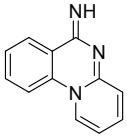
Under air, in a 25 mL reaction tube equipped with a stirring bar, 2-fluorobenzonitrile (1.5 mmol), 2-aminopyridine (1 mmol), ^{t}BuOK (3 equiv.) and DMAc (2 mL) were added. Then close the tube and heat it up to 100 ℃ for 16 h., cool the reaction mixture to room temperature when the reaction completed. The reaction solution was quenched with distilled water and extracted with ethyl acetate three times. The combined organic phases were washed with saturated NaCl solution and dried over Na_2SO_4. The crude product was purified by column chromatography to give the pure product.

6*H*-pyrido[1,2-a]quinazolin-6-imine



148 mg, 76%, yellow solid, 185℃.

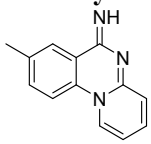
^{1}H NMR (300 MHz, Chloroform-*d*) δ 9.06 (dt, *J* = 7.5, 1.1 Hz, 1H), 7.89 (dt, *J* = 8.4, 0.9 Hz, 1H), 7.67 – 7.58 (m, 2H), 7.45 – 7.27 (m, 3H), 6.69 (ddd, *J* = 7.7, 6.3, 1.5 Hz, 1H).

^{13}C NMR (75 MHz, Chloroform-*d*) δ 155.88, 148.04, 144.61, 134.68, 133.31, 128.15, 127.10, 125.65, 124.91, 124.16, 115.39, 111.53.

GC-MS (EI, 70ev): m/z(%) = 194 (M+, 100), 195 (65), 169 (51), 67 (11).

HRMS(ESI): calcd. for $[C_{13}H_{11}N_3 + H]^+$: 196.08692; found: 196.08706.

8-Methyl-6*H*-pyrido[1,2-*a*]quinazolin-6-imine



167 mg, 79 %, yellow solid, 147℃.

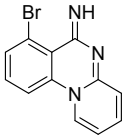
^{1}H NMR (300 MHz, Chloroform-*d*) δ 9.03 (ddd, *J* = 7.5, 1.6, 0.9 Hz, 1 H), 7.68 (dt, *J* = 1.7, 0.9 Hz, 1 H), 7.50 – 7.47 (m, 1 H), 7.53 (d, *J* = 8.3 Hz, 1 H), 7.55 – 7.51 (m, 1 H), 7.49 (dd, *J* = 1.9, 0.5 Hz, 1 H), 7.35 (ddd, *J* = 9.2, 6.2, 1.6 Hz, 1 H), 7.28 – 7.20 (m, 1 H), 6.65 (ddd, *J* = 7.7, 6.2, 1.6 Hz, 1 H), 2.54 – 2.45 (m, 4 H), 7.71 – 7.64 (m, 1 H).

^{13}C NMR (75 MHz, Chloroform-*d*) δ 155.83, 147.43, 142.73, 134.74, 133.81, 127.97, 127.09, 125.78, 123.52, 115.09, 111.11, 21.52.

GC-MS (EI, 70ev): m/z(%) = 210 (M+, 100), 211 (17), 209 (43), 181 (39).

HRMS(ESI): calcd. for $[C_{13}H_{11}N_3 + H]^+$: 210.10257; found: 210.10269.

7-Bromo-6*H*-pyrido[1,2-*a*]quinazolin-6-imine



188 mg, 68 %, white solid, 177℃.

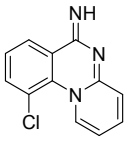
^{1}H NMR (300 MHz, Chloroform-*d*) δ 8.39 (dd, *J* = 8.7, 0.9 Hz, 1 H), 8.30 (ddd, *J* = 5.0, 1.9, 0.9 Hz, 1 H), 7.62 (ddd, *J* = 8.4, 7.3, 1.9 Hz, 1 H), 7.35 (dd, *J* = 8.7, 8.0 Hz, 1 H), 7.19 (dd, *J* = 8.0, 0.9 Hz, 1 H), 7.06 (s, 1 H), 6.93 (ddd, *J* = 7.3, 5.0, 0.9 Hz, 1 H), 6.88 (dt, *J* = 8.3, 0.9 Hz, 1 H).

^{13}C NMR (75 MHz, Chloroform-*d*) δ 153.53, 147.98, 145.90, 138.13, 134.28, 124.98, 124.62, 117.61, 116.55, 115.93, 111.99, 103.41.

GC-MS (EI, 70ev): m/z(%) = 275 (M+, 100), 276 (54), 273 (56), 272 (96), 249 (33), 247 (34), 193 (23).

HRMS(ESI): calcd. for $[C_{12}H_8BrN_3 + H]^+$: 273.99744; found: 273.99791.

10-Chloro-6*H*-pyrido[1,2-*a*]quinazolin-6-imine



156 mg, 68 %, yellow solid, 206 ℃.

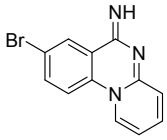
^{1}H NMR (300 MHz, Chloroform-*d*) δ 9.06 (dt, *J* = 7.5, 1.2 Hz, 1 H), 8.53 – 8.25 (m, 1 H), 7.79 (ddd, *J* = 14.5, 7.9, 1.3 Hz, 2 H), 7.63 – 7.35 (m, 2 H), 7.39 – 7.12 (m, 1 H), 6.76 (ddd, *J* = 7.6, 5.6, 2.3 Hz, 1 H).

^{13}C NMR (75 MHz, Chloroform-*d*) δ 155.30, 148.45, 141.99, 134.86, 133.14, 131.32, 127.98, 126.41, 124.08, 122.84, 116.80, 111.90.

GC-MS (EI, 70ev): m/z(%) = 194 (M+, 100), 229 (14), 195 (13).

HRMS(ESI): calcd. for $[C_{12}H_8ClN_3 + H]^+$: 230.04795; found: 230.04834.

8-Bromo-6*H*-pyrido[1,2-*a*]quinazolin-6-imine



90 mg, 33%, yellow solid, 185 ℃.

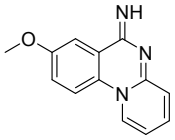
^{1}H NMR (300 MHz, Chloroform-*d*) δ 9.04 (ddd, *J* = 7.5, 1.6, 0.8 Hz, 1 H), 8.00 (d, *J* = 2.2 Hz, 1 H), 7.71 (dd, *J* = 8.8, 2.1 Hz, 1 H), 7.48 (d, *J* = 8.8 Hz, 1 H), 7.42 (ddd, *J* = 9.2, 6.4, 1.6 Hz, 1 H), 7.31 – 7.21 (m, 2 H), 6.71 (ddd, *J* = 7.6, 6.4, 1.5 Hz, 1 H).

^{13}C NMR (75 MHz, Chloroform-*d*) δ 154.62, 148.23, 143.86, 136.18, 134.73, 129.08, 128.06, 126.66, 125.81, 117.47, 116.79, 111.66.

GC-MS (EI, 70ev): m/z(%) = 272 (M+, 100), 273 (65), 274(75), 274 (72), 249 (39), 247(22), 193 (29), 249 (39).

HRMS(ESI): calcd. for $[C_{12}H_8BrN_3 + H]^+$: 273.99744; found: 273.99792.

8-Methoxy-6*H*-pyrido[1,2-*a*]quinazolin-6-imine



122 mg, 54 %, yellow solid, 174 ℃.

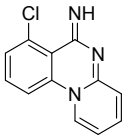
^{1}H NMR (300 MHz, Chloroform-*d*) δ 8.96 (ddd, *J* = 7.5, 1.6, 0.9 Hz, 1 H), 7.53 (d, *J* = 8.9 Hz, 1 H), 7.28 – 7.24 (m, 1 H), 7.24 – 7.21 (m, 1 H), 7.20 – 7.14 (m, 2 H), 6.59 (ddd, *J* = 7.7, 6.2, 1.6 Hz, 1 H), 3.87 (s, 3 H).

^{13}C NMR (75 MHz, Chloroform-*d*) δ 157.10, 155.55, 146.43, 139.46, 133.03, 129.03, 127.73, 125.86, 122.83, 115.81, 111.09, 104.64, 55.76.

GC-MS (EI, 70ev): m/z(%) = 225 (M+, 100), 226 (16), 224 (51), 210 (98), 211 (18), 199 (20), 182 (15), 182 (42).

HRMS(ESI): calcd. for $[C_{13}H_{11}N_3O + H]^+$: 226.09749; found: 226.09768.

7-Chloro-6*H*-pyrido[1,2-*a*]quinazolin-6-imine



160 mg, 70 %, white solid, 156 ℃.

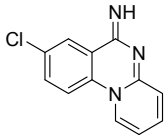
^{1}H NMR (300 MHz, Chloroform-*d*) δ 8.35 (dd, *J* = 8.6, 0.9 Hz, 1 H), 8.31 (ddd, *J* = 5.0, 2.0, 0.9 Hz, 1 H), 7.63 (ddd, *J* = 8.3, 7.3, 1.9 Hz, 1 H), 7.43 (dd, *J* = 8.7, 8.0 Hz, 1 H), 7.03 (dd, *J* = 8.0, 0.9 Hz, 2 H), 6.94 (ddd, *J* = 7.3, 5.0, 0.9 Hz, 1 H), 6.88 (dt, *J* = 8.3, 0.9 Hz, 1 H).

^{13}C NMR (75 MHz, Chloroform-*d*) δ 153.50, 147.98, 145.60, 138.16, 136.73, 134.11, 121.49, 117.61, 116.04, 114.73, 111.96, 99.99.

GC-MS (EI, 70ev): m/z(%) = 228 (M+, 100), 229 (55), 230 (39), 231 (18), 205 (10), 203 (37), 193 (10).

HRMS(ESI): calcd. for $[C_{12}H_8ClN_3 + H]^+$: 230.04795; found: 230.04827.

8-Chloro-6*H*-pyrido[1,2-*a*]quinazolin-6-imine



163 mg, 71 %, yellow solid, 180 ℃.

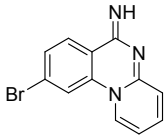
^{1}H NMR (300 MHz, Chloroform-*d*) δ 9.05 (ddd, *J* = 7.5, 1.6, 0.8 Hz, 1 H), 7.85 (dd, *J* = 1.8, 0.9 Hz, 1 H), 7.57 (t, *J* = 1.4 Hz, 2 H), 7.43 (ddd, *J* = 9.2, 6.3, 1.6 Hz, 1 H), 7.32 – 7.23 (m, 2 H), 6.72 (ddd, *J* = 7.7, 6.3, 1.5 Hz, 1 H).

^{13}C NMR (75 MHz, Chloroform-*d*) δ 154.75, 148.11, 143.43, 134.75, 133.55, 130.06, 128.87, 128.05, 125.74, 123.55, 116.29, 111.73.

GC-MS (EI, 70ev): m/z(%) = 228 (M+, 100), 229 (67), 230 (42), 231 (23), 205 (12), 203 (37), 193 (14).

HRMS(ESI): calcd. for $[C_{12}H_8ClN_3 + H]^+$: 230.04795; found: 230.04827.

9-Bromo-6*H*-pyrido[1,2-*a*]quinazolin-6-imine



109 mg, 48 %, yellow solid, 167 ℃.

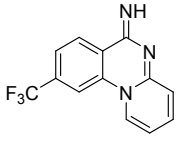
^{1}H NMR (300 MHz, Chloroform-*d*) δ 8.85 (ddd, *J* = 7.4, 1.5, 0.9 Hz, 1 H), 8.27 (d, *J* = 8.7 Hz, 1 H), 7.95 (d, *J* = 1.8 Hz, 1 H), 7.56 (d, *J* = 1.8 Hz, 1 H), 7.53 (dd, *J* = 2.5, 1.7 Hz, 1 H), 7.49 (ddd, *J* = 9.2, 1.7, 0.9 Hz, 1 H), 6.90 (ddd, *J* = 7.6, 6.1, 1.6 Hz, 1 H).

^{13}C NMR (75 MHz, Chloroform-*d*) δ 158.57, 149.31, 148.47, 134.98, 130.14, 129.37, 128.75, 128.64, 126.81, 126.26, 114.89, 112.98.

GC-MS (EI, 70ev): m/z(%) = 226 (M+, 100), 227 (15).

HRMS(ESI): calcd. for $[C_{12}H_8BrN_3 + H]^+$: 273.99744; found: 273.99793.

9-(Trifluoromethyl)-6*H*-pyrido[1,2-*a*]quinazolin-6-imine



160 mg, 61 %, yellow solid.

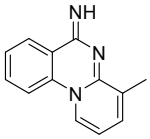
^{1}H NMR (300 MHz, Chloroform-*d*) δ 9.10 (ddd, *J* = 7.5, 1.6, 0.8 Hz, 1H), 8.03 (d, *J* = 8.5 Hz, 1 H), 7.90 (dd, *J* = 1.8, 0.9 Hz, 1 H), 7.62 – 7.41 (m, 2 H), 7.32 (ddd, *J* = 9.2, 1.5, 0.8 Hz, 1 H), 6.78 (ddd, *J* = 7.7, 6.4, 1.5 Hz, 1 H).

^{13}C NMR (101 MHz, Chloroform-*d*) δ 155.04, 148.80, 145.03, 135.25, 135.20 – 134.07 (m, *J* = 33.19 Hz), 128.06, 125.79, 125.20, 124.81 (q, *J* = 4.2 Hz), 122.20, 120.20 (q, *J* = 3.4 Hz), 117.40, 111.96.

GC-MS (EI, 70ev): m/z(%) = 262 (M+, 100), 263 (79), 242 (18), 237 (49), 67 (11).

HRMS(ESI): calcd. for $[C_{13}H_8F_3N_3 + H]^+$: 264.07431; found: 264.07458.

4-Methyl-6*H*-pyrido[1,2-*a*]quinazolin-6-imine



146 mg, 70 %, yellow solid, 153 ℃.

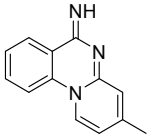
^{1}H NMR (300 MHz, Chloroform-*d*) δ 8.97 (ddd, *J* = 7.6, 1.7, 0.9 Hz, 1 H), 8.01 – 7.83 (m, 1 H), 7.75 – 7.55 (m, 2 H), 7.33 (ddd, *J* = 8.2, 6.4, 1.9 Hz, 1 H), 7.28 – 7.17 (m, 1 H), 6.59 (t, *J* = 7.0 Hz, 1 H), 2.49 (t, *J* = 0.9 Hz, 3 H).

^{13}C NMR (75 MHz, Chloroform-*d*) δ 156.52, 147.74, 144.73, 133.68, 132.79, 132.28, 127.84, 126.10, 124.57, 123.90, 115.24, 110.70, 18.71.

GC-MS (EI, 70ev): m/z(%) = 208 (M+, 100), 209 (65), 193 (10), 183 (36).

HRMS(ESI): calcd. for $[C_{13}H_{11}N_3 + H]^+$: 210.10257; found: 210.10272.

3-Methyl-6*H*-pyrido[1,2-*a*]quinazolin-6-imine



146 mg, 70 %, yellow solid, 158 ℃.

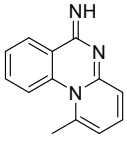
^{1}H NMR (300 MHz, Chloroform-*d*) δ 9.17 (d, *J* = 7.6 Hz, 1 H), 8.08 (ddd, *J* = 8.1, 1.3, 0.6 Hz, 1 H), 7.91 – 7.65 (m, 2 H), 7.61 – 7.44 (m, 1 H), 7.31 – 7.16 (m, 1 H), 6.73 (dd, *J* = 7.6, 2.0 Hz, 1 H), 2.55 (d, *J* = 1.2 Hz, 3 H).

