

Supporting Information

Enantioselective total Syntheses and determination of absolute configuration of marine toxins, oxazinins.

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Tel: + 91-512-2596537, **Fax:** + 91-512-2597436.

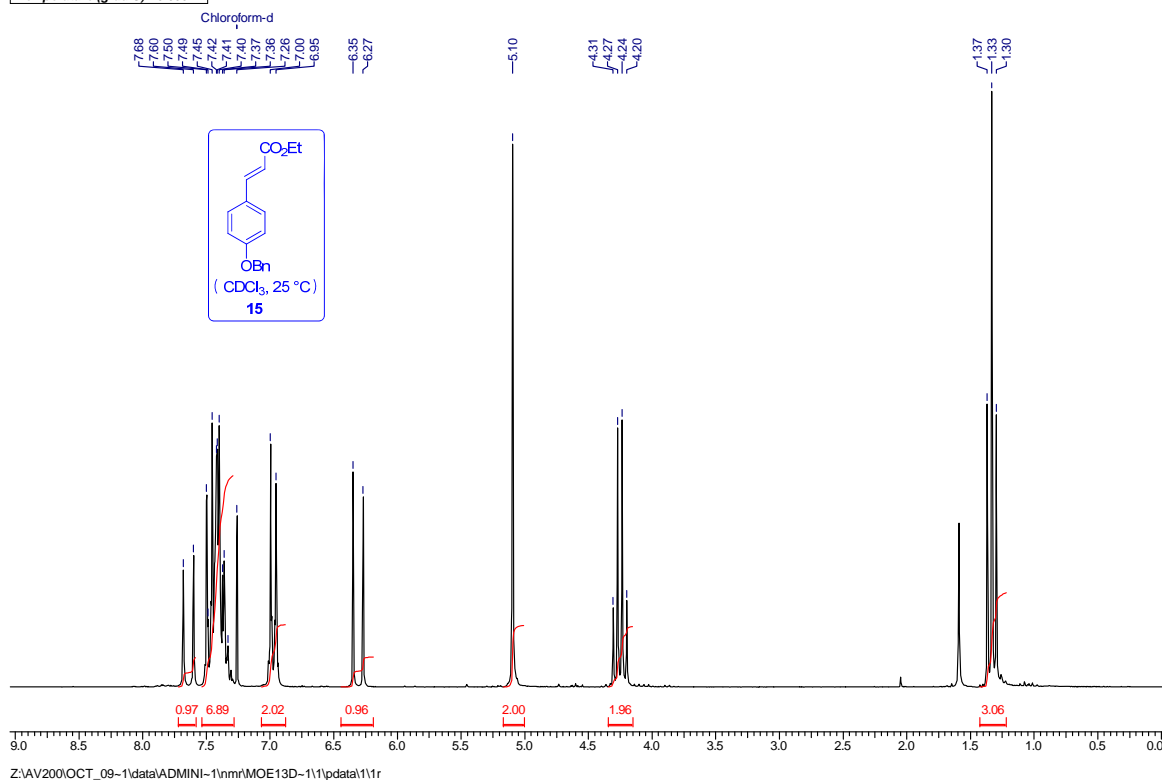
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NMR Spectrum:

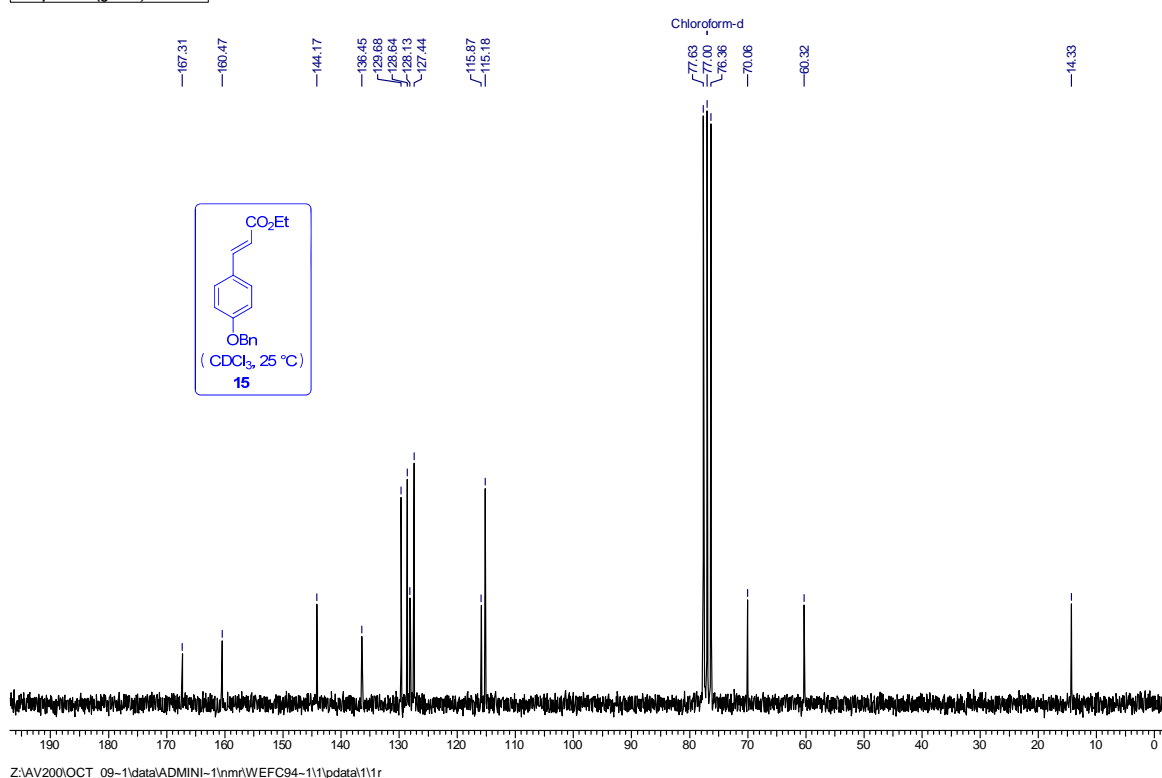
30 May 2011
 Alk

Acquisition Time (sec)	7.9167	Comment	Alk	Date	19/10/2009 15:38:24	Frequency (MHz)	200.13
Nucleus	¹ H	Original Points Count	32768	Points Count	32768	Sweep Width (Hz)	4139.07
Temperature (grad C)	0.000						



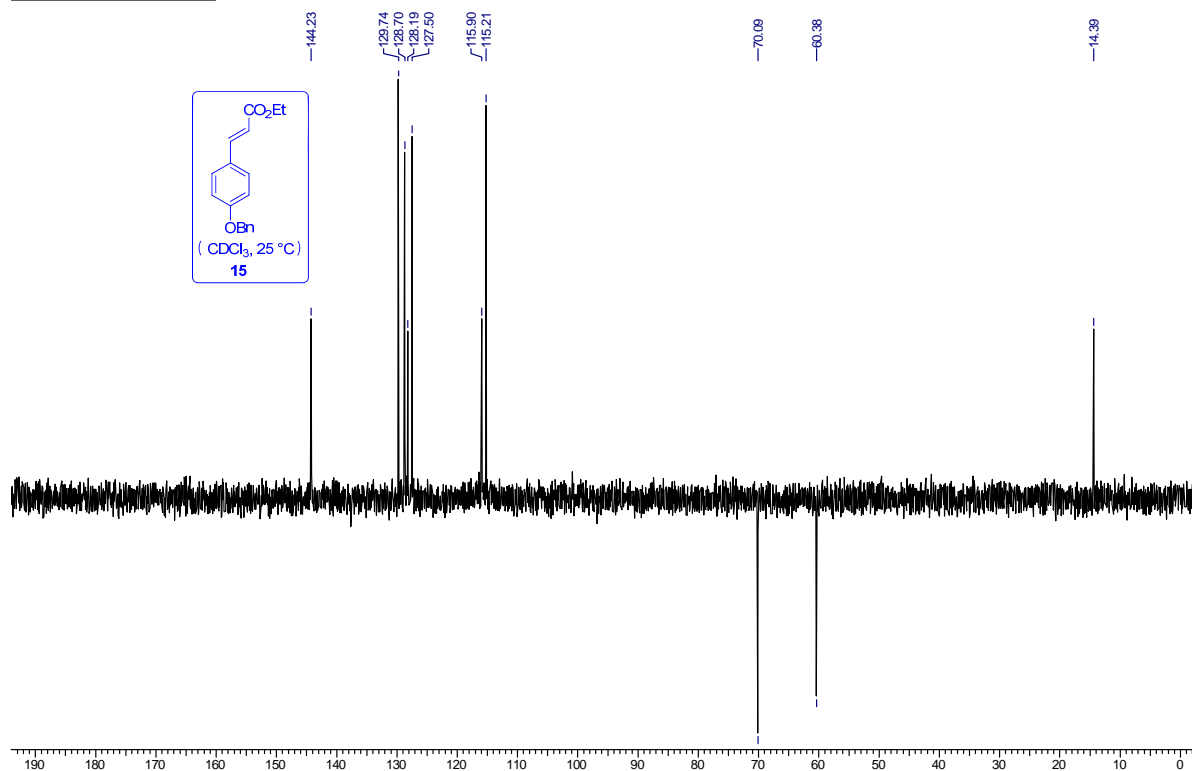
30 May 2011
 Alk

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Temperature (grad C)	0.000						



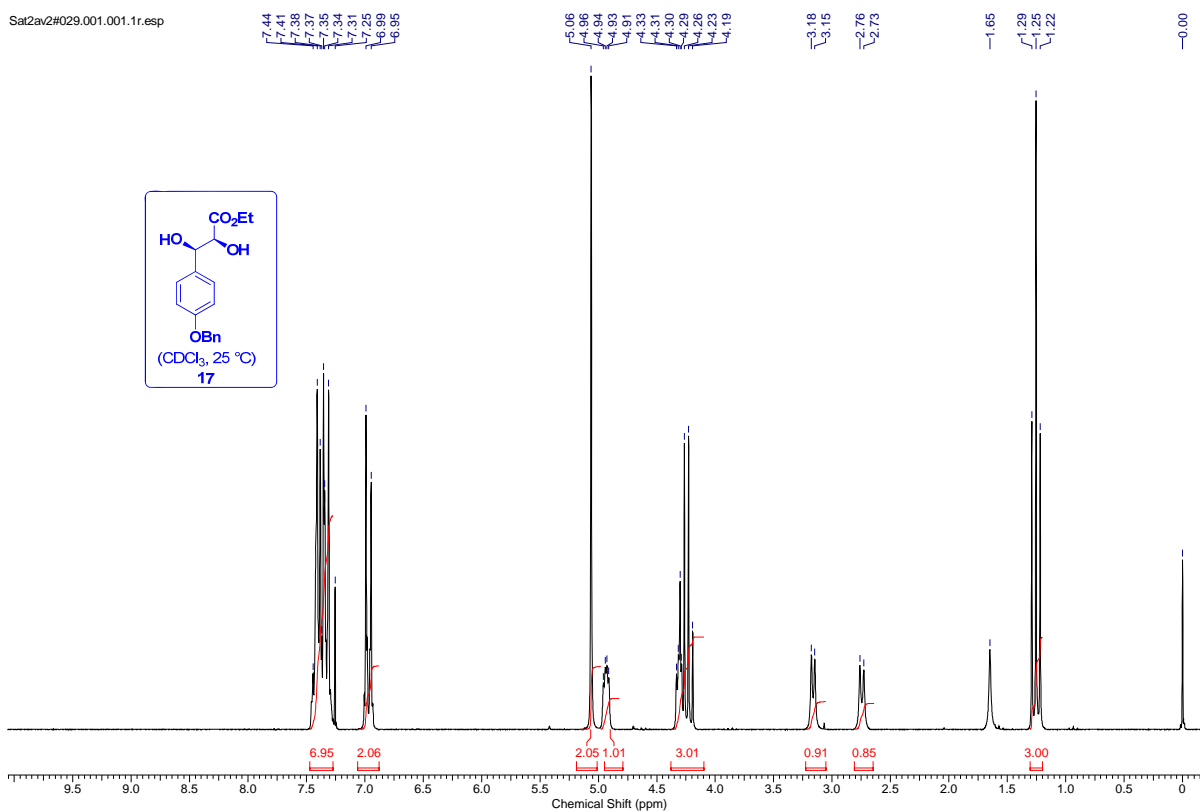
30 May 2011
 Alk

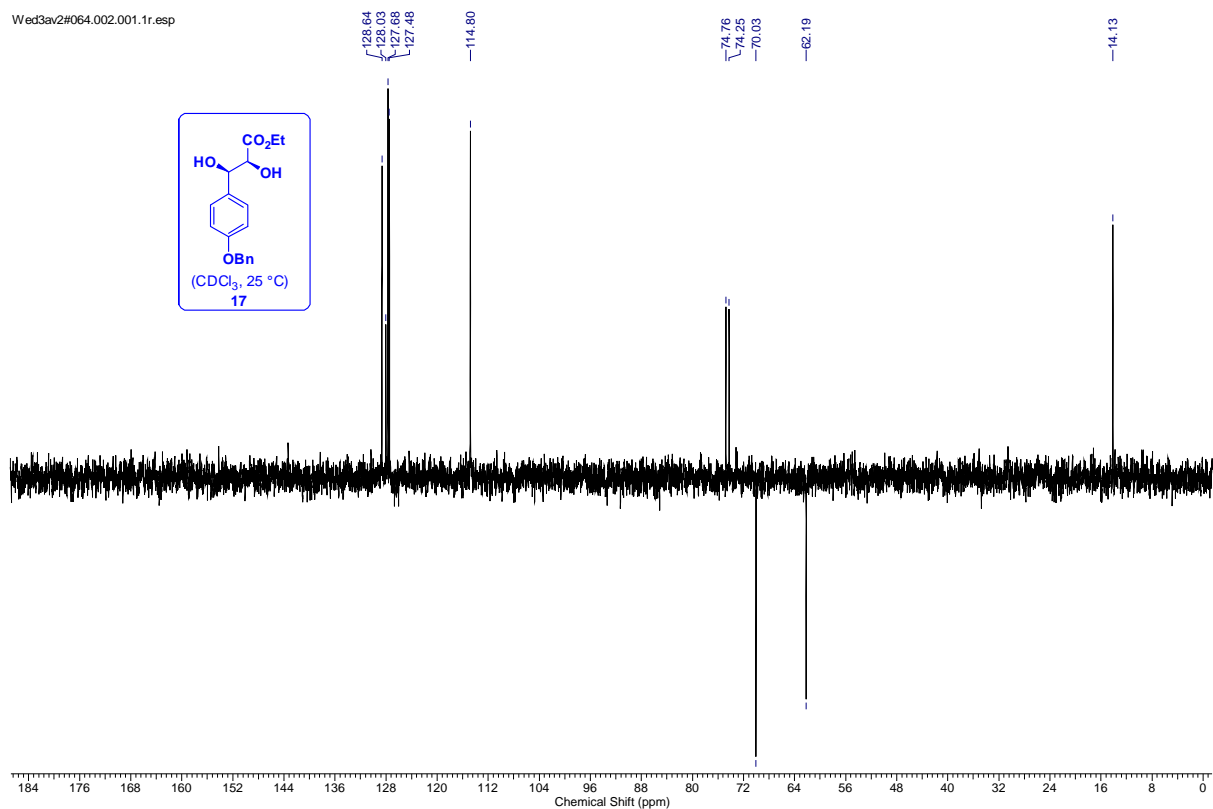
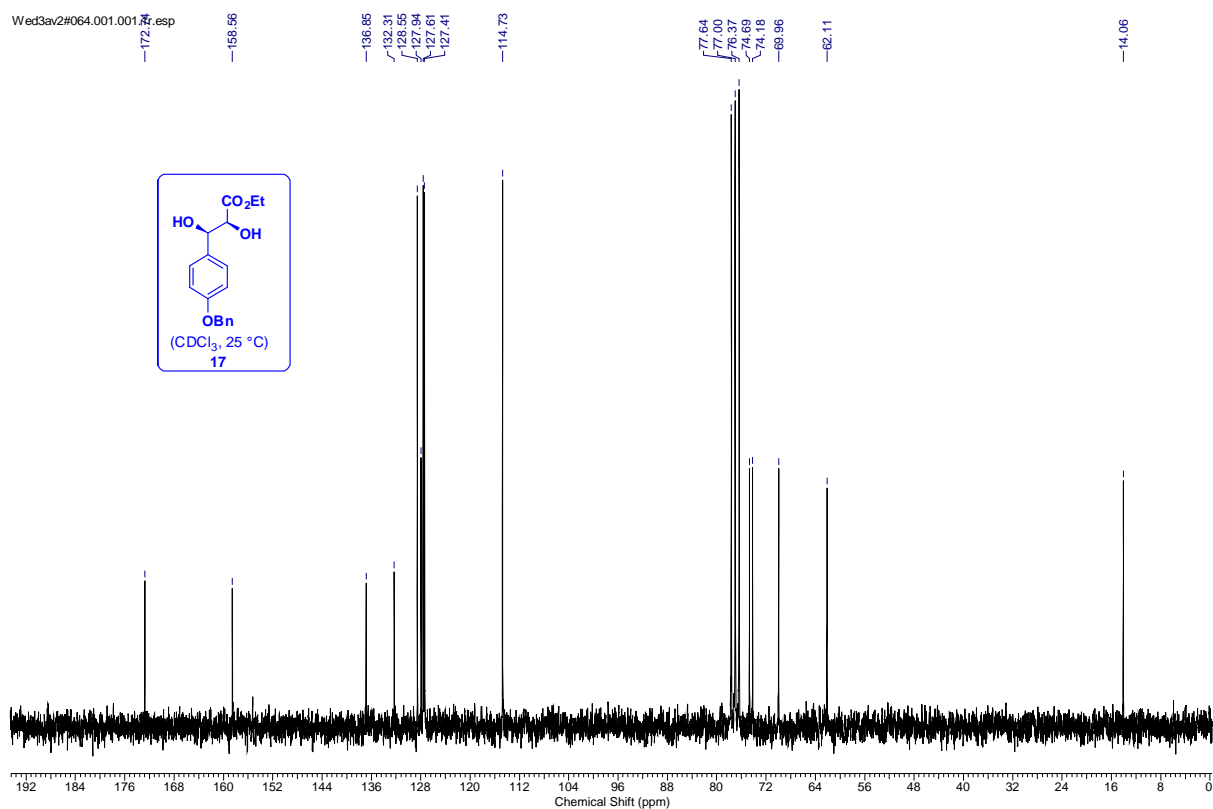
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Temperature (grad C)	0.000						

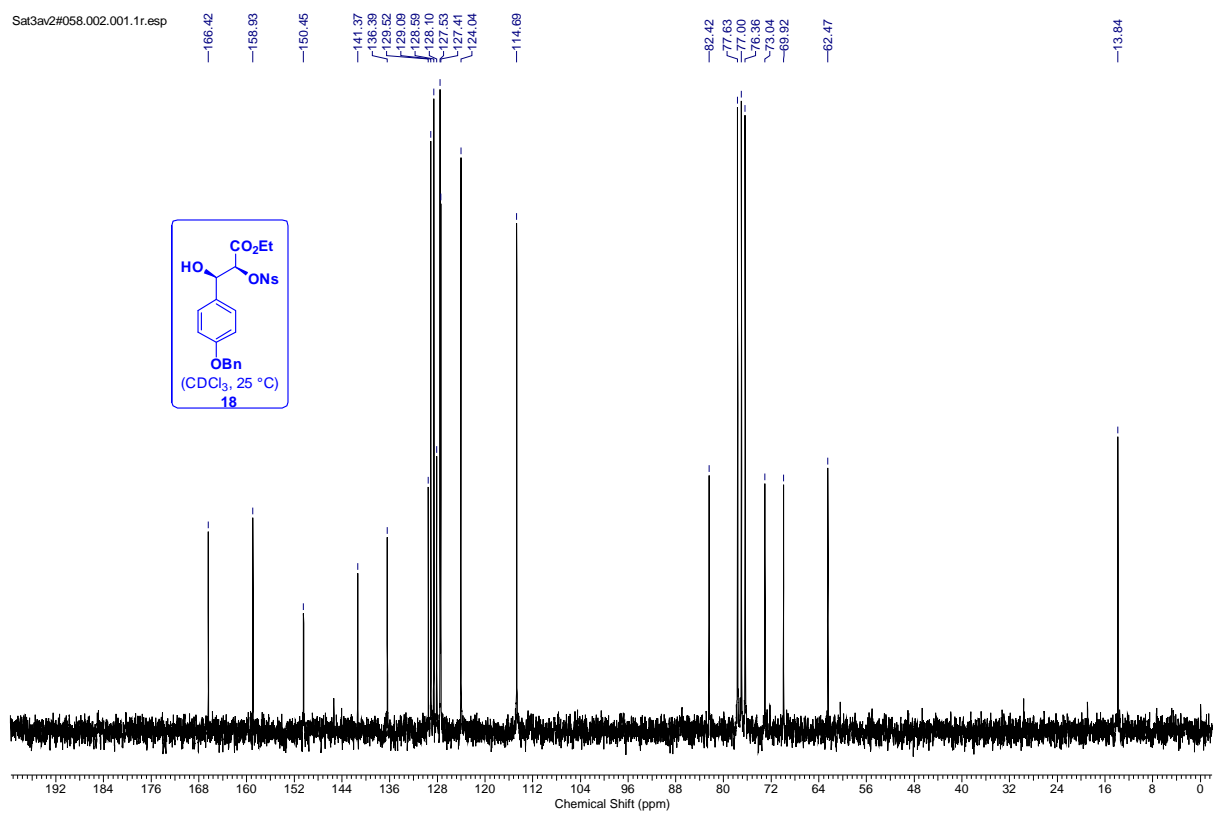
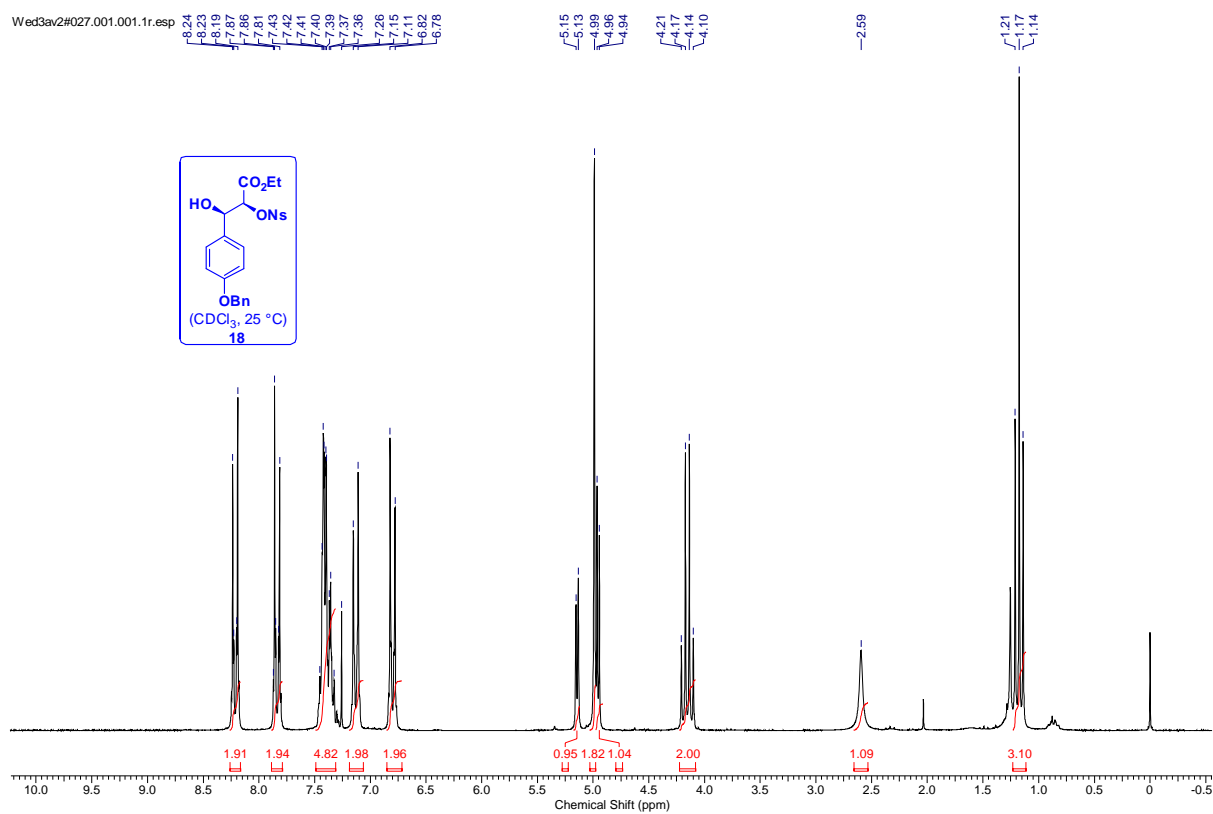


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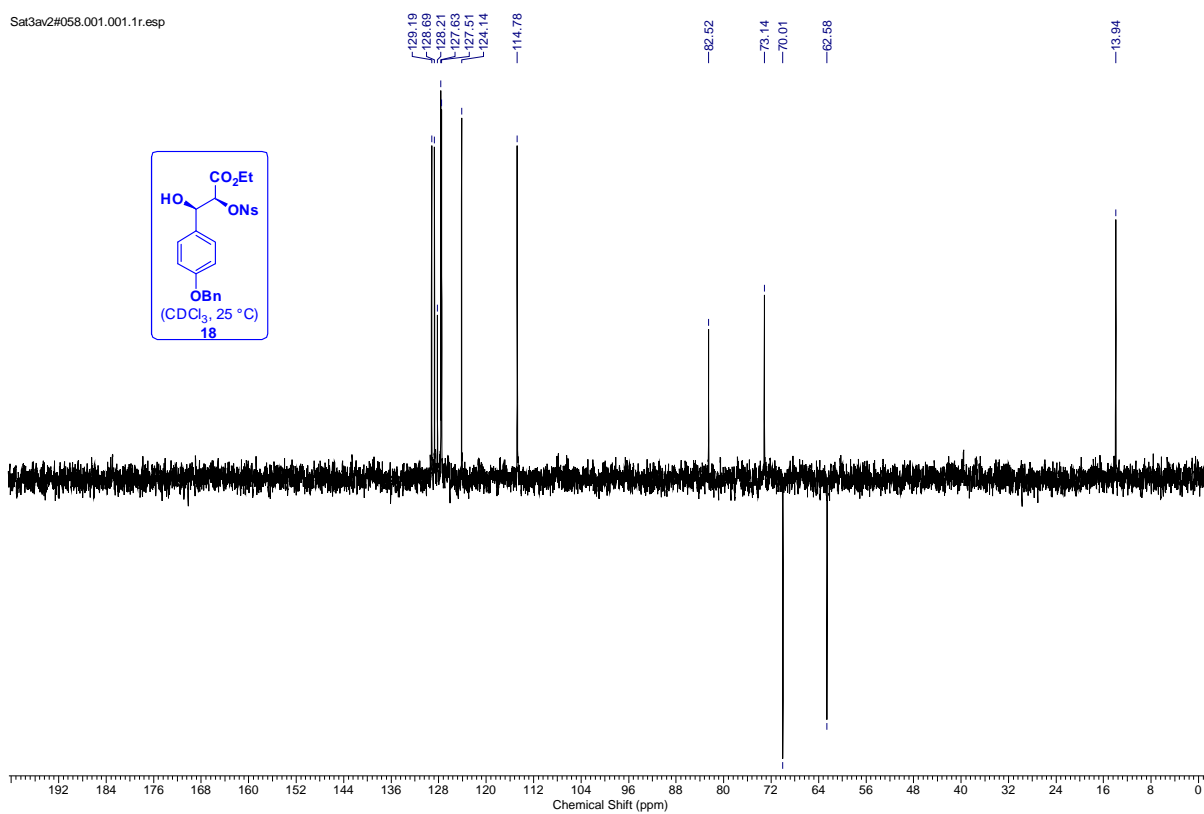
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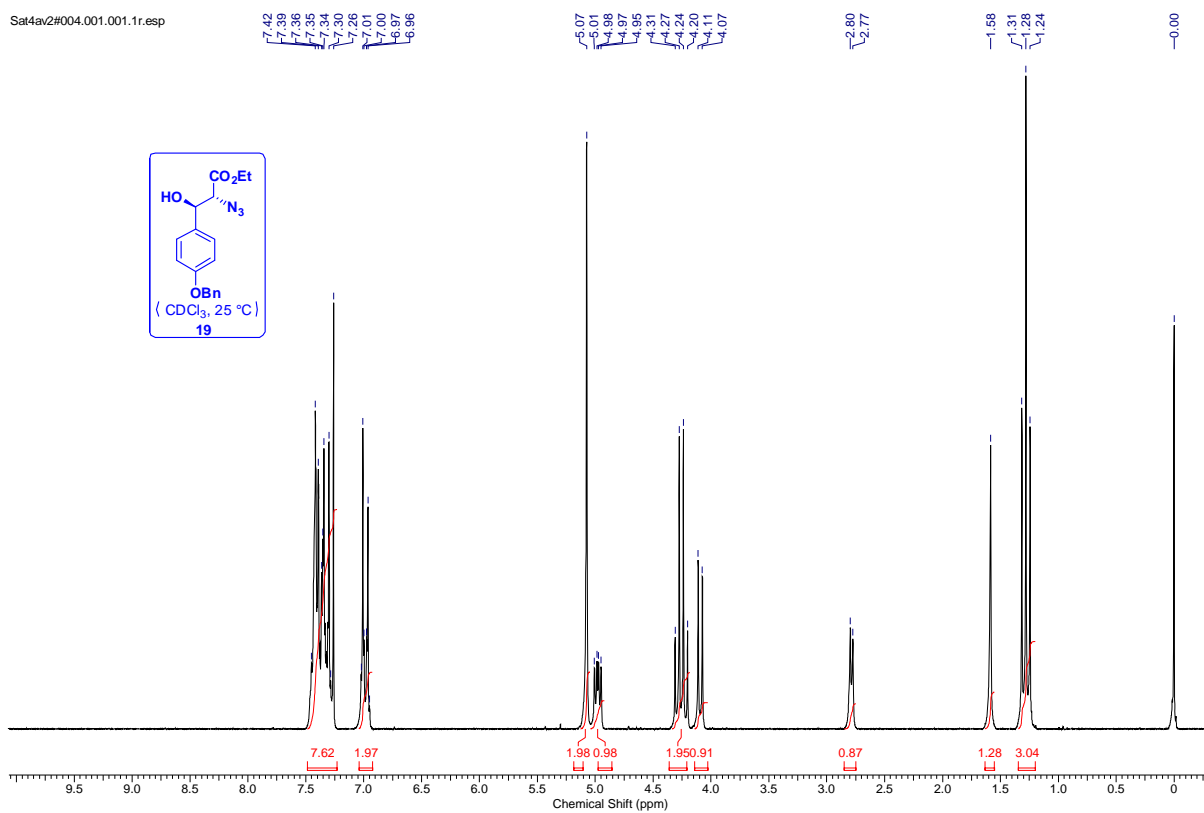


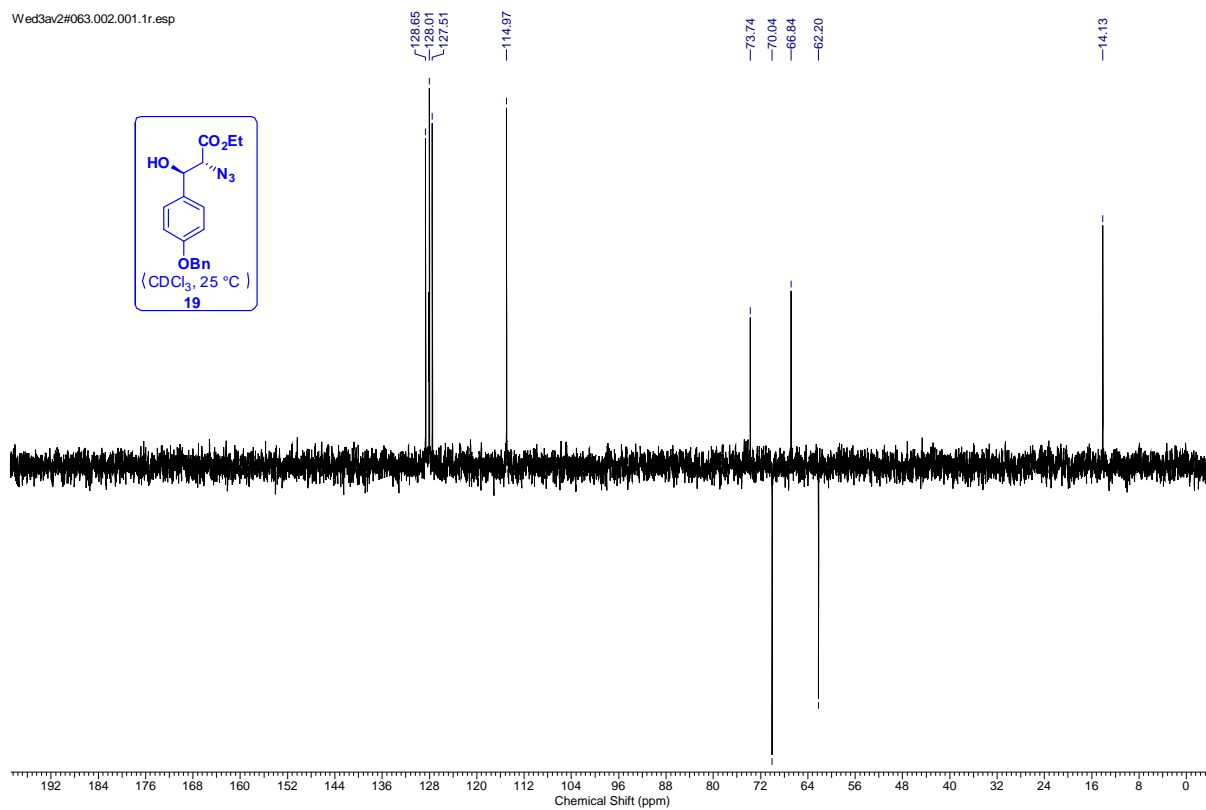
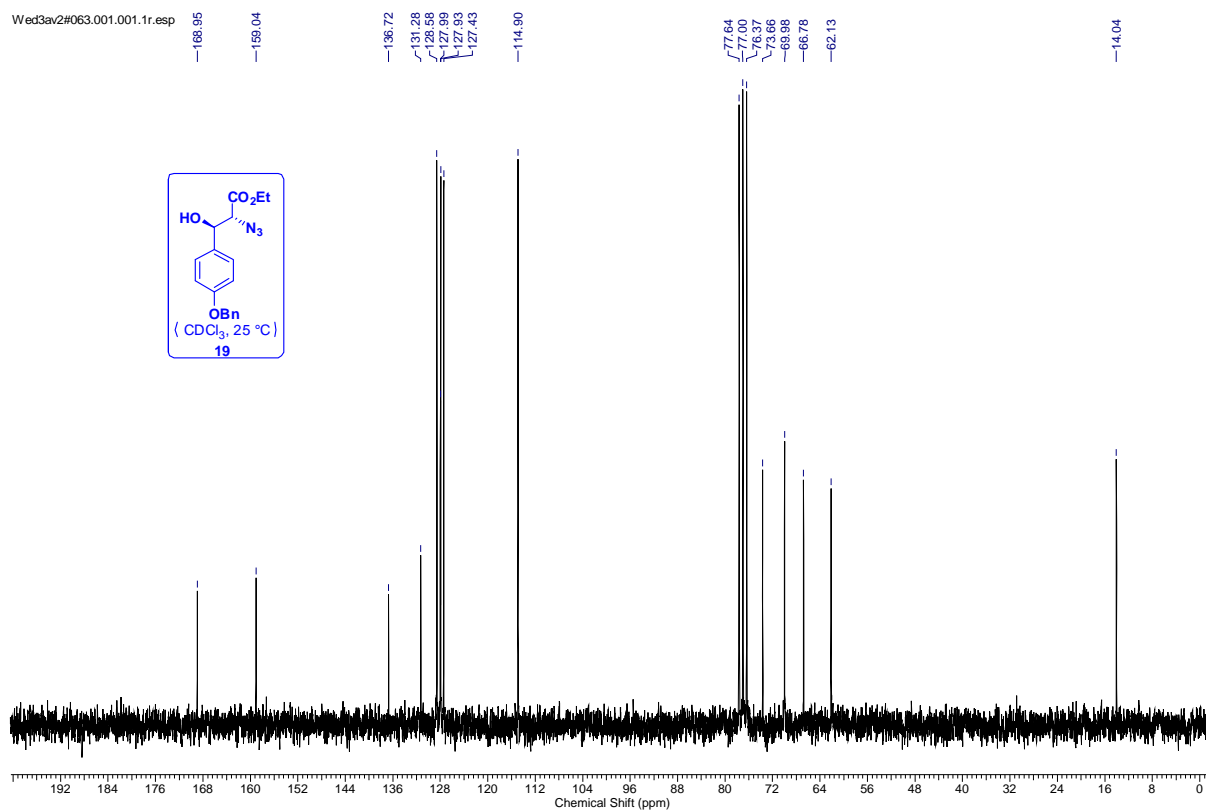


