Supporting Information

One-Pot Two-StepDithiocarbamylationofStyrenes: Metal free Stereoselective Synthesis of StyrenylDithiocarbamates

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A.General Information:

All chemicals were used without further purification. All the reactions were checked by using TLC on silica gel plates (Merck silica gel, f_{24}). All synthesized products were purified by column chromatography on 100-200 mesh silica gel. The ^{1}H spectra of synthesized products were recorded in $CDCl_3$ on Brucker Spectrometer at 300, 400 MHz. The ^{19}F spectra of synthesized fluorinated products were recorded in $CDCl_3$ on Brucker Spectrometer, 300 MHz. The ^{13}C spectra of synthesized products were recorded in $CDCl_3$ on Brucker Spectrometer at 75, 100 MHz. Chemical shifts were reported in ppm referenced to 0.00 ppm for TMS. The coupling constant (*J*) values are shown in hertz, and splitting patterns of the proton are described as *s* (singlet), *d* (doublet), *t* (triplet), and *m* (multiplet). HRMS were measured in methanol solvent on a Waters Micromass Q-tofMicromass spectrometer.

B. General experimental procedure:

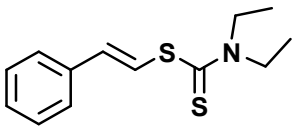
Preparation of dithiocarbamate anion: CS_2 (0.1 mL, 1.5 mmol) was added drop wise to asolution of secondary amine (1 mmol) and Et_3N (0.28 mL, 2 mmol) in acetonitrile (1 ml) at 5 ^{o}C. The resulting solution was stirred at room temperature for 5 min.

Synthesis of styrenyldithiocarbamate:Br_2 (0.05 mL, 1 mmol) in MeCN (1 mL) was added drop wise to the styrene (1 mmol) solution in MeCN (2 mL) at 5 ^oC. After complete addition, the reaction mixture was allowed to stir for 30 min at room temperature. Then the solution of freshly prepared dithiocarbamateanion (1 mmol) containing Et_3N (0.28 mL, 2 mmol)was added slowly into the brominated reaction mixture. The reaction mixture was allowed to stir at 65 $^oC$for a certain reaction time period. After completion of reaction (checked by TLC), the solvent was evaporated under reduced pressure. The crude product was extracted with ethyl acetate and purified by column chromatography to obtain the desired product.

All the styrenyldithiocarbamate products (**3a-3p**) were characterized by ^1H and ^{13}C NMR spectroscopy. HRMS was recorded for the all unknown compounds.

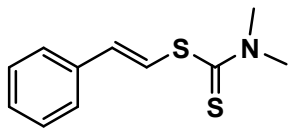
C. Characterization Data of Synthesized Compounds

Styryldiethylcarbamodithioate (**3a**): White solid, ^1H NMR (300 MHz, $CDCl_3$) δ:



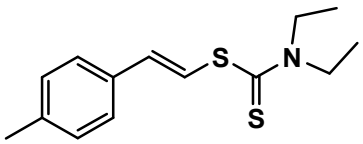
1.26-1.34(m, 6H), 3.74-3.77(m, 2H), 4.04-4.06(m, 2H), 6.75(d, J=15.9 Hz, 1H), 7.28-7.51(m, 6 Hz), ^{13}C NMR (75 MHz, $CDCl_3$) δ: 11.69, 12.74, 47.11, 49.42, 122.92, 126.68(2C), 128.13, 128.74(2C), 132.28, 136.43, 193.31, . HRMS (ESI) m/z calcd for $C_{13}H_{17}NS_2$ $[M + H]^+$, 252.0802, found 252.0194.

Styryldimethylcarbamodithioate (**3b**).[1]White solid, ^{1}H NMR (300 MHz, $CDCl_3$) δ:



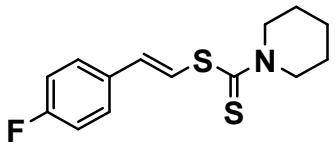
3.43(s, 3H), 3.60(s, 3H), 6.79(d, J=15.9 Hz, 1H), 7.28-7.39(m, 3H), 7.43-7.52(m, 3H) , ^{13}C NMR (75 MHz, $CDCl_3$) δ: 41.61, 45.09, 123.06, 126.63(2C), 128.15, 128.69(2C), 132.37, 136.25, 194.84.

Diethyl-1-carbodithioic acid(4-methyl-phenyl-vinyl ester) (**3c**): Light yellow solid,



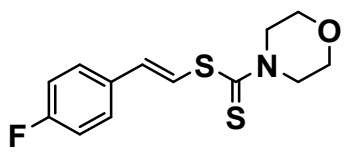
^{1}H NMR (300 MHz, $CDCl_3$) δ: 1.30-1.39(m, 6H), 2.37(s, 3H), 3.72-3.79(m, 2H), 4.04-4.11(m, 2H), 6.75(d, J=15.9 Hz, 1H), 7.17(d, J=8.1 Hz, 1H), 7.37-7.44(m, 3H), ^{13}C NMR (75 MHz, $CDCl_3$) δ: 11.62, 12.66, 21.30, 47.02, 49.31, 121.50, 126.55(2C), 129.38(2C), 132.49, 133.63, 138.05, 193.53, . HRMS (ESI) m/z calcd for $C_{14}H_{19}NS_2$ $[M + H]^+$, 265.1039, found 265.8385.

Piperidine-1-carbodithioic acid(4-fluoro-phenyl-vinyl ester) (**3d**): Yellow solid, ^{1}H



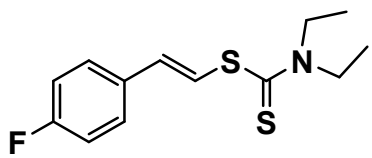
NMR (300 MHz, $CDCl_3$) δ: 1.73(s, 6H), 3.88(broad, 2H), 4.29(broad, 2H), 6.70(d, J=15.9 Hz, 1H), 7.00-7.06(m, 2H), 7.36-7.45(m, 3H), ^{13}C NMR (75 MHz, $CDCl_3$) δ: 24.33, 25.59, 26.22, 51.85, 52.76, 115.77(d, J_{C-F} = 21.75 Hz, 2C), 122.48(d, J_{C-F} = 2.25 Hz), 128.33(d, J_{C-F} = 8.25 Hz, 2C), 131.44, 132.70(d, J_{C-F} = 3.75 Hz),162.71(d, J_{C-F} = 246.75 Hz), 193.27, ^{19}F NMR(300 MHz, $CDCl_3$) δ: -113.40 HRMS (ESI) m/z calcd for $C_{14}H_{16}NFS_2$ $[M + H]^+$, 282.0788, found 282.0788.

Morpholine-1-carbodithioic acid(4-fluoro-phenyl-vinyl ester) (**3e**): Yellow solid,



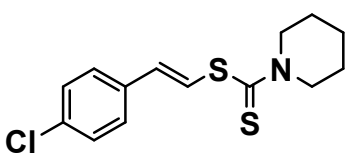
^{1}H NMR (300 MHz, $CDCl_3$) δ: 3.75-3.81(m, 4H), 4.06-4.24(m, 4H), 6.73(d, J=15.9 Hz, 1H), 7.00-7.06(m, 2H), 7.34(d, J=15.9 Hz, 1H), 7.40-7.45(m, 2H), ^{13}C NMR (75 MHz, $CDCl_3$) δ: 50.96(d, J_{C-F} = 13.5 Hz,2C), 66.29(2C), 26.22, 115.74(d, J_{C-F} = 21.75 Hz, 2C), 121.34(d, J_{C-F} = 2.25 Hz), 128.31(d, J_{C-F} = 8.25 Hz, 2C), 132.30, 132.36(d, J_{C-F} = 3 Hz),162.73(d, J_{C-F} = 246.75 Hz), 195.16, ^{19}F NMR(300 MHz, $CDCl_3$) δ: -112.97, HRMS (ESI) m/z calcd for $C_{13}H_{14}NFOS_2$ $[M + H]^+$, 284.0581, found 284.0100.

Diethyl-1-carbodithioic acid(4-fluoro phenyl-vinyl ester) (**3f**): Yellow oil, ^{1}H NMR



(300 MHz, $CDCl_3$) δ: 1.26-1.37(m, 6H), 3.72-3.79(m, 2H), 4.01-4.08(m, 2H), 6.71(d, J=15. 9, 1H), 7.00-7.06(m, 2H), 7.36-7.45(m,3H), ^{13}C NMR (75 MHz, $CDCl_3$) δ: 11.70, 12.76, 47.14, 49.44, 122.95, 126.69(2C), 128.22, 128.77(2C), 132.27, 136.44, 193.28, ^{19}F NMR(300 MHz, $CDCl_3$) δ: -113.44, HRMS (ESI) m/z calcd for $C_{13}H_{16}NFS_2$ $[M + H]^+$, 270.0788, found 270.0788.

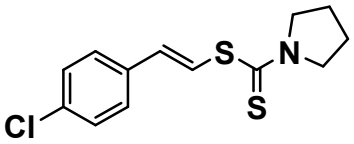
Piperidine-1-carbodithioic acid(4-chloro-phenyl-vinyl ester) (**3g**).[1] Yellow solid,



^{1}H NMR (300 MHz, $CDCl_3$) δ: 1.73(s, 6H), 3.88(broad, 2H), 4.30(broad, 2H), 6.69(d, J=15.9 Hz, 1H), 7.30(d, J=8.4 Hz, 2H), 7.38(d, J=8.7 Hz, 2H), 7.50(d, J=15.9

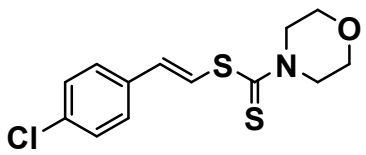
Hz, 1H), ^{13}C NMR (75 MHz, $CDCl_3$) δ: 24.23, 25.46, 26.05, 51.80, 52.71, 123.69, 127.76(2C), 128.87(2C), 130.83, 133.73, 134.87, 192.84.

Pyrolidine-1-carbodithioic acid(4-chloro-phenyl-vinyl ester) (**3h**).[1] Yellow solid,



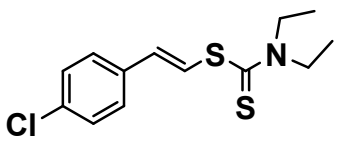
^{1}H NMR (300 MHz, $CDCl_3$) δ: 1.96-2.16(m, 4H), 3.68(t, J=6.9 Hz, 2H), 3.96(t, J=6.9 Hz, 2H), 6.70(d, J=16.2 Hz, 1H), 7.28-7.39(m, 4H),7.58(d, J=16.2 Hz, 1H) ^{13}C NMR (75 MHz, $CDCl_3$) δ: 24.36, 26.19, 50.85, 54.96, 123.78, 127.79(2C), 128.93(2C), 130.25, 133.76, 134.88, 189.84.

Morpholine-1-carbodithioic acid(4-chloro-phenyl-vinyl ester) (**3i**): Yellow solid,



^{1}H NMR (300 MHz, $CDCl_3$) δ: 3.77-3.80(m, 4H), 4.10(broad, 4H), 6.71(d, J=16.2 Hz, 1H), 7.29-7.40(m, 4H), 7.44(d, J=15.9 Hz, 1H), ^{13}C NMR (75 MHz, $CDCl_3$) δ: 50.85(2C), 66.18(2C), 122.59, 127.81(2C), 128.92(2C), 131.79, 133.99, 134.60, 194.79, HRMS (ESI) m/z calcd for $C_{13}H_{14}NClOS_2$ $[M + H]^+$, 300.0285 found 300.0286.

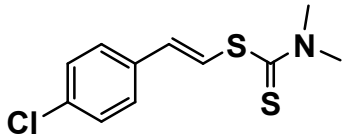
Diethyl-1-carbodithioic acid(4-chloro-phenyl-vinyl ester) (**3j**): Yellow solid, ^{1}H



NMR (400 MHz, $CDCl_3$) δ: 1.27-1.35(m, 2H), 3.71-3.77(m,2H), 4.01-4.06(m, 2H), 6.69(d, J=16 Hz, 1H), 7.28-7.31(m, 2H), 7.36-7.38(m, 2H), 7.49(d, J=16 Hz,

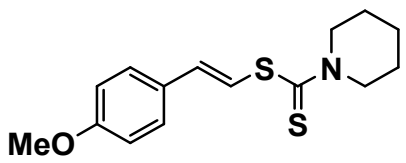
1H), ^{13}C NMR (100 MHz, $CDCl_3$) δ: 11.46, 12.74, 47.15, 49.44, 123.95, 127.82(2C), 128.93(2C), 130.59, 133.76, 134.95, 192.83, HRMS (ESI) m/z calcd for $C_{13}H_{16}NClS_2$ $[M + H]^+$, 285.0413, found 286.0493.

Dimethyl-1-carbodithioic acid(4-chloro-phenyl-vinyl ester) (**3k**).[2] Light yellow



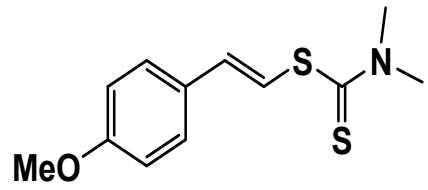
solid, ^1H NMR (300 MHz, $CDCl_3$) δ: 3.43(s, 3H), 3.60(s, 3H), 6.73(d, J=15.9 Hz, 1H), 7.33(d, J=8.4 Hz, 2H), 7.41(d, J=8.1 Hz, 2H), 7.50(d, J=16.2 Hz, 1H), ^{13}C NMR (75 MHz, $CDCl_3$) δ: 41.61, 45.13, 124.03, 127.77, 128.88, 130.74, 133.80, 134.77, 194.42.

Piperidine-1-carbodithioic acid(4-methoxy-phenyl-vinyl ester) (**3l**).[1] White solid,



^1H NMR (300 MHz, $CDCl_3$) δ: 1.74(s, 6H), 3.84(s, 3H), 3.90(broad, 2H), 4.31(broad, 2H), 6.72(d, J=16.5 Hz, 1H), 6.89(d, J=7.2 Hz, 2H), 7.27(d, J=12.9 Hz, 1H), 7.43(d, J=6.6 Hz, 2H), ^{13}C NMR (75 MHz, $CDCl_3$) δ: 24.31, 25.52, 26.01, 51.72, 52.50, 55.42, 114.09(2C), 119.77, 127.97(2C), 129.37, 132.88, 159.73, 193.90.

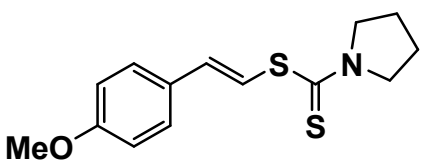
Dimethyl-1-carbodithioic acid(4-methoxy-phenyl-vinyl ester) (**3m**).[1] Yellow solid,



^1H NMR (300 MHz, $CDCl_3$) δ: 3.38(s, 3H), 3.55(s, 3H), 3.81(s, 3H), 6.70(d, J=15.9 Hz, 1H),7.28-7.39(m, 4H) 7.58(d, J=16.2 Hz, 1H), ^{13}C NMR (75

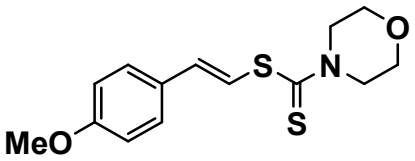
MHz, $CDCl_3$) δ: 41.60, 45.05, 55.35, 114.12(2C), 120.06, 127.97(2C), 129.13, 132.65, 159.71, 195.38.

Pyrolidine-1-carbodithioic acid(4-methoxy-phenyl-vinyl ester) (**3n**): Yellow solid,



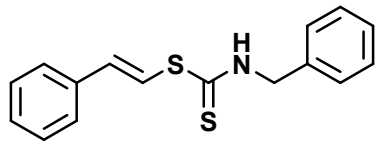
^{1}H NMR (300 MHz, $CDCl_3$) δ: 1.98-2.07(m, 2H), 2.09-2.18(m, 2H), 3.70(t, J=6.6 Hz, 2H), 3.84(s, 3H), 3.98(t, J=6.9 Hz, 2H), 6.73(d, J=15.9 Hz, 1H), 6.93(d, J=8.7 Hz, 2H), 7.33-7.43(m, 3H), ^{13}C NMR (75 MHz, $CDCl_3$) δ: 24.32, 26.15, 50.72, 54.77, 55.34, 114.10(2C), 119.70, 127.93(2C), 129.19, 132.19, 159.66, 190.81, HRMS (ESI) m/z calcd for $C_{14}H_{17}NOS_2$ $[M + H]^+$, 279.0752, found 279.0913.

Morpholine-1-carbodithioic acid(4-methoxy-phenyl-vinyl ester) (**3o**): White solid,



^{1}H NMR (300 MHz, $CDCl_3$) δ: 3.79-3.82(m, 4H), 3.84(s, 3H), 4.0-4.50(m, 4H), 6.74(d, J=15.9 Hz, 1H), 6.90(d, J=8.7 Hz, 1H), 7.22(d, J=15.6 Hz, 1H), 7.42(d, J=8.7 Hz, 2H), ^{13}C NMR (75 MHz, $CDCl_3$) δ: 50.79, 51.06, 55.35, 66.28(2C), 114.15(2C), 118.65, 128.06(2C), 129.01, 133.76, 159.85, 195.89, HRMS (ESI) m/z calcd for $C_{14}H_{17}NO_2S_2$ $[M + H]^+$, 296.0701, found 296.0780.

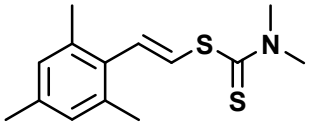
Styrylbenzylcarbamodithioate (**3p**): yellow solid, ^{1}H NMR (300 MHz, $CDCl_3$) δ:



5.43(s, 2H), 6.51(s, 1H), 6.94-6.95(m, 2H), 7.11(d,

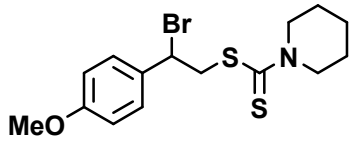
J=7.2 Hz, 2H), 7.21-7.23(m, 3H), 7.42-7.44(m, 5H), ^{13}C NMR (75 MHz, $CDCl_3$) δ: 50.87, 108.95, 127.06(2C), 127.57, 128.49(2C), 128.68(2C), 129.49(2C), 129.89, 130.61, 135.33, 144.85, 189.08, HRMS (ESI) m/z calcd for $C_{16}H_{15}NS_2$ $[M + H]^+$, 286.0646, found 286.0726.

Dimethyl-1-carbodithioic acid(2,4,6-trimethyl-phenyl-vinyl ester) (**3q**): White



solid, ^{1}H NMR (300 MHz, $CDCl_3$) δ: 2.29(s, 3H), 2.38(s, 3H), 3.41(s, 3H), 3.57(s, 3H), 6.82(d, J=16.2 Hz, 1H), 6.90(s, 2H), 6.97(d, J=16.5 Hz, 1H),), ^{13}C NMR (75 MHz, $CDCl_3$) δ: 21.03, 21.29(2C), 41.68, 45.01, 126.49, 128.84(2C), 131.30, 132.58, 136.20(2C), 136.93, 195.37, HRMS (ESI) m/z calcd for $C_{16}H_{15}NS_2$ $[M + H]^+$, 266.0959, found 266.1044.