^{13}C NMR (75 MHz, Chloroform-*d*) δ 155.87, 148.02, 145.75, 145.23, 132.94, 127.17, 127.01, 124.12, 123.95, 123.18, 115.12, 114.12, 21.24.

GC-MS (EI, 70ev): m/z(%) = 208 (M+, 100), 209 (58), 183 (38), 80(10).

HRMS(ESI): calcd. for $[C_{13}H_{11}N_3 + H]^+$: 210.10257; found: 210.10272.

1-Methyl-6*H*-pyrido[1,2-*a*]quinazolin-6-imine



132 mg, 63 %, yellow solid, 114 ℃.

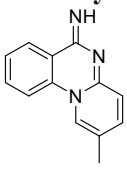
^{1}H NMR (300 MHz, Chloroform-*d*) δ 8.47 – 8.08 (m, 1 H), 7.65 – 7.37 (m, 3 H), 7.10 – 6.90 (m, 2 H), 6.74 (ddd, *J* = 15.0, 7.9, 0.9 Hz, 2 H), 2.49 (s, 3 H).

^{13}C NMR (75 MHz, Chloroform-*d*) δ 157.31, 153.28, 144.05, 138.33, 133.90, 132.78, 121.08, 118.19, 117.31, 116.44, 108.00, 100.55, 24.28.

GC-MS (EI, 70ev): m/z(%) = 208 (M+, 100), 209 (48), 183 (13).

HRMS(ESI): calcd. for $[C_{13}H_{11}N_3 + H]^+$: 210.10257; found: 210.10277.

2-Methyl-6*H*-pyrido[1,2-*a*]quinazolin-6-imine



96 mg, 46 %, yellow oil.

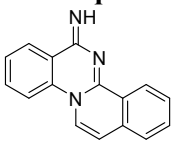
^{1}H NMR (300 MHz, Chloroform-*d*) δ 8.91 – 8.84 (m, 1 H), 7.96 – 7.88 (m, 1 H), 7.68 – 7.61 (m, 2 H), 7.35 (ddd, *J* = 8.2, 6.0, 2.2 Hz, 1 H), 7.30 – 7.25 (m, 2 H), 2.30 (d, *J* = 1.3 Hz, 3 H).

^{13}C NMR (75 MHz, Chloroform-*d*) δ 155.94, 147.26, 144.95, 137.65, 132.94, 127.17, 125.33, 124.92, 124.51, 124.03, 121.01, 115.30, 18.18.

GC-MS (EI, 70ev): m/z(%) = 208 (M+, 100), 209 (59), 183 (39).

HRMS(ESI): calcd. for $[C_{13}H_{11}N_3 + H]^+$: 210.10257; found: 210.10290.

6*H*-Isoquinolino[2,1-*a*]quinazolin-6-imine



29 mg, 12 %, yellow solid, 167℃.

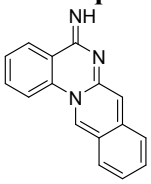
^{1}H NMR (400 MHz, Chloroform-*d*) δ 8.98 (ddt, *J* = 8.1, 1.4, 0.7 Hz, 1 H), 8.84 (d, *J* = 7.9 Hz, 1 H), 7.91 (dd, *J* = 8.1, 1.4 Hz, 1 H), 7.74 (dd, *J* = 8.2, 1.3 Hz, 1 H), 7.68 (ddt, *J* = 8.3, 7.0, 1.4 Hz, 2 H), 7.62 – 7.54 (m, 2 H), 7.39 (ddd, *J* = 8.2, 7.0, 1.3 Hz, 1 H), 6.89 (dd, *J* = 7.9, 0.7 Hz, 1H).

^{13}C NMR (101 MHz, Chloroform-*d*) δ 156.36, 146.32, 144.12, 133.31, 132.89, 131.92, 128.05 (d, *J* = 4.9 Hz), 127.81, 127.46, 127.24, 126.17, 125.34, 123.94, 123.39, 116.88, 111.55.

GC-MS (EI, 70ev): m/z(%) = 244 (M+, 100), 246 (15), 245 (93), 219 (32).

HRMS(ESI): calcd. for $[C_{16}H_{11}N_3 + H]^+$: 246.10257; found: 246.10285.

5*H*-Isoquinolino[2,3-*a*]quinazolin-5-imine



25 mg, 10 %, yellow solid.

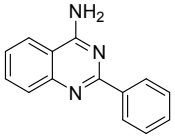
^{1}H NMR (300 MHz, Chloroform-*d*) δ 8.97 (t, *J* = 0.9 Hz, 1 H), 7.96 – 7.88 (m, 1 H), 7.83 (dq, *J* = 8.3, 1.0 Hz, 1 H), 7.65 – 7.58 (m, 1 H), 7.57 – 7.40 (m, 3 H), 7.35 (ddd, *J* = 8.1, 6.6, 1.4 Hz, 1 H), 7.22 – 7.16 (m, 1 H), 7.01 (s, 1 H), 6.93 (td, *J* = 7.6, 1.0 Hz, 1 H).

^{13}C NMR (75 MHz, Chloroform-*d*) δ 151.97, 149.43, 144.59, 138.16, 133.93, 133.08, 130.94, 127.80, 125.55, 125.06, 124.98, 121.03, 117.32, 117.29, 103.81, 100.72.

GC-MS (EI, 70ev): m/z(%) = 245 (M+, 100), 246 (20), 244 (69), 205 (29), 219 (29), 213 (26), 117 (57).

HRMS(ESI): calcd. for $[C_{16}H_{11}N_3 + H]^+$: 246.10257; found: 246.10278.

2-Phenylquinazolin-4-amine



155 mg, 70 %, white solid, 138 ℃.

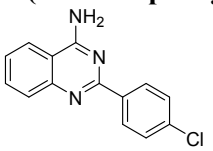
^{1}H NMR (300 MHz, Chloroform-*d*) δ 8.55 – 8.39 (m, 2 H), 7.96 (ddd, *J* = 8.4, 1.2, 0.6 Hz, 1 H), 7.79 – 7.65 (m, 2 H), 7.54 – 7.43 (m, 3 H), 7.39 (ddd, *J* = 8.2, 6.9, 1.2 Hz, 1 H), 6.03 (s, 2 H).

^{13}C NMR (75 MHz, Chloroform-*d*) δ 161.67, 161.00, 150.93, 138.61, 133.33, 130.21, 128.56 – 128.21 (m), 128.69, 128.46, 128.43, 125.78, 121.73, 113.07.

GC-MS (EI, 70ev): m/z(%) = 221 (M+, 100), 222 (17), 220 (16), 205 (29), 118 (21).

HRMS(ESI): calcd. for $[C_{16}H_{11}N_3 + H]^+$: 222.10257; found: 222.1028.

2-(4-Chlorophenyl)quinazolin-4-amine



52 mg, 20 %, white solid, 149 ℃.

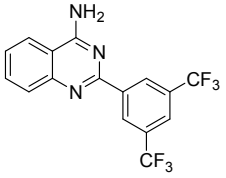
^{1}H NMR (300 MHz, Chloroform-*d*) δ 8.50 – 8.41 (m, 2 H), 7.94 (ddd, *J* = 8.5, 1.2, 0.6 Hz, 1 H), 7.83 – 7.69 (m, 2 H), 7.52 – 7.40 (m, 3 H), 5.71 (s, 2 H).

^{13}C NMR (75 MHz, Chloroform-*d*) δ 161.38, 159.76, 150.86, 136.92, 136.34, 133.41, 129.71, 128.80, 128.54, 125.97, 121.58, 112.99.

GC-MS (EI, 70ev): m/z(%) = 255 (M+, 100), 257 (38), 256 (17), 239 (29), 207 (18), 118 (19), 103 (10).

HRMS(ESI): calcd. for $[C_{14}H_{10}ClN_3 + H]^+$: 256.0636; found: 256.06383.

2-(3,5-Bis(trifluoromethyl)phenyl)quinazolin-4-amine



71 mg, 20 %, yellow solid, 197 ℃.

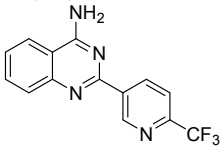
^{1}H NMR (300 MHz, Chloroform-*d*) δ 9.27 – 8.73 (m, 2 H), 8.11 – 7.90 (m, 2 H), 7.90 – 7.70 (m, 2 H), 7.54 (ddd, *J* = 8.2, 7.0, 1.2 Hz, 1 H), 5.75 (s, 2 H).

^{13}C NMR (75 MHz, Chloroform-*d*) δ 161.49, 157.60, 150.66, 140.50, 133.69, 131.58 (q, *J* = 33.4 Hz), 129.06, 128.97, 128.43 (d, *J* = 4.2 Hz), 126.67, 125.35, 123.84 – 123.17 (m), 121.74, 121.63, 118.13, 113.28.

GC-MS (EI, 70ev): m/z(%) = 357 (M+, 100), 358 (12), 356 (18), 341 (22), 338 (14).

HRMS(ESI): calcd. for $[C_{16}H_9F_6N_3 + H]^+$: 358.07734; found: 358.07789.

2-(6-(Trifluoromethyl)pyridin-3-yl)quinazolin-4-amine



148 mg, 51 %, white solid, 205 ℃.

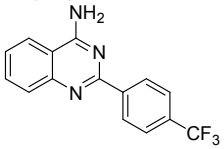
^{1}H NMR (300 MHz, Chloroform-*d*) δ 9.85 – 9.74 (m, 1 H), 8.96 (ddd, *J* = 8.3, 1.9, 0.8 Hz, 1 H), 7.98 (dt, *J* = 8.4, 1.0 Hz, 1 H), 7.90 – 7.71 (m, 3 H), 7.54 (ddd, *J* = 8.2, 6.9, 1.3 Hz, 1 H), 5.81 (s, 2 H).

^{13}C NMR (75 MHz, Chloroform-*d*) δ 161.50, 157.50, 150.71, 150.29, 136.98, 136.62, 133.68, 132.86, 129.10, 126.75, 121.66, 119.99 (q, *J* = 2.6 Hz), 113.35.

GC-MS (EI, 70ev): m/z(%) = 290 (M+, 100), 291(17), 221(32).

HRMS(ESI): calcd. for $[C_{15}H_{10}F_3N_3 + H]^+$: 291.08521; found: 291.08566.

2-(4-(Trifluoromethyl)phenyl)quinazolin-4-amine



150 mg, 52 %, white solid, 170 ℃.

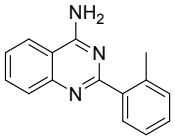
^{1}H NMR (300 MHz, Chloroform-*d*) δ 8.70 – 8.51 (m, 2 H), 8.02 – 7.91 (m, 1 H), 7.85 – 7.66 (m, 4 H), 7.49 (ddd, *J* = 8.2, 6.9, 1.2 Hz, 1 H), 5.86 (s, 2 H).

^{13}C NMR (75 MHz, Chloroform-*d*) δ 161.57, 159.42, 150.88, 141.84, 133.68, 132.11, 131.68, 129.10, 128.76, 126.50, 126.22, 125.40 (q, *J* = 3.8 Hz), 122.61, 121.77, 113.28.

GC-MS (EI, 70ev): m/z(%) = 289 (M+, 100), 290(18), 288 (18), 273 (26), 118 (10).

HRMS(ESI): calcd. for $[C_{15}H_{10}F_3N_3 + H]^+$: 290.08996; found: 290.09042.

2-(*o*-Tolyl)quinazolin-4-amine



129 mg, 55 %, white solid, 134 ℃.

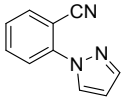
^{1}H NMR (300 MHz, Chloroform-d) δ 8.39 – 8.22 (m, 2 H), 7.96 (ddd, *J* = 8.5, 1.2, 0.6 Hz, 1 H), 7.80 – 7.61 (m, 2 H), 7.38 (ddd, *J* = 8.3, 7.1, 1.4 Hz, 2 H), 7.27 (ddt, *J* = 7.6, 1.6, 0.9 Hz, 1H), 6.01 (s, 2 H), 2.44 (d, *J* = 0.9 Hz, 3 H).

^{13}C NMR (75 MHz, Chloroform-d) δ 161.61, 161.13, 150.94, 138.55, 138.00, 133.23, 130.97, 128.96, 128.66, 128.35, 125.6, 125.58, 121.71, 113.05, 21.55.

GC-MS (EI, 70ev): m/z(%) = 235 (M+, 100), 236 (17), 234 (19), 219 (20), 207(10), 118 (17).

HRMS(ESI): calcd. for $[C_{15}H_{13}N_3 + H]^+$: 236.11822; found: 236.11853.

2-(1*H*-Pyrazol-1-yl)benzonitrile



145 mg, 86 %, yellow oil.

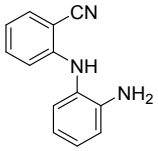
^{1}H NMR (300 MHz, Chloroform-*d*) δ 8.09 (t, *J* = 2.3 Hz, 1 H), 7.81 – 7.69 (m, 3 H), 7.69 – 7.59 (m, 1 H), 7.38 (ddt, *J* = 9.2, 7.2, 1.7 Hz, 1 H), 6.50 (q, *J* = 2.2 Hz, 1 H).

^{13}C NMR (75 MHz, Chloroform-*d*) δ 142.19, 141.92, 134.46, 134.02, 129.53, 127.28, 124.19, 117.02, 108.47, 105.32.

GC-MS (EI, 70ev): m/z(%) = 169 (M+, 100), 170 (12), 168 (10), 142 (47), 129(15), 115 (23), 102(27), 75 (14).

HRMS(ESI): calcd. for $[C_{10}H_7N_3 + H]^+$: 170.07127; found: 170.07124.

2-((2-Aminophenyl)amino)benzonitrile



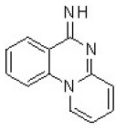
65 mg, 31 %, yellow oil.

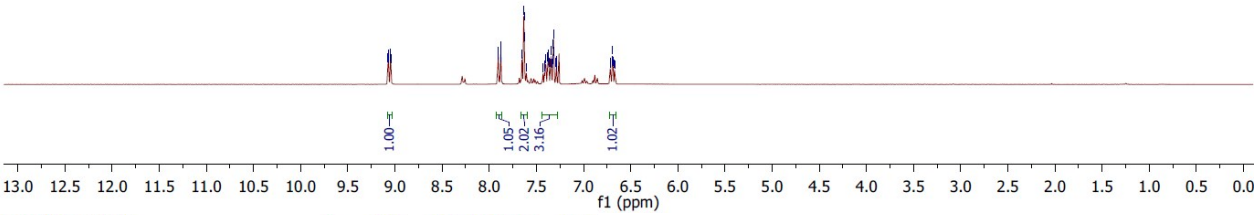
^{1}H NMR (300 MHz, Chloroform-*d*) δ 7.47 (ddd, *J* = 7.8, 1.6, 0.5 Hz, 1H), 7.36 – 7.27 (m, 1H), 7.21 – 7.05 (m, 2H), 6.96 – 6.64 (m, 3H), 6.57 (dt, *J* = 8.5, 0.7 Hz, 1H), 6.19 – 5.68 (m, 1H), 3.41 (s, 2H).

^{13}C NMR (75 MHz, Chloroform-*d*) δ 148.77, 143.15, 134.14, 132.64, 128.02, 127.64, 124.81, 119.21, 118.32, 117.70, 116.34, 113.40, 96.80.