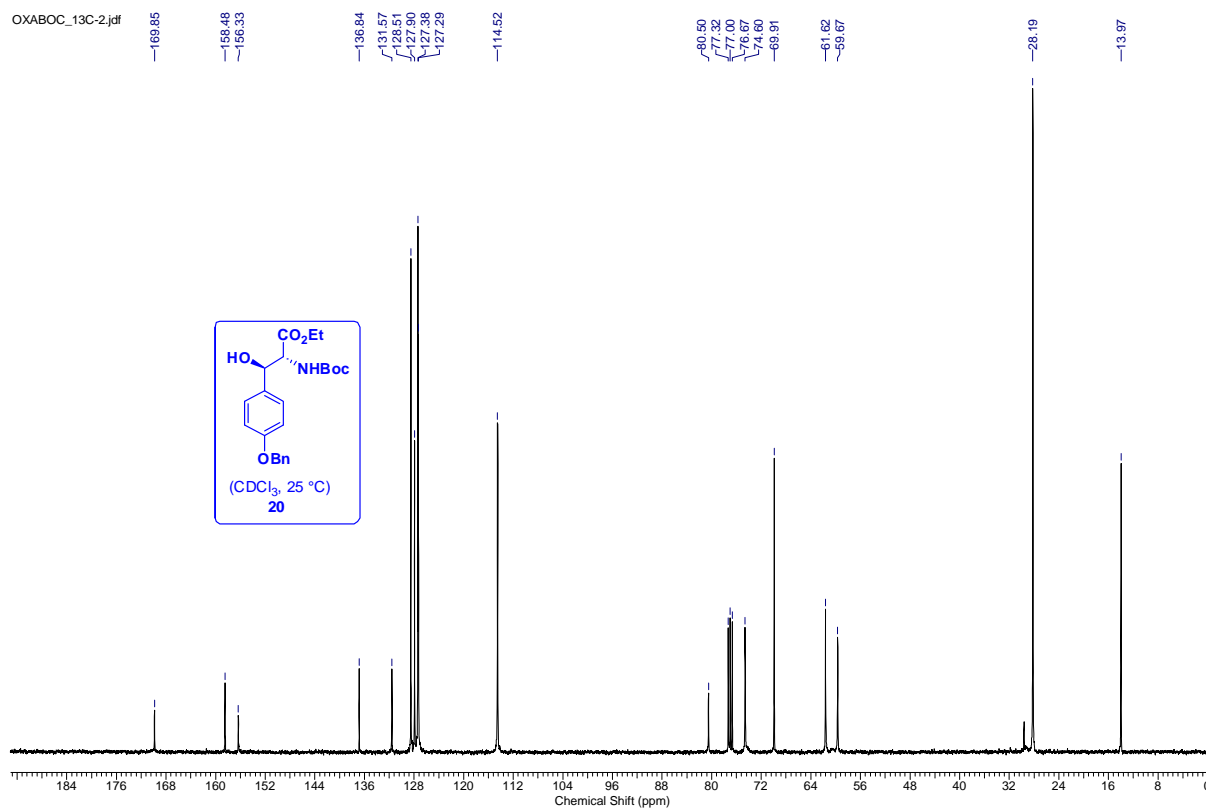
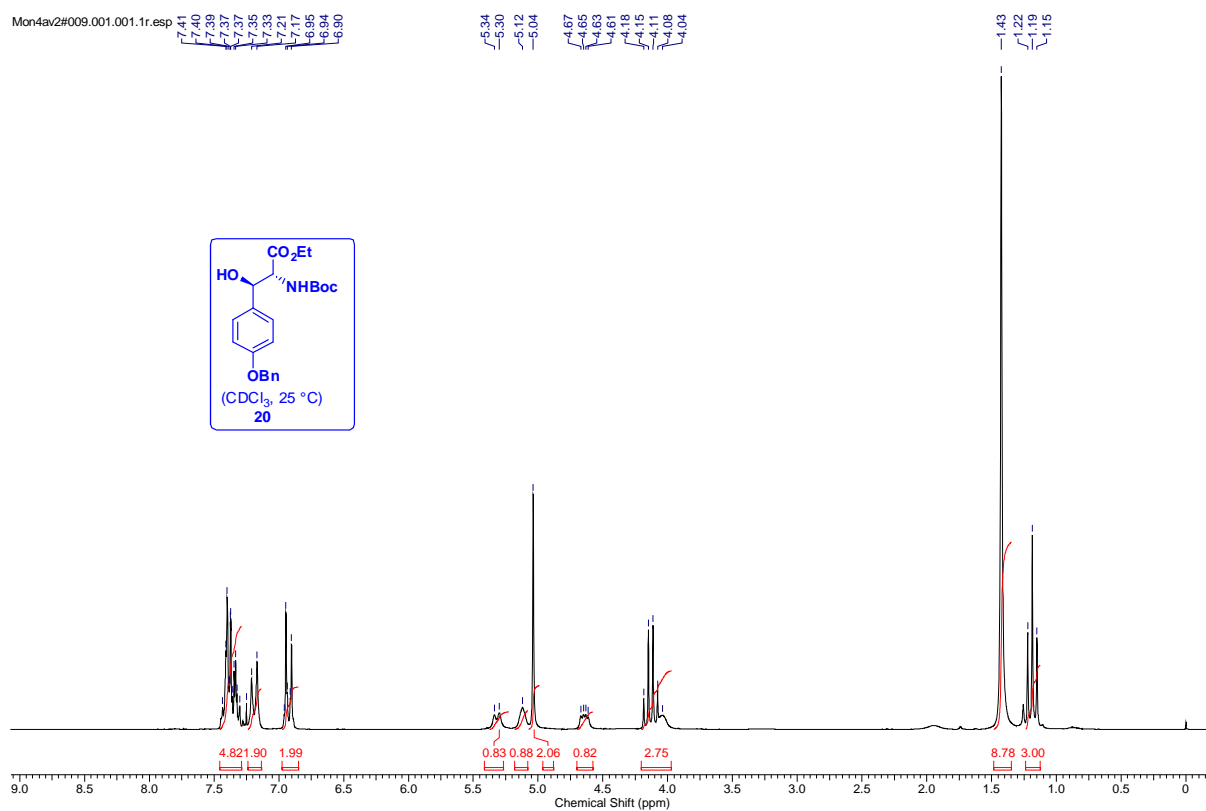
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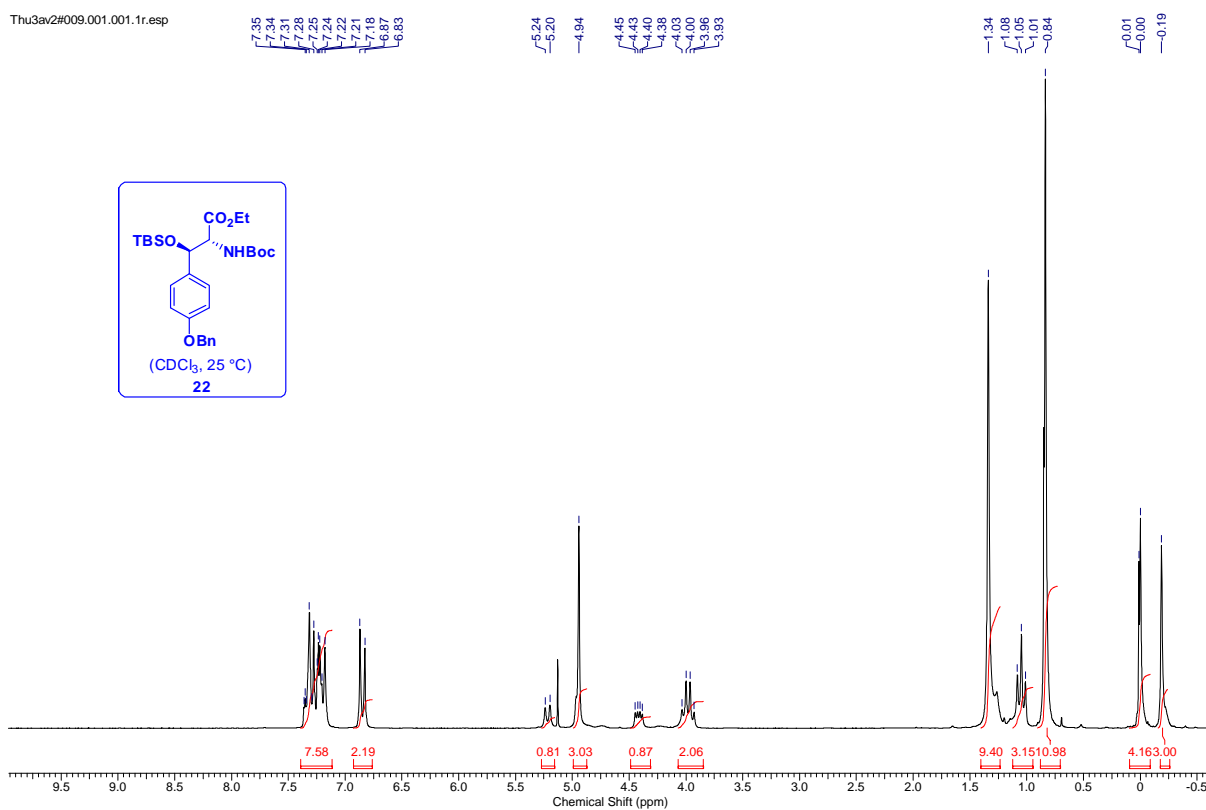
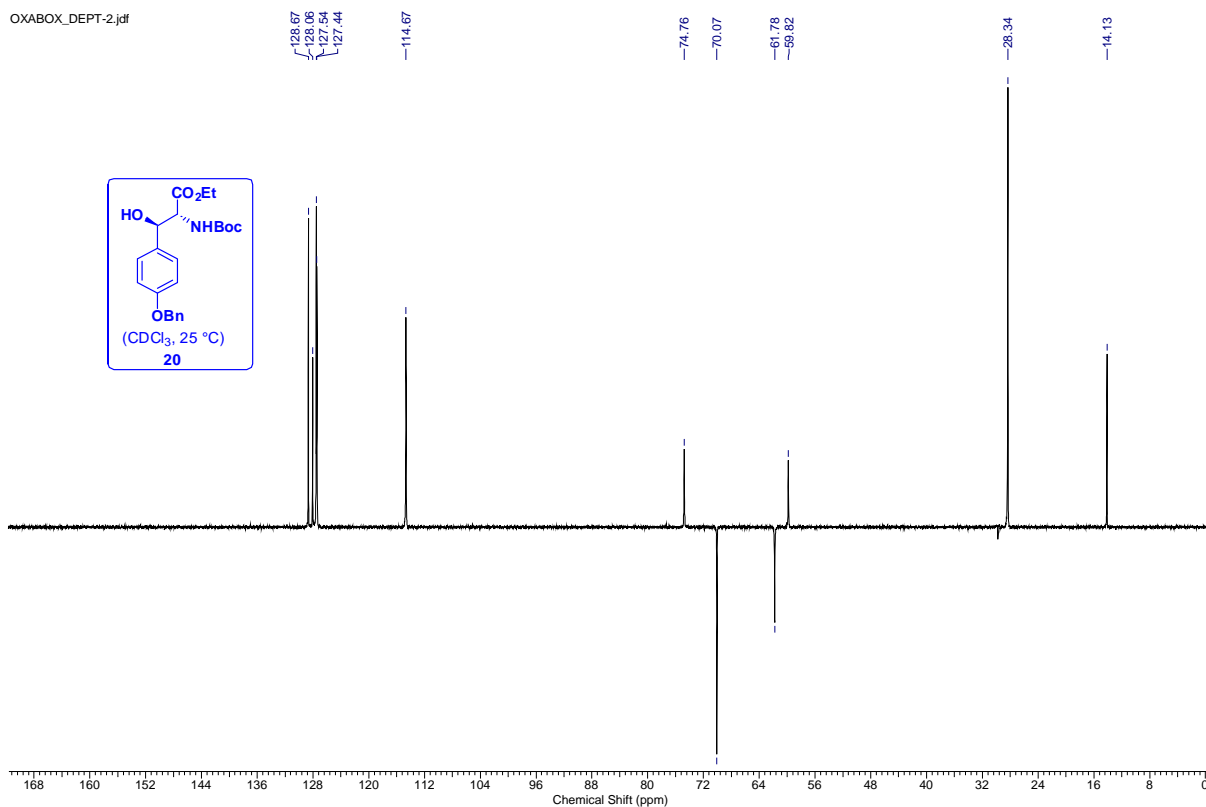


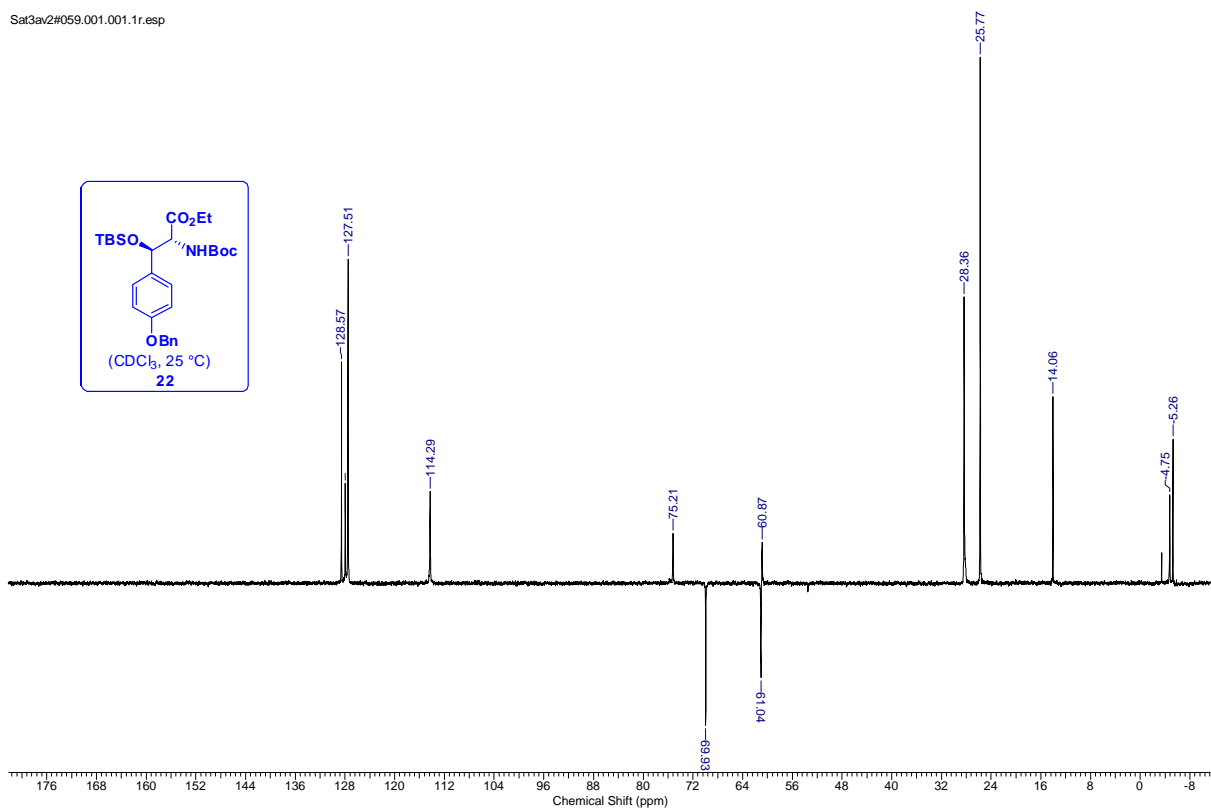
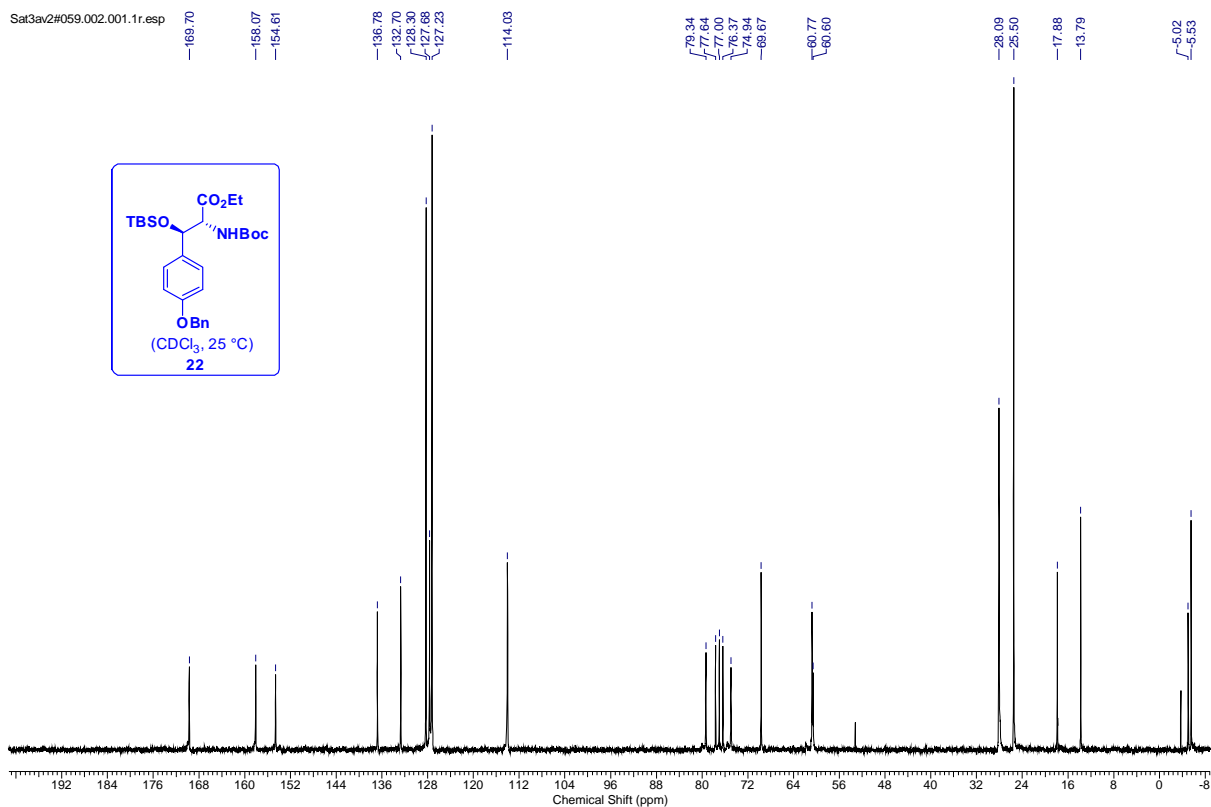
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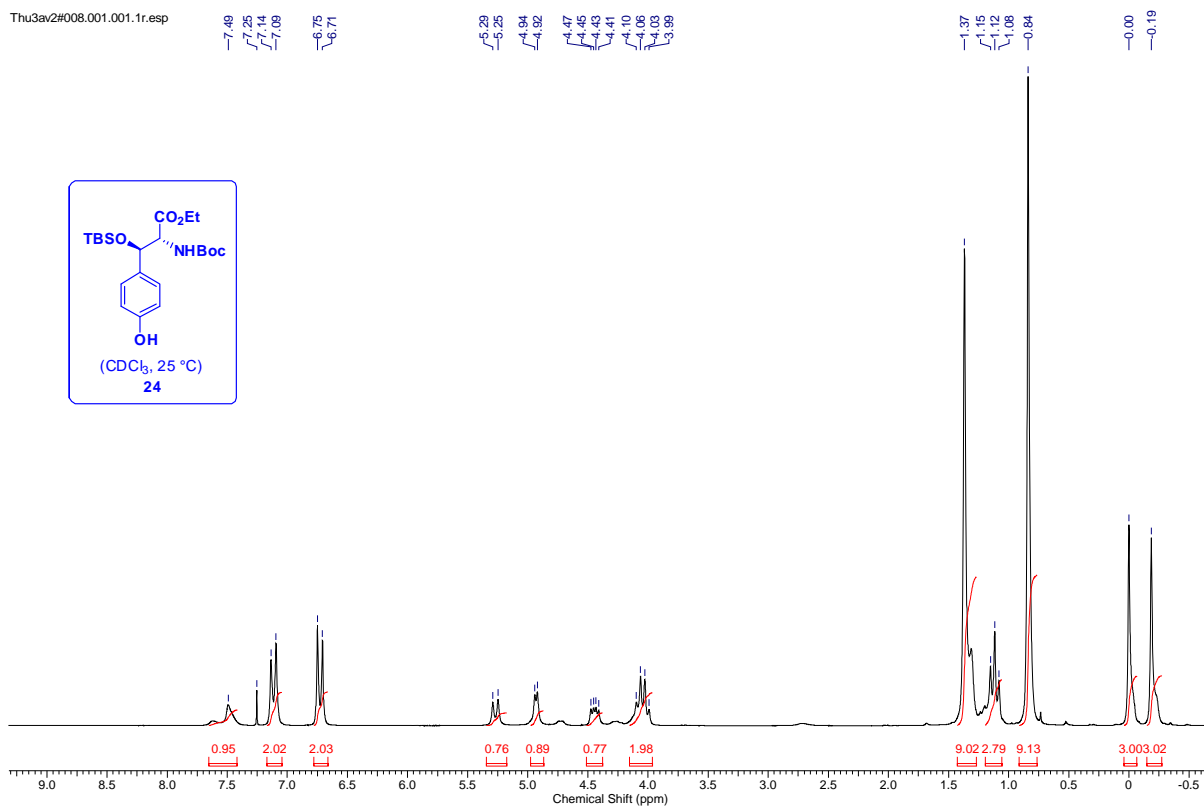




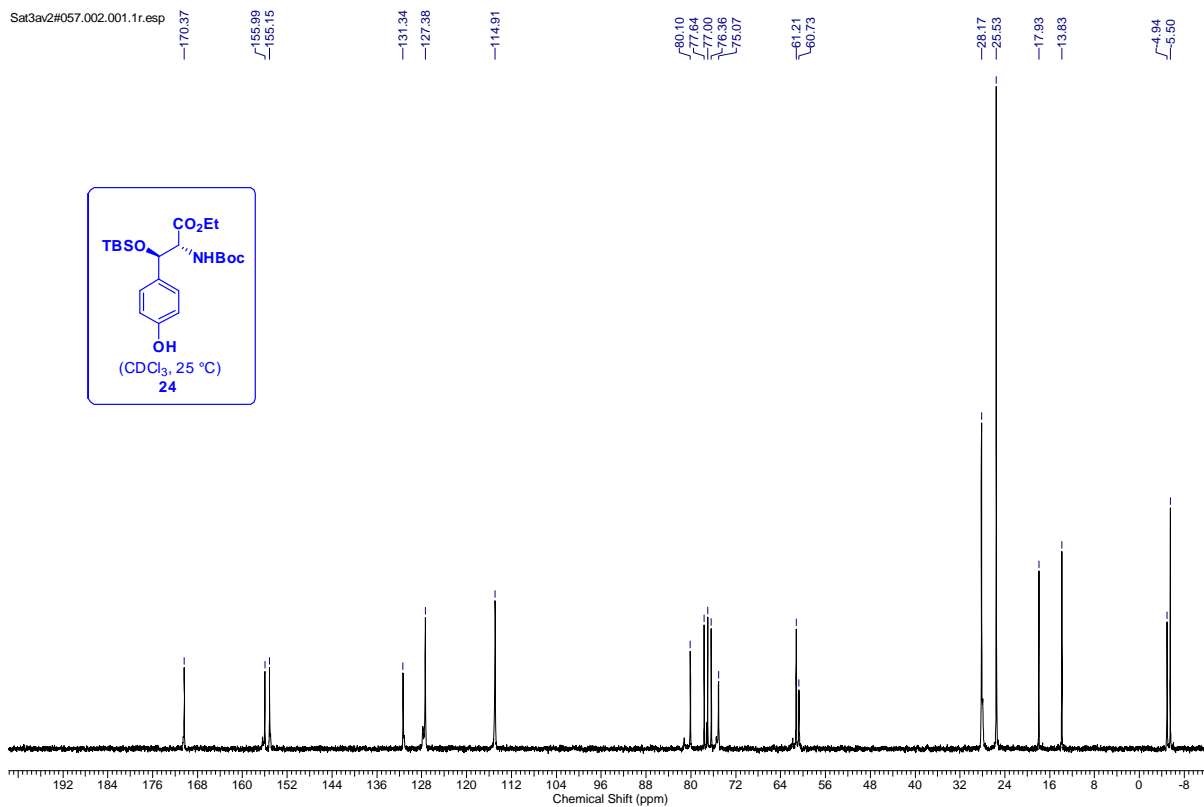




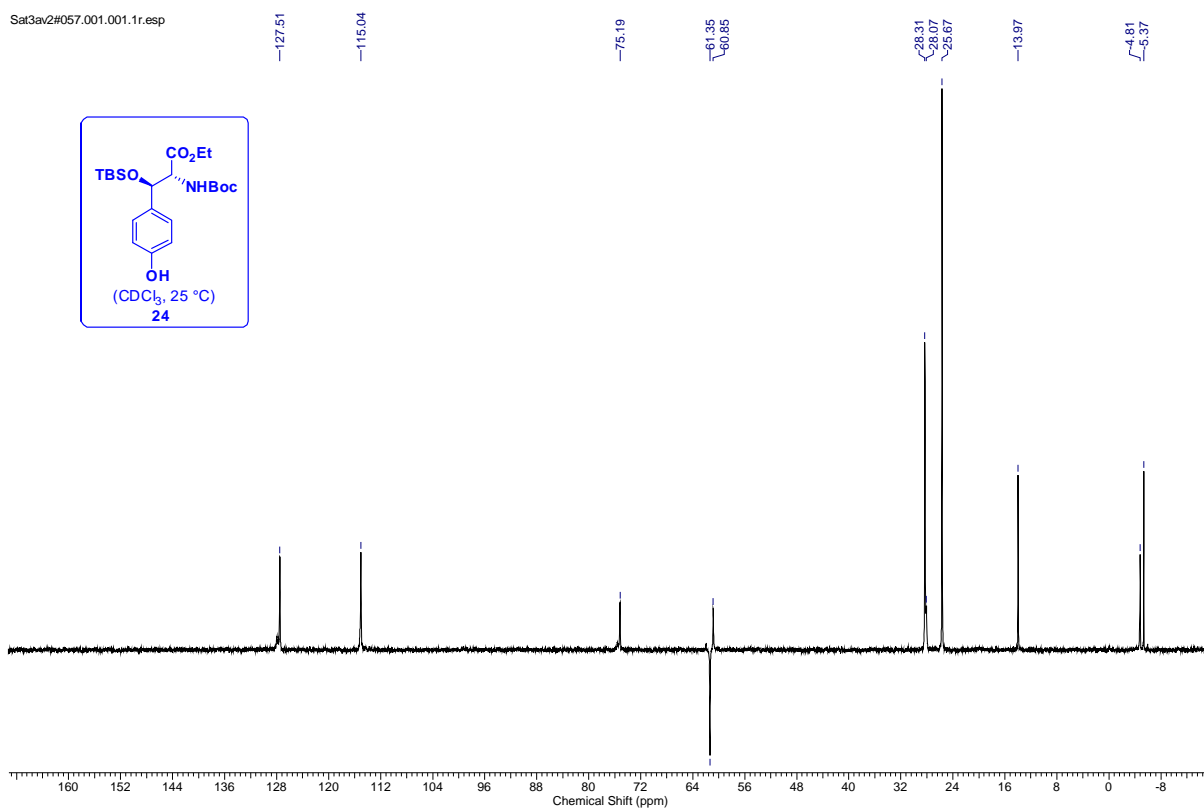
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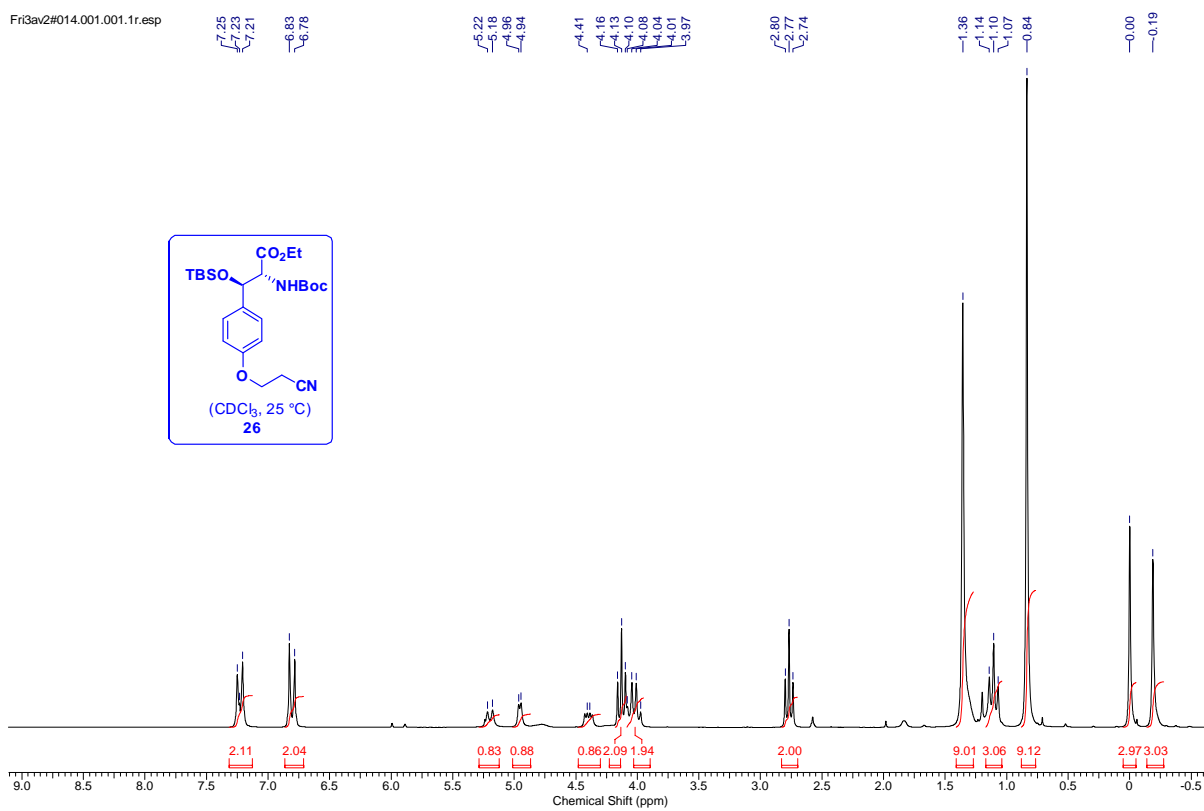
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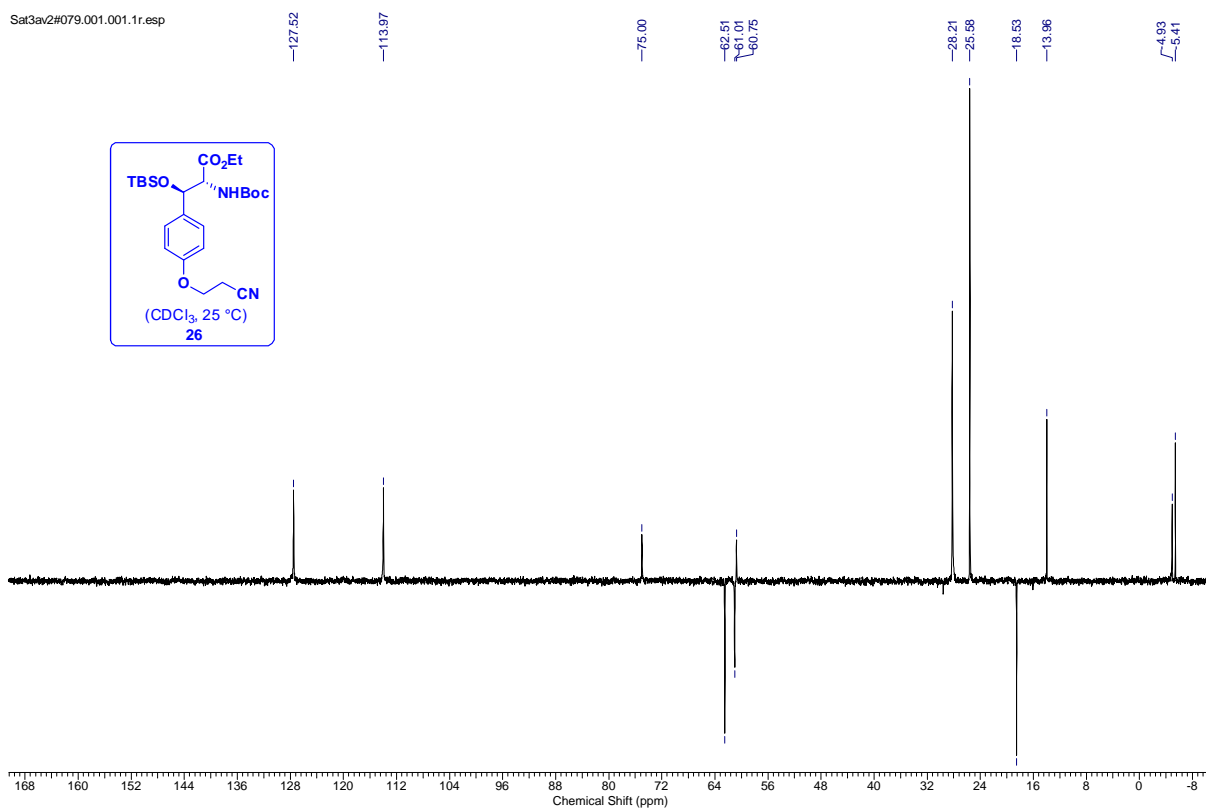
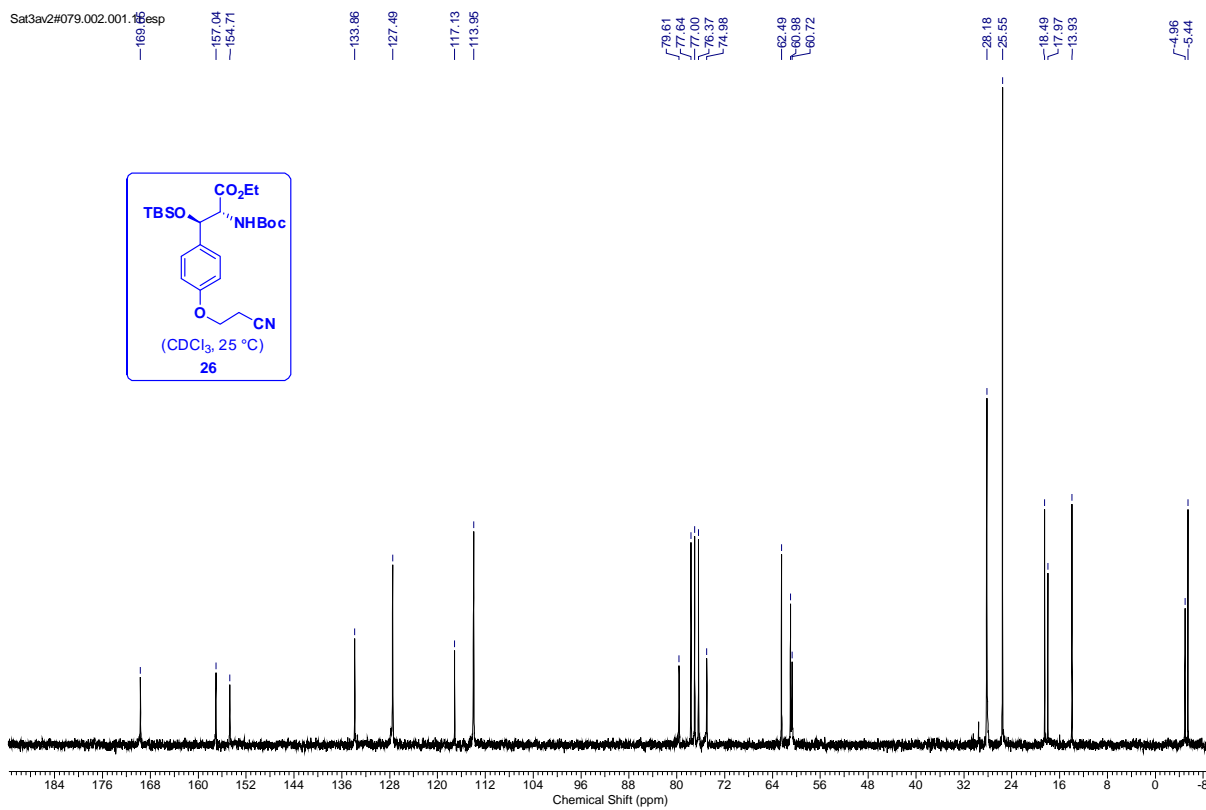


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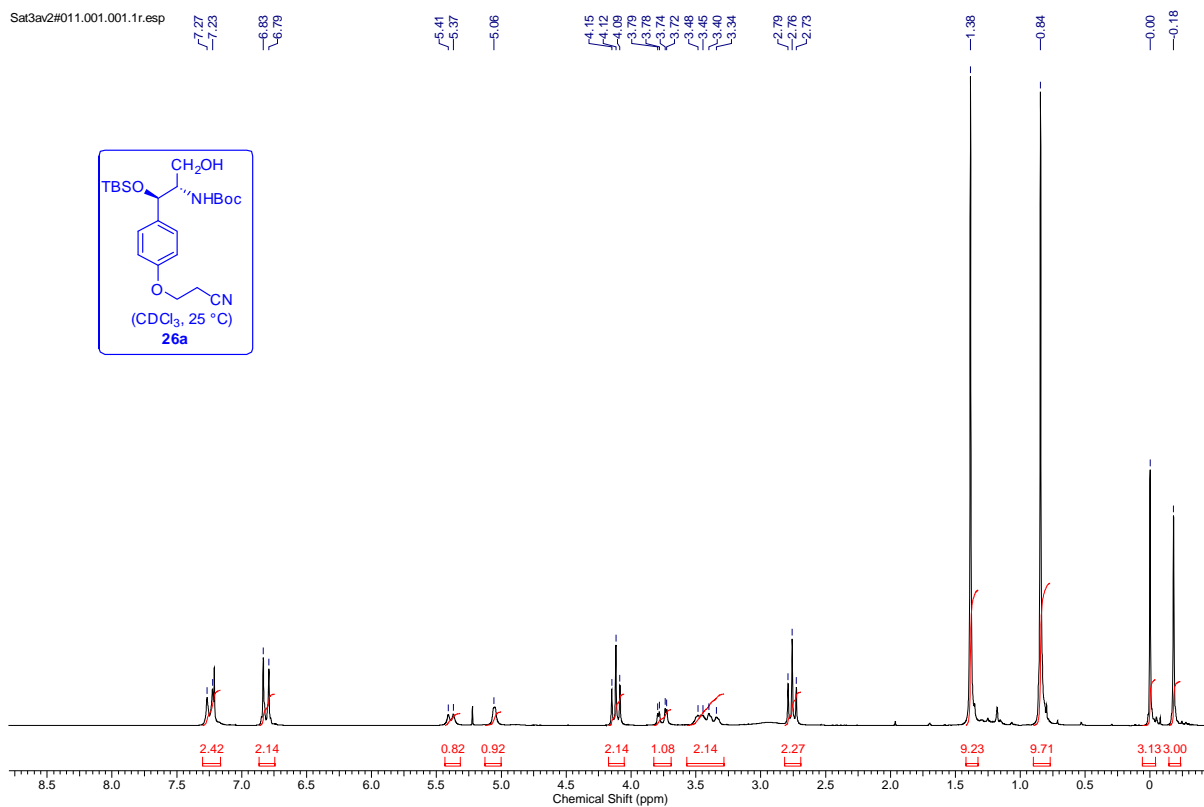


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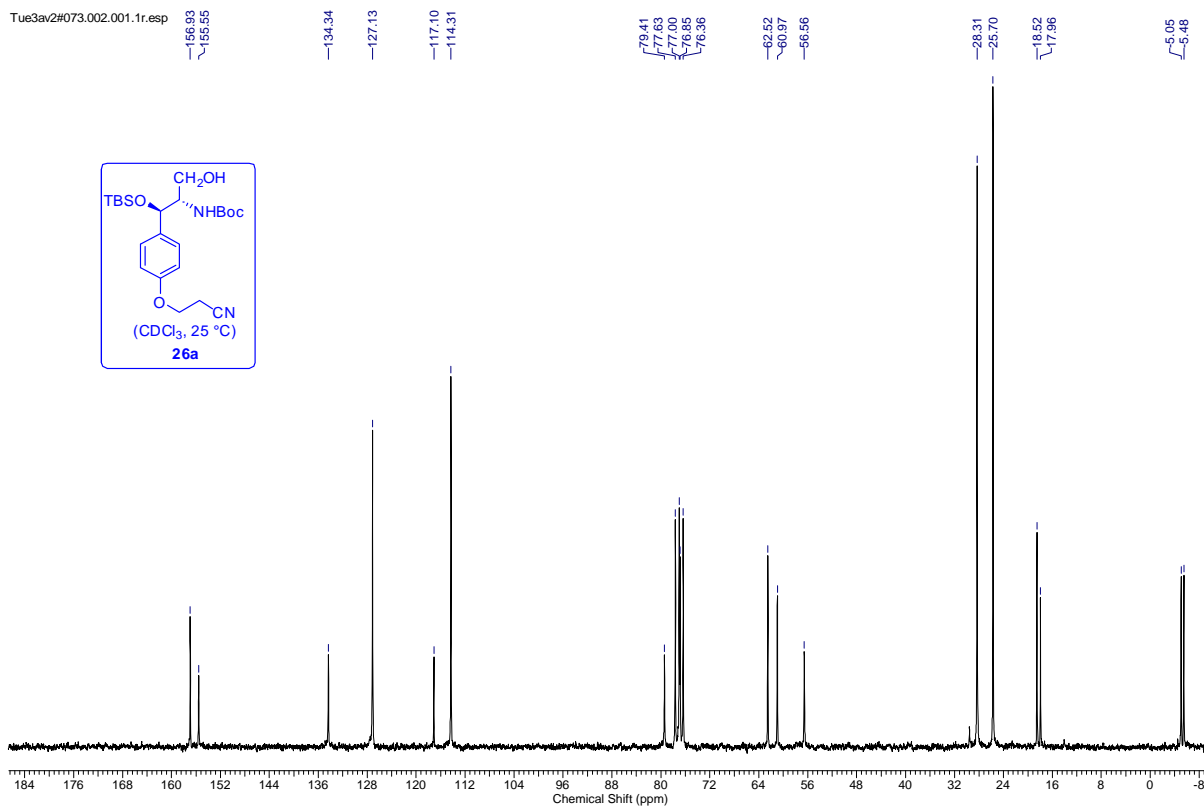




