

## Supplementary Information

### Synthetic Analogue of the Natural Product Piperlongumine as a Potent Inhibitor of Breast Cancer Cell Line Migration

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DRMV1 - CDCl3 - Bruker 400 MHz - 1H

Parameter	Value
Spectrometer	spect
Solvent	CDCl3
Temperature	294.2
Pulse Sequence	zg30
Number of Scans	8
Receiver Gain	128
Relaxation Delay	0.5000
Pulse Width	5.8000
Acquisition Time	2.7329
Acquisition Date	2013-01-10T07:40:19
Echo Delay	0.0000
Gradient Duration	0.0000
Spectrometer Frequency	400.13
Spectral Width	5995.2
Nucleus	1H

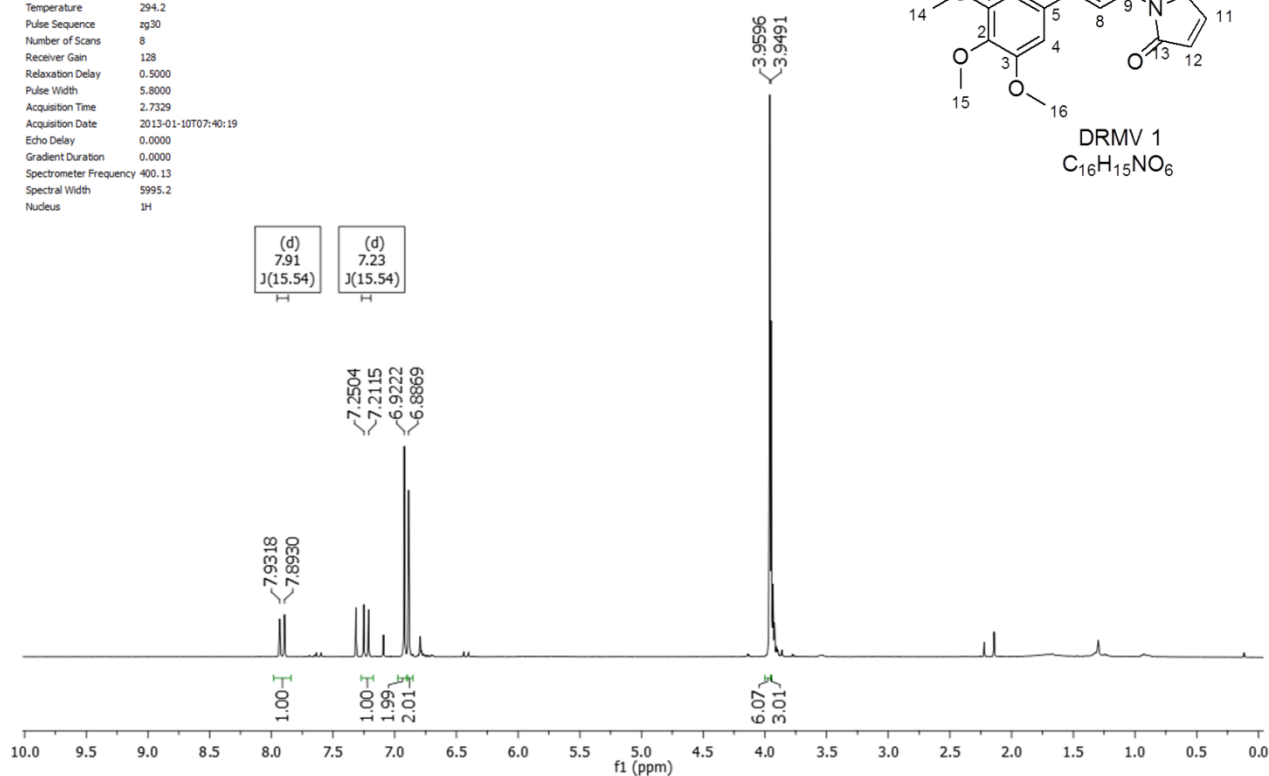
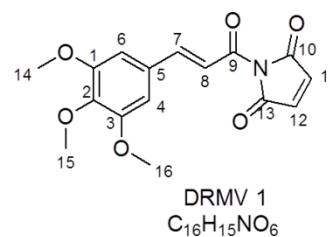


Figure S1. <sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) of **2**.

DRMV1 - CDCl3 - Bruker 300 MHz - 13C

Parameter	Value
Spectrometer	spect
Solvent	CDCl3
Temperature	293.6
Pulse Sequence	zgpg
Number of Scans	152
Receiver Gain	23170
Relaxation Delay	2.5000
Pulse Width	8.5000
Acquisition Time	0.7226
Acquisition Date	2012-12-20T11:51:24
Echo Delay	0.0000
Gradient Duration	0.0000
Spectrometer Frequency	75.47
Spectral Width	22675.7
Nucleus	13C

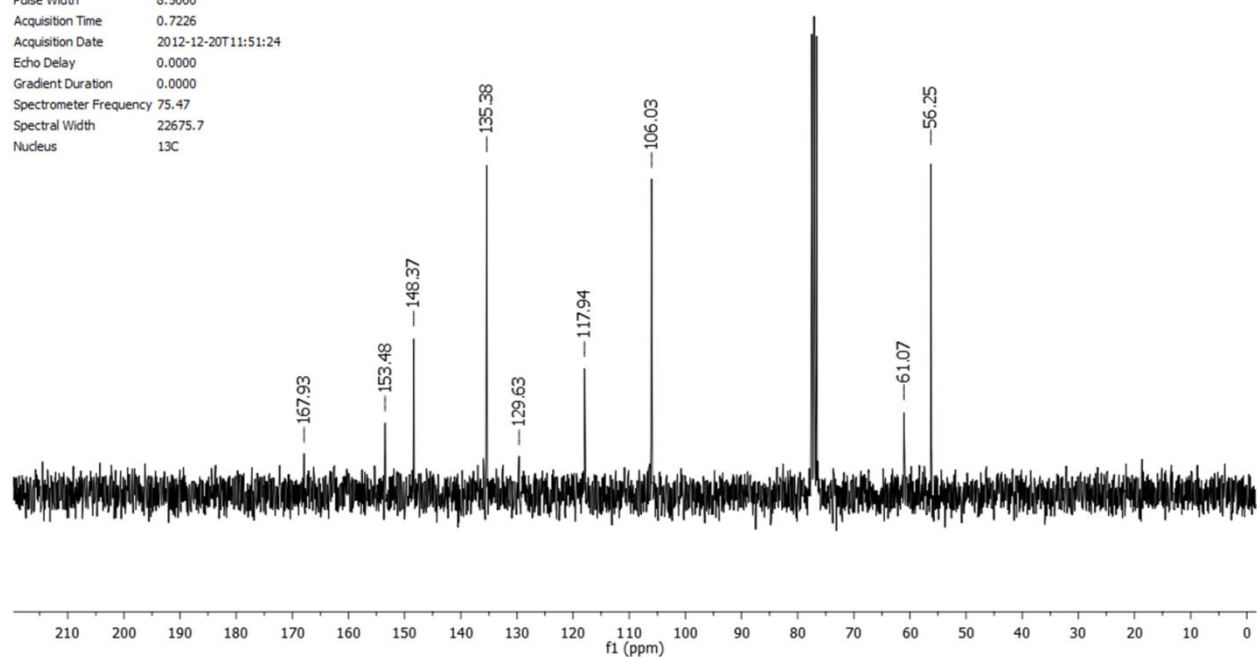


Figure S2. <sup>13</sup>C NMR (75 MHz, CDCl<sub>3</sub>) of **2**.