GC-MS (EI, 70ev): m/z(%) = 209 (M+, 100), 210 (15), 208 (17), 182 (15), 181(13).

150723.f324.11.fid
Jian-Bo Feng F11a
PROTON CDCl3 {C:\Bruker\TopSpin3.2PL6} 1507 24





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Jian-Bo Feng F11a
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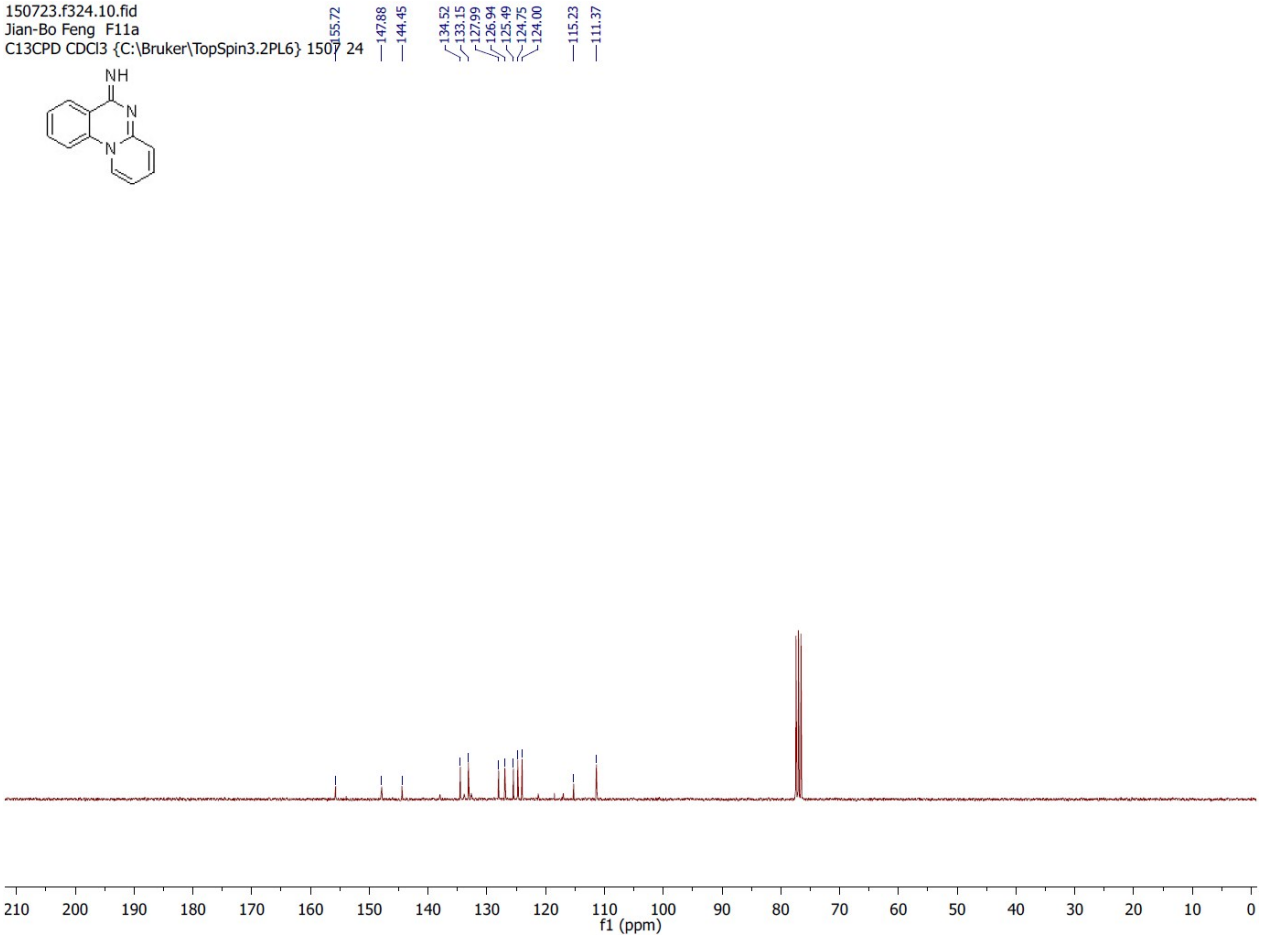

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J.Feng / F11a51
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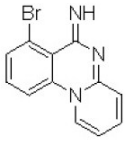

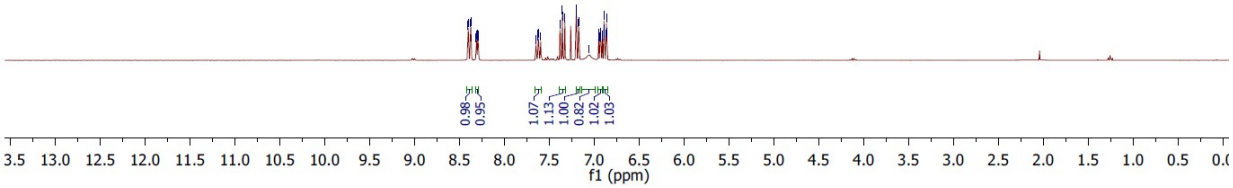

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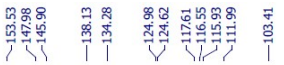

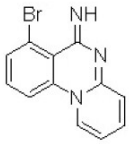

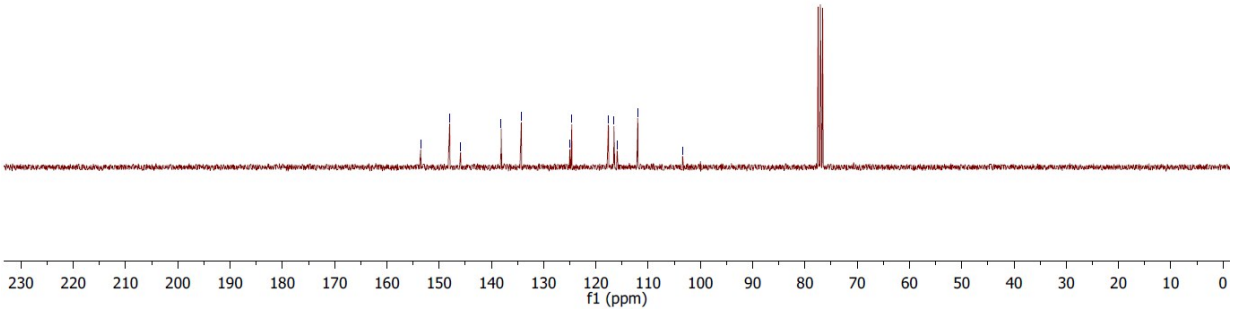

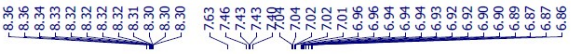
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7.46
7.43
7.43
7.04
7.04
7.02
7.02
7.01
6.96
6.96
6.94
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6.93
6.92
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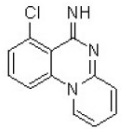
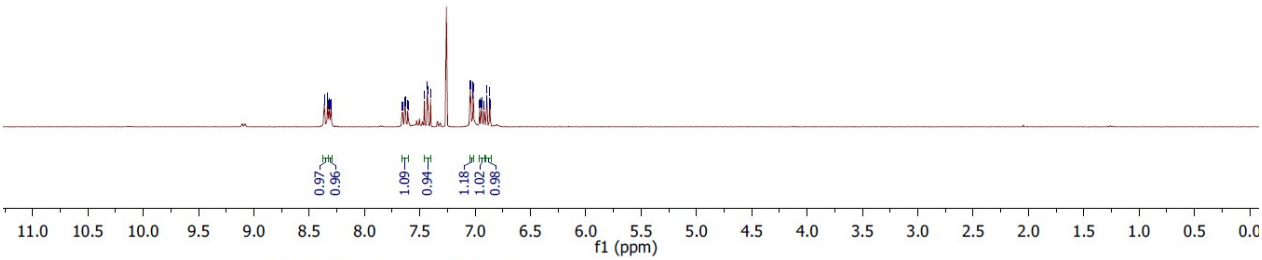
6.90
6.89
6.87
6.87
6.86


Cl
NH
N
N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0.94
1.18
1.02
0.98
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10.0
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8.0
7.5
7.0
6.5
6.0
5.5
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3.0
2.5
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1.5
1.0
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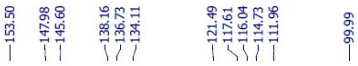
0.0
f1 (ppm)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136.73
134.11
121.49
117.61
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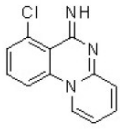
114.73
111.96
99.99


Cl
NH
N
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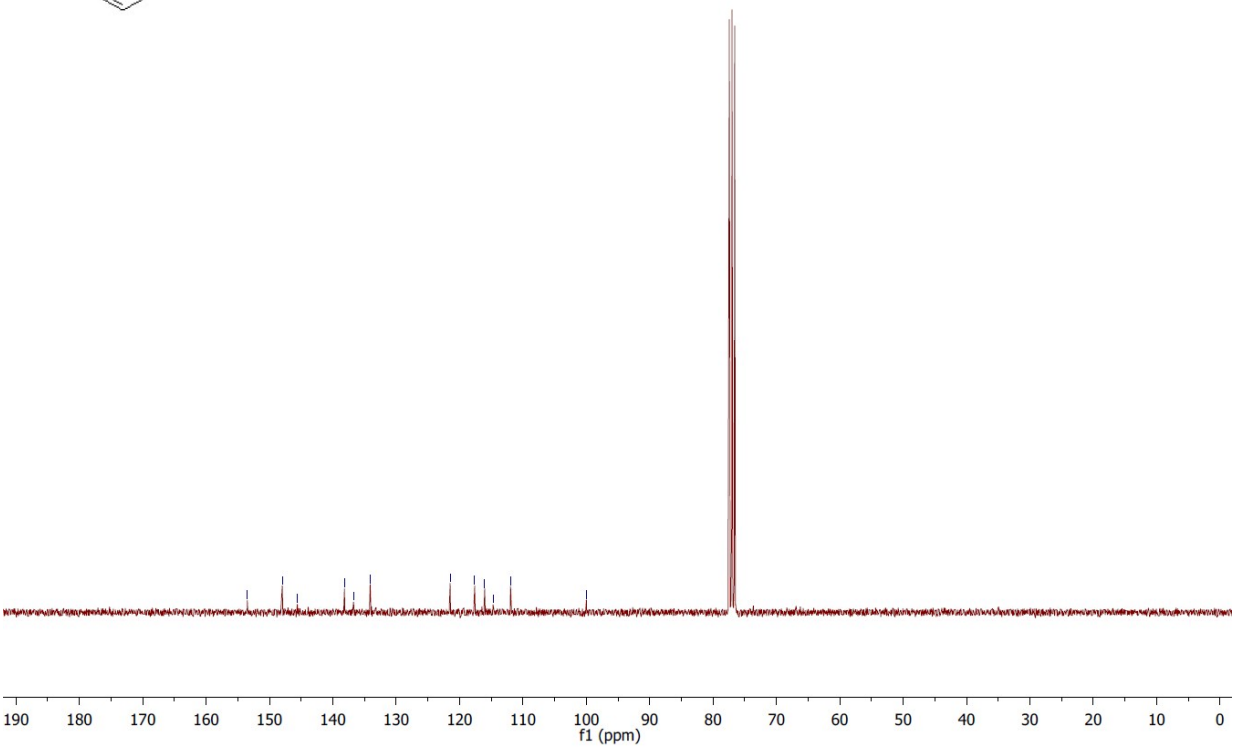
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
f1 (ppm)

150617.f330.10.fid
J.Feng / F11a56
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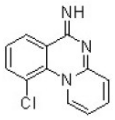

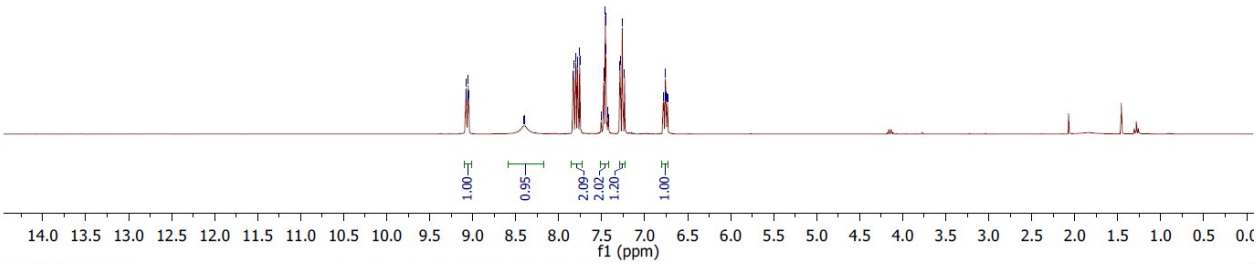

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J.Feng / F11a56
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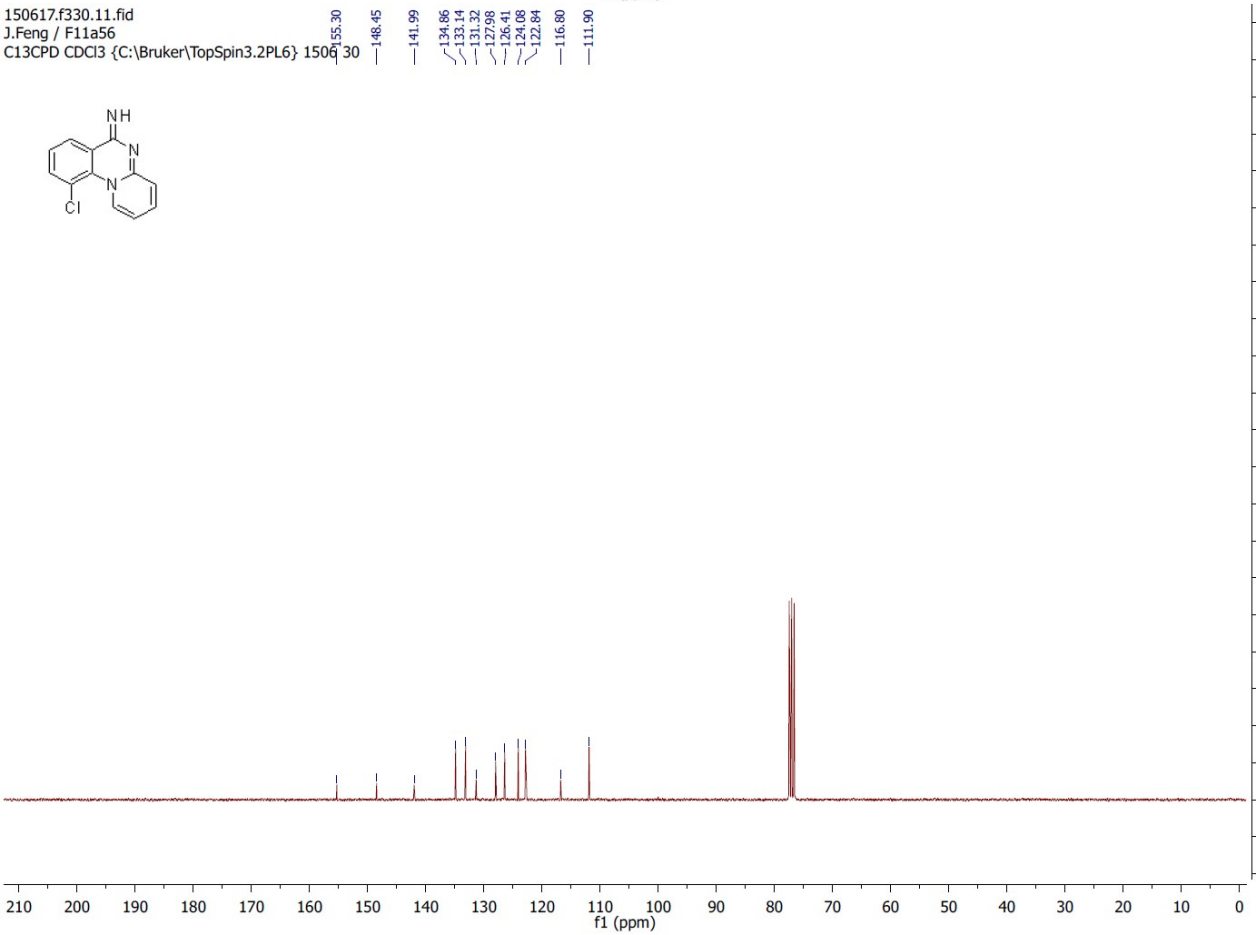
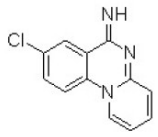
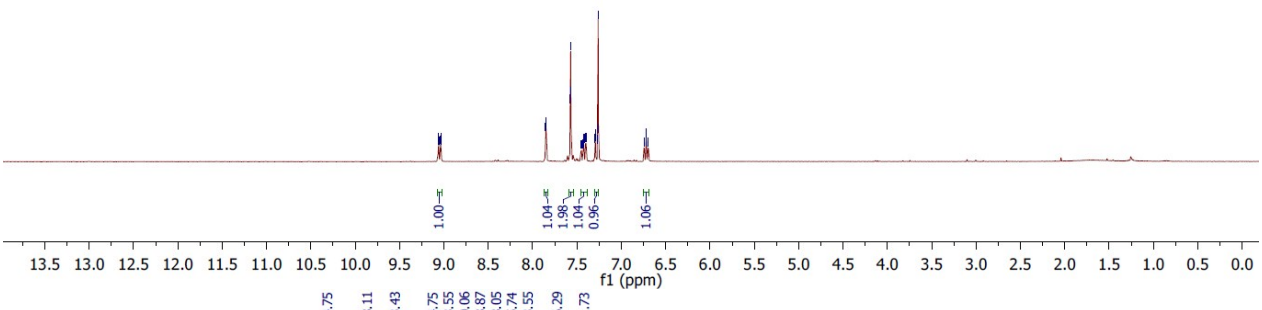



