

Supplementary information 2

Accessible protocol for asymmetric hydroformylation of vinylarenes using formaldehyde

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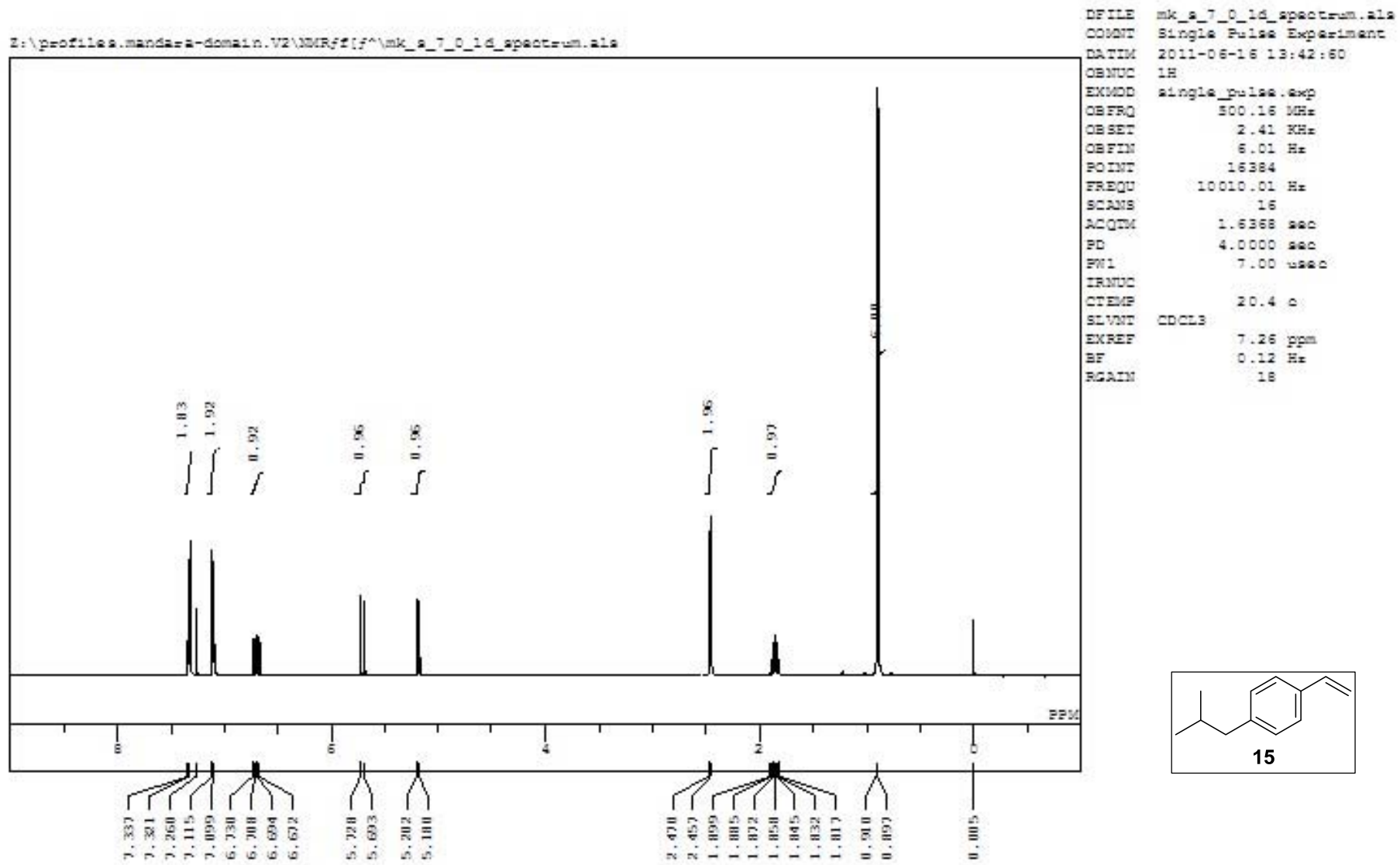
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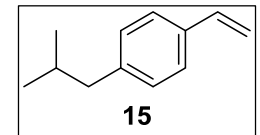
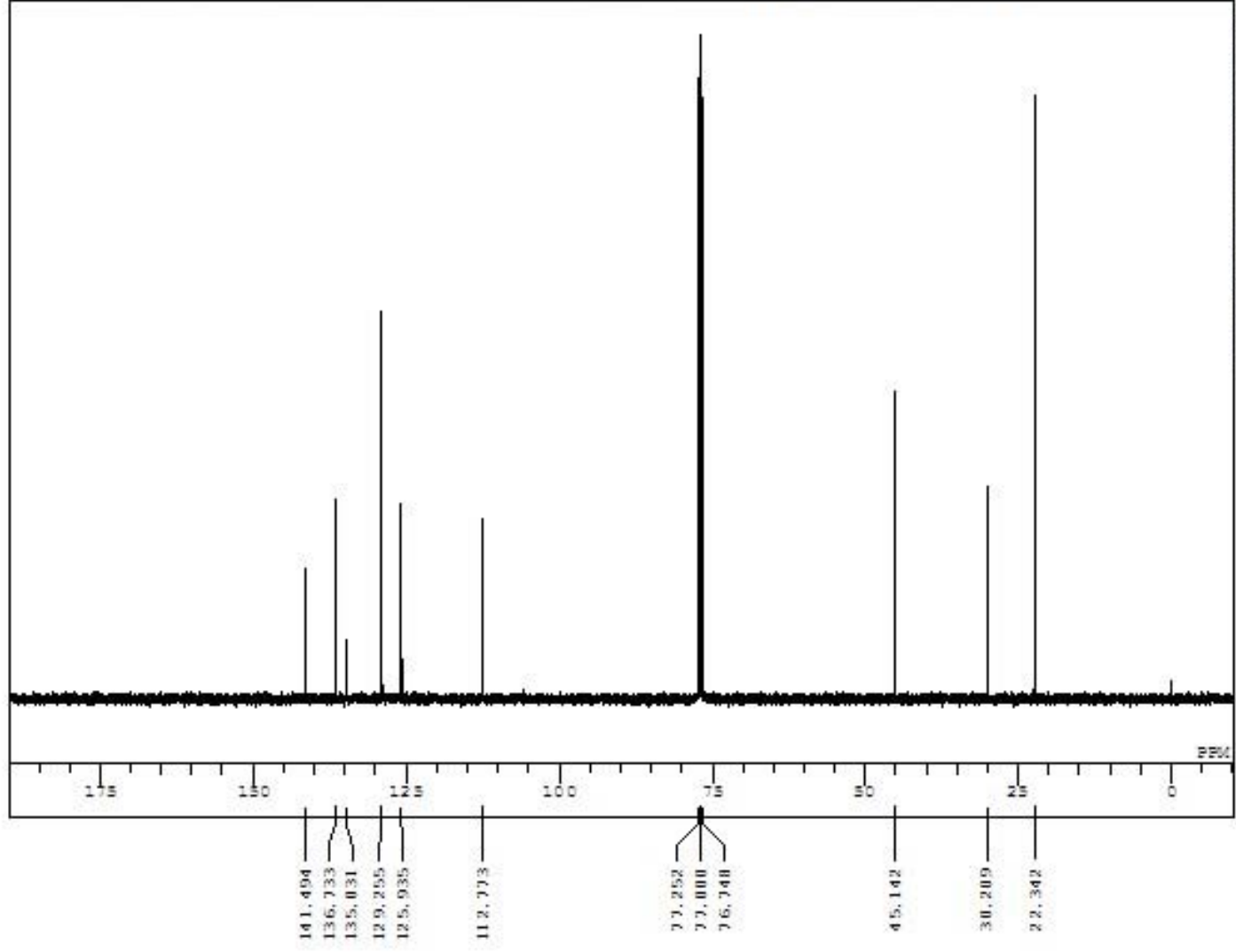
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13. ¹H & ¹³C NMR Charts of Vinylarenes 15 and 17.



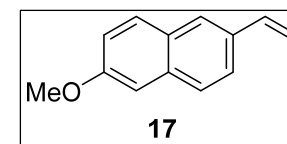
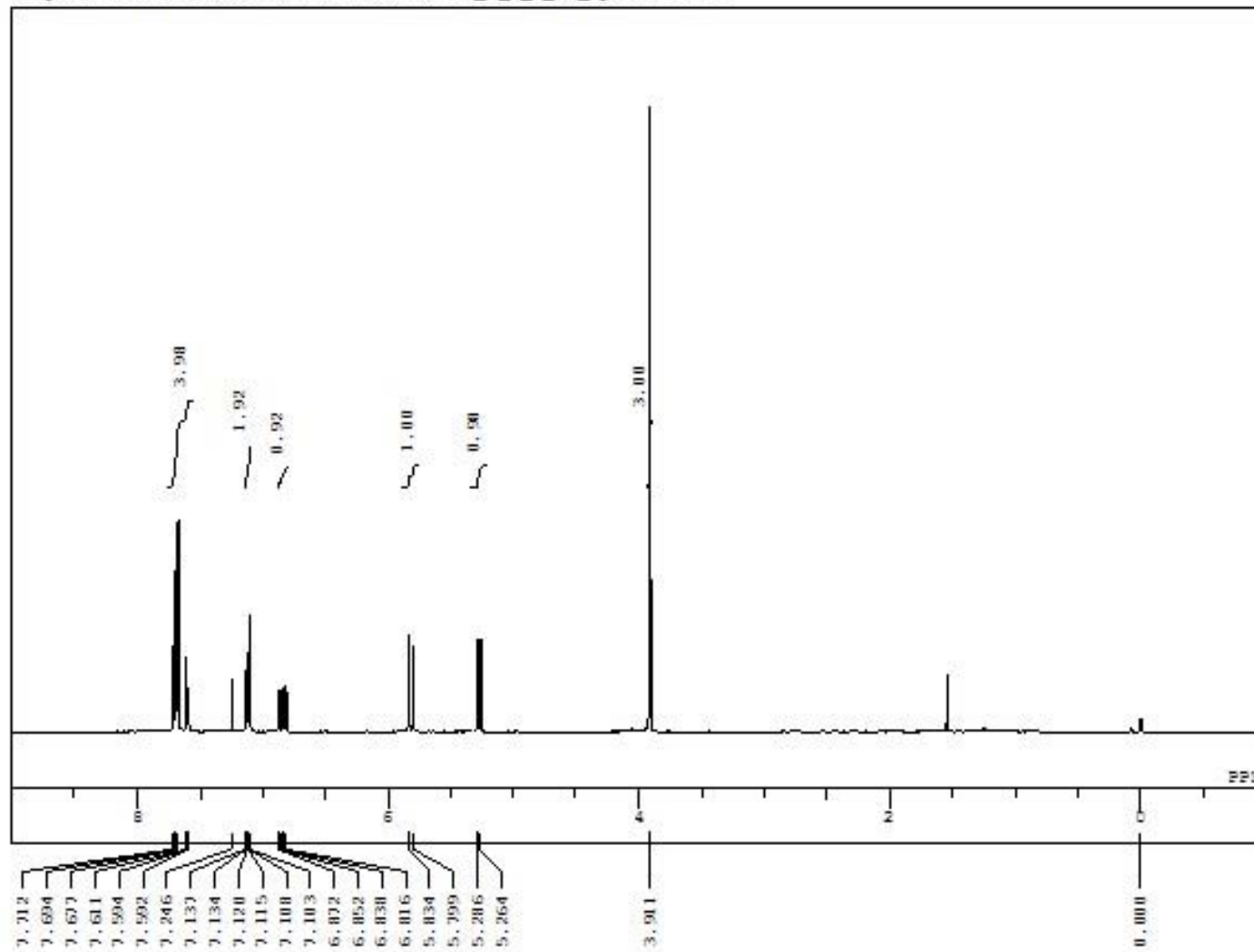
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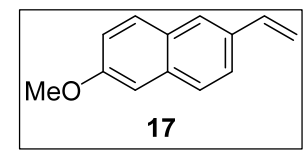
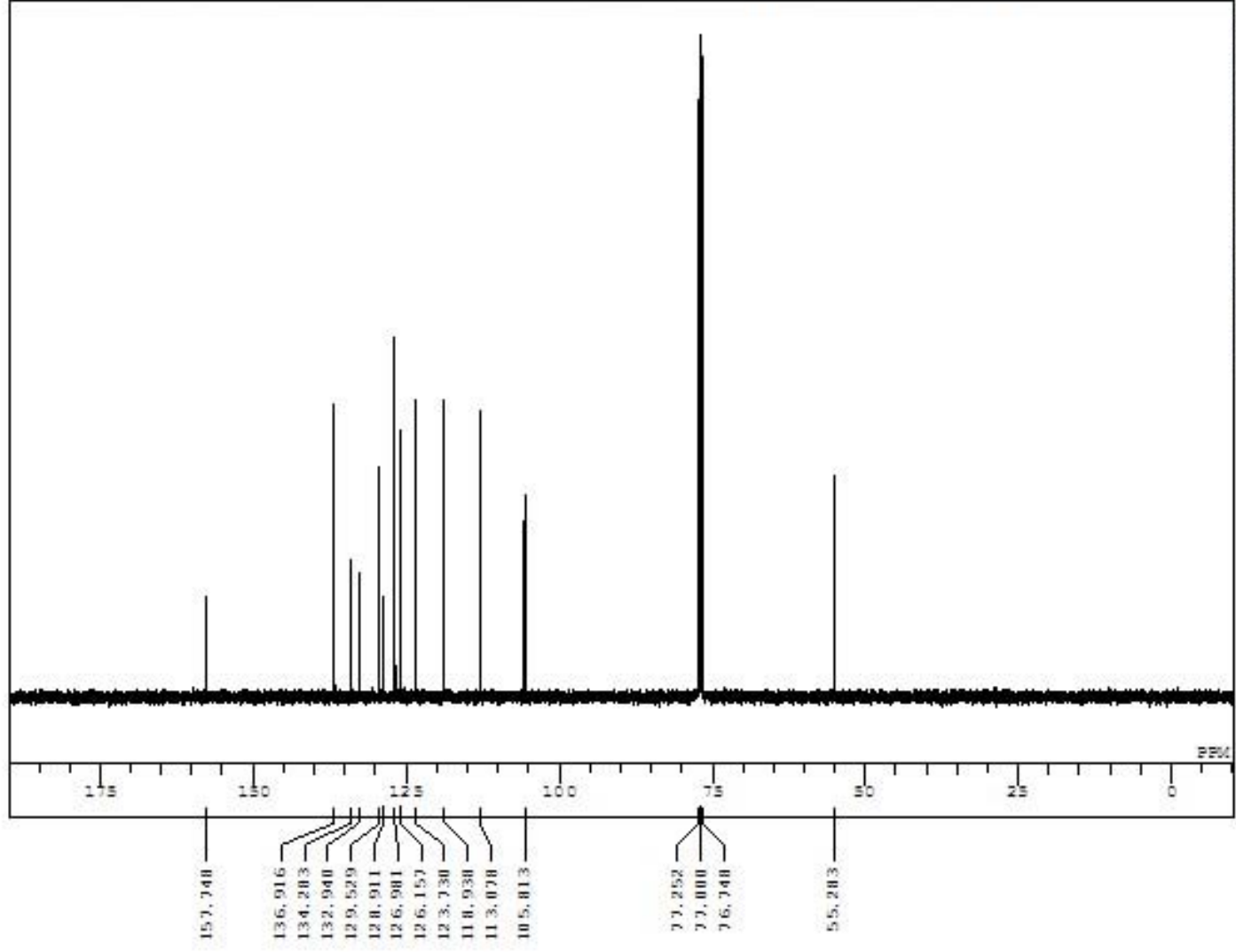
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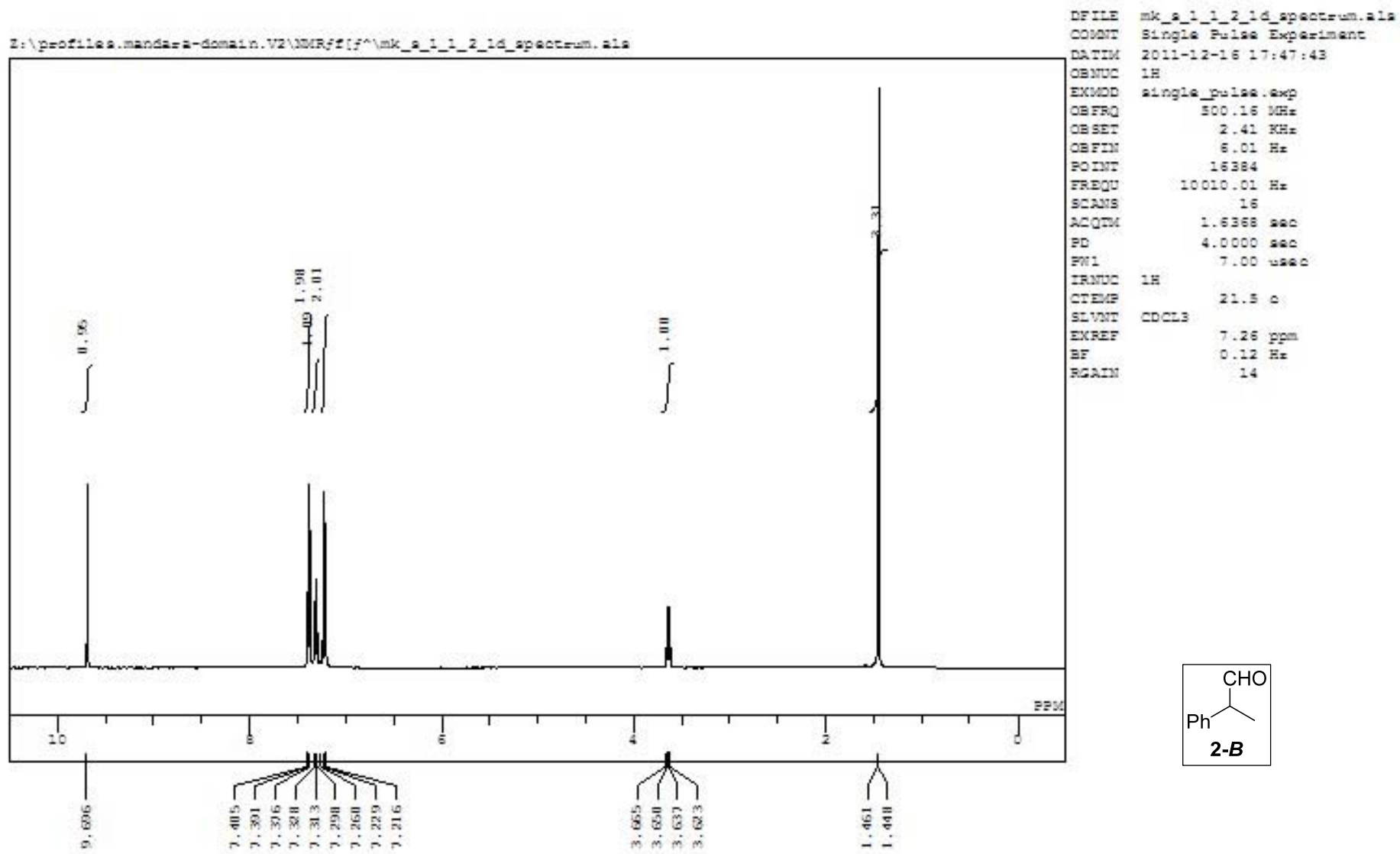


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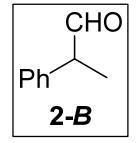
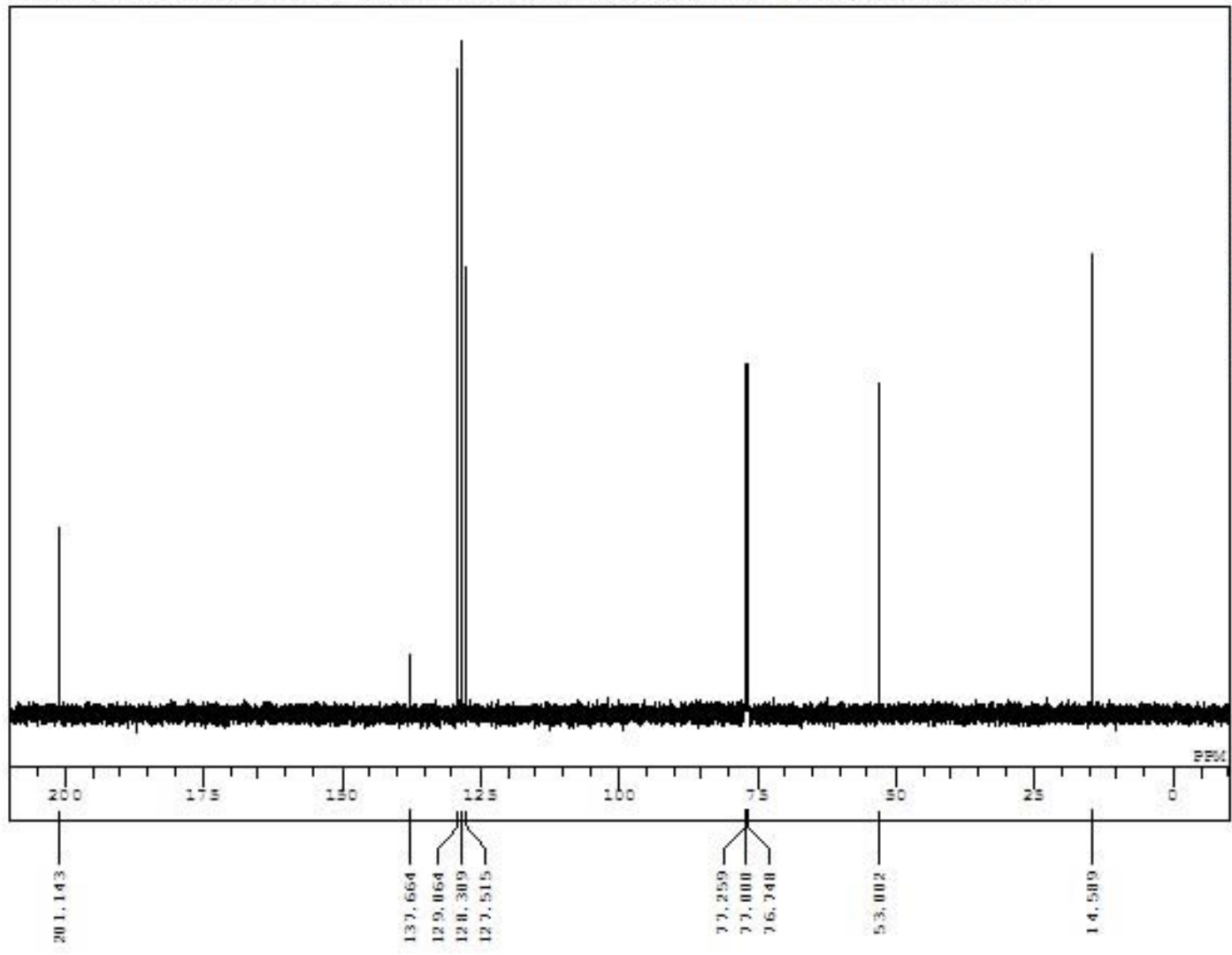


14. ¹H & ¹³C NMR Charts of Aldehydes 4, 6, 8, 10, 12, 14, 16, and 18.



