

## Supplementary Material

### O-Benzyl-N-(9'-acridinyl)hydroxylamines

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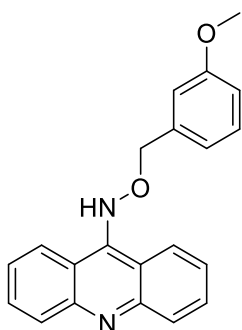
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## General Procedures

Benzyl chloride, substituted benzyl chlorides, N-hydroxyphthalimide, 9-chloroacridine (**5**) and other reagents were obtained commercially from Sigma Aldrich, and were used after a determination of purity via  $^1\text{H}$  NMR spectroscopy. Compounds **3** and **4** were prepared using the method of Bonaccorsi and Giorgi (ref. 9). All solvents used were dried prior to use and their purity verified via spectroscopic methods. Hydrogen chloride gas was generated as needed through the addition of concentrated sulfuric acid to sodium chloride. Radial chromatography was performed using a Harrison Associates Chromatotron<sup>®</sup> on 2mm-thick silica gel plates containing fluorescent indicator that were pre-cleaned with methanol and stored at elevated temperatures prior to use. NMR spectra were obtained on a Bruker Avance II (400 MHz for  $^1\text{H}$ ) multinuclear FT-NMR. Infrared spectra were collected using a Thermo Scientific iD<sub>5</sub> ATR ZnSe cell. All UV-visible data were measured using an Agilent UV-visible diode-array spectrophotometer with a Peltier-temperature controller. MTT assay data were collected using published procedures (ref. 15).

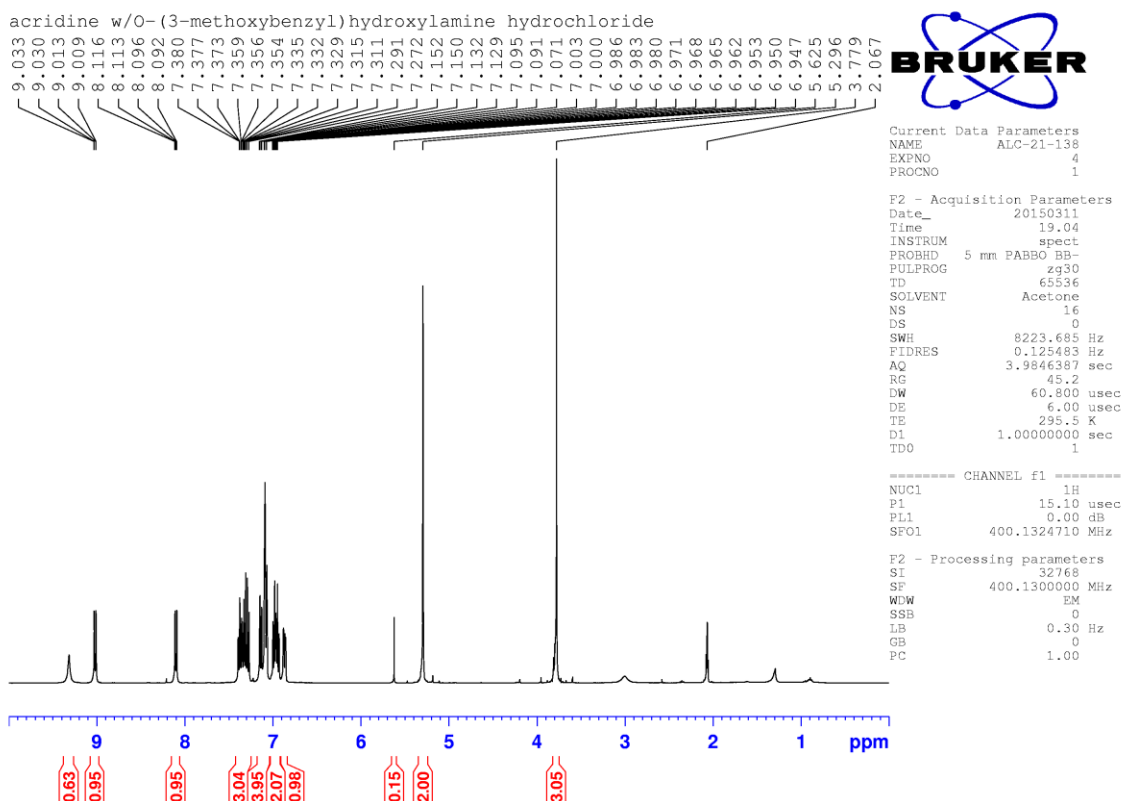
### General procedure for preparation of O-benzyl-N-(9'-acridinyl)-hydroxylamines (**6a-l**)

The appropriate salt, **4a-l**, ( $7.02 \times 10^{-4}$  mol) was treated with commercially available 9-chloroacridine (**5**) ( $4.68 \times 10^{-4}$  mol). The reaction was carried out in molten phenol using 3.0 grams of phenol per gram of 9-chloroacridine (**5**). The reaction was heated between 80-100 °C for a period of 6-8 hours, then cooled to room temperature and dissolved in  $\text{CH}_2\text{Cl}_2$ . The resulting orange or red organic solution was washed repeatedly with 0.25 M NaOH until greater than a 1:1 molar ratio of hydroxide to phenol was used. The organic phase was then washed with water (once) and brine (once). The organic layer was dried over anhydrous sodium sulfate, gravity filtered, and concentrated to a final volume of approximately 1 mL. This sample was then transferred to the top of a 5-cm column of silica gel constructed from a 10-mL syringe barrel and eluted with ethyl acetate. The orange filtrate was collected, concentrated to a final volume of 0.5-1.0 mL, and subjected to radial chromatography (2mm plate, silica gel,  $\text{CH}_2\text{Cl}_2:\text{Et}_2\text{O}$  100:0 to 90:10 gradient elution). Compounds **6a-l** were obtained in pure form by evaporation of the solvent from the bands that eluted.

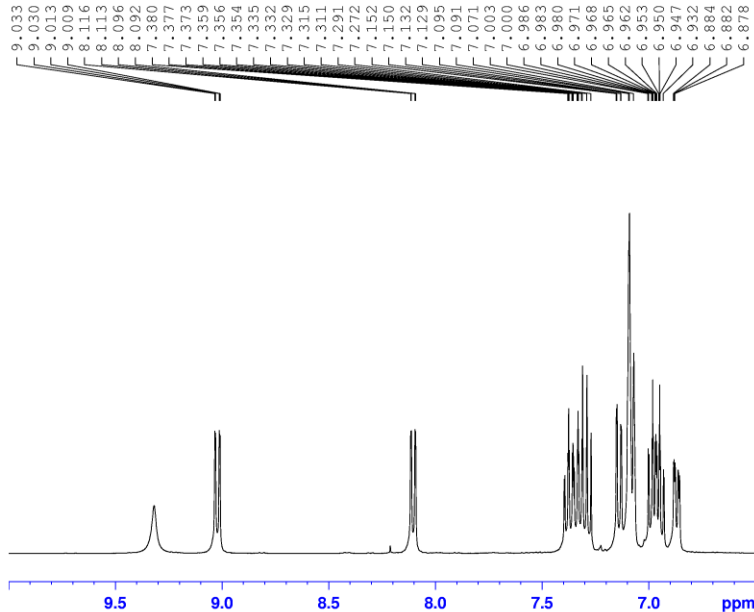


### O-(3-methoxybenzyl)-N-(9'-acridinyl)-hydroxylamine, 6a

Yield: 64%. <sup>1</sup>HNMR (acetone-d<sub>6</sub>) δ, in ppm: 9.32 (s, 1H); 9.03 (d, 1H); 8.10 (d, 1H); 7.34 (m, 3H); 7.13 (m, 4H); 6.97 (m, 2H); 6.88 (m, 1H); 5.30 (s, 2H); 3.78 (s, 3H). <sup>13</sup>CNMR (acetone-d<sub>6</sub>) δ, in ppm: 159.9; 143.5; 140.5; 140.4; 140.3; 138.1; 138.0; 131.9; 130.9; 129.8; 129.3; 124.6; 120.7; 120.0; 119.1; 118.1; 118.1; 115.4; 115.3; 115.0; 115.0; 114.9; 113.4; 113.0; 76.5; 54.5. IR (ATR-ZnSe) in cm<sup>-1</sup>: 747.39; 964.12; 1157.11; 1265.46; 1474.23; 1598.05; 1614.45. ΔT<sub>m</sub> = 9.1°C.



acridine w/O-(3-methoxybenzyl)hydroxylamine hydrochloride



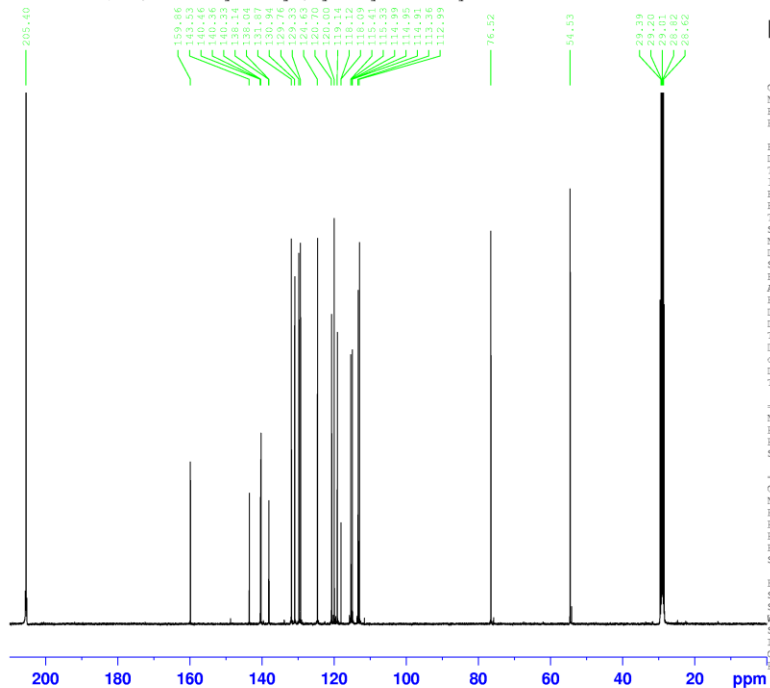
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acridine w/O-(3-methoxybenzyl)hydroxylamine hydrochloride



