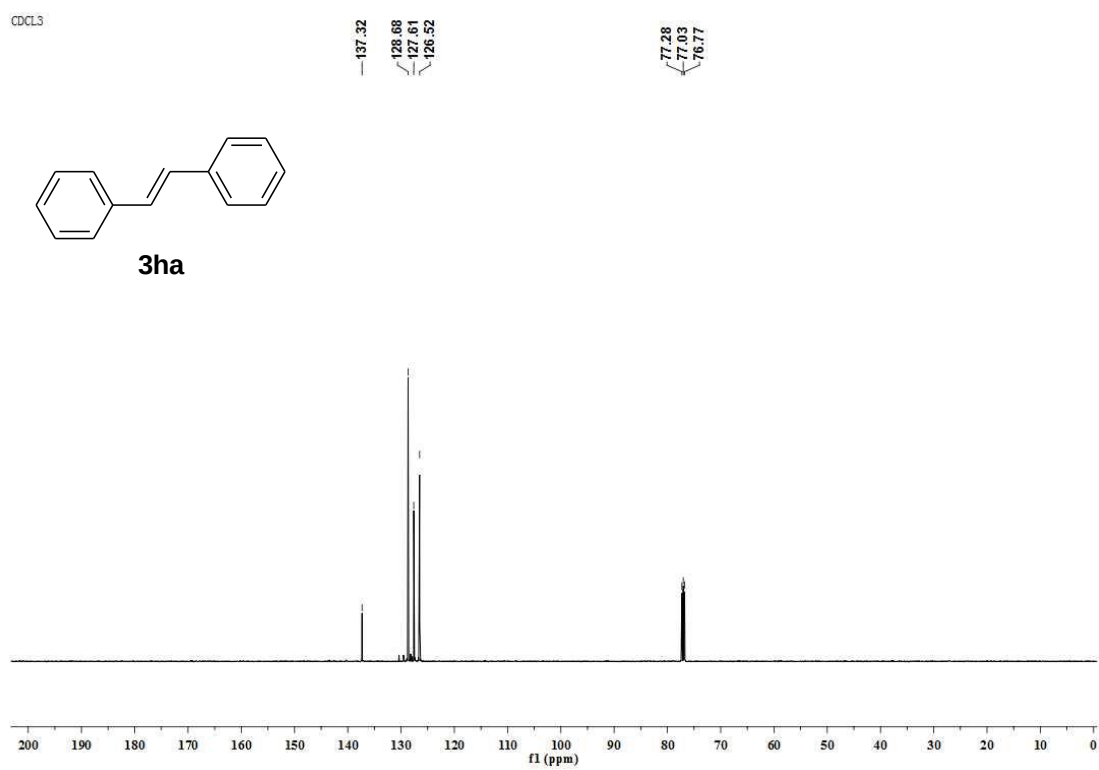
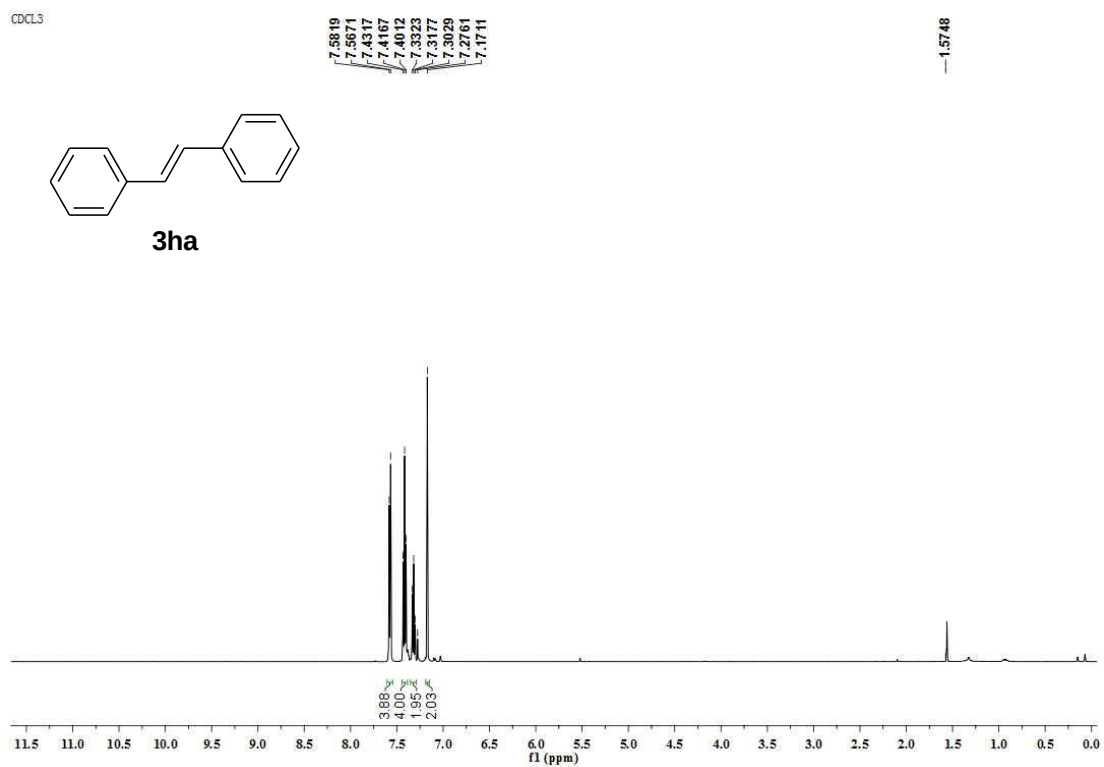
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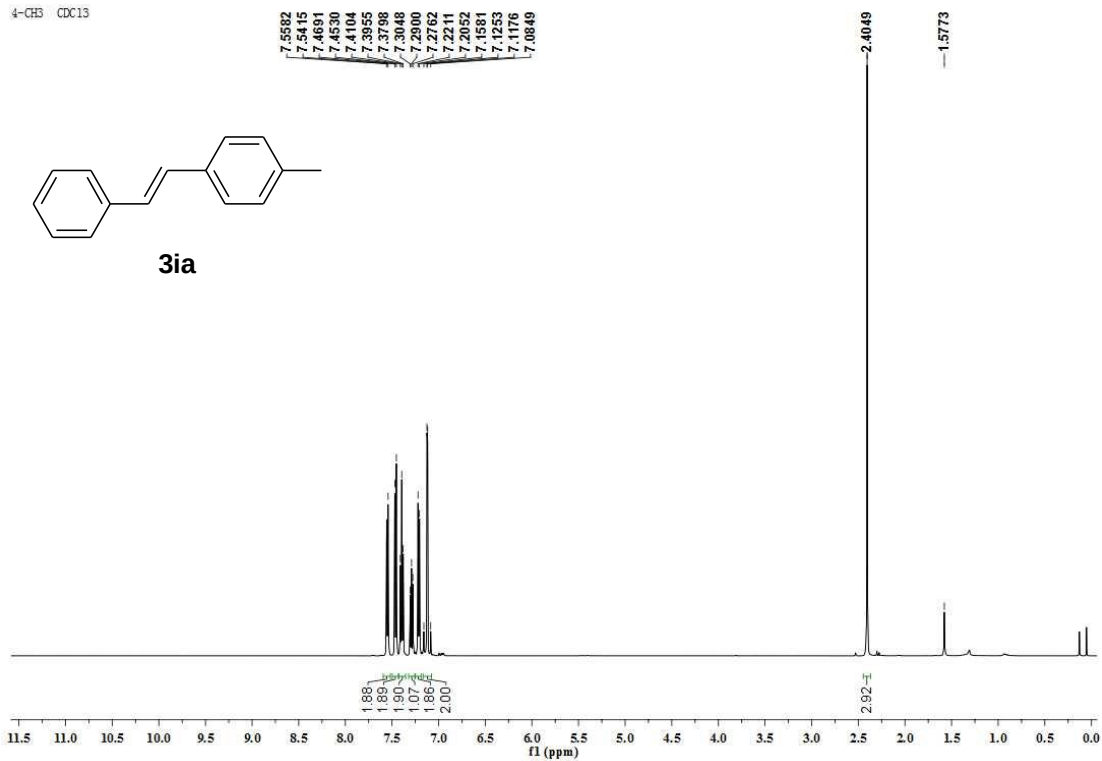