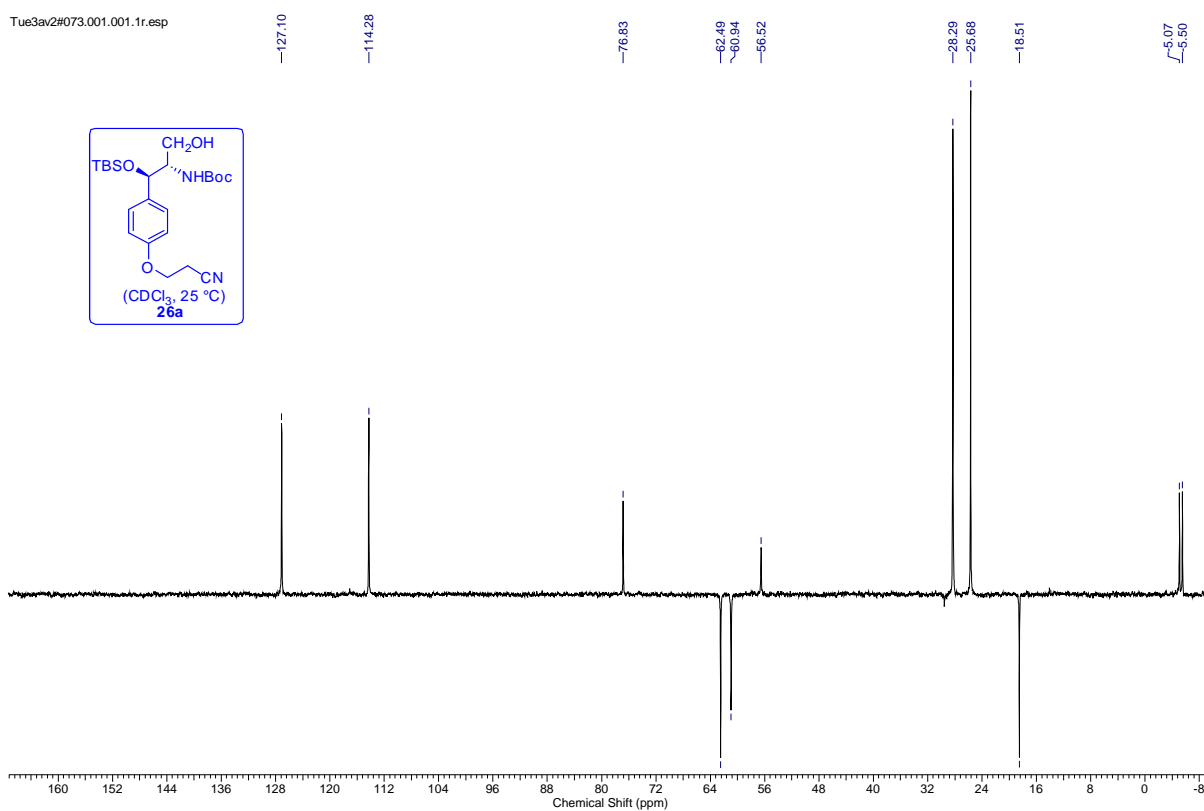
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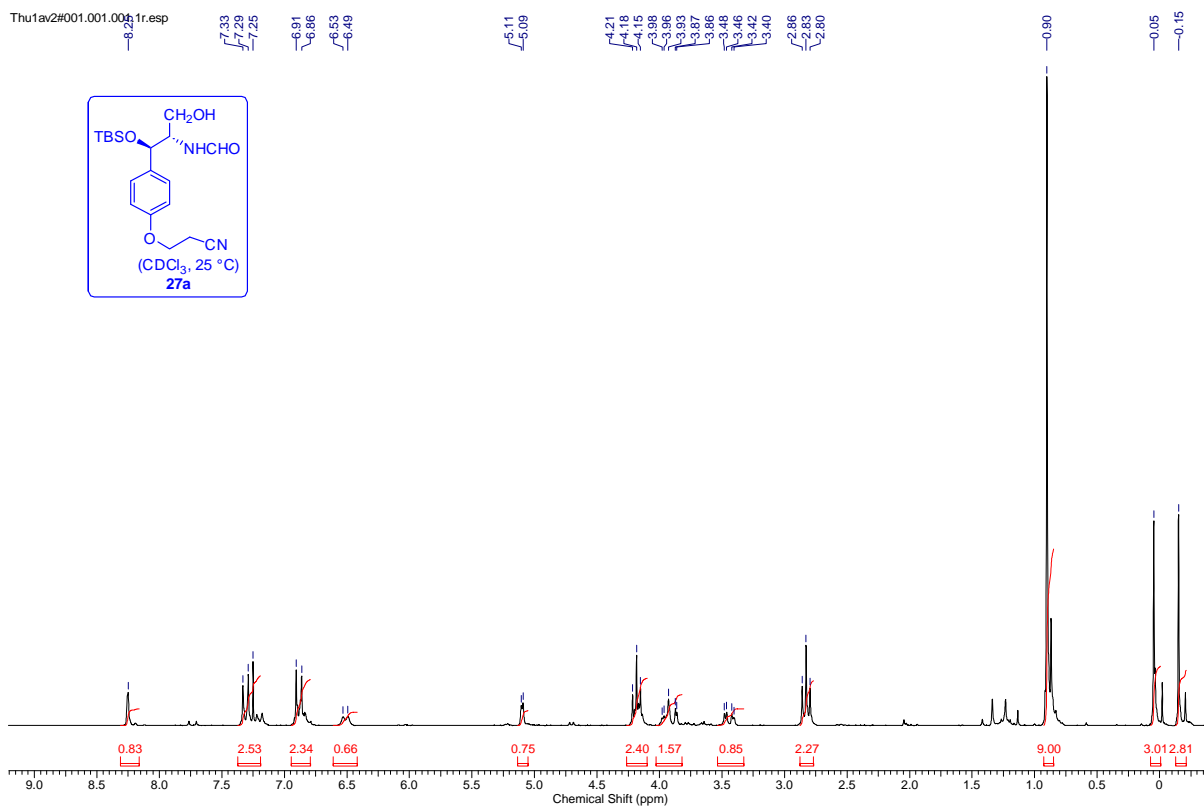
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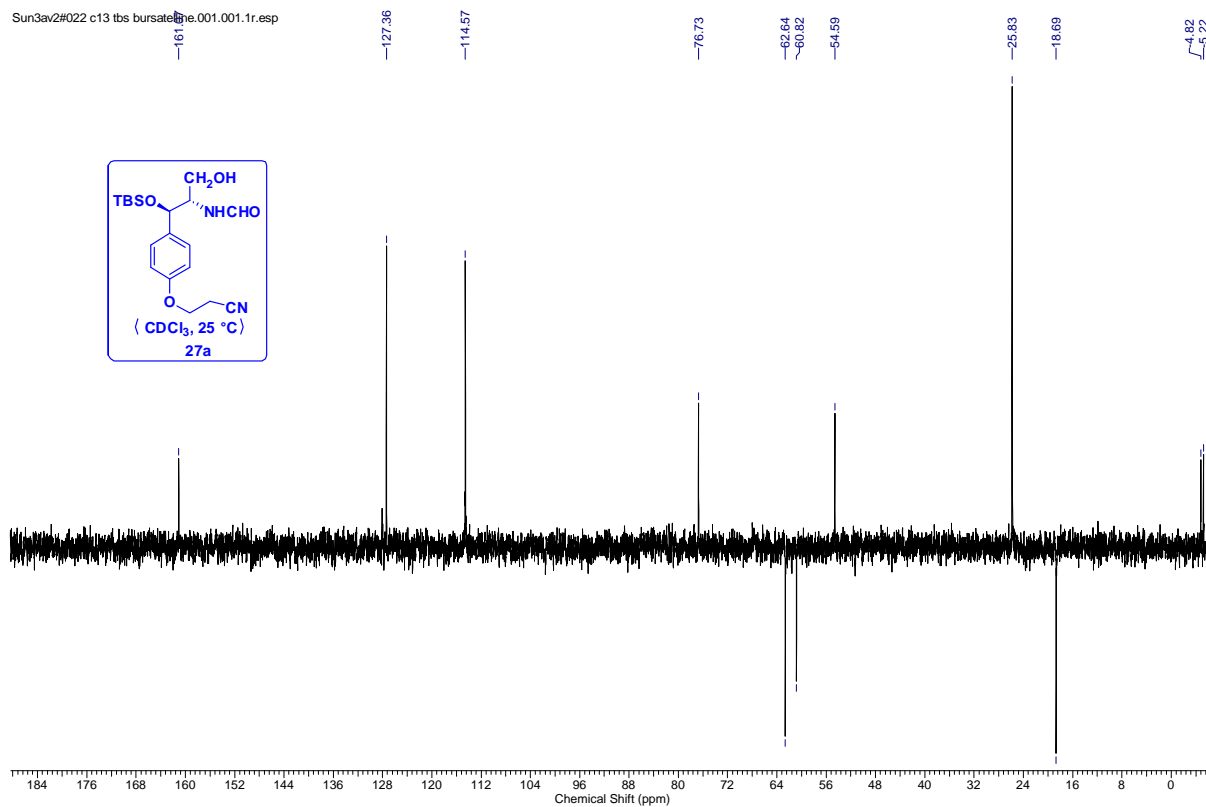
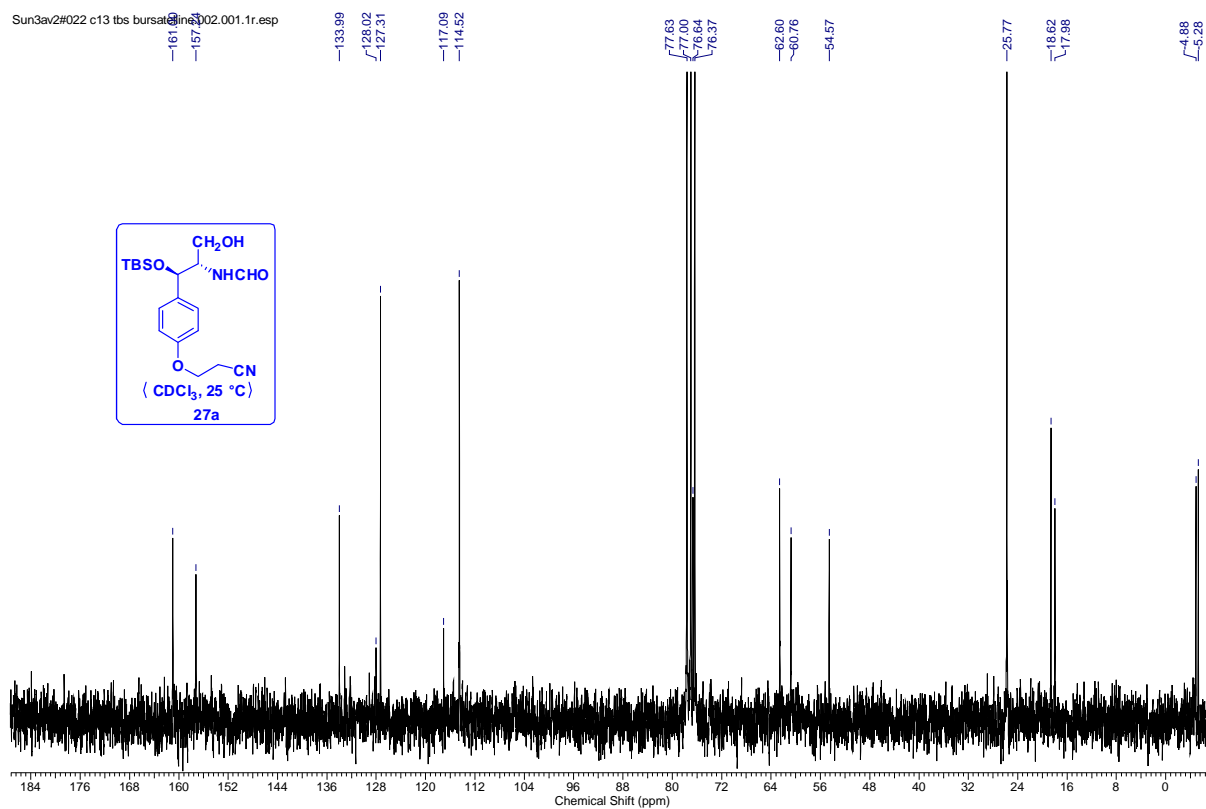


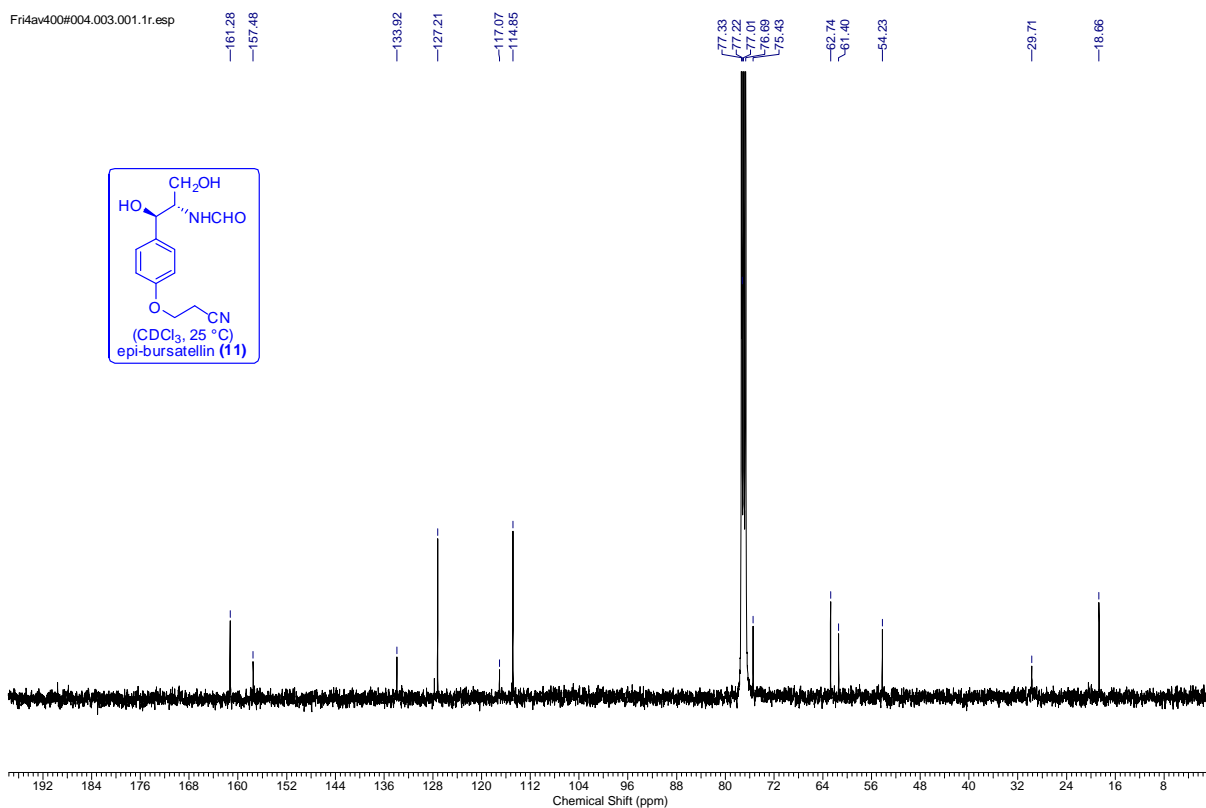
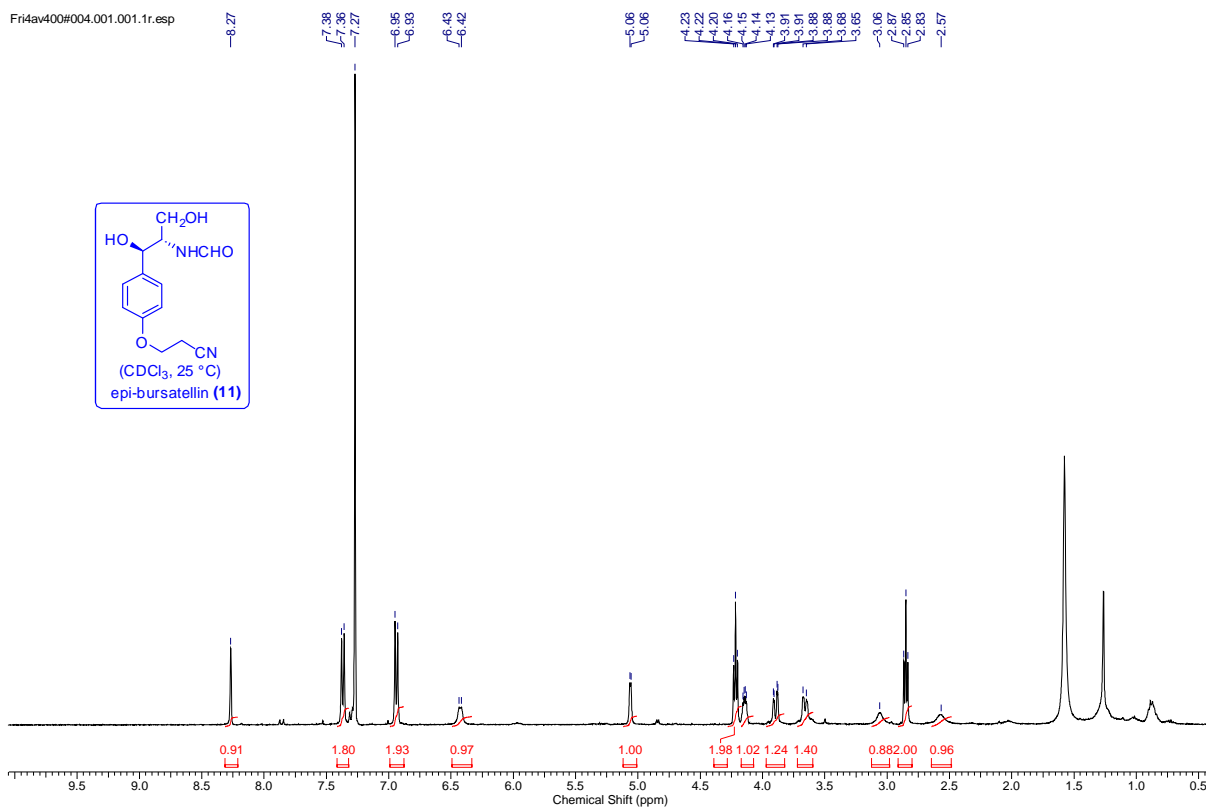
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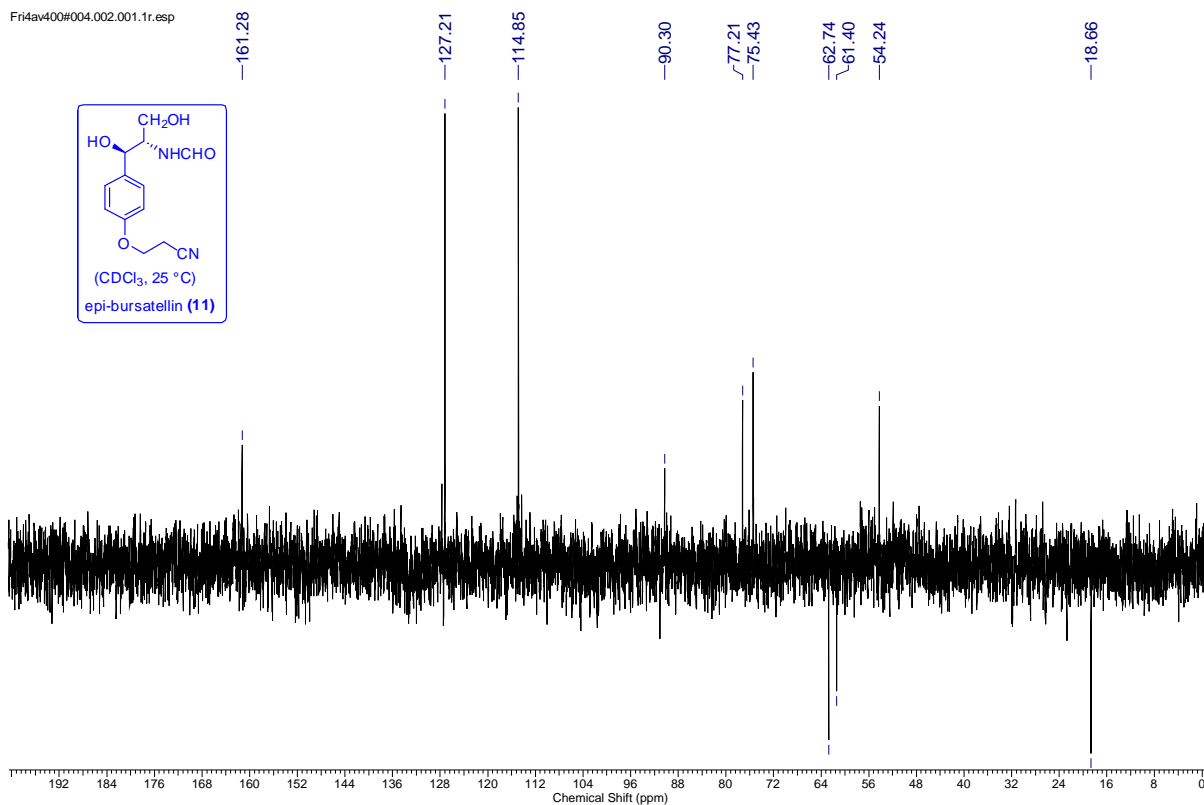
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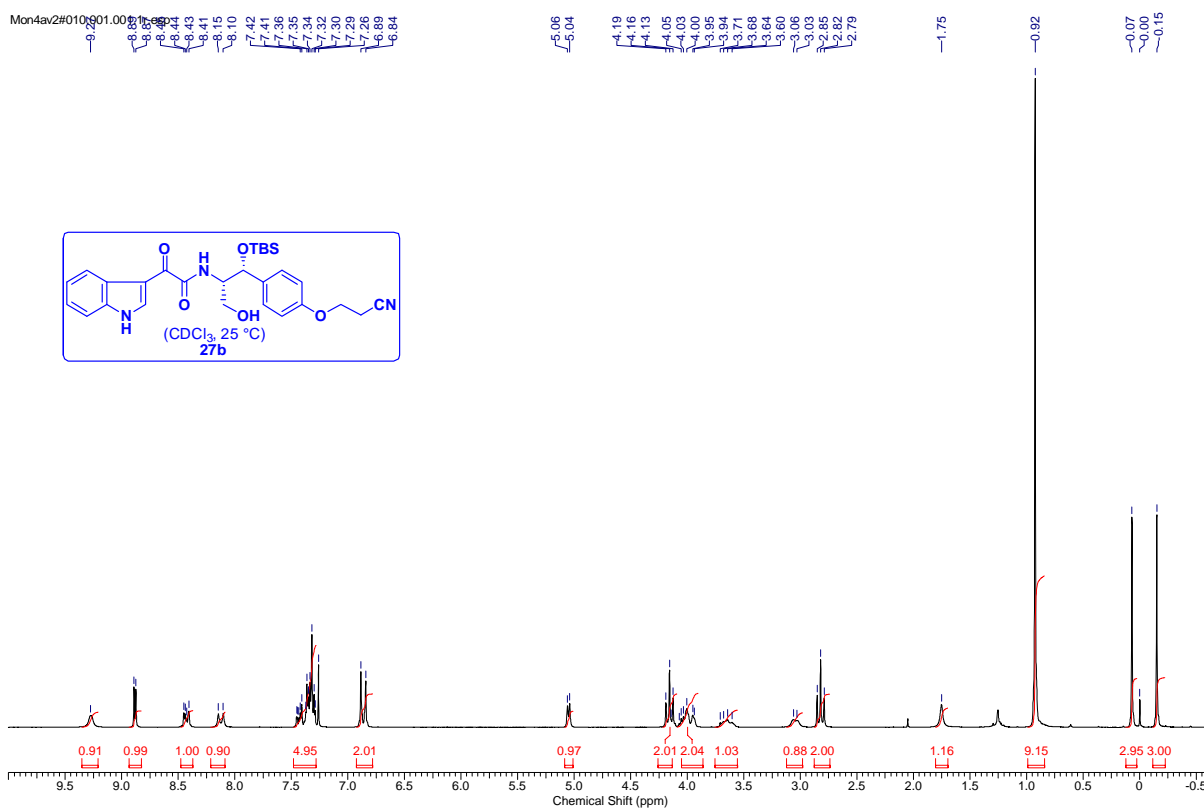


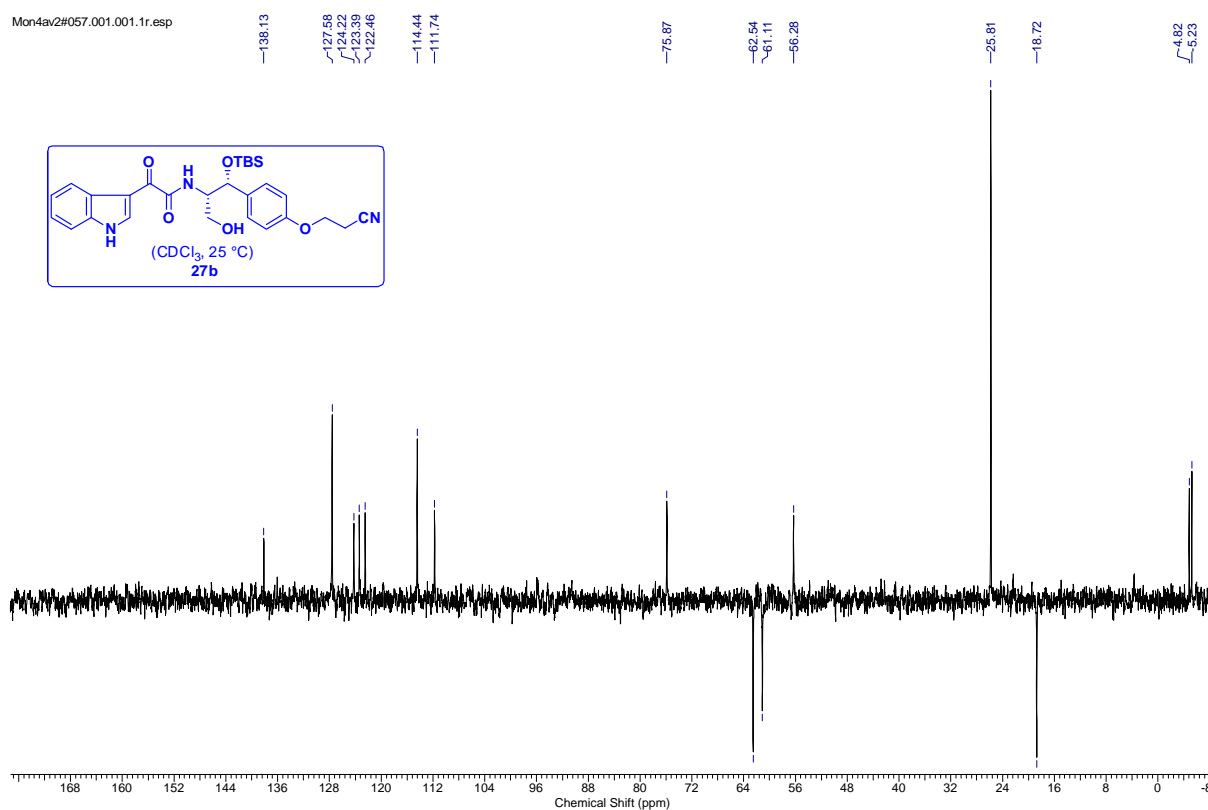
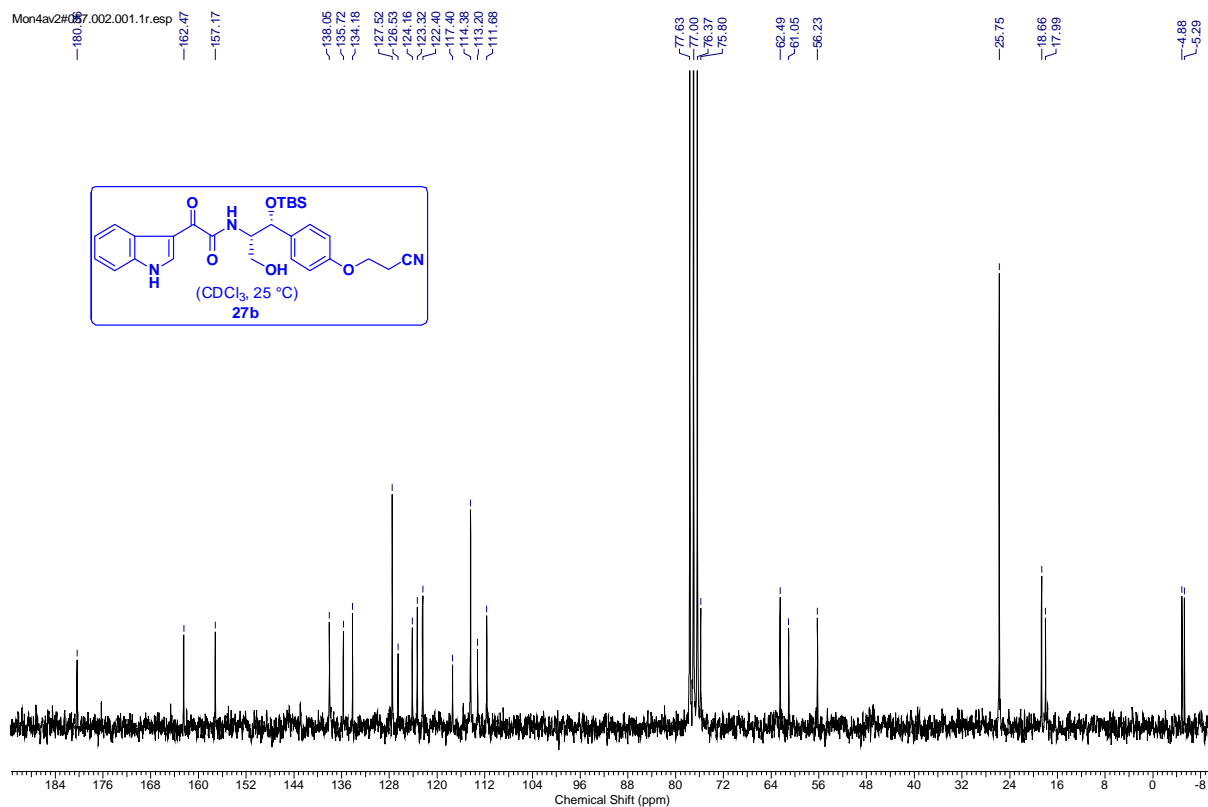


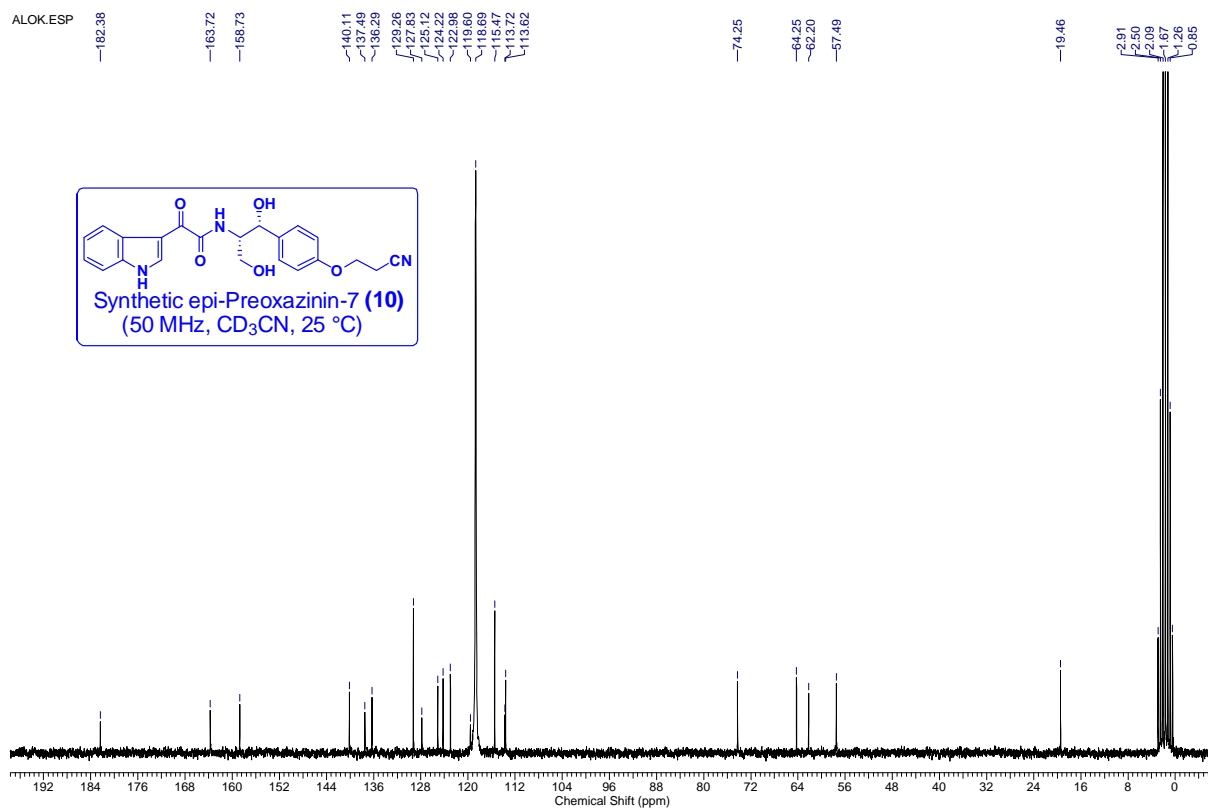
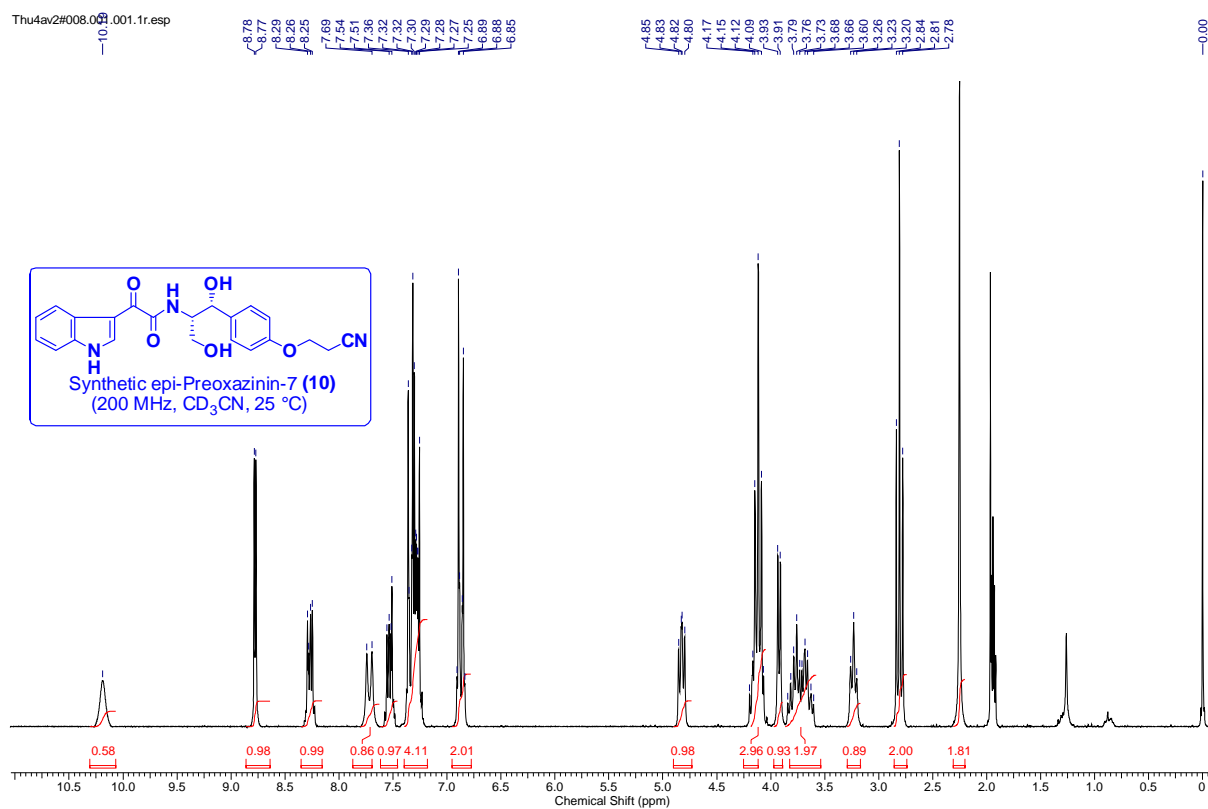
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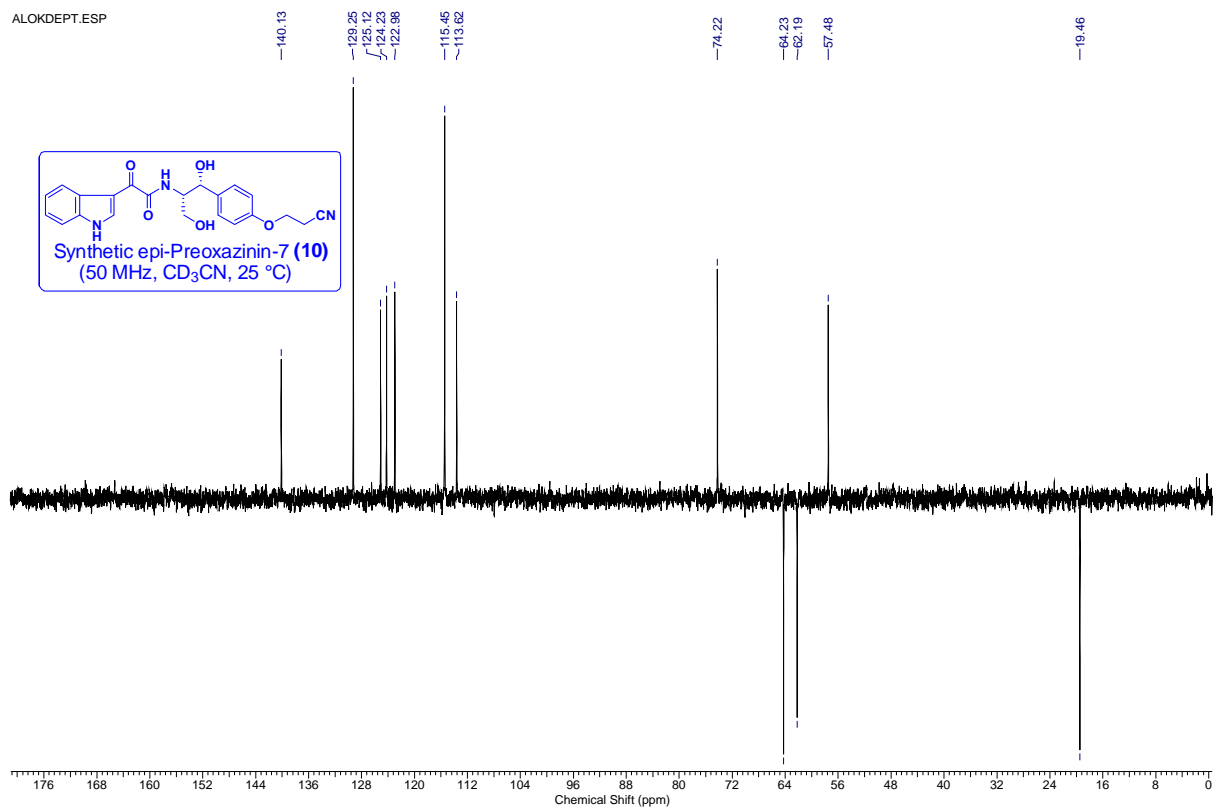