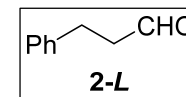
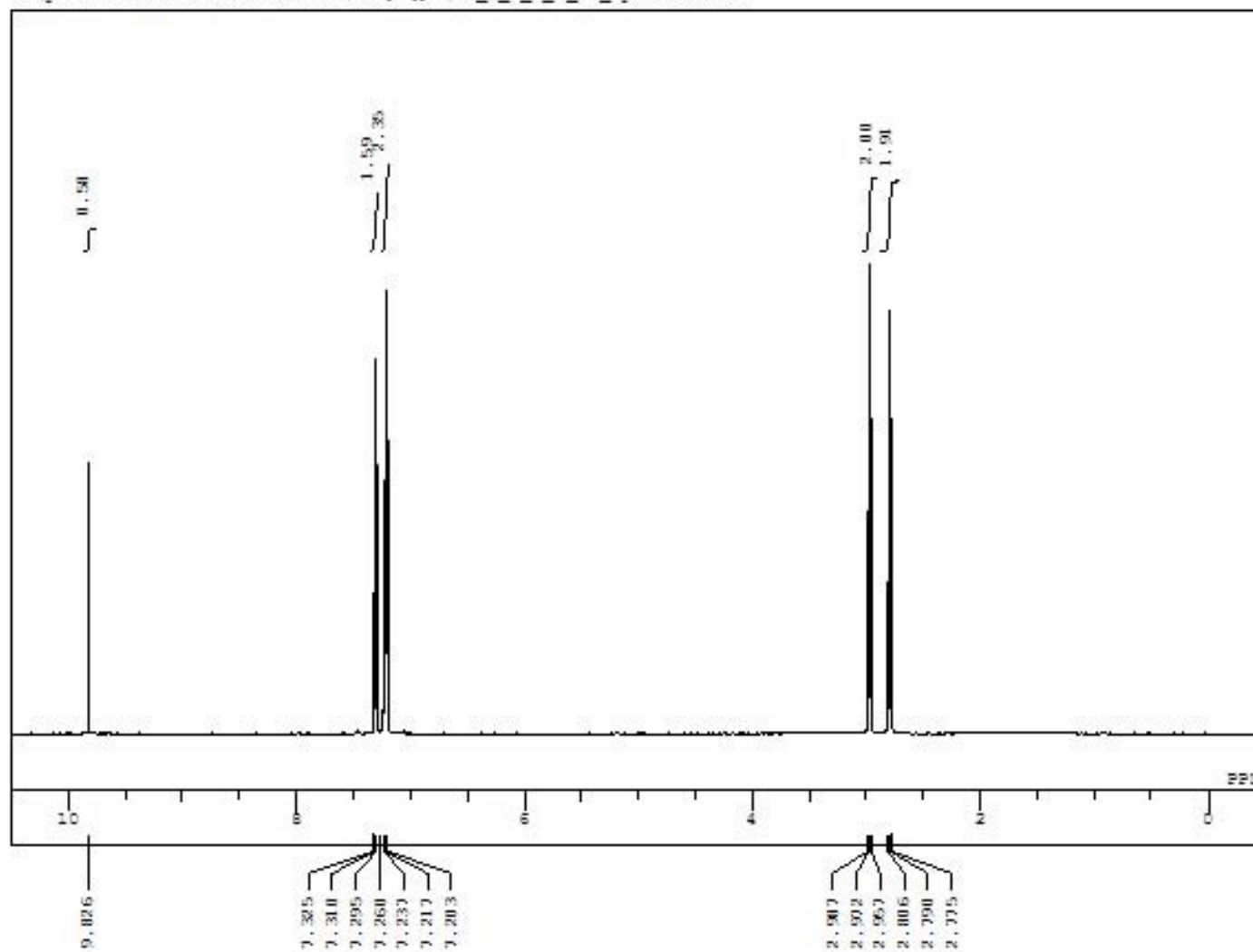
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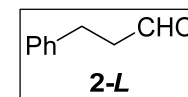
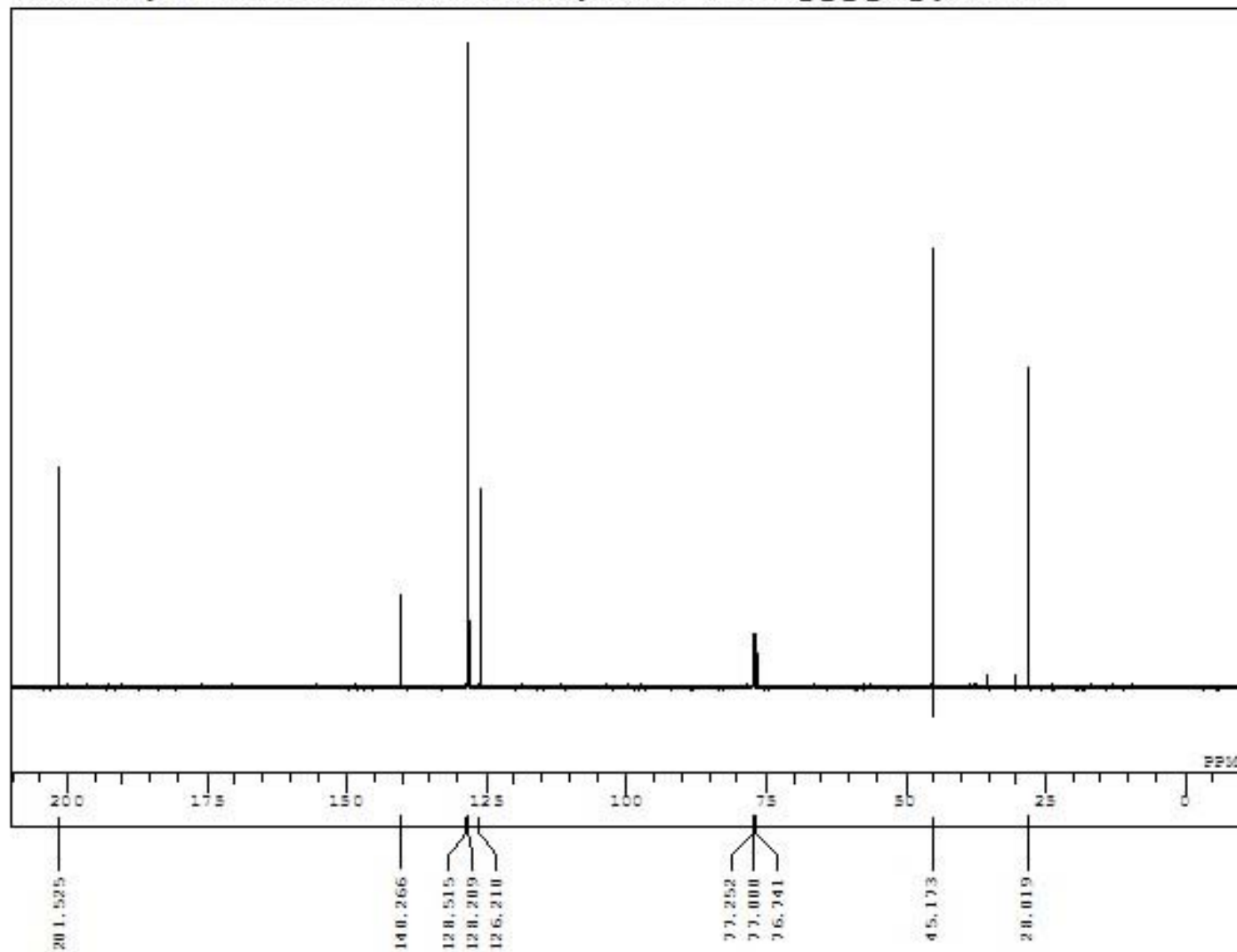
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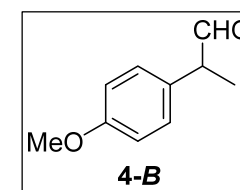
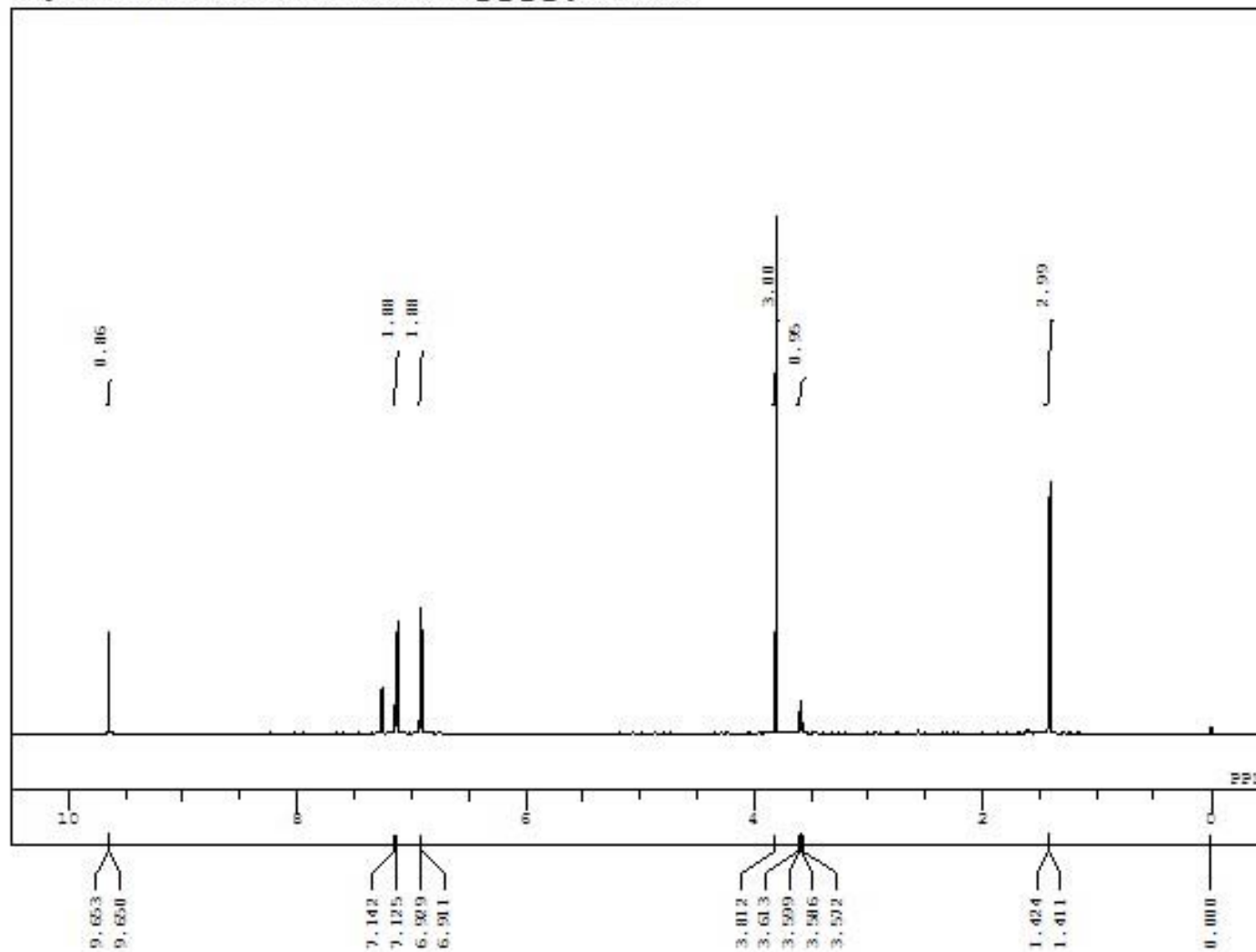
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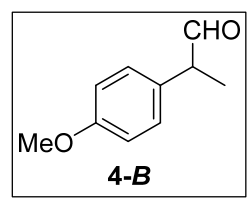
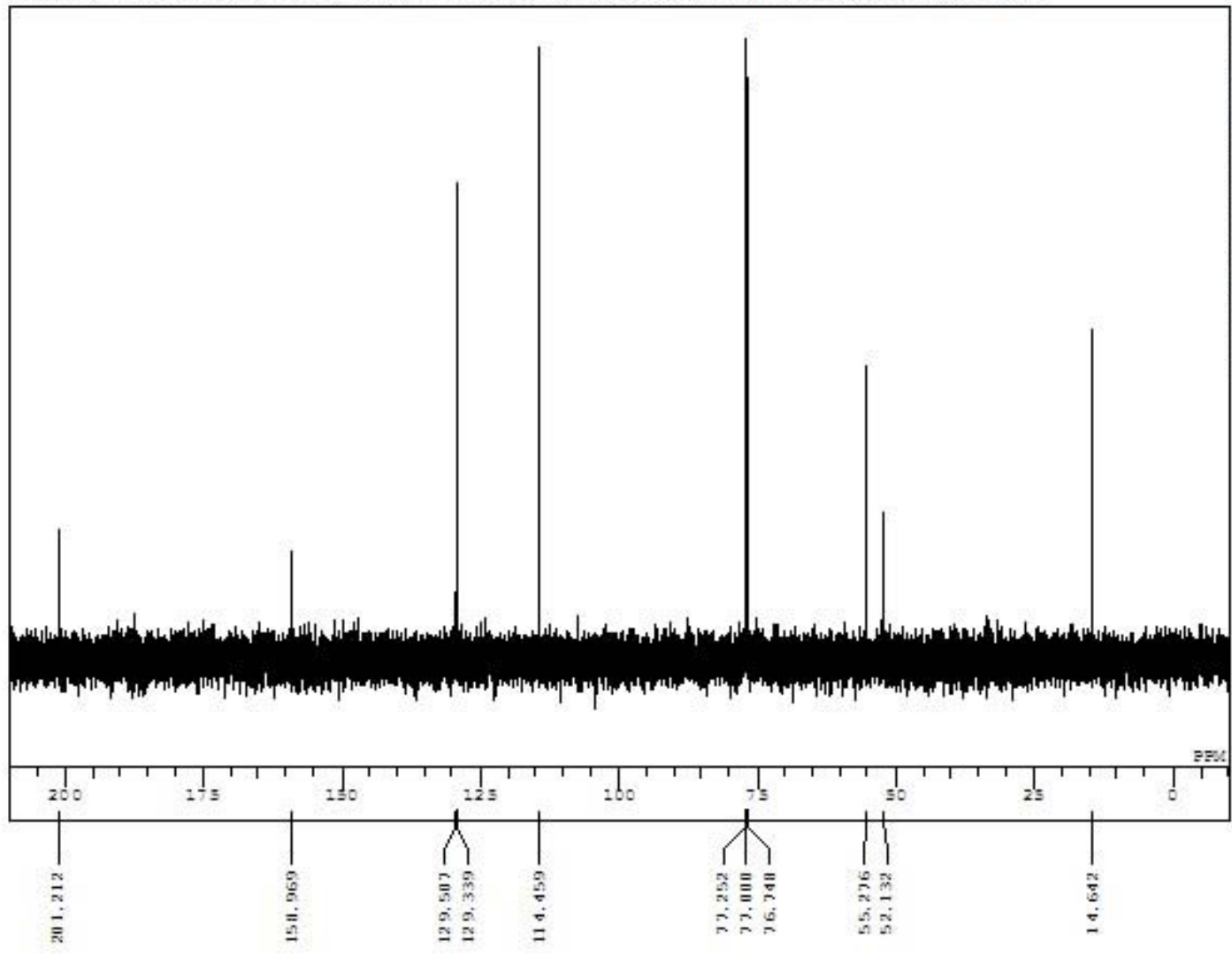
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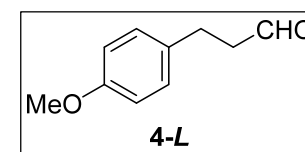
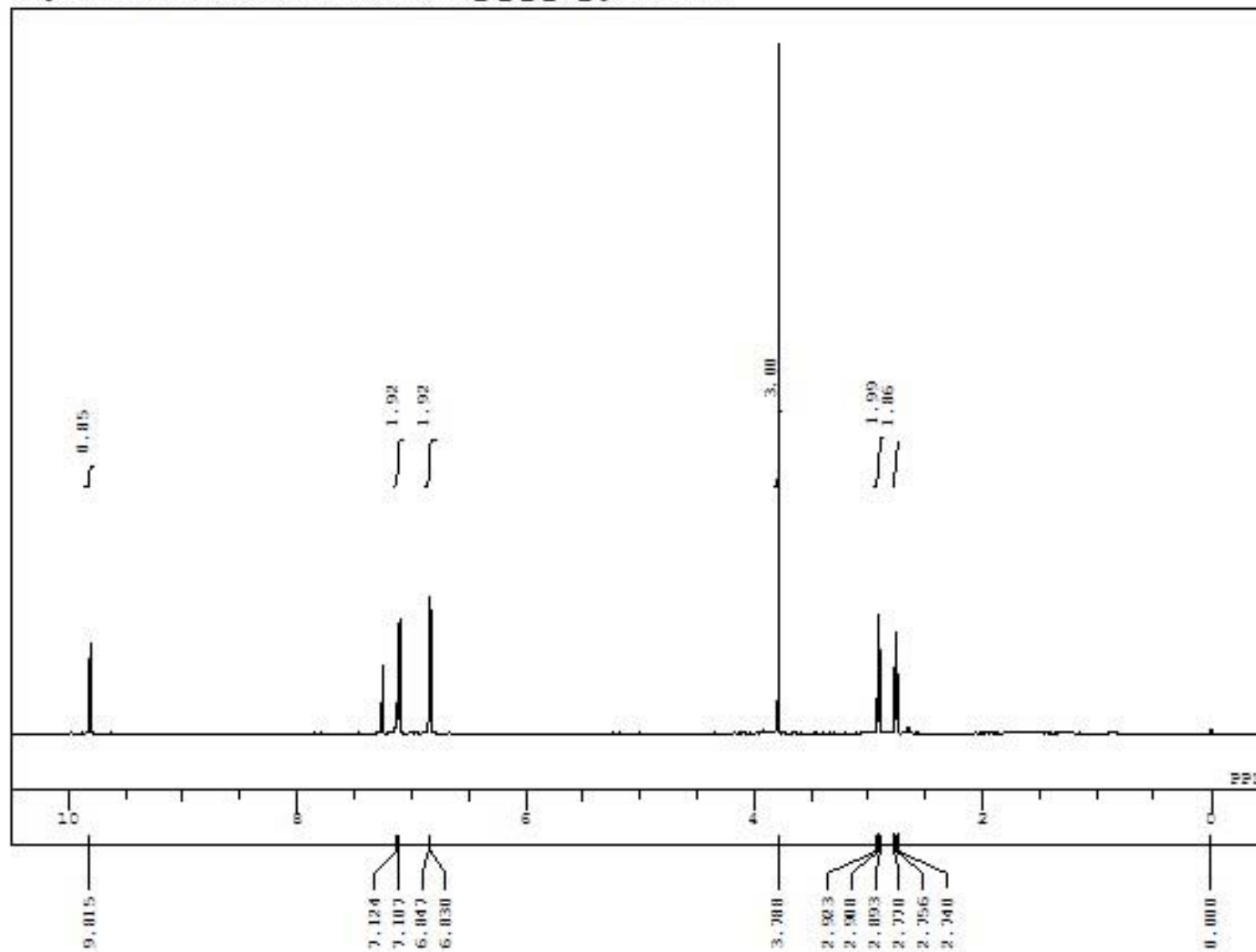
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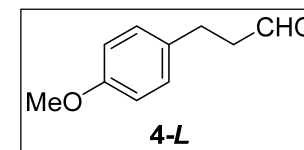
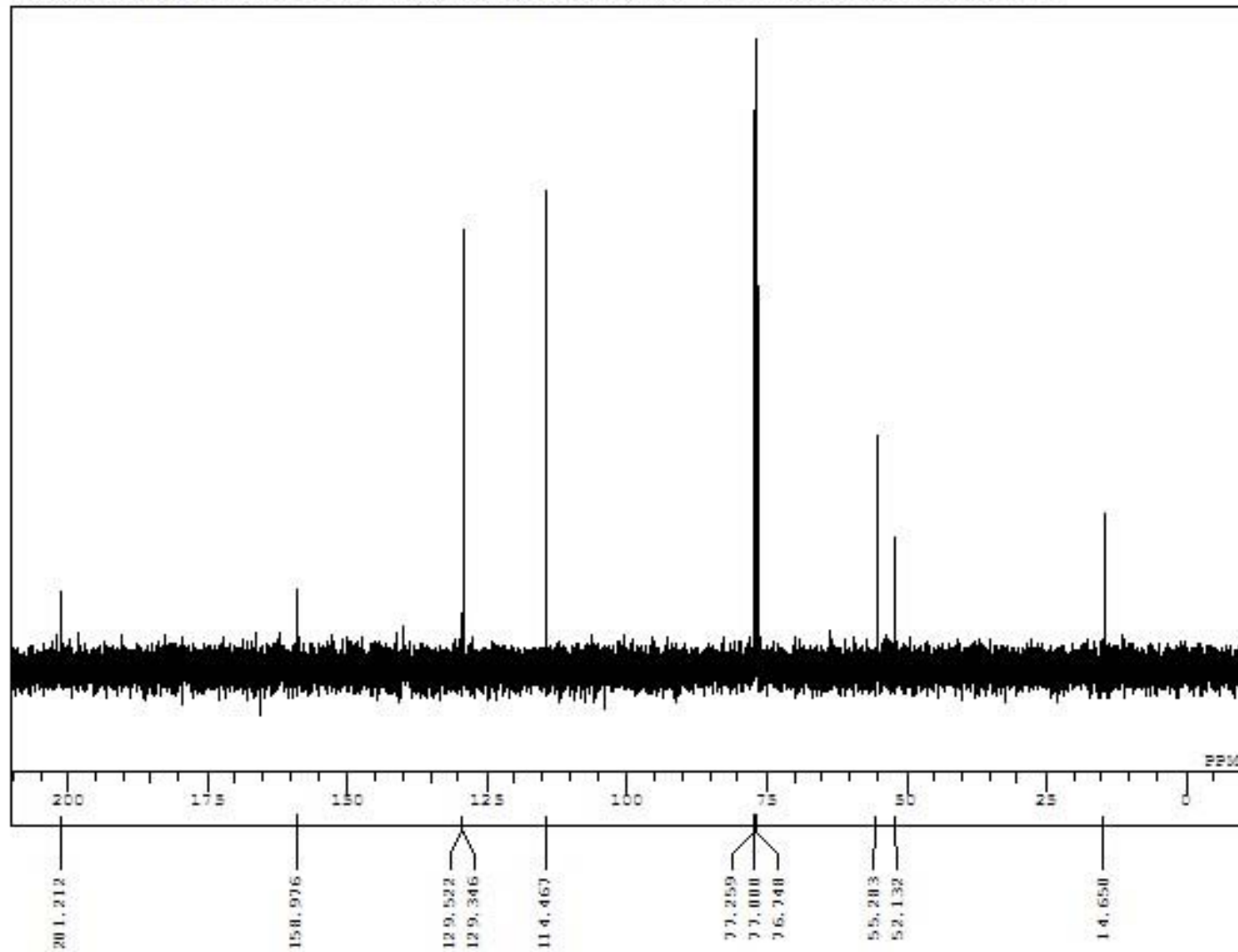
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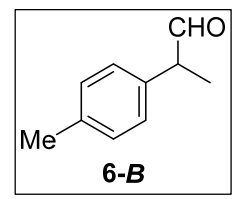
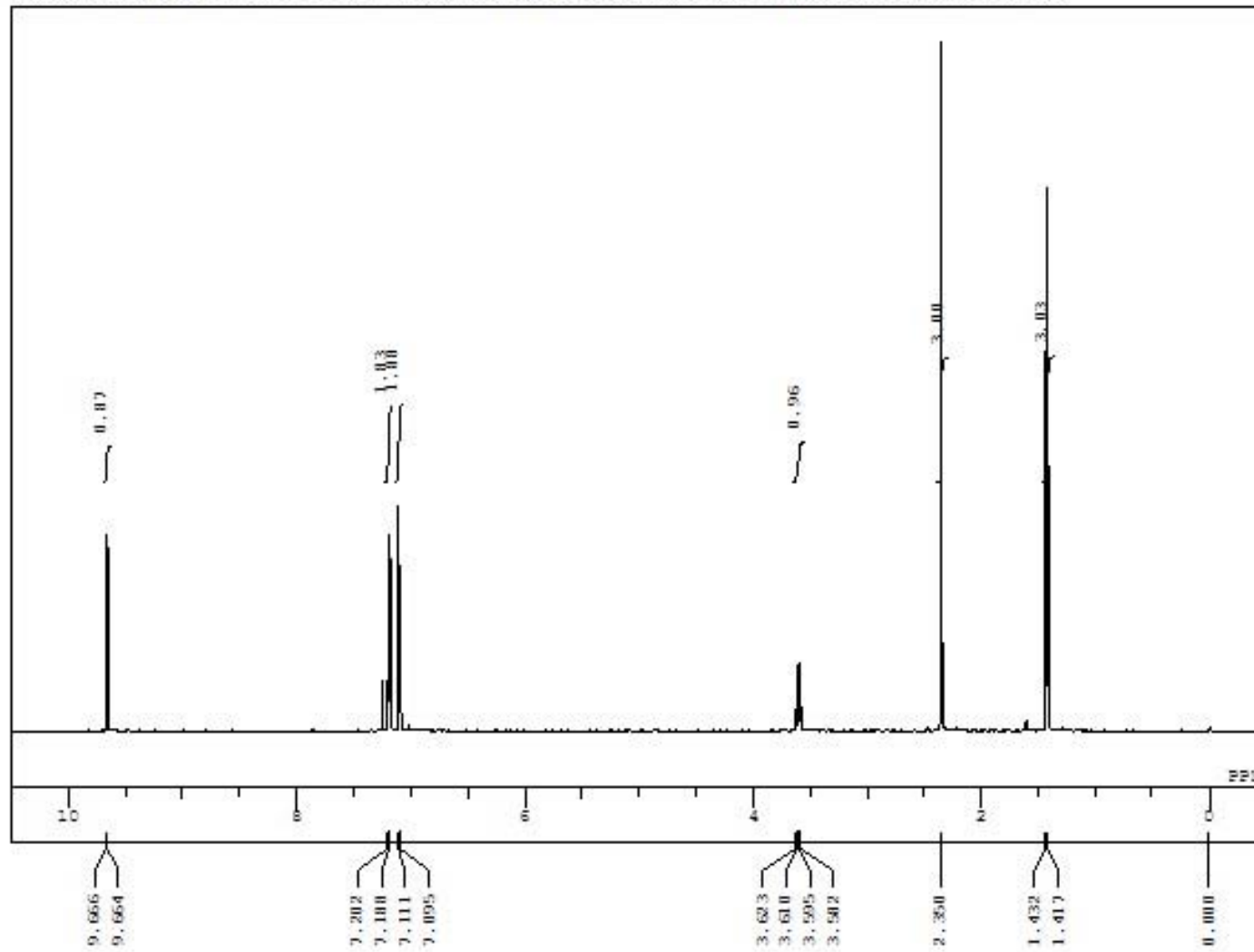
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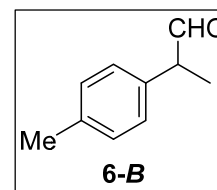
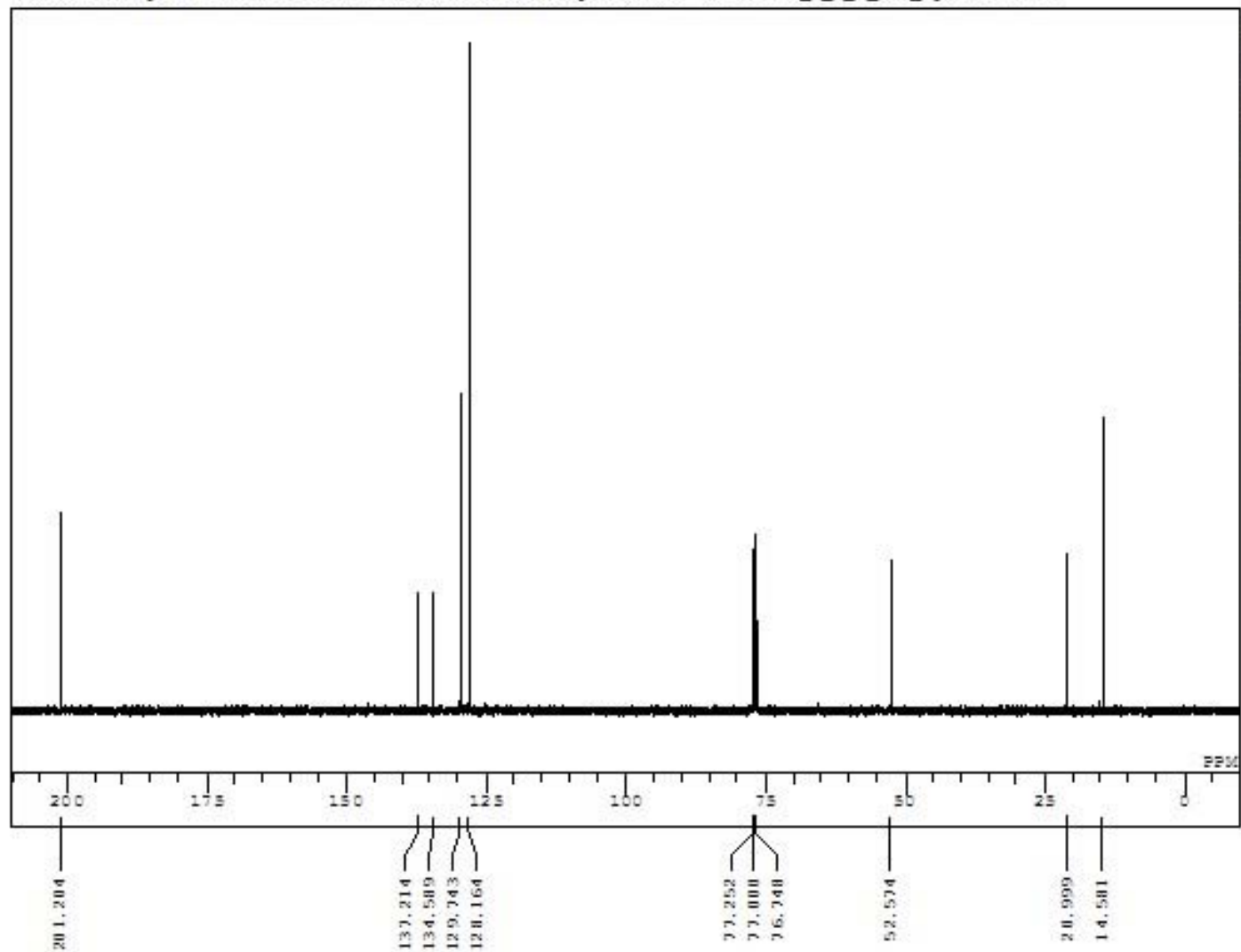
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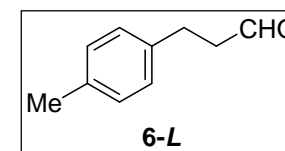
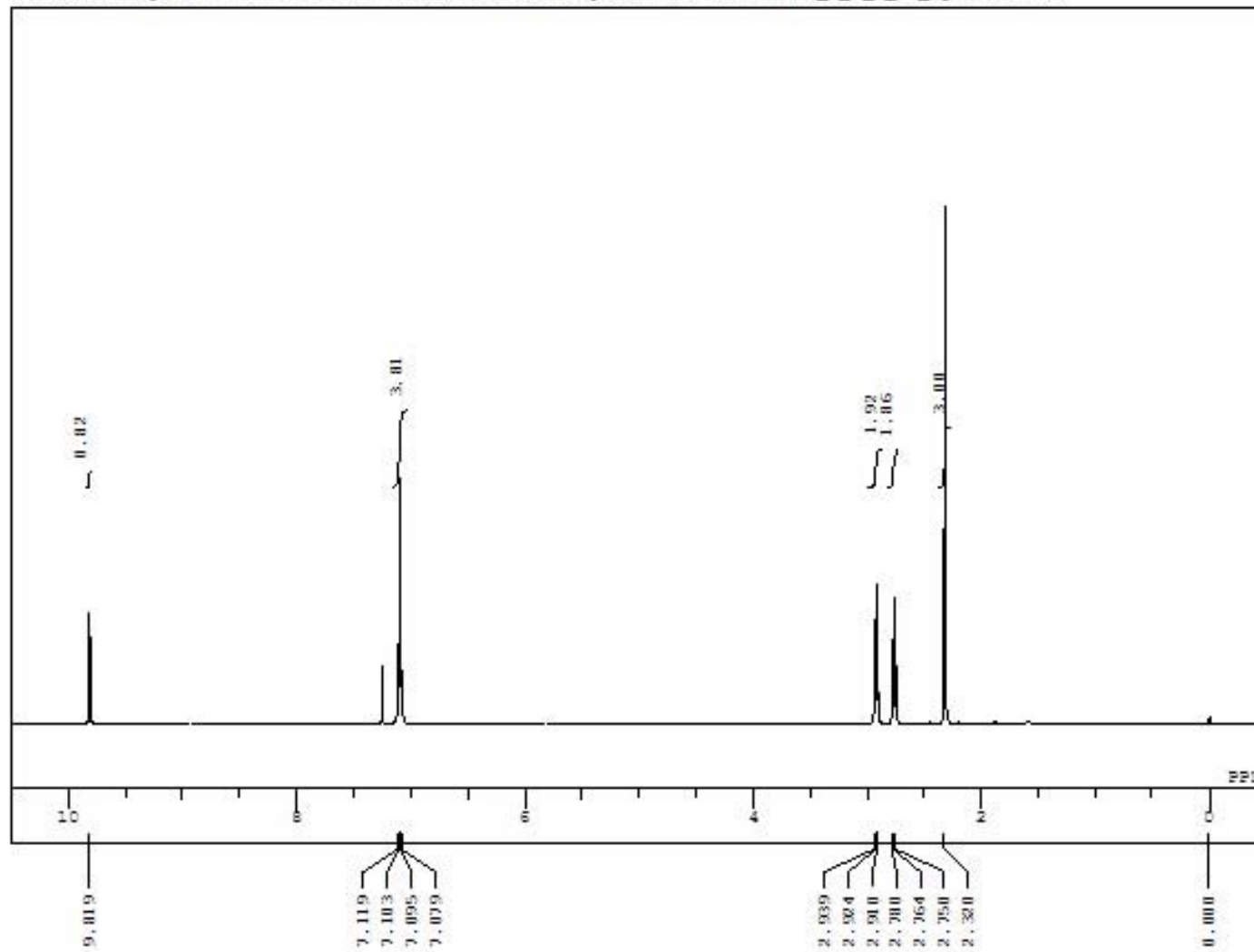
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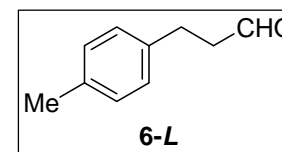
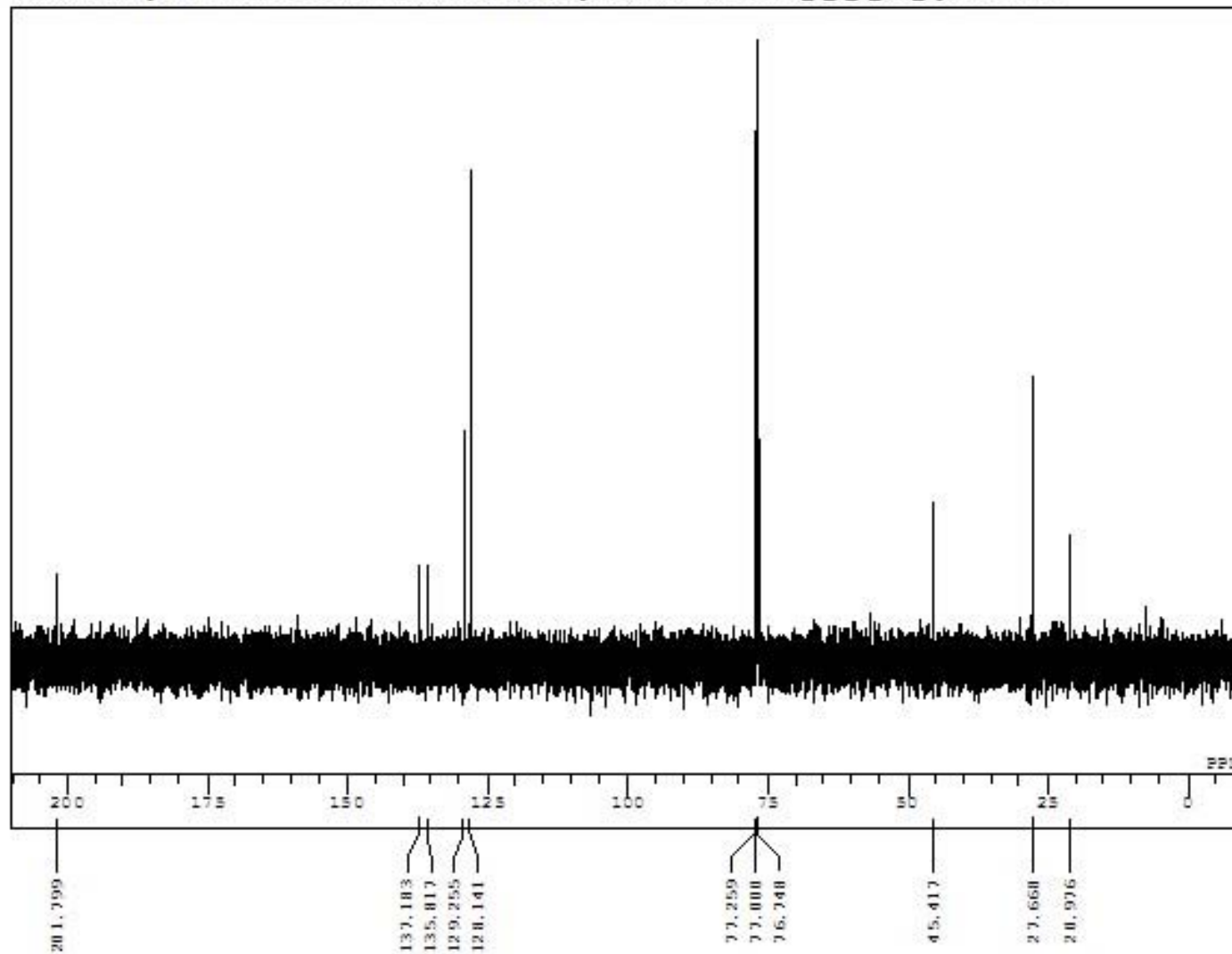
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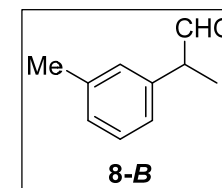
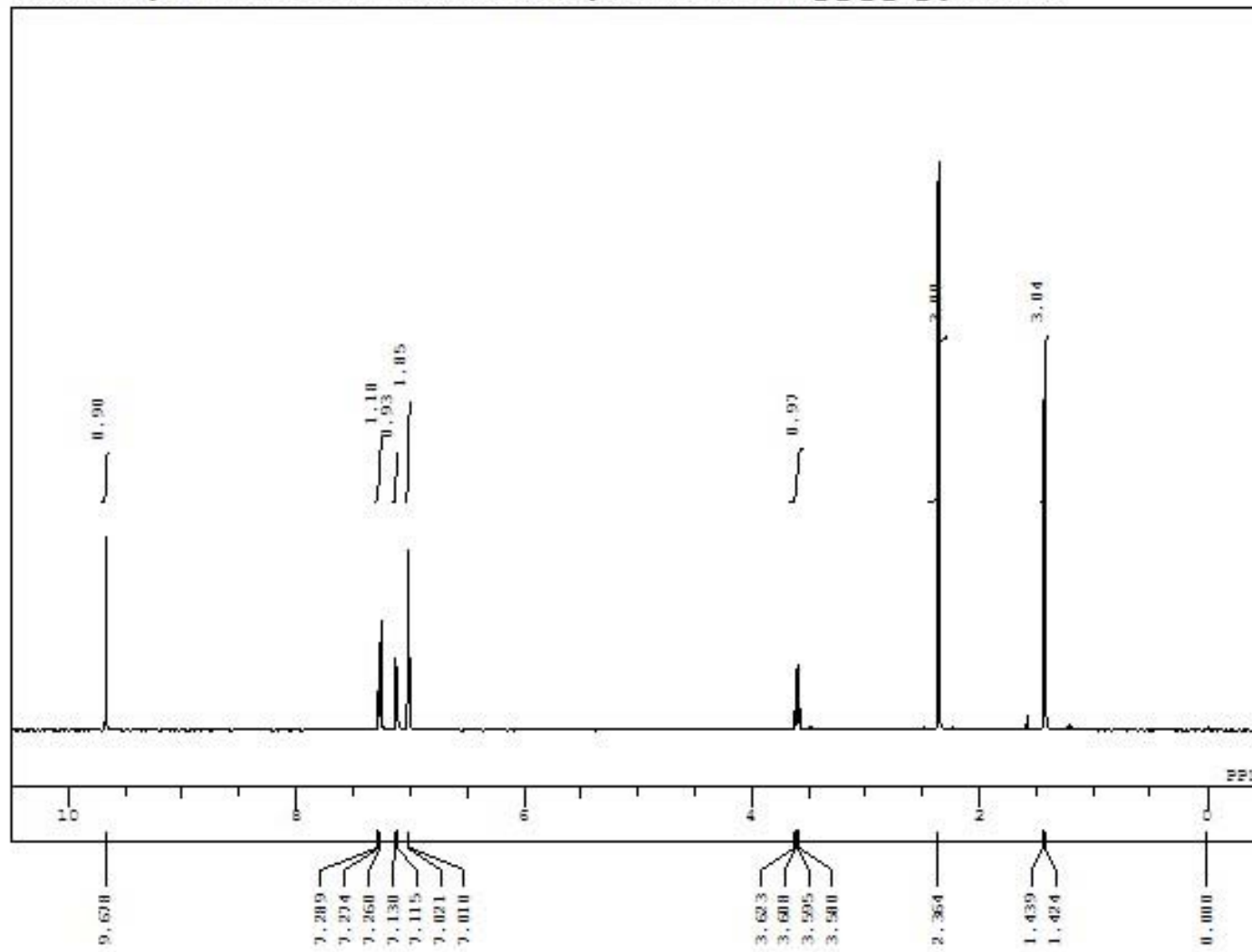
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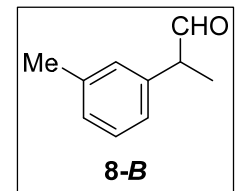
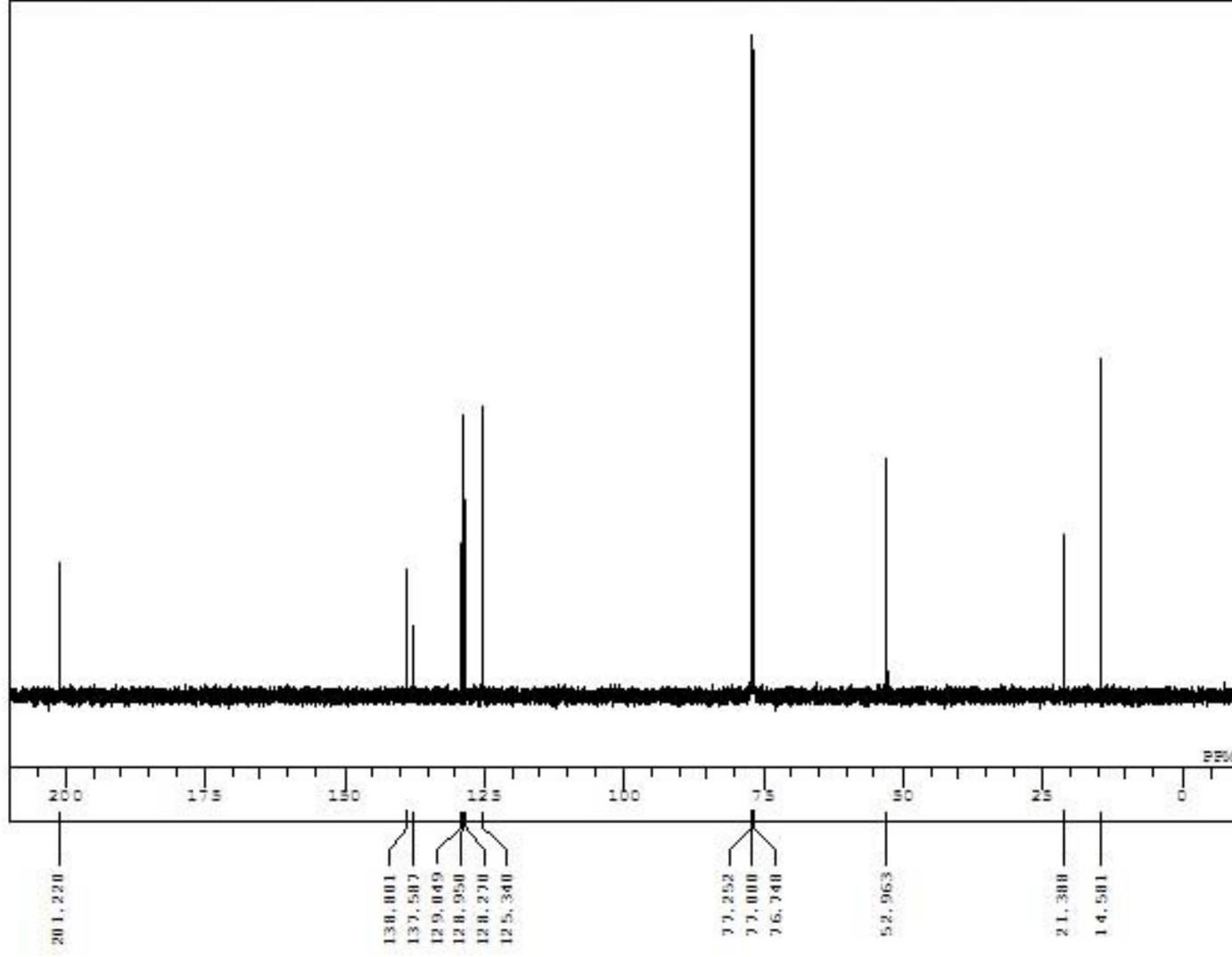
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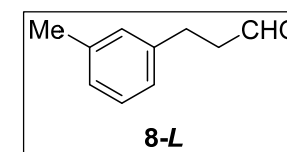
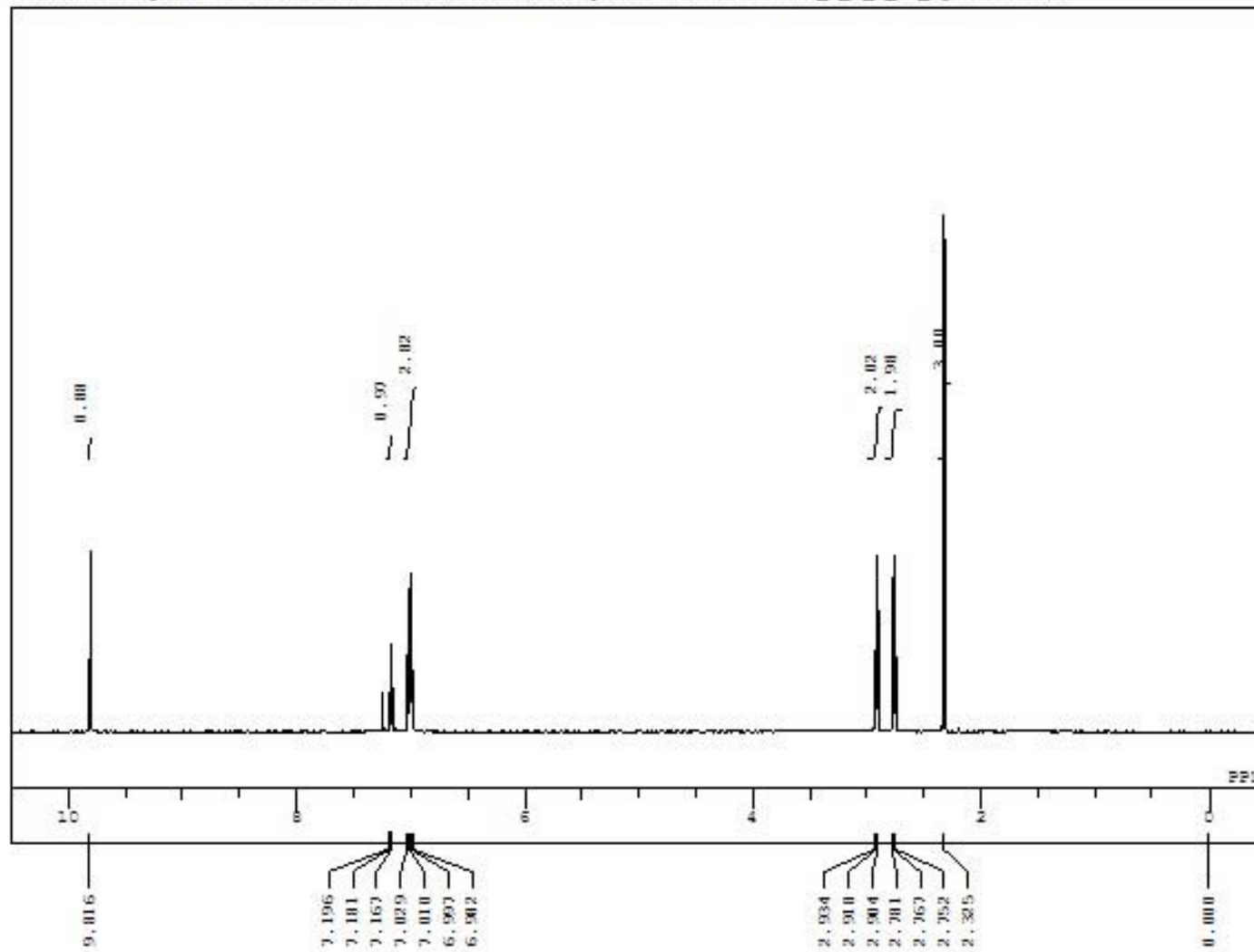
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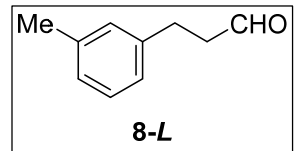
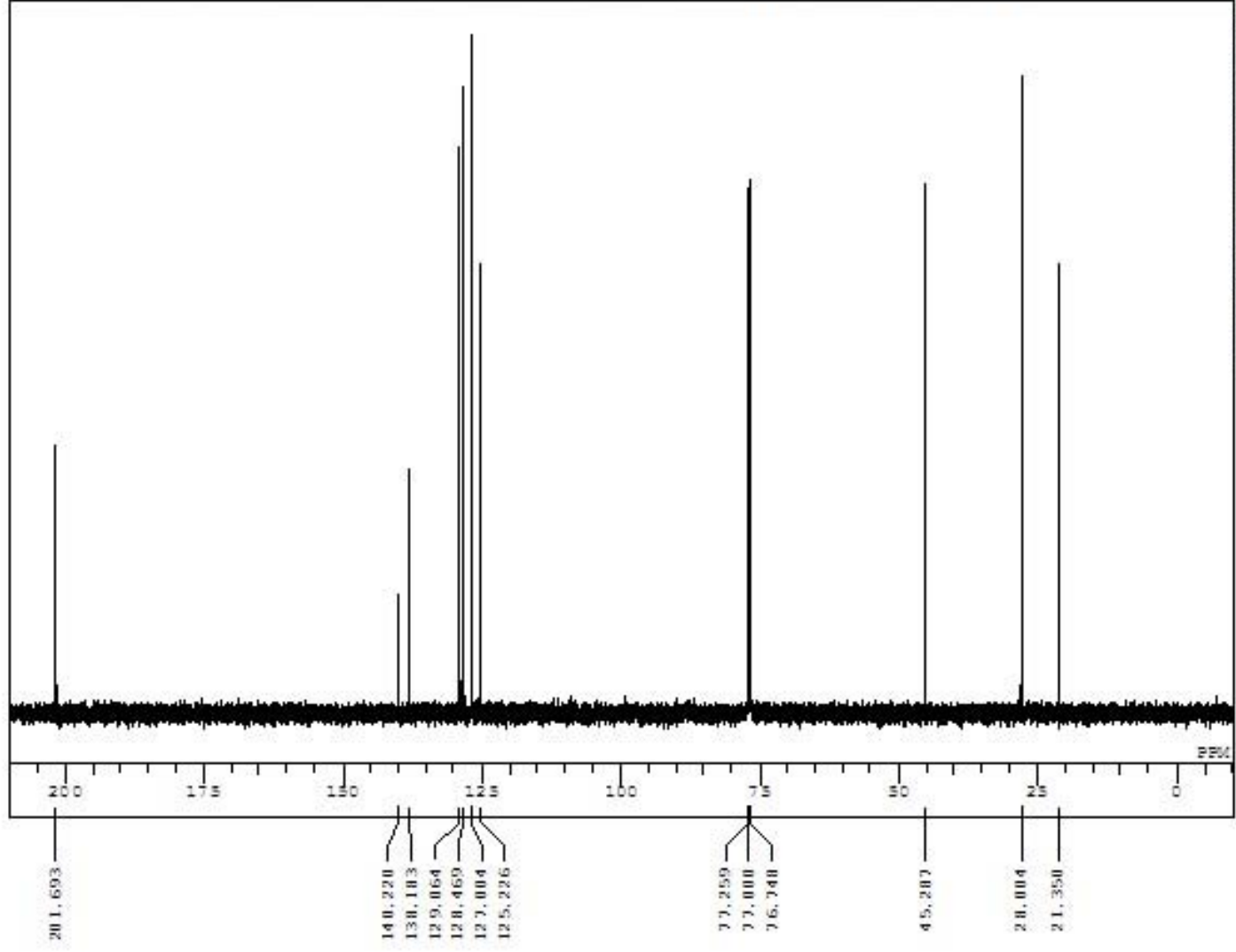
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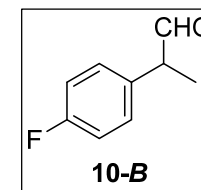
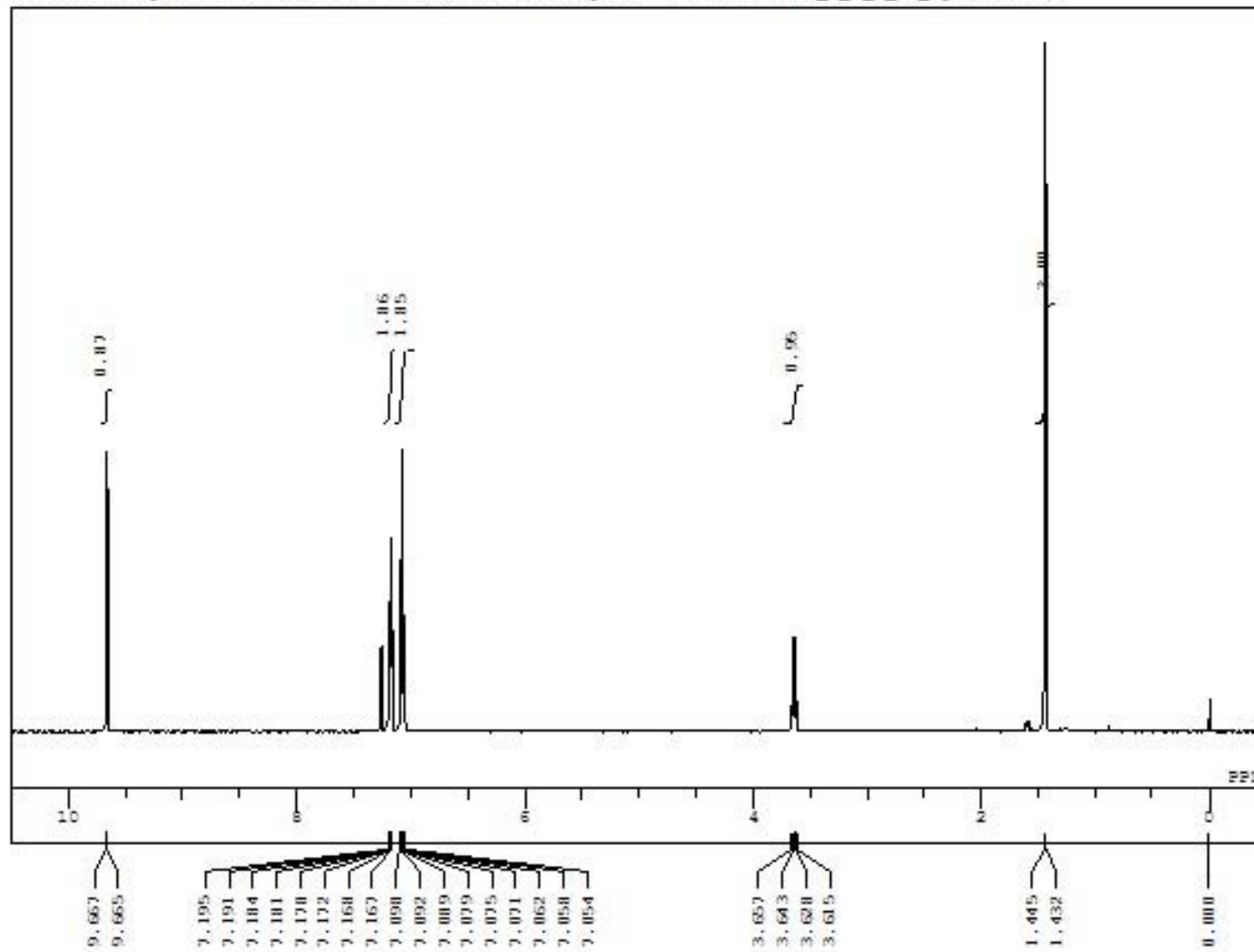
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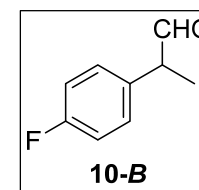
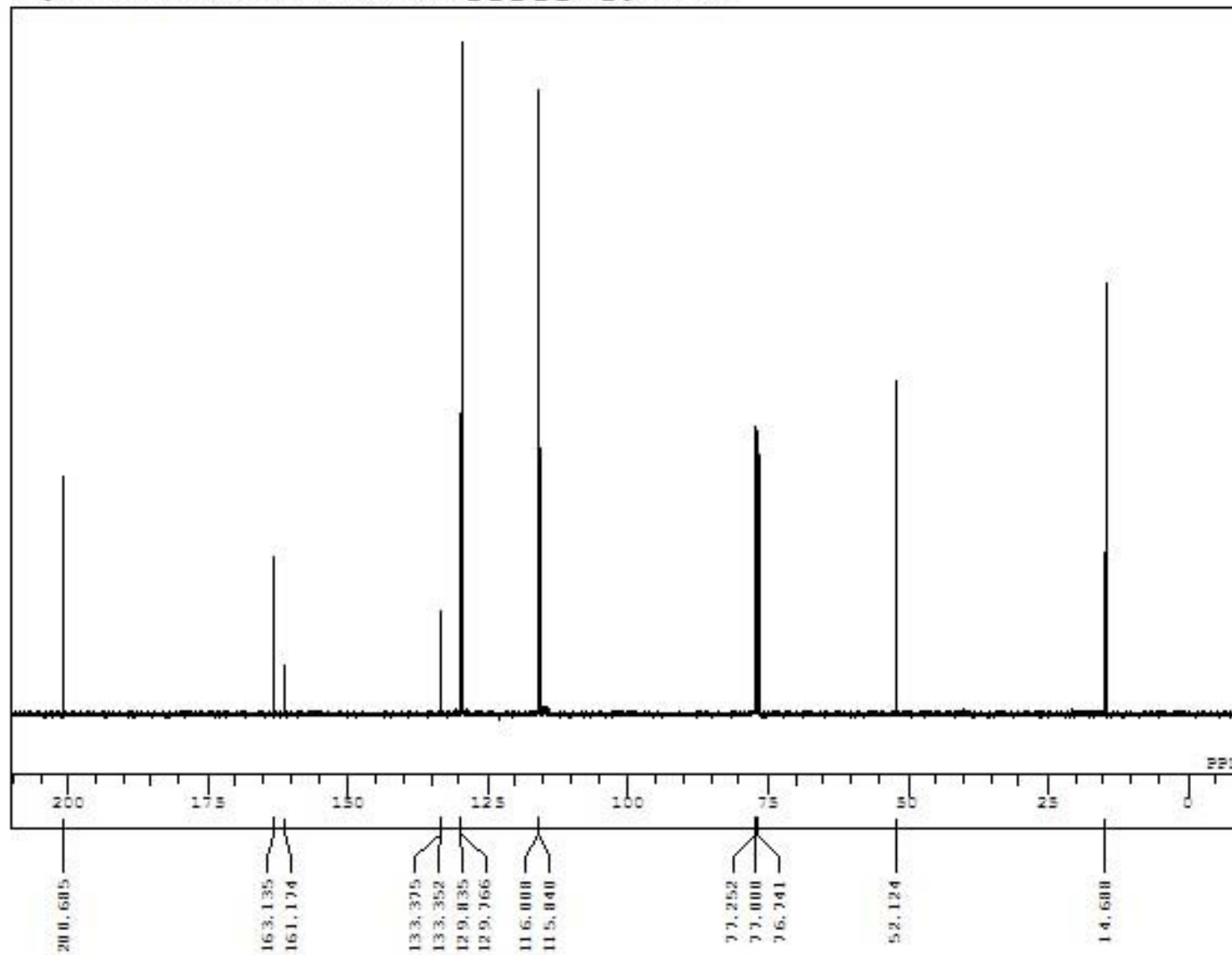
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DFILE mk_a_3_1_1d_spectrum.als
COMNT p_F_branched_aldehyde
DATIM 2011-04-22 13:02:22
OBNUC 1H
EXMDD single_pulse.exp
OBFRQ 500.16 MHz
OBSET 2.41 kHz
OBFIN 6.01 Hz
POINT 16384
FREQU 10010.01 Hz
SCANS 16
AQTM 1.6368 sec
PD 4.0000 sec
FW 7.00 usec
IRNUC
OTEMP 17.8 c
SLVNT CDCL3
EXREF 0.00 ppm
BF 0.12 Hz
RGAIN 18
    