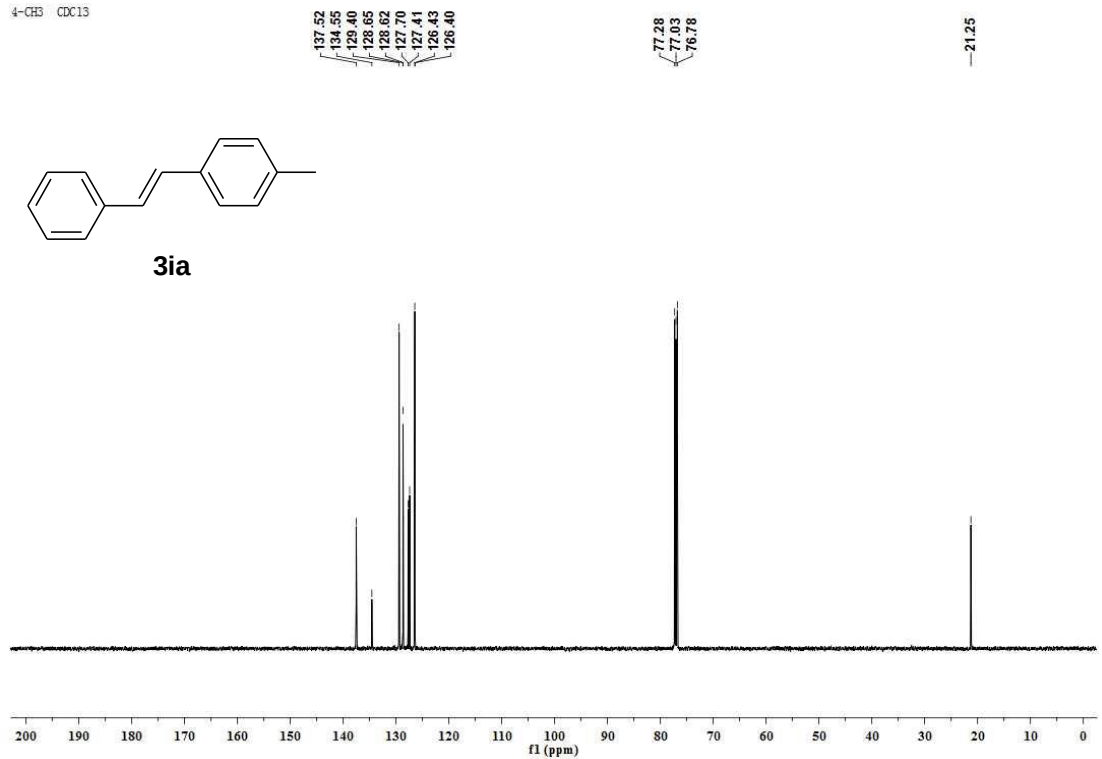


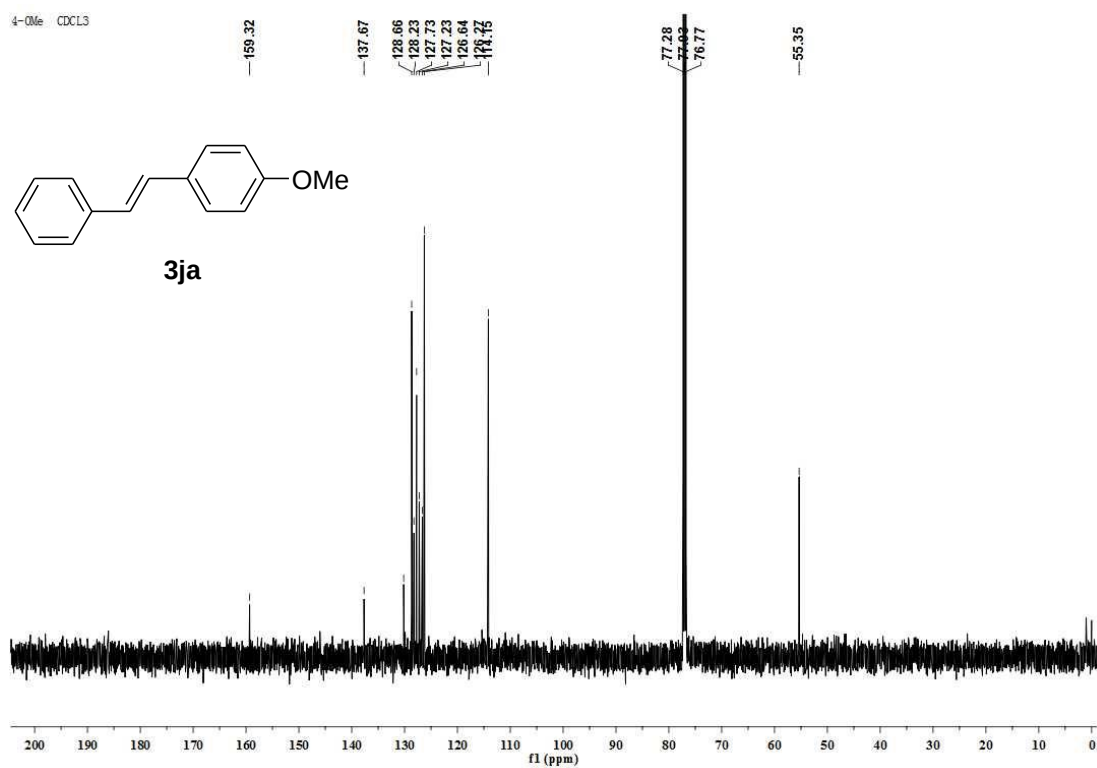
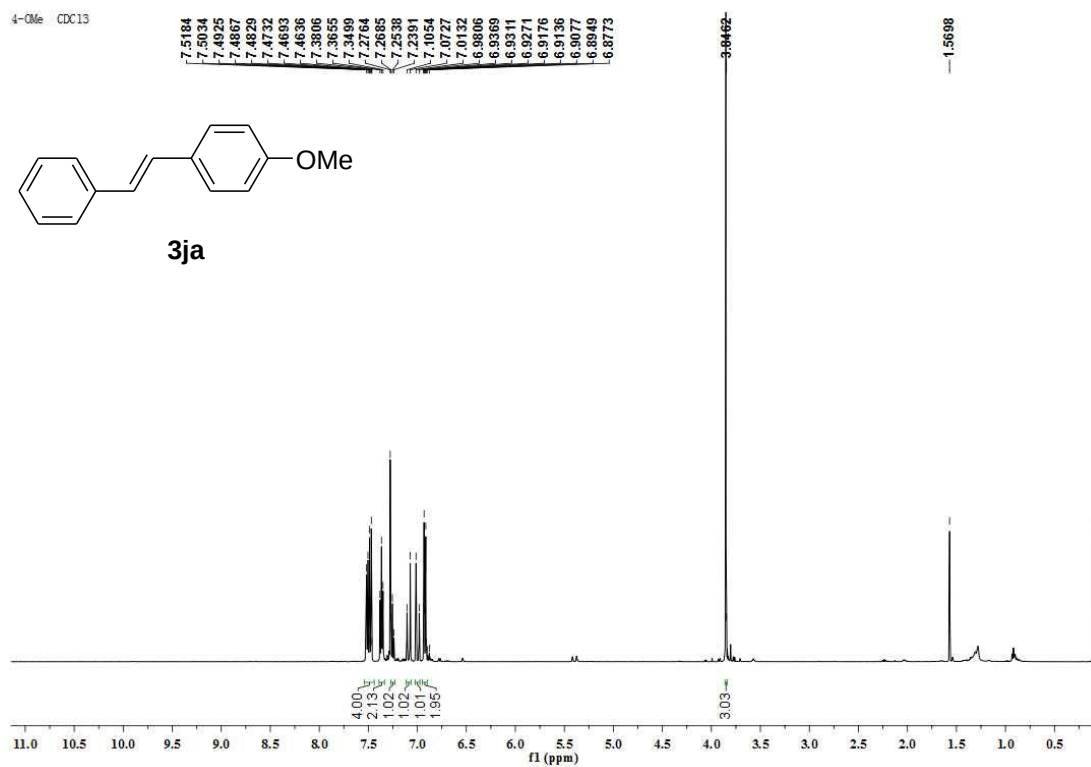


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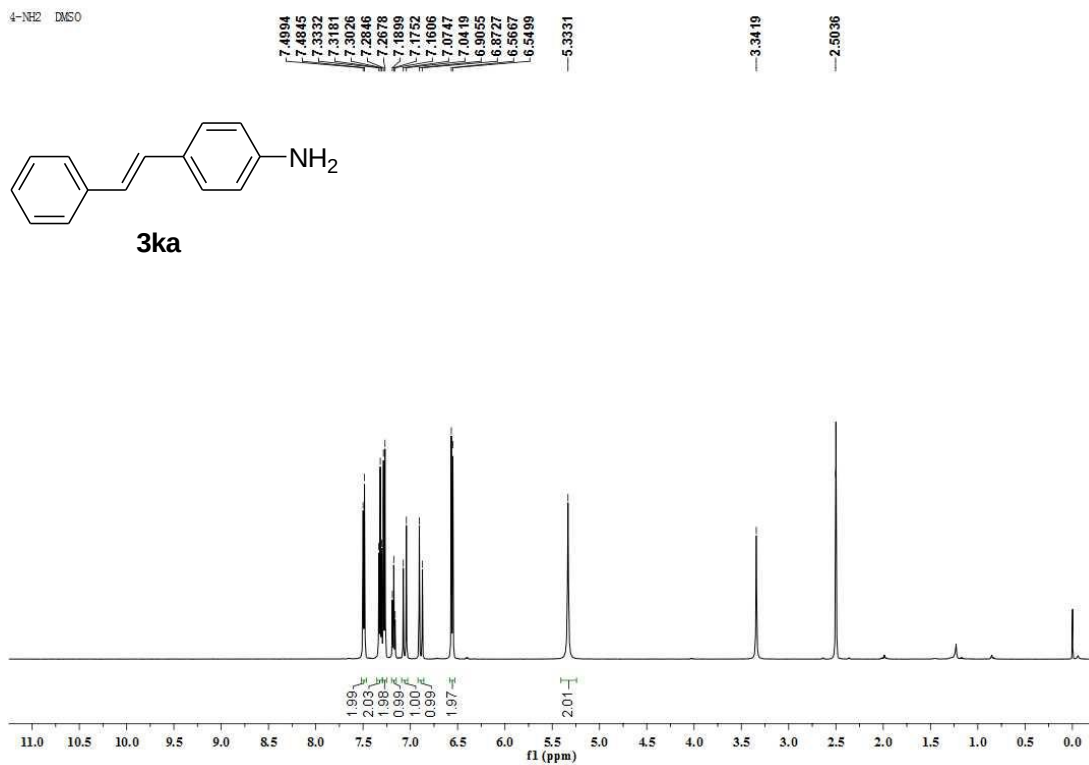
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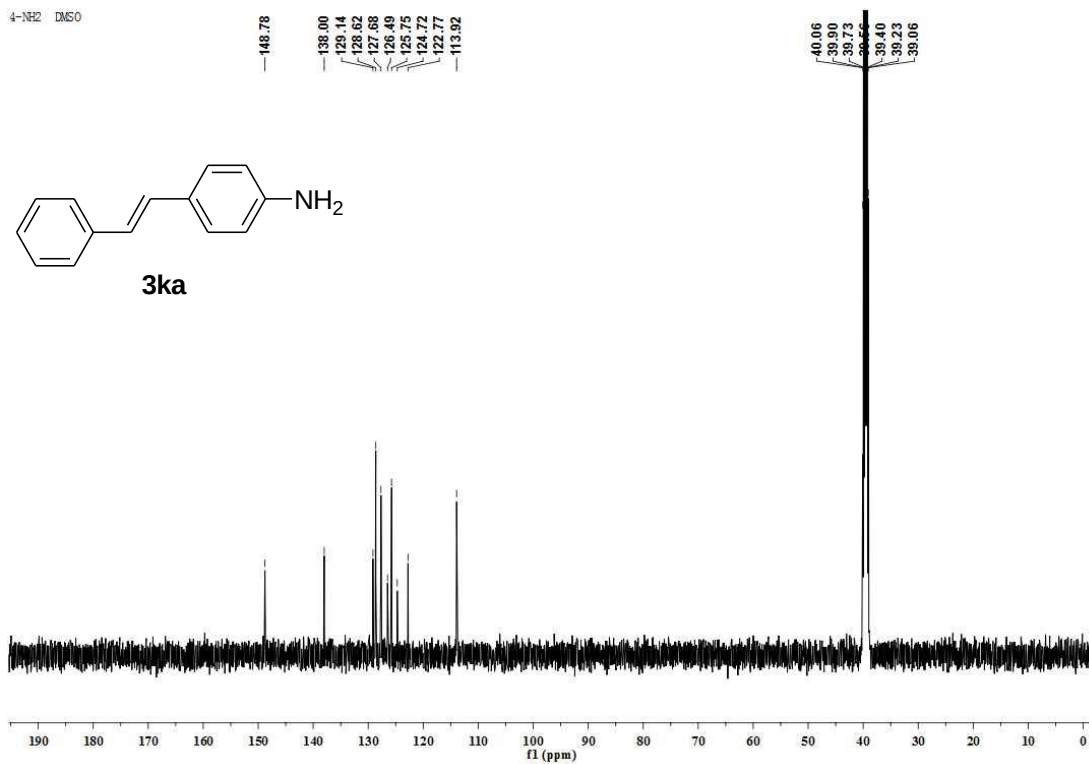


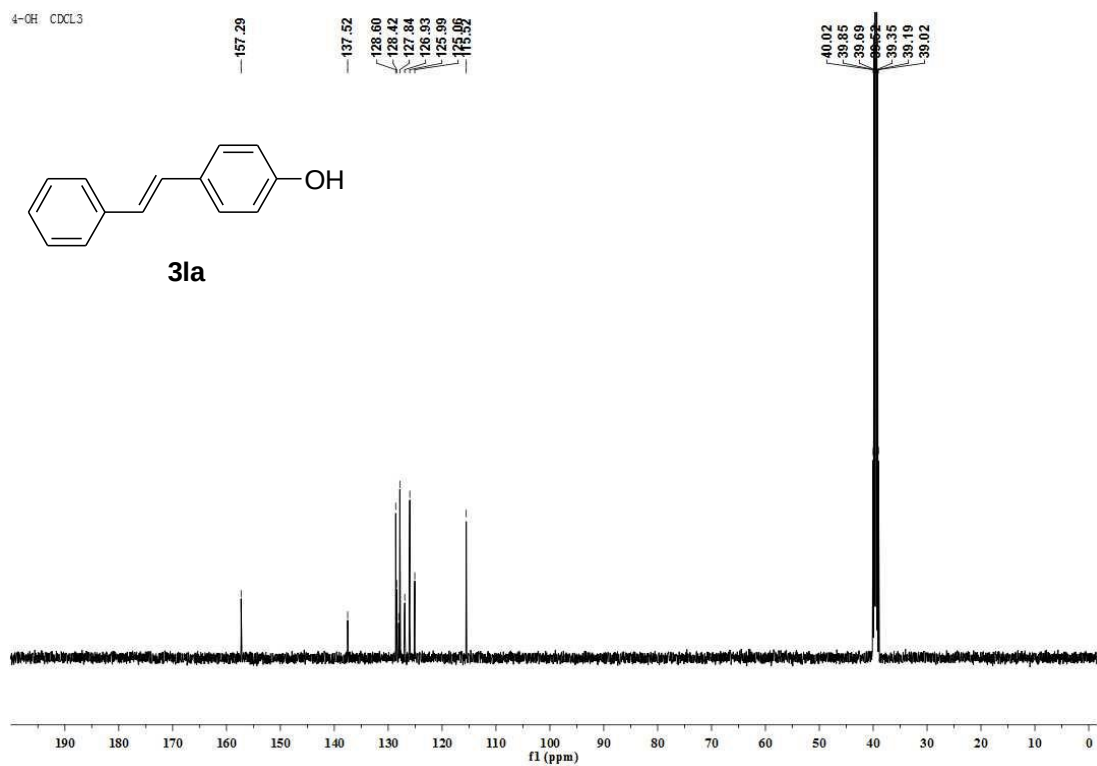
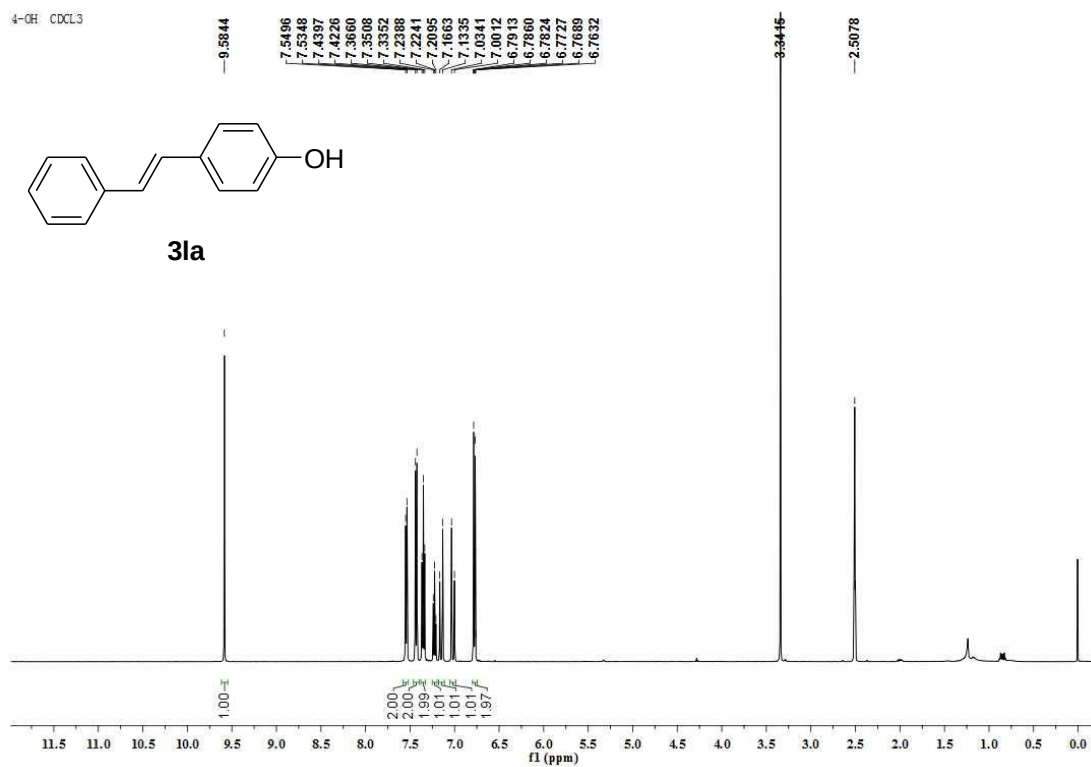