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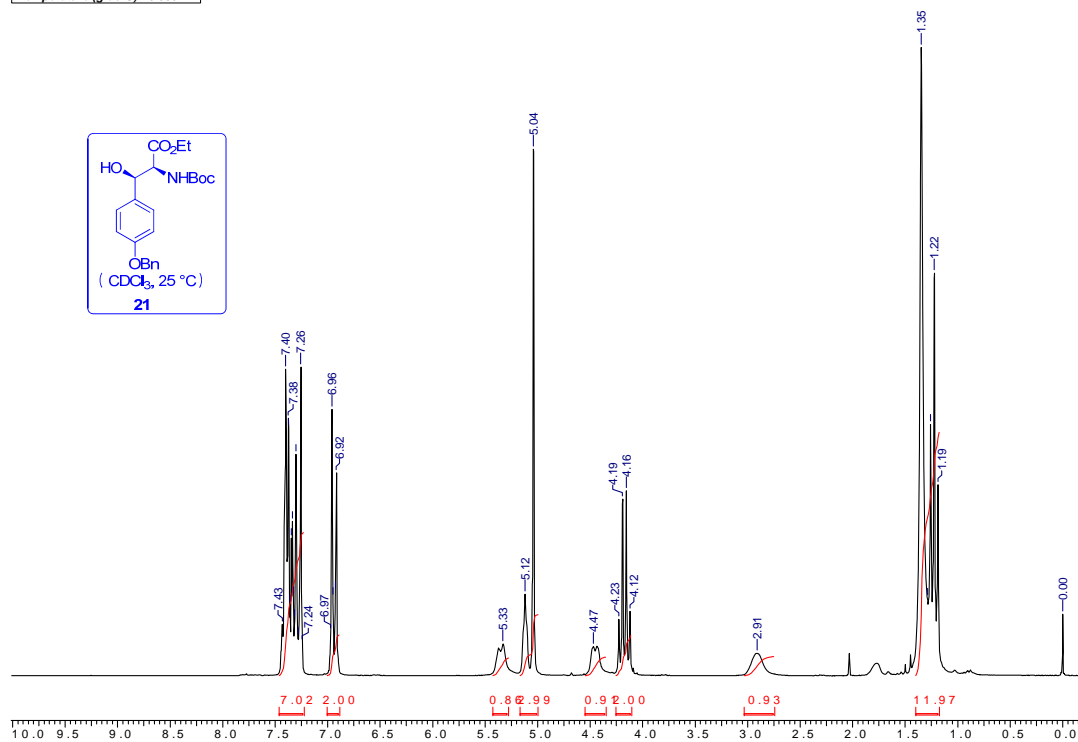






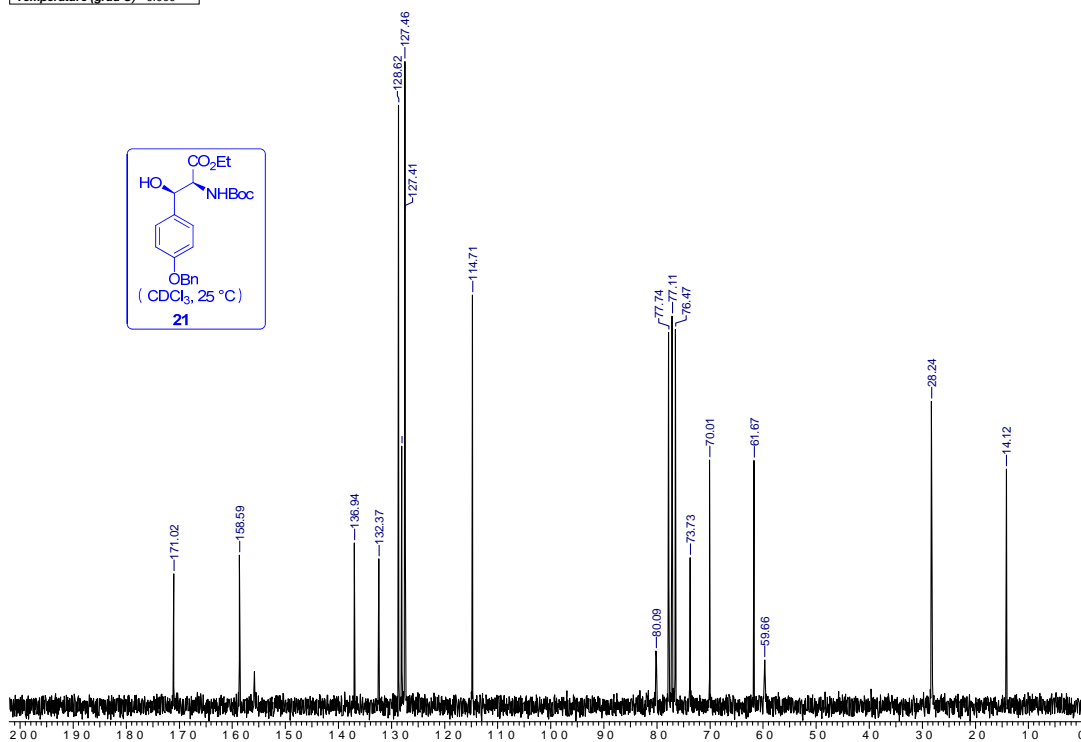
22 Dec 2010

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0.000	Temperature (grad C)		Sweep Width (Hz)	4139.07



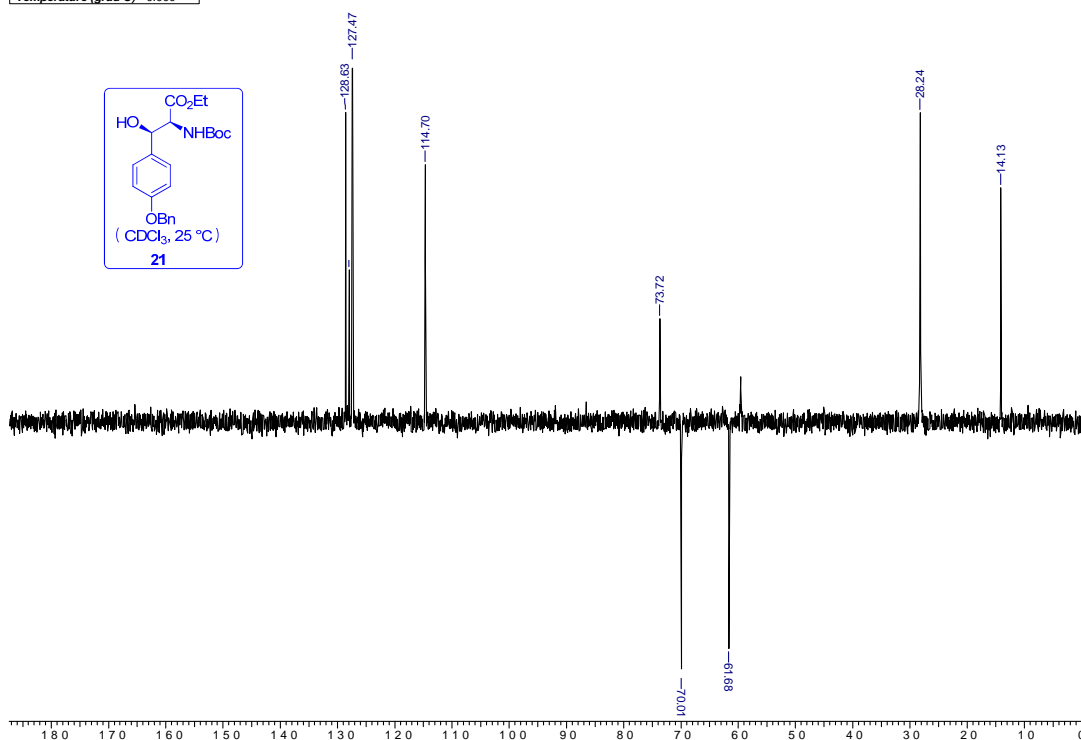
22 Dec 2010

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Temperature (grad C)	0.000			Points Count	32768
				Sweep Width (Hz)	11990.41



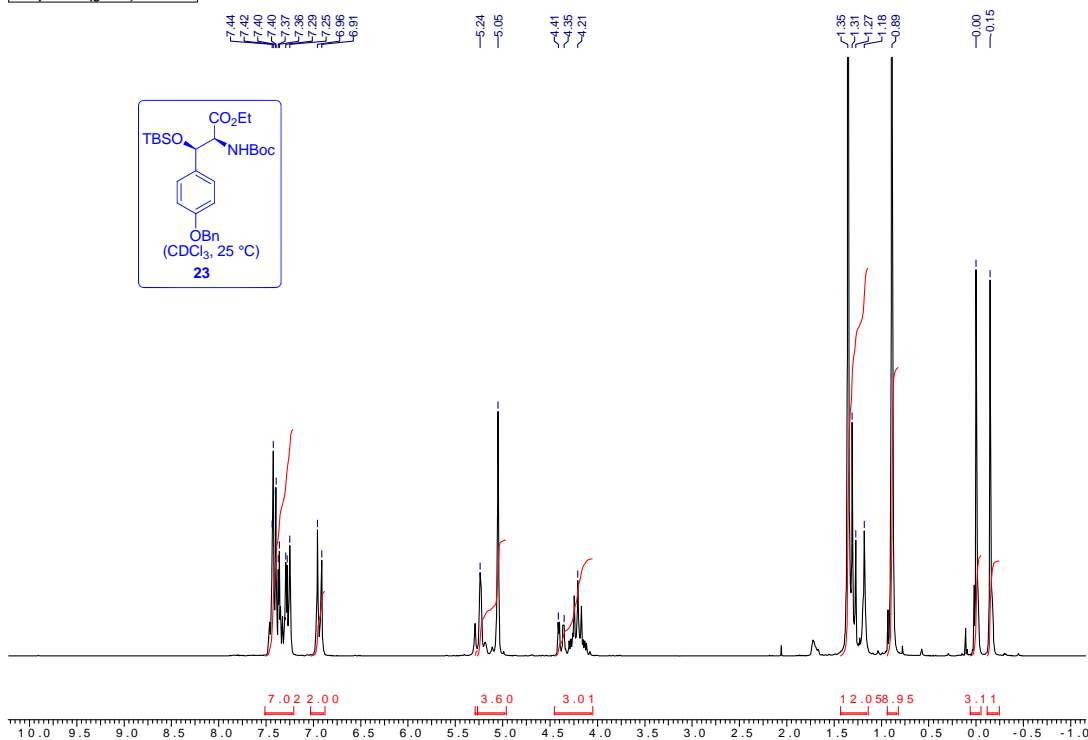
22 Dec 2010

Acquisition Time (sec)	2.7329	Comment	Alok/10997	Date	01/05/2010 23:11:08
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Temperature (grad C)	0.000			Points Count	32768
				Sweep Width (Hz)	11990.41



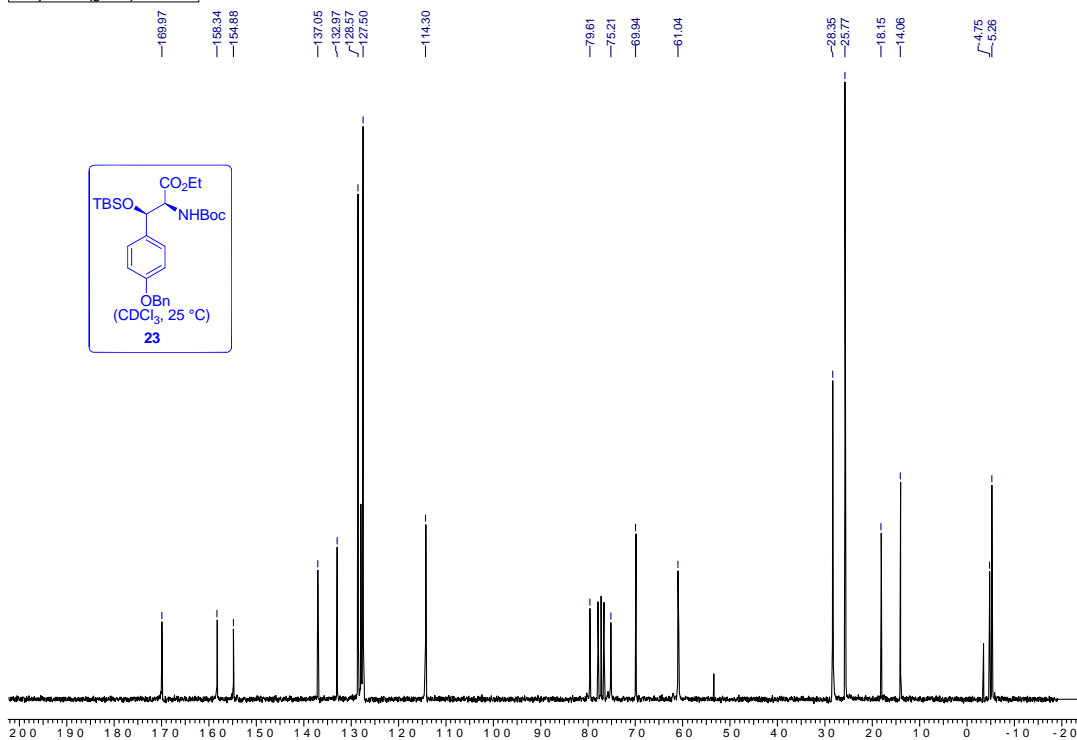
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Temperature (grad C)	0.000			Points Count	32768
				Sweep Width (Hz)	4139.07



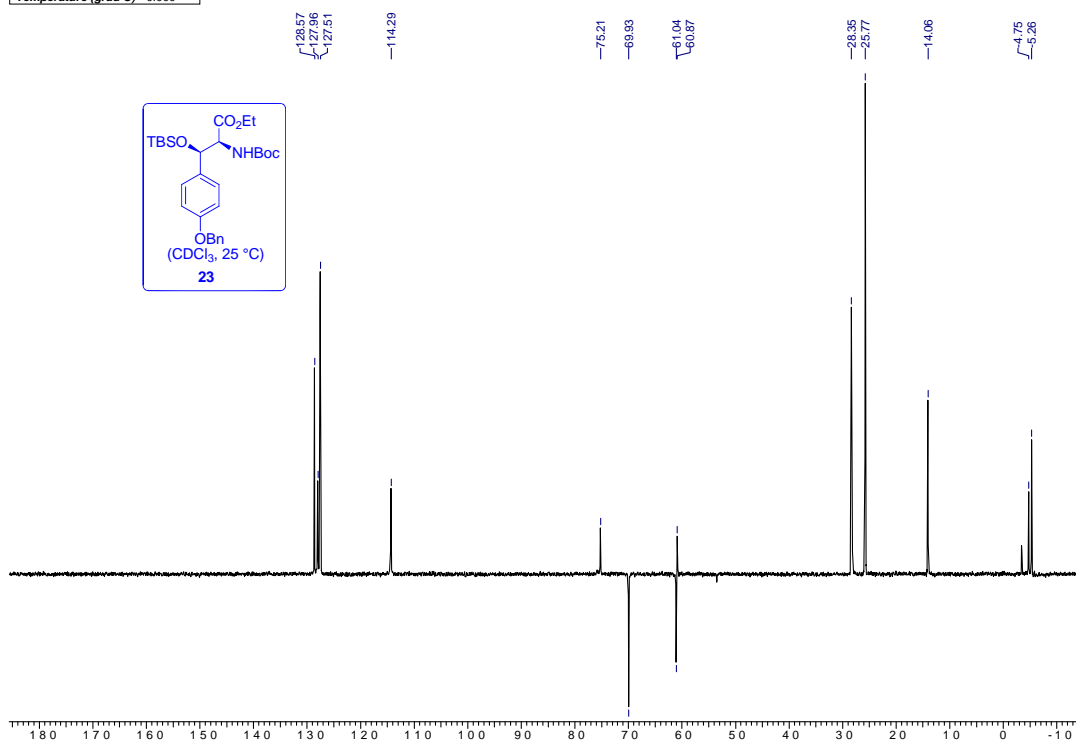
22 Dec 2010

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Temperature (grad C)	0.000			Points Count	32768
				Sweep Width (Hz)	11990.41



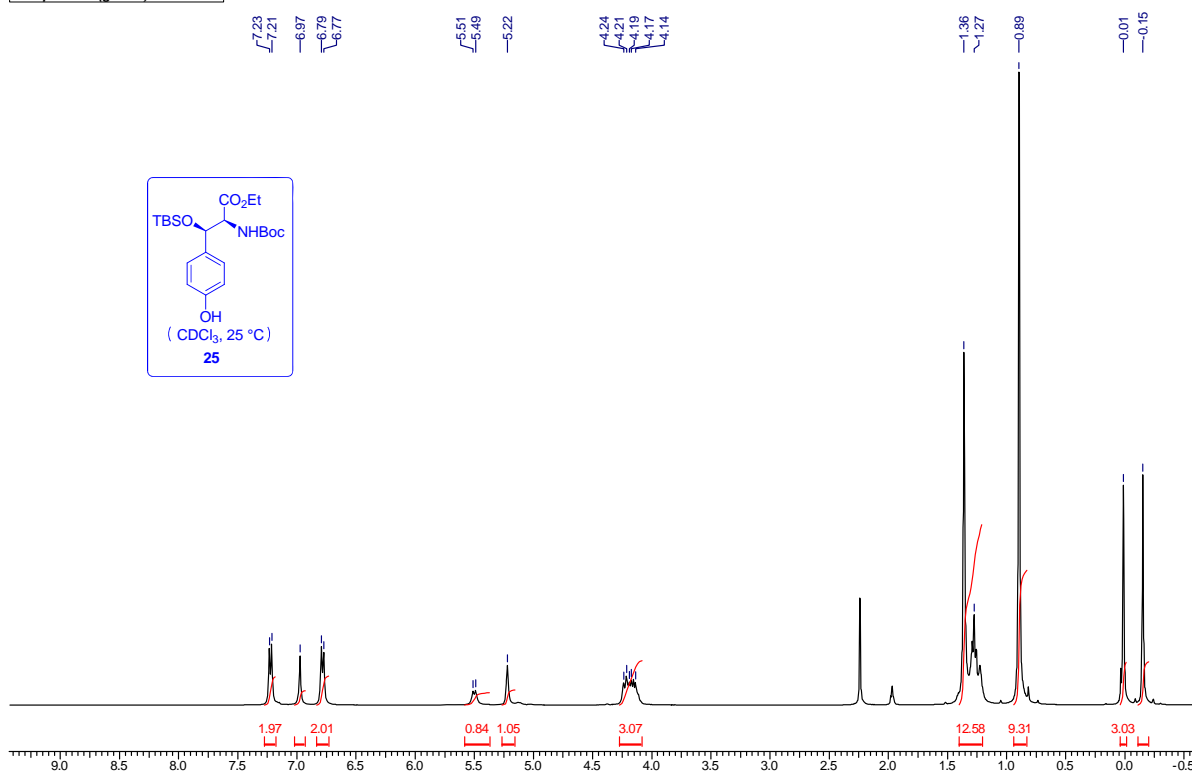
22 Dec 2010

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Temperature (grad C)	0.000			Points Count	32768
				Sweep Width (Hz)	11990.41



28 May 2011
 Alok/10997 (303K)

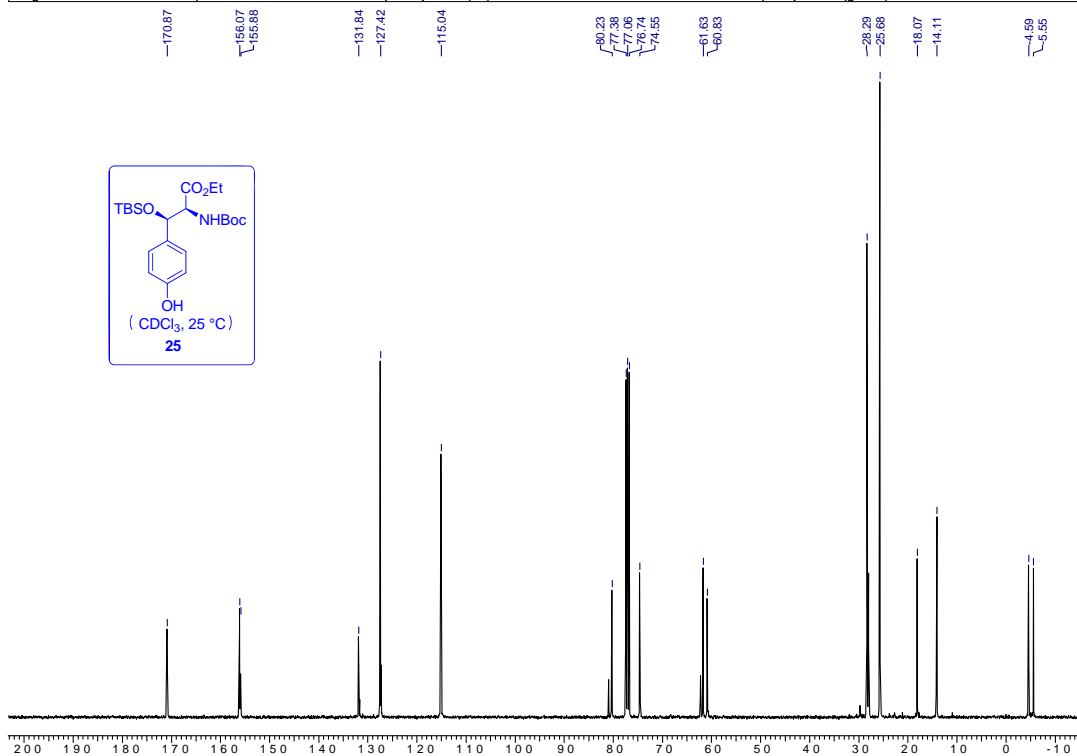
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				Sweep Width (Hz)	8223.68



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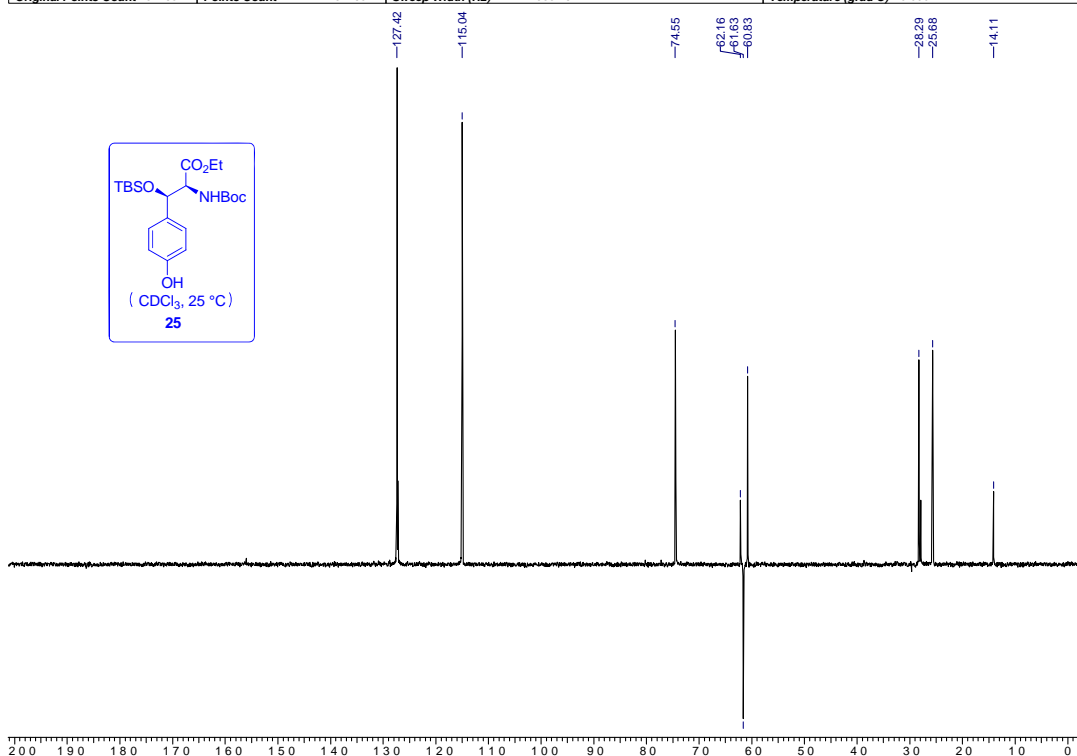
22 Dec 2010

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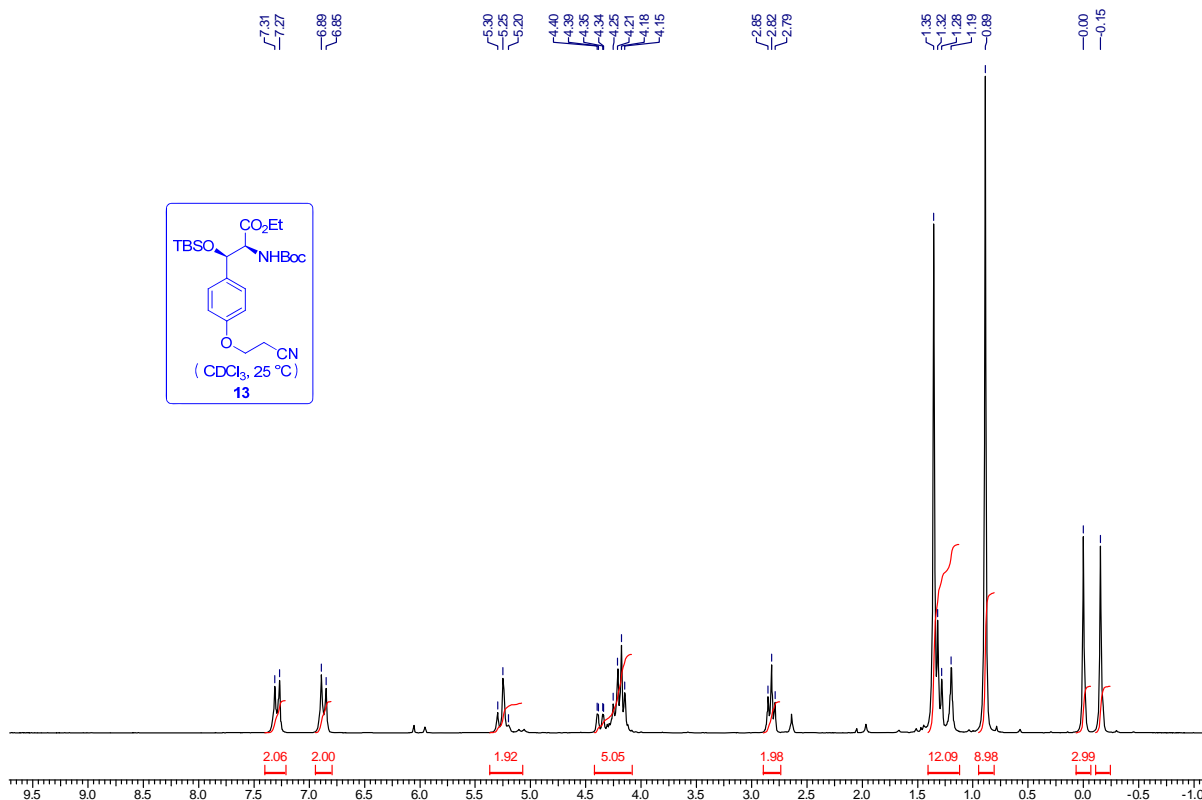
22 Dec 2010

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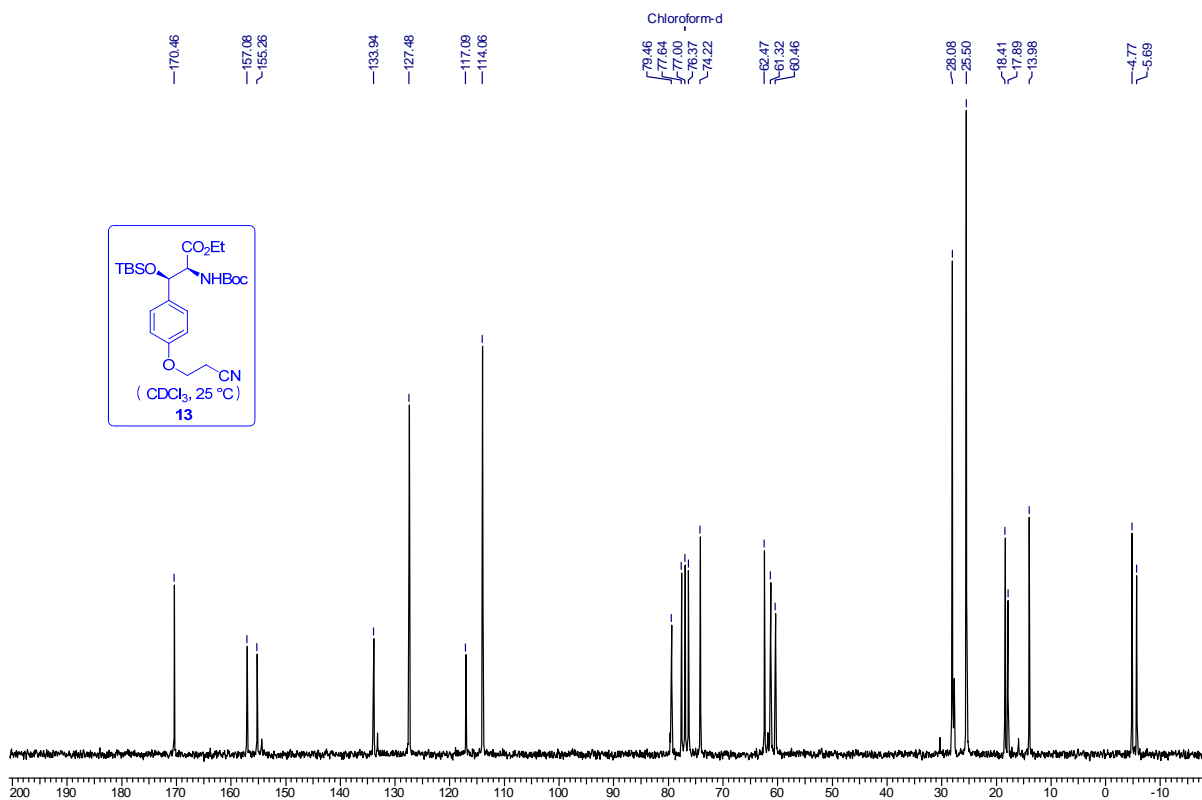
2 May 2011
 Alok/10997

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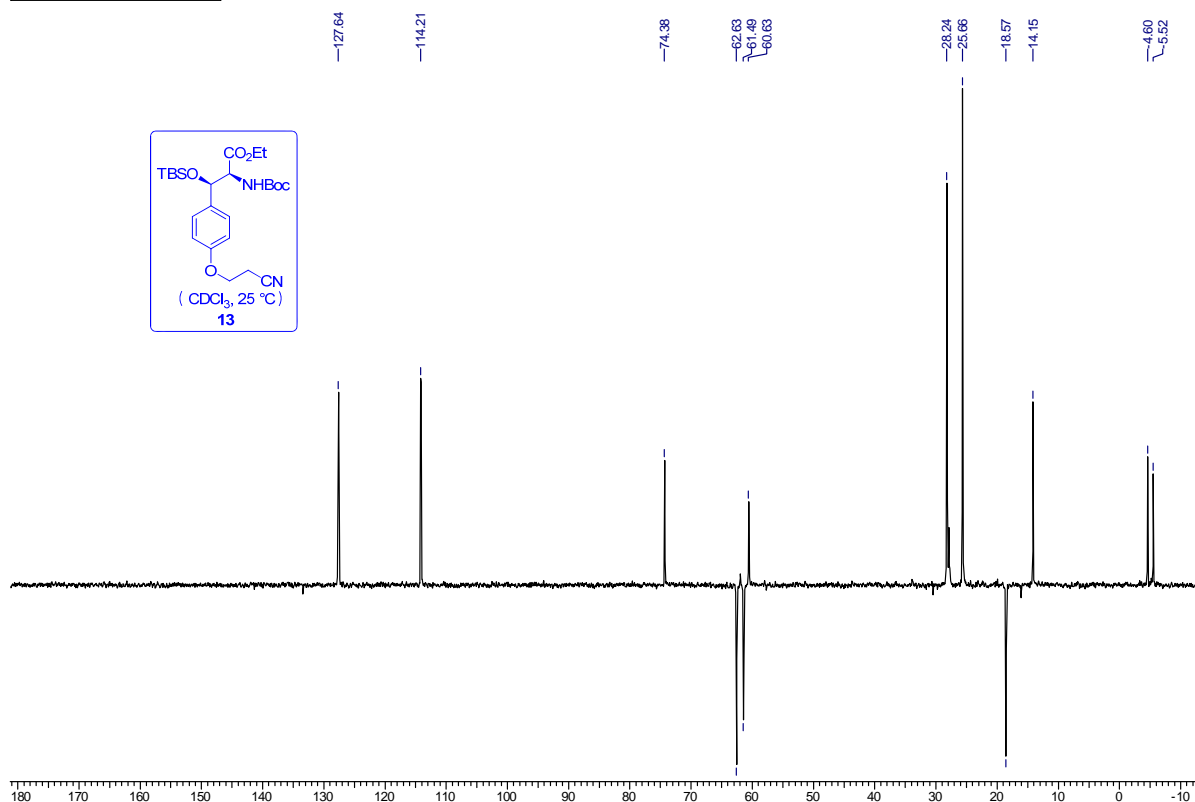
9 May 2011
 Alok/10997

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Temperature (grad C)	0.000			Points Count	32768
				Sweep Width (Hz)	11990.41



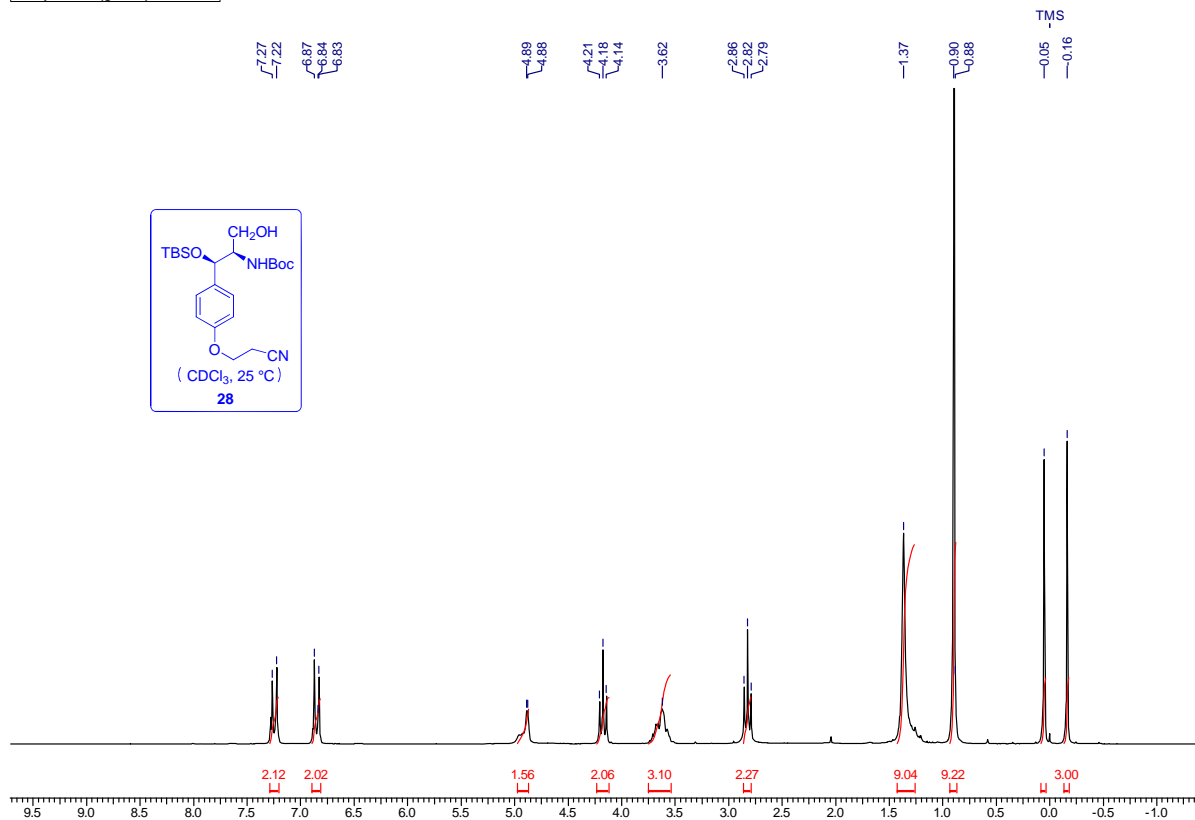
9 May 2011
 Alok/10997

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Temperature (grad C)	0.000								



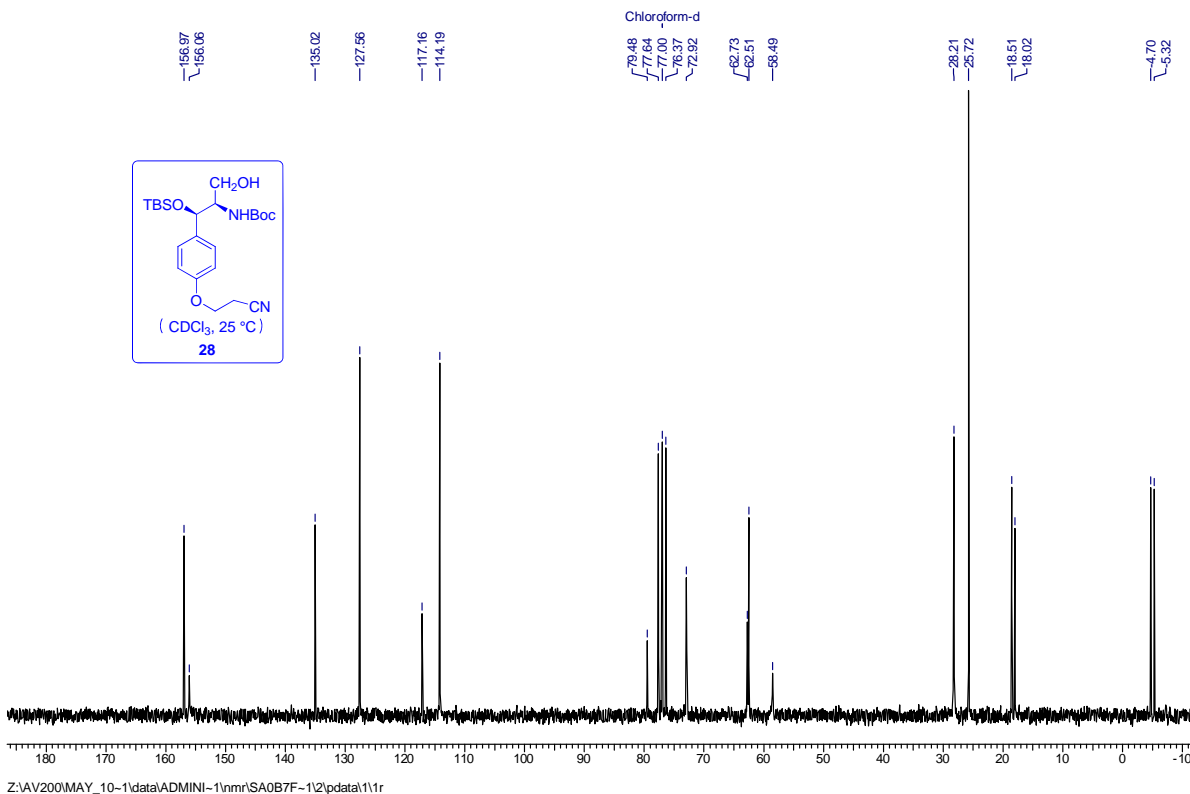
20 Jan 2011

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Temperature (grad C)	0.000								



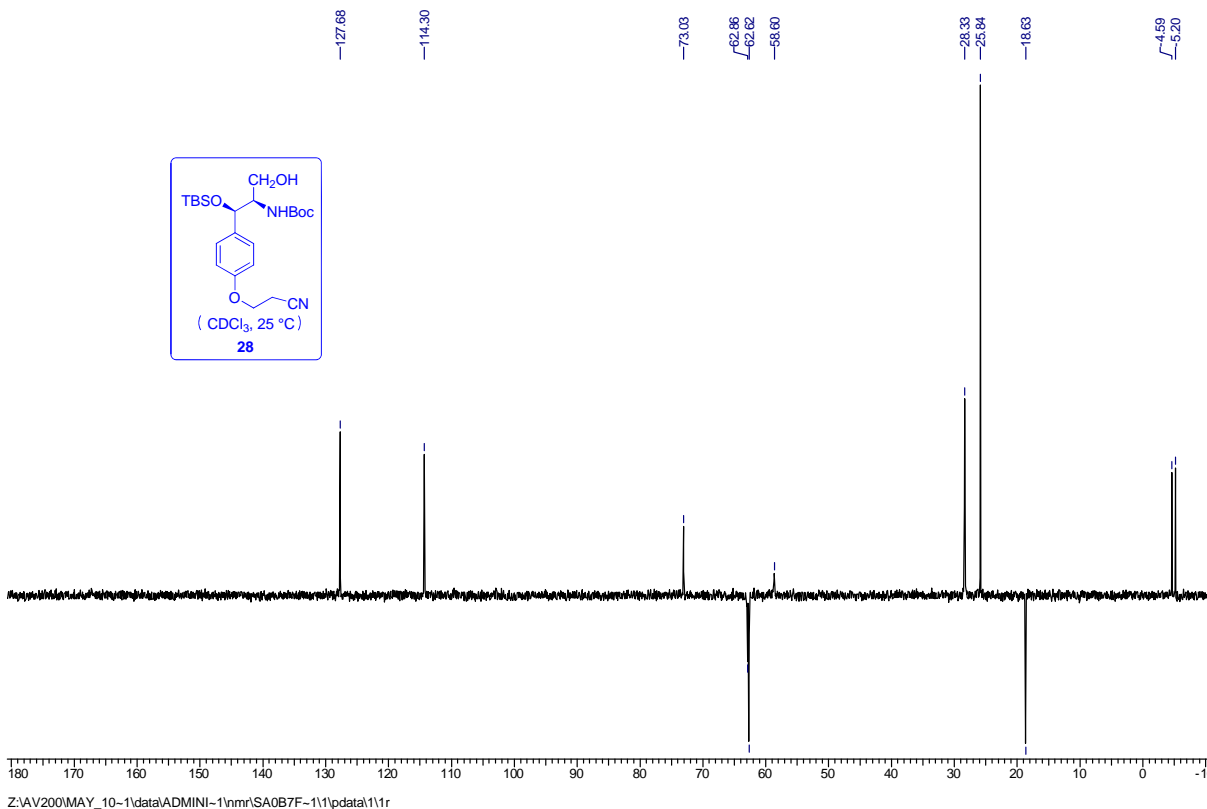
30 May 2011
 Alok/10997

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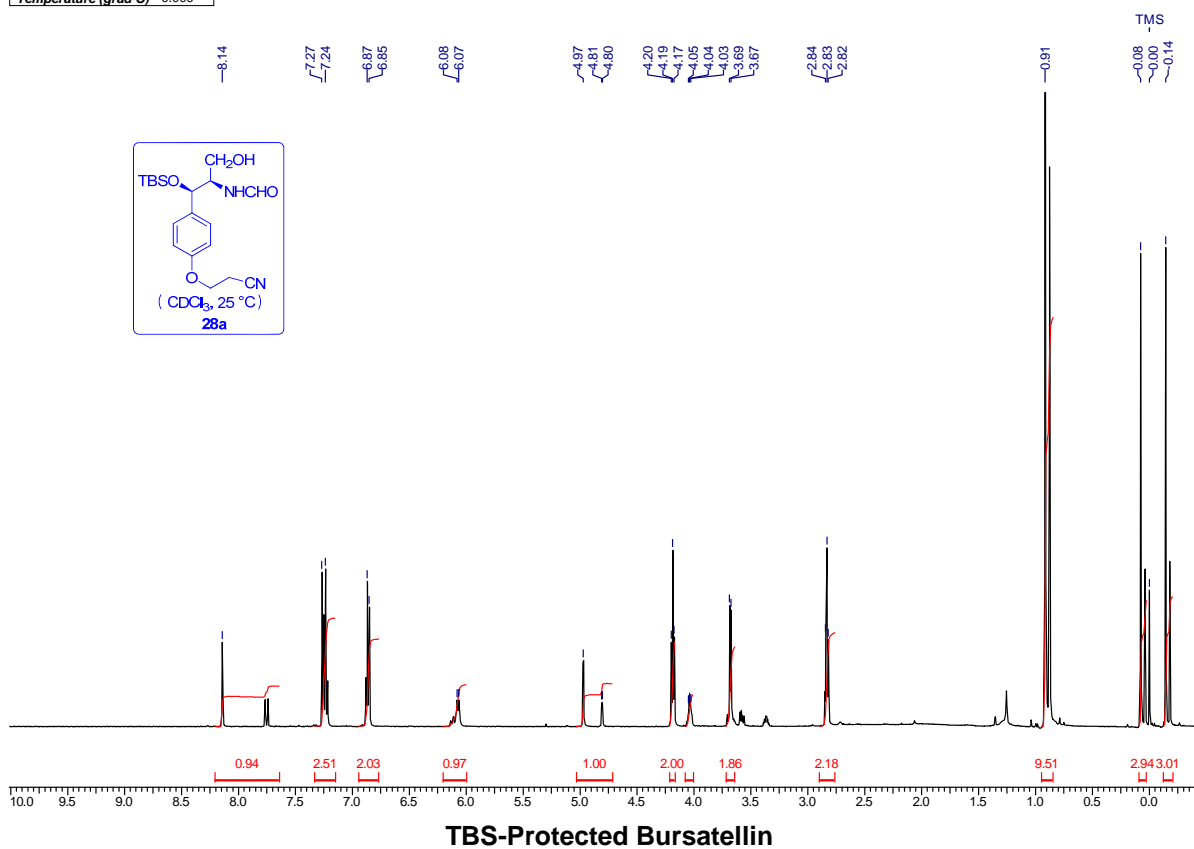
30 May 2011
 Alok/10997