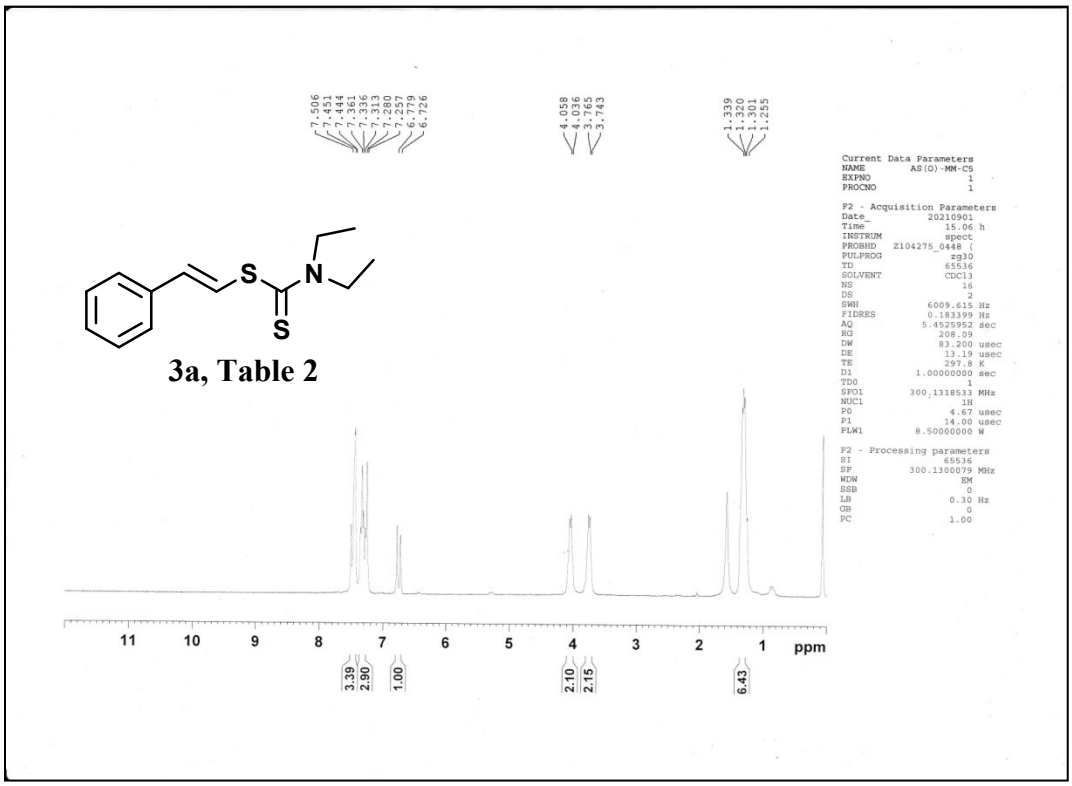
2-bromo-2-(4-methoxyphenyl)ethyl piperidine-1-carbodithioate (**5**) Yellow liquid,

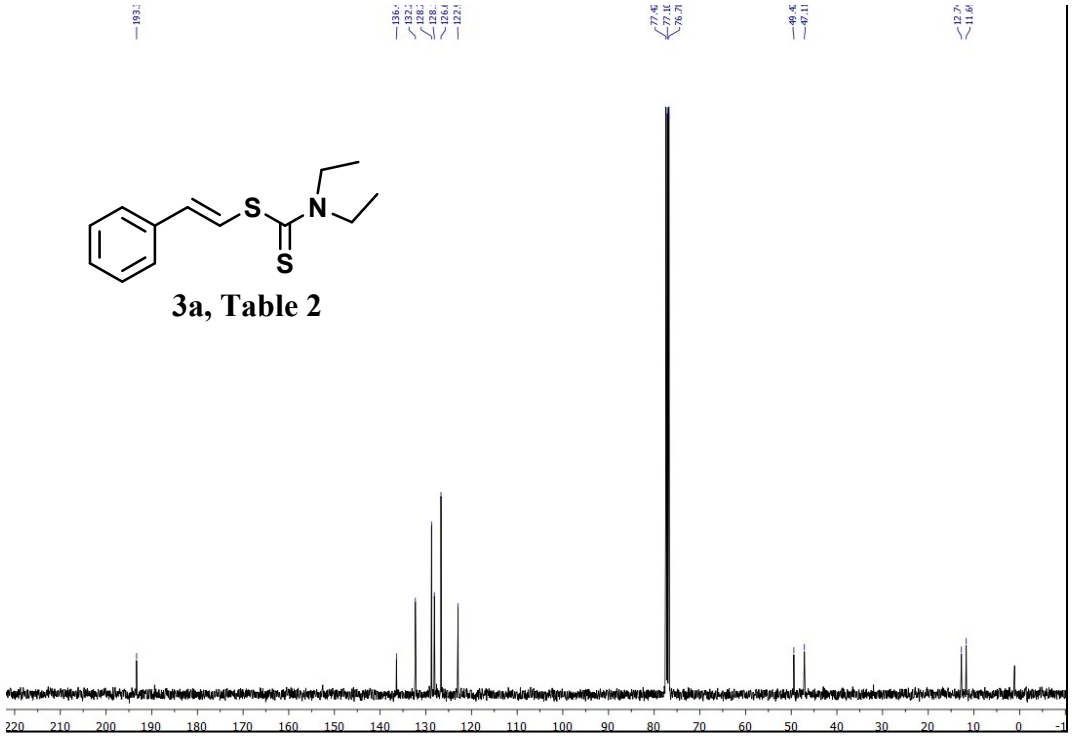


^{1}H NMR (300 MHz, $CDCl_3$) δ: 1.67(s, 6H), 1.75(s, 1H), 1.78(s, 1H), 3.79(s, 3H), 3.81(broad, 2H), 4.26(broad, 2H), 5.20-5.27(m, 1H), 6.83-6.87(m, 2H), 7.33-7.38(m, 2H), ^{13}C NMR (75 MHz, $CDCl_3$) δ: 21.90, 24.25, 25.34, 26.16, 50.42, 51.16, 52.42, 55.21, 113.81(2C), 128.87(2C), 134.09, 158.67, 194.74

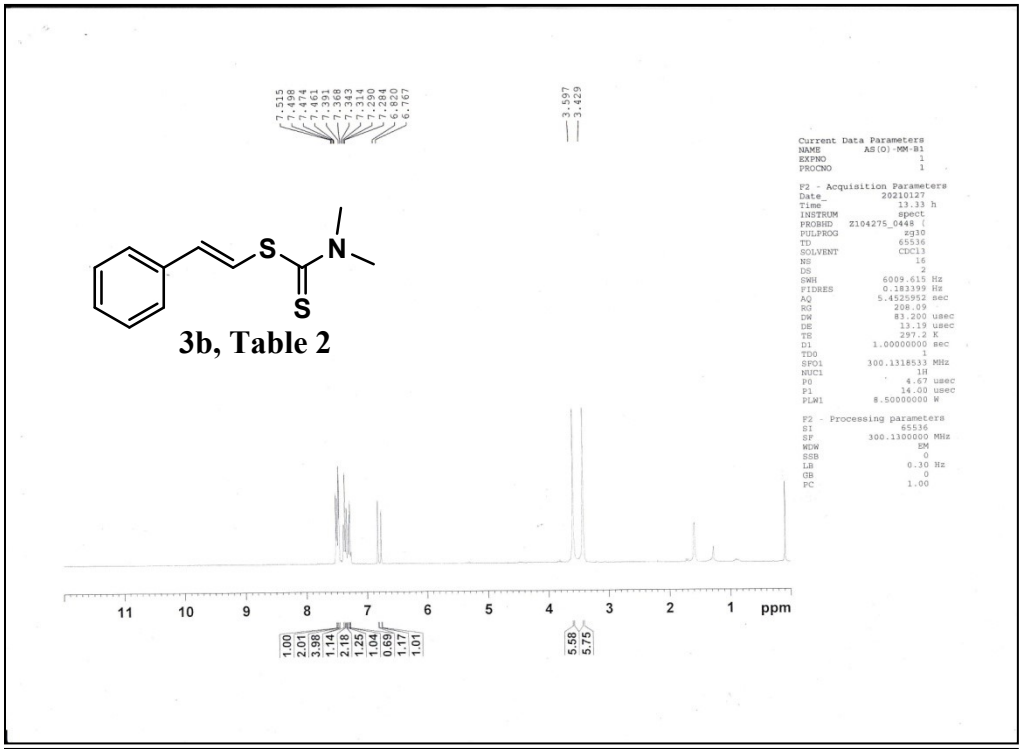
D.^{1}H and ^{13}C NMR spectra of products

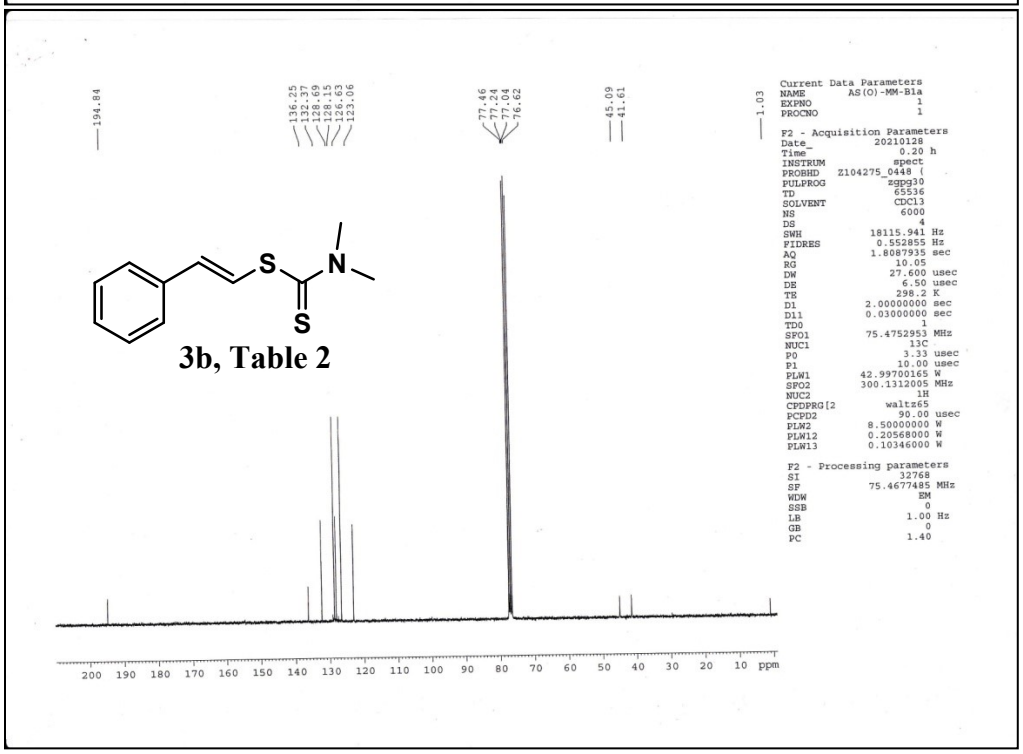
1. ^{1}H NMR (300 MHz, CDCl3) spectrum of 3a



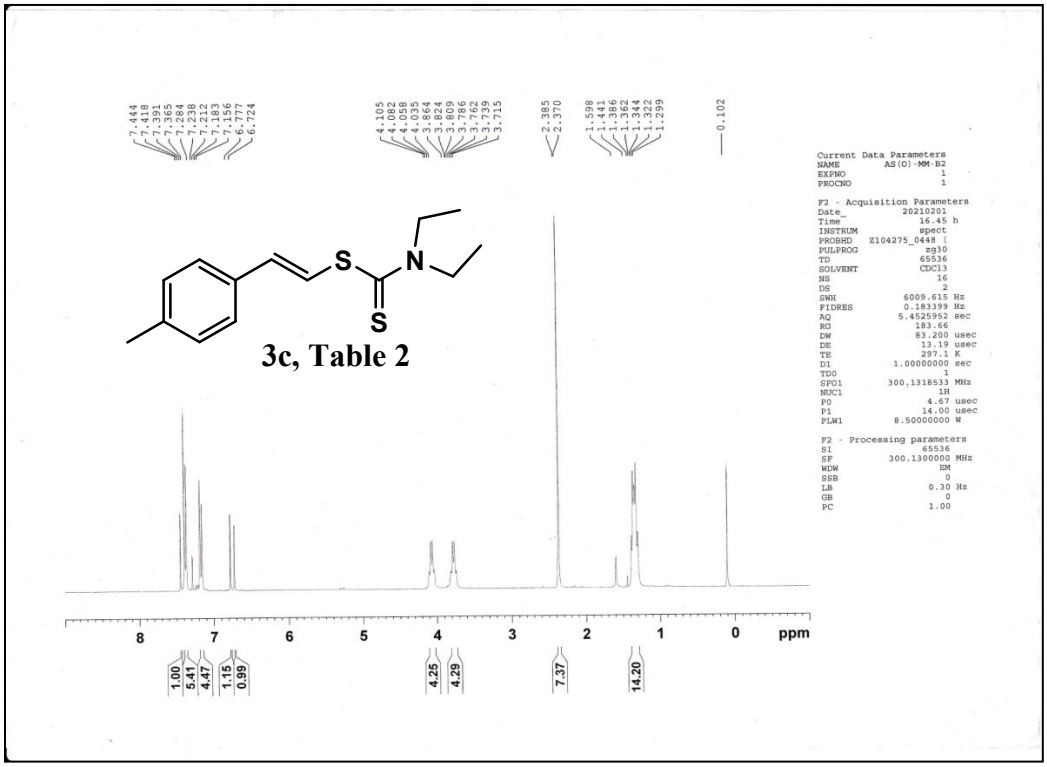


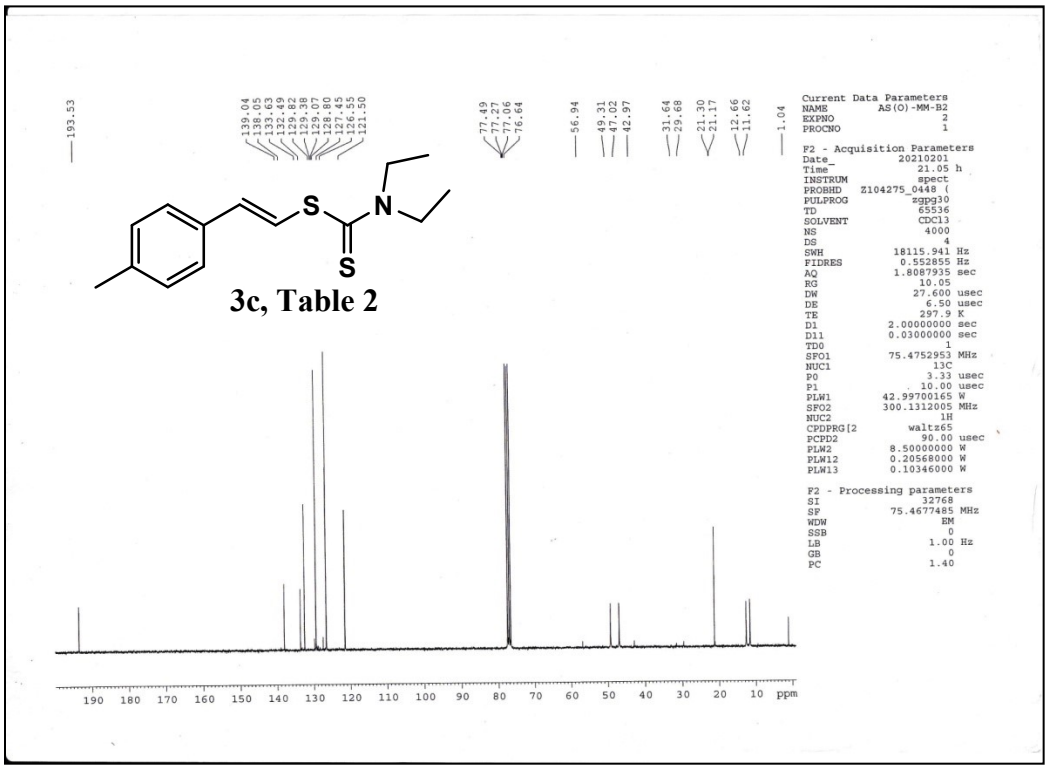
2.^{1}H NMR (300 MHz, CDCl3) and ^{13}C NMR(75 MHz, $CDCl_3$) spectrum of 3b



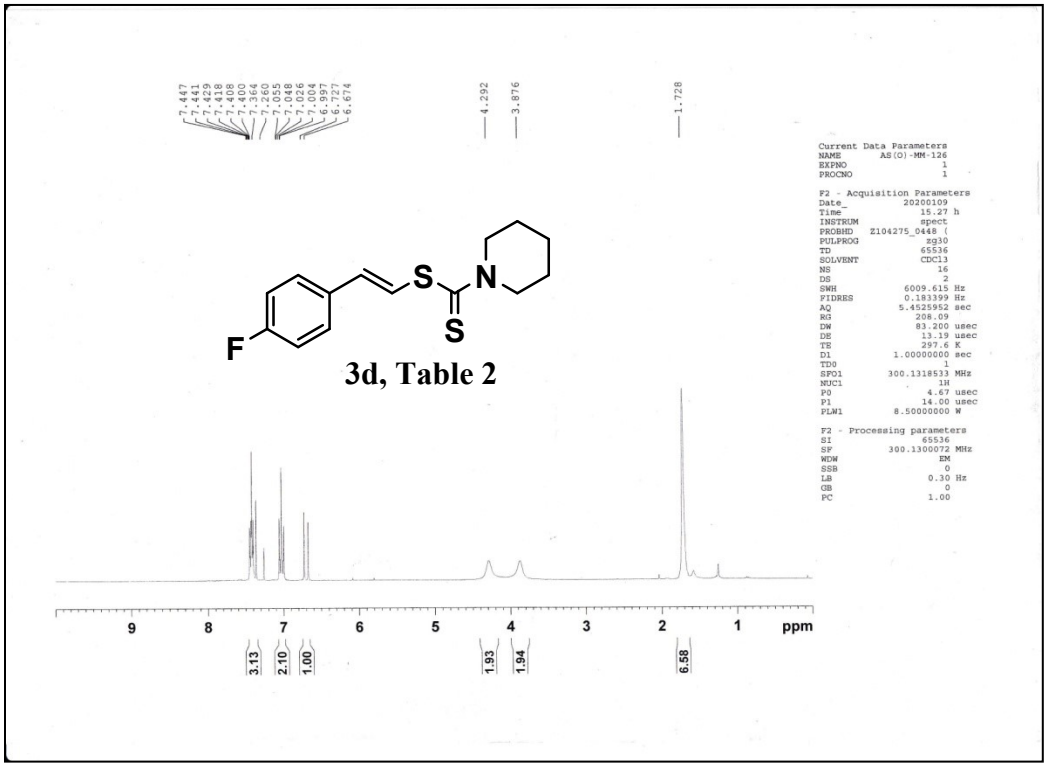


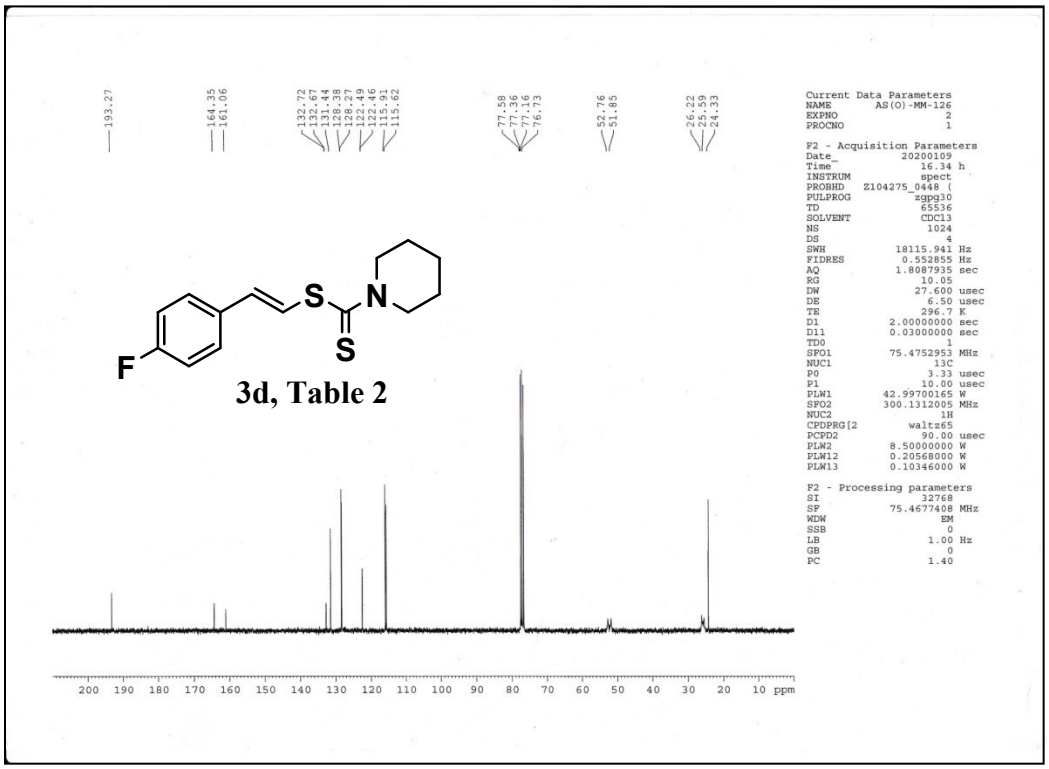
3.^{1}H NMR (300 MHz, CDCl3) and ^{13}C NMR(75 MHz, $CDCl_3$) spectrum of 3c