```



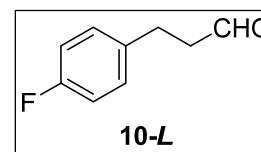
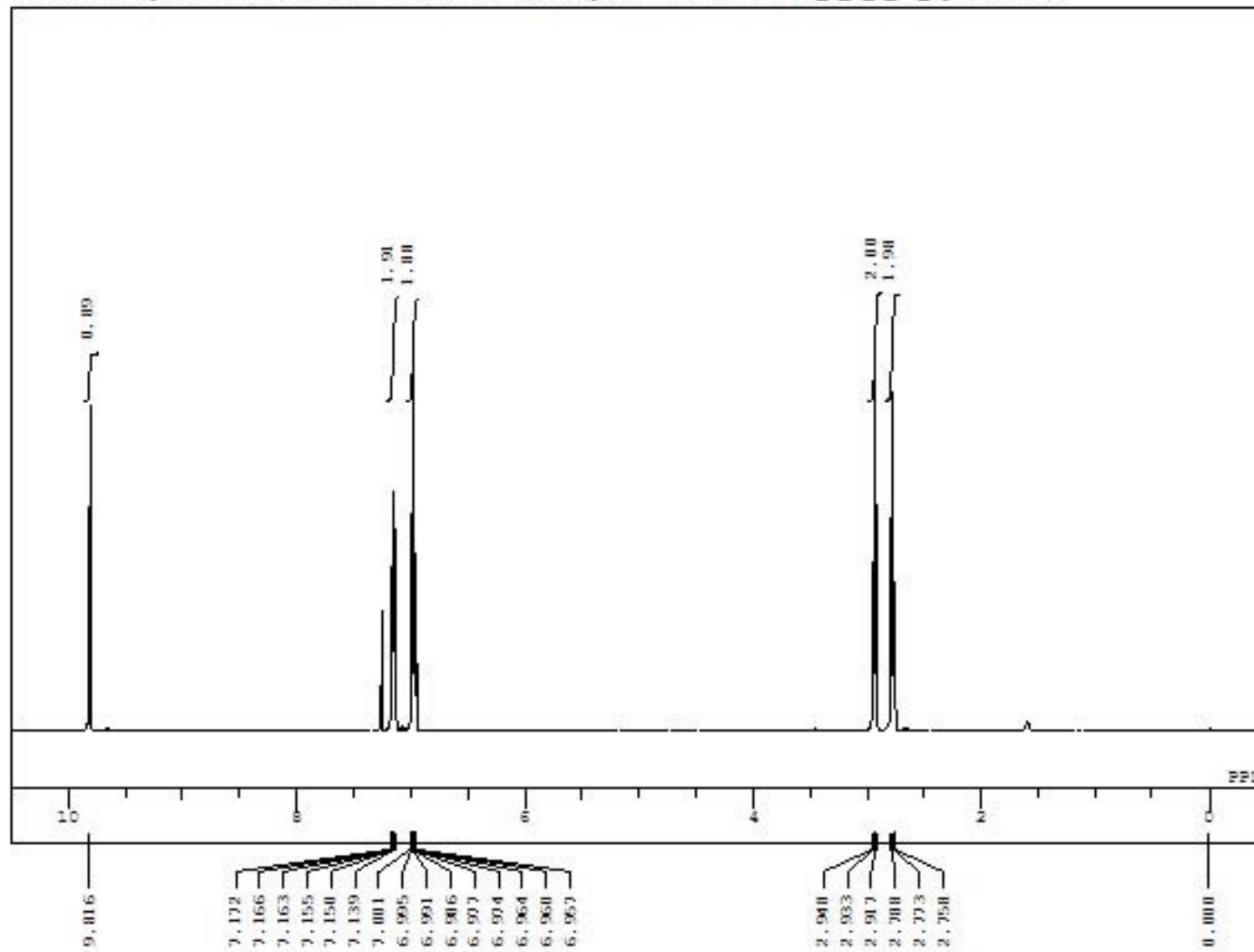
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DFILE mk_a_3_1_2_13c_spectrum.1
COMNT Single Pulse with Broadband
DATIM 2012-03-27 16:45:38
OBNUC 13C
EXMDD single_pulse_dec
OBFRQ 125.77 MHz
OBSET 7.87 kHz
OBFIN 4.21 Hz
POINT 32768
FREQU 31446.54 Hz
SCANS 4000
ACQTM 1.0420 sec
PD 1.0000 sec
PWL 4.47 usec
IRNUC 1H
OTEMP 22.3 c
SLVMT CDCL3
EXREF 77.00 ppm
BF 0.12 Hz
RGAIN 30



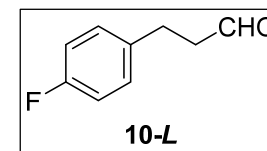
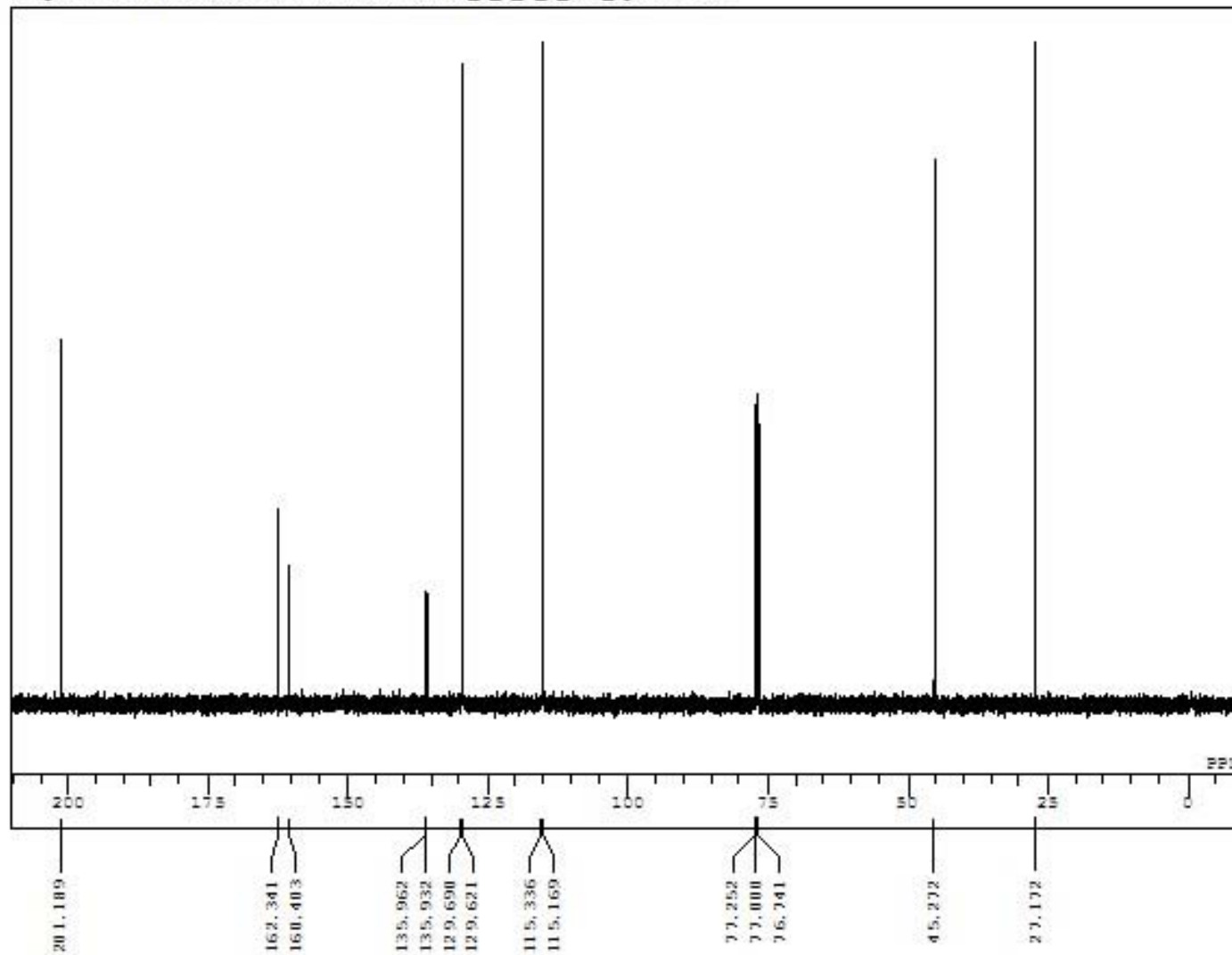
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DFILE mk_a_3_2_1d_spectrum.als
COMNT p_F_linear_aldehyde
DATIM 2011-04-22 12:39:22
OBNUC 1H
EXMDD single_pulse.exp
OBFRQ 500.16 MHz
OBSET 2.41 kHz
OBFIN 6.01 Hz
POINT 16384
FREQU 10010.01 Hz
SCANS 16
ACQTM 1.6368 sec
PD 4.0000 sec
PW1 7.00 usec
IRNUC 1H
OTEMP 17.3 c
SLVNT CDCL3
EXREF 0.00 ppm
BF 0.12 Hz
RGAIN 18



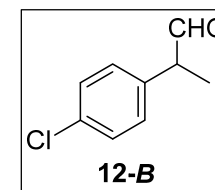
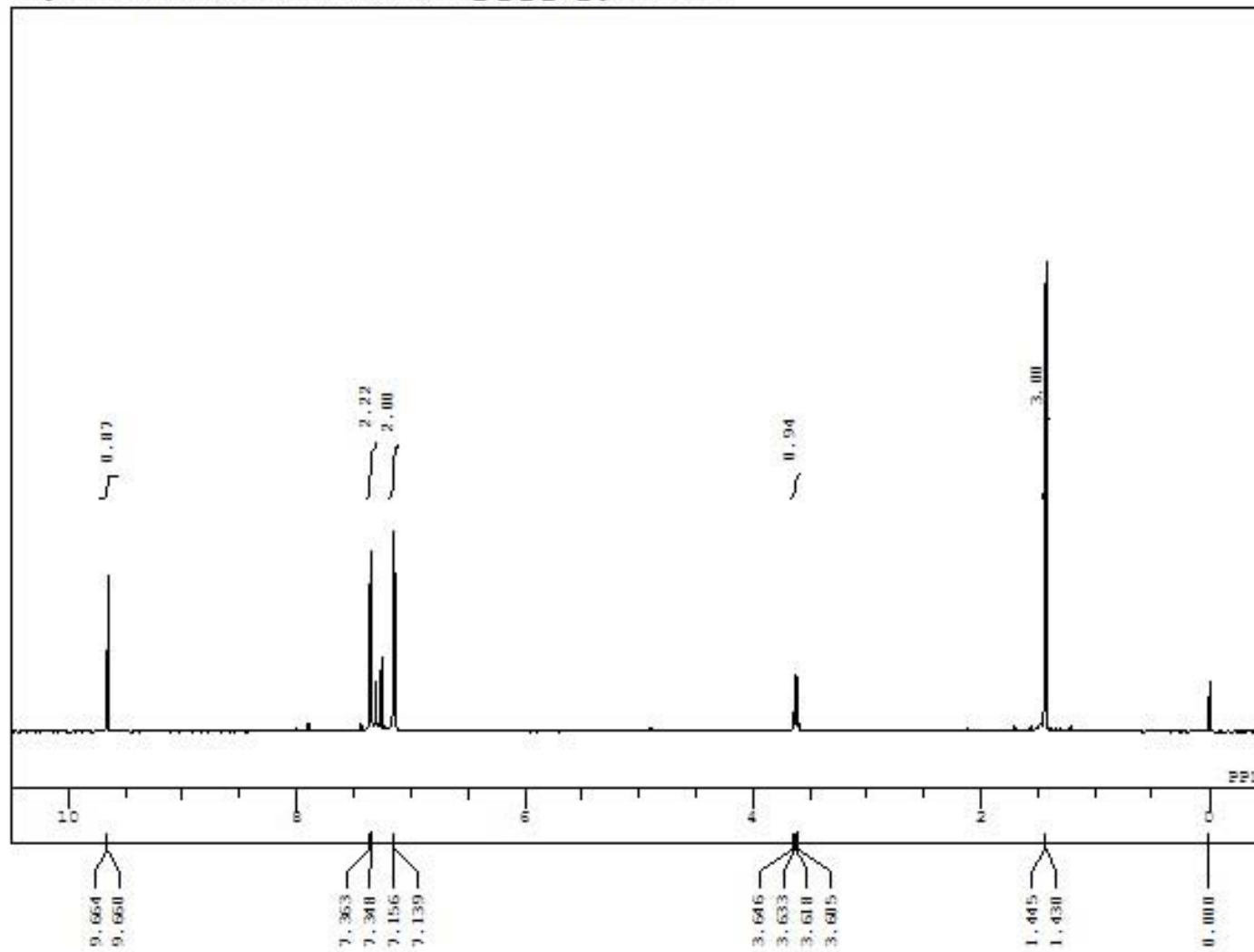
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COMNT Single Pulse with Broadband
DATIM 2012-03-27 17:35:22
OBNUC 13C
EXMOD single_pulse_dec
OBFRQ 125.77 MHz
OBSET 7.87 KHz
OBFIN 4.21 Hz
POINT 32768
FREQU 31446.54 Hz
SCANS 1000
ACQTM 1.0420 sec
PD 1.0000 sec
PWL 4.47 usec
IRNUC 1H
OTEMP 22.0 c
SOLVENT CDCL3
EXREF 77.00 ppm
BF 0.12 Hz
RGAIN 30

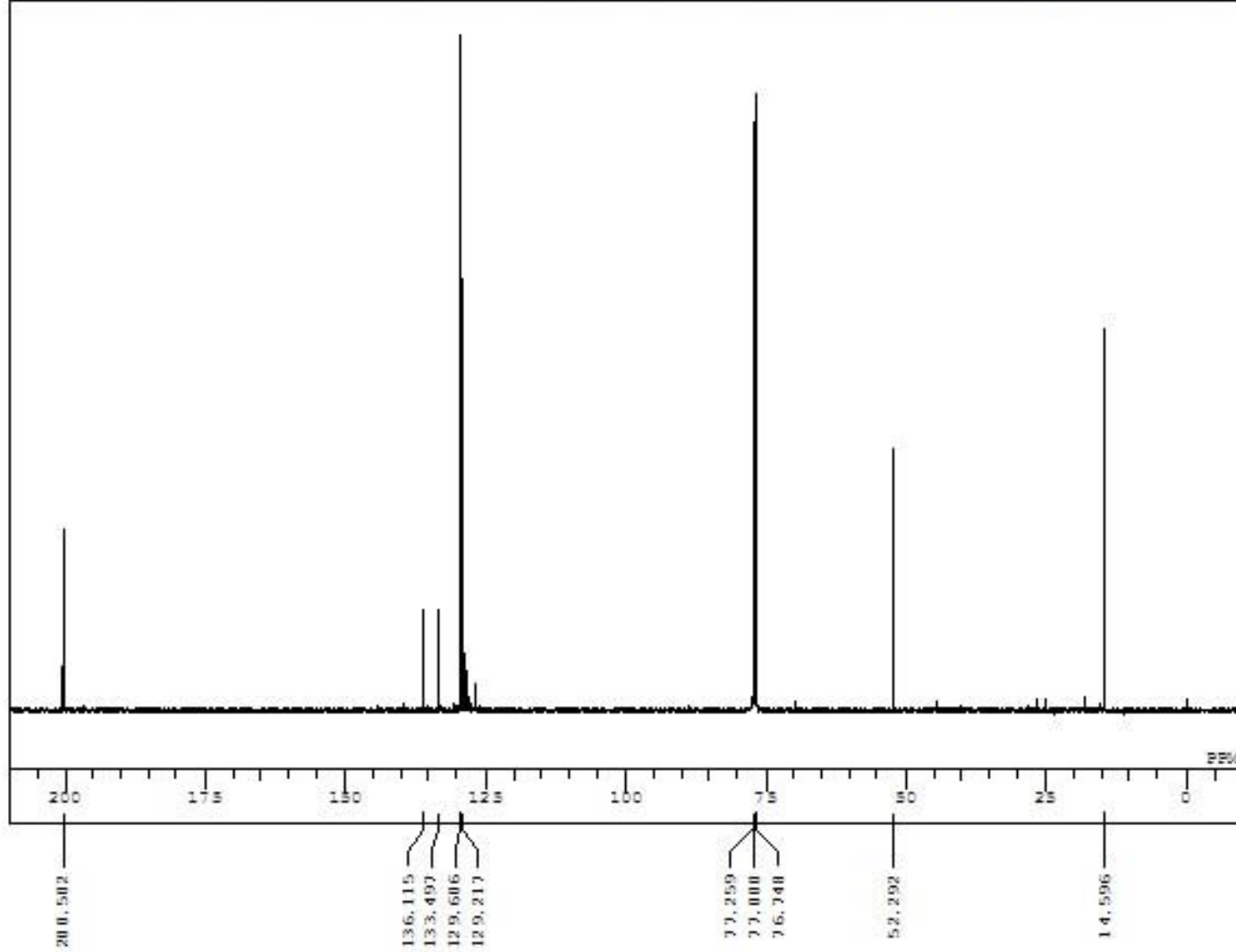


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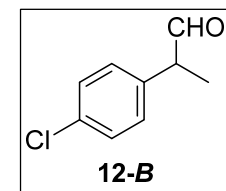
DFILE mk_a_2_1_1d_spectrum.als
COMNT Single Pulse Experiment
DATIM 2011-05-26 21:56:25
OBNUC 1H
EXMDD single_pulse.exp
OBFRQ 500.16 MHz
OBSET 2.41 KHz
OBFIN 6.01 Hz
POINT 16384
FREQU 10010.01 Hz
SCANS 16
ACQTM 1.6368 sec
PD 4.0000 sec
FW1 7.00 usec
IRNUC
OTEMP 19.2 c
SLVMT CDCL3
EXREF 0.00 ppm
BF 0.12 Hz
RGAIN 19



\\Fao-c08\orgchem-lab2\TeamG\ (17) 2001-4-22E23"Xj\ EAG-fs[f^\1Hx13CNGRrIRs\SeHRMS\aldehyde_B\5_p-Cl\mk_e_2_1_2_13c_spectrum.ala
 DFILE mk_e_2_1_2_13c_spectrum.ala
 PROCIT Single Pulse with Broadband
 2011-07-21 09:06:48

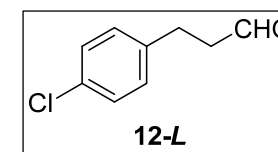
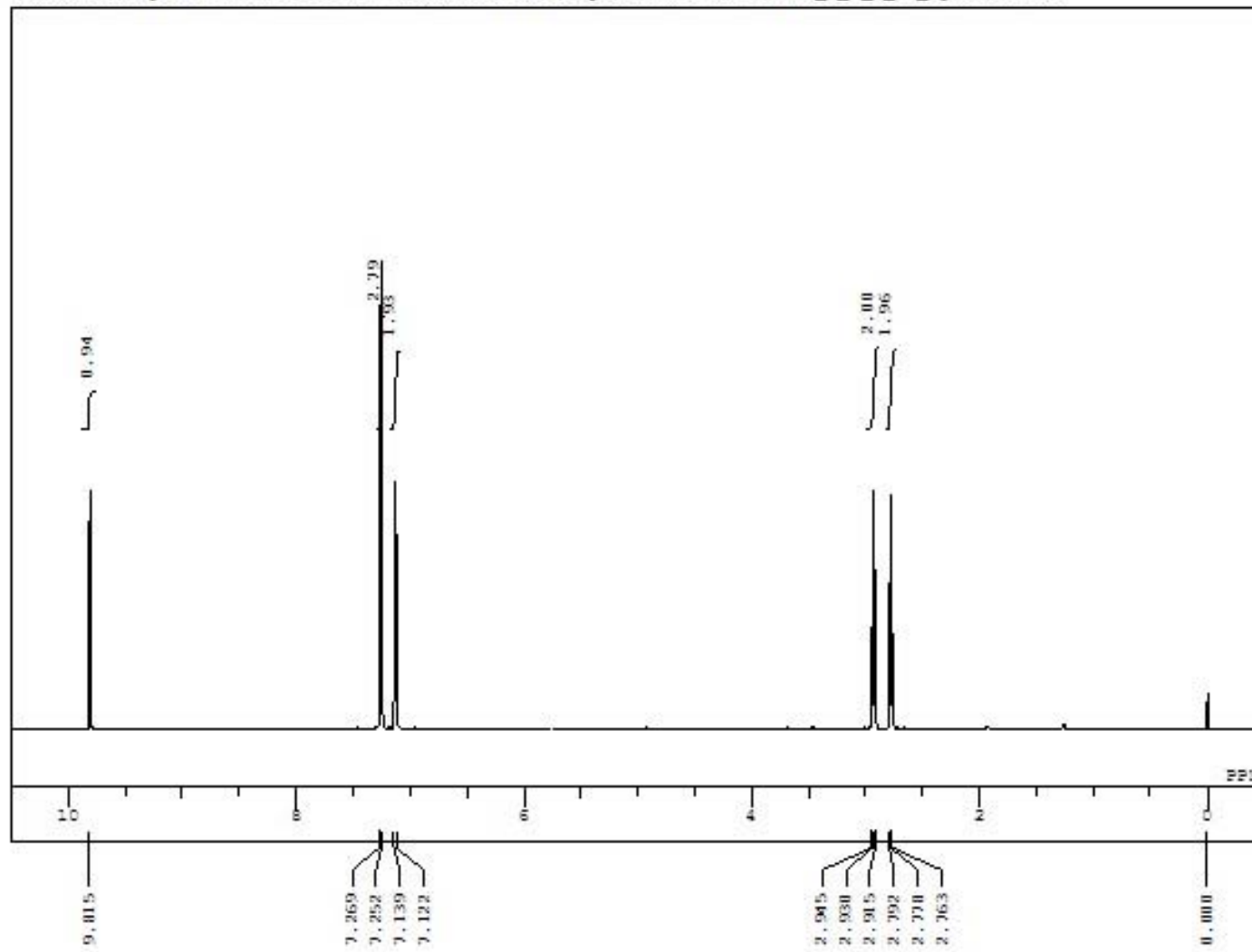


ENMOD single_pulse_dec
 OBFRQ 125.77 MHz
 OBSET 7.87 KHz
 OBFIN 4.21 Hz
 POINT 32768
 FREQU 31446.54 Hz
 SCANS 18600
 ACQTM 1.0420 sec
 PD 1.0000 sec
 FWL 4.47 usec
 IRMUC 1H
 CTEMP 21.8 c
 SLVNT CDCL3
 EXREF 77.00 ppm
 BF 0.12 Hz
 RGAIN 28



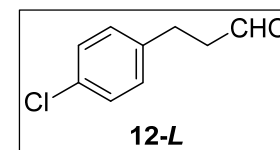
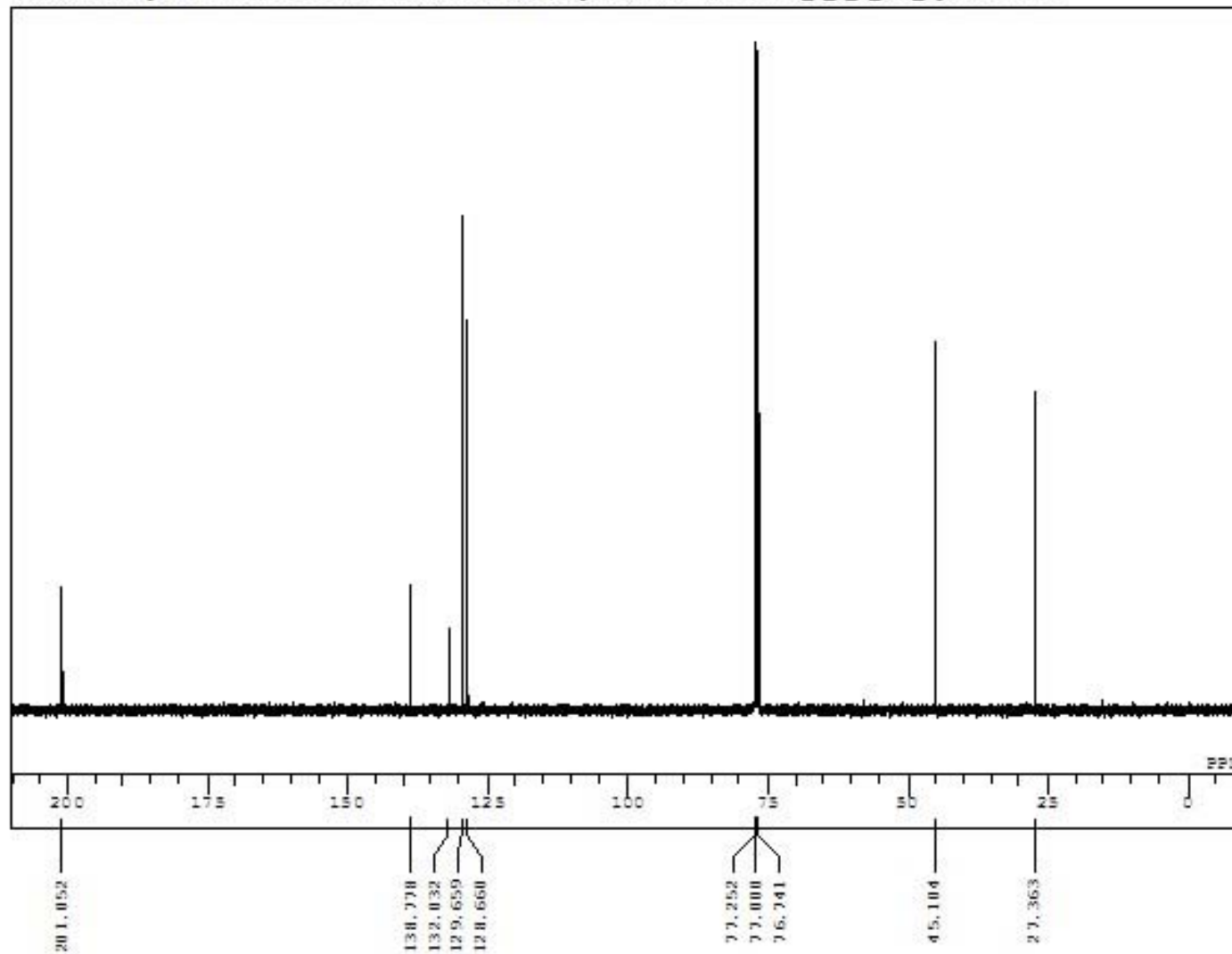
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DFILE mk_a_2_2_ld_spectrum.als
COMNT Single Pulse Experiment
DATIM 2011-06-02 12:30:06
OBNUC 1H
EXMDD single_pulse.exp
OBFRQ 500.16 MHz
OBSET 2.41 KHz
OBFIN 6.01 Hz
POINT 16384
FREQU 10010.01 Hz
SCANS 16
ACQTM 1.6368 sec
PD 4.0000 sec
PW1 7.00 usec
IRNUC
OTEMP 19.5 c
SLVMT CDCL3
EXREF 0.00 ppm
BF 0.12 Hz
RGAIN 25



\\fso-c08\orgchem-lab2\TeamG\17\ZODI-H-22E23\31*xj\ZAGzff(f^)\Alice\mk_a_2_2_13c_spectrum.ala

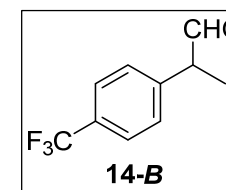
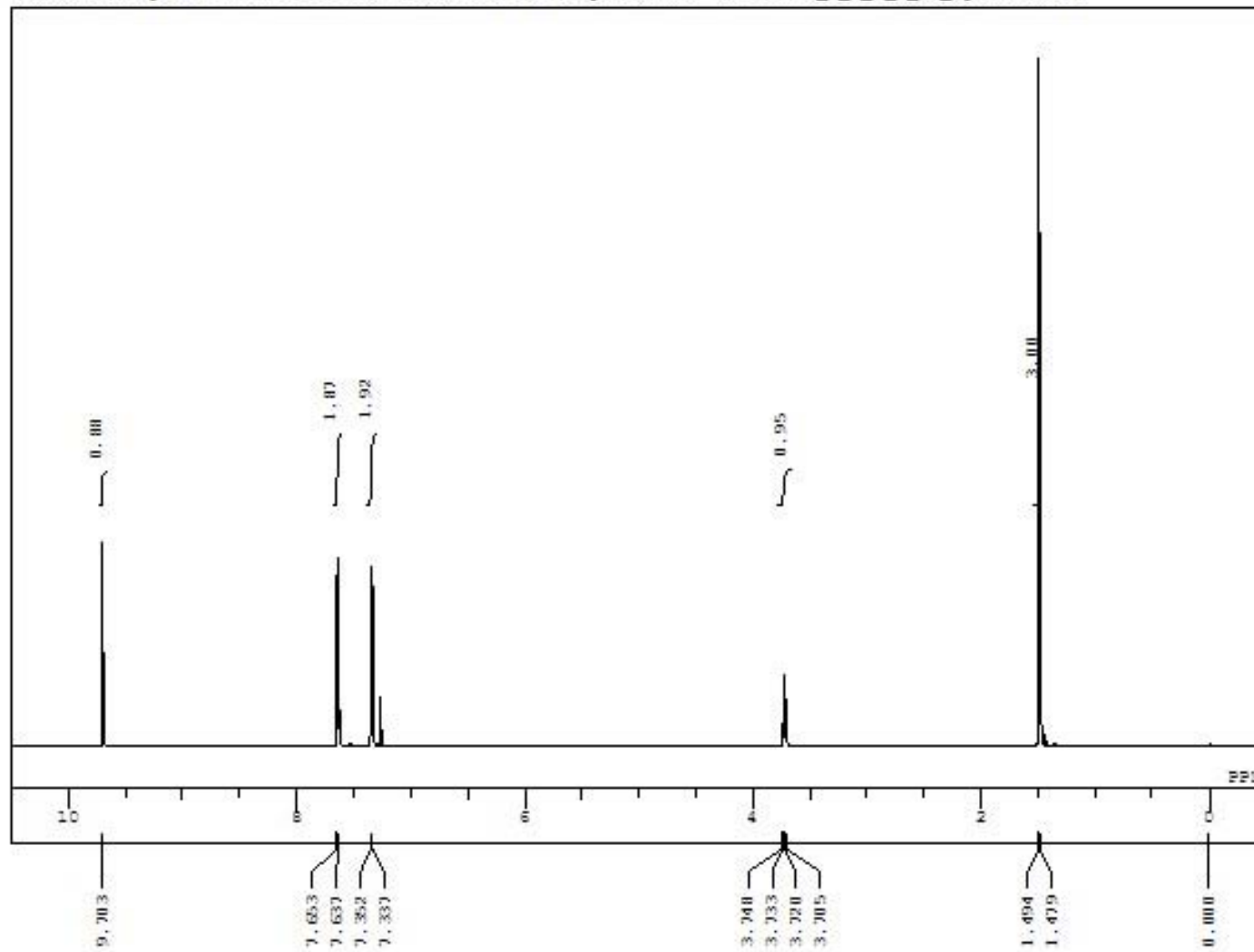
DFILE mk_a_2_2_13c_spectrum.ala
COMNT Single Pulse with Broadband
DATIM 2011-06-02 12:10:52
OBNUC 13C
EXMDD single_pulse_dec
OBFRQ 125.77 MHz
OBSET 7.87 KHz
OBFIN 4.21 Hz
POINT 32768
FREQU 31446.54 Hz
SCANS 2048
ACQTM 1.0420 sec
PD 1.0000 sec
FW1 4.47 usec
IRNUC 1H
OTEMP 20.7 c
SLVMT CDCL3
EXREF 77.00 ppm
BF 0.12 Hz
RGAIN 28



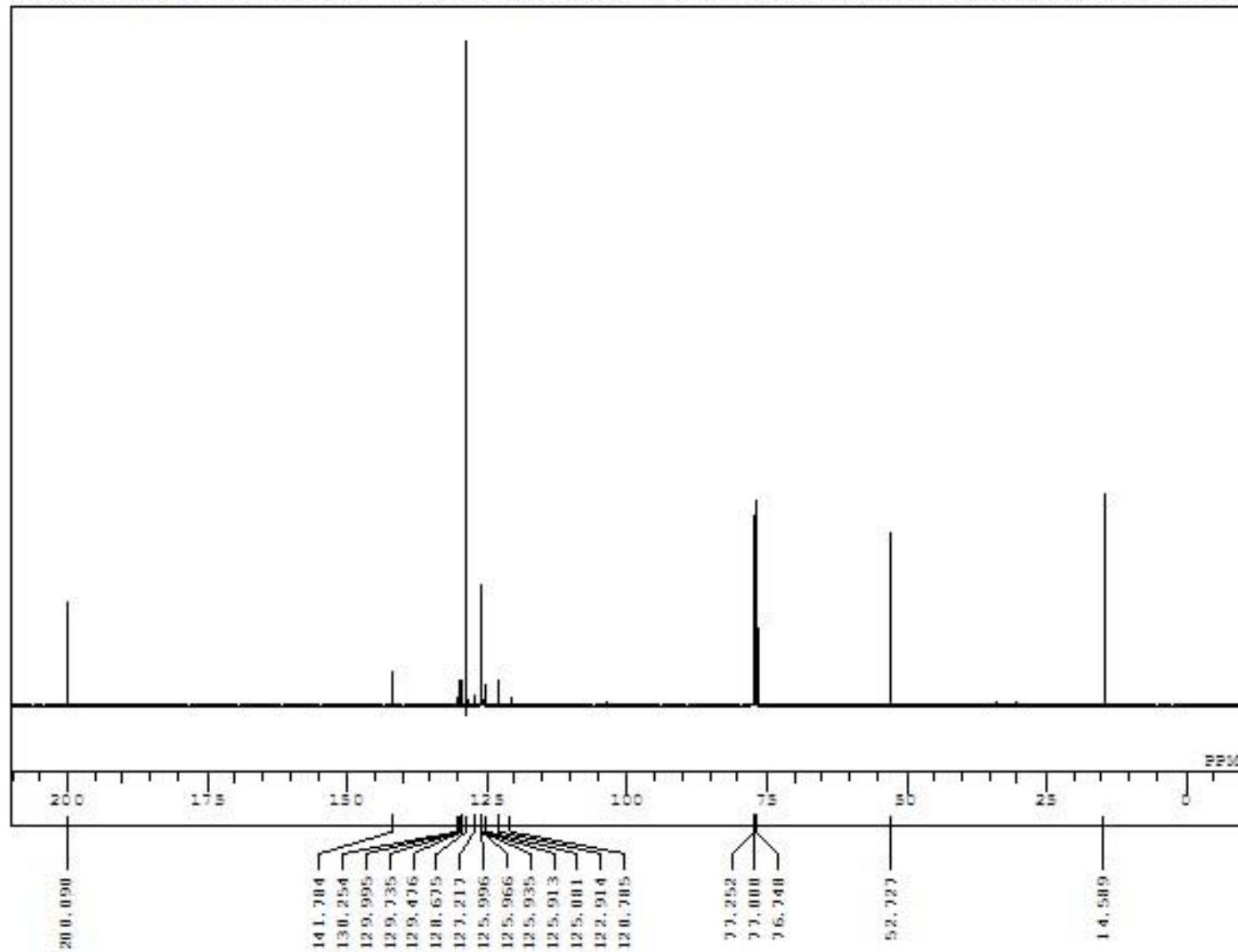
\\fao-c08\o-gchem-lab2\TeamG\171 ZODI-4-22E23"N"xj\ZAGzff(f^\Alice\mk_a_9_1_2_id_spectrum.als

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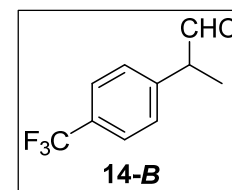
DFILE mk_a_9_1_2_id_spectrum.als
COMNT Single Pulse Experiment
DATIM 2012-03-20 14:11:03
OBNUC 1H
EXMDD single_pulse.exp
OBFRQ 500.16 MHz
OBSET 2.41 kHz
OBFIM 6.01 Hz
POINT 16384
FREQU 10010.01 Hz
SCANS 16
ACQTM 1.6368 sec
PD 4.0000 sec
FW1 7.00 usec
IRNUC
OTEMP 21.3 c
SLVMT CDCL3
EXREF 0.00 ppm
BF 0.12 Hz
RGAIN 16
    
```



DFILE mk_a_9_1_13c_spectrum.ala
 COMMENT Single Pulse with Broadband
 \\fao-c08\orgchem-lab2\TeamG\17\ZODI-4-22E23\31\ZAGzff\1\Rel 3C13C\IRMS\HRMS\aldehyde_B\7_p-DF3\mk_a_9_1_13c_spectrum.ala
 DATIM 2012-03-20 16:10:56

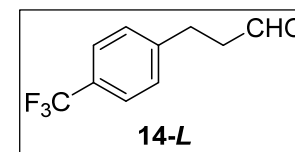
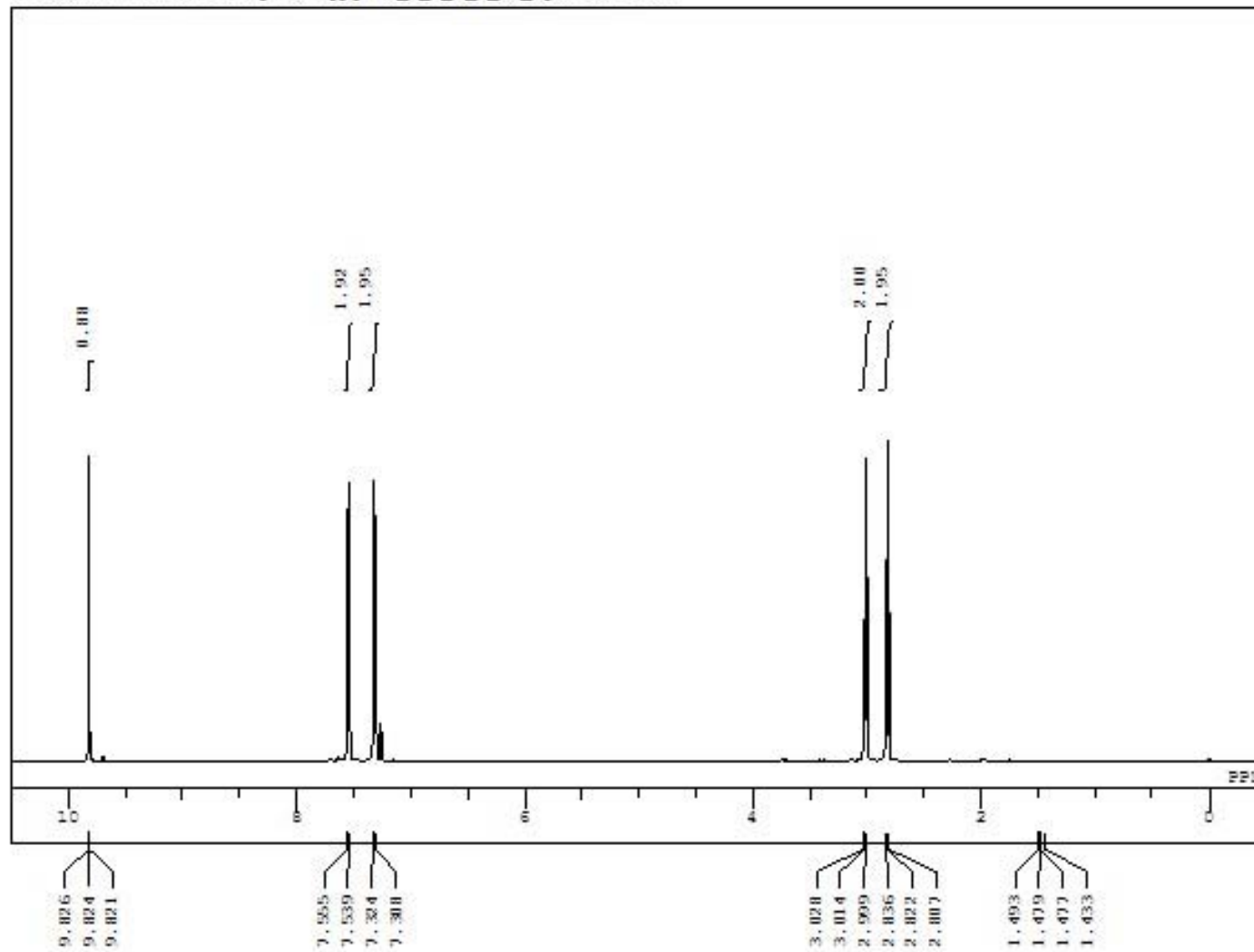