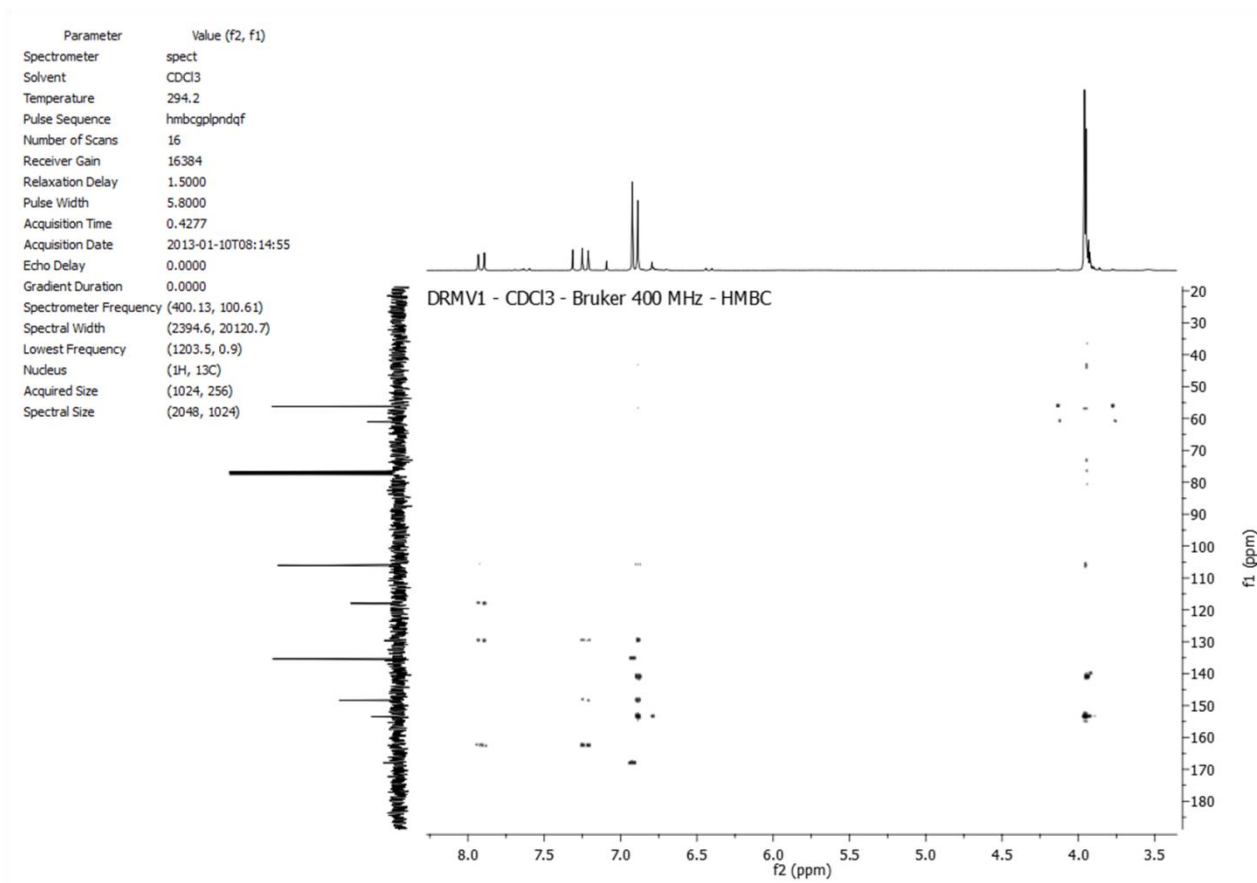


Figure S3. HMBC (400 MHz, CDCl<sub>3</sub>) of **2**.

