

Supplementary Materials: 2-C-Alkynyl and 2-C-cis-Alkenyl β -Mannosides with Acetal Protected γ -Aldehyde Functionality via 2-Uloside Alkynylation and Lindlar Hydrogenation

Daniel Borowski, Melchior Menzel and Thomas Ziegler

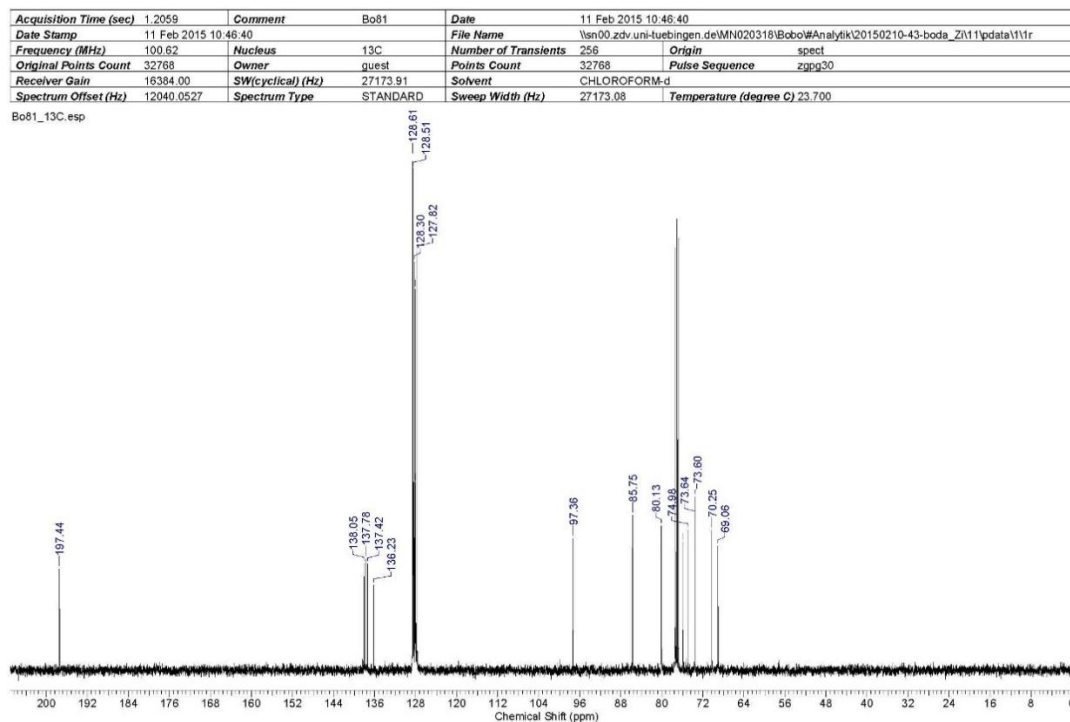


Figure S1. Compound 2 ^{13}C -NMR.

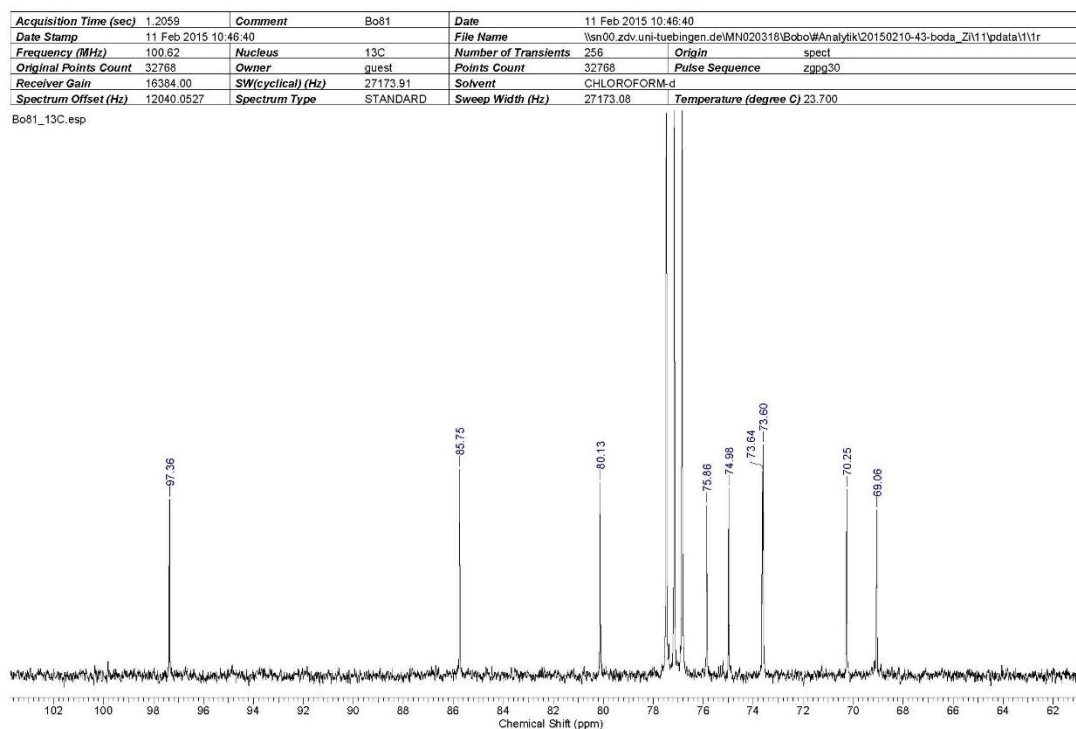
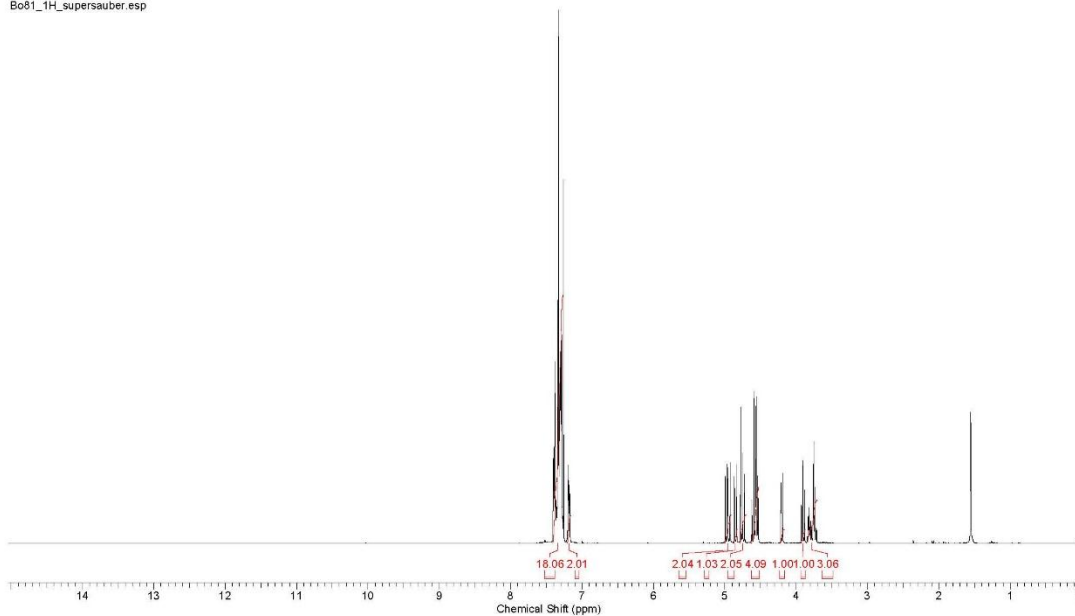


Figure S2. Compound 2 ^{13}C -NMR Zoom.

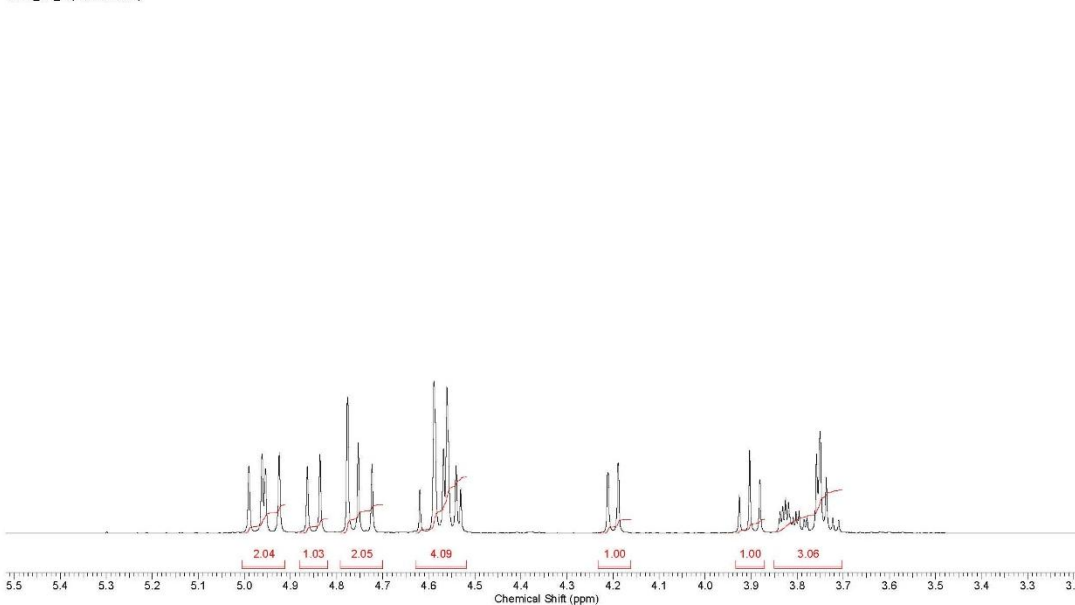
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Frequency (MHz)	400.16	Nucleus	¹ H	Number of Transients	16
Original Points Count	32768	Owner	nmrsu	Points Count	65536
Receiver Gain	200.95	SW(cyclical) (Hz)	8012.82	Solvent	CHLOROFORM-d
Spectrum Offset (Hz)	2461.2754	Spectrum Type	STANDARD	Sweep Width (Hz)	8012.70
				Temperature (degree C)	25.124

Bo81_1H_supersauber.esp

Figure S3. Compound 2 ¹H-NMR.

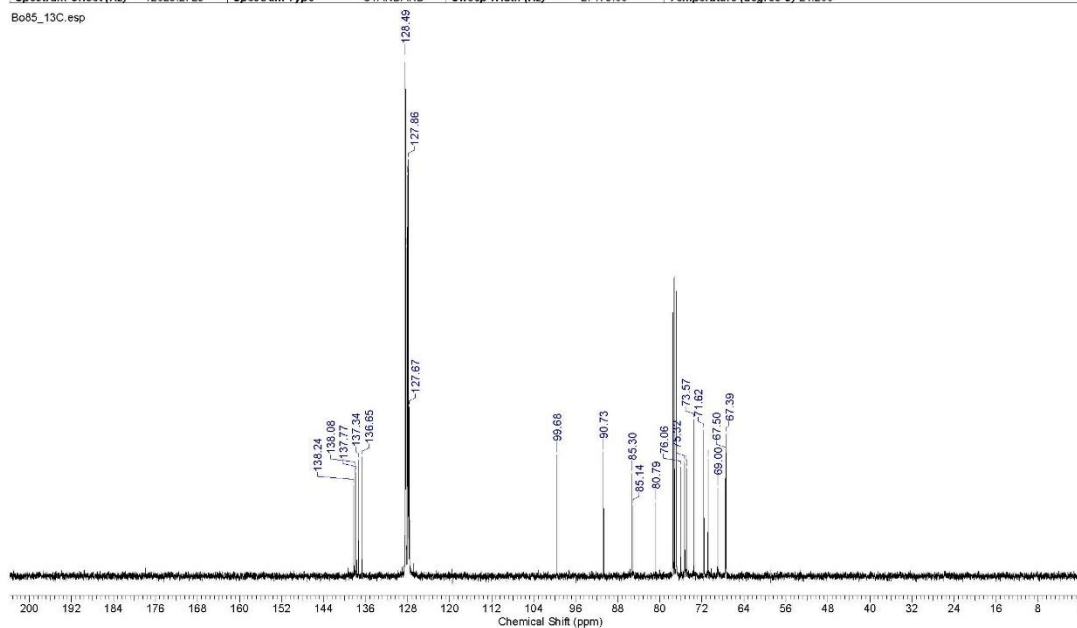
Acquisition Time (sec)	4.0894	Comment	Bo81.7	Date	29 Aug 2016 16:21:52
Date Stamp	29 Aug 2016 16:21:52			File Name	\\sn00.zdv.uni-tuebingen.de\\MN020318\\Bobo\\#Analytik\\20160829-14-boda_ZN\\10\\PDATA\\1\\1r
Frequency (MHz)	400.16	Nucleus	¹ H	Number of Transients	16
Original Points Count	32768	Owner	nmrsu	Points Count	65536
Receiver Gain	200.95	SW(cyclical) (Hz)	8012.82	Solvent	CHLOROFORM-d
Spectrum Offset (Hz)	2461.2754	Spectrum Type	STANDARD	Sweep Width (Hz)	8012.70
				Temperature (degree C)	25.124

Bo81_1H_supersauber.esp

Figure S4. Compound 2 ¹H-NMR Zoom.

