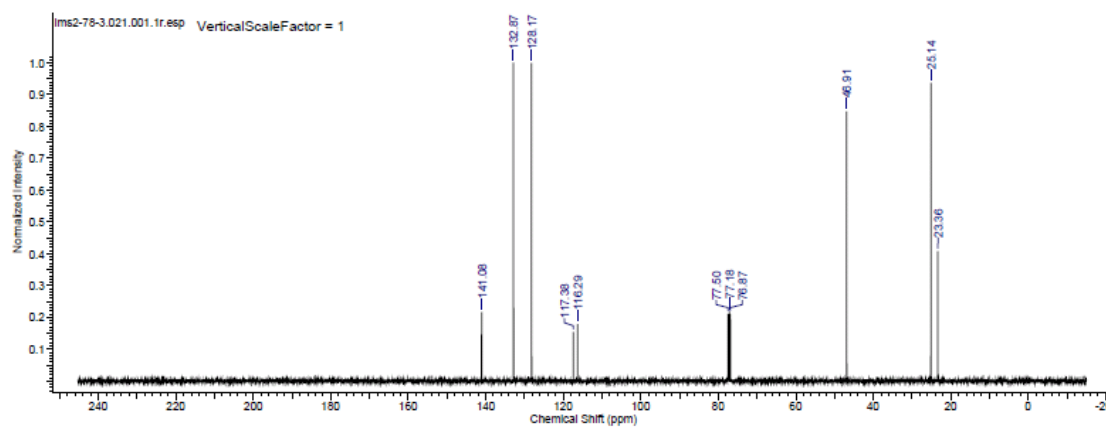
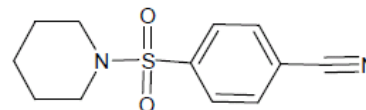
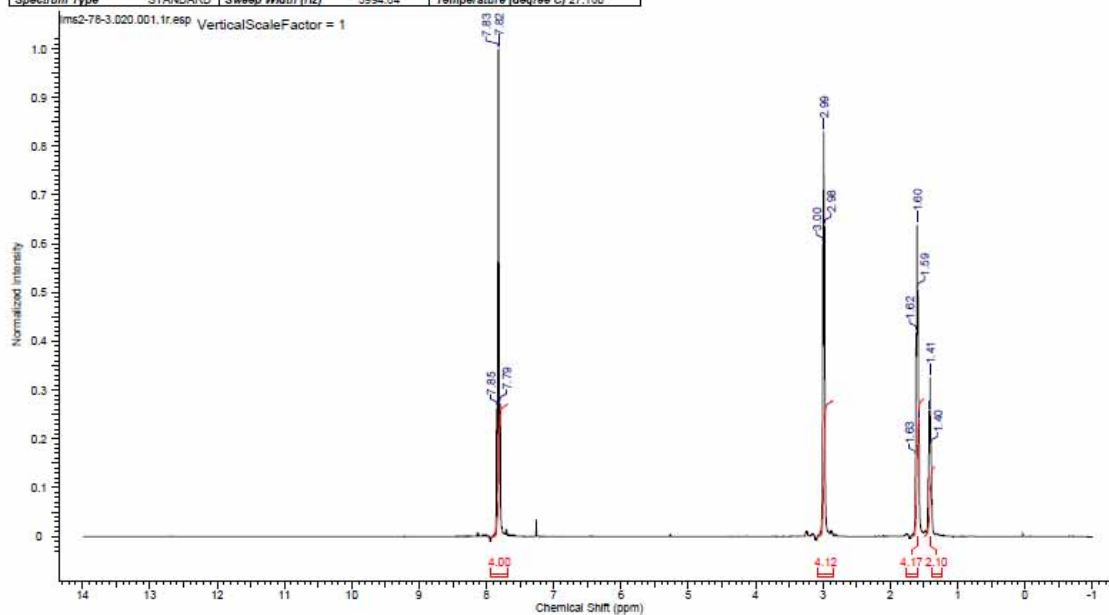


4-(Piperidine-1-sulfonyl)-benzonitrile ^{13}C NMR (400 MHz, CDCl_3) δ ppm 23.36, 25.14, 46.91, 116.29, 117.38, 128.17, 132.87, 141.08.**4-(Piperidine-1-sulfonyl)-benzonitrile**18/05/2010 17:25:38
lms2-78-3

Formula $\text{C}_{14}\text{H}_{18}\text{N}_2\text{O}_2\text{S}$		FW 250.3168	
Acquisition Time (sec)	2.5035	Comment	5 mm Dual 13C/1H Z8245/0021
Date Stamp	12 May 2010 15:06:56	File Name	E:\NMR's table\lms2-78-3\21\PDATA\111r
Nucleus	13C	Origin	dpx400
Points Count	65536	Number of Transients	45
Solvent	CHLOROFORM-d	Pulse Sequence	zq30
Temperature (degree C)	27.160	Receiver Gain	8192.00
		Spectrum Offset (Hz)	11583.0771
		Spectrum Type	STANDARD
		Original Points Count	65536
		SW(cyclical) (Hz)	26178.01
		Owner	autnmr
		Sweep Width (Hz)	26177.61

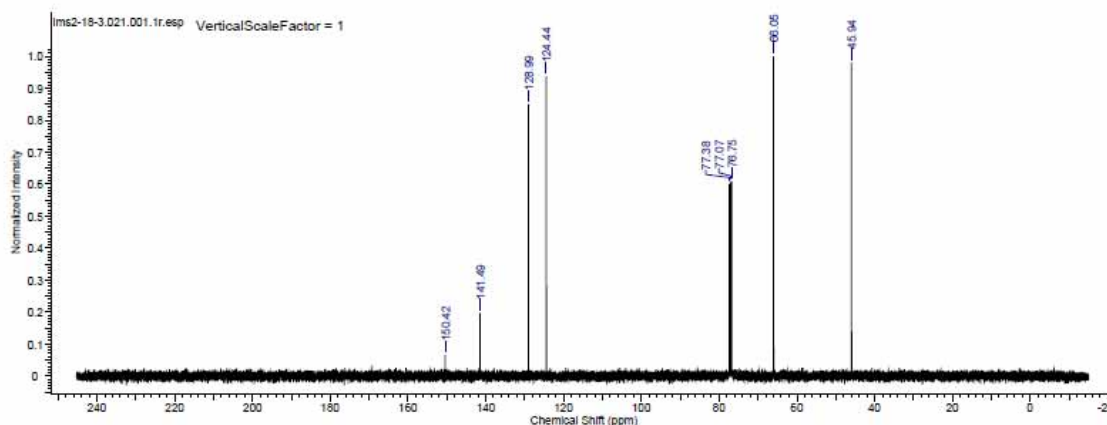
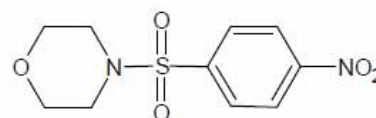
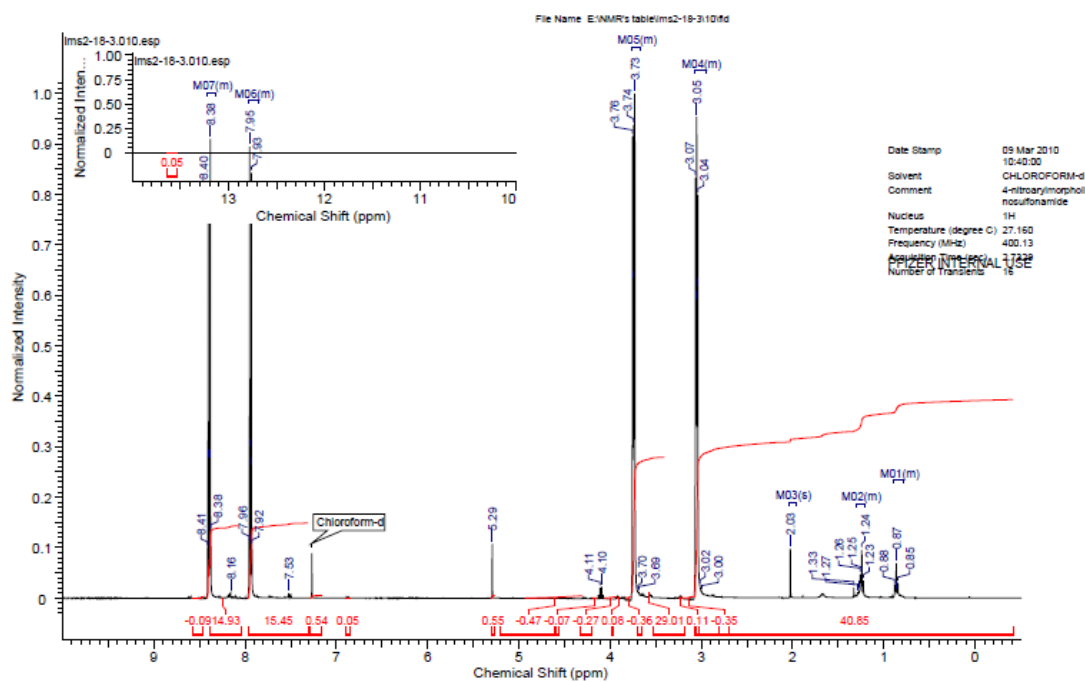
 ^1H NMR (400 MHz, CDCl_3) δ ppm 1.41 (m, 2 H), 1.60 (m, 4 H), 2.99 (m, 4 H), 7.82 (m, 4H).**4-(Piperidine-1-sulfonyl)-benzonitrile**18/05/2010 14:15:57
lms2-78-3

Acquisition Time (sec)	2.7329	Comment	sulfonamide	Date	12 May 2010 15:02:40	Date Stamp	12 May 2010 15:02:40
File Name	E:\NMR's table\lms2-78-3\20\PDATA\111r	Frequency (MHz)	400.13	Nucleus	^1H	Number of Transients	9
Origin	dpx400	Original Points Count	16384	Owner	autnmr	Points Count	16384
Receiver Gain	25.40	SW(cyclical) (Hz)	5995.20	Solvent	CHLOROFORM-d	Pulse Sequence	zq30
Spectrum Type	STANDARD	Sweep Width (Hz)	5994.84	Temperature (degree C)	27.160	Spectrum Offset (Hz)	2598.2322



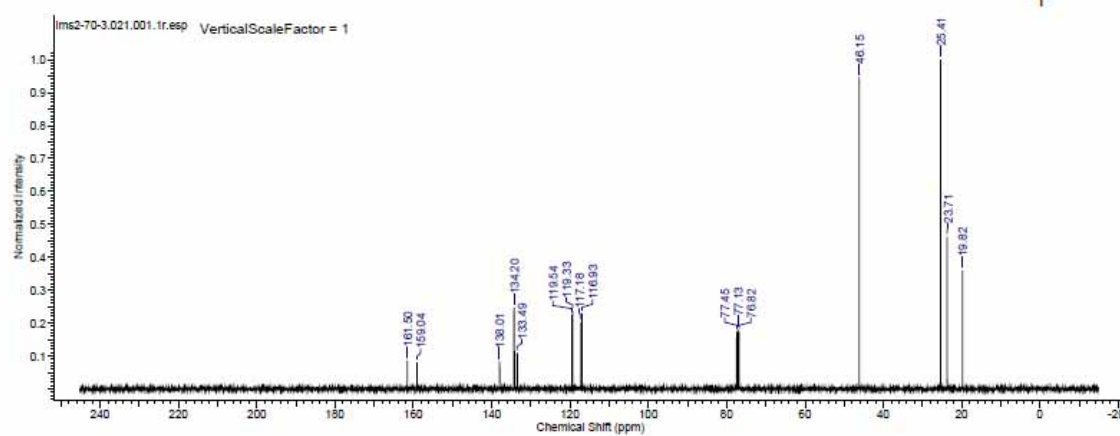
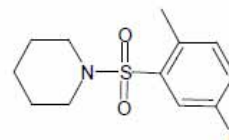
4-(4-Nitro-benzenesulfonyl)-morpholine ^{13}C NMR (400 MHz, CDCl_3) δ ppm 45.94, 66.05, 124.44, 128.99, 141.49, 150.42.**4-(4-Nitro-benzenesulfonyl)-morpholine**18/05/2010 15:16:40
ims2-16-3