DRMV2 - CDCl3 - Avance III 600 MHz - 1H

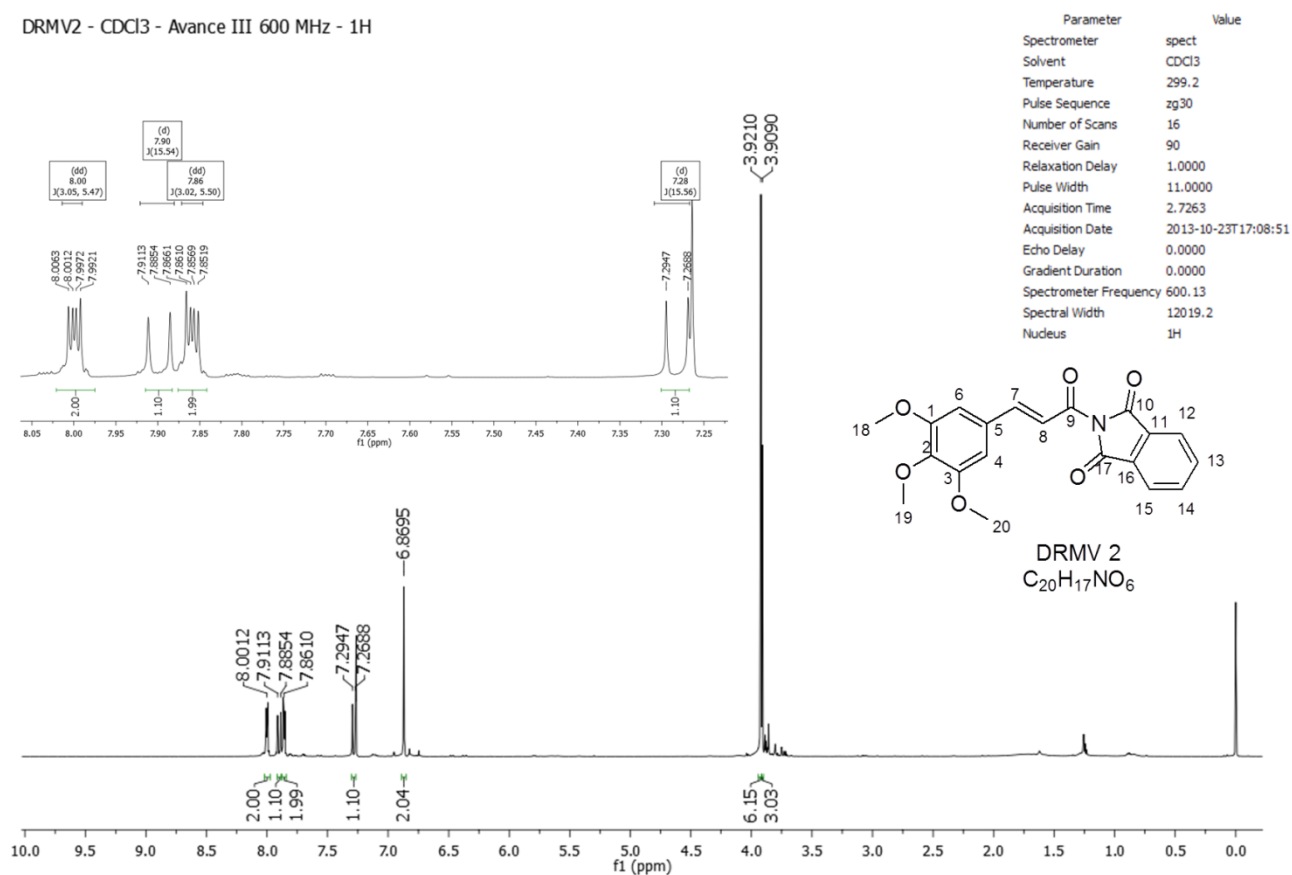


Figure S4. <sup>1</sup>H NMR (600 MHz, CDCl<sub>3</sub>) of **3**.

DRMV2 - CDCl3 - Avance III 600 MHz - 13C

Parameter	Value
Spectrometer	spect
Solvent	CDCl3
Temperature	299.4
Pulse Sequence	zgpg30
Number of Scans	372
Receiver Gain	81
Relaxation Delay	2.0000
Pulse Width	11.0000
Acquisition Time	0.9088
Acquisition Date	2013-10-24T13:43:35
Echo Delay	0.0000
Gradient Duration	0.0000
Spectrometer Frequency	150.90
Spectral Width	35057.7
Nucleus	13C

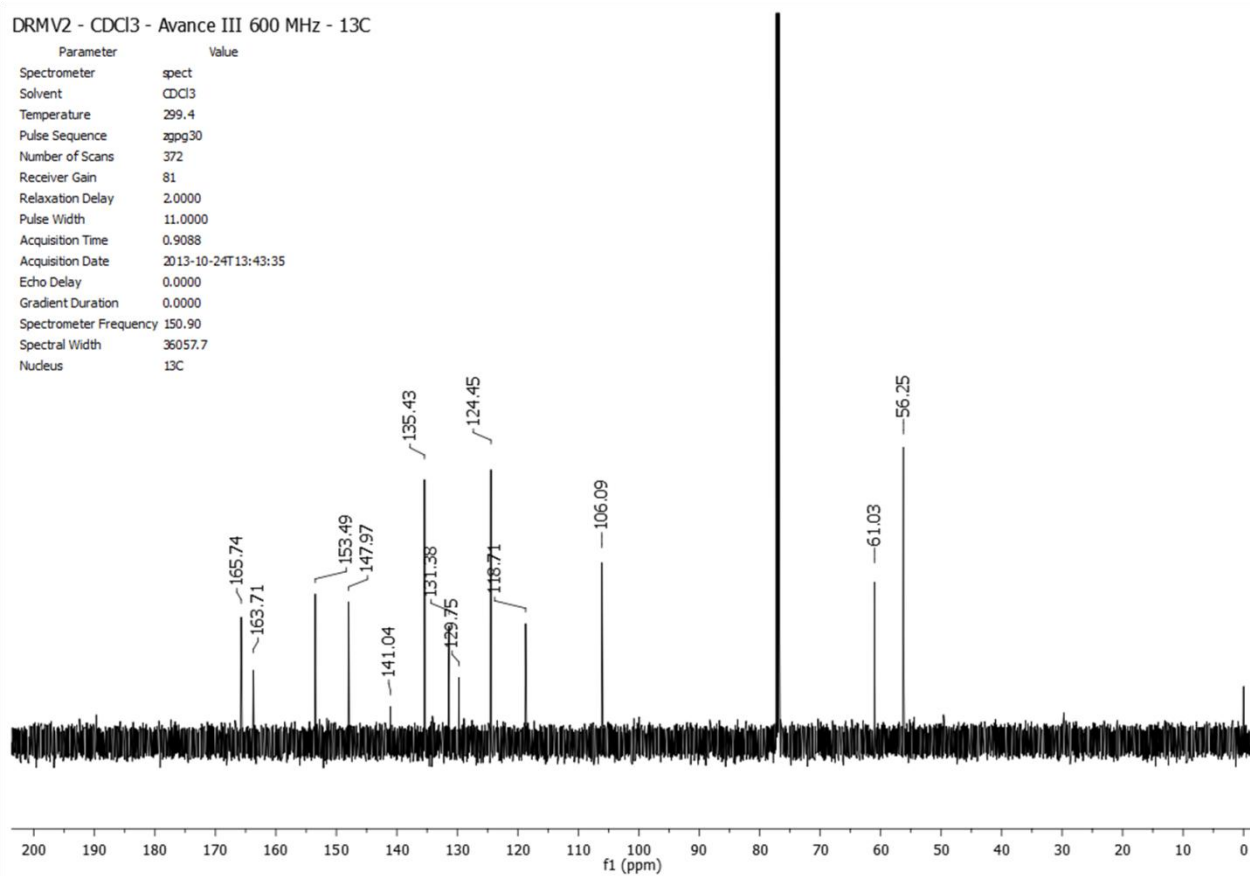


Figure S5.  $^{13}\text{C}$  NMR (150 MHz,  $\text{CDCl}_3$ ) of **3**.

Parameter	Value (f2, f1)
Spectrometer	spect
Solvent	CDCl3
Temperature	299.1
Pulse Sequence	hmbcgpndqf
Number of Scans	8
Receiver Gain	81
Relaxation Delay	1.5000
Pulse Width	11.0000
Acquisition Time	0.1311
Acquisition Date	2013-10-24T12:08:42
Echo Delay	0.0000
Gradient Duration	0.0000
Spectrometer Frequency	(600.13, 150.90)
Spectral Width	(7812.5, 33557.0)
Lowest Frequency	(-125.4, -1713.5)
Nucleus	( $^1\text{H}$ , $^{13}\text{C}$ )
Acquired Size	(1024, 128)
Spectral Size	(2048, 1024)

