

# **Supporting Information**

*The Journal of Organic Chemistry*

## **Synthesis of Substituted 2,3-Benzodiazepines**

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Email: [mychang@kmu.edu.tw](mailto:mychang@kmu.edu.tw)

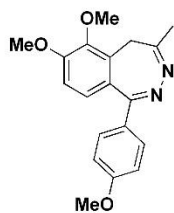
I.	Scanned Photocopies of $^1\text{H}$ and $^{13}\text{C}$ NMR Spectra for Compounds <b>1a~1aa</b> .....	S-2~S-109
II.	Scanned Photocopies of $^1\text{H}$ and $^{13}\text{C}$ NMR Spectra for Compounds <b>6a~6aa</b> .....	S-110~S-217
III.	Scanned Photocopies of $^1\text{H}$ and $^{13}\text{C}$ NMR Spectra for Compounds <b>8a~8b</b> .....	S-218~S-221
IV.	Scanned Photocopies of $^1\text{H}$ and $^{13}\text{C}$ NMR Spectra for Compounds <b>9a~9d</b> .....	S-222~S-234
V.	Scanned Photocopies of $^1\text{H}$ and $^{13}\text{C}$ NMR Spectra for Compound <b>10</b> .....	S-235~S-238
VI.	Crystal Data for Compounds <b>1a, 1c, 1p, 7y</b> and <b>9a</b> .....	S-239~S-243

Total Pages of Supporting Information : (243).

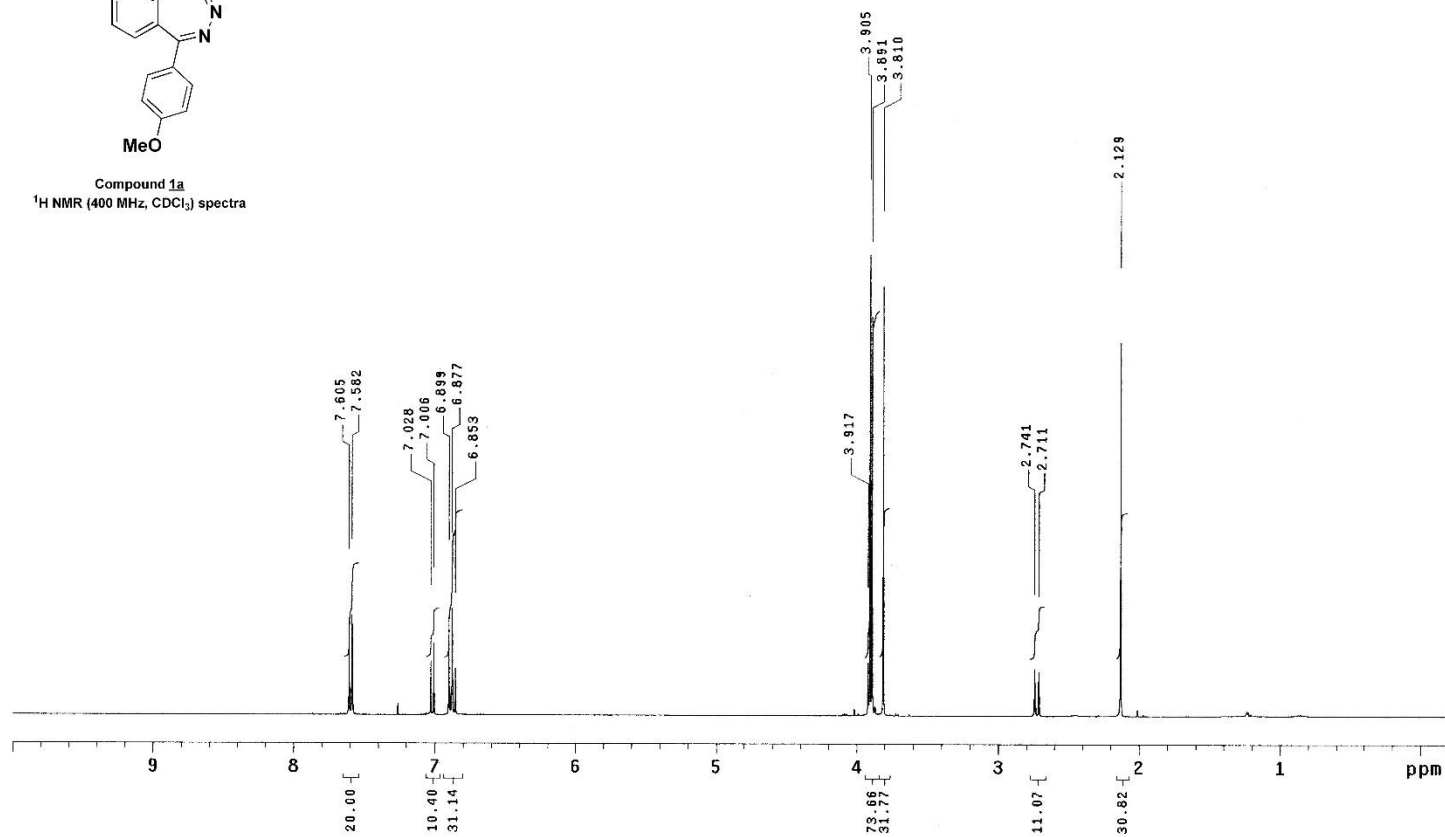
## Compound 1a

YR1040701

Pulse Sequence: s2pu1  
UNITYplus-400 "unity400"  
Date: Jul 2 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 64 repetitions



Compound 1a  
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



## Compound 1a

YR1040701

Pulse Sequence: s2pu1

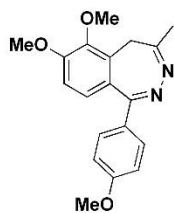
UNITYplus-400 "unity400"

Date: Jul 2 2015

Solvent: CDCl<sub>3</sub>

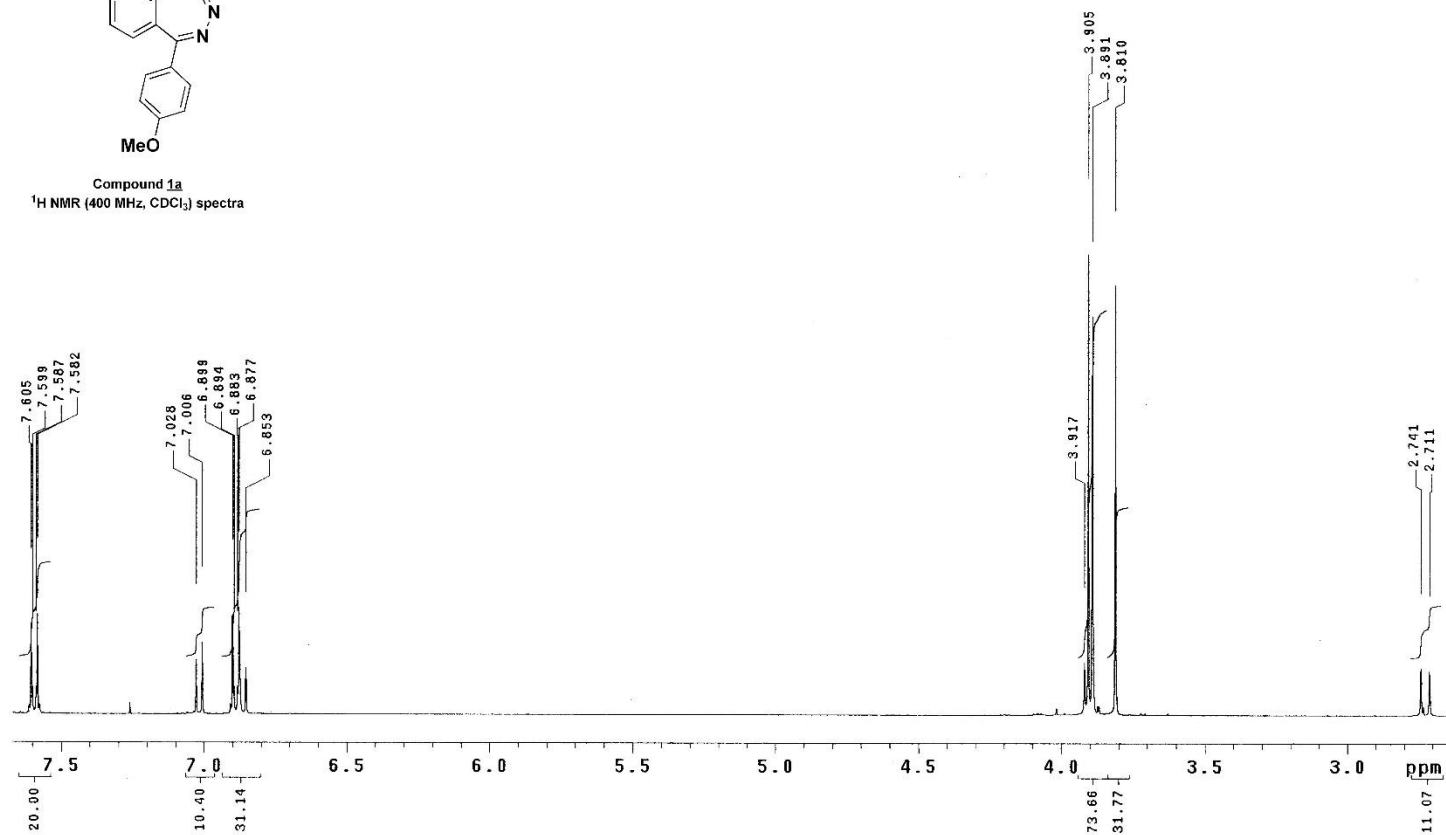
Ambient temperature

Total 64 repetitions



Compound 1a

<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



## Compound 1a

YR1040701

Pulse Sequence: s2pul

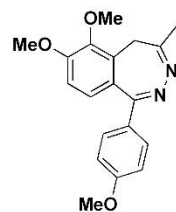
UNITYplus-400 "unity400"

Date: Jul 2 2015

Solvent: CDCl<sub>3</sub>

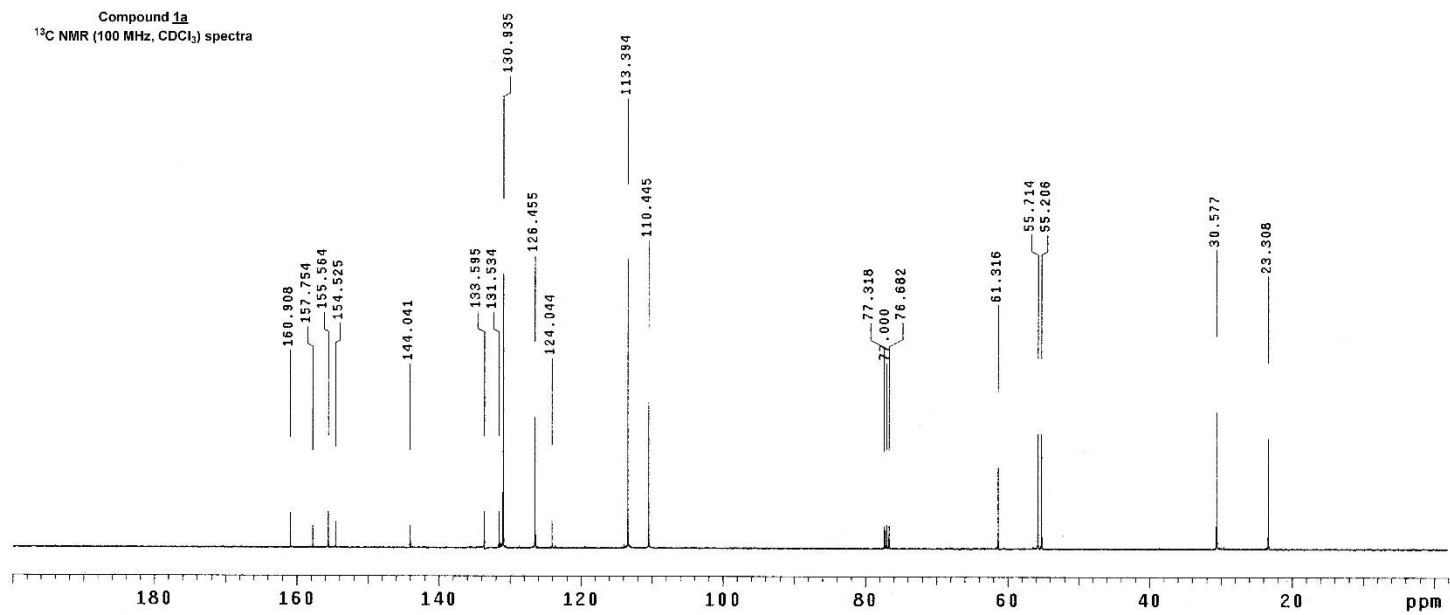
Ambient temperature

Total 1632 repetitions



Compound 1a

<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra





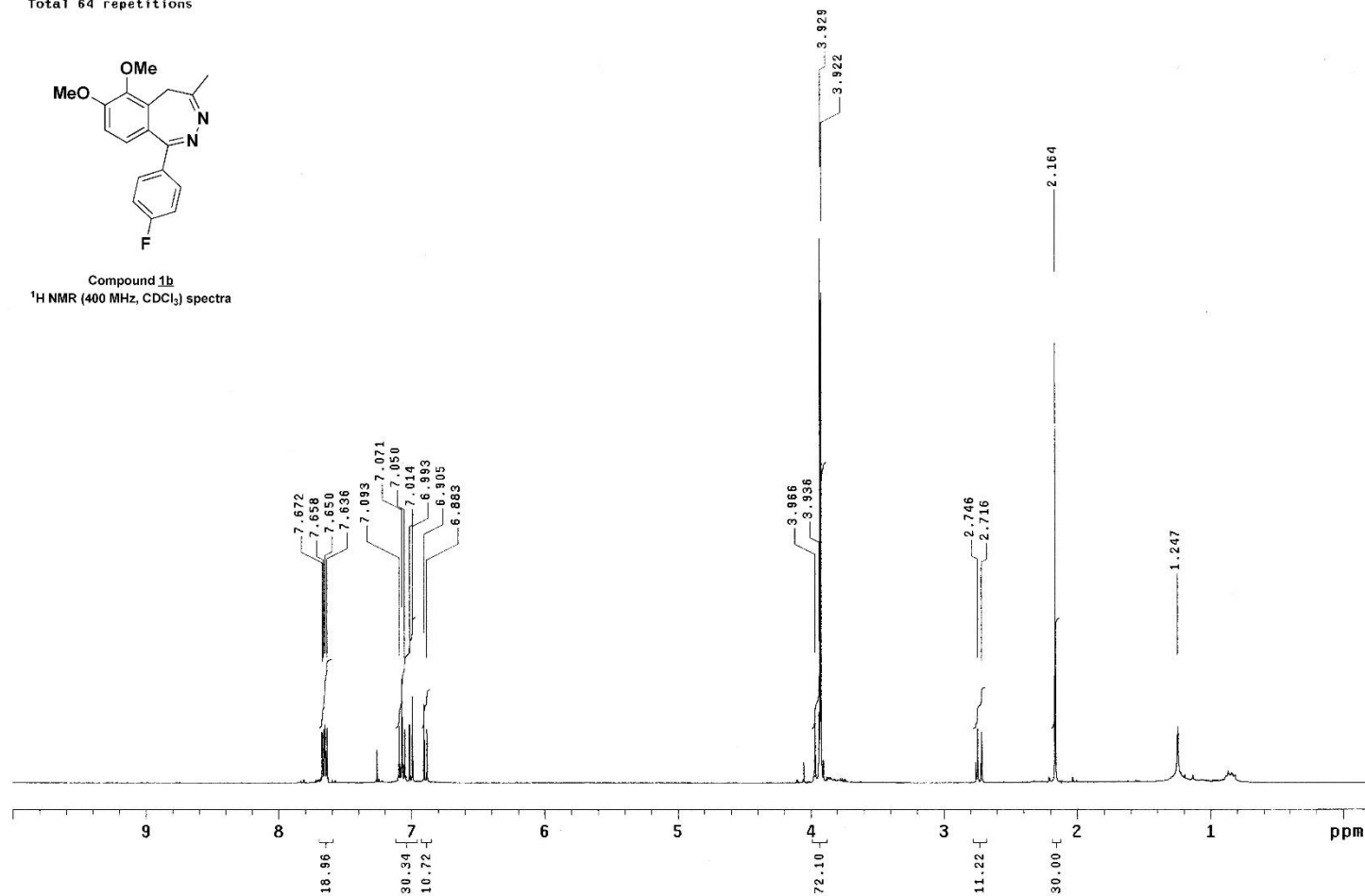
## Compound 1b

YL1040716

Pulse Sequence: s2pu1  
UNITYplus-400 "unity400"  
Date: Jul 20 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 64 repetitions



Compound 1b  
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



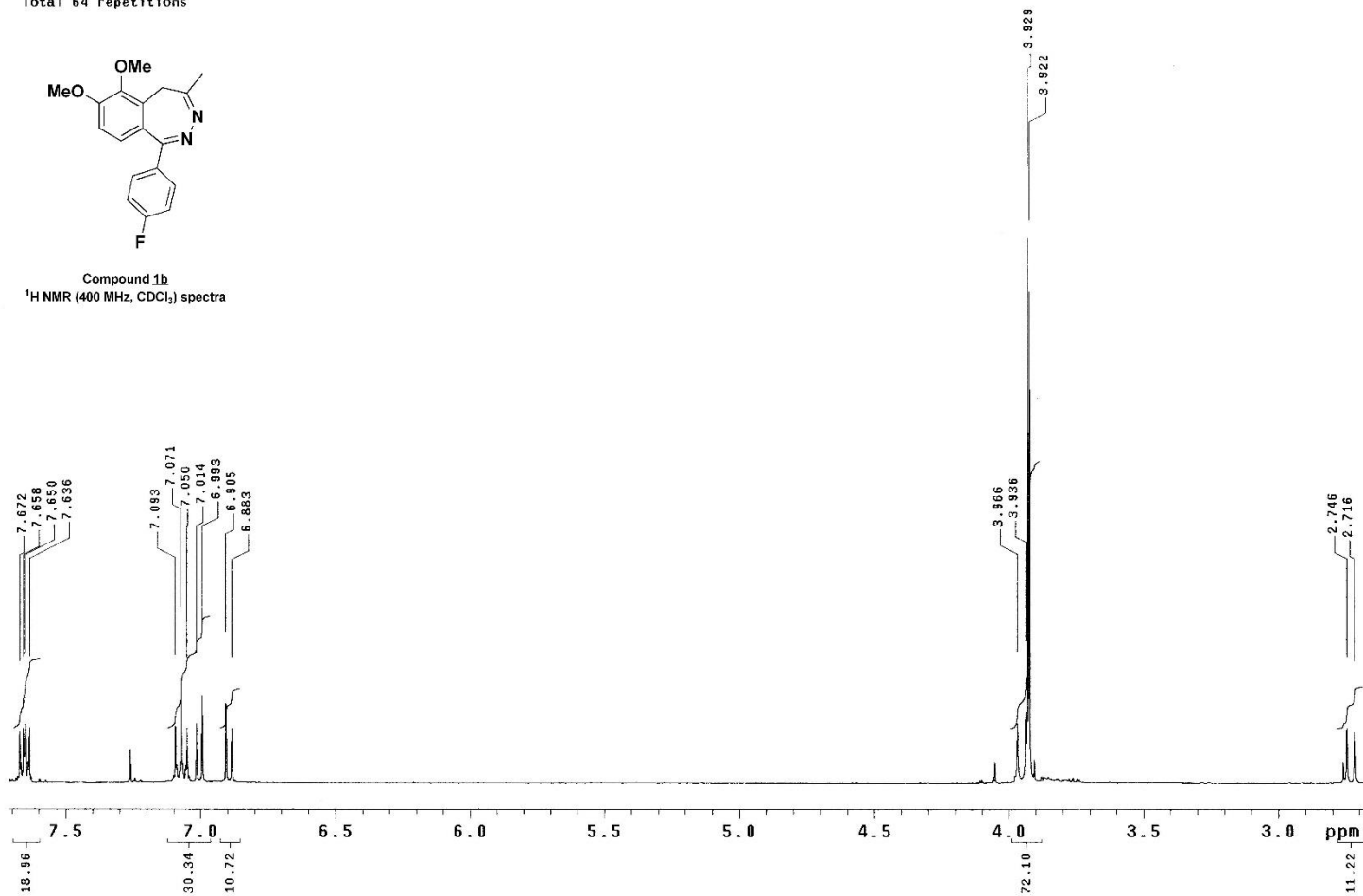
## Compound 1b

YL1040716

Pulse Sequence: s2pu1  
UNITYplus-400 "unity400"  
Date: Jul 20 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 64 repetitions



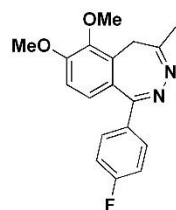
Compound 1b  
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



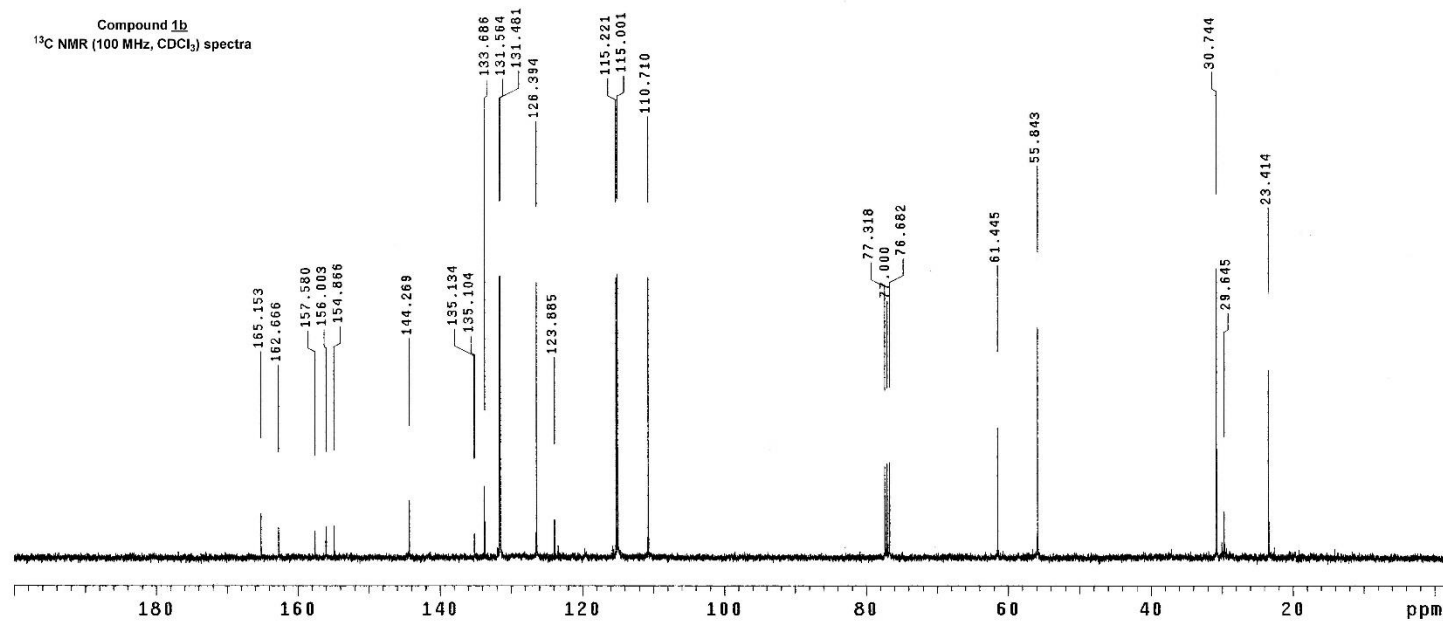
## Compound 1b

YL1040716

Pulse Sequence: s2pul  
UNITYplus-400 "unity400"  
Date: Jul 20 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 2128 repetitions



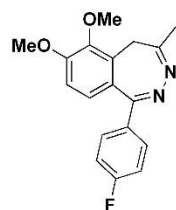
Compound 1b  
<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra



## Compound 1b

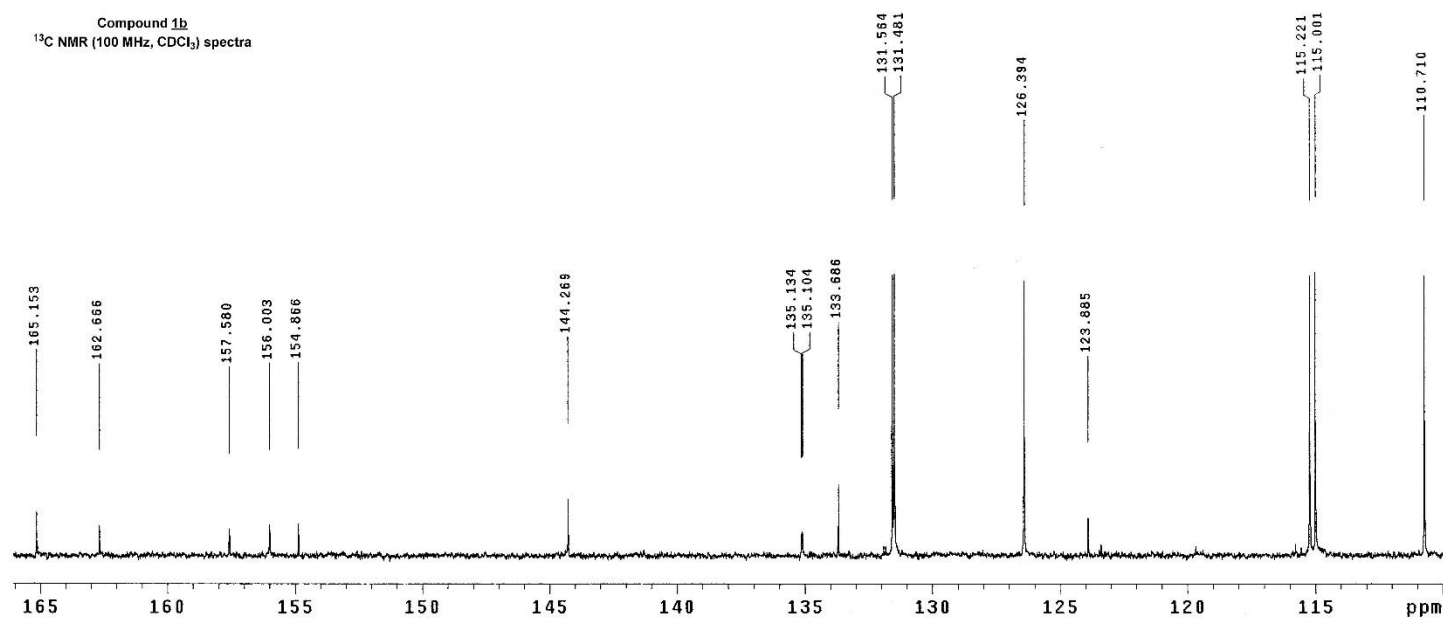
YL1040716

Pulse Sequence: s2pul  
UNITYplus-400 "unity400"  
Date: Jul 20 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 2128 repetitions



Compound 1b

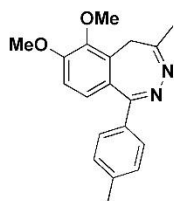
<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra



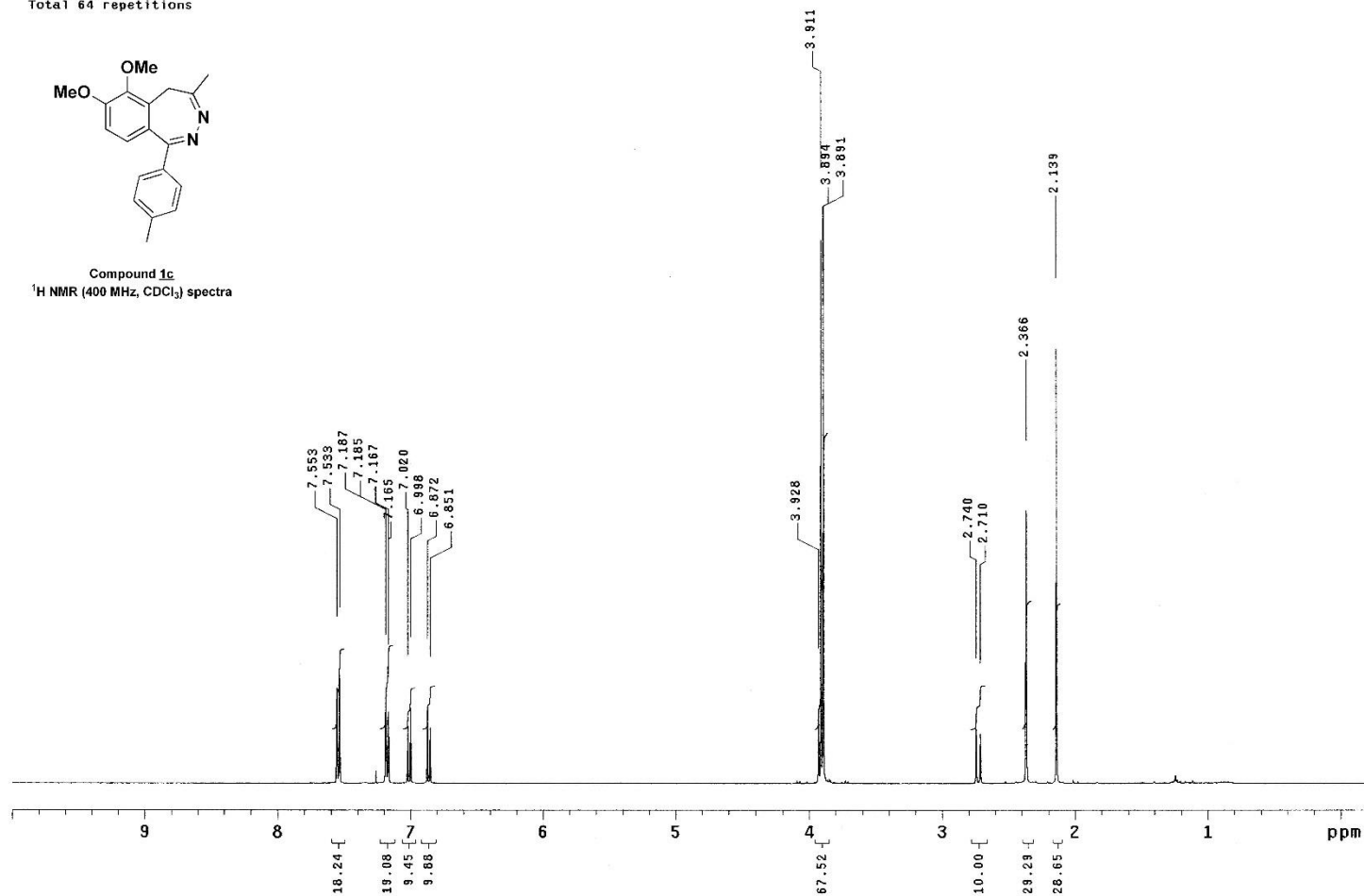
## Compound 1c

YL1040906

Pulse Sequence: s2pul  
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Date: Sep 8 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 64 repetitions



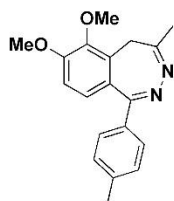
Compound 1c  
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



## Compound 1c

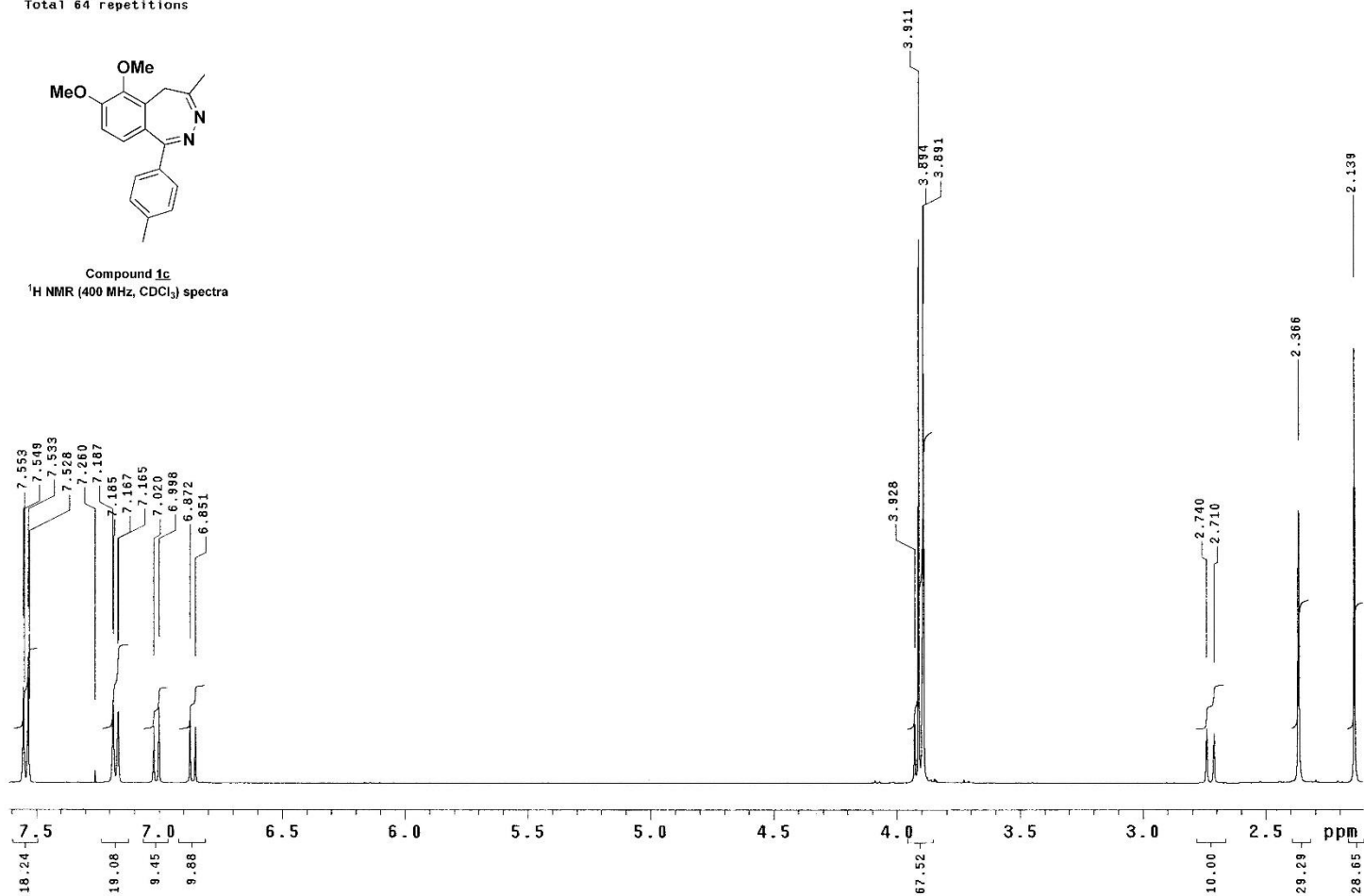
YL1040906

Pulse Sequence: s2pul  
UNITYplus-400 "unity400"  
Date: Sep 8 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 64 repetitions



Compound 1c

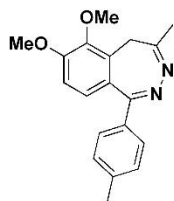
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



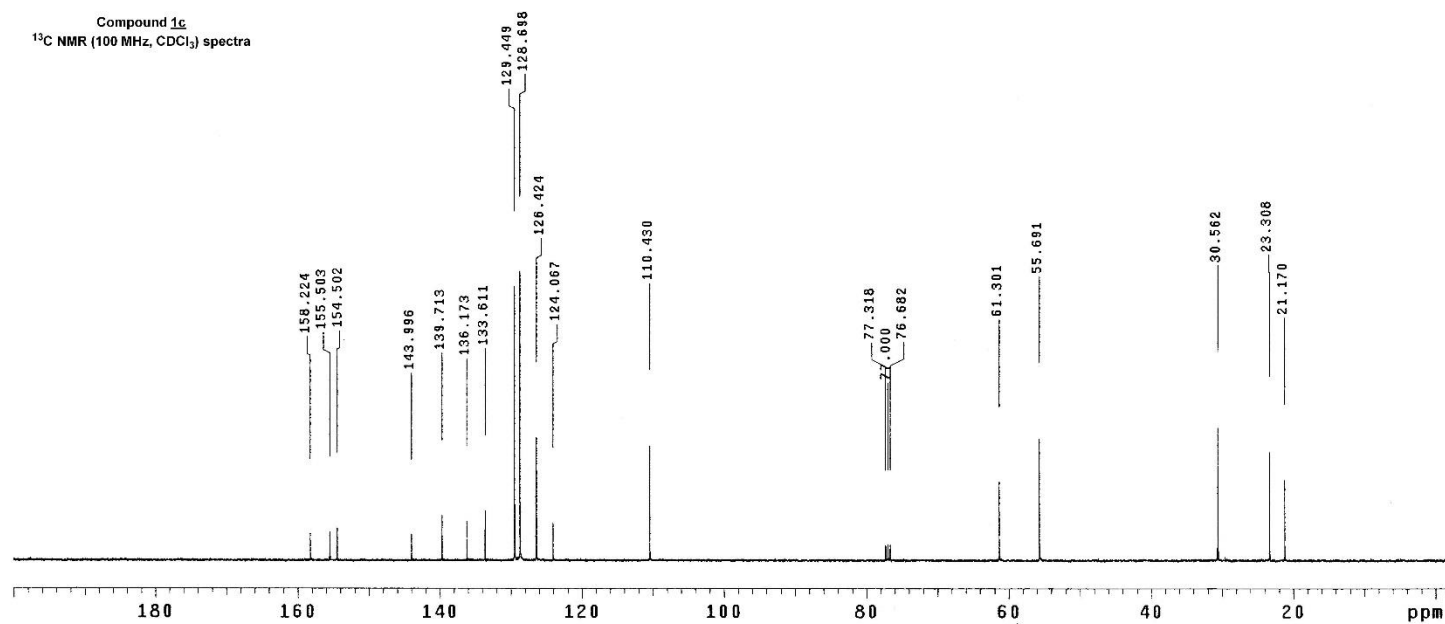
## Compound 1c

YL1040906

Pulse Sequence: s2pu1  
UNITYplus-400 "unity400"  
Date: Sep 8 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 320 repetitions



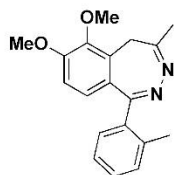
Compound 1c  
<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra



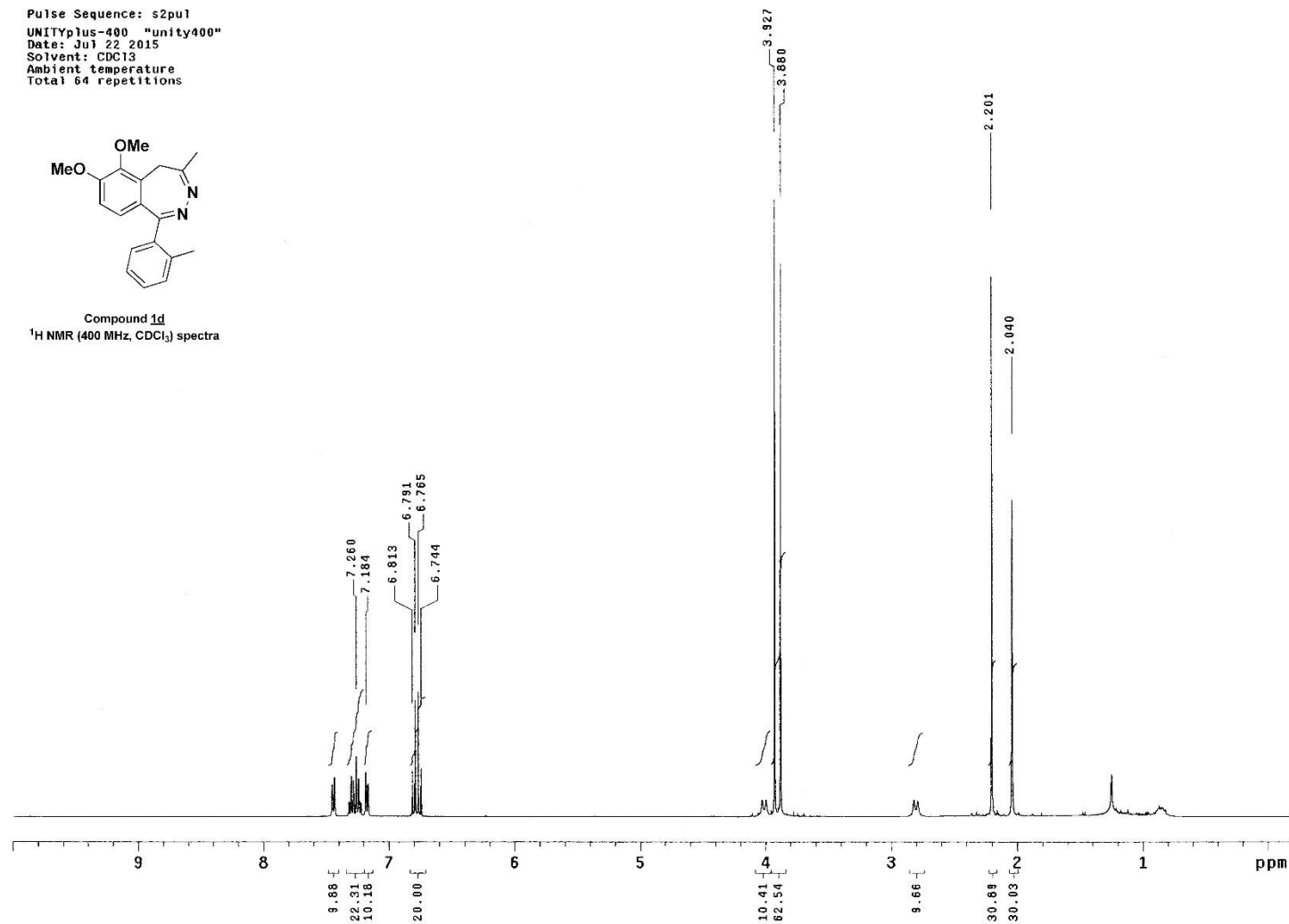
## Compound 1d

YL1040717

Pulse Sequence: s2pu1  
UNITYplus-400 "unity400"  
Date: Jul 22 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 64 repetitions



Compound 1d  
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra





## Compound 1d

YL1040717

Pulse Sequence: s2pu1

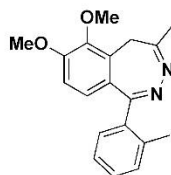
UNITYplus-400 "unity400"

Date: Jul 22 2015

Solvent: CDCl<sub>3</sub>

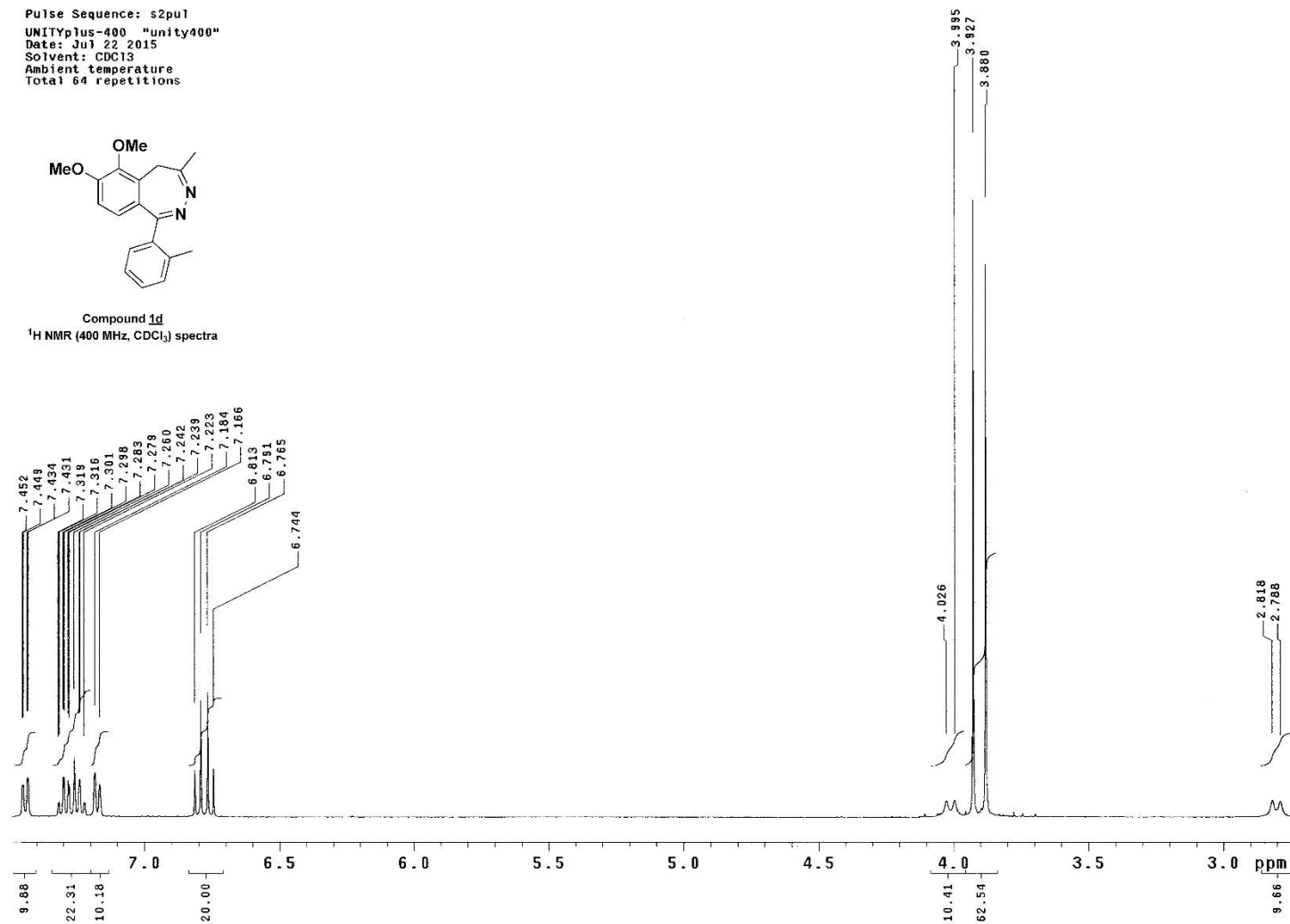
Ambient temperature

Total 64 repetitions



Compound 1d

<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



## Compound 1d

YL1040717

Pulse Sequence: s2pul

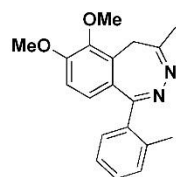
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Date: Jul 22 2015