Formula C ₁₀ H ₁₀ N ₂ O ₅ S		FW 272.2777	
Acquisition Time (sec)	2.5035	Comment	5 mm Dual 13C/1H Z3246/0021
Date Stamp	12 May 2010 15:44:32	File Name	E:\NMR's table\ims2-16-3\21\PDATA\111r
Nucleus	13C	Origin	dpx400
Pois Count	65536	Original Pois Count	65536
Solvent	CHLOROFORM-d	Receiver Gain	8192.00
Temperature (degree C)	27.160	Spectrum Offset (Hz)	11583.0771
		Spectrum Type	STANDARD
		Sweep Width (Hz)	26177.61

 ^1H NMR (400 MHz, CDCl_3) δ ppm 3.06 (m, 4H), 3.76 (m, 4H), 7.94 (d, $J = 8.78\text{Hz}$, 2 H), 8.40 (d, $J = 8.78\text{ Hz}$, 2 H). ^1H NMR (400 MHz, CHLOROFORM-d) δ ppm 0.78 - 0.90 (m) 1.20 - 1.31 (m) 2.03 (s) 2.95 - 3.07 (m) 3.67 - 3.76 (m) 7.85 - 7.97 (m) 8.32 - 8.42 (m)

1-(5-Fluoro-2-methyl-benzenesulfonyl)-piperidine ^{13}C NMR (400 MHz, CDCl_3) δ ppm 19.82, 23.71, 25.41, 46.15, 116.93, 119.33, 133.49, 134.20, 138.01, 159.04, 161.50.**1-(5-Fluoro-2-methyl-benzenesulfonyl)-piperidine**18/05/2010 15:33:38
lms2-70-3

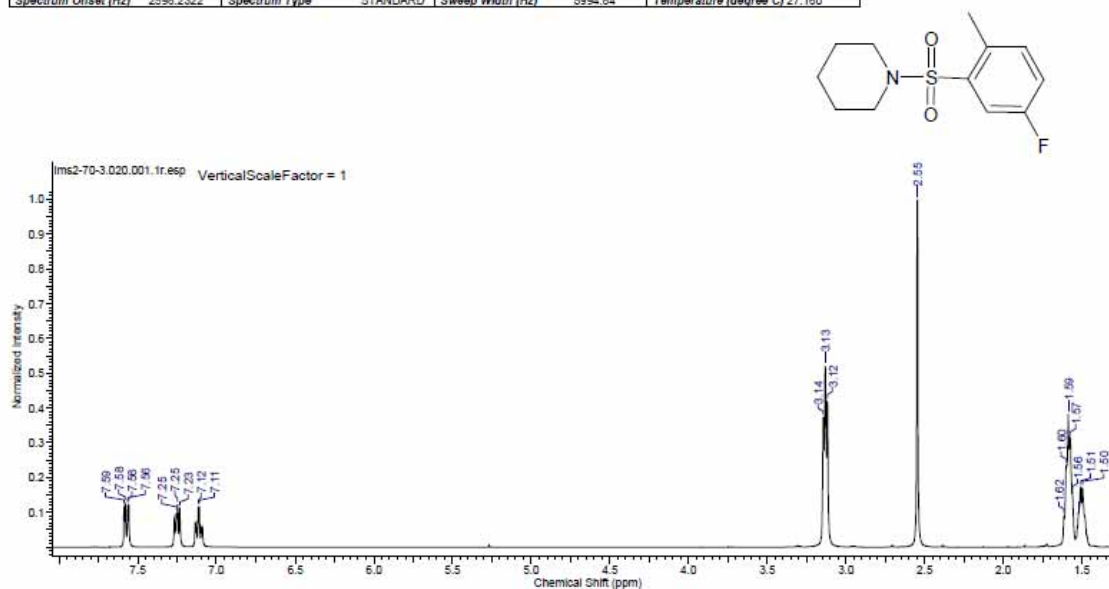
Formula	C ₁₄ H ₁₈ FNO ₂ S	FW	257.3243						
Acquisition Time (sec)	2.5035	Comment	5 mm Dual 13C/1H Z8245/0021	Date	11 May 2010 15:36:06				
Date Stamp	11 May 2010 15:36:06	File Name	E:\NMR's table\lms2-70-3\21\PDATA\11.r	Frequency (MHz)	100.61				
Nucleus	13C	Number of Transients	42	Origin	dpx400	Original Points Count	65536	Owner	autonmr
Points Count	65536	Pulse Sequence	zpgq30	Receiver Gain	8192.00	SW(cyclical) (Hz)	26178.01		
Solvent	CHLOROFORM-d	Spectrum Offset (Hz)	11583.0771	Spectrum Type	STANDARD	Sweep Width (Hz)	26177.61		
Temperature (degree C)	27.160								

 ^1H NMR (400 MHz, CDCl_3) δ ppm 1.51 (m, 2 H), 1.59 (m, 4 H), 2.55 (s, 3H), 3.13 (m, 4 H), 7.12 (m, 1H), 7.25 (m, 1H), 7.57 (m, 1H).

1-(5-Fluoro-2-methyl-benzenesulfonyl)-piperidine

18/05/2010 15:23:45
lms2-70-3

Formula C ₁₁ H ₁₄ FNO ₂ S		FW		257.3243	
Acquisition Time (sec)	2.7329	Comment	sulfonamide pure		
Date Stamp	11 May 2010 18:36:00	File Name	E:\NMR's table\lms2-70-3\20\PDATA\111r		
Nucleus	¹ H	Number of Transients	13	Origin	dpx400
Points Count	16384	Pulse Sequence	zq30	Receiver Gain	22.60
Spectrum Offset (Hz)	2598.2322	Spectrum Type	STANDARD	Sweep Width (Hz)	5994.84
				Temperature (degree C)	27.160
				Frequency (MHz)	400.13
				Original Points Count	16384
				Owner	autonmr
				Solvent	CHLOROFORM-d



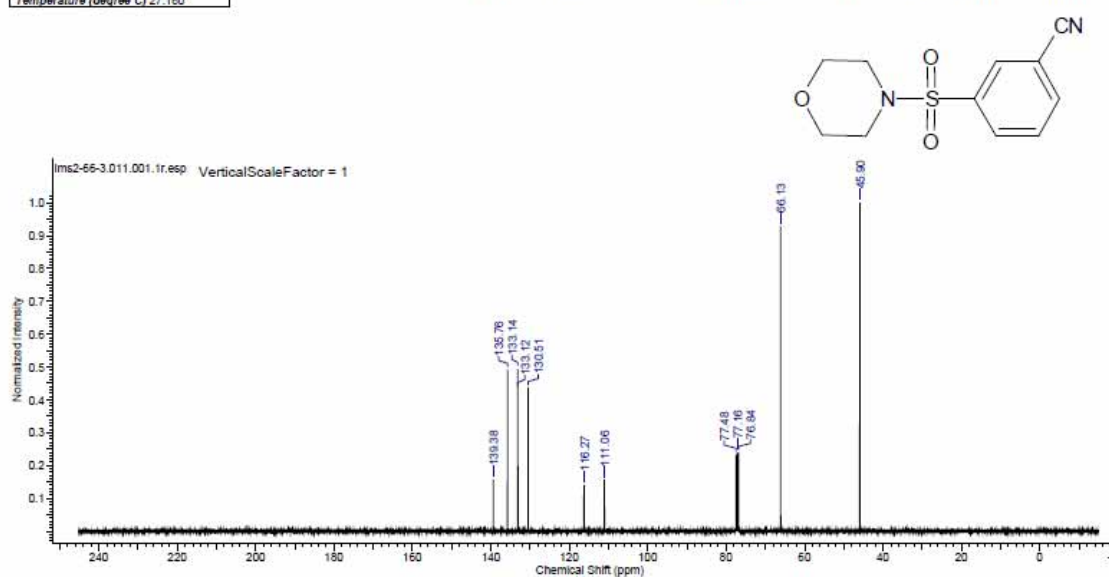
3-(Morpholine-4-sulfonyl)-benzotrile

¹³C NMR (400 MHz, CDCl₃) δ ppm 45.90, 66.13, 111.06, 116.27, 130.51, 133.12, 133.14, 135.76, 139.38.

3-(Morpholine-4-sulfonyl)-benzotrile

18/05/2010 15:43:58
lms2-66-3

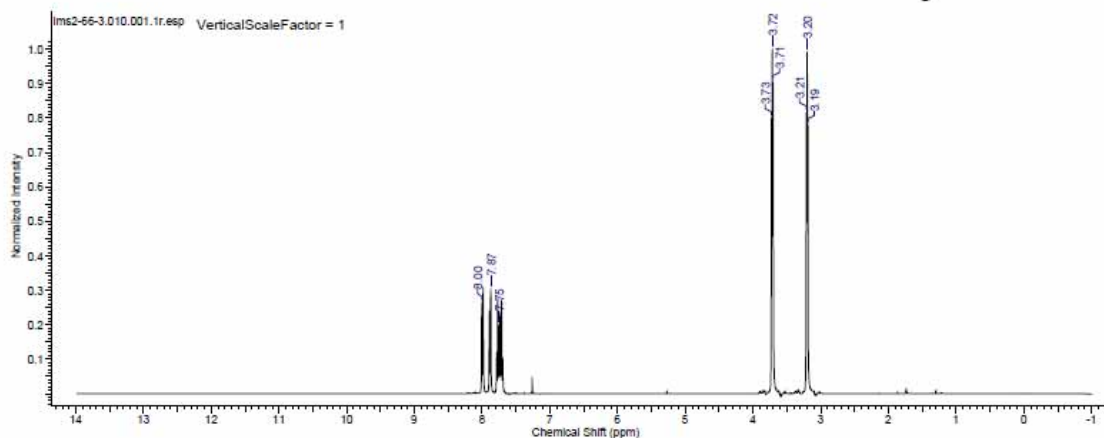
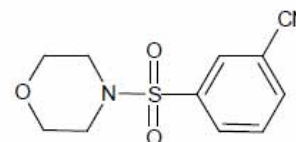
Formula C ₁₁ H ₁₀ N ₂ O ₂ S		FW		252.2896	
Acquisition Time (sec)	2.5035	Comment	5 mm Dual 13C/1H Z8246/D021		
Date Stamp	12 May 2010 19:03:44	File Name	E:\NMR's table\lms2-66-3\11\PDATA\111r		
Nucleus	¹³ C	Number of Transients	45	Origin	dpx400
Points Count	65536	Pulse Sequence	zopq30	Receiver Gain	8192.00
Spectrum Offset (Hz)		Spectrum Type	STANDARD	Sweep Width (Hz)	26177.61
				Temperature (degree C)	27.160
				Frequency (MHz)	100.61
				Original Points Count	65536
				Owner	autonmr
				Solvent	CHLOROFORM-d

¹H NMR (400 MHz, CDCl₃) δ ppm 3.20 (m, 4H), 3.72 (m, 4H), 7.75 (m, 1 H), 7.88 (m, 1 H), 7.99 (m, 1H).