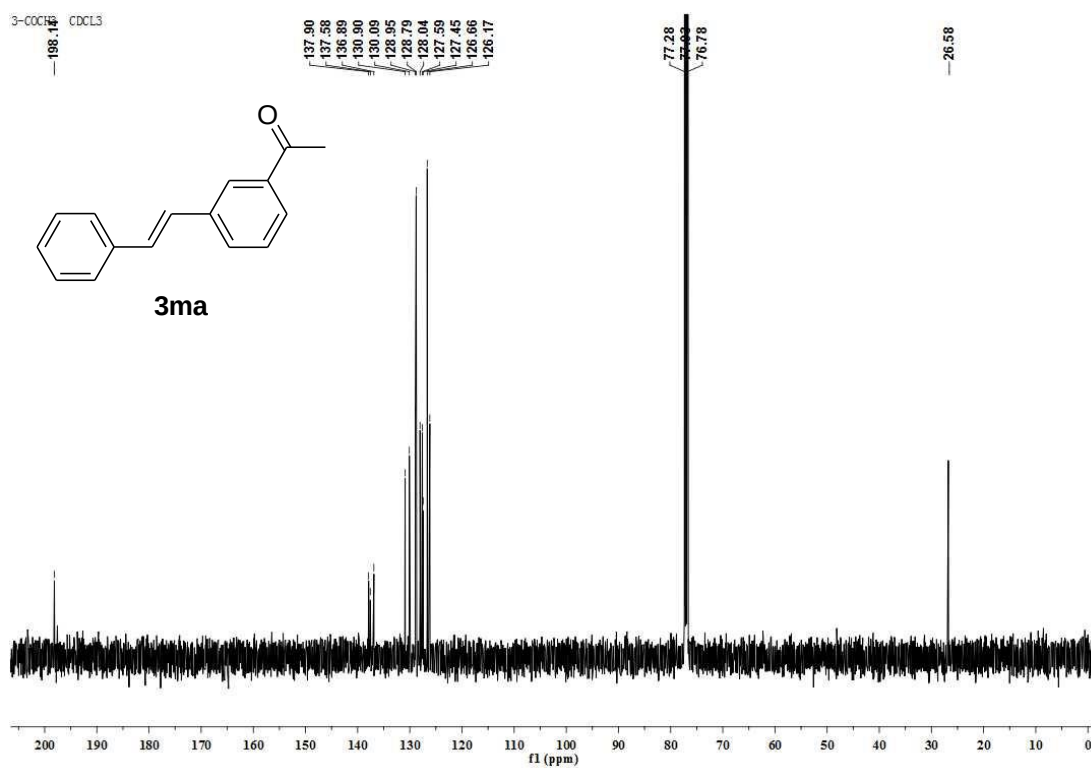
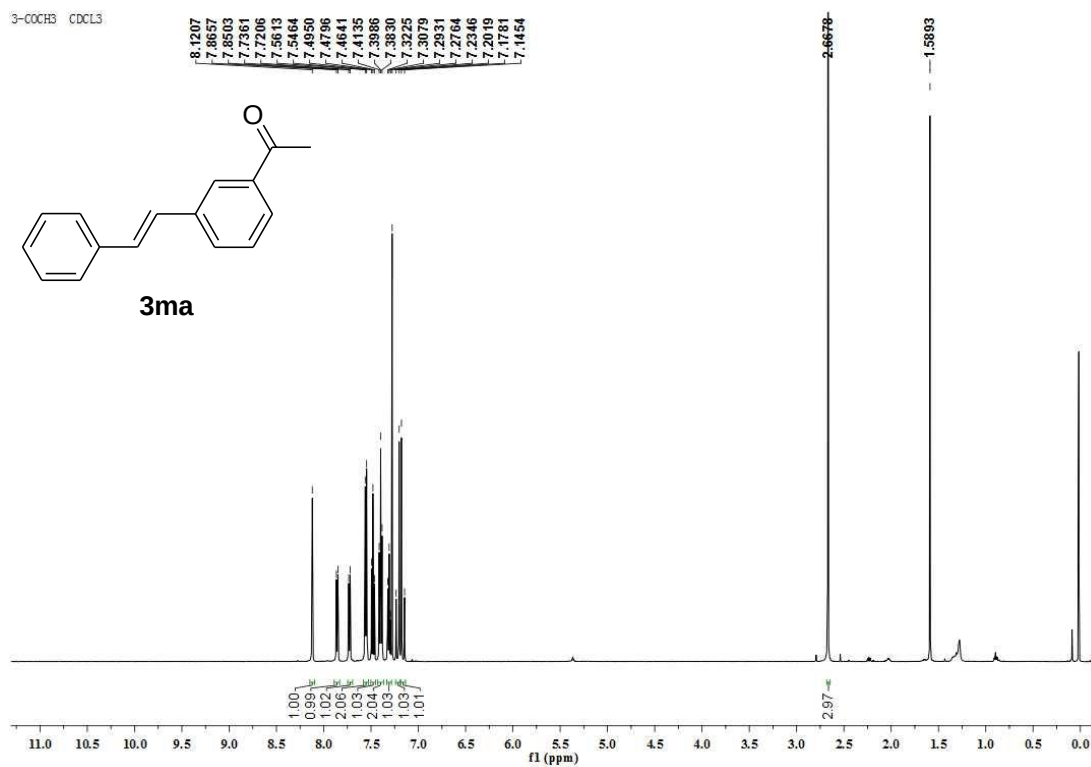
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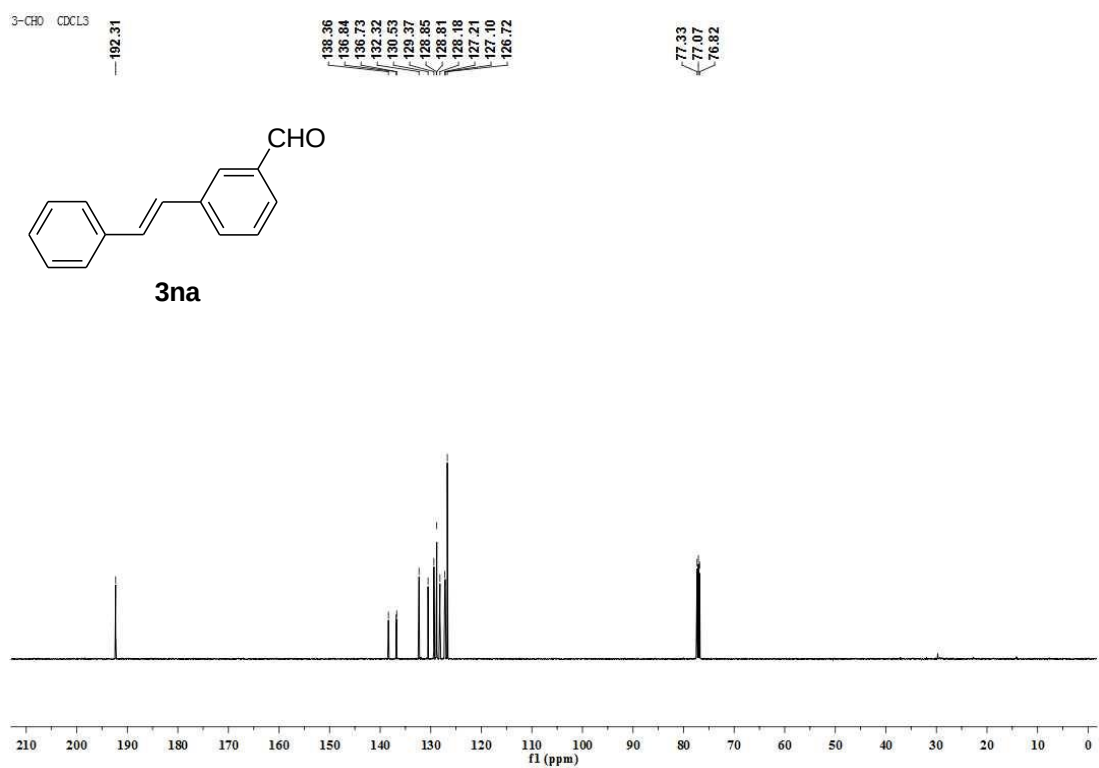
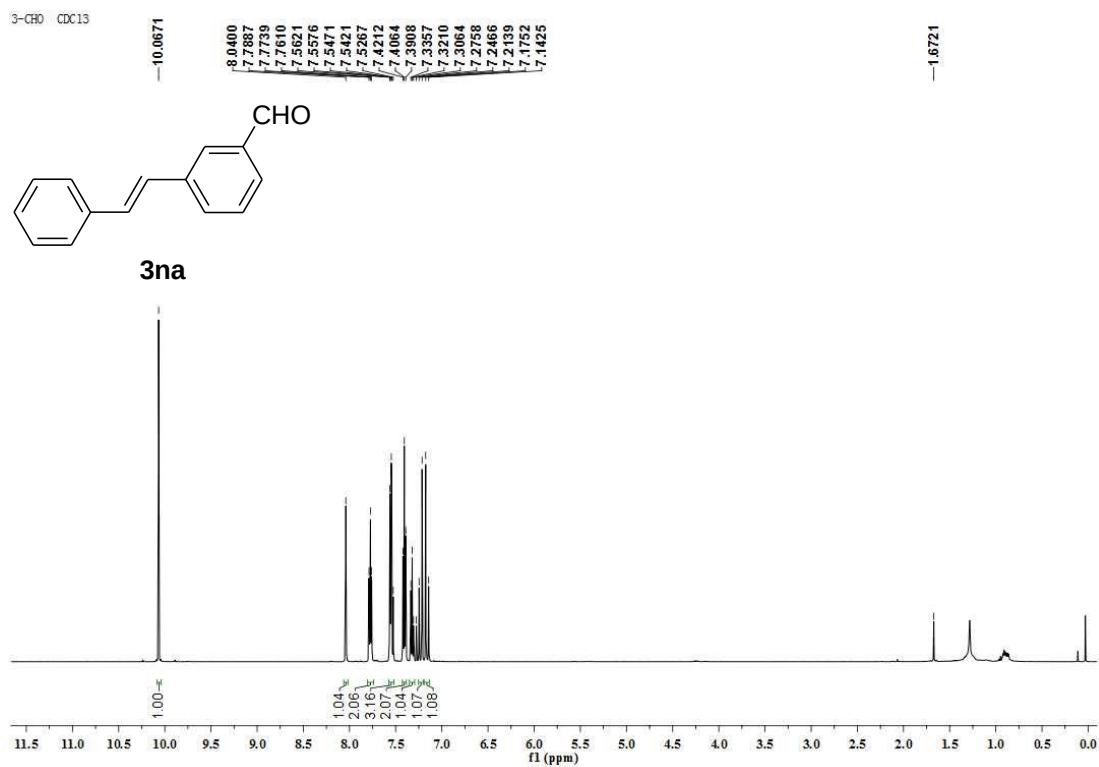