OBNUC 13C
 EXMDD single_pulse_dec
 OBFRQ 125.77 MHz
 OBSET 7.87 KHz
 OBFIM 4.21 Hz
 POINT 32768
 FREQU 31446.54 Hz
 SCANS 7000
 ACQTM 1.0420 sec
 PD 1.0000 sec
 PW1 4.47 usec
 IRNUC 1H
 CTEMP 22.8 c
 SLVMT CDCL3
 EXREF 77.00 ppm
 BF 0.12 Hz
 RGAIN 30

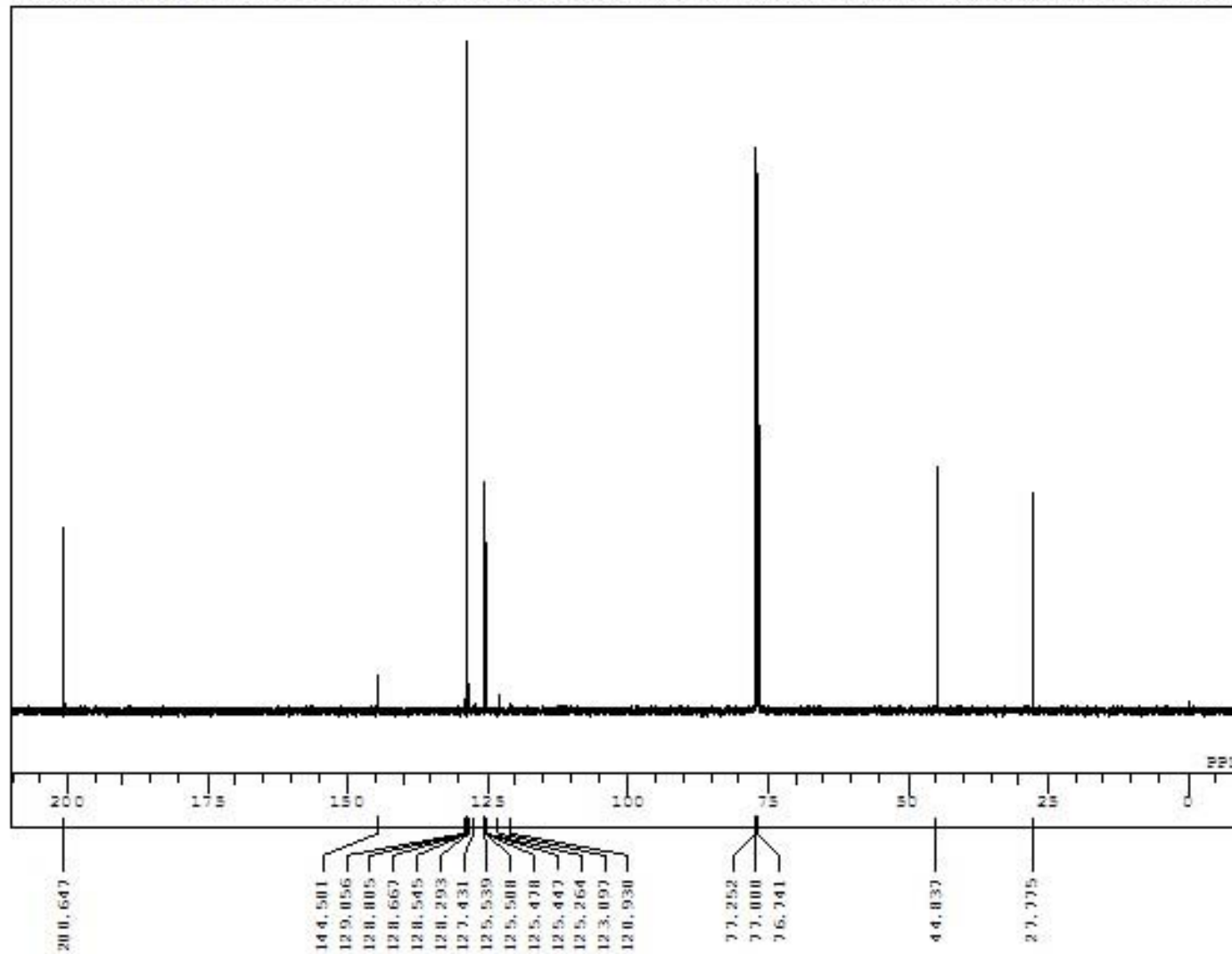


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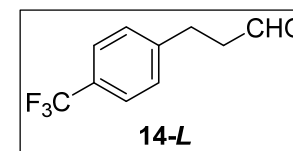
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DFILE mk_a_9_2_2_1d_spectrum.aia
COMNT Single Pulse Experiment
DATIM 2012-03-20 11:33:25
OBNUC 1H
EXMDD single_pulse.exp
OBFRQ 500.16 MHz
OBSET 2.41 kHz
OBFIN 6.01 Hz
POINT 16384
FREQU 10010.01 Hz
SCANS 16
ACQTM 1.6368 sec
PD 4.0000 sec
PW1 7.00 usec
IRNUC
OTEMP 20.4 c
SLVNT CDCL3
EXREF 0.00 ppm
BF 0.12 Hz
RGAIN 17
```



DFILE mk_a_9_2_13c_spectrum.ala
 COMMENT Single Pulse with Broadband
 \\fao-c08\orgchem-lab2\TeamG\17\ZODI-4-22E23\31x\ZAGsff(f^1Hs13CNGrIRMSsHRMS)\aldehyde_I\7_p-DF3\mk_a_9_2_13c_spectrum.ala
 DATIM 2012-01-19 07:25:20



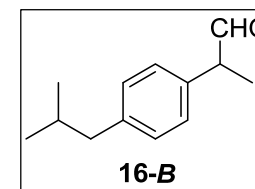
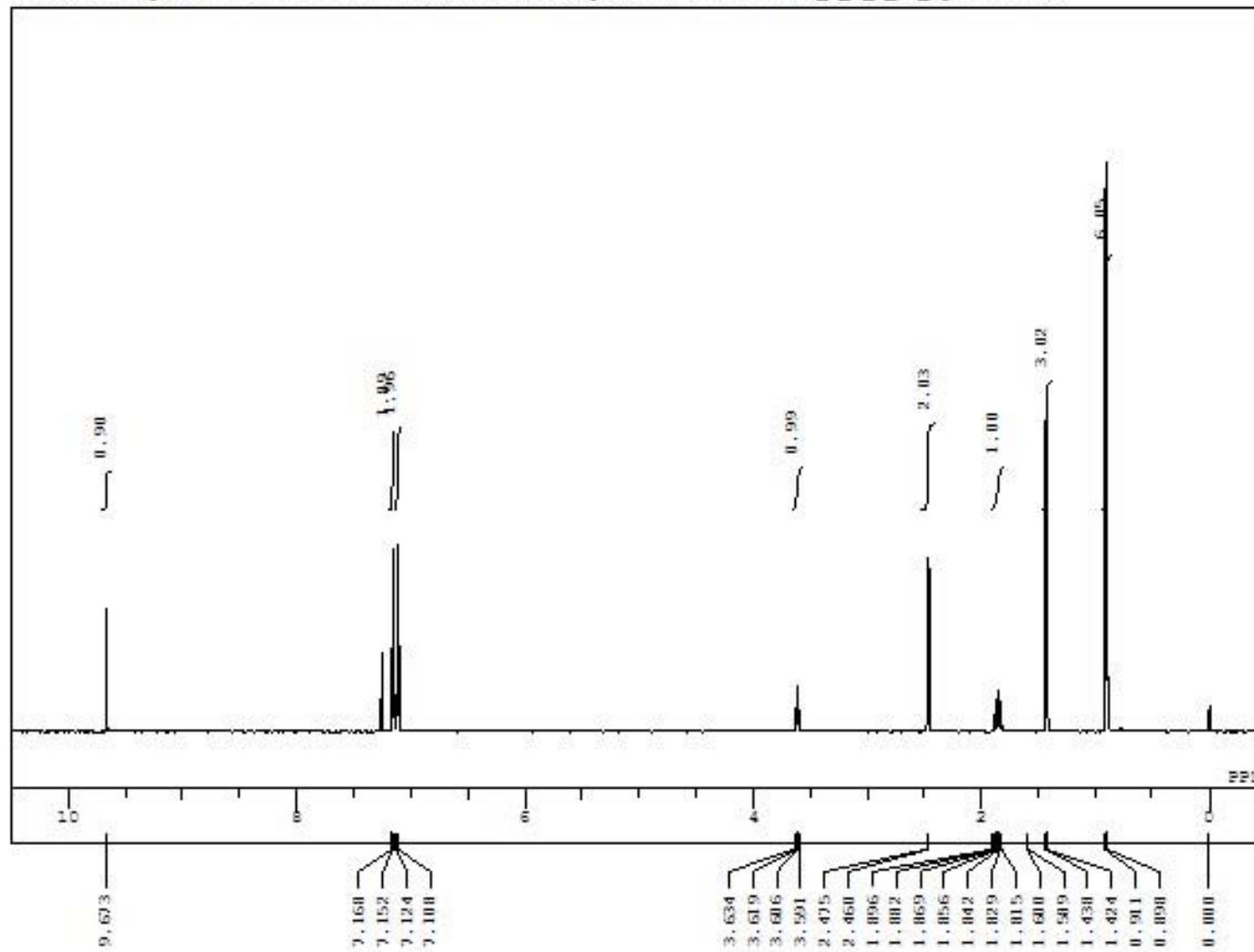
OBNUC 13C
 EXMOD single_pulse_dec
 OBFRQ 125.77 MHz
 OBSET 7.87 KHz
 OBFIM 4.21 Hz
 POINT 32768
 FREQU 31446.54 Hz
 SCANS 8900
 ACQTM 1.0420 sec
 PD 1.0000 sec
 PW1 4.47 usec
 IRNUC 1H
 CTEMP 20.5 c
 SLVNT CDCL3
 EXREF 77.00 ppm
 BF 0.12 Hz
 RGAIN 30



\\fao-c08\oegchem-lab2\TeamG\17\ZODI-4-22E23\31*xj\ZAGzff\Alice\mk_a_7_1_id_spectrum.als

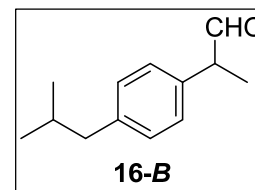
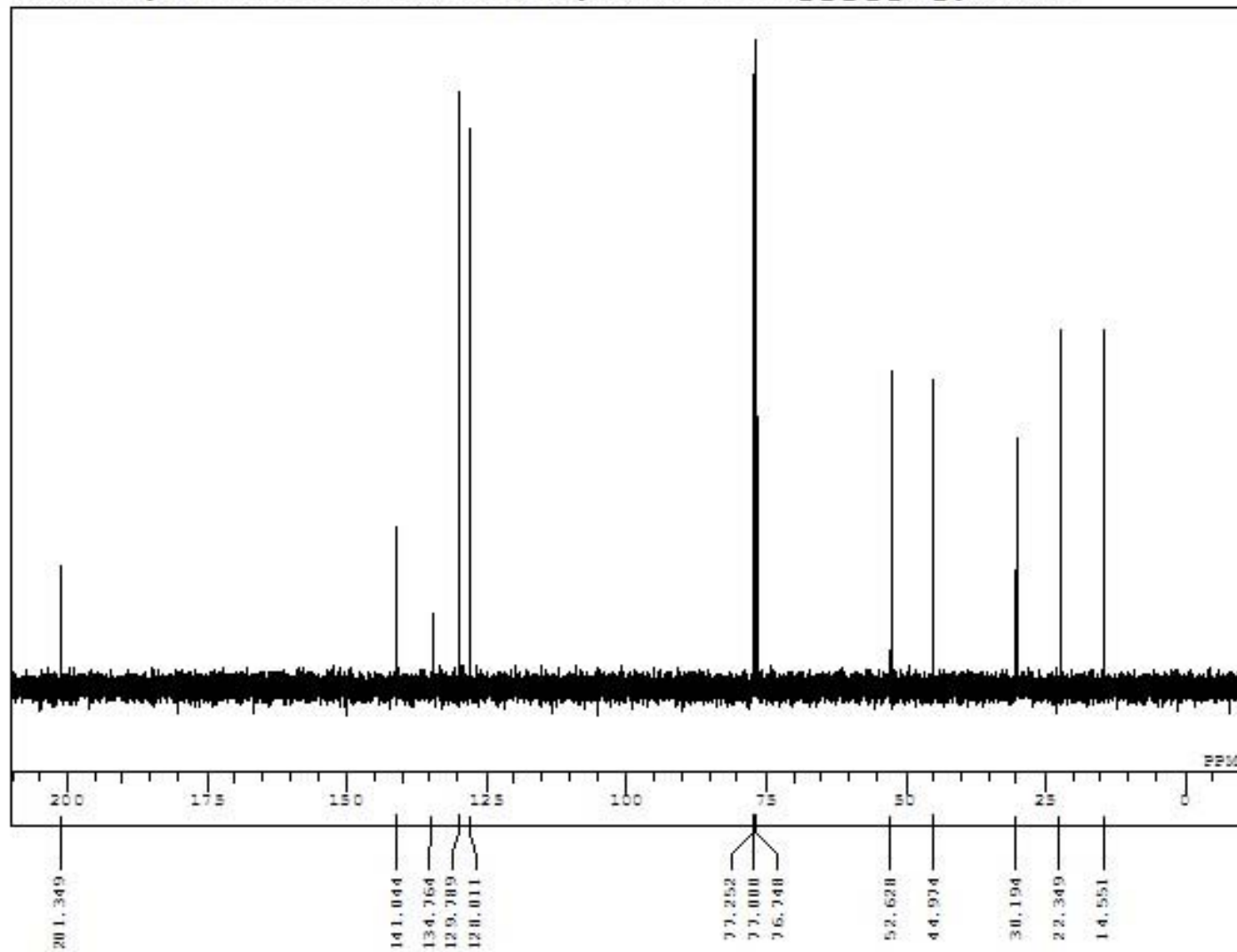
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EXMDD single_pulse.exp
OBFRQ 500.16 MHz
OBSET 2.41 kHz
OBFIN 6.01 Hz
POINT 16384
FREQU 10010.01 Hz
SCANS 16
AQTM 1.6368 sec
PD 4.0000 sec
FW1 7.00 usec
IRNUC 1H
OTEMP 16.4 c
SLVNT CDCL3
EXREF 0.00 ppm
BF 0.12 Hz
RGAIN 18
    
```



\\fso-c08\orgchem-lab2\TeamG\17\ZODI-4-22E23"N"xj\ZAGzff(f^\Alice\mk_a_7_1_2_13c_spectrum.als

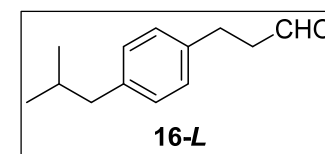
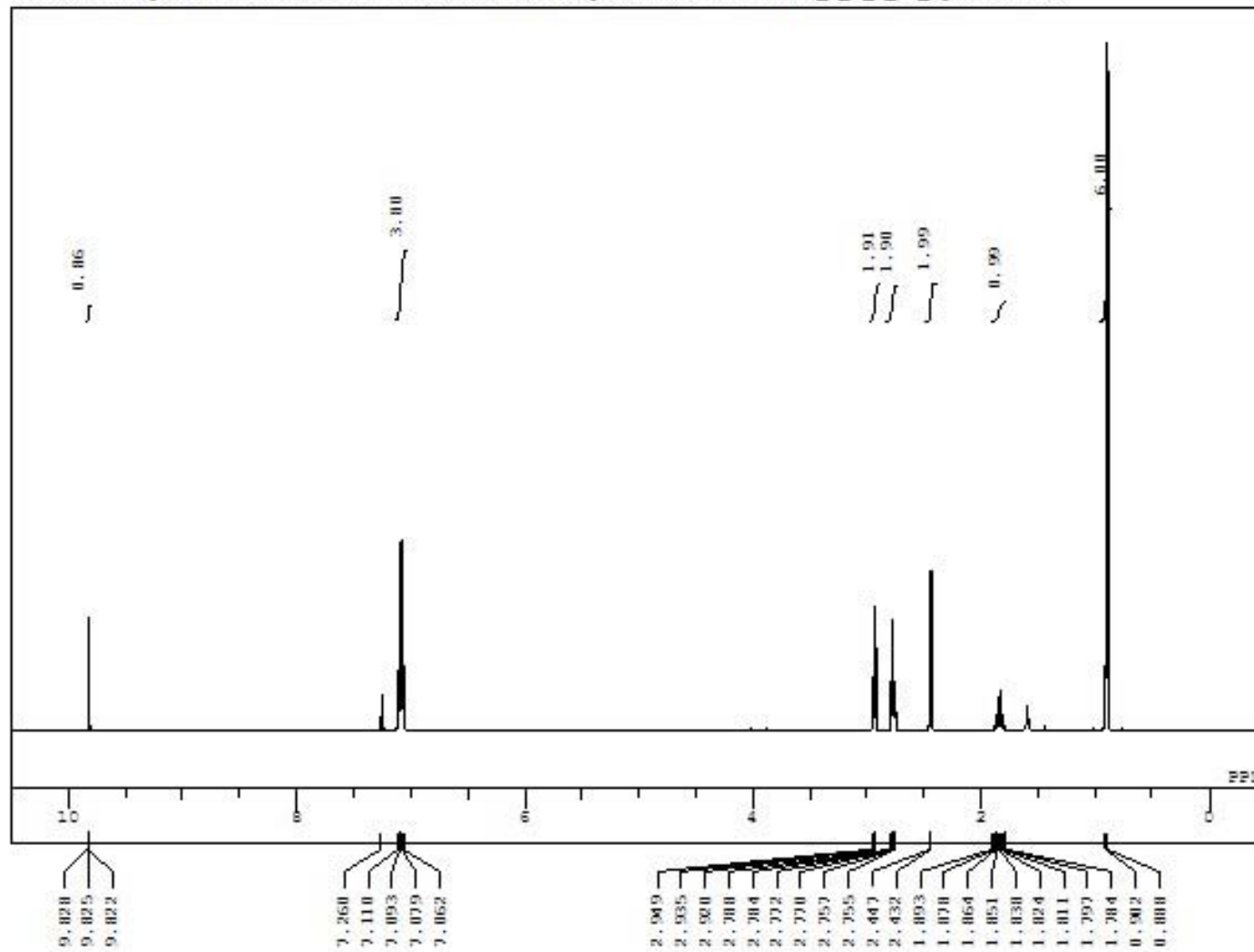
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COMNT Single Pulse with Broadband
DATIM 2012-03-01 17:53:25
OBNUC 13C
EXMDD single_pulse_dec
OBFRQ 125.77 MHz
OBSET 7.87 KHz
OBFIN 4.21 Hz
POINT 32768
FREQU 31446.54 Hz
SCANS 800
ACQTM 1.0420 sec
PD 1.0000 sec
FW1 4.47 usec
IRNUC 1H
OTEMP 18.3 c
SLVMT CDCL3
EXREF 77.00 ppm
BF 0.12 Hz
RGAIN 30



\\fao-c08\oegchem-lab2\TeamG\17\ZODI-4-22E23\31*xj\ZAGzff\Alice\mk_a_7_2_1d_spectrum.als

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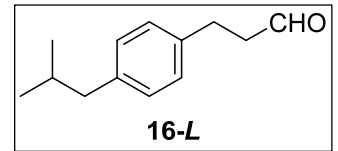
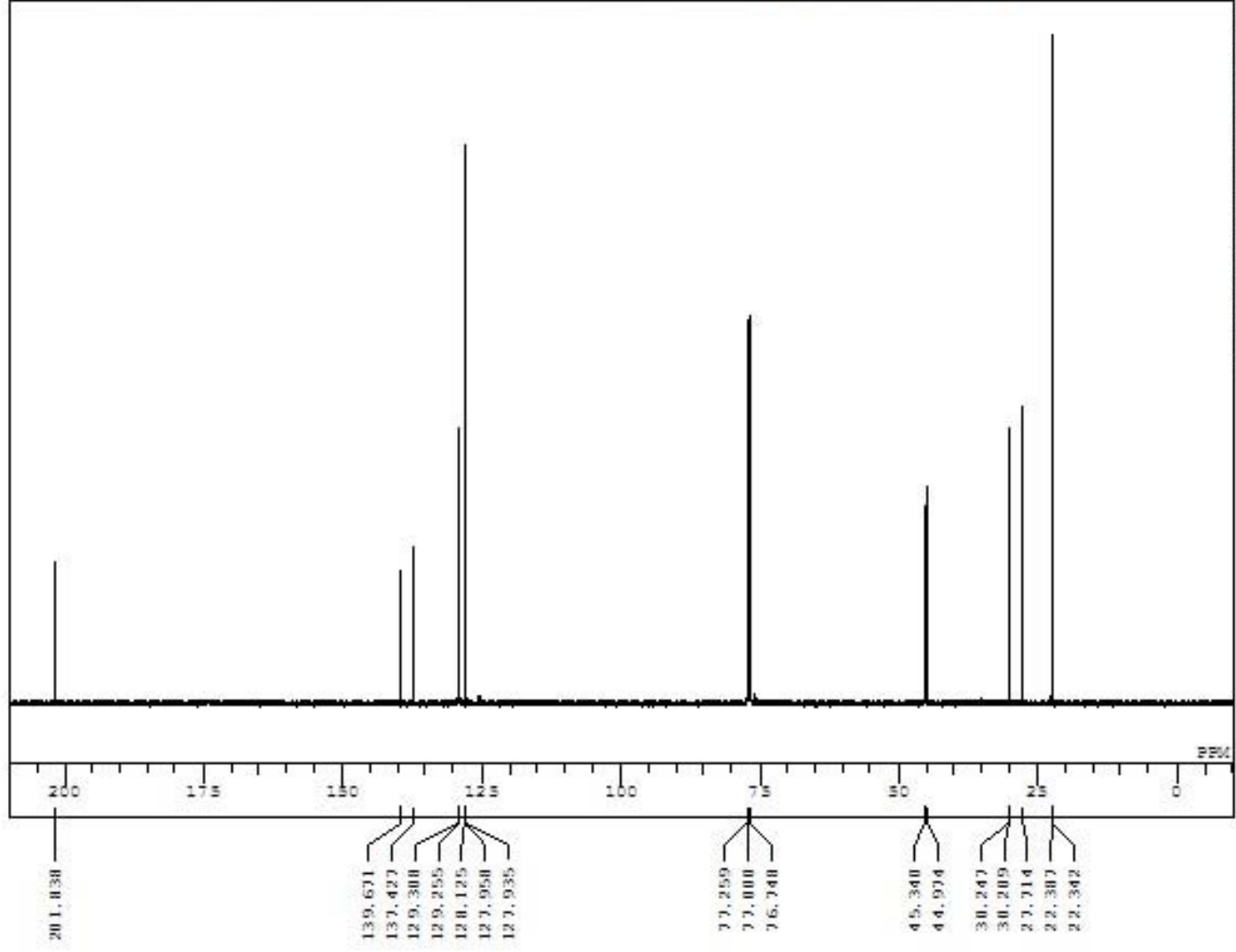
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COMNT Kugel
DATIM 2011-06-29 22:07:27
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EXMDD single_pulse.exp
OBFRQ 500.16 MHz
OBSET 2.41 kHz
OBFIN 6.01 Hz
POINT 16384
FREQU 10010.01 Hz
SCANS 16
AQTM 1.6368 sec
PD 4.0000 sec
PWL 7.00 usec
IRNUC
OTEMP 22.3 c
SLVNT CDCL3
EXREF 7.26 ppm
BF 0.12 Hz
RGAIN 17
    
```



\\Fao-c08\orgchem-lab2\Team2\ (17) ZODI-4-22E23\N\Xj\ZAZzff\Alice\mk_s_7_2_13c_spectrum.als

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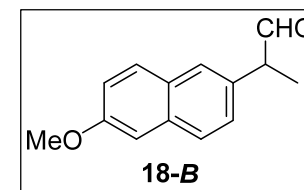
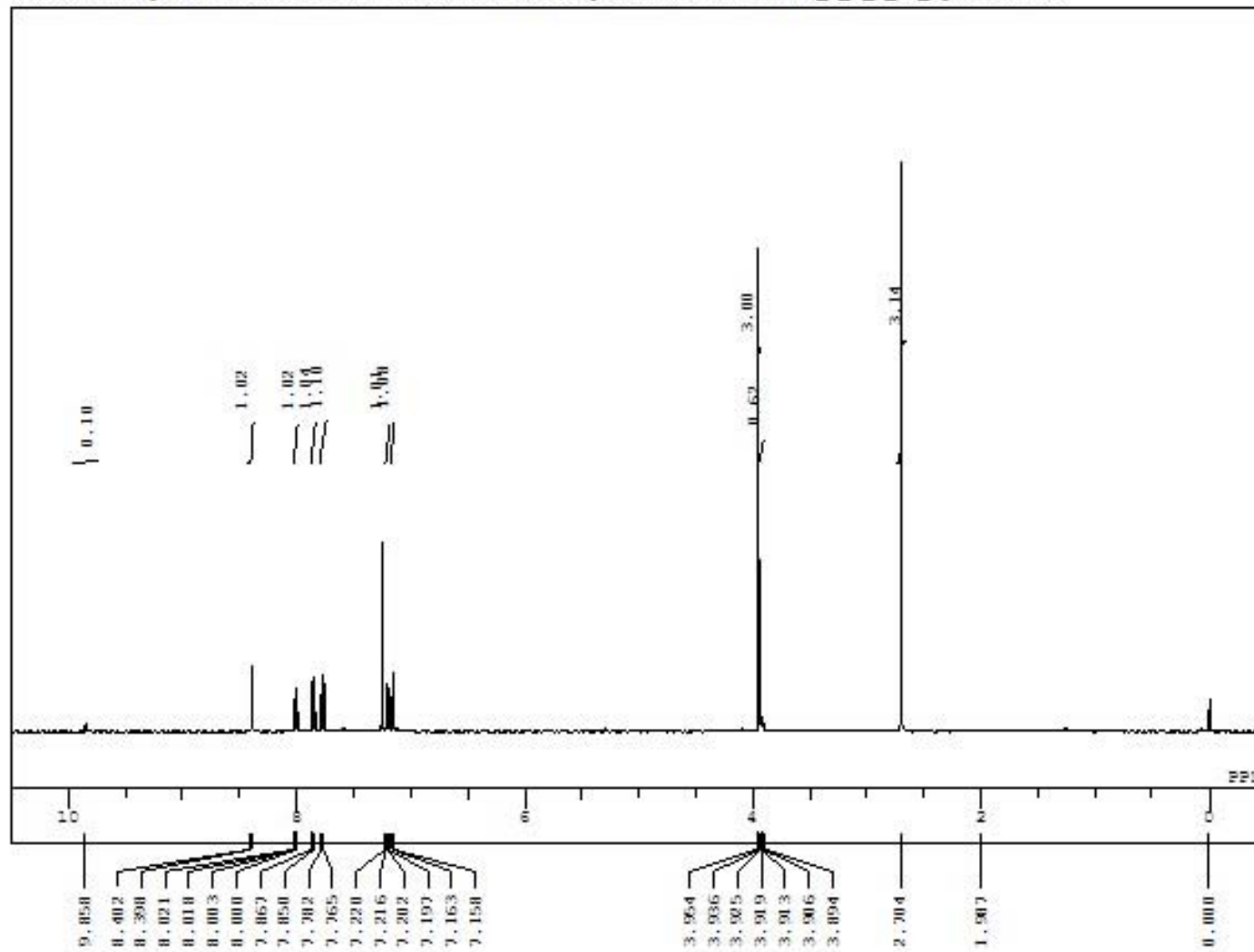
DFILE mk_s_7_2_13c_spectrum.als
COMMT Single Pulse with Broadband
DATIM 2011-09-29 08:41:32
CNMUC 13C
ENMOD single_pulse_dec
OBFRQ 125.77 MHz
OBSET 7.87 KHz
OBFIN 4.21 Hz
POINT 32768
FREQU 31446.54 Hz
SCANS 11500
AQQT 1.0420 sec
PD 1.0000 sec
PWL 4.47 usec
IRNUC 1H
CTEMP 21.8 c
SLVNT CDCL3
EKREF 77.00 ppm
BF 0.12 Hz
RGAIN 30
    
```



\\fao-c08\oegchem-lab2\TeamG\17\ZODI-4-22E23\31*xj\ZAGzff\Alice\mk_e_8_1_id_spectrum.als

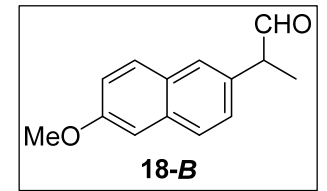
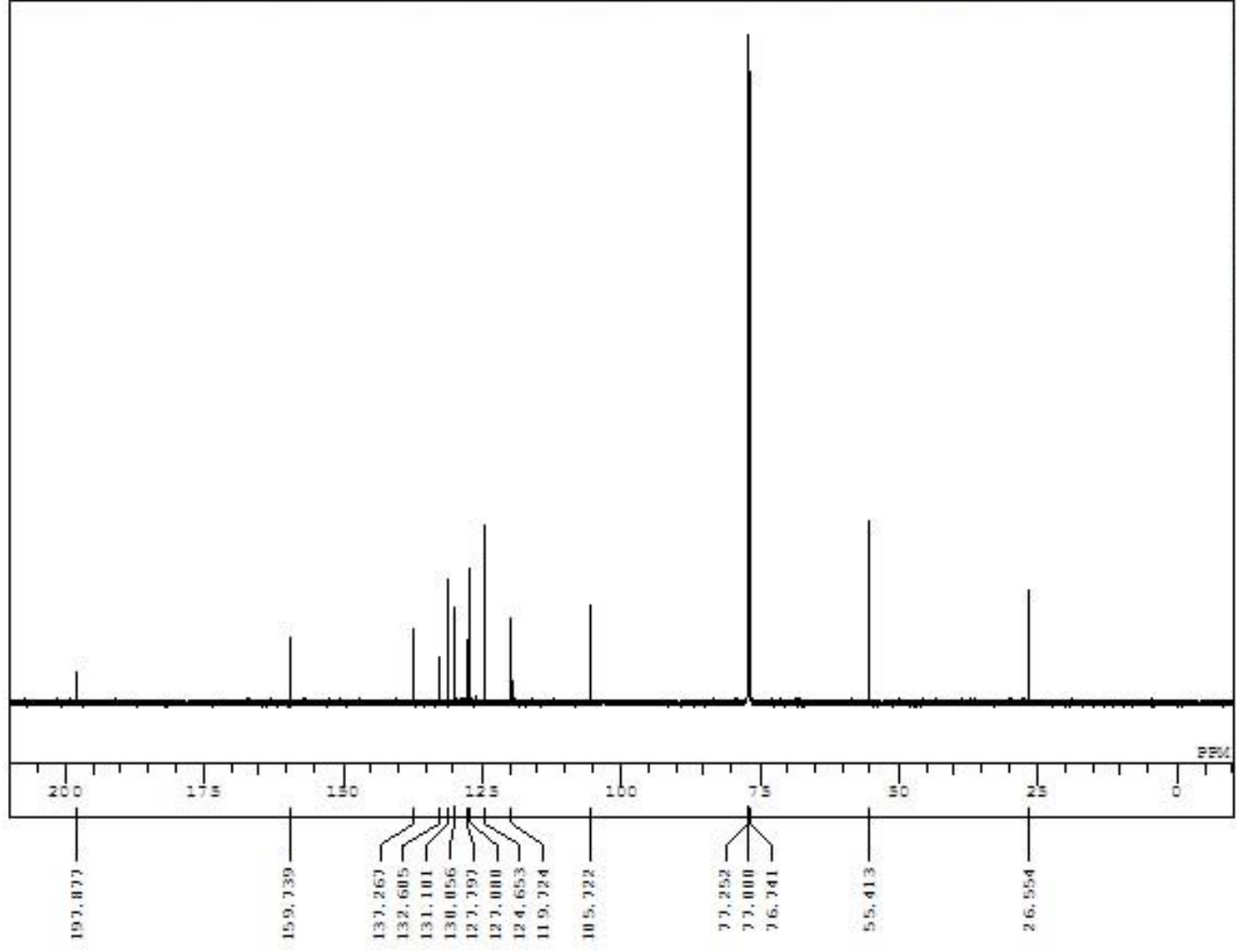
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COMENT Single Pulse Experiment
DATIM 2011-09-14 17:04:48
OBNUC 1H
EXMDD single_pulse.exp
OBFRQ 500.16 MHz
OBSET 2.41 kHz
OBFIN 6.01 Hz
POINT 16384
FREQU 10010.01 Hz
SCANS 16
AQTM 1.6368 sec
PD 4.0000 sec
FW 7.00 usec
IRNUC
OTEMP 21.6 c
SLVNT CDCL3
EXREF 0.00 ppm
BF 0.12 Hz
RGAIN 23
    
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\\Fao-008\orgchem-lab2\Team2\ (17) ZODI-4-2ZE23\N\Xj\ZAZ-fs[f^Alicia\mk_s_6_1_2_13c_spectrum.ala

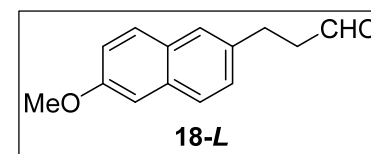
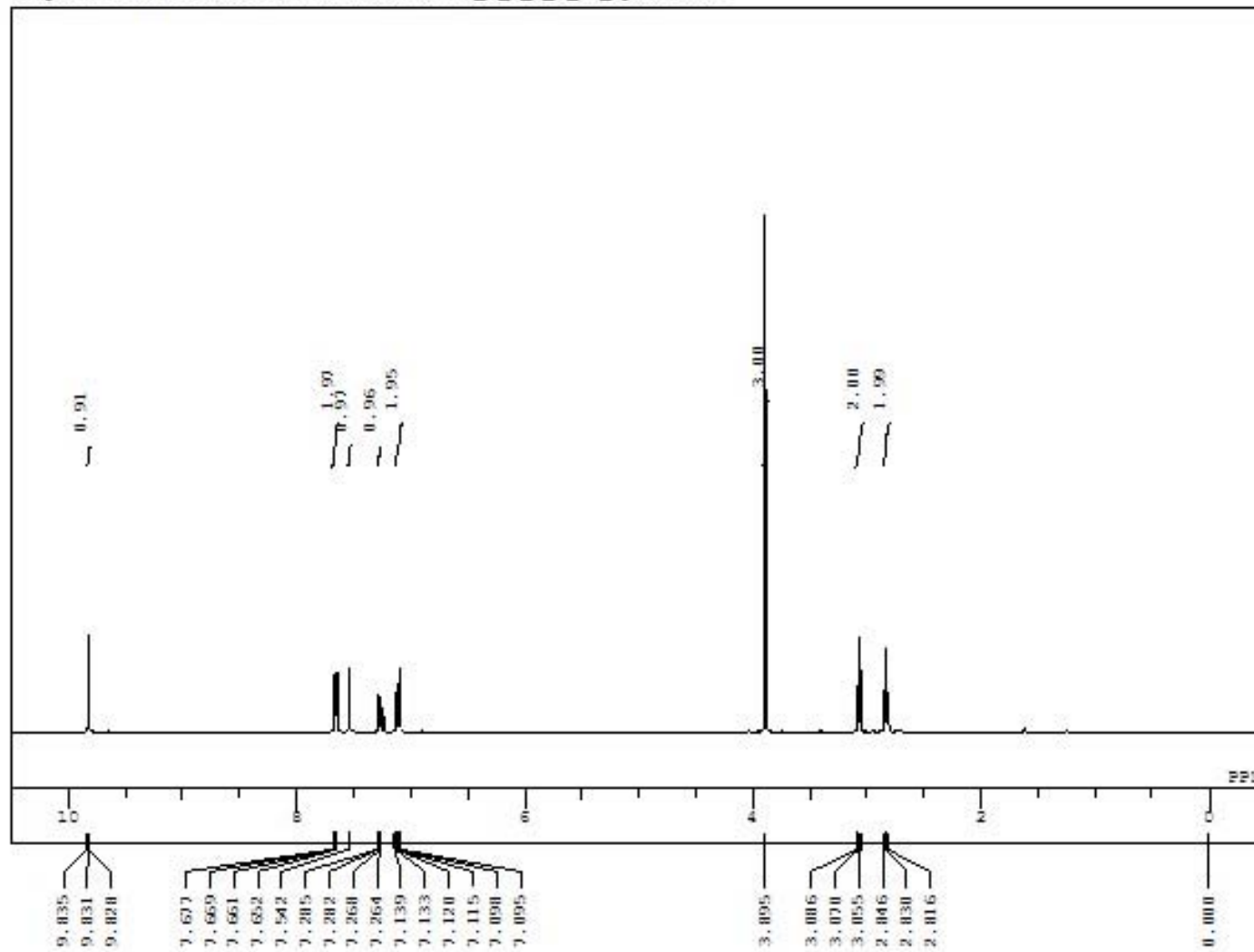
DFILE mk_s_6_1_2_13c_spectrum.ala
COMMT Single Pulse with Broadband
DATIM 2011-09-30 08:34:14
CENUC 13C
EXMOD single_pulse_dec
OBFRQ 125.77 MHz
OBSET 7.87 KHz
OBFIN 4.21 Hz
POINT 32768
FREQU 31446.54 Hz
SCANS 18000
AQTM 1.0420 sec
PD 1.0000 sec
PWL 4.47 usec
IRNUC 1H
CTEMP 22.0 c
SLVNT CDCL3
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BF 0.12 Hz
RGAIN 28



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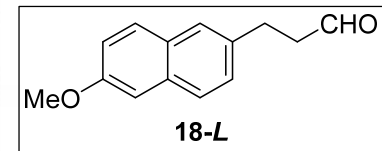
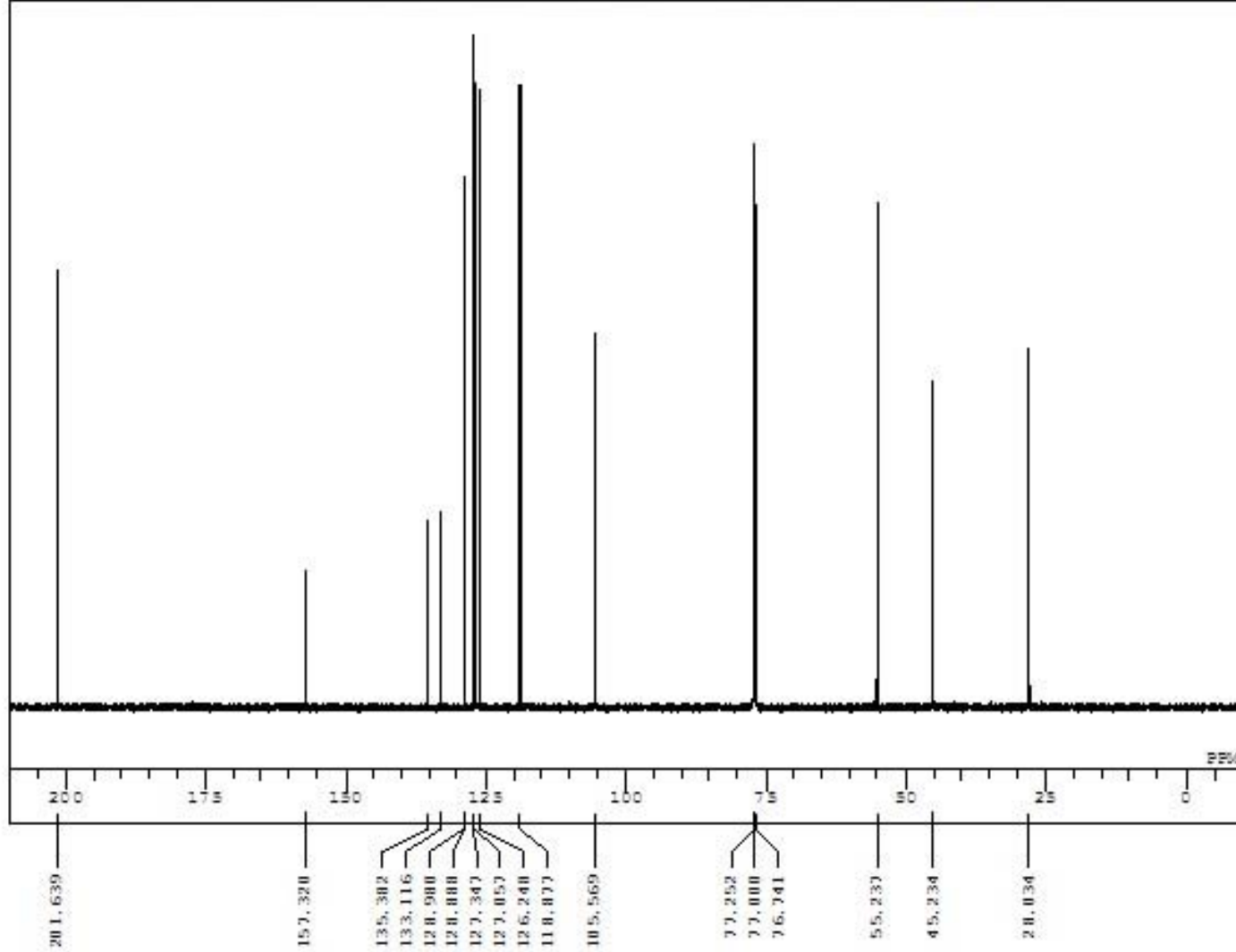
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COMENT Single Pulse Experiment
DATIM 2012-03-26 04:57:35
OBNUC 1H
EXMDD single_pulse.exp
OBFRQ 500.16 MHz
OBSET 2.41 kHz
OBFIN 6.01 Hz
POINT 16384
FREQU 10010.01 Hz
SCANS 16
AQTM 1.6368 sec
PD 4.0000 sec
PW1 7.00 usec
IRNUC
OTEMP 19.6 c
SOLVENT CDCL3
EXREF 0.00 ppm
BF 0.12 Hz
RGAIN 18
    