3-(Morpholine-4-sulfonyl)-benzonitrile

18/05/2010 15:41:53
lms2-66-3

Formula	C ₁₁ H ₁₀ N ₂ O ₂ S	FW	252.2896
Acquisition Time (sec)	2.7329	Comment	sulfonamide
Date Stamp	12 May 2010 18:59:28	Date	12 May 2010 18:59:28
File Name	E:\NMR's table\lms2-66-3\10\PDATA\111r	Frequency (MHz)	400.13
Origin	dpx400	Original Points Count	16384
Receiver Gain	35.90	SW (cycles)	5995.20
Spectrum Type	STANDARD	Sweep Width (Hz)	5994.84
		Temperature (degree C)	27.160



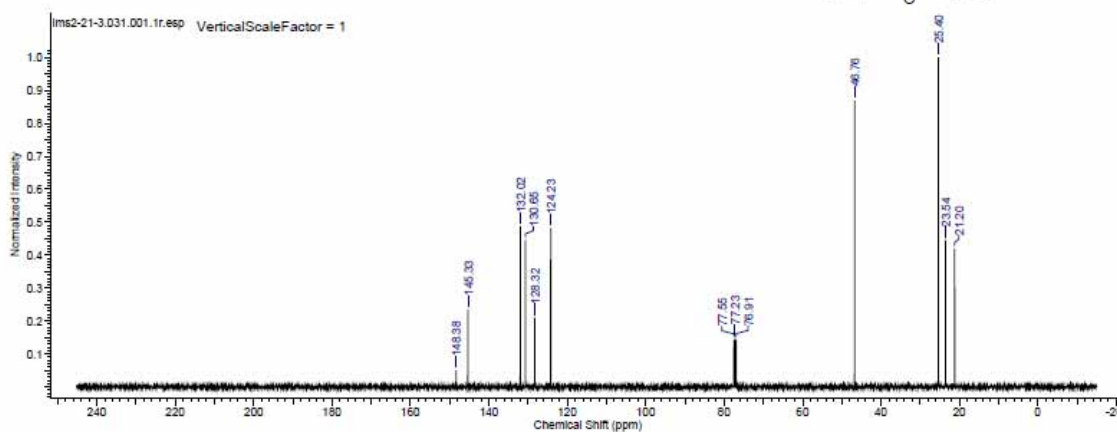
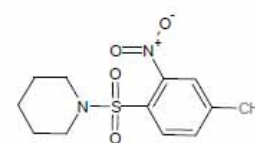
1-(4-Methyl-2-nitro-benzenesulfonyl)-piperidine

¹³C NMR (400 MHz, CDCl₃) δ ppm 21.20, 23.54, 25.40, 46.76, 124.23, 128.32, 130.65, 132.02, 145.33, 148.38.

1-(4-Methyl-2-nitro-benzenesulfonyl)-piperidine

18/05/2010 15:59:09
lms2-21-3

Formula	C ₁₃ H ₁₄ N ₂ O ₄ S	FW	284.3314
Acquisition Time (sec)	2.5035	Comment	S mm Dual 13C/1H Z3246/0021
Date Stamp	12 May 2010 18:55:12	Date	12 May 2010 18:55:12
File Name	E:\NMR's table\lms2-21-3\31\PDATA\111r	Frequency (MHz)	100.61
Nucleus	13C	Number of Transients	45
Origin	dpx400	Original Points Count	65536
Receiver Gain	8192.00	SW (cycles)	26178.01
Points Count	65536	Pulse Sequence	zpgq30
Solvent	CHLOROFORM-d	Spectrum Offset (Hz)	11583.0771
Temperature (degree C)	27.160	Spectrum Type	STANDARD
		Sweep Width (Hz)	26177.61



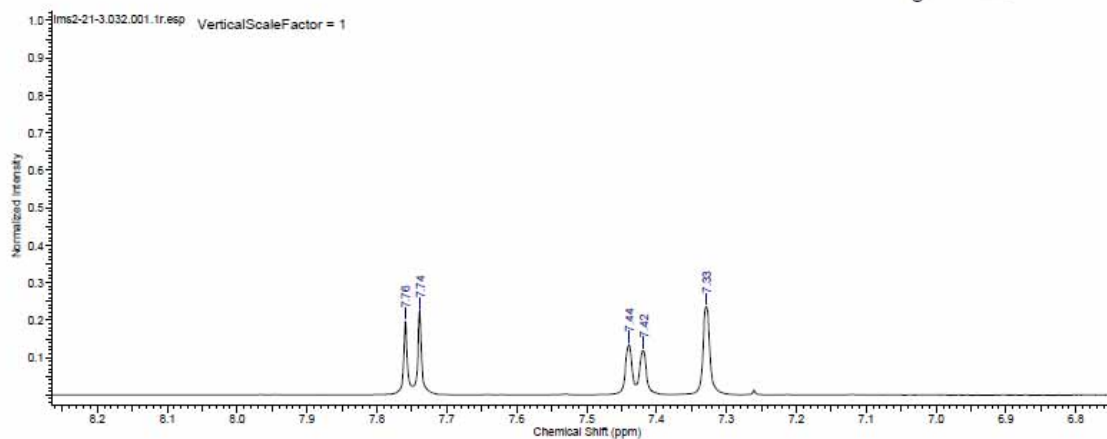
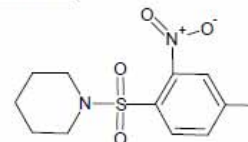
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^1H NMR (400 MHz, CDCl_3) δ ppm 1.47 (m, 2 H), 1.58 (m, 4 H), 2.43 (s, 3H), 3.17 (m, 4 H), 7.33 (s, 1H), 7.43 (d, $J = 8.42$ Hz, 1H), 7.75 (d, $J = 8.42$ Hz, 1H).

1-(4-Methyl-2-nitro-benzenesulfonyl)-piperidine

18/05/2010 16:52:46
lms2-21-3

Formula	C	H	N	O	S	FW	284.3314
Acquisition Time (sec)	2.7329		Comment	5 mm Dual 13C/1H Z8246/0021		Date	12 May 2010 18:55:12
Date Stamp	12 May 2010 18:55:12		File Name	E:\NMR's table\lms2-21-3\2\pdata\111r		Frequency (MHz)	400.13
Nucleus	1H		Number of Transients	7		Origin	dpx400
Points Count	16384		Pulse Sequence	zg30		Original Points Count	16384
Spectrum Offset (Hz)	2598.2322		Receiver Gain	16.00		SW (cyclical) (Hz)	5995.20
Spectrum Type	STANDARD		Sweep Width (Hz)	5994.84		Temperature (degree C)	27.160
Owner	autonmr						
Solvent	CHLOROFORM-d						



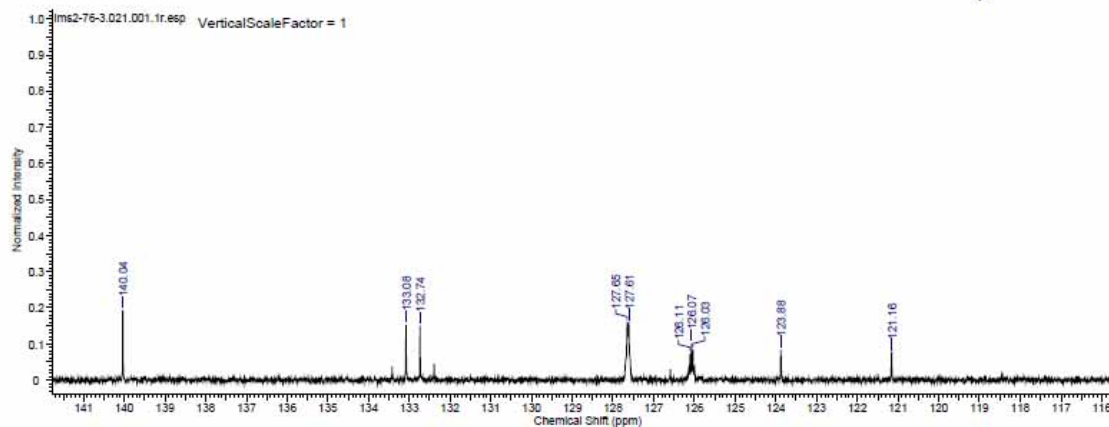
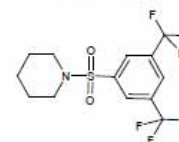
1-(3,5-Bis-trifluoromethyl-benzenesulfonyl)-piperidine

^{13}C NMR (400 MHz, CDCl_3) δ ppm 23.29, 25.12, 46.87, 122.53 (q, $J = 34.35$, CF_3), 126.07, 127.62, 132.93 (q, $J = 273.62$, C-CF_3), 140.04.

1-(3,5-Bis-trifluoromethyl-benzenesulfonyl)-piperidine

18/05/2010 16:21:35
ims2-76-3

Formula C ₁₁ H ₁₄ F ₆ NO ₂ S		FW 361.3032	
Acquisition Time (sec)	2.5035	Comment	sulfonamide
Date	11 May 2010 12:48:16	Date Stamp	11 May 2010 12:48:16
File Name	E:\NMR's table\ims2-76-3\21\PCDATA\111r	Frequency (MHz)	100.61
Origin	dp400	Original Points Count	65536
Owner	autonmr	Nucleus	13C
Points Count	65536	Pulse Sequence	zgpg30
Receiver Gain	8192.00	SW(cyclical) (Hz)	26178.01
Solvent	CHLOROFORM-d	Spectrum Offset (Hz)	11583.0771
Spectrum Type	STANDARD	Sweep Width (Hz)	26177.61
Temperature (degree C)	27.160		

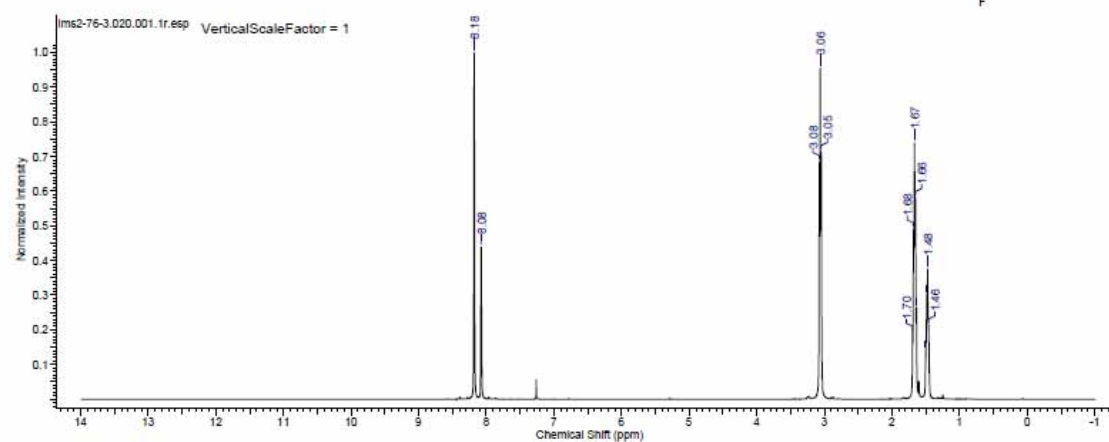
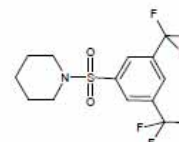


¹H NMR (400 MHz, CDCl₃) δ ppm 1.48 (m, 2 H), 1.67 (m, 4 H), 3.06 (m, 4 H), 8.08 (s, 1H), 8.18 (s, 2H).

1-(3,5-Bis-trifluoromethyl-benzenesulfonyl)-piperidine

18/05/2010 16:23:09
ims2-76-3

Formula C ₁₁ H ₁₄ F ₆ NO ₂ S		FW 361.3032	
Acquisition Time (sec)	2.7329	Comment	sulfonamide
Date	11 May 2010 12:44:00	Date Stamp	11 May 2010 12:44:00
File Name	E:\NMR's table\ims2-76-3\20\PCDATA\111r	Frequency (MHz)	400.13
Origin	dp400	Original Points Count	16384
Owner	autonmr	Nucleus	1H
Points Count	16384	Pulse Sequence	zg30
Receiver Gain	50.80	SW(cyclical) (Hz)	5995.20
Solvent	CHLOROFORM-d	Spectrum Offset (Hz)	2598.2322
Spectrum Type	STANDARD	Sweep Width (Hz)	5994.84
Temperature (degree C)	27.160		



1-(3-Ethynyl-benzenesulfonyl)-piperidine

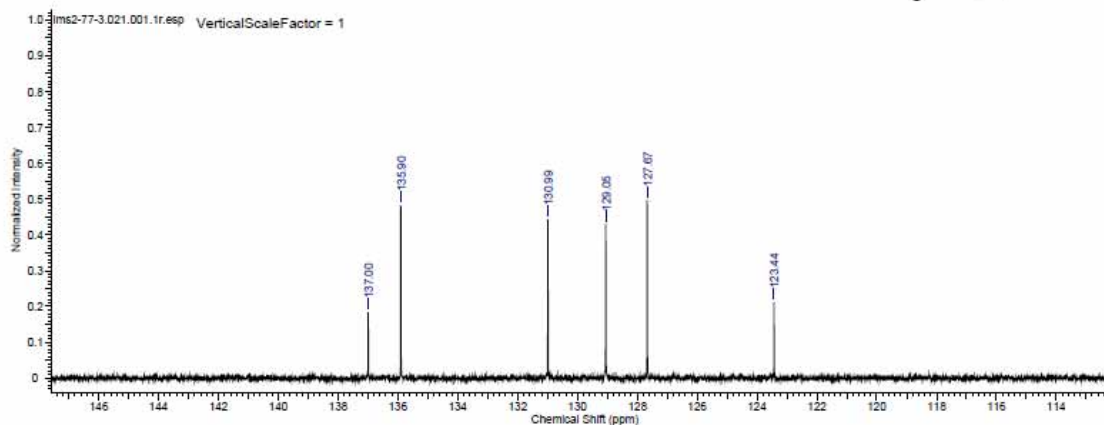
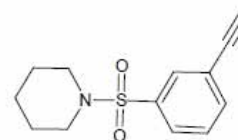
This journal is (c) The Royal Society of Chemistry 2010

 ^{13}C NMR (400 MHz, CDCl_3) δ ppm 23.46, 25.17, 46.96, 79.48, 81.86, 123.44, 127.67, 129.05, 130.99, 135.90, 137.00.