NH
Cl
N
N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9.06
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9.03
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7.26
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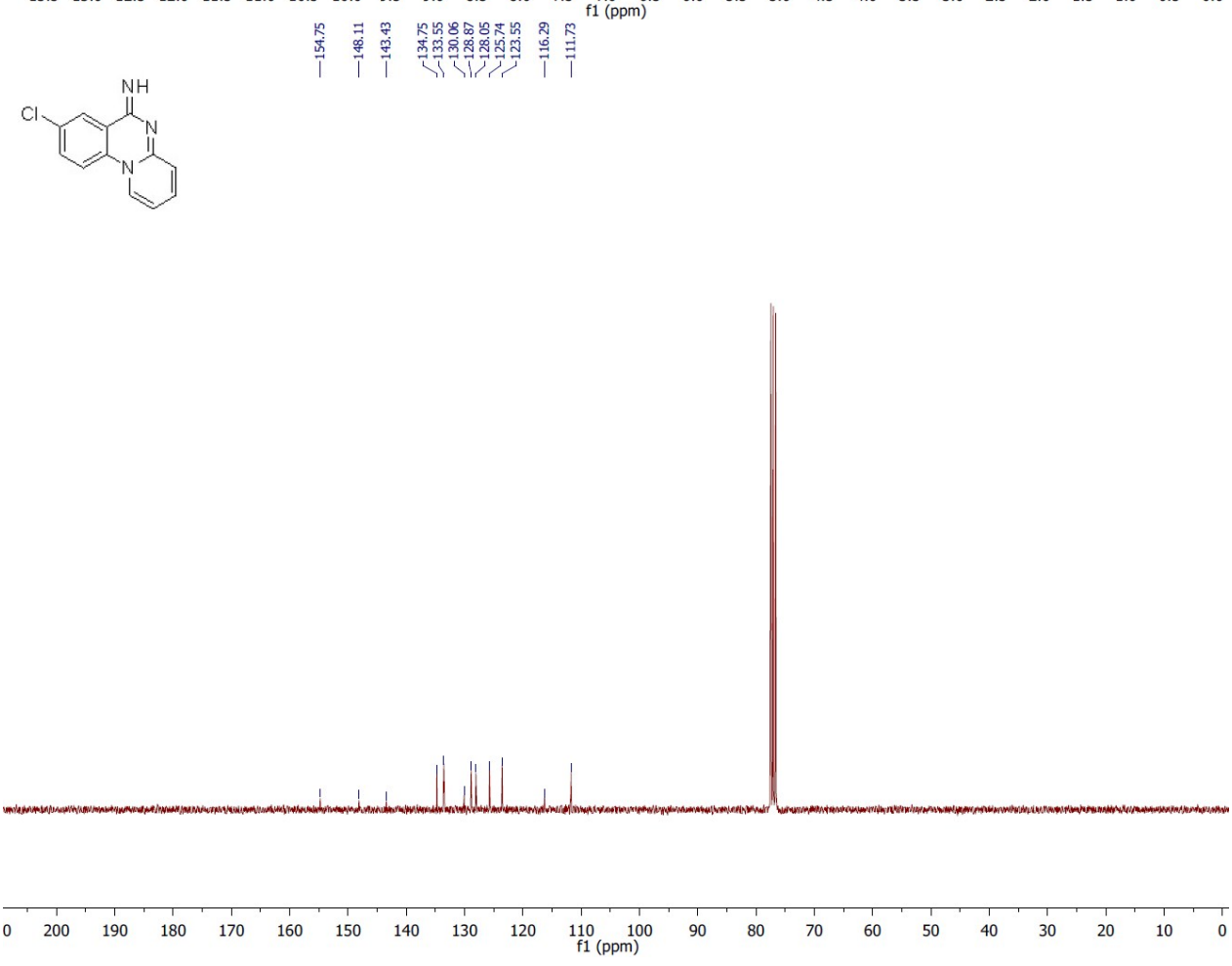
6.74
6.72
6.72
6.71
6.70
6.69
1.00
1.04
1.98
1.04
0.96
1.06
13.5 13.0 12.5 12.0 11.5 11.0 10.5 10.0 9.5 9.0 8.5 8.0 7.5 7.0 6.5 6.0 5.5 5.0 4.5 4.0 3.5 3.0 2.5 2.0 1.5 1.0 0.5 0.0
f1 (ppm)

NH
Cl
N
N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134.75
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130.06
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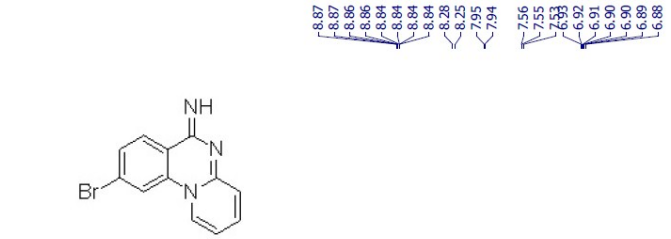
128.05
125.74
123.55
116.29
111.73
0 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0
f1 (ppm)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6.89
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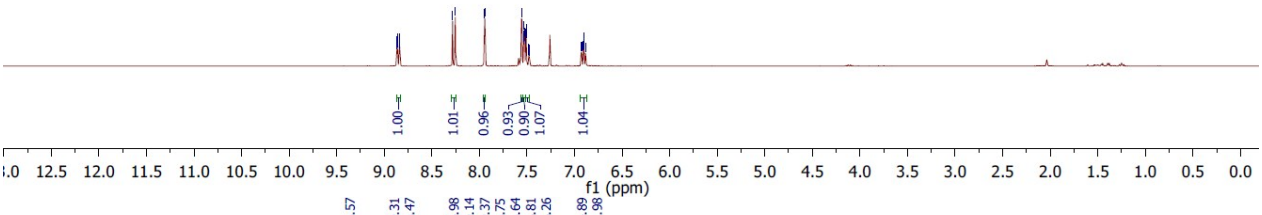
NH
N
Br
N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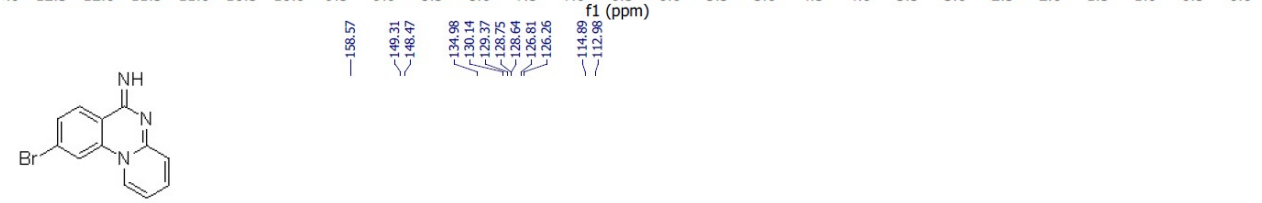
0.90
1.07
1.04
f1 (ppm)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126.26
114.89
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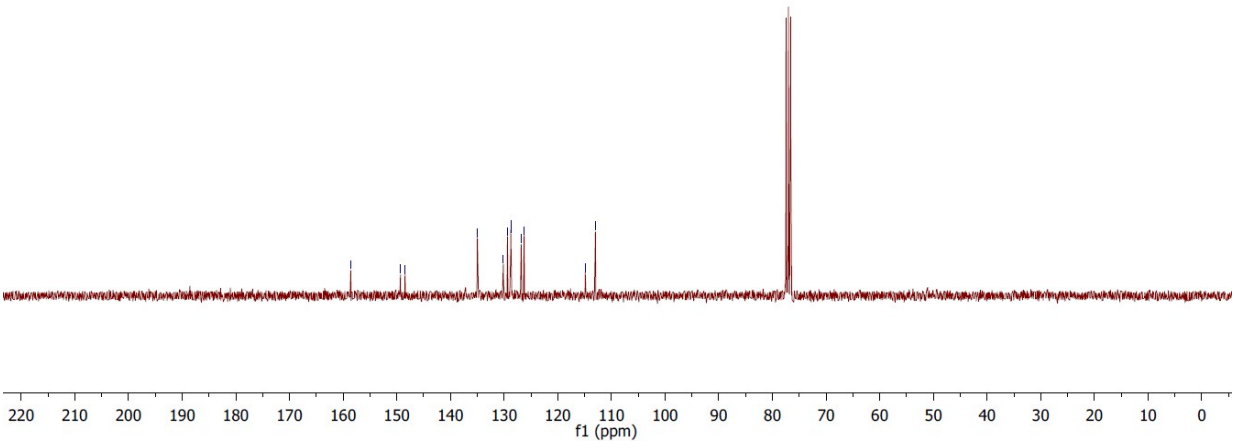
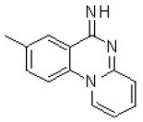
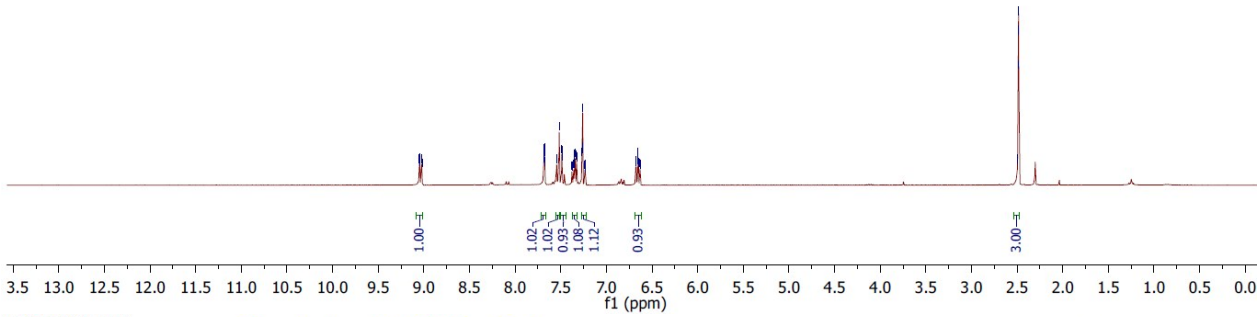
NH
N
Br
N


f1 (ppm)

150608.343.10.fid
Feng/ F11a63
Au1H CDCl3 /opt/topspin 1506 43





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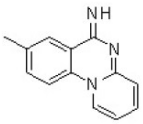
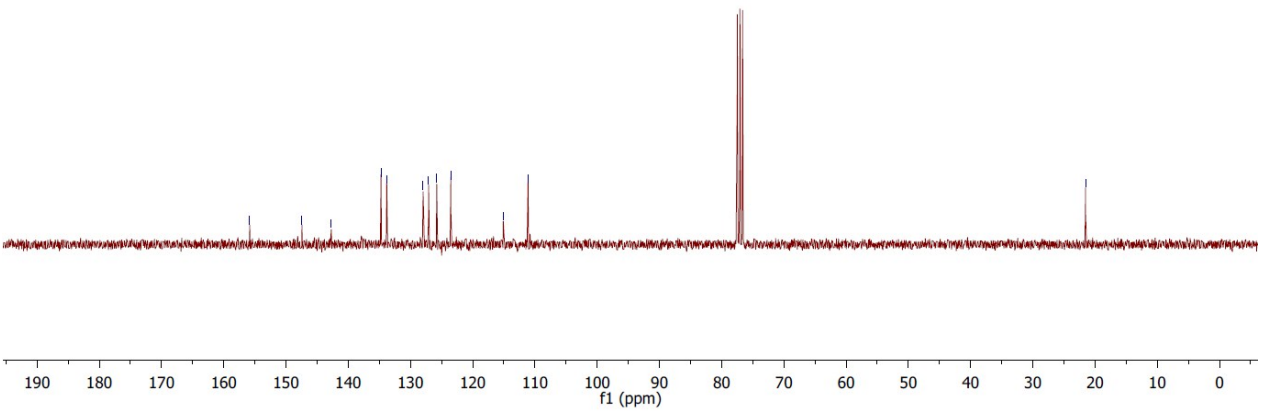
Feng/ F11a63
Au13C CDCl3 /opt/topspin 1506 43





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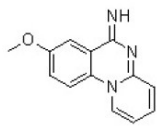
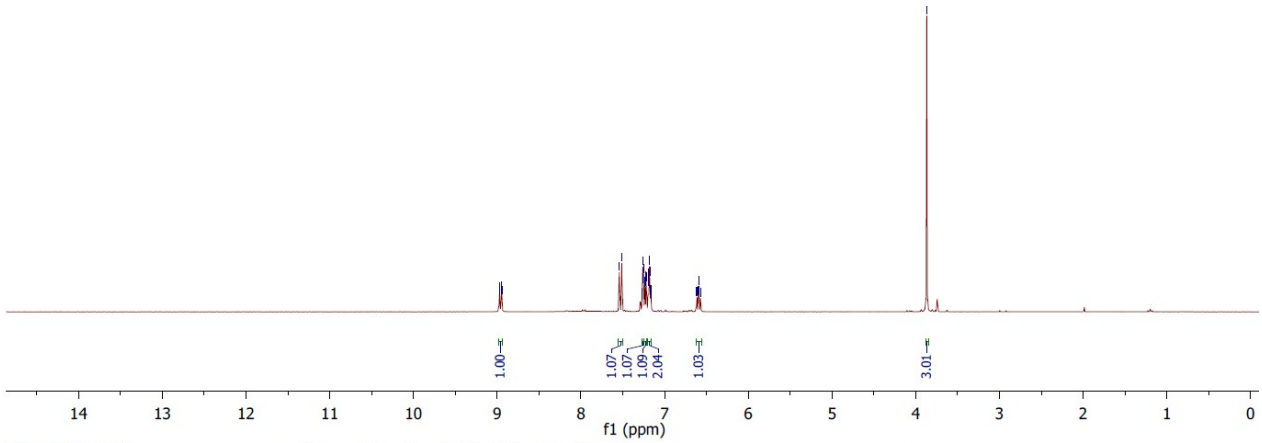
PROTON CDCl3 {C:\Bruker\TopSpin3.2PL6} 1506 3