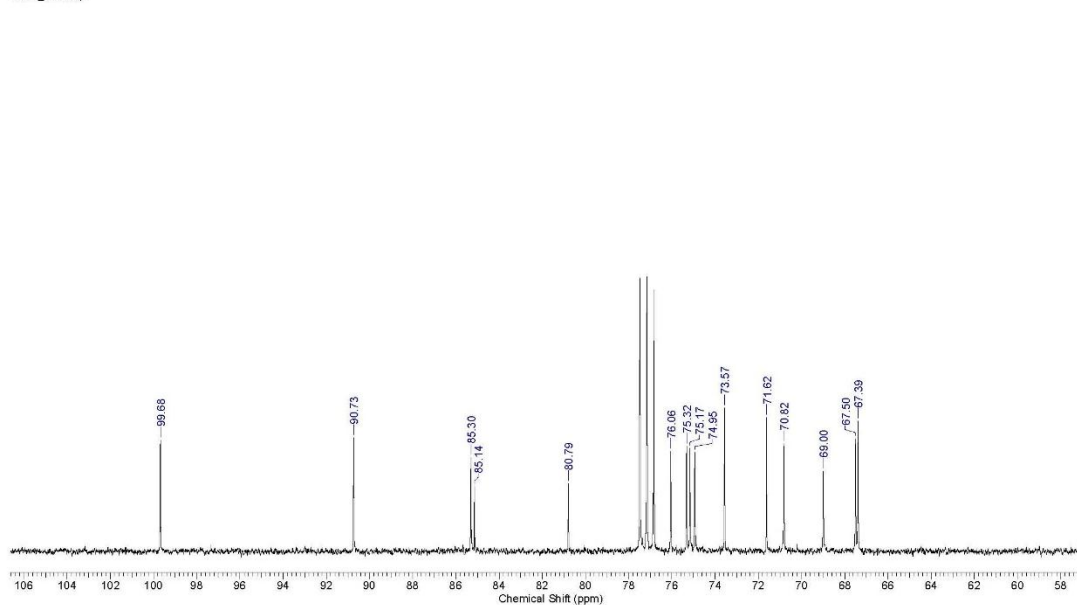
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Date Stamp	26 Feb 2015 11:35:44			File Name	\\134.2.180.232\NMR\avance400\data\boda_Zi\nmr\20150226-2-boda_Zi\1f1pdata\1f1r
Frequency (MHz)	100.62	Nucleus	¹³ C	Number of Transients	256
Original Points Count	32768	Owner	quest	Points Count	32768
Receiver Gain	18390.40	SW(cyclical) (Hz)	27173.91	Solvent	CHLOROFORM-d
Spectrum Offset (Hz)	12029.2725	Spectrum Type	STANDARD	Sweep Width (Hz)	27173.08
				Temperature (degree C)	24.200

Bo85_13C.esp

Figure S5. Compound 3a ¹³C-NMR.

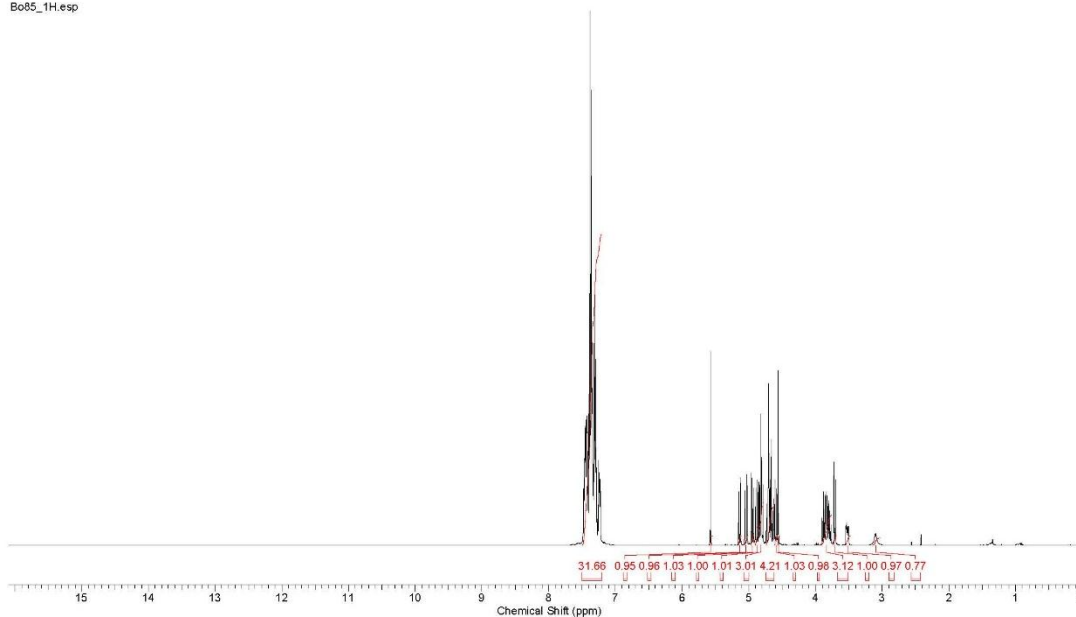
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Frequency (MHz)	100.62	Nucleus	¹³ C	Number of Transients	256
Original Points Count	32768	Owner	quest	Points Count	32768
Receiver Gain	18390.40	SW(cyclical) (Hz)	27173.91	Solvent	CHLOROFORM-d
Spectrum Offset (Hz)	12029.2725	Spectrum Type	STANDARD	Sweep Width (Hz)	27173.08
				Temperature (degree C)	24.200

Bo85_13C.esp

Figure S6. Compound 3a ¹³C-NMR Zoom.

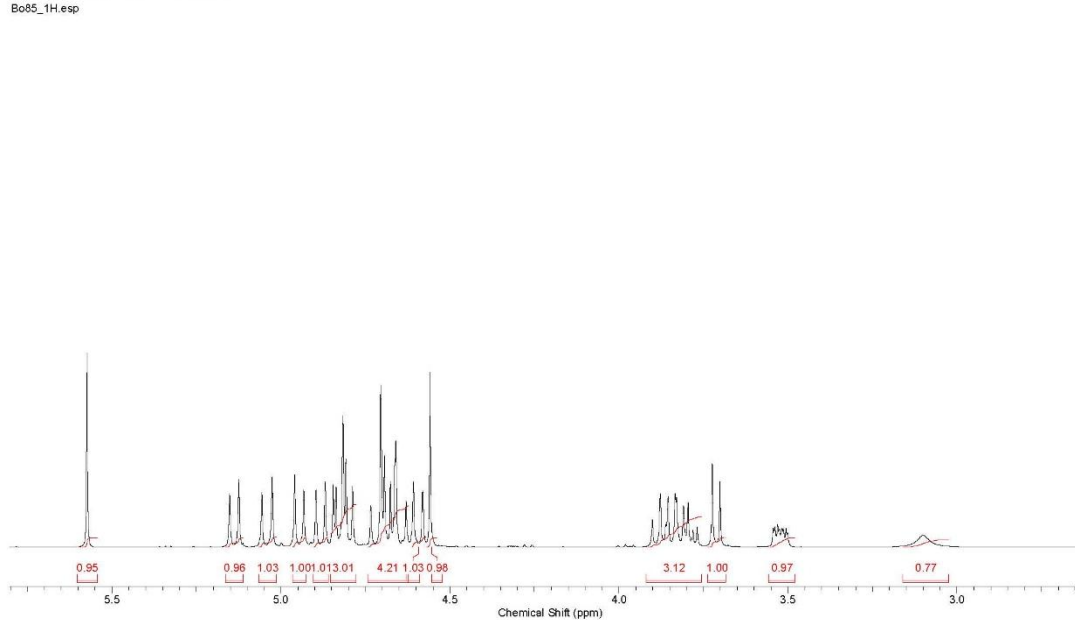
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Date Stamp	26 Feb 2015 11:25:04	File Name	\\134.2.180.232\NMR\avance400\data\boda_Zi\1010\data\111r		
Frequency (MHz)	400.16	Nucleus	1H	Number of Transients	32
Owner	guest	Points Count	32768	Pulse Sequence	zg30
Solvent	CHLOROFORM-d	Spectrum Offset (Hz)	2463.1875	Receiver Gain	35.90
Temperature (degree C)	23.900	Spectrum Type	STANDARD	SW(cyclical) (Hz)	8278.15
				Sweep Width (Hz)	8277.89

Bo85_1H.esp

Figure S7. Compound 3a ^1H -NMR.

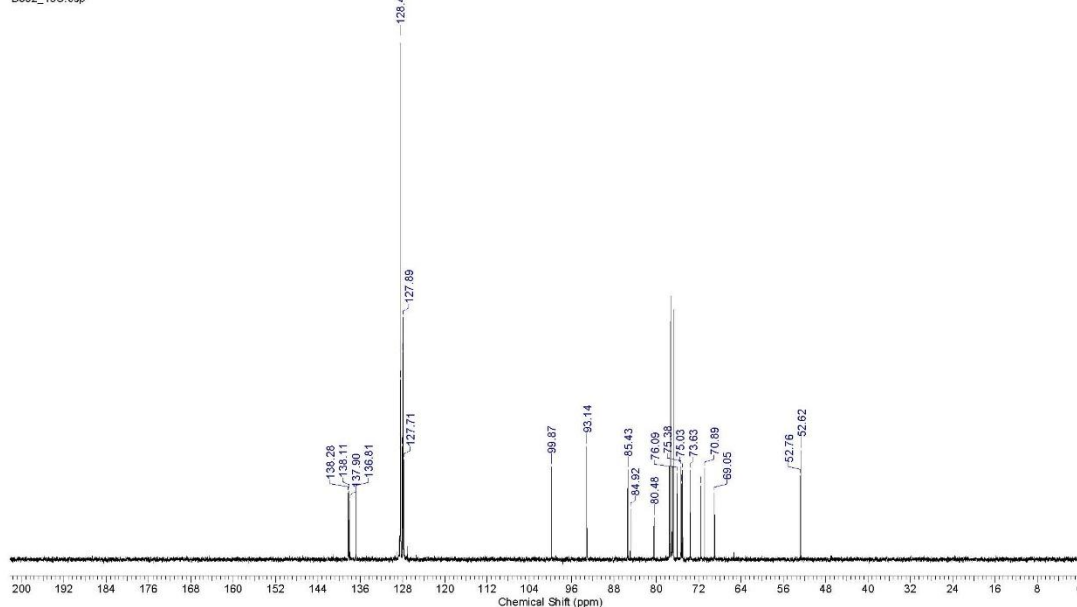
Acquisition Time (sec)	3.9584	Comment	Bo85	Date	26 Feb 2015 11:25:04
Date Stamp	26 Feb 2015 11:25:04	File Name	\\134.2.180.232\NMR\avance400\data\boda_Zi\1010\data\111r		
Frequency (MHz)	400.16	Nucleus	1H	Number of Transients	32
Owner	guest	Points Count	32768	Pulse Sequence	zg30
Solvent	CHLOROFORM-d	Spectrum Offset (Hz)	2463.1875	Receiver Gain	35.90
Temperature (degree C)	23.900	Spectrum Type	STANDARD	SW(cyclical) (Hz)	8278.15
				Sweep Width (Hz)	8277.89

Bo85_1H.esp

Figure S8. Compound 3a ^1H -NMR Zoom.

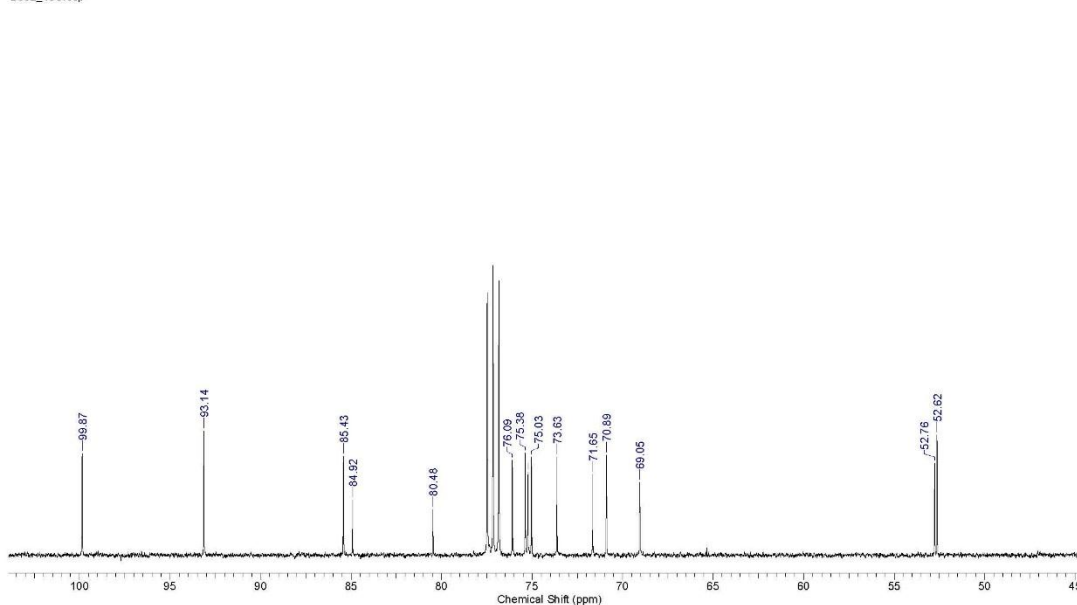
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Date Stamp	08 Apr 2015 20:27:12			File Name	\\sn00.zdv.uni-tuebingen.de\MN020318\Boba\Analytik\20150408-19-boda_ZiV1\1\PDAT\1\1r
Frequency (MHz)	100.62	Nucleus	¹³ C	Number of Transients	512
Original Points Count	32768	Owner	guest	Points Count	32768
Receiver Gain	18390.40	SW(cyclical) (Hz)	27173.91	Solvent	CHLOROFORM-d
Spectrum Offset (Hz)	12040.0527	Spectrum Type	STANDARD	Sweep Width (Hz)	27173.08
				Temperature (degree C)	25.000

Bo92_13C.esp

Figure S9. Compound **3b** ¹³C-NMR.