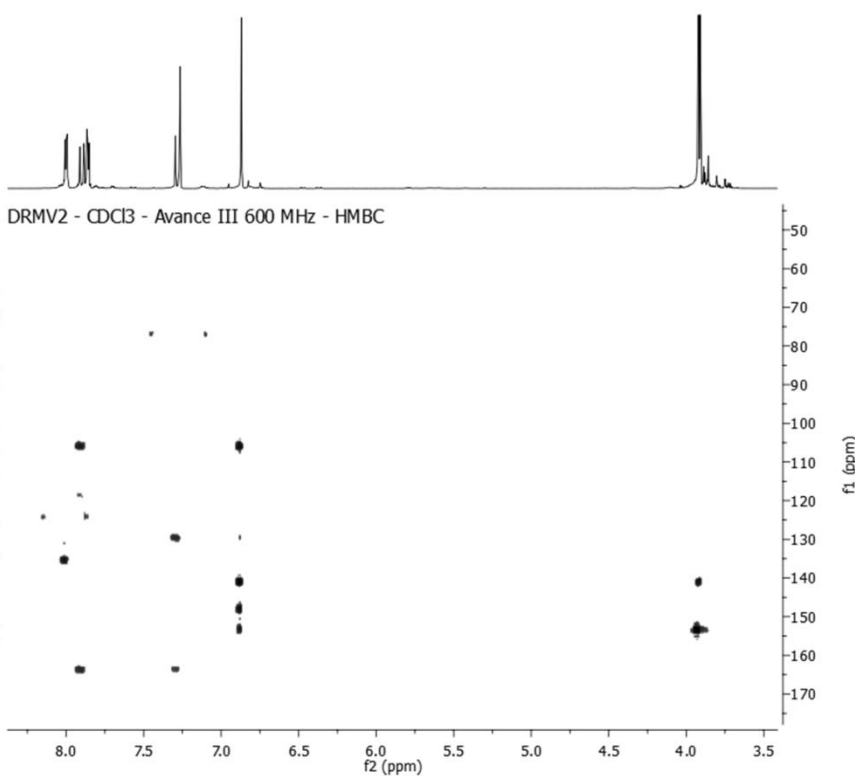


Figure S6. HMBC (600 MHz,  $\text{CDCl}_3$ ) of **3**.

DRMV3 - CDCl3 - Bruker 400 MHz - 1H

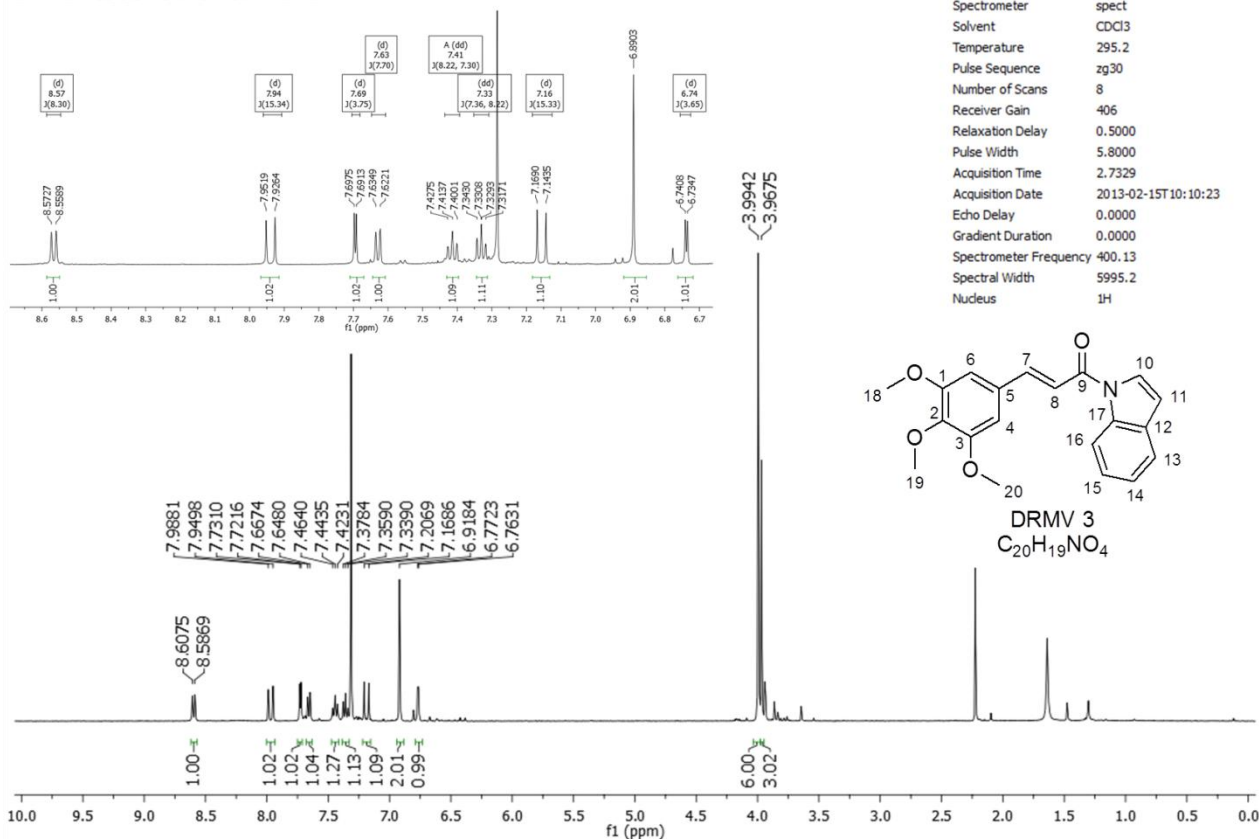


Figure S7.  $^1H$  NMR (400 MHz,  $CDCl_3$ ) of 4.