Solvent: CDCl<sub>3</sub>

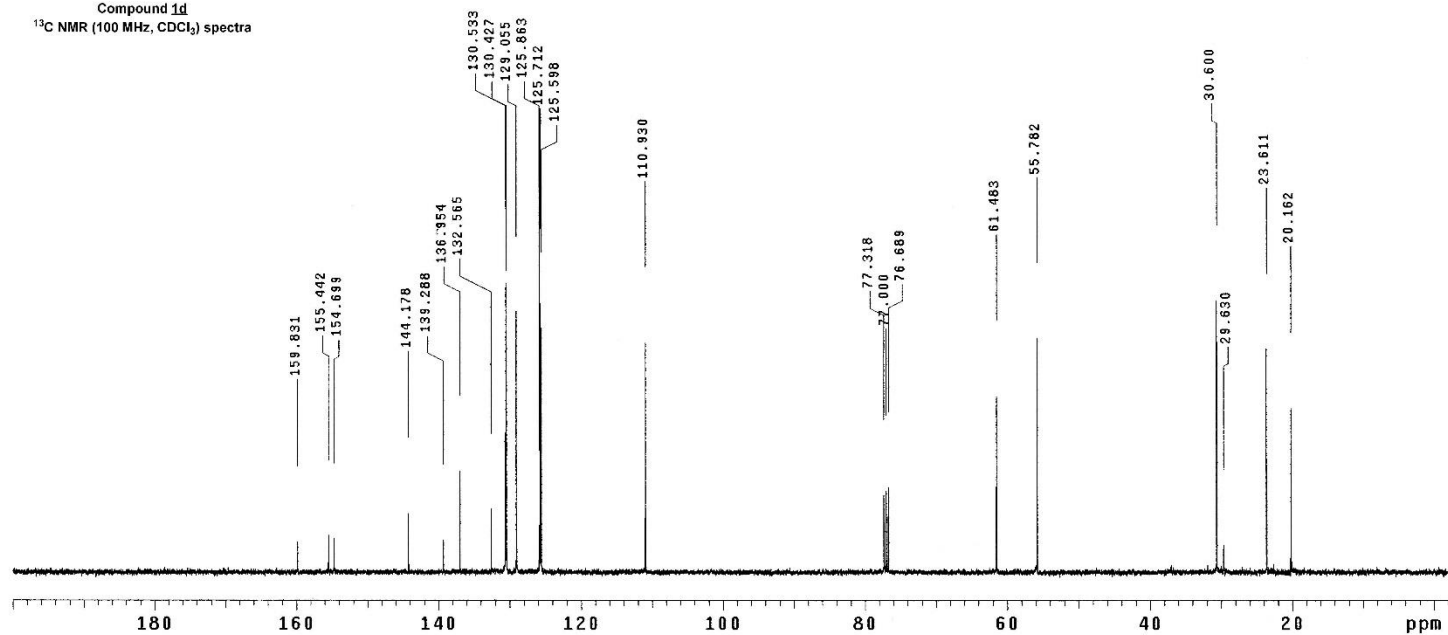
Ambient temperature

Total 2080 repetitions



Compound 1d

<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra



## Compound 1d

YL1040717

Pulse Sequence: s2pul

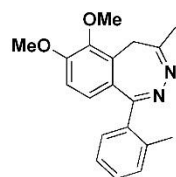
UNITYplus-400 "unity400"

Date: Jul 22 2015

Solvent: CDCl<sub>3</sub>

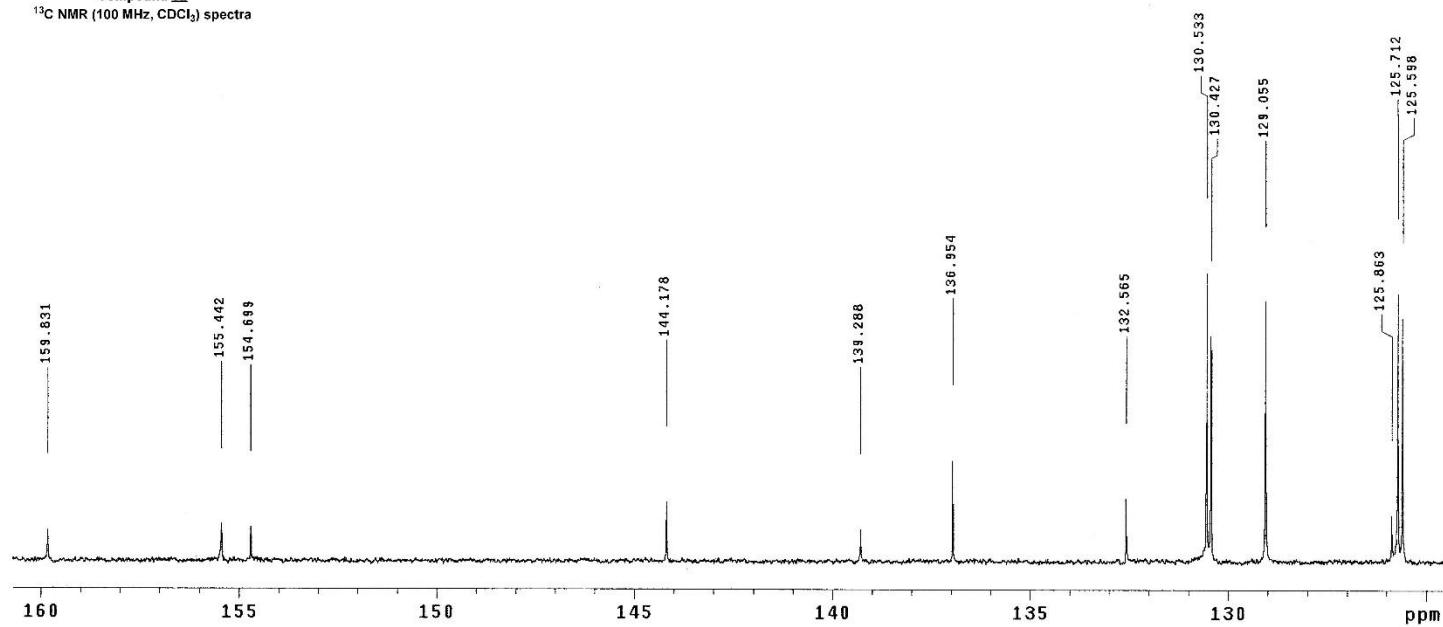
Ambient temperature

Total 2080 repetitions



Compound 1d

<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra



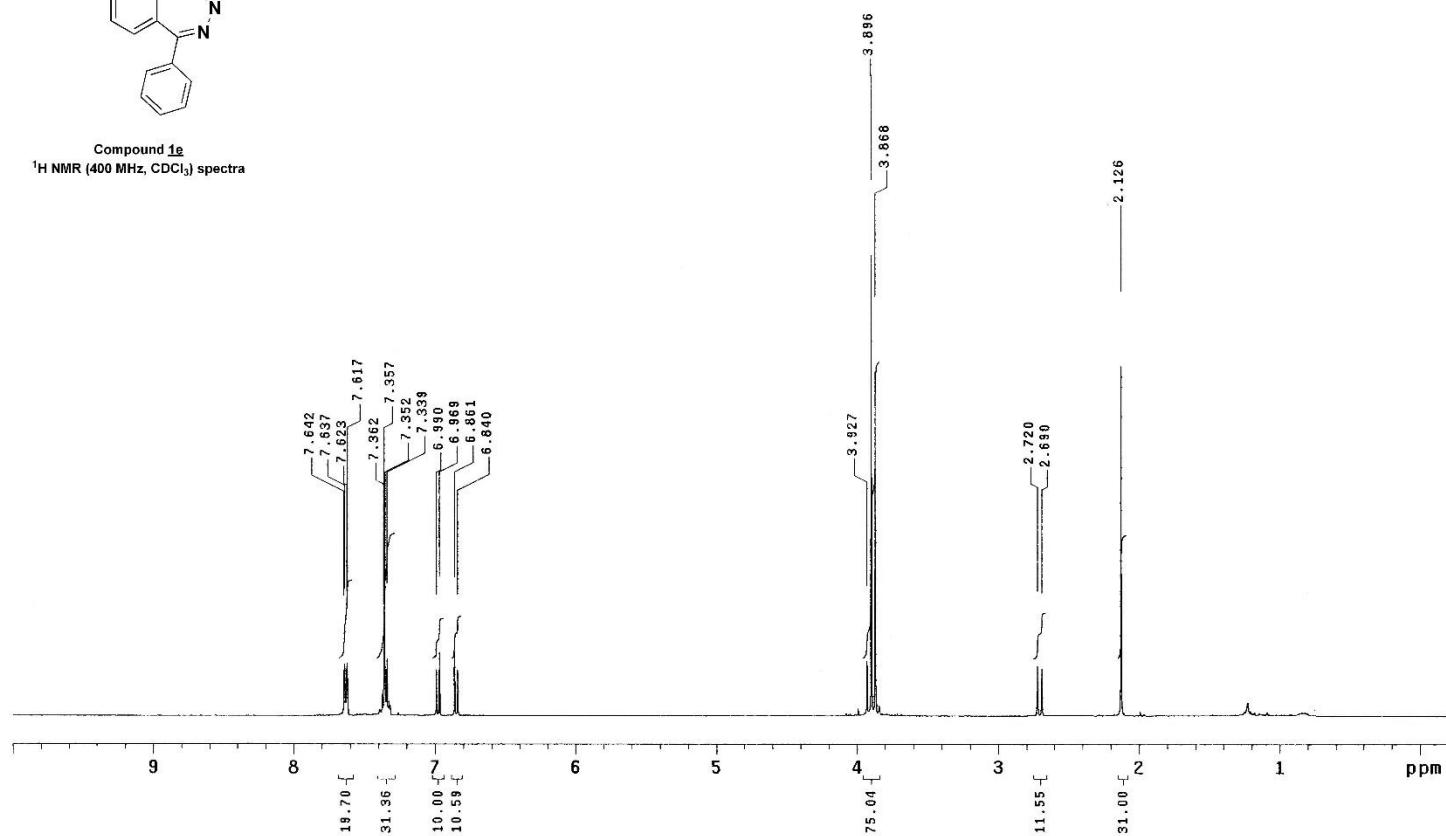
## Compound 1e

YL1040723

Pulse Sequence: s2pul  
UNITYplus-400 "unity400"  
Date: Jul 30 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 64 repetitions



Compound **1e**  
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



## Compound 1e

YL1040723

Pulse Sequence: s2pul

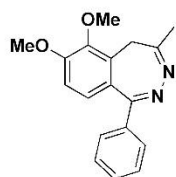
UNITYplus-400 "unity400"

Date: Jul 30 2015

Solvent: CDCl<sub>3</sub>

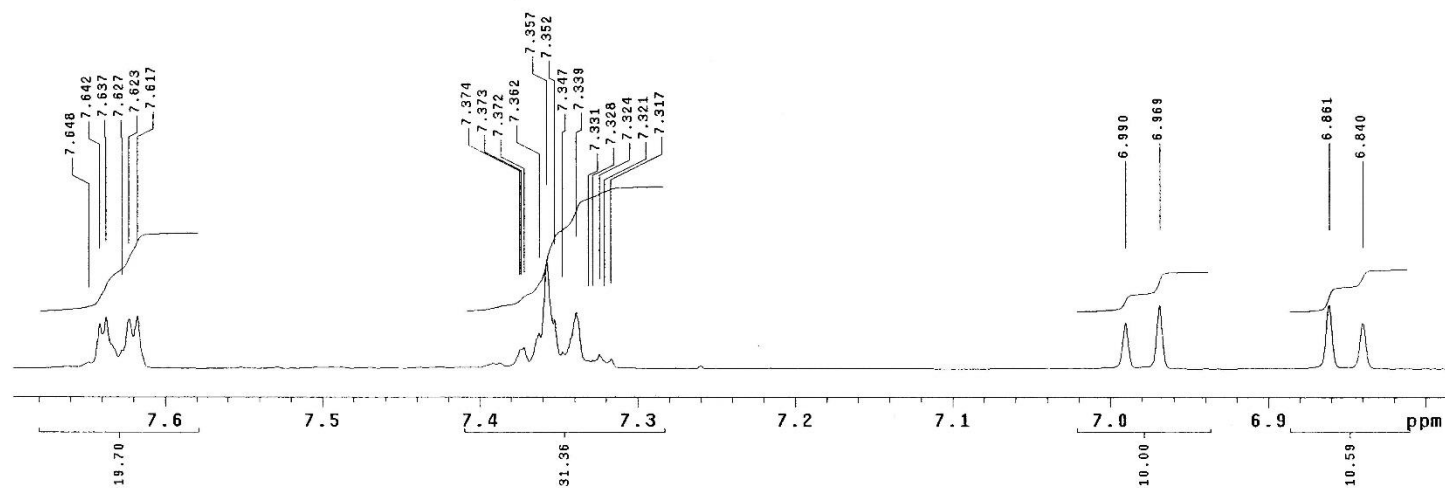
Ambient temperature

Total 64 repetitions



Compound **1e**

<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



## Compound 1e

YL1040723

Pulse Sequence: s2pu1

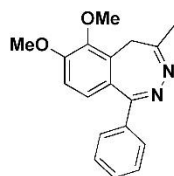
UNITYplus-400 "unity400"

Date: Jul 30 2015

Solvent: CDCl<sub>3</sub>

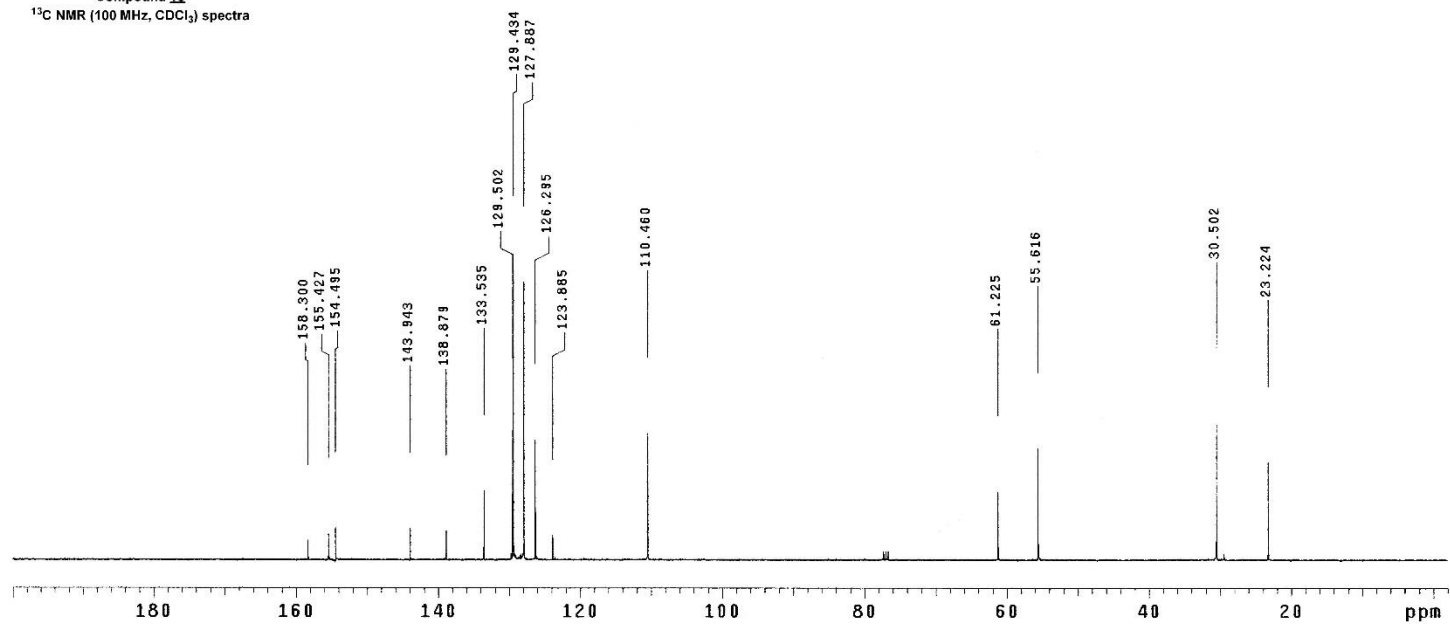
Ambient temperature

Total 624 repetitions



Compound 1e

<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra



## Compound 1f

YL1040729

Pulse Sequence: s2pul

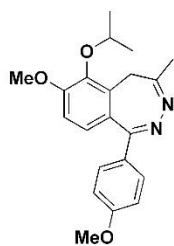
UNITYplus-400 "unity400"

Date: Aug 5 2015

Solvent: CDCl<sub>3</sub>

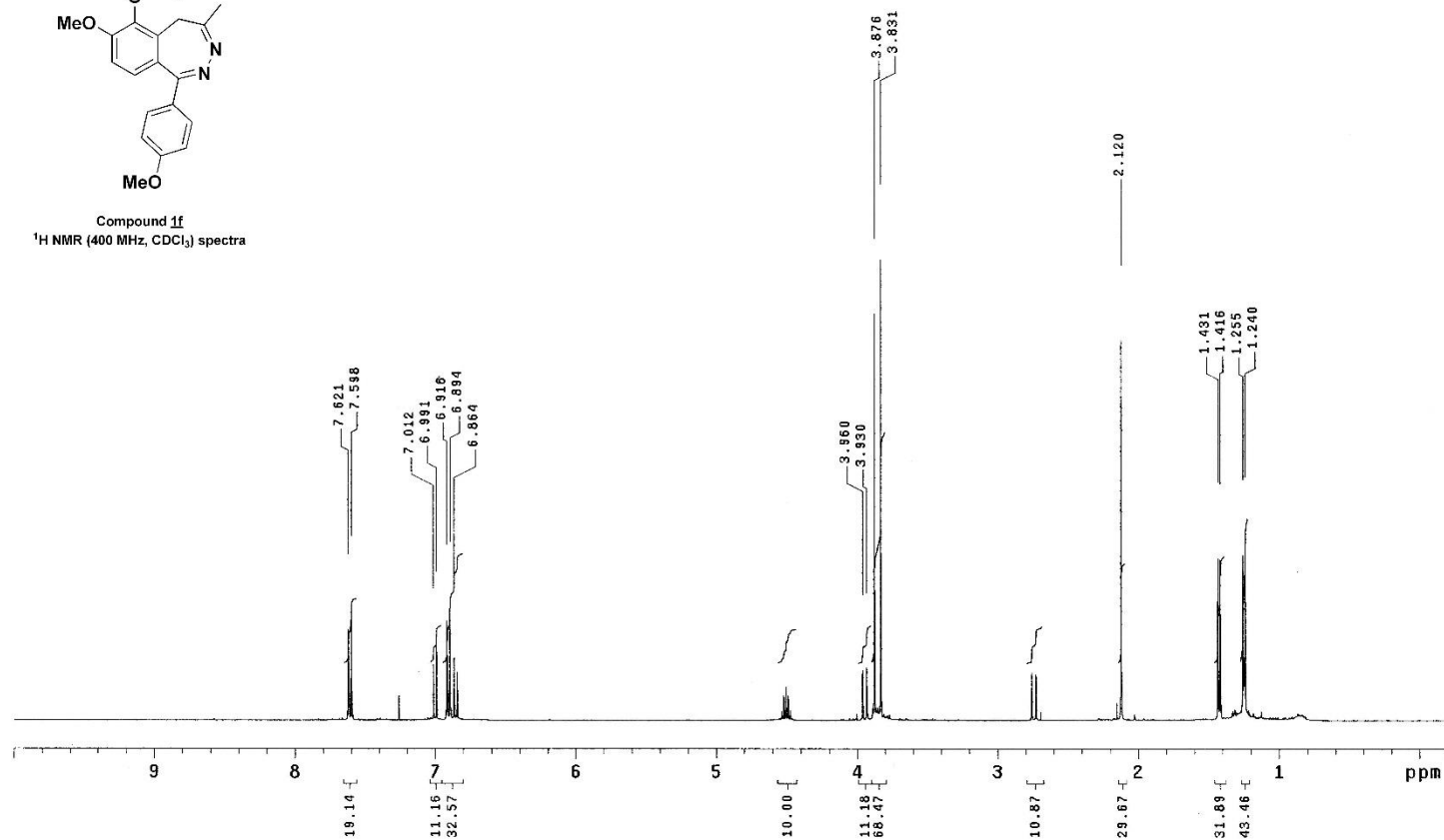
Ambient temperature

Total 64 repetitions



Compound 1f

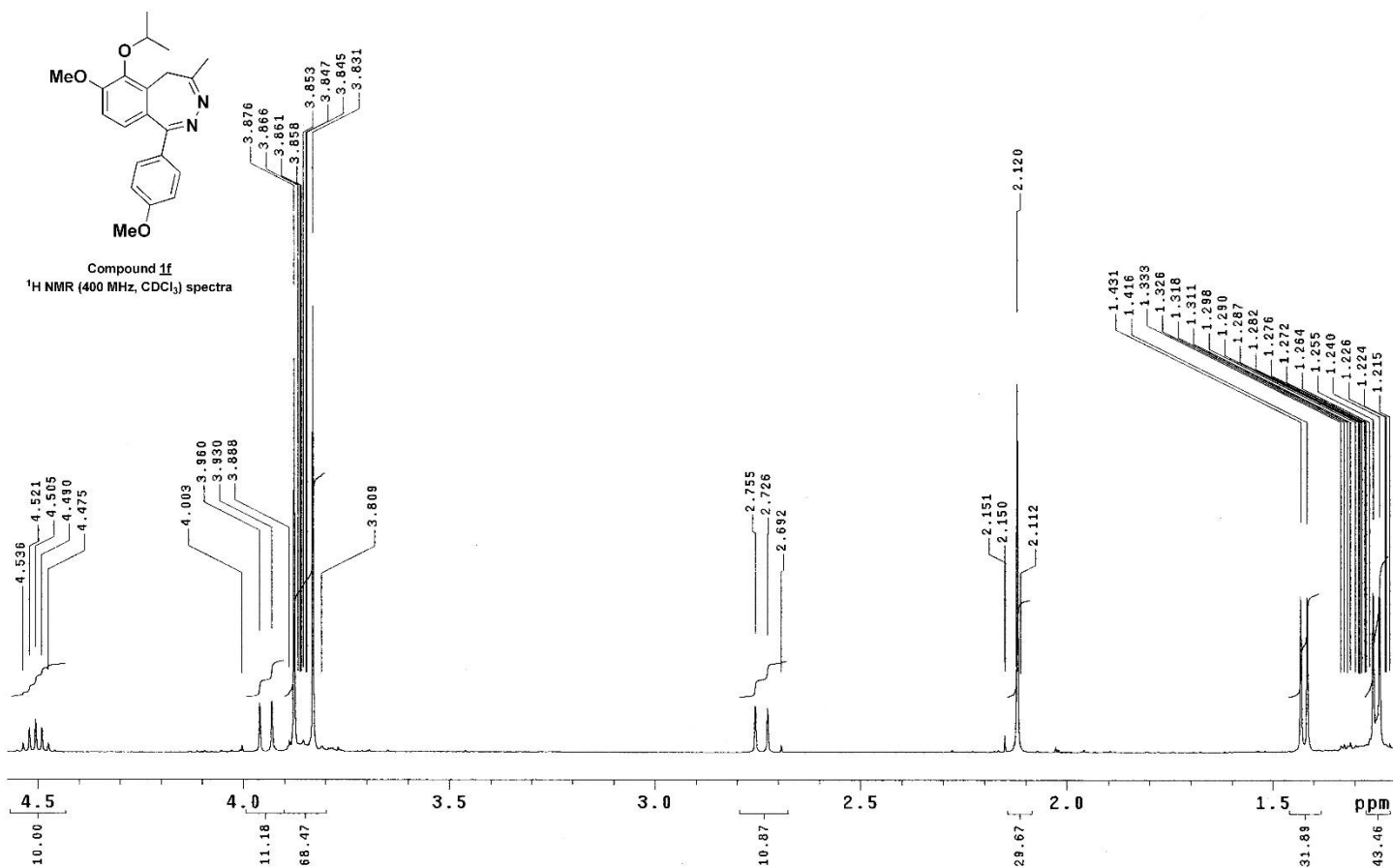
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



## Compound 1f

YL1040729

Pulse Sequence: s2pul  
UNITYplus-400 "unity400"  
Date: Aug 5 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 64 repetitions





## Compound 1f

YL1040729

Pulse Sequence: s2pu1

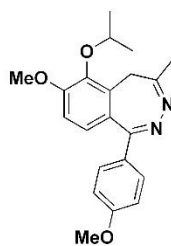
UNITYplus-400 "unity400"

Date: Aug 5 2015

Solvent: CDCl<sub>3</sub>

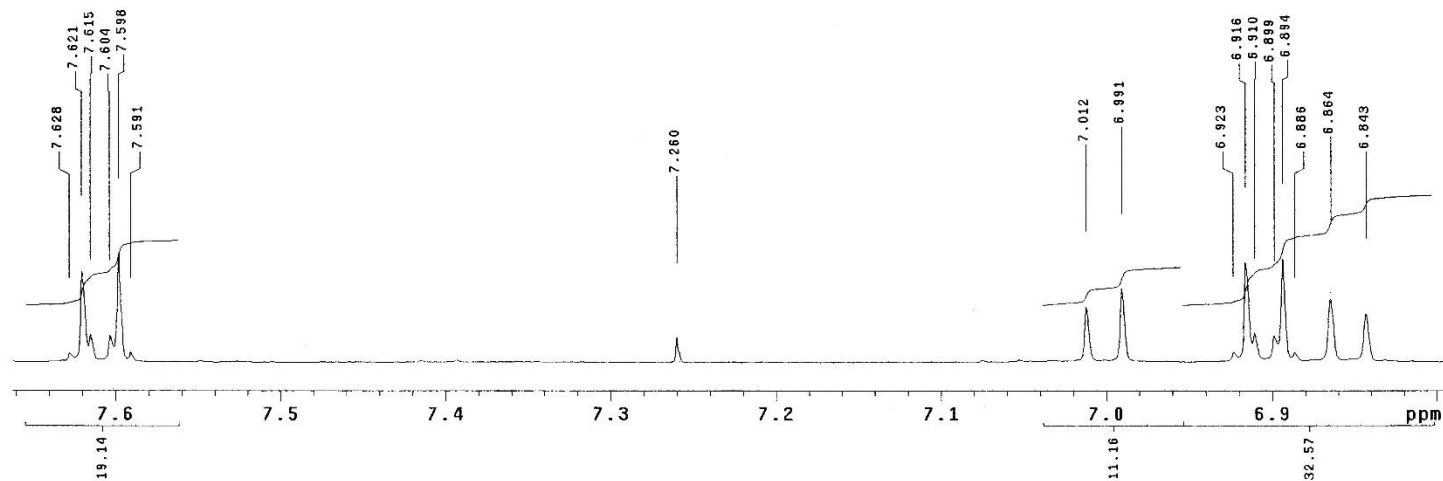
Ambient temperature

Total 64 repetitions



Compound 1f

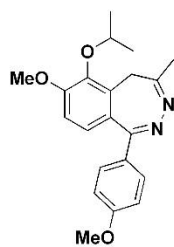
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



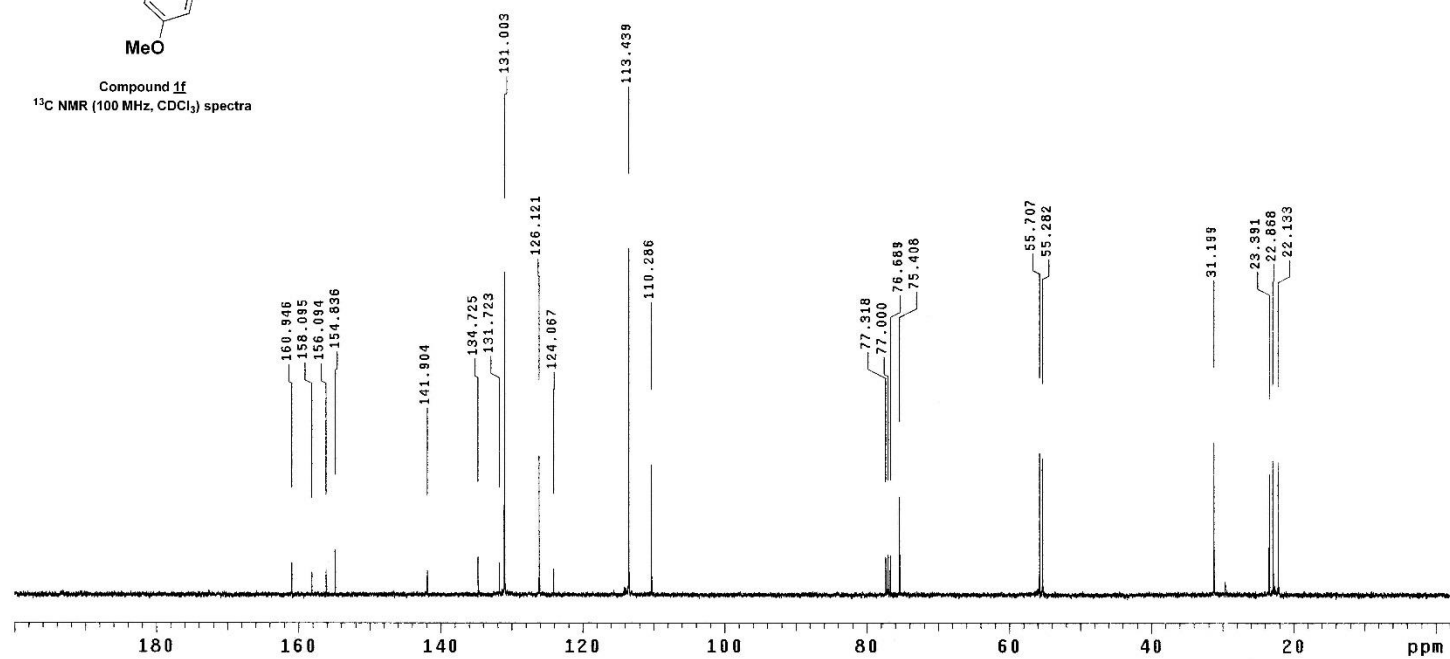
## Compound 1f

YL1040729

Pulse Sequence: s2pul  
UNITYplus-400 "unity400"  
Date: Aug 5 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 640 repetitions



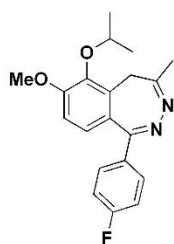
Compound 1f  
<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra



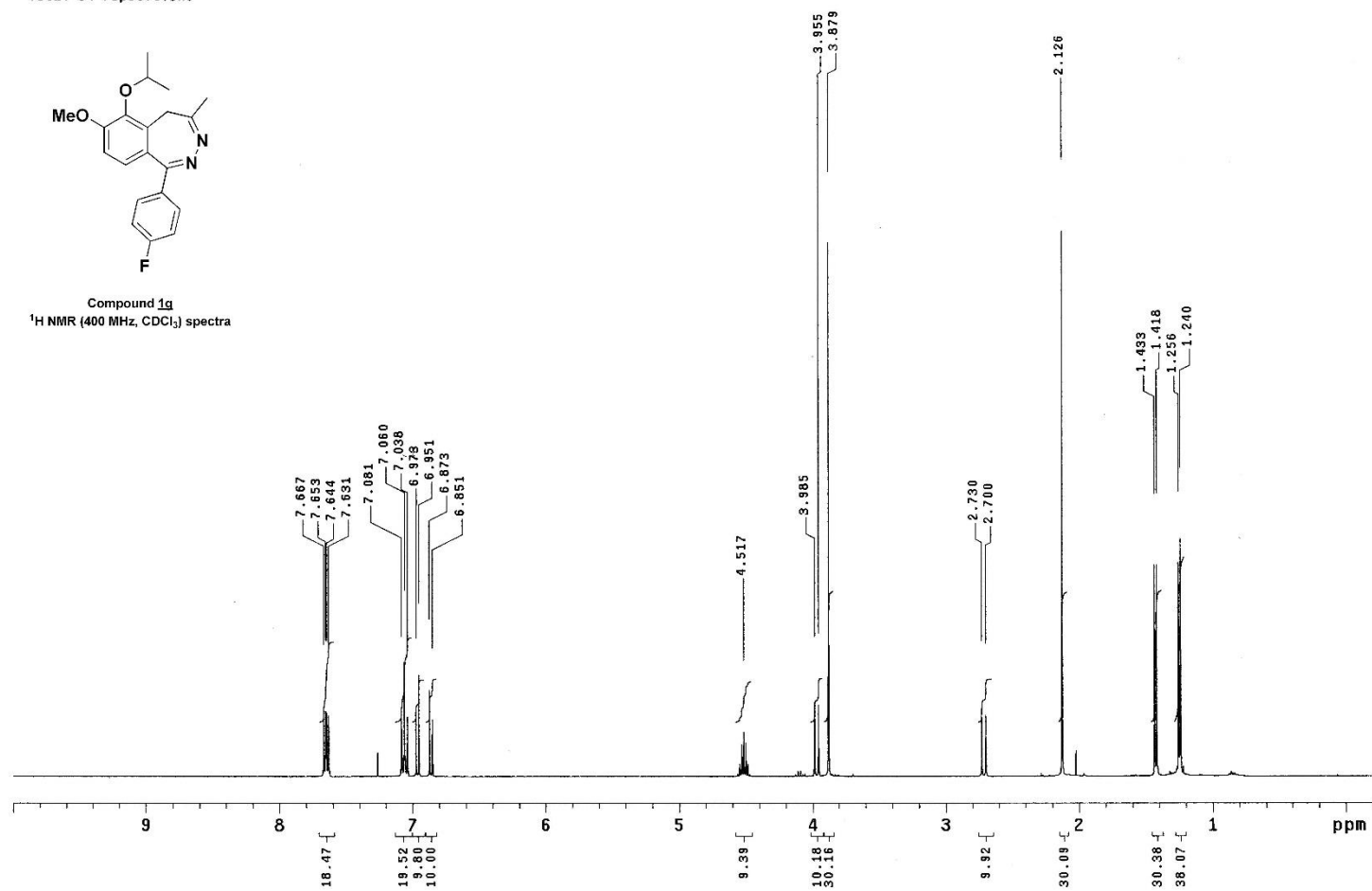
## Compound 1g

YL1040821

Pulse Sequence: s2pul  
UNITYplus-400 "unity400"  
Date: Aug 24 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 64 repetitions



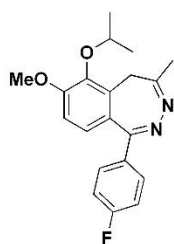
Compound 1g  
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



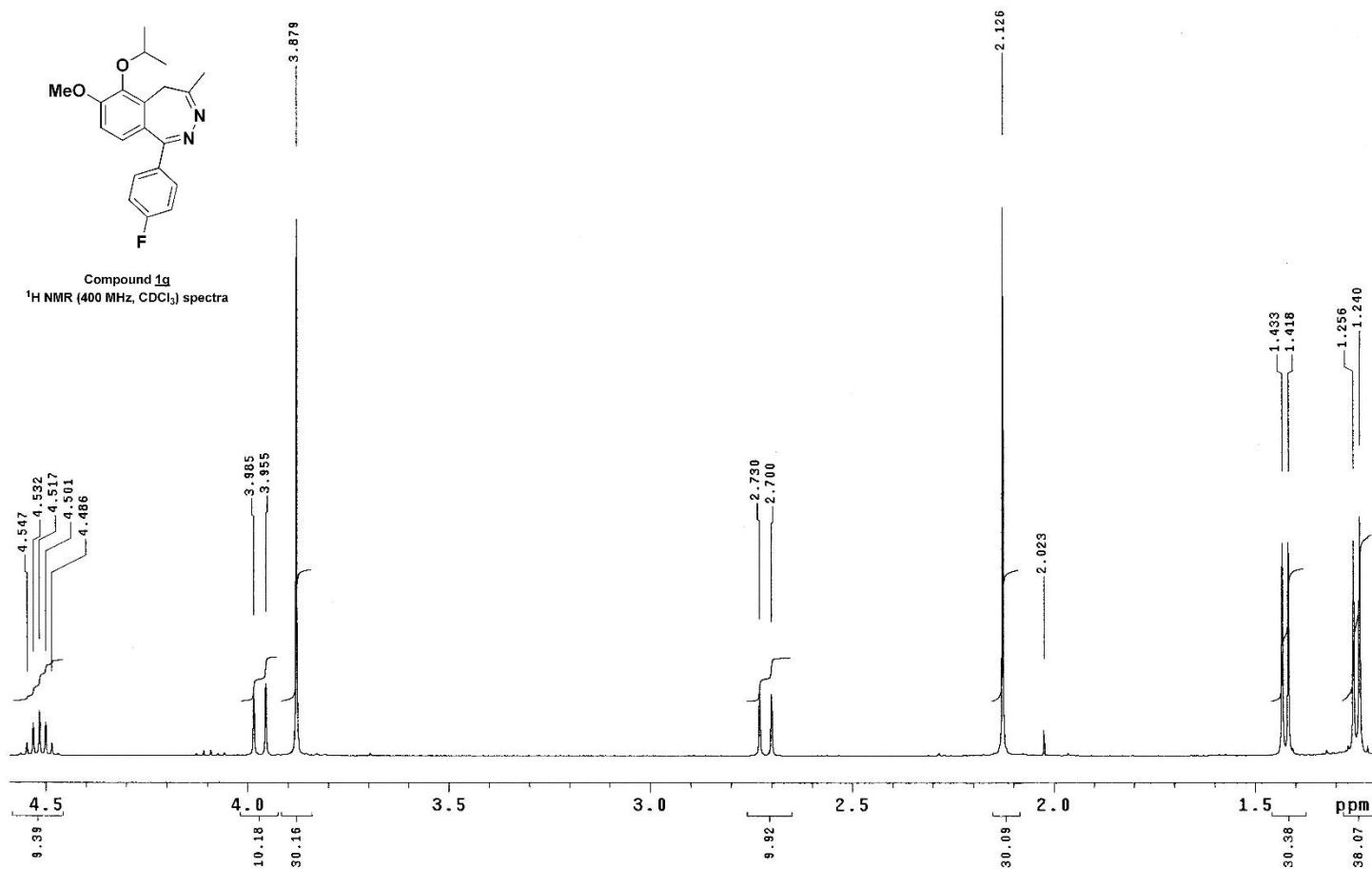
## Compound 1g

YL1040821

Pulse Sequence: s2pul  
UNITYplus-400 "unity400"  
Date: Aug 24 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 64 repetitions



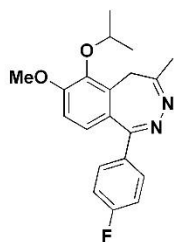
Compound 1g  
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



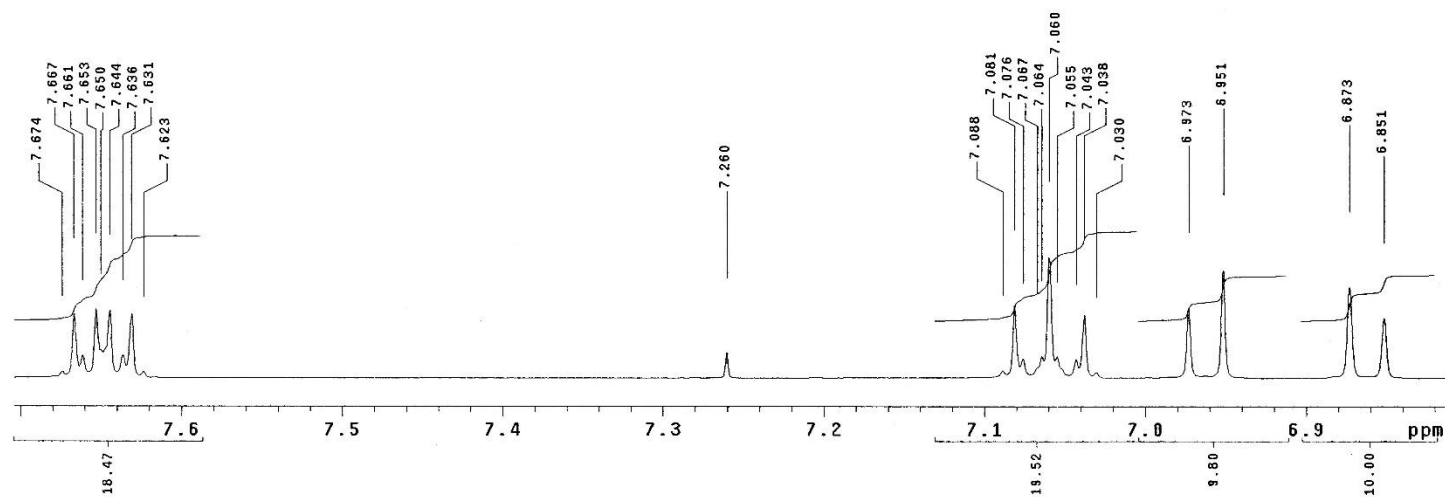
## Compound 1g

YL1040821

Pulse Sequence: s2pul  
UNITYplus-400 "unity400"  
Date: Aug 24 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 64 repetitions



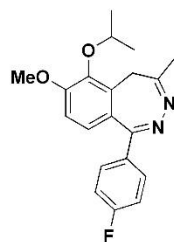
Compound 1g  
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



## Compound 1g

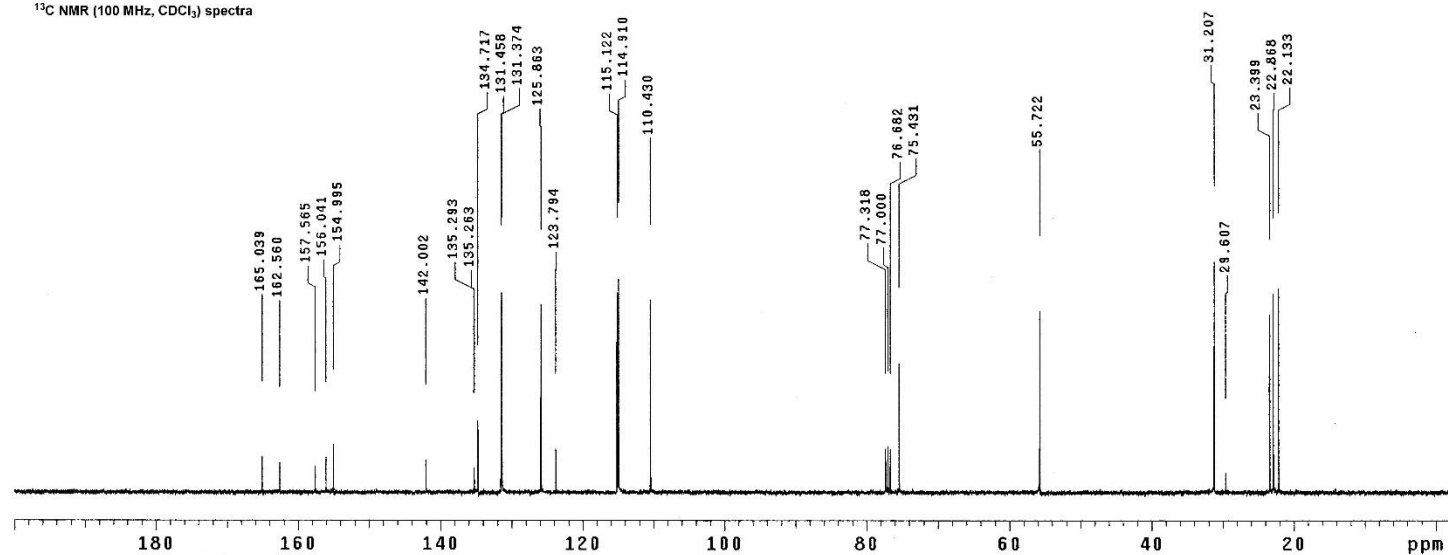
YL1040821

Pulse Sequence: s2pul  
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Date: Aug 24 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 720 repetitions



Compound 1g

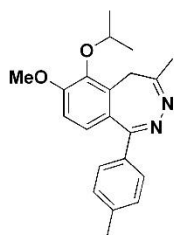
<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra



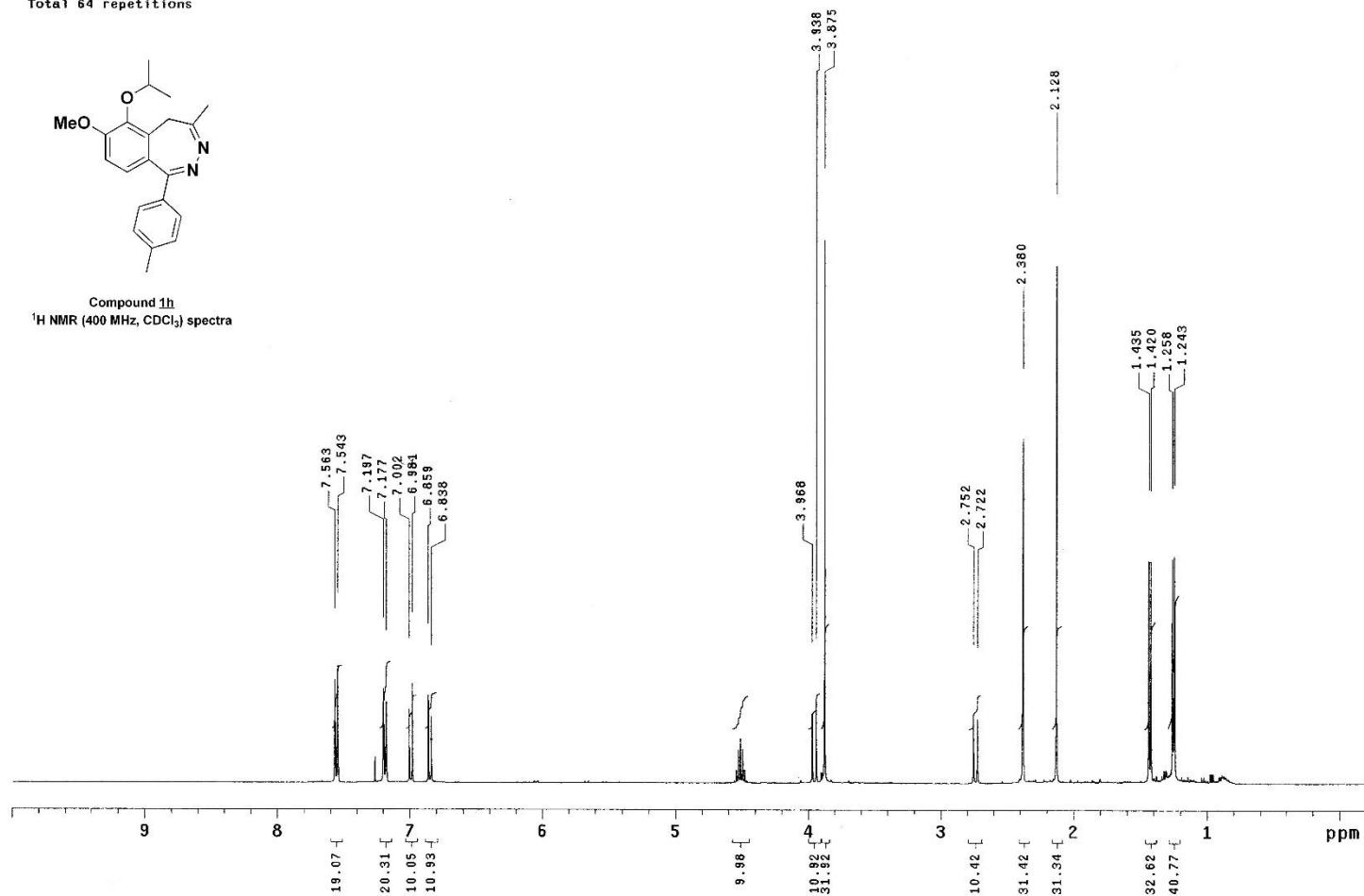
## Compound 1h

YL1040831

Pulse Sequence: s2pul  
UNITYplus-400 "unity400"  
Date: Sep 2 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 64 repetitions



Compound 1h  
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



## Compound 1h

YL1040831

Pulse Sequence: s2pul

UNITYplus-400 "unity400"