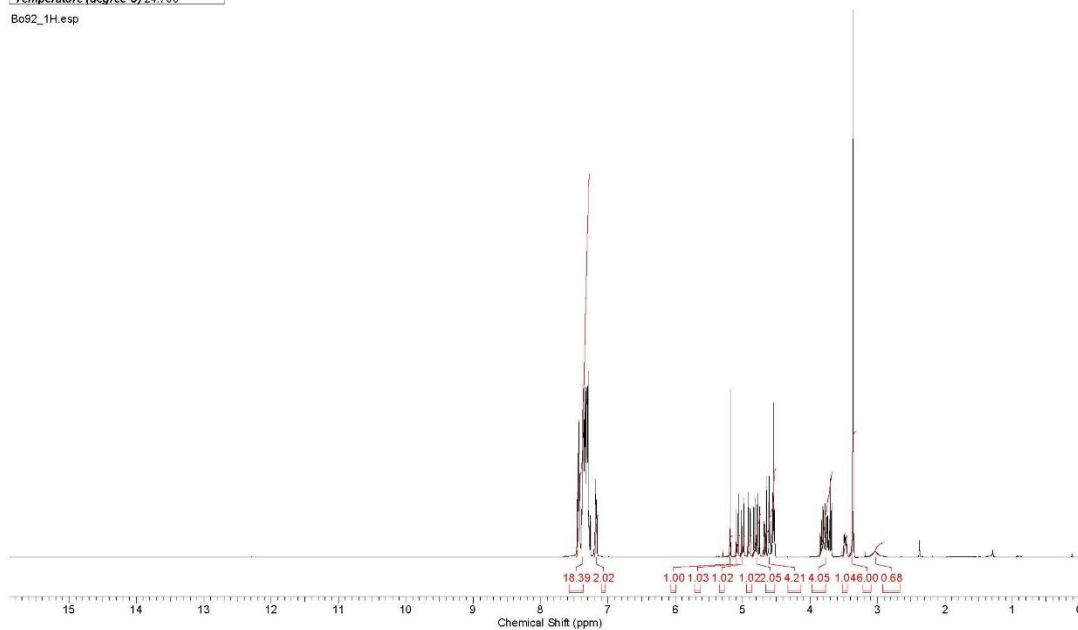
Acquisition Time (sec)	1.2059	Comment	Bo93	Date	08 Apr 2015 20:27:12
Date Stamp	08 Apr 2015 20:27:12			File Name	\\sn00.zdv.uni-tuebingen.de\MN020318\Boba\Analytik\20150408-19-boda_ZiV1\1\PDAT\1\1r
Frequency (MHz)	100.62	Nucleus	¹³ C	Number of Transients	512
Original Points Count	32768	Owner	guest	Points Count	32768
Receiver Gain	18390.40	SW(cyclical) (Hz)	27173.91	Solvent	CHLOROFORM-d
Spectrum Offset (Hz)	12040.0527	Spectrum Type	STANDARD	Sweep Width (Hz)	27173.08
				Temperature (degree C)	25.000

Bo92_13C.esp

Figure S10. Compound **3b** ¹³C-NMR Zoom.

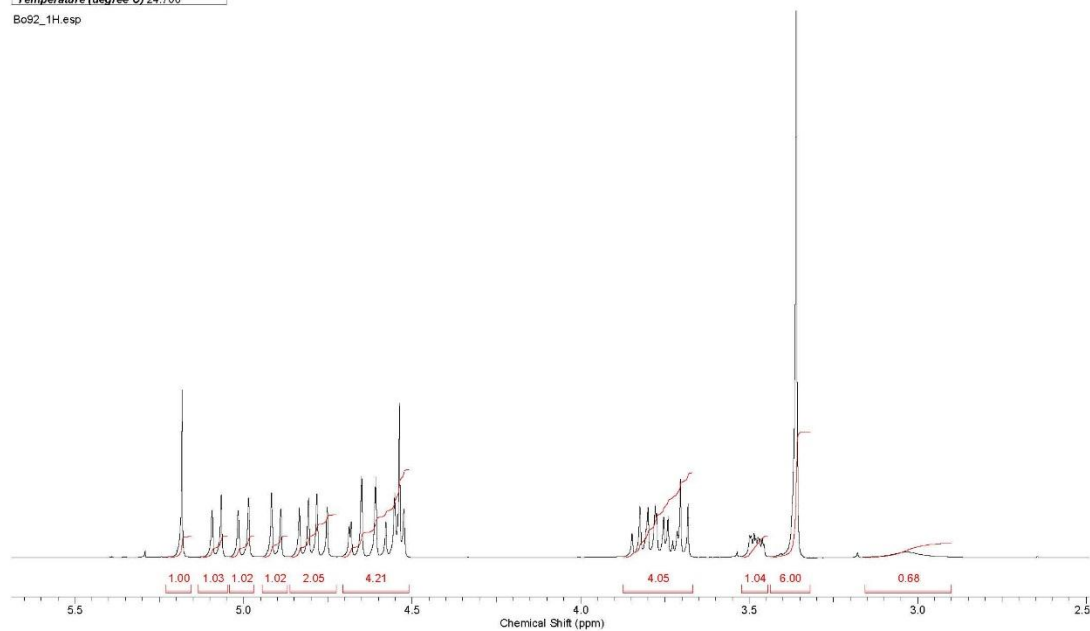
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Frequency (MHz)	400.16	Nucleus	¹ H	Number of Transients	64
Owner	guest	Points Count	32768	Pulse Sequence	zg30
Solvent	CHLOROFORM-d	Spectrum Offset (Hz)	2463.4404	Receiver Gain	64.00
Temperature (degree C)	24.700	Spectrum Type	STANDARD	SW(cyclical) (Hz)	8278.15
				Sweep Width (Hz)	8277.89

Bo92_1H.esp

Figure S11. Compound 3b ¹H-NMR.

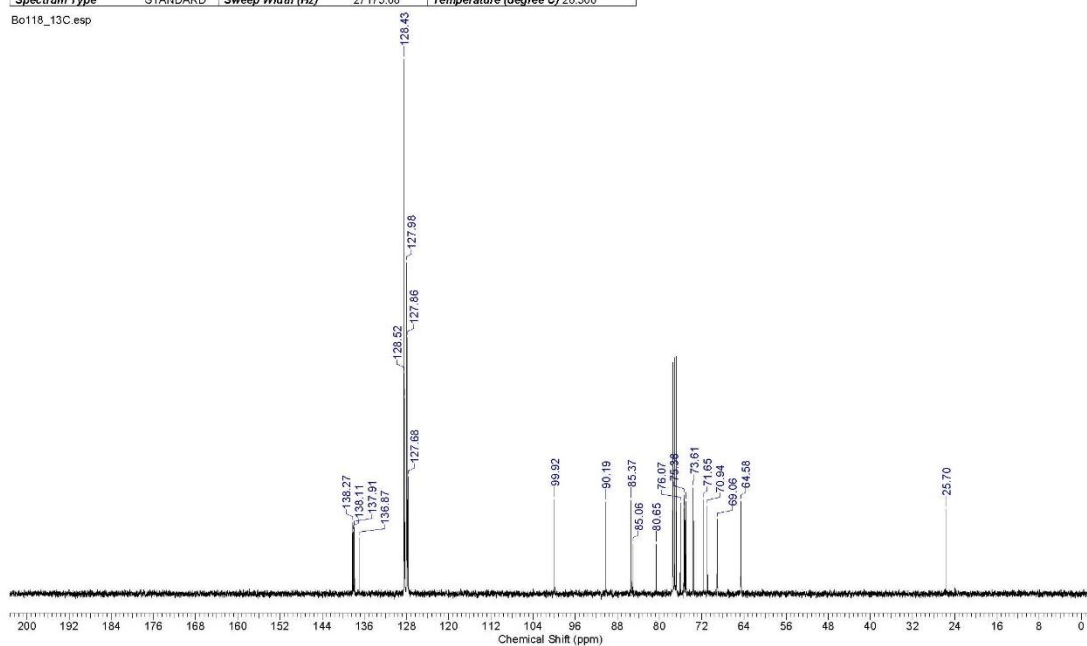
Acquisition Time (sec)	3.9584	Comment	Bo93	Date	08 Apr 2015 19:31:44
Date Stamp	08 Apr 2015 19:31:44	File Name	\\134.2.180.232\NMR\avance400\data\boda_Zi\nmr\20150408-19-boda_Zi\10\PDAT\1\1r		
Frequency (MHz)	400.16	Nucleus	¹ H	Number of Transients	64
Owner	guest	Points Count	32768	Pulse Sequence	zg30
Solvent	CHLOROFORM-d	Spectrum Offset (Hz)	2463.4404	Receiver Gain	64.00
Temperature (degree C)	24.700	Spectrum Type	STANDARD	SW(cyclical) (Hz)	8278.15
				Sweep Width (Hz)	8277.89

Bo92_1H.esp

Figure S12. Compound 3b ¹H-NMR Zoom.

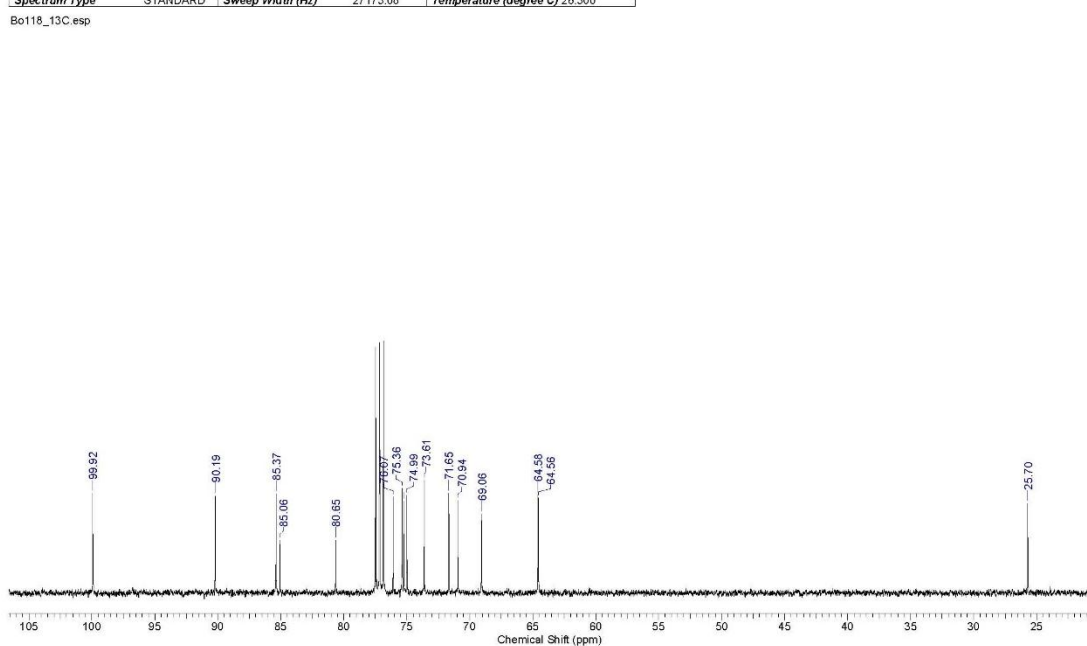
Acquisition Time (sec)	1.2059	Comment	Bo118	Date	16 Jul 2015 11:27:28	Date Stamp	16 Jul 2015 11:27:28
File Name	C:\Univ\Analytik\20150716-9-boda_Z\11\VPDATA\111r	Frequency (MHz)	100.62	Nucleus	13C	Number of Transients	256
Origin	spect	Original Points Count	32768	Owner	quest	Points Count	32768
Receiver Gain	20642.50	SW(cyclical) (Hz)	27173.91	Solvent	CHLOROFORM-d	Pulse Sequence	zgpg30
Spectrum Type	STANDARD	Sweep Width (Hz)	27173.08	Temperature (degree C)	26.300	Spectrum Offset (Hz)	12037.5654

Bo118_13C.esp

Figure S13. Compound 3c ¹³C-NMR.

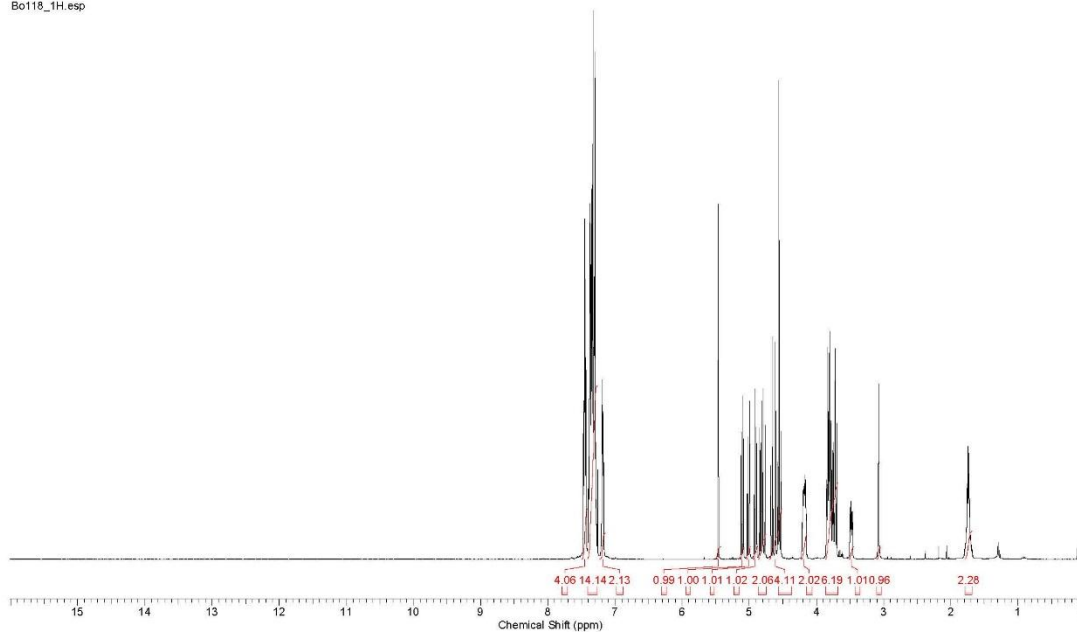
Acquisition Time (sec)	1.2059	Comment	Bo118	Date	16 Jul 2015 11:27:28	Date Stamp	16 Jul 2015 11:27:28
File Name	C:\Univ\Analytik\20150716-9-boda_Z\11\VPDATA\111r	Frequency (MHz)	100.62	Nucleus	13C	Number of Transients	256
Origin	spect	Original Points Count	32768	Owner	quest	Points Count	32768
Receiver Gain	20642.50	SW(cyclical) (Hz)	27173.91	Solvent	CHLOROFORM-d	Pulse Sequence	zgpg30
Spectrum Type	STANDARD	Sweep Width (Hz)	27173.08	Temperature (degree C)	26.300	Spectrum Offset (Hz)	12037.5654

Bo118_13C.esp

Figure S14. Compound 3c ¹³C-NMR Zoom.