Acquisition Time (sec)	2.7329	Comment	Alok/10997	Date	02/05/2010 13:04:54		
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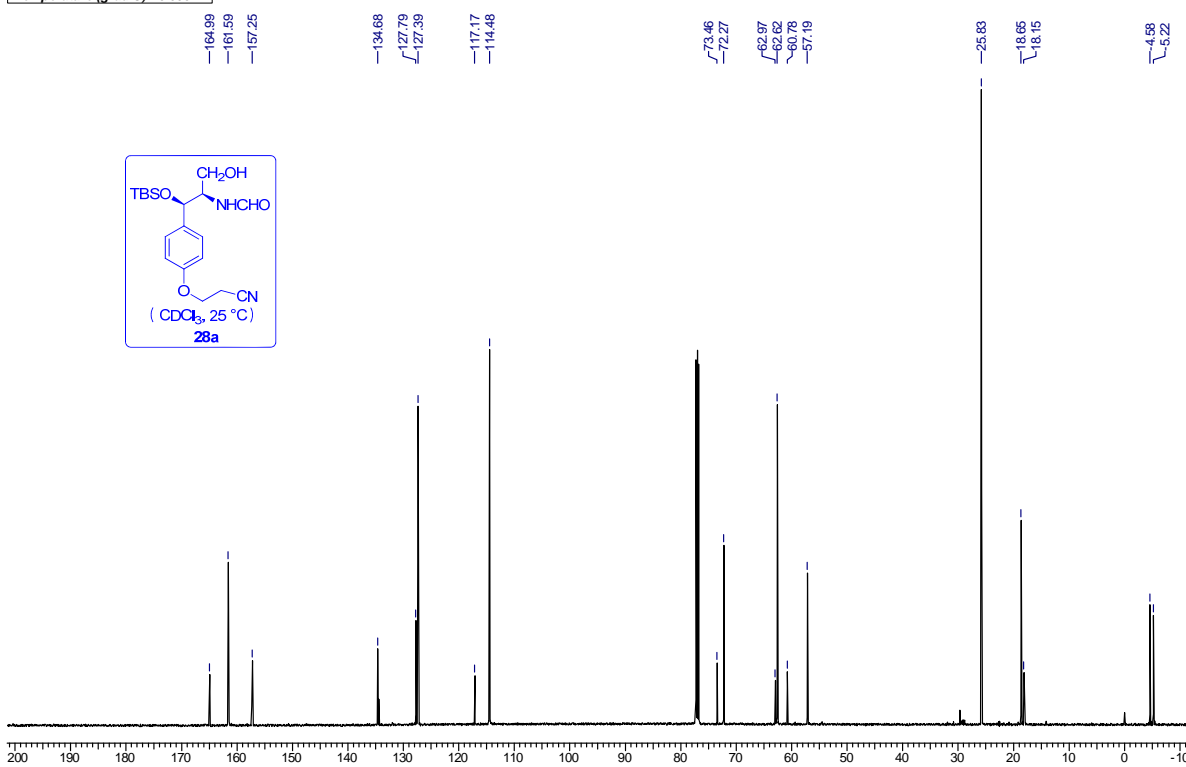
20 May 2011
 1H

Acquisition Time (sec)	3.2768	Comment	1H	Date	25/05/2010 22:14:54	Frequency (MHz)	500.13
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Temperature (grad C)	0.000						



20 May 2011
 13C

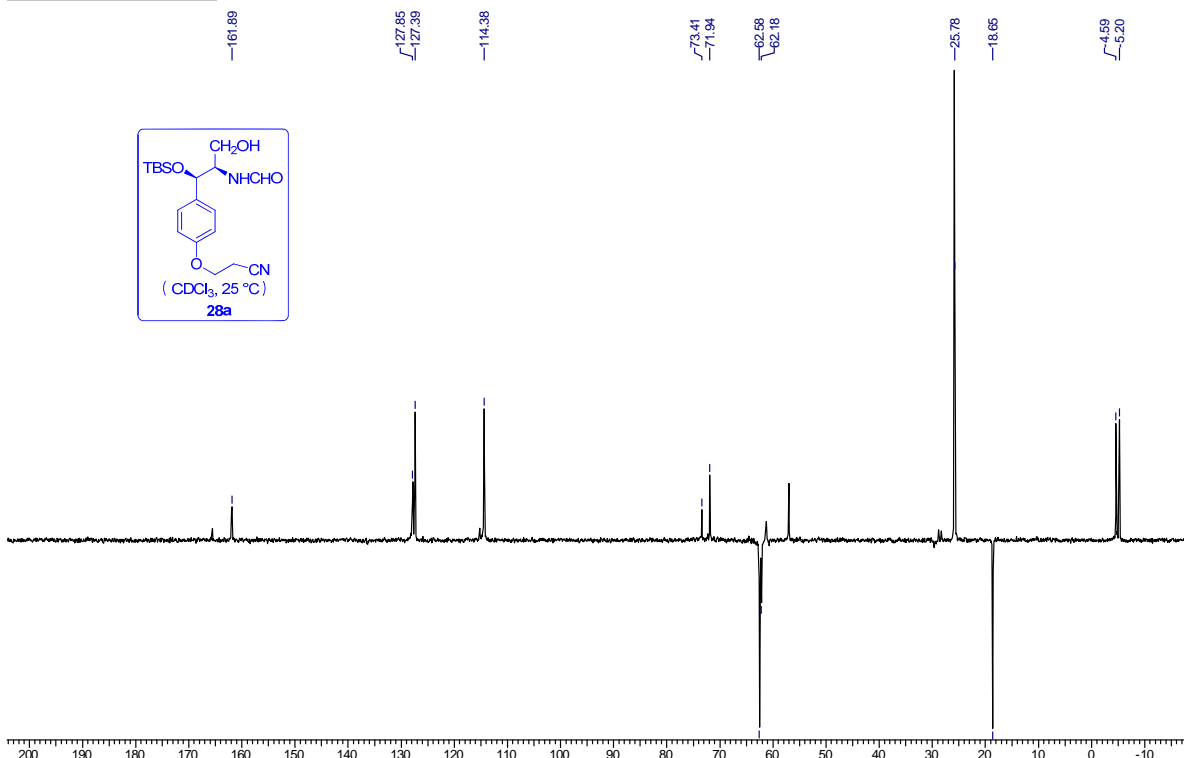
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Nucleus	13C	Original Points Count	32768	Points Count	32768	Sweep Width (Hz)	29761.90
Temperature (grad C)	0.000						



TBS-Protected Bursatellin

20 May 2011
 Alok/10997

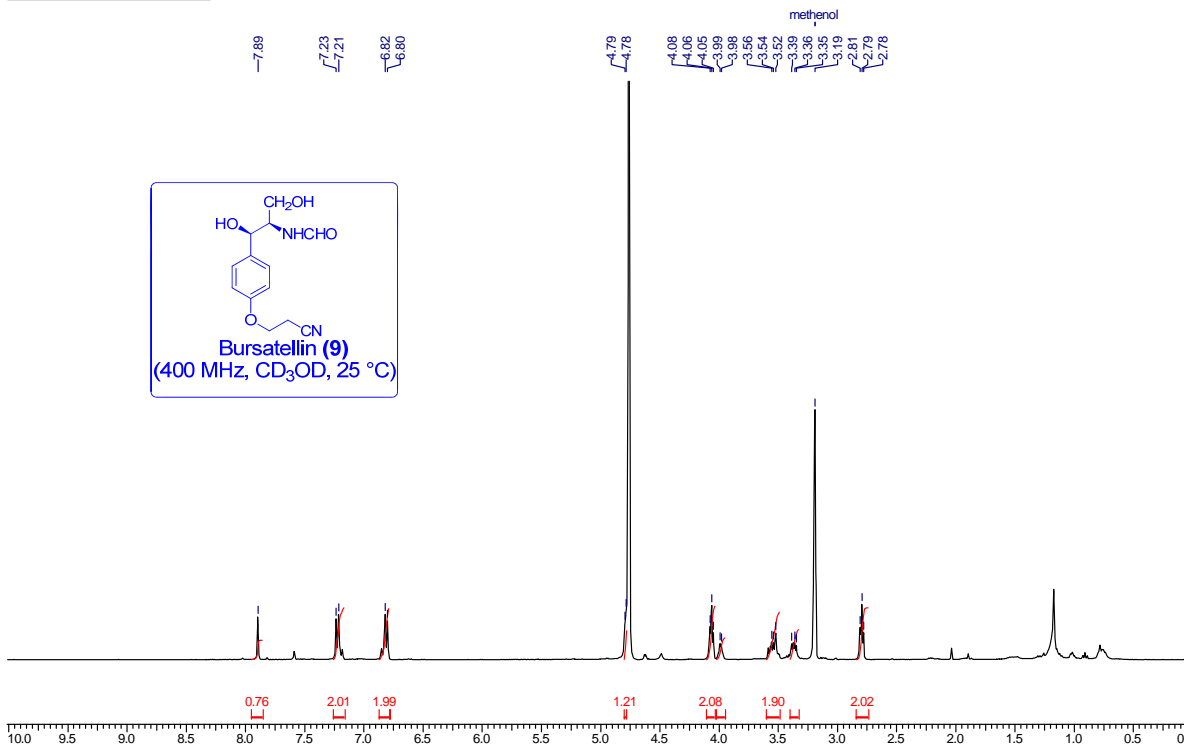
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Temperature (grad C)	0.000								



(-)-Bursatellin

19 May 2011
 Thu2av400#009
 Alok

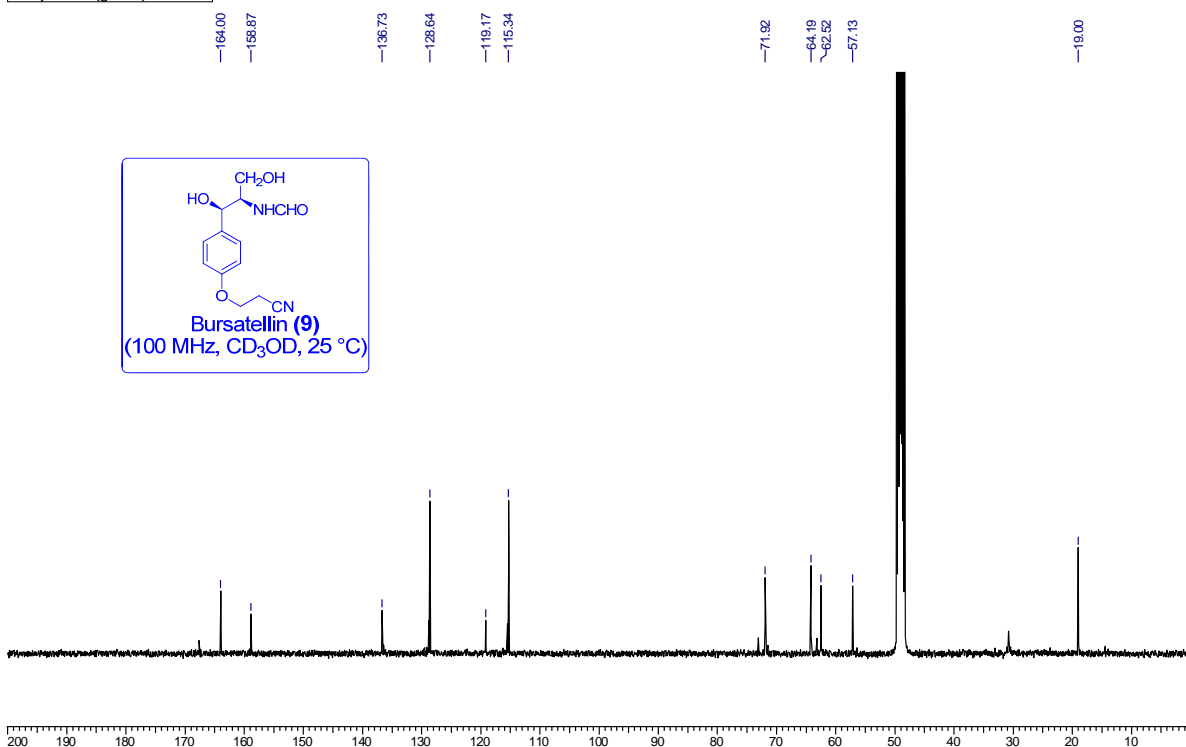
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Nucleus	¹ H	Original Points Count	32768	Points Count	32768	Sweep Width (Hz)	8223.68	
Temperature (grad C)	0.000							



(-)-Bursatellin

19 May 2011
 Thu2av400#009
 Alok

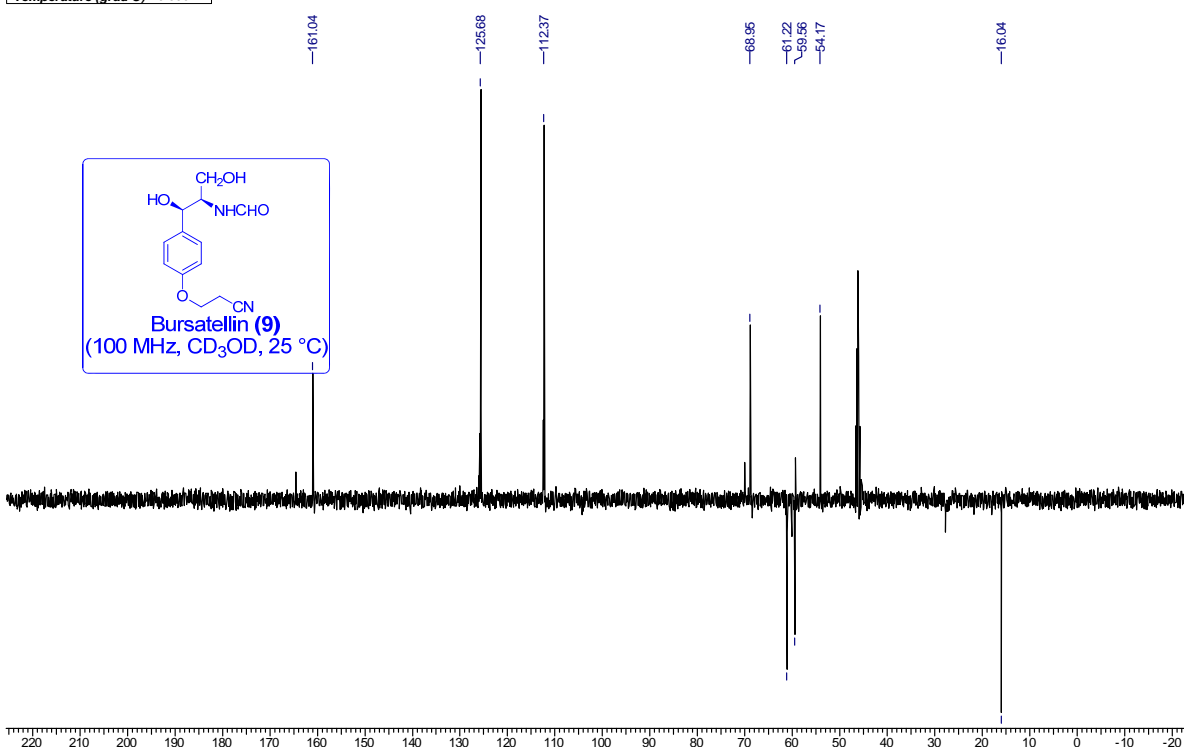
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Temperature (grad C)	0.000						



(-)-Bursatellin

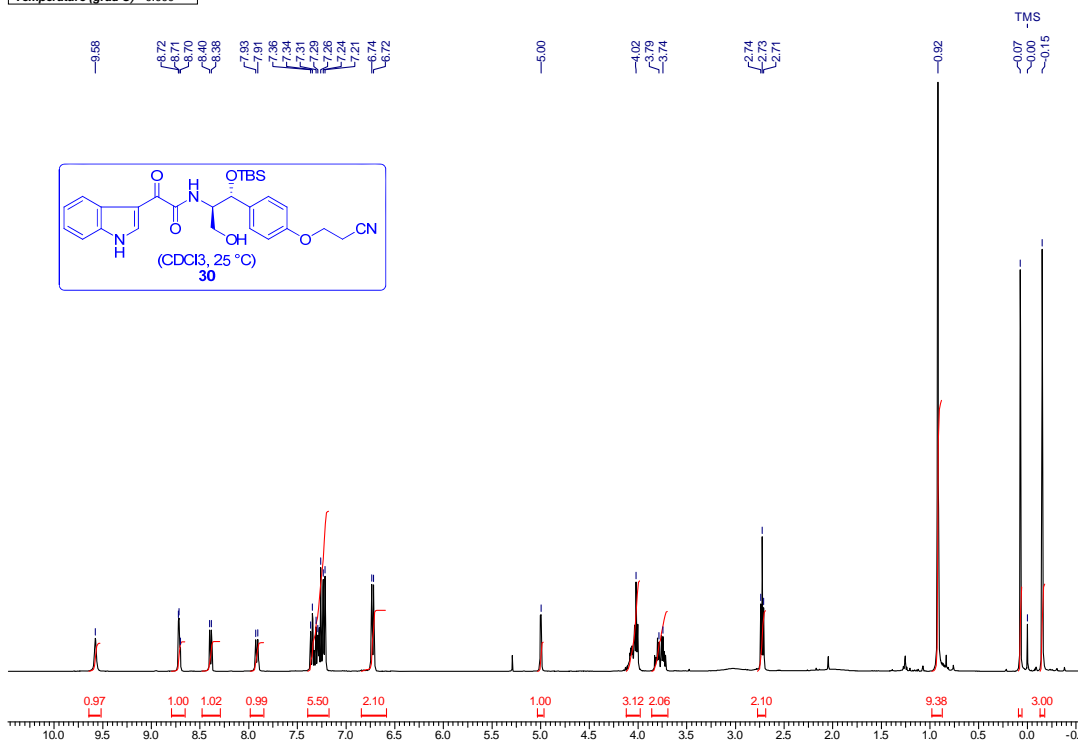
19 May 2011
 Thu2av400#009
 Alok

Acquisition Time (sec)	1.2976	Comment	Alok	Date	07/02/2011 09:30:54	Frequency (MHz)	100.61
Nucleus	13C	Original Points Count	32768	Points Count	32768	Sweep Width (Hz)	25252.53
Temperature (grad C)	0.000						



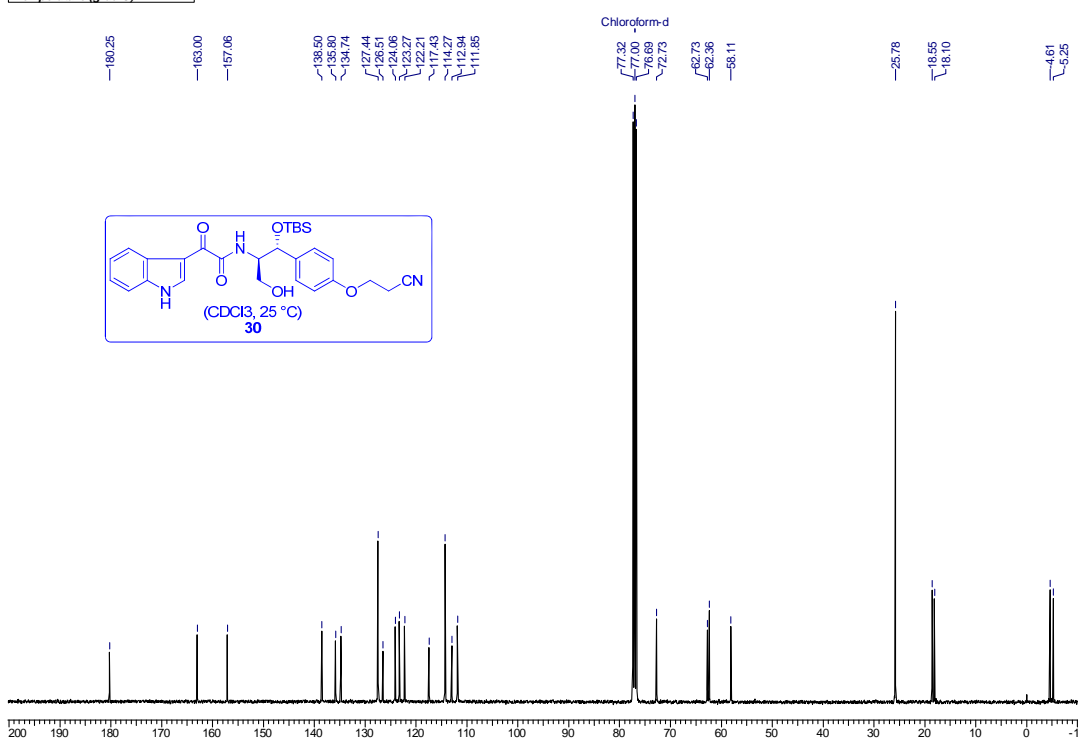
3 Jan 2011

Acquisition Time (sec)	3.9846	Comment	Alck10997	Date	03/01/2011 16:27:34				
Frequency (MHz)	400.13	Nucleus	¹ H	Original Points Count	32768	Points Count	32768	Sweep Width (Hz)	8223.68
Temperature (grad C)	0.000								



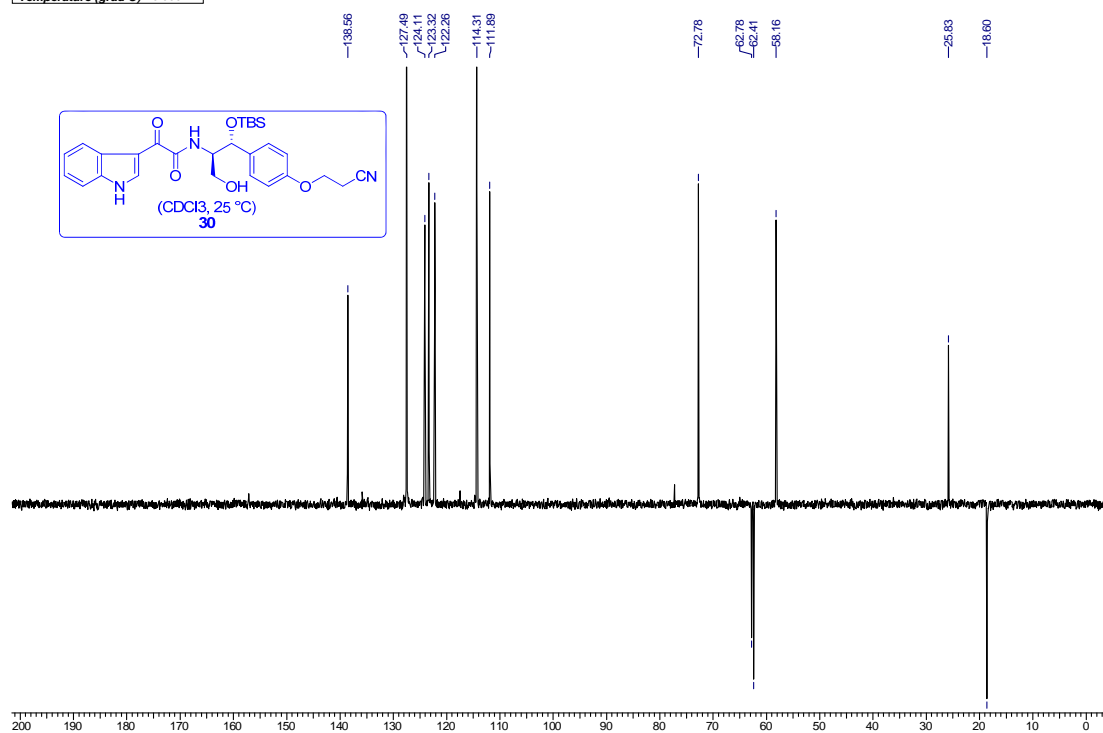
3 Jan 2011

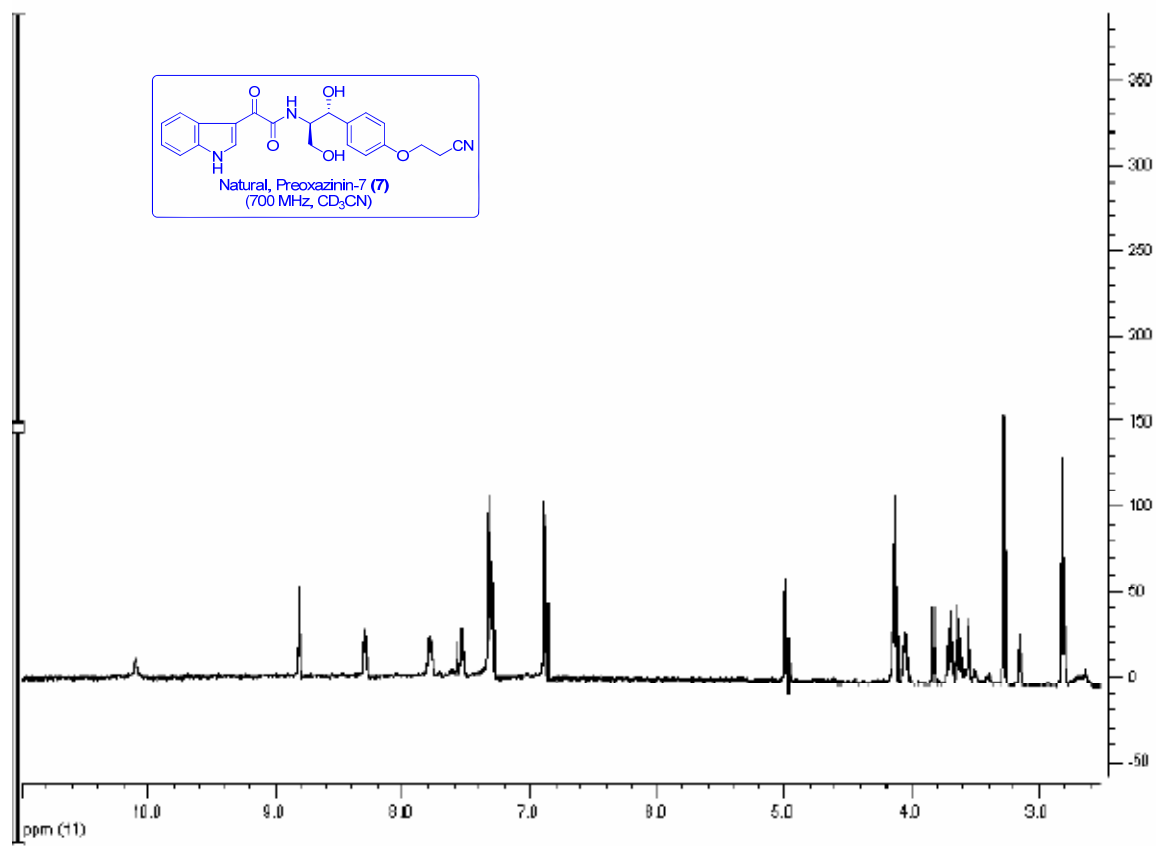
Acquisition Time (sec)	1.3631	Comment	13C	Date	03/01/2011 16:27:50		Frequency (MHz)	100.61
Nucleus	13C	Original Points Count	32768	Points Count	32768	Sweep Width (Hz)	24038.46	
Temperature (grad C)	0.000							



3 Jan 2011

Acquisition Time (sec)	1.3631	Comment	DEPT	Date	03/01/2011 16:27:42	Frequency (MHz)	100.61
Nucleus	¹³ C	Original Points Count	32768	Points Count	32768	Sweep Width (Hz)	24038.46
Temperature (grad C)	0.000						

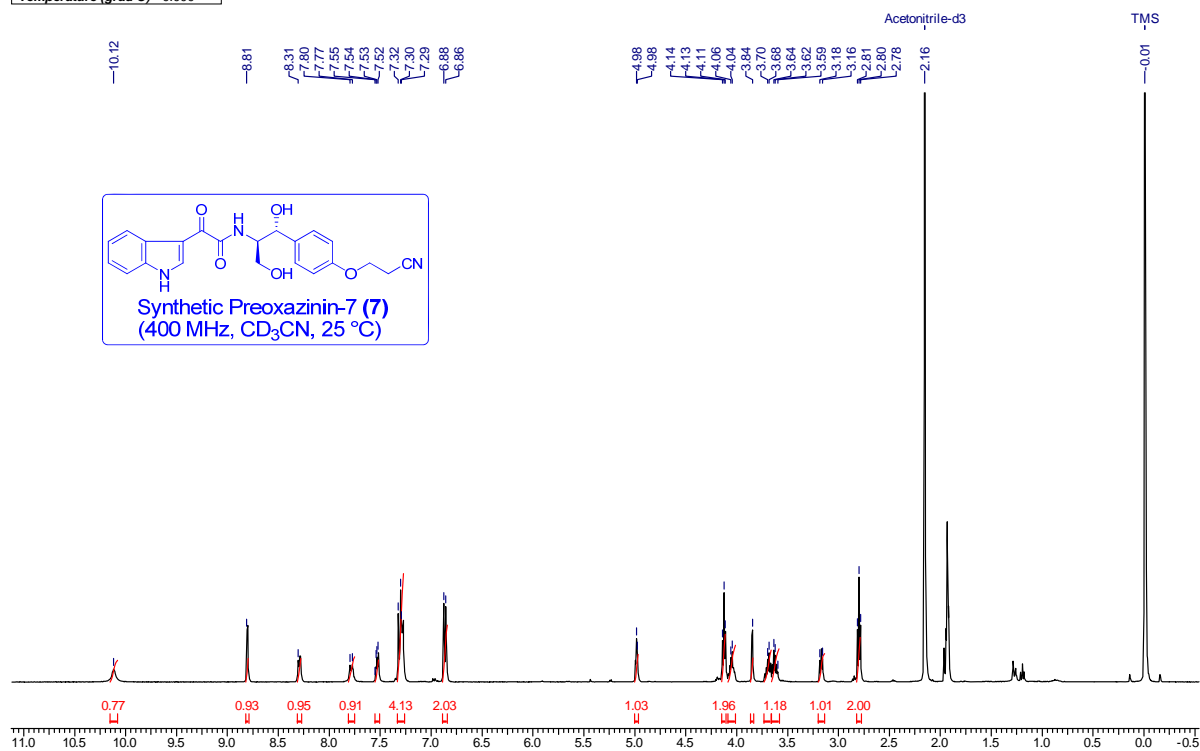




Preoxazin

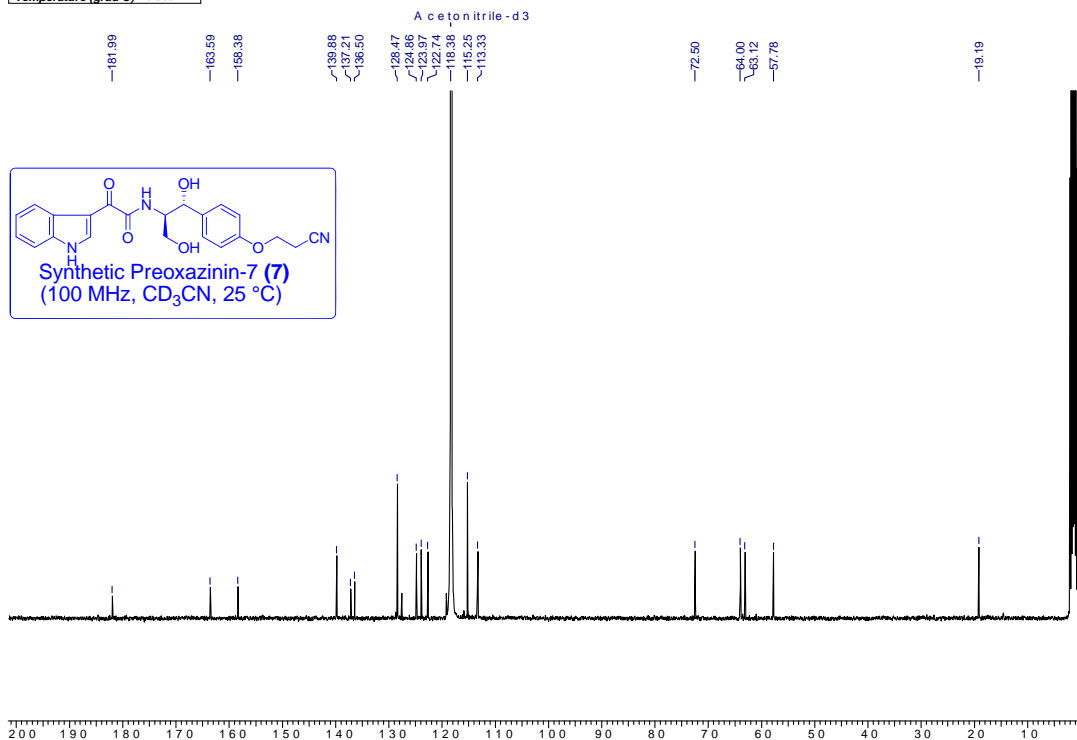
18 May 2011
 Thu2av400#009
 Alok R/10997

Acquisition Time (sec)	3.9846	Comment	Alok R/10997		Date	17/05/2010 21:04:00	
Frequency (MHz)	400.13	Nucleus	1H	Original Points Count	32768	Points Count	32768
Temperature (grad C)	0.000				Sweep Width (Hz)	8223.68	



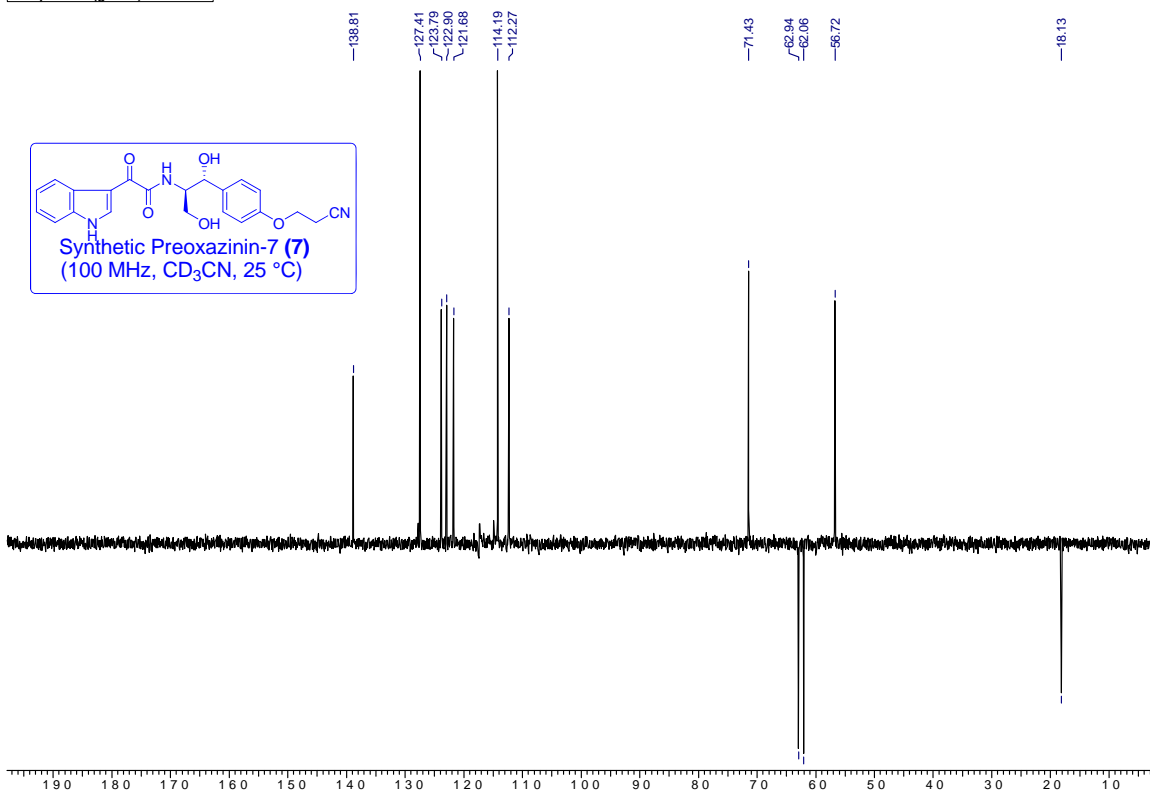
23 Dec 2010

Acquisition Time (sec)	1.3631	Comment	Alok R/10997	Date	18/05/2010 10:30:42
Frequency (MHz)	100.61	Nucleus	¹³ C	Original Points Count	32768
Temperature (grad C)	0.000			Points Count	32768
				Sweep Width (Hz)	24038.46