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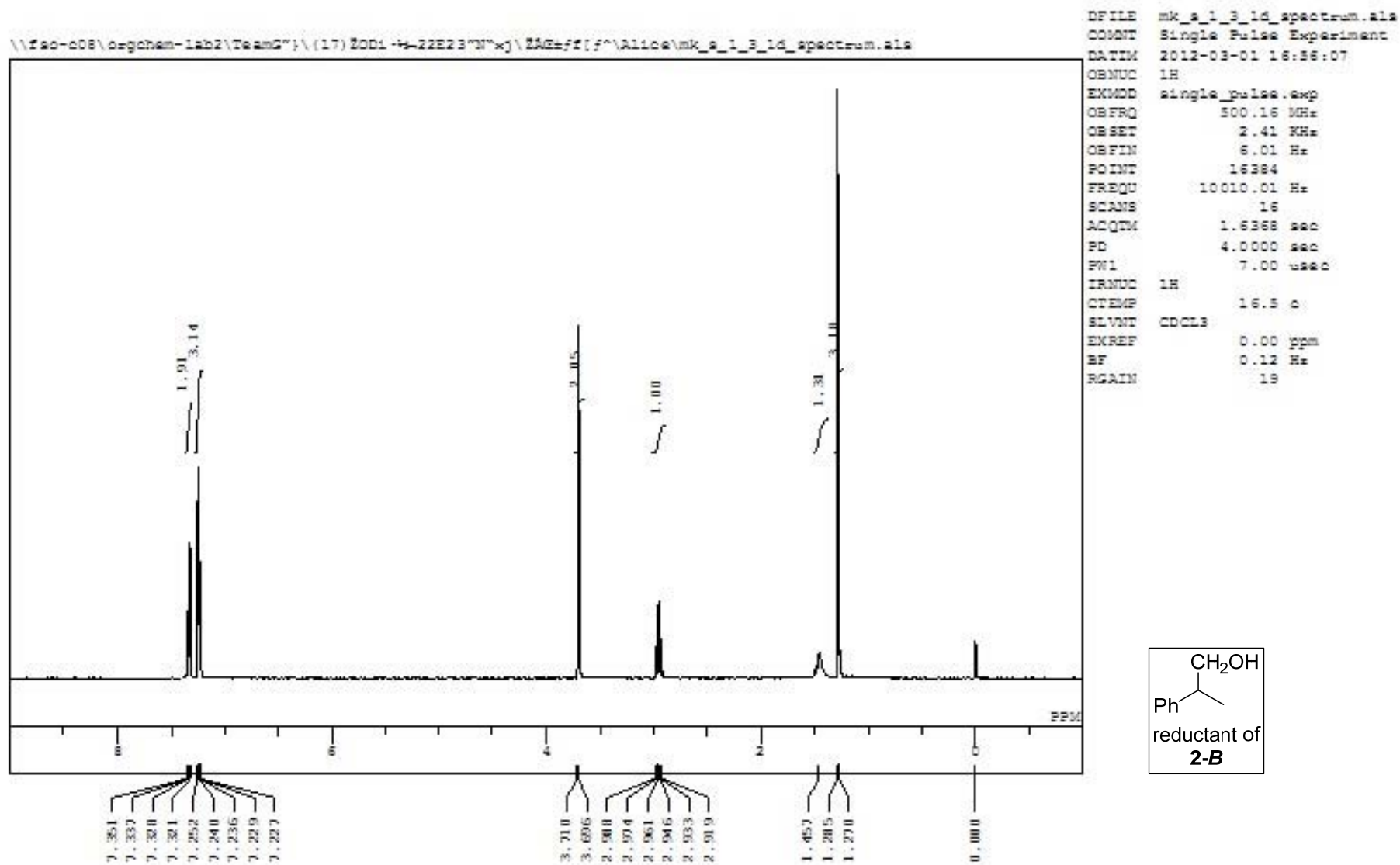


\\Fao-c08\orgchem-lab2\Team2\ (17) ZODI-4-2ZE23\N\XJ\ EAG-fs\Alicia\mk_s_6_2_4_13c_spectrum.ala

DFILE mk_s_6_2_4_13c_spectrum.ala
COMMT Single Pulse with Broadband
DATIM 2012-03-26 07:48:37
CENUC 13C
EXMOD single_pulse_dec
OBFRQ 125.77 MHz
OBSET 7.87 KHz
OBFIN 4.21 Hz
POINT 32768
FREQU 31446.54 Hz
SCANS 5000
AQTM 1.0420 sec
PD 1.0000 sec
PWL 4.47 usec
IRNUC 1H
CTEMP 21.6 c
SLVNT CDCL3
EKREF 77.00 ppm
BF 0.12 Hz
RGAIN 30

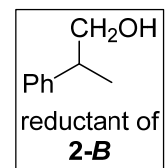
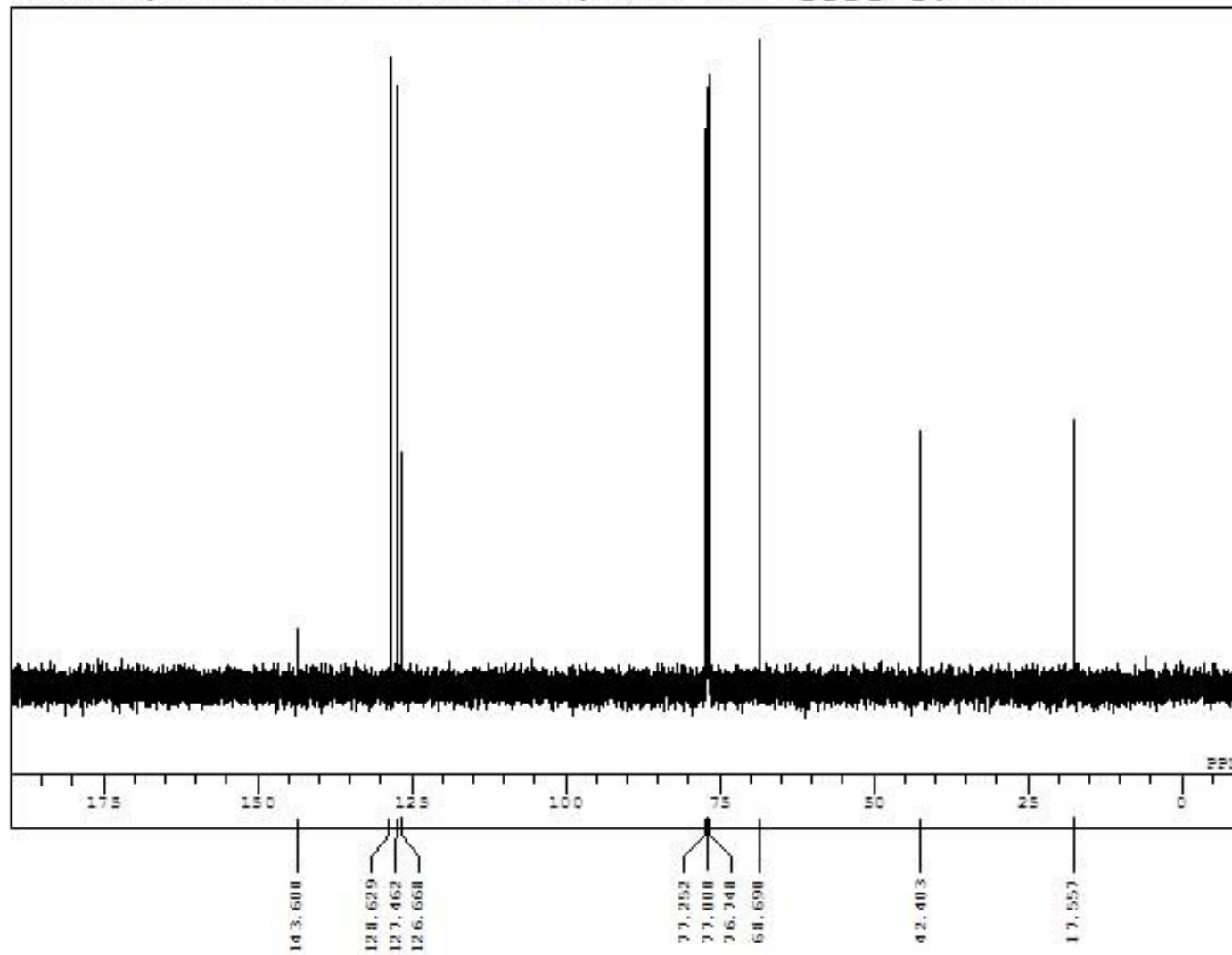


14. ¹H & ¹³C NMR Charts of Reductants of Aldehydes 2, 4, 6, 8, 10, 12, 14, 16, and 18.



\\fso-c08\orgchem-lab2\TeamG\17\ZODI-4-22E23\31*xj\ZAGzff(f^)\Alice\mk_a_1_3_13c_spectrum.aie

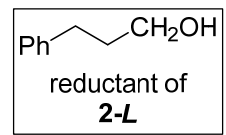
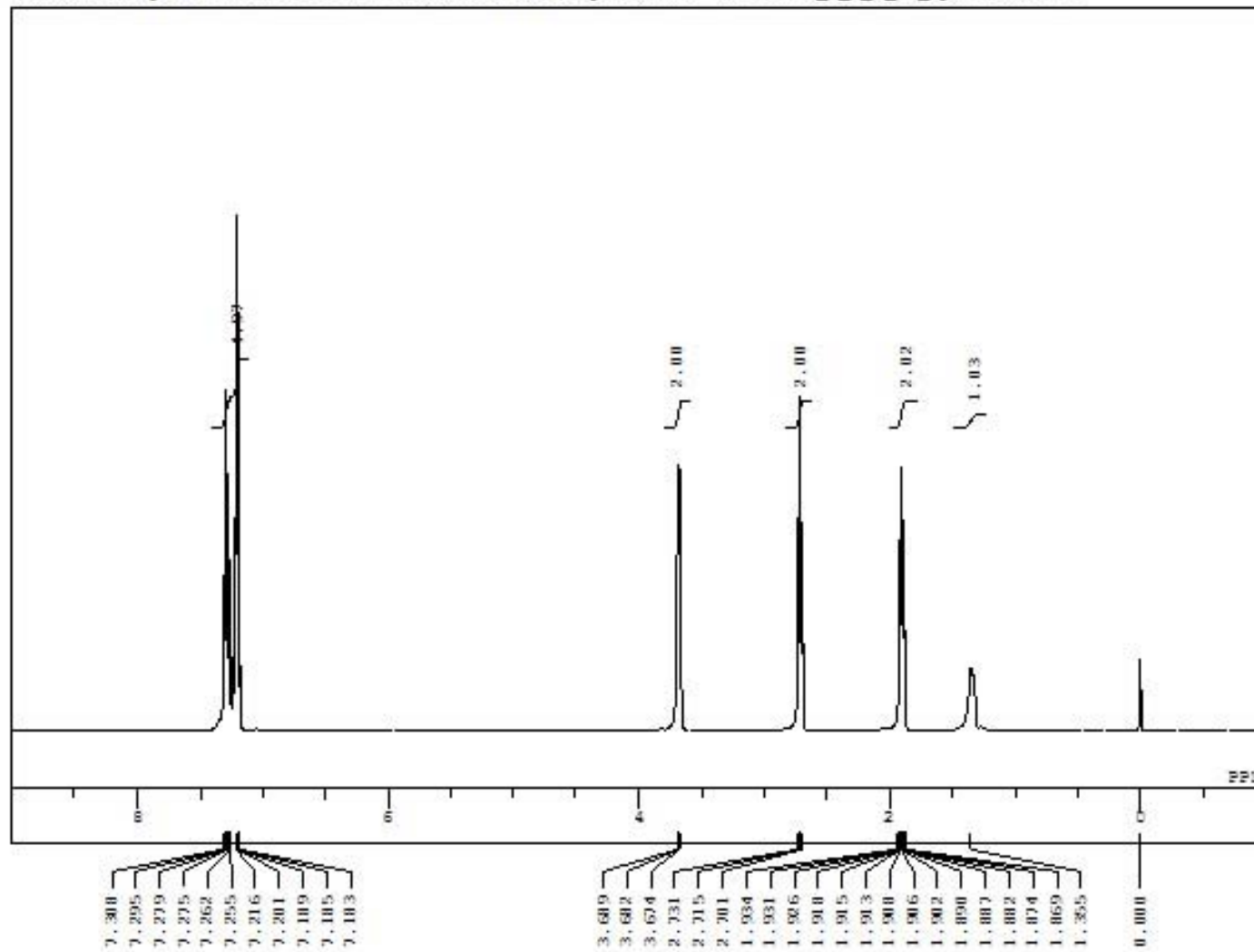
DFILE mk_a_1_3_13c_spectrum.aie
COMNT Single Pulse with Broadband
DATIM 2012-03-01 17:20:54
OBNUC 13C
EXMDD single_pulse_dec
OBFRQ 125.77 MHz
OBSET 7.87 KHz
OBFIN 4.21 Hz
POINT 32768
FREQU 31446.54 Hz
SCANS 700
ACQTM 1.0420 sec
PD 1.0000 sec
PW1 4.47 usec
IRNUC 1H
OTEMP 18.8 c
SLVMT CDCL3
EXREF 77.00 ppm
BF 0.12 Hz
RGAIN 28



\\fso-c08\oegchan-lab2\TeamG\17\ZODI-4-22E23\31*xj\ZAGeff\Alice\mk_a_1_4_ld_spectrum2.aia

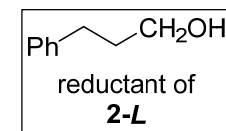
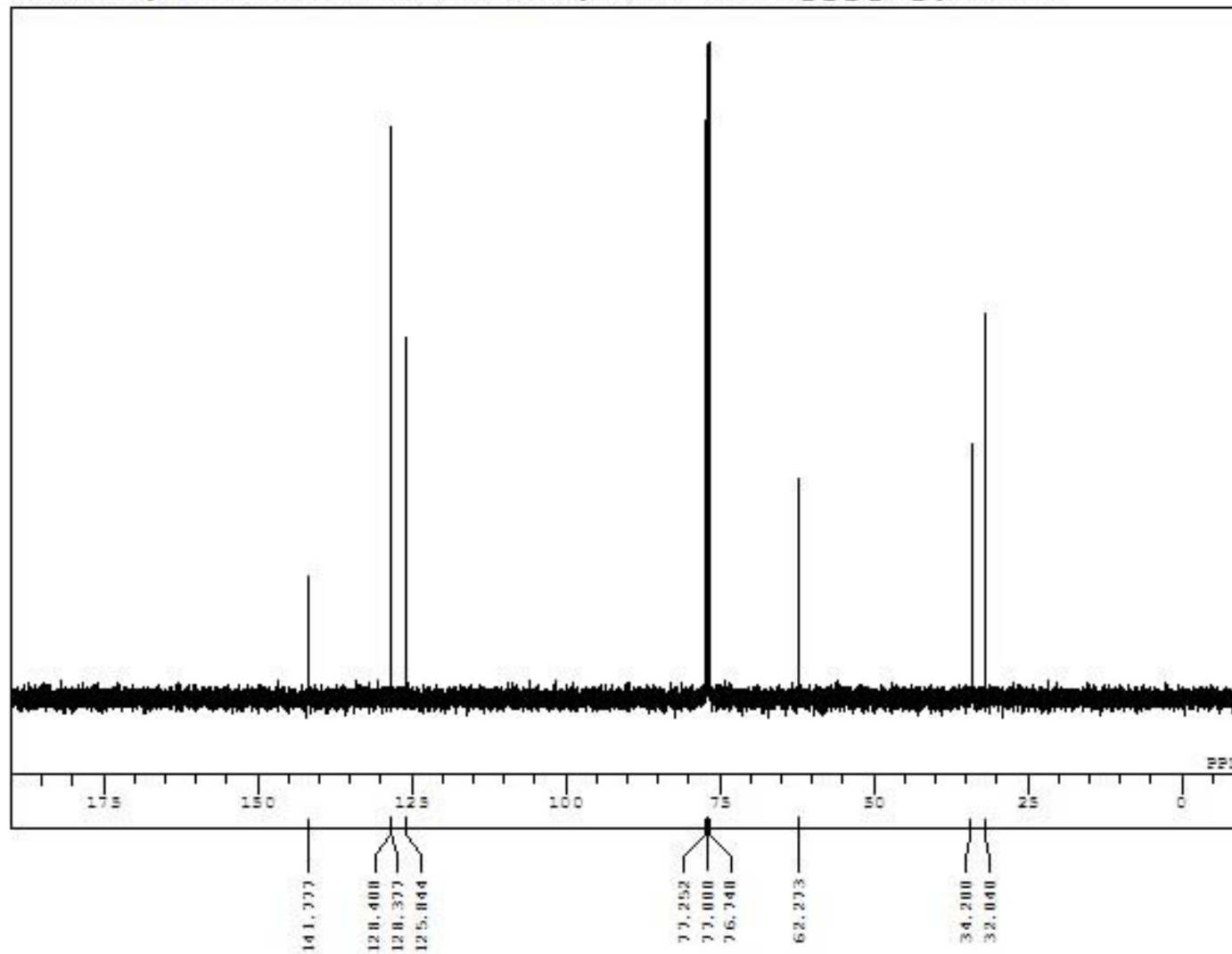
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DFILE mk_a_1_4_ld_spectrum2.aia
COMENT Single Pulse Experiment
DATIM 2012-03-02 16:47:37
OBNUC 1H
EXMDD single_pulse.exp
OBFRQ 500.16 MHz
OBSET 2.41 kHz
OBFIN 6.01 Hz
POINT 16384
FREQU 10010.01 Hz
SCANS 16
AQTM 1.6368 sec
PD 4.0000 sec
PW1 7.00 usec
IRNUC
OTEMP 16.6 c
SLVNT CDCL3
EXREF 0.00 ppm
BF 0.12 Hz
RGAIN 18
    
```



\\fso-c08\orgchem-lab2\TeamG\17\ZODI-4-22E23\01*xj\ZAGzff(f^)\Alice\mk_a_1_4_13c_spectrum.ala

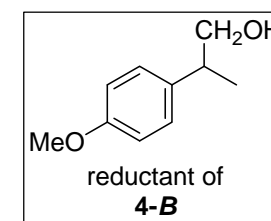
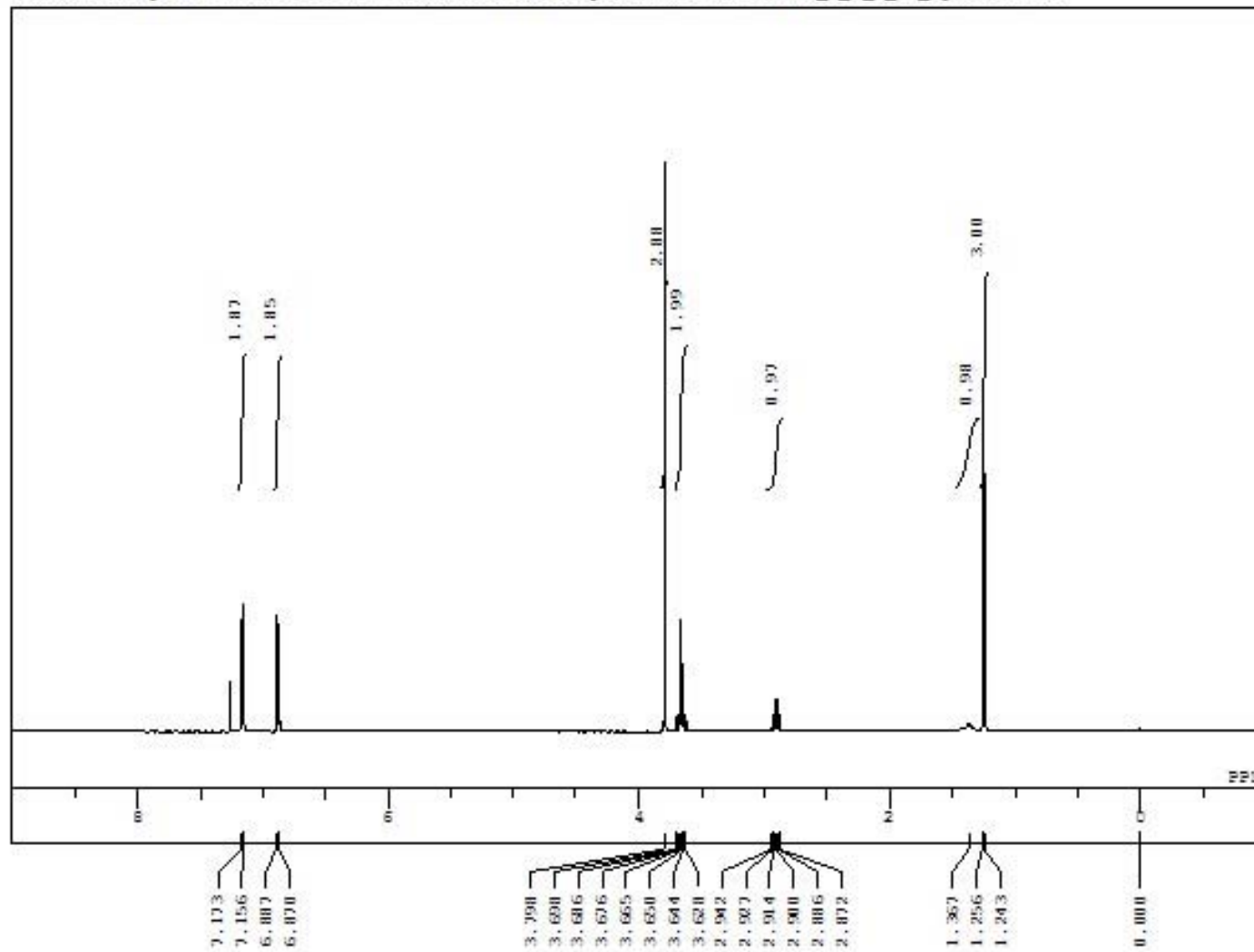
DFILE mk_a_1_4_13c_spectrum.ala
COMNT Single Pulse with Broadband
DATIM 2012-03-02 17:49:40
OBNUC 13C
EXMDD single_pulse_dec
OBFRQ 125.77 MHz
OBSET 7.87 kHz
OBFIN 4.21 Hz
POINT 32768
FREQU 31446.54 Hz
SCANS 1800
ACQTM 1.0420 sec
PD 1.0000 sec
PW1 4.47 usec
IRNUC 1H
OTEMP 18.3 c
SLVMT CDCL3
EXREF 77.00 ppm
BF 0.12 Hz
RGAIN 28



\\fao-c08\oegchan-lab2\TeamG\17\ZODI-4-22E23\31*x\ZAGzff\Alice\mk_a_4_3_1d_spectrum.als

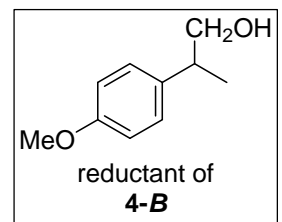
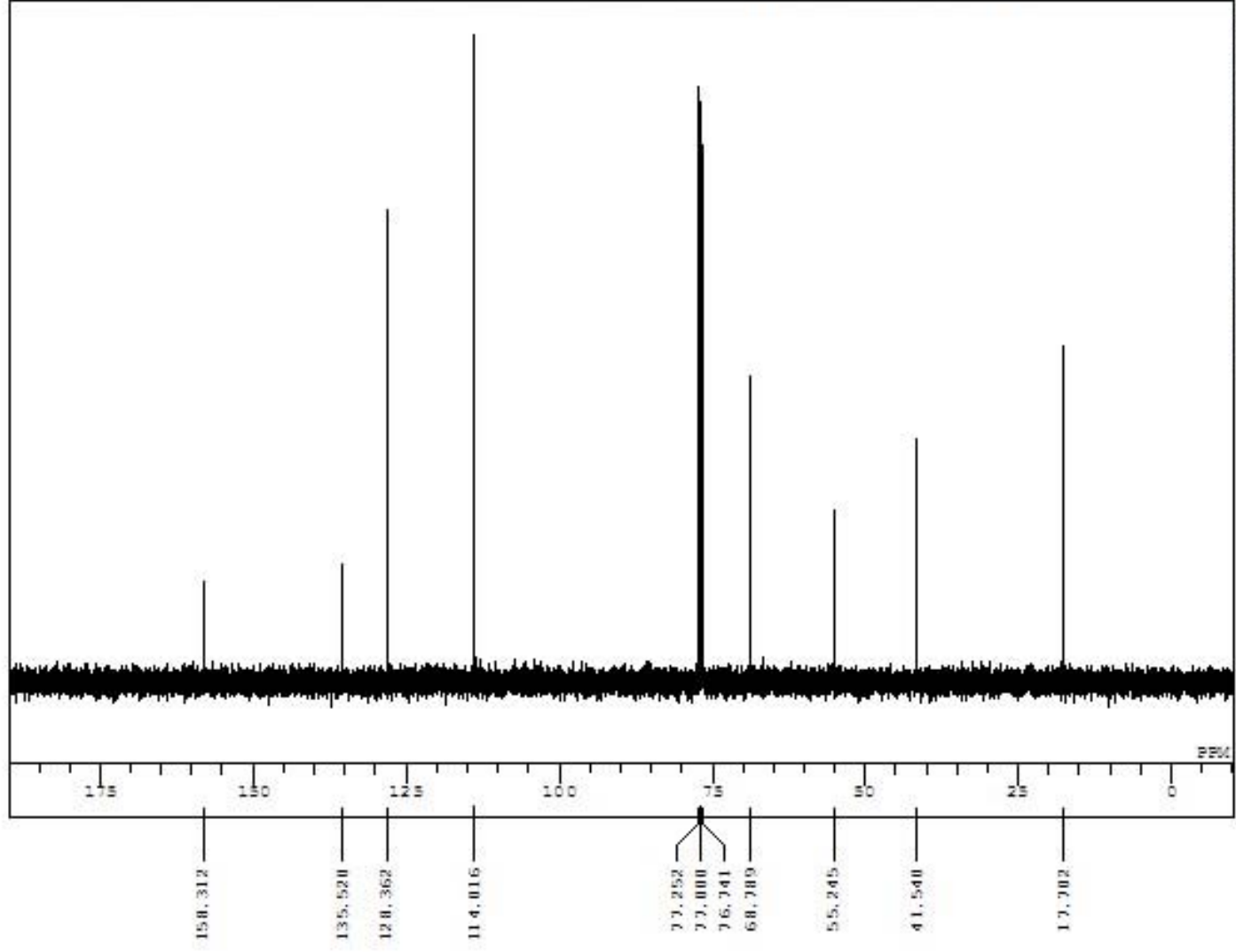
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DFILE mk_a_4_3_1d_spectrum.als
COMNT Single Pulse Experiment
DATIM 2011-05-27 00:42:52
OBNUC 1H
EXMDD single_pulse.exp
OBFRQ 500.16 MHz
OBSET 2.41 kHz
OBFIN 6.01 Hz
POINT 16384
FREQU 10010.01 Hz
SCANS 16
AQTM 1.6368 sec
PD 4.0000 sec
FW 7.00 usec
IRNUC
OTEMP 19.5 c
SLVNT CDCL3
EXREF 7.26 ppm
BF 0.12 Hz
RGAIN 17
    
```



\\Fao-c08\orgchem-lab2\TeamG\ (17) ZODI-4-2ZE23\N*xj\ZAZzff\j^Alice\mk_s_4_3_13c_spectrum.als

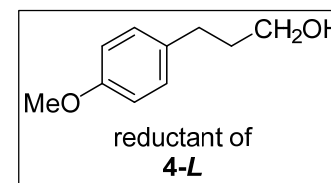
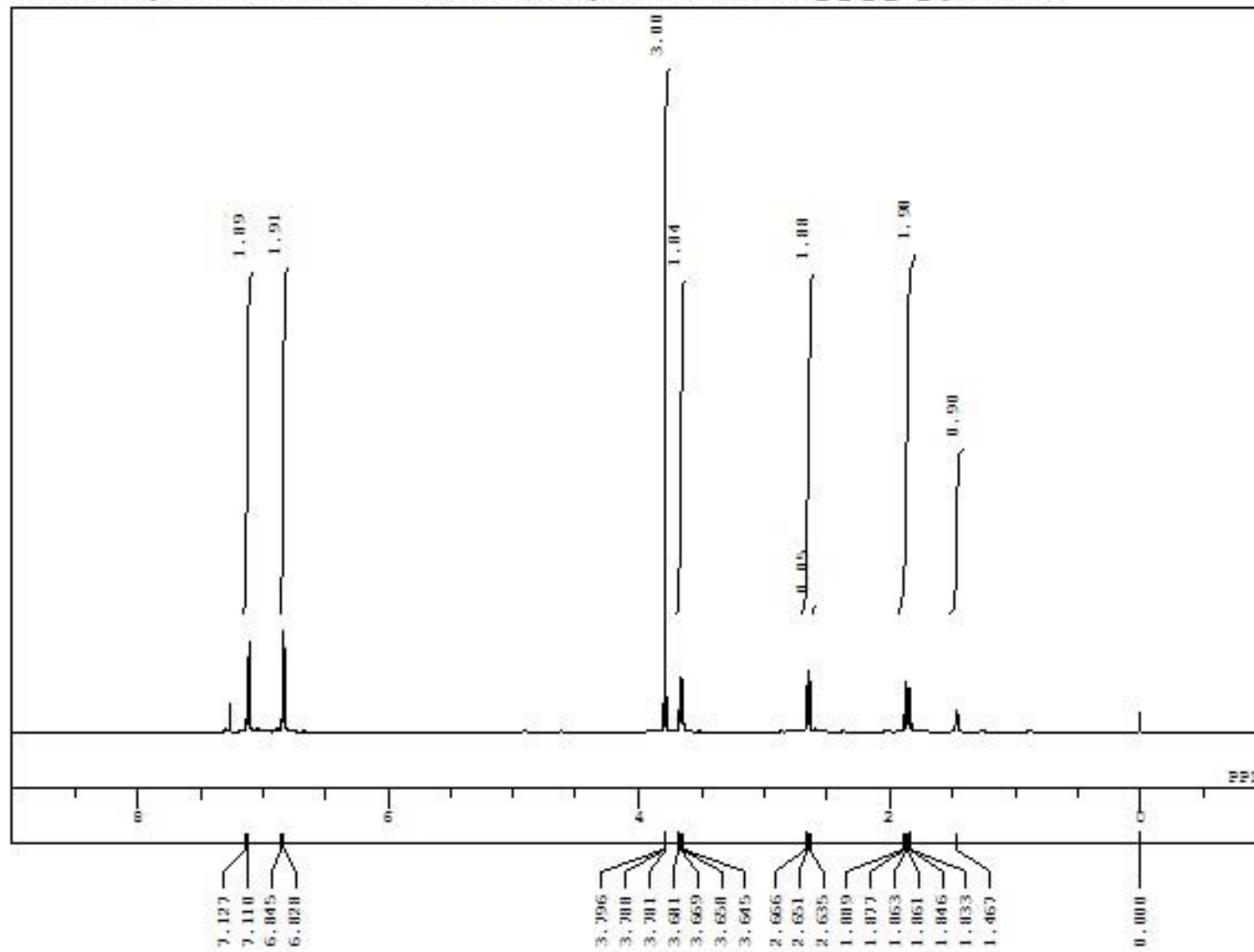
DFILE mk_s_4_3_13c_spectrum.als
COMMT Single Pulse with Broadband
DATIM 2011-05-27 00:51:29
CENUC 13C
EXMOD single_pulse_dec
OBFRQ 125.77 MHz
OBSET 7.87 KHz
OBFIN 4.21 Hz
POINT 32768
FREQU 31446.54 Hz
SCANS 200
AQTM 1.0420 sec
PD 1.0000 sec
FWL 4.47 usec
IRNUC 1H
CTEMP 20.6 c
SLVNT CDCL3
EKREF 77.00 ppm
BF 0.12 Hz
RGAIN 30



\\fao-c08\o-gchem-lab2\TeamG\17\ZODI-4-22E23\31*xj\ZAZzff\Alice\mk_a_4_4_ld_spectrum.als

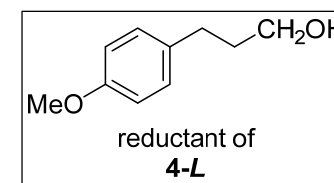
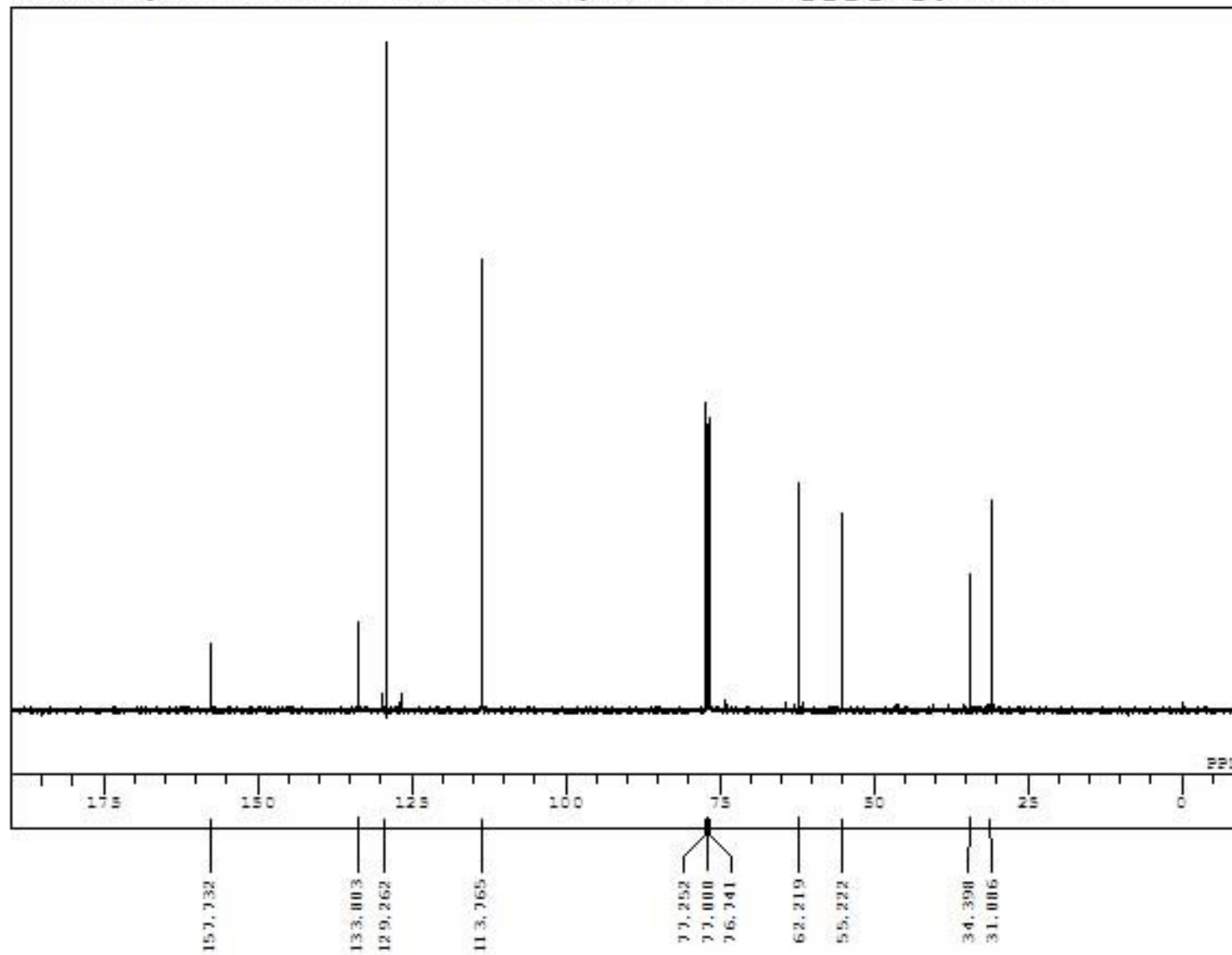
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DFILE mk_a_4_4_ld_spectrum.als
COMENT Single Pulse Experiment
DATIM 2011-05-27 10:49:12
OBNUC 1H
EXMDD single_pulse.exp
OBFRQ 500.16 MHz
OBSET 2.41 kHz
OBFIM 6.01 Hz
POINT 16384
FREQU 10010.01 Hz
SCANS 16
AQTM 1.6368 sec
PD 4.0000 sec
PW1 7.00 usec
IRNUC
OTEMP 19.2 c
SLVNT CDCL3
EXREF 7.26 ppm
BF 0.12 Hz
RGAIN 18
    