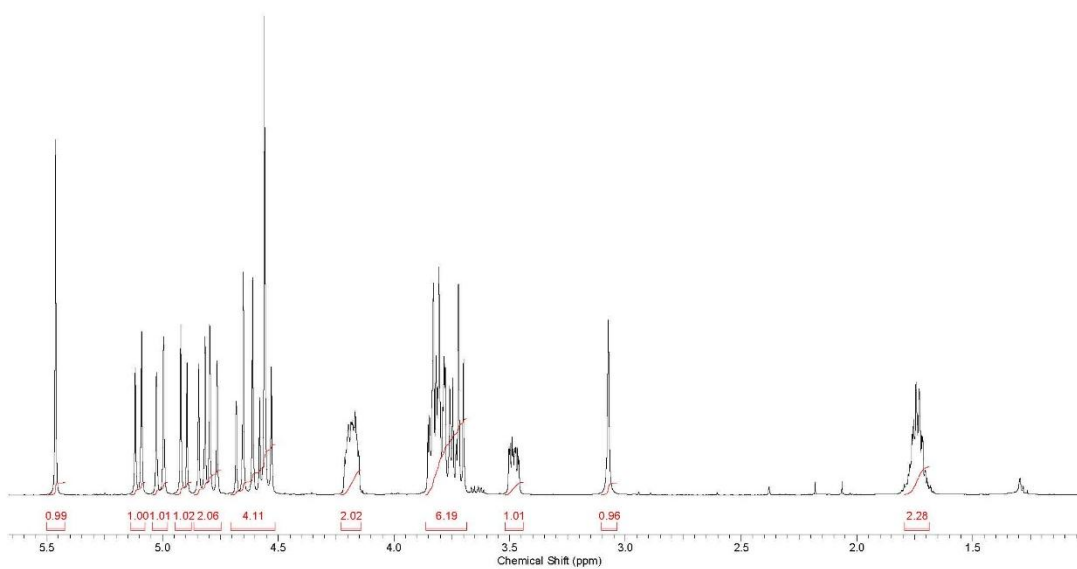
Acquisition Time (sec)	3.9584	Comment	Bo118	Date	17 Jul 2015 23:05:04	Date Stamp	17 Jul 2015 23:05:04
File Name	C:\Unit\Analytik\20150717-24-boda_Zi\10\PDATA\111r	Origin	spect	Original Points Count	32768	Frequency (MHz)	400.16
Number of Transients	32	Receiver Gain	45.30	SW(cyclical) (Hz)	8278.15	Owner	quest
Pulse Sequence	zg30	Spectrum Type	STANDARD	Sweep Width (Hz)	8277.89	Solvent	CHLOROFORM-d
Spectrum Offset (Hz)	2462.9351					Temperature (degree C)	26.200

Bo118_1H.esp

Figure S15. Compound 3c ¹H-NMR.

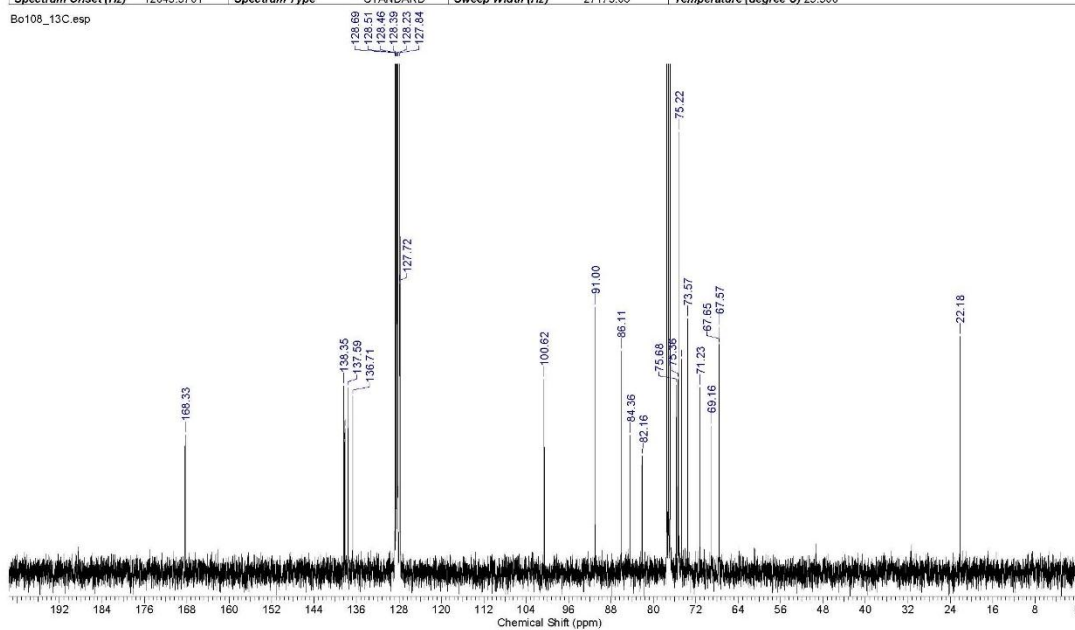
Acquisition Time (sec)	3.9584	Comment	Bo118	Date	17 Jul 2015 23:05:04	Date Stamp	17 Jul 2015 23:05:04
File Name	C:\Unit\Analytik\20150717-24-boda_Zi\10\PDATA\111r	Origin	spect	Original Points Count	32768	Frequency (MHz)	400.16
Number of Transients	32	Receiver Gain	45.30	SW(cyclical) (Hz)	8278.15	Owner	quest
Pulse Sequence	zg30	Spectrum Type	STANDARD	Sweep Width (Hz)	8277.89	Solvent	CHLOROFORM-d
Spectrum Offset (Hz)	2462.9351					Temperature (degree C)	26.200

Bo118_1H.esp

Figure S16. Compound 3c ¹H-NMR Zoom.

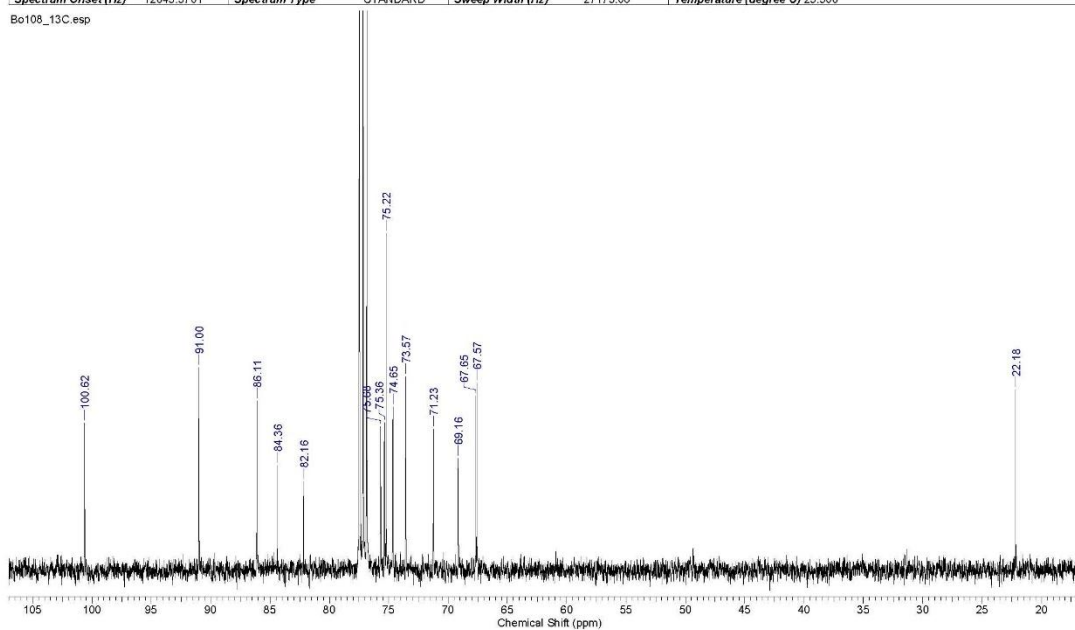
Acquisition Time (sec)	1.2059	Comment	Bo108.2	Date	25 Jun 2015 10:49:04
Date Stamp	25 Jun 2015 10:49:04			File Name	\\sn00.zdv.uni-tuebingen.de\MN020318\Bobo\Analytik\20150625-1-boda_Zi\111\data\111r
Frequency (MHz)	100.62	Nucleus	¹³ C	Number of Transients	256
Original Points Count	32768	Owner	guest	Points Count	32768
Receiver Gain	20842.50	SW(cyclical) (Hz)	27173.91	Solvent	CHLOROFORM-d
Spectrum Offset (Hz)	12043.3701	Spectrum Type	STANDARD	Sweep Width (Hz)	27173.08
				Temperature (degree C)	25.300

Bo108_13C.esp

Figure S17. Compound 3d ¹³C-NMR.

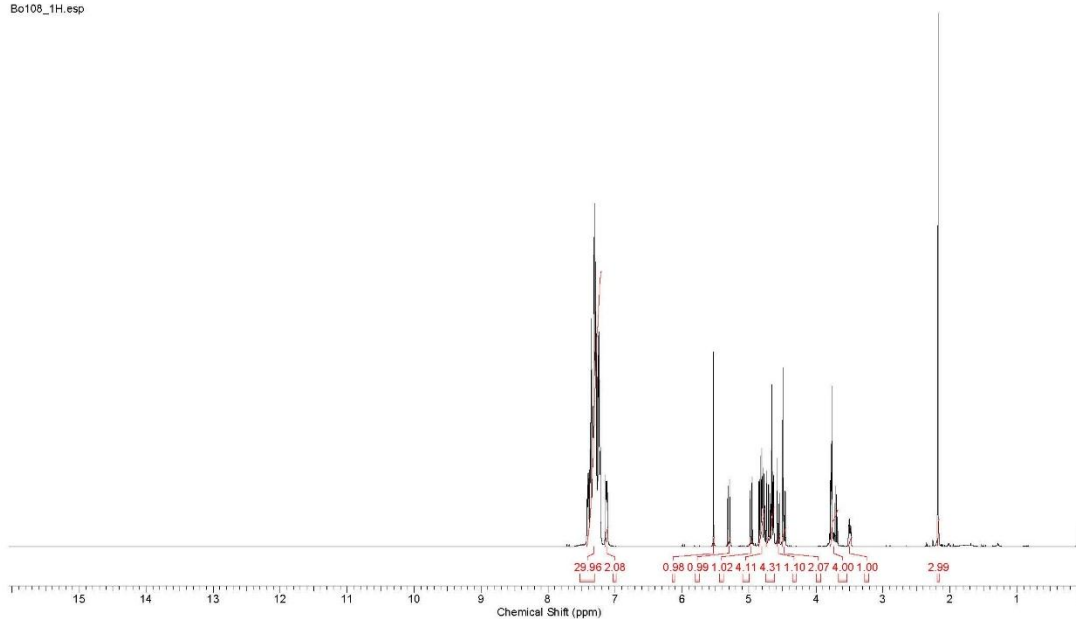
Acquisition Time (sec)	1.2059	Comment	Bo108.2	Date	25 Jun 2015 10:49:04
Date Stamp	25 Jun 2015 10:49:04			File Name	\\sn00.zdv.uni-tuebingen.de\MN020318\Bobo\Analytik\20150625-1-boda_Zi\111\data\111r
Frequency (MHz)	100.62	Nucleus	¹³ C	Number of Transients	256
Original Points Count	32768	Owner	guest	Points Count	32768
Receiver Gain	20842.50	SW(cyclical) (Hz)	27173.91	Solvent	CHLOROFORM-d
Spectrum Offset (Hz)	12043.3701	Spectrum Type	STANDARD	Sweep Width (Hz)	27173.08
				Temperature (degree C)	25.300

Bo108_13C.esp

Figure S18. Compound 3d ¹³C-NMR Zoom.

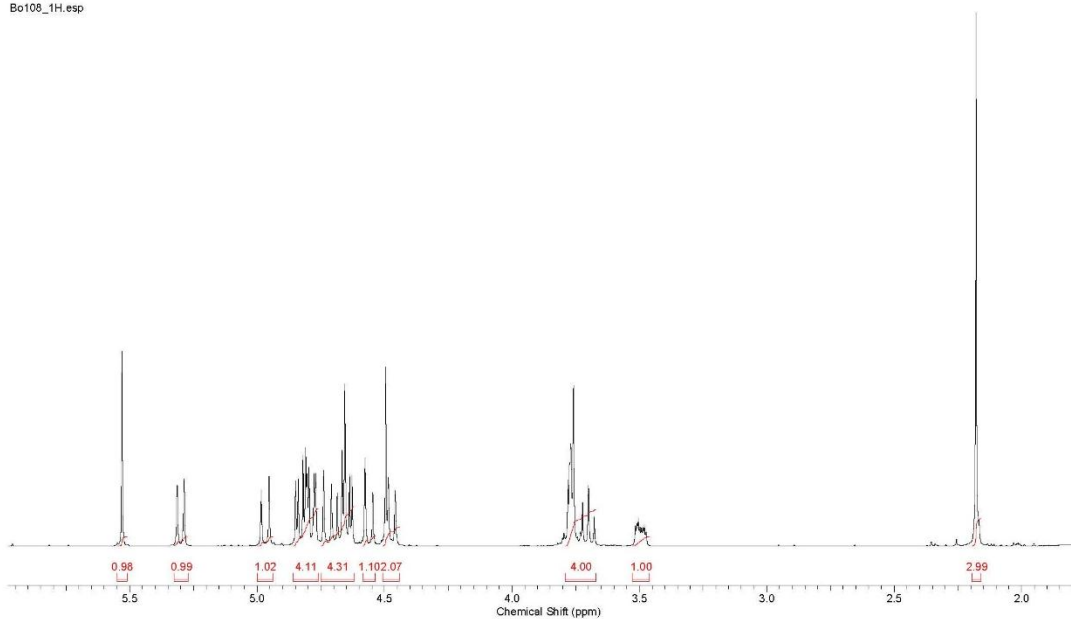
Acquisition Time (sec)	3.9584	Comment	Bo108.2	Date	25 Jun 2015 10:38:24
Date Stamp	25 Jun 2015 10:38:24			File Name	\\sn00.zdv.uni-tuebingen.de\\MN020318\\Bobo\\Analytik\\20150625-1-boda_ZN10\\PDAT\\1\\1r
Frequency (MHz)	400.16	Nucleus	¹ H	Number of Transients	32
Original Points Count	32768	Owner	guest	Points Count	32768
Receiver Gain	90.50	SW(cyclical) (Hz)	8278.15	Solvent	CHLOROFORM-d
Spectrum Offset (Hz)	2460.0828	Spectrum Type	STANDARD	Sweep Width (Hz)	8277.89
				Temperature (degree C)	24.900

Bo108_1H.esp

Figure S19. Compound 3d ¹H-NMR.