Date: Sep 2 2015

Solvent: CDCl<sub>3</sub>

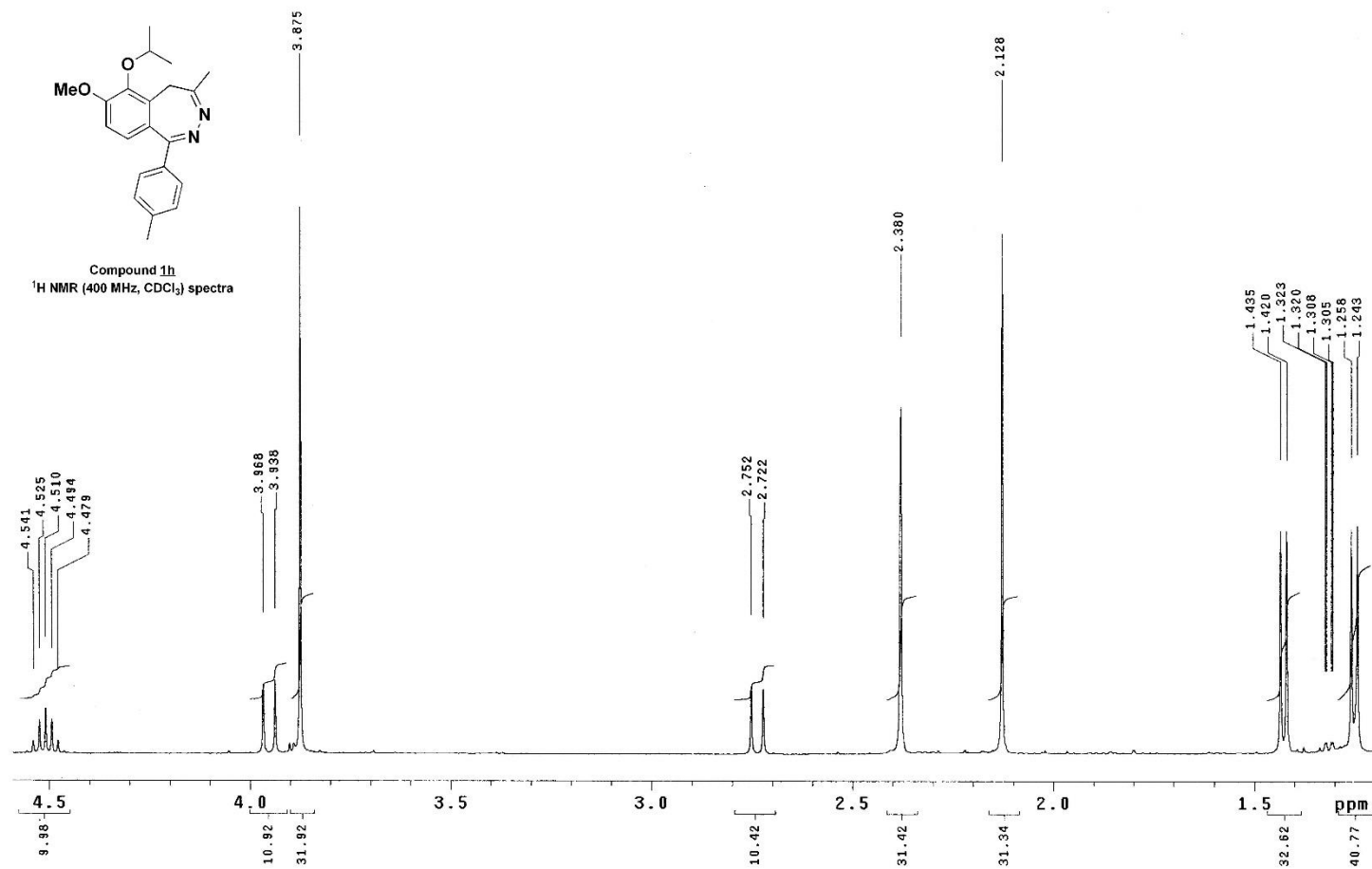
Ambient temperature

Total 64 repetitions



Compound 1h

<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra

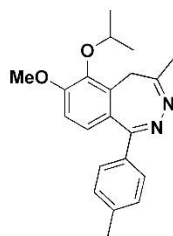




## Compound 1h

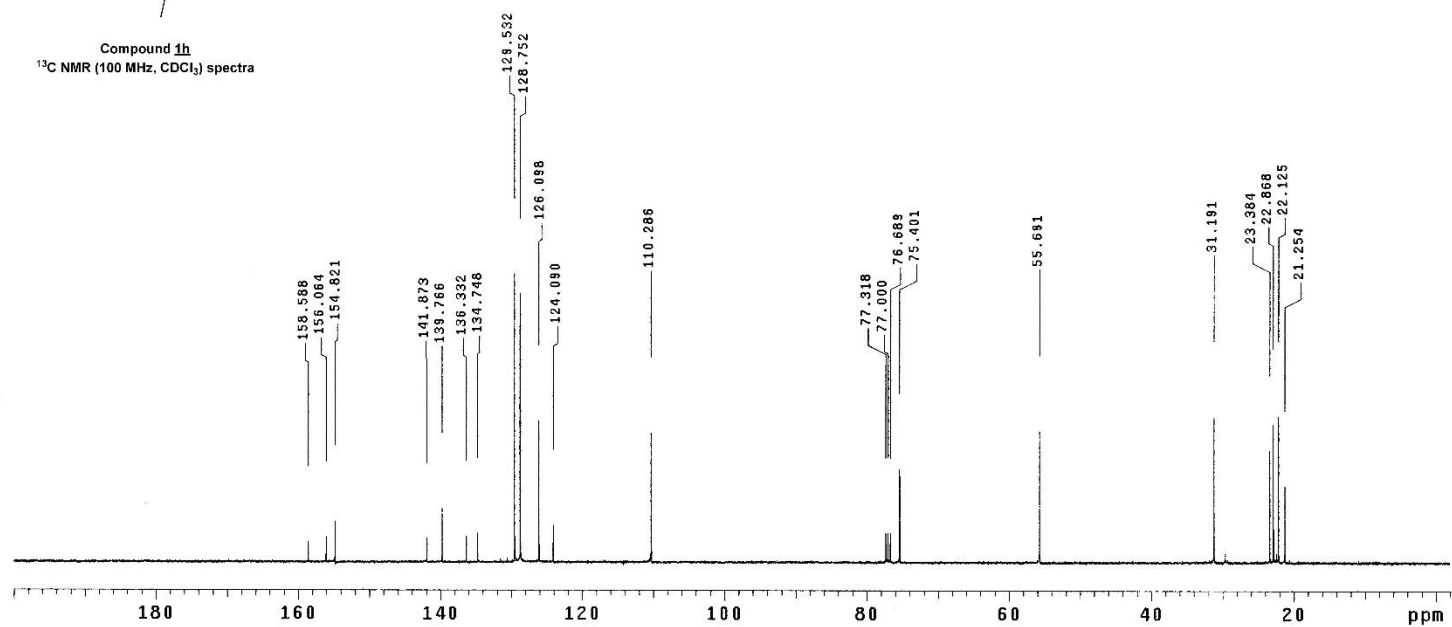
YL1040831

Pulse Sequence: s2pu1  
UNITYplus-400 "unity400"  
Date: Sep 2 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 1616 repetitions



Compound 1h

<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra



# Compound 1i

YL1040825

Pulse Sequence: s2pul

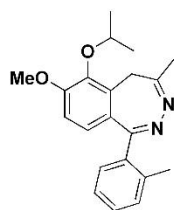
UNITYplus-400 "unity400"

Date: Aug 26 2015

Solvent: CDCl<sub>3</sub>

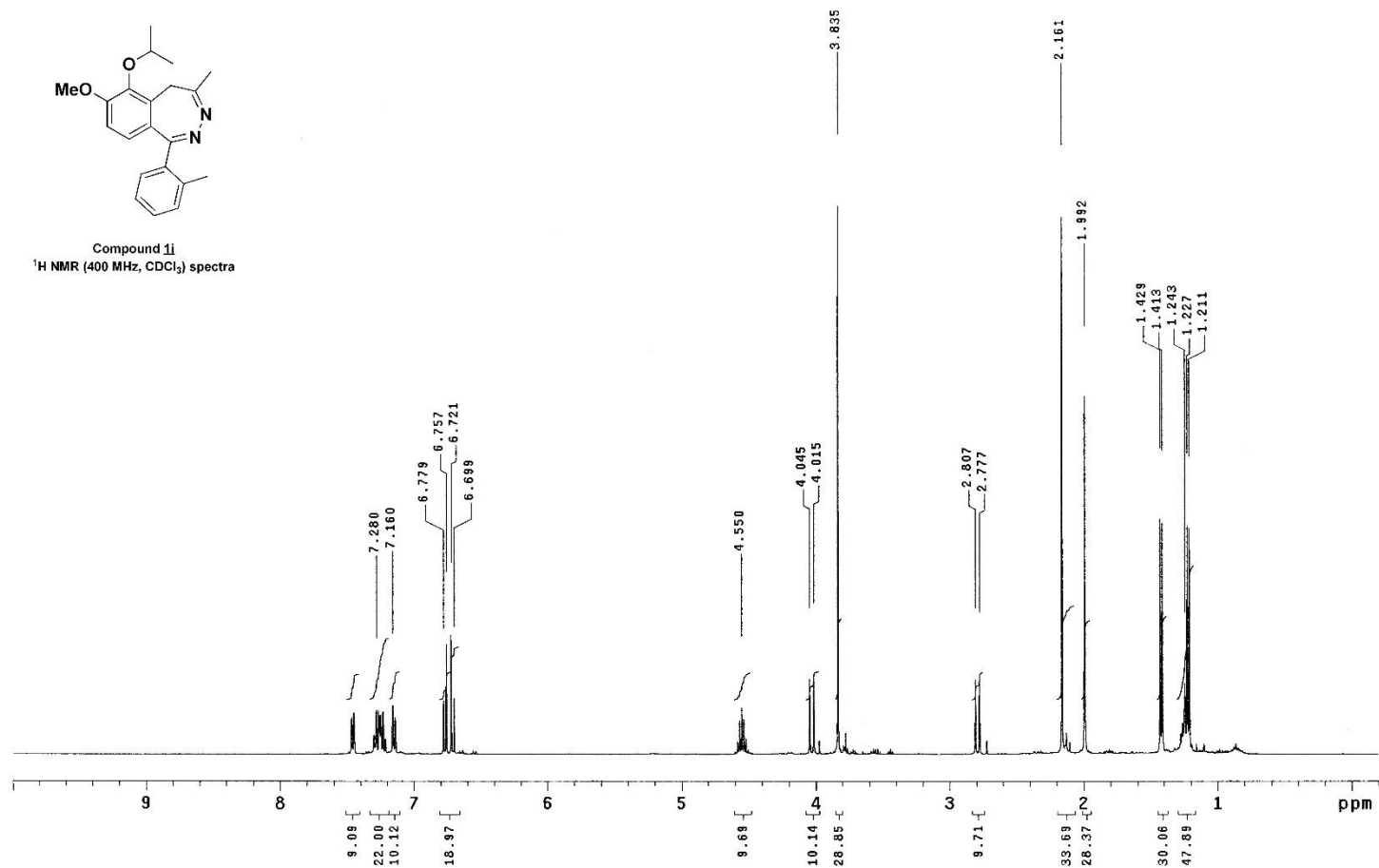
Ambient temperature

Total 48 repetitions



Compound 1i

<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



## Compound 1i

YL1040825

Pulse Sequence: s2pu1

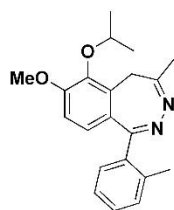
UNITYplus-400 "unity400"

Date: Aug 26 2015

Solvent: CDCl<sub>3</sub>

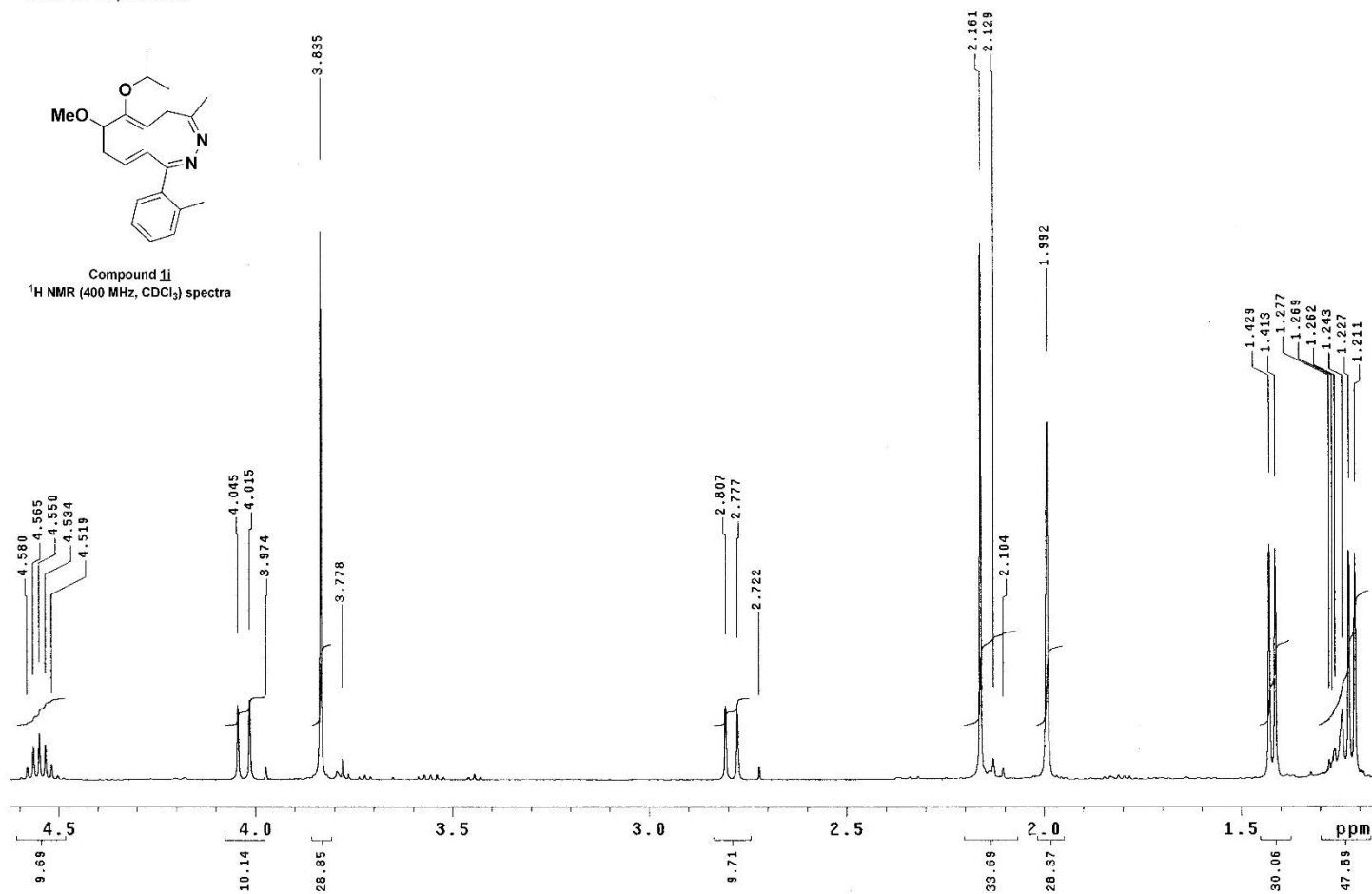
Ambient temperature

Total 48 repetitions



Compound 1i

<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



## Compound 1i

YL1040825

Pulse Sequence: s2pu1

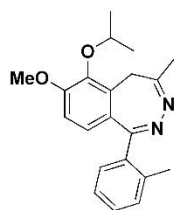
UNITYplus-400 "unity400"

Date: Aug 26 2015

Solvent: CDCl<sub>3</sub>

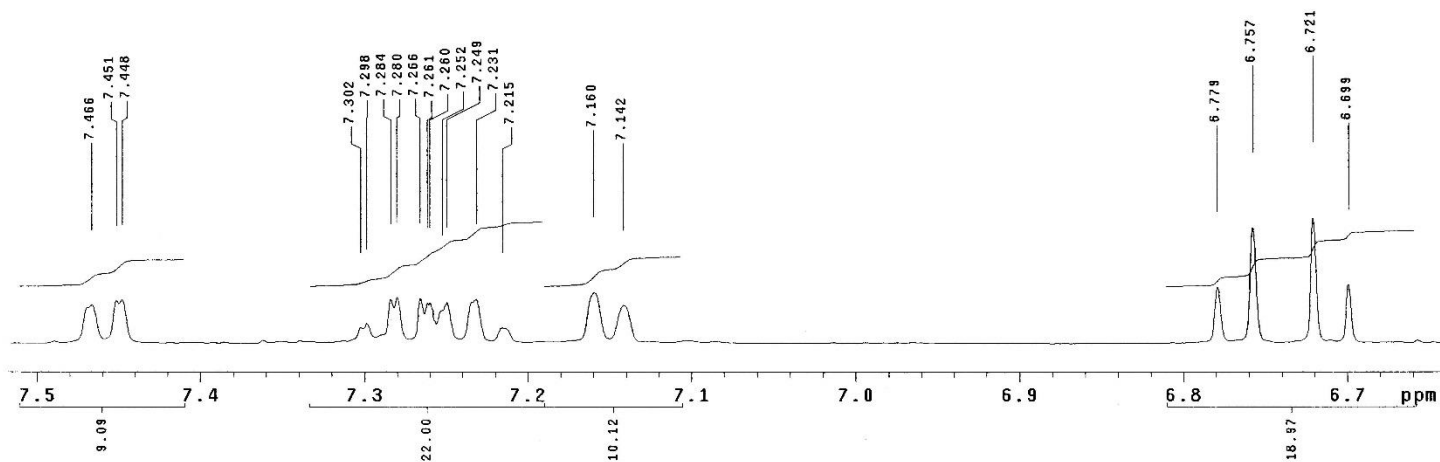
Ambient temperature

Total 48 repetitions



Compound 1i

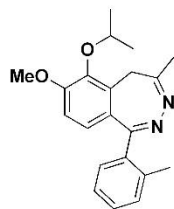
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



## Compound 1i

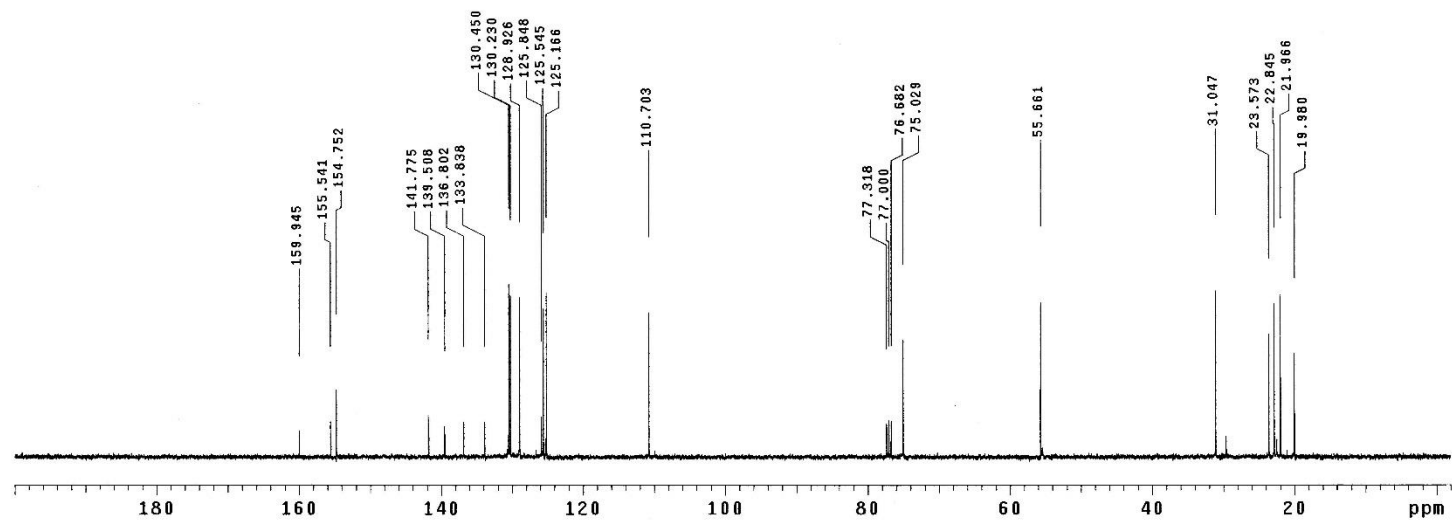
YL1040825

Pulse Sequence: s2pul  
UNITYplus-400 "unity400"  
Date: Aug 26 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 400 repetitions



Compound 1i

<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra



## Compound 1i

YL1040825

Pulse Sequence: s2pul

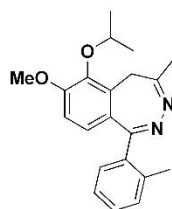
UNITYplus-400 "unity400"

Date: Aug 26 2015

Solvent: CDCl<sub>3</sub>

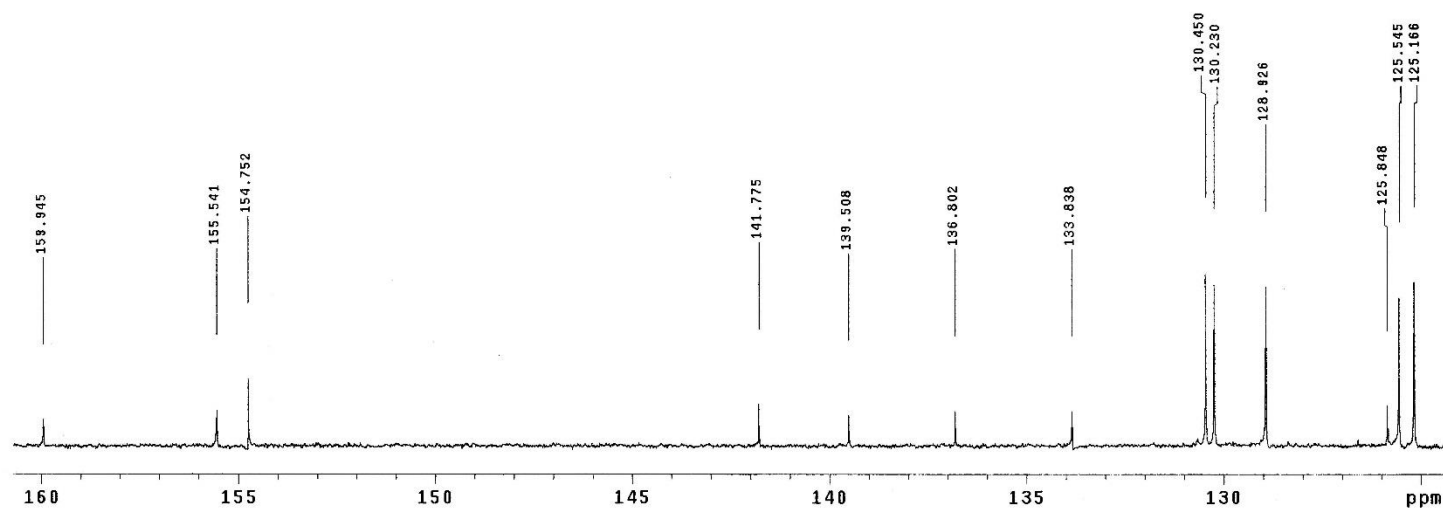
Ambient temperature

Total 400 repetitions



Compound 1i

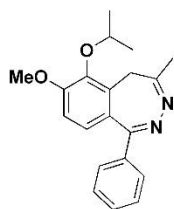
<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra



## Compound 1j

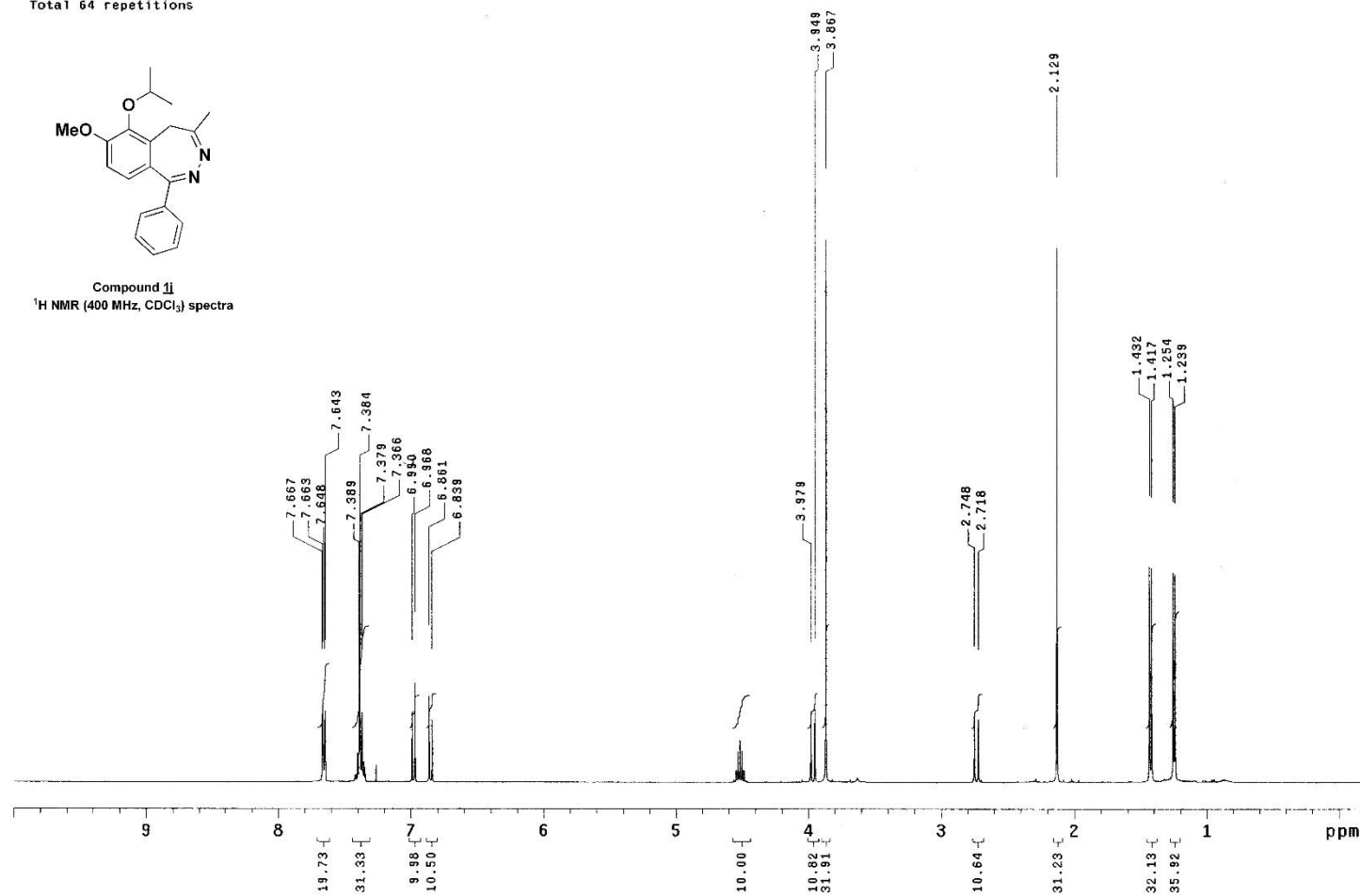
YL1040827

Pulse Sequence: s2pul  
UNITYplus-400 "unity400"  
Date: Aug 31 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 64 repetitions



Compound 1j

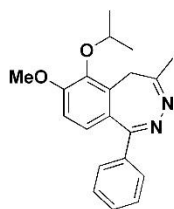
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



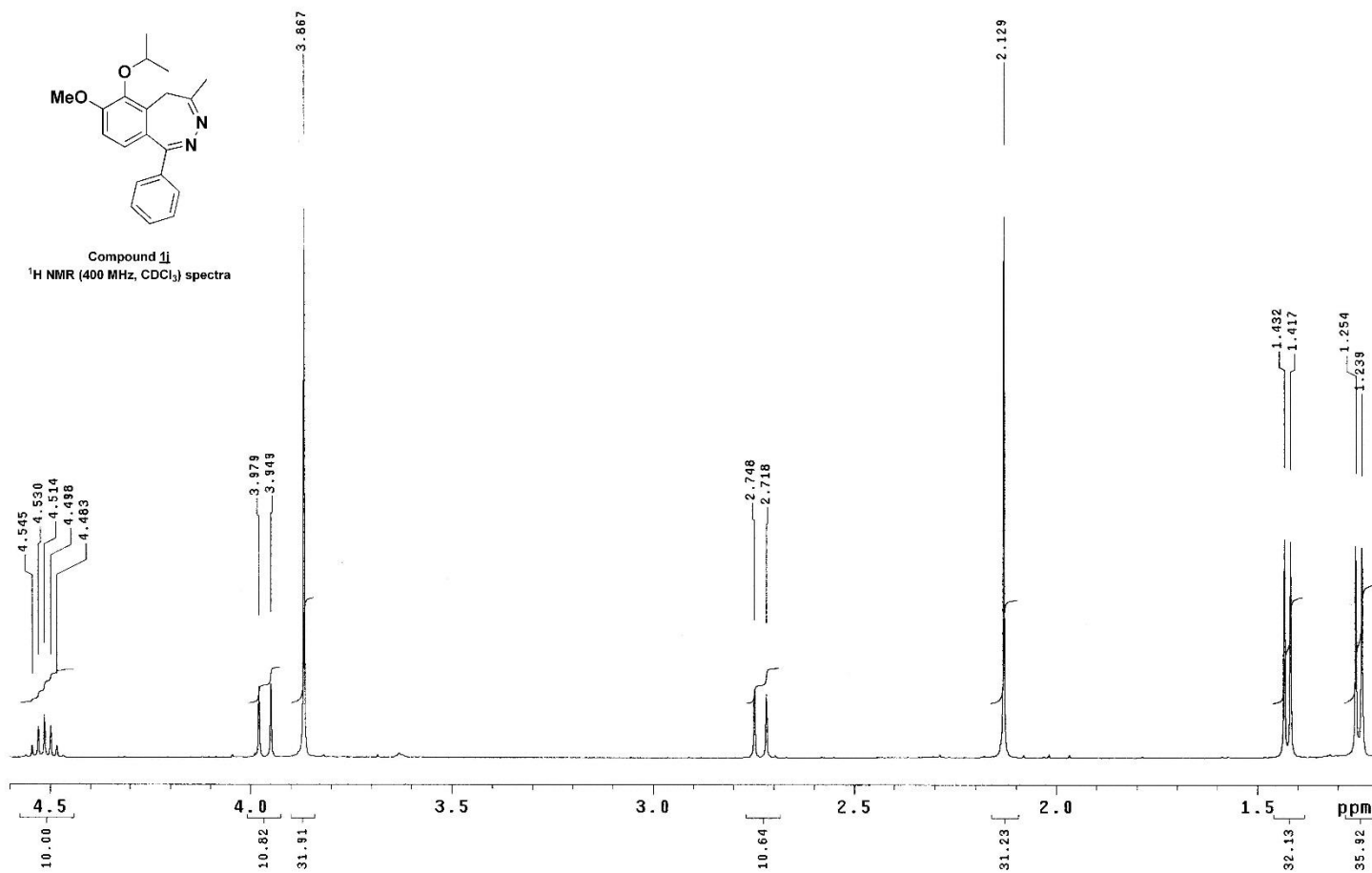
## Compound 1j

YL1040827

Pulse Sequence: s2pu1  
UNITYplus-400 "unity400"  
Date: Aug 31 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 64 repetitions



Compound 1j  
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra

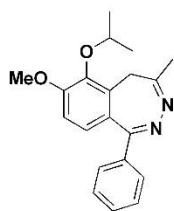




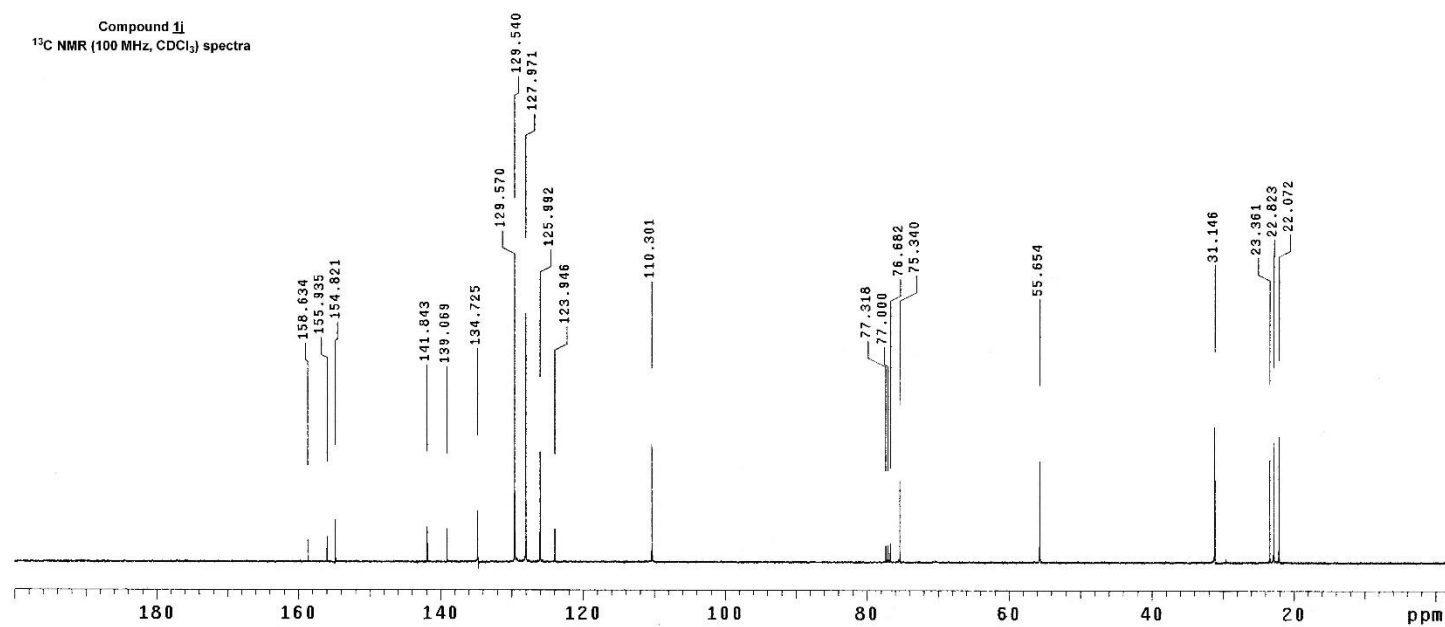
## Compound 1j

YL1040827

Pulse Sequence: s2pul  
UNITYplus-400 "unity400"  
Date: Aug 31 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 672 repetitions



Compound 1j  
<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra



## Compound 1k

YL1040730

Pulse Sequence: s2pul

UNITYplus-400 "unity400"

Date: Aug 5 2015

Solvent: CDCl<sub>3</sub>

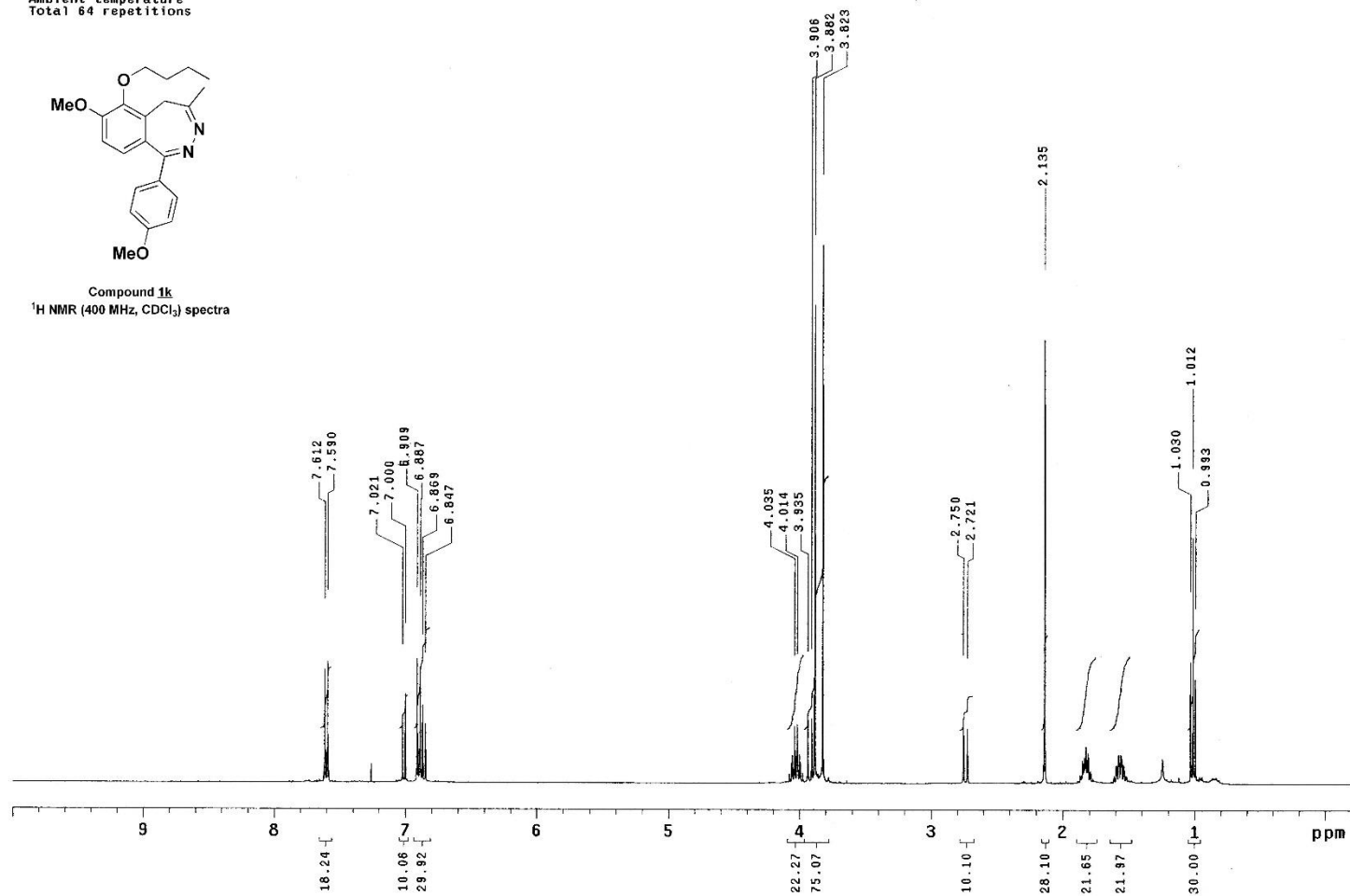
Ambient temperature

Total 64 repetitions

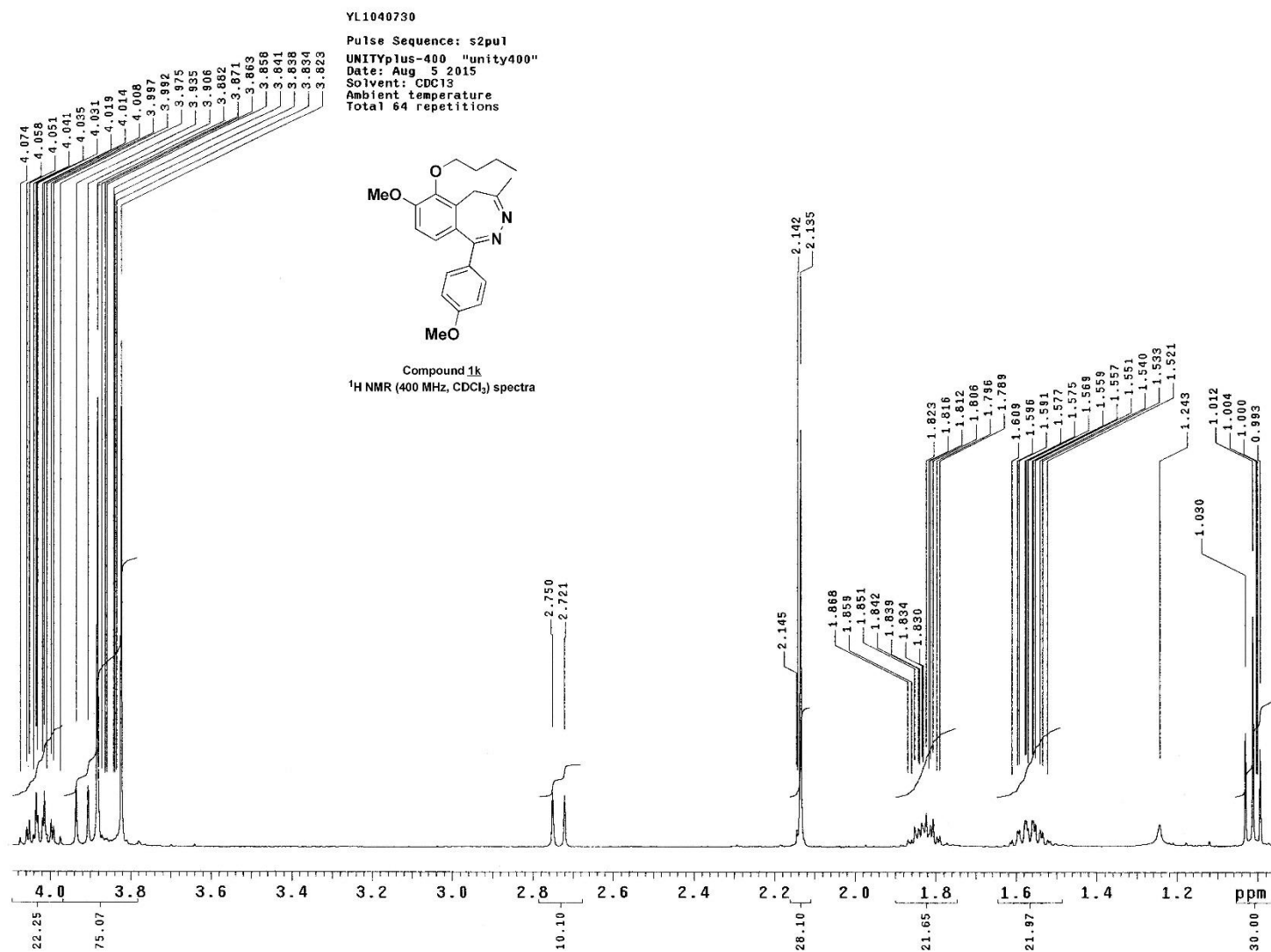


Compound 1k

<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



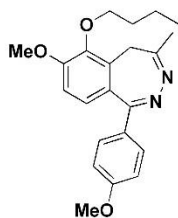
# Compound 1k



## Compound 1k

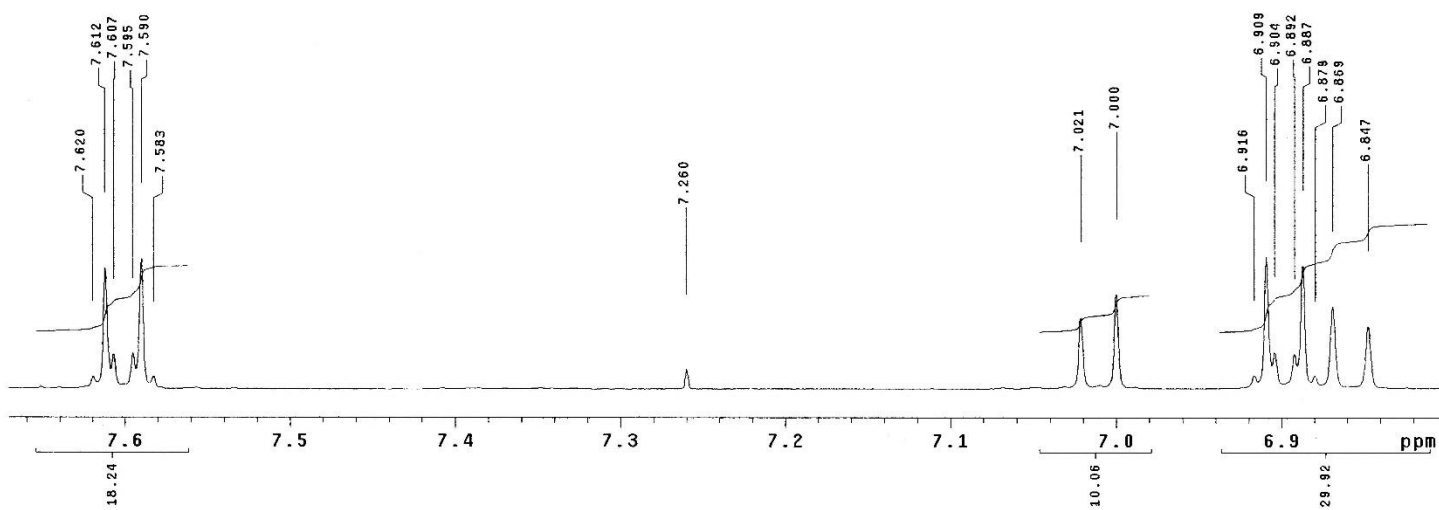
YL1040730

Pulse Sequence: s2pul  
UNITYplus-400 "unity400"  
Date: Aug 5 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 64 repetitions



Compound 1k

<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



## Compound 1k

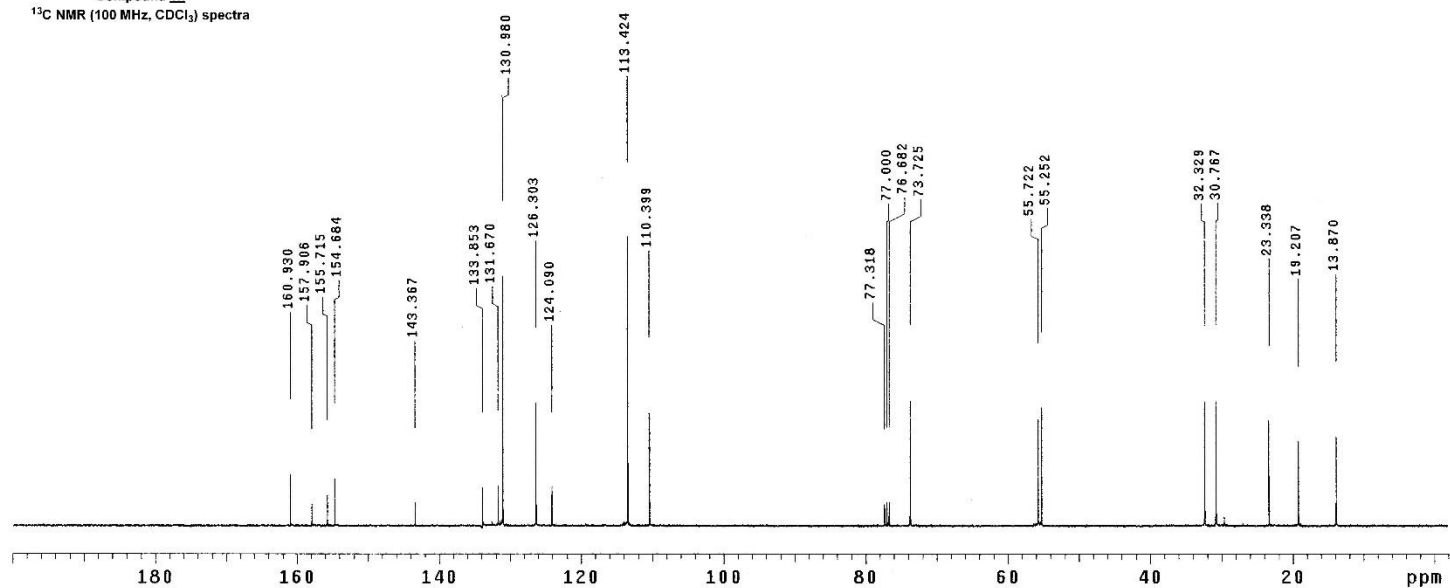
YL1040730

Pulse Sequence: s2pu1  
UNITYplus-400 "unity400"  
Date: Aug 5 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 1504 repetitions



Compound **1k**

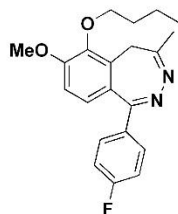
<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra