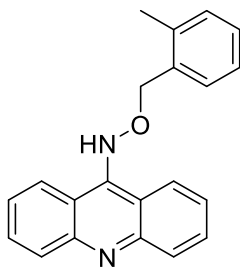
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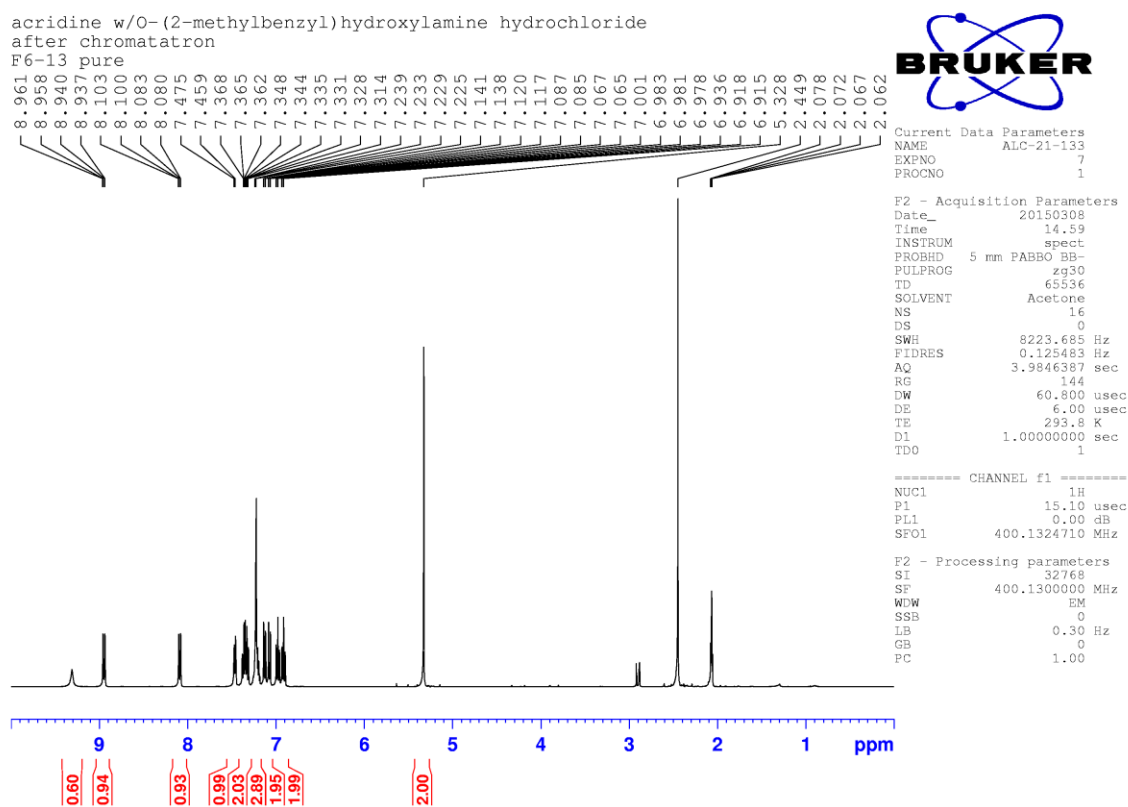
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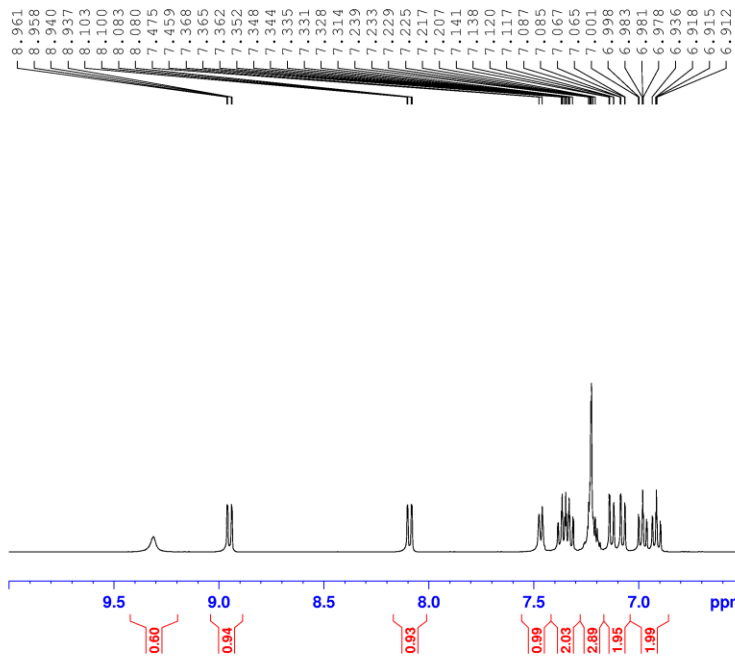


### O-(2-methylbenzyl)-N-(9'-acridinyl)-hydroxylamine, 6c

Yield: 49%. <sup>1</sup>HNMR (acetone-d<sub>6</sub>) δ, in ppm: 9.31 (s, 1H); 8.95 (m, 1H); 8.09 (d, 1H); 7.47 (d, 1H); 7.34 (m, 2H); 7.23 (m, 3H); 7.12 (m, 2H); 6.98 (m, 2H); 5.33 (s, 2H); 2.45 (s, 3H). <sup>13</sup>CNMR (acetone-d<sub>6</sub>) δ, in ppm: 143.3; 140.4; 140.3; 138.1; 138.0; 136.8; 136.4; 131.7; 130.9; 130.0; 129.7; 129.2; 127.9; 125.7; 124.6; 120.6; 119.1; 118.2; 118.1; 115.4; 115.3; 115.0; 114.9; 114.9; 75.2. IR (ATR-ZnSe) in cm<sup>-1</sup>: 1473. HRMS: M-1, 315.1496 (C<sub>21</sub>H<sub>19</sub>N<sub>2</sub>O). ΔT<sub>m</sub> = 15.5°C. MTT IC<sub>50</sub> = 17.7±0.2μM



acridine w/O-(2-methylbenzyl)hydroxylamine hydrochloride  
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F6-13 pure



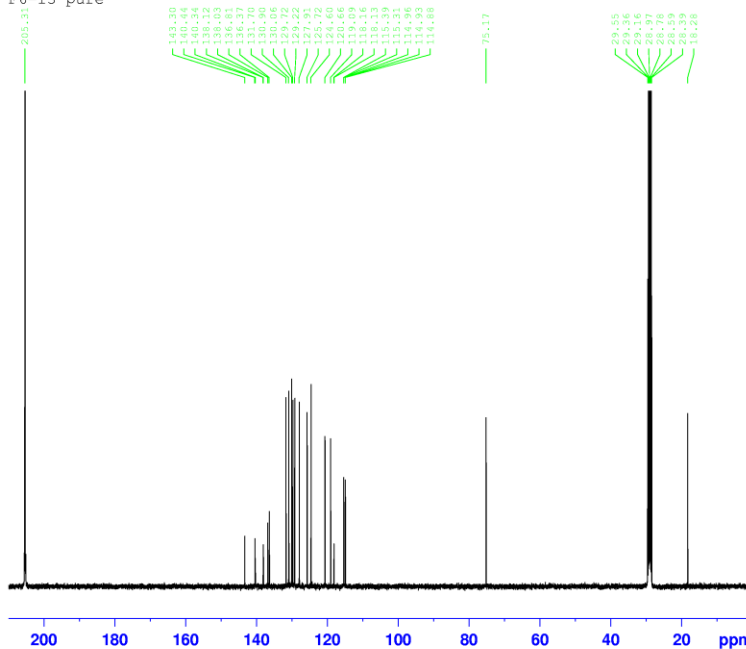
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acridine w/O-(2-methylbenzyl)hydroxylamine hydrochloride  
after chromatatron  
F6-13 pure



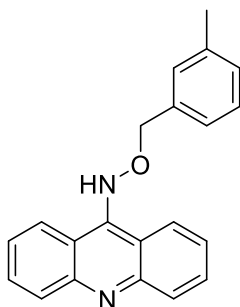
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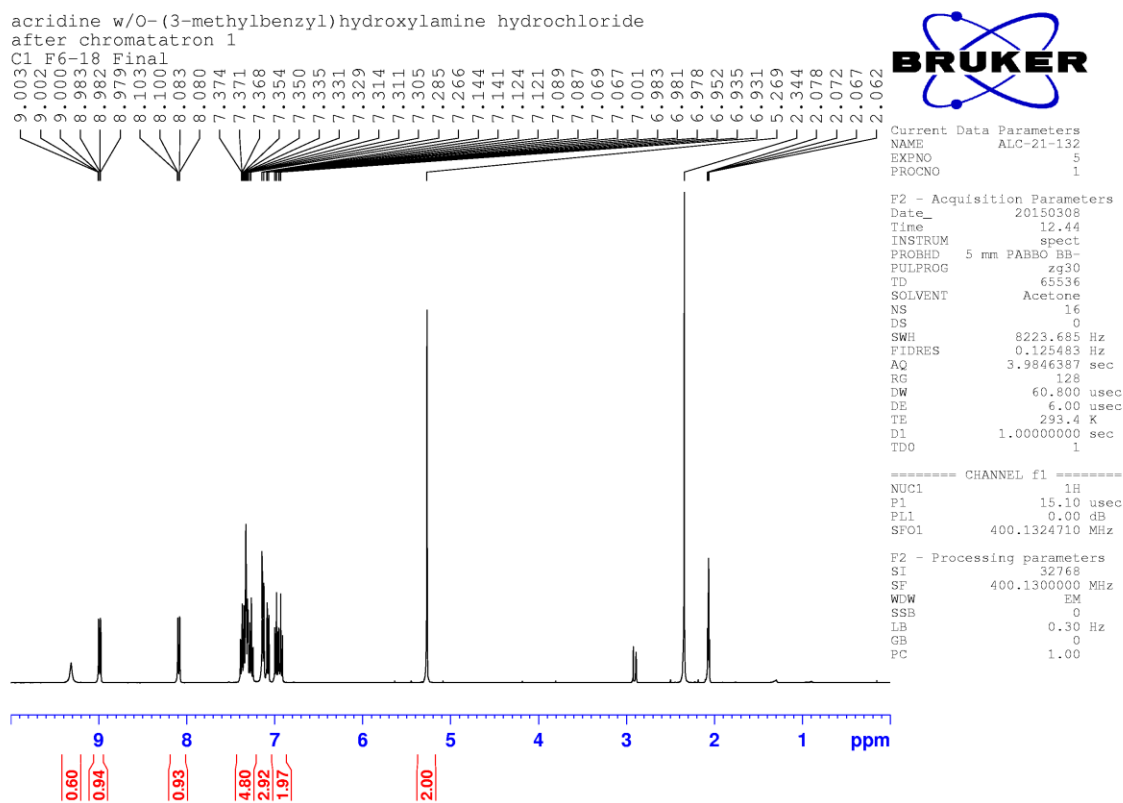
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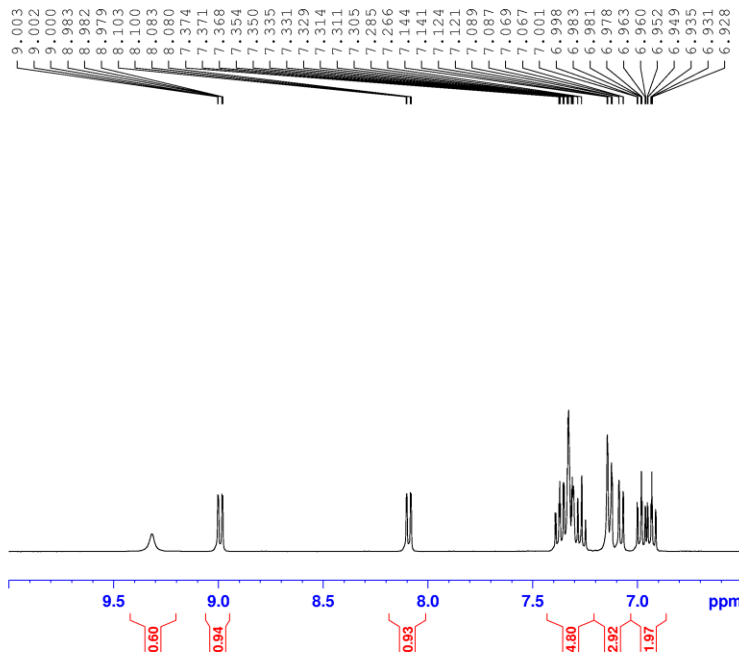


### O-(3-methylbenzyl)-N-(9'-acridinyl)-hydroxylamine, 6d

Yield: 71%.  $^1\text{H}$  NMR (acetone- $d_6$ )  $\delta$ , in ppm: 9.31 (s, 1H); 8.99 (d, 1H); 8.09 (d, 1H); 7.33 (m, 5H); 7.10 (m, 3H); 6.98 (m, 2H); 5.27 (s, 2H); 2.34 (s, 3H).  $^{13}\text{C}$  NMR (acetone- $d_6$ )  $\delta$ , in ppm: 143.3; 140.4; 140.4; 138.6; 138.1; 138.0; 137.7; 131.9; 130.9; 129.7; 128.7; 128.3; 128.2; 125.2; 124.6; 120.7; 119.1; 118.2; 118.1; 115.4; 115.3, 114.98, 115.0; 114.9; 76.8. IR (ATR-ZnSe) in  $\text{cm}^{-1}$ : 745; 770; 964, 1156; 1472; 1486; 1598; 1614. HRMS: M-1, 315.1477 ( $\text{C}_{21}\text{H}_{19}\text{N}_2\text{O}$ ).  $\Delta T_m = 19.0^\circ\text{C}$ . MTT  $\text{IC}_{50} = 20.7 \pm 0.5 \mu\text{M}$



acridine w/O-(3-methylbenzyl)hydroxylamine hydrochloride  
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C1 F6-18 Final