DRMV3 - CDCl3 - Bruker300 MHz - 13C

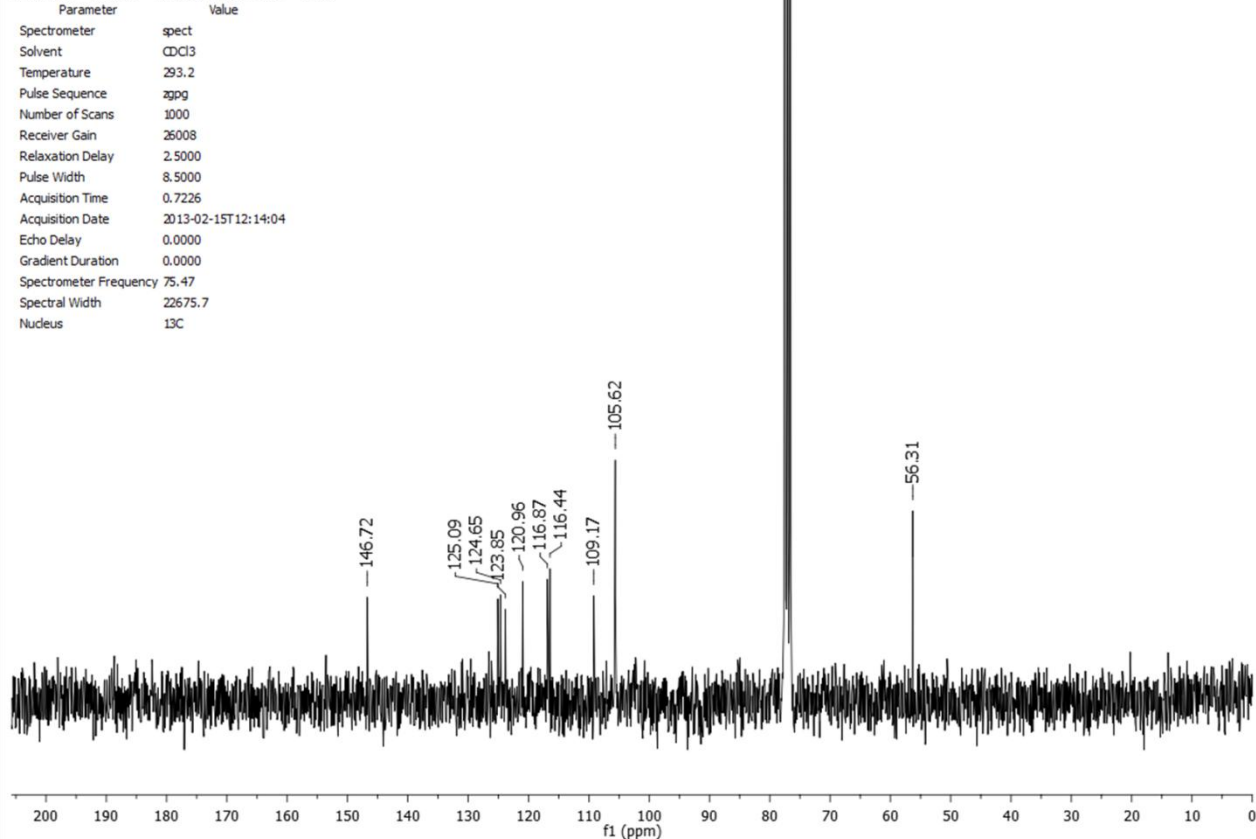


Figure S8.  $^{13}C$  NMR (75 MHz,  $CDCl_3$ ) of 4.

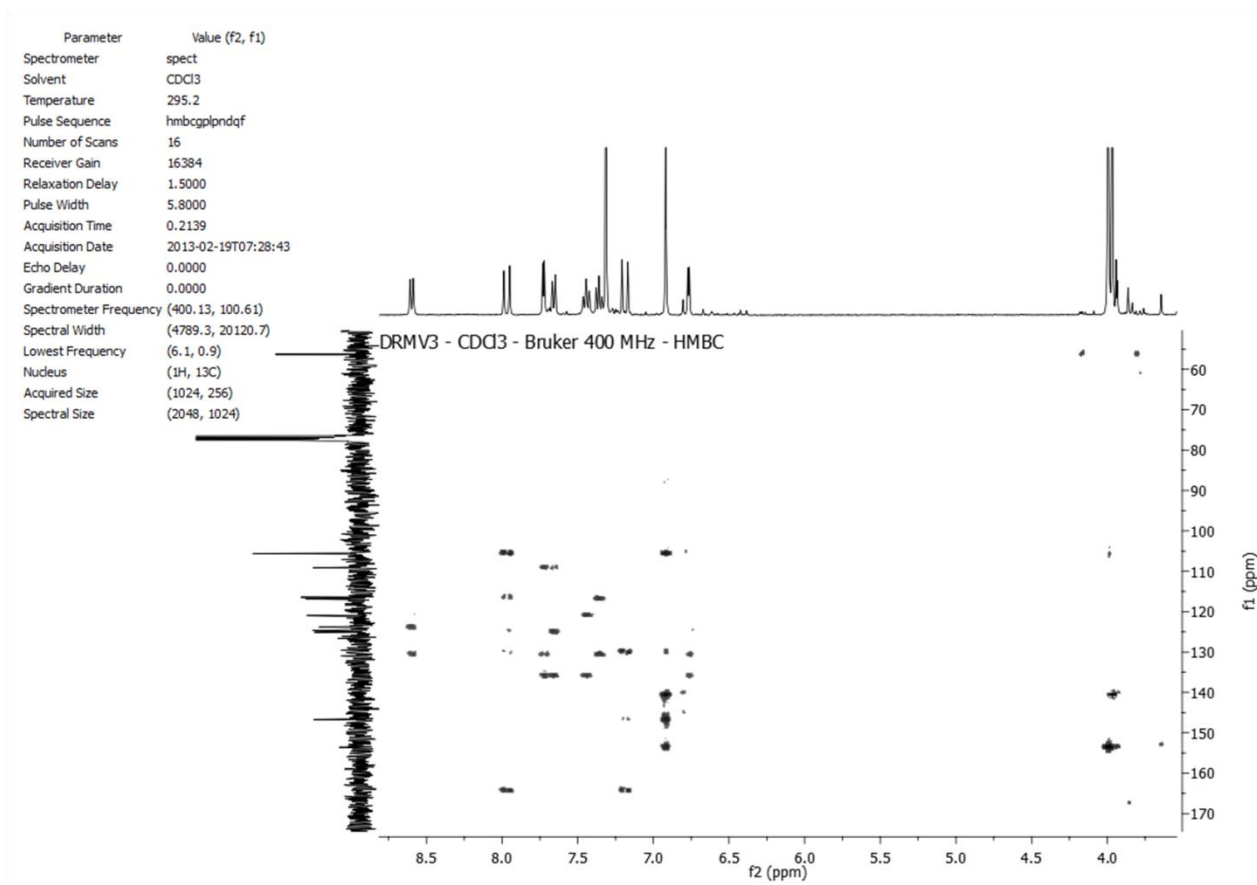


Figure S9. HMBC (400 MHz, CDCl<sub>3</sub>) of **4**.