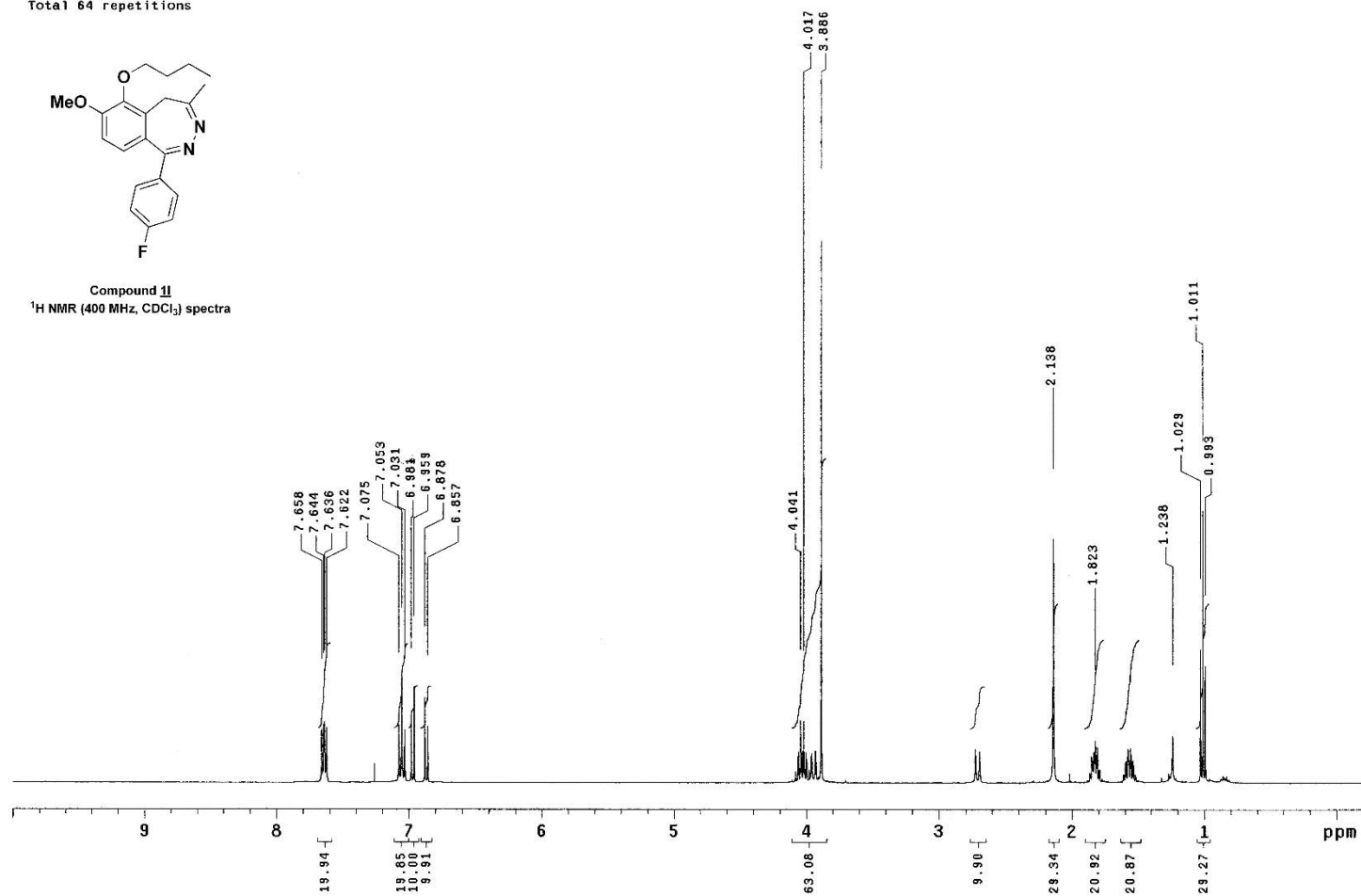
## Compound 11

YL1040822

Pulse Sequence: s2pul  
UNITYplus-400 "unity400"  
Date: Aug 24 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 64 repetitions



Compound 11  
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



# Compound 11

YL1040822

Pulse Sequence: s2pu1

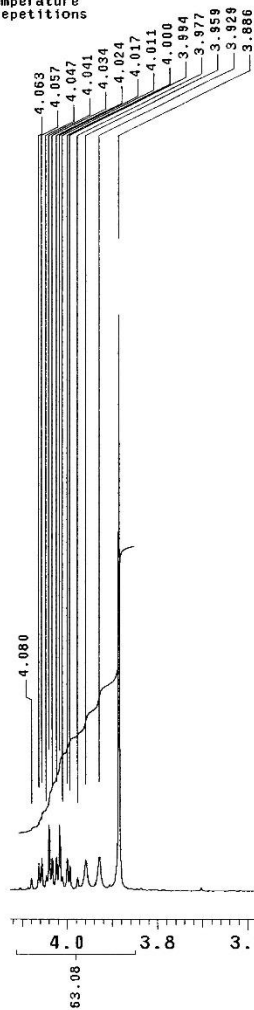
UNITYplus-400 "unity400"

Date: Aug 24 2015

Solvent: CDCl<sub>3</sub>

Ambient temperature

Total 64 repetitions

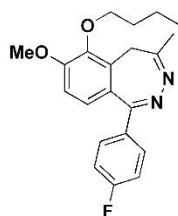


Compound 11  
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra

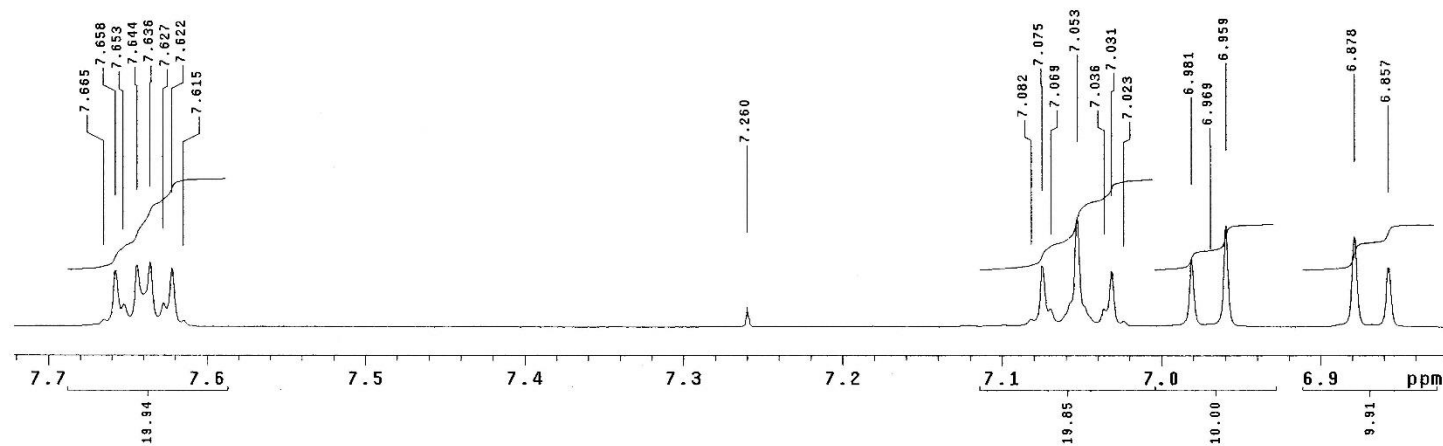
## Compound 11

YL1040822

Pulse Sequence: s2pul  
UNITYplus-400 "unity400"  
Date: Aug 24 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 64 repetitions



Compound 11  
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra





## Compound 1l

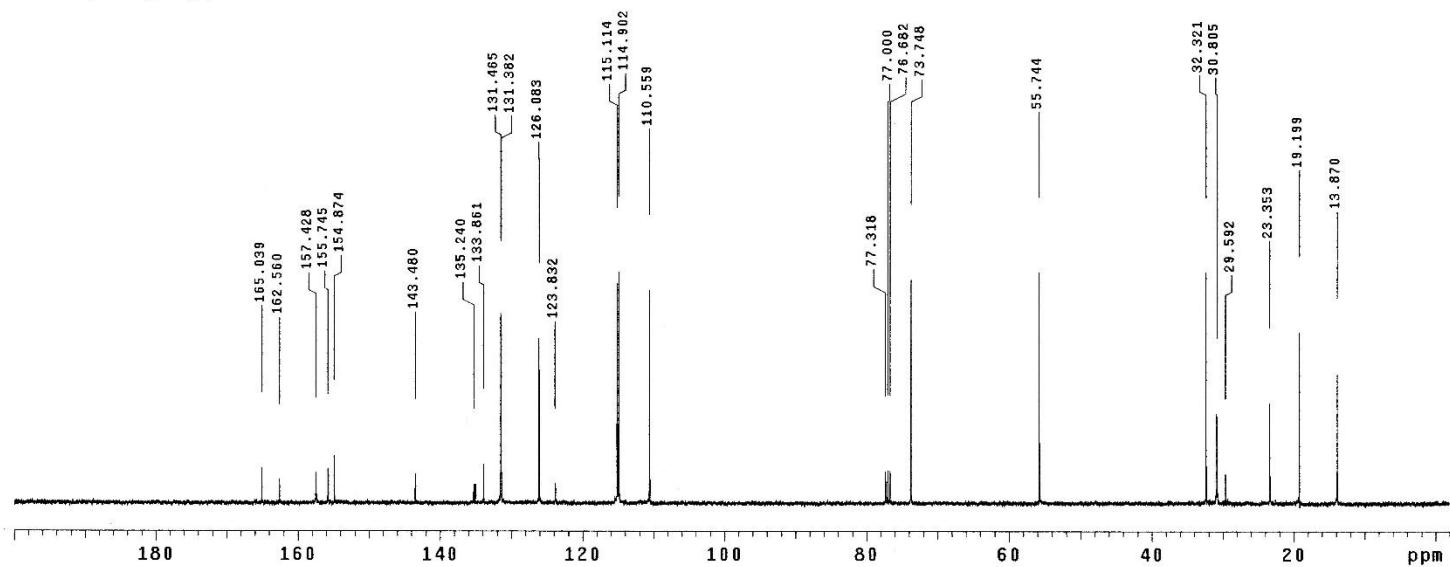
YL1040822

Pulse Sequence: s2pul  
UNITYplus-400 "unity400"  
Date: Aug 24 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 704 repetitions



Compound 1l

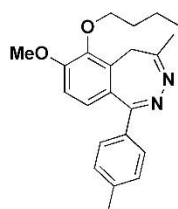
<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra



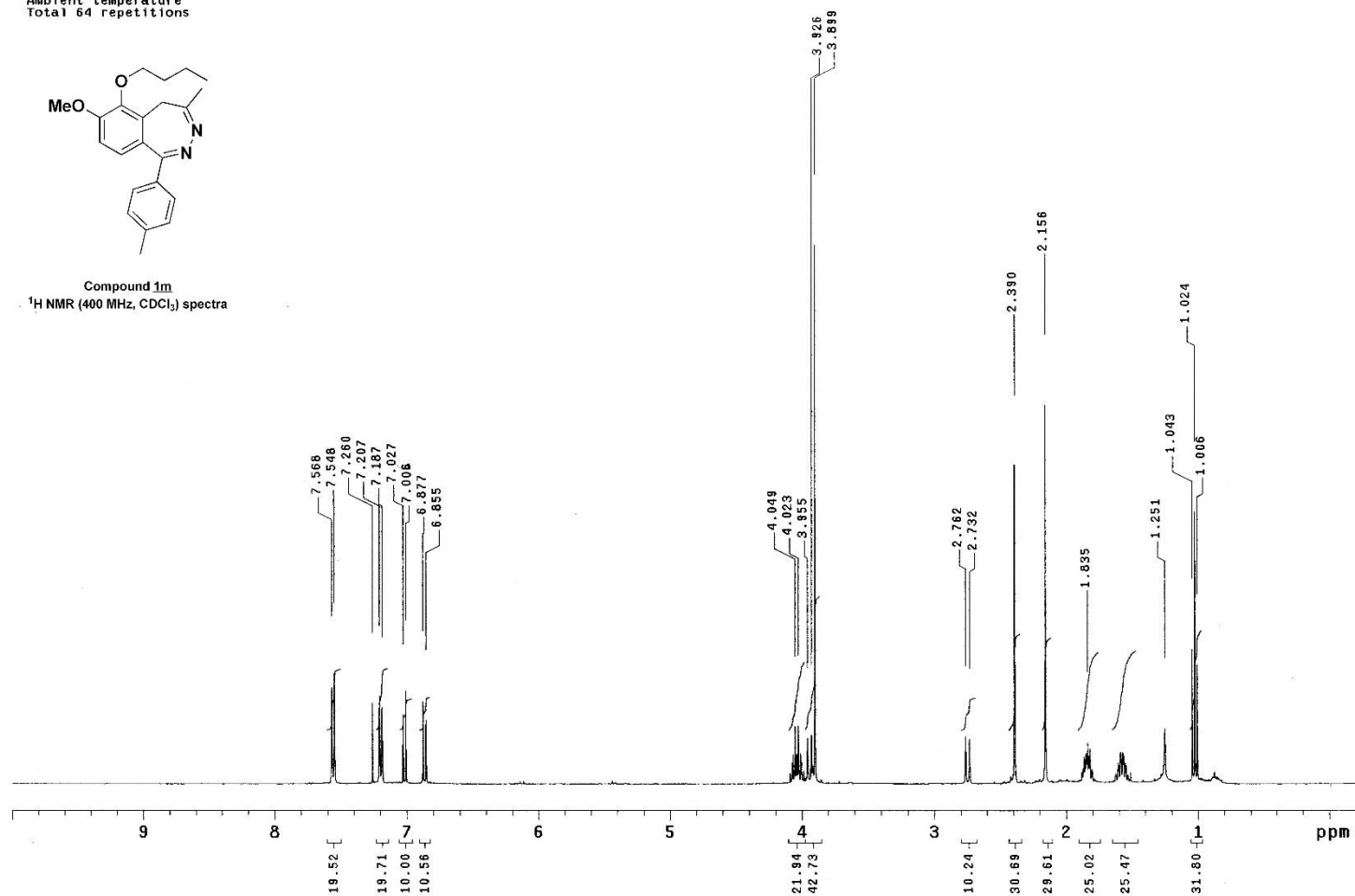
## Compound 1m

YL1040832

Pulse Sequence: s2pu1  
UNITYplus-400 "unity400"  
Date: Sep 2 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 64 repetitions



Compound 1m  
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



# Compound 1m

YL1040832

Pulse Sequence: s2pu1

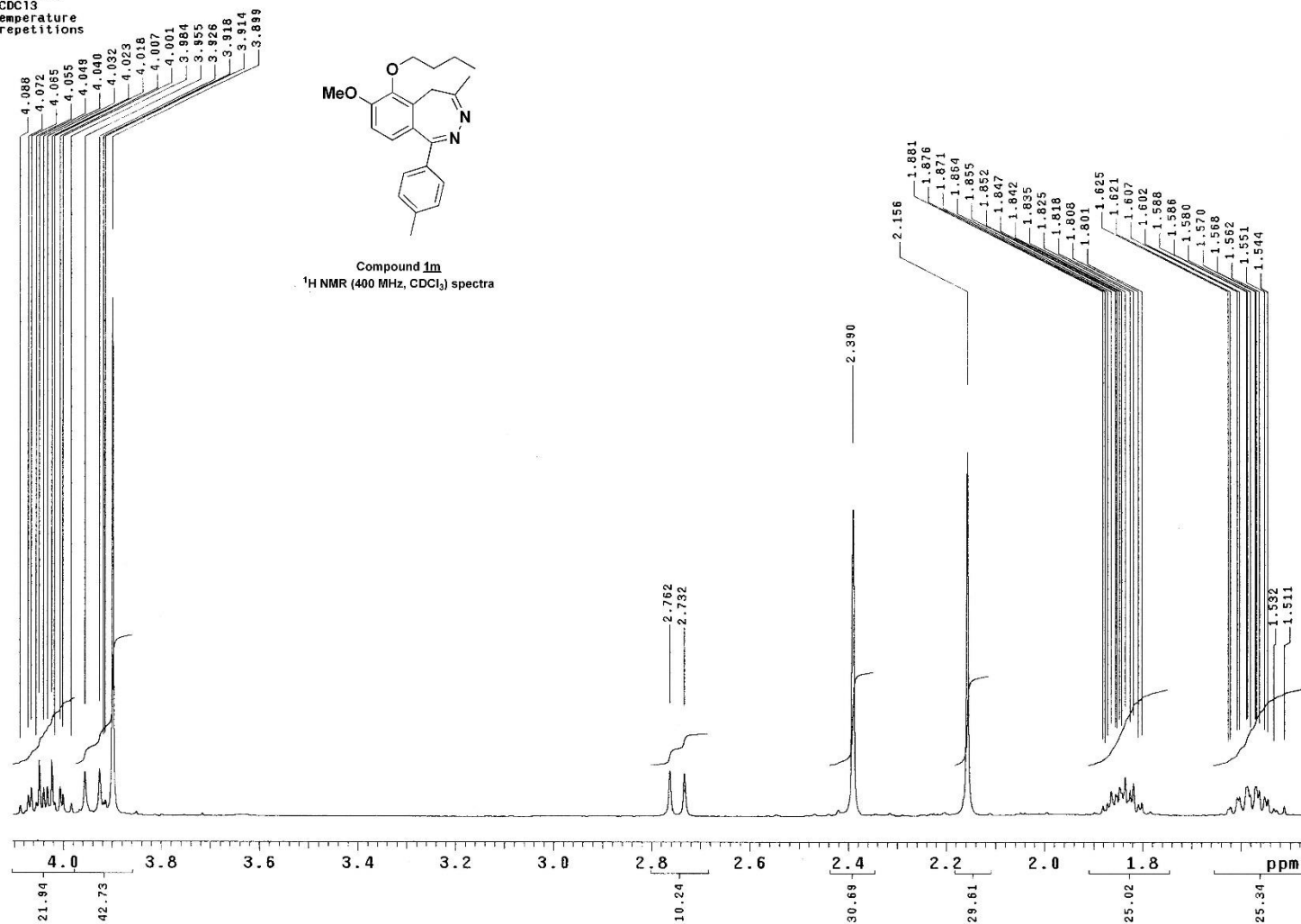
UNITYplus-400 "unity400"

Date: Sep 2 2015

Solvent: CDCl<sub>3</sub>

Ambient temperature

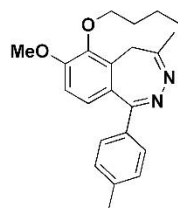
Total 64 repetitions



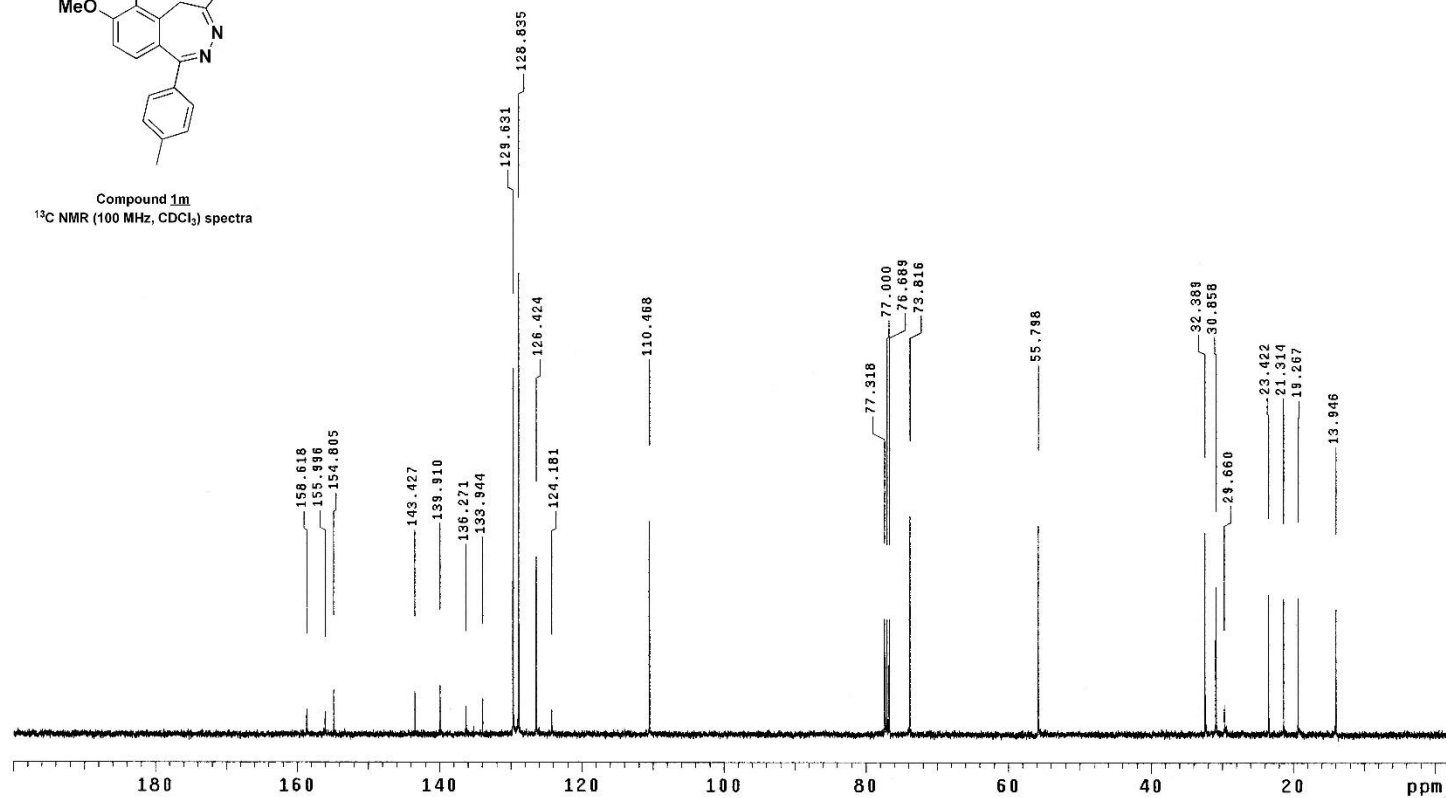
## Compound 1m

YL1040832

Pulse Sequence: s2pu1  
UNITYplus-400 "unity400"  
Date: Sep 2 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 3456 repetitions



Compound 1m  
<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra



## Compound 1m

YL1040832

Pulse Sequence: s2pu1

UNITYplus-400 "unity400"

Date: Sep 2 2015

Solvent: CDCl<sub>3</sub>

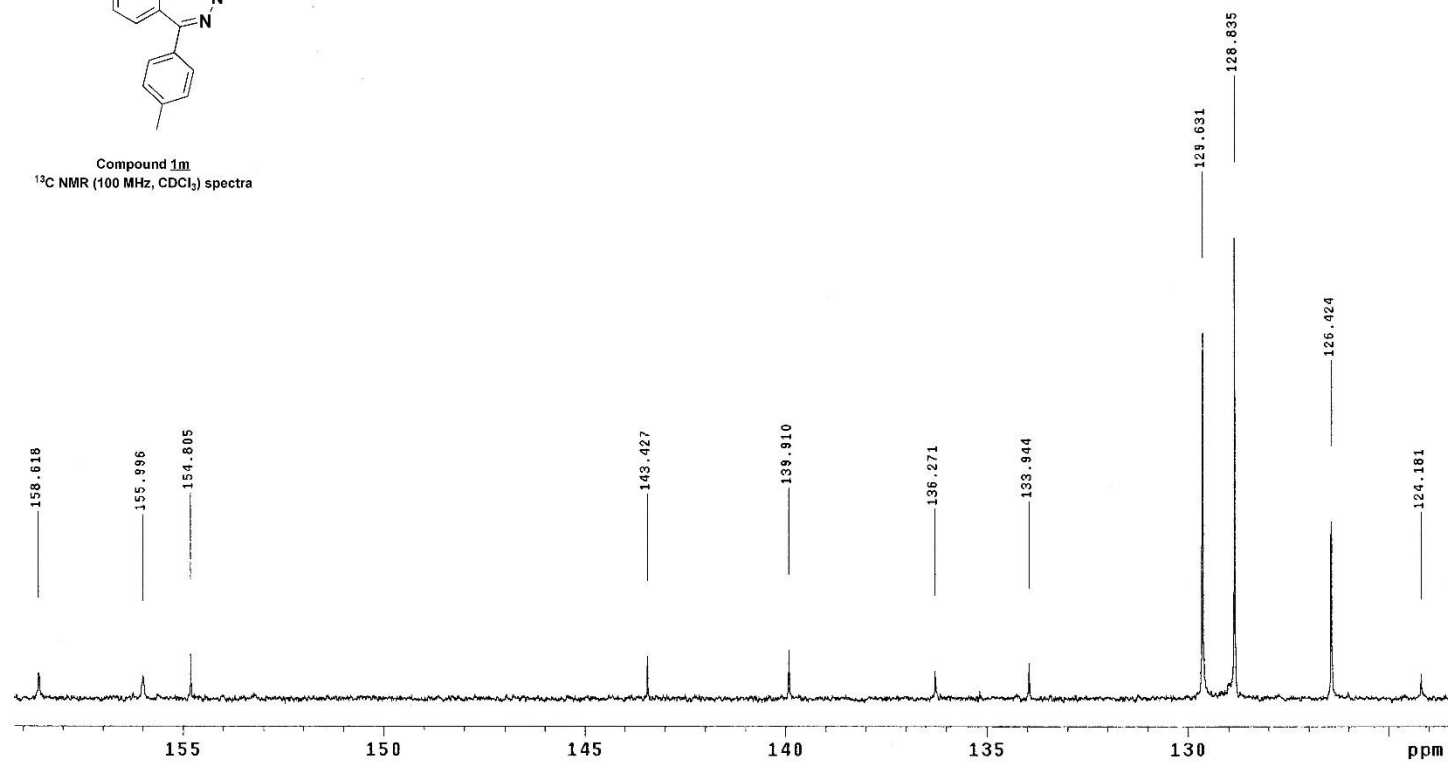
Ambient temperature

Total 3456 repetitions



Compound 1m

<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra



## Compound 1n

YL1040826

Pulse Sequence: s2pu1

UNITYplus-400 "unity400"

Date: Aug 26 2015

Solvent: CDCl<sub>3</sub>

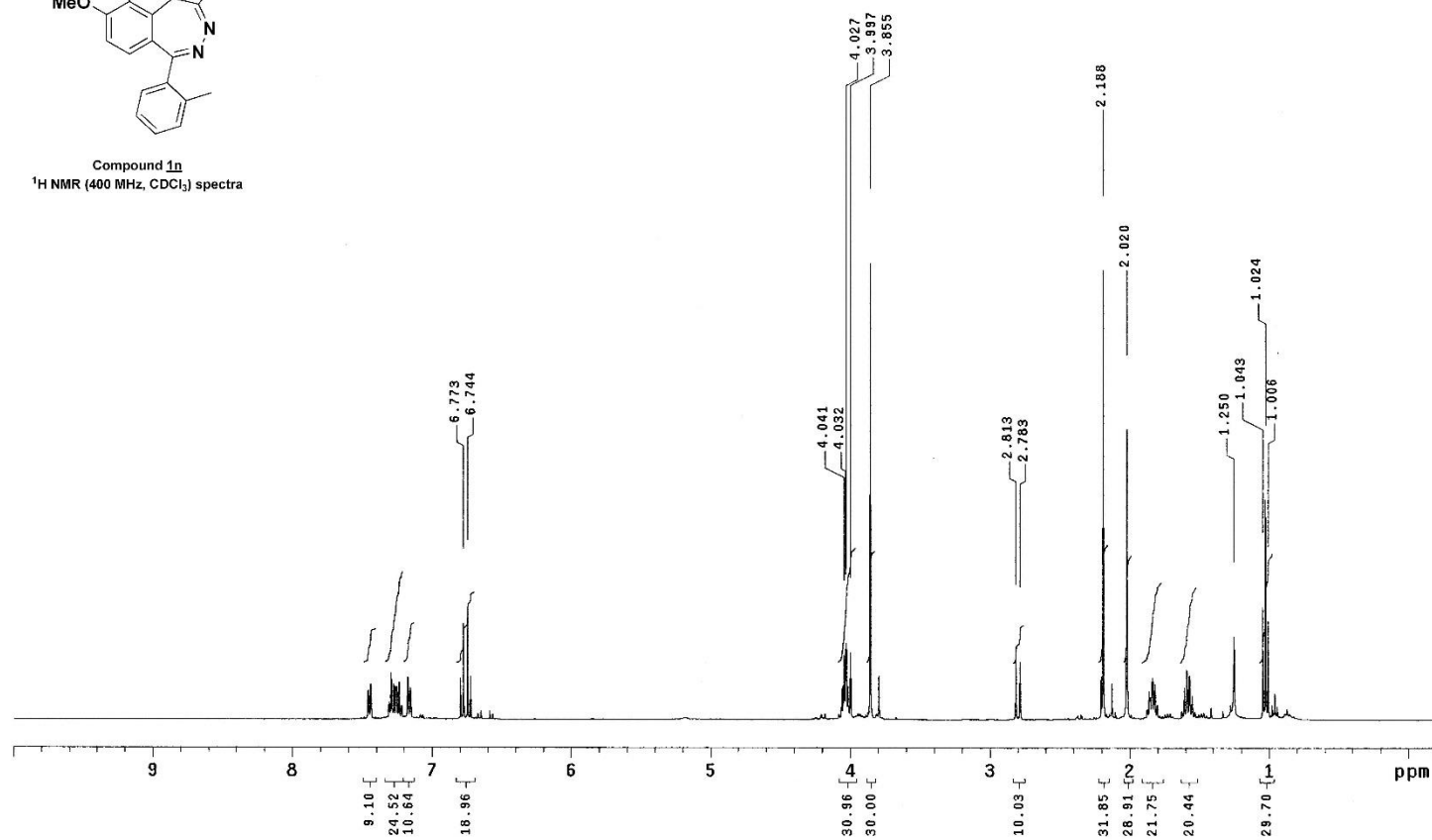
Ambient temperature

Total 64 repetitions



Compound 1n

<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



# Compound 1n

YL1040826

Pulse Sequence: s2pu1

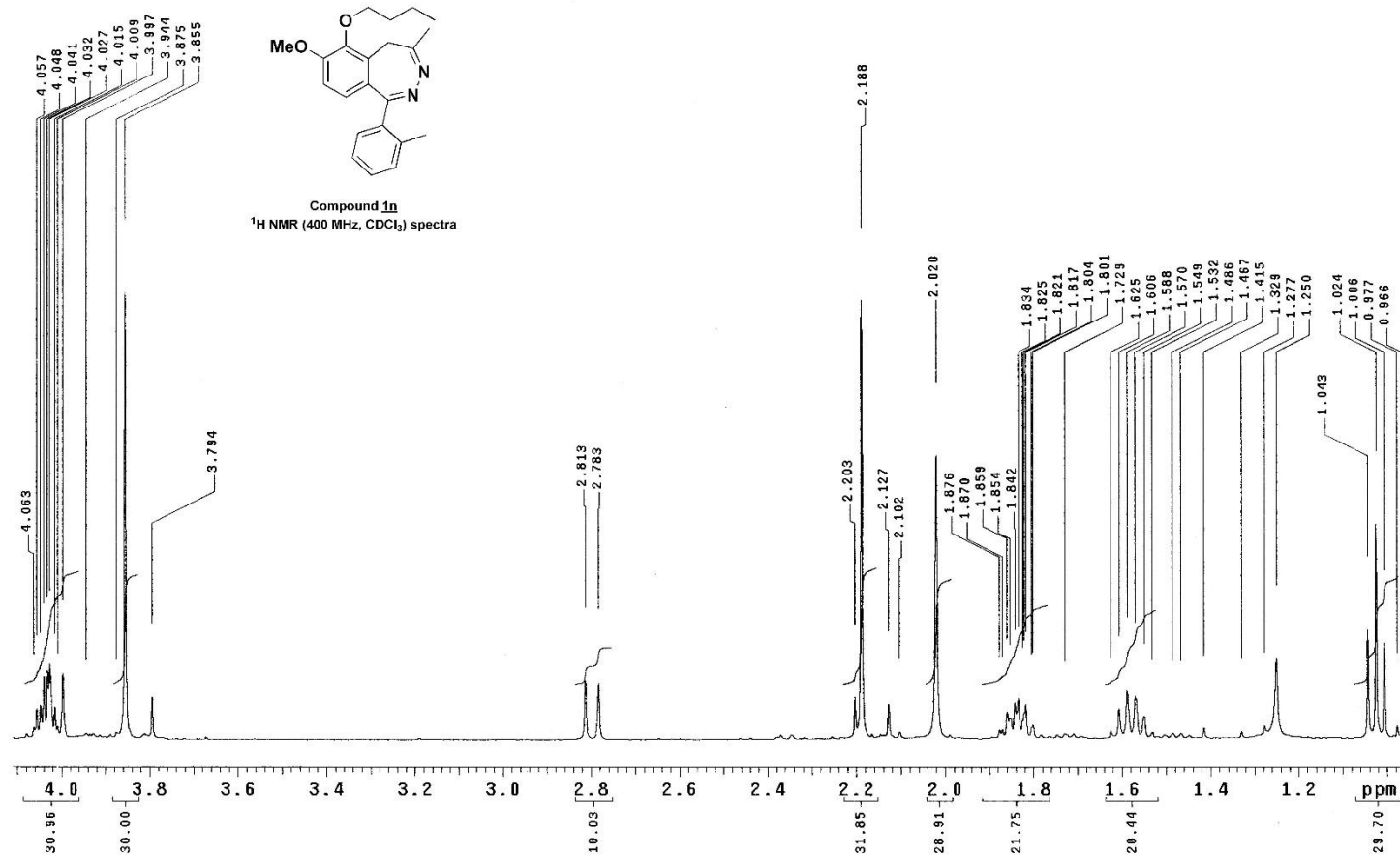
UNITYplus-400 "unity400"

Date: Aug 26 2015

Solvent: CDCl<sub>3</sub>

Ambient temperature

Total 64 repetitions



## Compound 1n

YL1040826

Pulse Sequence: s2pu1

UNITYplus-400 "unity400"

Date: Aug 26 2015

Solvent: CDCl<sub>3</sub>

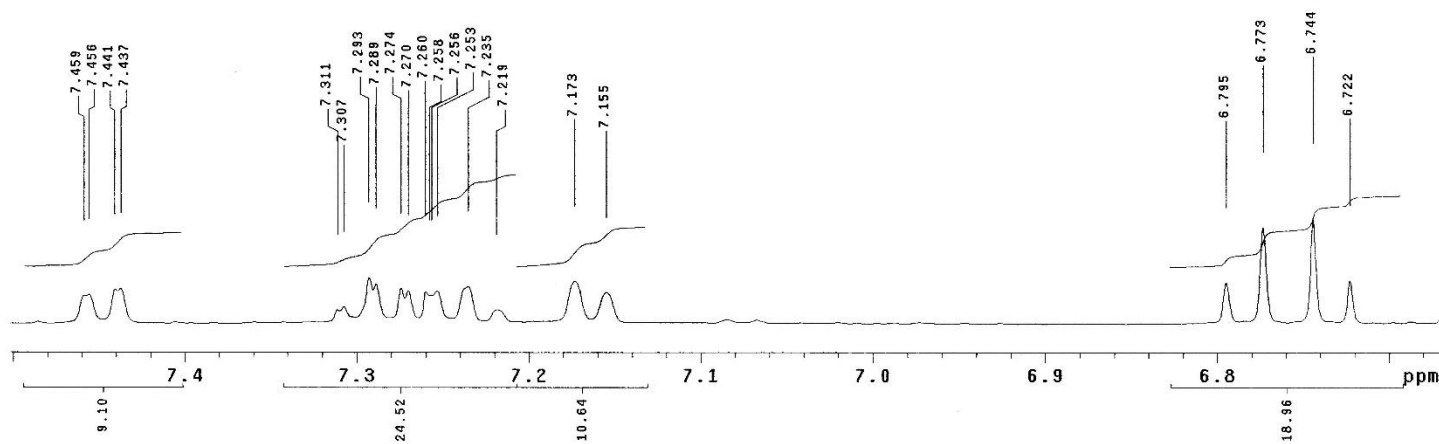
Ambient temperature

Total 64 repetitions



Compound 1n

<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra





## Compound 1n

YL1040826

Pulse Sequence: s2pu1

UNITYplus-400 "unity400"

Date: Aug 26 2015

Solvent: CDCl<sub>3</sub>

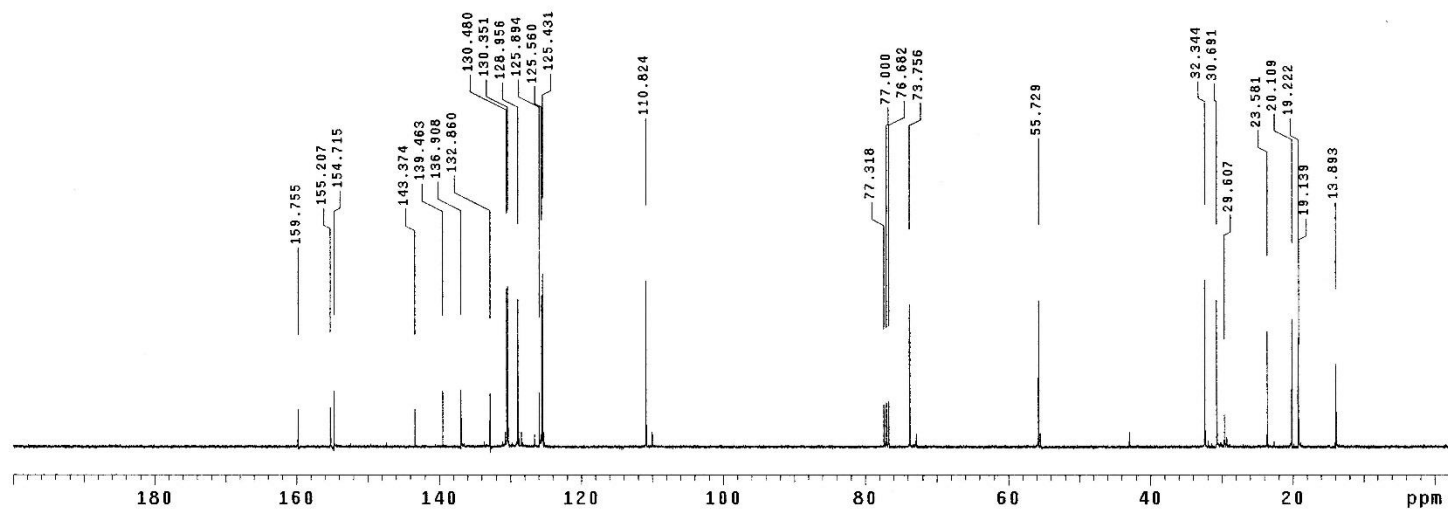
Ambient temperature

Total 64000 repetitions



Compound 1n

<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra



## Compound 1n

YL1040826

Pulse Sequence: s2pu1

UNITYplus-400 "unity400"

Date: Aug 26 2015

Solvent: CDCl<sub>3</sub>

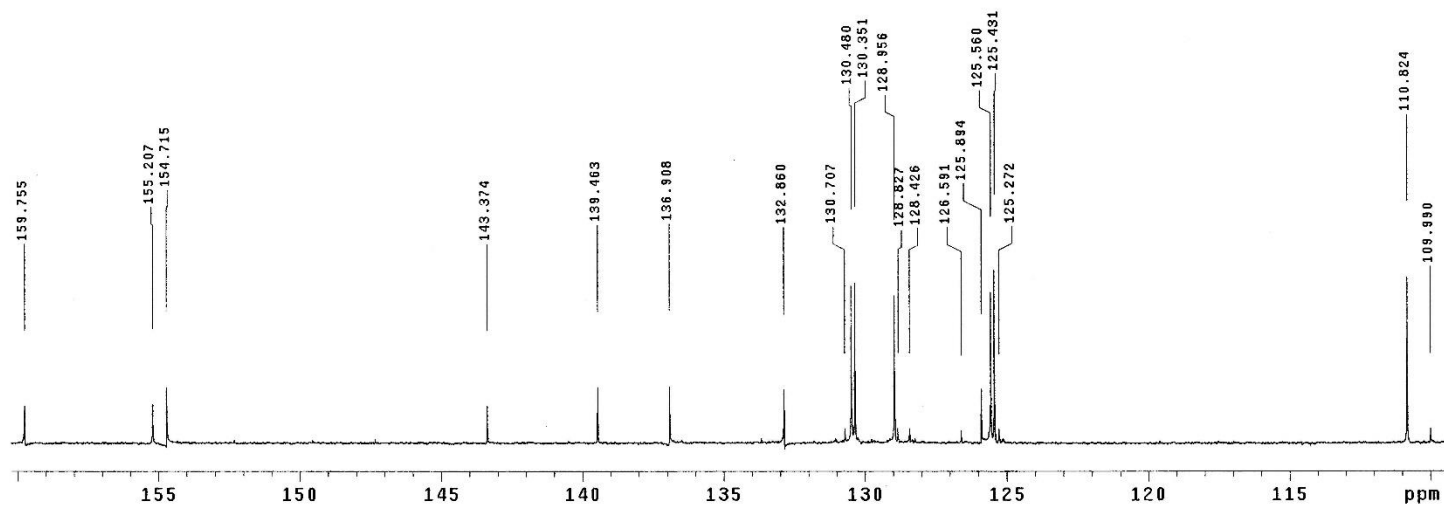
Ambient temperature

Total 64000 repetitions



Compound 1n

<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra



## Compound 1o

YL1040828

Pulse Sequence: s2pul

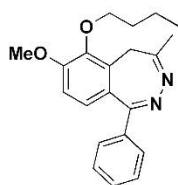
UNITYplus-400 "unity400"

Date: Aug 31 2015

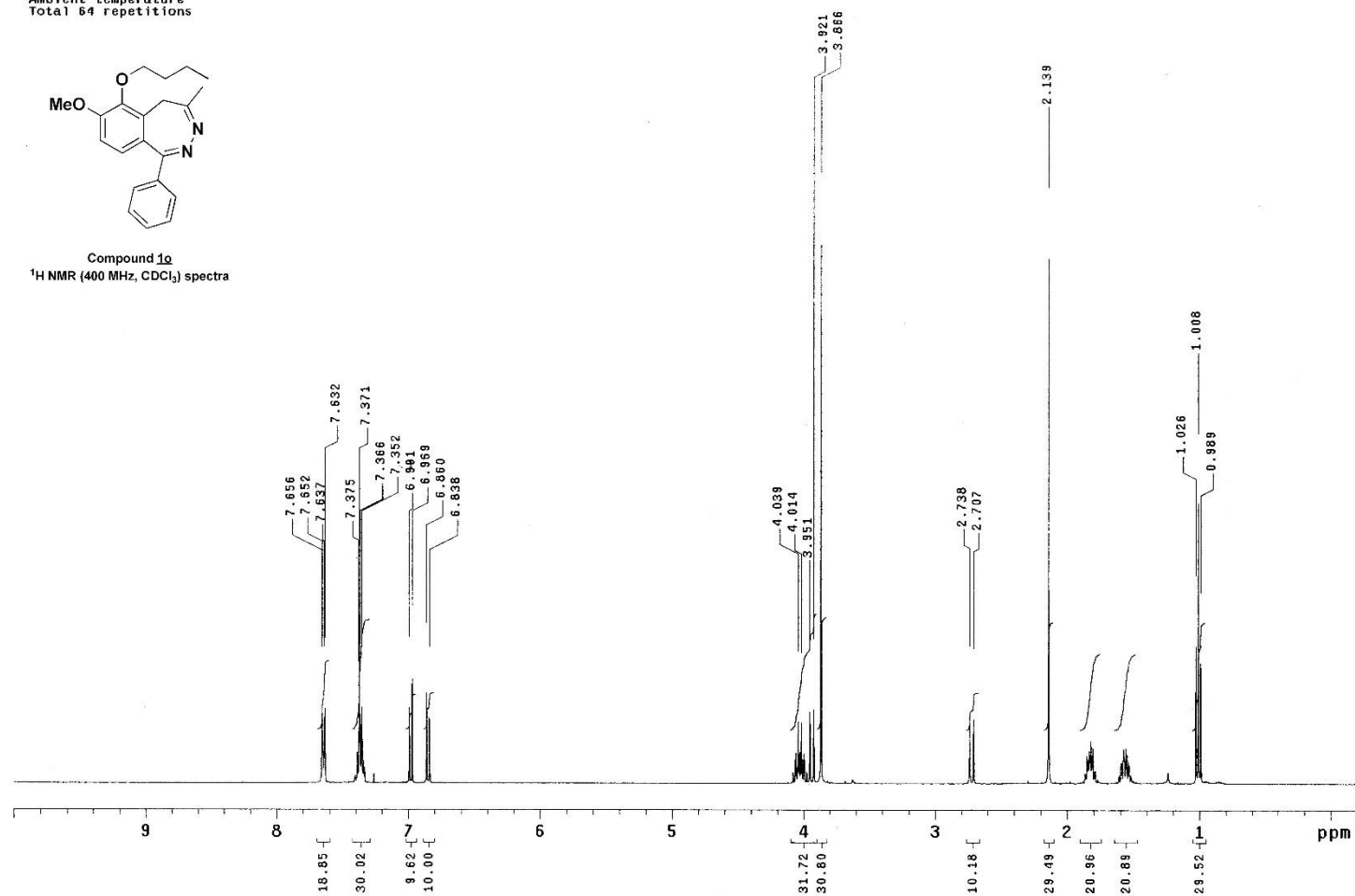
Solvent: CDCl<sub>3</sub>

Ambient temperature

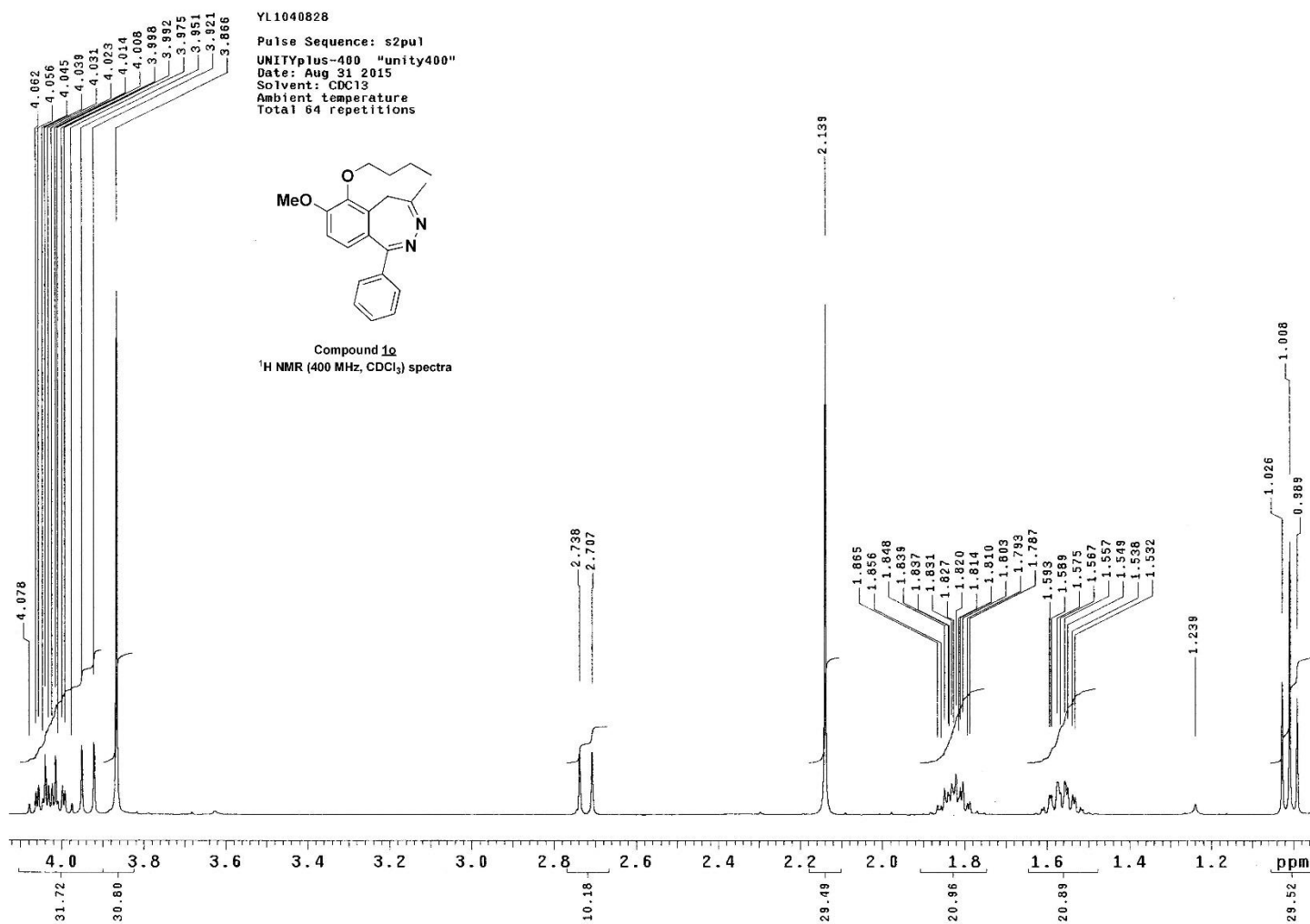
Total 64 repetitions



Compound 1o  
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



## Compound 1o



## Compound 1o

YL1040828

Pulse Sequence: s2pul

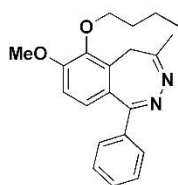
UNITYplus-400 "unity400"