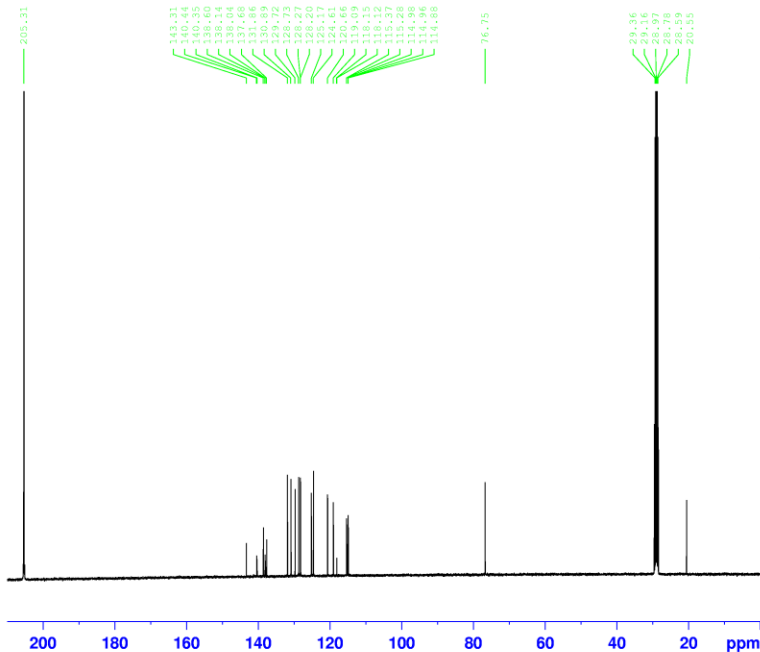
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acridine w/O-(3-methylbenzyl)hydroxylamine hydrochloride  
after chromatatron 1  
C1 F6-18 Final



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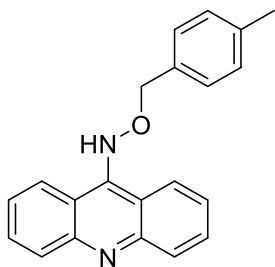
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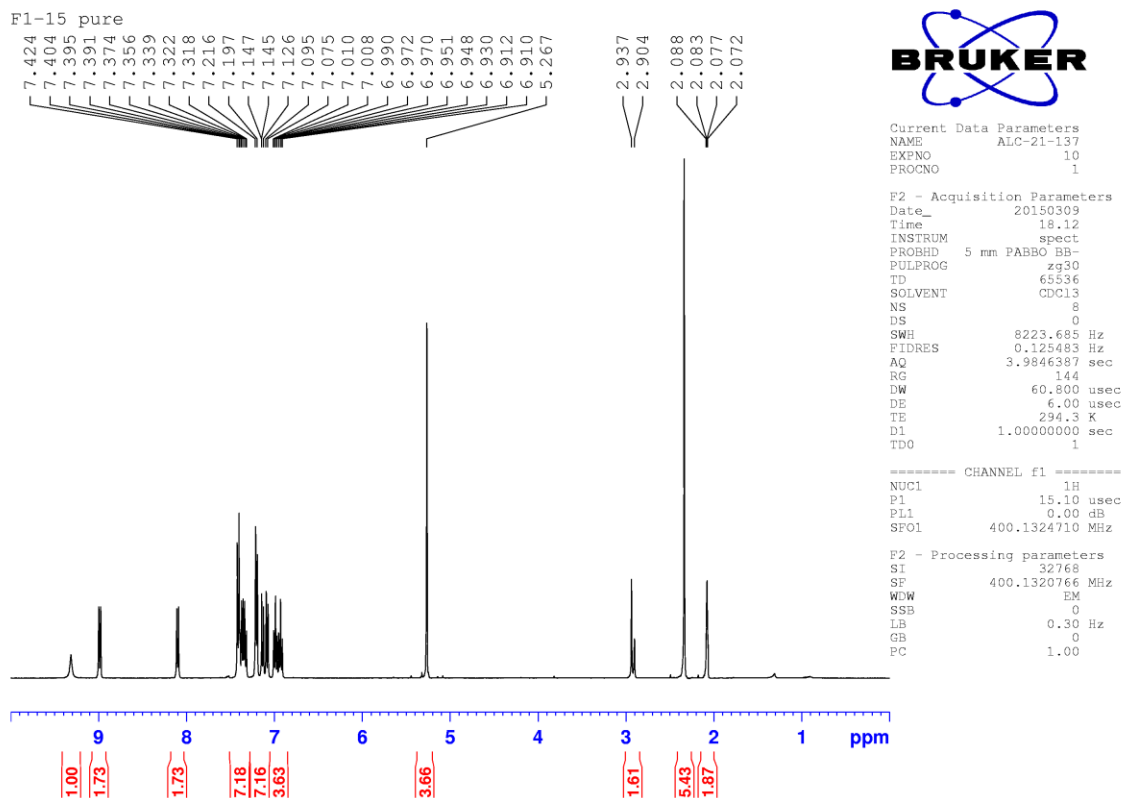
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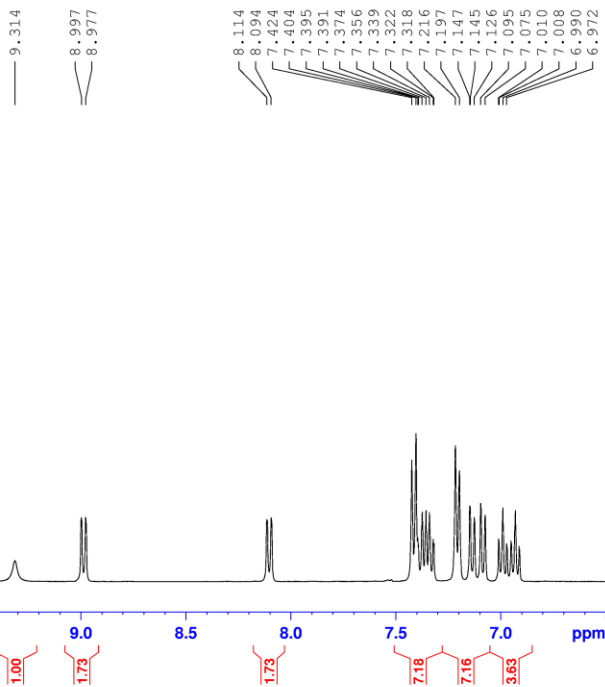


### O-(4-methylbenzyl)-N-(9'-acridinyl)-hydroxylamine, 6e

Yield: 40%. <sup>1</sup>HNMR (acetone-d<sub>6</sub>) δ, in ppm: 9.31 (s, 1H); 8.98 (m, 1H); 8.11 (m, 1H); 7.37 (m, 4H); 7.14 (m, 4H); 6.96 (m, 2H); 5.27 (s, 2H); 2.33 (s, 3H). <sup>13</sup>CNMR (acetone-d<sub>6</sub>) δ, in ppm: 143.2; 140.4; 138.1; 138.0; 137.1; 135.6; 131.8; 130.9; 129.7; 128.9; 128.2; 124.6; 120.7; 119.1; 119.1; 118.2; 115.4; 115.3; 115.0; 114.9; 76.6. IR (ATR-ZnSe) in cm<sup>-1</sup>: 746, 965, 1157, 1472. HRMS: M-1, 315.1490 (C<sub>21</sub>H<sub>19</sub>N<sub>2</sub>O). ΔT<sub>m</sub> = 19.0°C. MTT IC<sub>50</sub> = 22.2±1.7 μM.



F1-15 pure



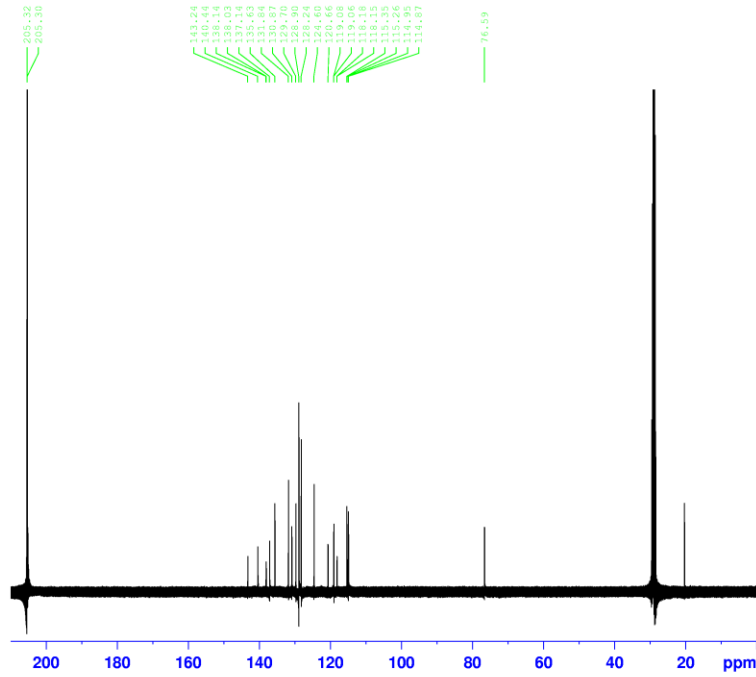
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F1-15 pure



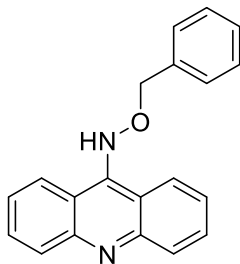
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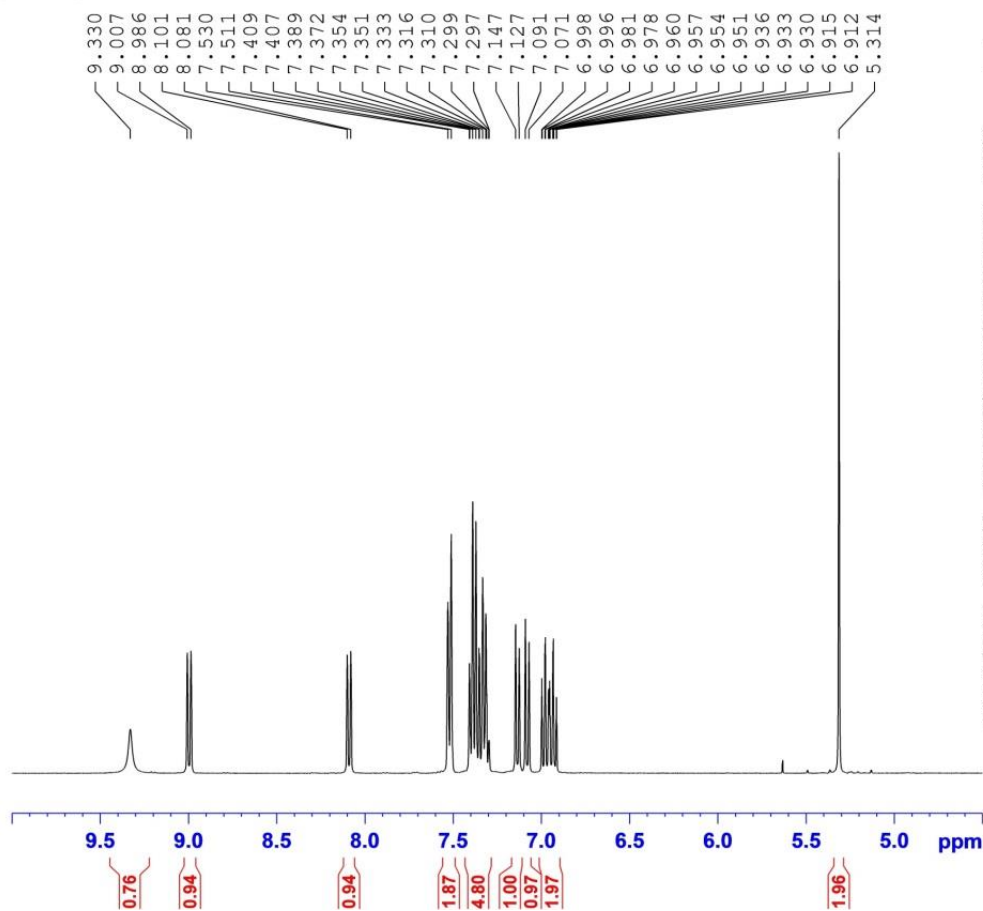
### O-benzyl-N-(9'-acridinyl)-hydroxylamine, **6f**

Yield: 16%.  $^1\text{H}$  NMR (acetone- $d_6$ )  $\delta$ , in ppm: 9.33 (s, 1H); 9.00 (m, 1H); 8.09 (m, 1H); 7.54 (m, 2H); 7.35 (m, 5H); 7.14 (m, 1H); 7.08 (m, 2H); 6.95 (m, 2H); 5.31 (s, 2H).

$^{13}\text{C}$  NMR (acetone- $d_6$ )  $\delta$ , in ppm: 143.40; 140.45; 138.76; 138.14; 131.84; 130.91; 129.74; 128.28; 128.03; 127.57; 124.61; 120.68; 119.11; 118.12; 115.39; 115.30; 114.97; 114.89; 76.65. IR (ATR-ZnSe) in  $\text{cm}^{-1}$ : 1473.