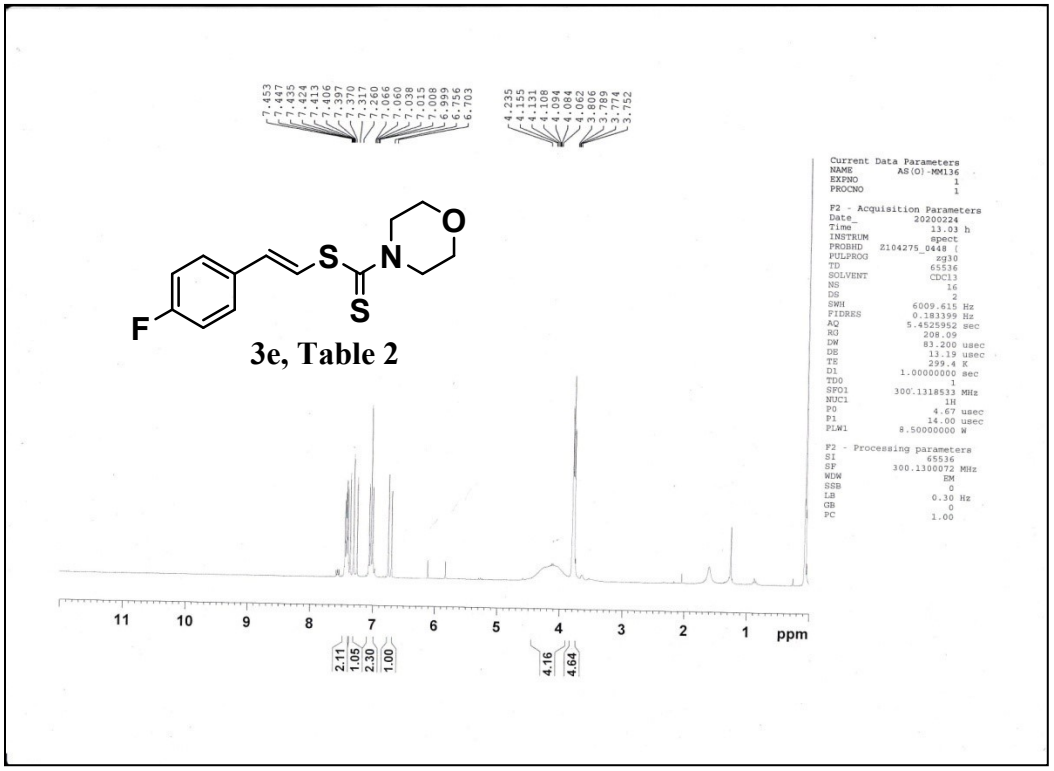


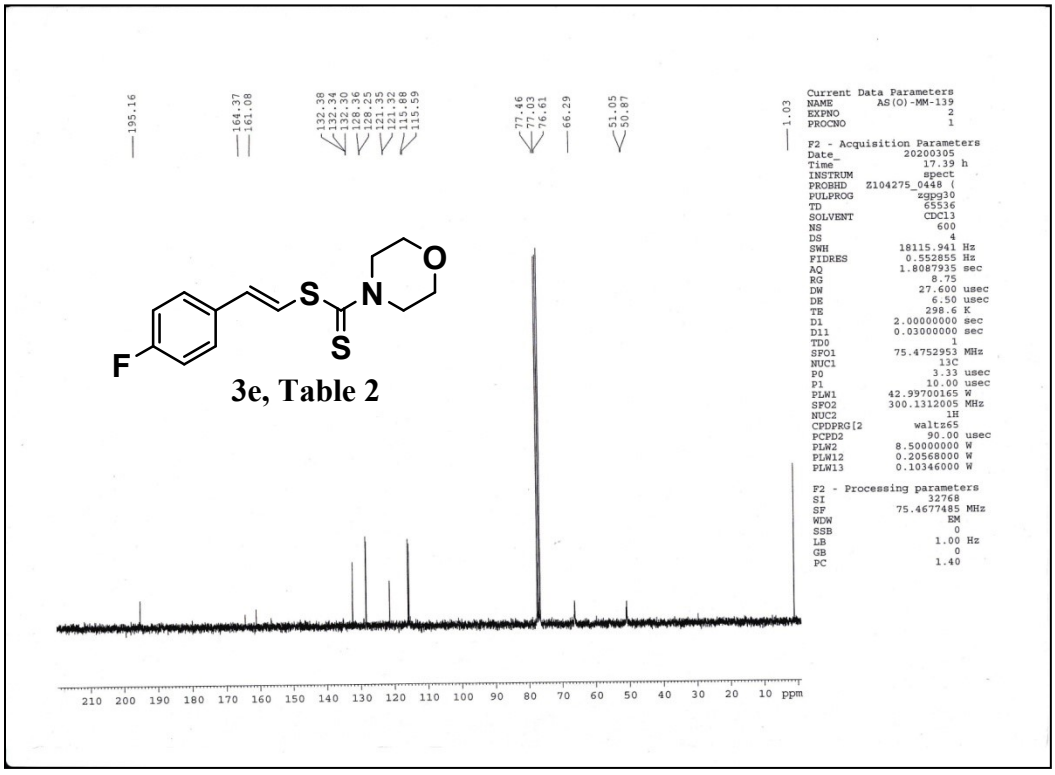
4.^{1}H NMR (300 MHz, CDCl3) and ^{13}C NMR(75 MHz, $CDCl_3$) spectrum of 3d



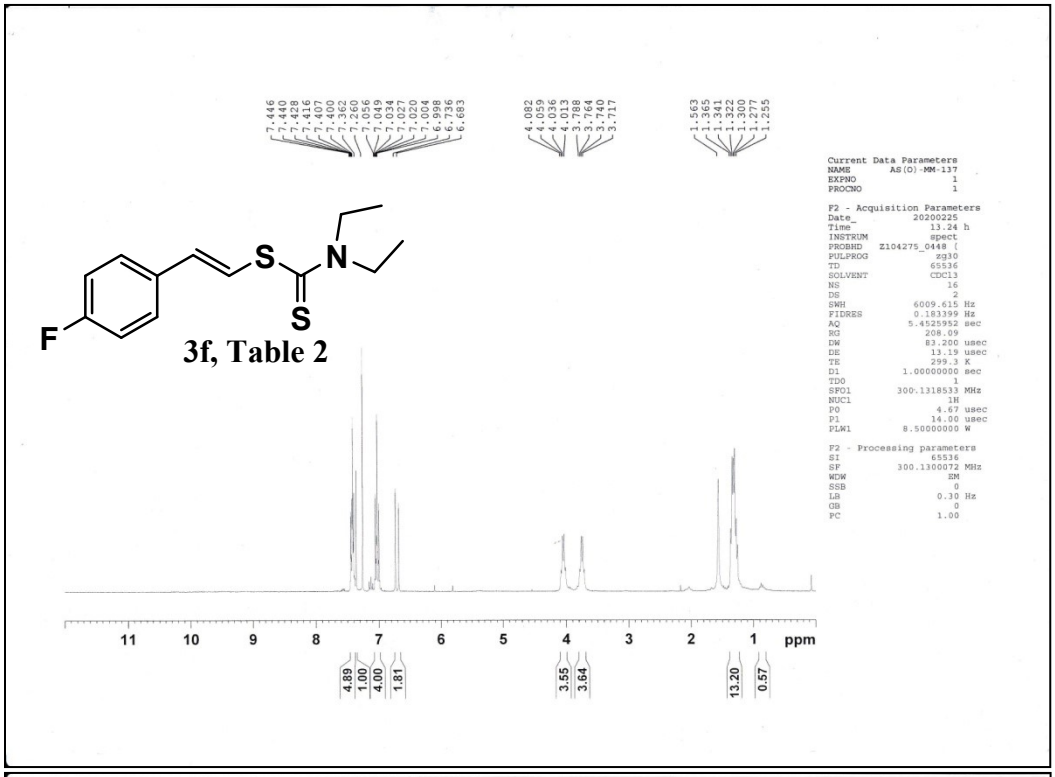


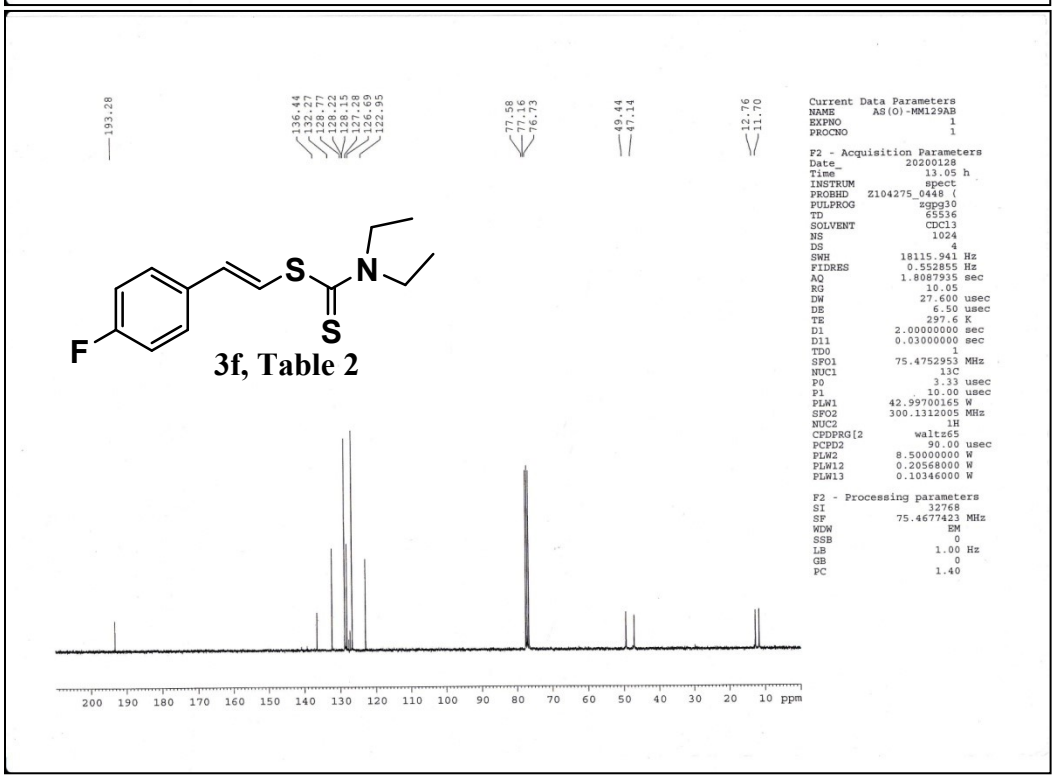
5.^{1}H NMR (300 MHz, CDCl3) and ^{13}C NMR(75 MHz, $CDCl_3$) spectrum of 3e