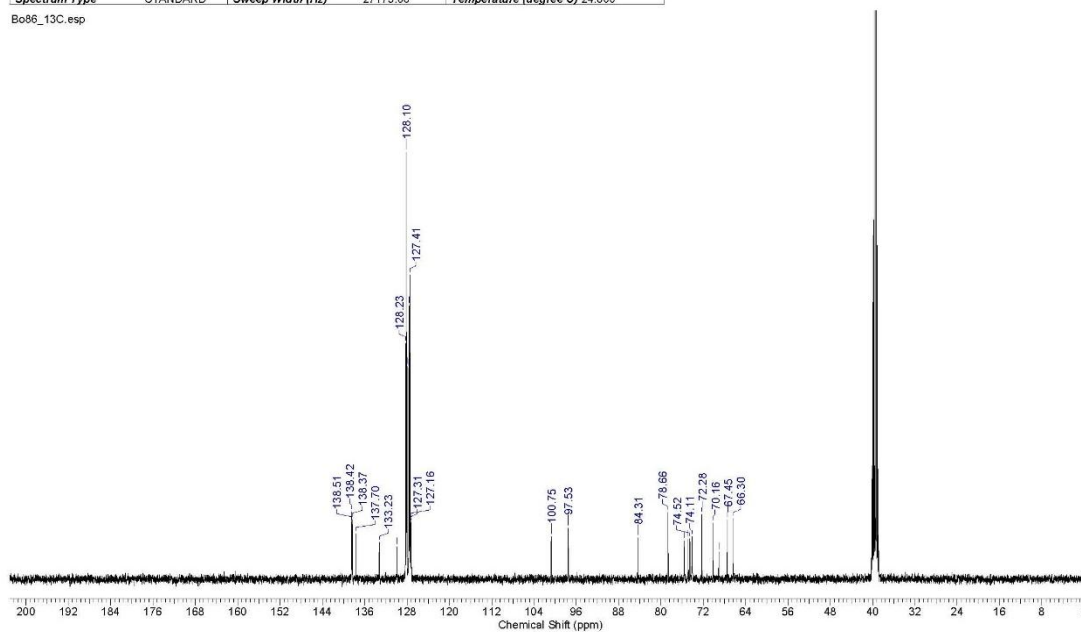
Acquisition Time (sec)	3.9584	Comment	Bo108.2	Date	25 Jun 2015 10:38:24
Date Stamp	25 Jun 2015 10:38:24			File Name	\\sn00.zdv.uni-tuebingen.de\\MN020318\\Bobo\\Analytik\\20150625-1-boda_ZN10\\PDAT\\1\\1r
Frequency (MHz)	400.16	Nucleus	¹ H	Number of Transients	32
Original Points Count	32768	Owner	guest	Points Count	32768
Receiver Gain	90.50	SW(cyclical) (Hz)	8278.15	Solvent	CHLOROFORM-d
Spectrum Offset (Hz)	2460.0828	Spectrum Type	STANDARD	Sweep Width (Hz)	8277.89
				Temperature (degree C)	24.900

Bo108_1H.esp

Figure S20. Compound 3d ¹H-NMR Zoom.

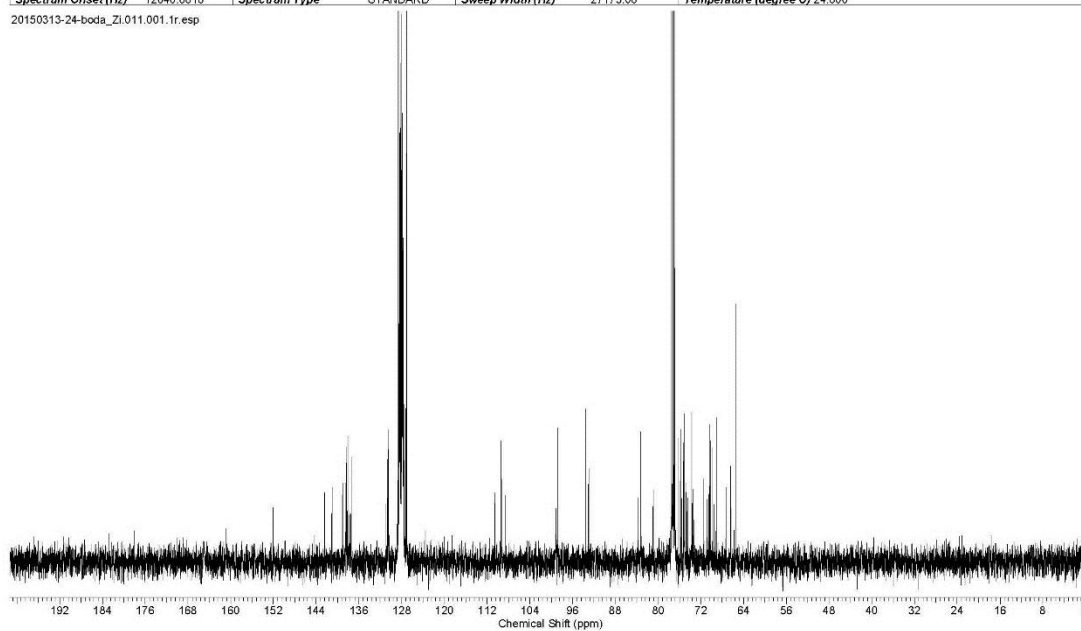
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Date Stamp	12 Mar 2015 22:49:52			File Name	\\sn00.zdv.uni-tuebingen.de\WN020318\Bobo\Analytik\20150312-12-boda_Zi\12\data\1\1r
Frequency (MHz)	100.62	Nucleus	¹³ C	Number of Transients	512
Original Points Count	32768	Owner	quest	Points Count	32768
Receiver Gain	18390.40	SW(cyclical) (Hz)	27173.91	Solvent	DMSO-d ₆
Spectrum Type	STANDARD	Sweep Width (Hz)	27173.08	Temperature (degree C)	24.600

Bo86_13C.esp

Figure S21. Compound **4a** ¹³C-NMR.

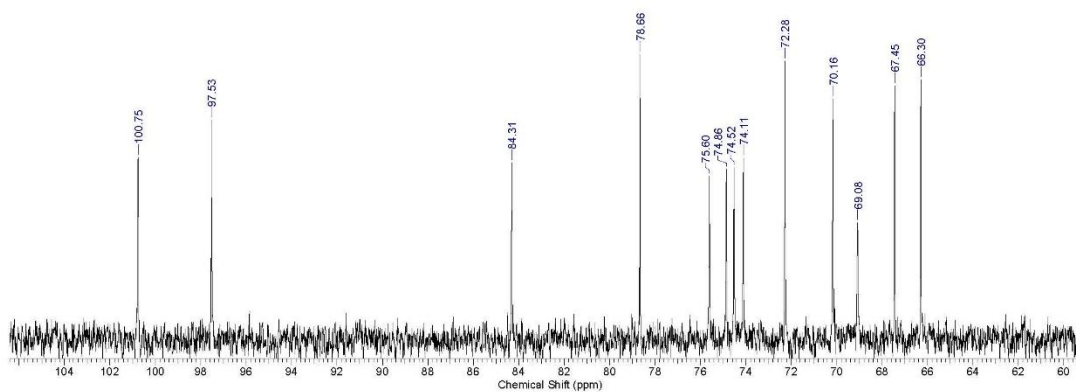
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Date Stamp	13 Mar 2015 16:45:04			File Name	\\sn00.zdv.uni-tuebingen.de\WN020318\Bobo\Analytik\20150313-24-boda_Zi\11\data\1\1r
Frequency (MHz)	100.62	Nucleus	¹³ C	Number of Transients	256
Original Points Count	32768	Owner	quest	Points Count	32768
Receiver Gain	20642.50	SW(cyclical) (Hz)	27173.91	Solvent	CHLOROFORM-d
Spectrum Offset (Hz)	12040.8818	Spectrum Type	STANDARD	Sweep Width (Hz)	27173.08

20150313-24-boda_Zi.011.001.1r.esp

Figure S22. Compound **4a** ¹³C-NMR chloroform.

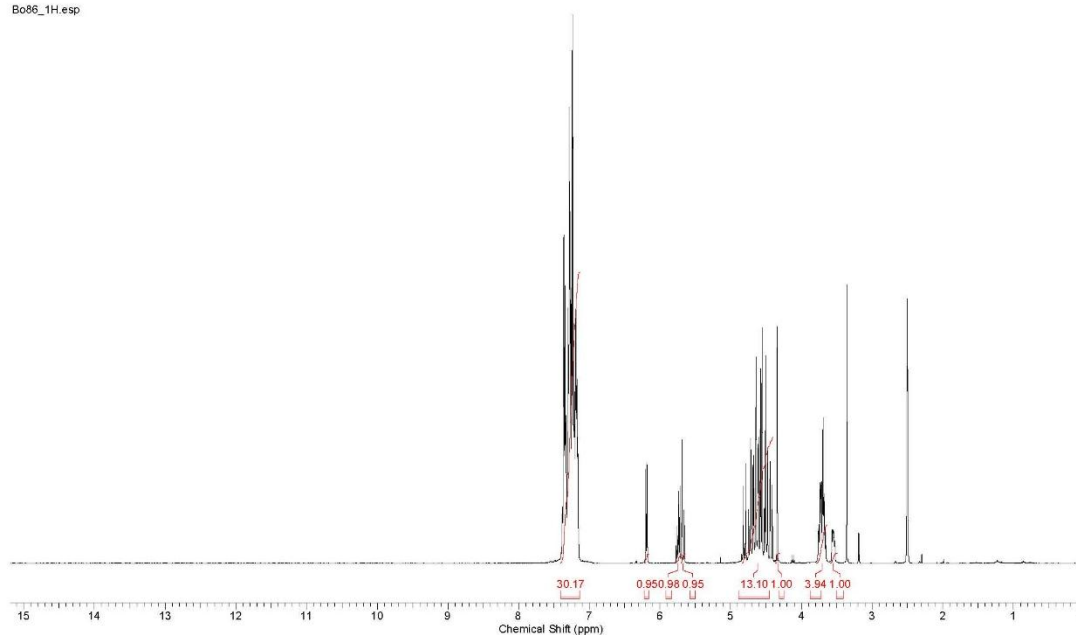
Acquisition Time (sec)	1.2059	Comment	Bo86.1.1	Date	12 Mar 2015 22:49:52
Date Stamp	12 Mar 2015 22:49:52			File Name	\\sn00.zdv.uni-tuebingen.de\WN020318\Bobo\Analytik\20150312-12-boda_Zi\12\data\1\1r
Frequency (MHz)	100.62	Nucleus	¹³ C	Number of Transients	512
Original Points Count	32768	Owner	quest	Points Count	32768
Receiver Gain	18390.40	SW(cyclical) (Hz)	27173.91	Solvent	DMSO-d ₆
Spectrum Type	STANDARD	Sweep Width (Hz)	27173.08	Temperature (degree C)	24.600
				Origin	spect
				Pulse Sequence	zgpg30
				Spectrum Offset (Hz)	11986.1348

Bo86_13C.esp

Figure S23. Compound 4a ¹³C-NMR Zoom.

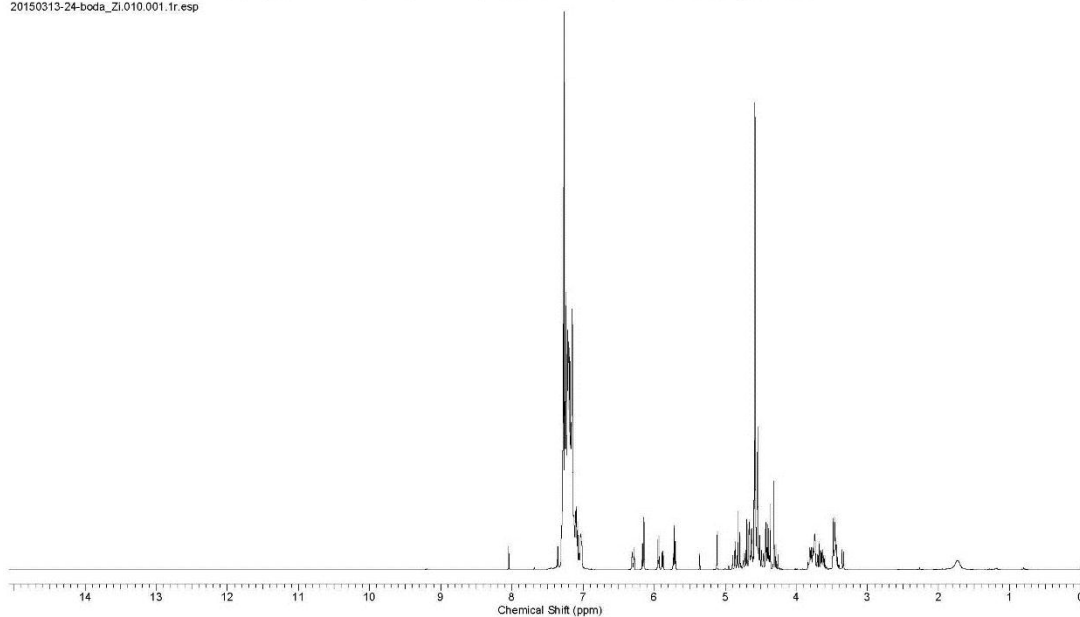
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Date Stamp	12 Mar 2015 22:28:32			File Name	\\sn00.zdv.uni-tuebingen.de\WN020318\Bobo\Analytik\20150312-12-boda_Zi\10\data\1\1r
Frequency (MHz)	400.16	Nucleus	¹ H	Number of Transients	32
Owner	quest	Points Count	32768	Pulse Sequence	zg30
Solvent	DMSO-d ₆	Spectrum Offset (Hz)	2469.5637	Spectrum Type	STANDARD
				Sweep Width (Hz)	8277.89
				Temperature (degree C)	24.400
				Origin	spect
				Receiver Gain	71.80
				SW(cyclical) (Hz)	8278.15

Bo86_1H.esp

Figure S24. Compound 4a ¹H-NMR.