HRMS: M-1, 301.1341 ( $\text{C}_{20}\text{H}_{17}\text{N}_2\text{O}$ ). UV  $\lambda_{\text{max}}$ : 259 nm,  $A_{259} = 0.36471$ .  $\Delta T_m = 6.6^\circ\text{C}$ . MTT  $\text{IC}_{50} = 33.2 \pm 0.6 \mu\text{M}$ .

C2 F2-9

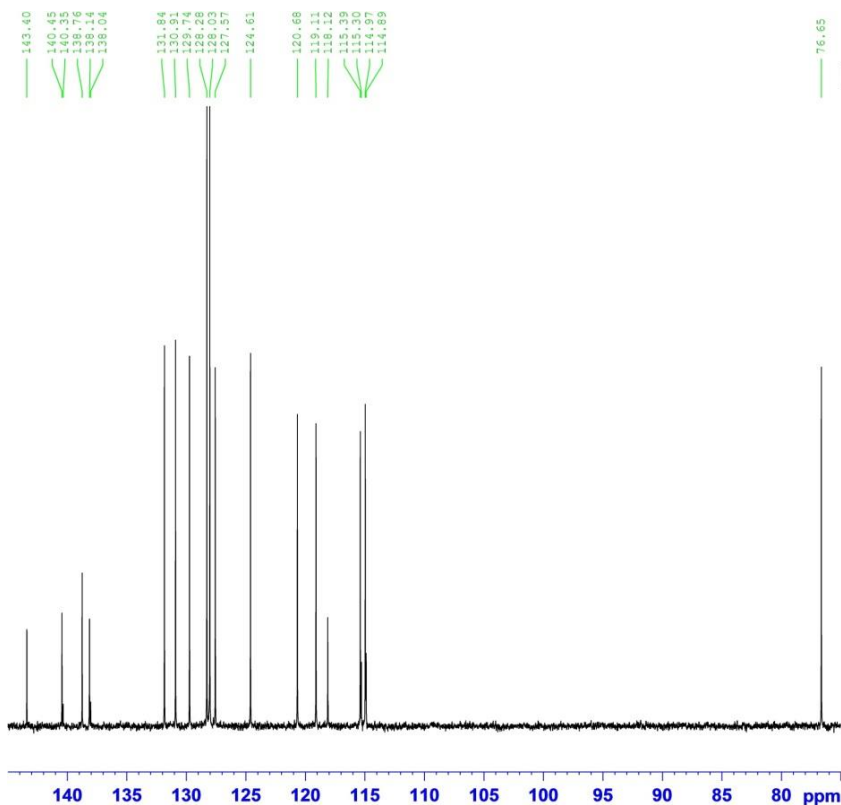


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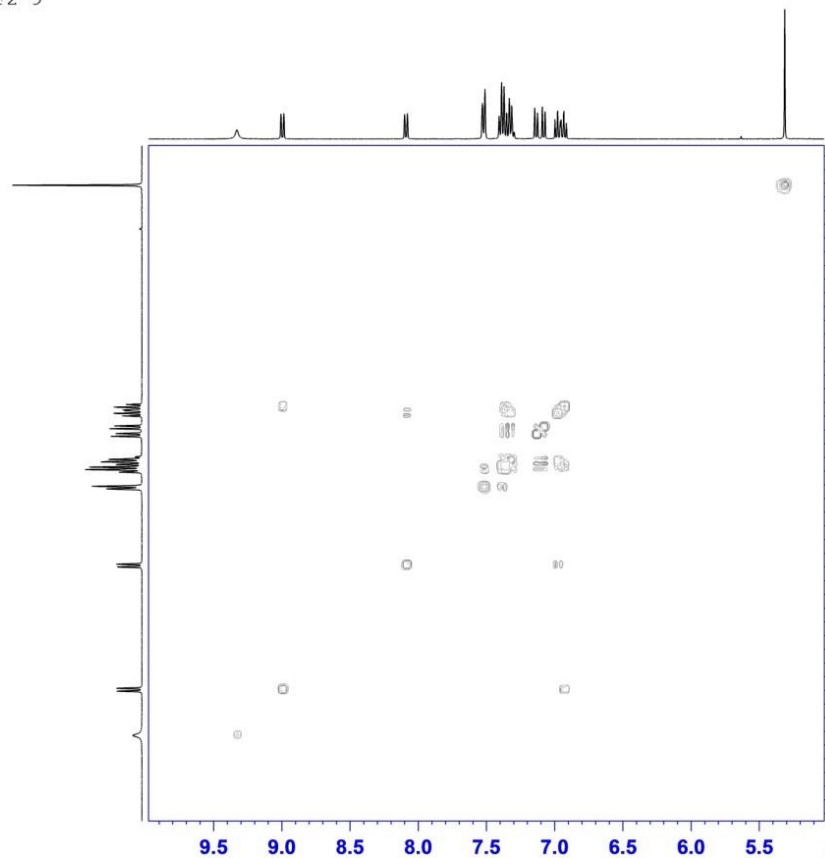
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 SFO1 100.6228298 Mhz

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 CPDPRG2 waltz16  
 NUC2 1H  
 PCPD2 70.00 usec  
 PL2 0.00 dB  
 PL12 13.44 dB  
 PL13 14.20 dB  
 SFO2 400.1316005 Mhz

F2 - Processing parameters  
 SI 32768  
 SF 100.6127690 Mhz  
 WDW EM  
 SSB 0  
 LB 1.00 Hz  
 GB 0  
 FC 1.40

C2 F2-9



Current Data Parameters  
 NAME ALC-21-118  
 EXPNO 23  
 PROCNO 1

F2 - Acquisition Parameters  
 Date 20141120  
 Time 13.13  
 INSTRUM spect  
 PROBHD 5 mm PABBO BB-  
 PULPROG cosyppqf  
 TD 2048  
 SOLVENT Acetone  
 NS 1  
 DS 0  
 SWH 5341.880 Hz  
 FIDRES 2.608340 Hz  
 AQ 0.1917428 sec  
 RG 64  
 DW 93.600 usec  
 DE 6.00 usec  
 TE 294.3 K  
 D0 0.00000300 sec  
 D1 1.48689198 sec  
 d13 0.00000400 sec  
 D16 0.00020000 sec  
 INO 0.00018720 sec

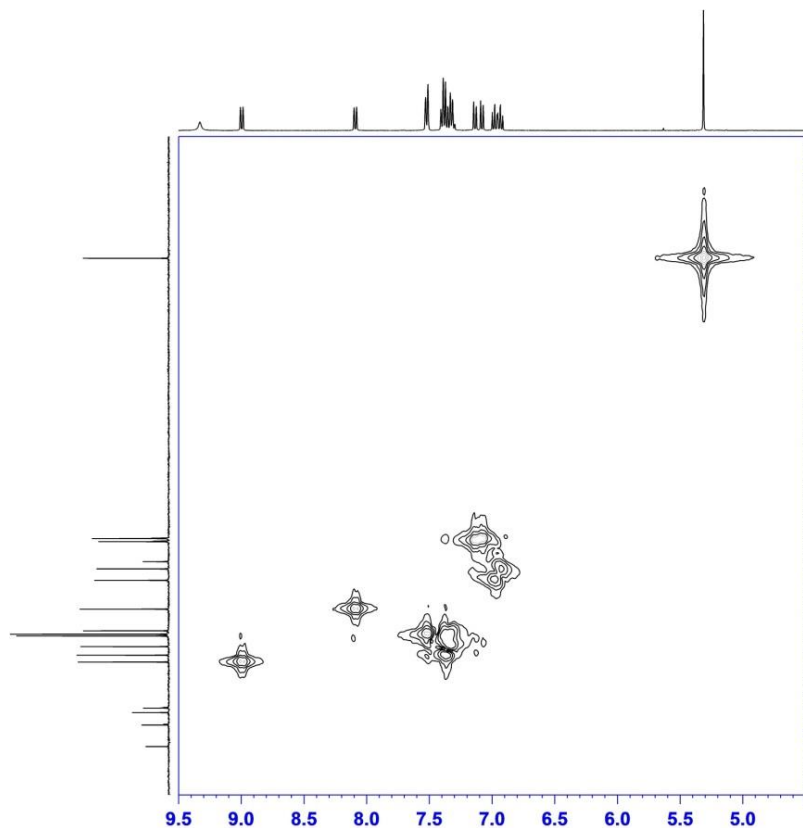
===== CHANNEL f1 =====  
 NUC1 1H  
 P0 14.90 usec  
 PL1 0.00 dB  
 SFO1 400.1324057 Mhz

===== GRADIENT CHANNEL =====  
 GPNAM1 SINE.100  
 GPNAM2 SINE.100  
 GPZ1 10.00 %  
 GPZ2 10.00 %  
 P16 1000.00 usec

F1 - Acquisition parameters  
 NDO 1  
 TD 128  
 SFO1 400.1324 Mhz  
 FIDRES 41.733440 Hz  
 SW 13.350 ppm  
 FMODE QF

F2 - Processing parameters  
 SI 1024  
 SF 400.1301110 Mhz  
 WDW SINE  
 SSB 0  
 LB 0.00 Hz  
 GB 0  
 PC 1.00

F1 - Processing parameters  
 SI 1024  
 MC2 QF  
 SF 400.1301112 Mhz  
 WDW SINE  
 SSB 0  
 LB 0.00 Hz  
 GB 0



Current Data Parameters  
 NAME AIC-21-118  
 EXPNO 25  
 PROCNO 1

F2 - Acquisition Parameters  
 Date\_ 20150311  
 Time 20.06  
 INSTRUM spect  
 PROBRD 5 mm F400 DD-  
 PULPROG hmcpsppmgf  
 TD 1024  
 SOLVENT Acetone  
 NS 4  
 DS 16  
 SWH 4045.307 Hz  
 FIDRES 3.904490 Hz  
 AQ 0.1246164 sec  
 RG 2050  
 LW 123.600 usec  
 DE 4.00 usec  
 TE 300.2 K  
 CMT2 145.000000  
 d0 0.0000000 sec  
 d1 1.5000000 sec  
 d2 0.0034428 sec  
 d12 0.0000200 sec  
 d13 0.0000400 sec  
 d14 0.0002000 sec  
 DELT1 0.0027428 sec  
 INO 0.0000300 sec

----- CHANNEL f1 -----  
 NUC1 1H  
 P1 15.10 usec  
 P2 30.20 usec  
 PL1 0.00 dB  
 SFO1 400.1318130 MHz

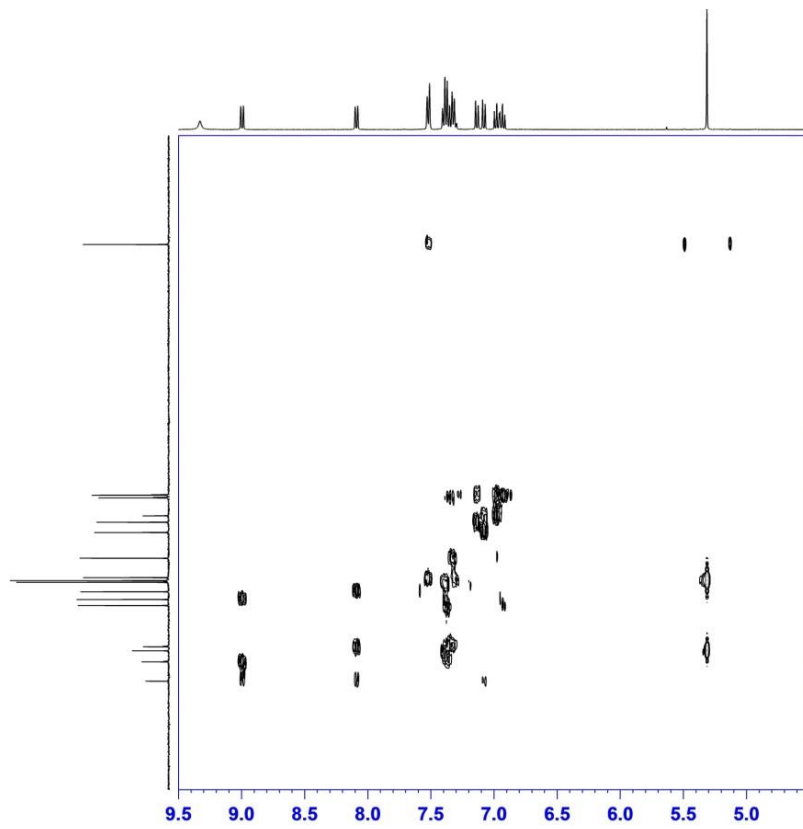
----- CHANNEL f2 -----  
 CPDPRG2 gssp  
 NUC2 13C  
 P3 9.55 usec  
 PCPD2 80.00 usec  
 PL2 -2.00 dB  
 PL12 16.46 dB  
 SFO2 100.6203140 MHz