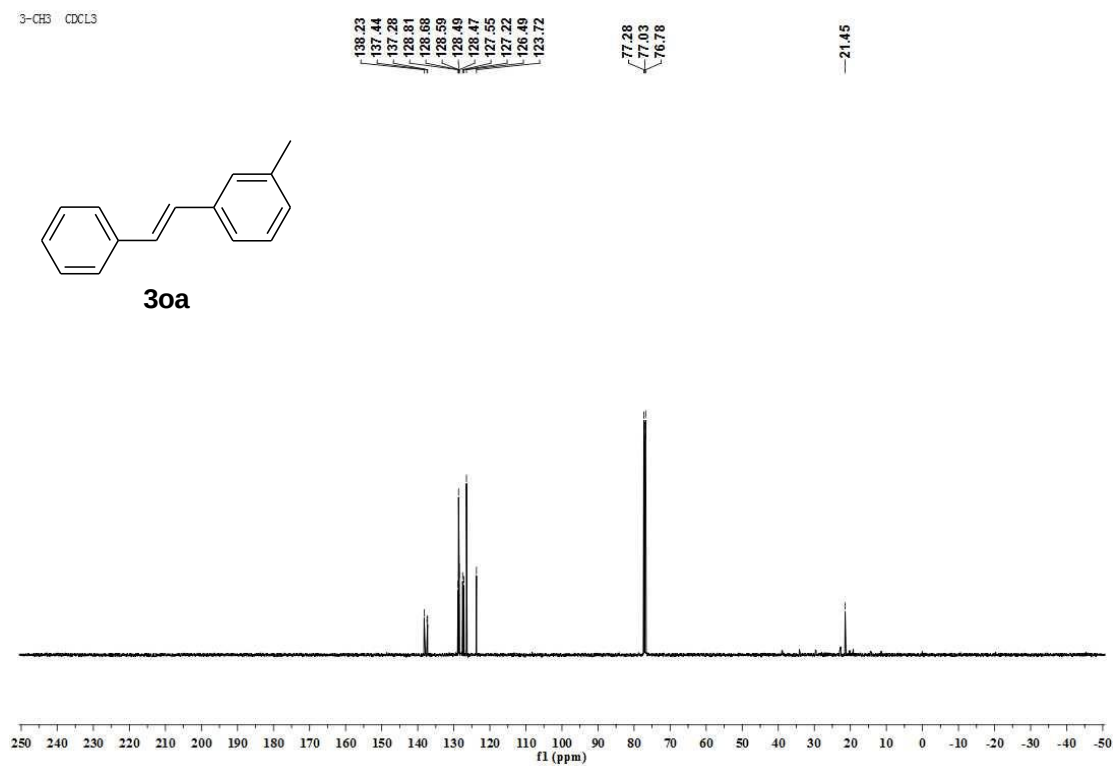
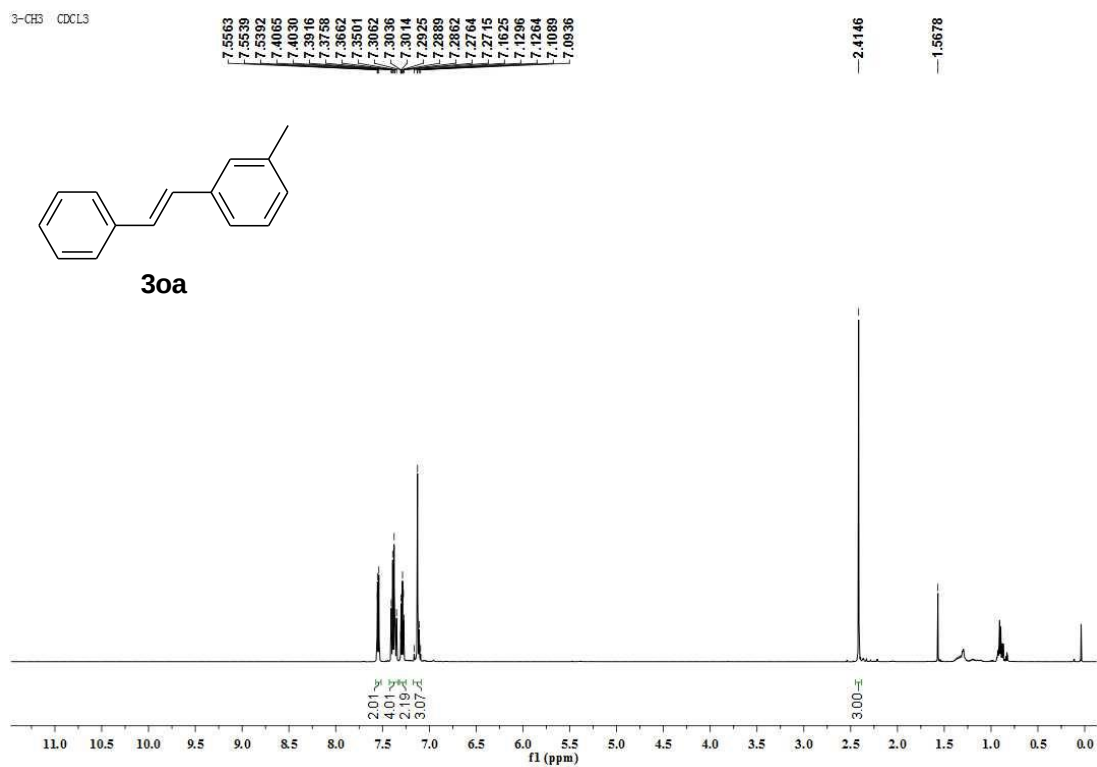
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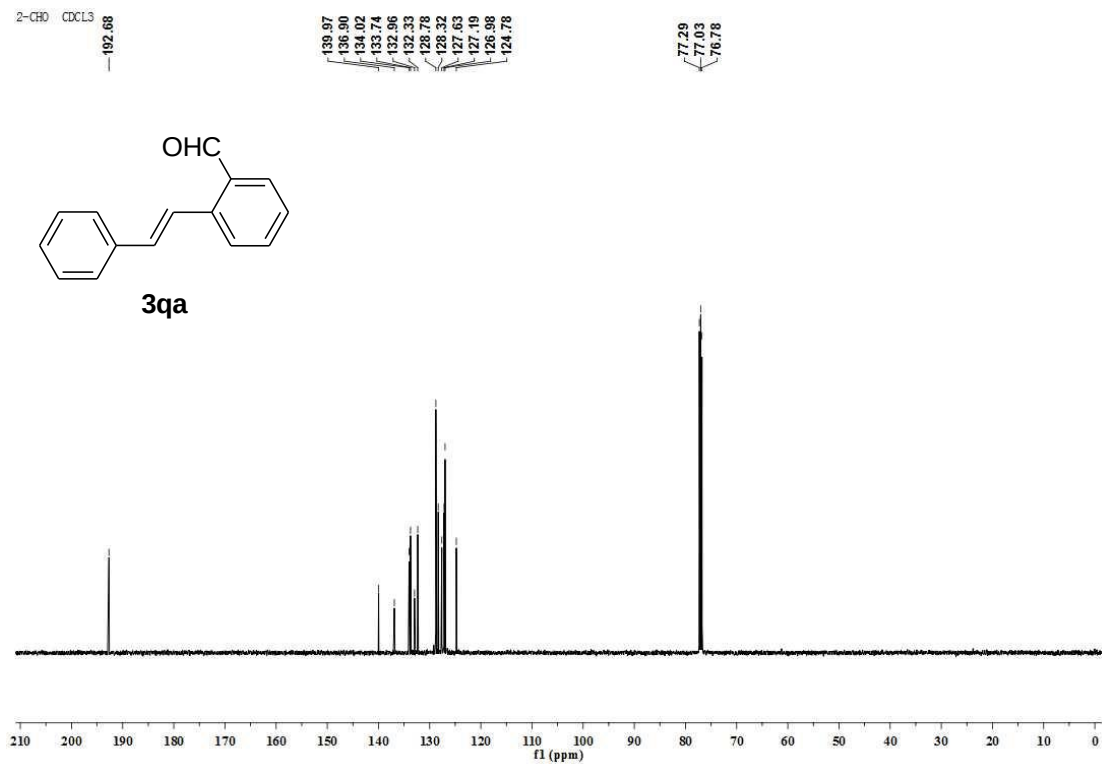
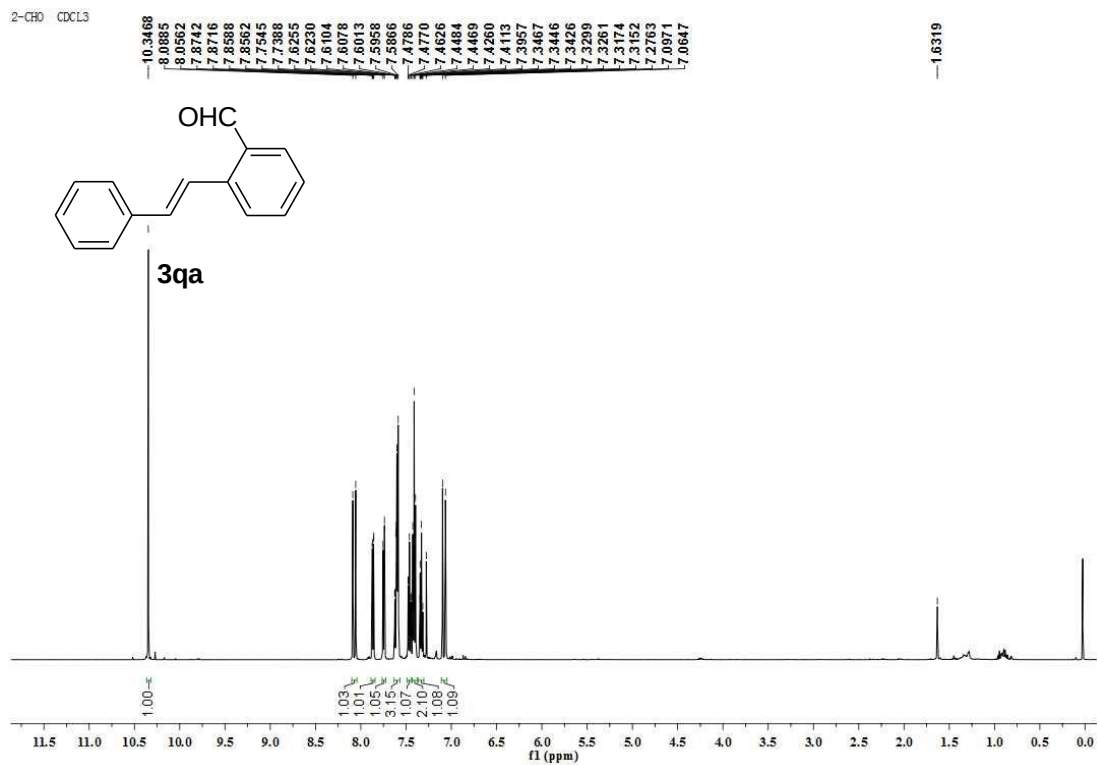