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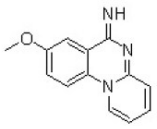

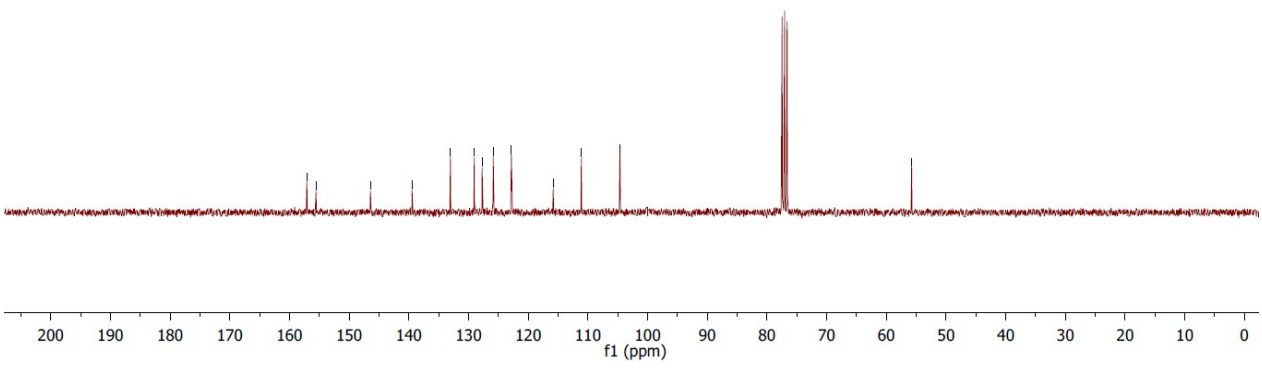

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J.Feng / F11a65
PROTON CDCl3 {C:\Bruker\TopSpin3.2PL6} 1506 28

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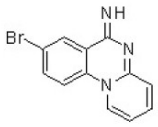

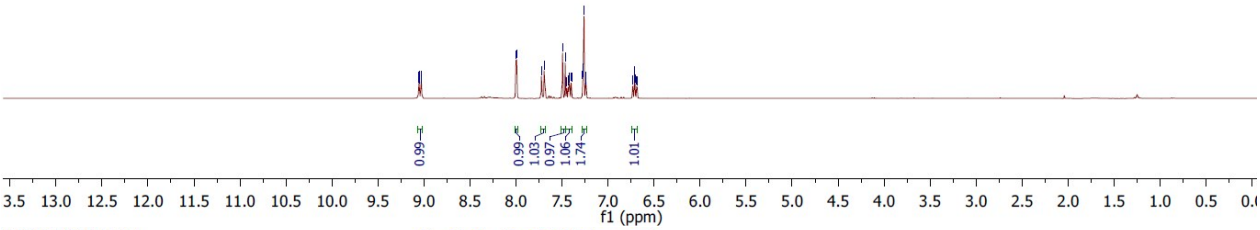

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J.Feng / F11a65
C13CPD CDCl3 {C:\Bruker\TopSpin3.2PL6} 1506 28

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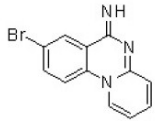

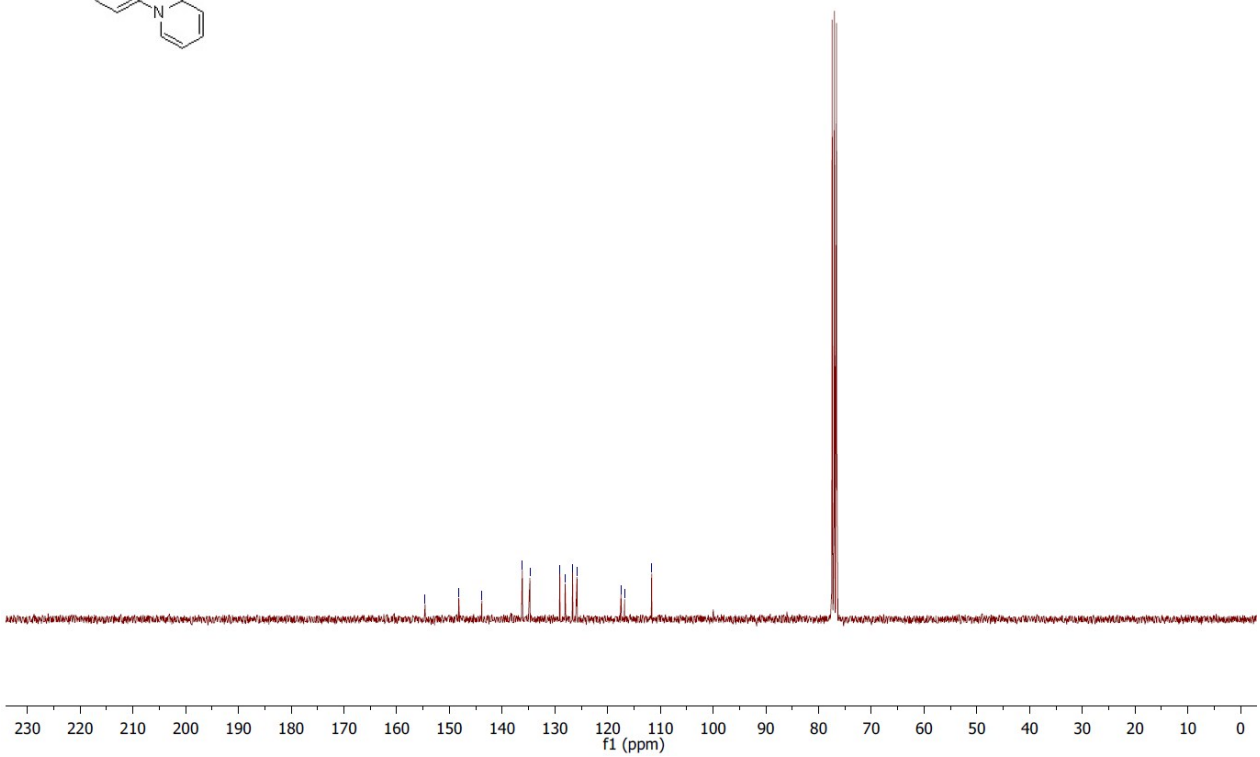

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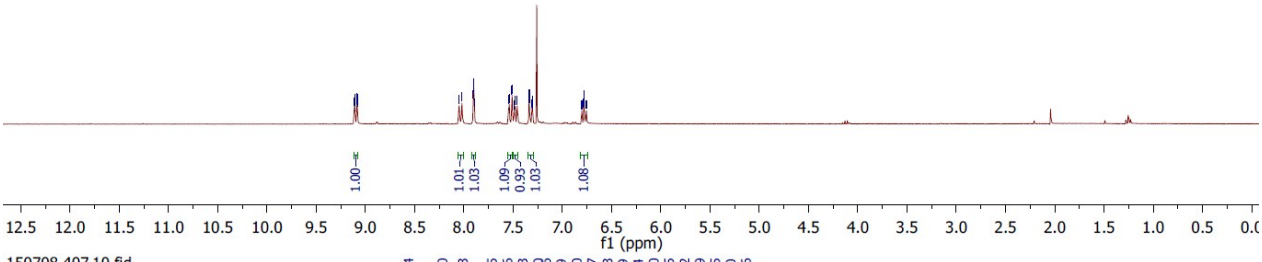
PROTON CDCl3 {C:\Bruker\TopSpin3.2PL6} 1506 7



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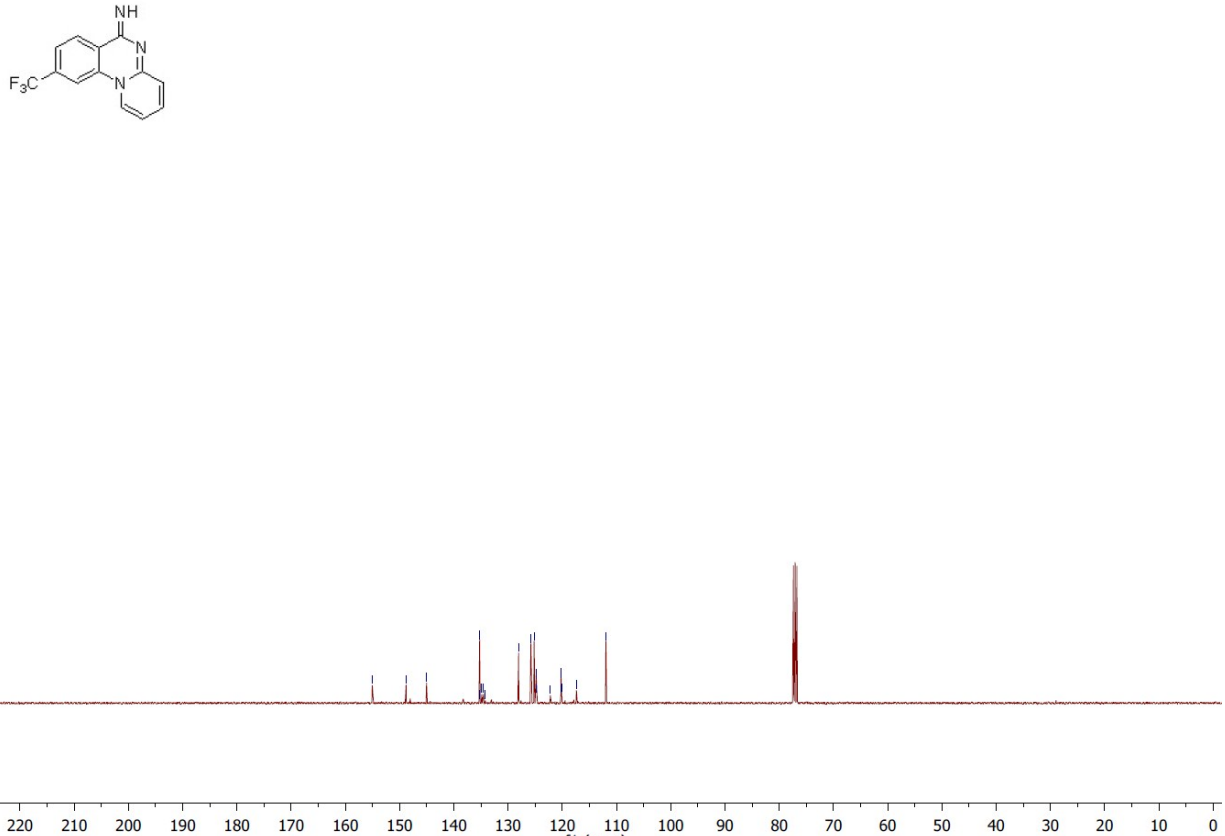
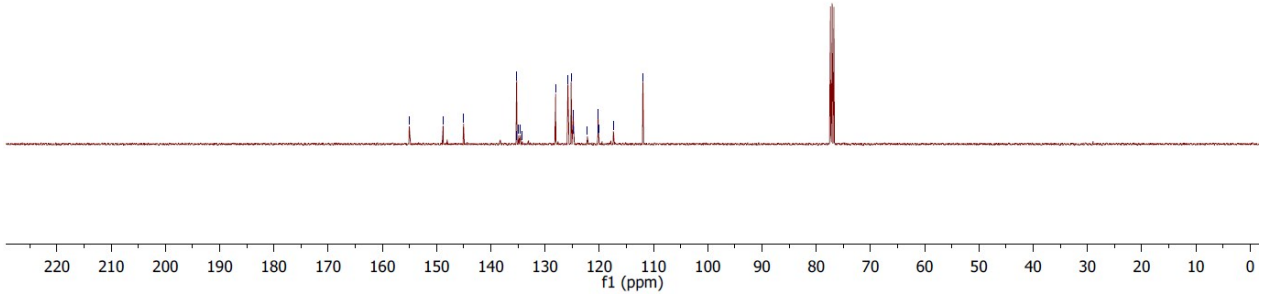
Au13C CDCl3 /opt/topspin 1507 7





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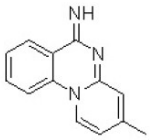
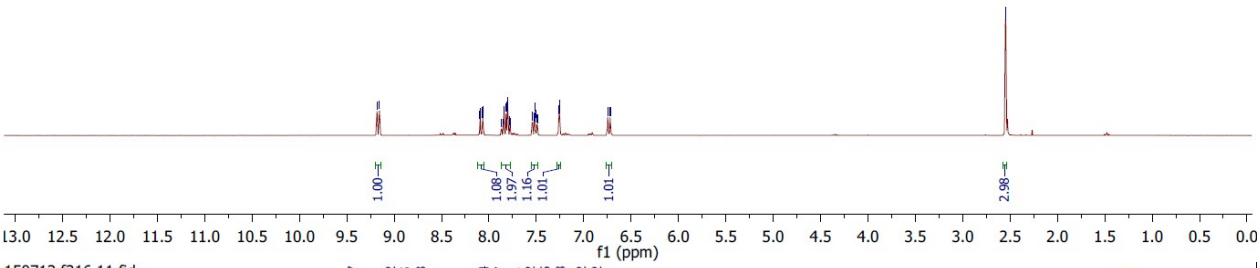
PROTON CDCl3 {C:\Bruker\TopSpin3.2PL6} 1507 16