1-(3-Ethynyl-benzenesulfonyl)-piperidine

18/05/2010 16:32:04
ims2-77-3

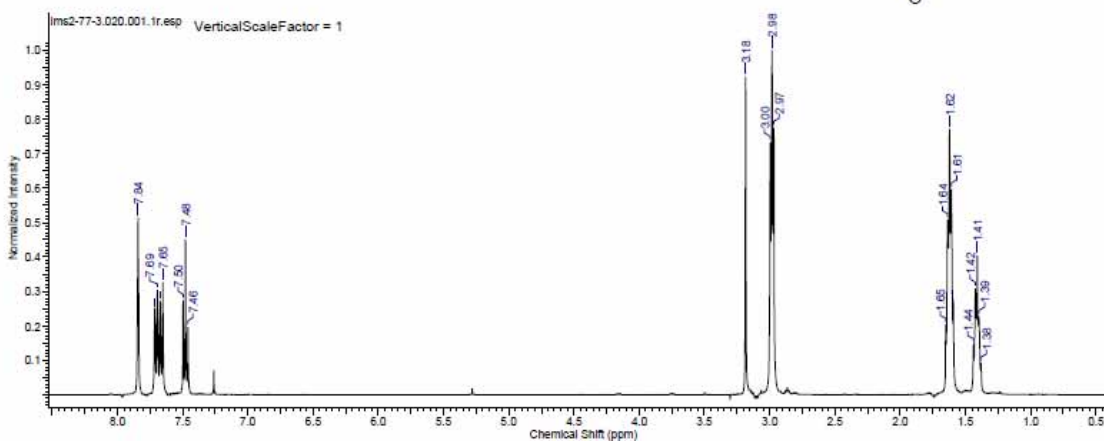
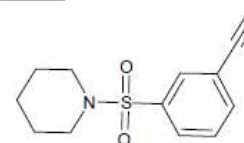
Formula C ₁₄ H ₁₇ NO ₂ S		FW 249.3267			
Acquisition Time (sec)	2.5035	Comment	5 mm Dual 13C/1H ZS245/0021	Date	12 May 2010 14:58:24
Date Stamp	12 May 2010 14:58:24	File Name	E:\NMR's table\ims2-77-3\21\PDATA\111r	Frequency (MHz)	100.61
Nucleus	13C	Number of Transients	43	Origin	dpx400
Points Count	65536	Pulse Sequence	zqzq30	Original Points Count	65536
Solvent	CHLOROFORM-d	Receiver Gain	8192.00	SW(cyclical) (Hz)	26178.01
Temperature (degree C)	27.160	Spectrum Offset (Hz)	11583.0771	Spectrum Type	STANDARD
				Sweep Width (Hz)	26177.61

 ^1H NMR (400 MHz, CDCl_3) δ ppm 1.41 (m, 2 H), 1.62 (m, 4H), 2.98 (m, 4H), 3.18(s, 1H), 7.48 (m, 1H), 7.68 (m, 1H), 7.84(s, 1H).

1-(3-Ethynyl-benzenesulfonyl)-piperidine

18/05/2010 16:34:19
ims2-77-3

Formula C ₁₄ H ₁₇ NO ₂ S		FW 249.3267			
Acquisition Time (sec)	2.7329	Comment	sulfonamide pure	Date	12 May 2010 14:56:16
Date Stamp	12 May 2010 14:56:16	File Name	E:\NMR's table\ims2-77-3\20\PDATA\111r	Frequency (MHz)	400.13
Nucleus	1H	Number of Transients	12	Origin	dpx400
Points Count	16384	Pulse Sequence	zqz30	Original Points Count	16384
Spectrum Offset (Hz)	2598.2322	Receiver Gain	50.80	SW(cyclical) (Hz)	5995.20
		Spectrum Type	STANDARD	Solvent	CHLOROFORM-d
				Temperature (degree C)	27.160

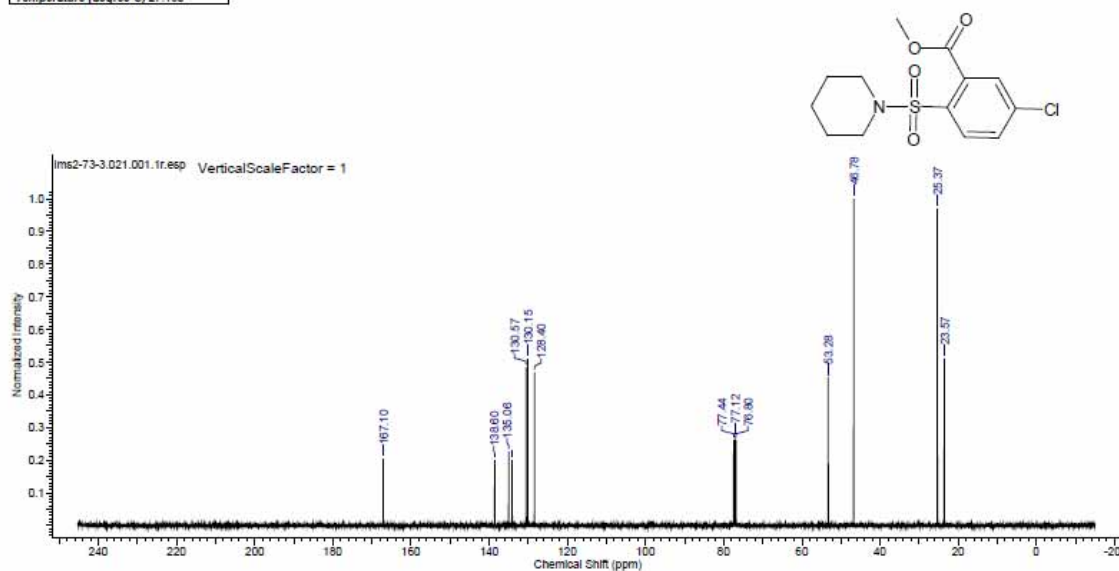


5-Chloro-2-(piperidine-1-sulfonyl)-benzoic acid methyl ester

^{13}C NMR (400 MHz, CDCl_3) δ ppm 23.57, 25.37, 46.78, 53.28, 128.40, 130.15, 130.57, 134.11, 135.06, 138.60, 167.10.

5-Chloro-2-(piperidine-1-sulfonyl)-benzoic acid methyl ester18/05/2010 16:40:21
ims2-73-3

Formula C ₁₇ H ₁₉ ClNO ₃ S		FW 317.7884	
Acquisition Time (sec)	2.5035	Comment	5 mm Dual 13C/1H ZS246/0021
Date Stamp	11 May 2010 12:56:45	File Name	E:\NMR's table\ims2-73-3\21\PDATA\111r
Nucleus	^{13}C	Origin	gpc400
Points Count	65536	Original Points Count	65536
Solvent	CHLOROFORM-d	Receiver Gain	8192.00
Temperature (degree C)	27.160	Spectrum Offset (Hz)	11583.0771
		Spectrum Type	STANDARD
		Frequency (MHz)	100.61
		Owner	autonmr
		Sweep Width (Hz)	26177.61

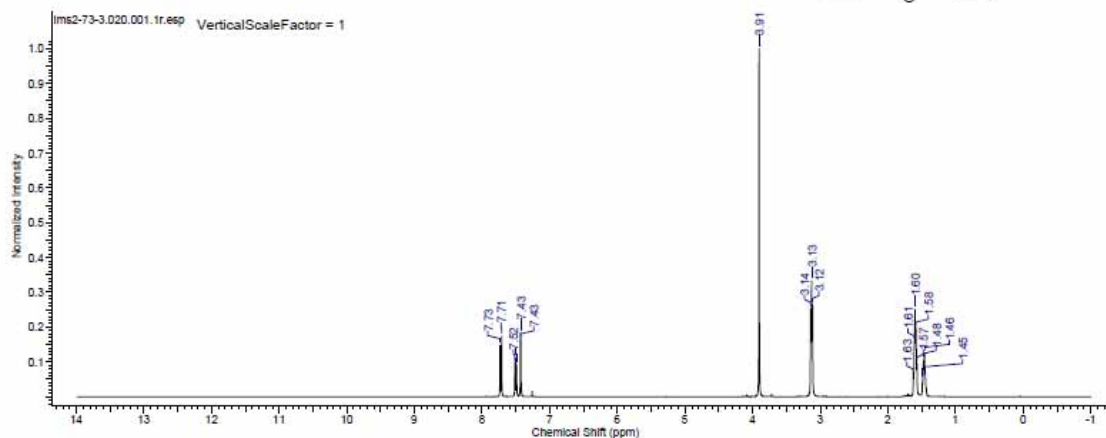
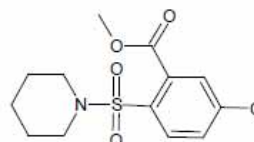


^1H NMR (400 MHz, CDCl_3) δ ppm 1.47 (m, 2H), 1.60(m, 4H), 3.13 (m, 4H), 3.91 (s, 3H), 7.43 (d, $J = 1.83$ Hz, 1H), 7.50 (m, $J = 1.83, 8.42$, 1H), 7.72 (d, $J = 8.42$, 1H).

5-Chloro-2-(piperidine-1-sulfonyl)-benzoic acid methyl ester

18/05/2010 16:44:02
ims2-73-3

Formula C ₁₄ H ₁₅ ClNO ₃ S		FW 317.7884					
Acquisition Time (sec)	2.7329	Comment	sulfonamide	Date	11 May 2010 12:52:32	Date Stamp	11 May 2010 12:52:32
File Name	E:\NMR's table\ims2-73-3\20\PDATA\111r	Frequency (MHz)	400.13	Nucleus	¹ H	Number of Transients	12
Origin	dpx400	Original Points Count	16384	Owner	autonmr	Points Count	16384
Receiver Gain	32.00	SW(cyclical) (Hz)	5995.20	Solvent	CHLOROFORM-d	Pulse Sequence	zg30
Spectrum Type	STANDARD	Sweep Width (Hz)	5994.54	Temperature (degree C)	27.160	Spectrum Offset (Hz)	2598.2322



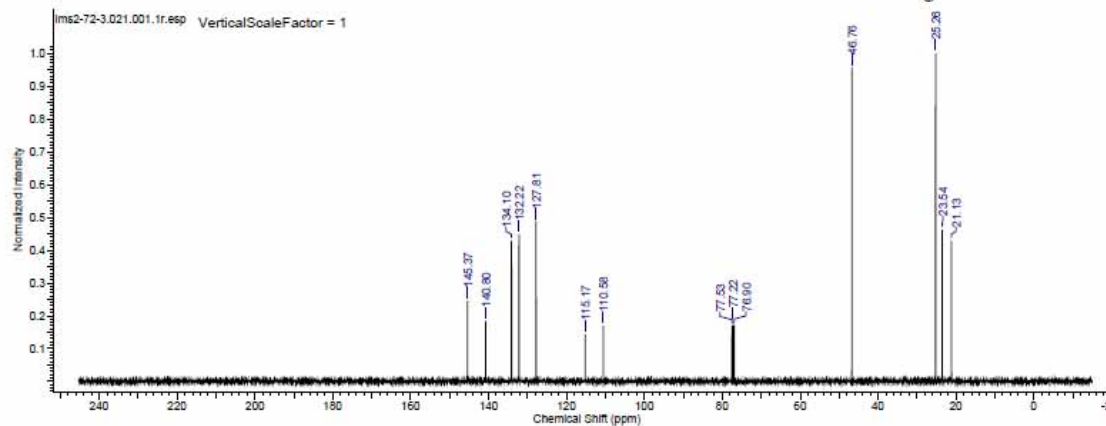
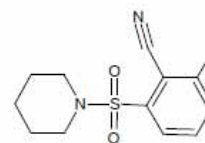
2-Methyl-6-(piperidine-1-sulfonyl)-benzonitrile

¹³C NMR (400 MHz, CDCl₃) δ ppm 21.13, 23.54, 25.26, 46.76, 110.58, 115.17, 127.81, 132.22, 134.10, 140.80, 145.37.