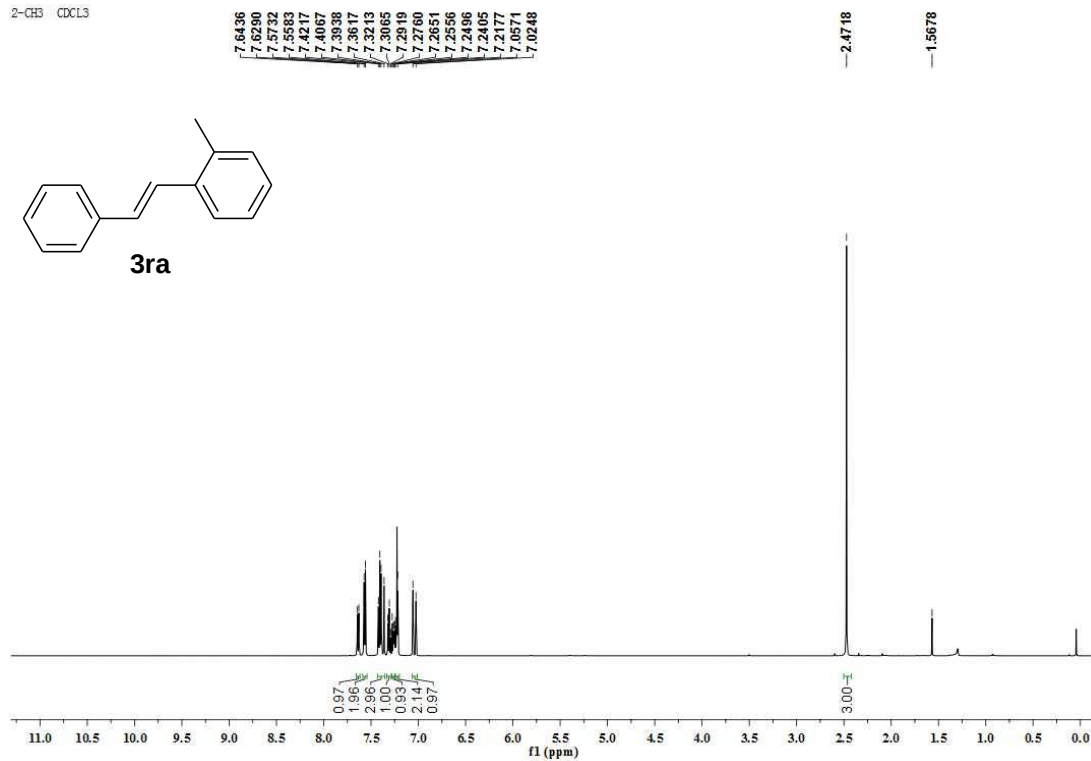




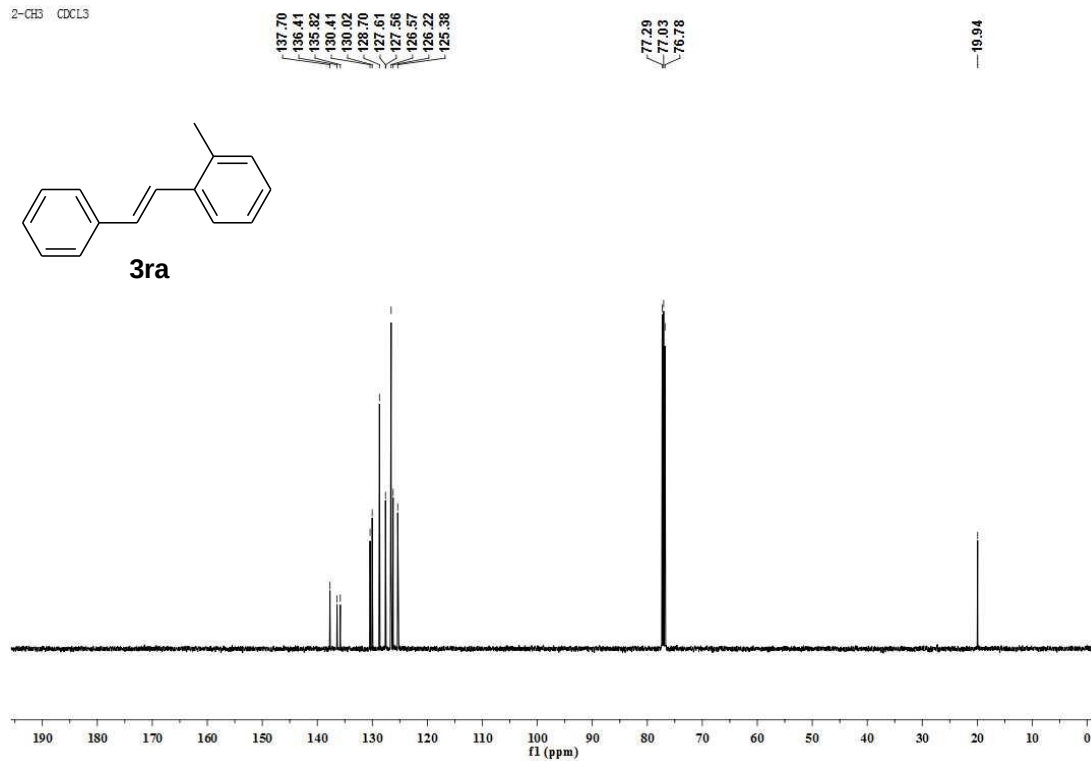


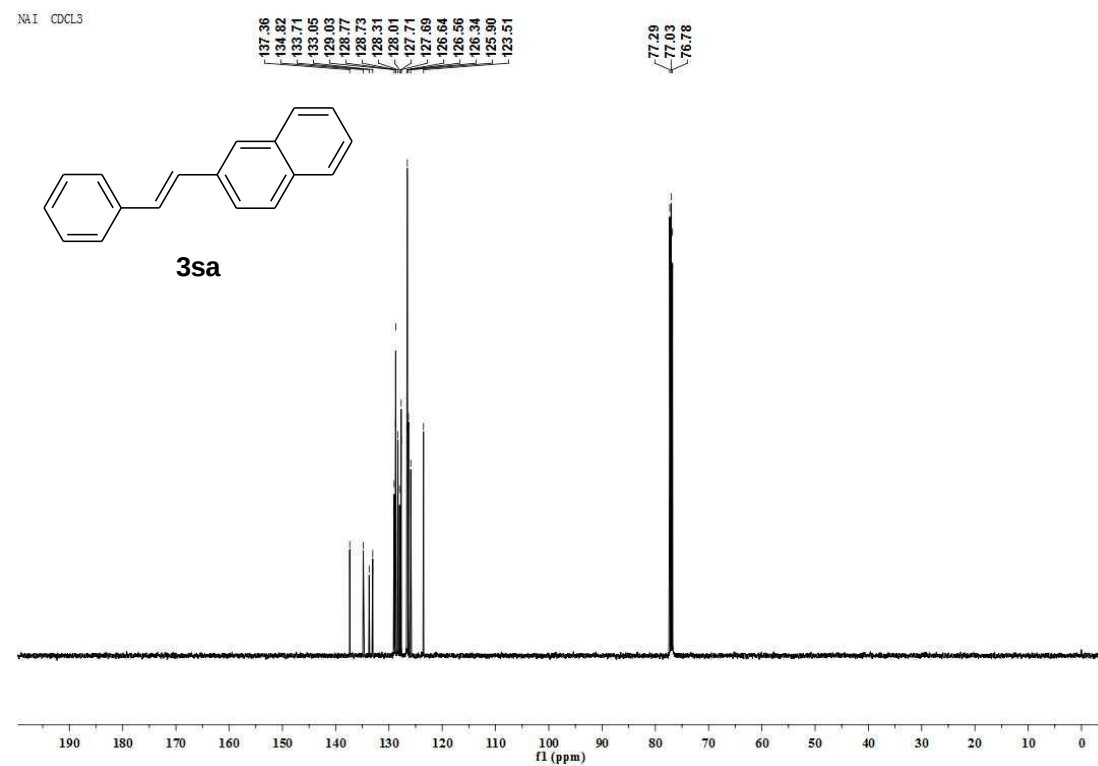
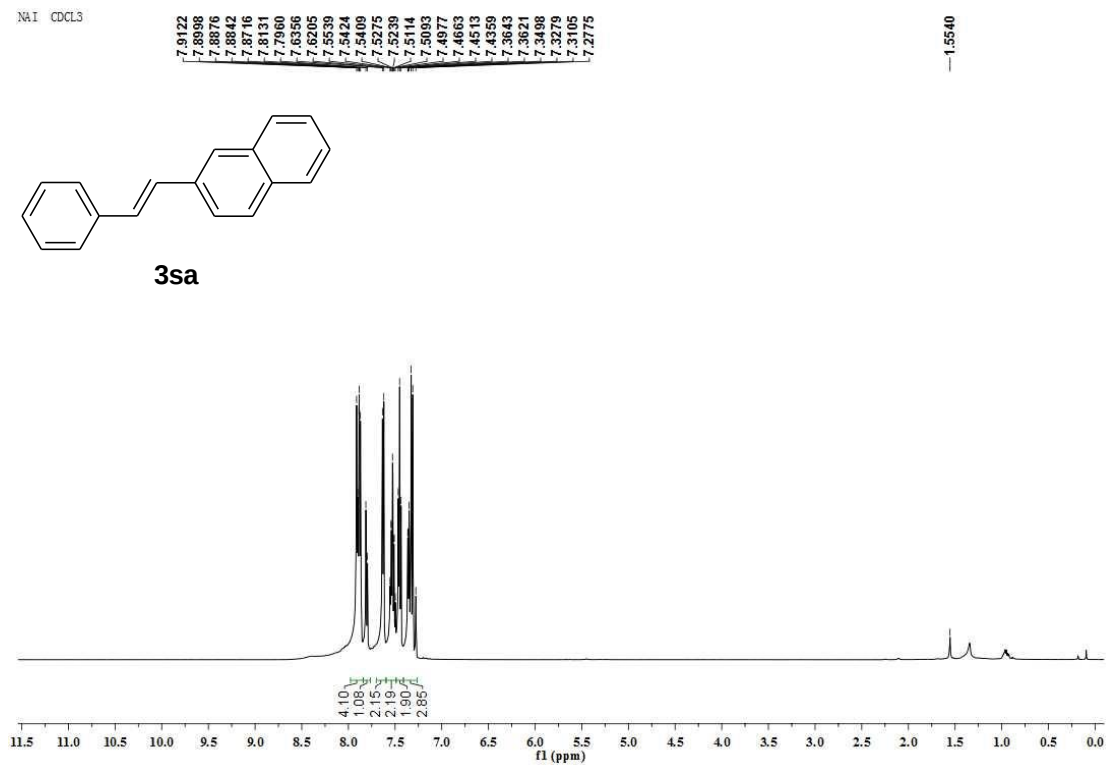


2-CH3 CDCl3



2-CH3 CDCl3



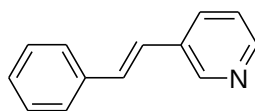




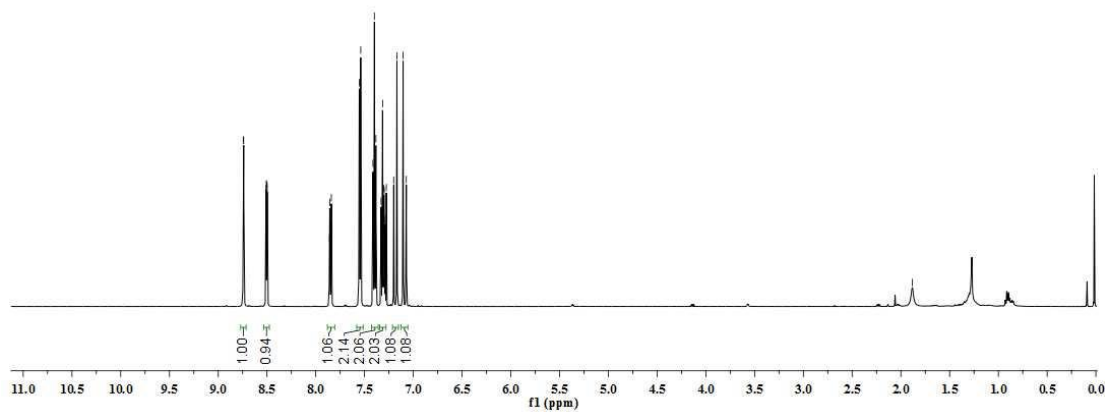
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8.5070  
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8.4974  
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7.8561  
7.8523  
7.8439  
7.8402  
7.8364  
7.5536  
7.5389  
7.4135  
7.4101  
7.3988  
7.3831  
7.3321  
7.3298  
7.3275  
7.3185  
7.3146  
7.3032  
7.3002  
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7.0716