```



\\fso-c08\orgchem-lab2\TeamG\17\ZODI-4-22E23\01*xj\ZAGzff(f^\Alice\mk_a_4_4_13c_spectrum.ala

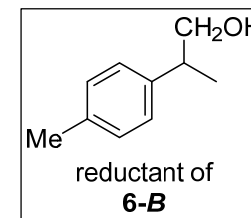
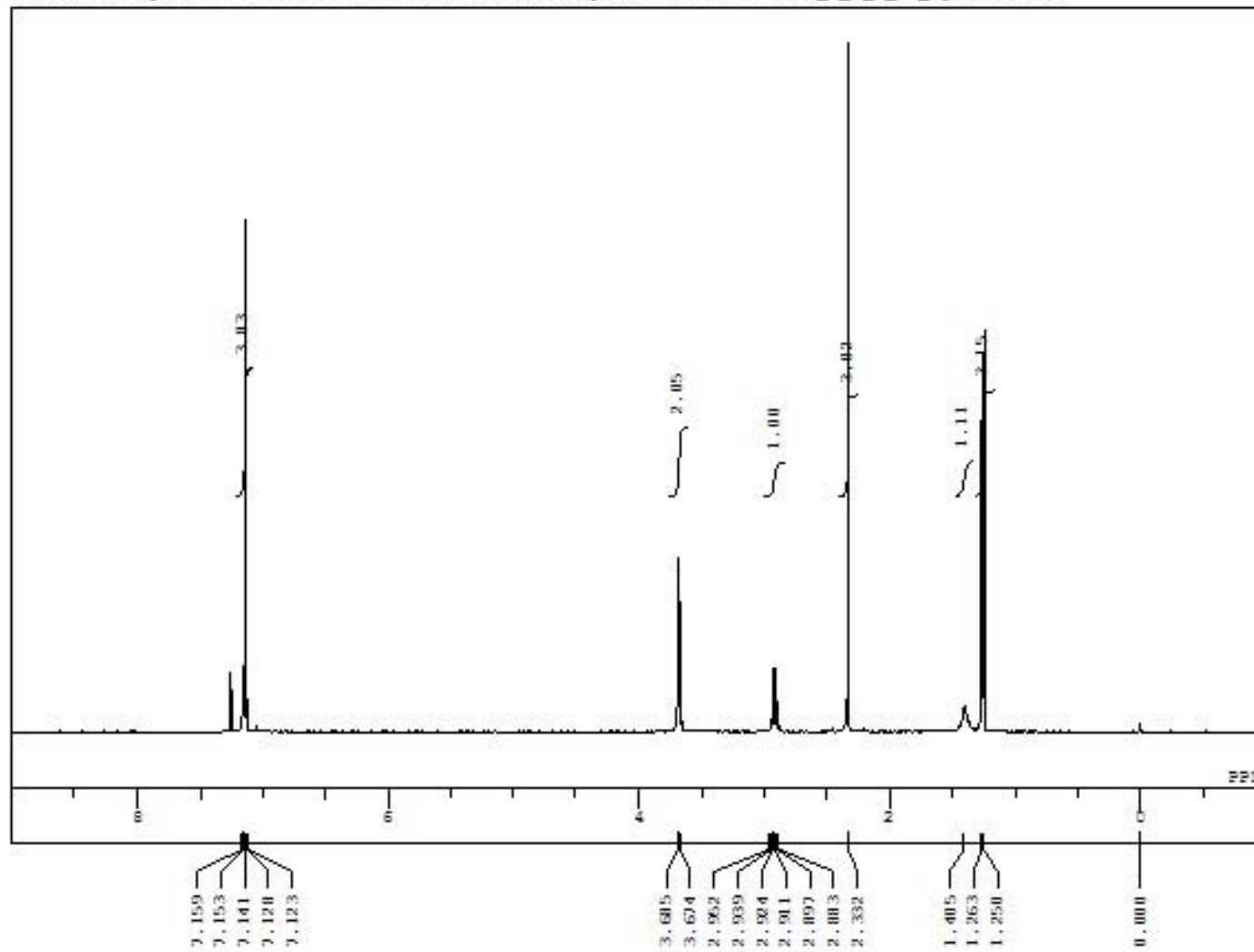
DFILE mk_a_4_4_13c_spectrum.ala
COMNT Single Pulse with Broadband
DATIM 2011-05-27 12:00:55
OBNUC 13C
EXMDD single_pulse_dec
OBFRQ 125.77 MHz
OBSET 7.87 KHz
OBFIN 4.21 Hz
POINT 32768
FREQU 31446.54 Hz
SCANS 2048
ACQTM 1.0420 sec
PD 1.0000 sec
FW1 4.47 usec
IRNUC 1H
OTEMP 20.4 c
SLVMT CDCL3
EXREF 77.00 ppm
BF 0.12 Hz
RGAIN 28



\\fso-c08\o-gchem-lab2\TeamG\17\ZODI-4-22E23\31*xj\ZAGzff\Alice\mk_e_5_3_1d_spectrum.als

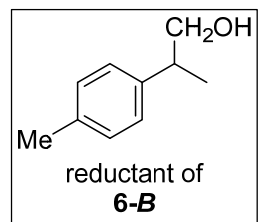
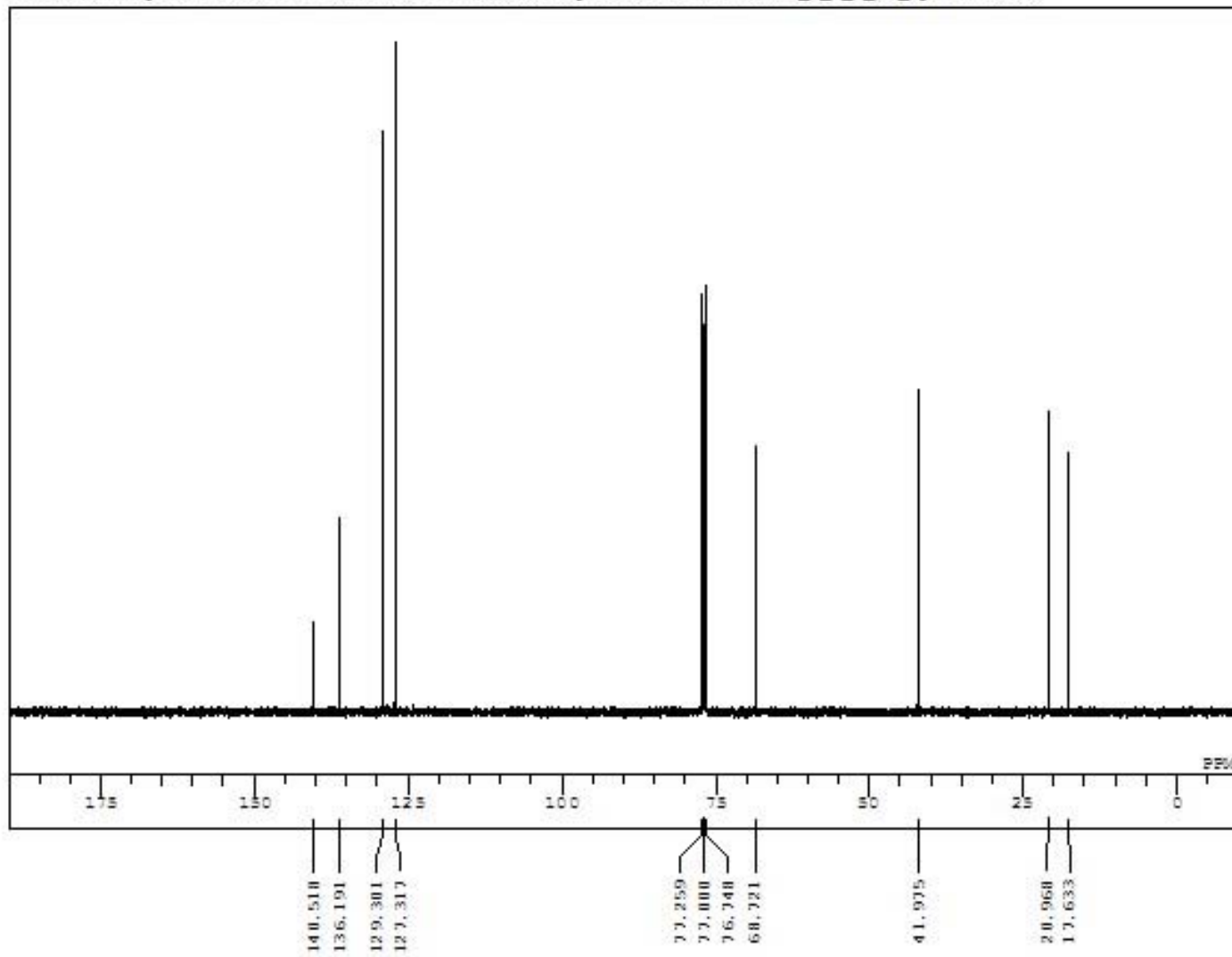
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DATIM 2011-06-03 10:58:07
OBNUC 1H
EXMDD single_pulse.exp
OBFRQ 500.16 MHz
OBSET 2.41 kHz
OBFIN 6.01 Hz
POINT 16384
FREQU 10010.01 Hz
SCANS 16
ACQTM 1.6368 sec
PD 4.0000 sec
FW1 7.00 usec
IRNUC
OTEMP 19.4 c
SLVNT CDCL3
EXREF 0.00 ppm
BF 0.12 Hz
RGAIN 18
    
```



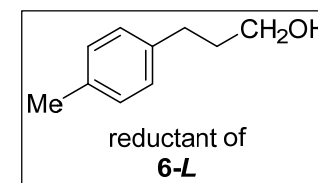
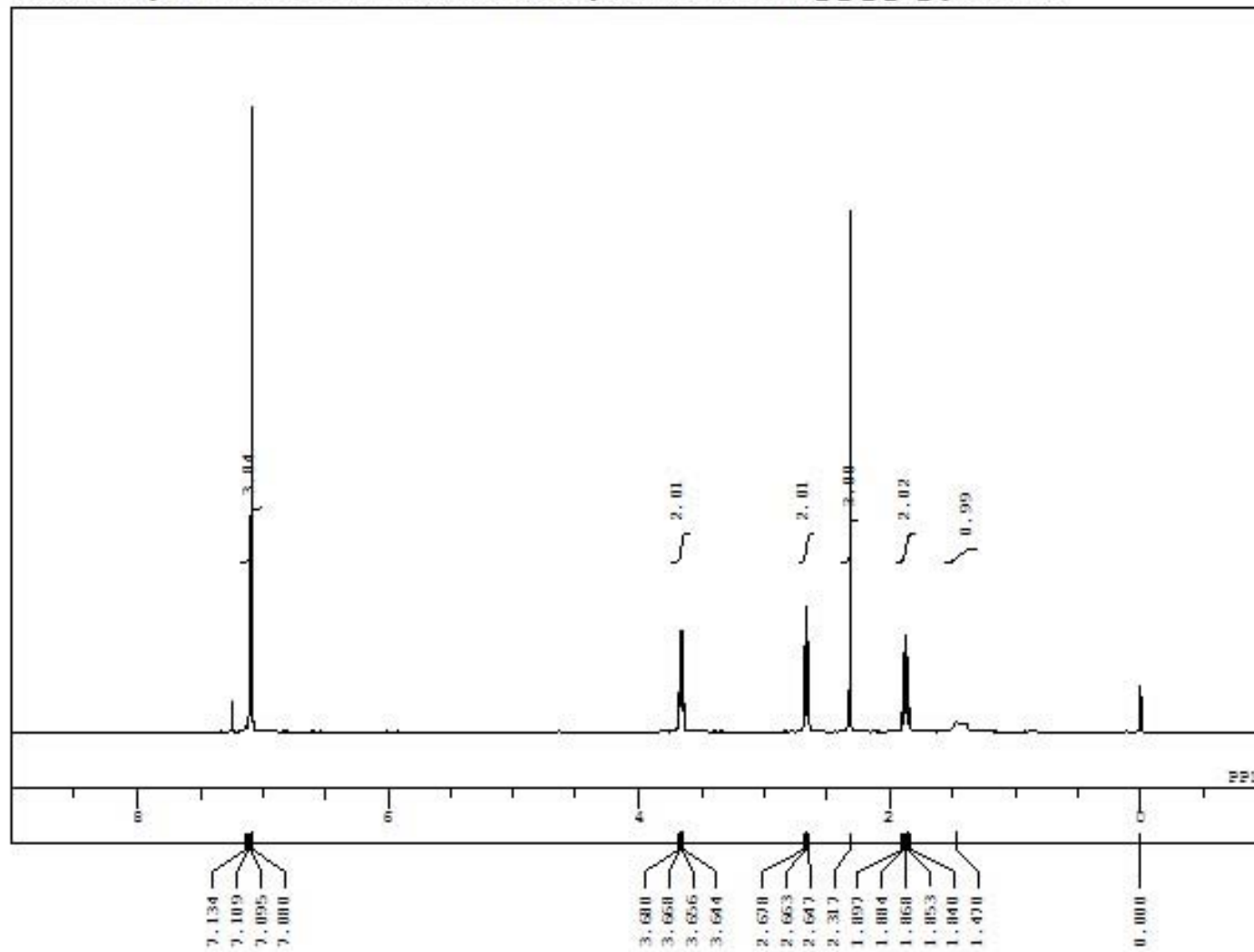
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DFILE mk_s_1_4_1d_spectrum.als
COMMT Single Pulse with Broadband
DATIM 2011-08-05 10:12:59
CENUC 13C
EXMOD single_pulse_dec
OBFRQ 125.77 MHz
OBSET 7.87 KHz
OBFIN 4.21 Hz
POINT 32768
FREQU 31446.54 Hz
SCANS 1800
AQTM 1.0420 sec
PD 1.0000 sec
FWL 4.47 usec
IRNUC 1H
CTEMP 22.8 c
SLVNT CDCL3
EXREF 77.00 ppm
BF 0.12 Hz
RGAIN 30



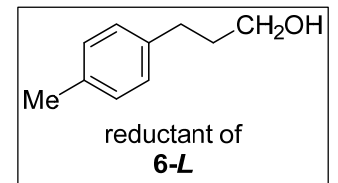
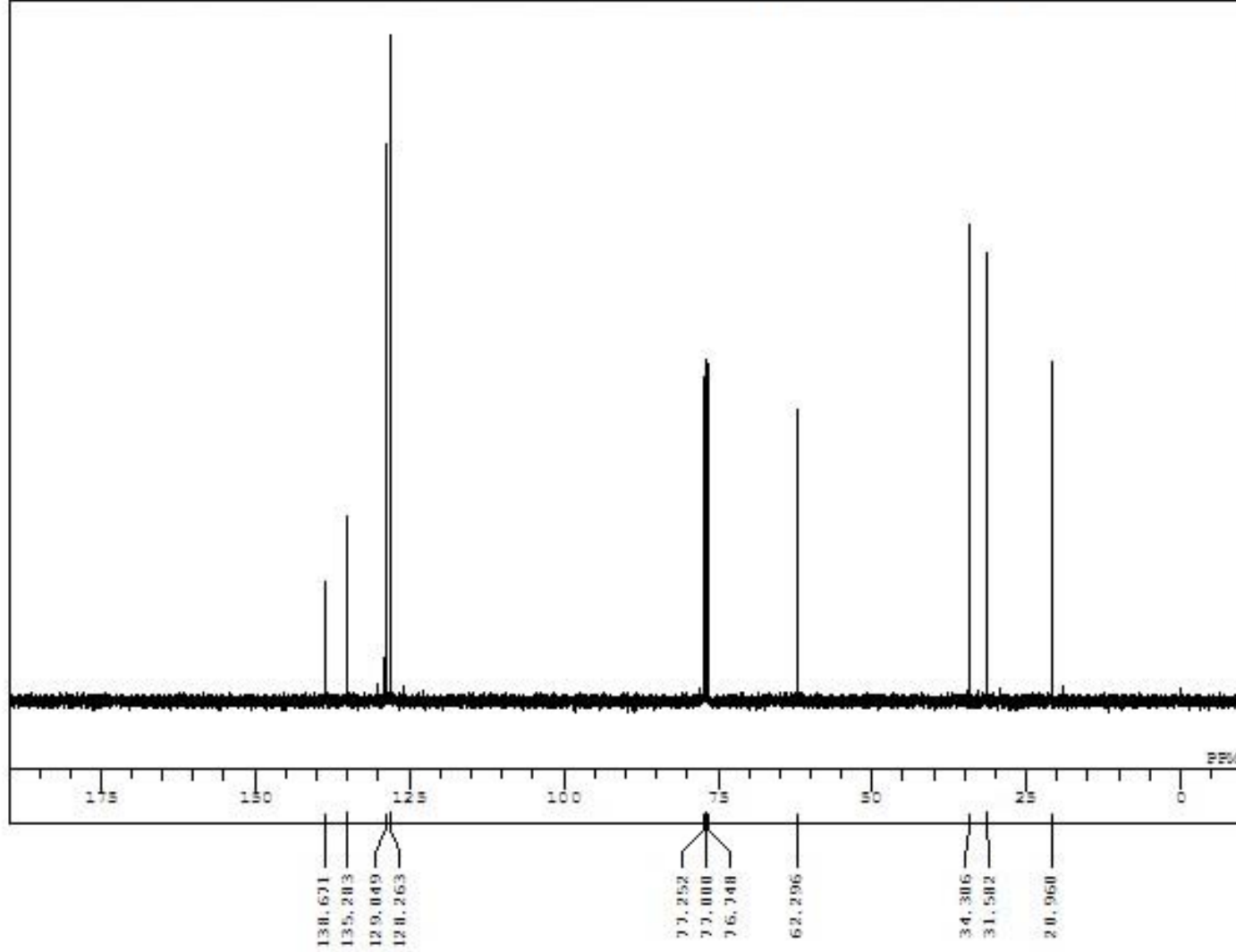
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DFILE mk_a_5_4_1d_spectrum.als
COMNT Single Pulse Experiment
DATIM 2011-05-27 20:27:18
OBNUC 1H
EXMDD single_pulse.exp
OBFRQ 500.16 MHz
OBSET 2.41 KHz
OBFIN 6.01 Hz
POINT 16384
FREQU 10010.01 Hz
SCANS 16
ACQTM 1.6368 sec
PD 4.0000 sec
PW1 7.00 usec
IRNUC
OTEMP 19.0 c
SLVMT CDCL3
EXREF 0.00 ppm
BF 0.12 Hz
RGAIN 16



\\Fao-c08\orgchem-lab2\Team2\ (17) ZODI-4-22E23\N*xj\ZAZzff\Alice\mk_s_4_13c_spectrum.als

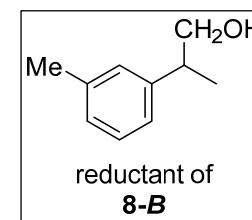
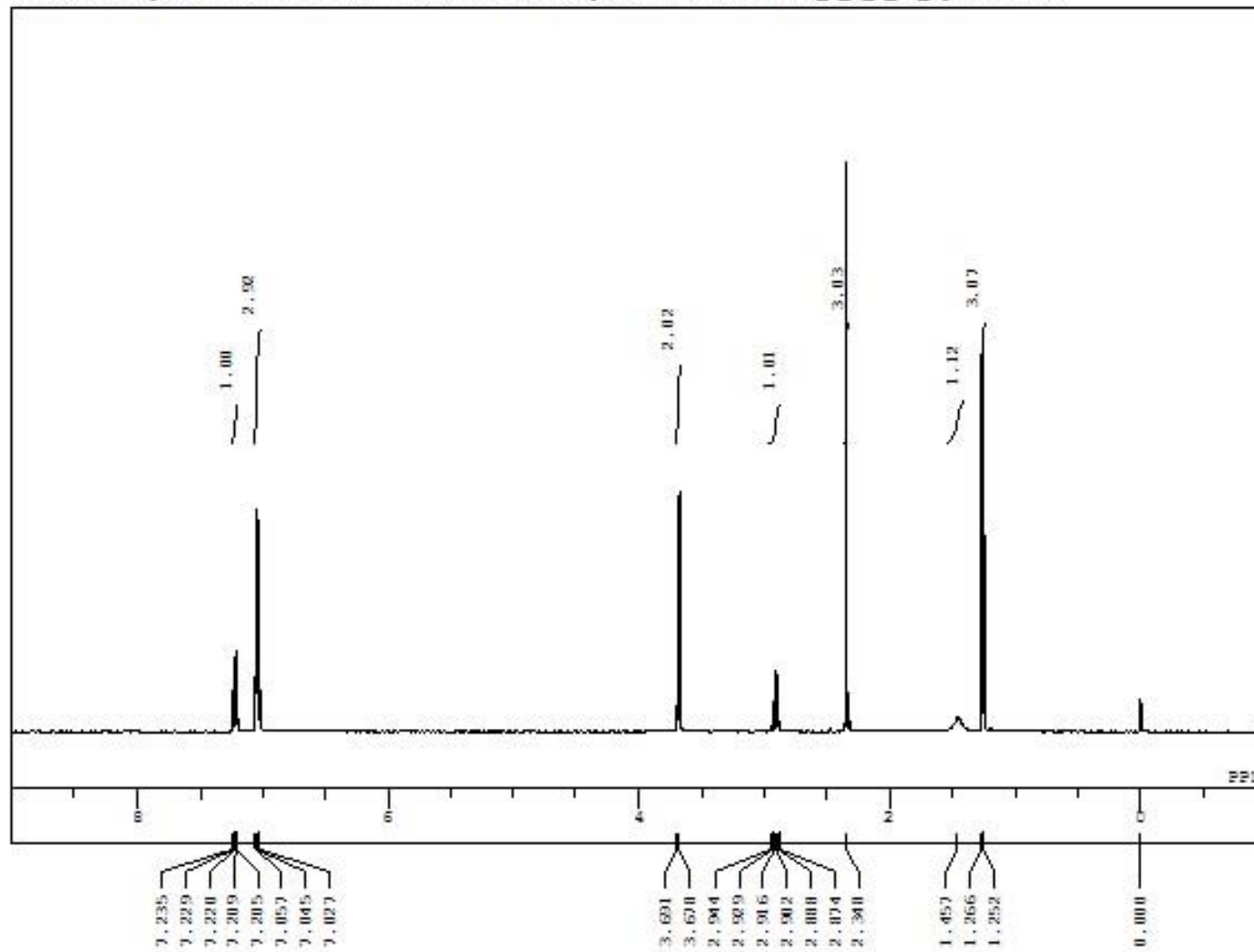
DFILE mk_s_4_13c_spectrum.als
COMMT Single Pulse with Broadband
DATIM 2011-05-27 21:38:30
CENUC 13C
EXMOD single_pulse_dec
OBFRQ 125.77 MHz
OBSET 7.87 KHz
OBFIN 4.21 Hz
POINT 32768
FREQU 31446.54 Hz
SCANS 2048
AQTM 1.0420 sec
PD 1.0000 sec
FWL 4.47 usec
IRNUC 1H
CTEMP 20.7 c
SOLVENT CDCL3
EXREF 77.00 ppm
BF 0.12 Hz
RGAIN 28



\\fao-c08\oegchem-lab2\TeamG\17\ZODI-4-22E23\31*xj\ZAGzff\Alice\mk_a_6_3_1d_spectrum.als

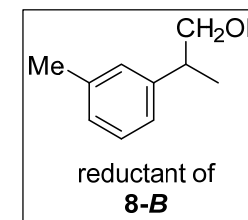
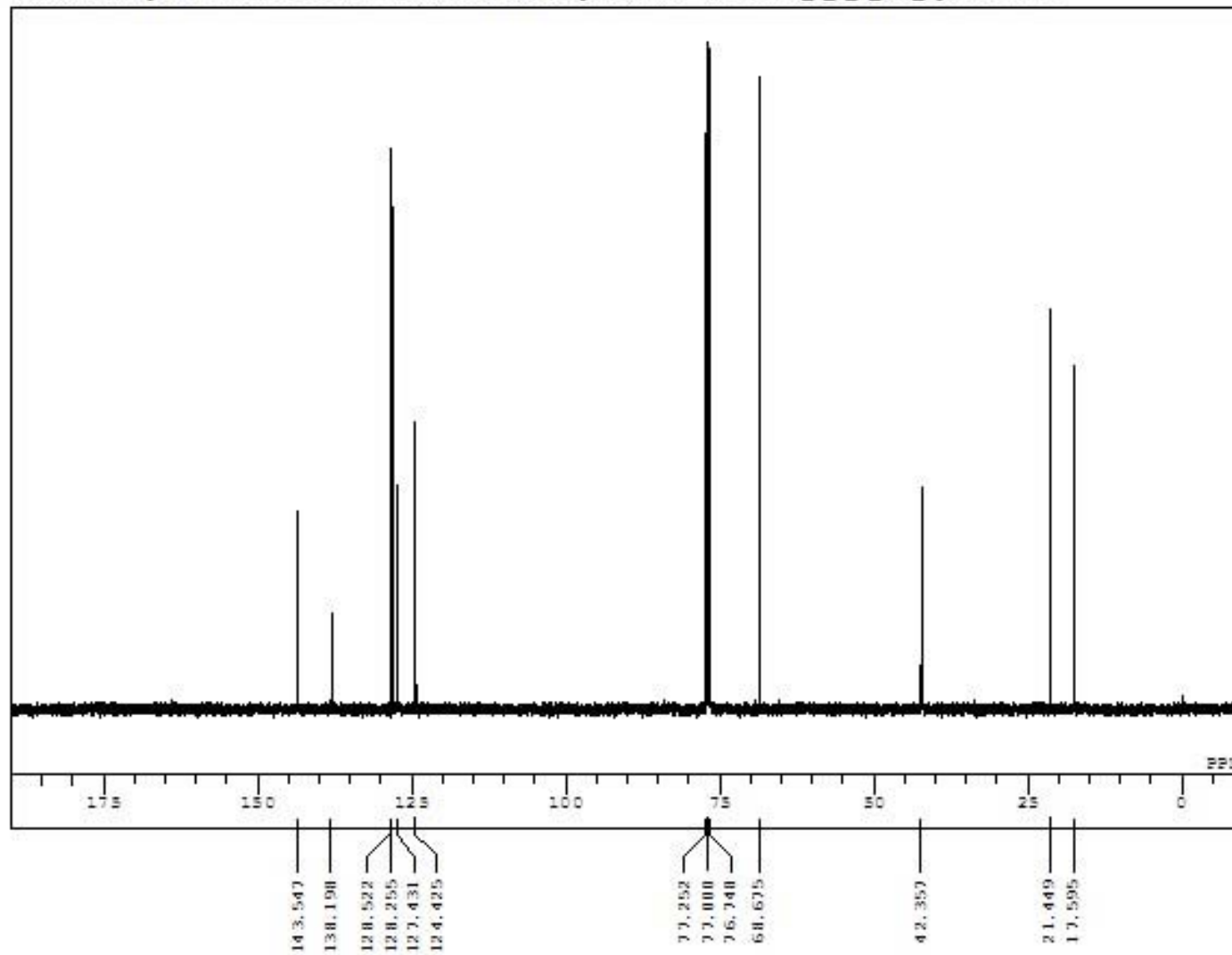
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DFILE mk_a_6_3_1d_spectrum.als
COMNT Single Pulse Experiment
DATIM 2011-08-05 11:18:37
OBNUC 1H
EXMDD single_pulse.exp
OBFRQ 500.16 MHz
OBSET 2.41 KHz
OBFIN 6.01 Hz
POINT 16384
FREQU 10010.01 Hz
SCANS 16
AQTM 1.6368 sec
PD 4.0000 sec
FW1 7.00 usec
IRNUC 1H
OTEMP 21.6 c
SLVNT CDCL3
EXREF 0.00 ppm
BF 0.12 Hz
RGAIN 16
    
```



\\fso-c08\orgchem-lab2\TeamG\17\ZODI-H-22E23\01*xj\ZAGzff(f^\Alice\mk_a_6_3_13c_spectrum.ala

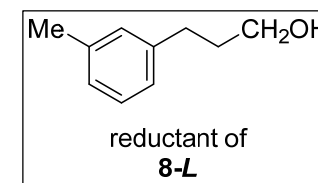
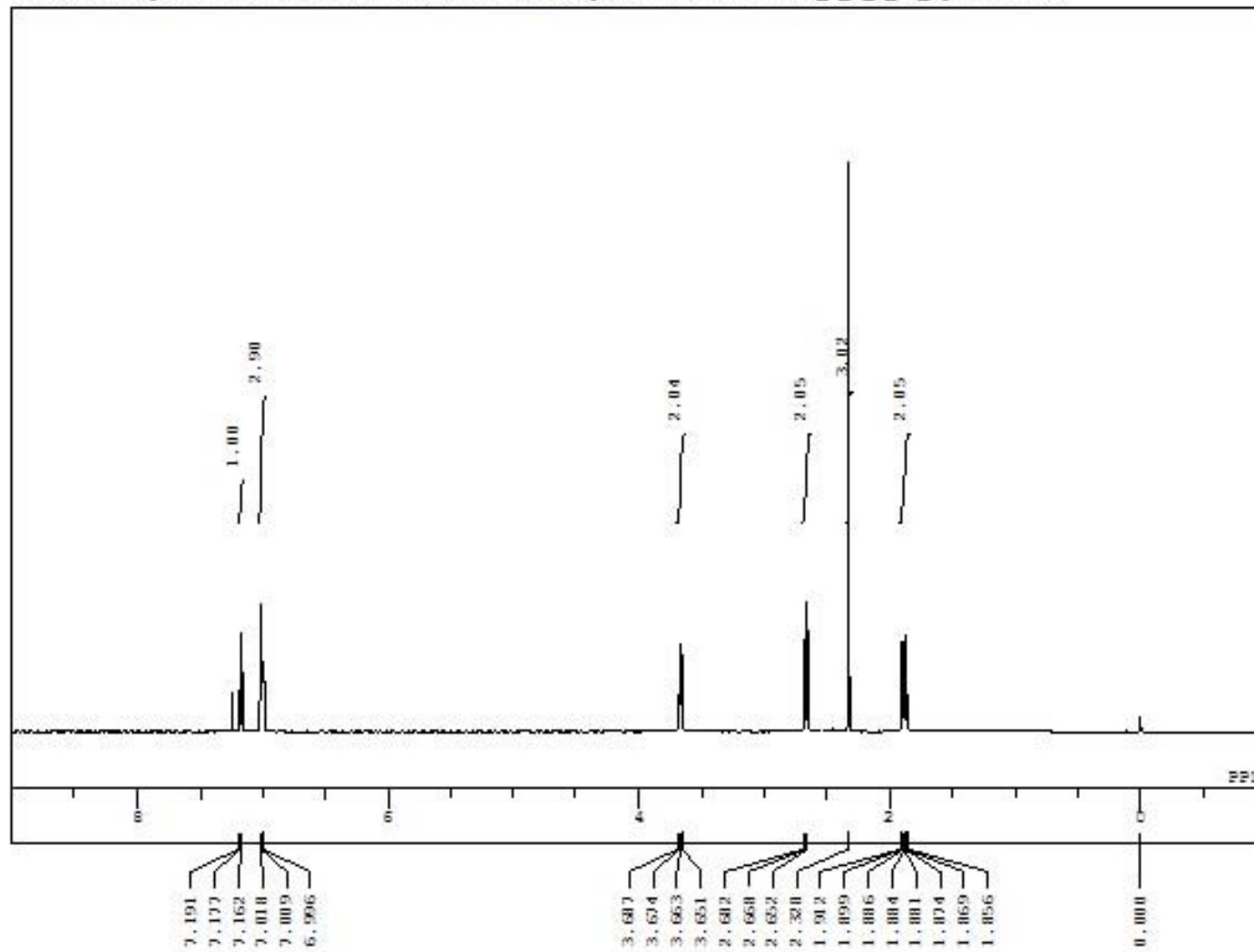
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COMNT Single Pulse with Broadband
DATIM 2011-08-05 12:27:50
OBNUC 13C
EXMDD single_pulse_dec
OBFRQ 125.77 MHz
OBSET 7.87 KHz
OBFIN 4.21 Hz
POINT 32768
FREQU 31446.54 Hz
SCANS 2000
ACQTM 1.0420 sec
PD 1.0000 sec
FW1 4.47 usec
IRNUC 1H
OTEMP 23.0 c
SLVMT CDCL3
EXREF 77.00 ppm
BF 0.12 Hz
RGAIN 28



\\fso-c08\o-gchem-lab2\TeamG\17\ZODI-4-22E23\31*xj\SAGEff\Alice\mk_a_6_4_1d_spectrum.als

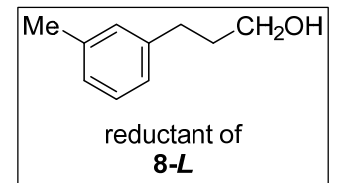
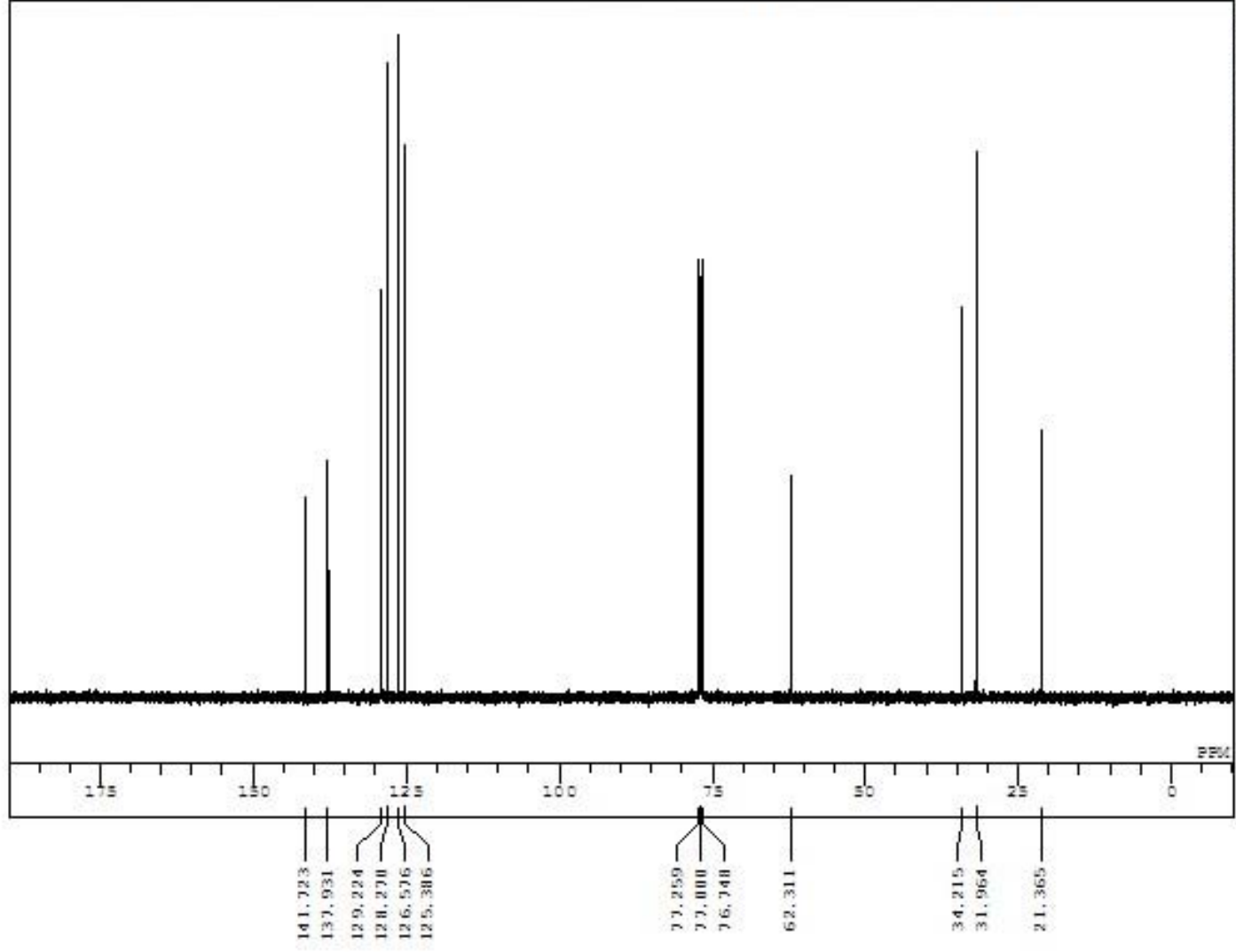
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COMNT Single Pulse Experiment
DATIM 2011-08-05 01:26:38
OBNUC 1H
EXMDD single_pulse.exp
OBFRQ 500.16 MHz
OBSET 2.41 kHz
OBFIN 6.01 Hz
POINT 16384
FREQU 10010.01 Hz
SCANS 16
AQTM 1.6368 sec
PD 4.0000 sec
FW1 7.00 usec
IRNUC 1H
OTEMP 20.9 c
SLVNT CDCL3
EXREF 0.00 ppm
BF 0.12 Hz
RGAIN 18
    
```



\\Fao-c08\orgchem-lab2\TeamD\ (17) ZODI-4-22E23\W*xj\ZAZzff\j^Alice\mk_s_6_4_13c_spectrum.als

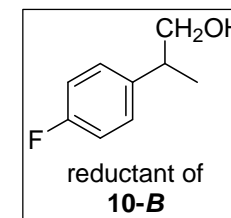
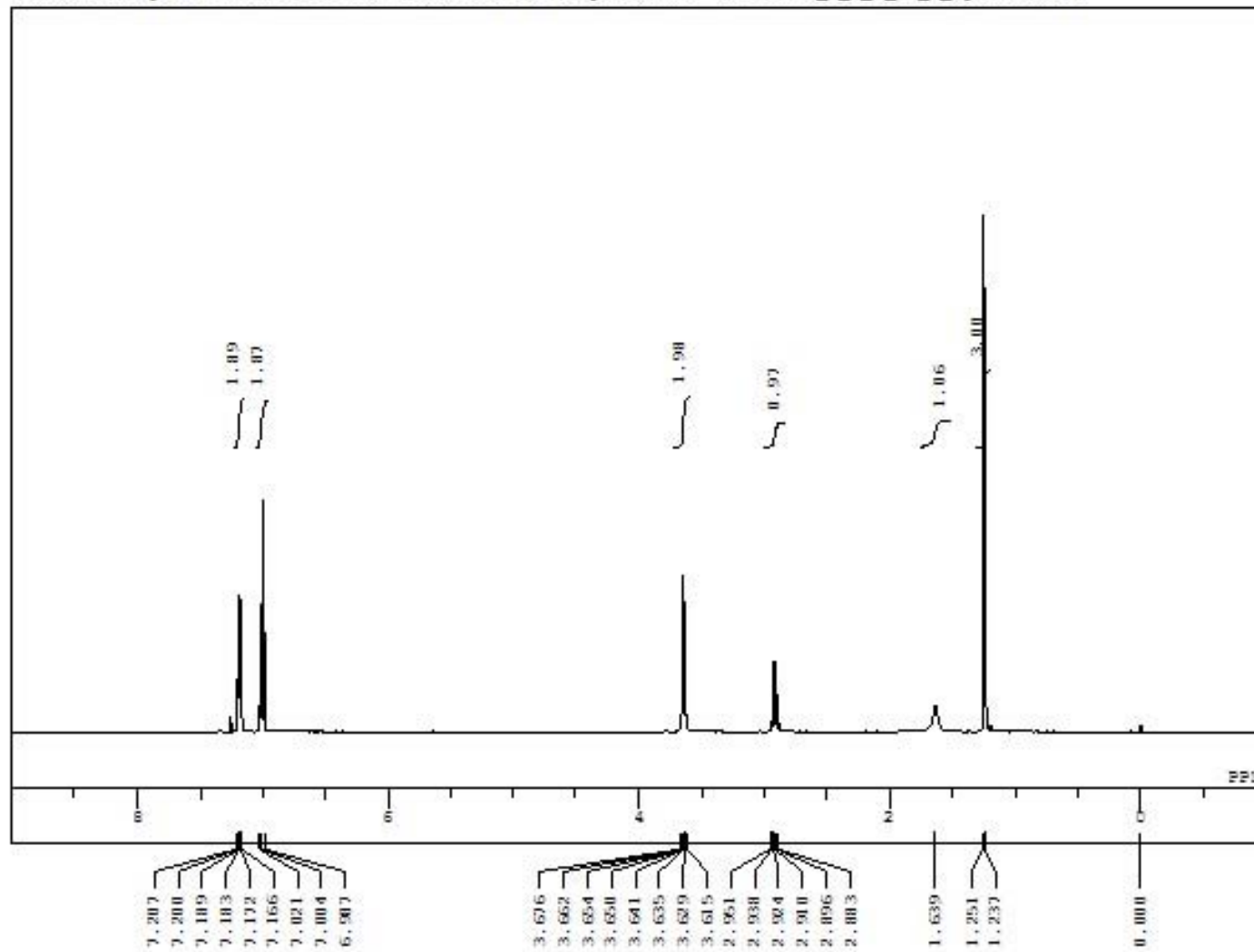
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COMMT Single Pulse with Broadband
DATIM 2011-08-05 02:36:32
CENUC 13C
EXMOD single_pulse_dec
OBFRQ 125.77 MHz
OBSET 7.87 KHz
OBFIN 4.21 Hz
POINT 32768
FREQU 31446.54 Hz
SCANS 2000
AQTM 1.0420 sec
PD 1.0000 sec
FWL 4.47 usec
IRNUC 1H
CTEMP 22.3 c
SLVNT CDCL3
EKREF 77.00 ppm
BF 0.12 Hz
RGAIN 30



\\fso-c08\oegchan-lab2\TeamG\17\ZODI-4-22E23"N"xj\ZAGzff\Alice\mk_a_3_3_ld_2_spectrum.als

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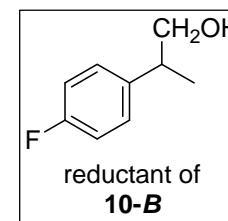
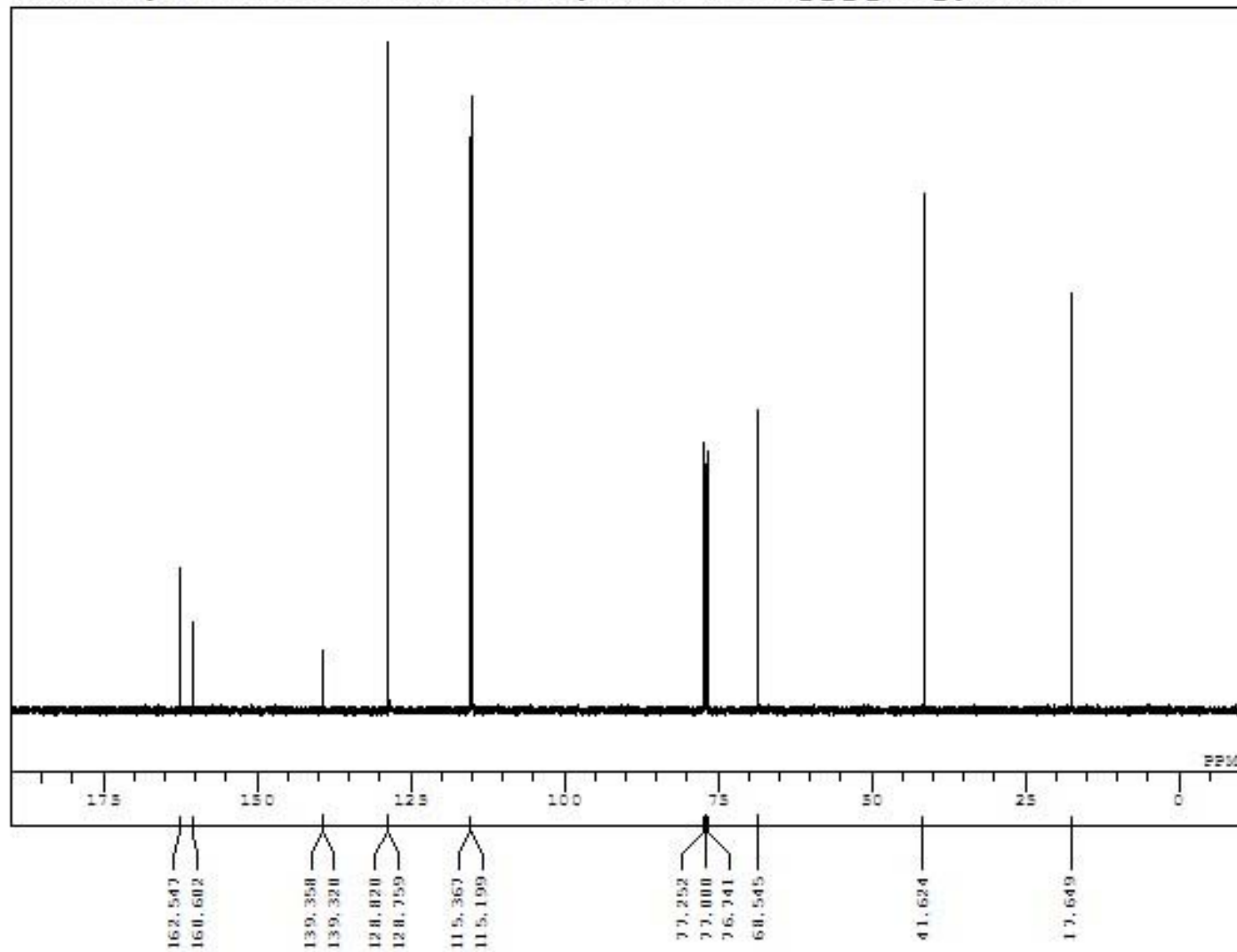
DFILE mk_a_3_3_ld_2_spectrum.als
COMNT Single Pulse Experiment
DATIM 2011-08-04 14:33:51
OBNUC 1H
EXMDD single_pulse.exp
OBFRQ 500.16 MHz
OBSET 2.41 kHz
OBFIN 6.01 Hz
POINT 16384
FREQU 10010.01 Hz
SCANS 16
AQTM 1.6368 sec
PD 4.0000 sec
FW1 7.00 usec
IRNUC
OTEMP 21.6 c
SLVNT CDCL3
EXREF 0.00 ppm
BF 0.12 Hz
RGAIN 18
    