Date: Aug 31 2015

Solvent: CDCl<sub>3</sub>

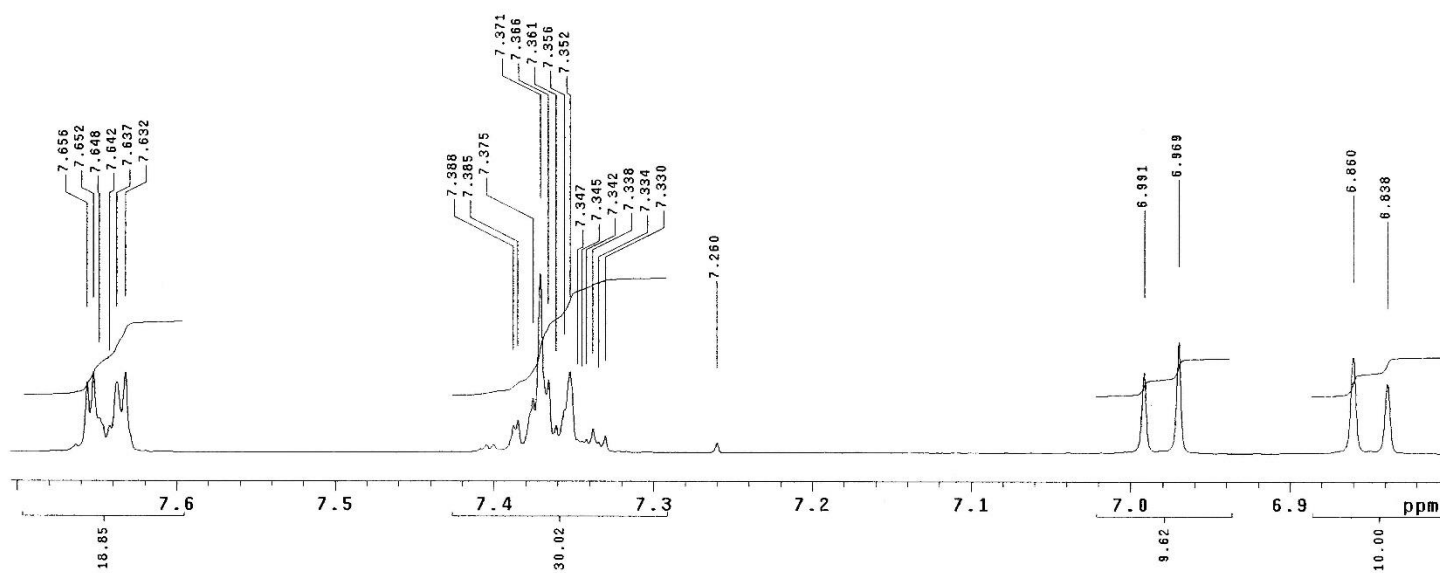
Ambient temperature

Total 64 repetitions



Compound 1o

<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



## Compound 1o

YL1040828

Pulse Sequence: s2pu1

UNITYplus-400 "unity400"

Date: Aug 31 2015

Solvent: CDCl<sub>3</sub>

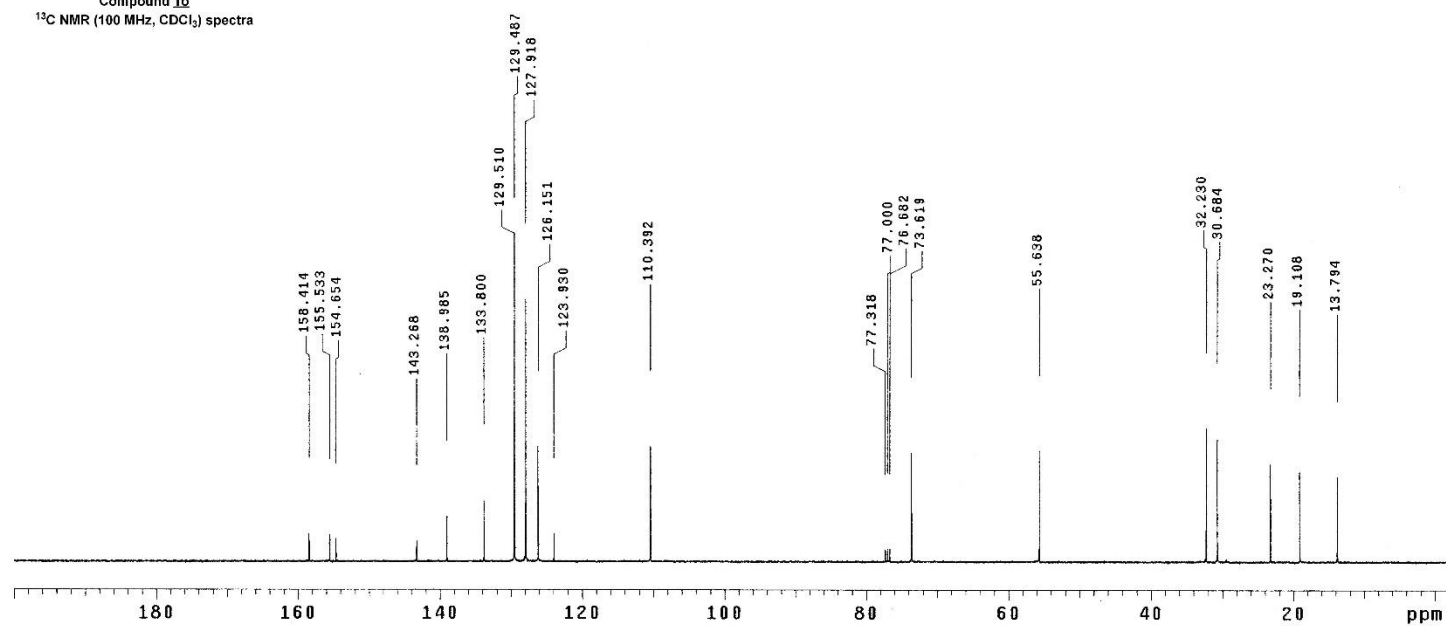
Ambient temperature

Total 336 repetitions



Compound 1o

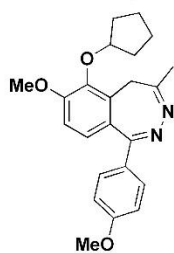
<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra



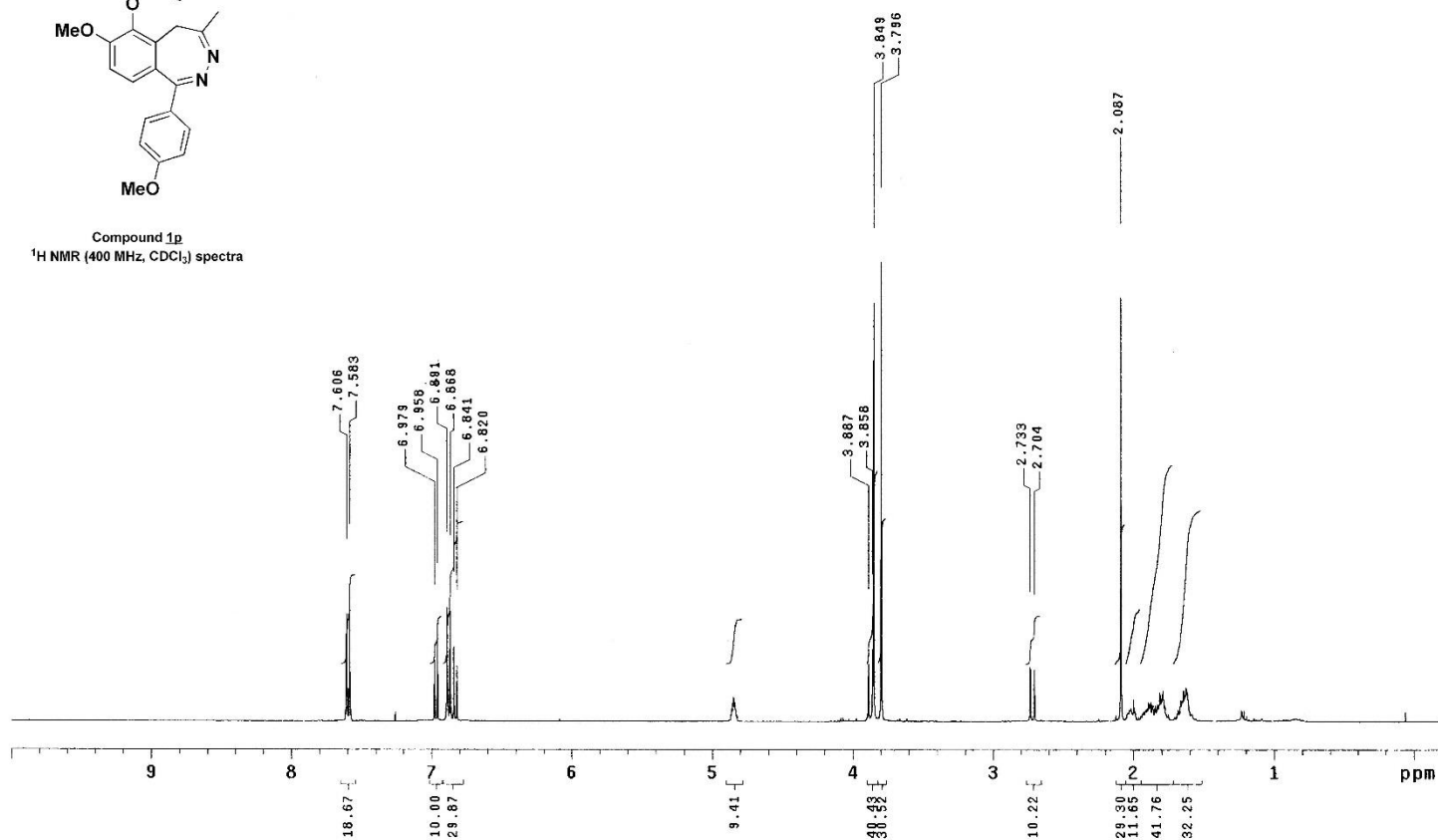
## Compound 1p

YL1040805

Pulse Sequence: s2pul  
UNITYplus-400 "unity400"  
Date: Aug 20 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 64 repetitions



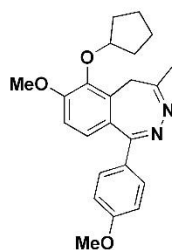
Compound 1p  
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



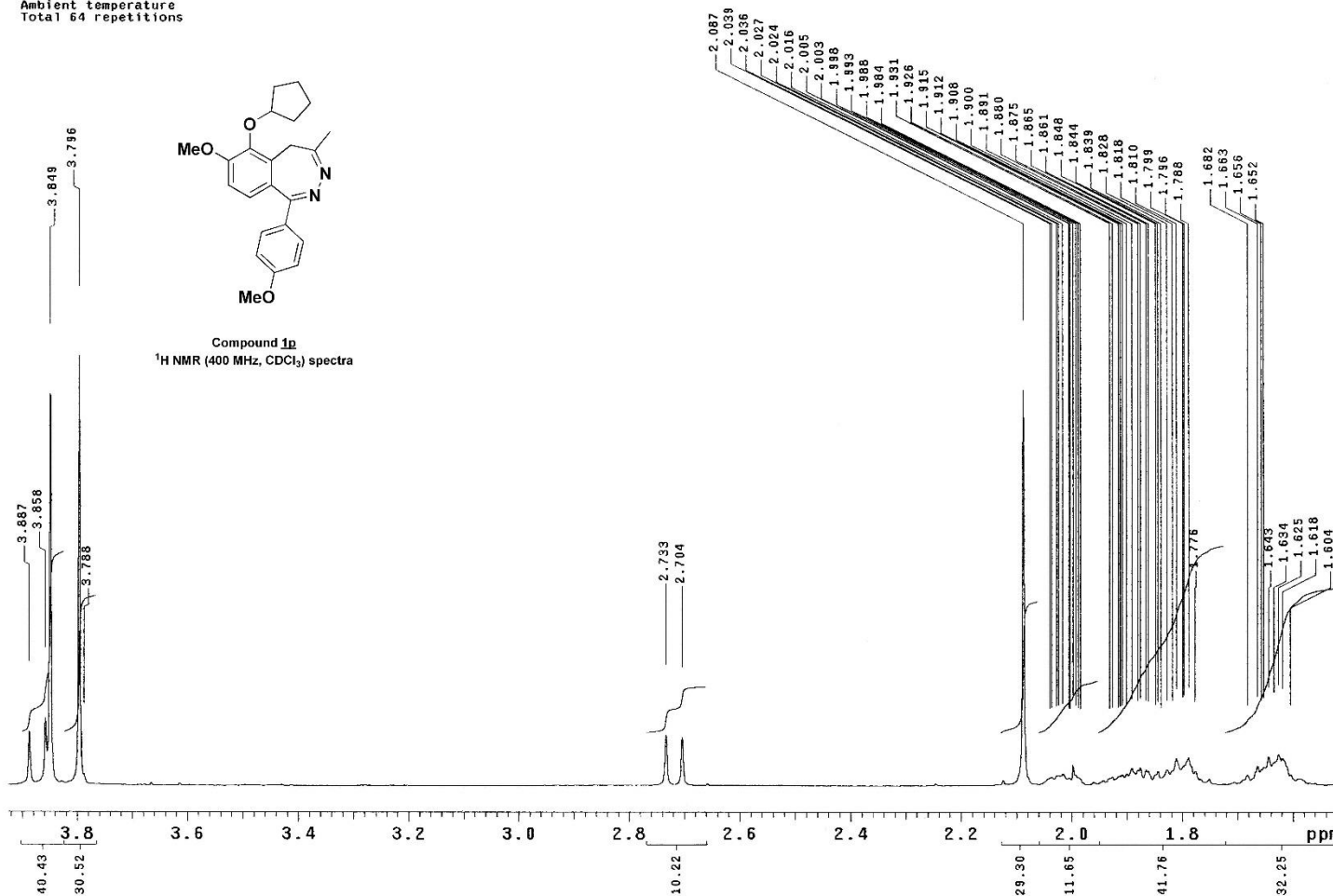
# Compound 1p

YL1040805

Pulse Sequence: s2pul  
 UNITYplus-400 "unity400"  
 Date: Aug 20 2015  
 Solvent: CDCl<sub>3</sub>  
 Ambient temperature  
 Total 64 repetitions



Compound 1p  
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra

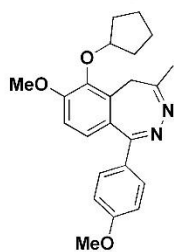




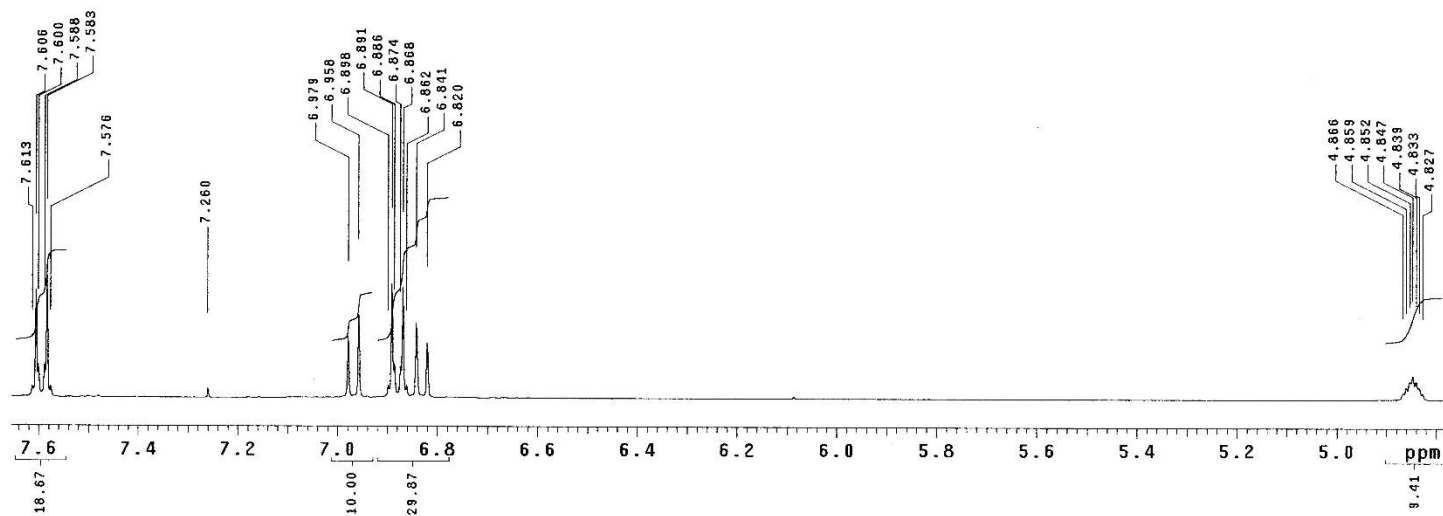
## Compound 1p

YL1040805

Pulse Sequence: s2pul  
UNITYplus-400 "unity400"  
Date: Aug 20 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 64 repetitions



Compound 1p  
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



## Compound 1p

YL1040805

Pulse Sequence: s2pul

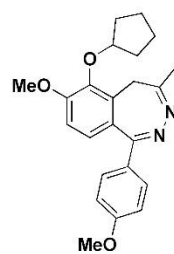
UNITYplus-400 "unity400"

Date: Aug 20 2015

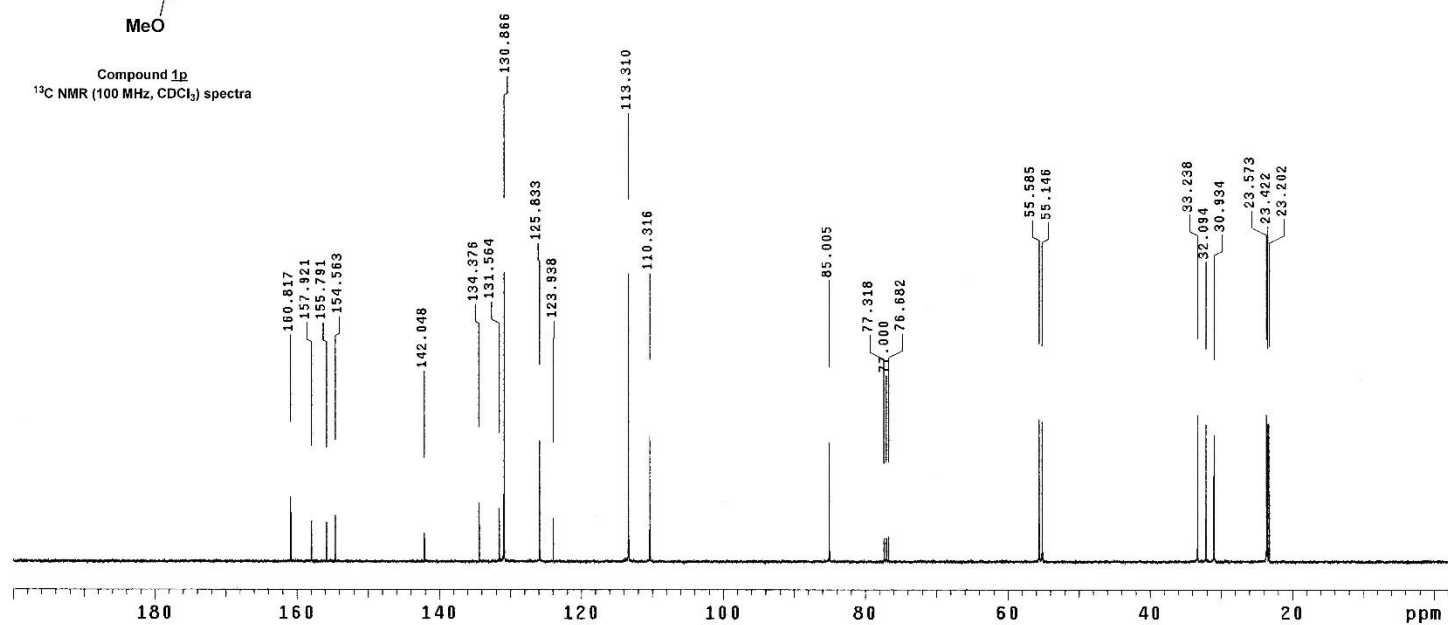
Solvent: CDCl<sub>3</sub>

Ambient temperature

Total 240 repetitions



Compound 1p  
<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra



## Compound 1q

YL1040823

Pulse Sequence: s2pul

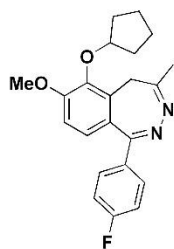
UNITYplus-400 "unity400"

Date: Aug 24 2015

Solvent: CDCl<sub>3</sub>

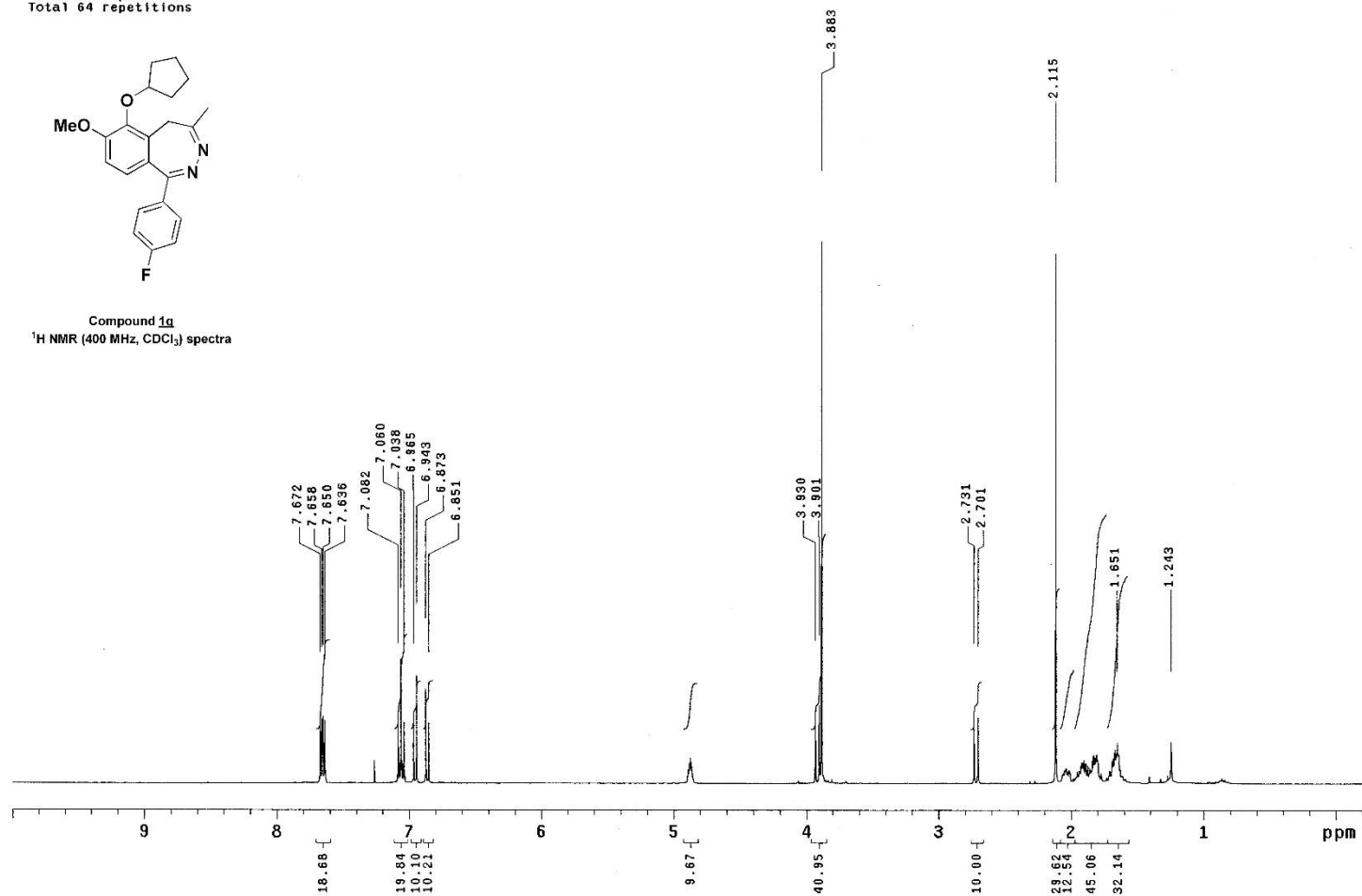
Ambient temperature

Total 64 repetitions



Compound 1q

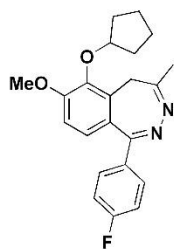
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



# Compound 1q

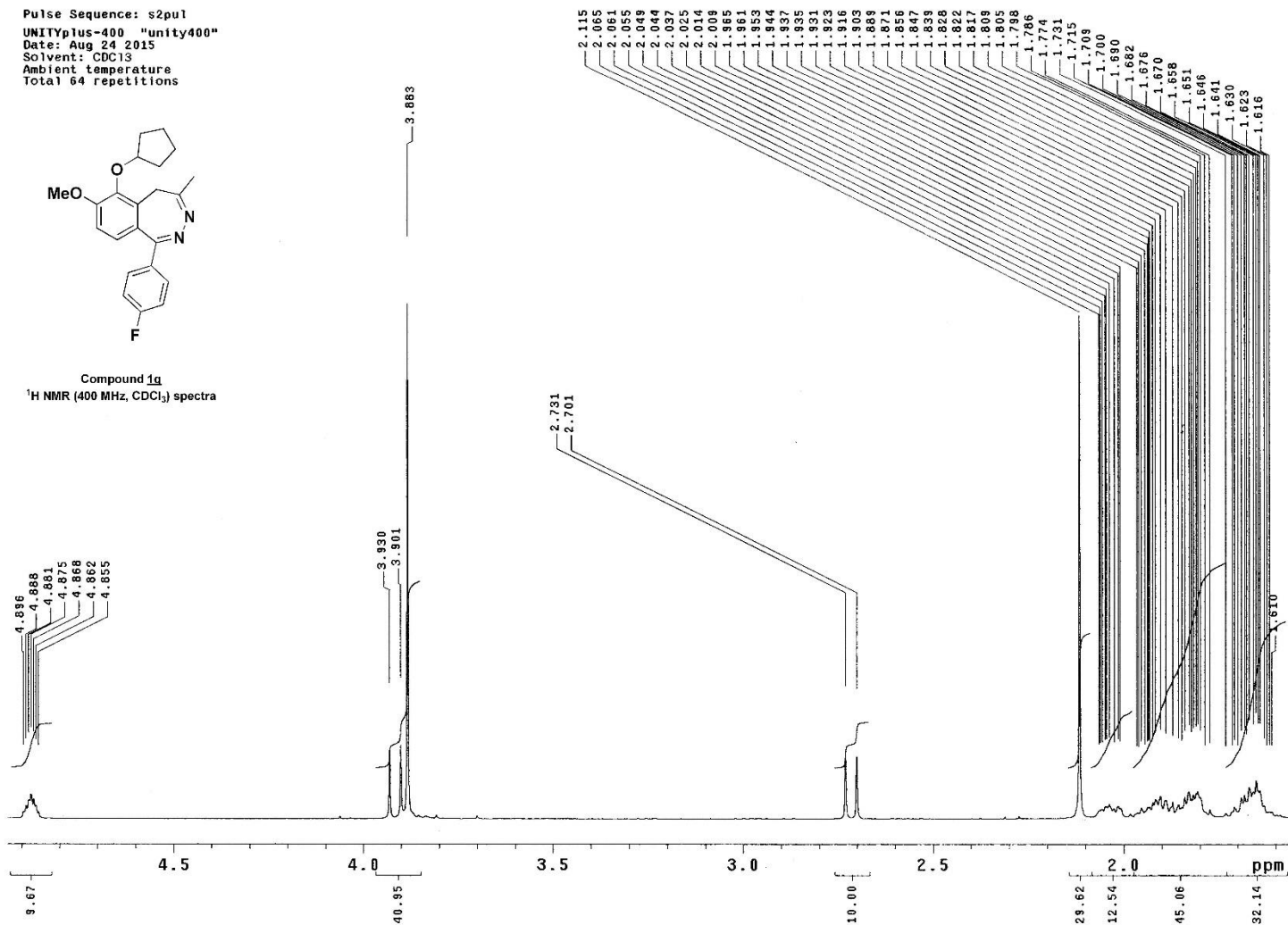
YL1040823

Pulse Sequence: s2pul  
 UNITYplus-400 "unity400"  
 Date: Aug 24 2015  
 Solvent: CDCl<sub>3</sub>  
 Ambient temperature  
 Total 64 repetitions



Compound 1q

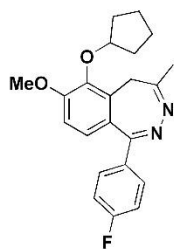
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



## Compound 1q

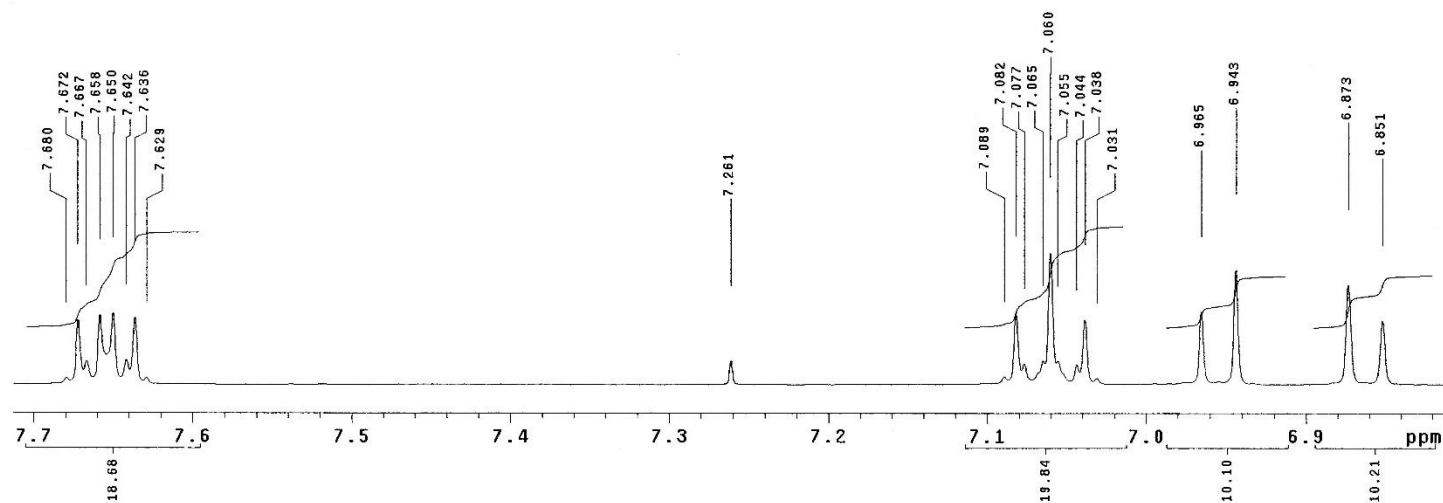
YL1040823

Pulse Sequence: s2pul  
UNITYplus-400 "unity400"  
Date: Aug 24 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 64 repetitions



Compound 1q

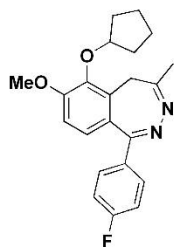
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



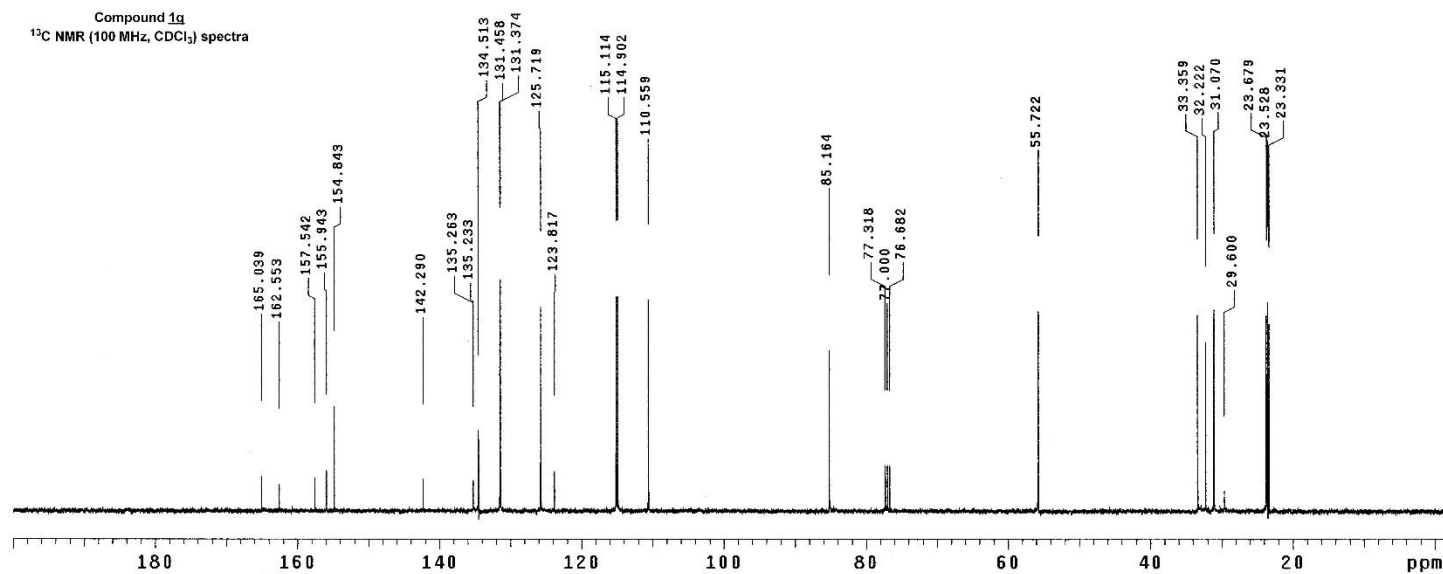
## Compound 1q

YL1040823

Pulse Sequence: s2pul  
UNITYplus-400 "unity400"  
Date: Aug 24 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 640 repetitions



Compound 1q  
<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra



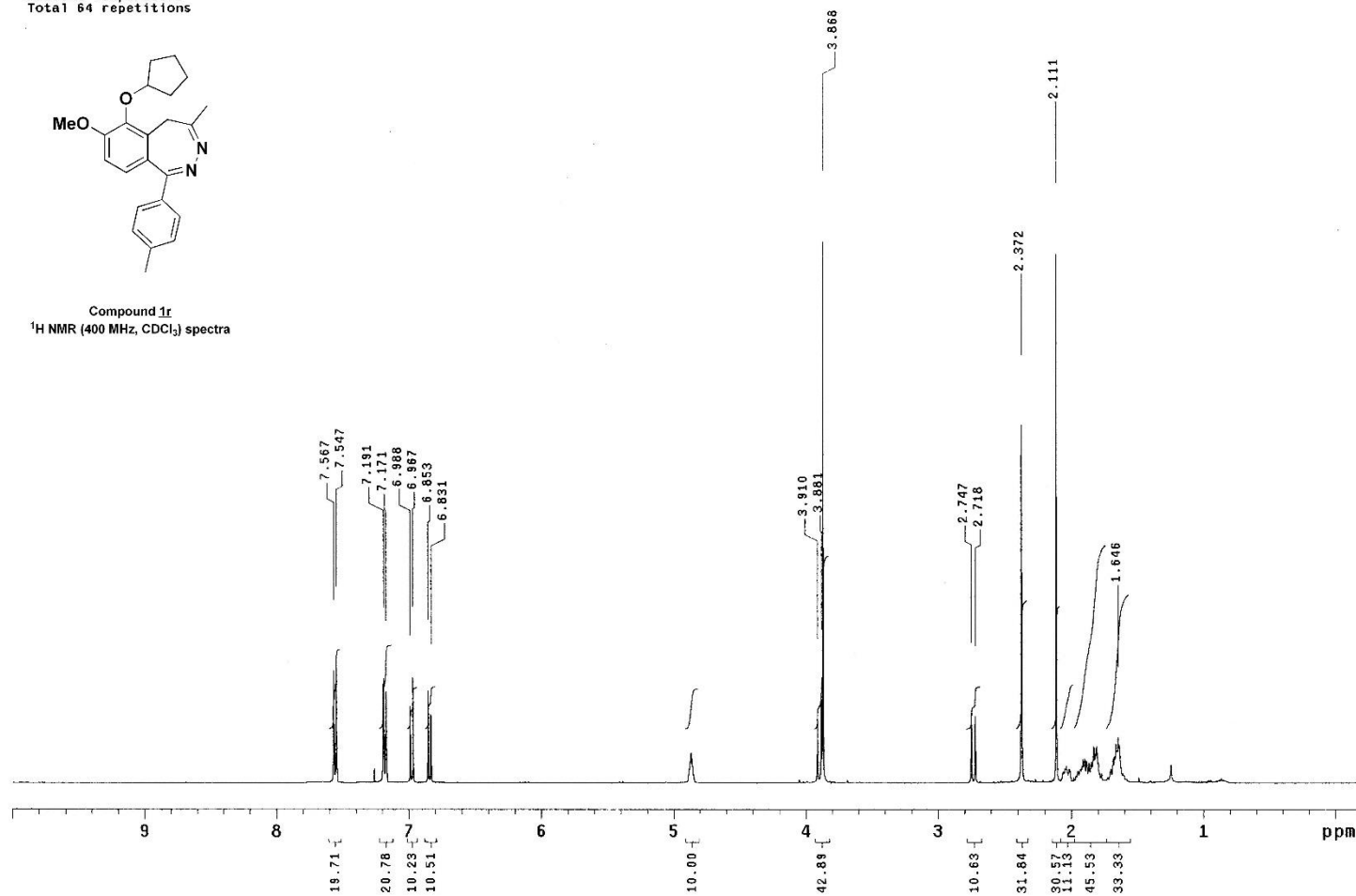
## Compound 1r

YL1040833

Pulse Sequence: s2pu1  
UNITYplus-400 "unity400"  
Date: Sep 2 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 64 repetitions



Compound 1r  
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



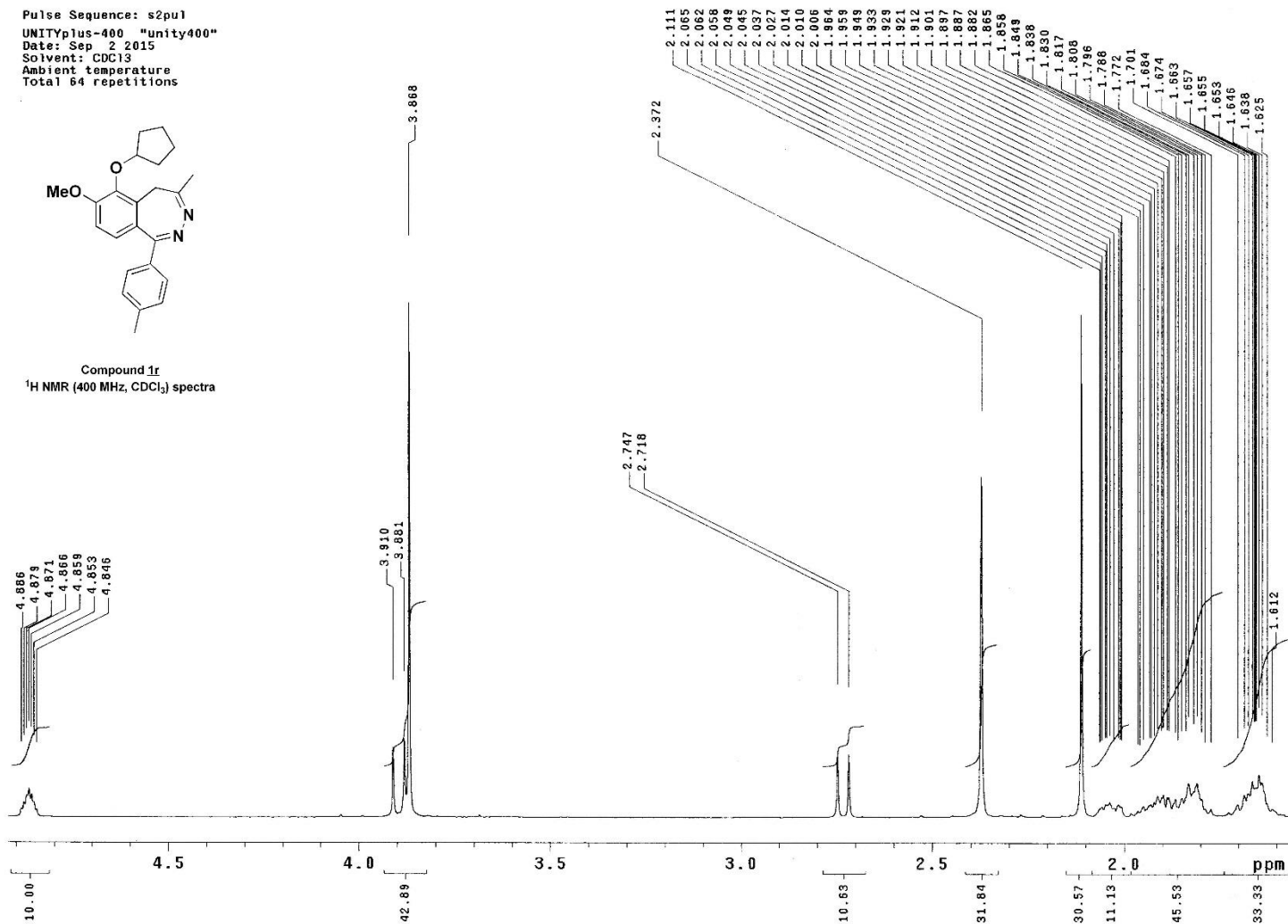
# Compound 1r

YL1040833

Pulse Sequence: s2pu1  
 UNITYplus-400 "unity400"  
 Date: Sep 2 2015  
 Solvent: CDCl3  
 Ambient temperature  
 Total 64 repetitions



Compound 1r  
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra





## Compound 1r

YL1040833

Pulse Sequence: s2pu1

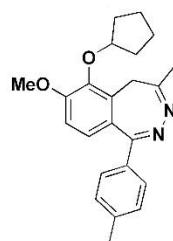
UNITYplus-400 "unity400"

Date: Sep 2 2015

Solvent: CDCl<sub>3</sub>

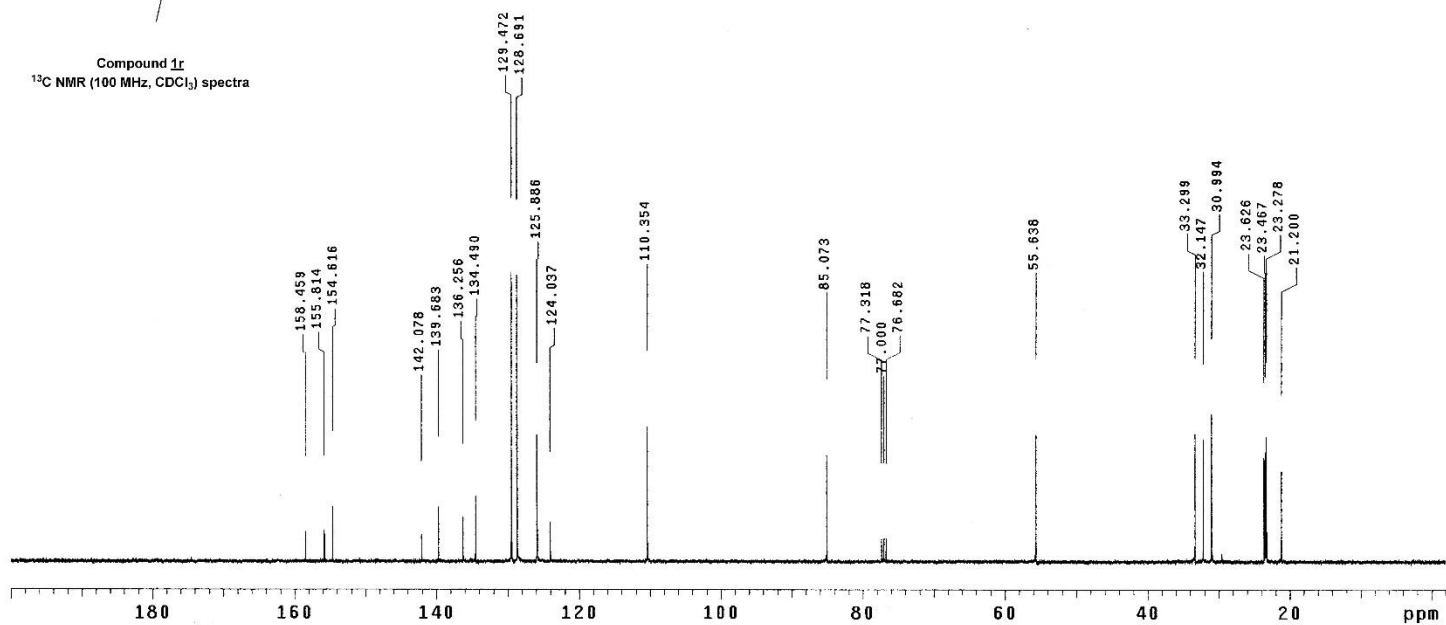
Ambient temperature

Total 320 repetitions



Compound 1r

<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra



## Compound 1s

YL1040827

Pulse Sequence: s2pu1

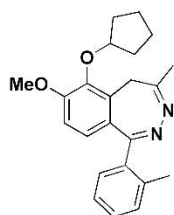
UNITYplus-400 "unity400"

Date: Aug 26 2015

Solvent: CDCl<sub>3</sub>

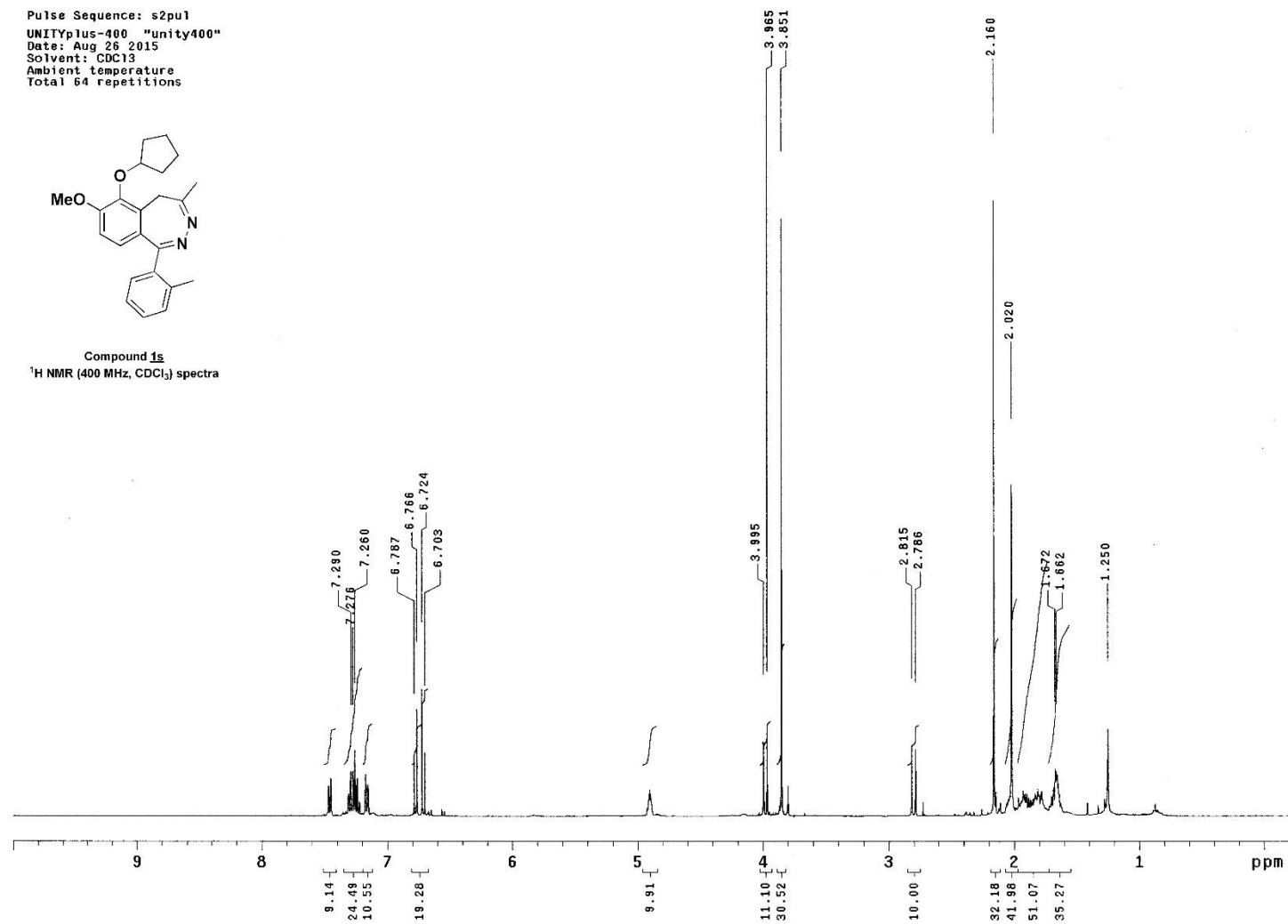
Ambient temperature

Total 64 repetitions



Compound **1s**

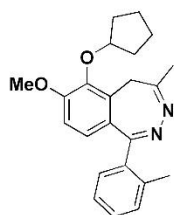
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