DRMV4 - CDCl<sub>3</sub> - Avance III 600 MHz - 1H

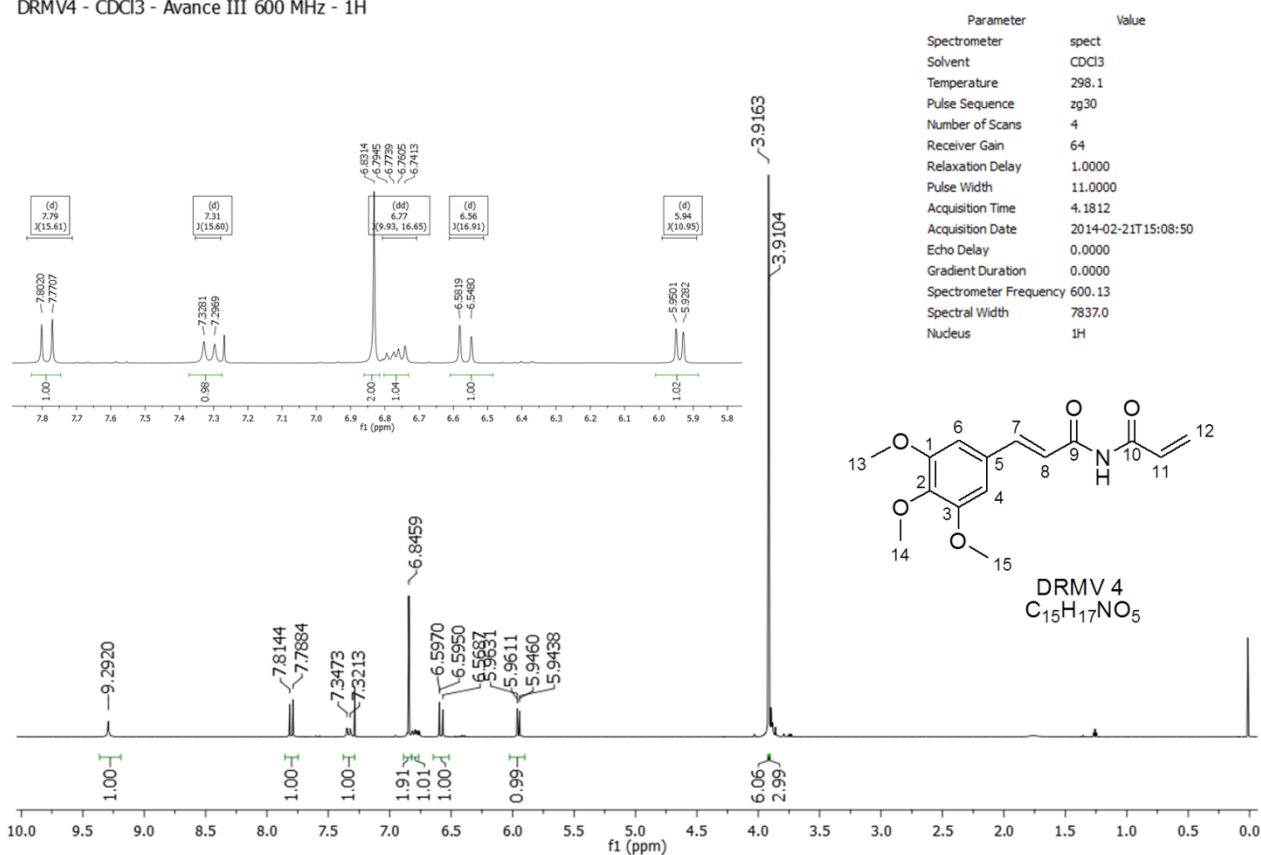


Figure S10. <sup>1</sup>H NMR (600 MHz, CDCl<sub>3</sub>) of **5**.

DRMV4 - CDCl<sub>3</sub> - Avance 600 MHz - 13C

Parameter	Value
Spectrometer	spect
Solvent	CDCl <sub>3</sub>
Temperature	298.3
Pulse Sequence	zgpg30
Number of Scans	144
Receiver Gain	2050
Relaxation Delay	2.0000
Pulse Width	11.0000
Acquisition Time	0.9088
Acquisition Date	2014-02-21T15:11:28
Echo Delay	0.0000
Gradient Duration	0.0000
Spectrometer Frequency	150.90
Spectral Width	35057.7
Nucleus	13C

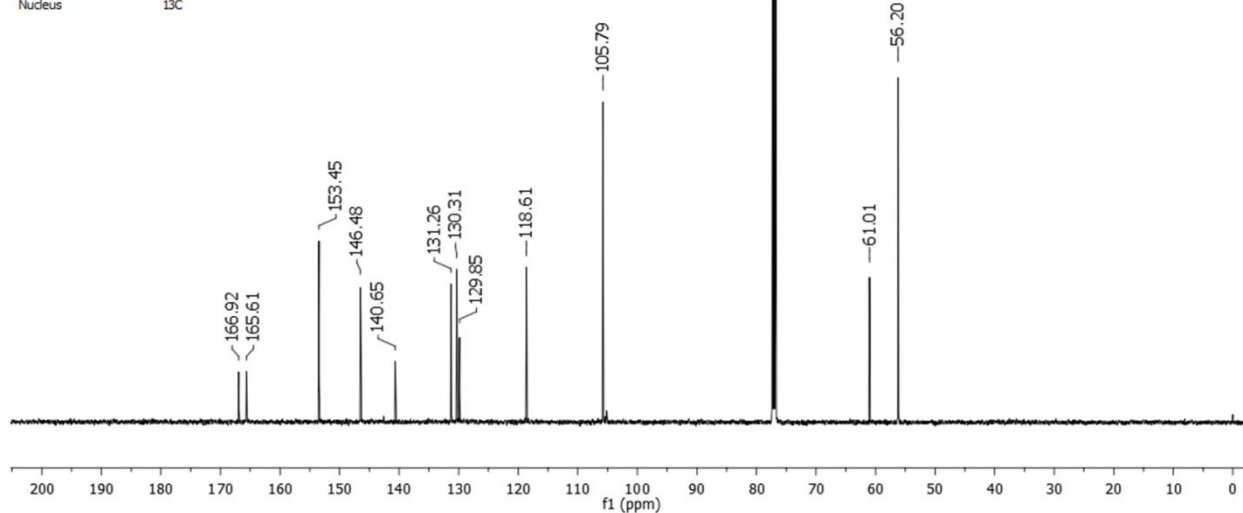


Figure S11. <sup>13</sup>C NMR (150 MHz, CDCl<sub>3</sub>) of **5**.

Parameter	Value (f2, f1)
Spectrometer	spect
Solvent	CDCl <sub>3</sub>
Temperature	298.1
Pulse Sequence	hmbcgpndqf
Number of Scans	8
Receiver Gain	64
Relaxation Delay	1.5000
Pulse Width	11.0000
Acquisition Time	0.1311
Acquisition Date	2014-02-21T15:35:14
Echo Delay	0.0000
Gradient Duration	0.0000
Spectrometer Frequency	(600.13, 150.90)
Spectral Width	(7812.5, 33557.0)
Lowest Frequency	(-125.4, -1713.5)
Nucleus	(1H, 13C)
Acquired Size	(1024, 128)
Spectral Size	(2048, 1024)