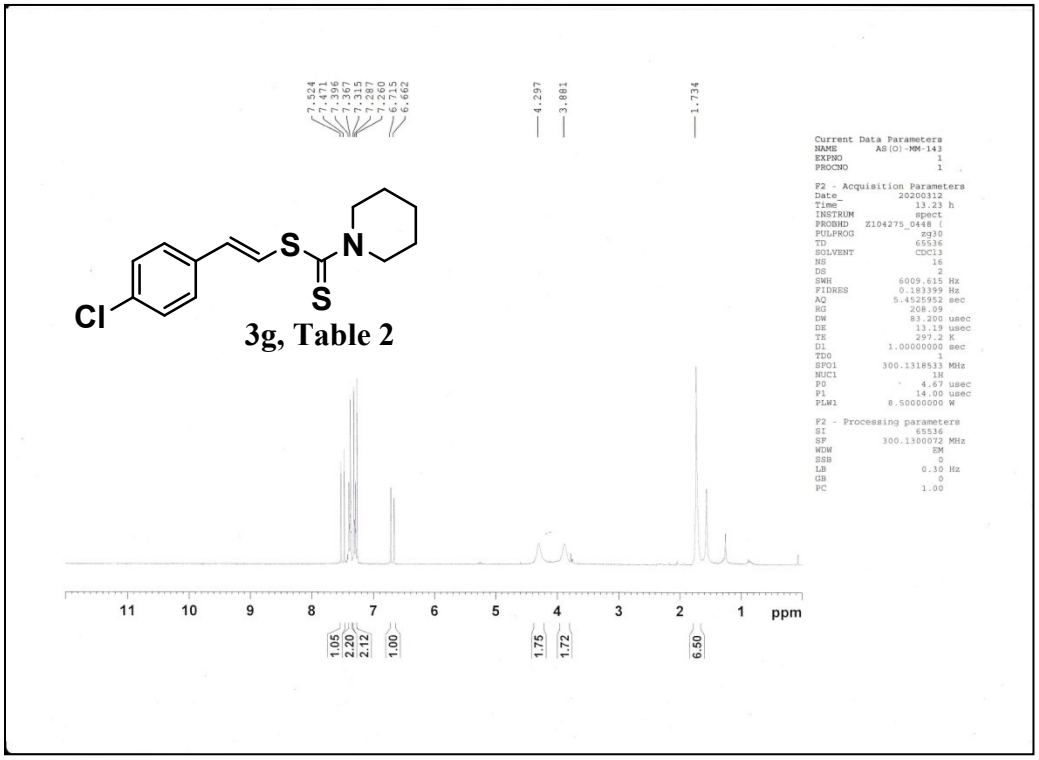


6.^{1}H NMR (300 MHz, CDCl3) and ^{13}C NMR(75 MHz, $CDCl_3$) spectrum of 3f

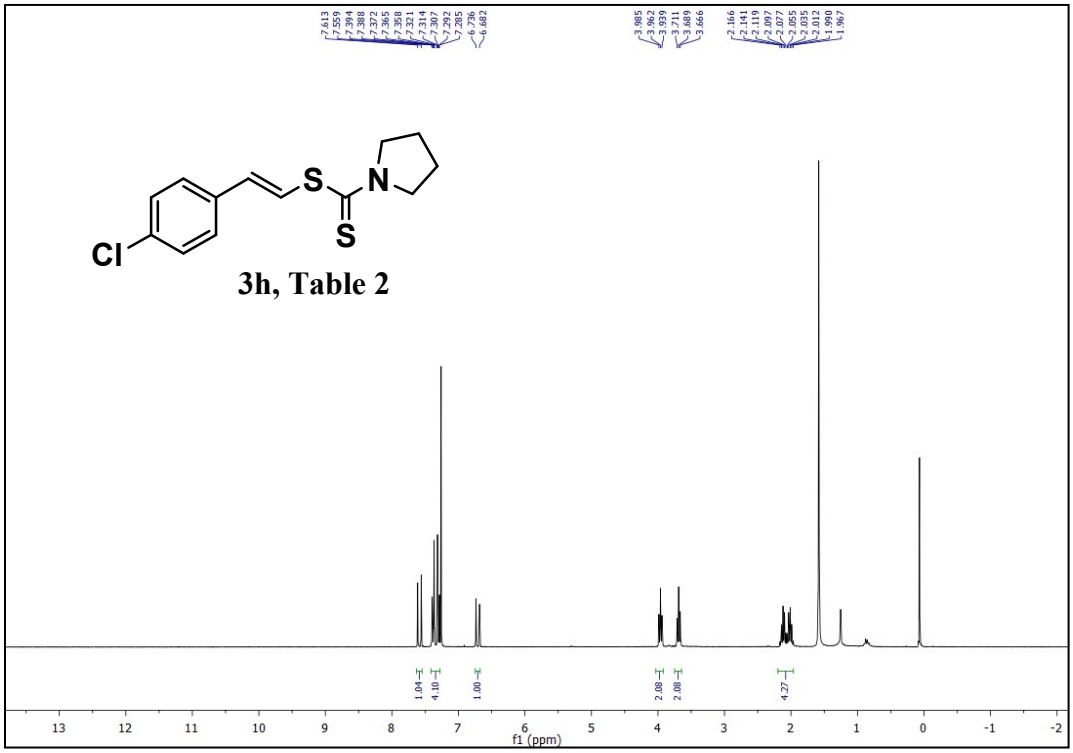


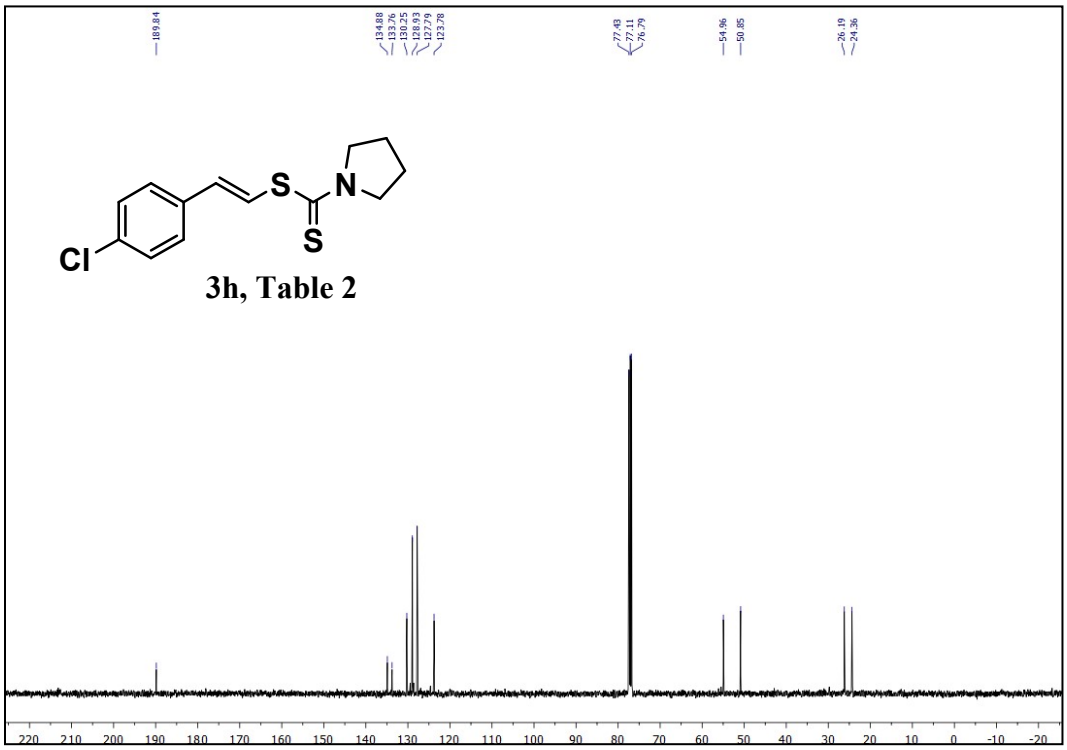


7.^{1}H NMR (300 MHz, CDCl3) and ^{13}C NMR(75 MHz, $CDCl_3$) spectrum of 3g

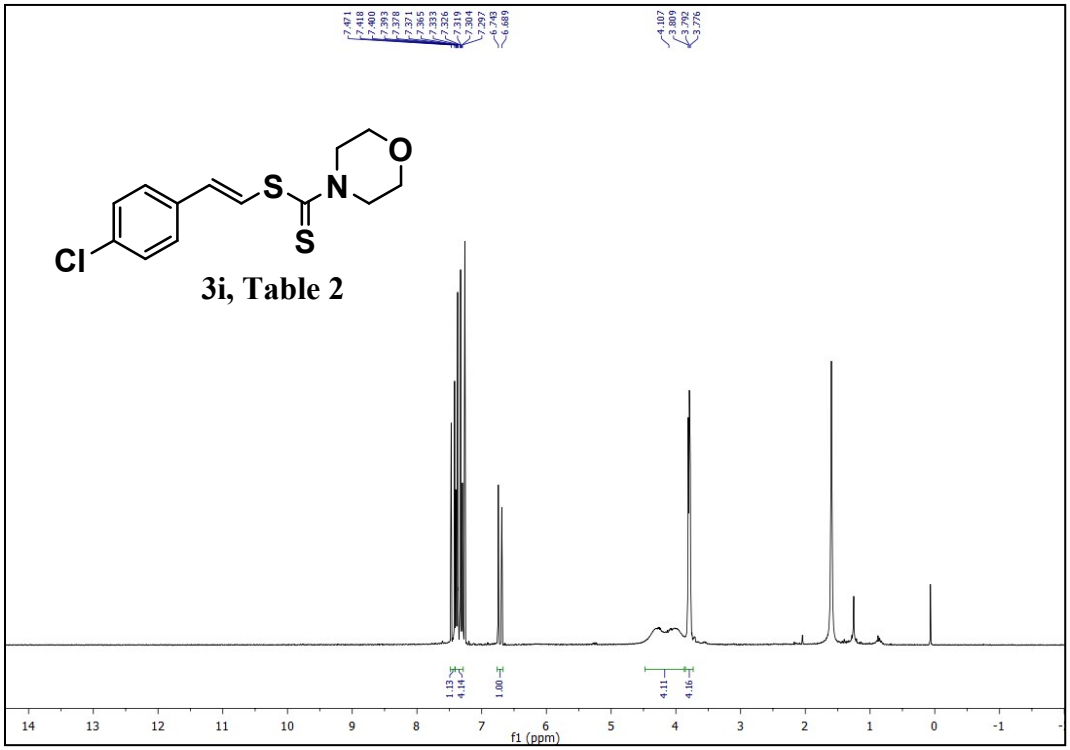


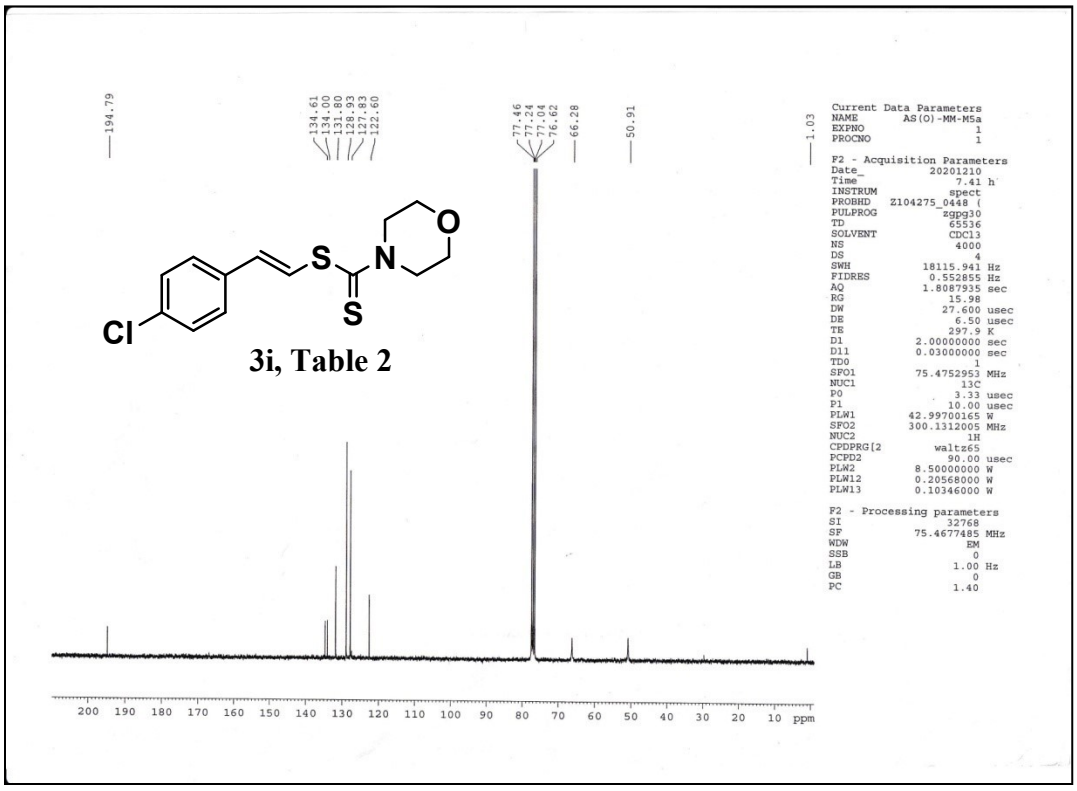
8.^{1}H NMR (300 MHz, CDCl3) and ^{13}C NMR(75 MHz, $CDCl_3$) spectrum of 3h



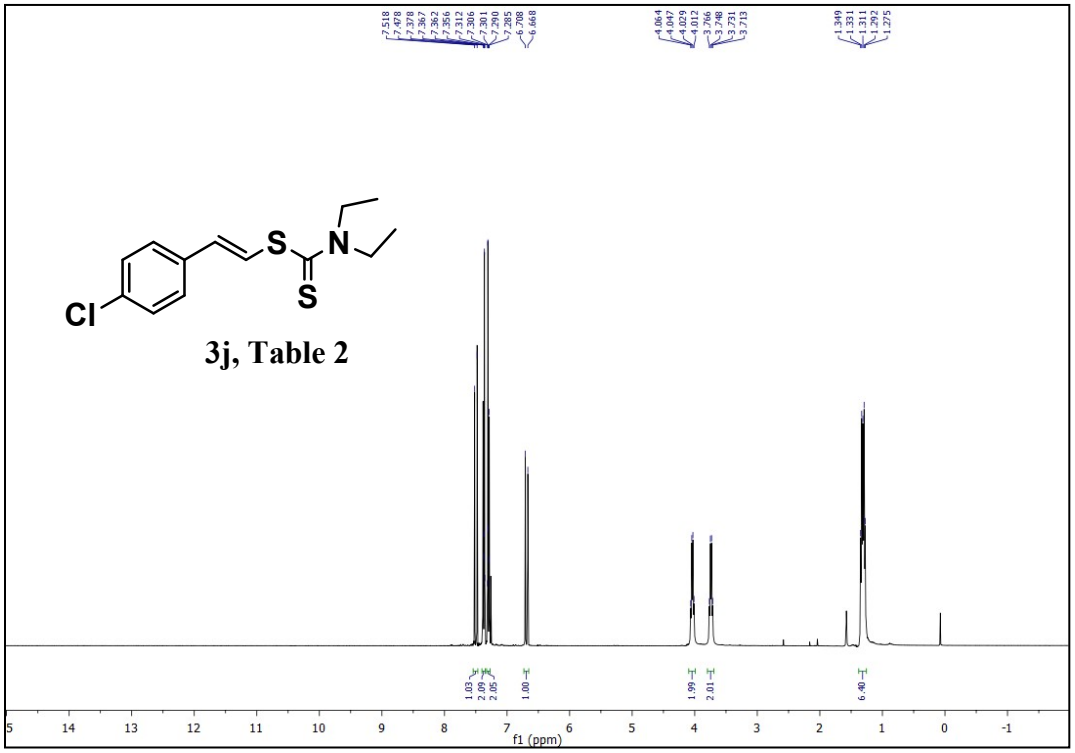


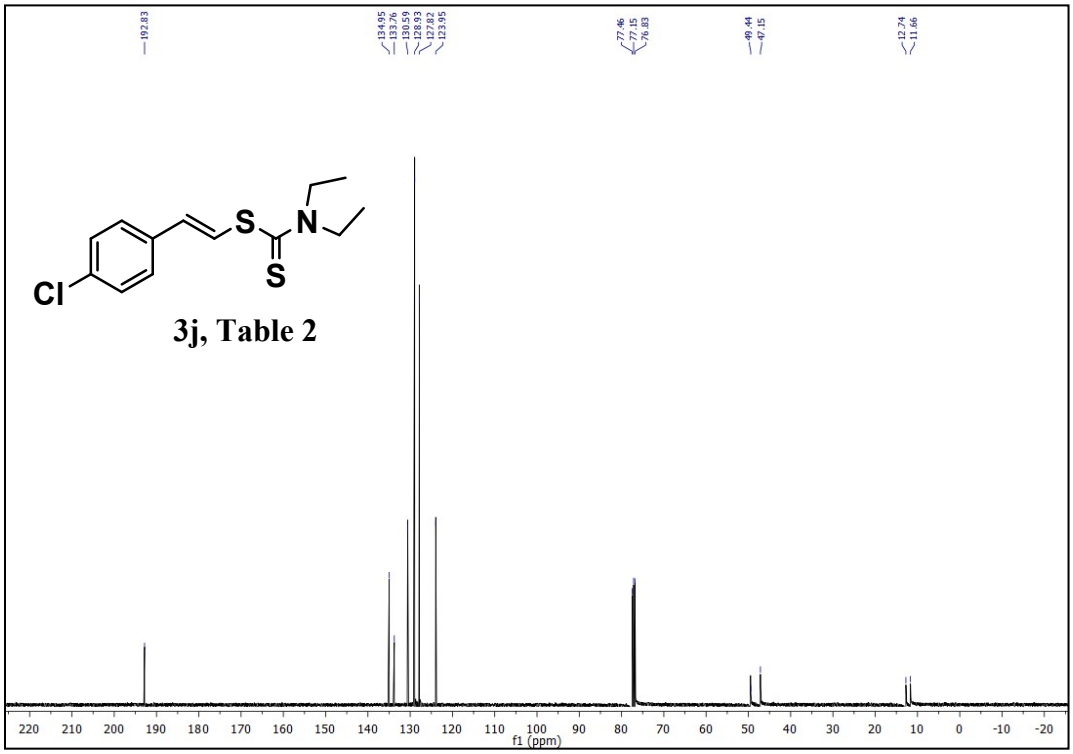
9.^{1}H NMR (300 MHz, CDCl3) and ^{13}C NMR(75 MHz, $CDCl_3$) spectrum of 3i



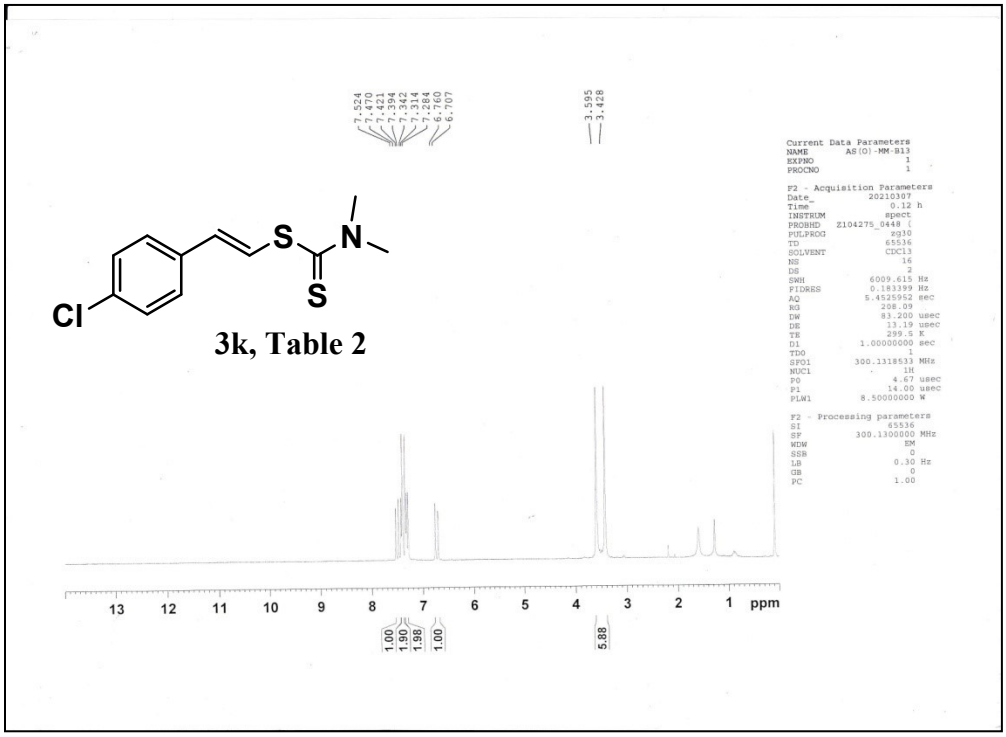


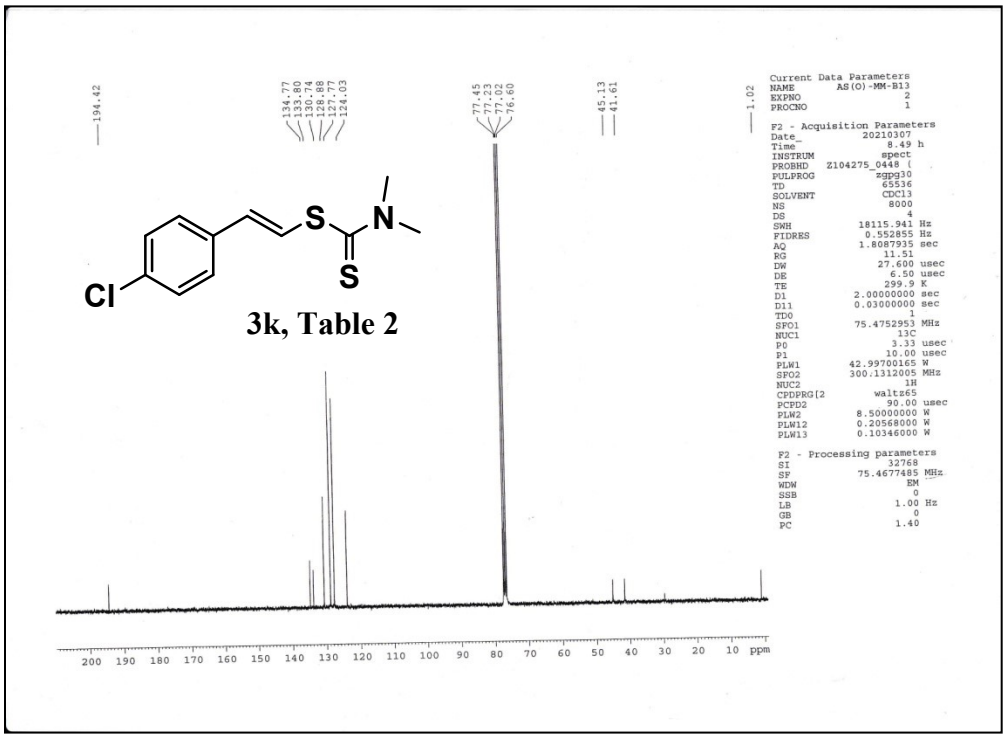
10.^{1}H NMR (300 MHz, CDCl3) and ^{13}C NMR(75 MHz, $CDCl_3$) spectrum of 3j



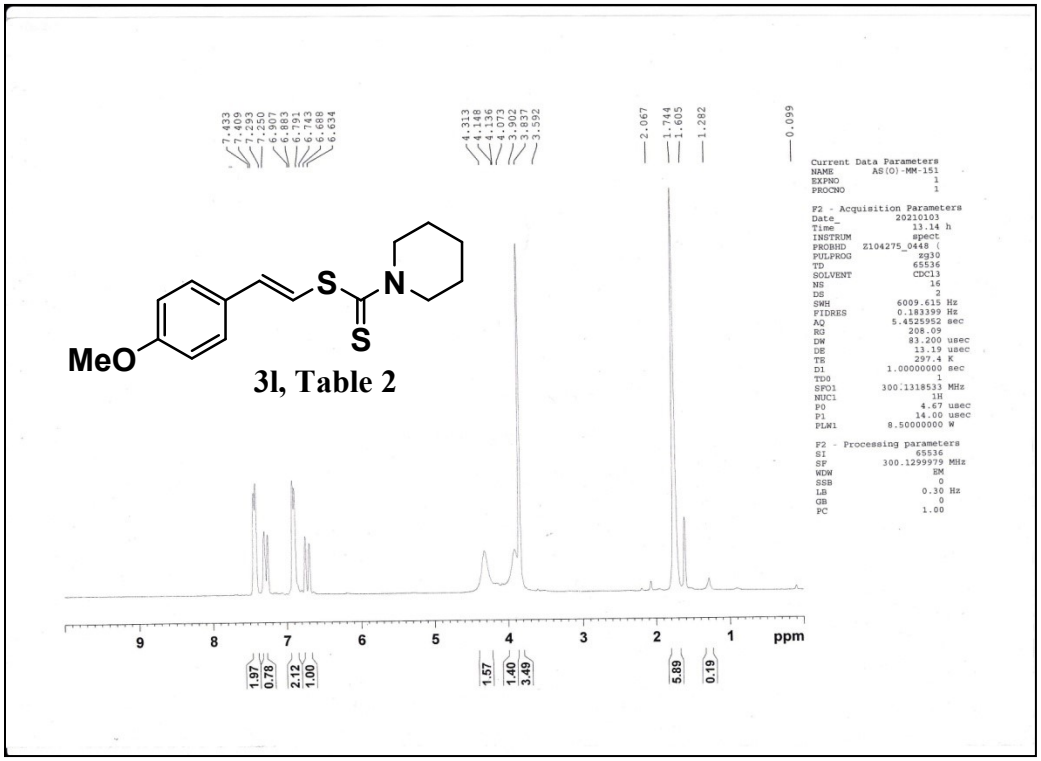


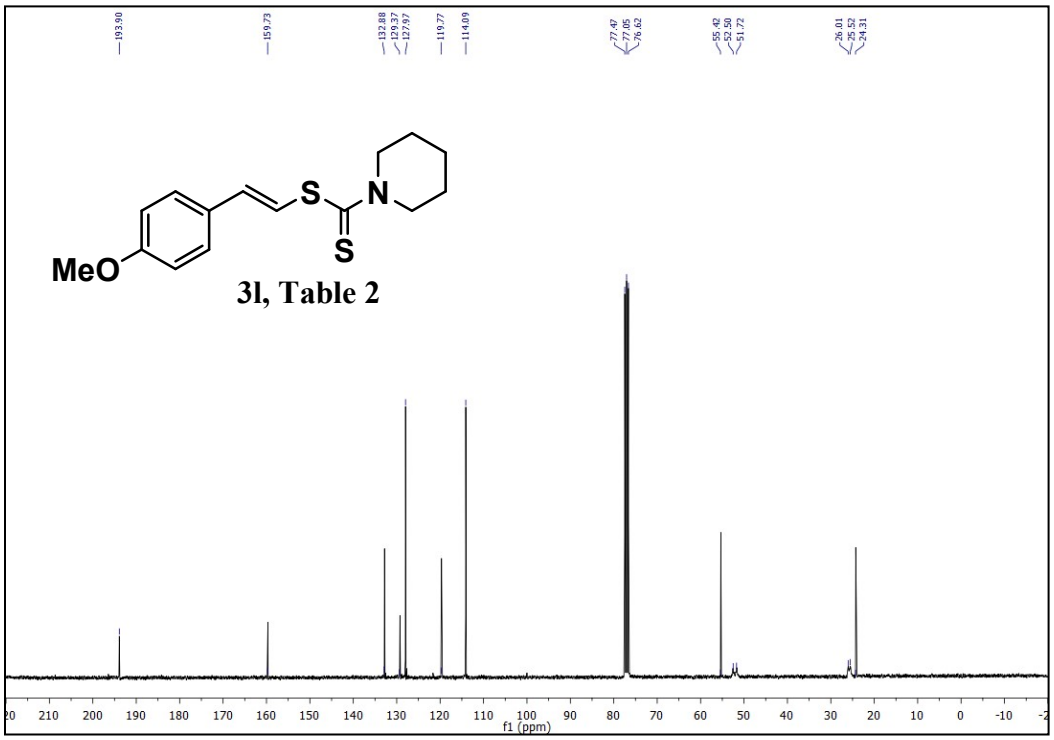
11.^{1}H NMR (300 MHz, CDCl3) and ^{13}C NMR(75 MHz, $CDCl_3$) spectrum of 3k