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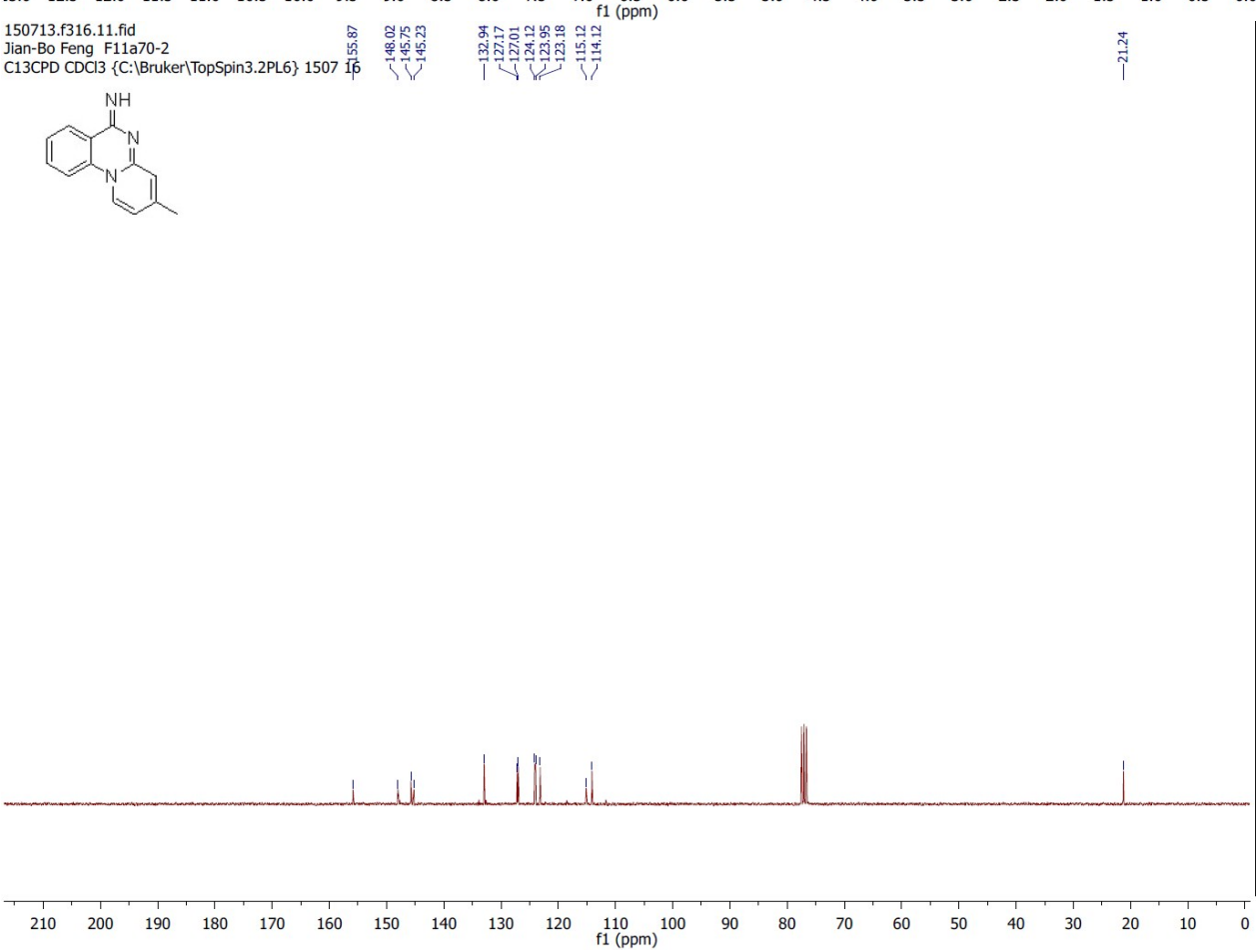

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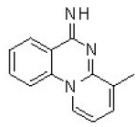
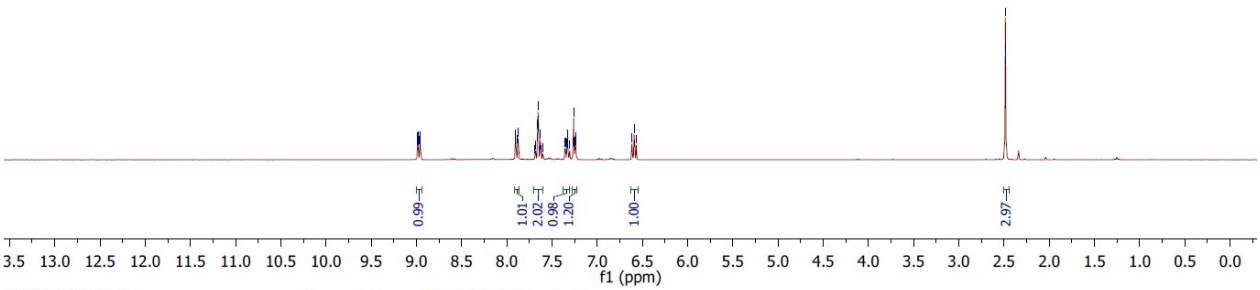
PROTON CDCl3 {C:\Bruker\TopSpin3.2PL6} 1507 9





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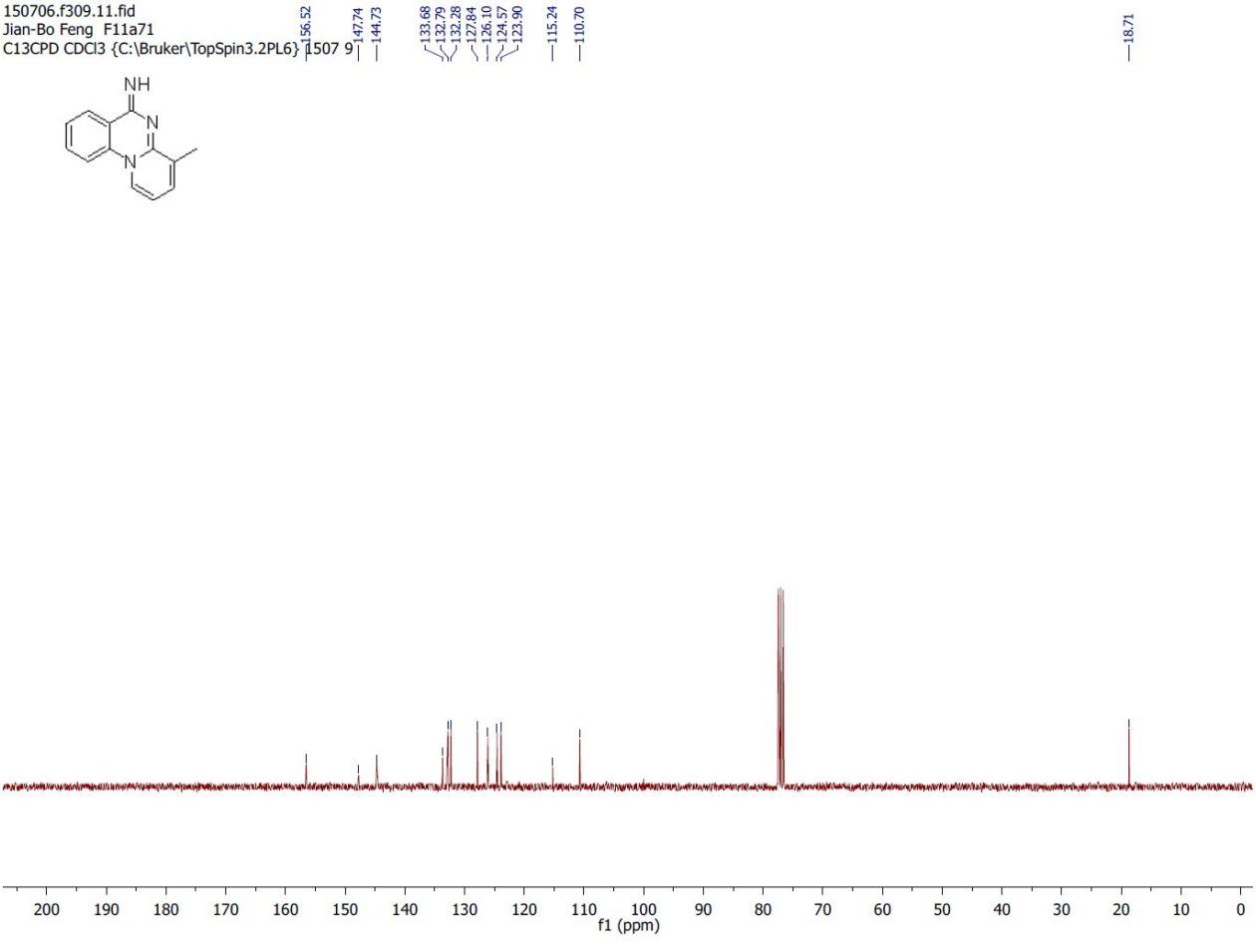

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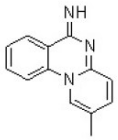

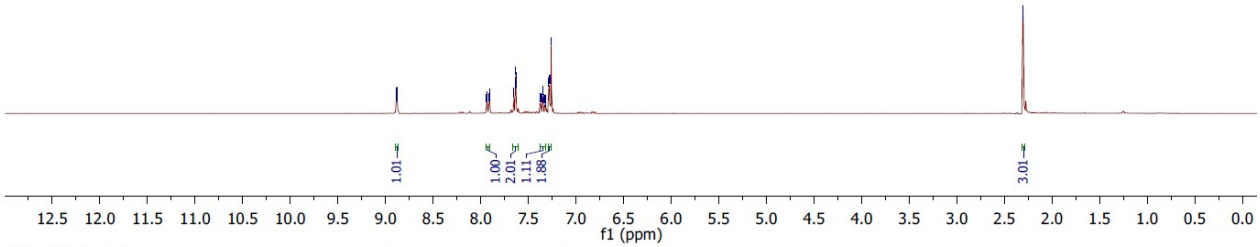

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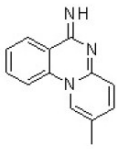
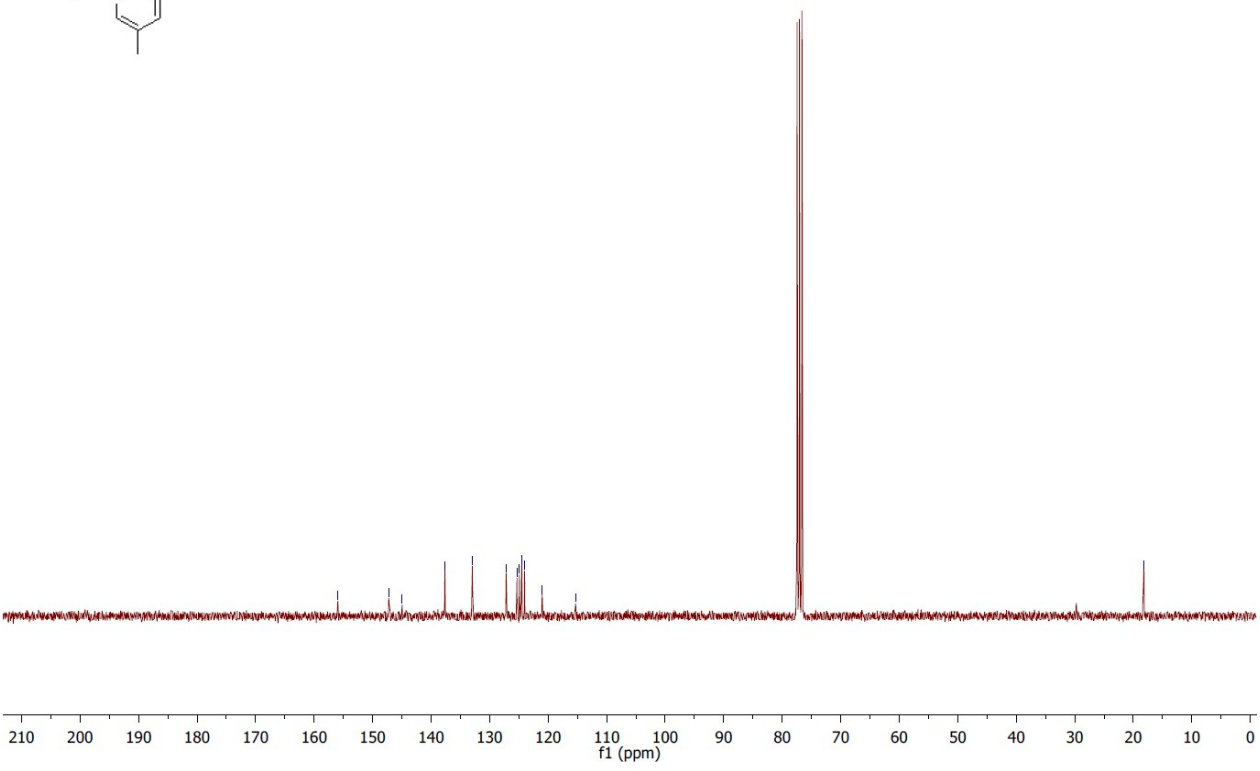
Au13C CDCl3 /opt/topspin 1507 22





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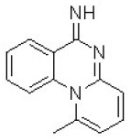
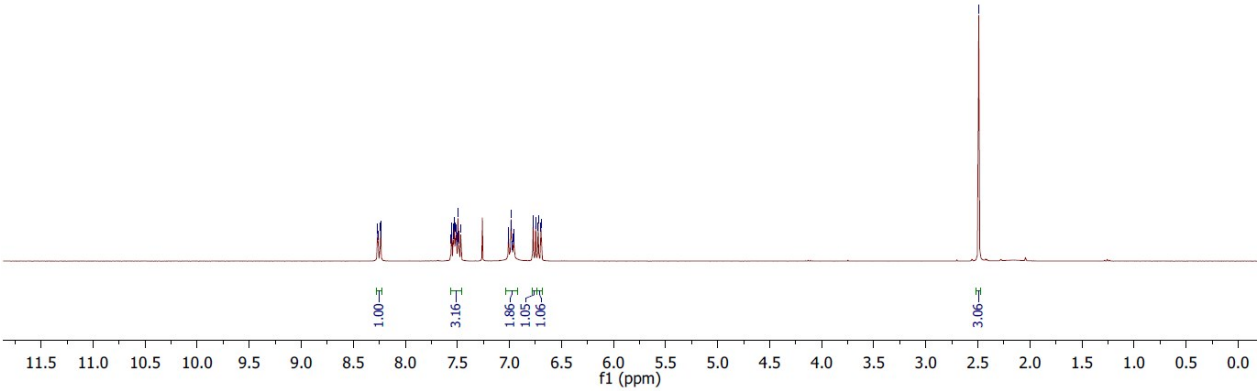
PROTON CDCl3 {C:\Bruker\TopSpin3.2PL6} 1507 33





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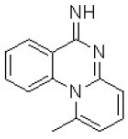
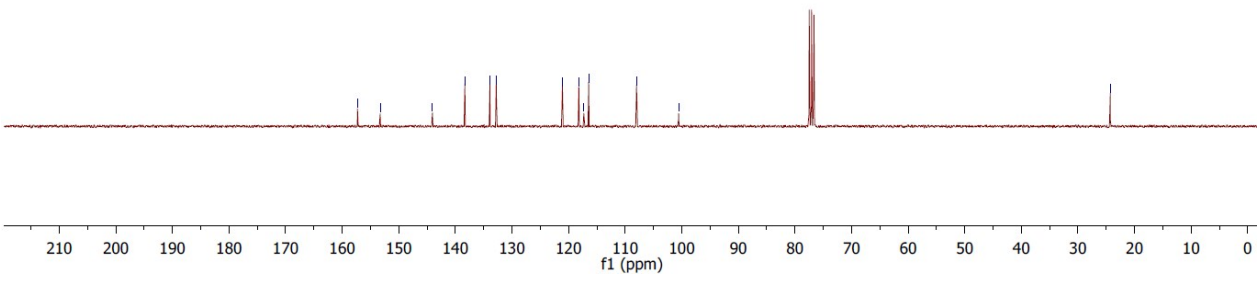
Au13C CDCl3 /opt/topspin 1507 20





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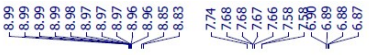
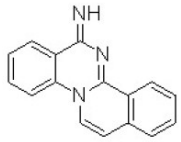
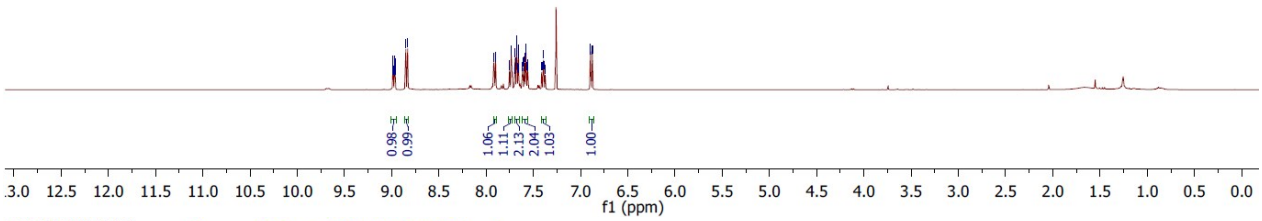
Jian-Bo Feng F11a78
Au1H CDCl3 /opt/topspin 1507 8