2-Methyl-6-(piperidine-1-sulfonyl)-benzonitrile

18/05/2010 16:51:50
ims2-72-3

Formula C ₁₄ H ₁₃ N ₂ O ₂ S		FW 264.3433			
Acquisition Time (sec)	2.5035	Comment	5 mm Dual 13C/1H ZS246/0021	Date	11 May 2010 16:57:20
Date Stamp	11 May 2010 16:57:20	File Name	E:\NMR's table\ims2-72-3\21\PDATA\111r	Frequency (MHz)	100.61
Nucleus	¹³ C	Number of Transients	67	Owner	autonmr
Points Count	65536	Pulse Sequence	zpgp30	Receiver Gain	8192.00
Solvent	CHLOROFORM-d	Spectrum Offset (Hz)	11583.0771	Spectrum Type	STANDARD
Temperature (degree C)	27.160	Sweep Width (Hz)	26177.61		



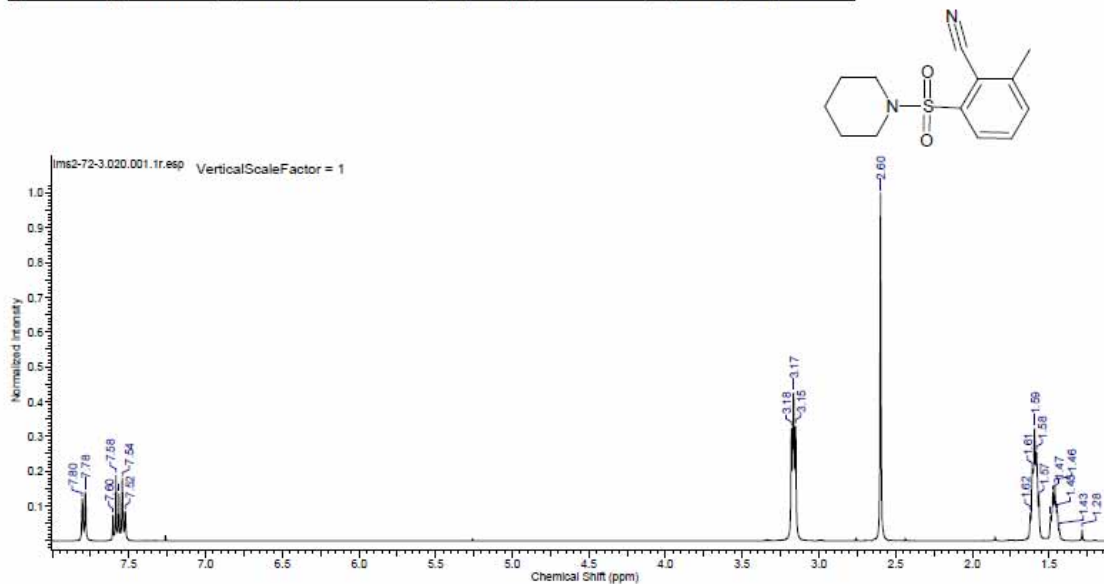
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^1H NMR (400 MHz, CDCl_3) δ ppm 1.46 (m, 2H), 1.59 (m, 4H), 2.60 (s, 3H), 3.17 (m, 4H), 7.56 (m, 2H), 7.79 (d, $J = 7.69$, 1H).

2-Methyl-6-(piperidine-1-sulfonyl)-benzonitrile

18/05/2010 16:54:58
ims2-72-3

Formula	C	H	N	O	S	FW	264.3433		
Acquisition Time (sec)	2.7329		Comment		sulfonamide pure		Date	11 May 2010 18:53:04	
Date Stamp	11 May 2010 18:53:04		File Name	E:\NMR's table\ims2-72-3\20\PDATA\111r		Frequency (MHz)	400.13		
Nucleus	1H		Number of Transients	9		Origin	dpx400		
Points Count	16384		Pulse Sequence	zg30		Receiver Gain	22.50		
Spectrum Offset (Hz)	2598.2322		Spectrum Type	STANDARD		Sweep Width (Hz)	5994.84		
						Temperature (degree C)	27.150		
						Original Points Count	16384		
						Owner	autonmr		
						SW(cyclical) (Hz)	5995.20		
						Solvent	CHLOROFORM-d		



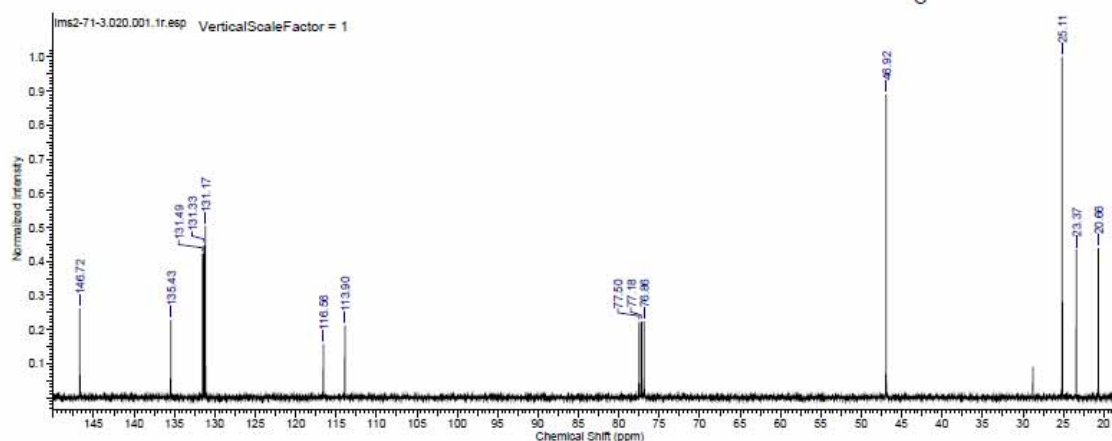
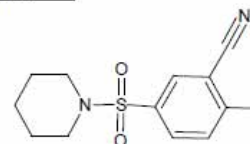
2-Methyl-5-(piperidine-1-sulfonyl)-benzonitrile

^{13}C NMR (400 MHz, CDCl_3) δ ppm 20.66, 23.37, 25.11, 46.92, 113.90, 116.56, 131.17, 131.33, 131.49, 135.43, 146.72.

2-Methyl-5-(piperidine-1-sulfonyl)-benzonitrile

18/05/2010 17:09:33
lms2-71-3

Formula C ₁₄ H ₁₆ N ₂ O ₂ S		FW 264.3433			
Acquisition Time (sec)	2.5035	Comment	sulfonamide pure	Date	11 May 2010 18:45:40
Date Stamp	11 May 2010 18:45:40	File Name	E:\NMR's table\lms2-71-3\20\PDATA\111r	Frequency (MHz)	100.61
Nucleus	¹³ C	Number of Transients	70	Origin	dpx400
Points Count	65536	Pulse Sequence	zgpg30	Original Points Count	65536
Spectrum Offset (Hz)	11583.0771	Spectrum Type	STANDARD	Receiver Gain	3192.00
				SW(cyclical) (Hz)	26178.01
				Sweep Width (Hz)	26177.61
				Temperature (degree C)	27.160
				Solvent	CHLOROFORM-d

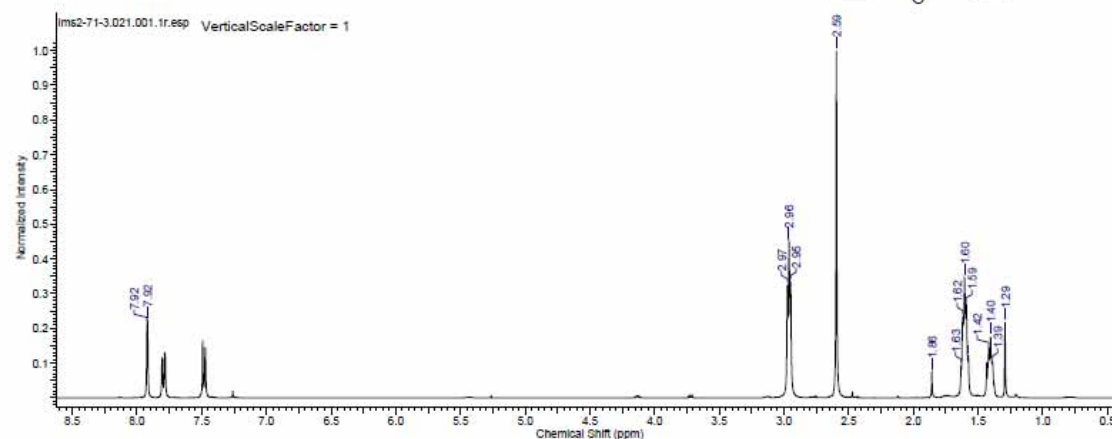
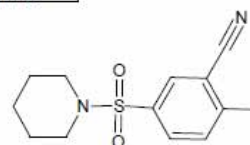


¹H NMR (400 MHz, CDCl₃) δ ppm 1.40 (m, 2H), 1.60 (m, 4H), 2.59 (s, 3H), 2.66 (m, 4H), 7.48 (d, *J* = 8.42, 1H), 7.79 (d, *J* = 8.42, 1H), 7.92 (s, 1H).

2-Methyl-5-(piperidine-1-sulfonyl)-benzonitrile

18/05/2010 17:05:27
lms2-71-3

Formula C ₁₄ H ₁₆ N ₂ O ₂ S		FW 264.3433			
Acquisition Time (sec)	2.7329	Comments	5 mm Dual 13C/1H Z8246/0021	Date	11 May 2010 18:45:48
Date Stamp	11 May 2010 18:45:48	File Name	E:\NMR's table\lms2-71-3\21\PDATA\111r	Frequency (MHz)	400.13
Nucleus	¹ H	Number of Transients	13	Origin	dpx400
Points Count	16384	Pulse Sequence	zg30	Original Points Count	16384
Spectrum Offset (Hz)	2598.2322	Spectrum Type	STANDARD	Receiver Gain	25.40
				SW(cyclical) (Hz)	5995.20
				Sweep Width (Hz)	5994.84
				Temperature (degree C)	27.160
				Solvent	CHLOROFORM-d



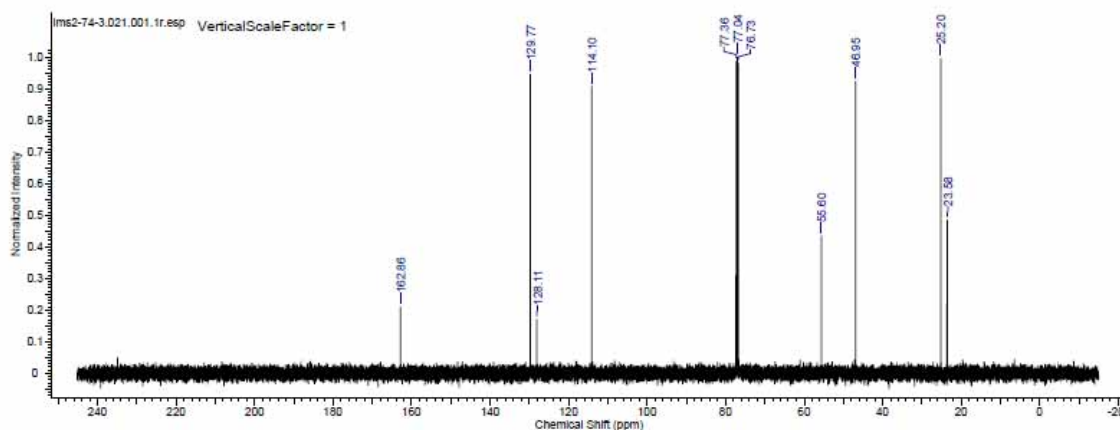
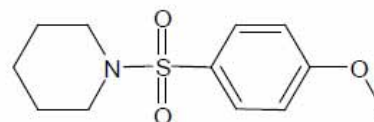
1-(4-Methoxy-benzenesulfonyl)-piperidine

¹³C NMR (400 MHz, CDCl₃) δ ppm 23.58, 25.20, 46.95, 55.60, 114.10, 128.11, 129.77, 162.86.