23 Dec 2010

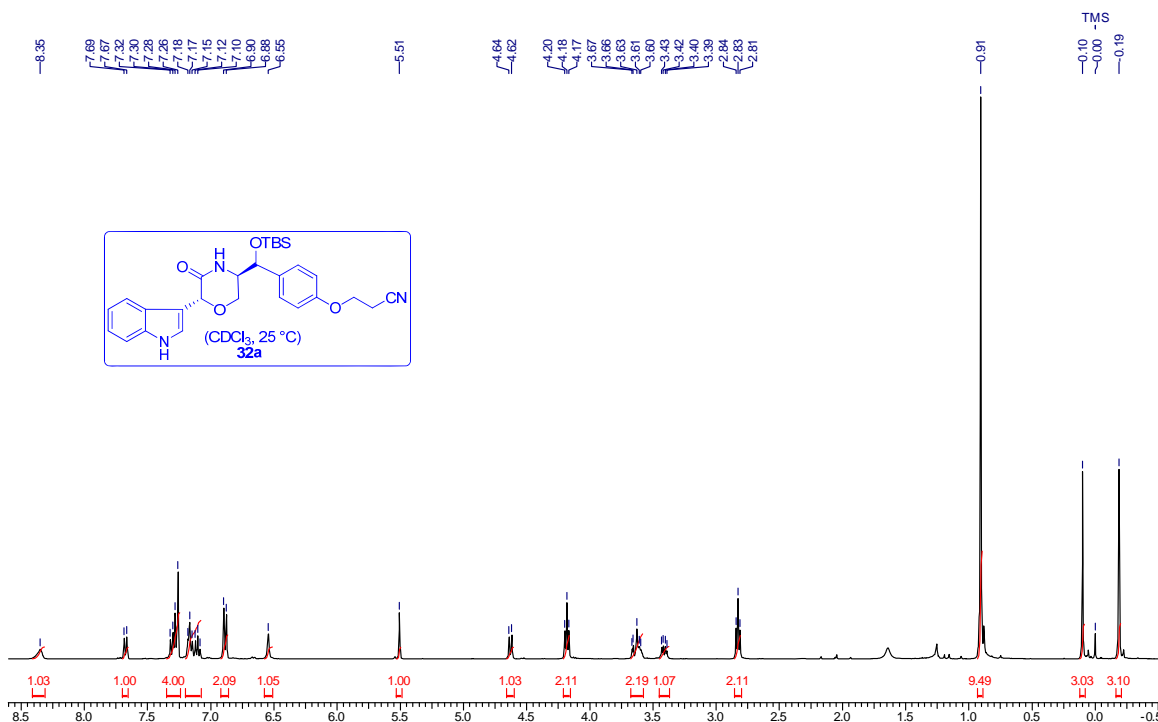
Acquisition Time (sec)	1.3631	Comment	Alok R/10997	Date	18/05/2010 18:39:38
Frequency (MHz)	100.61	Nucleus	¹³ C	Original Points Count	32768
Temperature (grad C)	0.000			Points Count	32768
				Sweep Width (Hz)	24038.46



TBS-protected oxazinin-5

28 Apr 2011
 mon5av400#002
 VHP

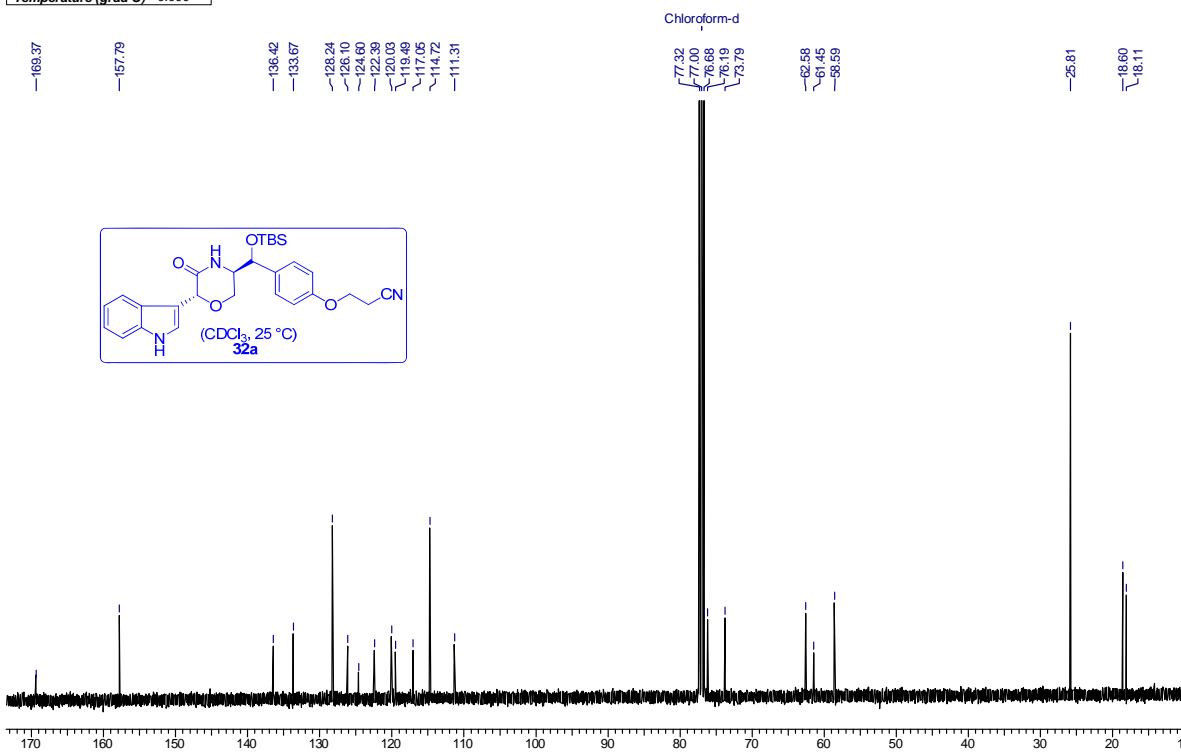
Acquisition Time (sec)	3.9846	Comment	Alok	Date	28/03/2011 15:45:38	Frequency (MHz)	400.13
Nucleus	¹ H	Original Points Count	32768	Points Count	32768	Sweep Width (Hz)	8223.68
Temperature (grad C)	0.000						



TBS-protected oxazinin-5

28 Apr 2011
 mon5av400#002
 13C

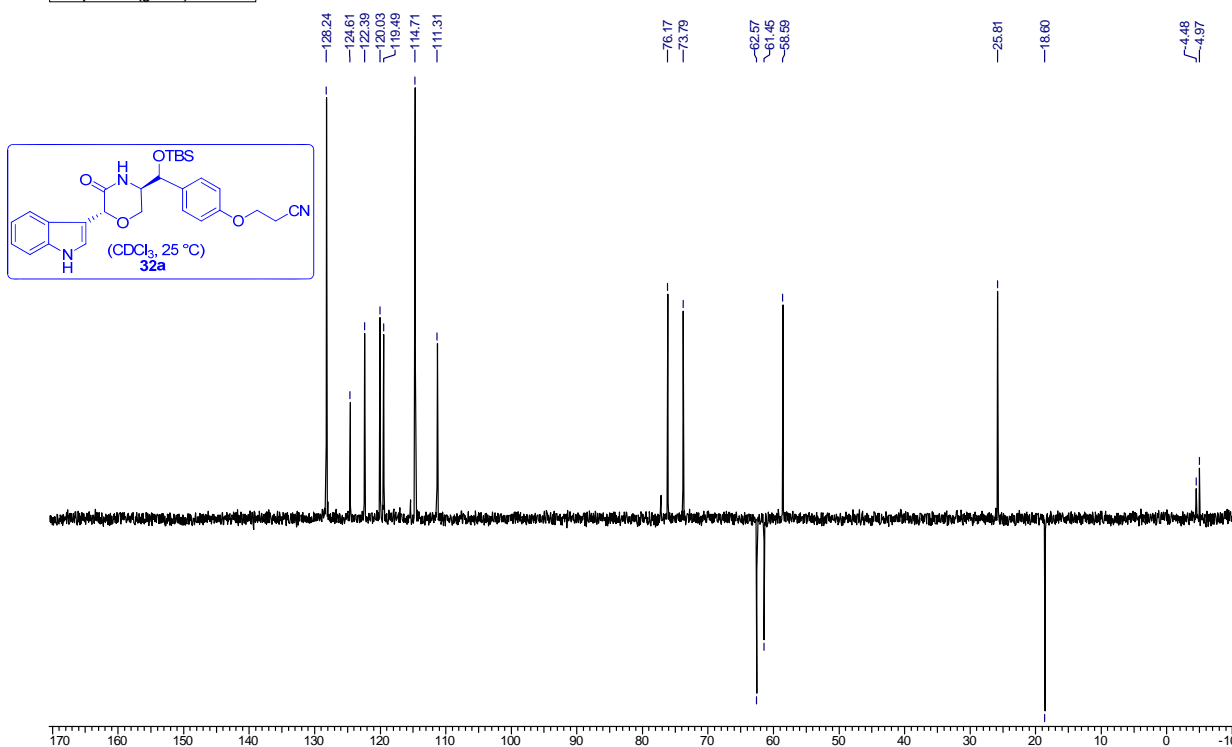
Acquisition Time (sec)	1.8350	Comment	13C	Date	28/03/2011 15:44:12	Frequency (MHz)	100.61
Nucleus	¹³ C	Original Points Count	32768	Points Count	32768	Sweep Width (Hz)	17857.14
Temperature (grad C)	0.000						



TBS-protected oxazinin-5

28 Apr 2011
 mon5av400#002
 DEPT

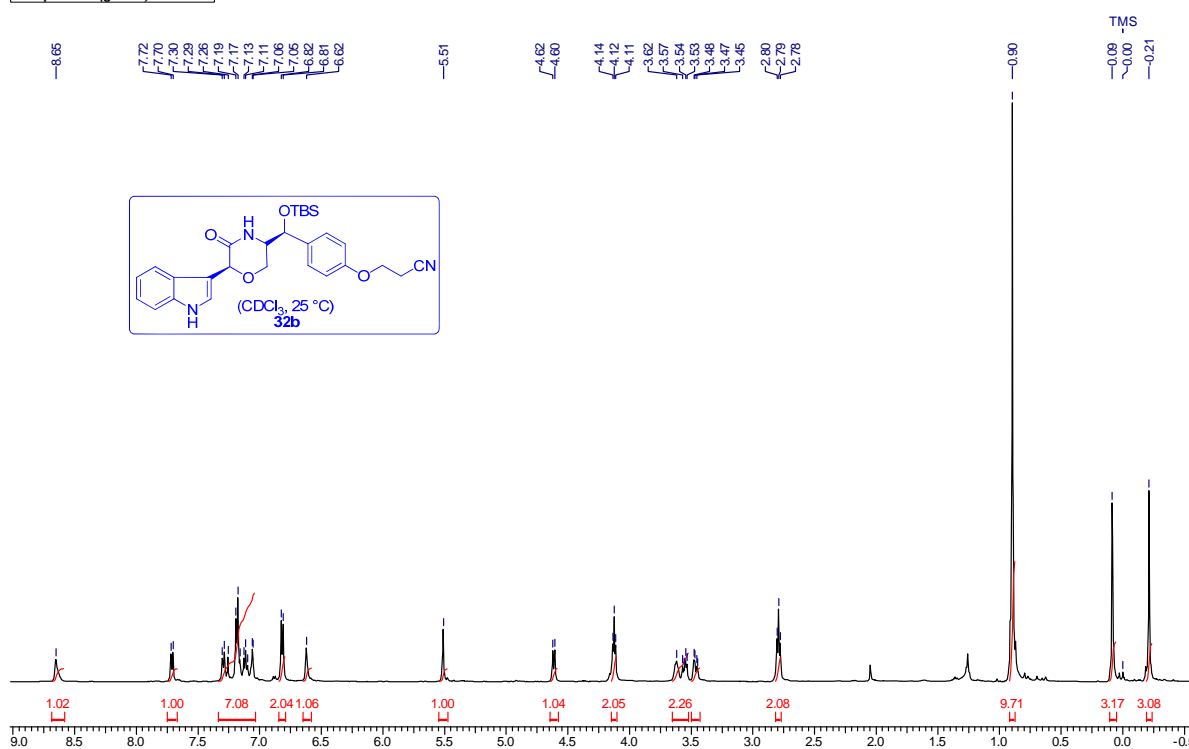
Acquisition Time (sec)	1.2976	Comment	DEPT	Date	28/03/2011 15:45:30	Frequency (MHz)	100.61
Nucleus	¹³ C	Original Points Count	32768	Points Count	32768	Sweep Width (Hz)	25252.53
Temperature (grad C)	0.000						



TBS-protected oxazinin-6

28 Apr 2011
 wed5av500#009
 alok

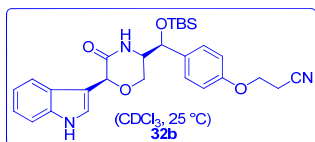
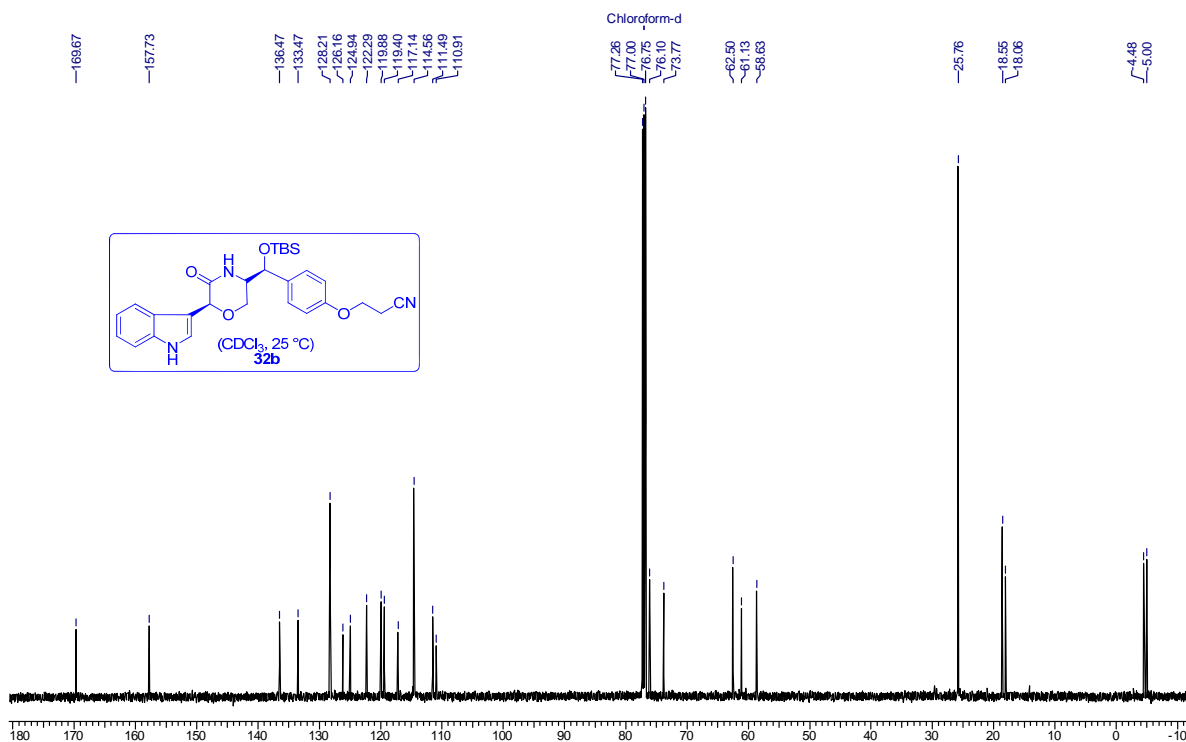
Acquisition Time (sec)	3.2768	Comment	alok	Date	23/03/2011 17:33:42	Frequency (MHz)	500.13
Nucleus	¹ H	Original Points Count	32768	Points Count	32768	Sweep Width (Hz)	10000.00
Temperature (grad C)	0.000						



TBS-protected oxazinin-6

28 Apr 2011
 wed5av500#009
 13C

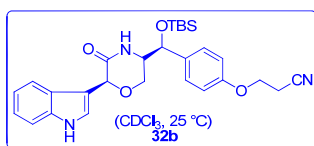
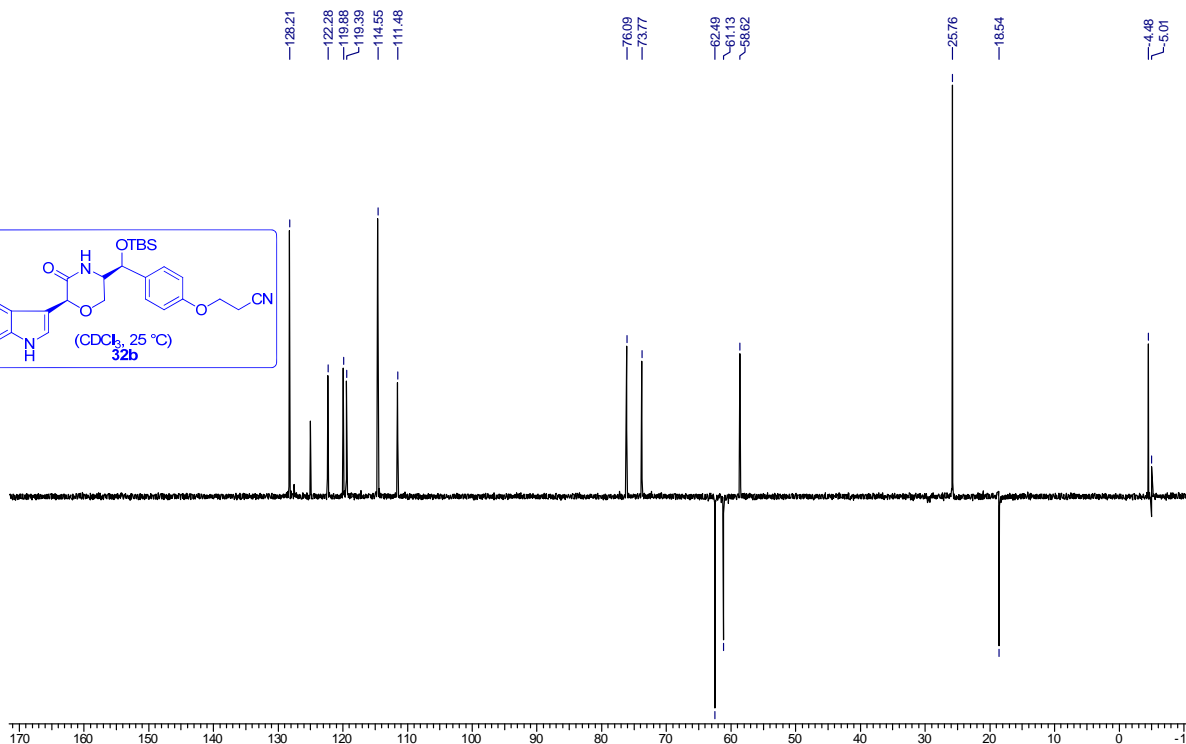
Acquisition Time (sec)	1.1010	Comment	13C	Date	23/03/2011 18:14:02	Frequency (MHz)	125.76
Nucleus	13C	Original Points Count	32768	Points Count	32768	Sweep Width (Hz)	29761.90
Temperature (grad C)	0.000						

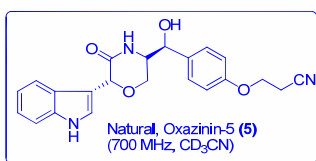
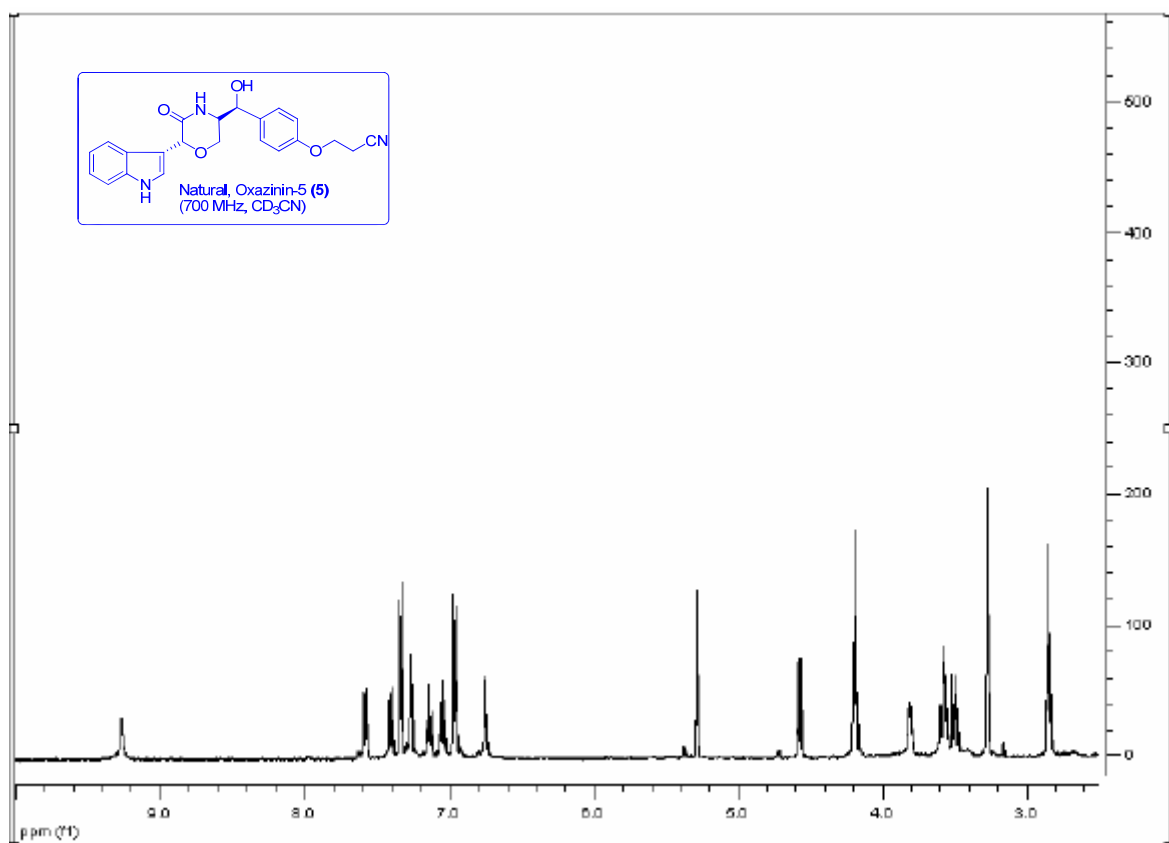


TBS-protected oxazinin-6

28 Apr 2011
 wed5av500#009
 DEPT135

Acquisition Time (sec)	1.1010	Comment	DEPT135	Date	23/03/2011 17:55:36	Frequency (MHz)	125.76
Nucleus	13C	Original Points Count	32768	Points Count	32768	Sweep Width (Hz)	29761.90
Temperature (grad C)	0.000						

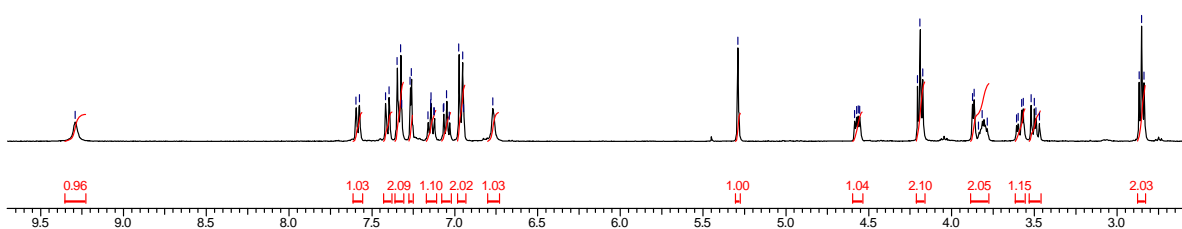
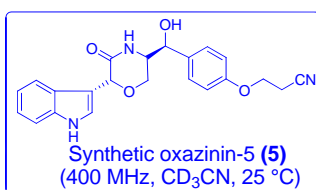




oxazinin-5

28 Apr 2011
 wed3av400#012
 VHP

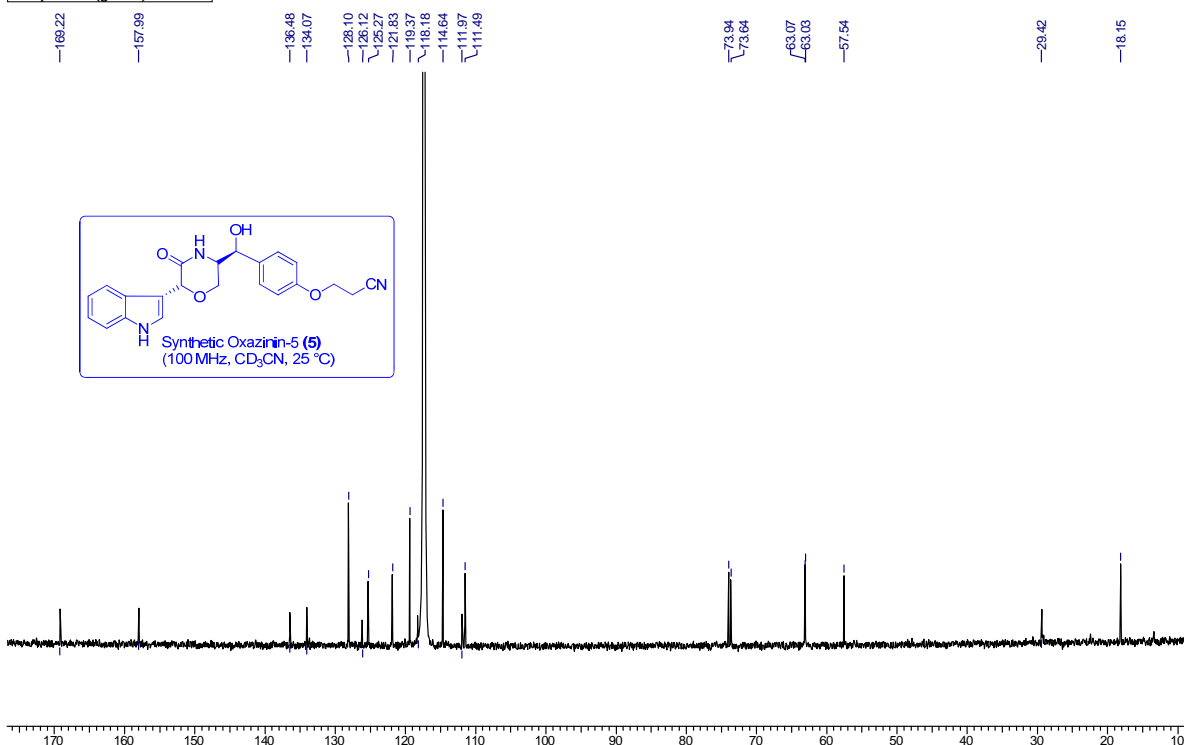
Acquisition Time (sec)	4.0894	Comment	Alok Ranjan	Date	13/04/2011 22:44:38
Frequency (MHz)	400.13	Nucleus	1H	Original Points Count	32768
Temperature (grad C)	0.000	Points Count	32768	Sweep Width (Hz)	8012.82



oxazinin-5

16 May 2011
 wed3av400#012
 13C

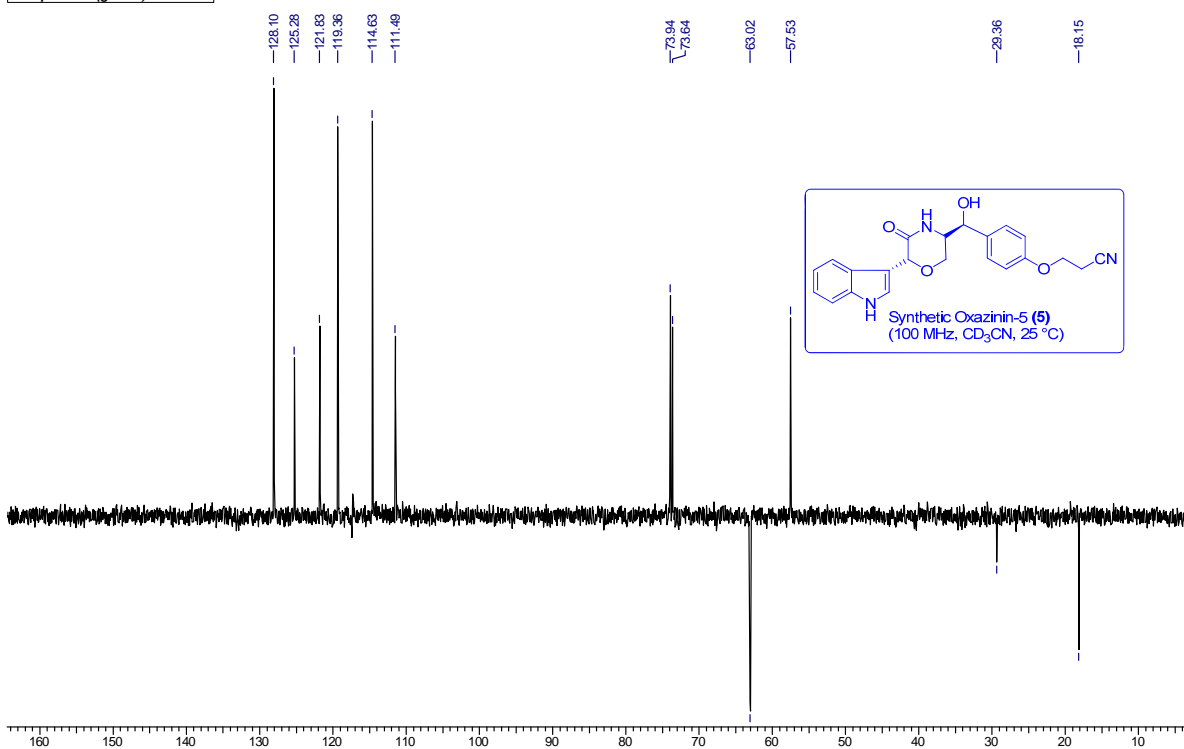
Acquisition Time (sec)	1.2976	Comment	13C	Date	14/04/2011 10:21:50	Frequency (MHz)	100.61
Nucleus	13C	Original Points Count	32768	Points Count	32768	Sweep Width (Hz)	25252.53
Temperature (grad C)	0.000						



oxazinin-5

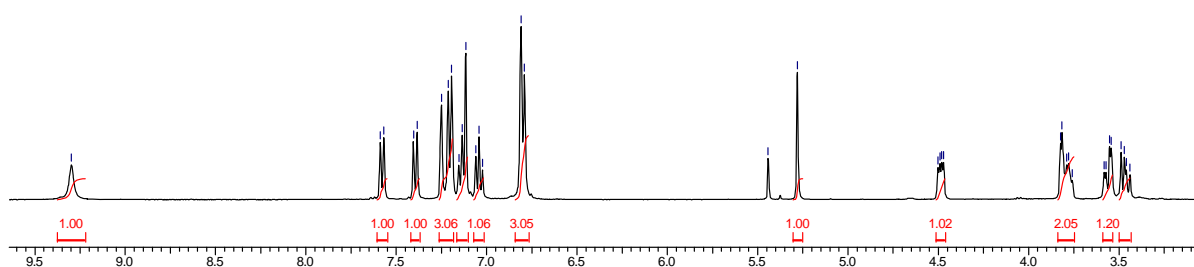
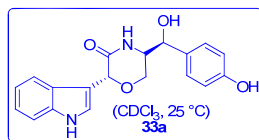
16 May 2011
 wed3av400#012
 DEPT

Acquisition Time (sec)	1.2976	Comment	DEPT	Date	14/04/2011 10:22:24	Frequency (MHz)	100.61
Nucleus	13C	Original Points Count	32768	Points Count	32768	Sweep Width (Hz)	25252.53
Temperature (grad C)	0.000						



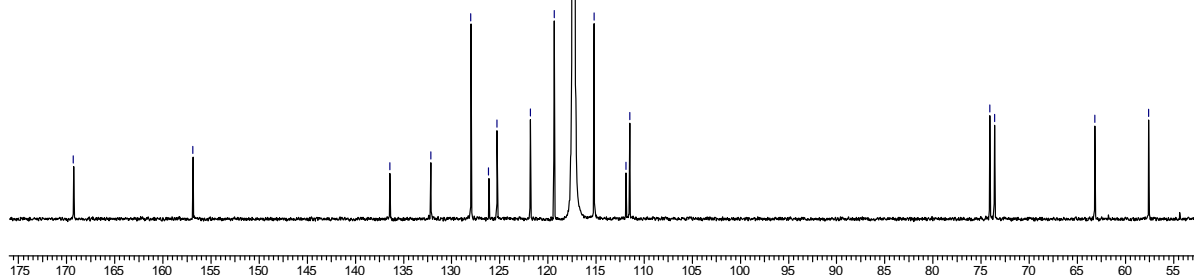
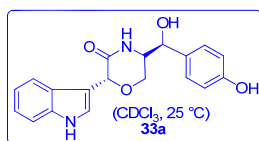
17 May 2011
 Mon1av400#005
 Vijendra

Acquisition Time (sec)	4.0894	Comment	Vijendra	Date	03/05/2011 10:05:10	Frequency (MHz)	400.13
Nucleus	1H	Original Points Count	32768	Points Count	32768	Sweep Width (Hz)	8012.82
						Temperature (grad C)	0.000



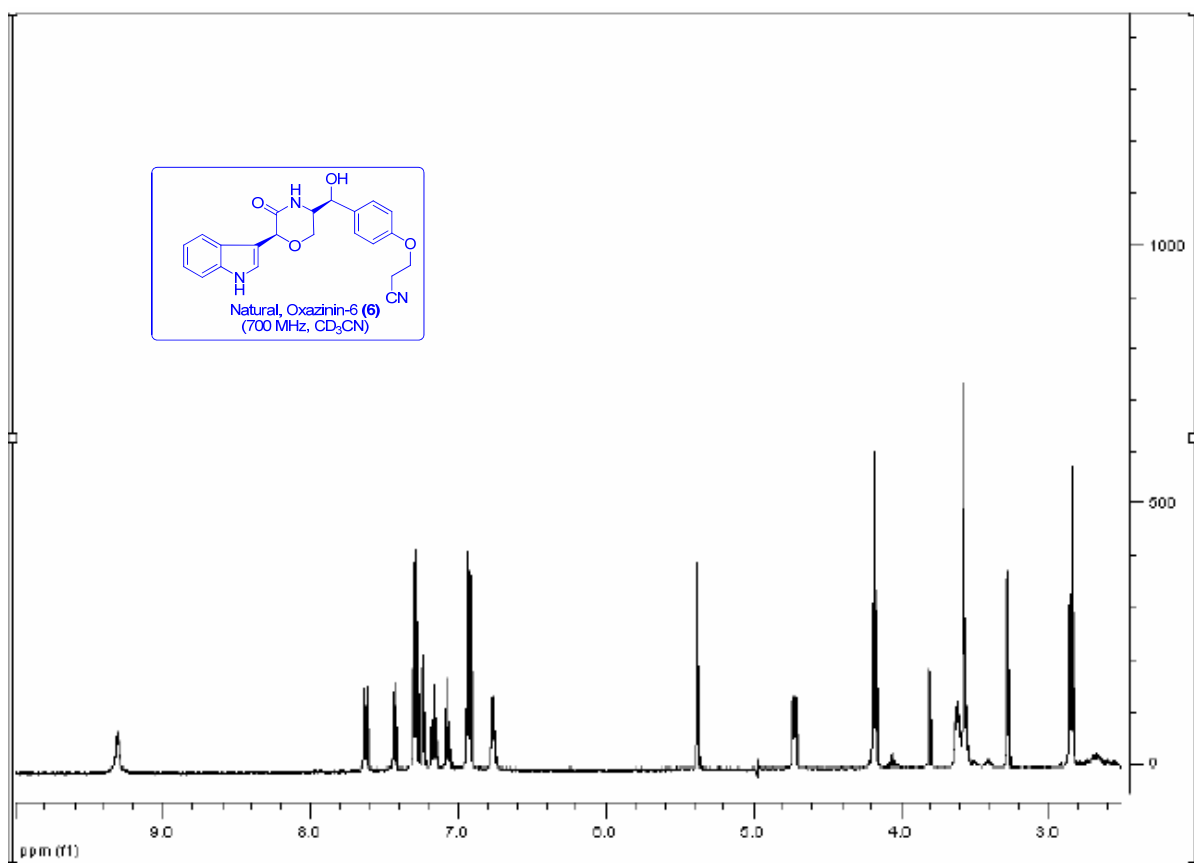
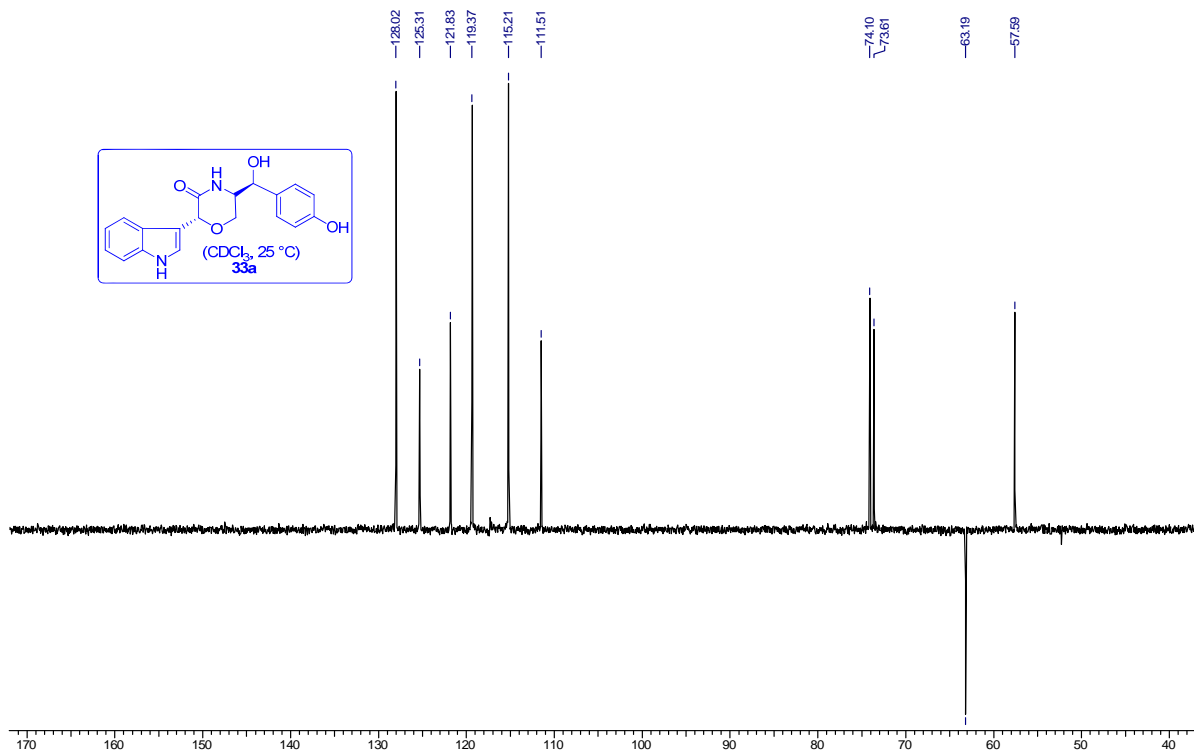
17 May 2011
 Mon1av400#005
 Vijendra