----- GRADIENT CHANNEL -----  
 GPRAM1 SINE:100  
 STIM:100  
 GPRAM2 SINE:100  
 STIM:100  
 GPRAM3 SINE:100  
 STIM:100  
 GF1 50.00 %  
 GF2 30.00 %  
 GF3 40.10 %  
 P16 1000.00 usec

F1 - Acquisition parameters  
 MD 2  
 TD 128  
 SFO1 100.6203 MHz  
 FIDRES 130.238328 Hz  
 SW 165.639 ppm  
 FMODE QF

F2 - Processing parameters  
 SI 1024  
 SF 400.1300000 MHz  
 WDW SINE  
 SSB 0  
 LB 0.00 Hz  
 GB 0  
 PC 1.40

F1 - Processing parameters  
 SI 1024  
 MC2 QF  
 SF 100.6127690 MHz  
 WDW SINE  
 SSB 0  
 LB 0.00 Hz  
 GB 0



Current Data Parameters  
 NAME AIC-21-118  
 EXPNO 26  
 PROCNO 1

F2 - Acquisition Parameters  
 Date\_ 20150312  
 Time 10.32  
 INSTRUM spect  
 PROBRD 5 mm F400 DD-  
 PULPROG hmcpsppmgf  
 TD 1024  
 SOLVENT Acetone  
 NS 8  
 DS 16  
 SWH 5208.333 Hz  
 FIDRES 1.271546 Hz  
 AQ 0.3932660 sec  
 RG 2050  
 LW 96.000 usec  
 DE 6.00 usec  
 TE 293.8 K  
 CMT2 145.000000  
 CMT13 10.000000  
 d0 0.0000000 sec  
 d1 1.5000000 sec  
 d2 0.0034428 sec  
 d5 0.0000000 sec  
 D16 0.0002000 sec  
 INO 0.0000240 sec

----- CHANNEL f1 -----  
 NUC1 1H  
 P1 15.10 usec  
 P2 30.20 usec  
 PL1 0.00 dB  
 SFO1 400.132209 MHz

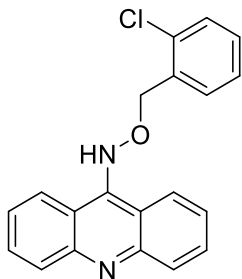
----- CHANNEL f2 -----  
 NUC2 13C  
 P3 9.55 usec  
 PL2 -2.00 dB  
 SFO2 100.6228139 MHz

----- GRADIENT CHANNEL -----  
 GPRAM1 SINE:100  
 STIM:100  
 GPRAM2 SINE:100  
 STIM:100  
 GPRAM3 SINE:100  
 STIM:100  
 GF1 50.00 %  
 GF2 30.00 %  
 GF3 40.10 %  
 P16 1000.00 usec

F1 - Acquisition parameters  
 MD 2  
 TD 128  
 SFO1 100.6228 MHz  
 FIDRES 174.366154 Hz  
 SW 221.833 ppm  
 FMODE QF

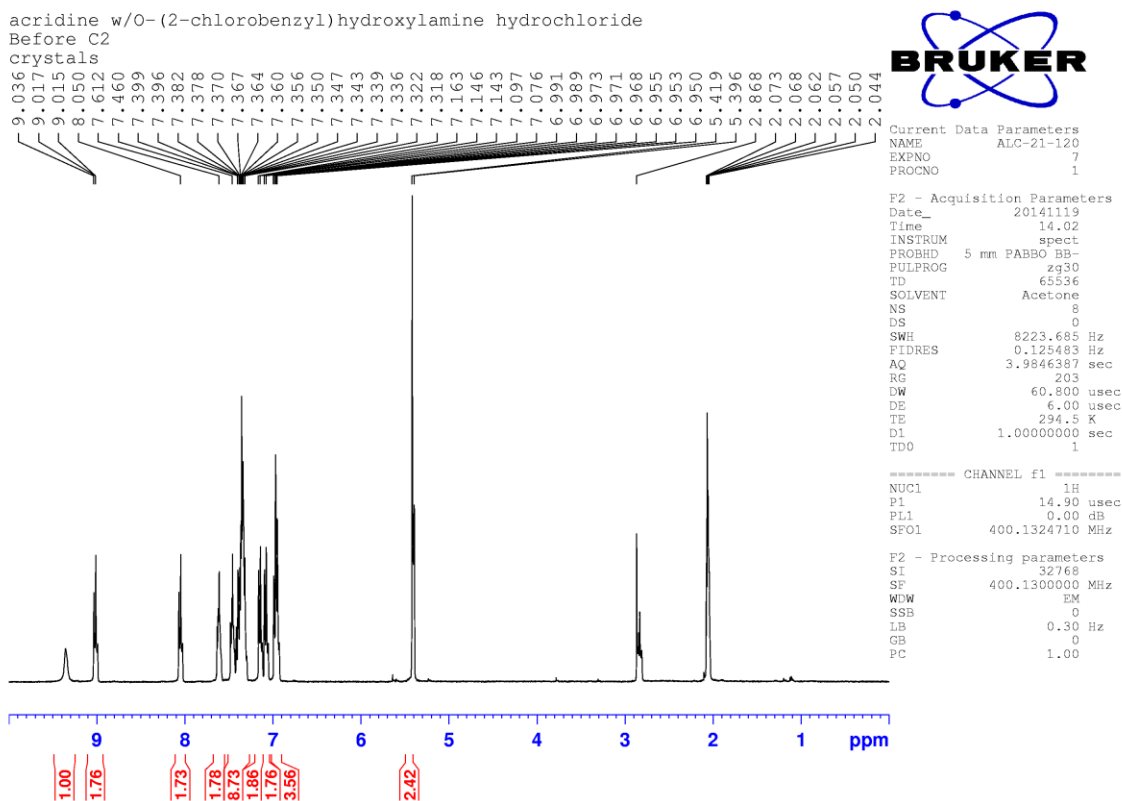
F2 - Processing parameters  
 SI 2048  
 SF 400.1300000 MHz  
 WDW SINE  
 SSB 0  
 LB 0.00 Hz  
 GB 0  
 PC 1.40

F1 - Processing parameters  
 SI 1024  
 MC2 QF  
 SF 100.6127690 MHz  
 WDW SINE  
 SSB 0  
 LB 0.00 Hz  
 GB 0

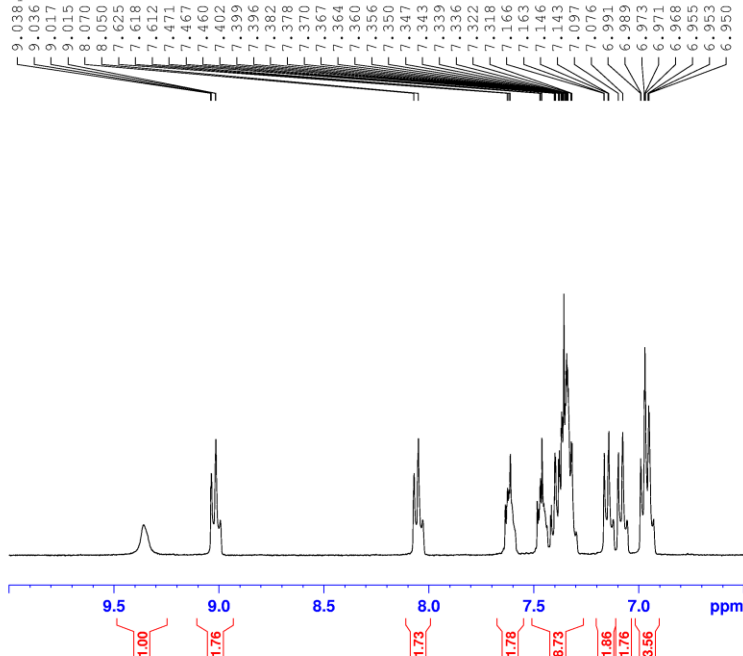


### O-(2-chlorobenzyl)-N-(9'-acridinyl)-hydroxylamine, 6g

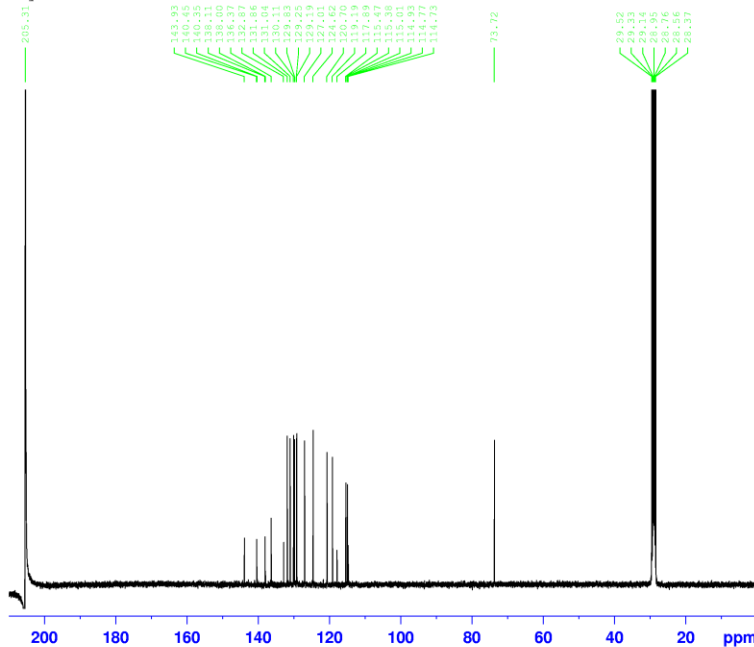
Yield: 15%.  $^1\text{H}$ NMR (acetone- $d_6$ )  $\delta$ , in ppm: 9.37 (s, 1H); 9.02 (m, 2H); 8.05 (m, 2H); 7.61 (m, 2H); 7.36 (m, 8H); 7.15 (m, 2H); 7.09 (m, 1H); 6.97 (m, 3H); 5.05 (s, 2H).  $^{13}\text{C}$ NMR (acetone- $d_6$ )  $\delta$ , in ppm: 143.9; 140.4; 140.4; 138.1; 138.0; 136.4; 132.9; 131.9; 131.0; 130.1; 129.8; 129.2; 129.2; 127.0; 124.6; 120.7; 119.2; 117.9; 115.5; 115.4; 115.0; 114.9; 114.8; 73.7. IR (ATR-ZnSe) in  $\text{cm}^{-1}$ : 746 1474. HRMS: M-1, 335.0952 ( $\text{C}_{20}\text{H}_{16}\text{N}_2\text{OCl}$ ).  $\Delta T_m = 18.2^\circ\text{C}$ . MTT IC $_{50} = 17.4 \pm 0.2 \mu\text{M}$ .