—1.8828



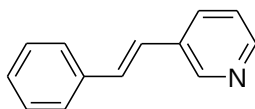
3ta



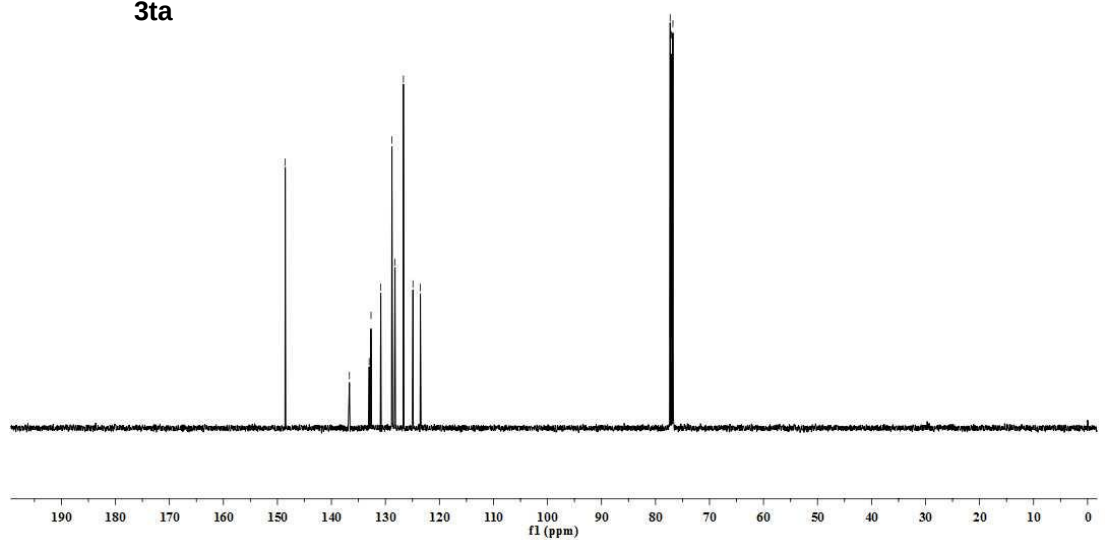
BIDING CDCL<sub>3</sub>

148.55  
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133.02  
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124.91  
123.53

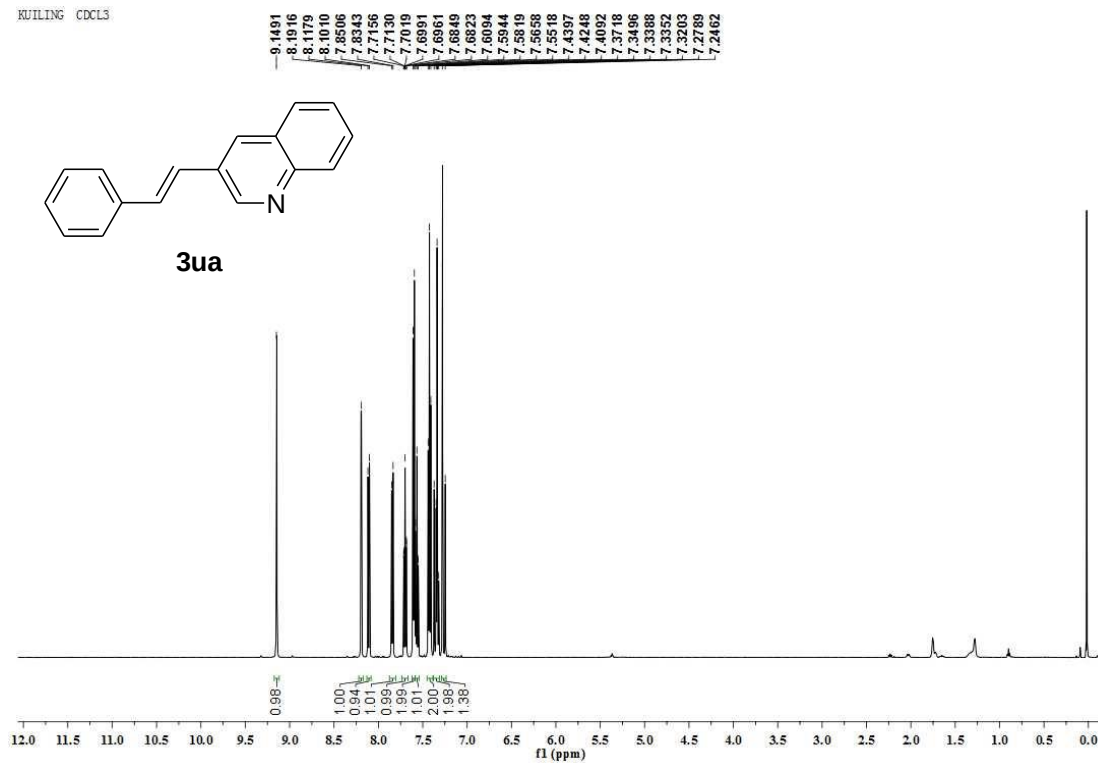
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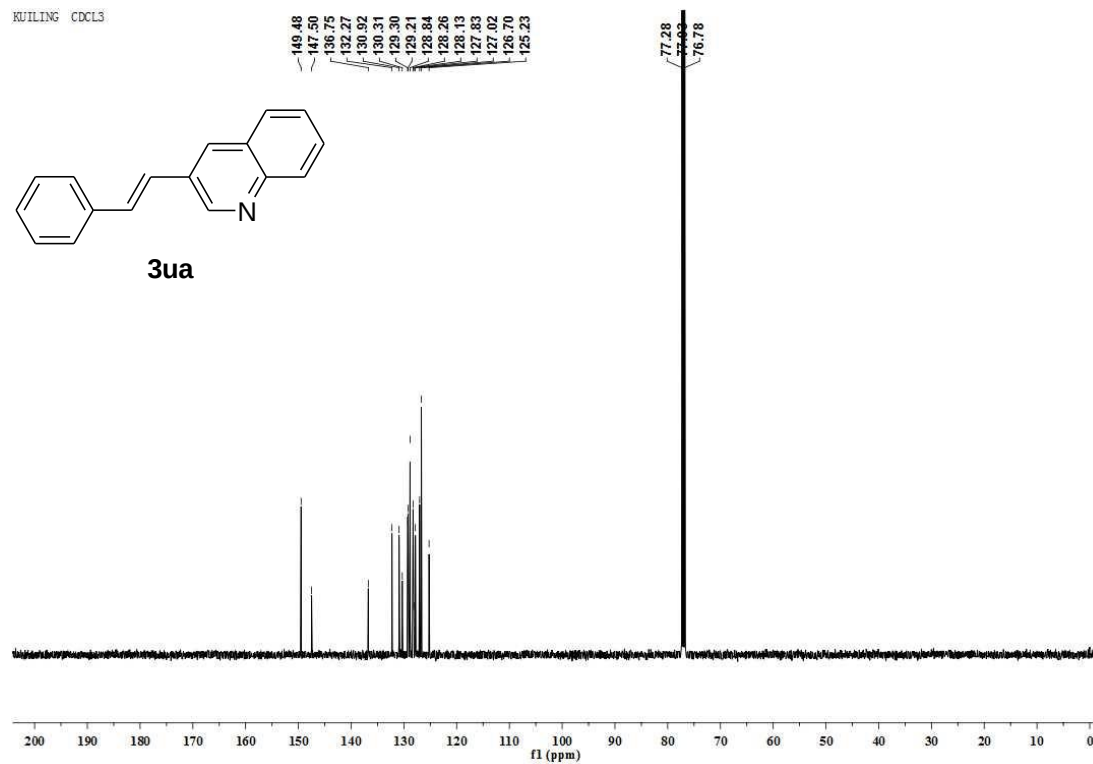
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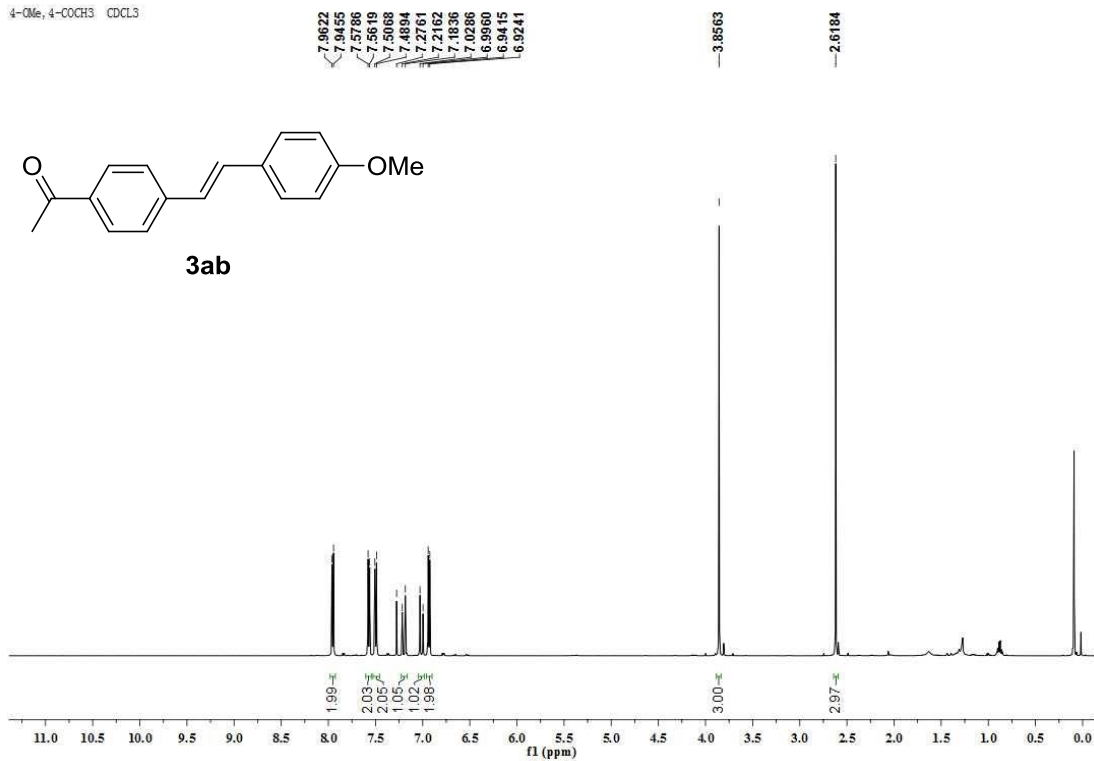
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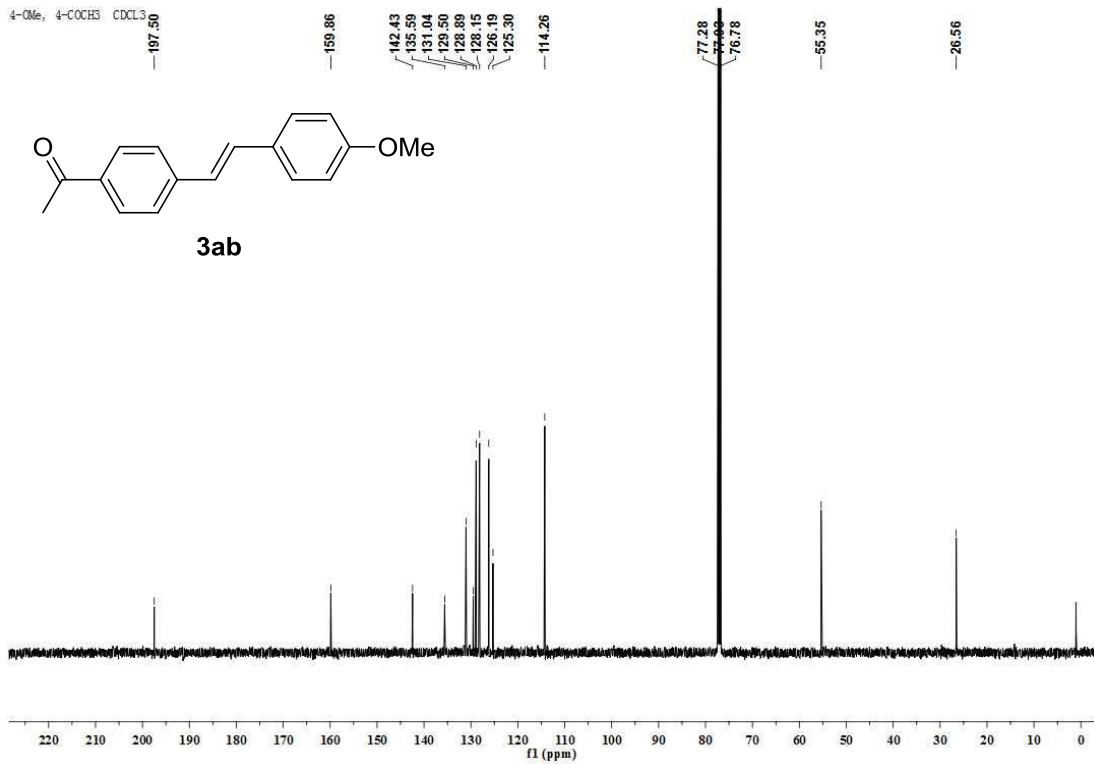
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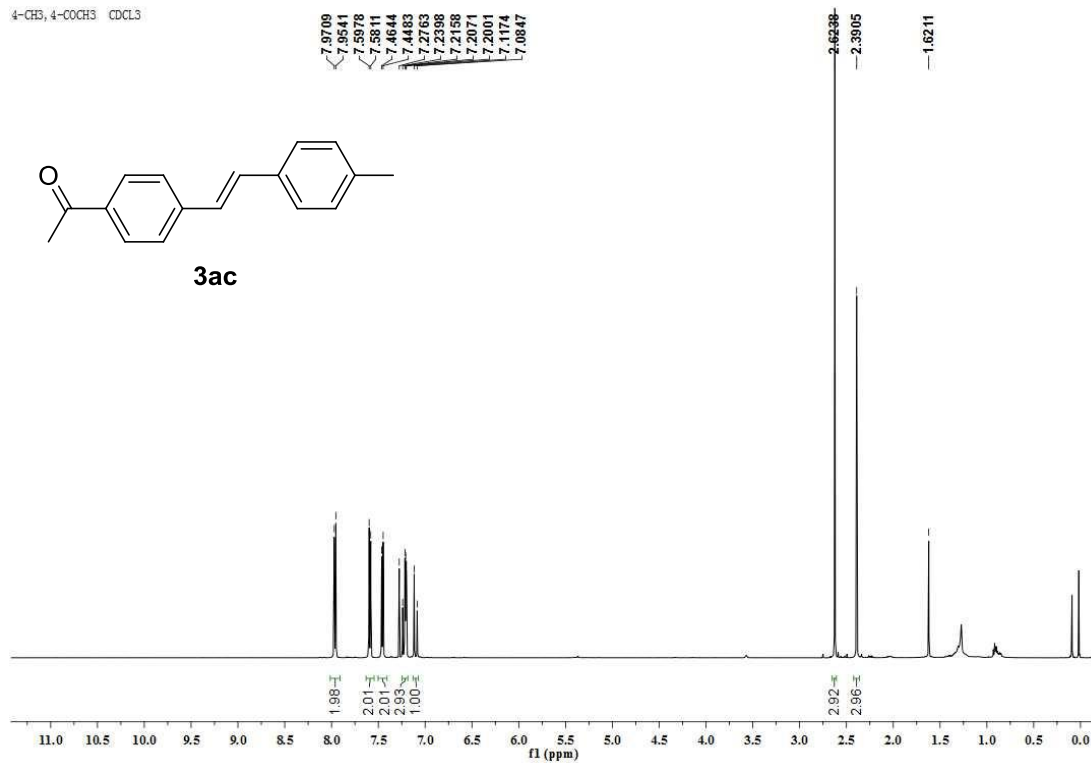
4-OMe, 4-COCH<sub>3</sub> CDCl<sub>3</sub>