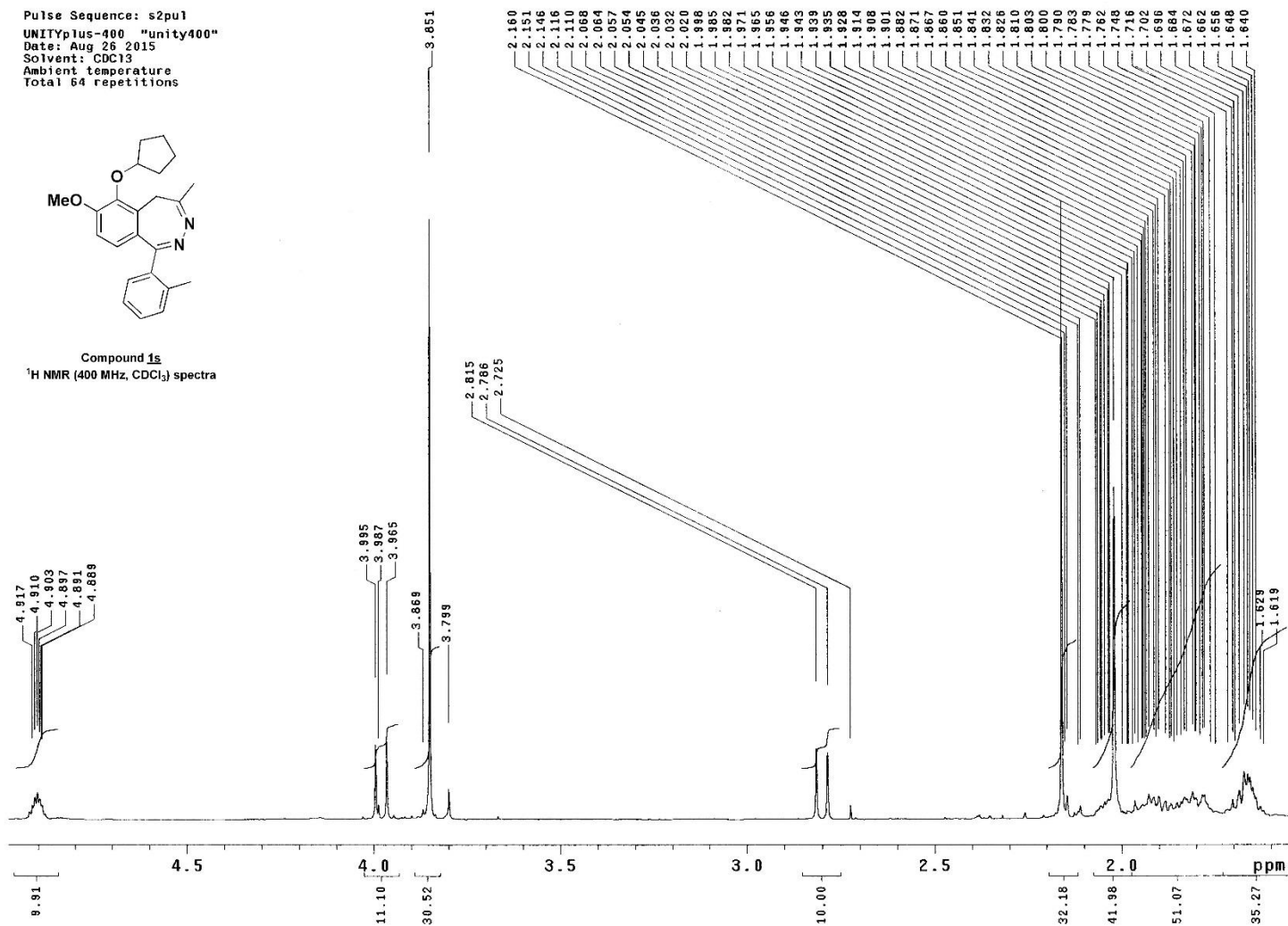
# Compound 1s

YL1040827

Pulse Sequence: s2pu1  
 UNITYplus-400 "unity400"  
 Date: Aug 26 2015  
 Solvent: CDCl3  
 Ambient temperature  
 Total 64 repetitions



Compound **1s**  
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



## Compound 1s

YL1040827

Pulse Sequence: s2pu1

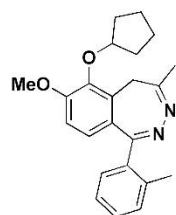
UNITYplus-400 "unity400"

Date: Aug 26 2015

Solvent: CDCl<sub>3</sub>

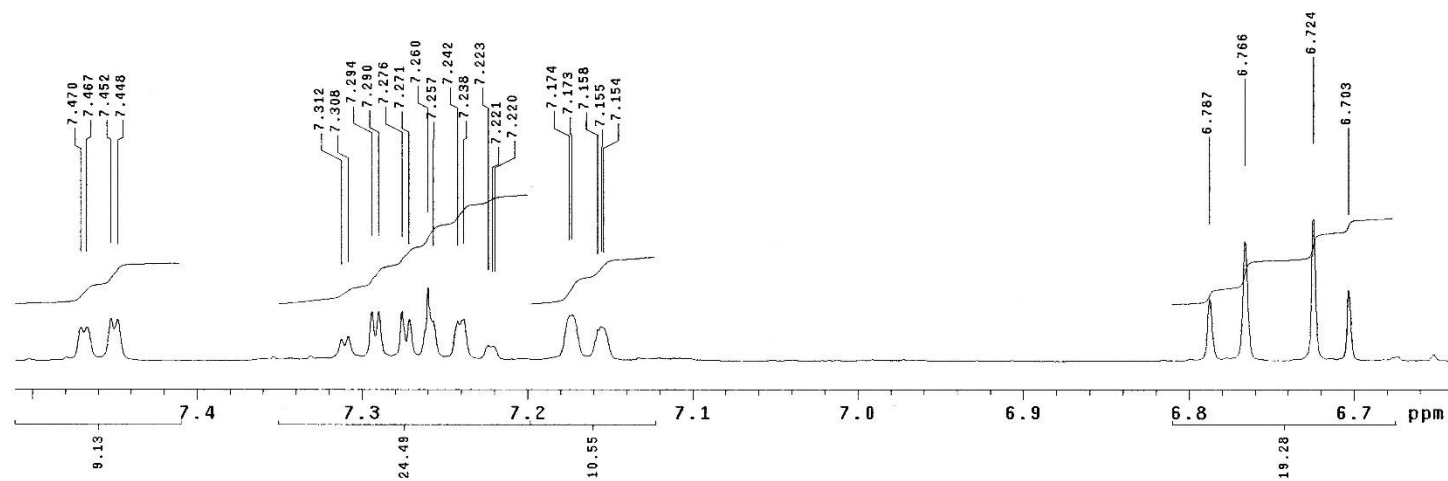
Ambient temperature

Total 64 repetitions



Compound **1s**

<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



## Compound 1s

YL1040827

Pulse Sequence: s2pu1

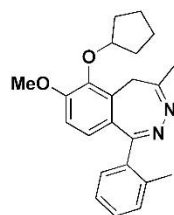
UNITYplus-400 "unity400"

Date: Aug 26 2015

Solvent: CDCl<sub>3</sub>

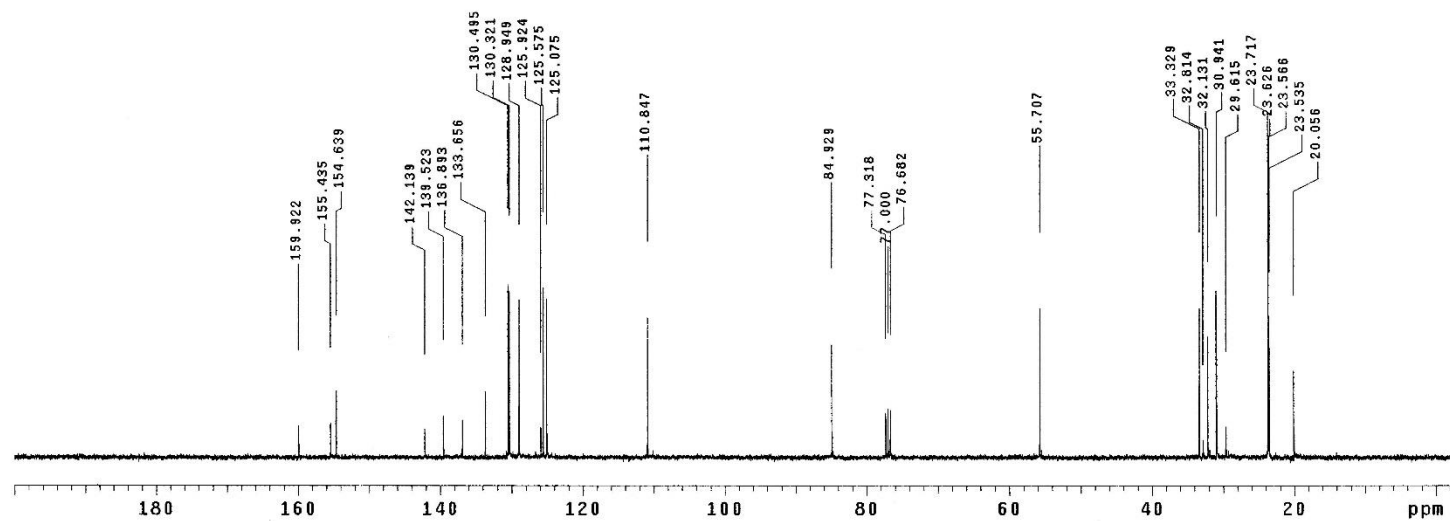
Ambient temperature

Total 944 repetitions



Compound **1s**

<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra



## Compound 1s

YL1040827

Pulse Sequence: s2pu1

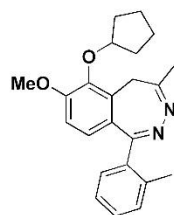
UNITYplus-400 "unity400"

Date: Aug 26 2015

Solvent: CDCl<sub>3</sub>

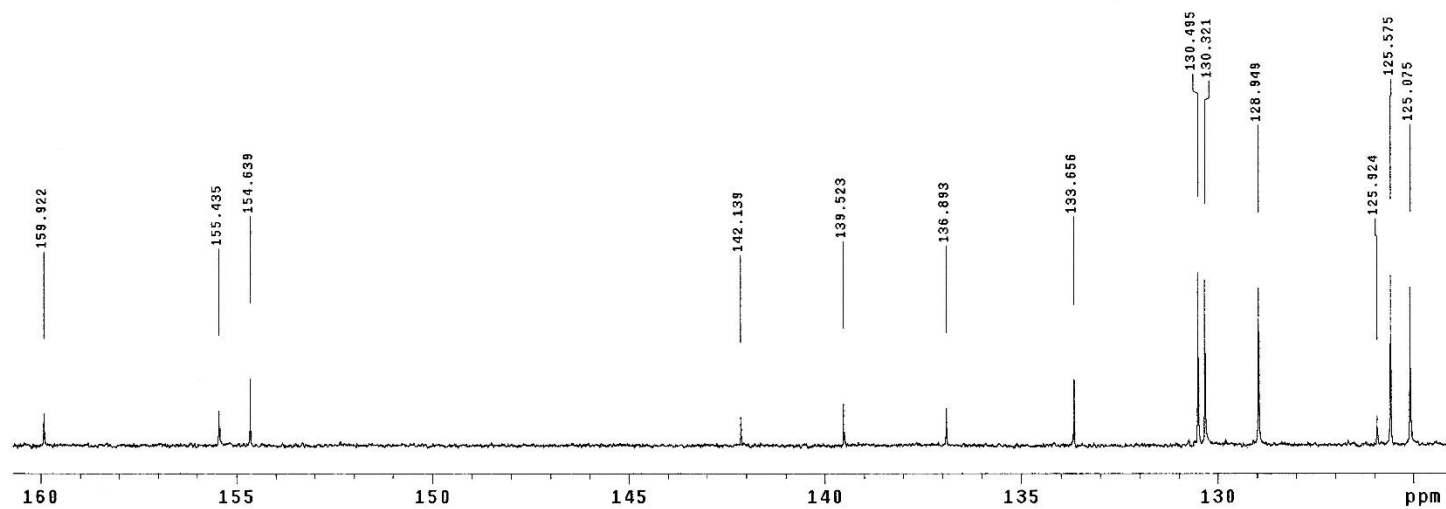
Ambient temperature

Total 944 repetitions



Compound **1s**

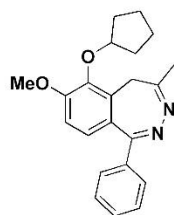
<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra



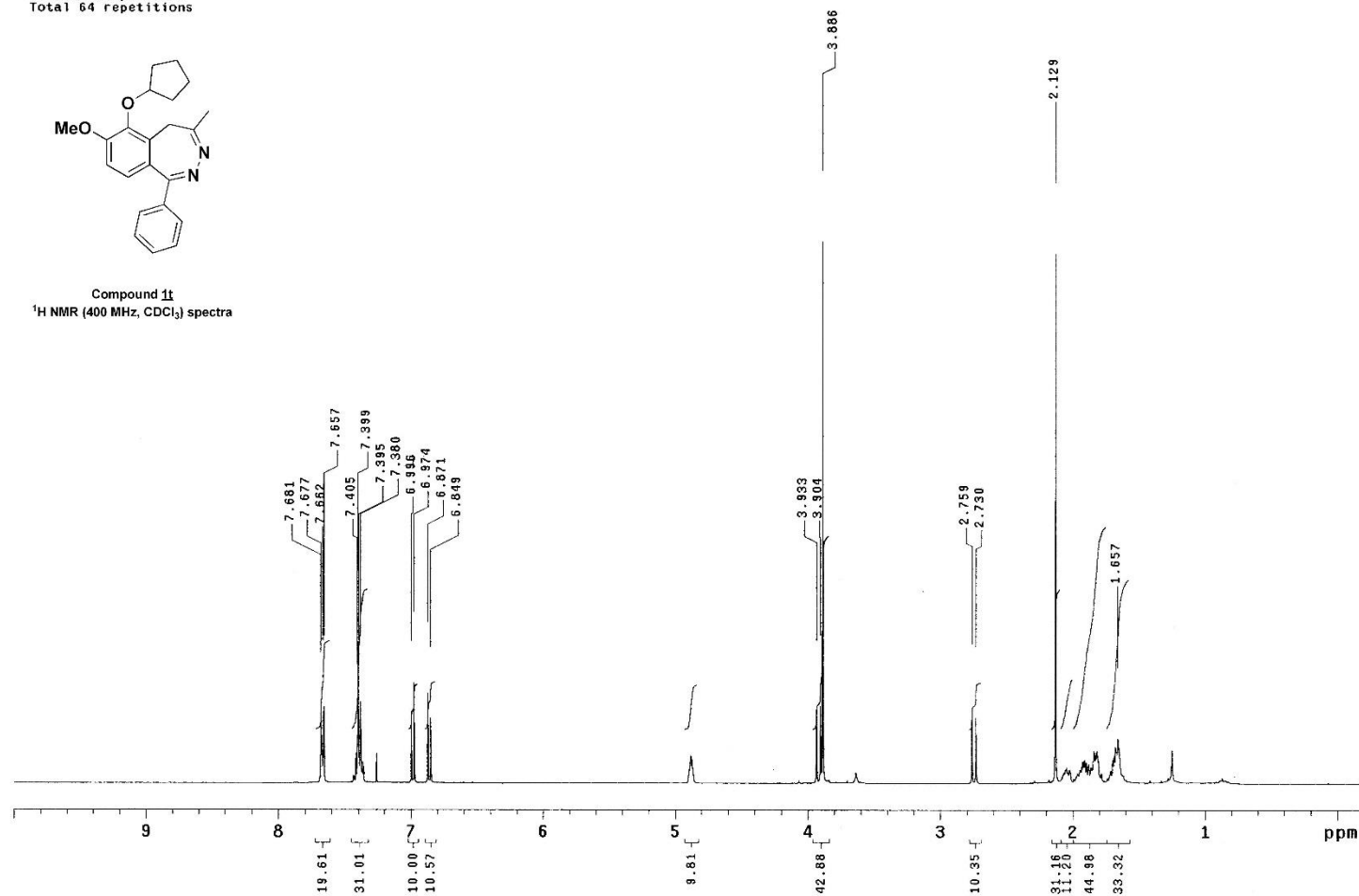
## Compound 1t

YL1040829

Pulse Sequence: s2pu1  
UNITYplus-400 "unity400"  
Date: Aug 31 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 64 repetitions



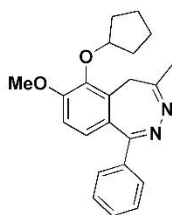
Compound 1t  
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



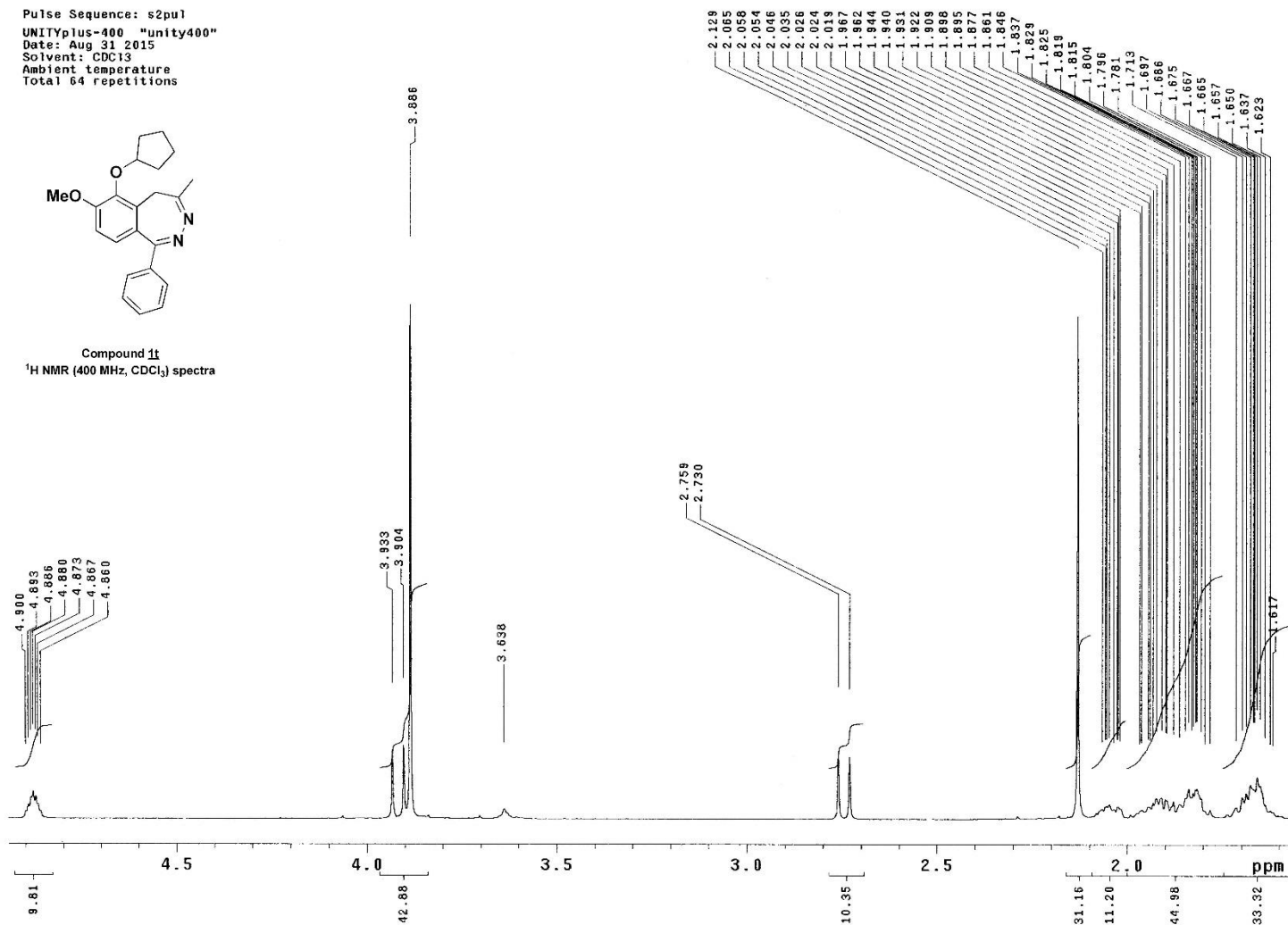
# Compound 1t

YL1040829

Pulse Sequence: s2pul  
 UNITYplus-400 "unity400"  
 Date: Aug 31 2015  
 Solvent: CDCl<sub>3</sub>  
 Ambient temperature  
 Total 64 repetitions



Compound 1t  
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra

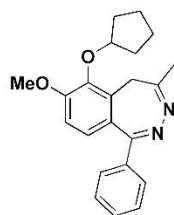




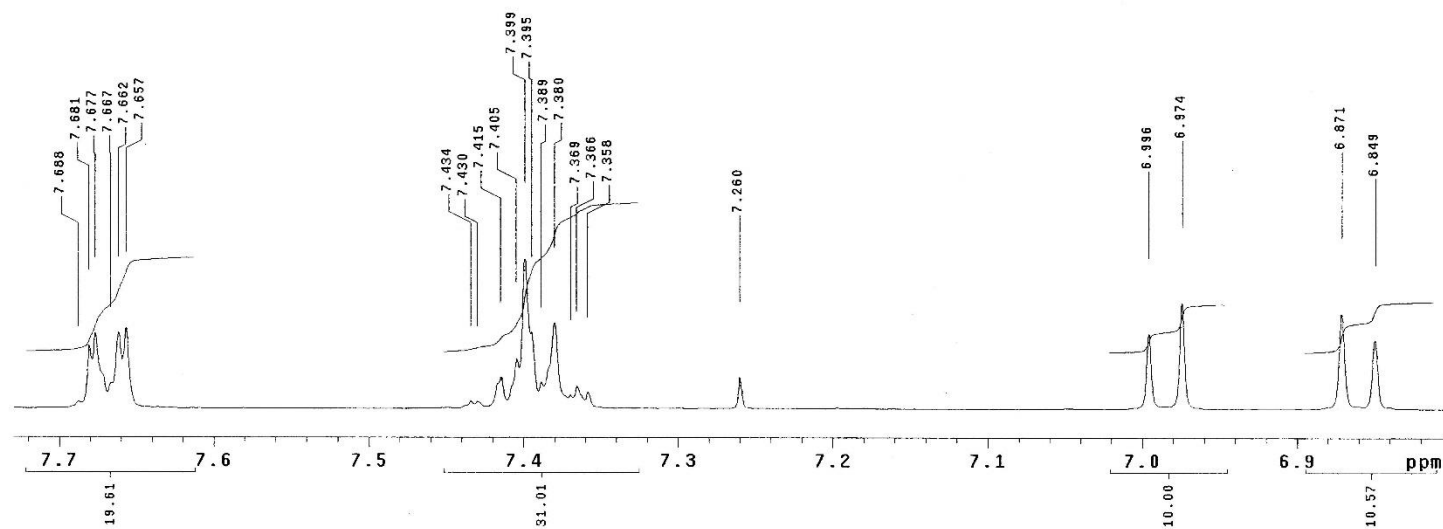
## Compound 1t

YL1040829

Pulse Sequence: s2pu1  
UNITYplus-400 "unity400"  
Date: Aug 31 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 64 repetitions



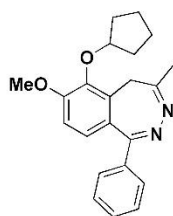
Compound 1t  
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



## Compound 1t

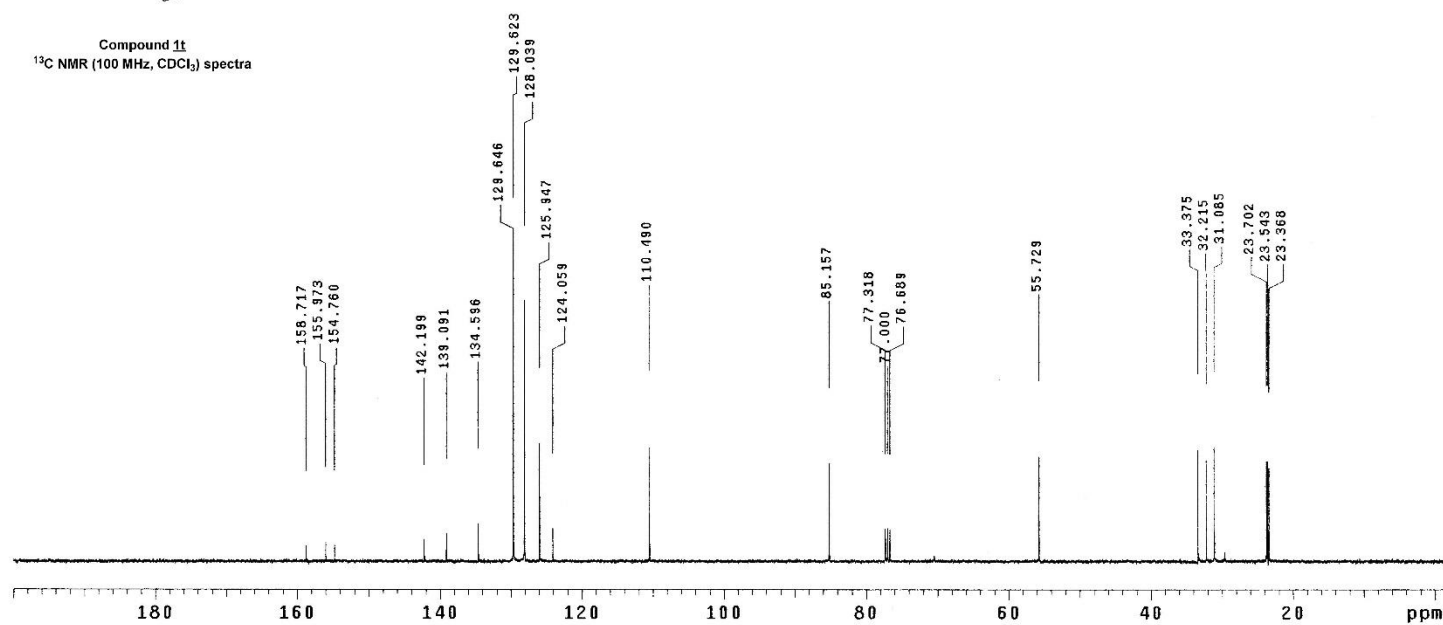
YL1040829

Pulse Sequence: s2pul  
UNITYplus-400 "unity400"  
Date: Aug 31 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 800 repetitions



Compound 1t

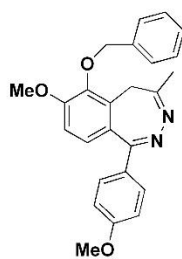
<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra



## Compound 1u

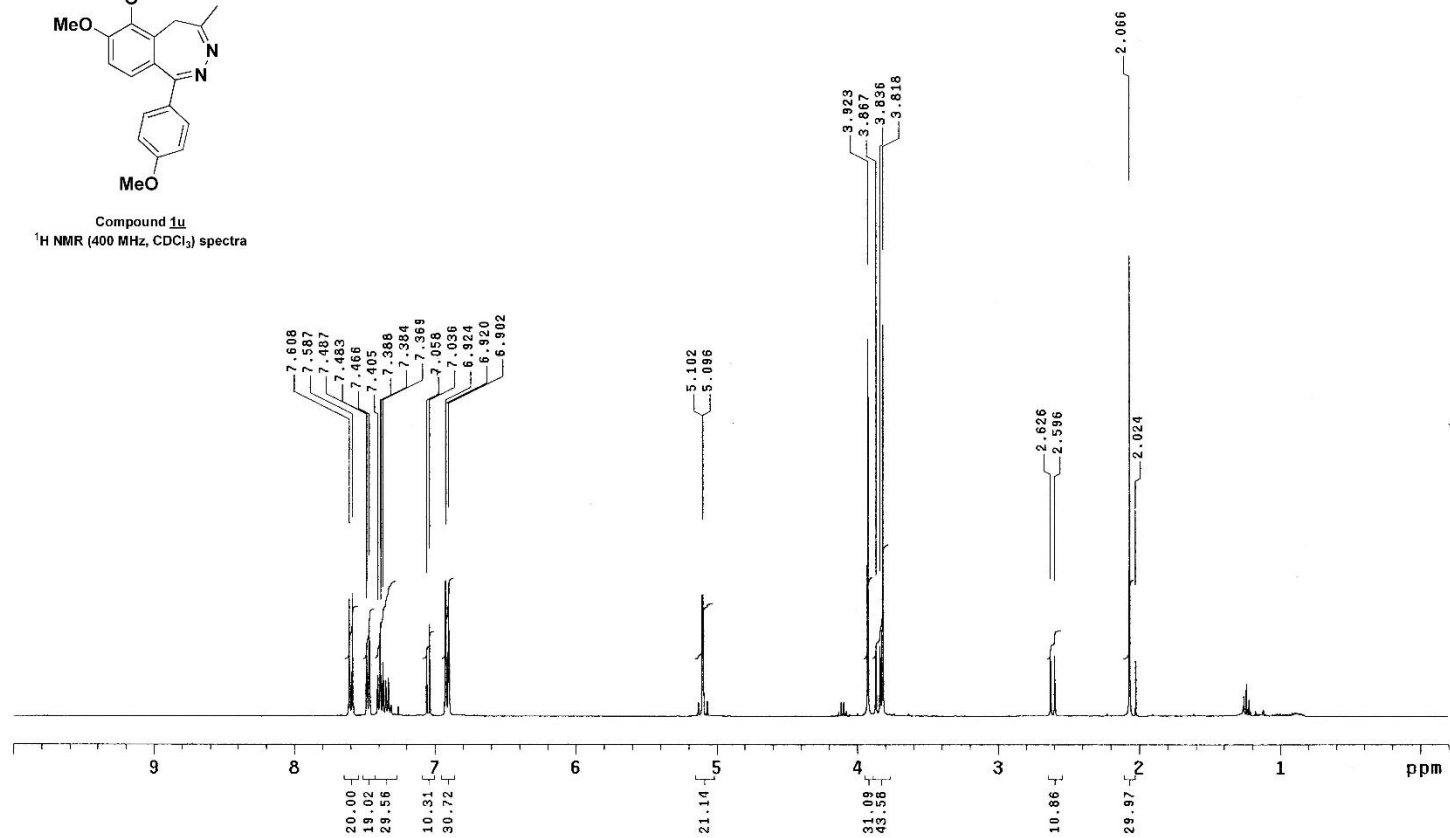
YL1040814

Pulse Sequence: s2pu1  
UNITYplus-400 "unity400"  
Date: Aug 20 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 32 repetitions



Compound 1u

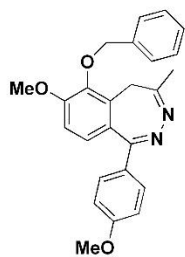
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



## Compound 1u

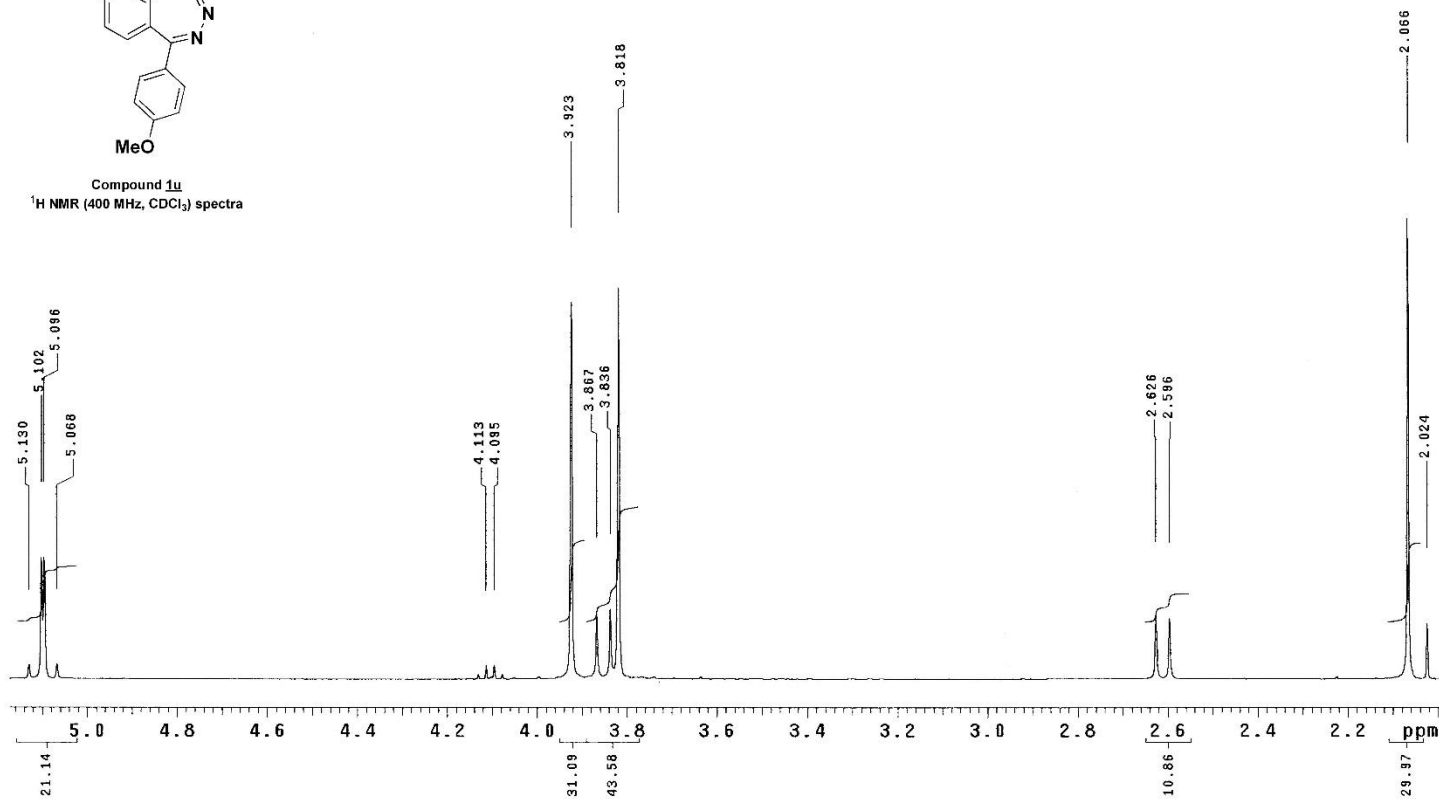
YL1040814

Pulse Sequence: s2pu1  
UNITYplus-400 "unity400"  
Date: Aug 20 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 32 repetitions



Compound 1u

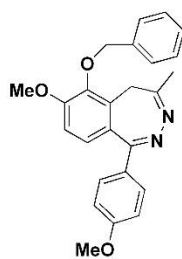
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



## Compound 1u

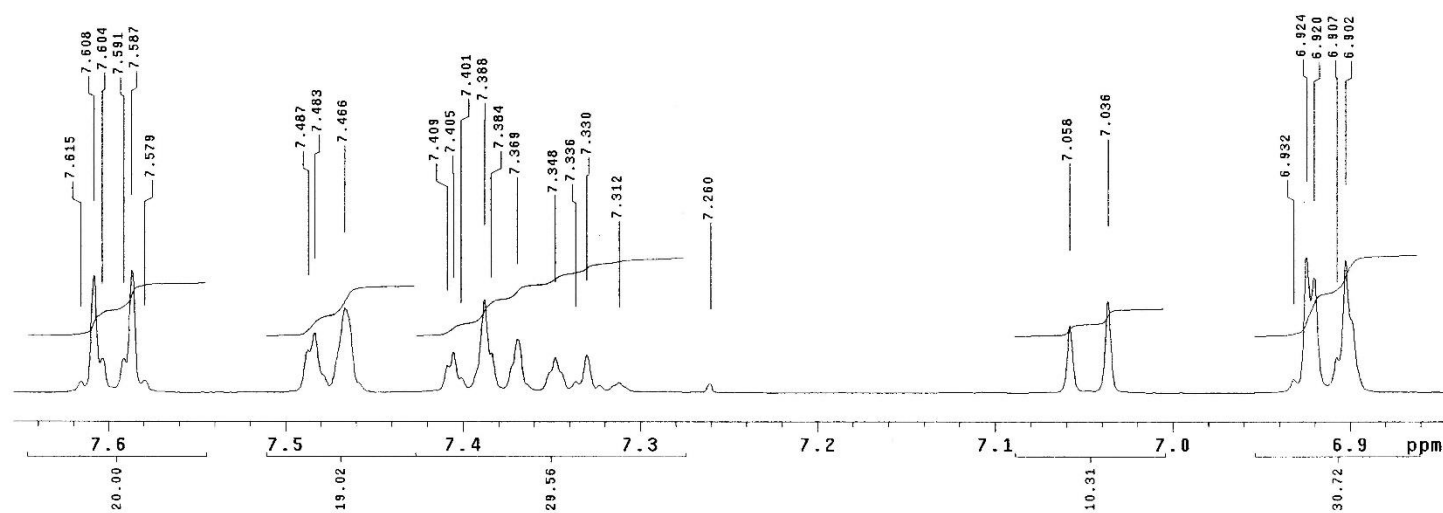
YL1040814

Pulse Sequence: s2pu1  
UNITYplus-400 "unity400"  
Date: Aug 20 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 32 repetitions



Compound 1u

<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



## Compound 1u

YL1040814

Pulse Sequence: s2pul

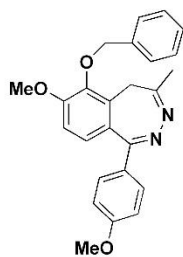
UNITYplus-400 "unity400"

Date: Aug 20 2015

Solvent: CDCl<sub>3</sub>

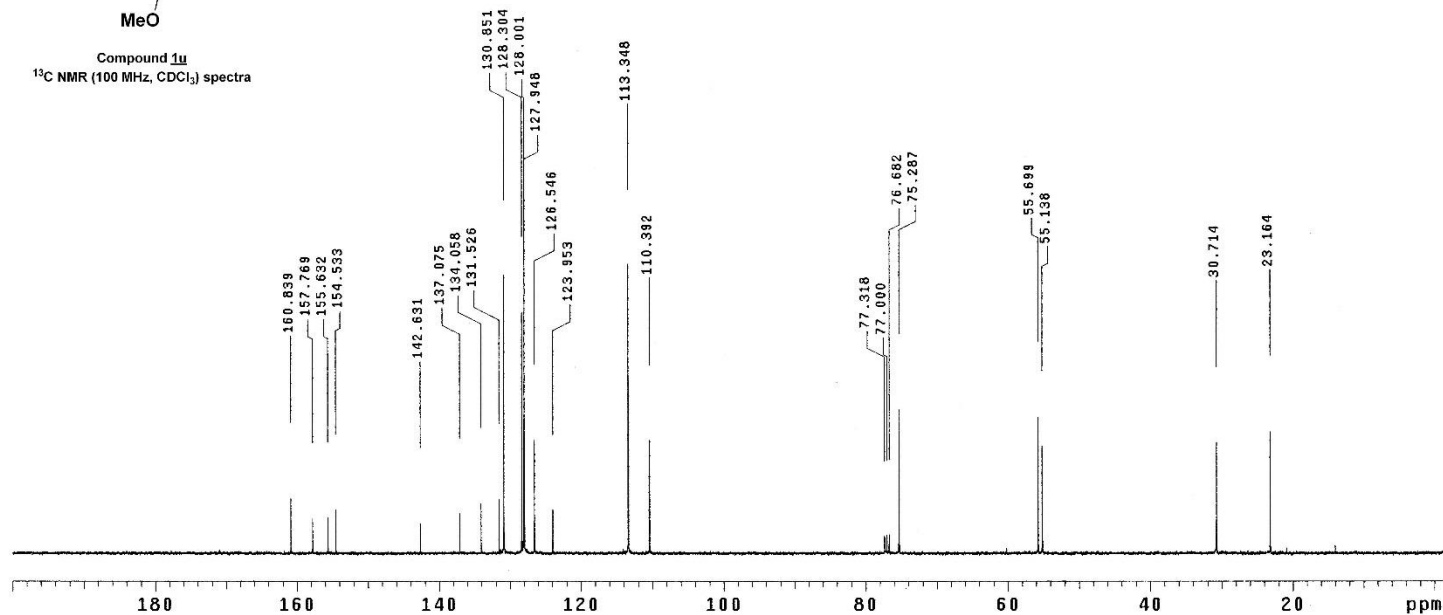
Ambient temperature

Total 208 repetitions



Compound **1u**

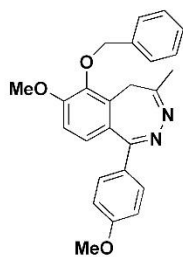
<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra



## Compound 1u

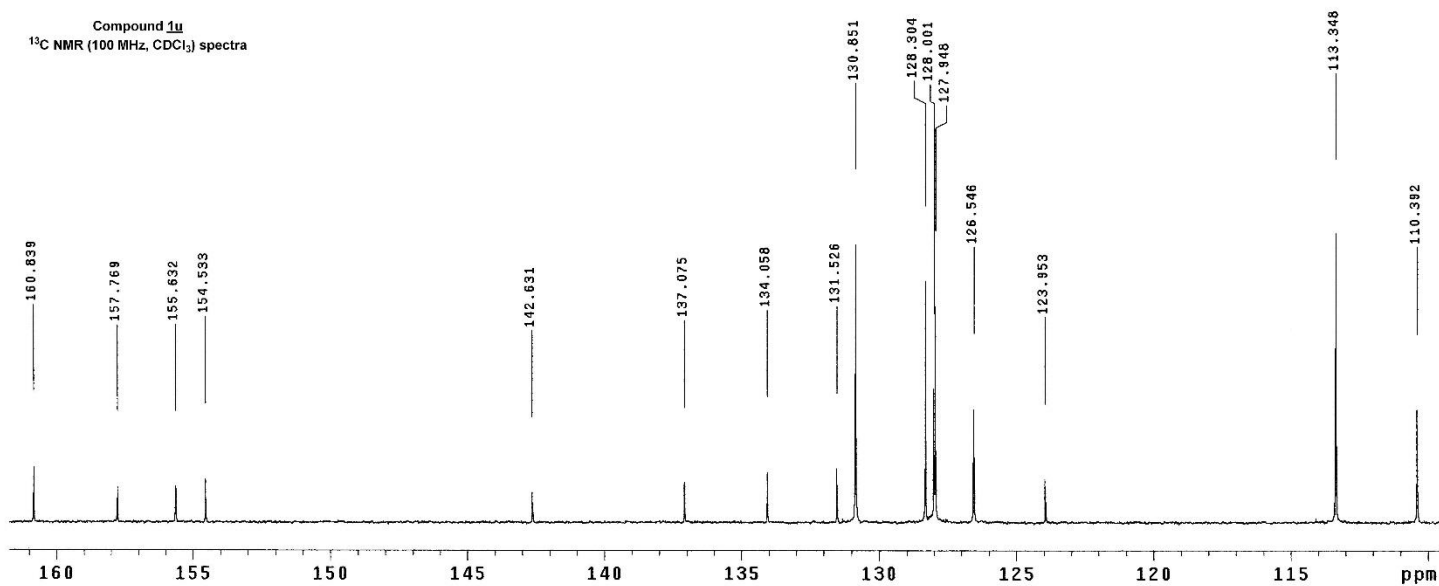
YL1040814

Pulse Sequence: s2pul  
UNITYplus-400 "unity400"  
Date: Aug 20 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 208 repetitions



Compound 1u

<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra



## Compound 1v

YL1040908

Pulse Sequence: s2pu1

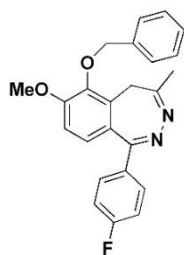
UNITYplus-400 "unity400"

Date: Sep 11 2015

Solvent: CDCl<sub>3</sub>

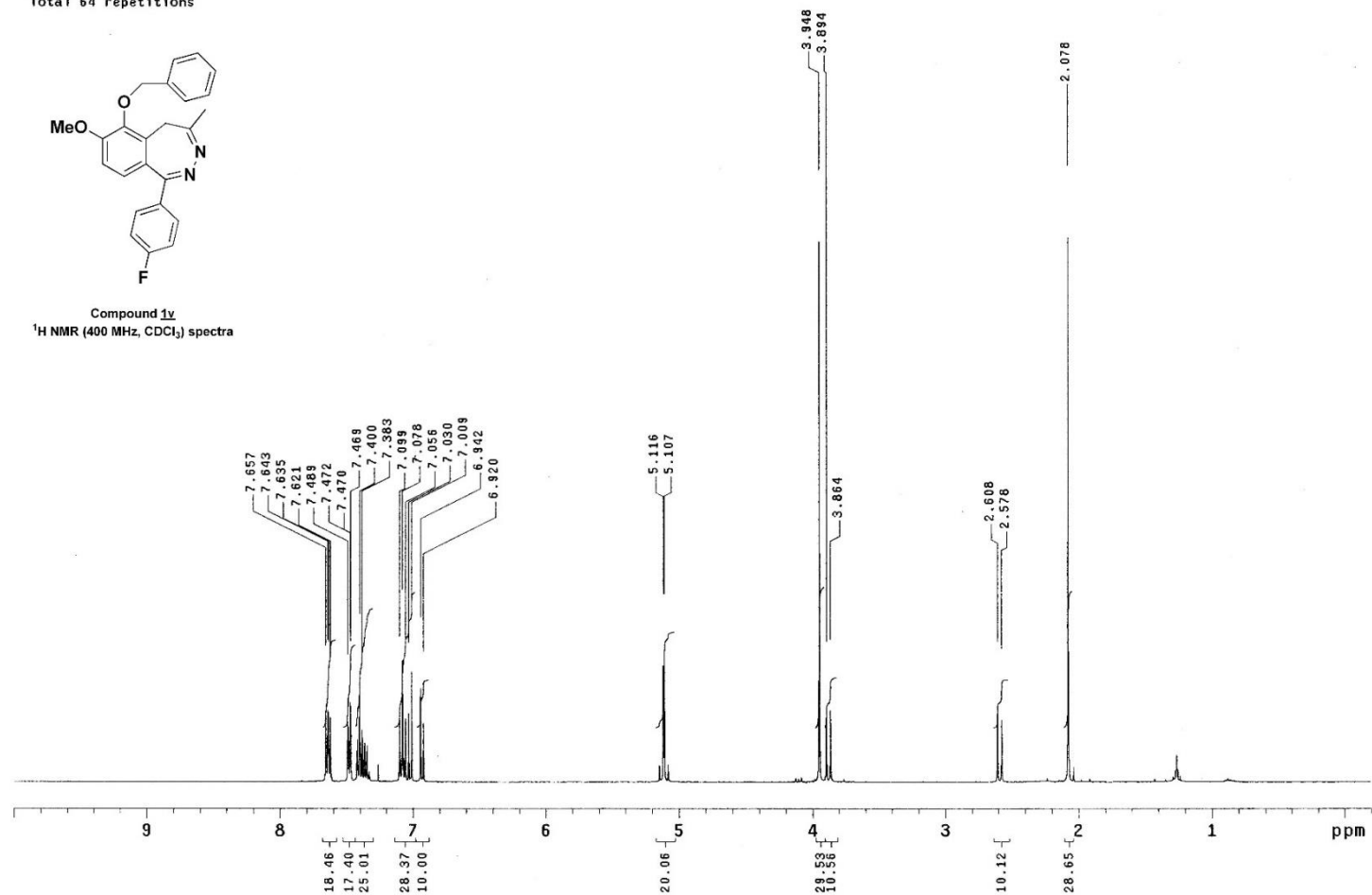
Ambient temperature

Total 64 repetitions



Compound 1v

<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra





## Compound 1v

YL1040908

Pulse Sequence: s2pu1

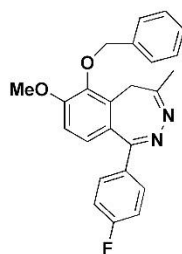
UNITYplus-400 "unity400"