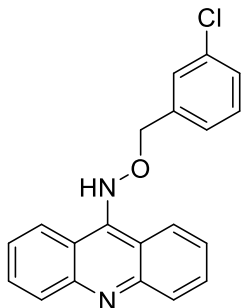


acridine w/O-(2-chlorobenzyl)hydroxylamine hydrochloride  
Before C2  
crystals



acridine w/O-(2-chlorobenzyl)hydroxylamine hydrochloride  
Before C2  
crystals

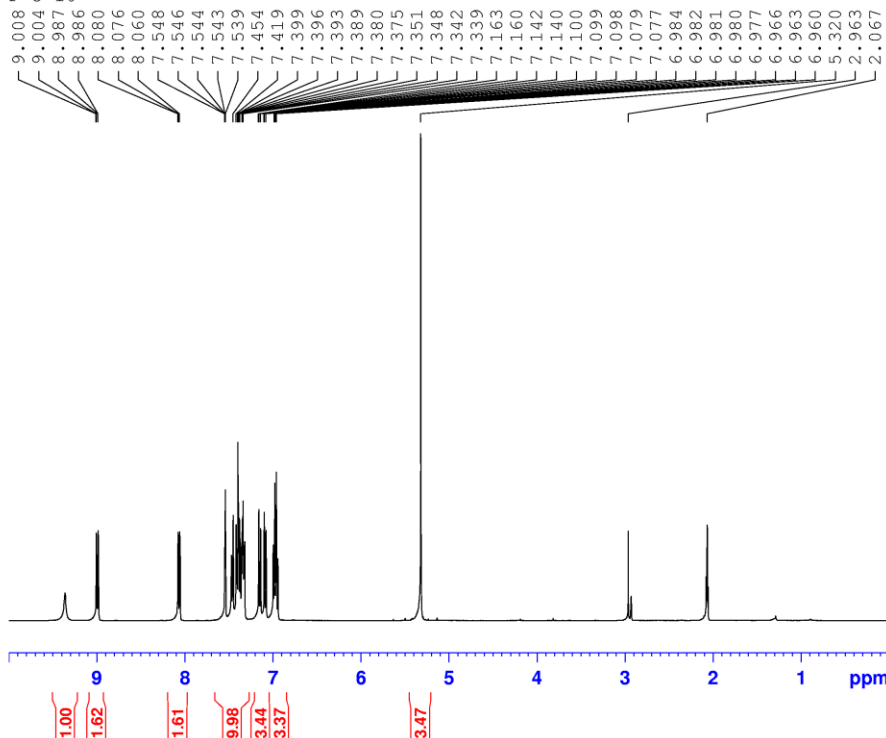




### O-(3-chlorobenzyl)-N-(9'-acridinyl)-hydroxylamine, 6h

Yield: 46%.  $^1\text{H}$ NMR (acetone- $d_6$ )  $\delta$ , in ppm: 9.37 (s, 1H); 9.00 (m, 1H); 8.08 (m, 1H); 7.40 (m, 6H); 7.10 (m, 2H); 6.98 (m, 2H); 5.32 (s, 2H).  $^{13}\text{C}$ NMR (acetone- $d_6$ )  $\delta$ , in ppm: 143.8; 141.5; 140.4; 140.4; 138.1; 138.0; 133.6; 131.8; 131.0; 130.0; 129.8; 127.8; 127.5; 126.3; 124.6; 120.7; 119.2; 117.9; 117.9; 115.5; 115.4; 115.04; 115.0; 114.8; 114.8; 75.6. IR (ATR-ZnSe) in  $\text{cm}^{-1}$ : 747, 1474. HRMS: M-1, 335.0948 ( $\text{C}_{20}\text{H}_{16}\text{N}_2\text{OCl}$ ).  $\Delta T_m = 18.5^\circ\text{C}$ . MTT  $\text{IC}_{50} = 18.0 \pm 0.2 \mu\text{M}$

acridine w/O-(3-chlorobenzyl)hydroxylamine hydrochloride  
after chromatatron  
F 3-10



Current Data Parameters  
NAME ALC-PS-09-92  
EXPNO 2  
PROCNO 1

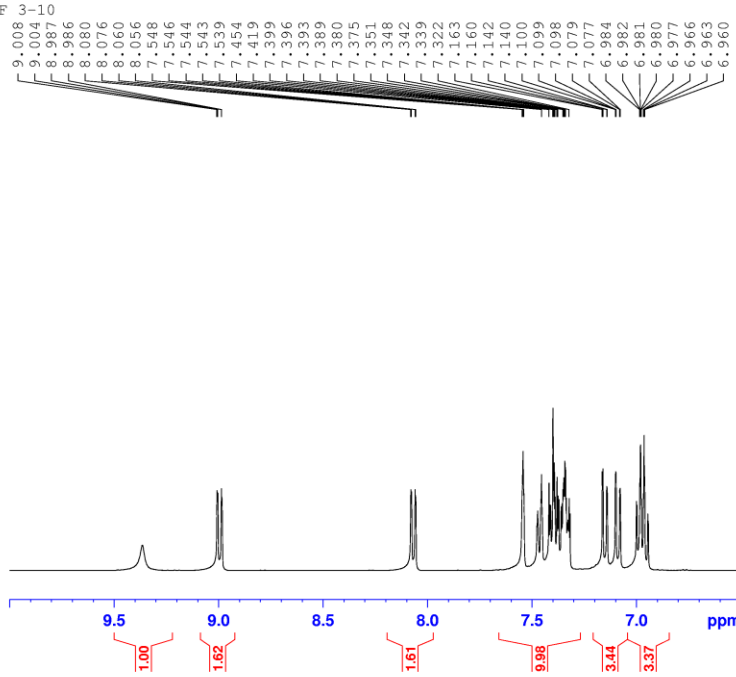
F2 - Acquisition Parameters  
Date\_ 20150308  
Time 17.43  
INSTRUM spect  
PROBHD 5 mm PABBO BB-  
PULPROG zg30  
TD 65536  
SOLVENT Acetone  
NS 16  
DS 0  
SWH 8223.685 Hz  
FIDRES 0.125483 Hz  
AQ 3.9846387 sec  
RG 101  
DW 60.800 usec  
DE 6.00 usec  
TE 293.4 K  
D1 1.0000000 sec  
TD0 1

----- CHANNEL f1 -----  
NUC1 1H  
P1 15.10 usec  
PL1 0.00 dB  
SFO1 400.1324710 MHz

F2 - Processing parameters  
SI 32768  
SF 400.1300000 MHz  
WDW EM  
SSB 0  
LB 0.30 Hz  
GB 0  
PC 1.00



acridine w/O-(3-chlorobenzyl)hydroxylamine hydrochloride  
after chromatatron  
F 3-10

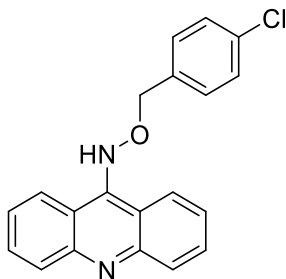


Current Data Parameters  
NAME ALC-PS-09-92  
EXPNO 2  
PROCNO 1

F2 - Acquisition Parameters  
Date\_ 20150308  
Time 17.43  
INSTRUM spect  
PROBHD 5 mm PABBO BB-  
PULPROG zg30  
TD 65536  
SOLVENT Acetone  
NS 16  
DS 0  
SWE 8223.685 Hz  
FIDRES 0.125483 Hz  
AQ 3.9846387 sec  
RG 101  
DW 60.800 usec  
DE 6.00 usec  
TE 293.4 K  
D1 1.00000000 sec  
TDO 1

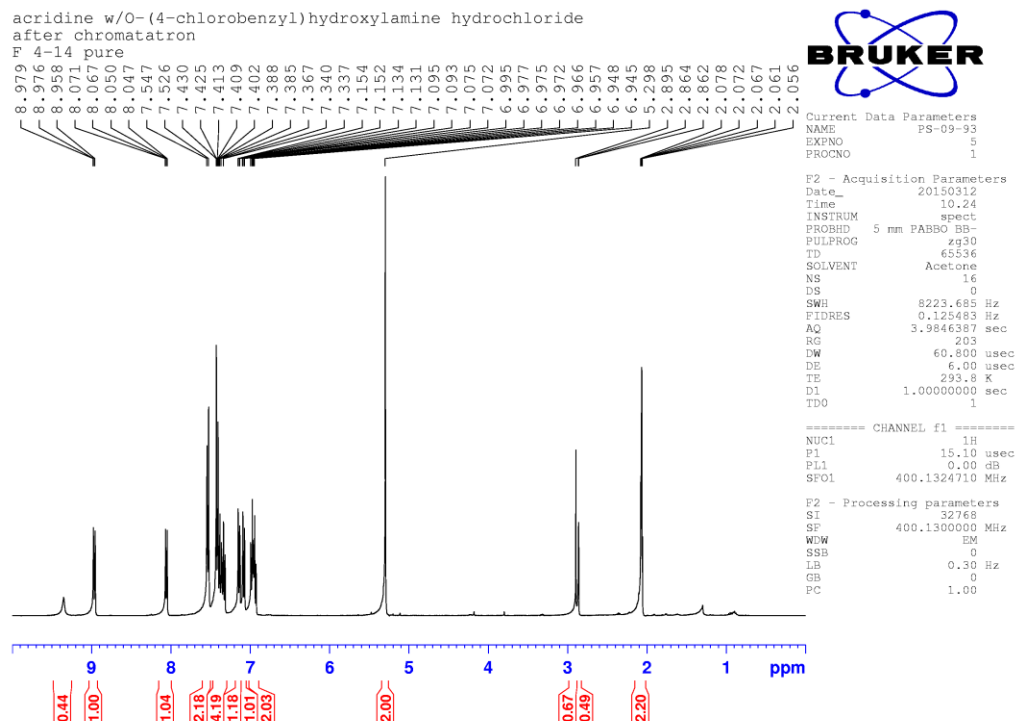
===== CHANNEL f1 =====  
NUC1 1H  
P1 15.10 usec  
PL1 0.00 dB  
SFO1 400.1324710 MHz

F2 - Processing parameters  
SI 32768  
SF 400.1300000 MHz  
WDW EM  
SSB 0  
LB 0.30 Hz  
GB 0  
PC 1.00



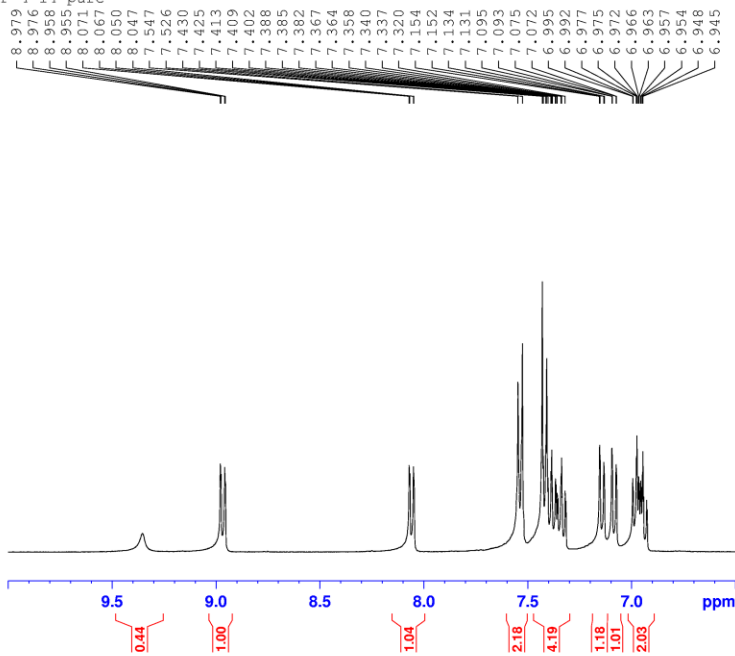
### O-(4-chlorobenzyl)-N-(9'-acridinyl)-hydroxylamine, 6i

Yield: 30%.  $^1\text{H}$ NMR (acetone- $d_6$ )  $\delta$ , in ppm: 9.34 (s, 1H); 8.98 (m, 1H); 8.06 (m, 1H); 7.54 (m, 2H); 7.40 (m, 4H); 7.14 (m, 1H); 7.08 (m, 1H); 6.97 (m, 2H); 5.30 (s, 2H).  $^{13}\text{C}$ NMR (acetone- $d_6$ )  $\delta$ , in ppm: 143.7; 140.4; 140.4; 138.1; 138.0; 137.8; 132.8; 131.8; 131.0; 129.8; 129.8; 128.3; 124.6; 120.7; 119.2; 118.0; 118.0; 115.4; 115.4; 115.0; 114.9; 114.8; 114.8; 75.6. IR (ATR-ZnSe) in  $\text{cm}^{-1}$ : 747; 964; 1473; 1489; 1598. HRMS: M-1, 335.0951 ( $\text{C}_{20}\text{H}_{16}\text{N}_2\text{OCl}$ ).  $\Delta T_m = 20.2^\circ\text{C}$ . MTT  $\text{IC}_{50} = 17.0 \pm 0.4 \mu\text{M}$ .