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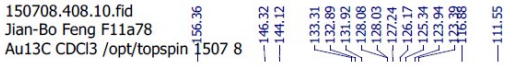
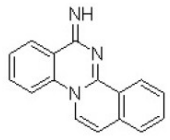
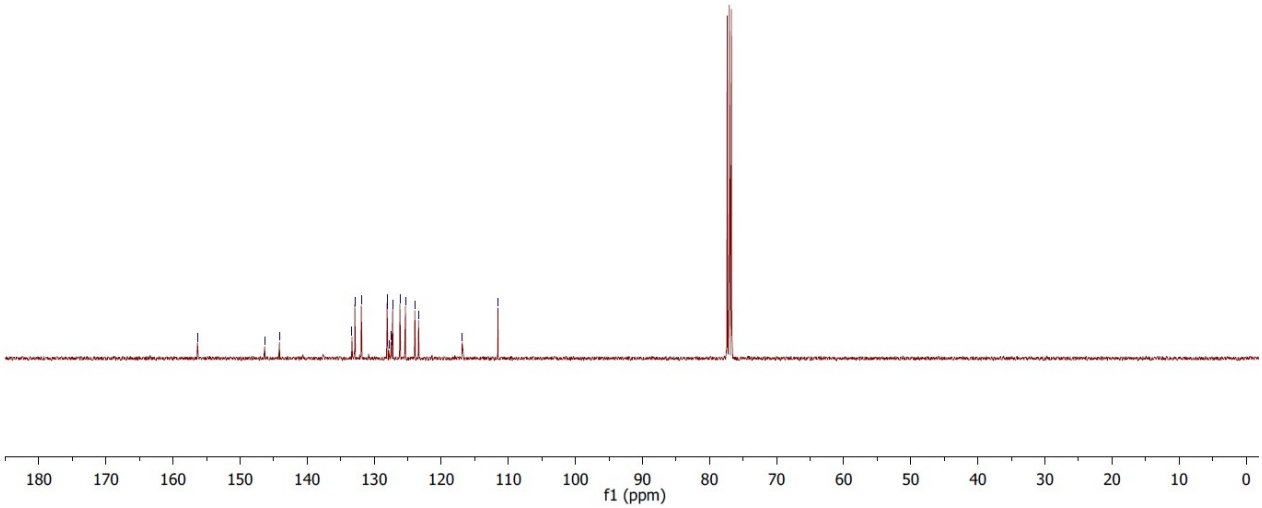
Au13C CDCl3 /opt/topspin 1507 8







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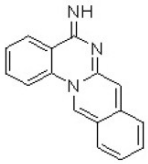
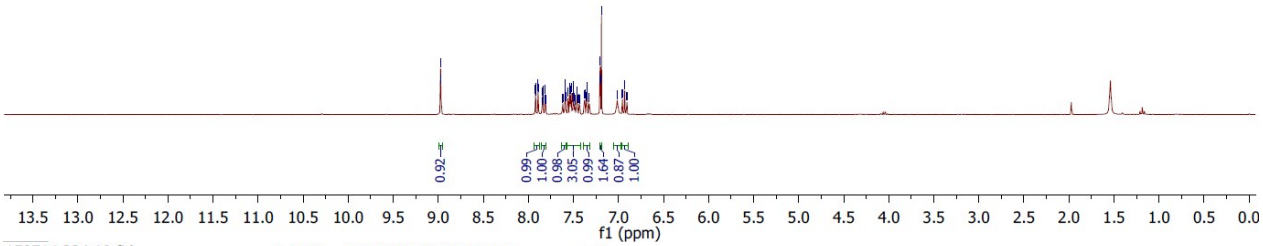
PROTON CDCl3 {C:\Bruker\TopSpin3.2PL6} 1507 10





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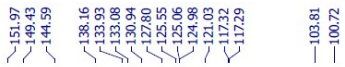
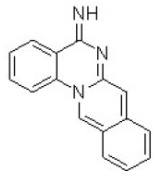
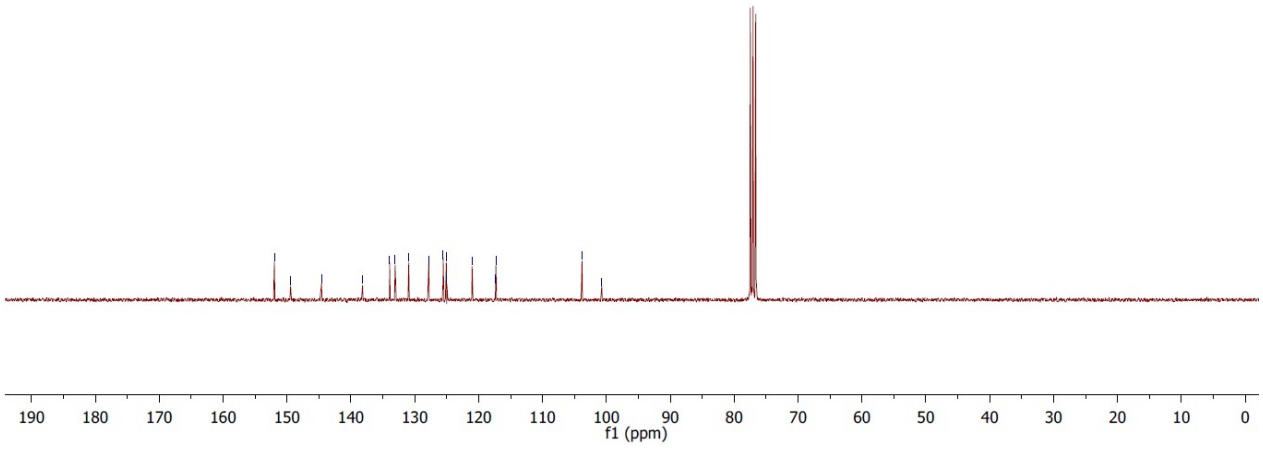
J.Feng / F11a83
Au13C CDCl3 /opt/topspin 1507 24







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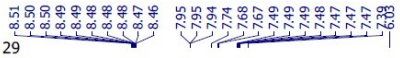
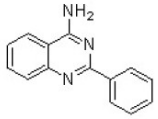
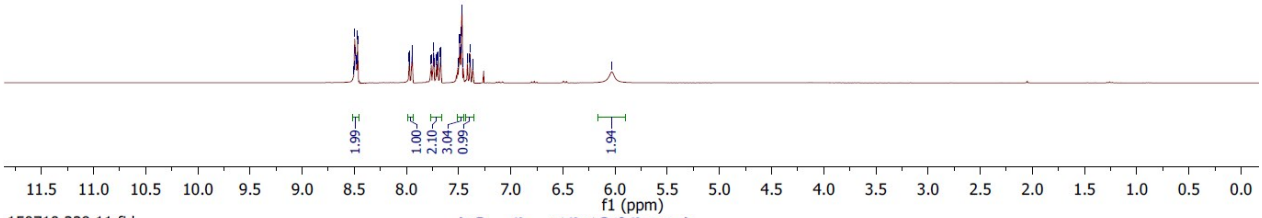
Jian-Bo Feng F11a87
Au1H CDCl3 /opt/topspin 1507 29







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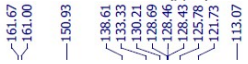
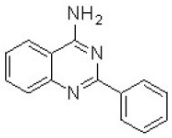
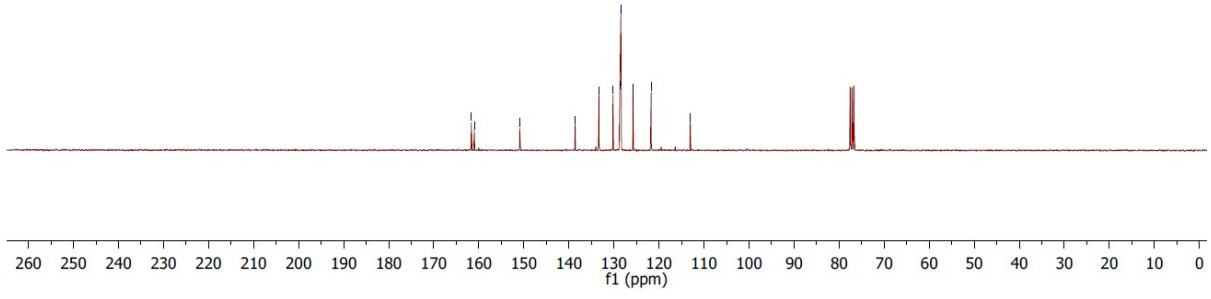
Jian-Bo Feng F11a87
Au13C CDCl3 /opt/topspin 1507 29







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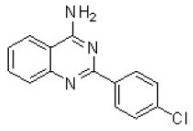
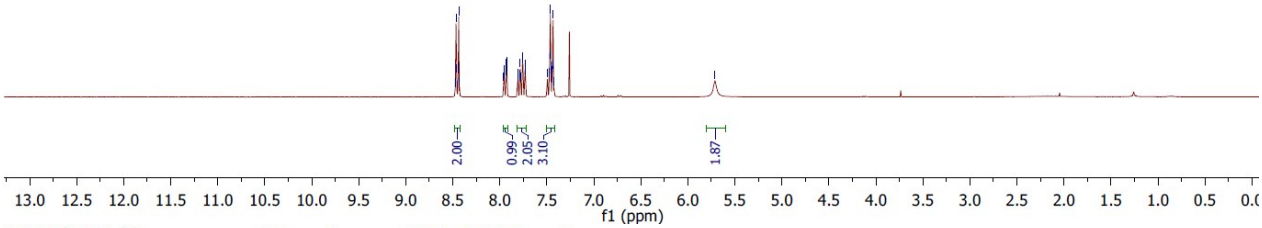
Jian-Bo Feng F11a94
PROTON CDCl3 {C:\Bruker\TopSpin3.2PL6} 1507 8





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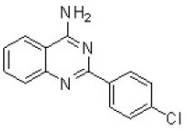
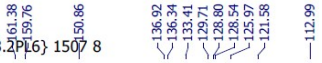
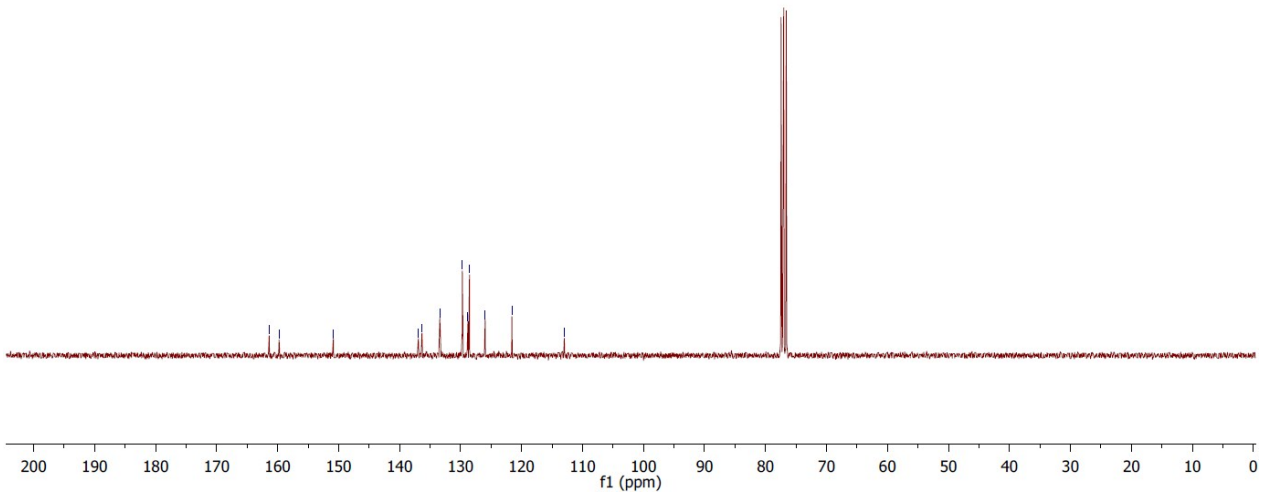
C13CPD CDCl3 {C:\Bruker\TopSpin3.2PL6} 1507 8







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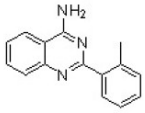
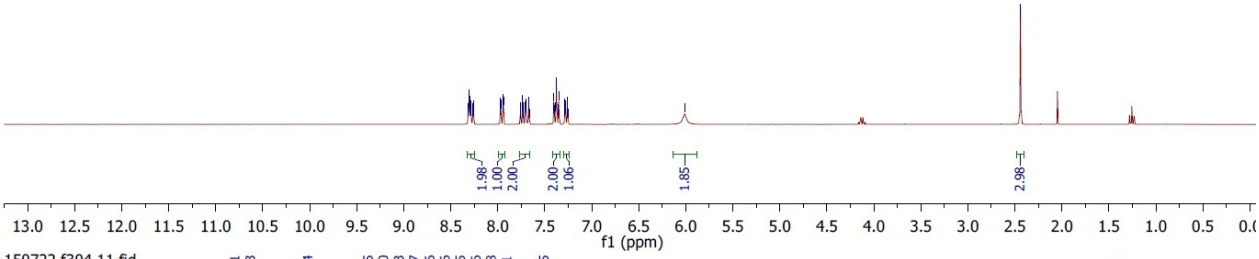
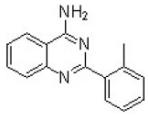
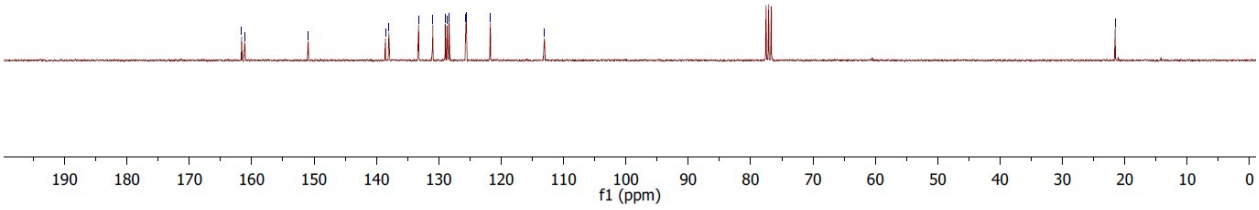
Jian-Bo Feng F11a95
PROTON CDCl3 {C:\Bruker\TopSpin3.2PL6} 1507 4



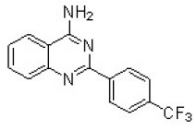


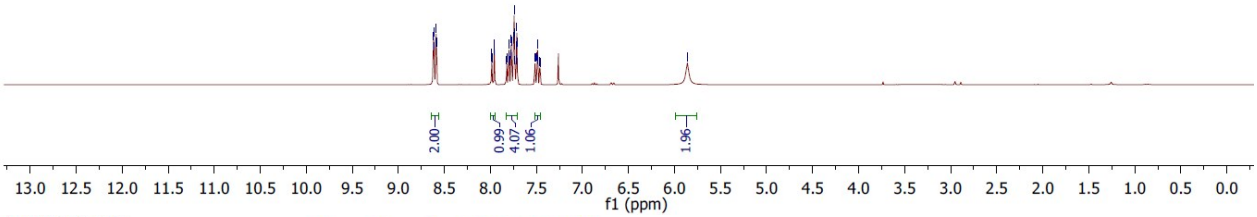
150722.f304.11.fid
Jian-Bo Feng F11a95
C13CPD CDCl3 {C:\Bruker\TopSpin3.2PL6} 1507 4