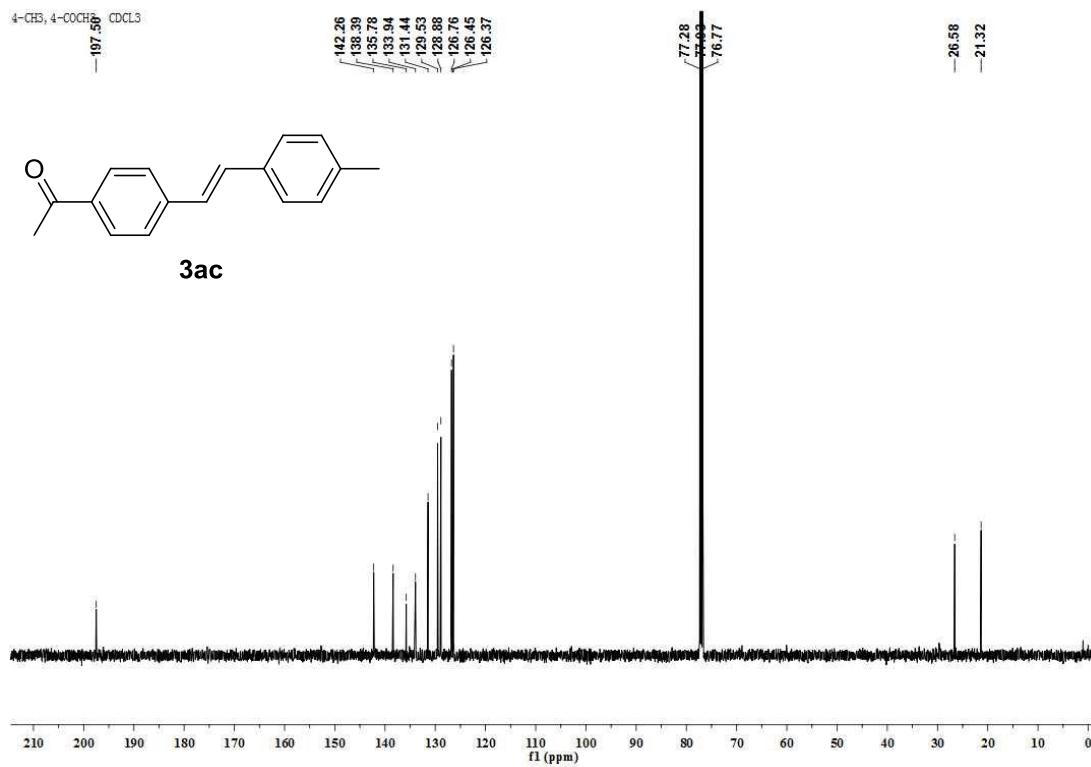
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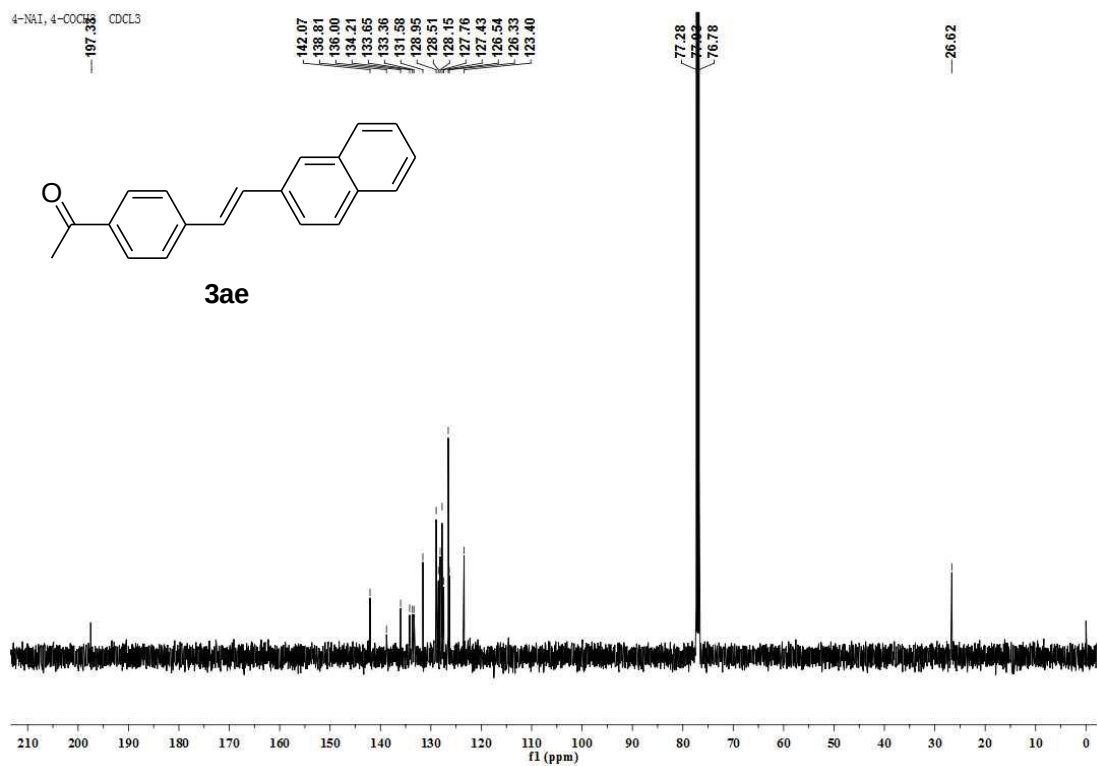
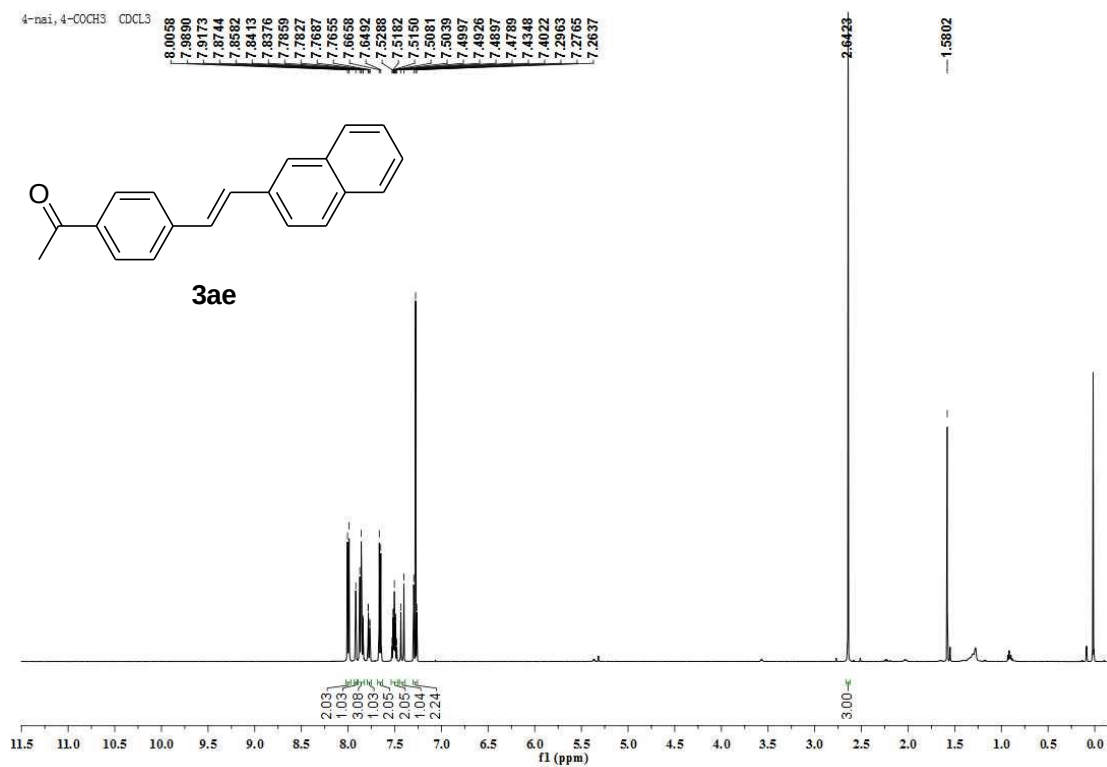
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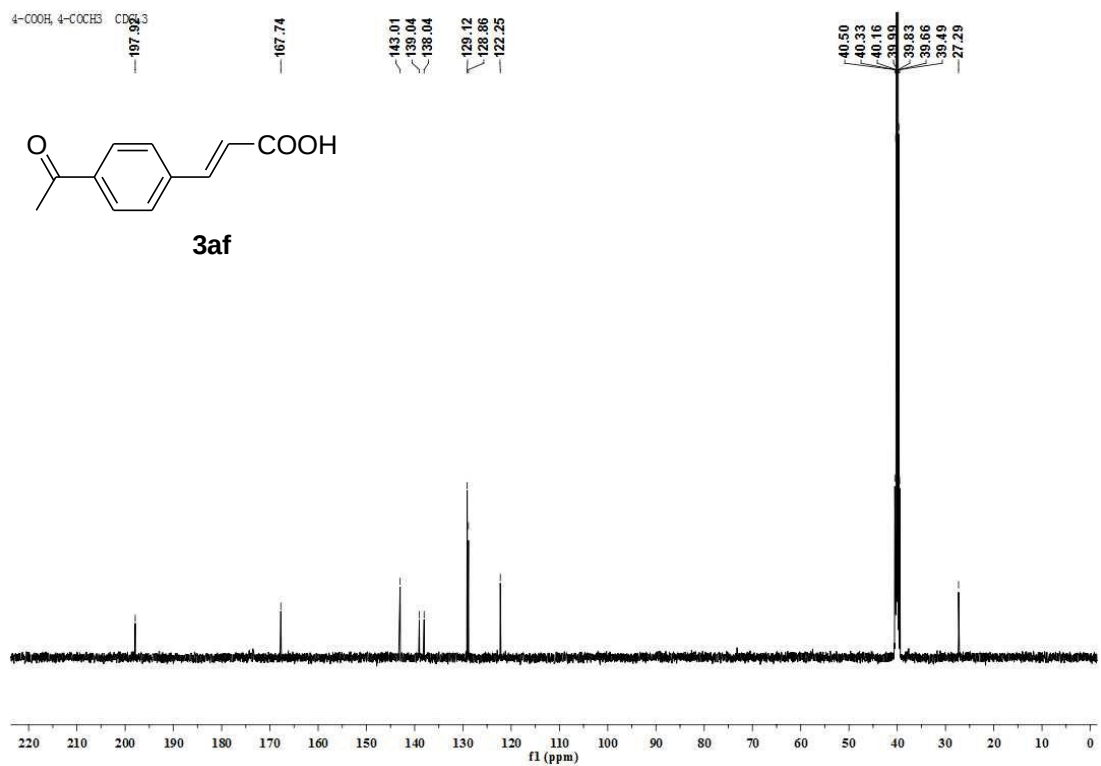
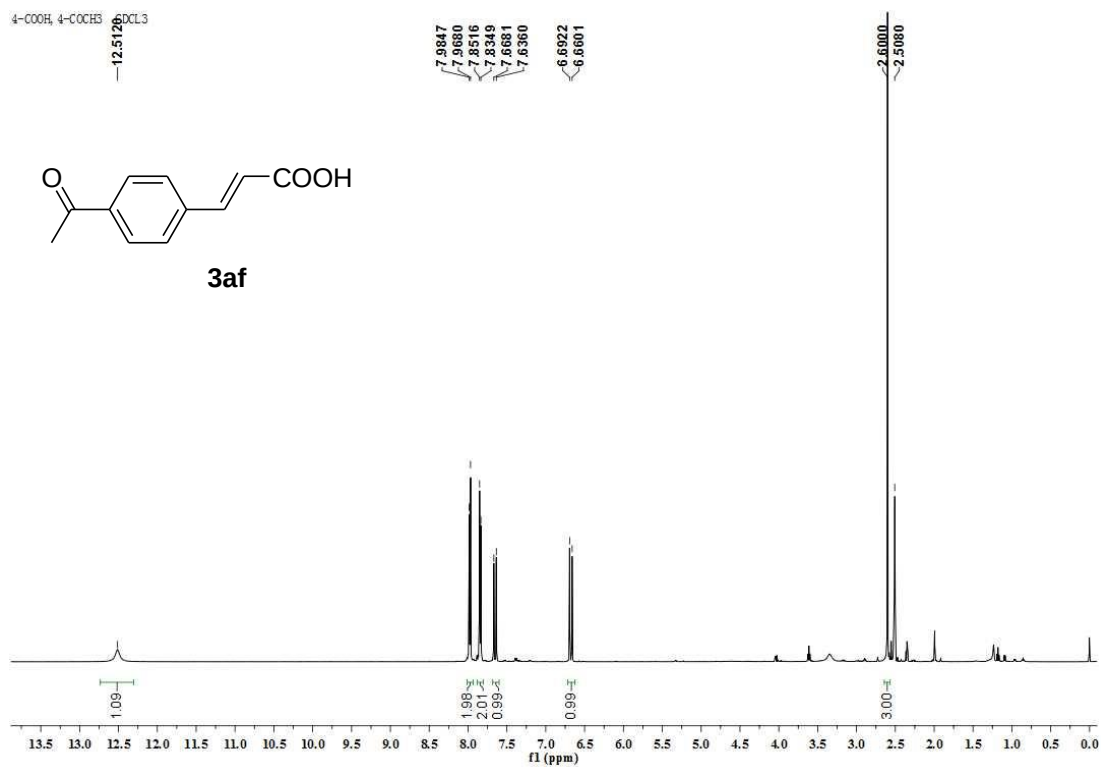