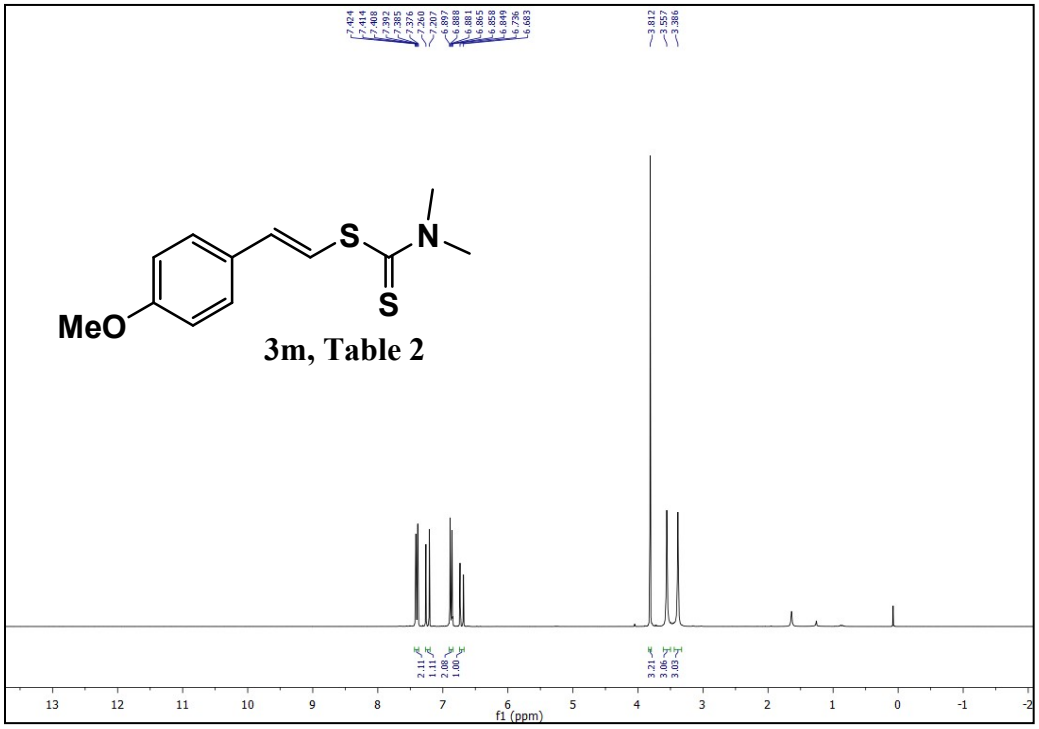


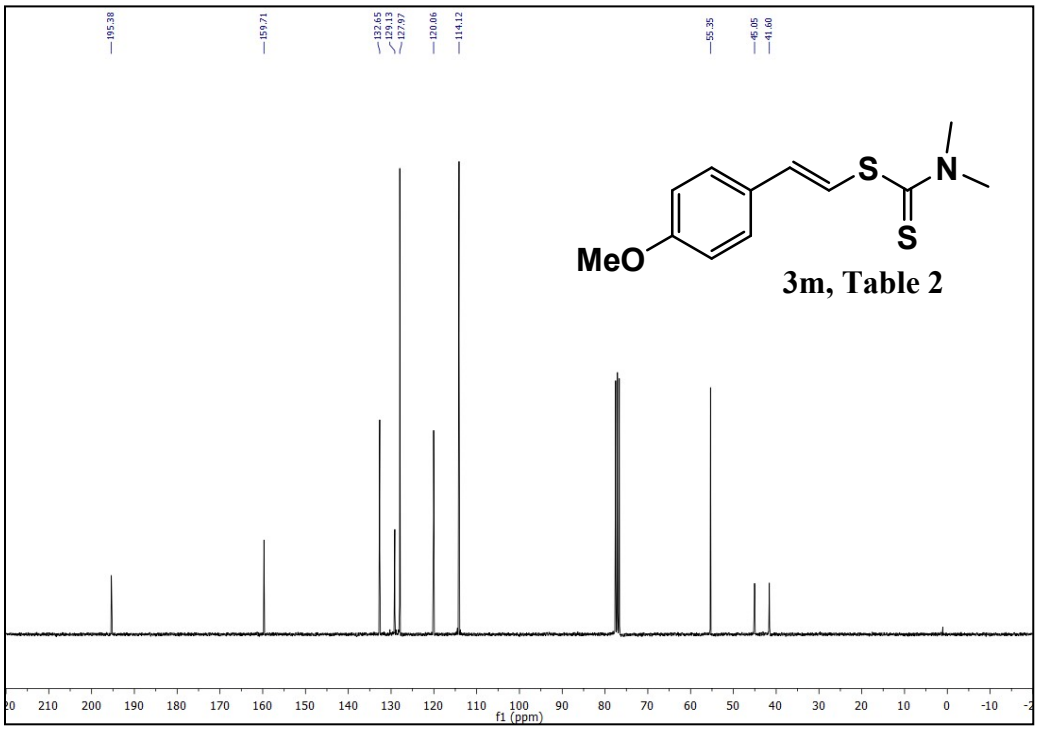
12.^{1}H NMR (300 MHz, CDCl3) and ^{13}C NMR(75 MHz, $CDCl_3$) spectrum of 3l



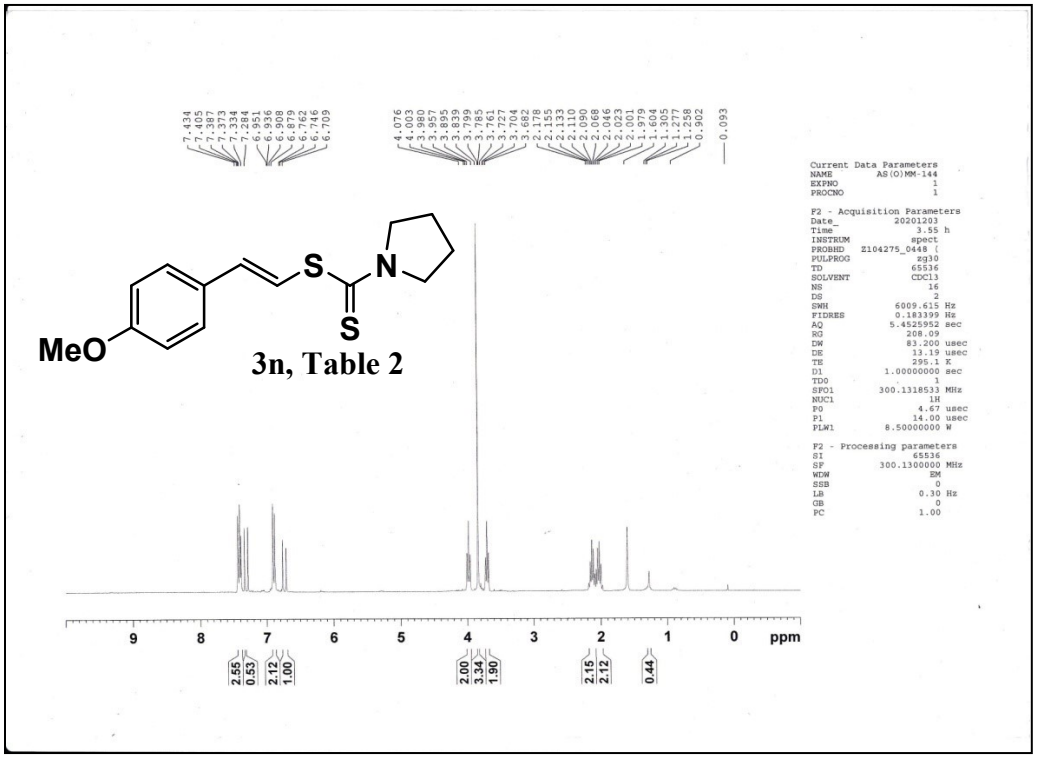


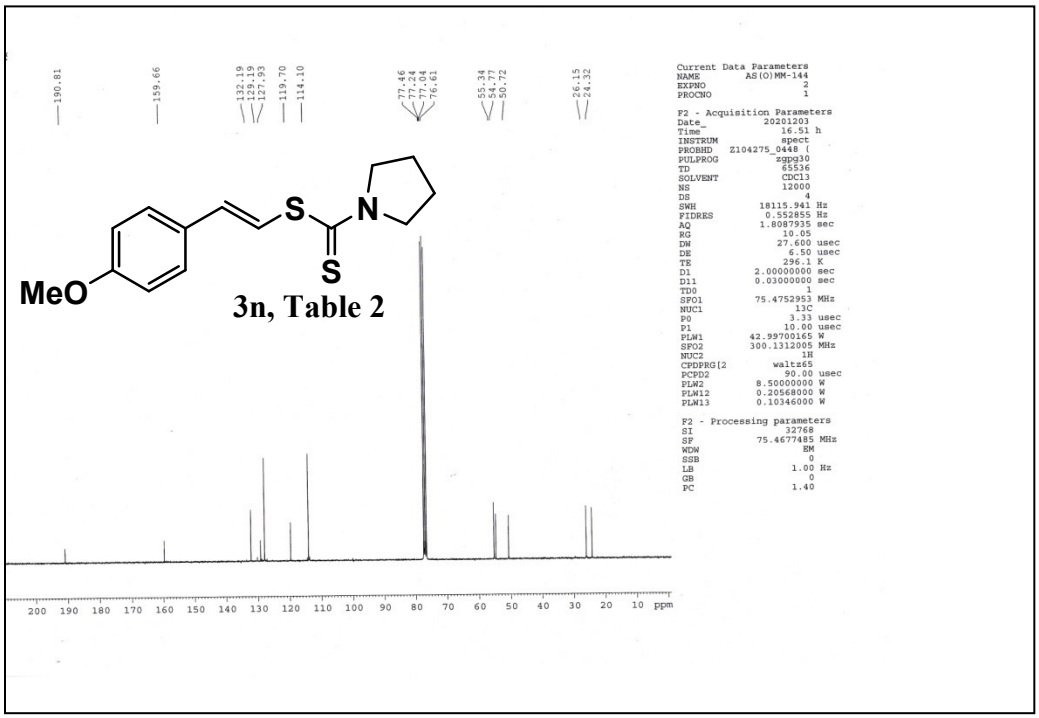
13.^{1}H NMR (300 MHz, CDCl3) and ^{13}C NMR(75 MHz, $CDCl_3$) spectrum of 3m



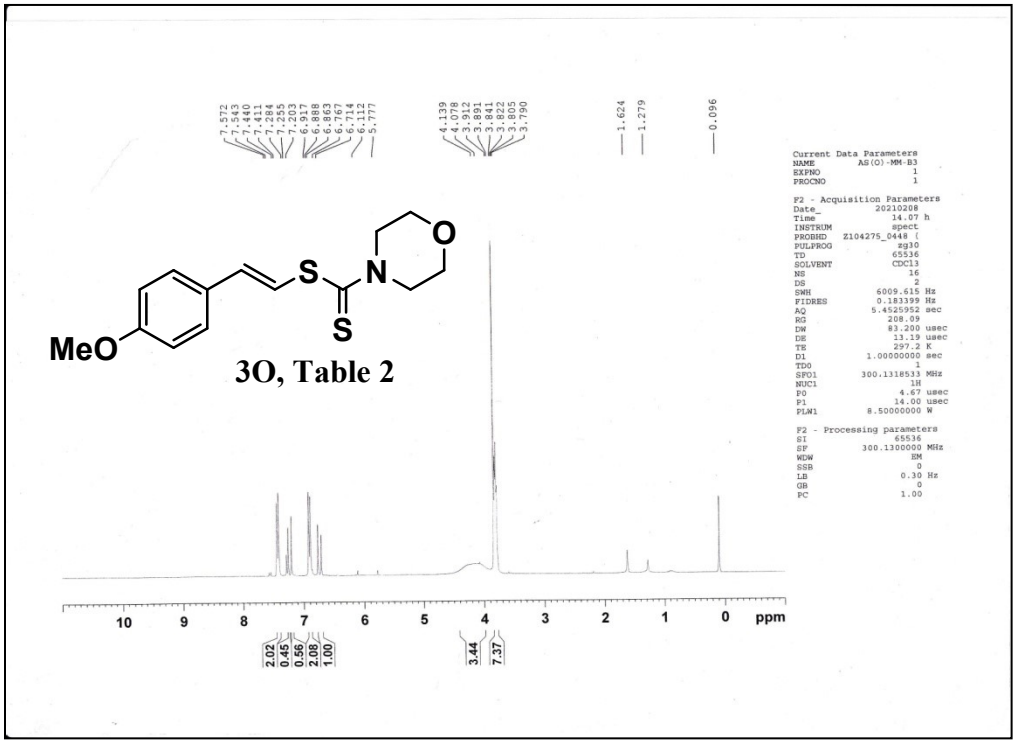


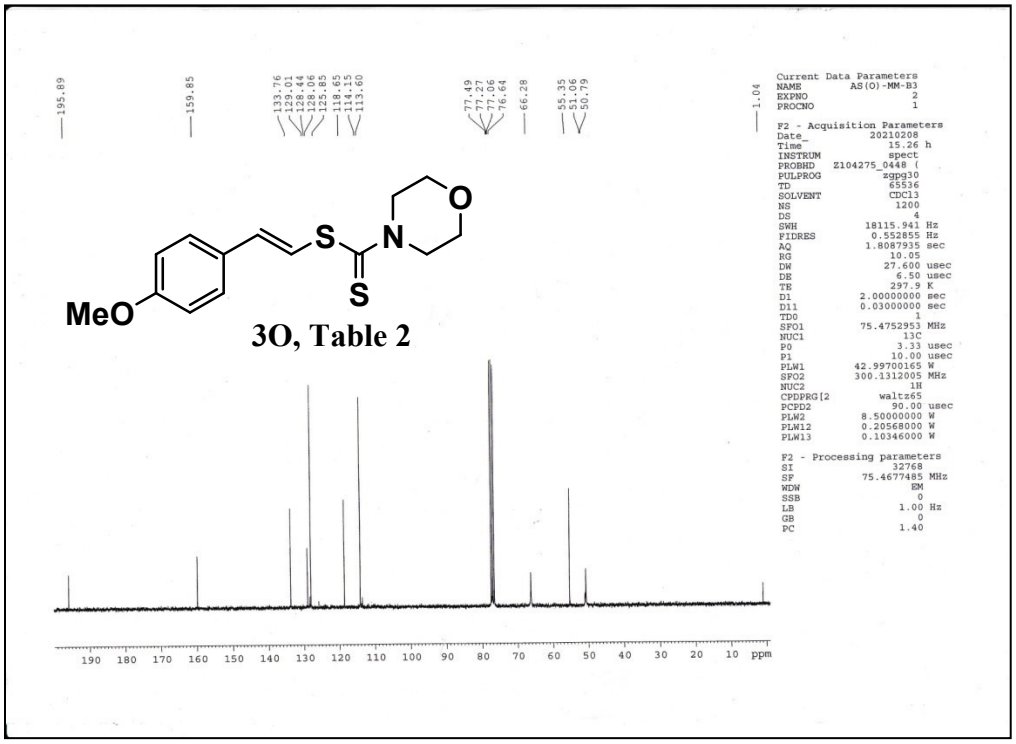
14.^{1}H NMR (300 MHz, CDCl3) and ^{13}C NMR(75 MHz, $CDCl_3$) spectrum of 3n



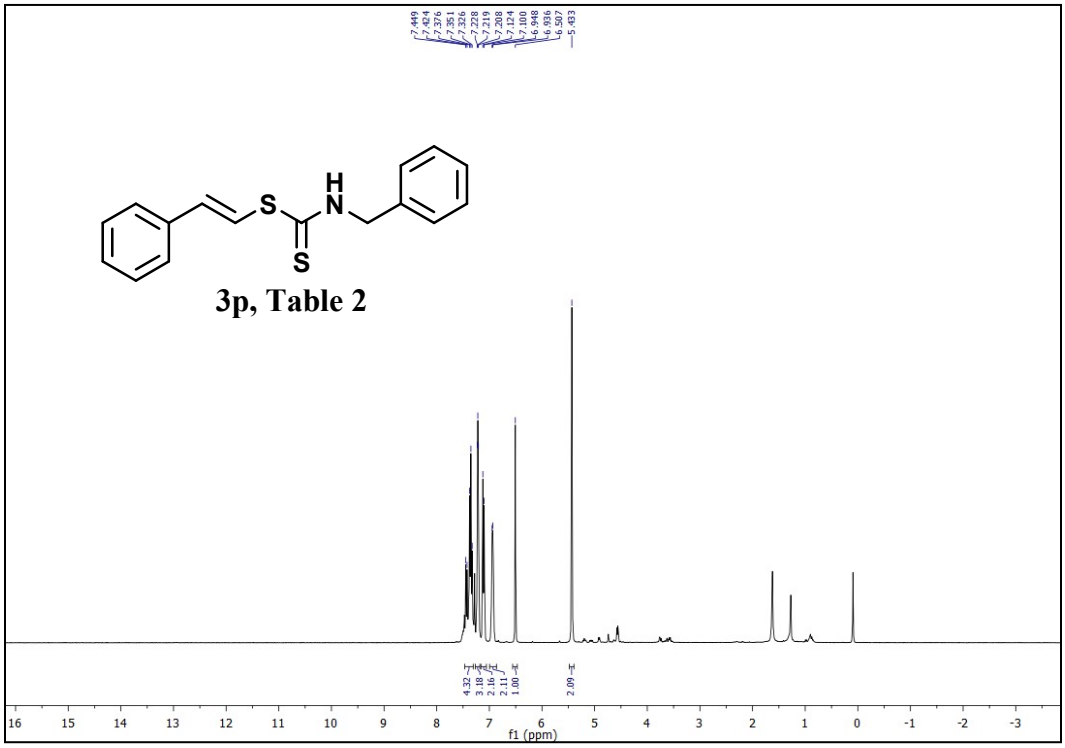


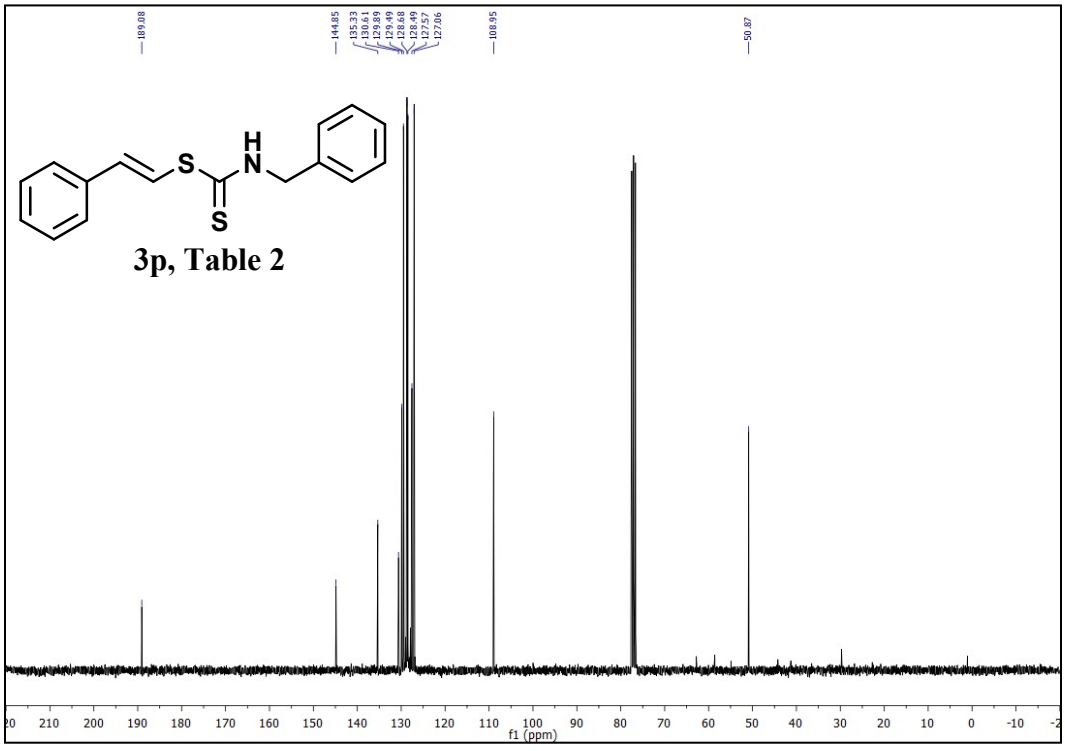
15.^{1}H NMR (300 MHz, CDCl3) and ^{13}C NMR(75 MHz, $CDCl_3$) spectrum of 3o