```



\\fso-c08\orgchem-lab2\TeamG\17\ZODI-4-22E23"N"xj\ZAGzff(f^)\Alice\mk_a_3_3_13c-2_spectrum.als

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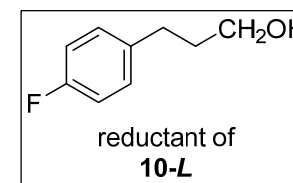
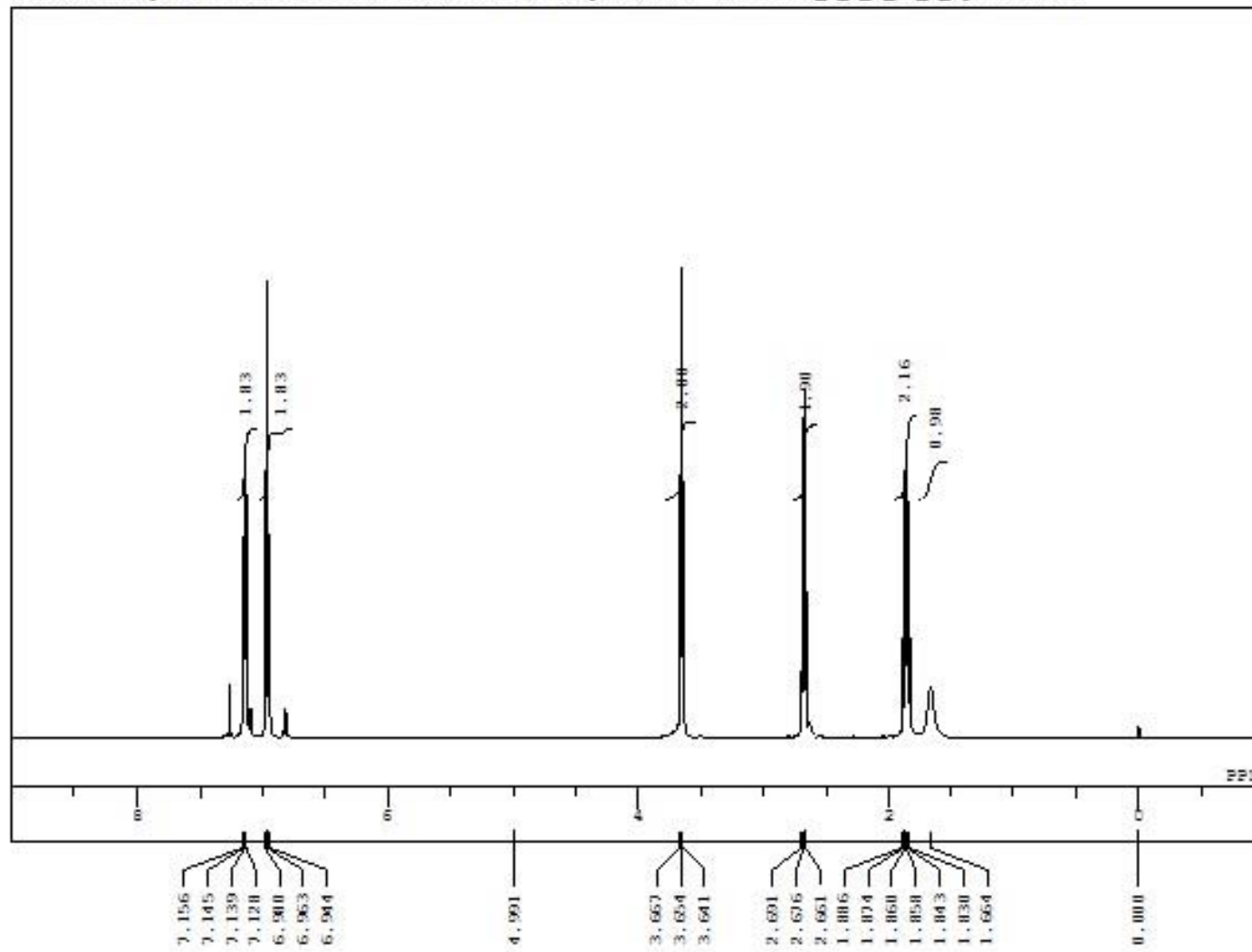
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EXMDD single_pulse_dec
OBFRQ 125.77 MHz
OBSET 7.87 KHz
OBFIN 4.21 Hz
POINT 32768
FREQU 31446.54 Hz
SCANS 2000
AQTM 1.0420 sec
PD 1.0000 sec
FW1 4.47 usec
IRNUC 1H
OTEMP 22.8 c
SLVMT CDCL3
EXREF 77.00 ppm
BF 0.12 Hz
RGAIN 30
    
```



\\fso-c08\o-gchem-lab2\TeamG\17\ZODI-4-22E23"N"xj\ZAGzff(f^\Alice\mk_a_3_4_ld_2_spectrum.als

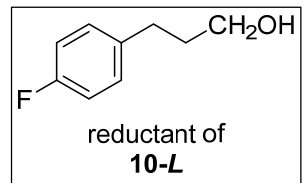
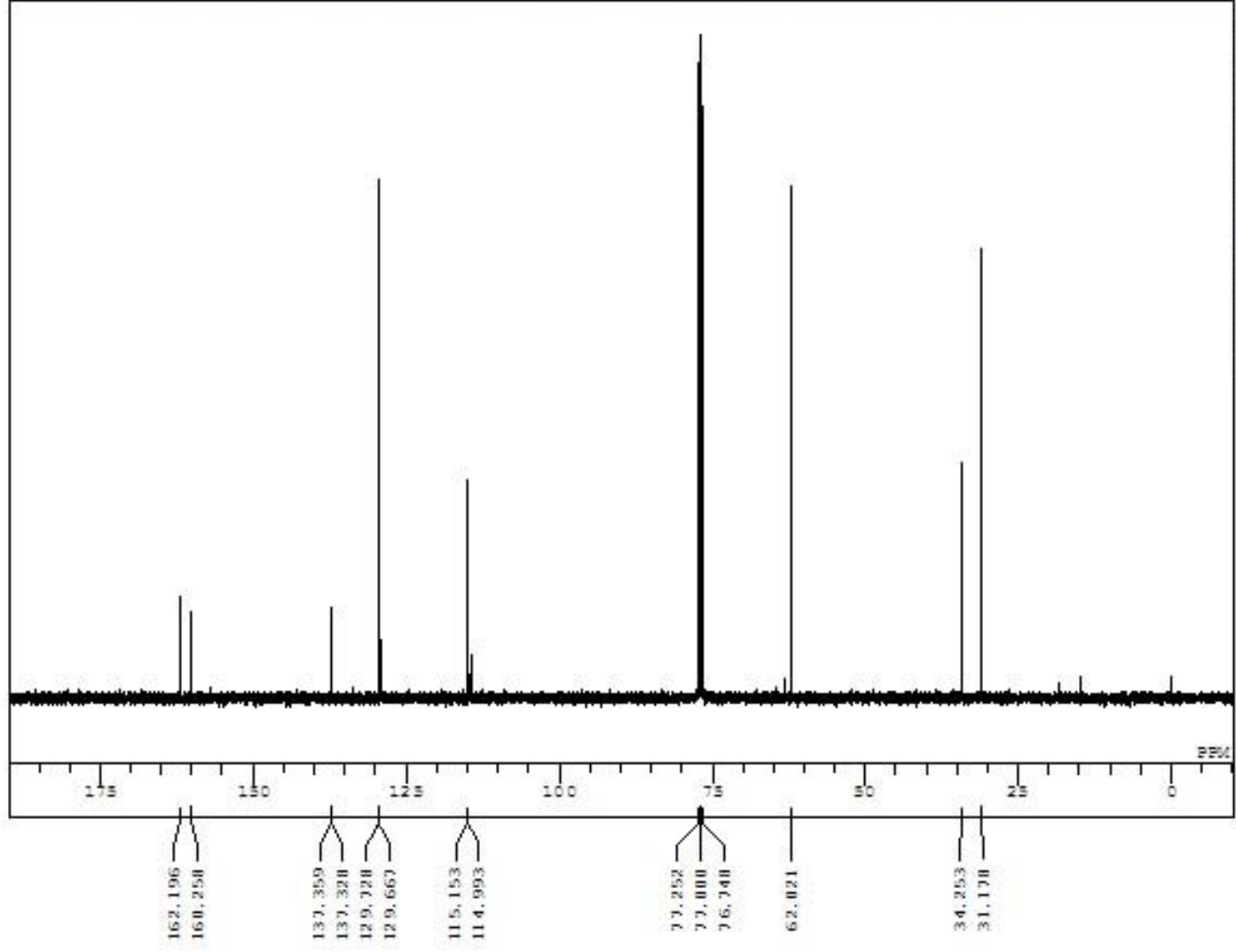
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DFILE mk_a_3_4_ld_2_spectrum.als
COMENT Single Pulse Experiment
DATIM 2011-08-04 17:01:55
OBNUC 1H
EXMDD single_pulse.exp
OBFRQ 500.16 MHz
OBSET 2.41 KHz
OBFIN 6.01 Hz
POINT 16384
FREQU 10010.01 Hz
SCANS 16
AQTM 1.6368 sec
PD 4.0000 sec
FW1 7.00 usec
IRNUC
OTEMP 21.5 c
SLVMT CDCL3
EXREF 0.00 ppm
BF 0.12 Hz
RGAIN 14
    
```



\\Fao-c08\orgchem-lab2\Team2\ (17) ZODI-4-22E23\W*xj\ZAGzff\Alice\mk_s_3_4_13c_spectrum.als

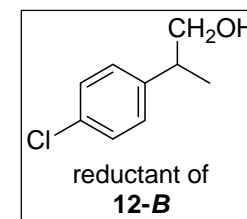
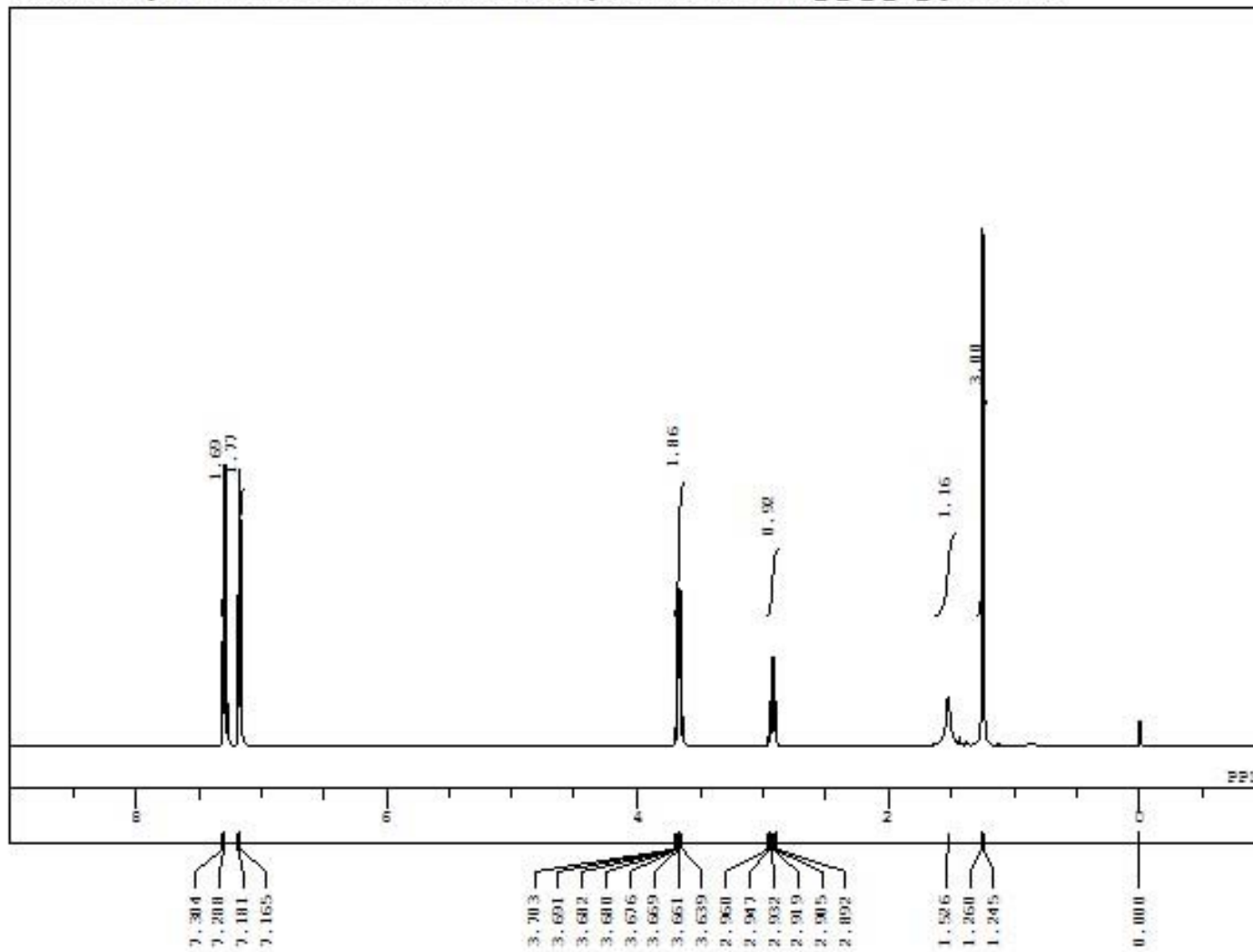
DFILE mk_s_3_4_13c_spectrum.als
COMMT Single Pulse with Broadband
DATIM 2011-05-28 01:44:57
CENUC 13C
EXMOD single_pulse_dec
OBFRQ 125.77 MHz
OBSET 7.87 KHz
OBFIN 4.21 Hz
POINT 32768
FREQU 31446.54 Hz
SCANS 2048
AQTM 1.0420 sec
PD 1.0000 sec
PWL 4.47 usec
IRNUC 1H
CTEMP 21.1 c
SOLVENT CDCL3
EXREF 77.00 ppm
BF 0.12 Hz
RGAIN 28



\\fso-c08\o-gchem-lab2\TeamG\17\ZODI-H-22E23\31*x\ZAGzff\Alice\mk_e_2_3_1d_spectrum.als

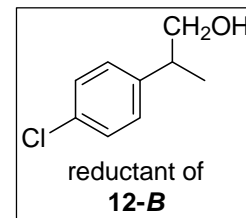
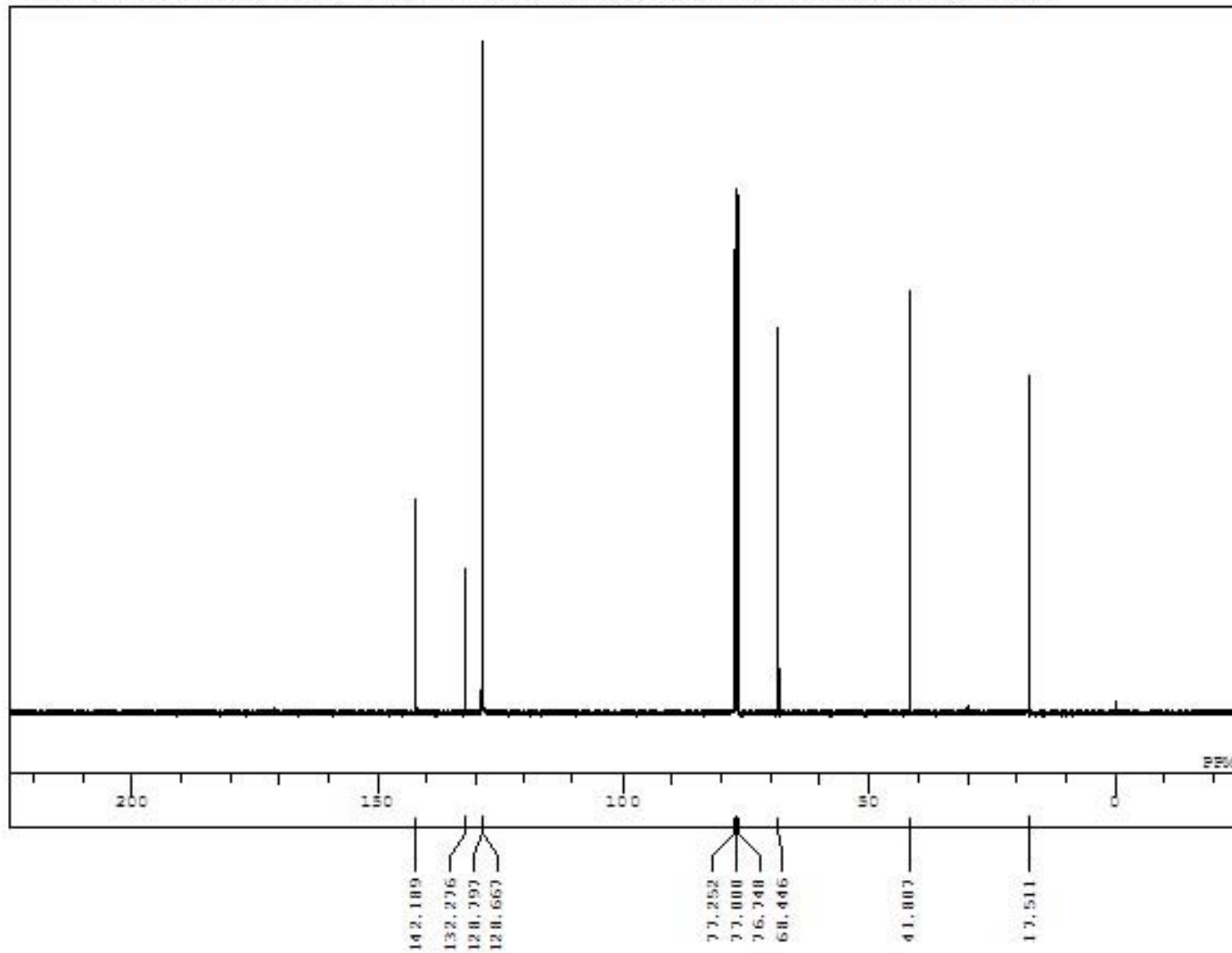
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DFILE mk_e_2_3_1d_spectrum.als
COMNT Single Pulse Experiment
DATIM 2011-05-31 09:13:18
OBNUC 1H
EXMDD single_pulse.exp
OBFRQ 500.16 MHz
OBSET 2.41 kHz
OBFIN 6.01 Hz
POINT 16384
FREQU 10010.01 Hz
SCANS 128
AQTM 1.6368 sec
PD 4.0000 sec
FW 7.00 usec
IRNUC
OTEMP 18.8 c
SLVNT CDCL3
EXREF 7.26 ppm
BF 0.12 Hz
RGAIN 17
    
```



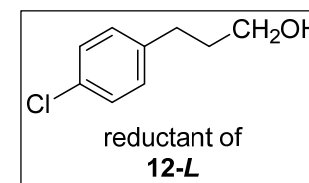
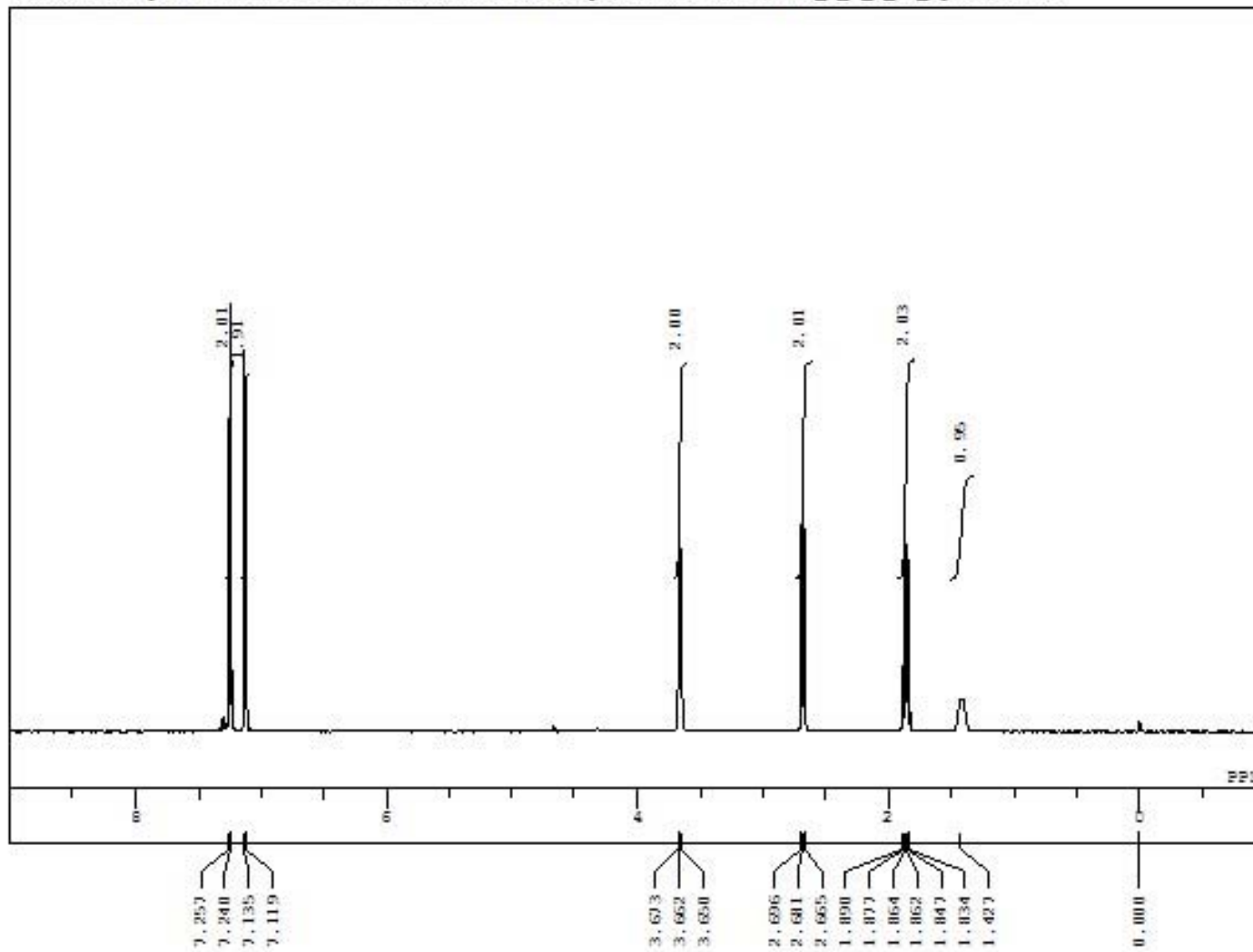
\\Fao-c08\orgchem-lab2\TeamG\ (17) ZODI-4-2ZE23"Xj\ZAZzff (f^\Alice\mk_a_2_3_13c_spectrum.ala

DFILE mk_a_2_3_13c_spectrum.ala
COMMT Single Pulse with Broadband
DATIM 2011-05-31 07:28:24
CENUC 13C
EXMOD single_pulse_dec
OBFRQ 125.77 MHz
OBSET 7.87 KHz
OBFIN 4.21 Hz
POINT 32768
FREQU 31446.54 Hz
SCANS 16384
AQTM 1.0420 sec
PD 1.0000 sec
PWL 4.47 usec
IRNUC 1H
CTEMP 20.2 c
SLVNT CDCL3
EKREF 77.00 ppm
BF 0.12 Hz
RGAIN 28



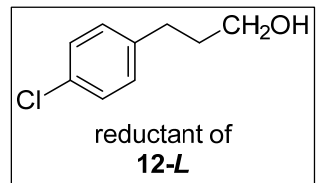
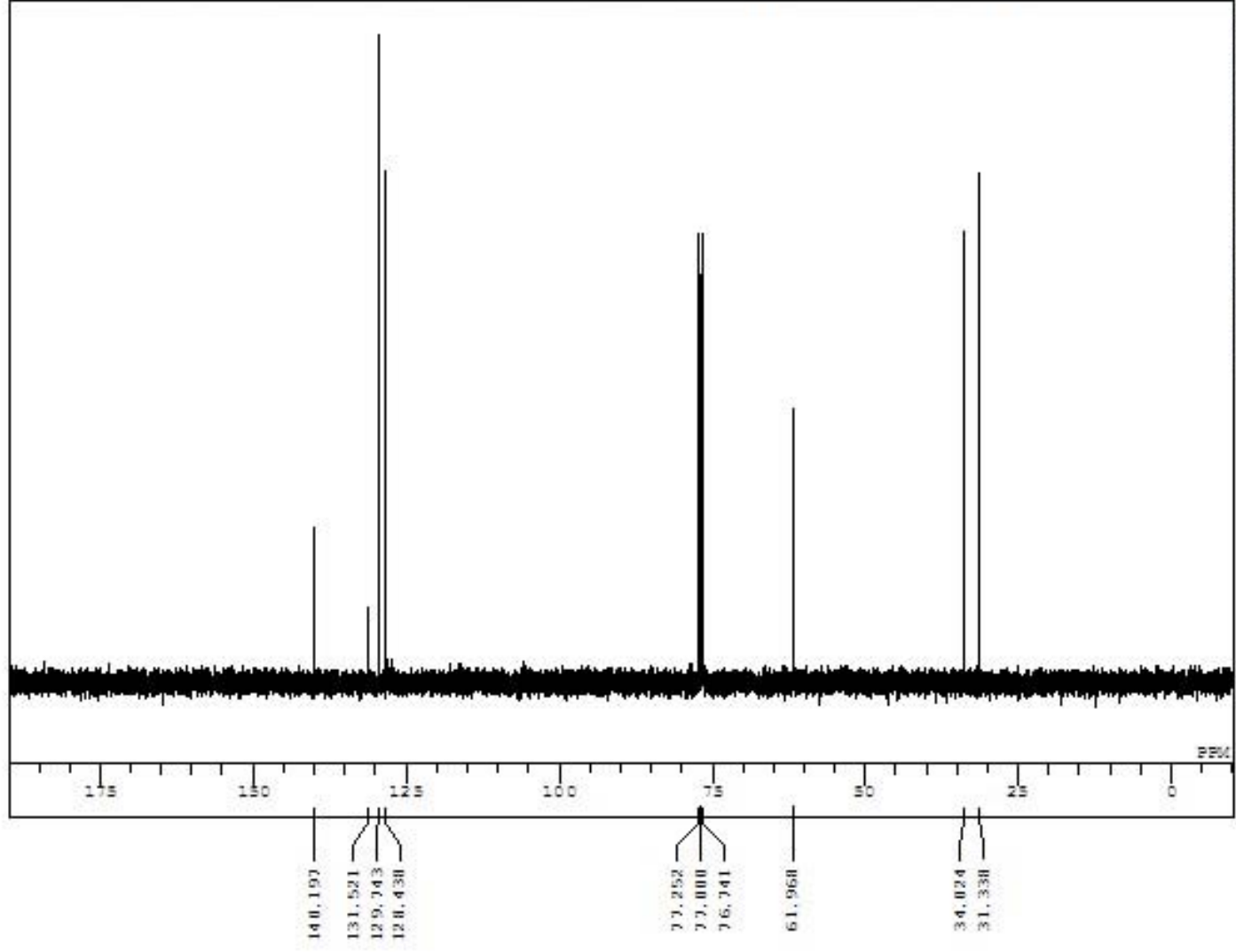
\\fao-c08\o-gchem-lab2\TeamG\17\ZODI-4-22E23\31*xj\ZAGzff\Alice\mk_a_2_4_ld_spectrum.als

DFILE mk_a_2_4_ld_spectrum.als
COMNT Single Pulse Experiment
DATIM 2011-05-28 08:35:04
OBNUC 1H
EXMDD single_pulse.exp
OBFRQ 500.16 MHz
OBSET 2.41 KHz
OBFIN 6.01 Hz
POINT 16384
FREQU 10010.01 Hz
SCANS 16
ACQTM 1.6368 sec
PD 4.0000 sec
FW1 7.00 usec
IRNUC
OTEMP 19.1 c
SLVNT CDCL3
EXREF 0.00 ppm
BF 0.12 Hz
RGAIN 17



\\Fao-c08\orgchem-lab2\TeamG\ (17) ZODI-4-2ZE23\N*xj\ZAZzff (f^\Alice\mk_a_2_4_13c_spectrum.als

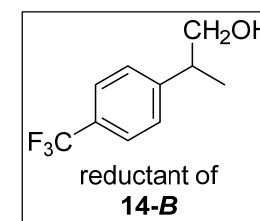
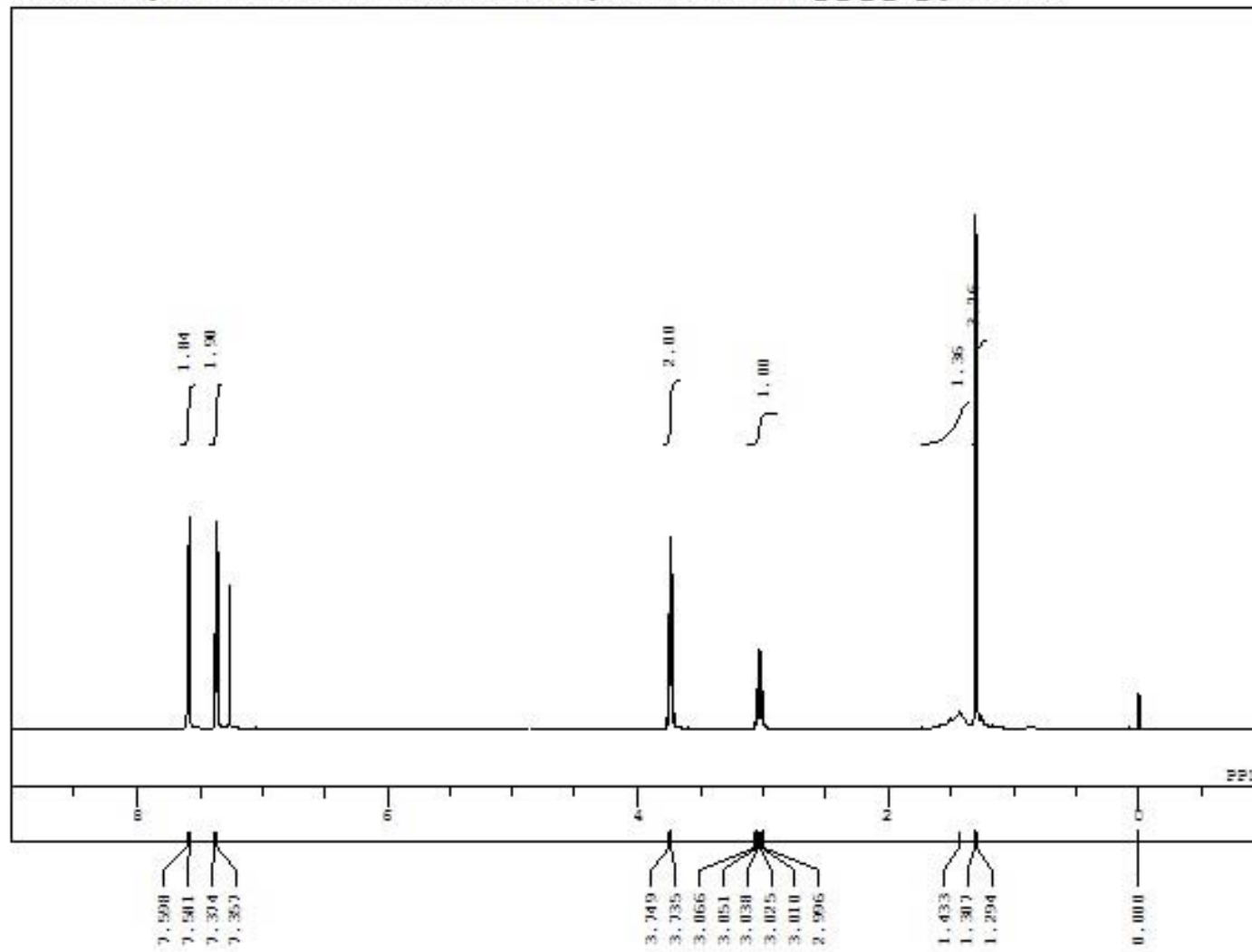
DFILE mk_a_2_4_13c_spectrum.als
COMMT Single Pulse with Broadband
DATIM 2011-05-28 08:43:07
CENUC 13C
EXMOD single_pulse_dec
OBFRQ 125.77 MHz
OBSET 7.87 KHz
OBFIN 4.21 Hz
POINT 32768
FREQU 31446.54 Hz
SCANS 200
AQTM 1.0420 sec
PD 1.0000 sec
FWL 4.47 usec
IRNUC 1H
CTEMP 20.2 c
SLVNT CDCL3
EXREF 77.00 ppm
BF 0.12 Hz
RGAIN 30



\\fso-c08\orgchem-lab2\TeamG\17\ZODI-4-22E23\31*xj\ZAGzff\Alice\mk_a_9_3_1d_spectrum.als

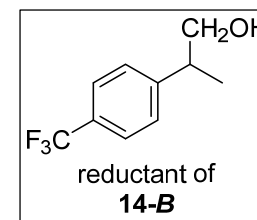
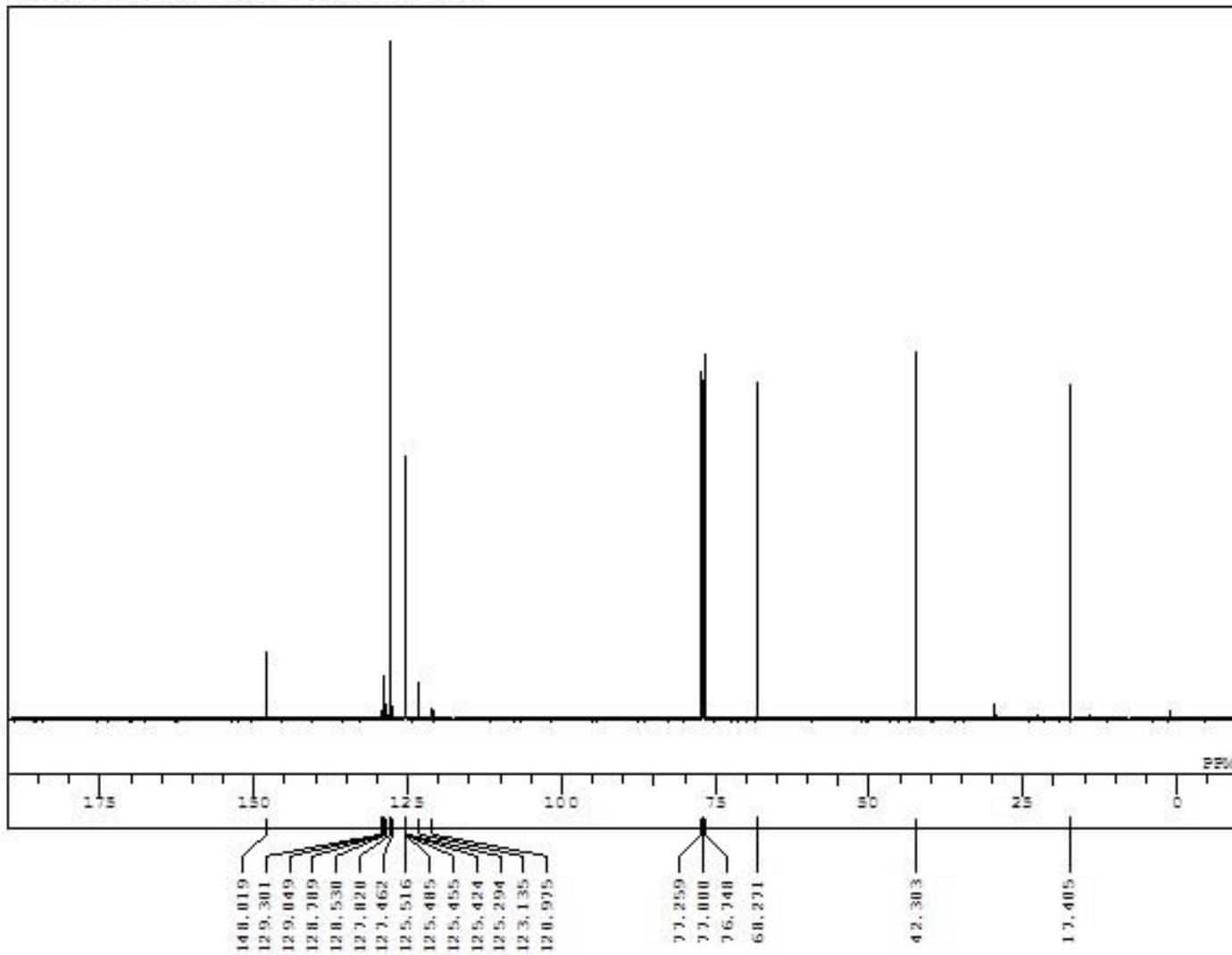
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DFILE mk_a_9_3_1d_spectrum.als
COMENT Single Pulse Experiment
DATIM 2012-02-23 16:21:27
OBNUC 1H
EXMDD single_pulse.exp
OBFRQ 500.16 MHz
OBSET 2.41 kHz
OBFIN 6.01 Hz
POINT 16384
FREQU 10010.01 Hz
SCANS 16
AQTM 1.6368 sec
PD 4.0000 sec
PW1 7.00 usec
IRNUC
OTEMP 19.7 c
SLVNT CDCL3
EXREF 0.00 ppm
BF 0.12 Hz
RGAIN 19
    