Acquisition Time (sec)	1.3631	Comment	Vijendra	Date	03/05/2011 10:06:22	Frequency (MHz)	100.61
Nucleus	13C	Original Points Count	32768	Points Count	32768	Sweep Width (Hz)	24038.46
						Temperature (grad C)	0.000



17 May 2011
 Mon1av400#005
 DEPT

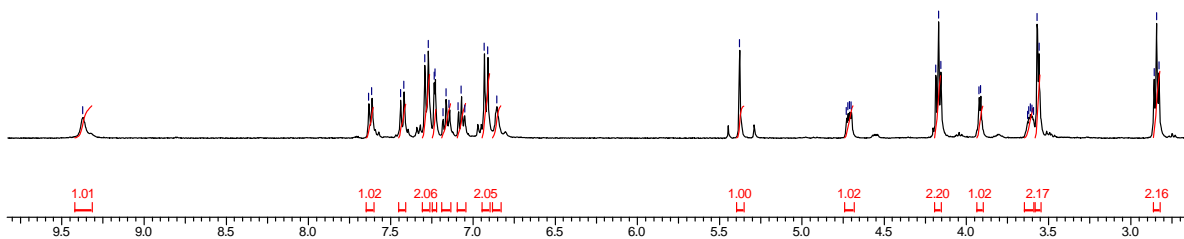
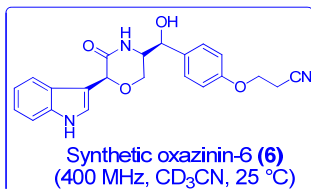
Acquisition Time (sec)	1.3631	Comment	Vijendra	Date	03/05/2011 10:06:00	Frequency (MHz)	100.61
Nucleus	¹³ C	Original Points Count	32768	Points Count	32768	Sweep Width (Hz)	24038.46
Temperature (grad C)	0.000						



oxazinin-6

17 May 2011
 sat5av400#009
 1H

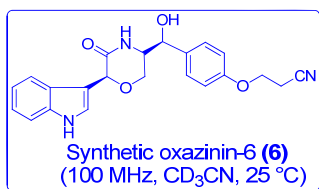
Acquisition Time (sec)	4.0894	Comment	Vijendra	Date	30/04/2011 17:36:36	Frequency (MHz)	400.13
Nucleus	1H	Original Points Count	32768	Points Count	32768	Sweep Width (Hz)	8012.82
Temperature (grad C)	0.000						



oxazinin-6

17 May 2011
 sat5av400#009
 13C

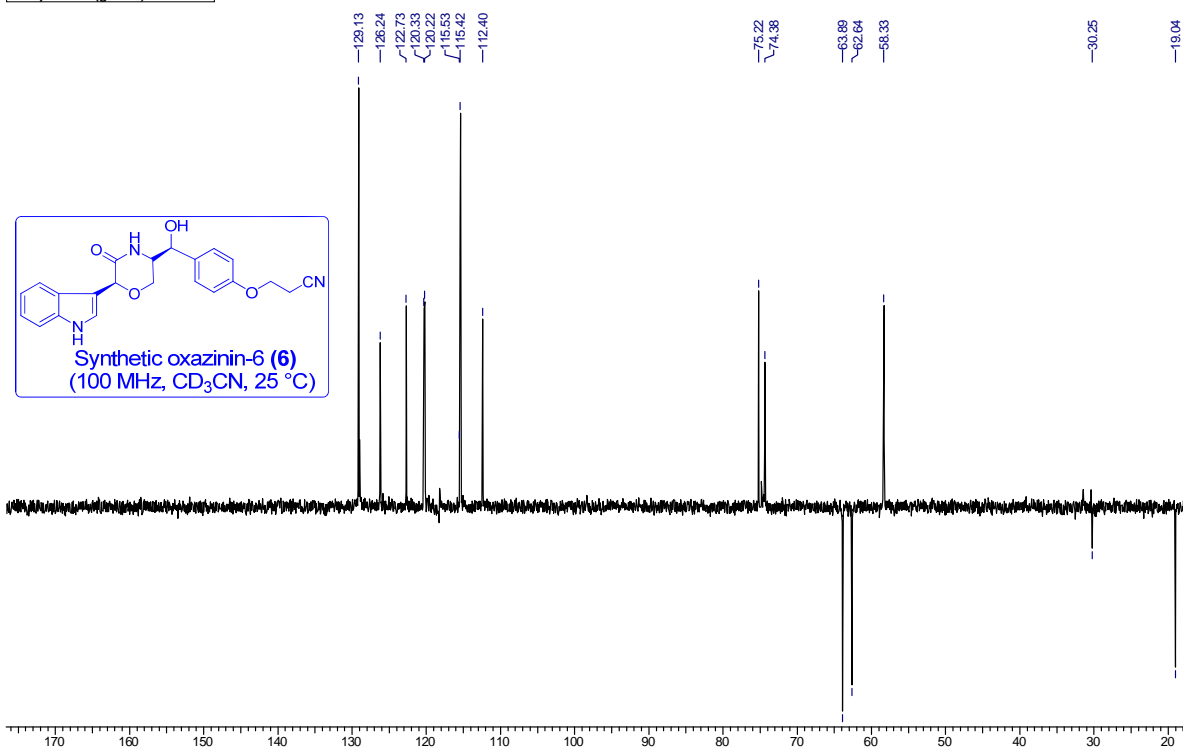
Acquisition Time (sec)	1.3631	Comment	13c	Date	01/05/2011 09:36:18	Frequency (MHz)	100.61
Nucleus	13C	Original Points Count	32768	Points Count	32768	Sweep Width (Hz)	24038.46
Temperature (grad C)	0.000						



oxazinin-6

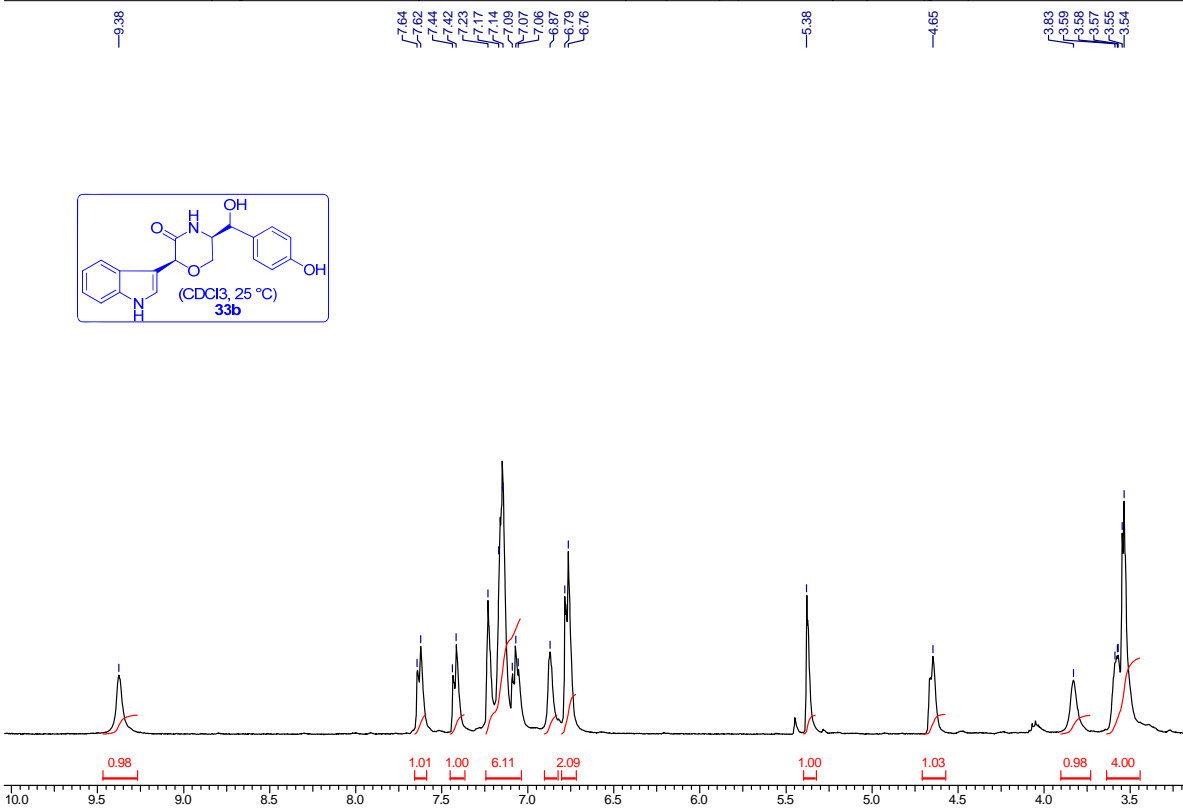
17 May 2011
 sat5av400#009
 Vijendra

Acquisition Time (sec)	1.3631	Comment	Vijendra	Date	01/05/2011 09:36:58	Frequency (MHz)	100.61
Nucleus	¹³ C	Original Points Count	32768	Points Count	32768	Sweep Width (Hz)	24038.46
Temperature (grad C)	0.000						



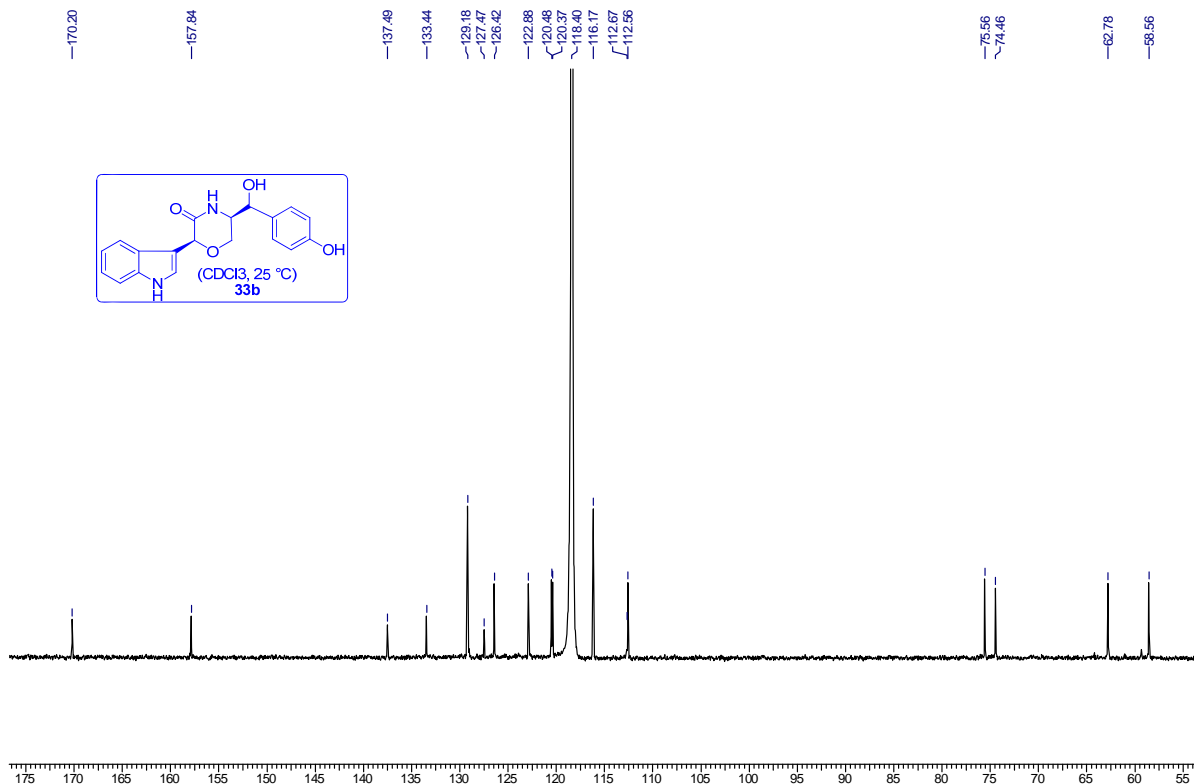
17 May 2011
 Thu2av400#009
 1H side product

Acquisition Time (sec)	4.0894	Comment	Vijendra	Date	13/05/2011 08:57:00	Frequency (MHz)	400.13
Nucleus	¹ H	Original Points Count	32768	Points Count	32768	Sweep Width (Hz)	8012.82
Temperature (grad C)	0.000						



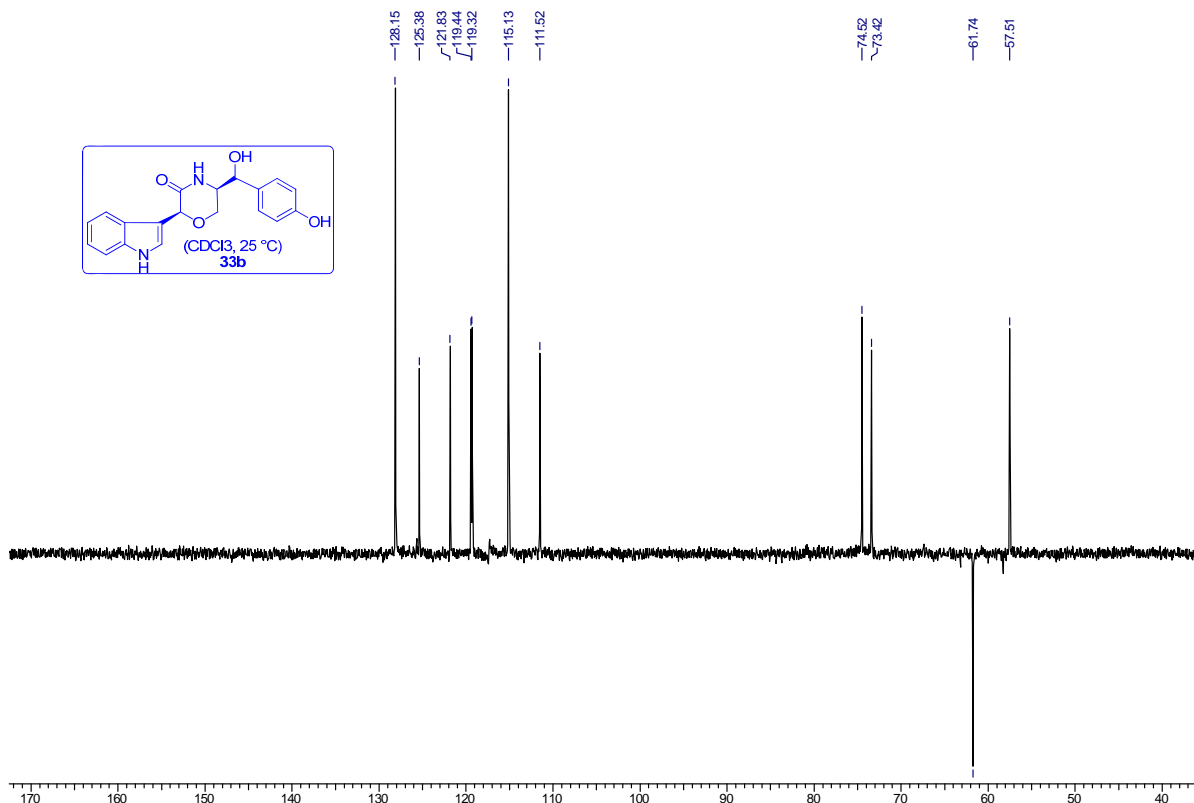
17 May 2011
 Thu2av400#009
 13C side product

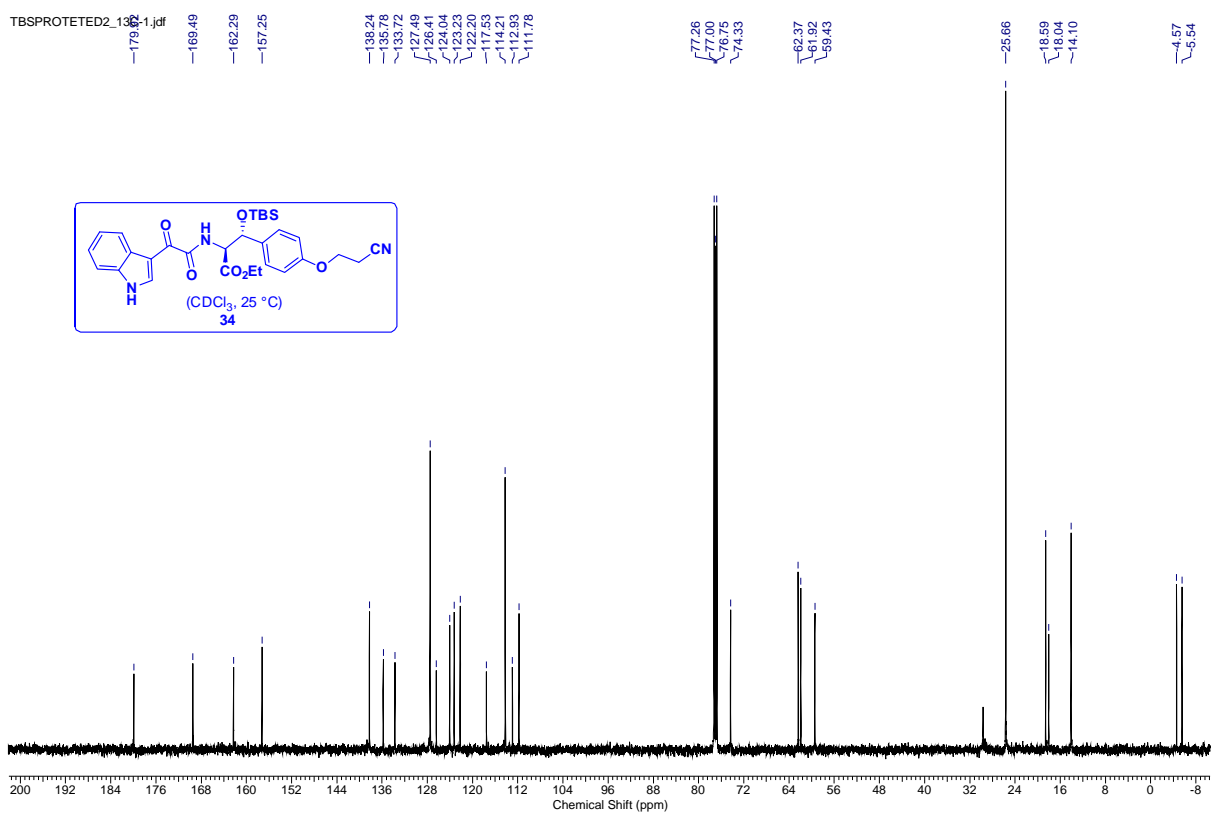
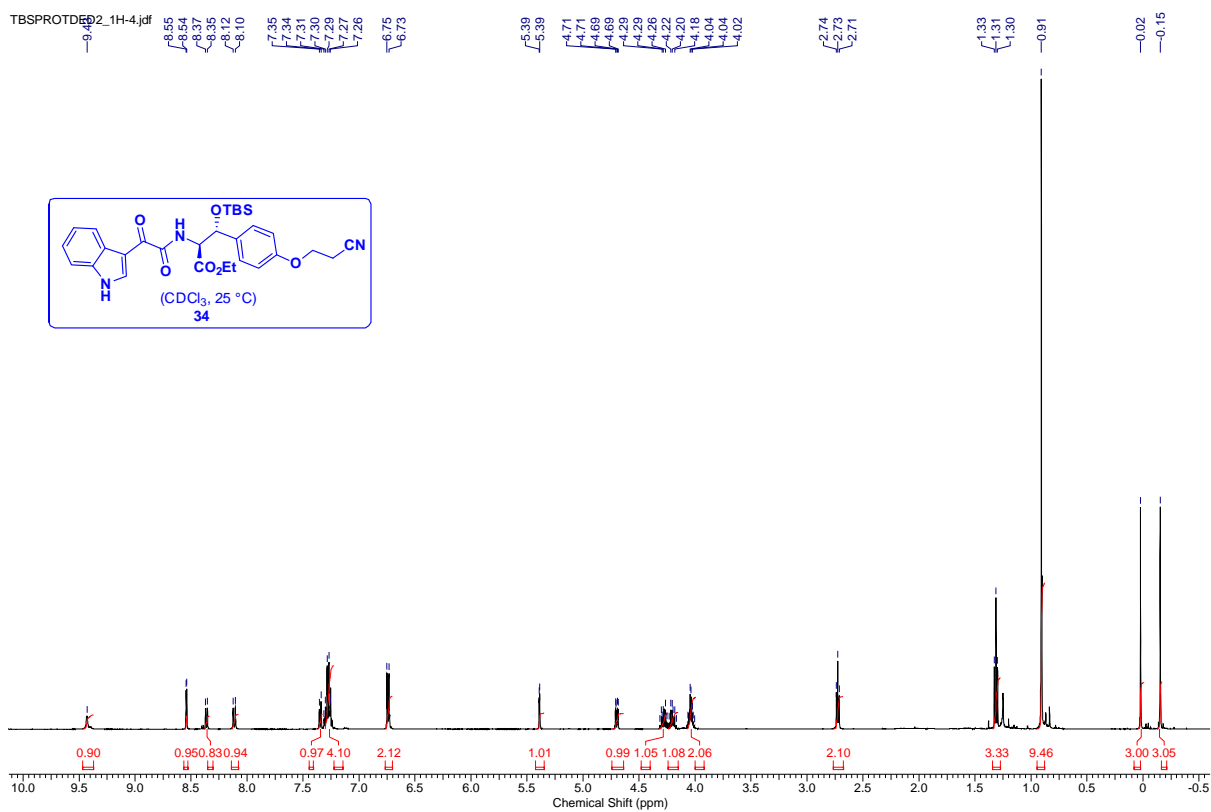
Acquisition Time (sec)	1.3631	Comment	13C	Date	13/05/2011 08:59:50	Frequency (MHz)	100.61
Nucleus	13C	Original Points Count	32768	Points Count	32768	Sweep Width (Hz)	24038.46
Temperature (grad C)	0.000						

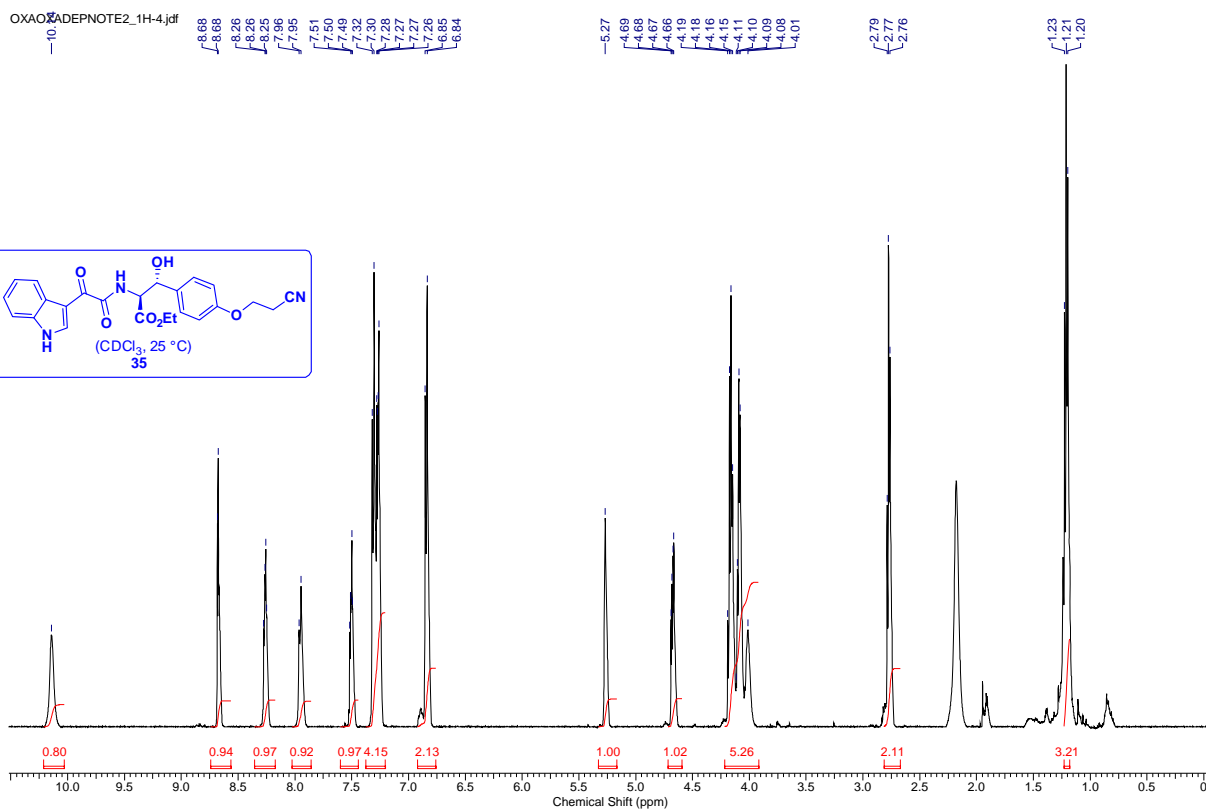
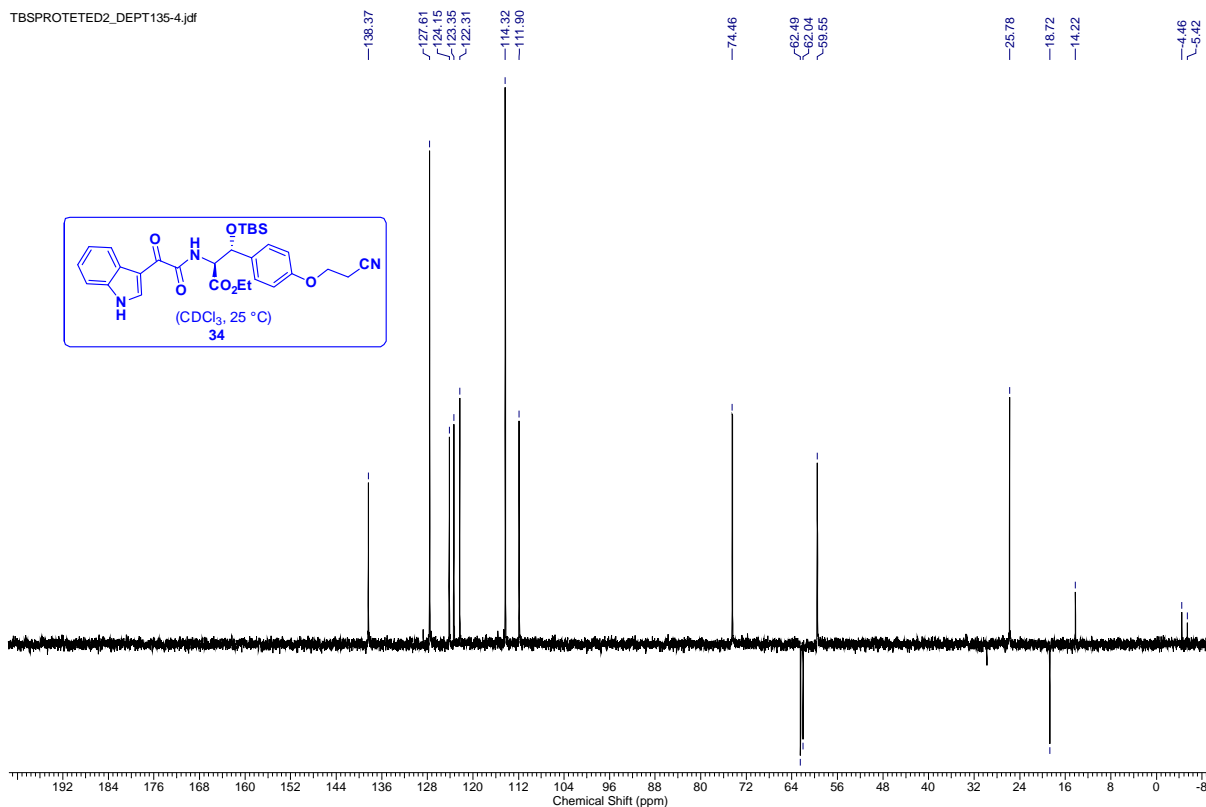


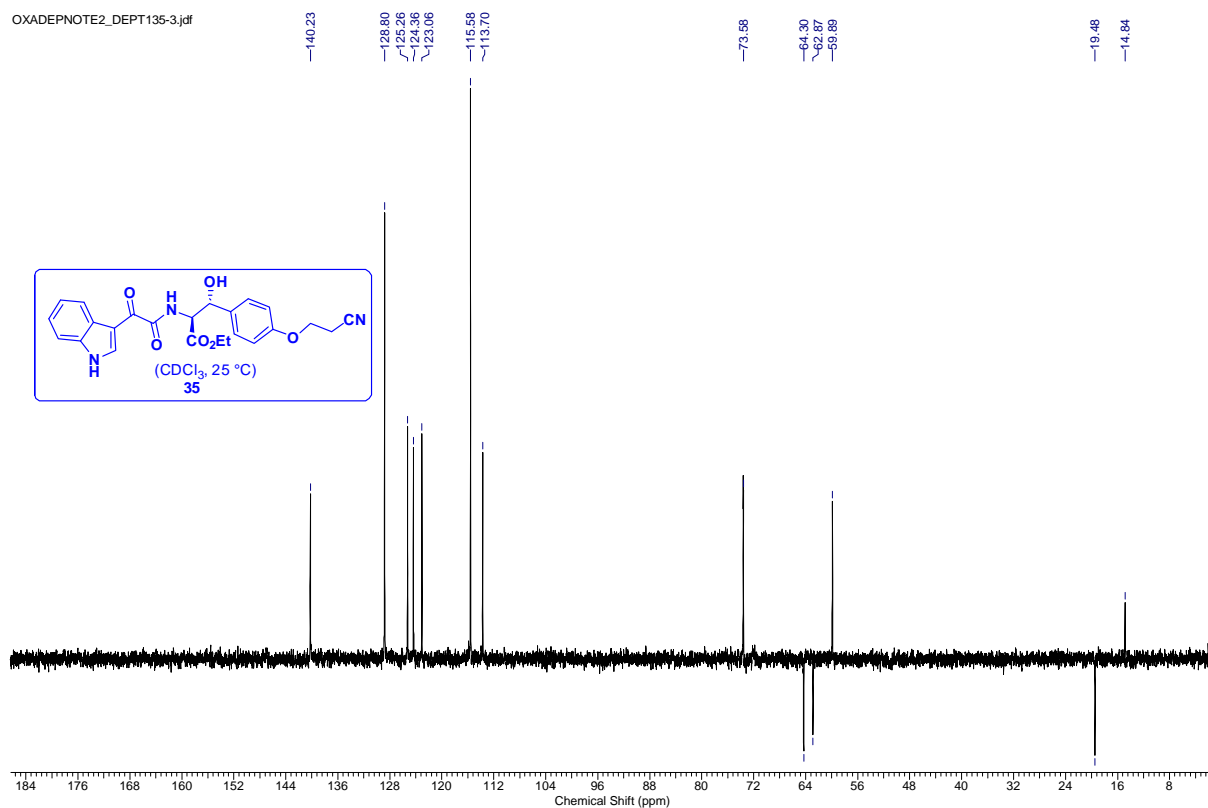
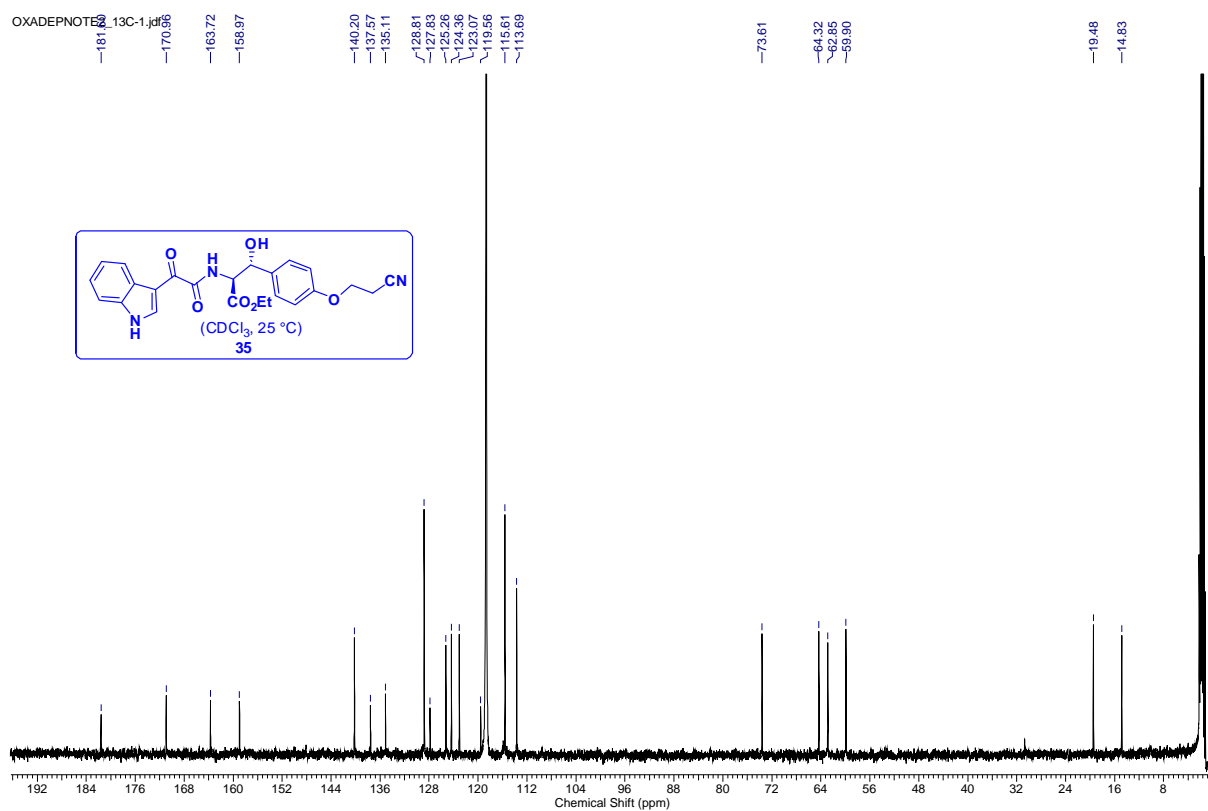
17 May 2011
 Thu2av400#009
 DEPT, side product

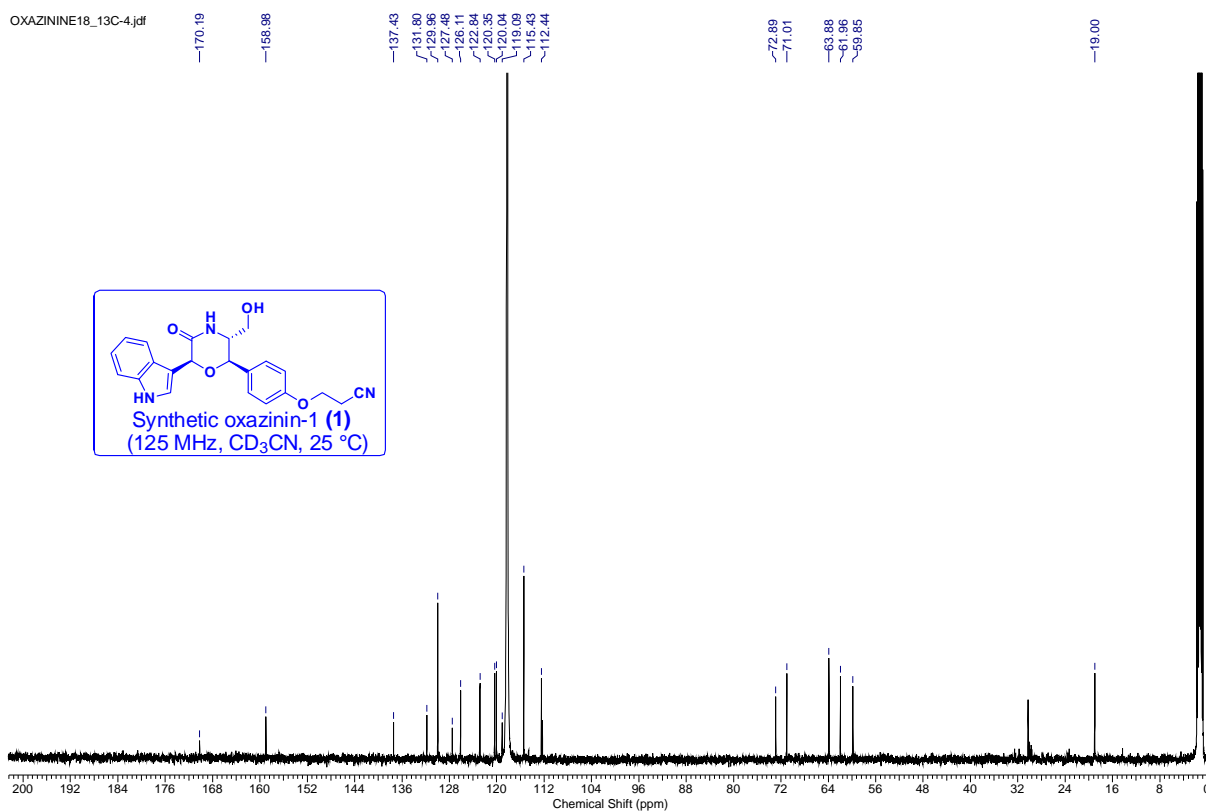
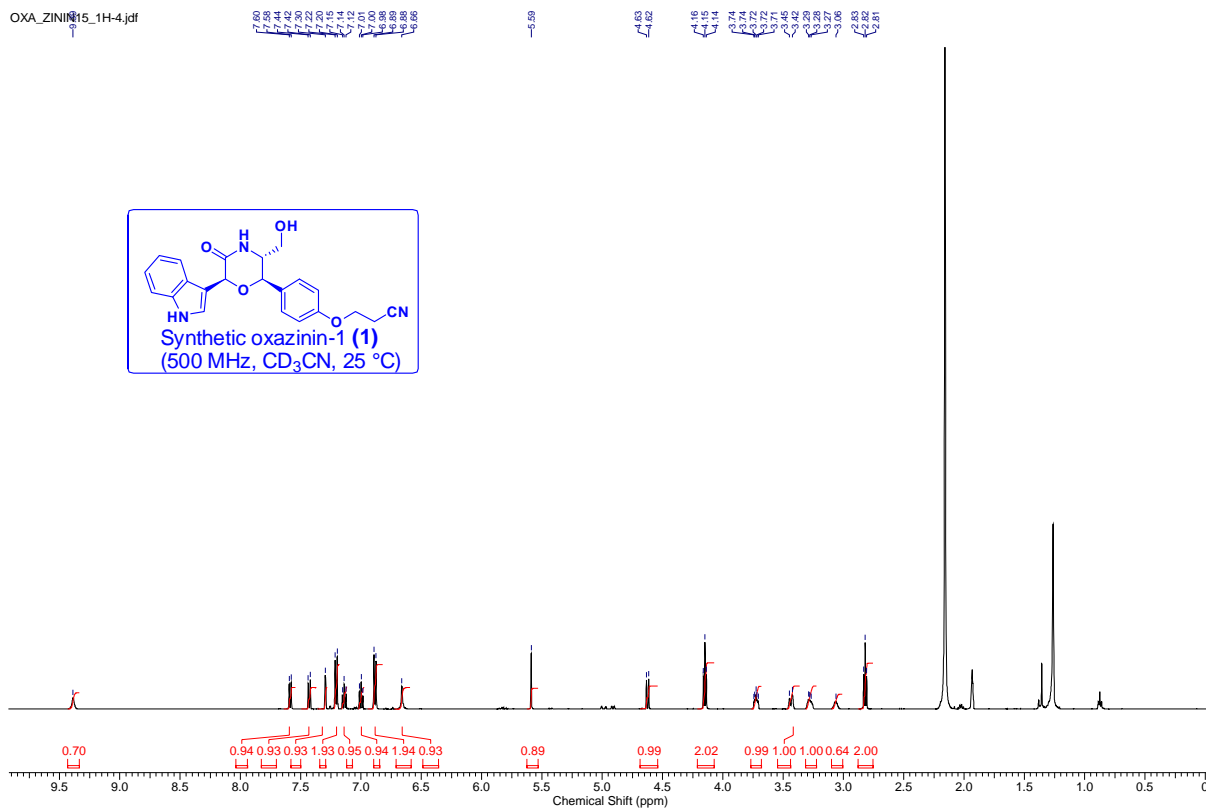
Acquisition Time (sec)	1.3631	Date	13/05/2011 08:57:22	Frequency (MHz)	100.61	Nucleus	13C
Original Points Count	32768	Points Count	32768	Sweep Width (Hz)	24038.46	Temperature (grad C)	0.000