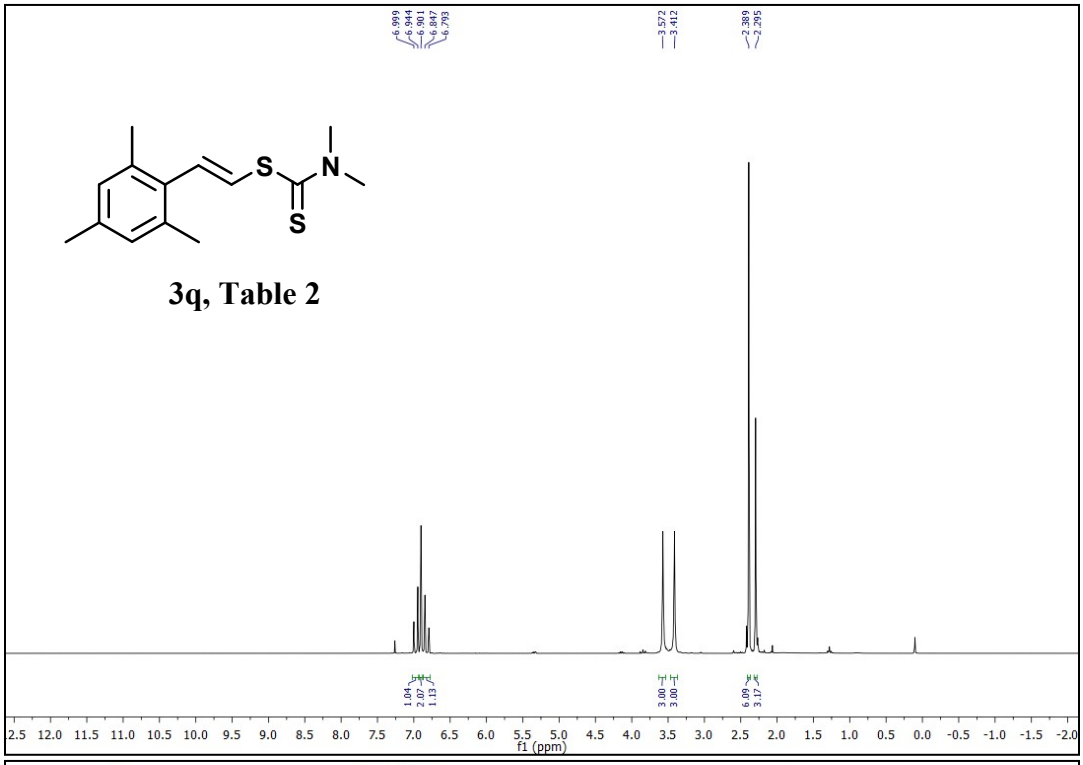


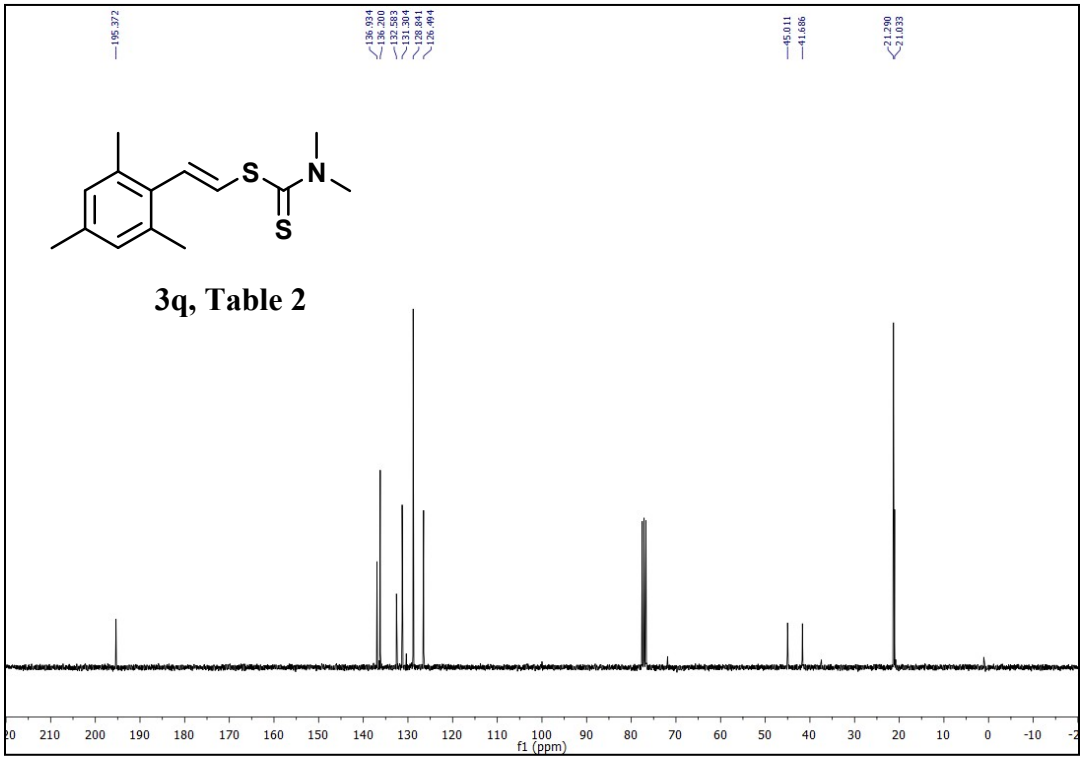
16.^{1}H NMR (300 MHz, CDCl3) and ^{13}C NMR(75 MHz, $CDCl_3$) spectrum of 3p



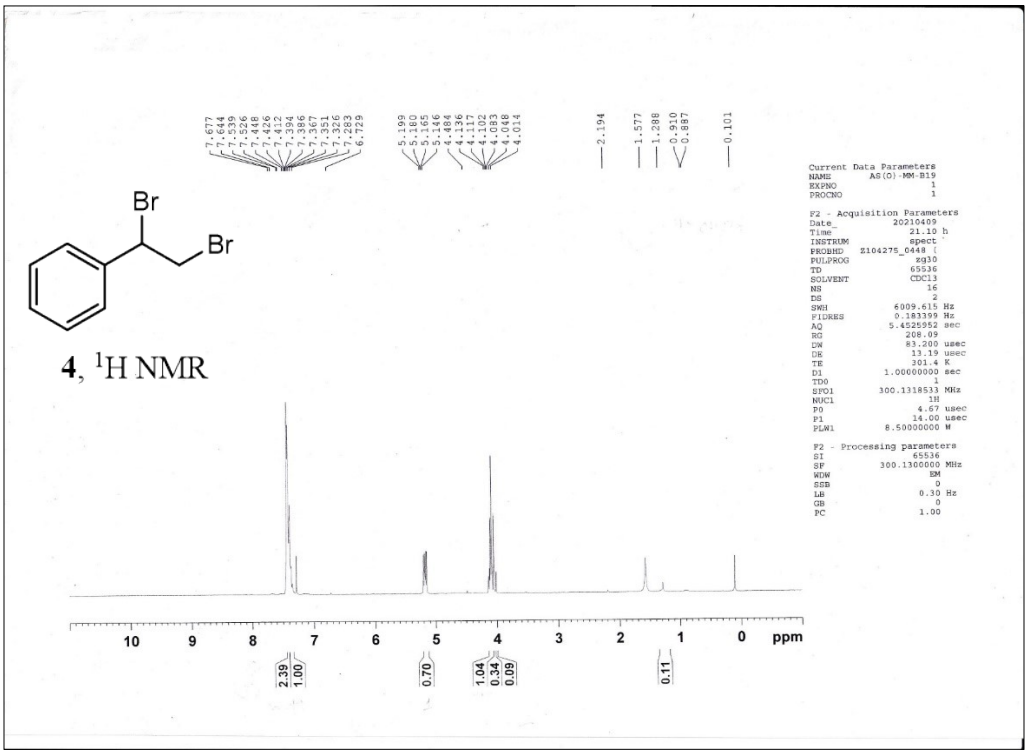


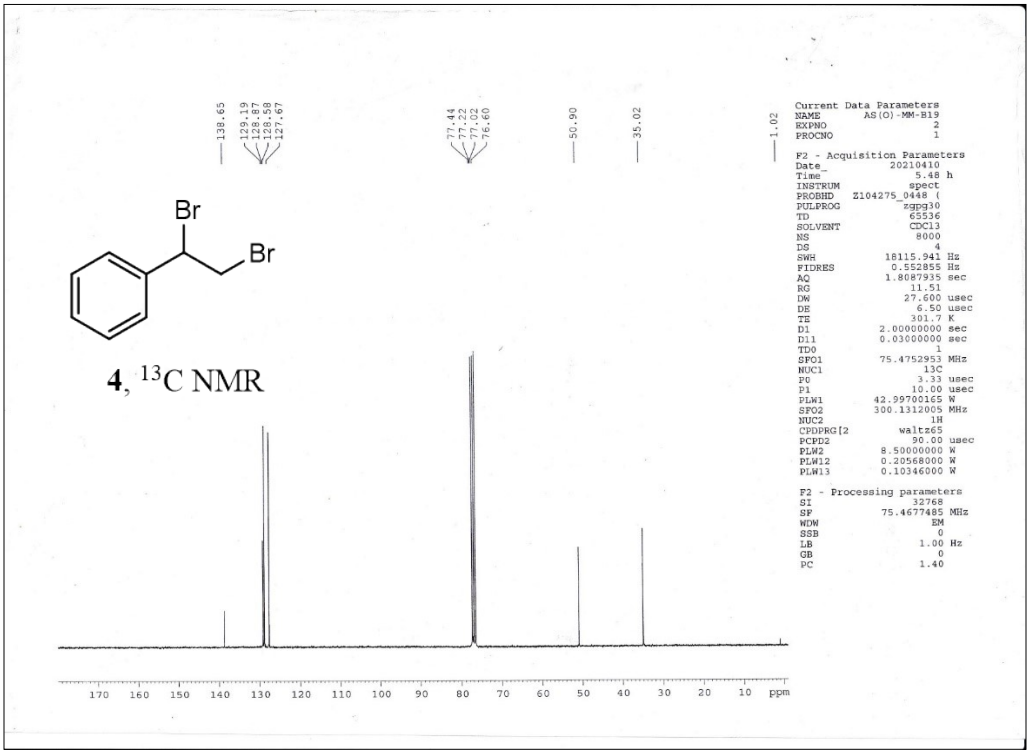
17.^{1}H NMR (300 MHz, CDCl3) and ^{13}C NMR(75 MHz, $CDCl_3$) spectrum of 3q



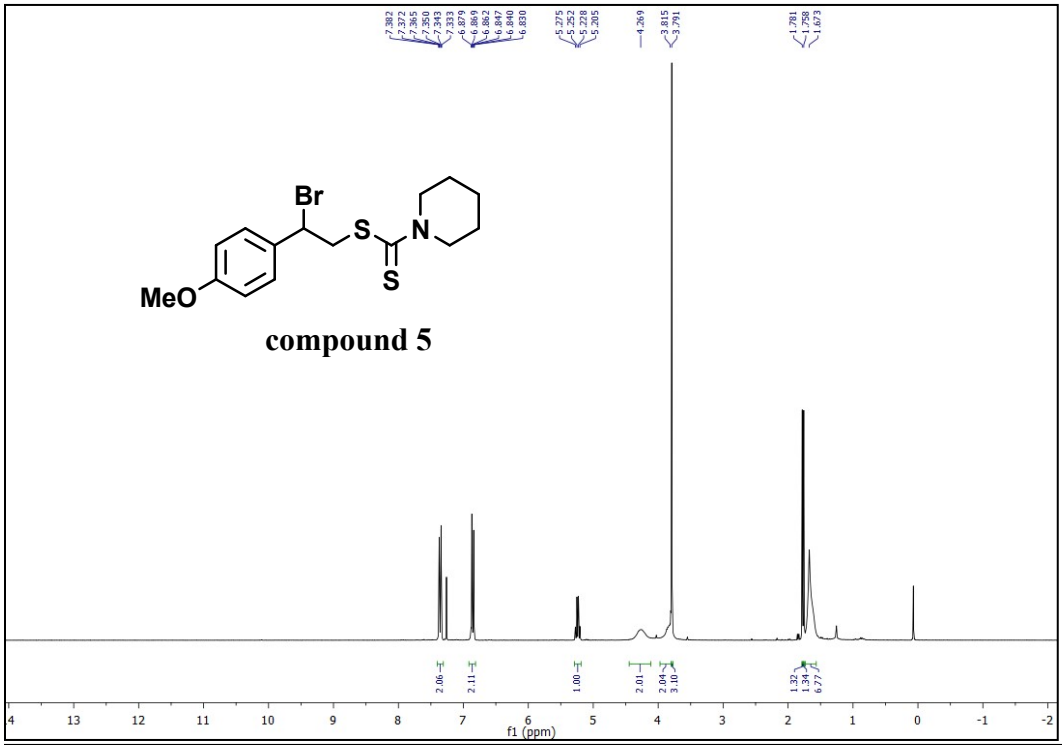


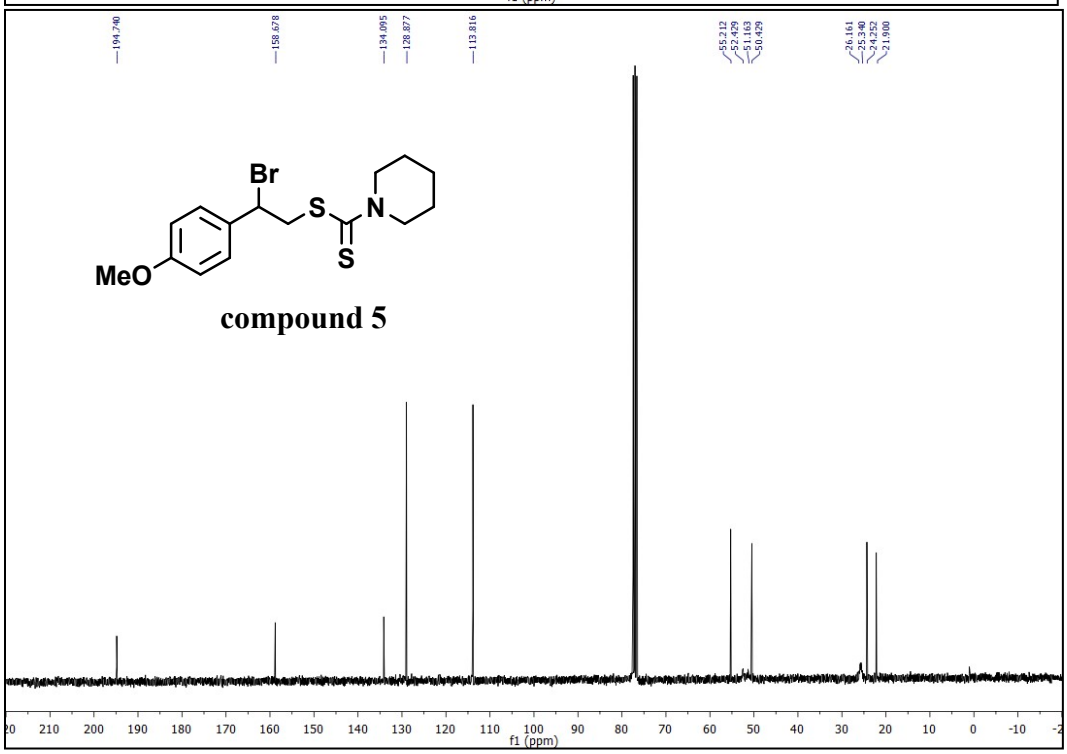
18.^{1}H NMR (300 MHz, CDCl3) and ^{13}C NMR(75 MHz, $CDCl_3$) spectrum of compound 4