150716.306.10.fid
Jian-Bo Feng F11a96
Au1H CDCl3 /opt/topspin 1507 6





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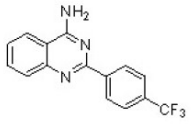
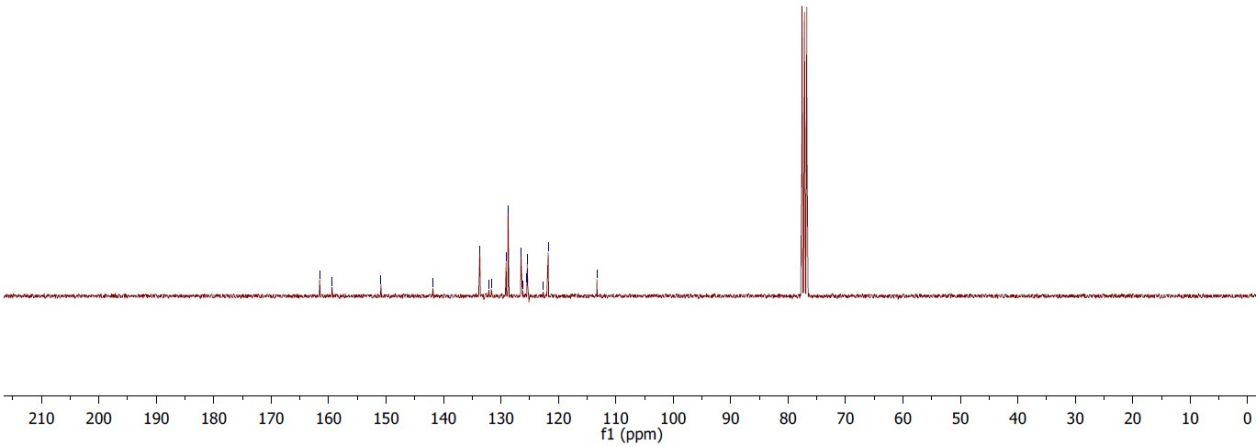
Jian-Bo Feng F11a96
Au13C CDCl3 /opt/topspin 1507 10





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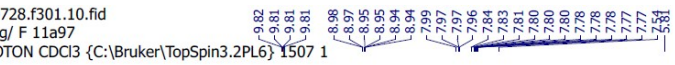
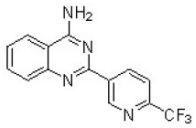
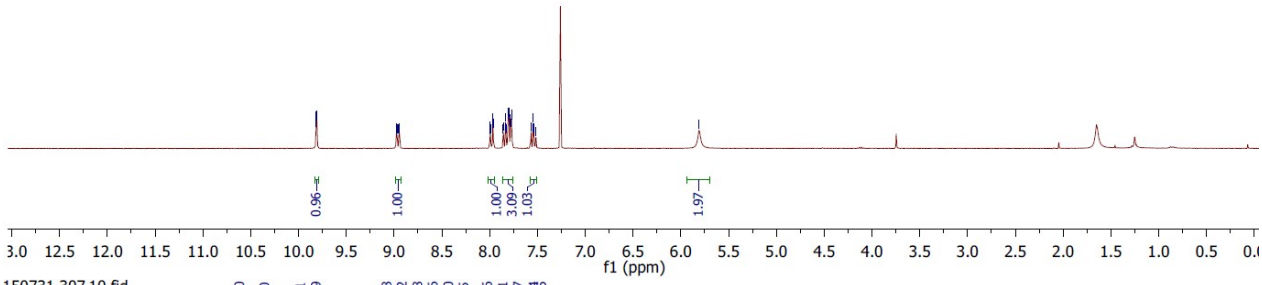
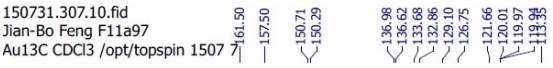
Feng/ F 11a97
PROTON CDCl3 {C:\Bruker\TopSpin3.2PL6} 1507 1

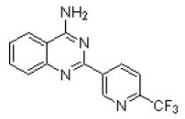


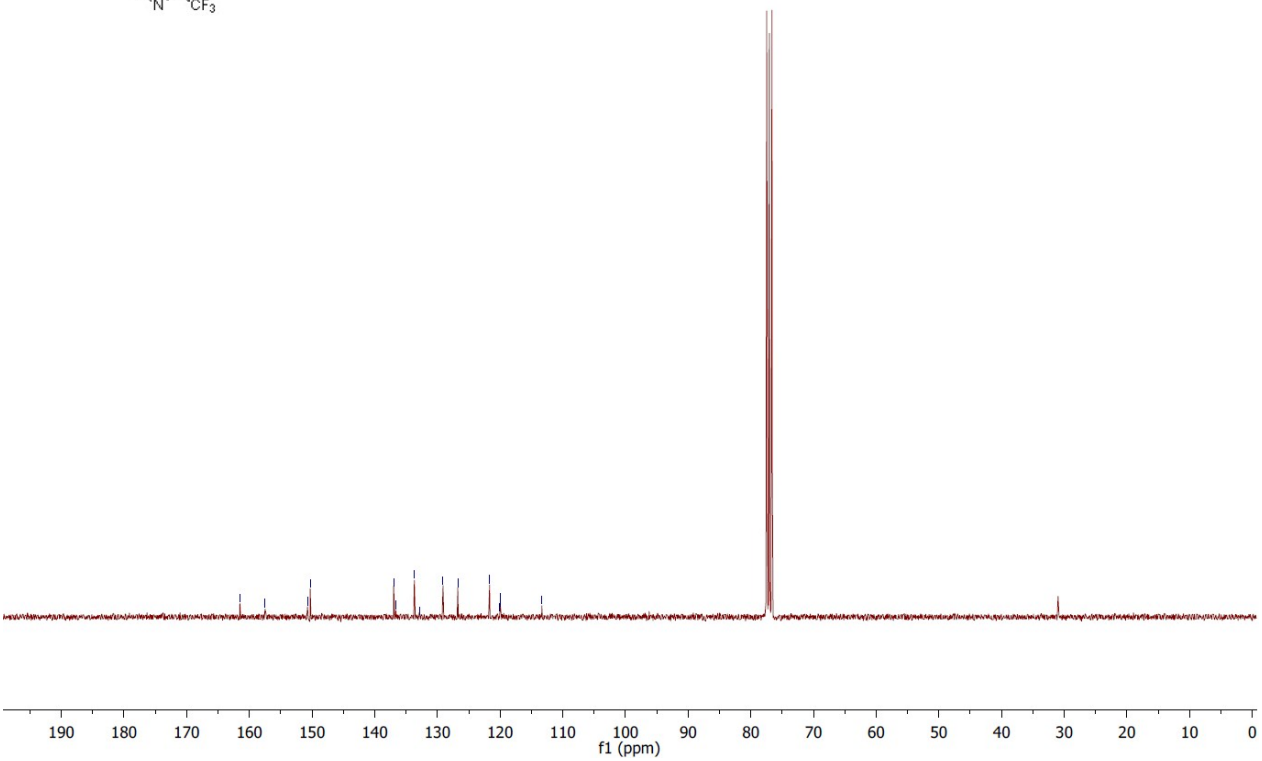




150731.307.10.fid
Jian-Bo Feng F11a97
Au13C CDCl3 /opt/topspin 1507 7







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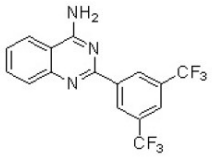
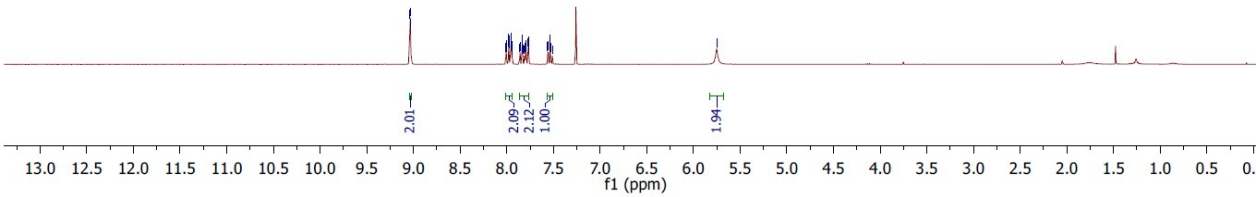
Jian-Bo Feng F11a93
PROTON CDCl3 {C:\Bruker\TopSpin3.2PL6} 1507 10





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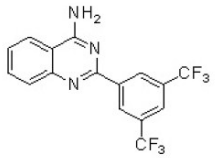
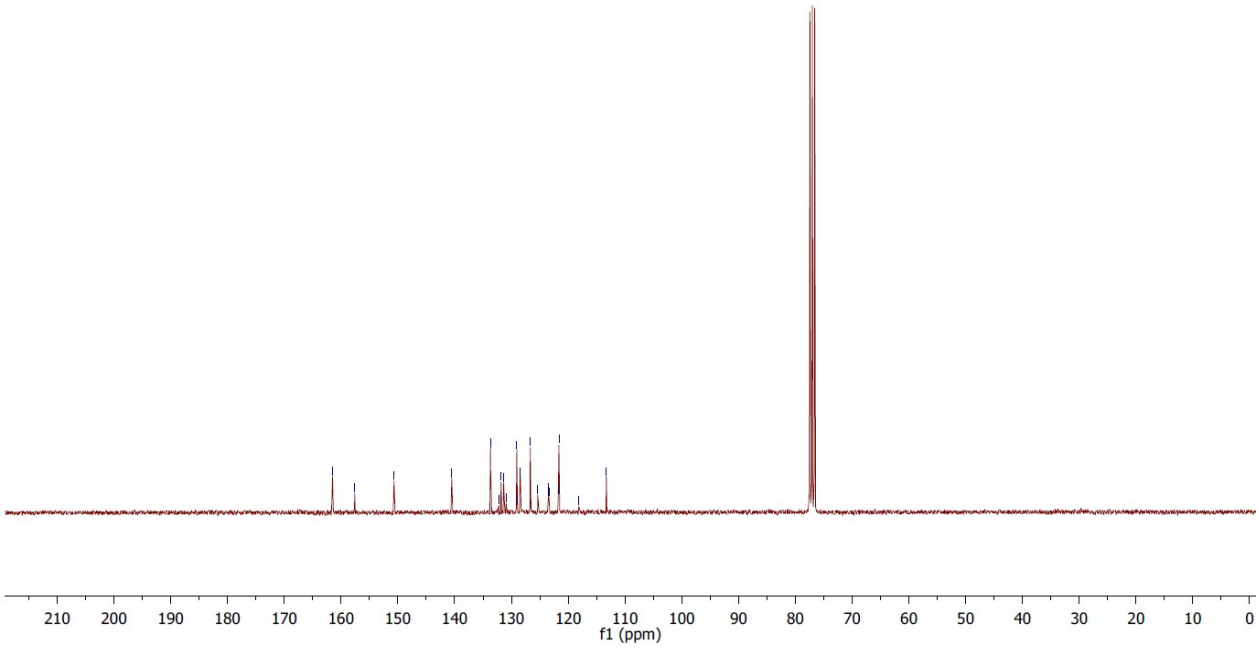
Jian-Bo Feng F11a93
C13CPD CDCl3 {C:\Bruker\TopSpin3.2PL6} 1507 18





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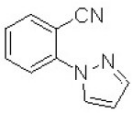
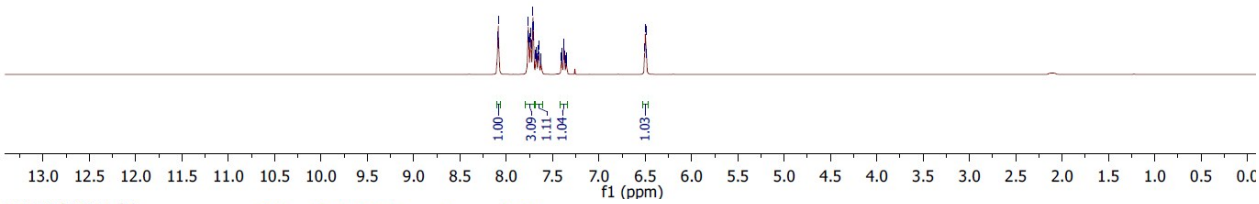
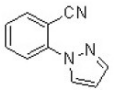
Jian-Bo Feng F11a88
PROTON CDCl3 {C:\Bruker\TopSpin3.2PL6} 1507 8

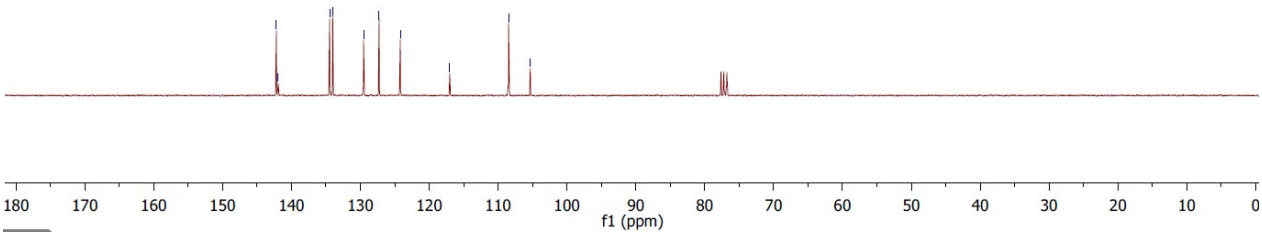




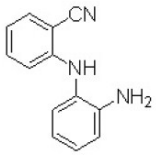
150713.f308.11.fid
Jian-Bo Feng F11a88
C13CPD CDCl3 {C:\Bruker\TopSpin3.2PL6} 1507 8

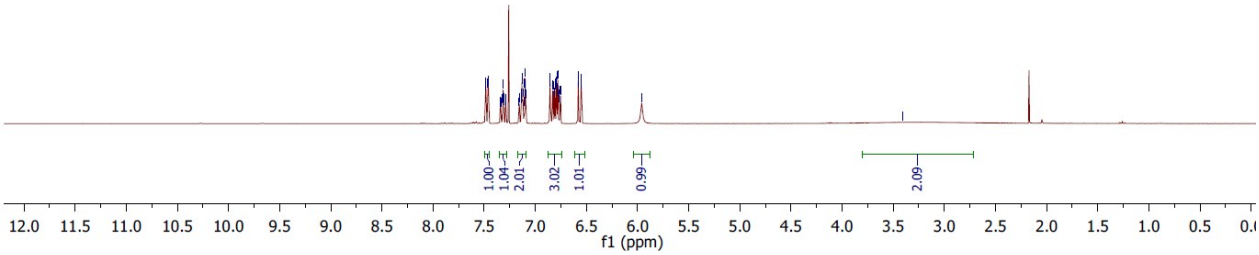
142.19
141.92
134.46
134.02
129.53
127.28
124.19
117.02
108.47
105.32





150817.322.10.fid
Jian-bo Feng, 42b56t
Au1H CDCl3 /opt/topspin 1508 22





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Jian-bo Feng, 42b56t
Au13C CDCl3 /opt/topspin 1508 22