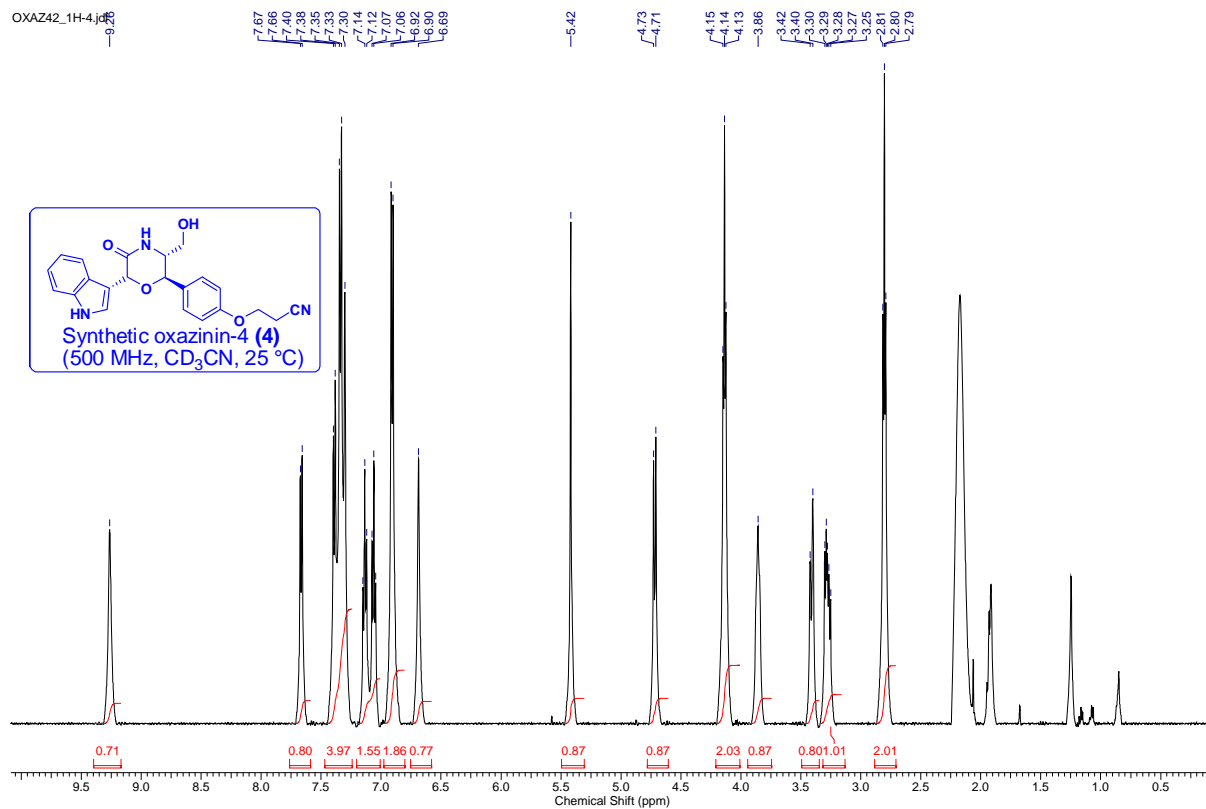
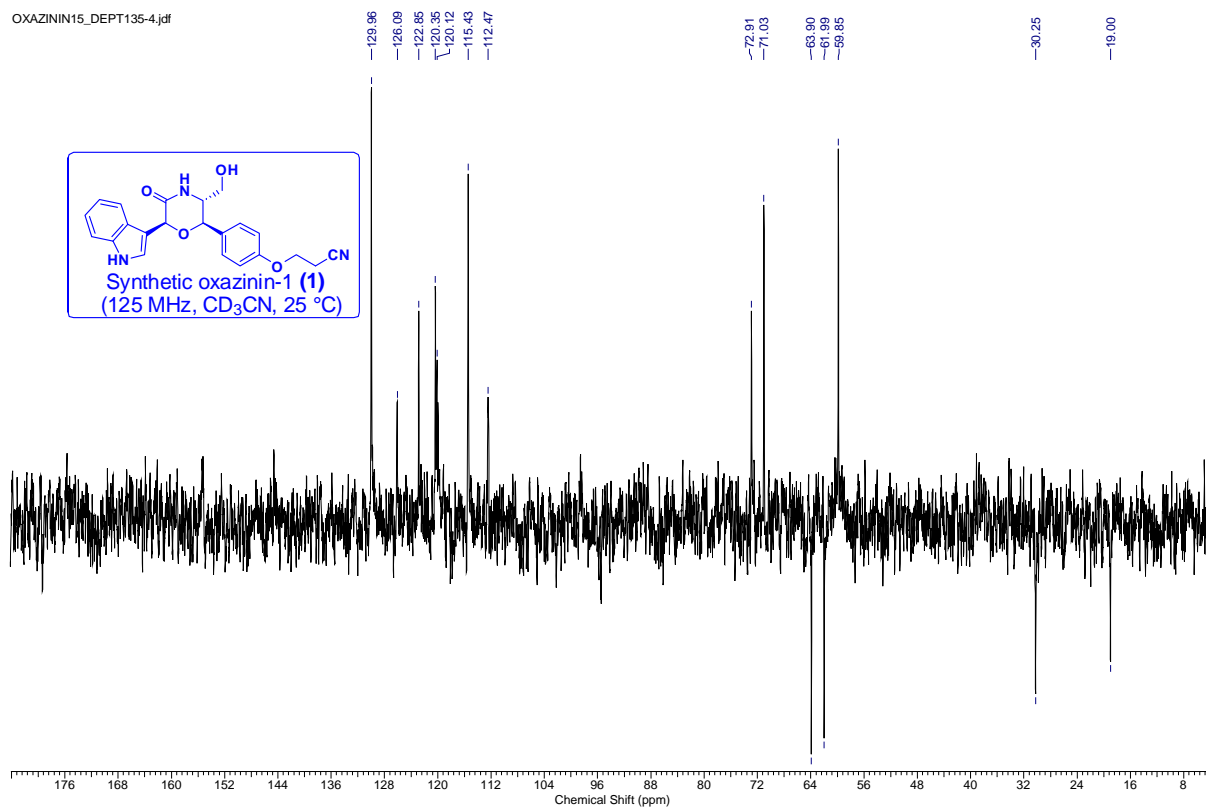


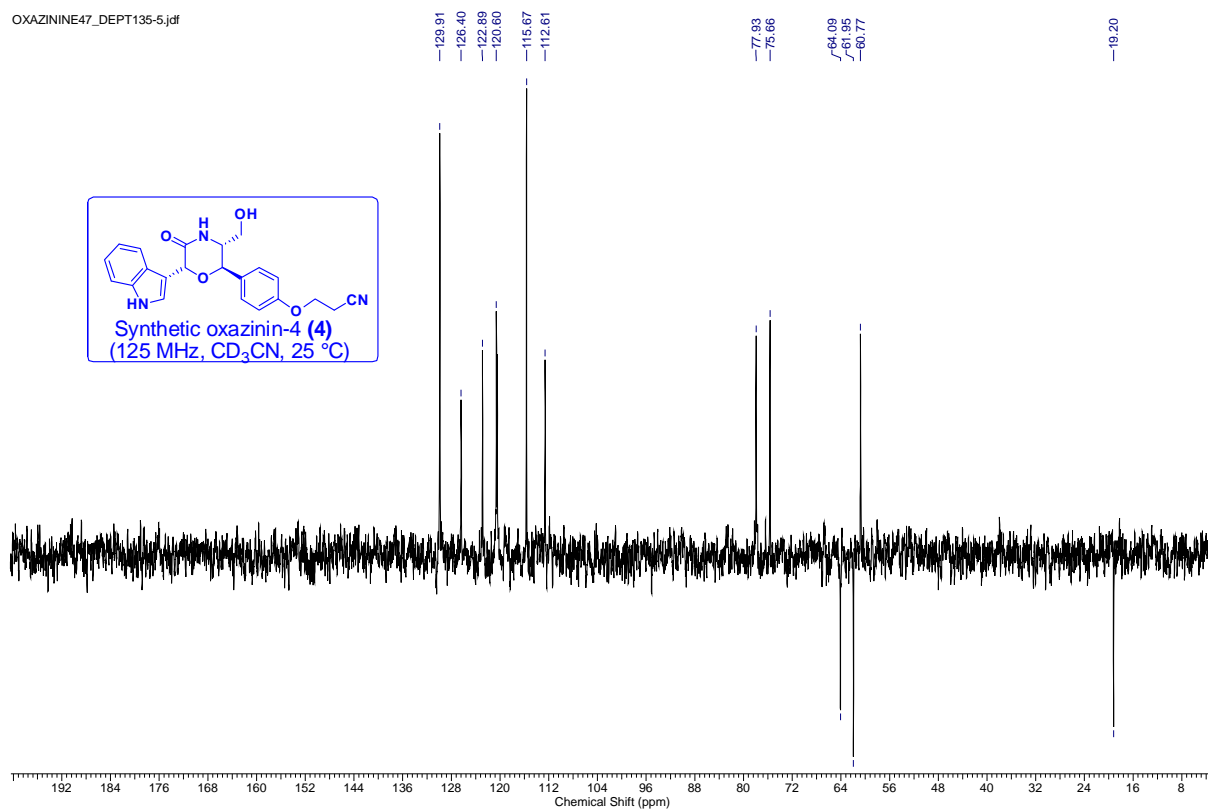
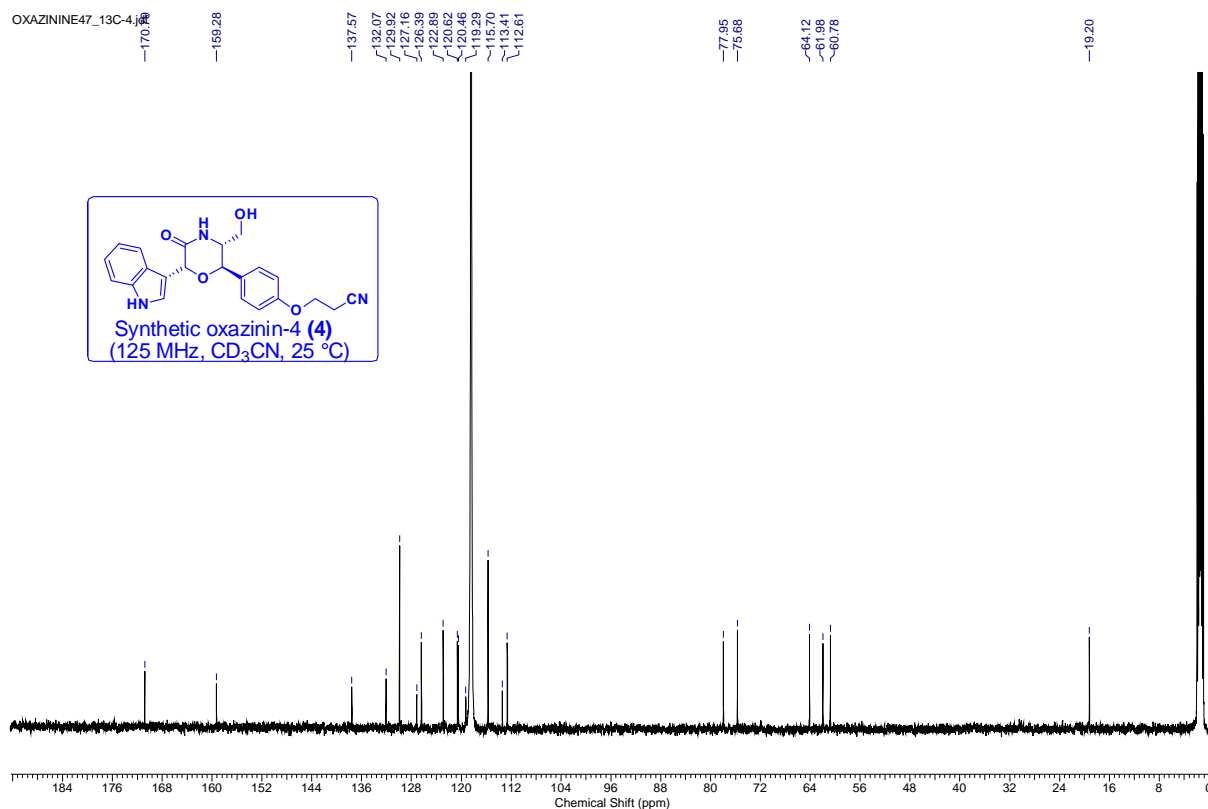


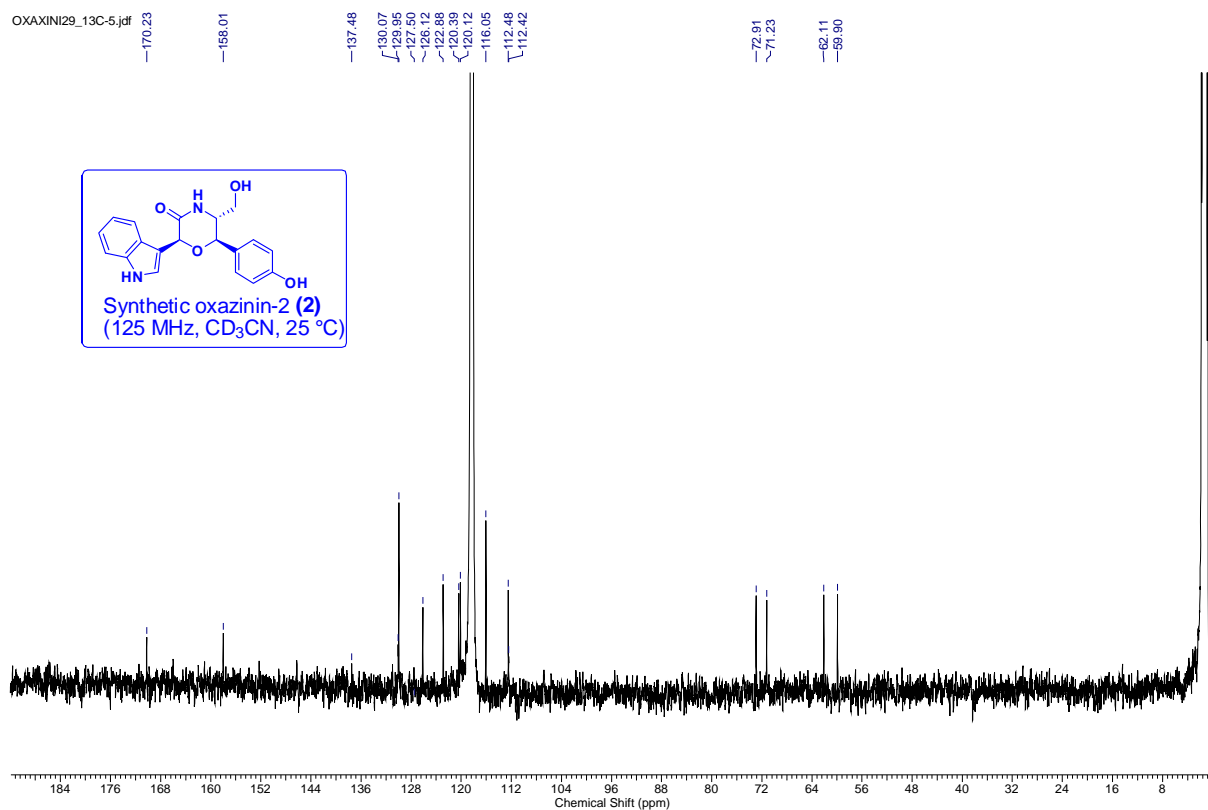
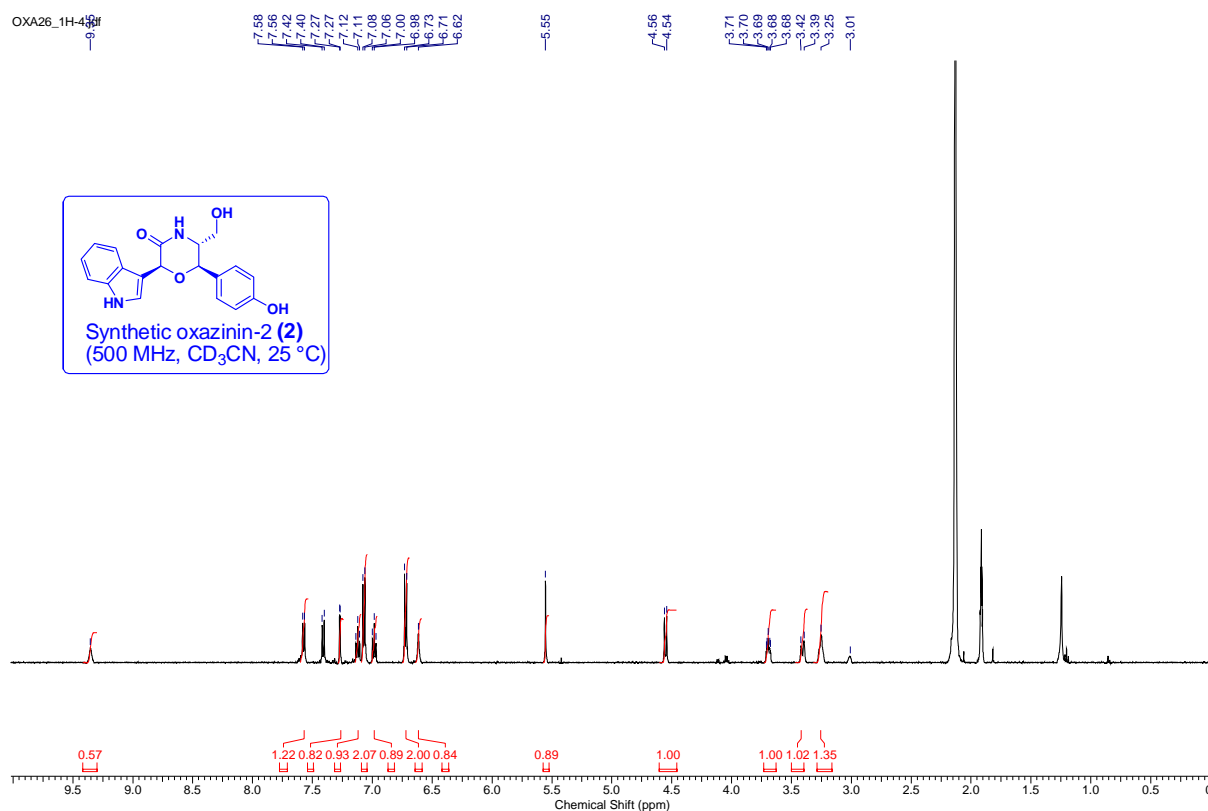




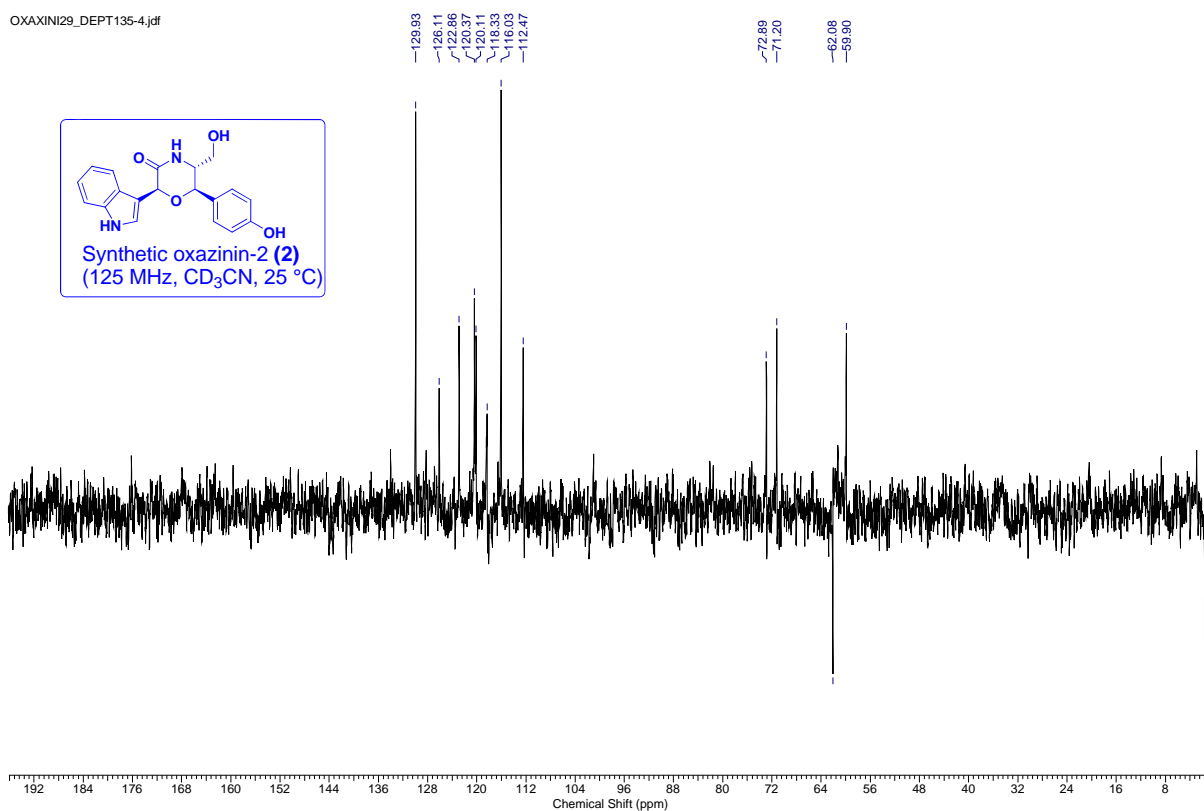




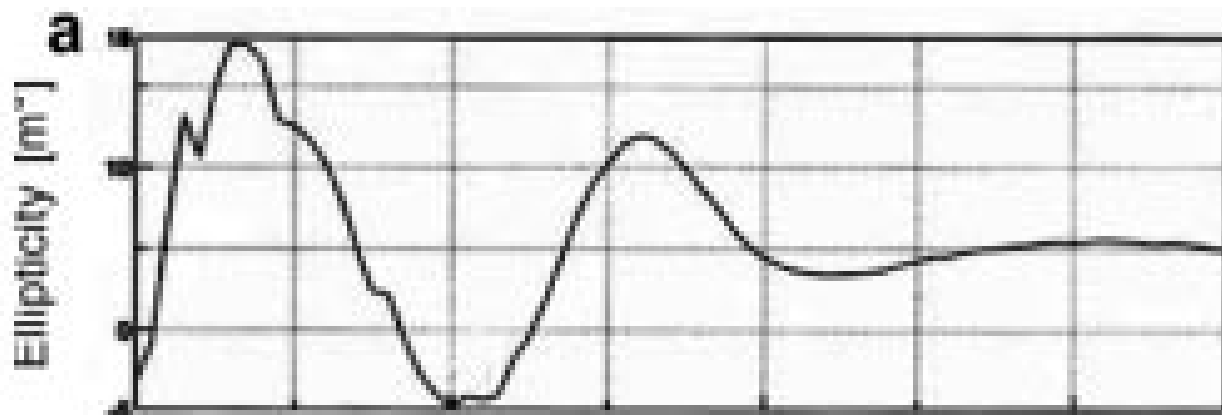




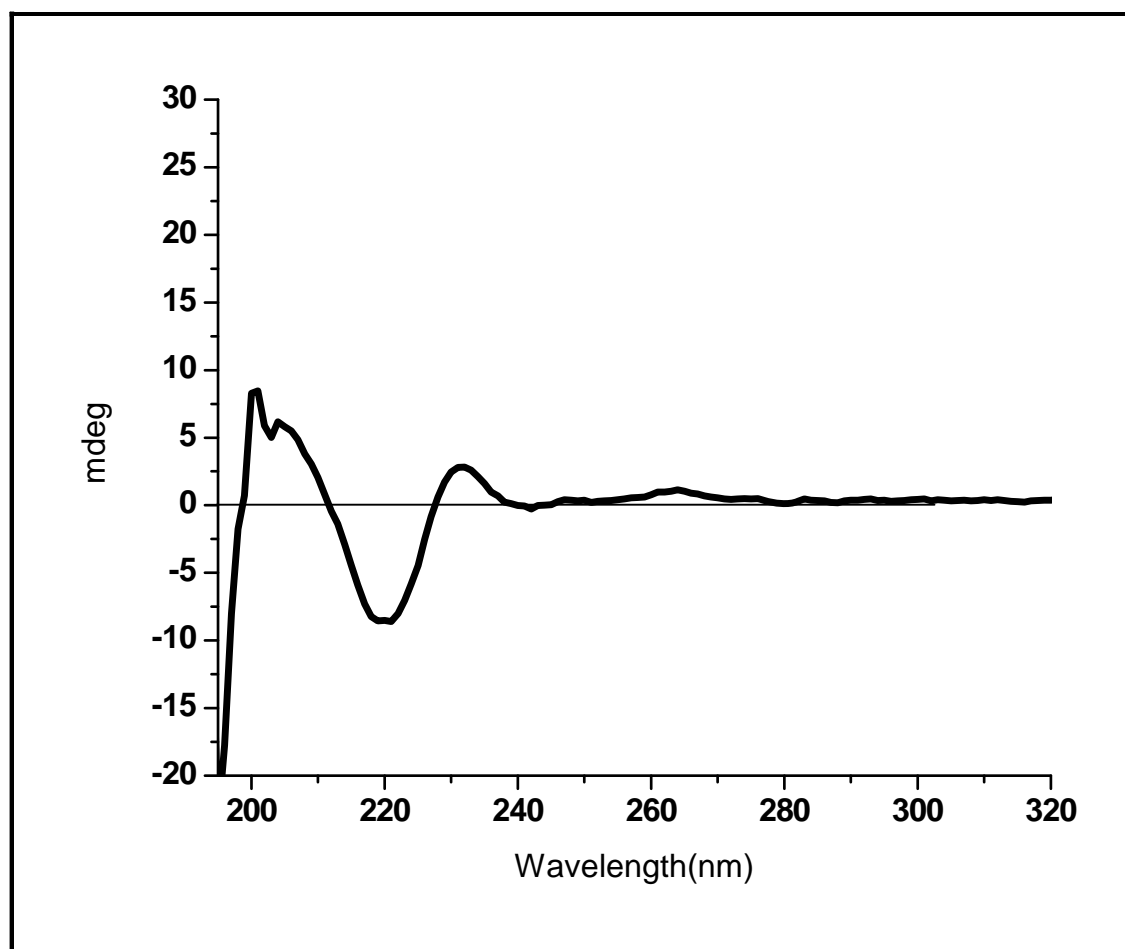
OXAXINI29_DEPT135-4.jdf



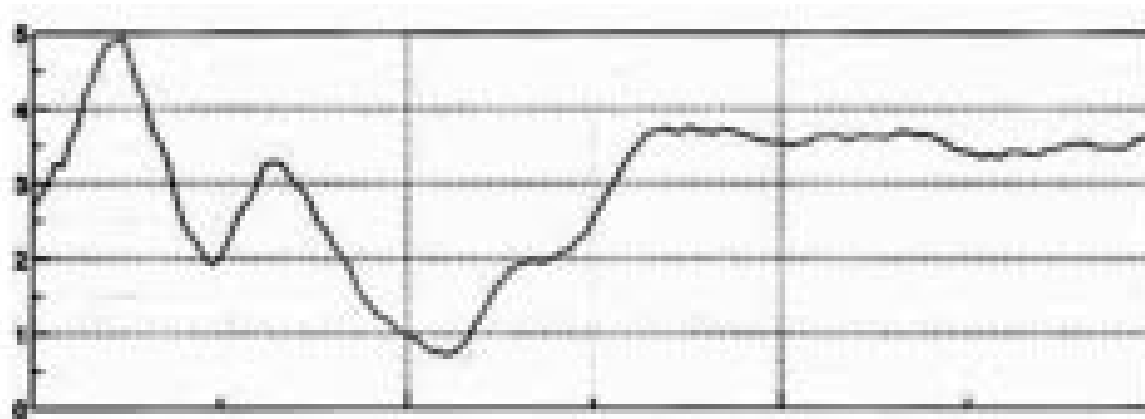
Reported CD Spectra of Natural Oxazinin-5 (5):



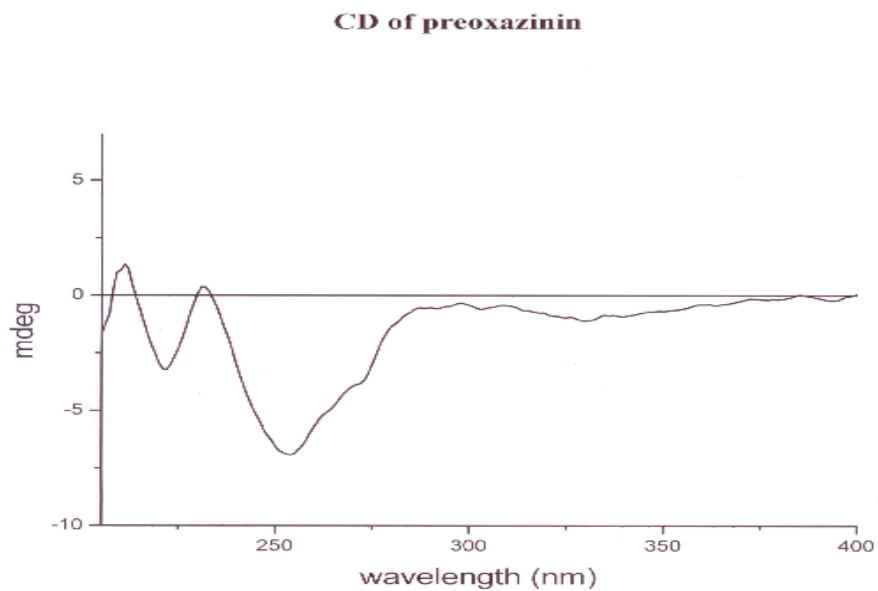
CD Spectra of Synthetic Oxazinin-5 (5):



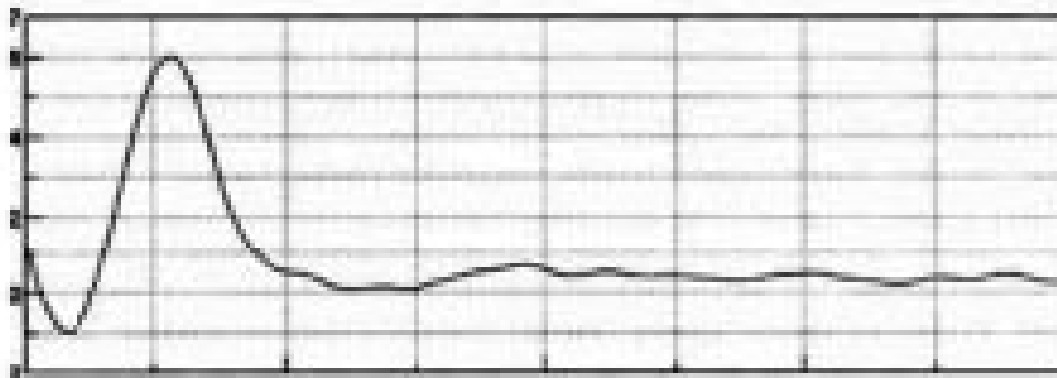
Reported CD spectra of Natural Preoxazinin-7 (7):



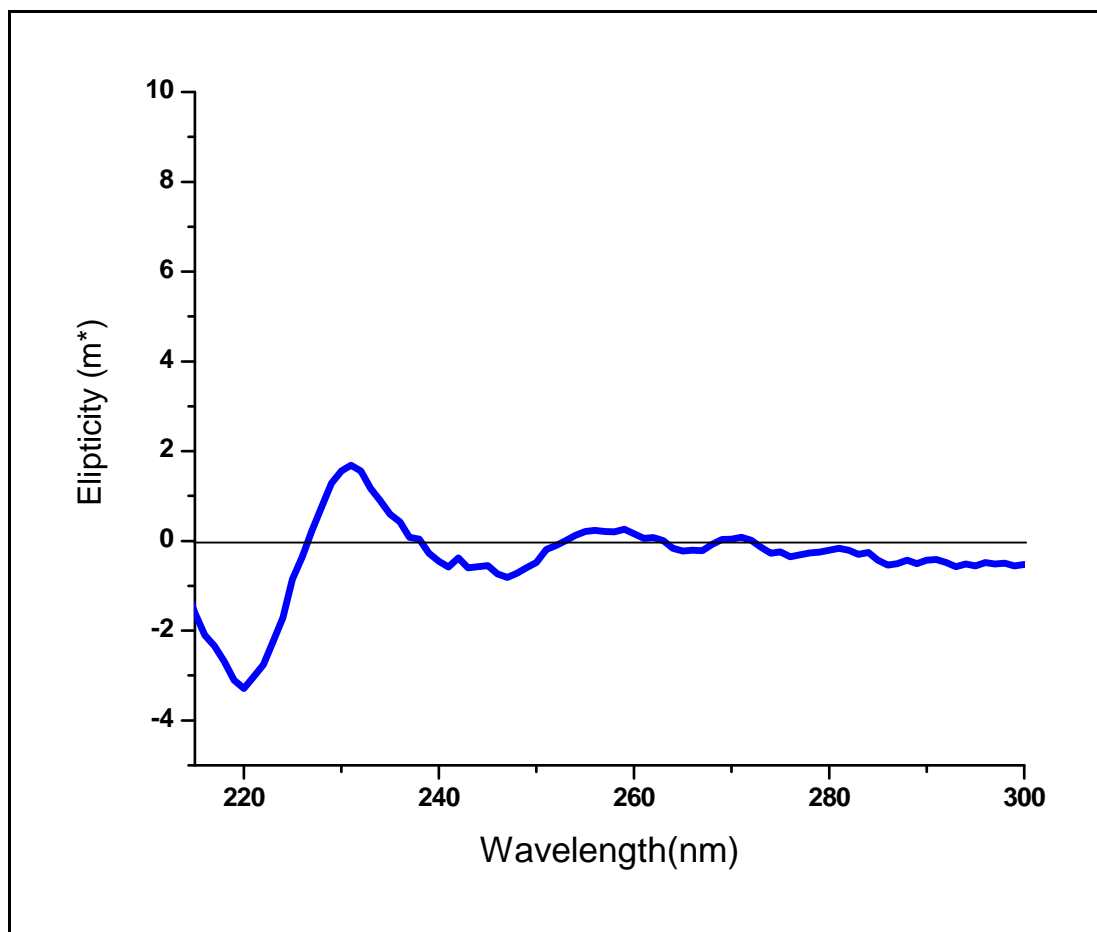
CD spectra of Synthetic Preoxazin -7 (7):



Reported CD spectra of Natural Oxazin-6 (6):

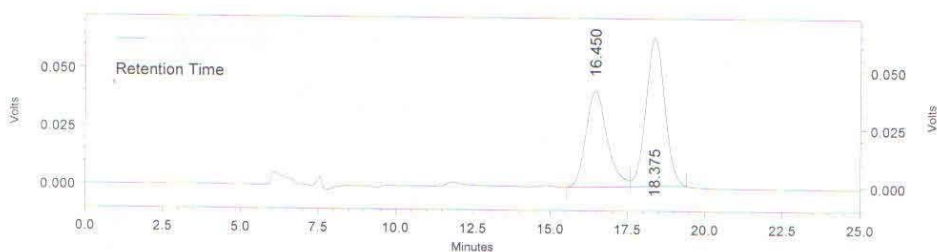


CD Spectra of Synthetic oxazinin-6 (6):



Enantiomeric excess of (2*S*,3*R*)-ethyl 3-(4-(benzyloxy)phenyl)-2-(*tert*-butoxycarbonylamino)-3-hydroxypropanoate (Recemic):

Shimadzu CLASS-VP V6.12 SP5
Method Name: C:\CLASS-VP\Method ch 2.met
Data Name: C:\CLASS-VP\Data\General\AL 1009
User: System
Acquired: 6/7/11 2:18:14 PM
Printed: 6/7/11 5:36:31 PM
Sample Name ALOK AMI - Racemic



Detector A - 1 (230nm)			
	Retention Time	C Area	Area %
	16.450	1975302	41.806
	18.375	2749650	58.194
	Totals	4724952	100.000

Project Leader :Dr.Dethe D.H.
Column :Kromasil 5-CelluCoat (0.46cm X 25cm)
Mobile Phase :IPA:PE (15:85)
Flow Rate : 0.5 ml/min 35kgf
Wavelength : 230nm
Con. : xmg /1.0m
Inject vol. :5uL

Enantiomeric excess of (2*S*,3*R*)-ethyl 3-(4-(benzyloxy)phenyl)-2-(*tert*-butoxycarbonylamino)-3-hydroxypropanoate (21) (Chiral):

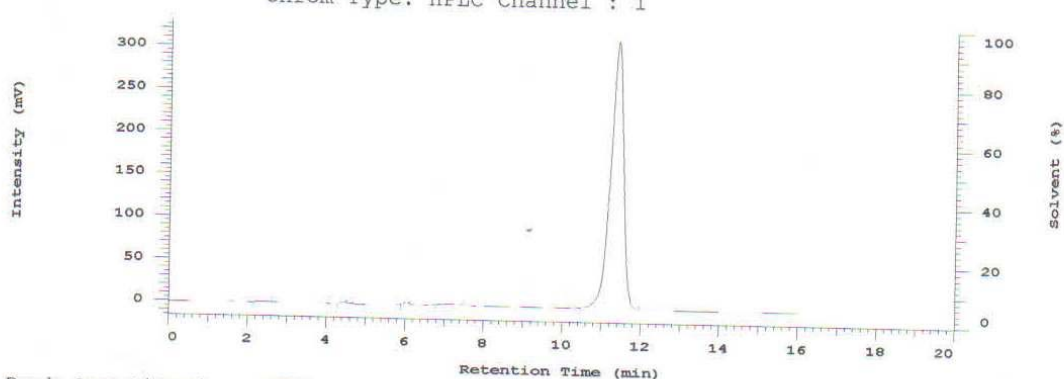
D-7000 HSM: NCLOC Series: 3871 Report: modified System: Sys 1

NATIONAL CHEMICAL LABORATORY
ORGANIC CHEMISTRY TECHNOLOGY

Analyzed: 06/03/11 04:44 PM Reported: 06/03/11 05:08 PM
Data Path: f:\win32app\hsm\NCLOC\DATA\3871\
Processing Method: Lichrosphere RP-18 (250-4) Acquisition Method: Lichrosphere RP-18 (250-4)

System(acquisition): Sys 1 Series:3871
Sample Name: AL-Chiral Vial Number: 2
Injection from vial: 1 of 1 Vial Type: UNK
Volume: 10.0 ul

Chrom Type: HPLC Channel : 1



Peak Quantitation: AREA Calculation Method: AREA%

No.	RT	Height	Area	Area %
1	2.35	320	7066	0.099
2	4.45	2043	15832	0.221
3	6.05	2204	20553	0.287
4	7.19	1139	30778	0.430
5	11.39	312512	7078235	98.962
		318218	7152464	100.000

Peak rejection level: 0

Group Leader :Dr.Dethe D
Column :Grace Denali RP-18 (250 X 4.6mm)
M.P. :A)ACN:H2O (50:50)

Flow Rate :1.0 ml/min (1480 psi)
Sample conc: x mg/ml
Inj vol: 10 UL
WAVELENGTH :230 nm