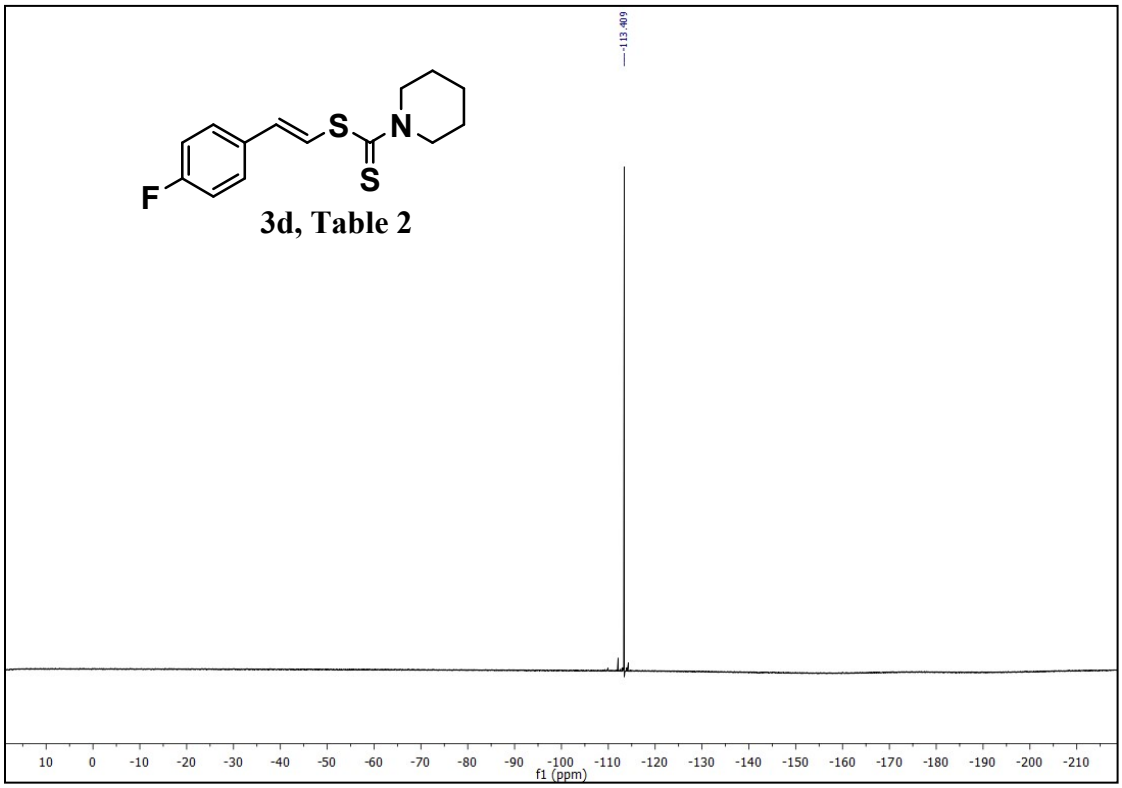


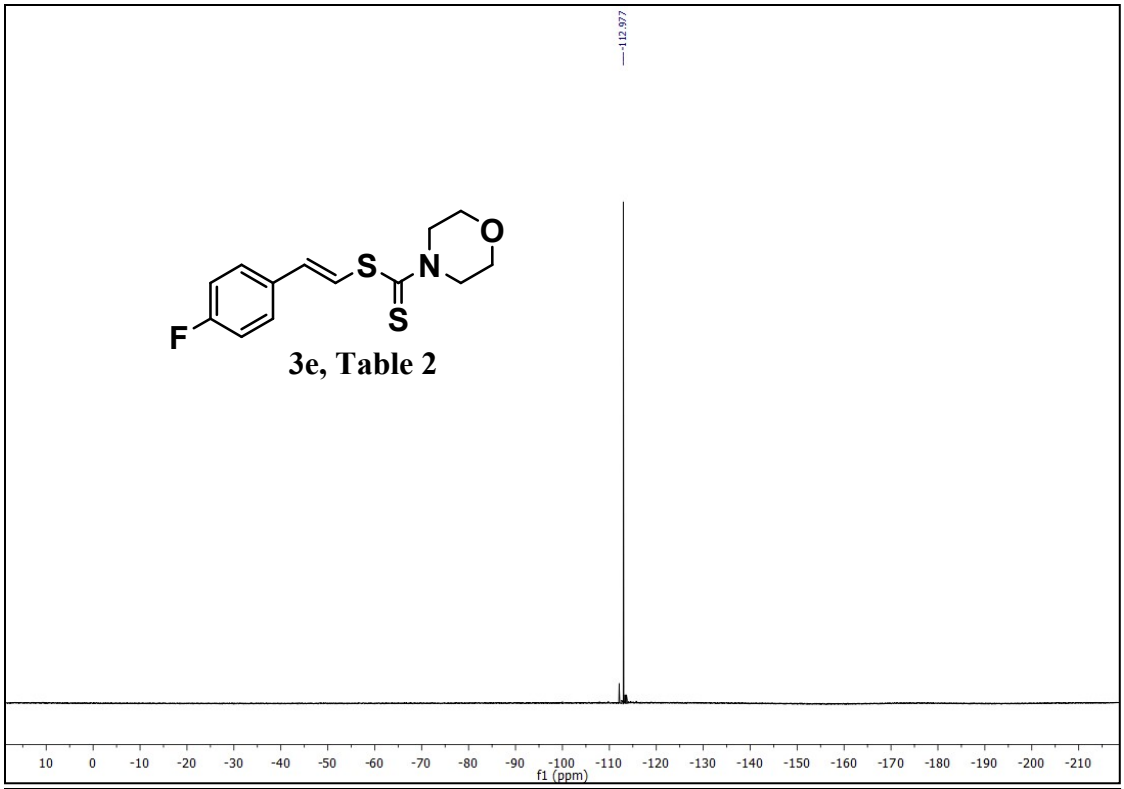
19.^{1}H NMR (300 MHz, CDCl3) and ^{13}C NMR(75 MHz, $CDCl_3$) spectrum of compound **5**



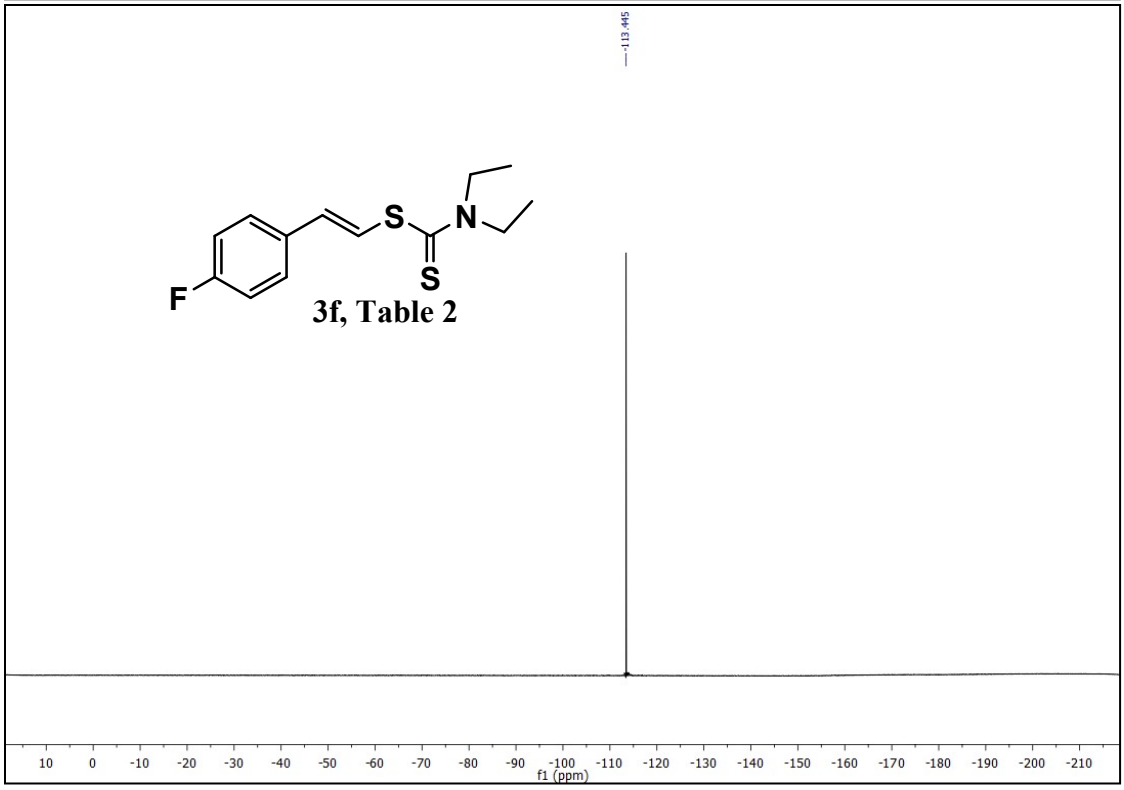


E. ^{19}F NMR spectra of fluorinated products



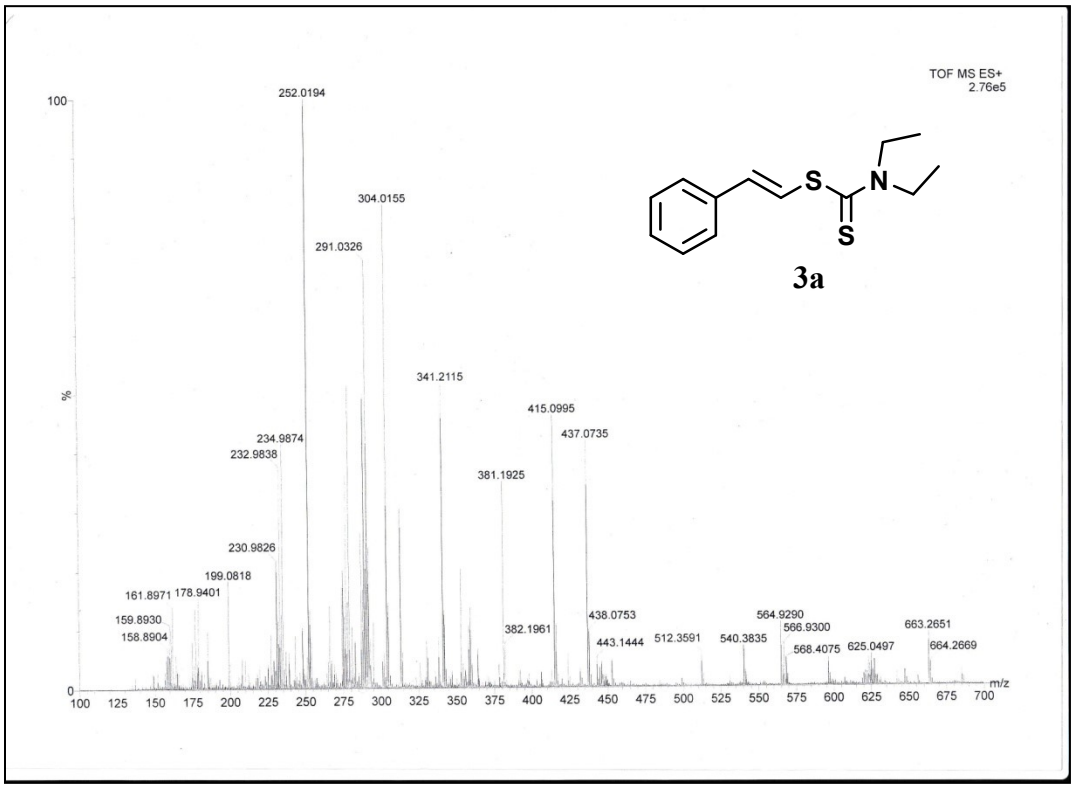


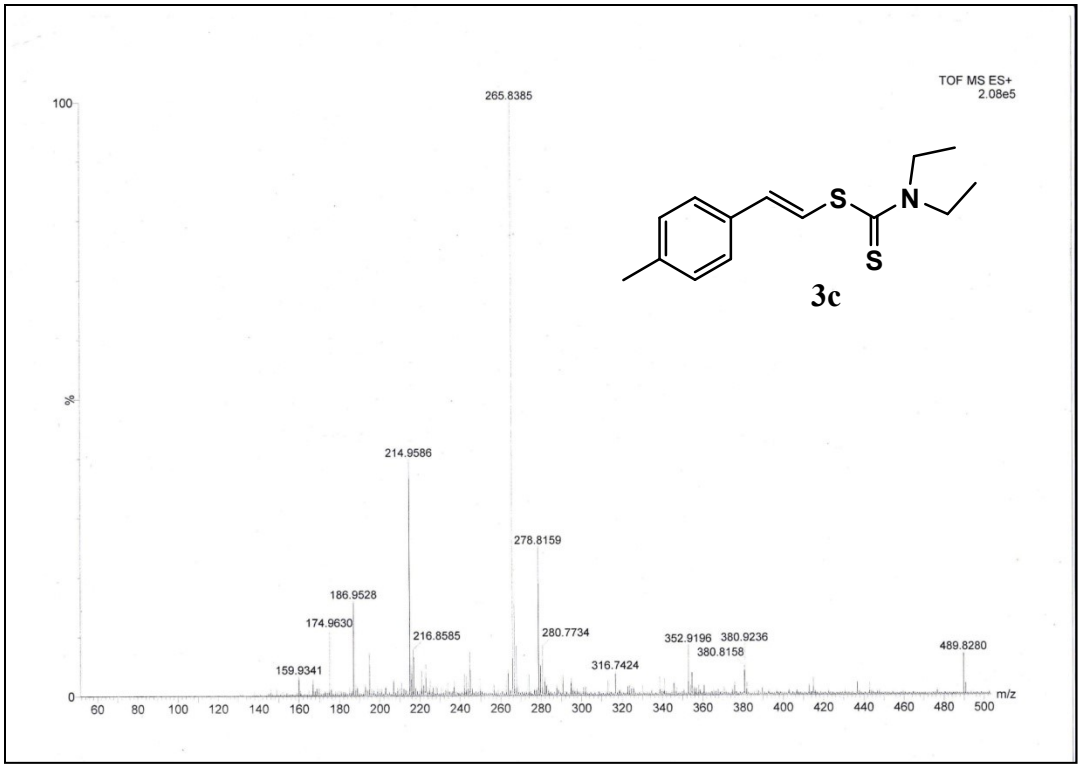
3e, Table 2



3f, Table 2

Mass spectra of products(3a, 3c, 3d,3e, 3f, 3i, 3j, 3n, 3o, 3p,3q)




TOF MS ES+
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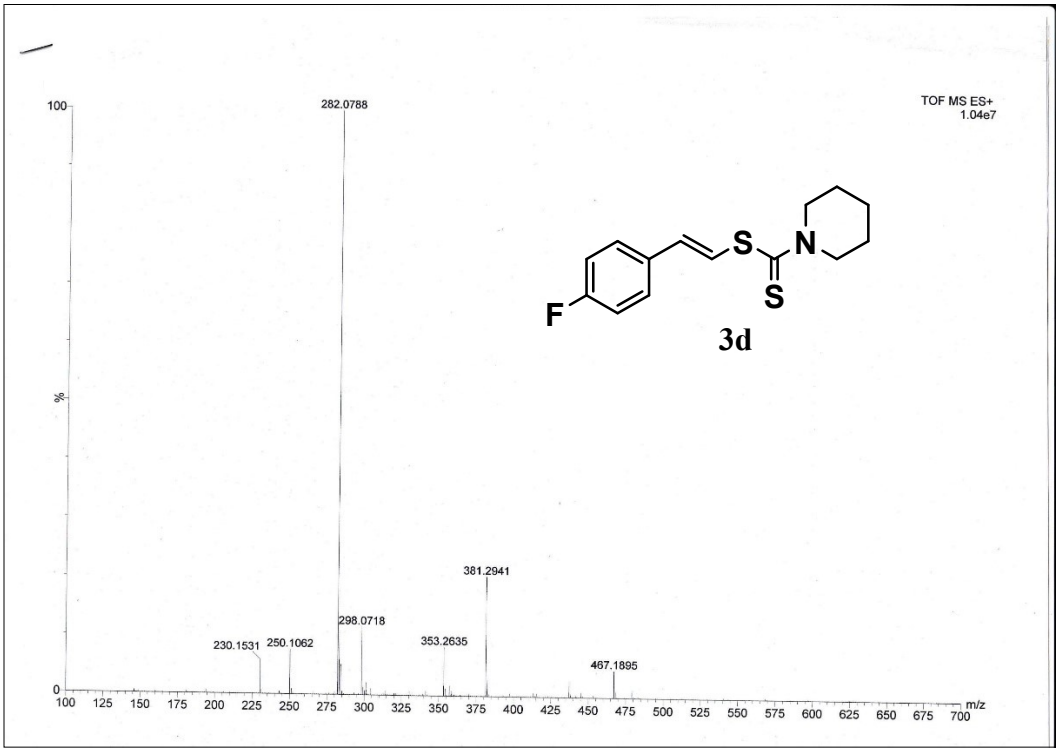
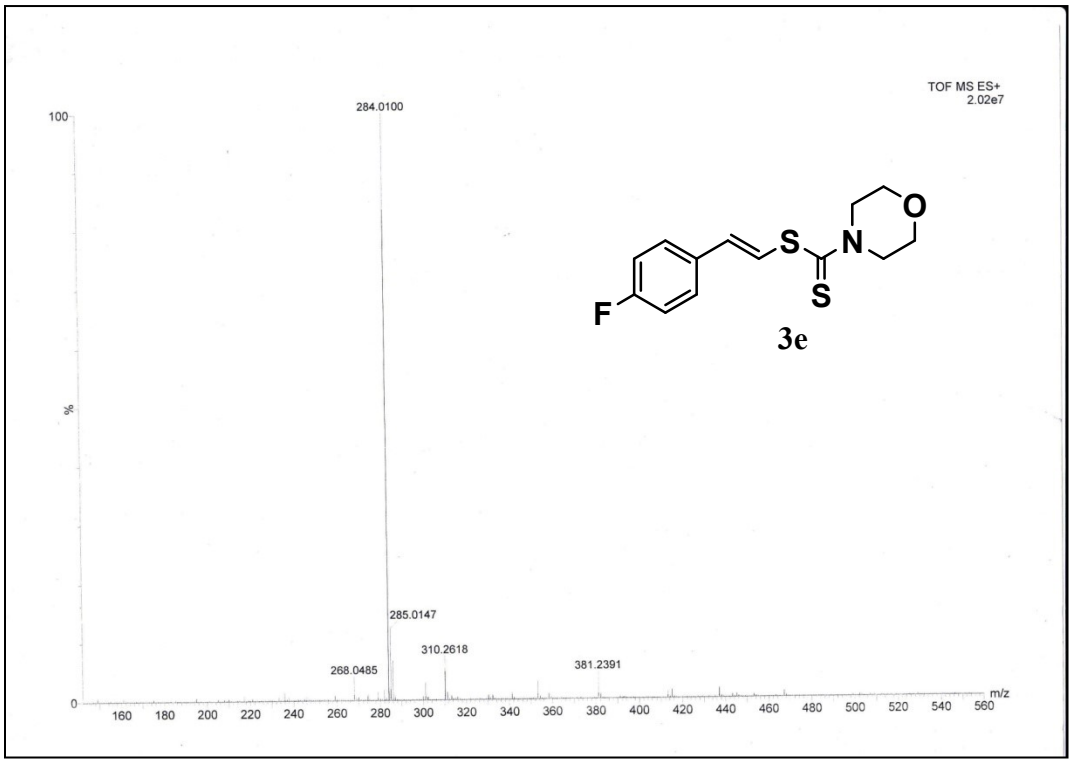
265.8385
214.9586
278.8159
186.9528
174.9630
216.8585
280.7734
352.9196
380.9236
380.8158
489.8280
159.9341
316.7424
%
m/z
100
0
60 80 100 120 140 160 180 200 220 240 260 280 300 320 340 360 380 400 420 440 460 480 500
S
N
S

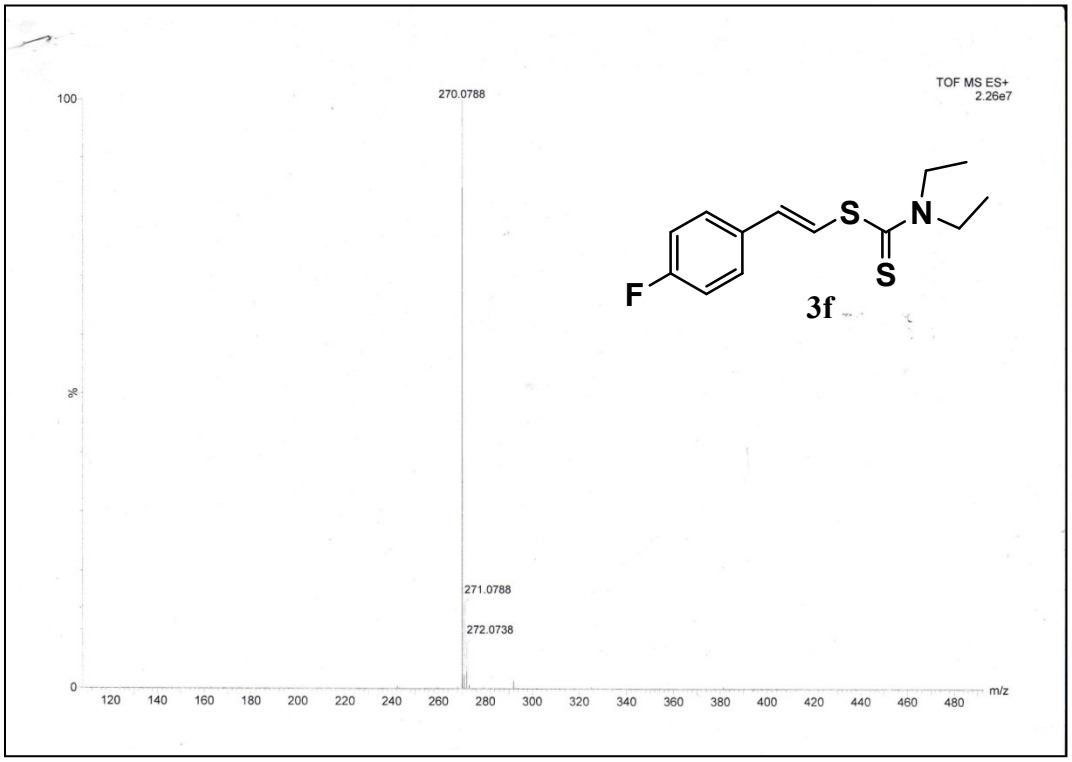
3c


TOF MS ES+
1.04e7
282.0788
381.2941
298.0718
230.1531
250.1062
353.2635
467.1895
%
m/z
100
0
100 125 150 175 200 225 250 275 300 325 350 375 400 425 450 475 500 525 550 575 600 625 650 675 700
S
N
S
F