1-(4-Methoxy-benzenesulfonyl)-piperidine

18/05/2010 17:14:53
Ims2-74-3

Formula	C ₁₄ H ₁₉ NO ₂ S	FW	255.3333
Acquisition Time (sec)	2.5035	Comment	5 mm Dual 13C(1H) Z8246/0021
Date Stamp	12 May 2010 14:49:52	File Name	E:\NMR's table\Ims2-74-3\21\PDATA\111r
Nucleus	13C	Number of Transients	49
Points Count	65536	Origin	dpx400
Solvent	CHLOROFORM-d	Receiver Gain	8192.00
Temperature (degree C)	27.150	Spectrum Offser (Hz)	11583.0771
		Spectrum Type	STANDARD
		Sweep Width (Hz)	26177.61

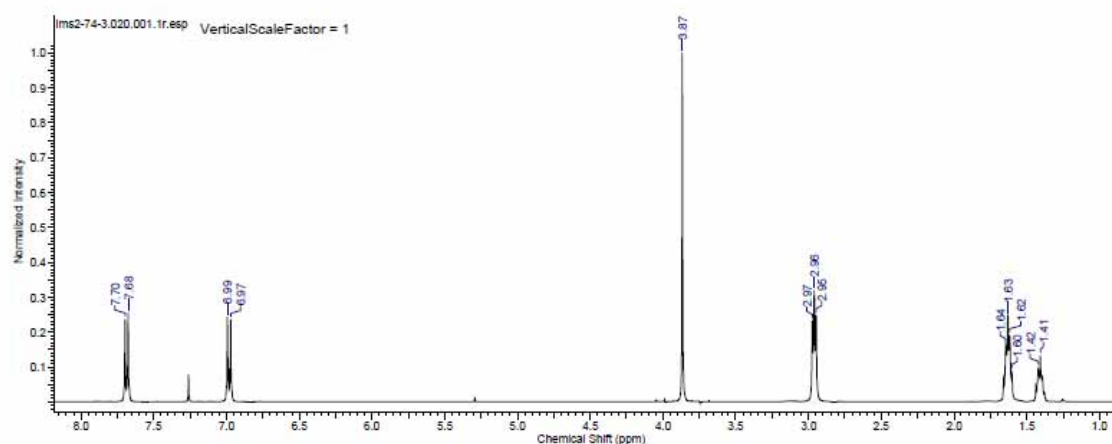
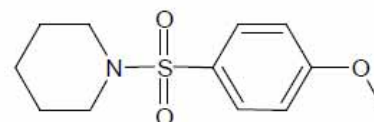


¹H NMR (400 MHz, CDCl₃) δ ppm 1.41 (m, 2H), 1.63 (m, 4H), 2.96 (m, 4H), 3.87 (s, 3H), 6.98 (d, *J* = 8.78, 2H), 7.69 (d, *J* = 8.78, 2H).

1-(4-Methoxy-benzenesulfonyl)-piperidine

18/05/2010 17:18:36
Ims2-74-3

Formula	C ₁₄ H ₁₉ NO ₂ S	FW	255.3333
Acquisition Time (sec)	2.7329	Comment	sulfonamide
Date Stamp	12 May 2010 14:47:44	File Name	E:\NMR's table\Ims2-74-3\20\PDATA\111r
Nucleus	1H	Number of Transients	16
Points Count	16384	Origin	dpx400
Solvent	CHLOROFORM-d	Receiver Gain	101.60
Temperature (degree C)	27.150	Spectrum Offser (Hz)	2598.2322
		Spectrum Type	STANDARD
		Sweep Width (Hz)	5954.84



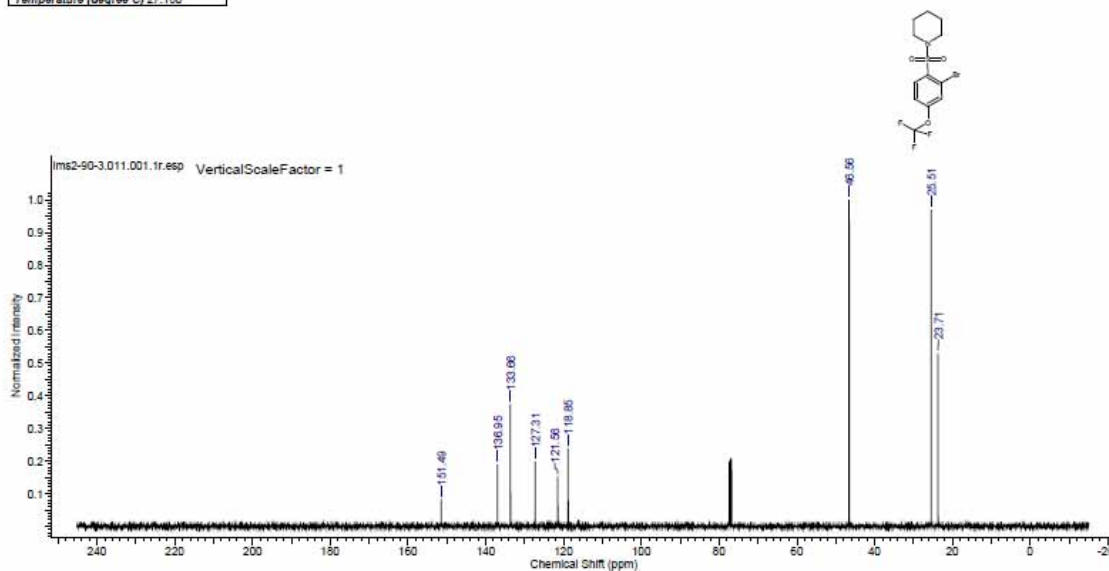
1-(2-Bromo-4-trifluoromethoxy-benzenesulfonyl)-piperidine

^{13}C NMR (400 MHz, CDCl_3) δ ppm 23.71, 25.51, 46.56, 118.85, 121.56, 127.31, 133.66, 136.95, 151.49.

1-(2-Bromo-4-trifluoromethoxy-benzenesulfonyl)-piperidine

18/05/2010 14:52:46
lms2-90-3

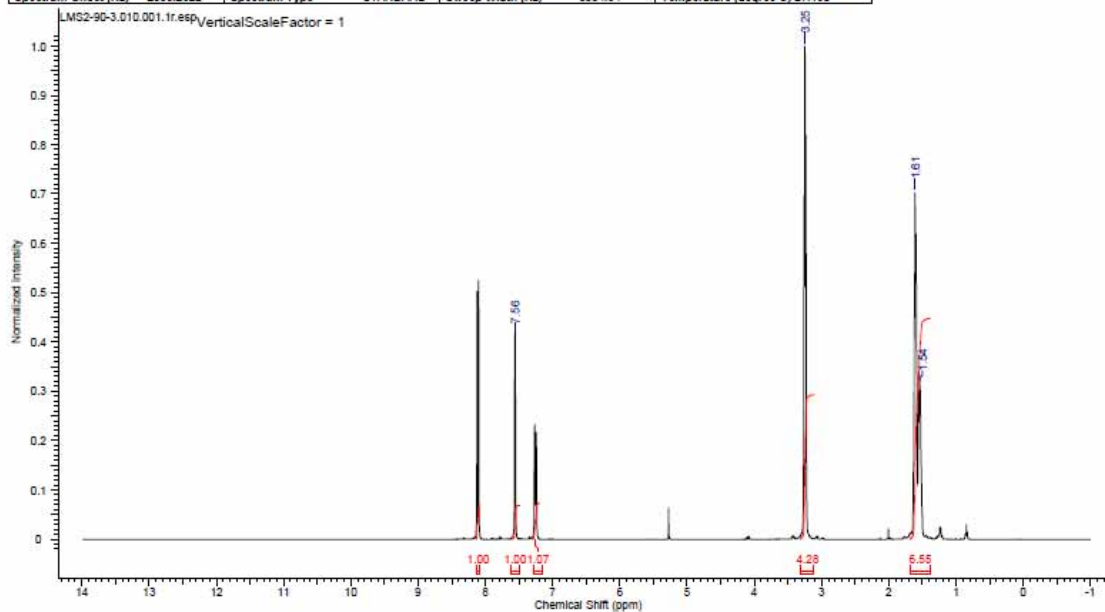
Formula C ₁₁ H ₁₁ BrF ₃ NO ₂ S		FW 386.2007			
Acquisition Time (sec)	2.5035	Comment	5 mm Dual 13C/1H Z8246/0021	Date	14 May 2010 11:35:44
Date Stamp	14 May 2010 11:35:44	File Name	E:\NMR's table\lms2-90-3\11\PDATA\111r	Frequency (MHz)	100.61
Nucleus	^{13}C	Number of Transients	77	Origin	dpx400
Points Count	65536	Pulse Sequence	zgpg30	Original Points Count	65536
Solvent	CHLOROFORM-d	Receiver Gain	8192.00	SW (cyclical) (Hz)	26178.01
Temperature (degree C)	27.160	Spectrum Offset (Hz)	11583.0771	Spectrum Type	STANDARD
				Sweep Width (Hz)	26177.61

 ^1H NMR (400 MHz, CDCl_3) δ ppm 1.54 (m, 2 H), 1.61 (m, 4 H), 3.25 (m, 4 H), 7.26 (d, $J = 8.78$ Hz, 1 H), 7.56 (s, 1 H), 8.10 (d, $J = 8.78$ Hz, 1 H)

1-(2-Bromo-4-trifluoromethoxy-benzenesulfonyl)-piperidine

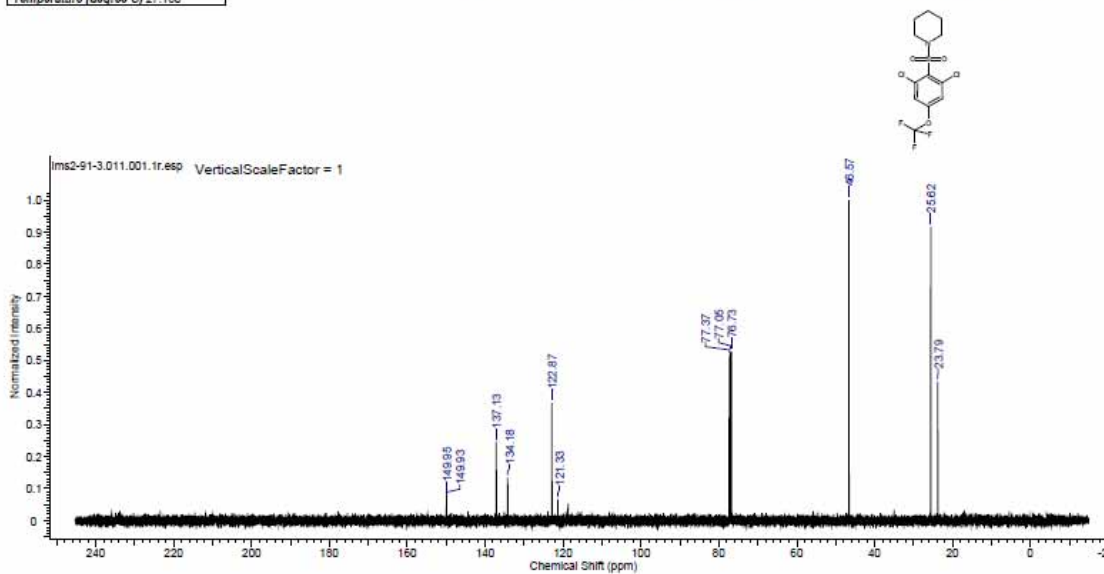
18/05/2010 14:37:06
lms2-90-3

Acquisition Time (sec) 2.7329		Comment 2-Br piperidino sulfonamide		Date 14 May 2010 11:31:28	
Date Stamp	14 May 2010 11:31:28	File Name	E:\NMR'S TABLE\LMS2-90-3\10\PDATA\111r	Frequency (MHz)	400.13
Nucleus	^1H	Number of Transients	8	Origin	dpx400
Points Count	16384	Pulse Sequence	zg30	Original Points Count	16384
Spectrum Offset (Hz)	2598.2322	Receiver Gain	40.30	SW (cyclical) (Hz)	5995.20
		Spectrum Type	STANDARD	Solvent	CHLOROFORM-d
			Sweep Width (Hz)	5994.84	Temperature (degree C) 27.160