acridine w/O-(4-chlorobenzyl)hydroxylamine hydrochloride  
after chromatatron

F 4-14 pure



Current Data Parameters  
NAME PS-09-93  
EXPNO 5  
PROCNO 1

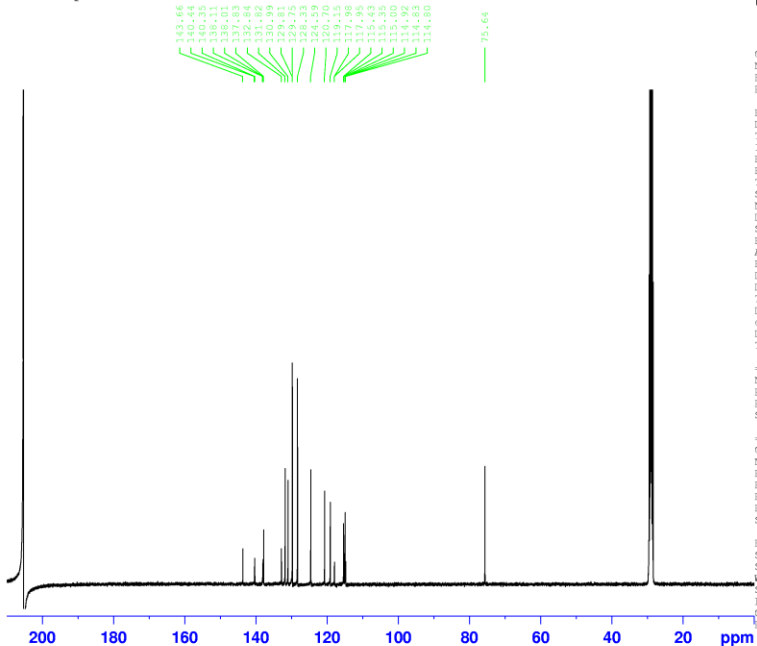
F2 - Acquisition Parameters  
Date\_ 20150312  
Time 10.24  
INSTRUM spect  
PROBHD 5 mm PABBO BB-  
PULPROG zg30  
TD 65536  
SOLVENT Acetone  
NS 16  
DS 0  
SWH 8223.685 Hz  
FIDRES 0.125483 Hz  
AQ 3.9846387 sec  
RG 203  
DW 60.800 usec  
DE 6.00 usec  
TE 293.8 K  
D1 1.0000000 sec  
TDO 1

===== CHANNEL f1 =====  
NUC1 1H  
P1 15.10 usec  
PL1 0.00 dB  
SFO1 400.1324710 MHz

F2 - Processing parameters  
SI 32768  
SF 400.1300000 MHz  
WDW EM  
SSB 0  
LB 0.30 Hz  
GB 0  
PC 1.00

acridine w/O-(4-chlorobenzyl)hydroxylamine hydrochloride  
after chromatatron

F 4-14 pure



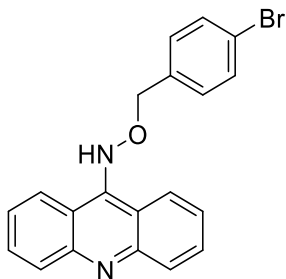
Current Data Parameters  
NAME PS-09-93  
EXPNO 4  
PROCNO 1

F2 - Acquisition Parameters  
Date\_ 20150312  
Time 6.13  
INSTRUM spect  
PROBHD 5 mm PABBO BB-  
PULPROG zgpg30  
TD 65536  
SOLVENT Acetone  
NS 10000  
DS 0  
SWH 24038.461 Hz  
FIDRES 0.366798 Hz  
AQ 1.3631988 sec  
RG 40.3  
DW 20.800 usec  
DE 6.00 usec  
TE 295.5 K  
D1 2.0000000 sec  
d11 0.0300000 sec  
DELTA 1.89999998 sec  
TDO 1

===== CHANNEL f1 =====  
NUC1 13C  
P1 9.55 usec  
PL1 -2.00 dB  
SFO1 100.6228298 MHz

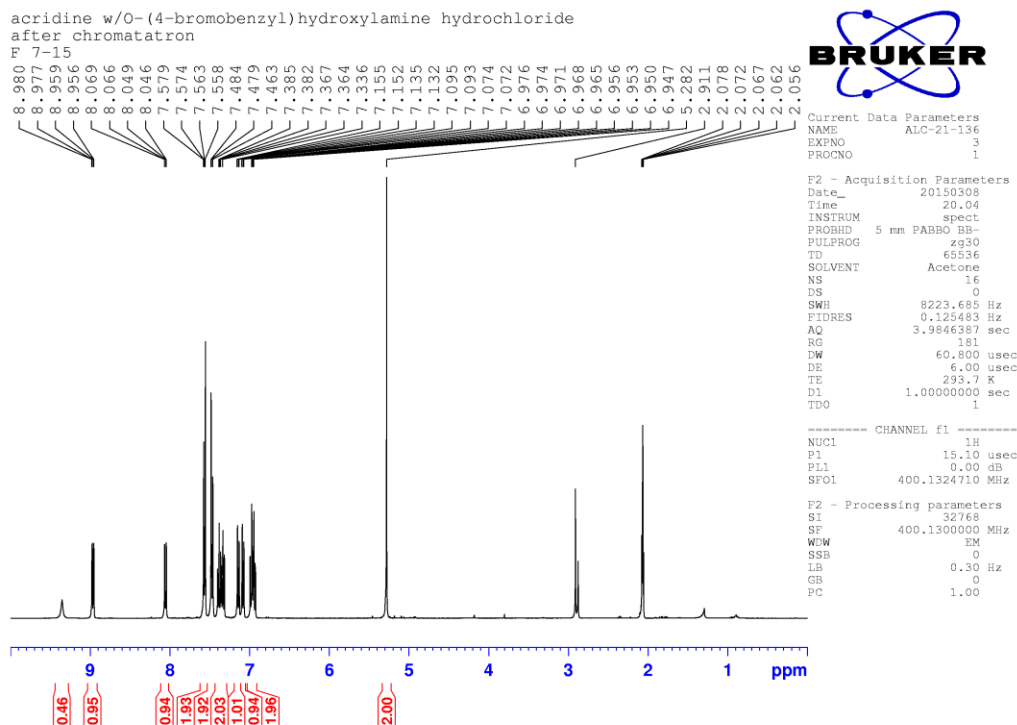
===== CHANNEL f2 =====  
CPDPRG2 waltz16  
NUC2 1H  
PCPD2 70.00 usec  
PL2 0.00 dB  
PL12 13.32 dB  
PL13 14.20 dB  
SFO2 400.1316005 MHz

F2 - Processing parameters  
SI 32768  
SF 100.6127690 MHz  
WDW EM  
SSB 0  
LB 1.00 Hz  
GB 0  
PC 1.40

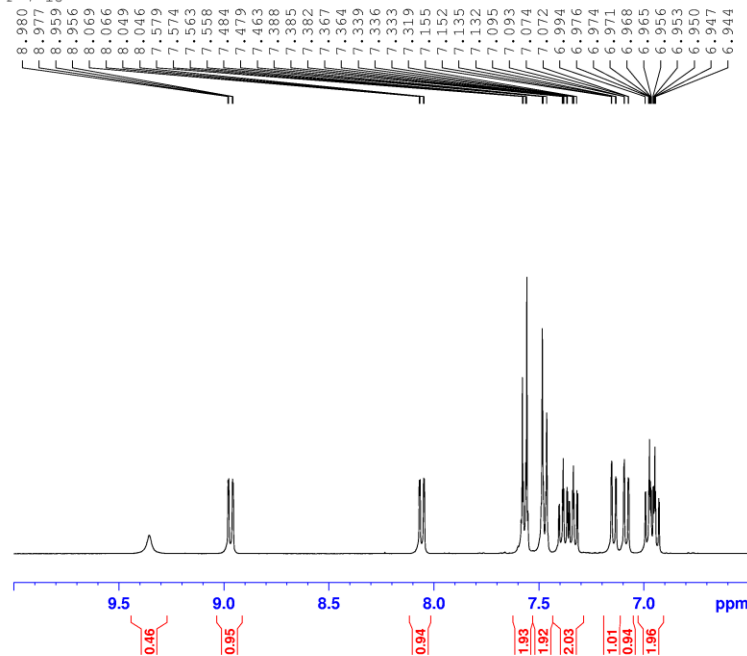


### O-(4-bromobenzyl)-N-(9'-acridinyl)-hydroxylamine, 6j

Yield: 51%.  $^1\text{H}$ NMR (acetone- $d_6$ )  $\delta$ , in ppm: 9.34 (s, 1H); 8.97 (m, 1H); 8.06 (m, 1H); 7.57 (m, 2H); 7.48 (m, 2H); 7.37 (m, 2H); 7.14 (m, 1H); 7.08 (m, 1H); 6.96 (m, 2H); 5.28 (s, 2H).  $^{13}\text{C}$ NMR (acetone- $d_6$ )  $\delta$ , in ppm: 143.7; 140.4; 140.4; 138.3; 138.1; 138.0; 131.8; 131.3; 131.0; 130.1; 129.8; 124.6; 121.0; 120.7; 119.2; 118.0; 117.9; 115.4; 115.4; 115.0; 114.9; 114.8; 114.8; 75.7 ppm. IR (ATR ZnSe) in  $\text{cm}^{-1}$ : 747; 964; 1008; 1473; 1486. HRMS: M-1, 379.0421 ( $\text{C}_{20}\text{H}_{16}\text{N}_2\text{OBr}$ ).  $\Delta T_m = 18.1^\circ\text{C}$ . MTT  $\text{IC}_{50} = 18.5 \pm 4.3 \mu\text{M}$



acridine w/O-(4-bromobenzyl)hydroxylamine hydrochloride  
after chromatatron  
F 7-15



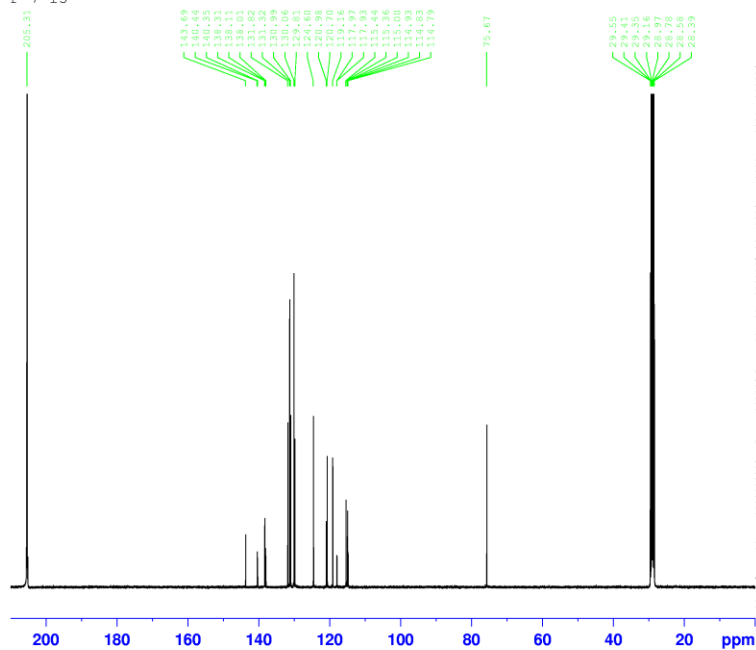
Current Data Parameters  
NAME ALC-21-136  
EXPNO 3  
PROCNO 1

F2 - Acquisition Parameters  
Date\_ 20150308  
Time 20.04  
INSTRUM spect  
PROBHD 5 mm PABBO BB-  
PULPROG zg30  
TD 65536  
SOLVENT Acetone  
NS 16  
DS 0  
SWH 8223.685 Hz  
FIDRES 0.125483 Hz  
AQ 3.9846387 sec  
RG 181  
DW 60.800 usec  
DE 6.00 usec  
TE 293.7 K  
D1 1.00000000 sec  
TDO 1

===== CHANNEL f1 =====  
NUC1 1H  
P1 15.10 usec  
PL1 0.00 dB  
SFO1 400.1324710 MHz

F2 - Processing parameters  
SI 32768  
SF 400.1300000 MHz  
WDW EM  
SSB 0  
LB 0.30 Hz  
GB 0  
PC 1.00

acridine w/O-(4-bromobenzyl)hydroxylamine hydrochloride  
after chromatatron  
F 7-15



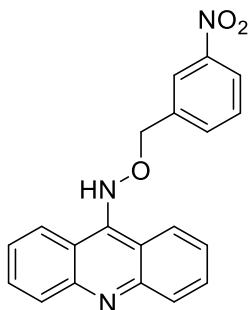
Current Data Parameters  
NAME ALC-21-136  
EXPNO 4  
PROCNO 1

F2 - Acquisition Parameters  
Date\_ 20150309  
Time 7.38  
INSTRUM spect  
PROBHD 5 mm PABBO BB-  
PULPROG zgpg30  
TD 65536  
SOLVENT Acetone  
NS 12000  
DS 0  
SWH 24038.461 Hz  
FIDRES 0.366798 Hz  
AQ 1.3631988 sec  
RG 50.8  
DW 20.800 usec  
DE 6.00 usec  
TE 295.4 K  
D1 2.00000000 sec  
d11 0.03000000 sec  
DELTA 1.89999998 sec  
TDO 1