Date: Sep 11 2015

Solvent: CDCl<sub>3</sub>

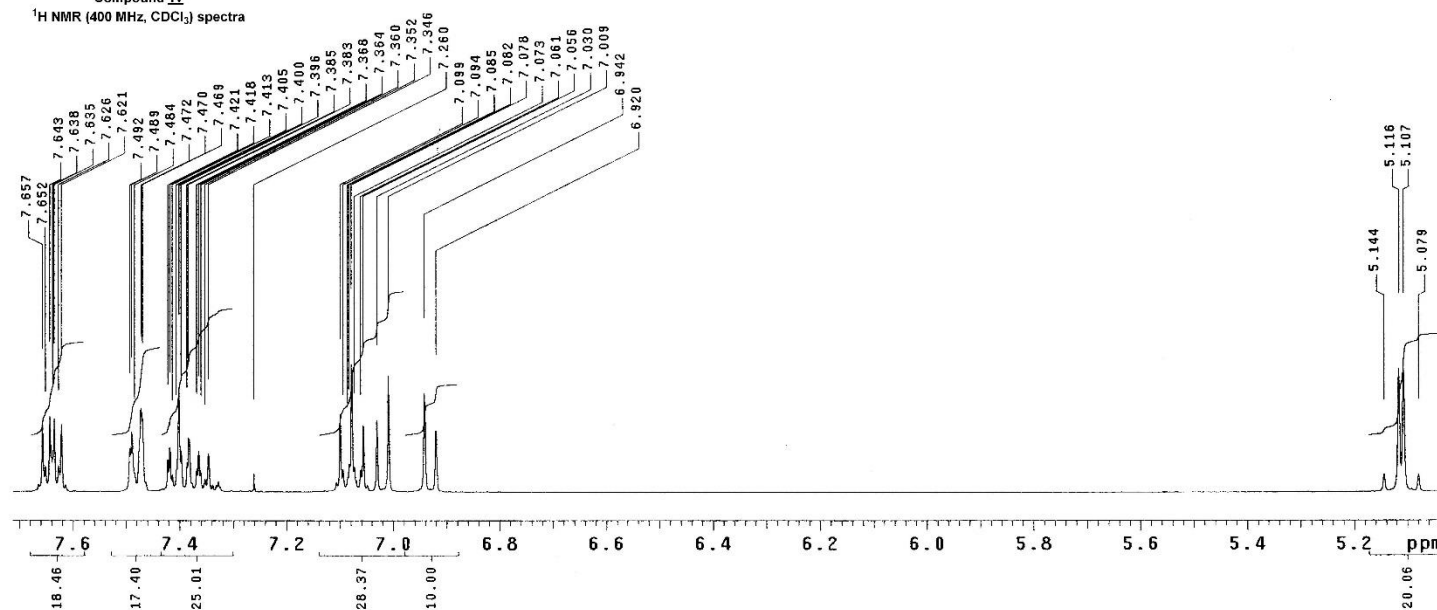
Ambient temperature

Total 64 repetitions



Compound 1v

<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



## Compound 1v

YL1040908

Pulse Sequence: s2pul

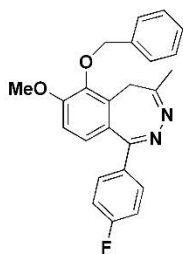
UNITYplus-400 "unity400"

Date: Sep 11 2015

Solvent: CDCl<sub>3</sub>

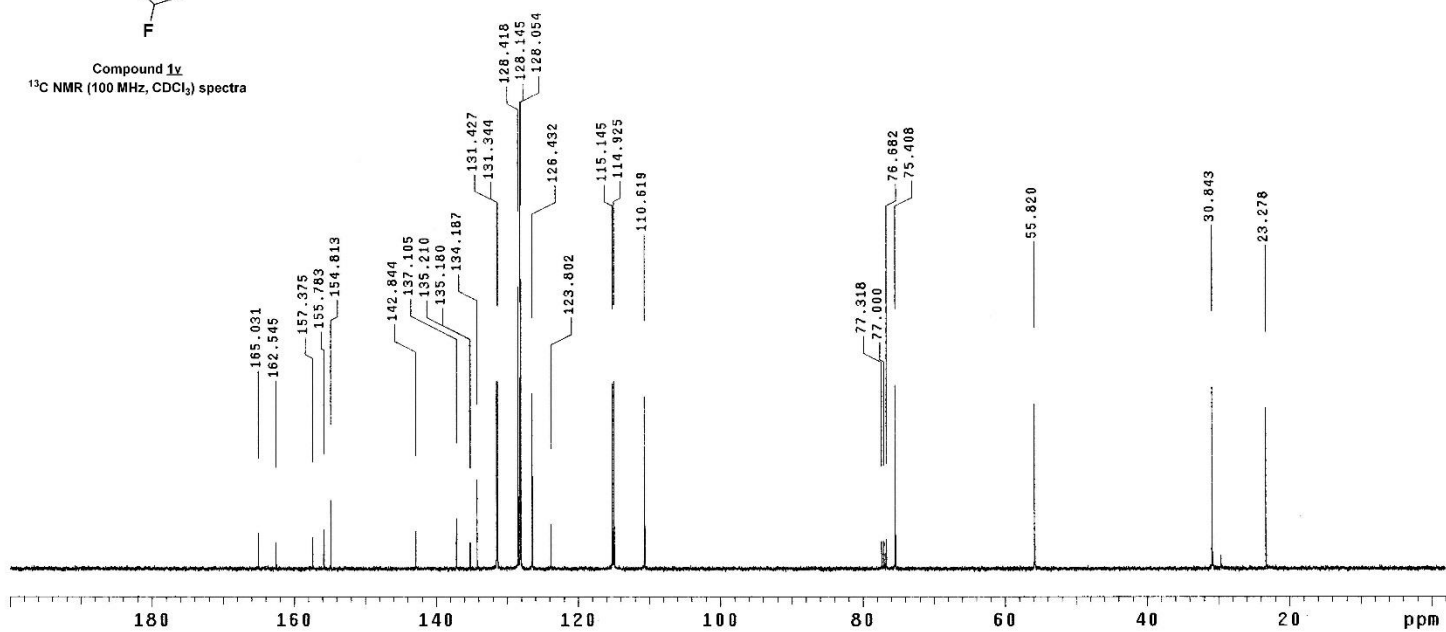
Ambient temperature

Total 448 repetitions



Compound 1v

<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra



## Compound 1v

YL1040908

Pulse Sequence: s2pu1

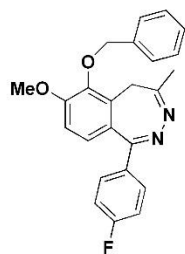
UNITYplus-400 "unity400"

Date: Sep 11 2015

Solvent: CDCl<sub>3</sub>

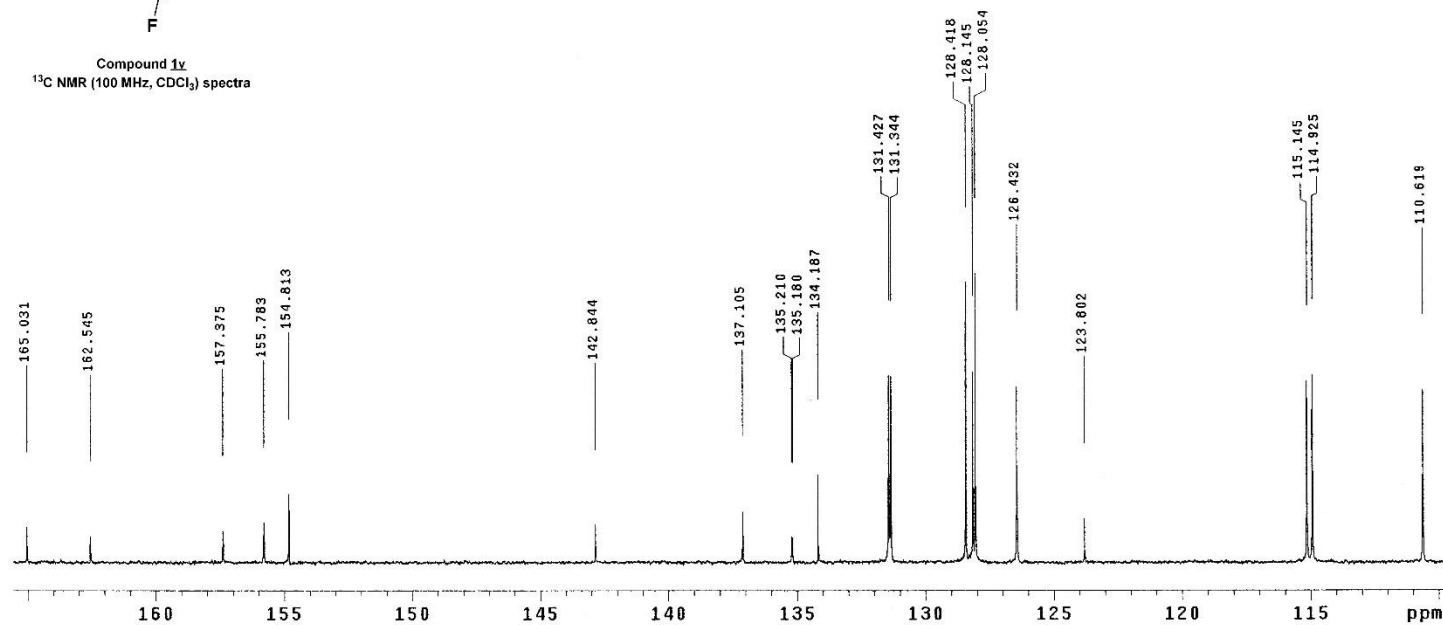
Ambient temperature

Total 448 repetitions



Compound 1v

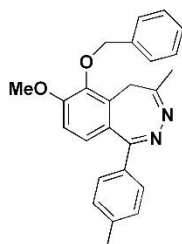
<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra



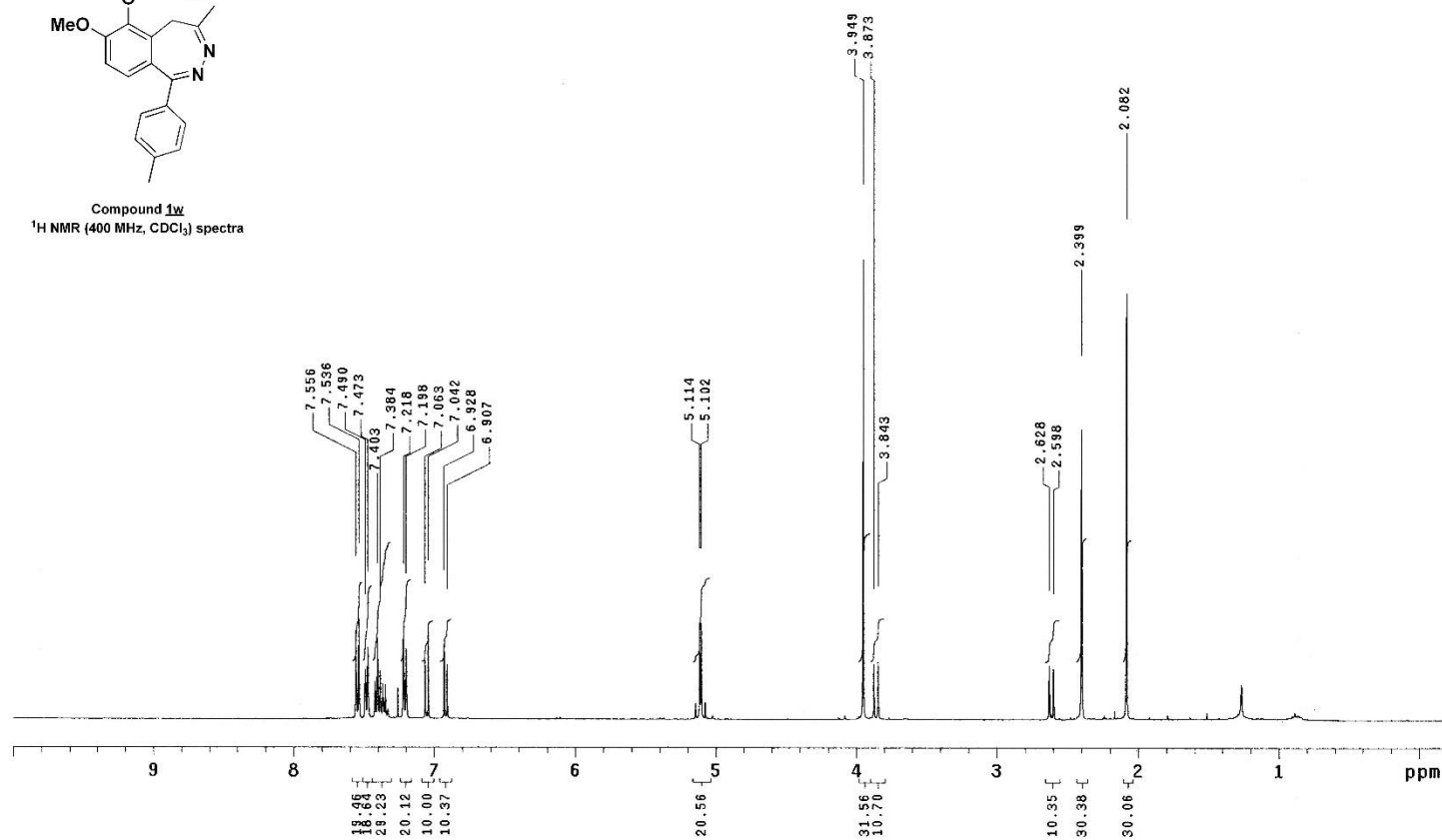
## Compound 1w

YL1040901

Pulse Sequence: s2pul  
UNITYplus-400 "unity400"  
Date: Sep 3 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 64 repetitions



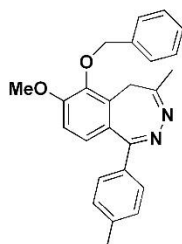
Compound 1w  
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



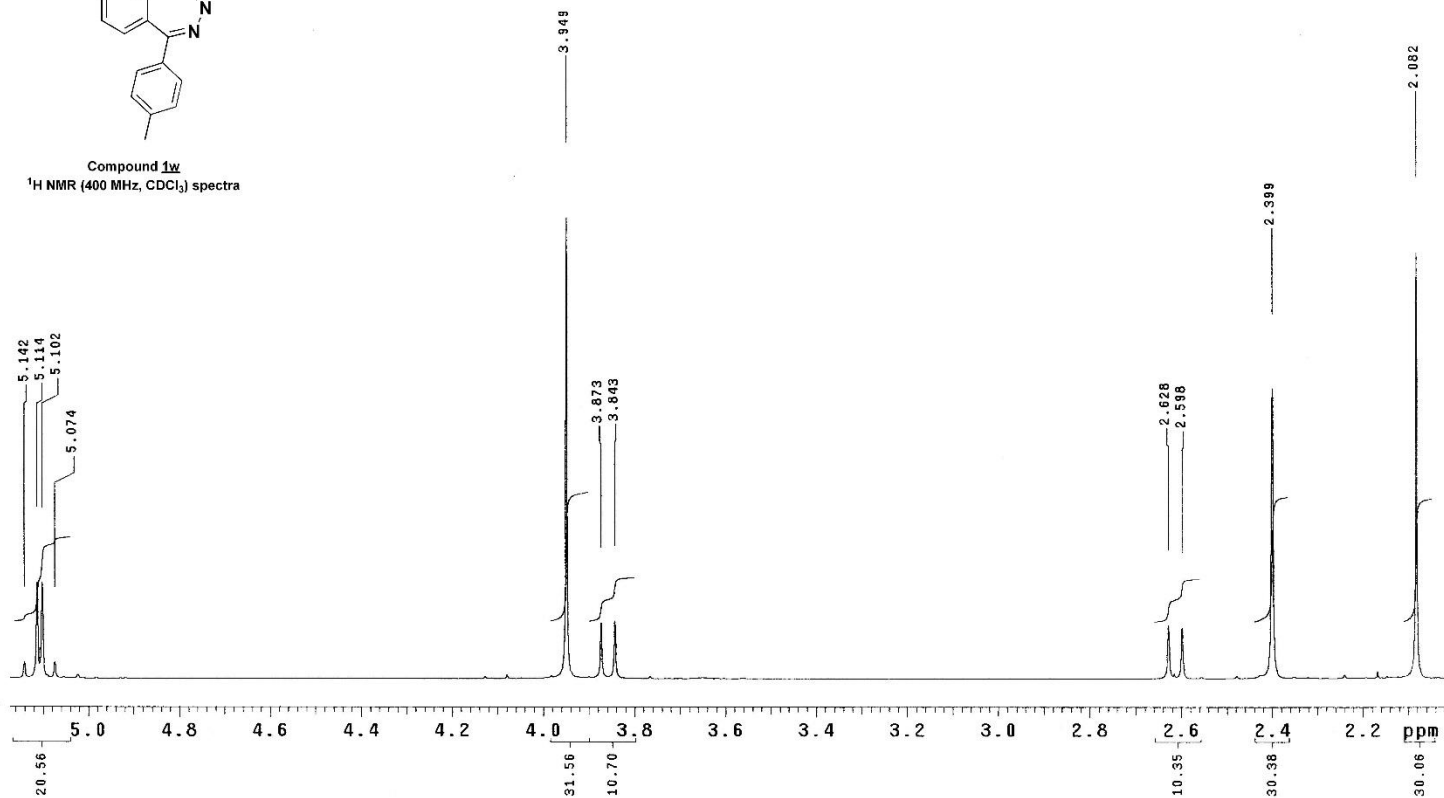
## Compound 1w

YL1040901

Pulse Sequence: s2pul  
UNITYplus-400 "unity400"  
Date: Sep 3 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 64 repetitions



Compound 1w  
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



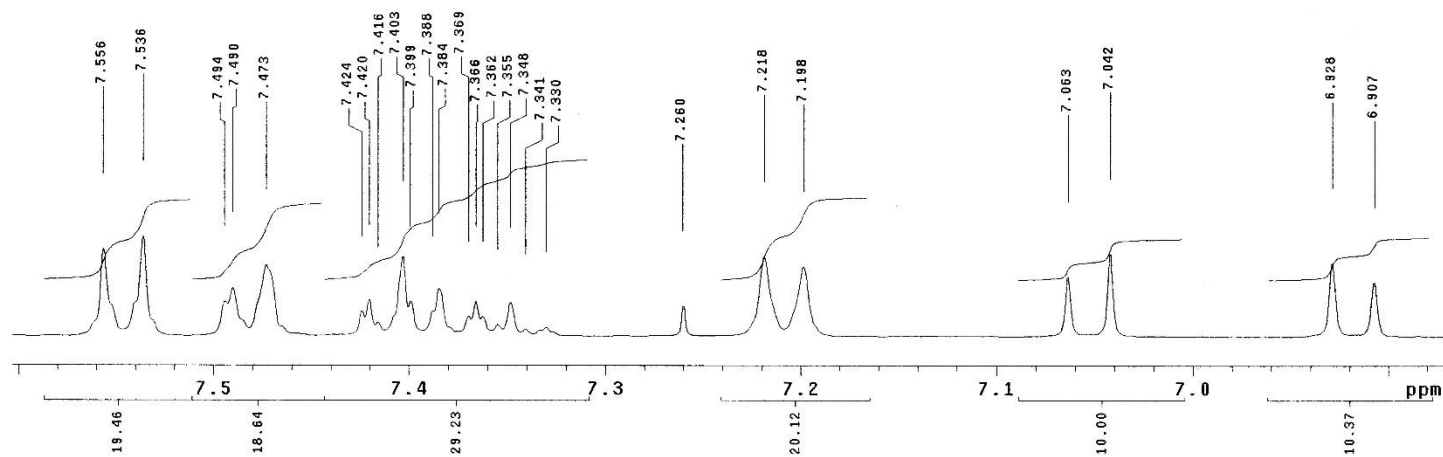
## Compound 1w

YL1040901

Pulse Sequence: s2pul  
UNITYplus-400 "unity400"  
Date: Sep 3 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 64 repetitions



Compound **1w**  
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



## Compound 1w

YL1040901

Pulse Sequence: s2pu1

UNITYplus-400 "unity400"

Date: Sep 3 2015

Solvent: CDCl<sub>3</sub>

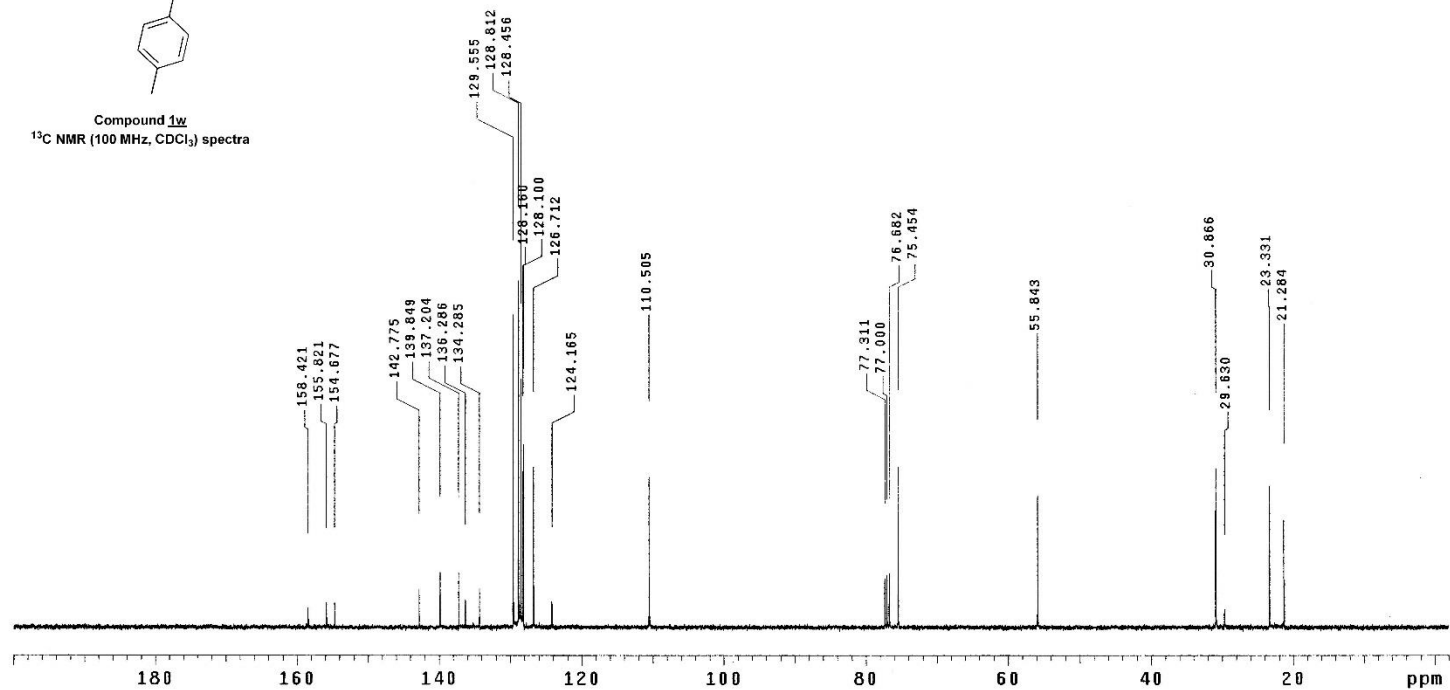
Ambient temperature

Total 1280 repetitions



Compound 1w

<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra



## Compound 1w

YL1040901

Pulse Sequence: s2pu1

UNITYplus-400 "unity400"

Date: Sep 3 2015

Solvent: CDCl<sub>3</sub>

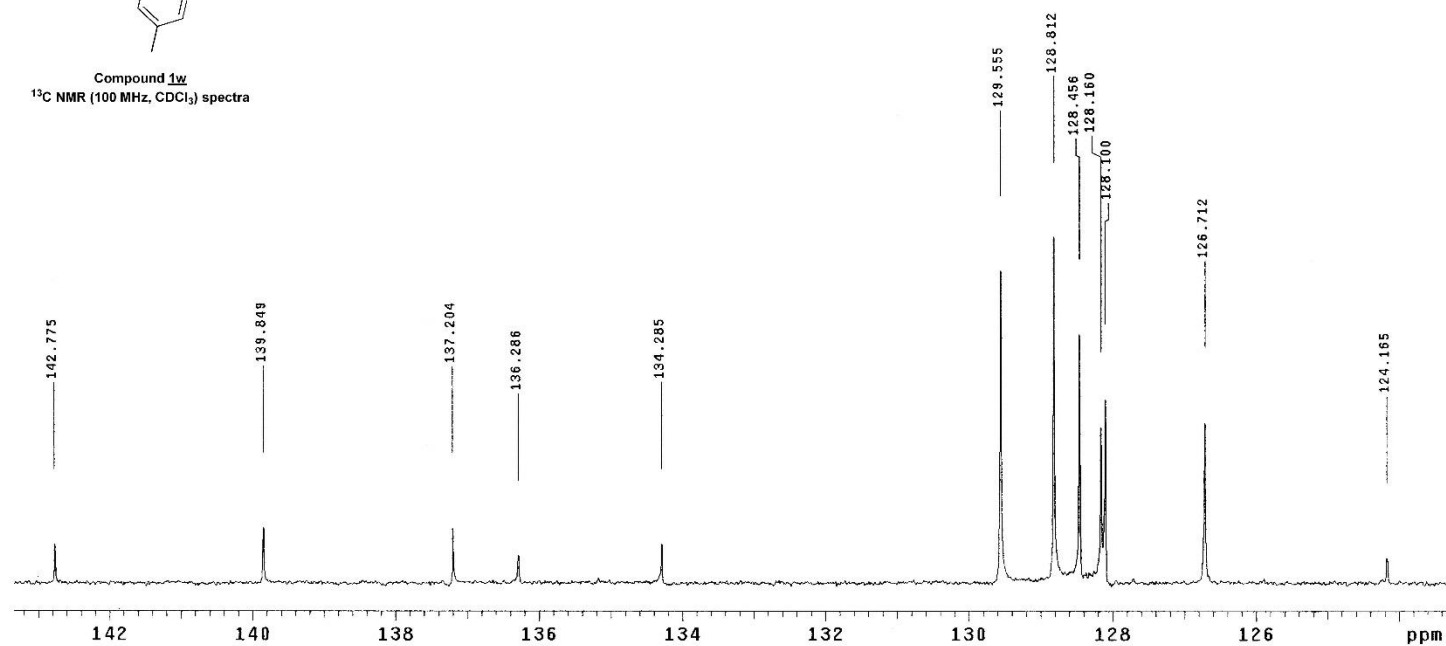
Ambient temperature

Total 1280 repetitions



Compound 1w

<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra

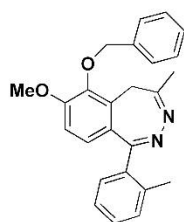




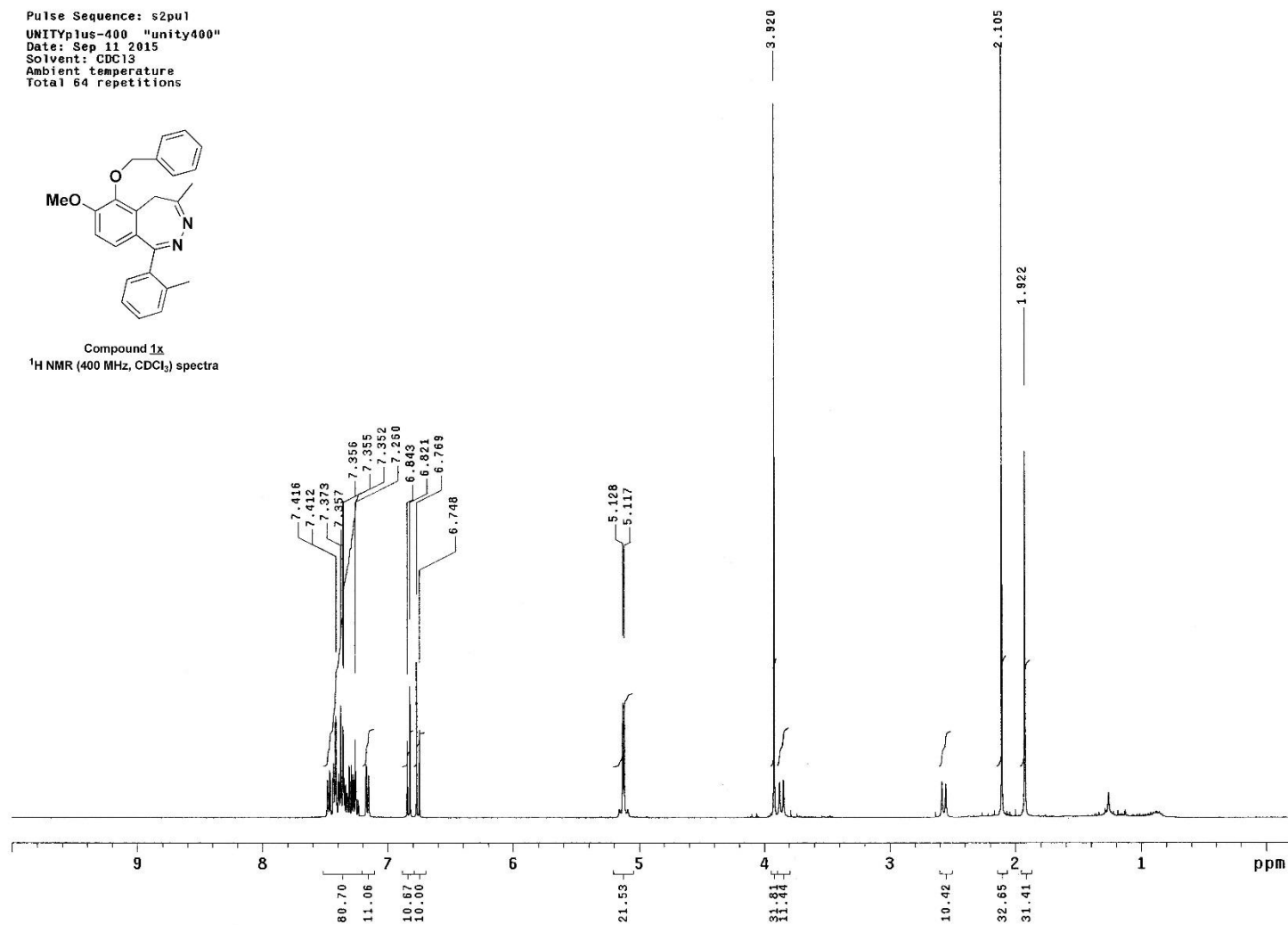
## Compound 1x

YL1040909

Pulse Sequence: s2pu1  
UNITYplus-400 "unity400"  
Date: Sep 11 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 64 repetitions



Compound 1x  
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



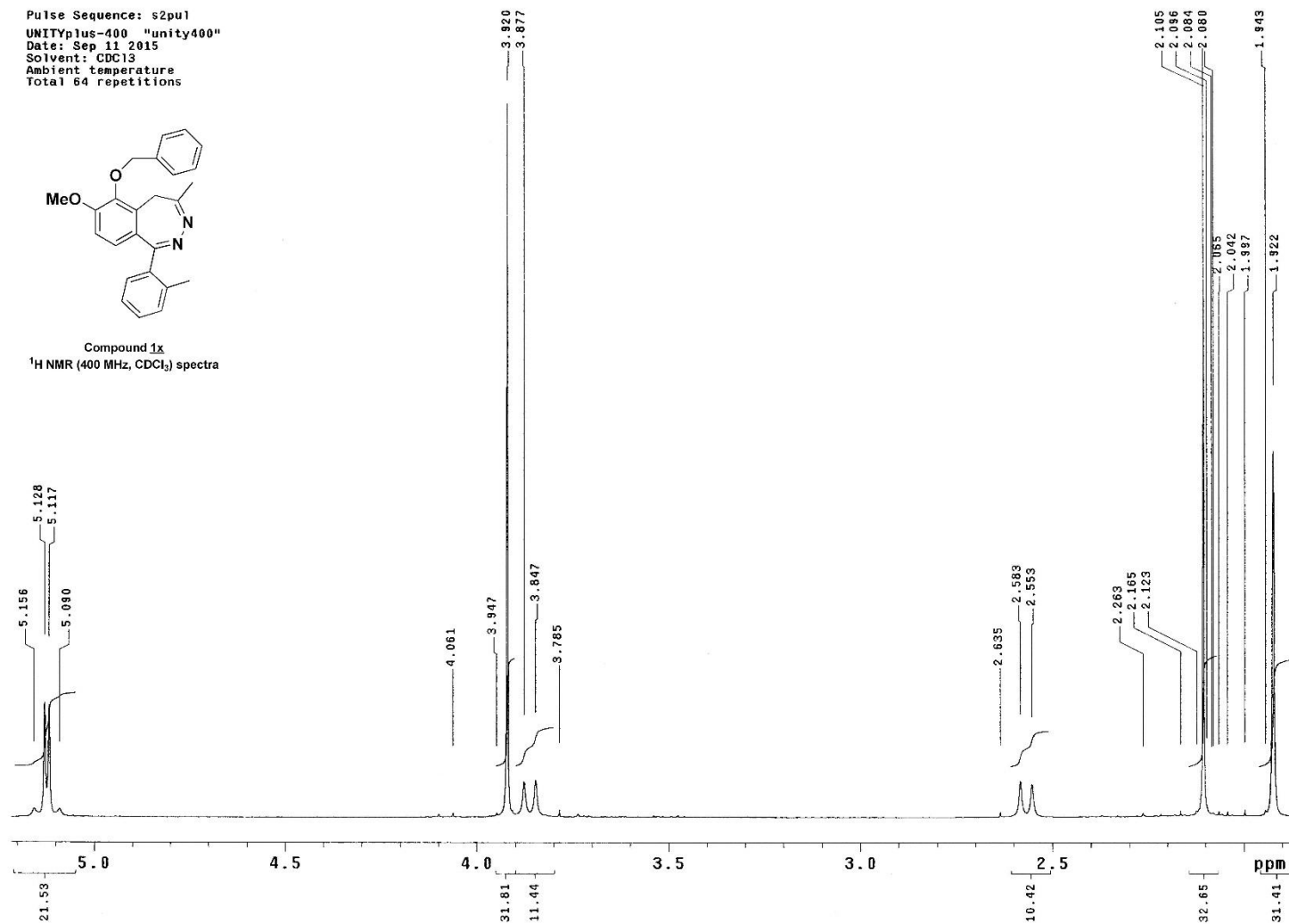
## Compound 1x

YL1040909

Pulse Sequence: s2pu1  
UNITYplus-400 "unity400"  
Date: Sep 11 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 64 repetitions



Compound 1x  
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



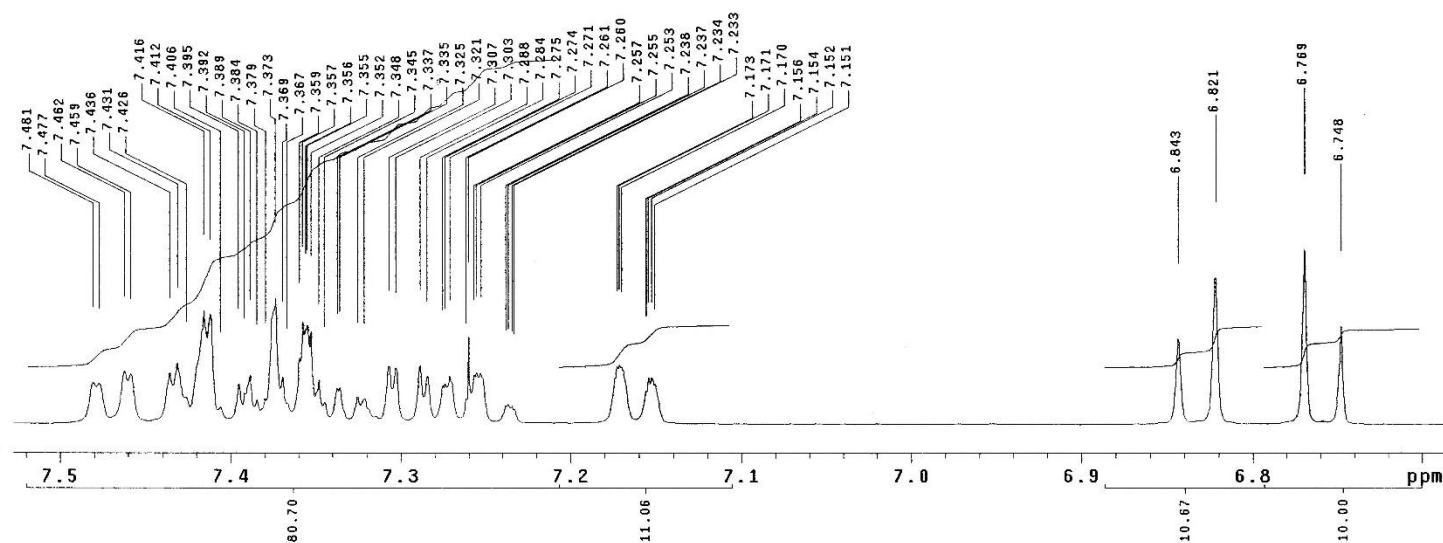
## Compound 1x

YL1040909

Pulse Sequence: s2pu1  
UNITYplus-400 "unity400"  
Date: Sep 11 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 64 repetitions

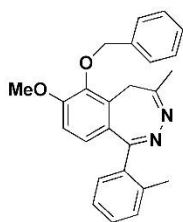


Compound 1x  
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra

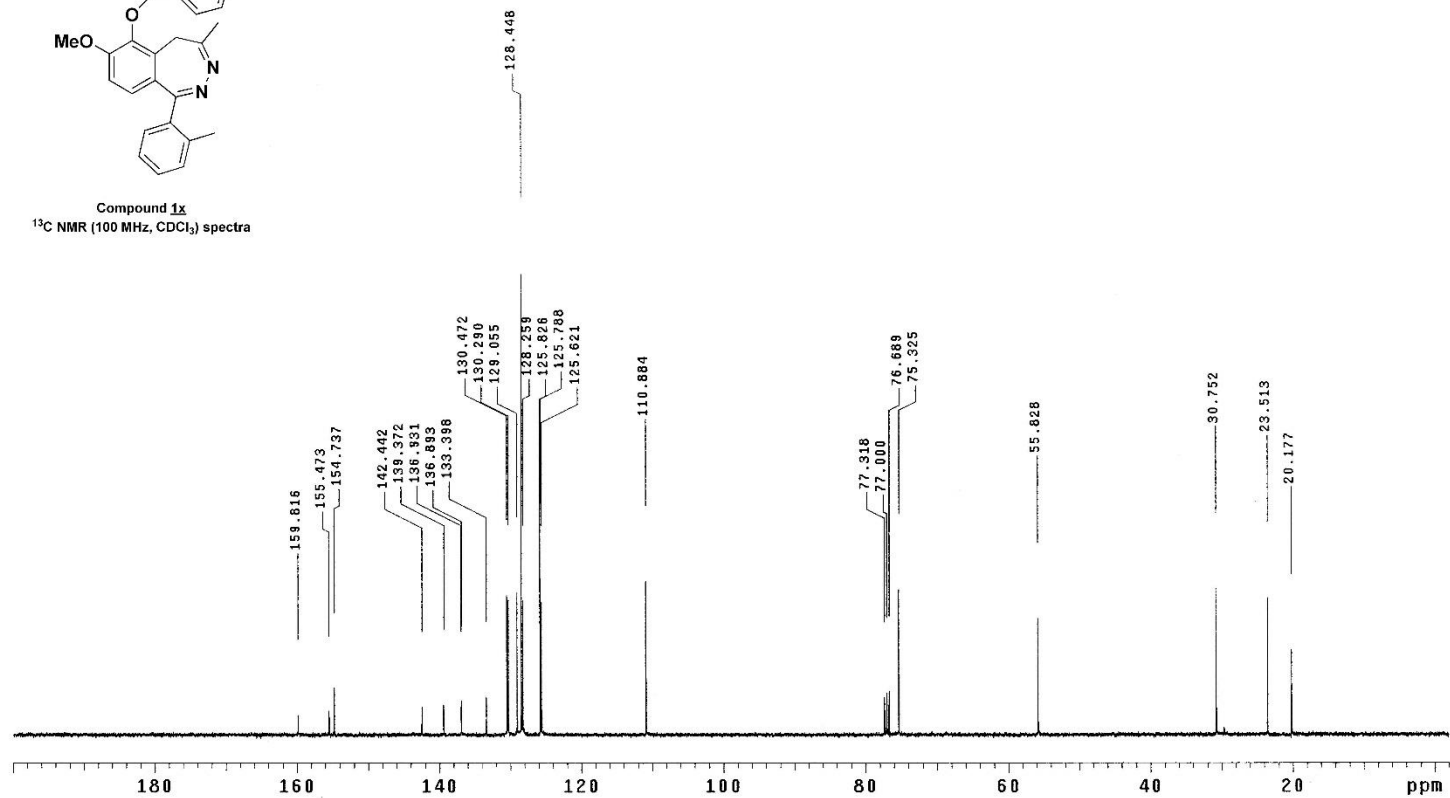


## Compound 1x

YL1040909  
Pulse Sequence: s2pu1  
UNITYplus-400 "unity400"  
Date: Sep 11 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 1312 repetitions



Compound 1x  
<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra

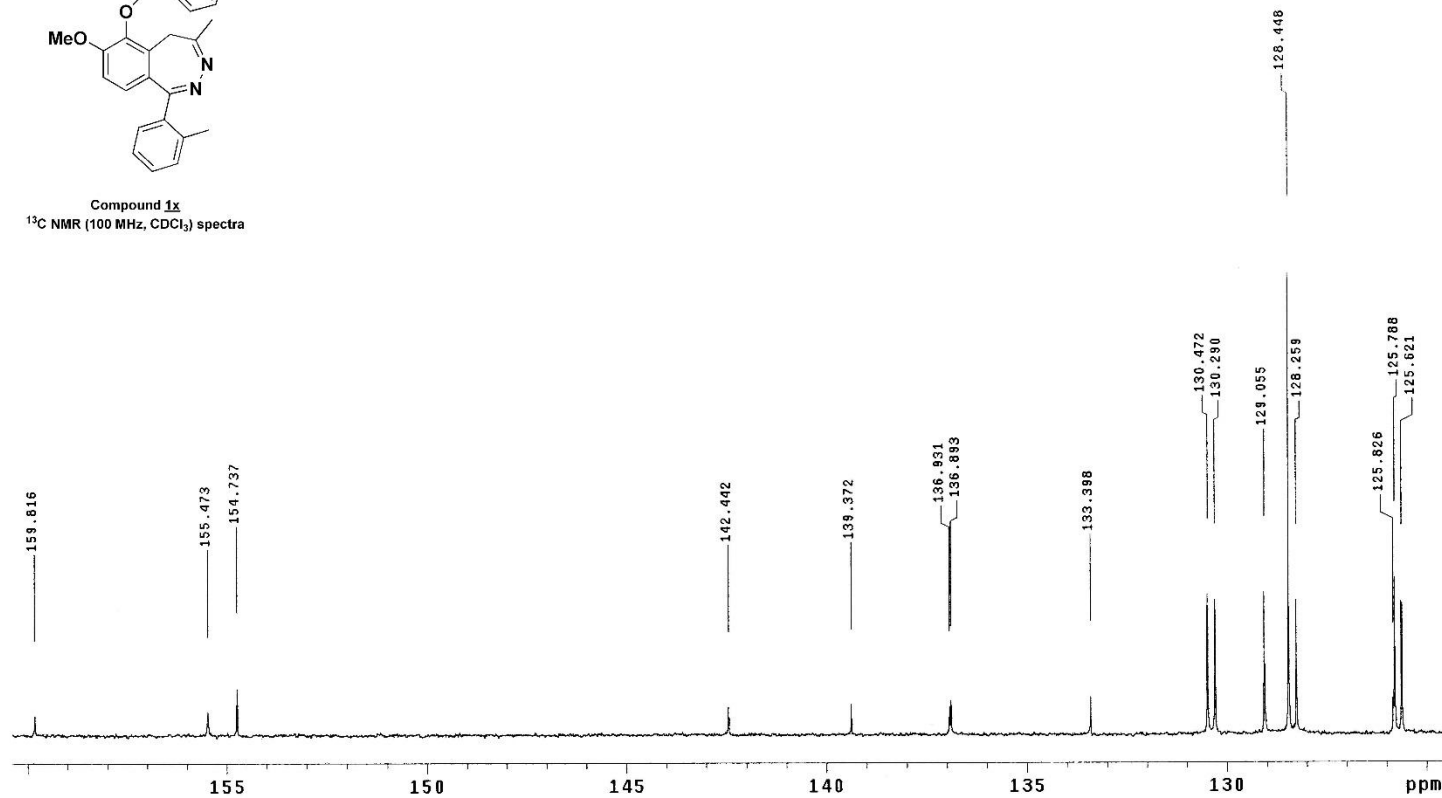


## Compound 1x

YL1040909  
Pulse Sequence: s2pu1  
UNITYplus-400 "unity400"  
Date: Sep 11 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 1312 repetitions