4-CH<sub>3</sub>, 4'-COCH<sub>3</sub> CDCl<sub>3</sub>

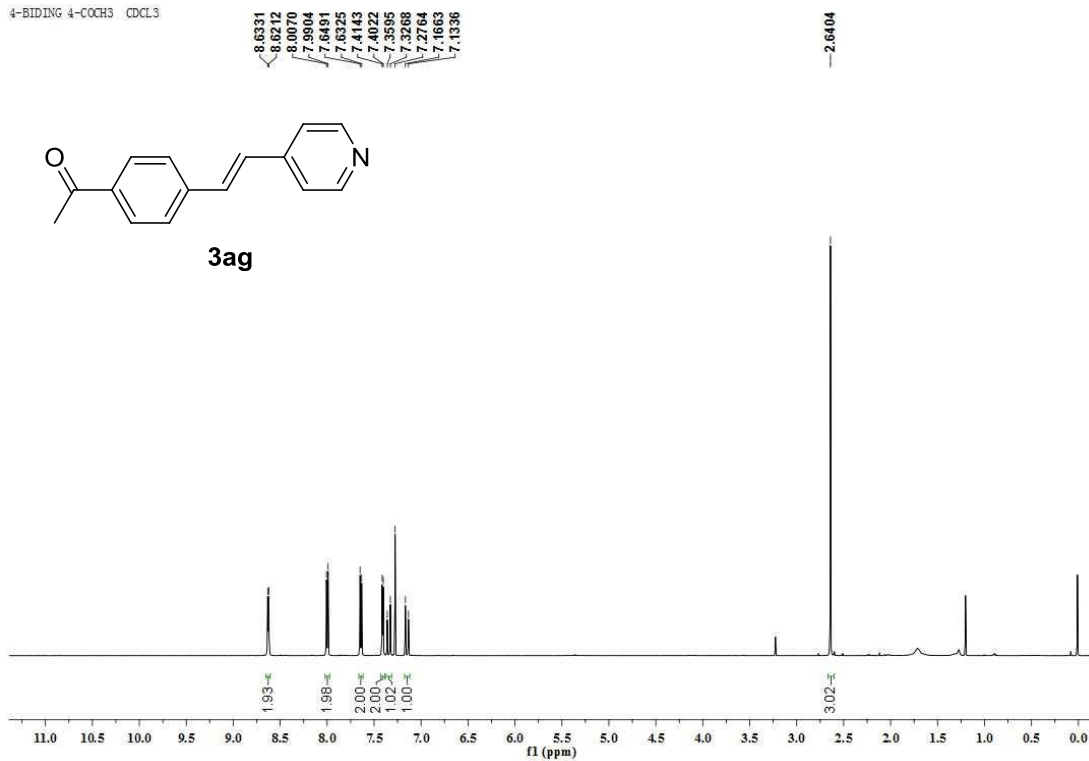




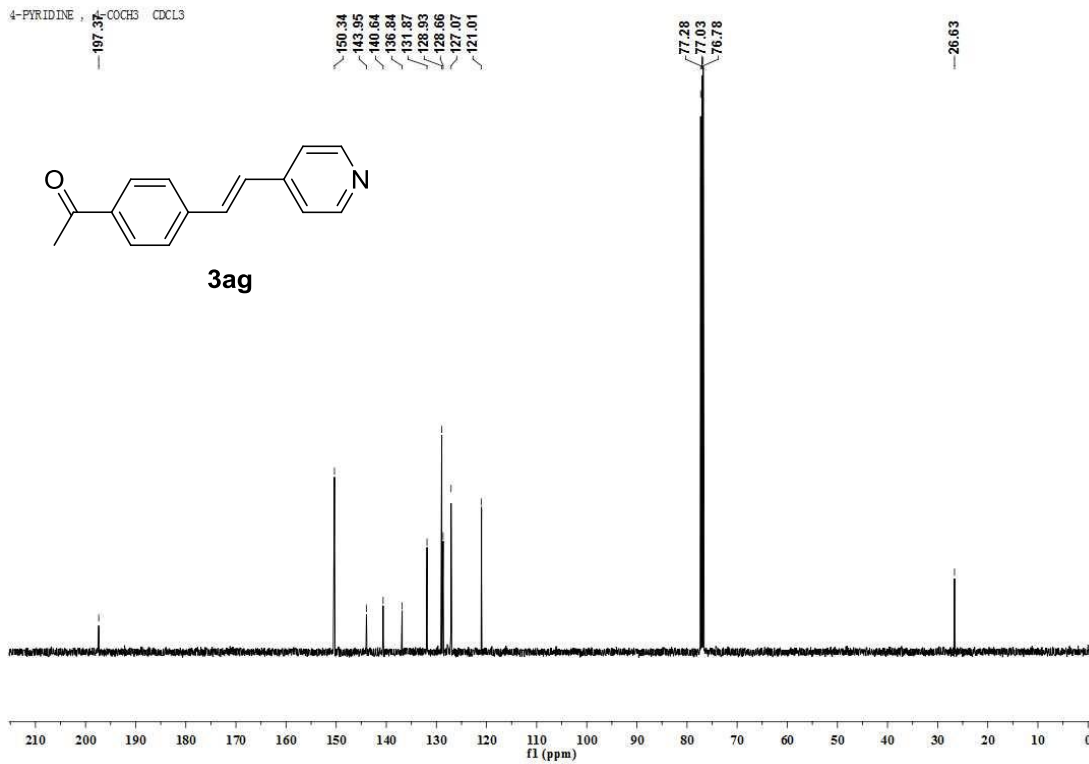




4-BIDING 4-COCH<sub>3</sub> CDCL<sub>3</sub>

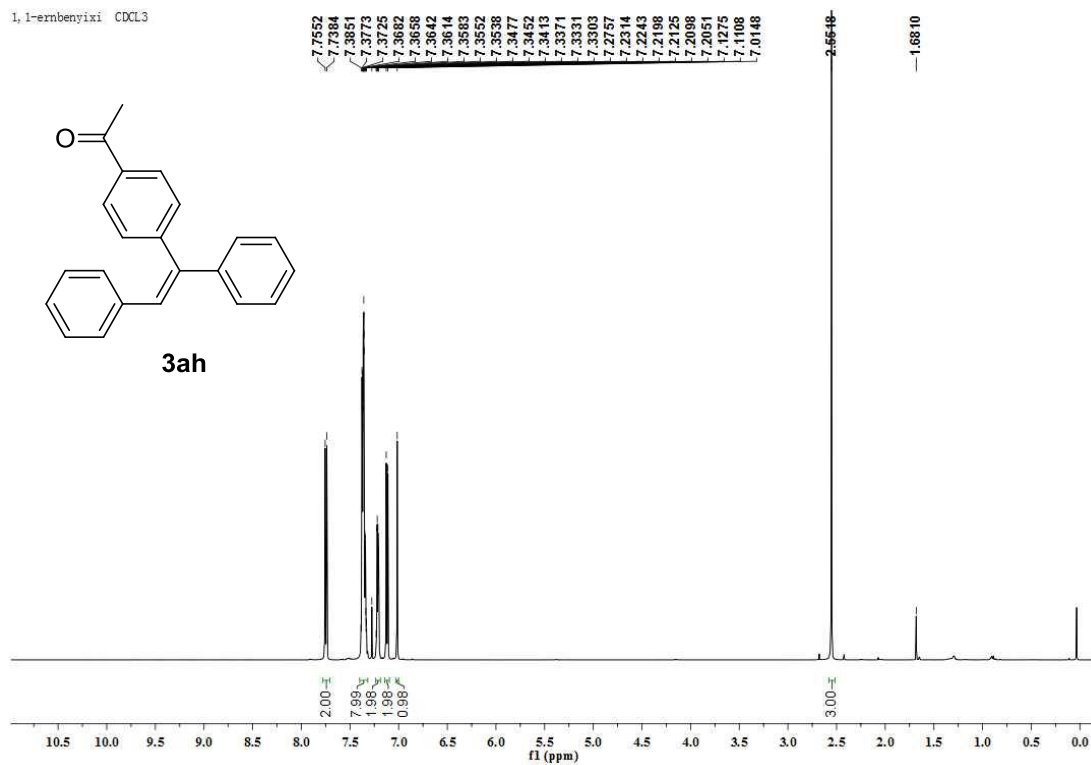


4-PYRIDINE , -COCH<sub>3</sub> CDCL<sub>3</sub>





1, 1-erbenyixi CDCL<sub>3</sub>



1, 1-erbenyixi CDCL<sub>3</sub>