===== CHANNEL f1 =====  
NUC1 13C  
P1 9.55 usec  
PL1 -2.00 dB  
SFO1 100.6228298 MHz

===== CHANNEL f2 =====  
CPDPRG2 waltz16  
NUC2 1H  
PCPD2 70.00 usec  
PL2 0.00 dB  
PL12 13.32 dB  
PL13 14.20 dB  
SFO2 400.1316005 MHz

F2 - Processing parameters  
SI 32768  
SF 100.6127630 MHz  
WDW EM  
SSB 0  
LB 1.00 Hz  
GB 0  
PC 1.40

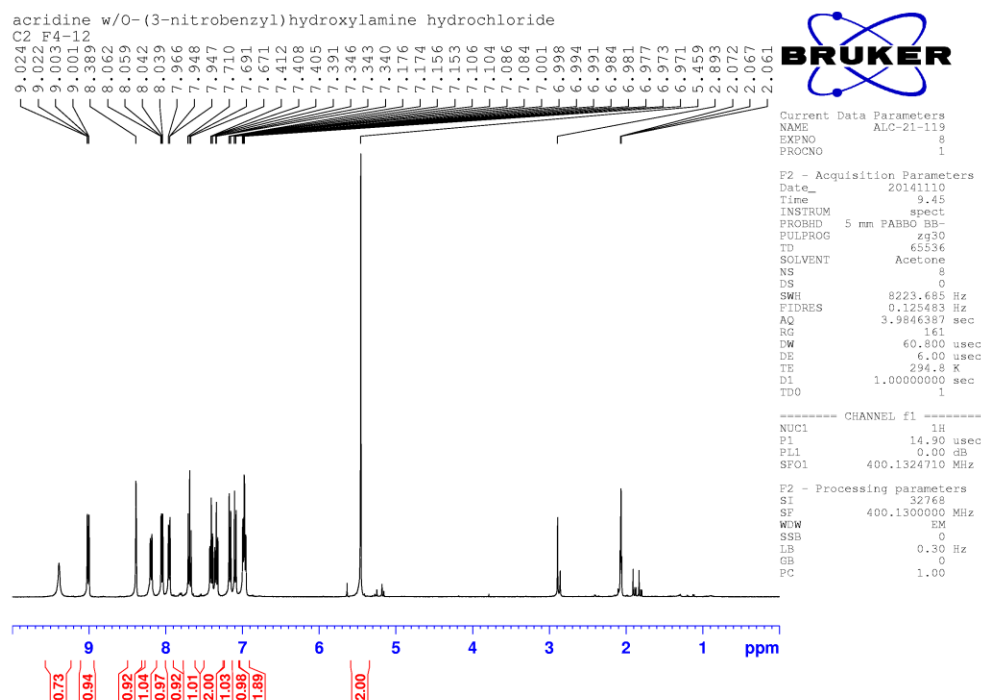


### O-(3-nitrobenzyl)-N-(9'-acridinyl)-hydroxylamine, 6k

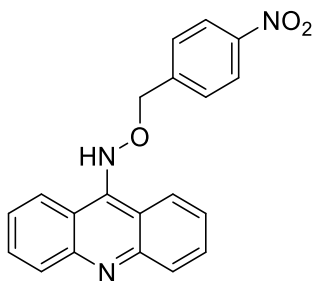
Yield: 41%. <sup>1</sup>HNMR (acetone-d<sub>6</sub>) δ, in ppm: 9.40 (s, 1H); 9.01 (s, 1H); 8.39 (s, 1H); 8.18 (m, 1H); 8.05 (m, 1H); 7.95 (m, 1H); 7.69 (m, 1H); 7.39 (m, 2H); 7.16 (m, 1H); 7.10 (m, 1H); 6.98 (m, 2H); 5.46 (s, 2H).

<sup>13</sup>CNMR (acetone-d<sub>6</sub>) δ, in ppm: 148.36; 144.21; 141.46; 140.46; 138.10; 134.13; 131.83; 131.12; 129.93; 129.64; 124.60; 122.45; 122.34; 120.75; 119.25; 117.79; 117.76; 115.54; 115.46; 115.07; 114.99; 114.69; 114.65; 75.08. IR (ATR ZnSe) in cm<sup>-1</sup>: 963; 1346; 1473; 1524; 1615. HRMS: M-1, 346.1194

(C<sub>20</sub>H<sub>16</sub>N<sub>3</sub>O<sub>3</sub>).. ΔT<sub>m</sub> = 15.1°C. MTT IC<sub>50</sub> = 31.8±0.1μM

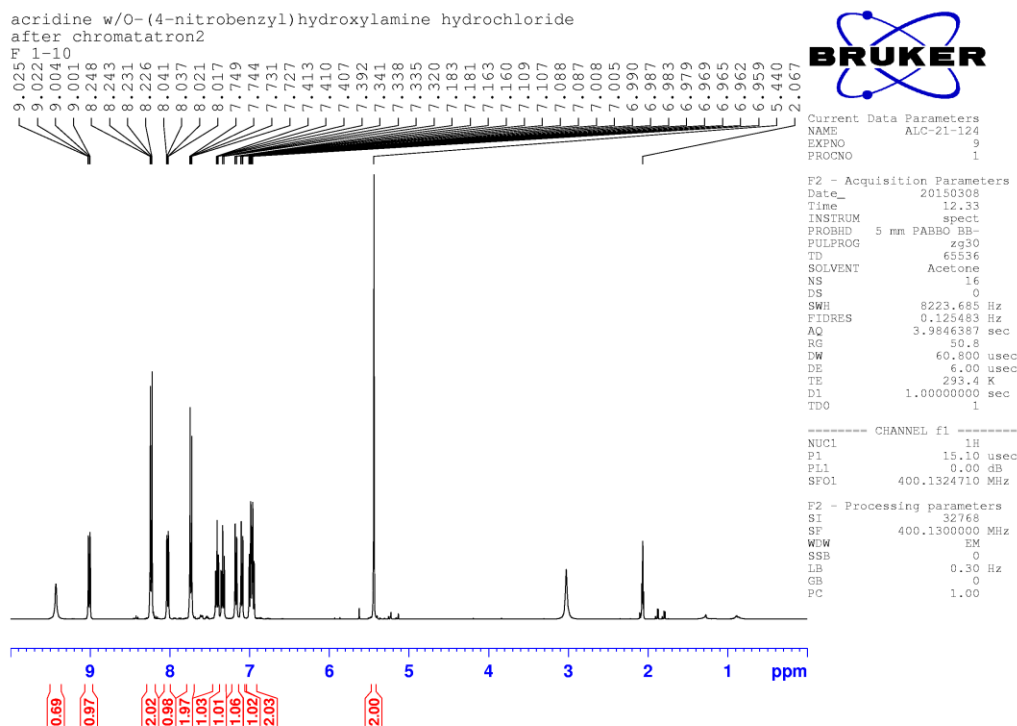






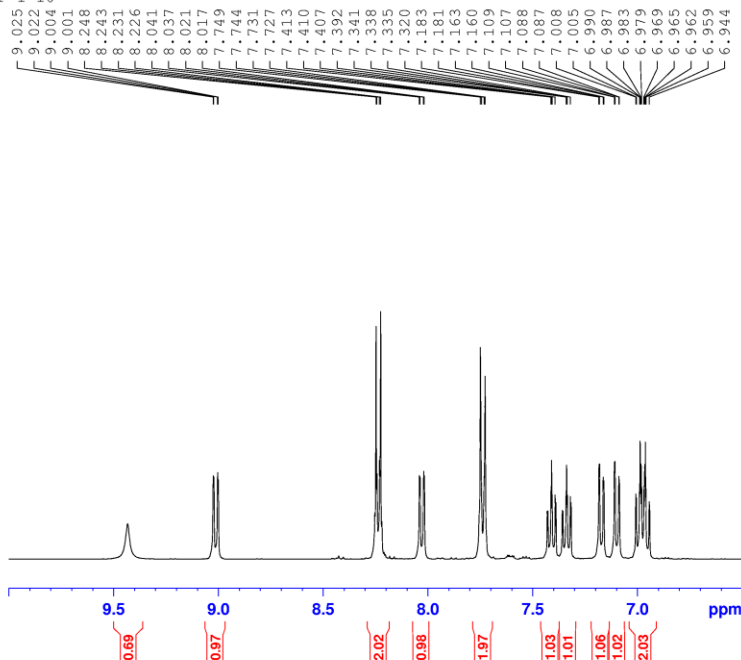
### O-(4-nitrobenzyl)-N-(9'-acridinyl)-hydroxylamine, 6l

Yield: 38%.  $^1\text{H}$ NMR (acetone- $d_6$ )  $\delta$ , in ppm: 9.43 (s, 1H); 9.01 (m, 1H); 8.24 (m, 2H); 8.03 (m, 1H); 7.74 (m, 2H); 7.41 (m, 1H); 7.34 (m, 1H); 7.17 (m, 1H); 7.10 (m, 1H); 6.98 (m, 2H); 5.44 (s, 2H).  $^{13}\text{C}$ NMR (acetone- $d_6$ )  $\delta$ , in ppm: 147.4; 146.9; 144.2; 140.5; 140.4; 138.1; 138.0; 131.8; 131.1; 129.9; 128.4; 123.4; 120.8; 119.3; 117.7; 117.7; 115.6; 115.5; 115.1; 115.0; 114.7; 114.6; 75.1. IR (ATR ZnSe) in  $\text{cm}^{-1}$ : 748; 1342; 1474; 1518. HRMS: M-1, 346.1172 ( $\text{C}_{20}\text{H}_{16}\text{N}_3\text{O}_3$ ). MTT  $\text{IC}_{50}$  =  $30.3 \pm 1.4 \mu\text{M}$





acridine w/O-(4-nitrobenzyl)hydroxylamine hydrochloride  
after chromatatron2  
F 1-10



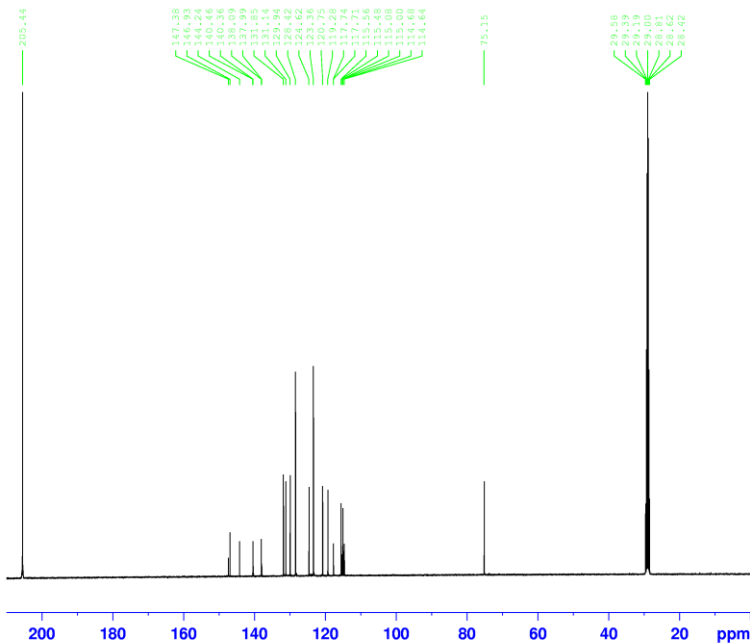
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PROCNO 1

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DS 0  
SWH 8223.685 Hz  
FIDRES 0.125483 Hz  
AQ 3.9846387 sec  
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LW 60.800 usec  
DE 6.00 usec  
TE 293.4 K  
DI 1.00000000 sec  
TDO 1

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F2 - Processing parameters  
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GB 0  
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acridine w/O-(4-nitrobenzyl)hydroxylamine hydrochloride  
after chromatatron2  
F 1-10



Current Data Parameters  
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PROCNO 1

F2 - Acquisition Parameters  
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FIDRES 0.366798 Hz  
AQ 1.3631988 sec  
RG 50.8  
LW 20.800 usec  
DE 6.00 usec  
TE 295.0 K  
DI 2.00000000 sec  
d11 0.03000000 sec  
DELTA 1.89999998 sec  
TDO 1

----- CHANNEL f1 -----  
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P1 9.55 usec  
PL1 2.00 dB  
SFO1 100.6228298 MHz

----- CHANNEL f2 -----  
CPDPRG2 waltz16  
NUC2 1H  
PCPD2 70.00 usec  
PL2 0.00 dB  
PL12 13.32 dB  
PL13 14.20 dB  
SFO2 400.1316005 MHz

F2 - Processing parameters  
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