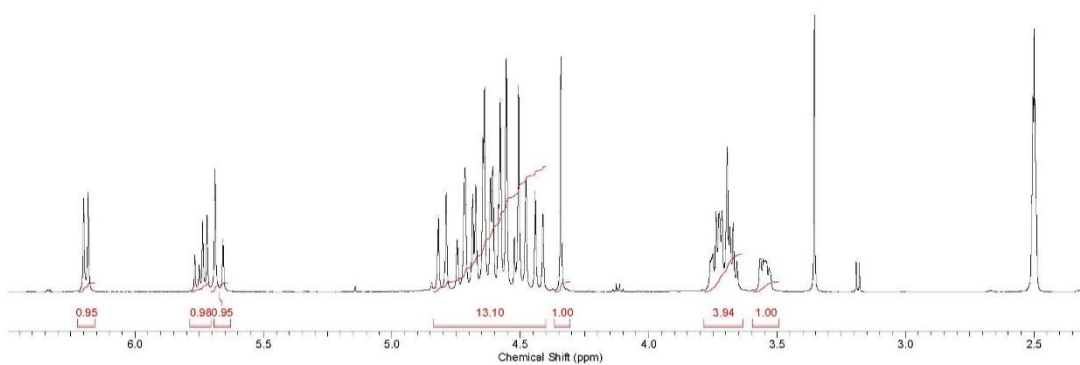
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Date Stamp	13 Mar 2015 16:34:24	File Name	\sn00.zdv.uni-luebingen.de\WN020318\Bobo\Analytik\20150313-24-boda_Zi\10\data\11\1r		
Frequency (MHz)	400.16	Nucleus	¹ H	Number of Transients	32
Original Points Count	32768	Owner	guest	Points Count	32768
Receiver Gain	71.80	SW(cyclical) (Hz)	8278.15	Pulse Sequence	zg30
Spectrum Offset (Hz)	2417.1821	Solvent	CHLOROFORM-d	Sweep Width (Hz)	8277.89
Spectrum Type	STANDARD	Temperature (degree C)	24.500		

20150313-24-boda_Zi.010.001.1r.esp

Figure S25. Compound 4a ¹H-NMR chloroform.

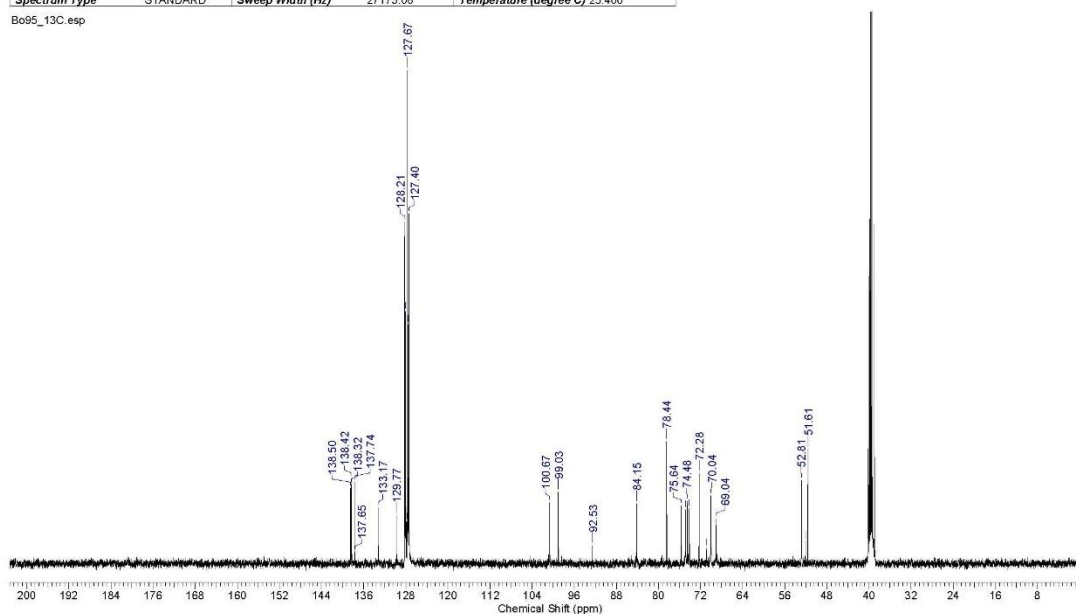
Acquisition Time (sec)	3.9584	Comment	Bo86.1.1	Date	12 Mar 2015 22:28:32
Date Stamp	12 Mar 2015 22:28:32	File Name	\sn00.zdv.uni-luebingen.de\WN020318\Bobo\Analytik\20150312-12-boda_Zi\10\data\11\1r		
Frequency (MHz)	400.16	Nucleus	¹ H	Number of Transients	32
Owner	guest	Points Count	32768	Pulse Sequence	zg30
Solvent	DMSO-d6	Receiver Gain	71.80	Original Points Count	32768
Spectrum Offset (Hz)	2469.5637	SW(cyclical) (Hz)	8278.15	Receiver Gain	71.80
Spectrum Type	STANDARD	Sweep Width (Hz)	8277.89	SW(cyclical) (Hz)	8278.15
		Temperature (degree C)	24.400		

Bo86_1H.esp

Figure S26. Compound 4a ¹H-NMR Zoom.

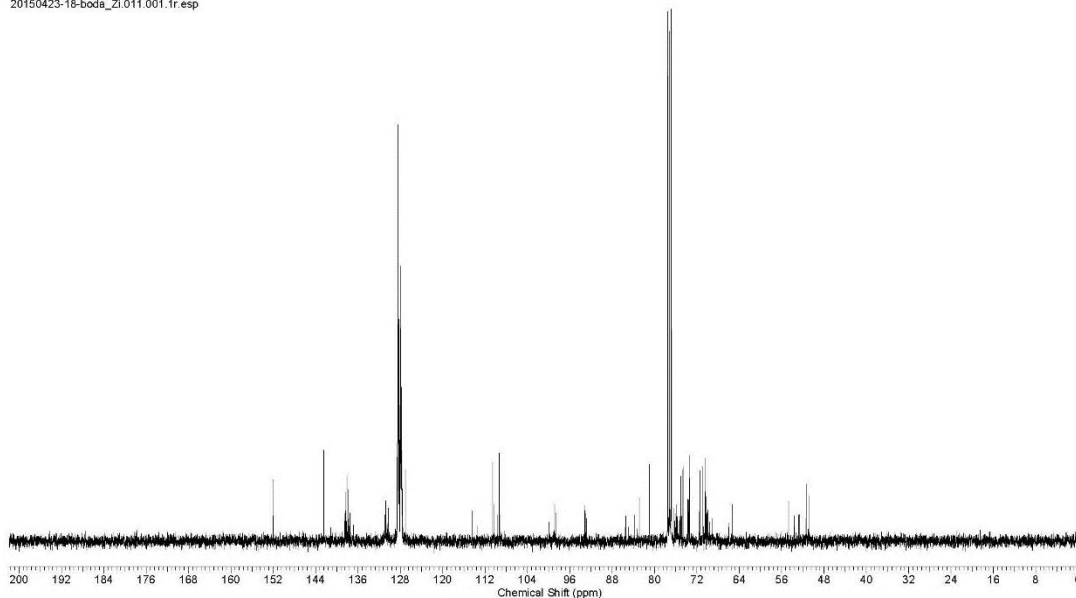
Acquisition Time (sec)	1.2059	Comment	Bo95	Date	24 Apr 2015 02:06:24
Date Stamp	24 Apr 2015 02:06:24				
File Name	\\sn00.zdv.uni-tuebingen.de\\MN020318\\Bobo\\Analytik\\bearbeitet\\Bo95\\20150423-31-boda_Zi\\11\\PDATA\\11r				
Frequency (MHz)	100.62	Nucleus	¹³ C	Number of Transients	512
Original Points Count	32768	Owner	guest	Points Count	32768
Receiver Gain	13004.00	SW(cyclical) (Hz)	27173.91	Solvent	DMSO-d6
Spectrum Type	STANDARD	Sweep Width (Hz)	27173.08	Temperature (degree C)	25.400
				Spectrum Offset (Hz)	11986.1348

Bo95_13C.esp

Figure S27. Compound **4b** ¹³C-NMR.

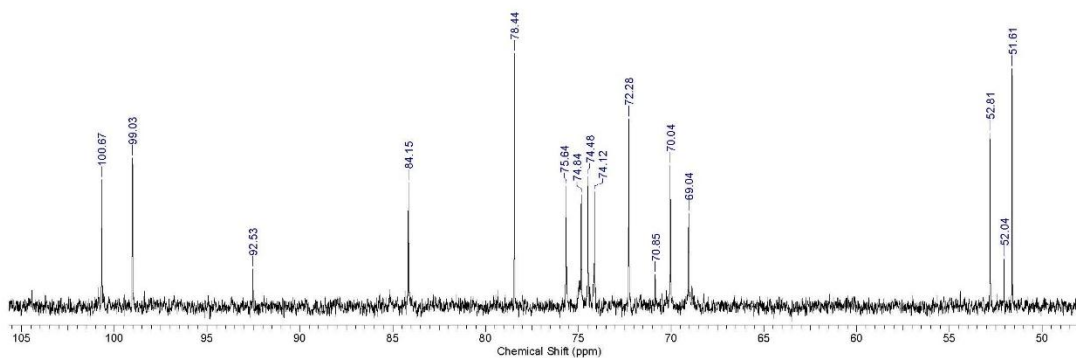
Acquisition Time (sec)	1.2059	Comment	Bo95_7-12	Date	23 Apr 2015 17:55:44
Date Stamp	23 Apr 2015 17:55:44				
File Name	\\sn00.zdv.uni-tuebingen.de\\MN020318\\Bobo\\Analytik\\bearbeitet\\Bo95\\20150423-18-boda_Zi\\11\\pdata\\11r				
Nucleus	¹³ C	Number of Transients	256	Origin	spect
Owner	guest	Points Count	32768	Pulse Sequence	zgpg30
SW(cyclical) (Hz)	27173.91	Solvent	CHLOROFORM-d	Receiver Gain	20642.50
Spectrum Type	STANDARD	Sweep Width (Hz)	27173.08	Temperature (degree C)	26.000
				Spectrum Offset (Hz)	12040.8818

20150423-18-boda_Zi011.001.1r.esp

Figure S28. Compound **4b** ¹³C-NMR chloroform.

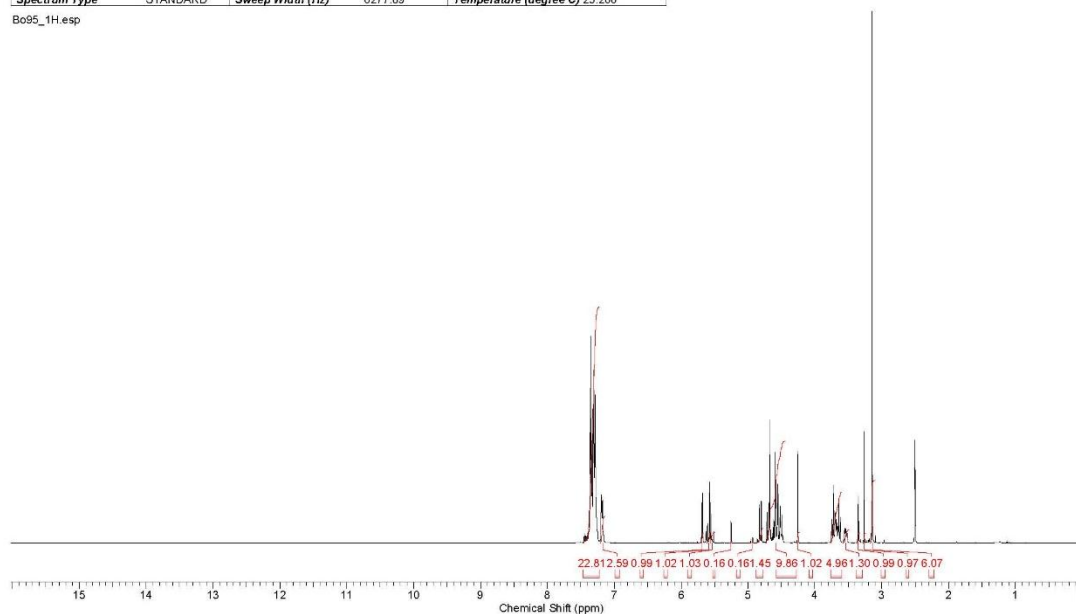
Acquisition Time (sec)	1.2059	Comment	Bo95	Date	24 Apr 2015 02:06:24
Date Stamp	24 Apr 2015 02:06:24				
File Name	\\sn00.zdv.uni-tuebingen.de\\MN020318\\Bobo\\Analytik\\bearbeitet\\Bo95\\20150423-31-boda_Zi\\11\\PDATA\\1\\1r				
Frequency (MHz)	100.62	Nucleus	13C	Number of Transients	512
Original Points Count	32768	Owner	guest	Points Count	32768
Receiver Gain	13004.00	SW(cyclical) (Hz)	27173.91	Solvent	DMSO-d6
Spectrum Type	STANDARD	Sweep Width (Hz)	27173.08	Temperature (degree C)	25.400
				Spectrum Offset (Hz)	11986.1348

Bo95_13C.esp

Figure S29. Compound 4b ¹³C-NMR Zoom.

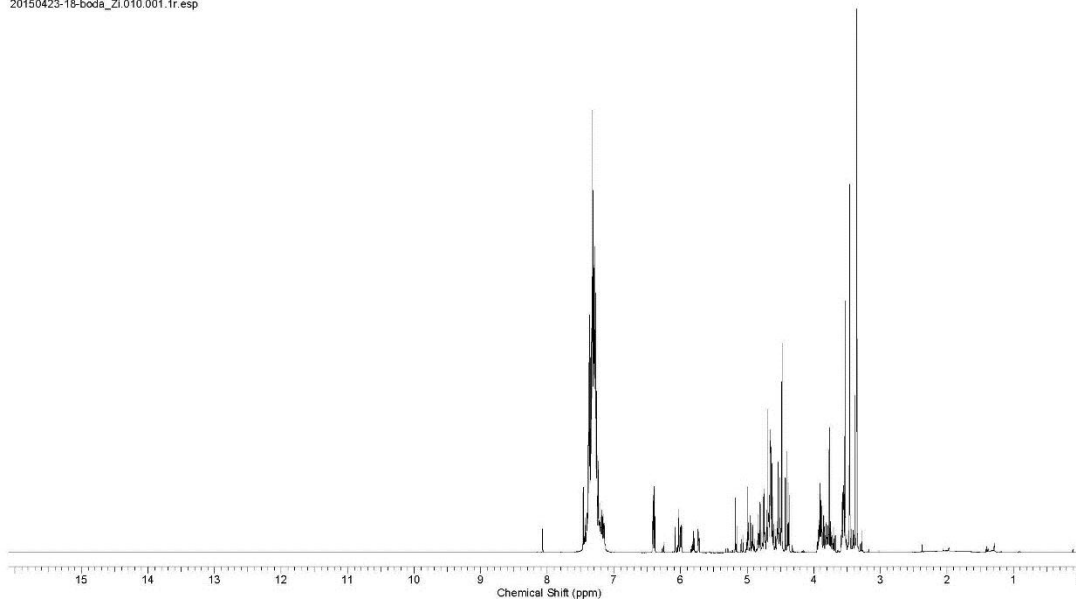
Acquisition Time (sec)	3.9584	Comment	Bo95	Date	24 Apr 2015 01:47:12
Date Stamp	24 Apr 2015 01:47:12				
File Name	\\sn00.zdv.uni-tuebingen.de\\MN020318\\Bobo\\Analytik\\bearbeitet\\Bo95\\20150423-31-boda_Zi\\10\\PDATA\\1\\1r				
Frequency (MHz)	400.16	Nucleus	1H	Number of Transients	32
Original Points Count	32768	Owner	guest	Points Count	32768
Receiver Gain	71.80	SW(cyclical) (Hz)	8278.15	Solvent	DMSO-d6
Spectrum Type	STANDARD	Sweep Width (Hz)	8277.89	Temperature (degree C)	25.200
				Spectrum Offset (Hz)	2471.1501

Bo95_1H.esp

Figure S30. Compound 4b ¹H-NMR.