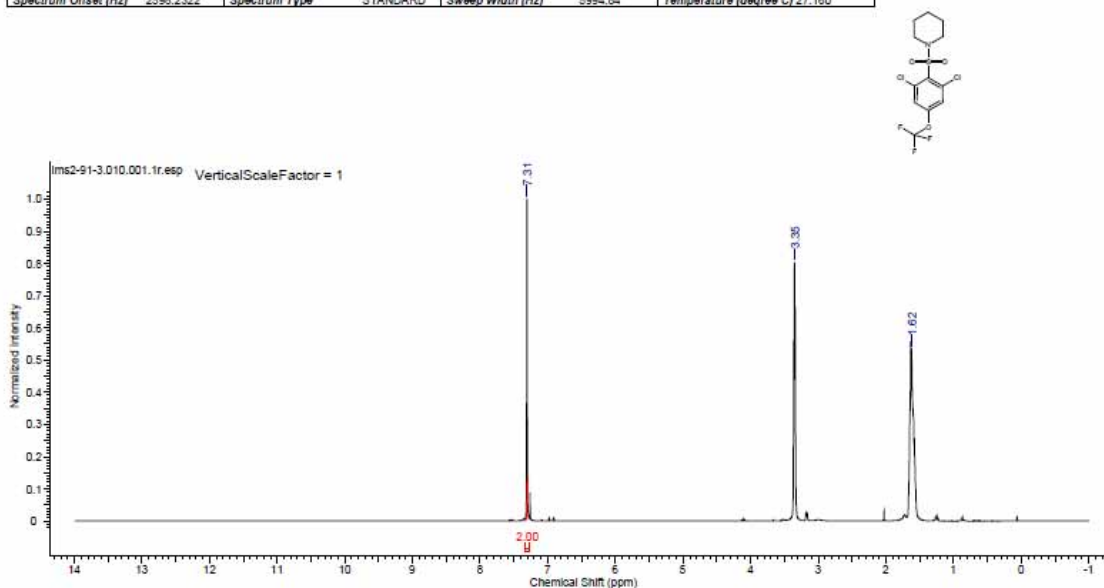


1-(2,6-Dichloro-4-trifluoromethoxy-benzenesulfonyl)-piperidine ^{13}C NMR (400 MHz, CDCl_3) δ ppm 23.79, 25.62, 46.57, 121.33, 122.87, 134.18, 137.13, 149.95.**1-(2,6-Dichloro-4-trifluoromethoxy-benzenesulfonyl)-piperidine**18/05/2010 14:57:06
ims2-91-3

Formula C ₁₄ H ₁₄ Cl ₂ F ₃ NO ₂ S		FW 378.1948	
Acquisition Time (sec)	2.5035	Comment	5 mm Dual 13C/1H Z8245/0021
Date Stamp	14 May 2010 11:42:08	File Name	E:\NMR's table\ims2-91-3\11\PDATA\111r
Nucleus	13C	Origin	dpq400
Points Count	65536	Original Points Count	65536
Solvent	CHLOROFORM-d	Receiver Gain	8192.00
Temperature (degree C)	27.160	SW(cyclical) (Hz)	26178.01
		Spectrum Offset (Hz)	11583.0771
		Spectrum Type	STANDARD
		Sweep Width (Hz)	26177.61

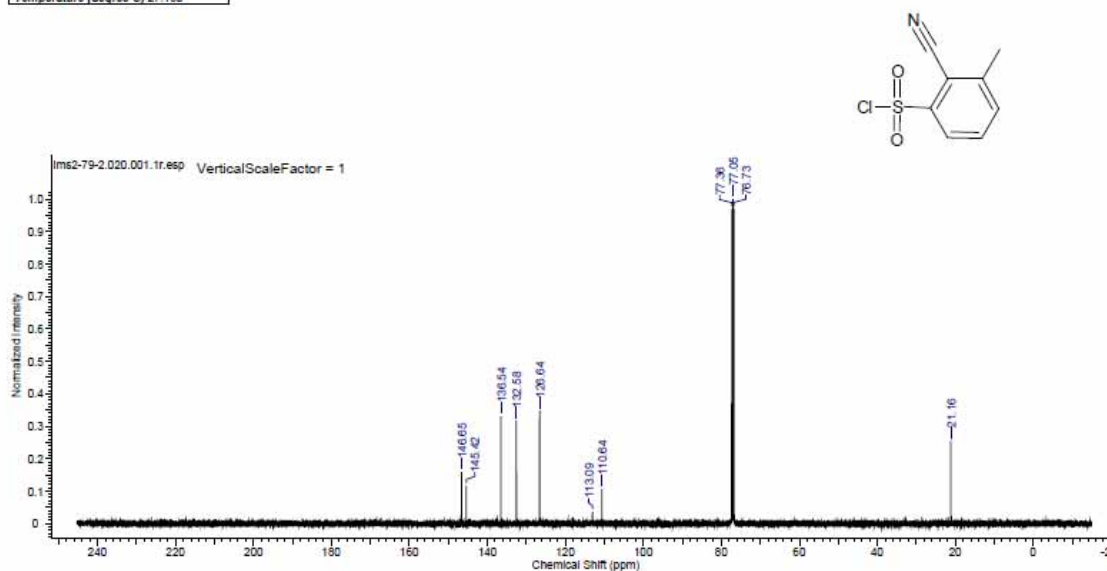
 ^1H NMR (400 MHz, CDCl_3) δ ppm 1.62 (m, 6H), 3.35 (m, 4H), 7.31 (m, 4H).**1-(2,6-Dichloro-4-trifluoromethoxy-benzenesulfonyl)-piperidine**18/05/2010 15:01:32
ims2-91-3

Formula C ₁₄ H ₁₄ Cl ₂ F ₃ NO ₂ S		FW 378.1948	
Acquisition Time (sec)	2.7329	Comments	2,6-dichloro piperidino sulfonamide
Date Stamp	14 May 2010 11:40:00	File Name	E:\NMR's table\ims2-91-3\10\PDATA\111r
Nucleus	1H	Origin	dpq400
Points Count	16384	Original Points Count	16384
Solvent	CHLOROFORM-d	Receiver Gain	64.00
Temperature (degree C)	27.160	SW(cyclical) (Hz)	5995.20
		Spectrum Offset (Hz)	2598.2322
		Spectrum Type	STANDARD
		Sweep Width (Hz)	5994.84

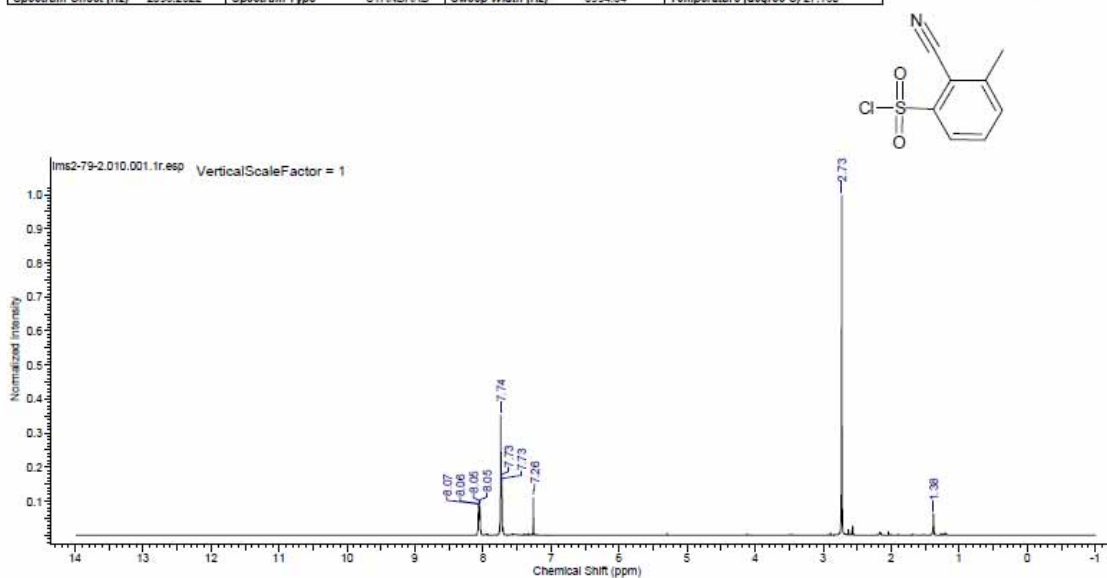


2-Cyano-3-methyl-benzenesulfonyl chloride ^{13}C NMR (400 MHz, CDCl_3) δ ppm 21.16, 110.64, 113.09, 126.64, 132.58, 136.54, 145.42, 146.65.**2-Cyano-3-methyl-benzenesulfonyl chloride**18/05/2010 18:22:01
ims2-79-2

Formula	$\text{C}_8\text{H}_7\text{ClNO}_2\text{S}$	FW	215.6567
Acquisition Time (sec)	2.5035	Comment	sulfonyl chloride after silica filtration
Date Stamp	05 May 2010 18:27:25	File Name	E:\NMR's table\ims2-79-2\20\PDATA\1\1r
Nucleus	^{13}C	Number of Transients	256
Points Count	65536	Pulse Sequence	zgpg30
Solvent	CHLOROFORM-d	Receiver Gain	8192.00
Temperature (degree C)	27.160	Spectrum Offset (Hz)	11583.0771
		Spectrum Type	STANDARD
		Sweep Width (Hz)	26177.61
		Frequency (MHz)	100.61
		Owner	autonmr
		Original Points Count	65536
		SW (cyclical) (Hz)	26178.01

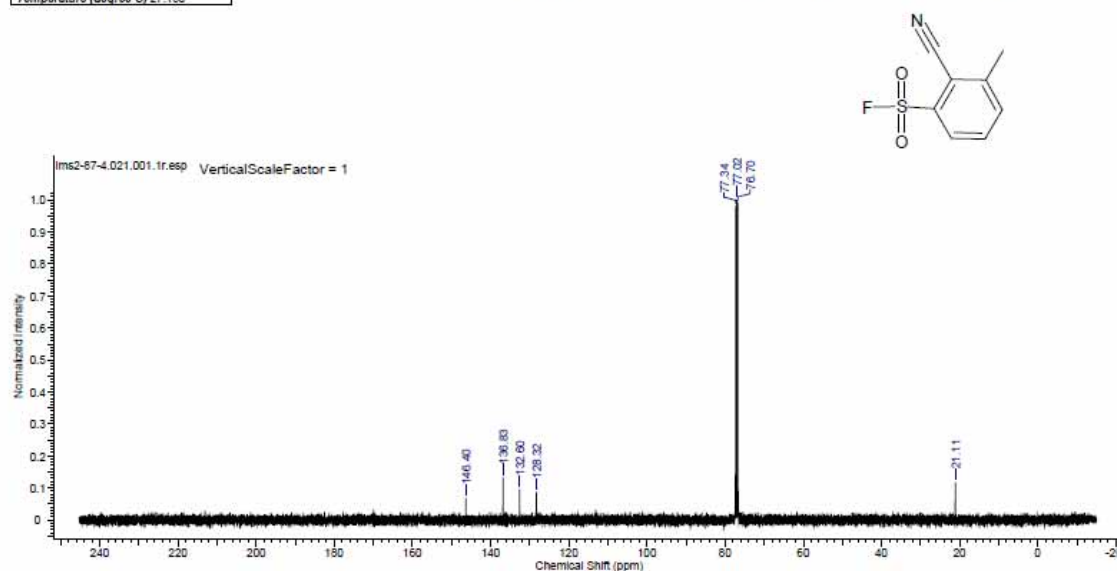
 ^1H NMR (400 MHz, CDCl_3) δ ppm 2.73 (s, 3H), 7.73 (m, 2H), 8.05 (m, 1H).**2-Cyano-3-methyl-benzenesulfonyl chloride**18/05/2010 18:23:37
ims2-79-2