3d


TOF MS ES+
2.02e7
284.0100
100
%
0
285.0147
310.2618
268.0485
381.2391
m/z
160 180 200 220 240 260 280 300 320 340 360 380 400 420 440 460 480 500 520 540 560
O
S
N
S
F

3e


TOF MS ES+
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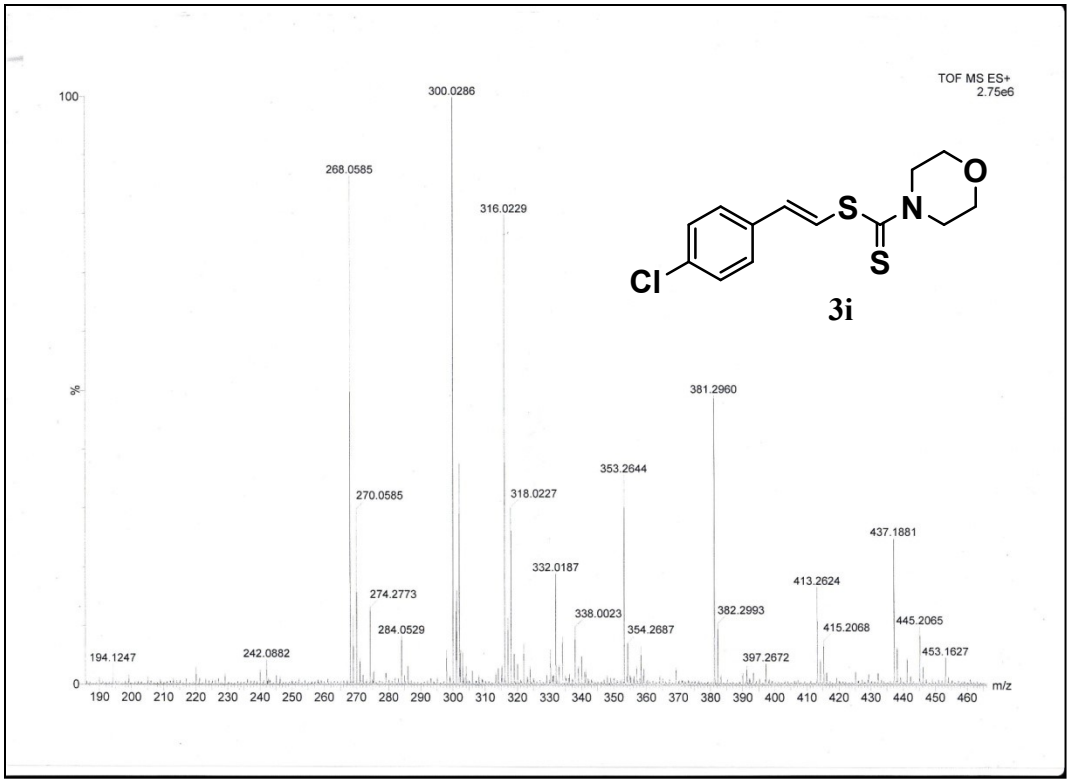
270.0788
100
%
0
271.0788
272.0738
m/z
120 140 160 180 200 220 240 260 280 300 320 340 360 380 400 420 440 460 480
S
N
S
F

3f


TOF MS ES+
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100
%
0
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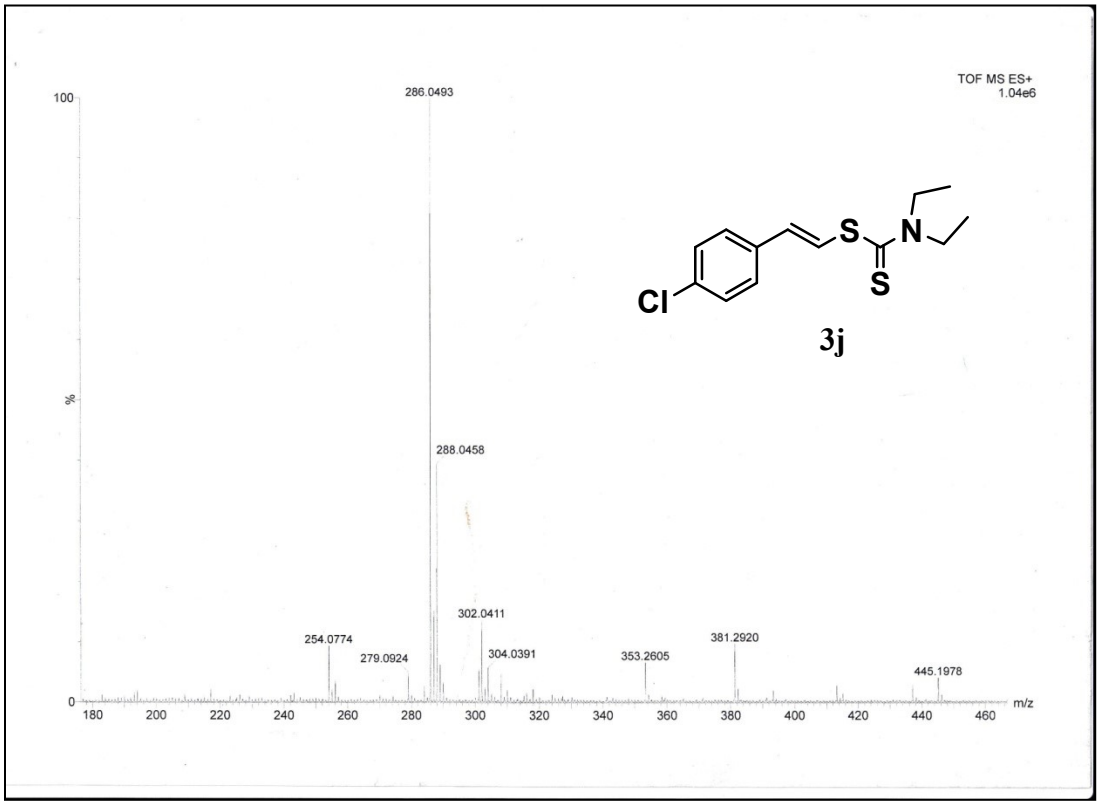
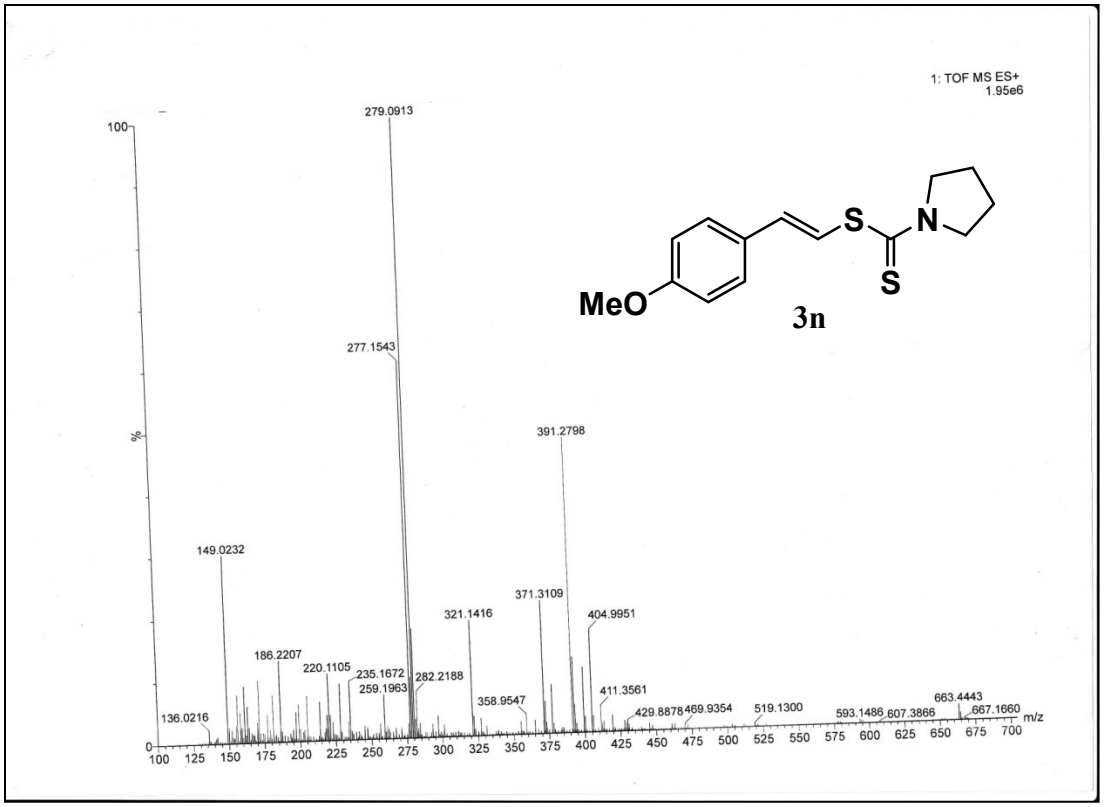
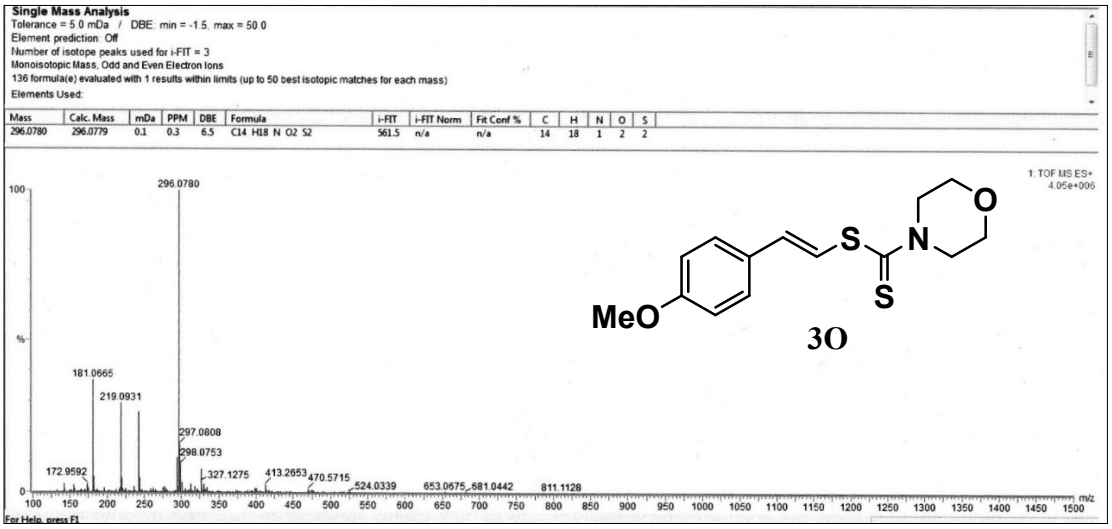
316.0229
381.2960
353.2644
270.0585
318.0227
437.1881
332.0187
413.2624
274.2773
338.0023
382.2993
284.0529
354.2687
415.2068
445.2065
194.1247
242.0882
397.2672
453.1627
190 200 210 220 230 240 250 260 270 280 290 300 310 320 330 340 350 360 370 380 390 400 410 420 430 440 450 460
m/z
Cl
S
N
O
S

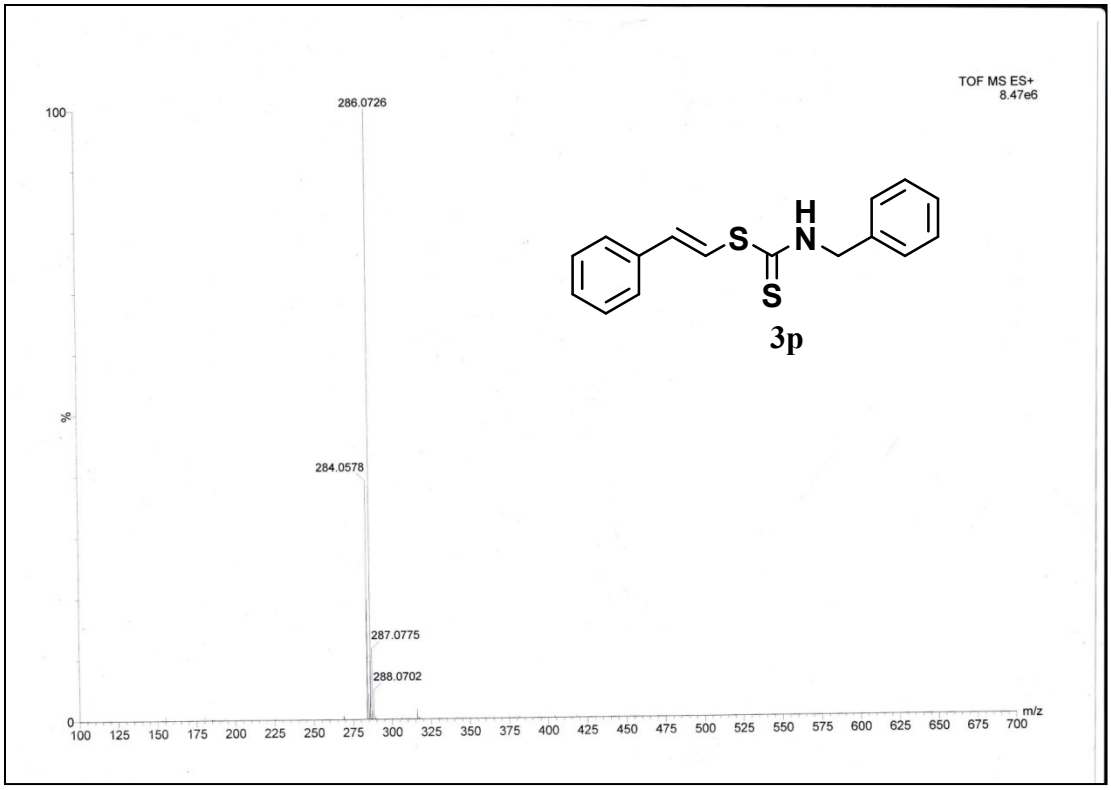
3i


TOF MS ES+
1.04e6
100
%
0
286.0493
288.0458
302.0411
254.0774
279.0924
304.0391
353.2605
381.2920
445.1978
180 200 220 240 260 280 300 320 340 360 380 400 420 440 460
m/z
Cl
S
N
S

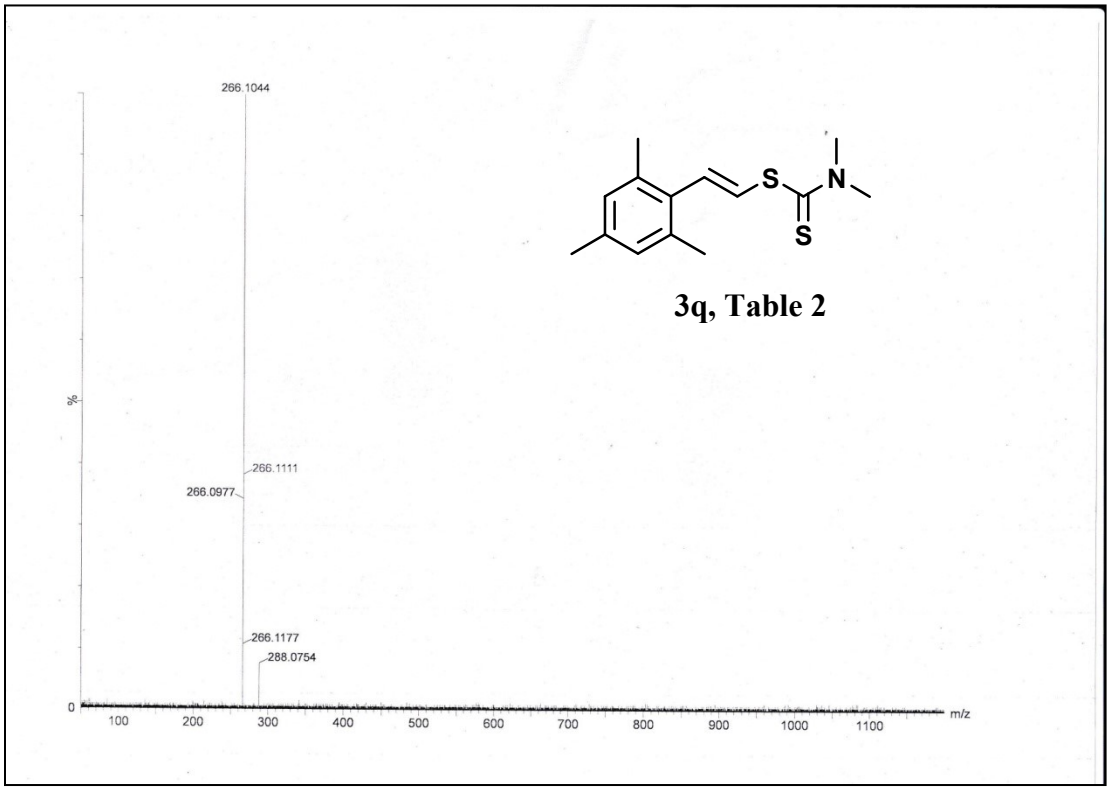
3j


1: TOF MS ES+
1.95e6
279.0913
277.1543
391.2798
149.0232
371.3109
321.1416
404.9951
186.2207
220.1105
235.1672
282.2188
259.1963
358.9547
411.3561
136.0216
429.8878
469.9354
519.1300
593.1486
607.3866
663.4443
667.1660
m/z
MeO
S
N
S
3n


Single Mass Analysis
Tolerance = 5.0 mDa / DBE: min = -1.5, max = 50.0
Element prediction: Off
Number of isotope peaks used for i-FIT = 3
Monoisotopic Mass, Odd and Even Electron Ions
136 formula(e) evaluated with 1 results within limits (up to 50 best isotopic matches for each mass)
Elements Used:
Mass | Calc. Mass | mDa | PPM | DBE | Formula | i-FIT | i-FIT Norm | Fit Conf % | C | H | N | O | S
296.0780 | 296.0779 | 0.1 | 0.3 | 6.5 | C14 H18 N O2 S2 | 561.5 | n/a | n/a | 14 | 18 | 1 | 2 | 2
1: TOF MS ES+
4.05e+006
296.0780
181.0665
219.0931
297.0808
298.0753
172.9592
327.1275
413.2653
470.5715
524.0339
653.0675
681.0442
811.1128
m/z
For Help, press F1
MeO
S
N
O
S
3O


TOF MS ES+
8.47e6
286.0726
284.0578
287.0775
288.0702
100
%
0
m/z
100 125 150 175 200 225 250 275 300 325 350 375 400 425 450 475 500 525 550 575 600 625 650 675 700

3p


266.1044
266.1111
266.0977
266.1177
288.0754
%
0
m/z
100 200 300 400 500 600 700 800 900 1000 1100

3q, Table 2

Reeferences:

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