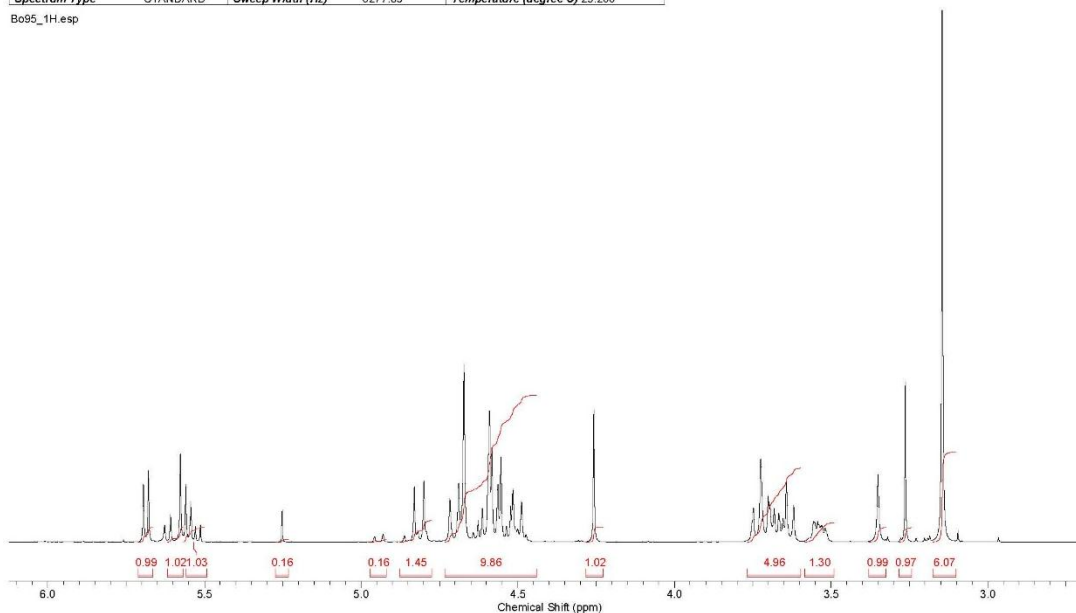
Acquisition Time (sec)	3.9584	Comment	Bo95_7-12	Date	23 Apr 2015 17:45:04
Date Stamp	23 Apr 2015 17:45:04				
File Name	\\sn00.zdv.uni-tuebingen.de\MN020318\Bobo\Analytik\bearbeitet\Bo95\20150423-18-boda_Zi\10\data\11r				
Nucleus	1H	Number of Transients	32	Origin	spect
Owner	quest	Points Count	32768	Pulse Sequence	zg30
SW(cyclical) (Hz)	8278.15	Solvent	CHLOROFORM-d	Original Points Count	32768
Spectrum Type	STANDARD	Sweep Width (Hz)	8277.89	Receiver Gain	64.00
		Temperature (degree C)	25.700	Spectrum Offset (Hz)	2463.1877

20150423-18-boda_Zi.010.001.1r.esp

Figure S31. Compound 4b ¹H-NMR chloroform.

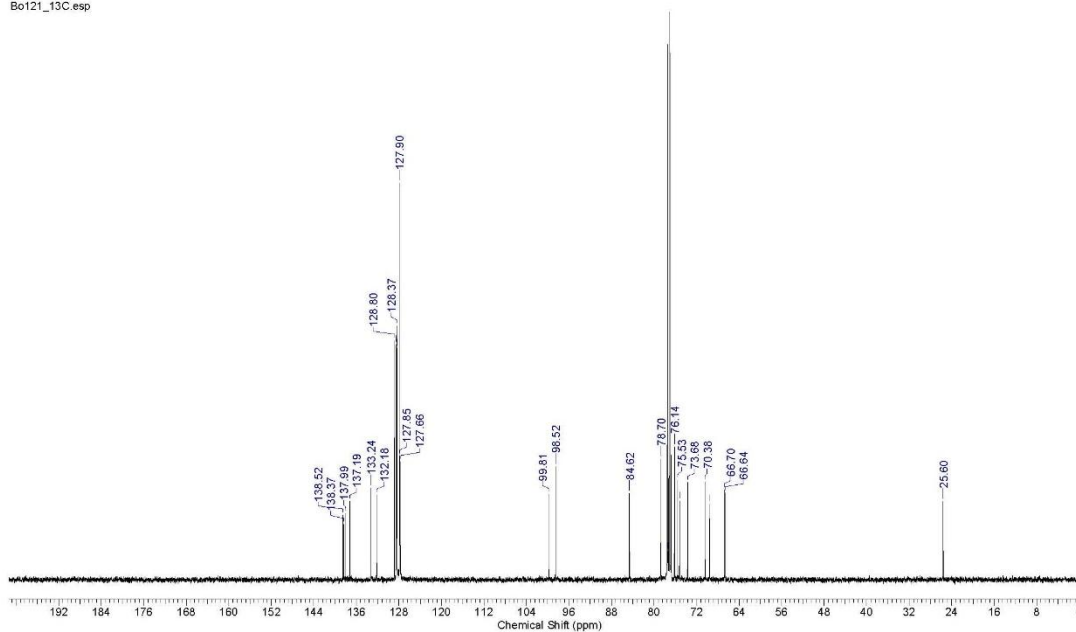
Acquisition Time (sec)	3.9584	Comment	Bo95	Date	24 Apr 2015 01:47:12
Date Stamp	24 Apr 2015 01:47:12				
File Name	\\sn00.zdv.uni-tuebingen.de\MN020318\Bobo\Analytik\bearbeitet\Bo95\20150423-31-boda_Zi\10\PDAT\11r				
Frequency (MHz)	400.16	Nucleus	1H	Number of Transients	32
Original Points Count	32768	Owner	quest	Points Count	32768
Receiver Gain	71.80	SW(cyclical) (Hz)	8278.15	Solvent	DMSO-d6
Spectrum Type	STANDARD	Sweep Width (Hz)	8277.89	Temperature (degree C)	25.200
				Spectrum Offset (Hz)	2471.1501

Bo95_1H.esp

Figure S32. Compound 4b ¹H-NMR Zoom.

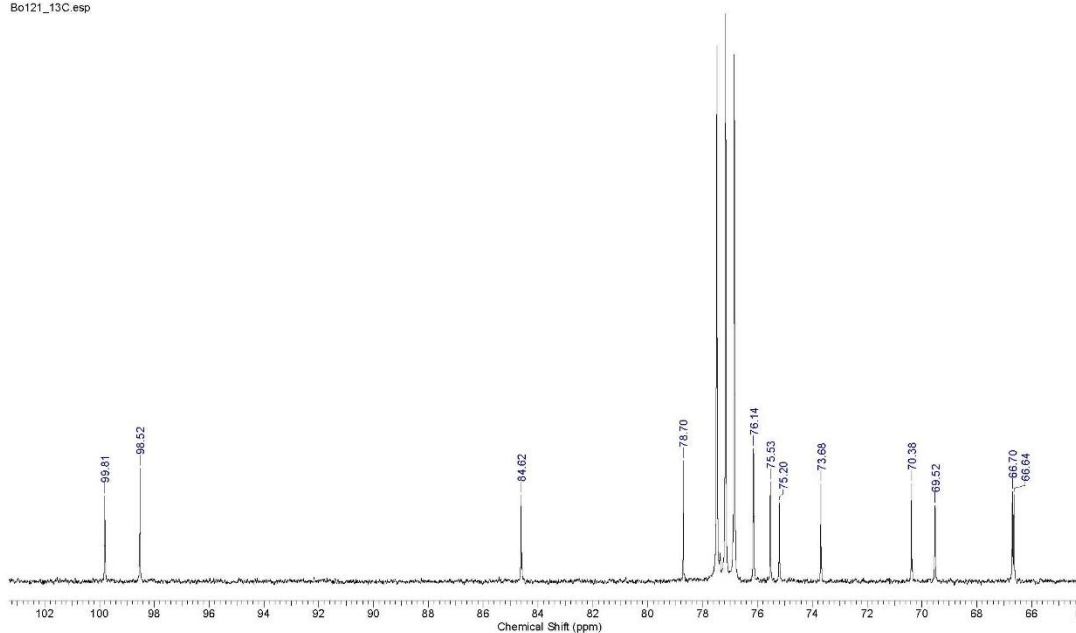
Acquisition Time (sec)	1.2059	Comment	Bo121	Date	22 Aug 2015 15:07:12		
Date Stamp	22 Aug 2015 15:07:12			File Name	C:\Uni\Analytik\20150822-25-boda_Zi\11\data\11\fr	Frequency (MHz)	100.62
Nucleus	¹³ C	Number of Transients	2048	Origin	spect	Original Points Count	32768
Points Count	32768	Pulse Sequence	zgpg30	Receiver Gain	18390.40	SW(cyclical) (Hz)	27173.91
Spectrum Offset (Hz)	12045.0283	Spectrum Type	STANDARD	Sweep Width (Hz)	27173.08	Temperature (degree C)	26.200
						Solvent	CHLOROFORM-d

Bo121_13C.esp

Figure S33. Compound 4c ¹³C-NMR.

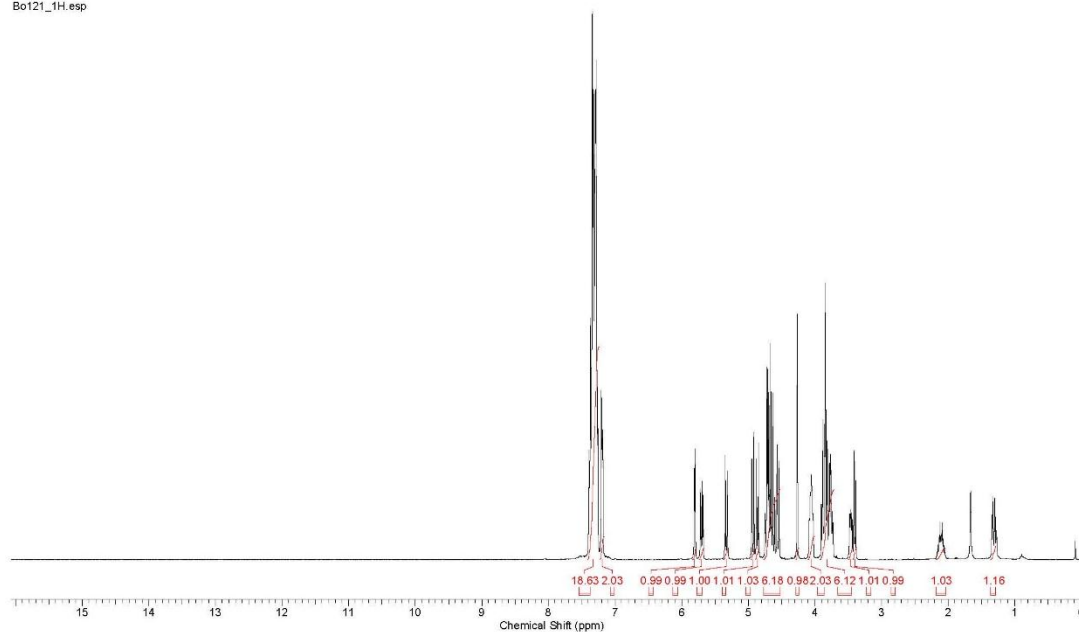
Acquisition Time (sec)	1.2059	Comment	Bo121	Date	22 Aug 2015 15:07:12		
Date Stamp	22 Aug 2015 15:07:12			File Name	C:\Uni\Analytik\20150822-25-boda_Zi\11\data\11\fr	Frequency (MHz)	100.62
Nucleus	¹³ C	Number of Transients	2048	Origin	spect	Original Points Count	32768
Points Count	32768	Pulse Sequence	zgpg30	Receiver Gain	18390.40	SW(cyclical) (Hz)	27173.91
Spectrum Offset (Hz)	12045.0283	Spectrum Type	STANDARD	Sweep Width (Hz)	27173.08	Temperature (degree C)	26.200
						Solvent	CHLOROFORM-d

Bo121_13C.esp

Figure S34. Compound 4c ¹³C-NMR Zoom.