Formula	$\text{C}_8\text{H}_7\text{ClNO}_2\text{S}$	FW	215.6567
Acquisition Time (sec)	2.7329	Comment	sulfonyl chloride after silica filtration
Date Stamp	05 May 2010 15:30:24	File Name	E:\NMR's table\ims2-79-2\10\PDATA\1\1r
Nucleus	^1H	Number of Transients	16
Points Count	16384	Pulse Sequence	zg30
Solvent	CHLOROFORM-d	Receiver Gain	228.10
Temperature (degree C)	27.160	Spectrum Offset (Hz)	2598.2322
		Spectrum Type	STANDARD
		Sweep Width (Hz)	5994.84
		Frequency (MHz)	400.13
		Owner	autonmr
		Original Points Count	16384
		SW (cyclical) (Hz)	5995.20

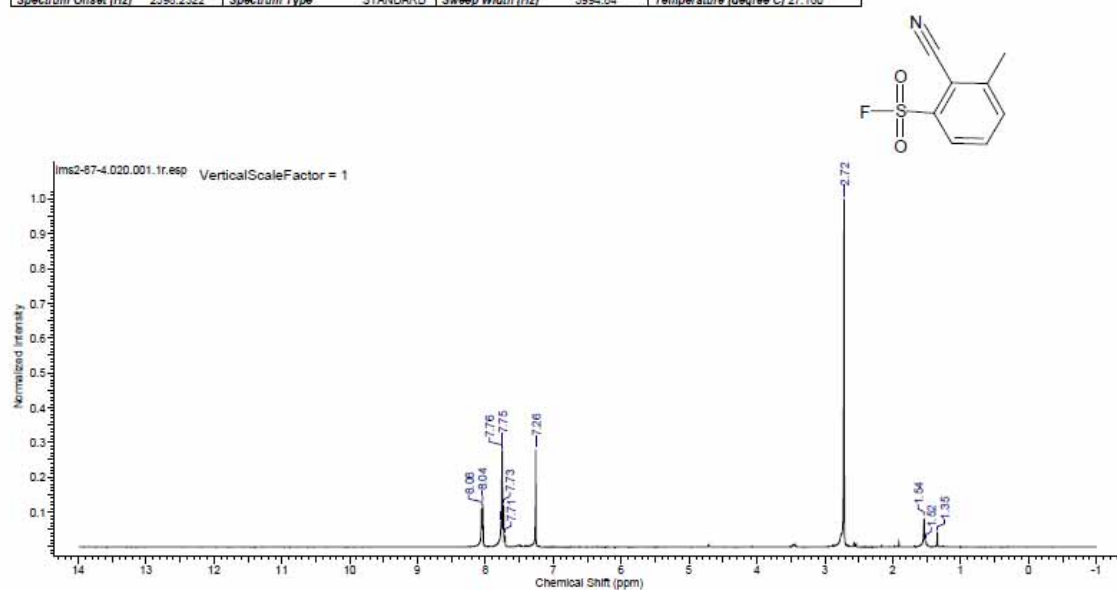


2-Cyano-3-methyl-benzenesulfonyl fluoride ^{13}C NMR (400 MHz, CDCl_3) δ ppm 21.11, 128.32, 132.60, 136.83, 146.40.**2-Cyano-3-methyl-benzenesulfonyl fluoride**18/05/2010 16:43:59
lms2-67-4

Formula	$\text{C}_8\text{H}_7\text{FNO}_2\text{S}$	FW	199.2021
Acquisition Time (sec)	2.5035	Comment	5 mm Dual 13C/1H Z8245/0021
Date Stamp	18 May 2010 18:21:04	File Name	E:\NMR's table\lms2-67-4(2)(PDATA)\11f
Nucleus	^{13}C	Number of Transients	256
Points Count	65536	Pulse Sequence	zgpg30
Solvent	CHLOROFORM-d	Receiver Gain	8192.00
Temperature (degree C)	27.160	Spectrum Offset (Hz)	11583.0771
		Spectrum Type	STANDARD
		Sweep Width (Hz)	26177.61
		Frequency (MHz)	100.61
		Owner	autonmr
		Original Points Count	65536
		SW (cyclical) (Hz)	26178.61

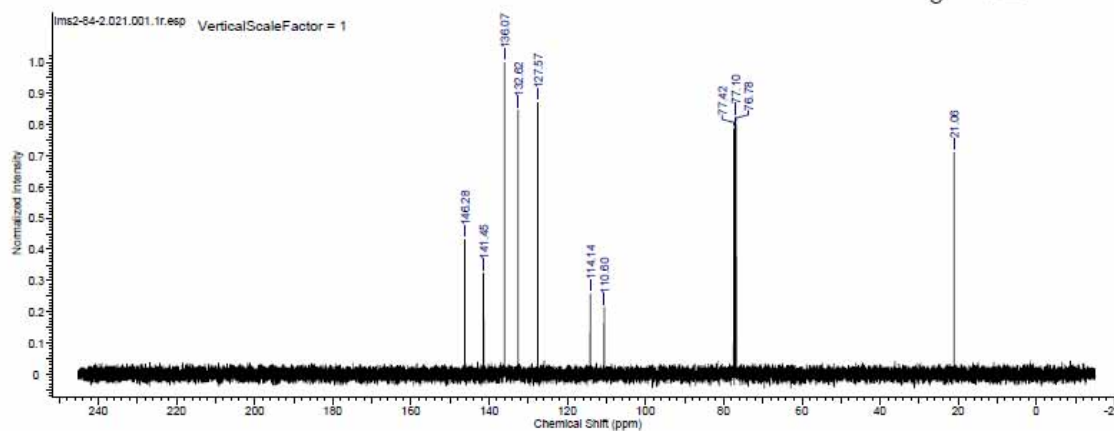
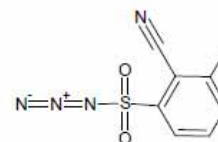
 ^1H NMR (400 MHz, CDCl_3) δ ppm 2.72 (s, 3H), 7.75 (m, 2H), 8.05 (d, $J = 6.95$ Hz, 1H).**2-Cyano-3-methyl-benzenesulfonyl fluoride**18/05/2010 16:47:24
lms2-67-4

Formula	$\text{C}_8\text{H}_7\text{FNO}_2\text{S}$	FW	199.2021
Acquisition Time (sec)	2.7329	Comment	sulfonyl fluoride
Date Stamp	18 May 2010 18:04:00	File Name	E:\NMR's table\lms2-67-4(2)(PDATA)\11f
Nucleus	^1H	Number of Transients	16
Points Count	16384	Pulse Sequence	zg30
Solvent	CHLOROFORM-d	Receiver Gain	724.10
Temperature (degree C)	27.160	Spectrum Offset (Hz)	5994.84
		Spectrum Type	STANDARD
		Sweep Width (Hz)	5994.84
		Frequency (MHz)	400.13
		Owner	autonmr
		Original Points Count	16384
		SW (cyclical) (Hz)	5995.20

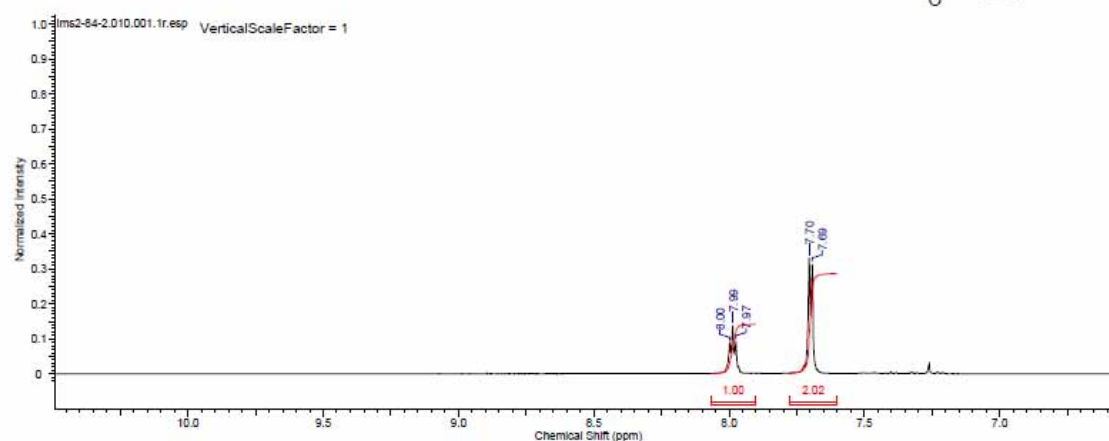
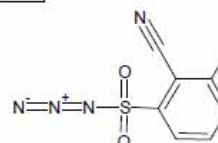


2-Cyano-3-methyl-benzenesulfonyl azide ^{13}C NMR (400 MHz, CDCl_3) δ ppm 21.06, 110.60, 114.14, 127.57, 132.62, 136.07, 146.28, 141.45.**2-Cyano-3-methyl-benzenesulfonyl azide**18/05/2010 18:18:23
ims2-84-2

Formula $\text{C}_8\text{H}_7\text{N}_3\text{O}_2\text{S}$		FW 222.2238	
Acquisition Time (sec)	2.5035	Comment	sulfonyl azide
Date	06 May 2010 14:56:16	Date Stamp	06 May 2010 14:56:16
File Name	E:\NMR's table\ims2-84-2\1\PODATA\111r	Frequency (MHz)	100.61
Origin	gpx400	Nucleus	^{13}C
Original Points Count	65536	Owner	autonmr
Receiver Gain	8192.00	Points Count	65536
SW(cyclical) (Hz)	26178.01	Pulse Sequence	zqcq30
Solvent	CHLOROFORM-d	Spectrum Offset (Hz)	11583.0771
Spectrum Type	STANDARD	Sweep Width (Hz)	26177.61
		Temperature (degree C)	27.160

 ^1H NMR (400 MHz, CDCl_3) δ ppm 2.69 (s, 3H), 7.69 (d, $J = 4.76$ Hz, 2H), 7.99 (t, $J = 4.76$ Hz, 1H).**2-Cyano-3-methyl-benzenesulfonyl azide**18/05/2010 18:14:40
ims2-84-2

Formula $\text{C}_8\text{H}_7\text{N}_3\text{O}_2\text{S}$		FW 222.2238	
Acquisition Time (sec)	2.7329	Comment	sulfonyl azide
Date	06 May 2010 11:33:36	Date Stamp	06 May 2010 11:33:36
File Name	E:\NMR's table\ims2-84-2\10\PODATA\111r	Frequency (MHz)	400.13
Origin	gpx400	Nucleus	^1H
Original Points Count	16384	Owner	autonmr
Points Count	16384	Receiver Gain	90.50
Pulse Sequence	zq30	SW(cyclical) (Hz)	5995.20
Solvent	CHLOROFORM-d	Spectrum Offset (Hz)	2598.2322
Spectrum Type	STANDARD	Sweep Width (Hz)	5994.84
		Temperature (degree C)	27.160



Supplementary Material (ESI) for Organic & Biomolecular Chemistry

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