DRMV4 - CDCl<sub>3</sub> - Avance III 600 MHz - HMBC

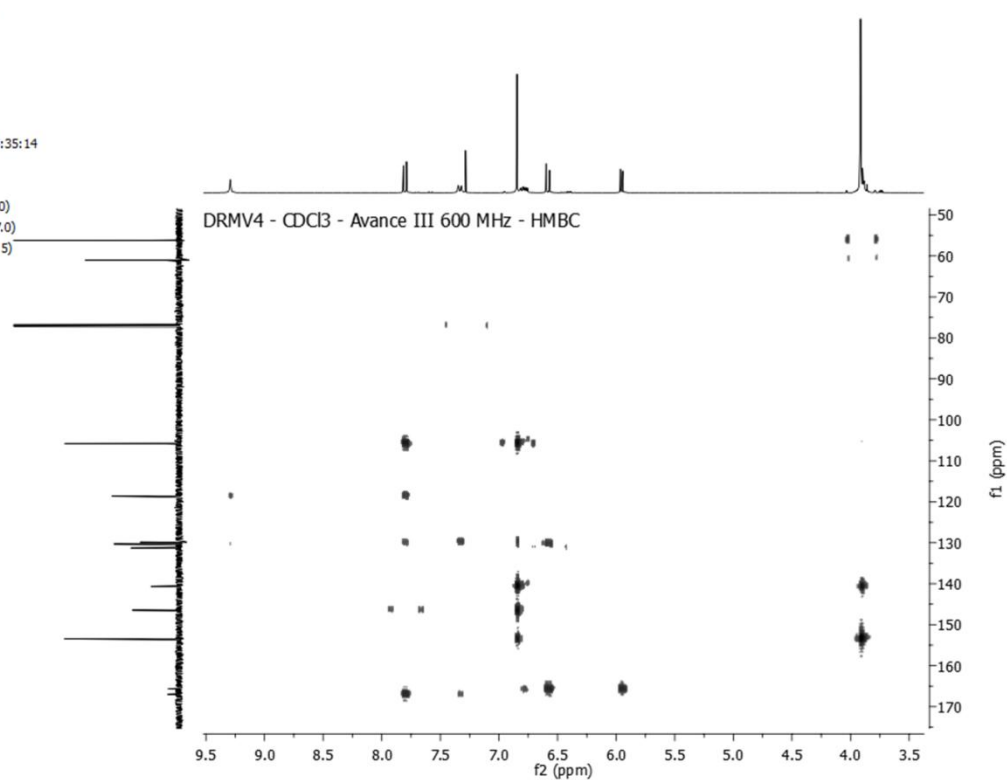
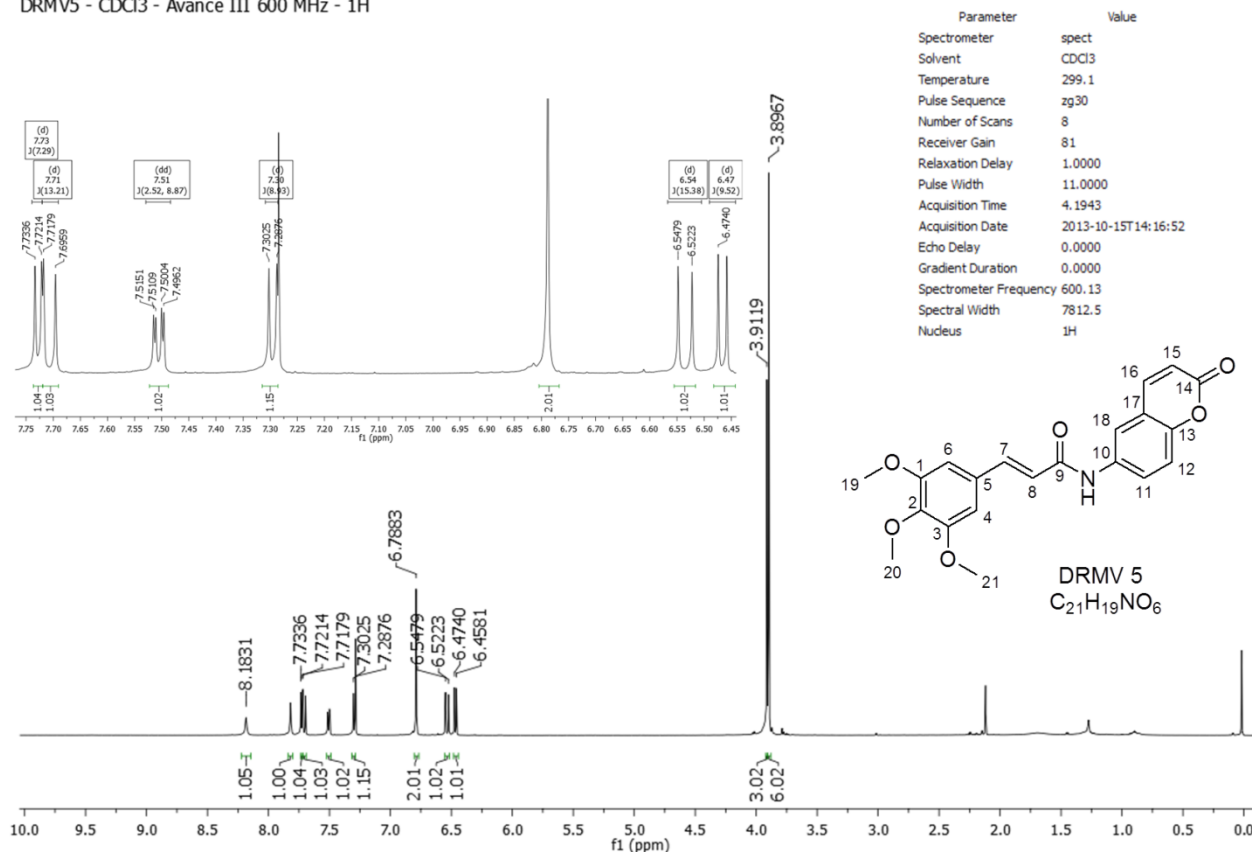


Figure S12. HMBC (600 MHz, CDCl<sub>3</sub>) of **5**.

DRMV5 - CDCl<sub>3</sub> - Avance III 600 MHz - 1H



Parameter	Value
Spectrometer	spect
Solvent	CDCl <sub>3</sub>
Temperature	299.1
Pulse Sequence	zg30
Number of Scans	8
Receiver Gain	81
Relaxation Delay	1.0000
Pulse Width	11.0000
Acquisition Time	4.1943
Acquisition Date	2013-10-15T14:16:52
Echo Delay	0.0000
Gradient Duration	0.0000
Spectrometer Frequency	600.13
Spectral Width	7812.5
Nucleus	<sup>1</sup> H

Figure S13. <sup>1</sup>H NMR (600 MHz, CDCl<sub>3</sub>) of 6.