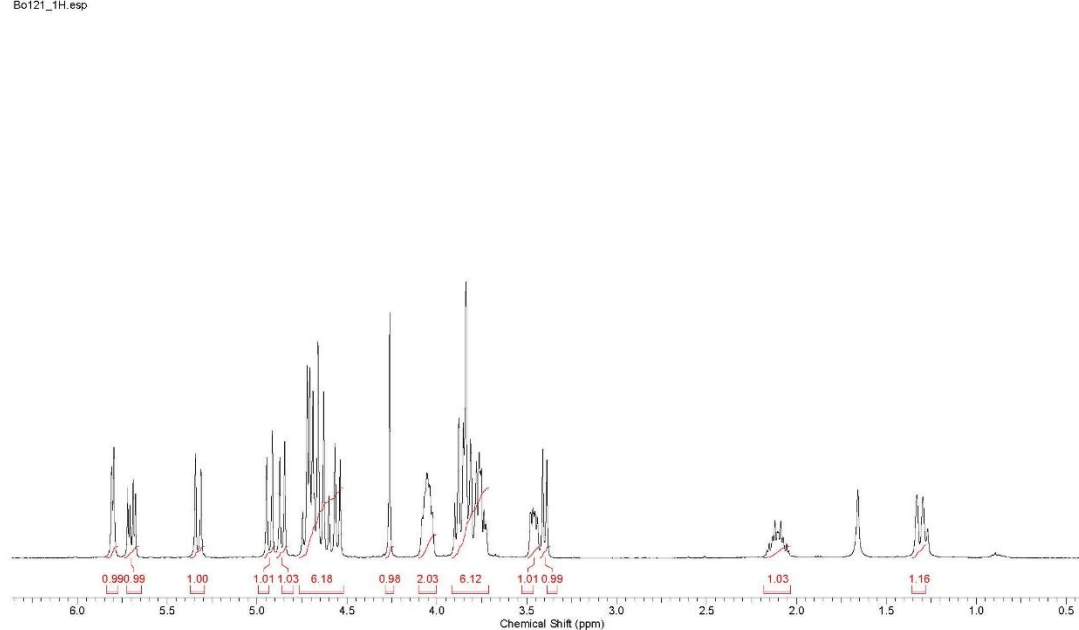
Acquisition Time (sec)	3.9584	Comment	Bo121	Date	22 Aug 2015 13:48:16	Date Stamp	22 Aug 2015 13:48:16
File Name	C:\Unif\Analytik\20150822-25-boda_Zi\10\PDATA\1\11	Frequency (MHz)	400.16	Nucleus	1H	Number of Transients	64
Origin	spect	Original Points Count	32768	Owner	quest	Points Count	32768
Receiver Gain	114.00	SW(cyclical) (Hz)	8278.15	Solvent	CHLOROFORM-d	Pulse Sequence	zg30
Spectrum Type	STANDARD	Sweep Width (Hz)	8277.89	Temperature (degree C)	25.600	Spectrum Offset (Hz)	2482.9351

Bo121_1H.esp

Figure S35. Compound 4c ¹H-NMR.

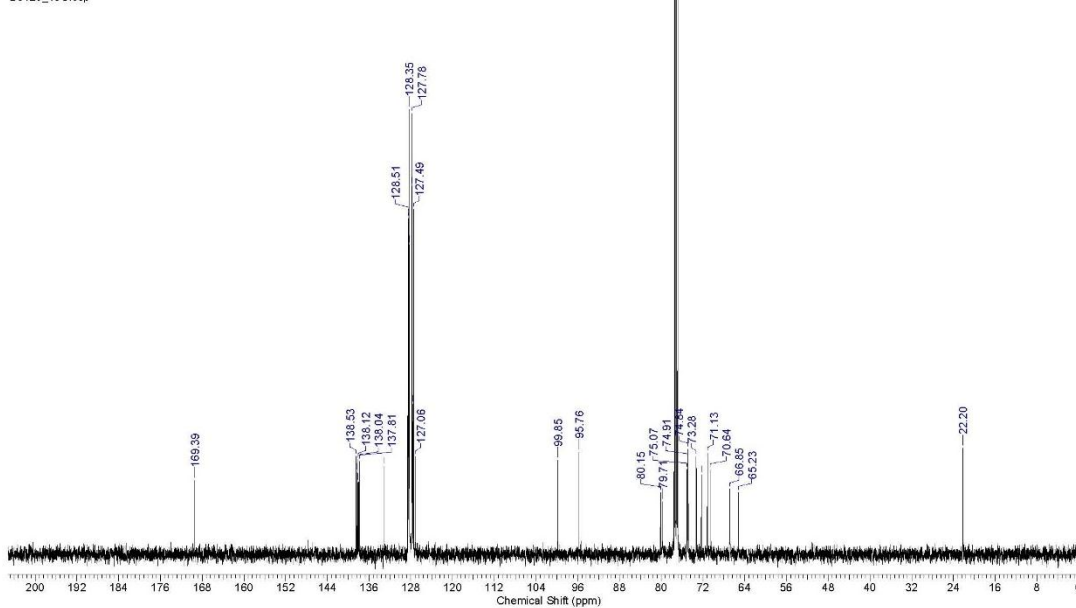
Acquisition Time (sec)	3.9584	Comment	Bo121	Date	22 Aug 2015 13:48:16	Date Stamp	22 Aug 2015 13:48:16
File Name	C:\Unif\Analytik\20150822-25-boda_Zi\10\PDATA\1\11	Frequency (MHz)	400.16	Nucleus	1H	Number of Transients	64
Origin	spect	Original Points Count	32768	Owner	quest	Points Count	32768
Receiver Gain	114.00	SW(cyclical) (Hz)	8278.15	Solvent	CHLOROFORM-d	Pulse Sequence	zg30
Spectrum Type	STANDARD	Sweep Width (Hz)	8277.89	Temperature (degree C)	25.600	Spectrum Offset (Hz)	2482.9351

Bo121_1H.esp

Figure S36. Compound 4c ¹H-NMR Zoom.

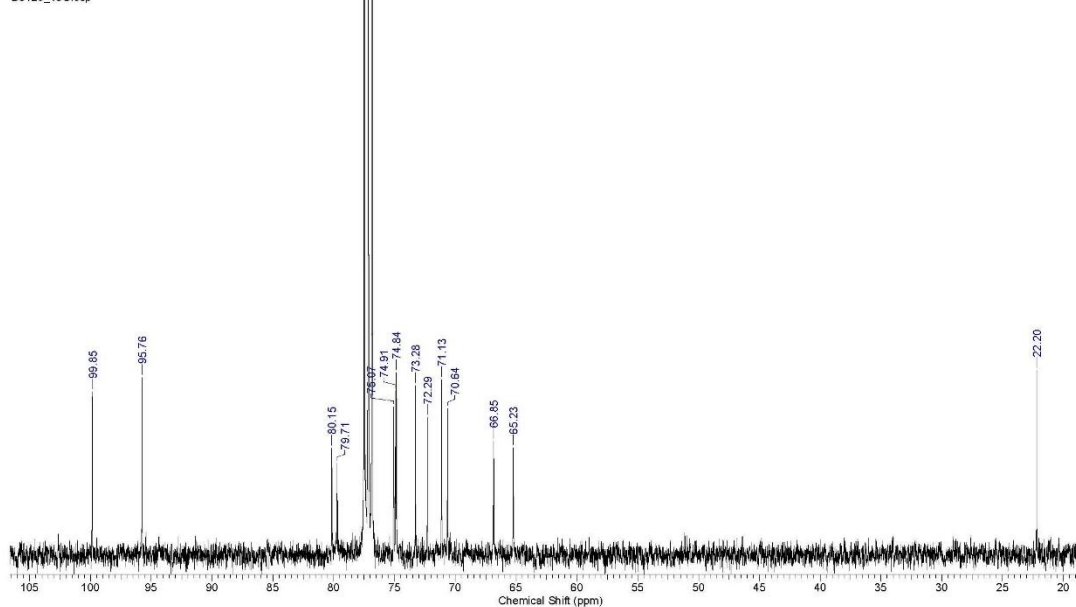
Acquisition Time (sec)	1.2059	Comment	Bo126	Date	07 Sep 2015 22:13:52
Date Stamp	07 Sep 2015 22:13:52			File Name	\\sn00.zdv.uni-luebingen.de\MN020318\Bobo\Analytik\20150907-13-boda_ZH11\IPDATA\11r
Frequency (MHz)	100.62	Nucleus	¹³ C	Number of Transients	1024
Original Points Count	32768	Owner	quest	Points Count	32768
Receiver Gain	20642.50	SW(cyclical) (Hz)	27173.91	Solvent	CHLOROFORM-d
Spectrum Offset (Hz)	12046.8875	Spectrum Type	STANDARD	Sweep Width (Hz)	27173.08
				Temperature (degree C)	25.800

Bo126_13C.esp

Figure S37. Compound 4d ¹³C-NMR.

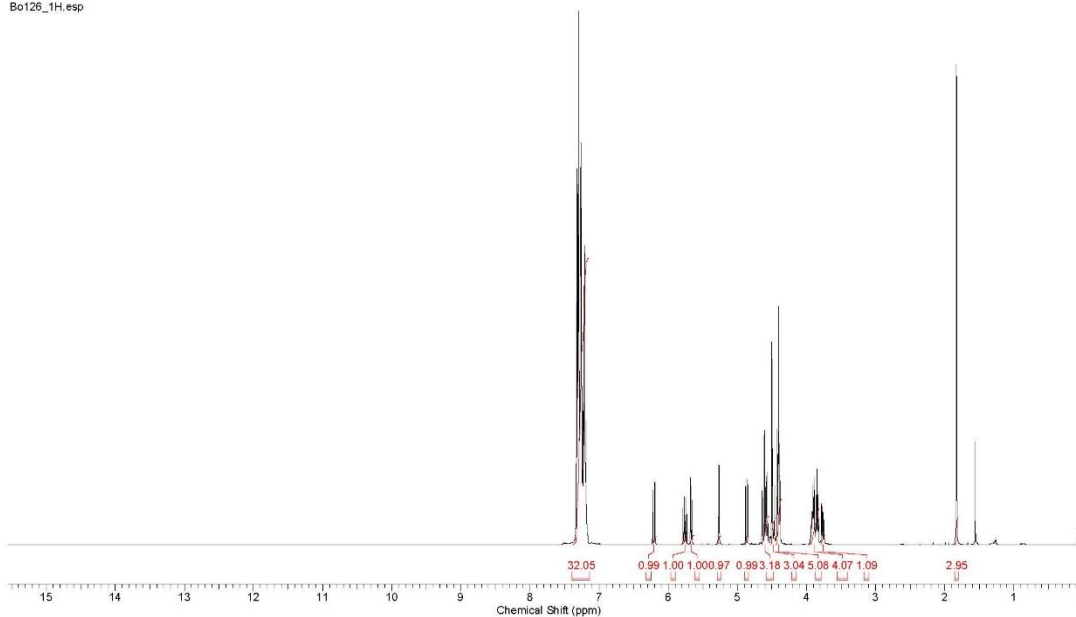
Acquisition Time (sec)	1.2059	Comment	Bo126	Date	07 Sep 2015 22:13:52
Date Stamp	07 Sep 2015 22:13:52			File Name	\\sn00.zdv.uni-luebingen.de\MN020318\Bobo\Analytik\20150907-13-boda_ZH11\IPDATA\11r
Frequency (MHz)	100.62	Nucleus	¹³ C	Number of Transients	1024
Original Points Count	32768	Owner	quest	Points Count	32768
Receiver Gain	20642.50	SW(cyclical) (Hz)	27173.91	Solvent	CHLOROFORM-d
Spectrum Offset (Hz)	12046.8875	Spectrum Type	STANDARD	Sweep Width (Hz)	27173.08
				Temperature (degree C)	25.800

Bo126_13C.esp

Figure S38. Compound 4d ¹³C-NMR Zoom.

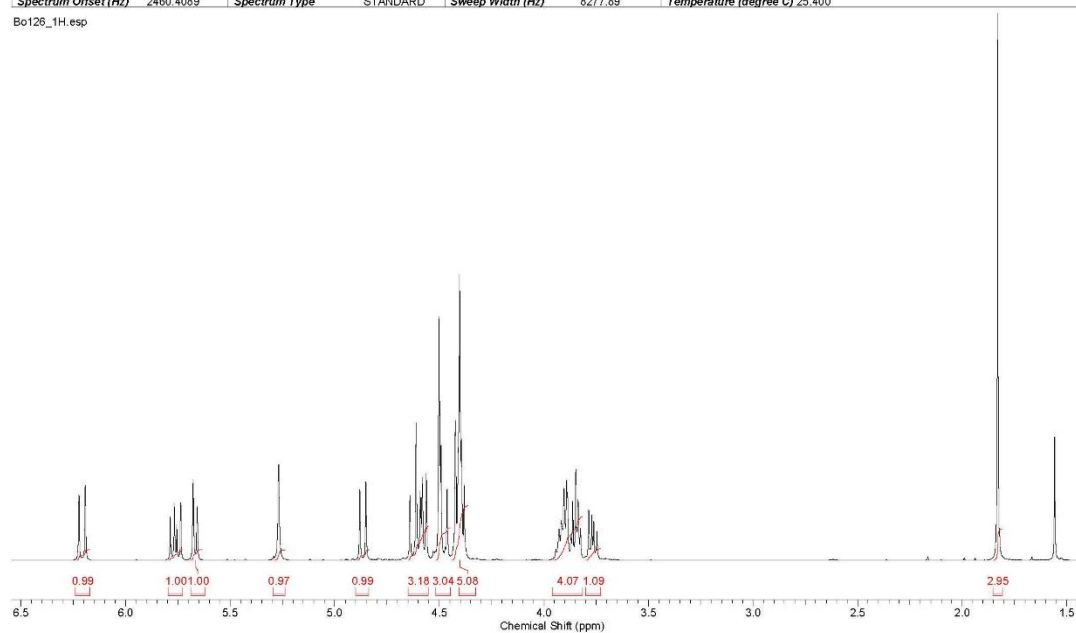
Acquisition Time (sec)	3.9584	Comment	Bo126	Date	07 Sep 2015 16:26:08
Date Stamp	07 Sep 2015 16:26:08			File Name	\\sn00.zdv.uni-tuebingen.de\MN020318\Bobo\Analytik\20150907-13-boda_Zi\10\data\111r
Frequency (MHz)	400.16	Nucleus	1H	Number of Transients	64
Original Points Count	32768	Owner	guest	Points Count	32768
Receiver Gain	128.00	SW(cyclical) (Hz)	8278.15	Solvent	CHLOROFORM-d
Spectrum Offset (Hz)	2460.4089	Spectrum Type	STANDARD	Sweep Width (Hz)	8277.89
				Temperature (degree C)	25.400

Bo126_1H.esp

Figure S39. Compound 4d ¹H-NMR.

Acquisition Time (sec)	3.9584	Comment	Bo126	Date	07 Sep 2015 16:26:08
Date Stamp	07 Sep 2015 16:26:08			File Name	\\sn00.zdv.uni-tuebingen.de\MN020318\Bobo\Analytik\20150907-13-boda_Zi\10\data\111r
Frequency (MHz)	400.16	Nucleus	1H	Number of Transients	64
Original Points Count	32768	Owner	guest	Points Count	32768
Receiver Gain	128.00	SW(cyclical) (Hz)	8278.15	Solvent	CHLOROFORM-d
Spectrum Offset (Hz)	2460.4089	Spectrum Type	STANDARD	Sweep Width (Hz)	8277.89
				Temperature (degree C)	25.400

Bo126_1H.esp

Figure S40. Compound 4d ¹H-NMR Zoom.