```



C:\Users\o-nagato\Desktop\mk_a_9_3_130.a1a

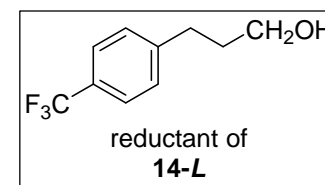
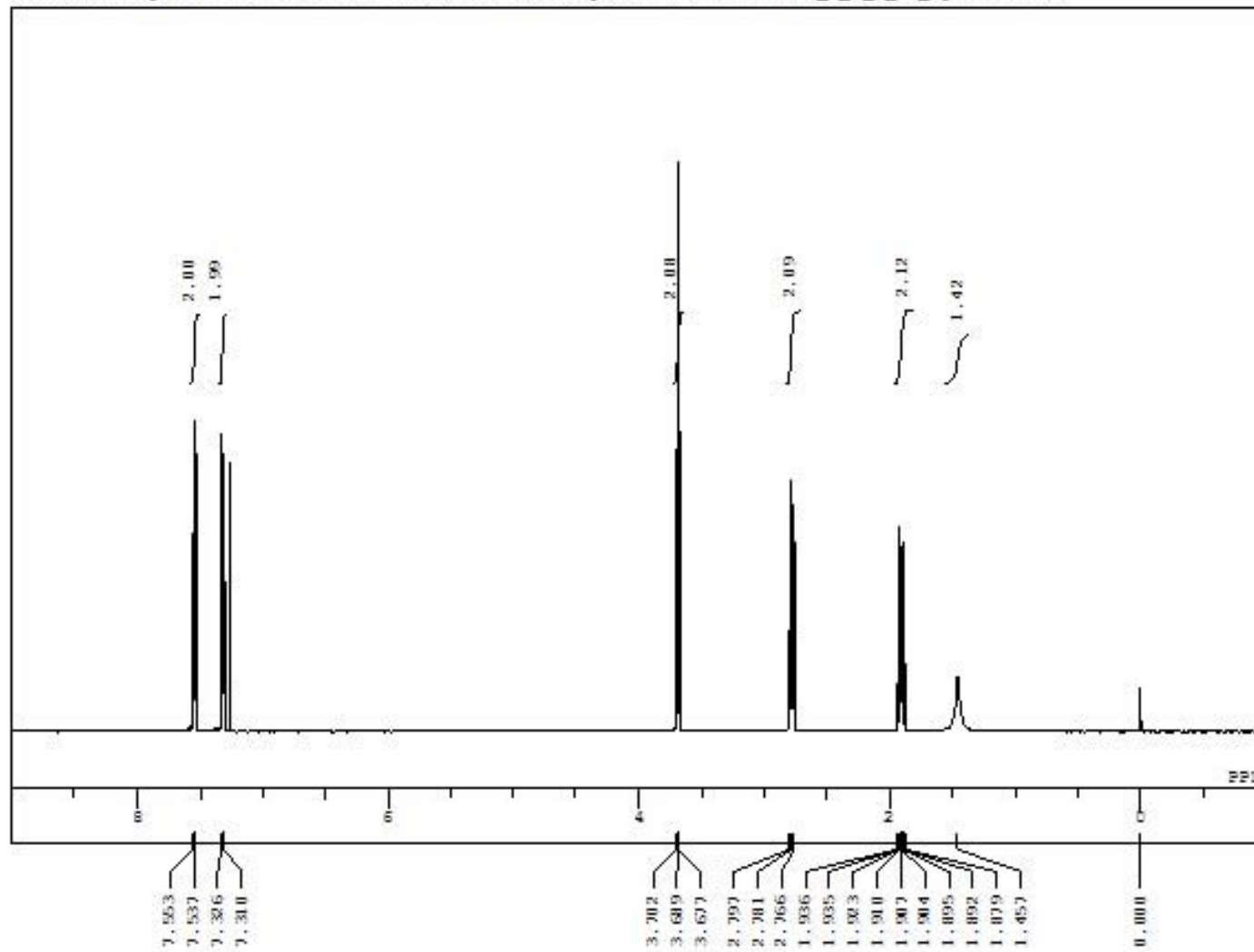
DFILE mk_a_9_3_130.a1a
COMMT Single Pulse with Broadband
DATIM 2012-03-29 10:03:57
CENUC 13C
EXMOD single_pulse_dec
OBFRQ 125.77 MHz
OBSET 7.87 KHz
OBFIN 4.21 Hz
POINT 32768
FREQU 31446.54 Hz
SCANS 21528
AQQT 1.0420 sec
PD 1.0000 sec
PWL 4.47 usec
IRNUC 1H
CTEMP 23.1 c
SLVNT CDCL3
EKREF 77.00 ppm
BF 0.10 Hz
RGAIN 28



\\fso-c08\oegchan-lab2\TeamG\17\ZODI-4-22E23\31*xj\ZAGzff\Alice\mk_a_9_4_ld_spectrum.als

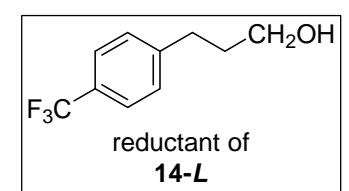
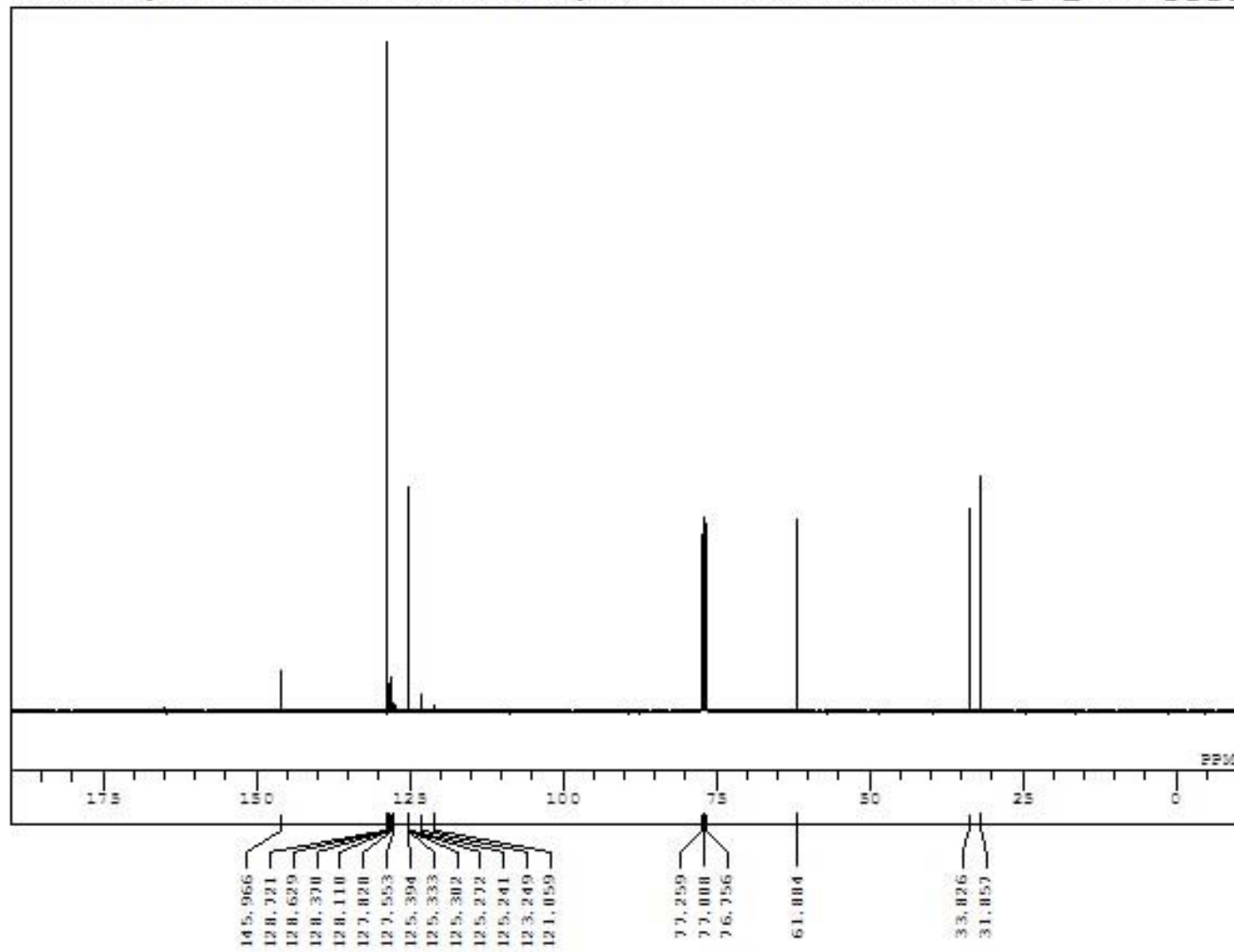
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DFILE mk_a_9_4_ld_spectrum.als
COMNT Single Pulse Experiment
DATIM 2012-03-01 10:46:56
OBNUC 1H
EXMDD single_pulse.exp
OBFRQ 500.16 MHz
OBSET 2.41 kHz
OBFIN 6.01 Hz
POINT 16384
FREQU 10010.01 Hz
SCANS 16
AQTM 1.6368 sec
PD 4.0000 sec
FW1 7.00 usec
IRNUC
OTEMP 19.3 c
SLVMT CDCL3
EXREF 0.00 ppm
BF 0.12 Hz
RGAIN 19
    
```



\\fao-c08\orgchem-lab2\TeamG\17\ZODI-4-22E23"N"xj\ZAGsff(f^\1Hs13CNGR&IR&MS&HRMS\alcohol_1\7_p-CF3\mk_a_9_4_13c_spectrum.ala
 DFILE mk_a_9_4_13c_spectrum.ala
 POINT Single_Pulse with Broadband
 13c_spectrum.ala
 DATE 2012-03-21 17:13:09

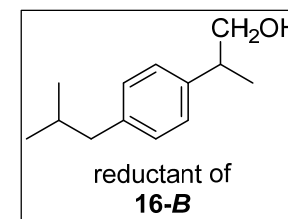
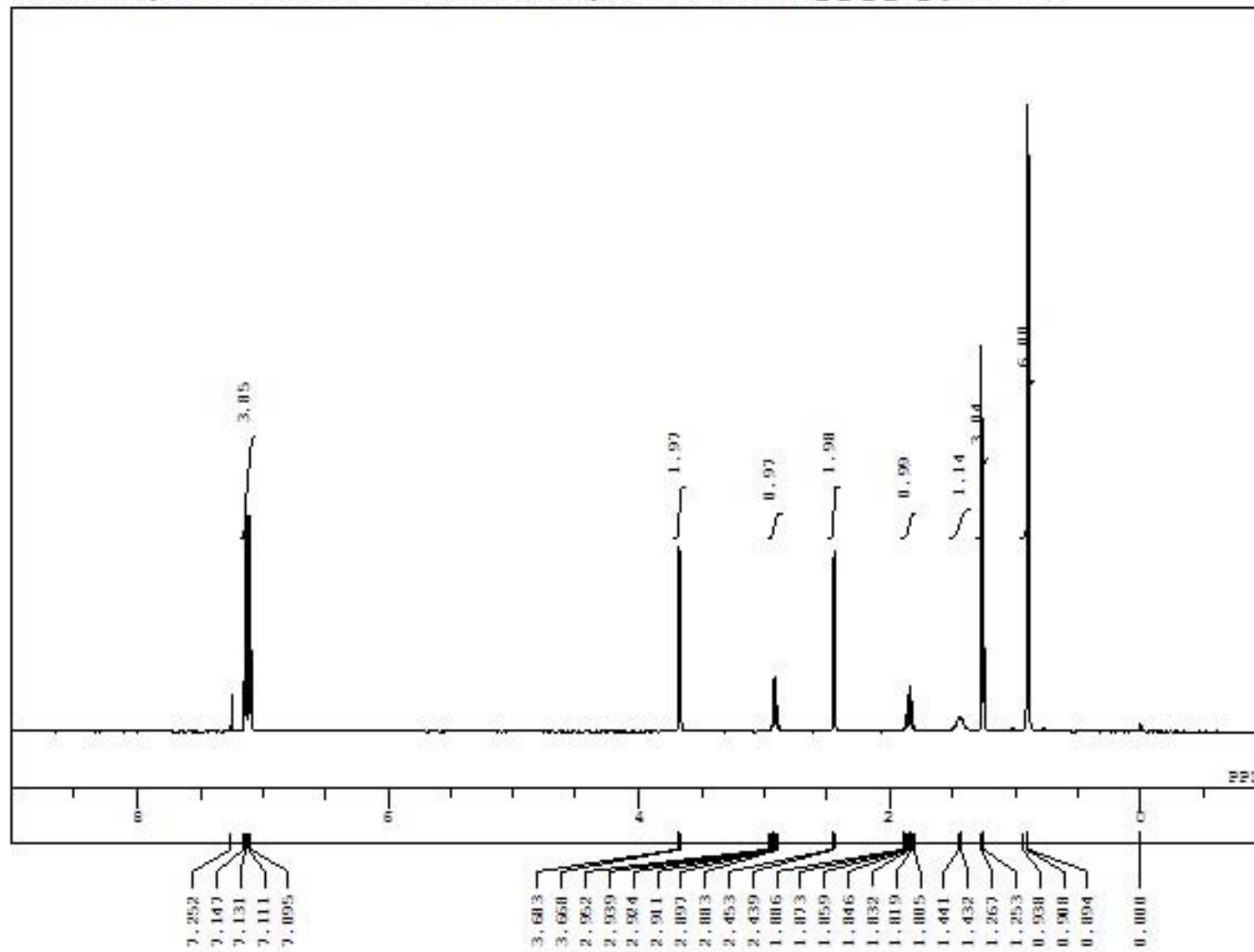
OBNUC 13C
 EXMOD single_pulse_dec
 OBFRQ 125.77 MHz
 OBSET 7.87 KHz
 OBFIM 4.21 Hz
 POINT 32768
 FREQU 31446.54 Hz
 SCANS 3400
 ACQTM 1.0420 sec
 PD 1.0000 sec
 FW1 4.47 usec
 IRNUC 1H
 OTEMP 22.3 c
 SLVNT CDCL3
 EXREF 77.00 ppm
 BF 0.12 Hz
 RGAIN 30



\\fso-c08\orgchem-lab2\TeamG\17\ZODI-H-22E23\31*x\ZAEff\Alice\mk_a_7_3_1d_spectrum.als

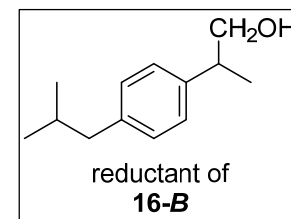
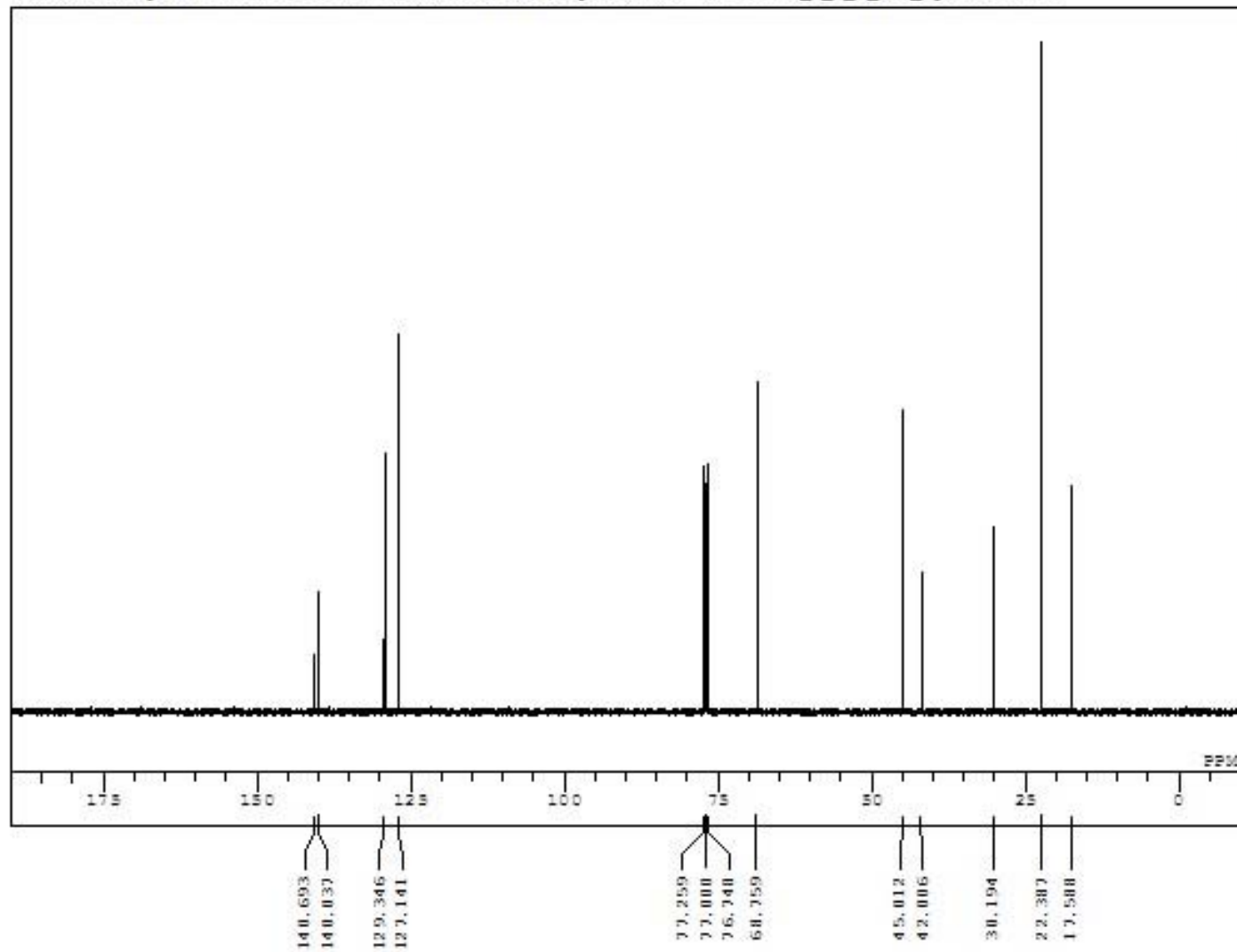
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DFILE mk_a_7_3_1d_spectrum.als
COMNT Single Pulse Experiment
DATIM 2011-09-13 16:13:12
OBNUC 1H
EXMDD single_pulse.exp
OBFRQ 500.16 MHz
OBSET 2.41 kHz
OBFIN 6.01 Hz
POINT 16384
FREQU 10010.01 Hz
SCANS 16
AQTM 1.6368 sec
PD 4.0000 sec
FW1 7.00 usec
IRNUC
OTEMP 21.4 c
SLVNT CDCL3
EXREF 0.00 ppm
BF 0.12 Hz
RGAIN 18
    
```



\\fso-c08\orgchem-lab2\TeamG\17\ZODI-4-22E23\01*xj\ZAGzff(f^)\Alice\mk_a_7_3_13c_spectrum.ala

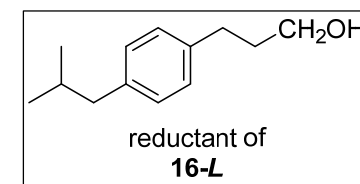
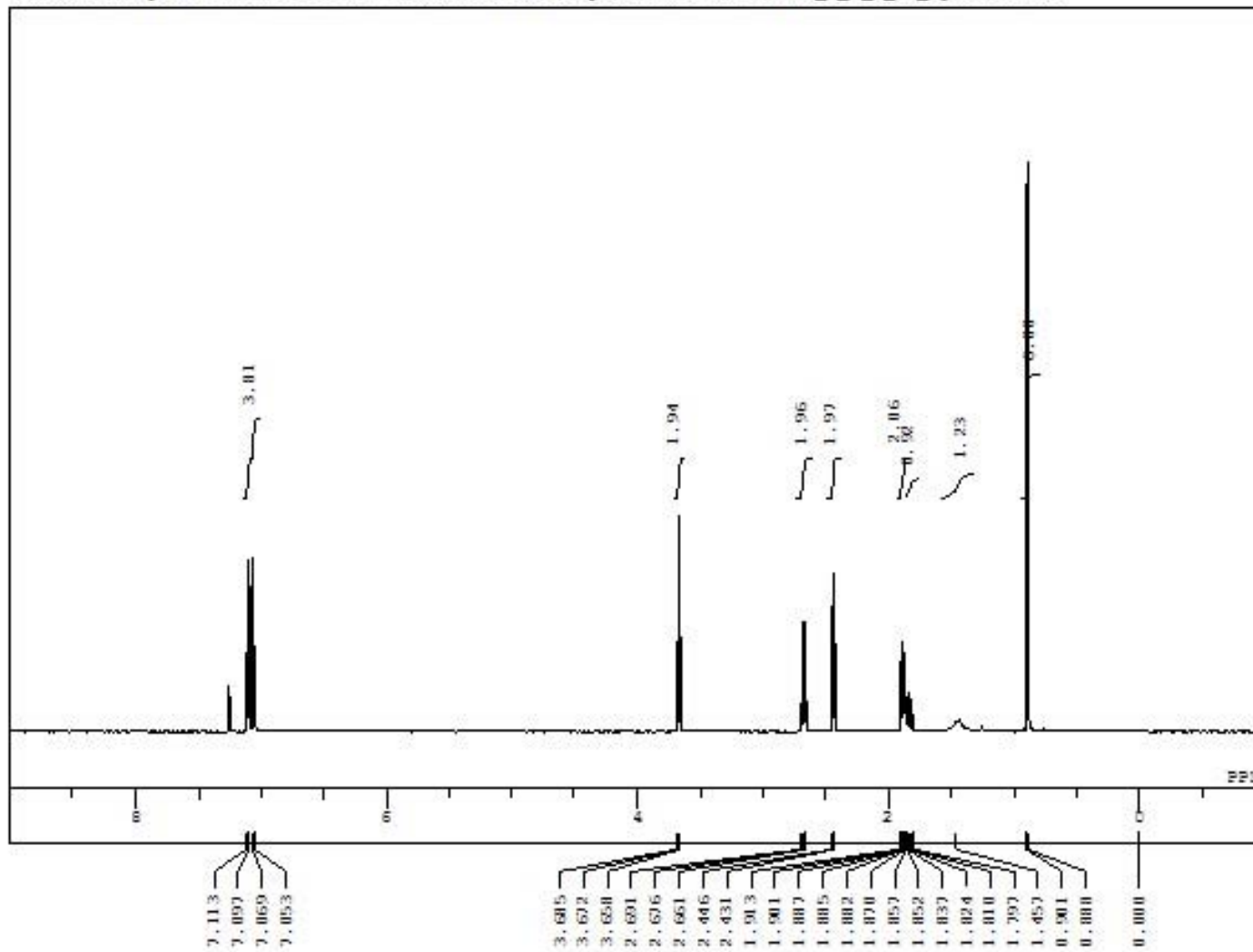
DFILE mk_a_7_3_13c_spectrum.ala
COMNT Single Pulse with Broadband
DATIM 2011-09-13 19:05:23
OBNUC 13C
EXMDD single_pulse_dec
OBFRQ 125.77 MHz
OBSET 7.87 KHz
OBFIN 4.21 Hz
POINT 32768
FREQU 31446.54 Hz
SCANS 1500
AQTM 1.0420 sec
PD 1.0000 sec
FW1 4.47 usec
IRNUC 1H
OTEMP 23.0 c
SLVMT CDCL3
EXREF 77.00 ppm
BF 0.12 Hz
RGAIN 28



\\fso-c08\o-gchem-lab2\TeamG\17\ZODI-4-22E23\31*x\ZAGzff\Alice\mk_a_7_4_ld_spectrum.als

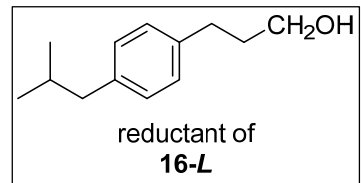
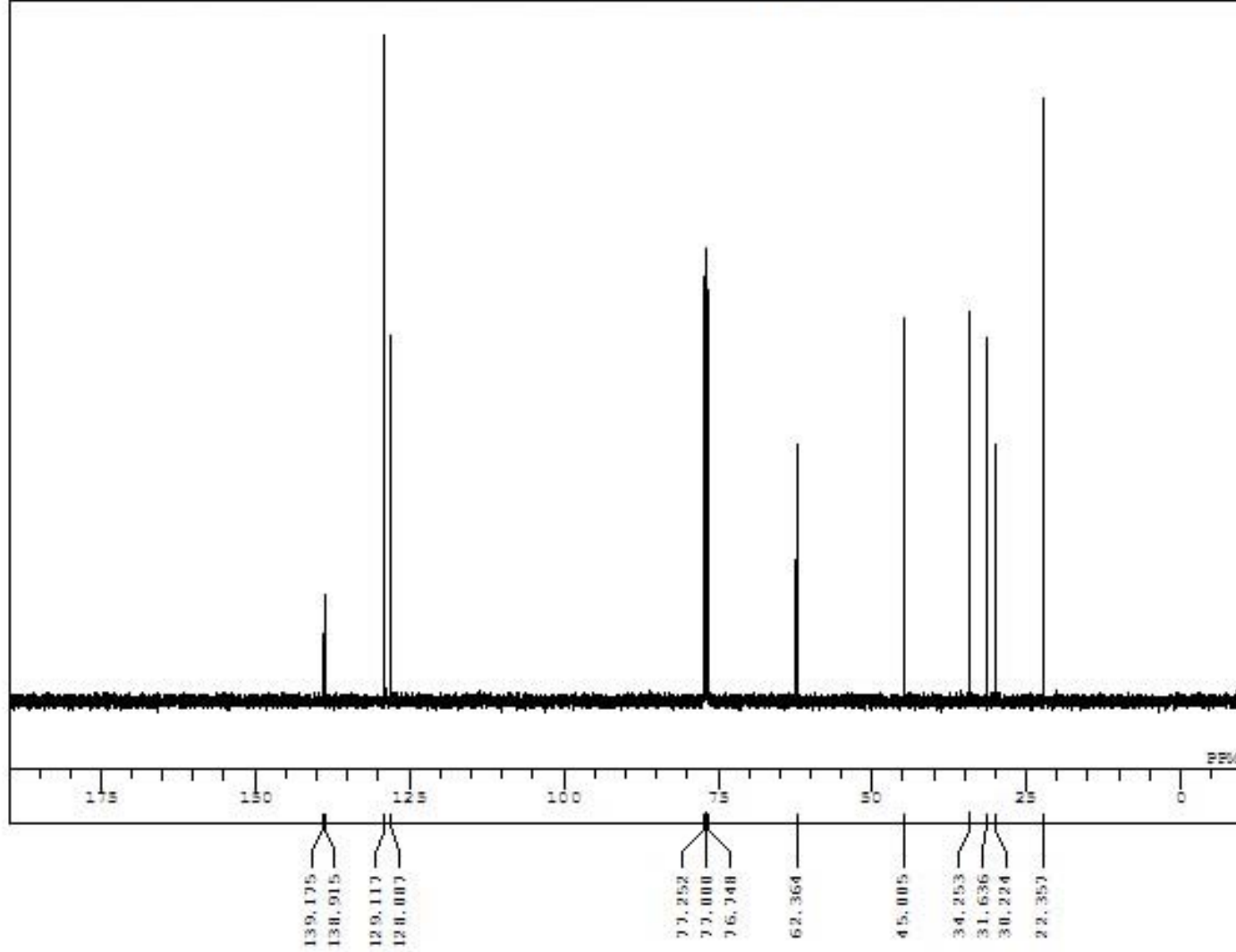
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DFILE mk_a_7_4_ld_spectrum.als
COMNT Single Pulse Experiment
DATIM 2011-09-13 21:40:41
OBNUC 1H
EXMDD single_pulse.exp
OBFRQ 500.16 MHz
OBSET 2.41 kHz
OBFIN 6.01 Hz
POINT 16384
FREQU 10010.01 Hz
SCANS 16
AQTM 1.6368 sec
PD 4.0000 sec
FW1 7.00 usec
IRNUC
OTEMP 21.8 c
SOLVENT CDCL3
EXREF 0.00 ppm
BF 0.12 Hz
RGAIN 17
    
```



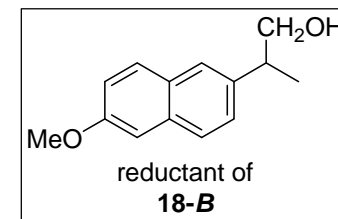
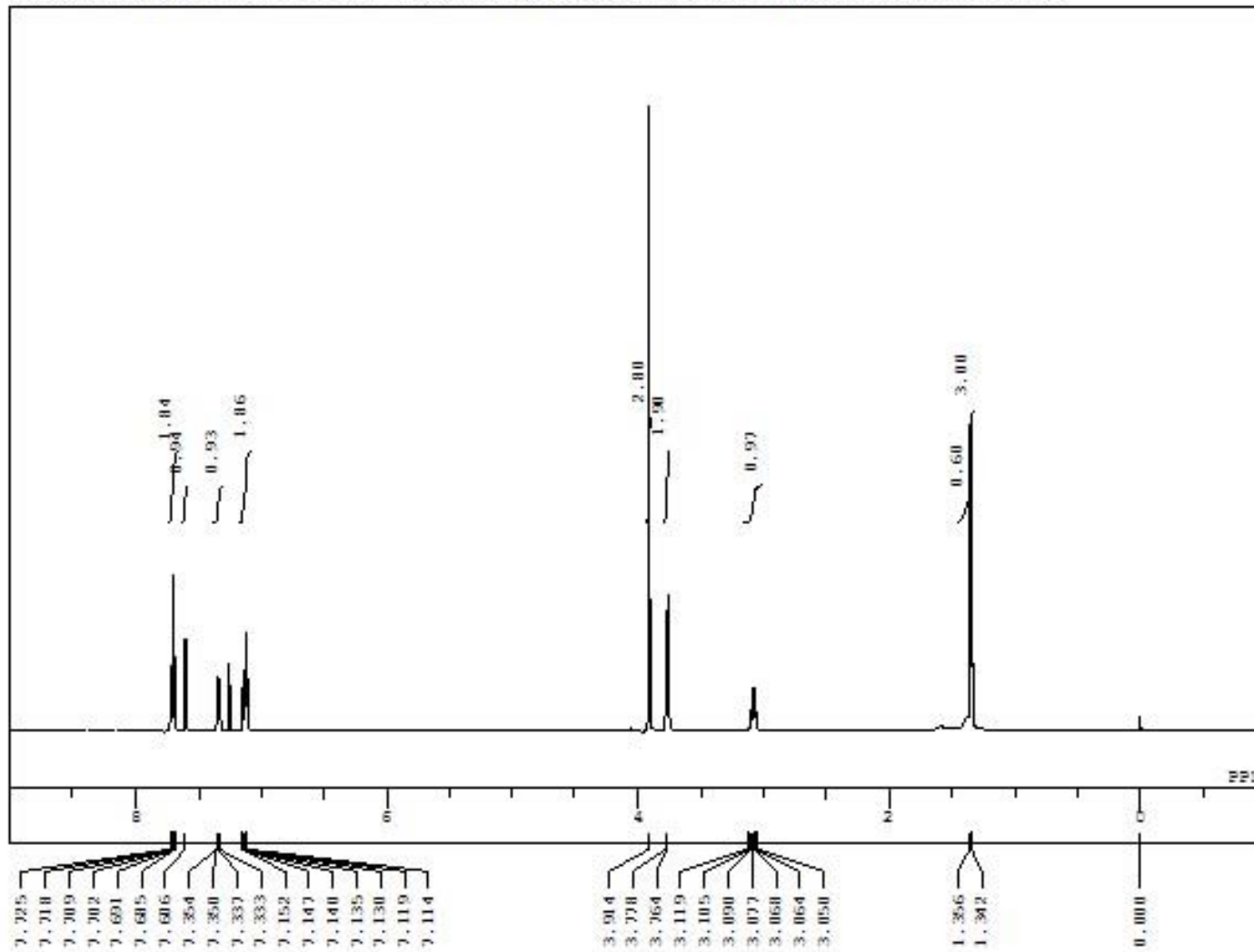
\\Fao-c08\orgchem-lab2\Team2\ (17) ZODI-4-22E23\W*xj\ZAZzff (f^\Alice\mk_s_7_4_13c_spectrum.als

DFILE mk_s_7_4_13c_spectrum.als
COMMT Single Pulse with Broadband
DATIM 2011-09-13 22:43:07
CENUC 13C
EXMOD single_pulse_dec
OBFRQ 125.77 MHz
OBSET 7.87 KHz
OBFIN 4.21 Hz
POINT 32768
FREQU 31446.54 Hz
SCANS 1800
AQTM 1.0420 sec
PD 1.0000 sec
FWL 4.47 usec
IRNUC 1H
CTEMP 23.1 c
SLVNT CDCL3
EKREF 77.00 ppm
BF 0.12 Hz
RGAIN 28



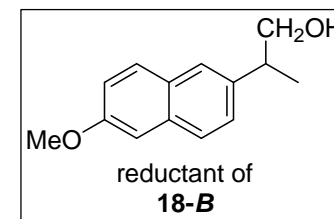
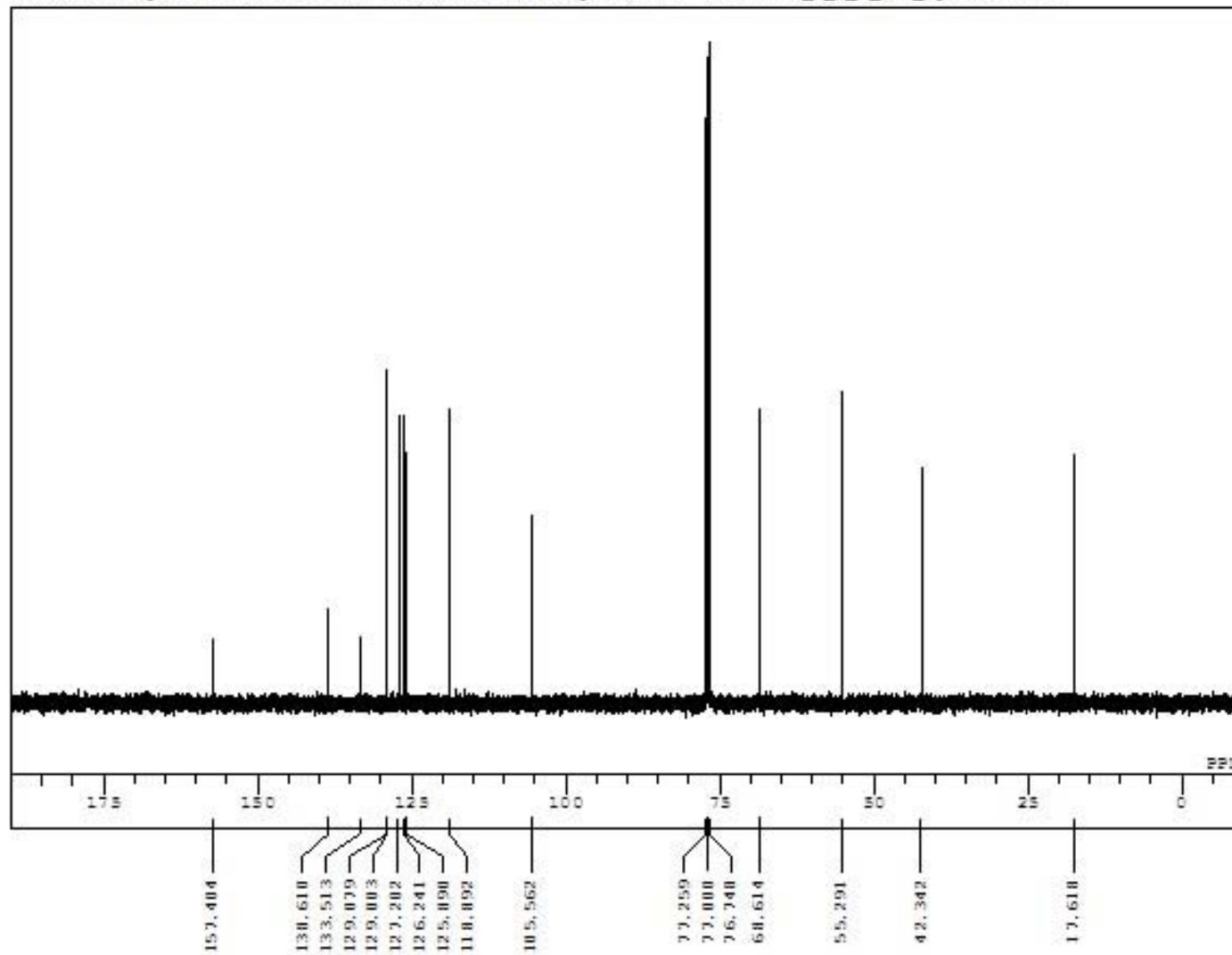
\\fso-c08\orgchem-lab2\TeamG\17\ZODI-H-22E23\31*xj\ZAEff\Alice\mk_e_8_3_1d_spectrum.als

DFILE mk_e_8_3_1d_spectrum.als
 COMNT Single Pulse Experiment
 DATIM 2011-09-05 13:37:59
 OBNUC 1H
 EXMDD single_pulse.exp
 OBFRQ 500.16 MHz
 OBSET 2.41 KHz
 OBFIM 6.01 Hz
 POINT 16384
 FREQU 10010.01 Hz
 SCANS 16
 ACQTM 1.6368 sec
 PD 4.0000 sec
 PW1 7.00 usec
 IRNUC
 OTEMP 20.3 c
 SOLVENT CDCL3
 EXREF 0.00 ppm
 BF 0.12 Hz
 RGAIN 19



\\fao-c08\orgchem-lab2\TeamG\17\ZODI-H-22E23\01*xj\ZAGzff(f^)\Alice\mk_a_8_3_13c_spectrum.ala

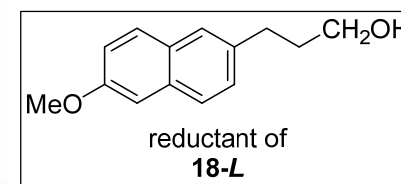
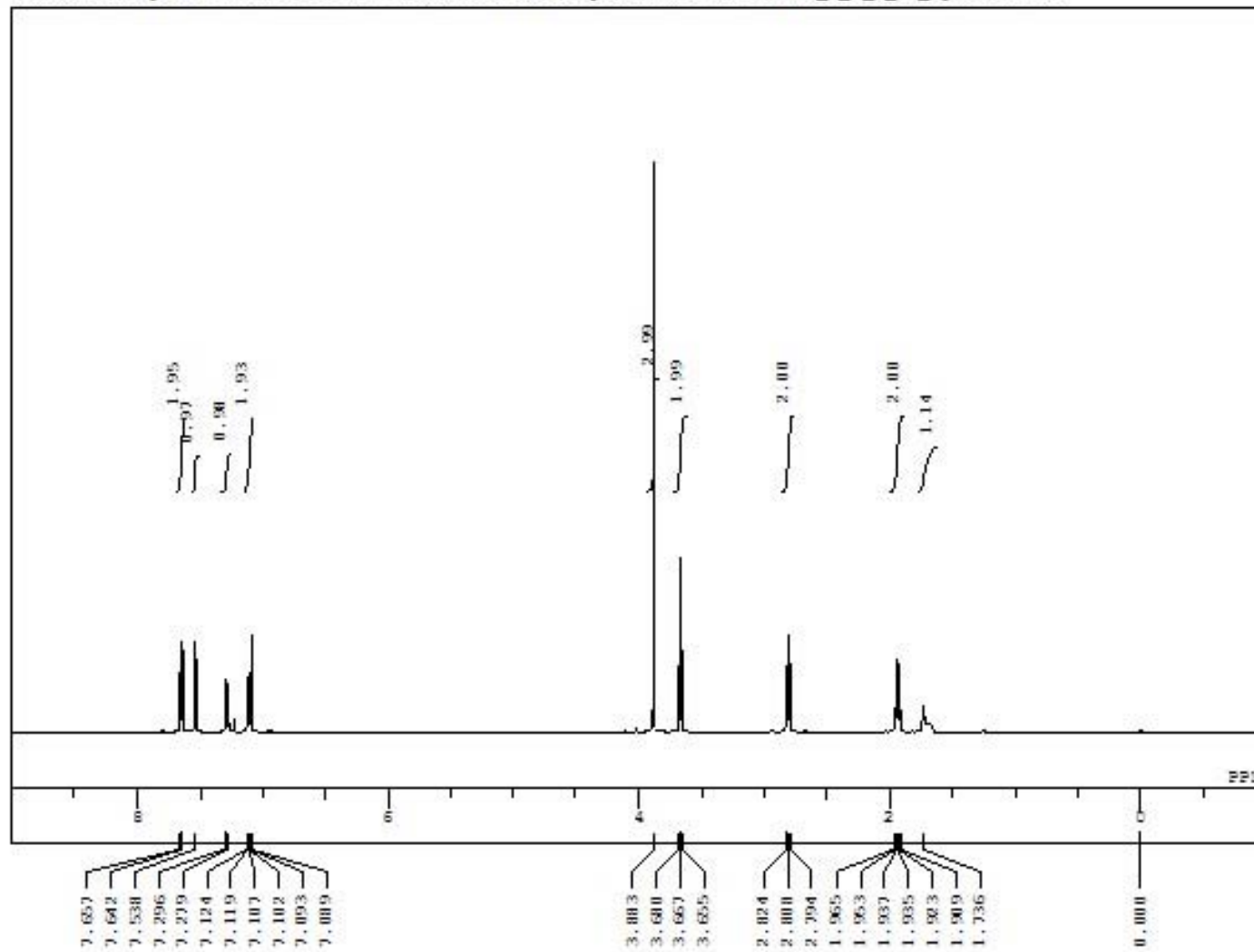
DFILE mk_a_8_3_13c_spectrum.ala
COMNT Single Pulse with Broadband
DATIM 2011-09-05 14:47:12
OBNUC 13C
EXMDD single_pulse_dec
OBFRQ 125.77 MHz
OBSET 7.87 KHz
OBFIN 4.21 Hz
POINT 32768
FREQU 31446.54 Hz
SCANS 2000
ACQTM 1.0420 sec
PD 1.0000 sec
FW1 4.47 usec
IRNUC 1H
OTEMP 21.9 c
SLVMT CDCL3
EXREF 77.00 ppm
BF 0.12 Hz
RGAIN 28



\\fao-c08\o-gchem-lab2\TeamG\17\ZODI-H-22E23\31*x\ZAGzff\Alice\mk_a_8_4_id_spectrum.als

```

DFILE mk_a_8_4_id_spectrum.als
COMENT Single Pulse Experiment
DATIM 2011-08-31 13:21:24
OBNUC 1H
EXMDD single_pulse.exp
OBFRQ 500.16 MHz
OBSET 2.41 KHz
OBFIN 6.01 Hz
POINT 16384
FREQU 10010.01 Hz
SCANS 16
AQTM 1.6368 sec
PD 4.0000 sec
FW 7.00 usec
IRNUC
OTEMP 21.7 c
SLVNT CDCL3
EXREF 0.00 ppm
BF 0.12 Hz
RGAIN 18
    
```



\\fao-c08\orgchem-lab2\TeamG\17\ZODI-H-22E23\Q\XJ\ZAGzff(f^)\Alice\mk_a_8_4_13c_spectrum.ala

DFILE mk_a_8_4_13c_spectrum.ala
COMNT Single Pulse with Broadband
DATIM 2011-09-14 12:14:36
OBNUC 13C
EXMDD single_pulse_dec
OBFRQ 125.77 MHz
OBSET 7.87 KHz
OBFIN 4.21 Hz
POINT 32768
FREQU 31446.54 Hz
SCANS 2100
ACQTM 1.0420 sec
PD 1.0000 sec
FW1 4.47 usec
IRNUC 1H
OTEMP 23.1 c
SLVMT CDCL3
EXREF 77.00 ppm
BF 0.12 Hz
RGAIN 30