DRMV5 - CDCl<sub>3</sub> - Avance III 600 MHz - 13C

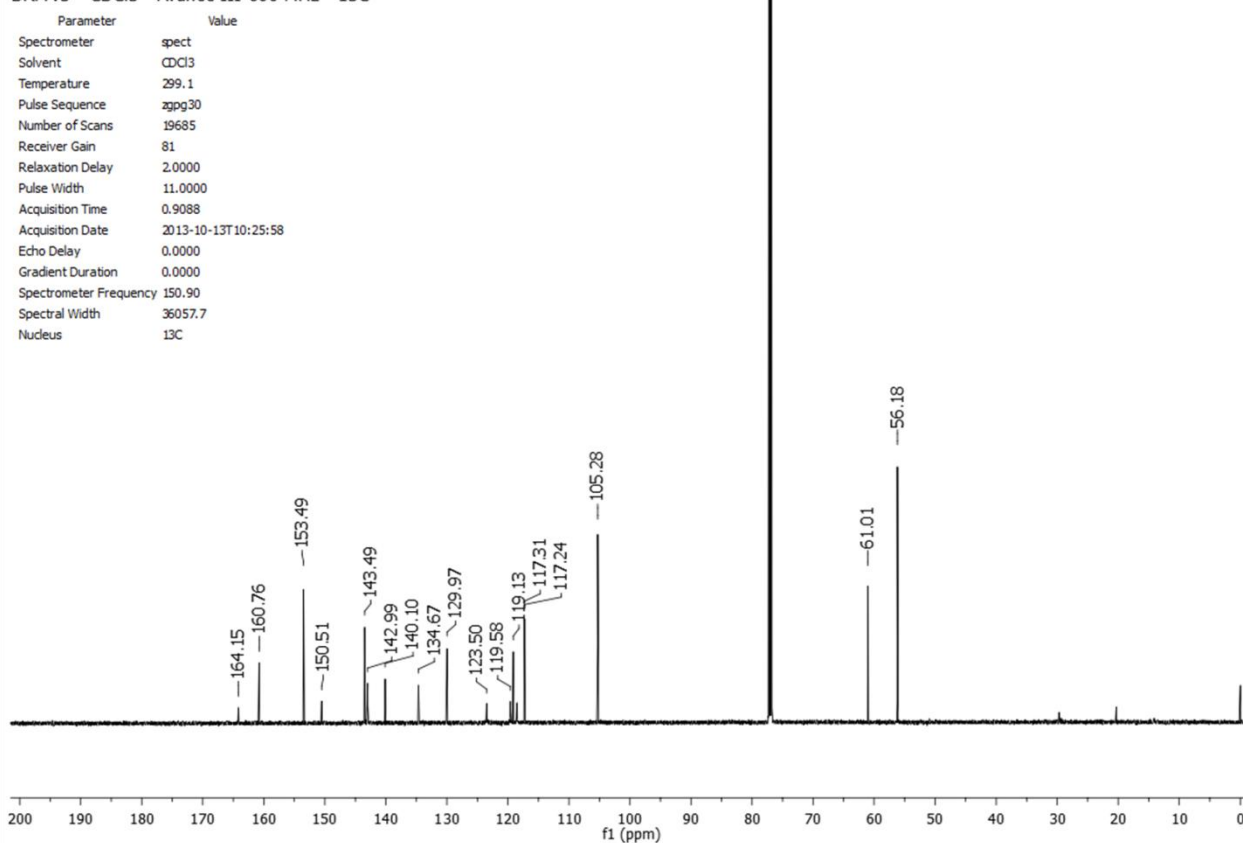
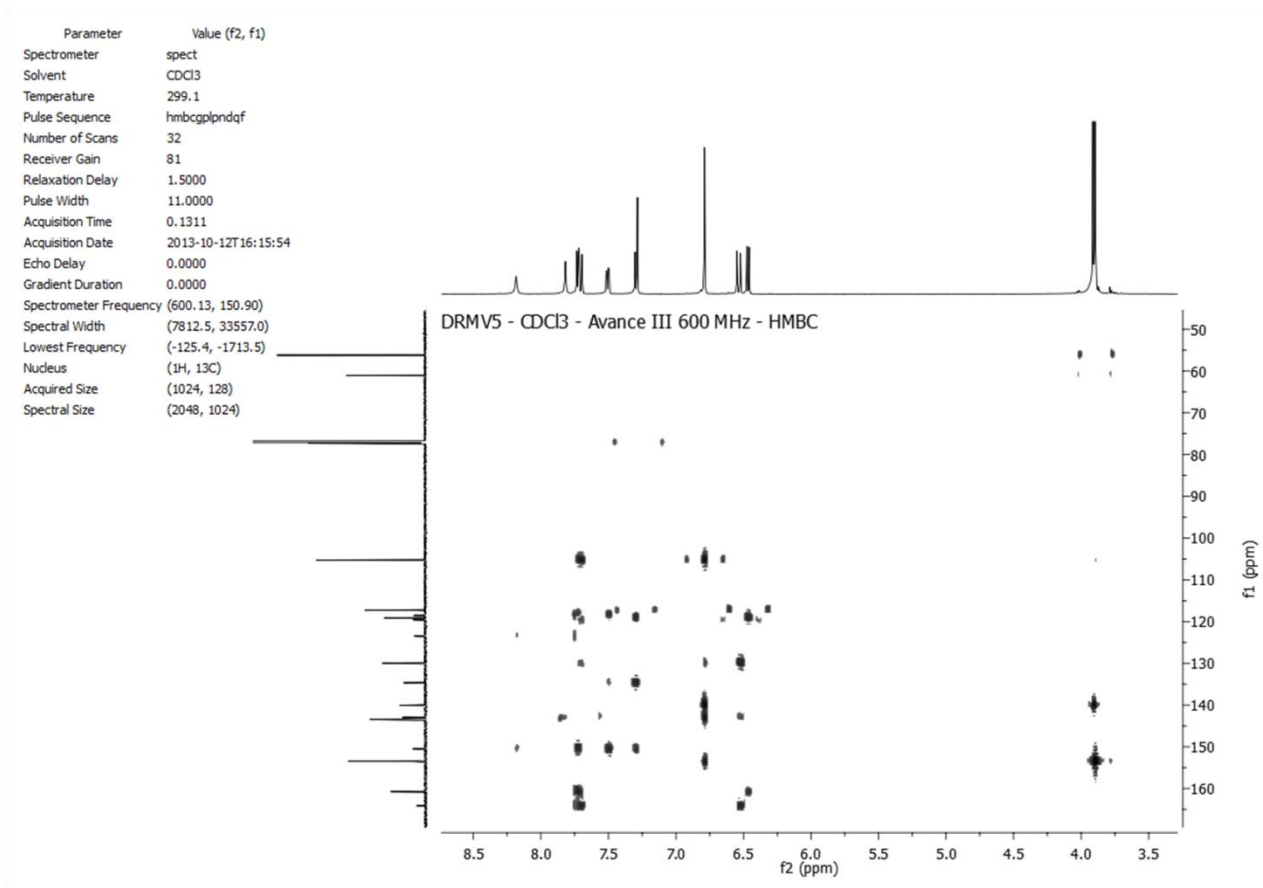


Figure S14. <sup>13</sup>C NMR (150 MHz, CDCl<sub>3</sub>) of 6.





**Figure S15.** HMBC (600 MHz, CDCl<sub>3</sub>) of **6**.