Compound 1x  
<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra



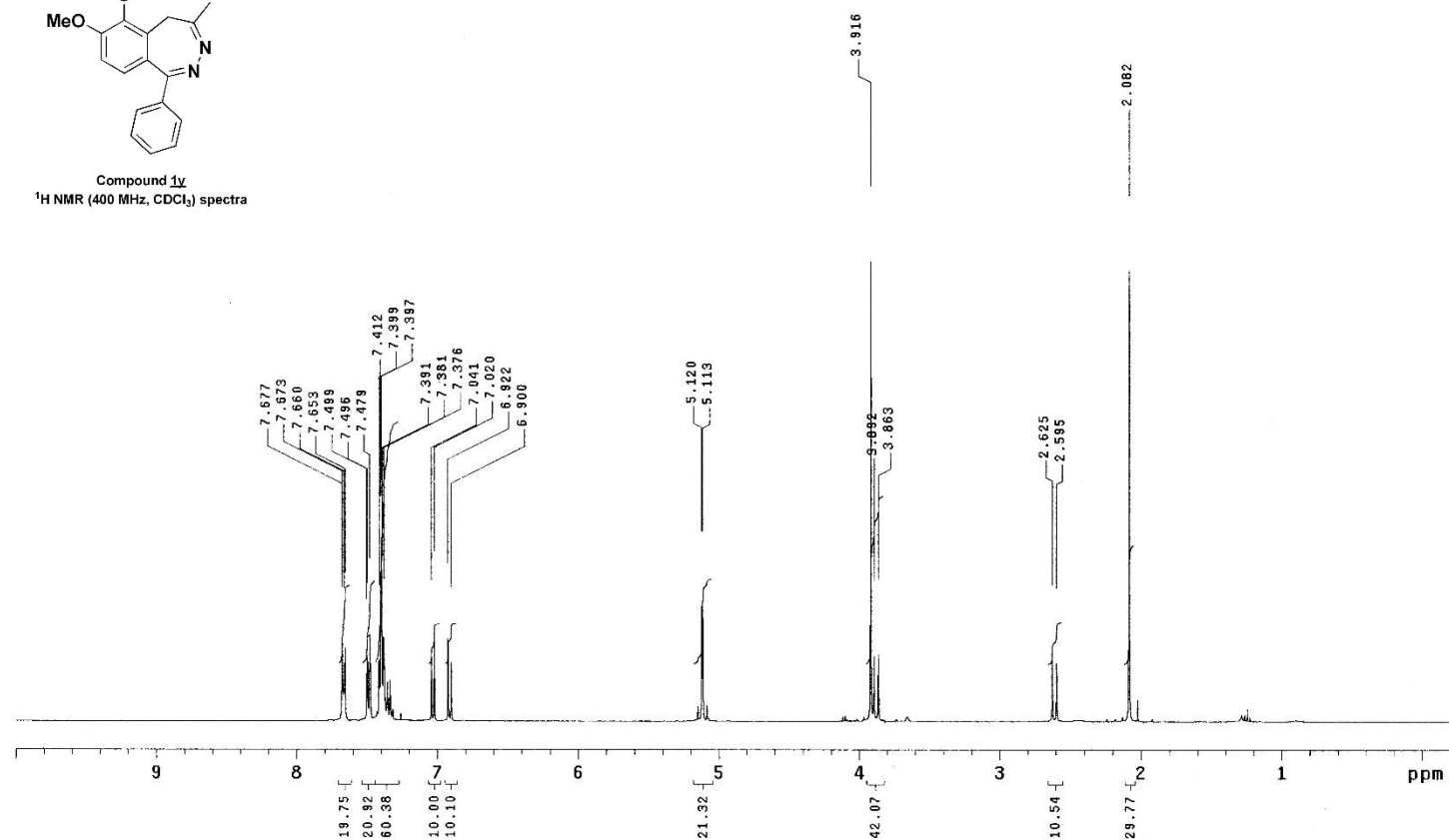
## Compound 1y

YL1040830

Pulse Sequence: s2pul  
UNITYplus-400 "unity400"  
Date: Sep 1 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 64 repetitions



Compound **1y**  
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



## Compound 1y

YL1040830

Pulse Sequence: s2pul

UNITYplus-400 "unity400"

Date: Sep 1 2015

Solvent: CDCl<sub>3</sub>

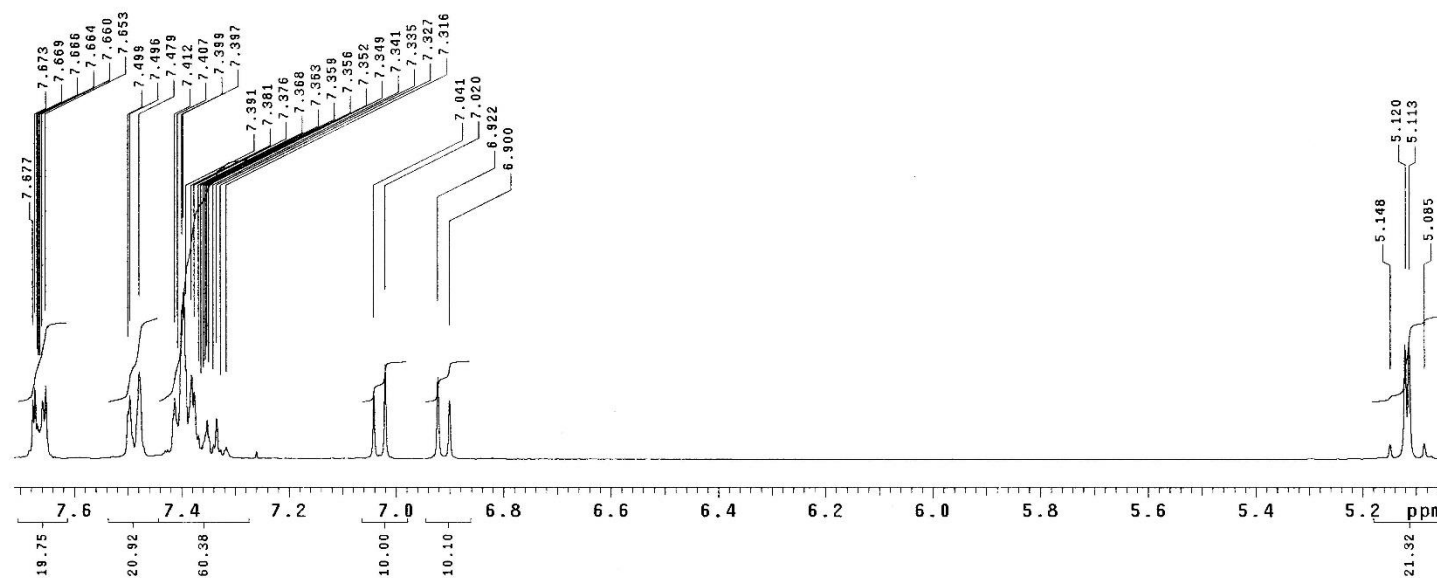
Ambient temperature

Total 64 repetitions



Compound 1y

<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



## Compound 1y

YL1040830

Pulse Sequence: s2pu1

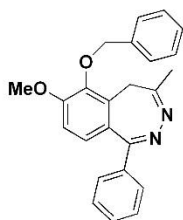
UNITYplus-400 "unity400"

Date: Sep 1 2015

Solvent: CDCl<sub>3</sub>

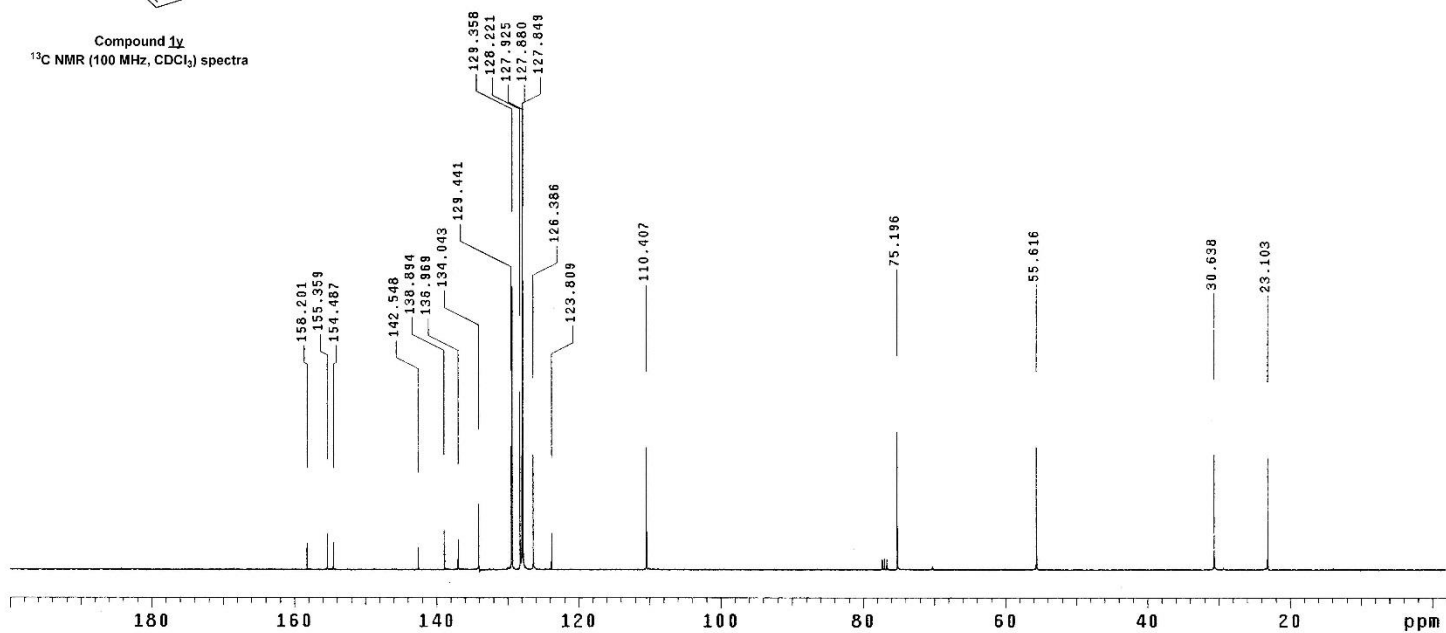
Ambient temperature

Total 704 repetitions



Compound 1y

<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra





## Compound 1y

YL1040830

Pulse Sequence: s2pu1

UNITYplus-400 "unity400"

Date: Sep 1 2015

Solvent: CDCl<sub>3</sub>

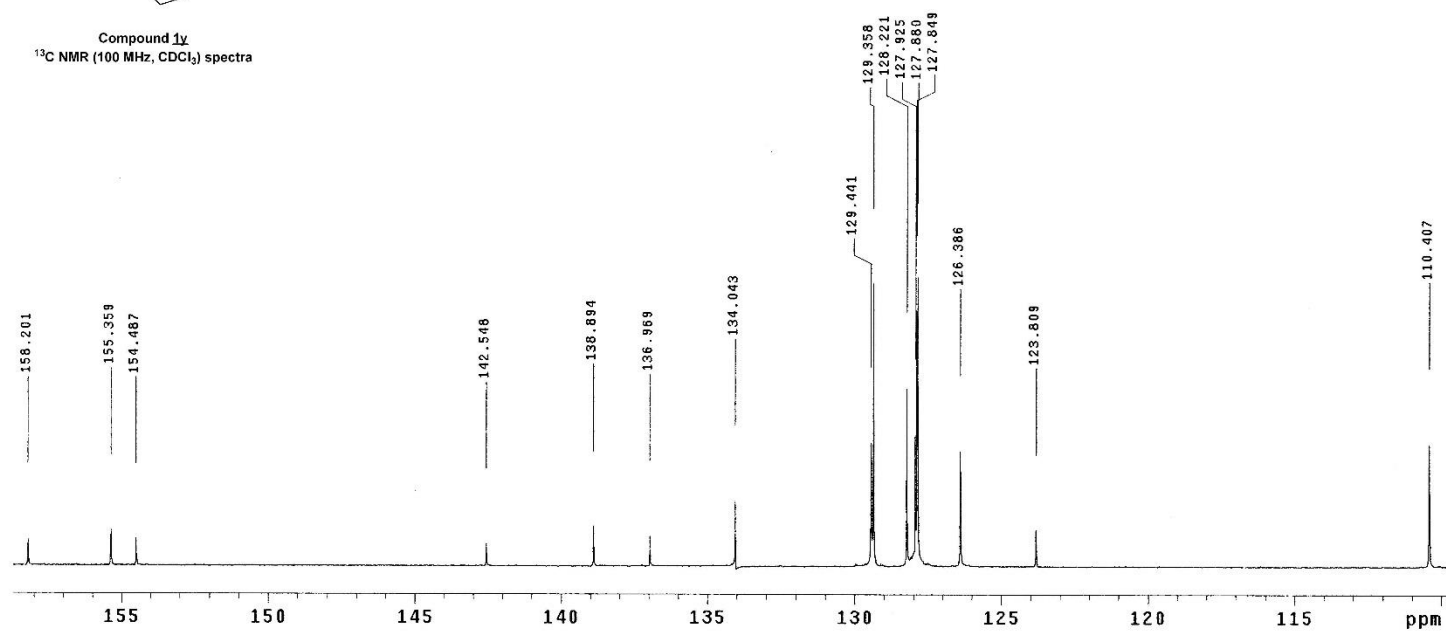
Ambient temperature

Total 704 repetitions



Compound 1y

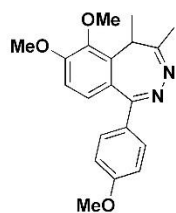
<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra



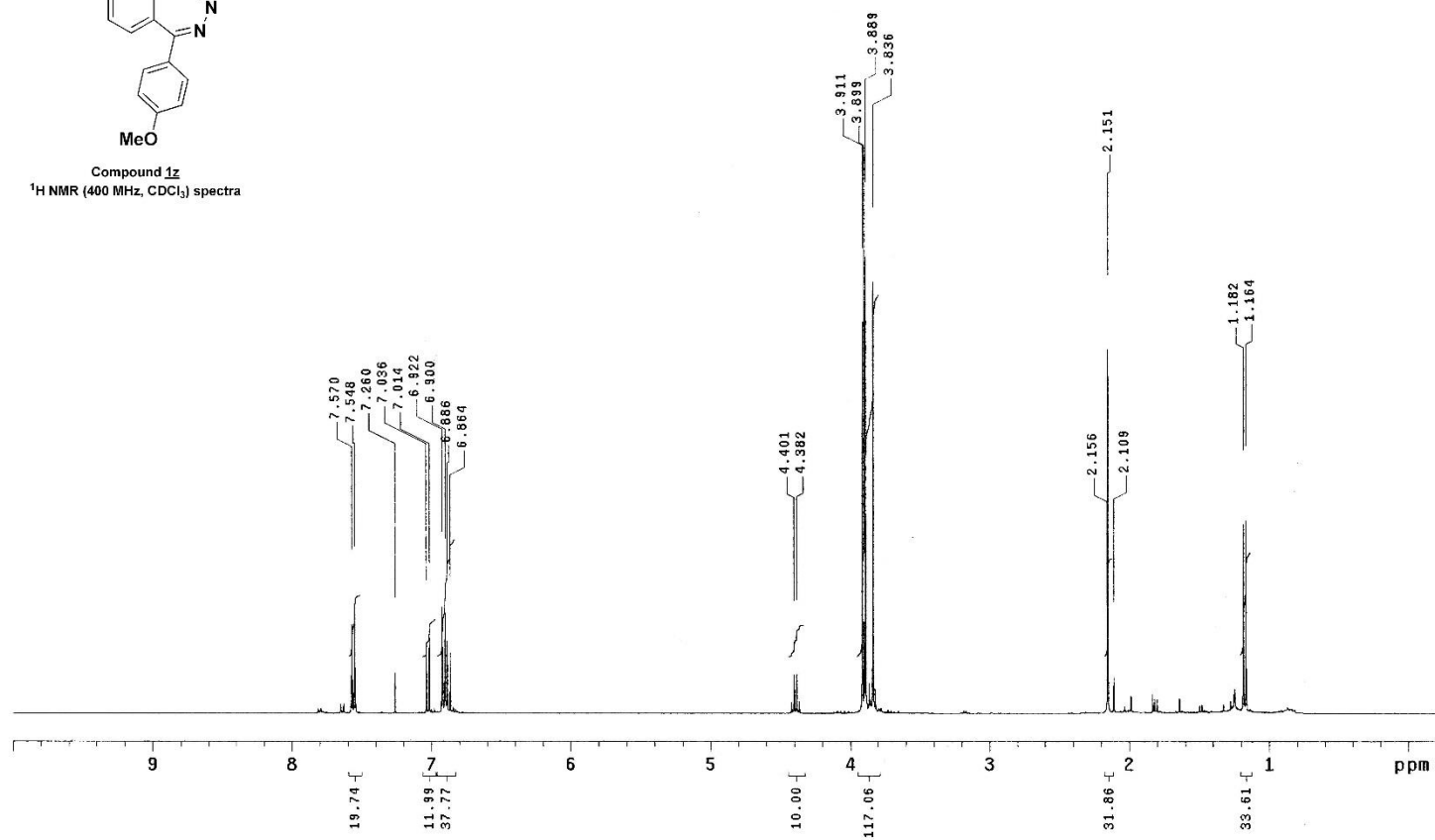
## Compound 1z

YL1040916

Pulse Sequence: s2pul  
UNITYplus-400 "unity400"  
Date: Sep 17 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 64 repetitions



Compound 1z  
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



## Compound 1z

YL1040916

Pulse Sequence: s2pul

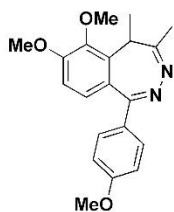
UNITYplus-400 "unity400"

Date: Sep 17 2015

Solvent: CDCl<sub>3</sub>

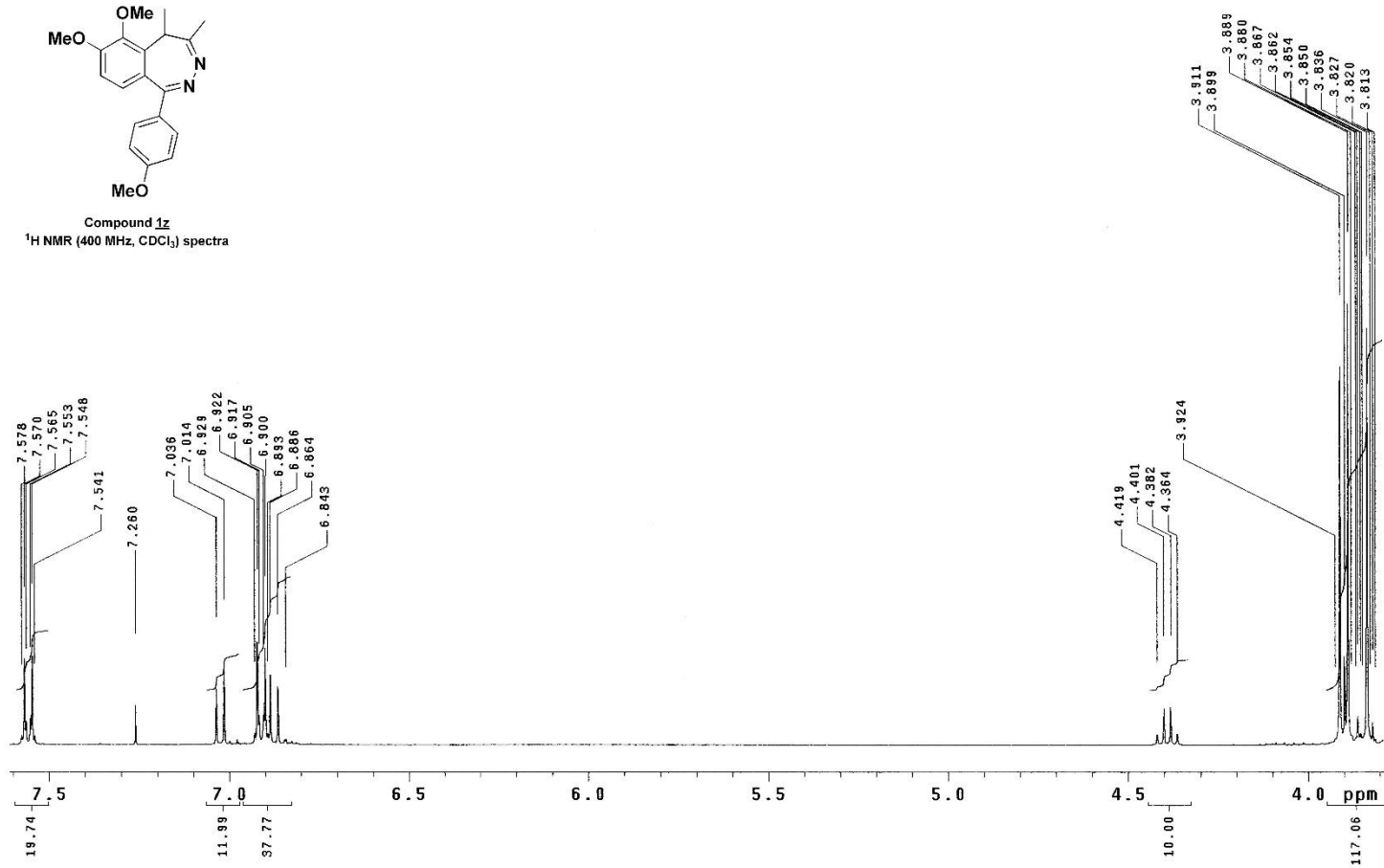
Ambient temperature

Total 64 repetitions



Compound 1z

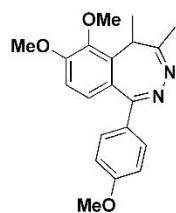
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



## Compound 1z

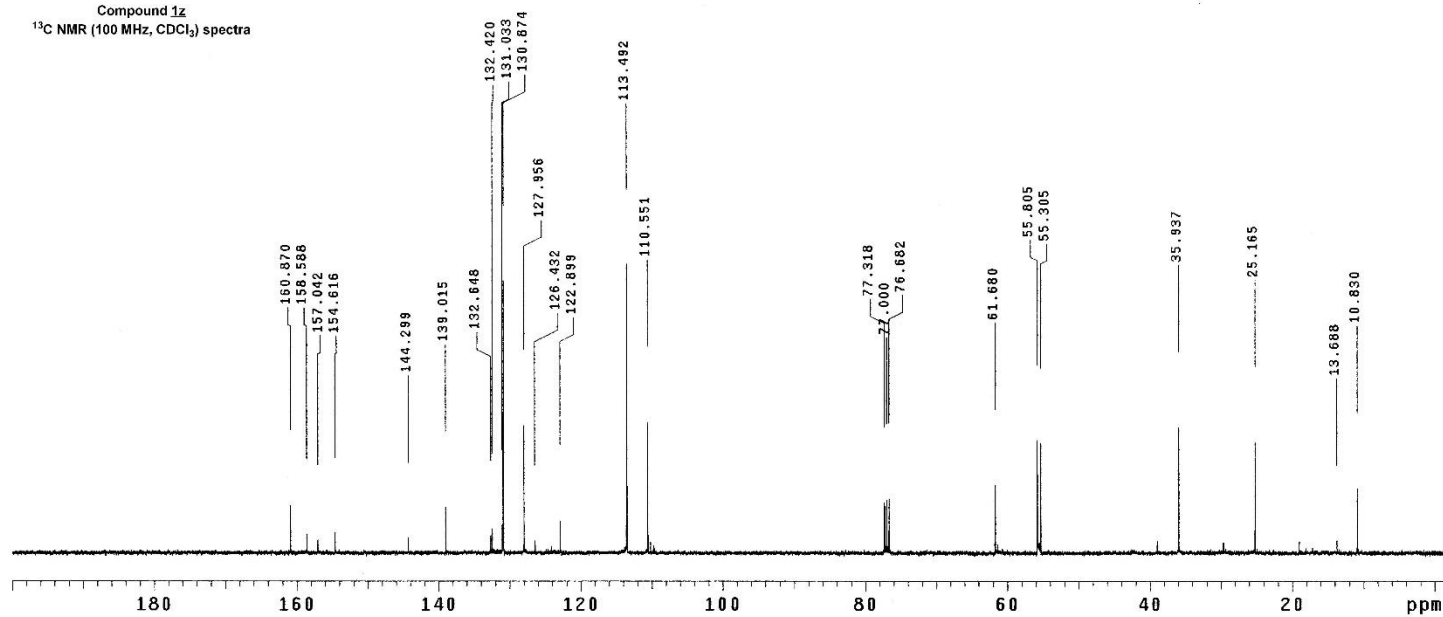
YL1040916

Pulse Sequence: s2pu1  
UNITYplus-400 "unity400"  
Date: Sep 17 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 1680 repetitions



Compound 1z

<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra



## Compound 1z

YL1040916

Pulse Sequence: s2pu1

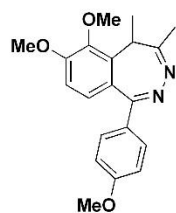
UNITYplus-400 "unity400"

Date: Sep 17 2015

Solvent: CDCl<sub>3</sub>

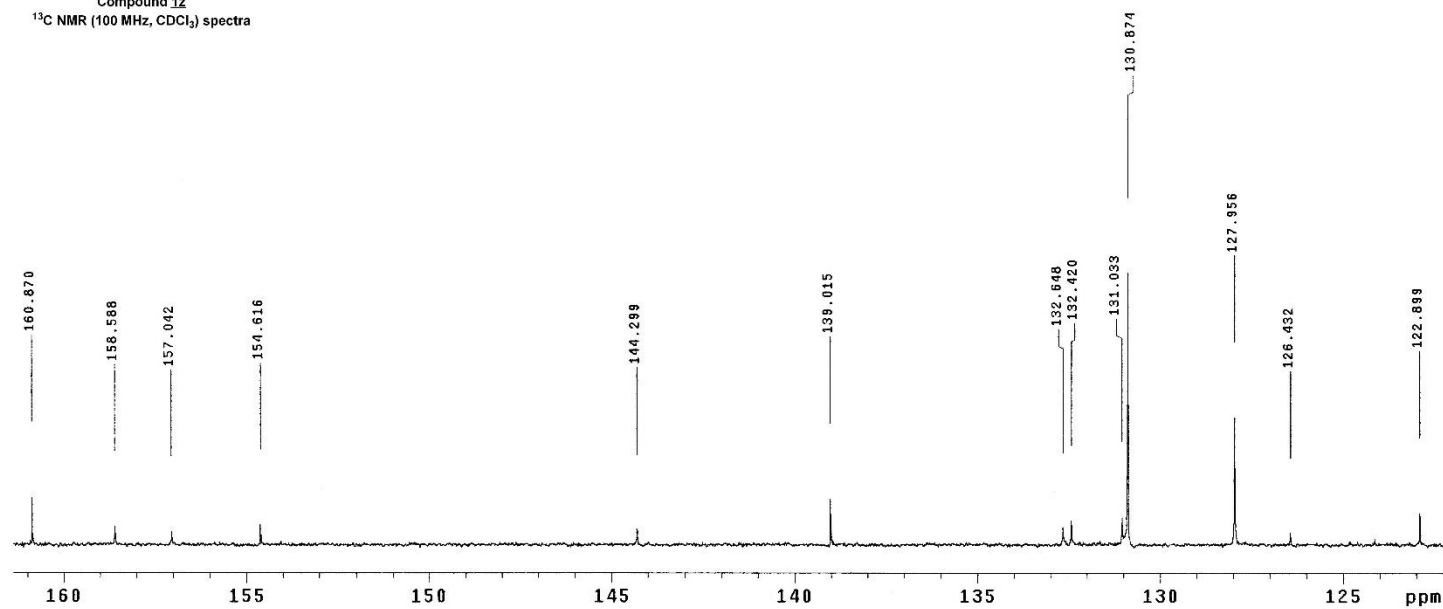
Ambient temperature

Total 1680 repetitions



Compound 1z

<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra



## Compound 1aa

YL1040915

Pulse Sequence: s2pu1

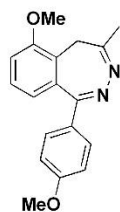
UNITYplus-400 "unity400"

Date: Sep 16 2015

Solvent: CDCl<sub>3</sub>

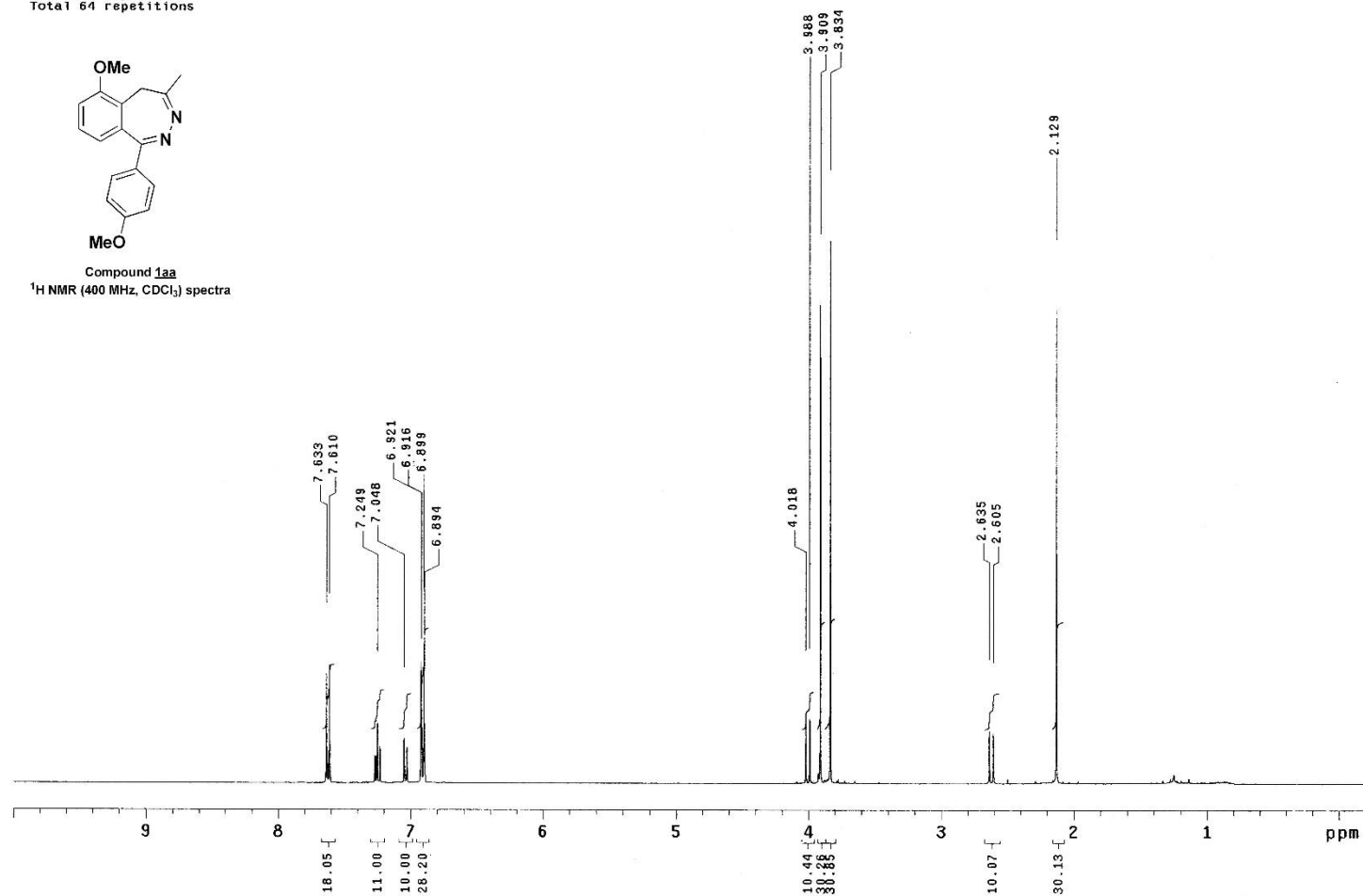
Ambient temperature

Total 64 repetitions



Compound 1aa

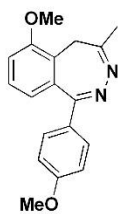
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



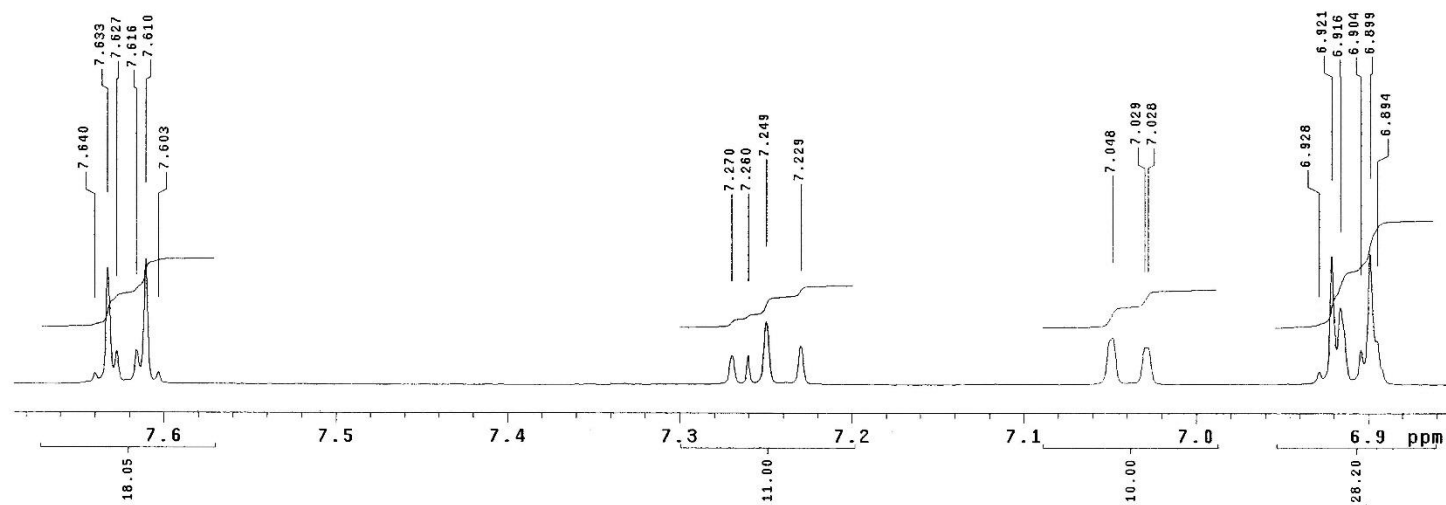
## Compound 1aa

YL1040915

Pulse Sequence: s2pu1  
UNITYplus-400 "unity400"  
Date: Sep 16 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 64 repetitions



Compound **1aa**  
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



## Compound 1aa

YL1040915

Pulse Sequence: s2pu1

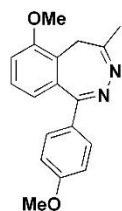
UNITYplus-400 "unity400"

Date: Sep 16 2015

Solvent: CDCl<sub>3</sub>

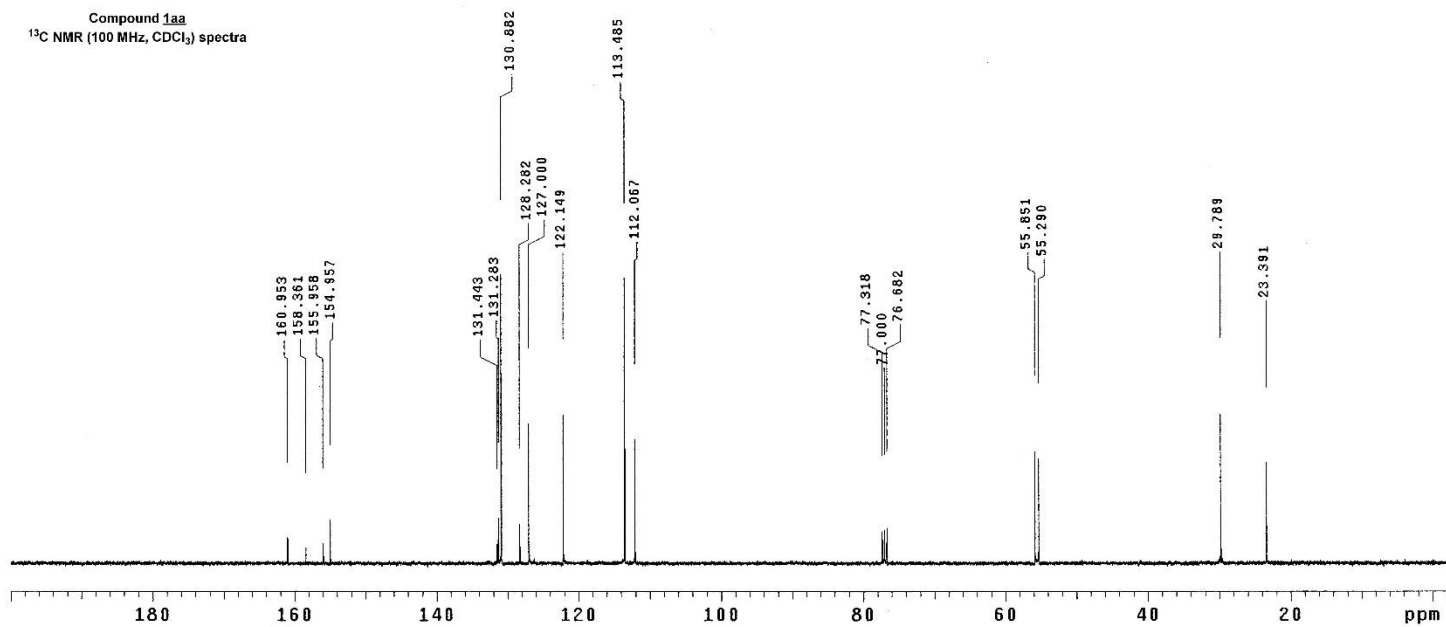
Ambient temperature

Total 736 repetitions



Compound 1aa

<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra





## Compound 1aa

YL1040915

Pulse Sequence: s2pu1

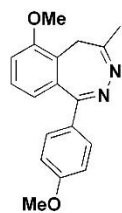
UNITYplus-400 "unity400"

Date: Sep 16 2015

Solvent: CDCl<sub>3</sub>

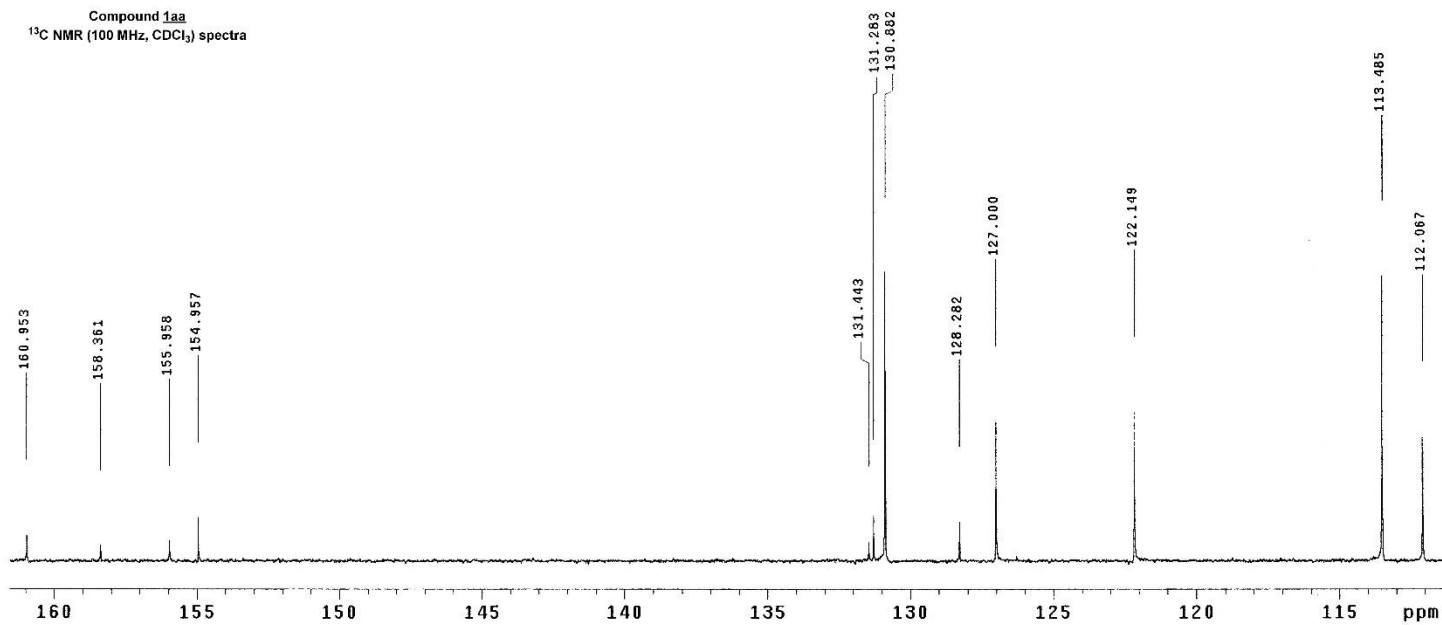
Ambient temperature

Total 736 repetitions



Compound 1aa

<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra



## Compound 6a

YLenon2a

Pulse Sequence: s2pu1

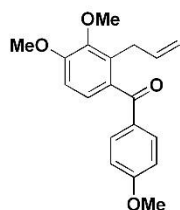
UNITYplus-400 "unity400"

Date: Nov 2 2015

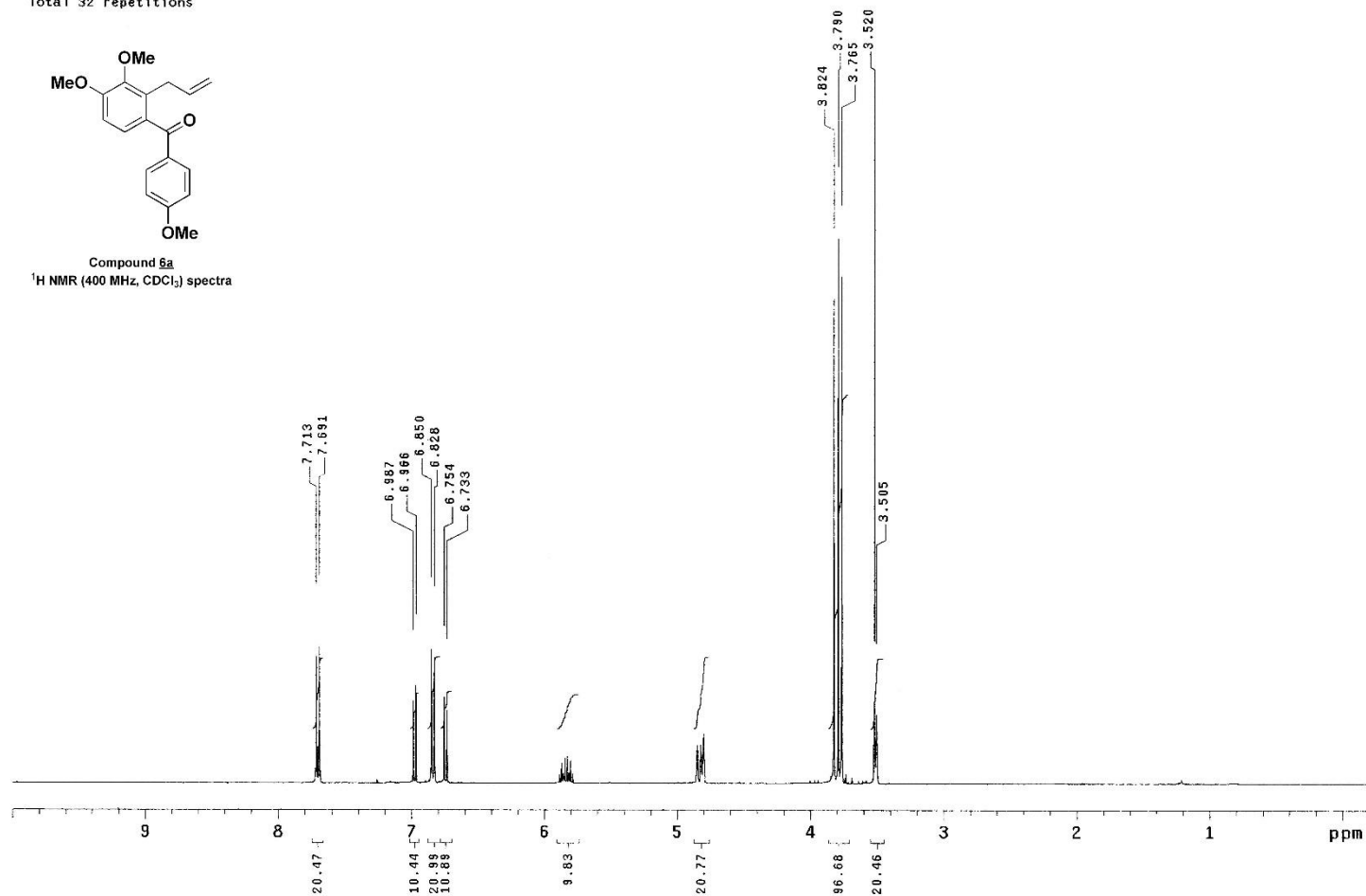
Solvent: CDCl<sub>3</sub>

Ambient temperature

Total 32 repetitions



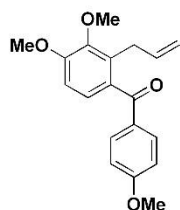
Compound 6a  
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



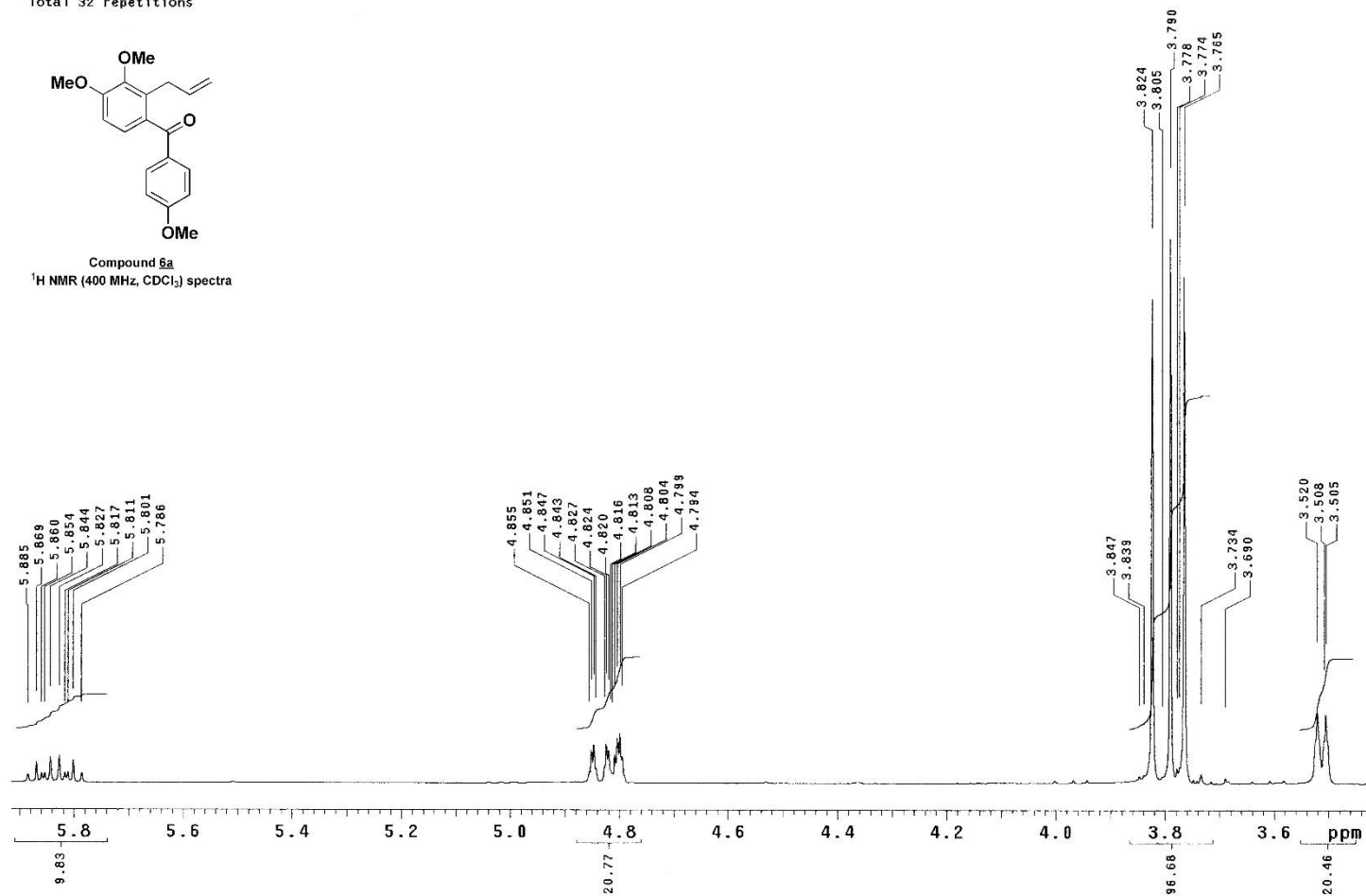
## Compound 6a

YLenon2a

Pulse Sequence: s2pu1  
UNITYplus-400 "unity400"  
Date: Nov 2 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 32 repetitions



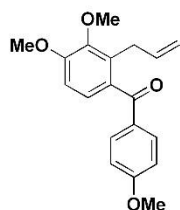
Compound 6a  
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



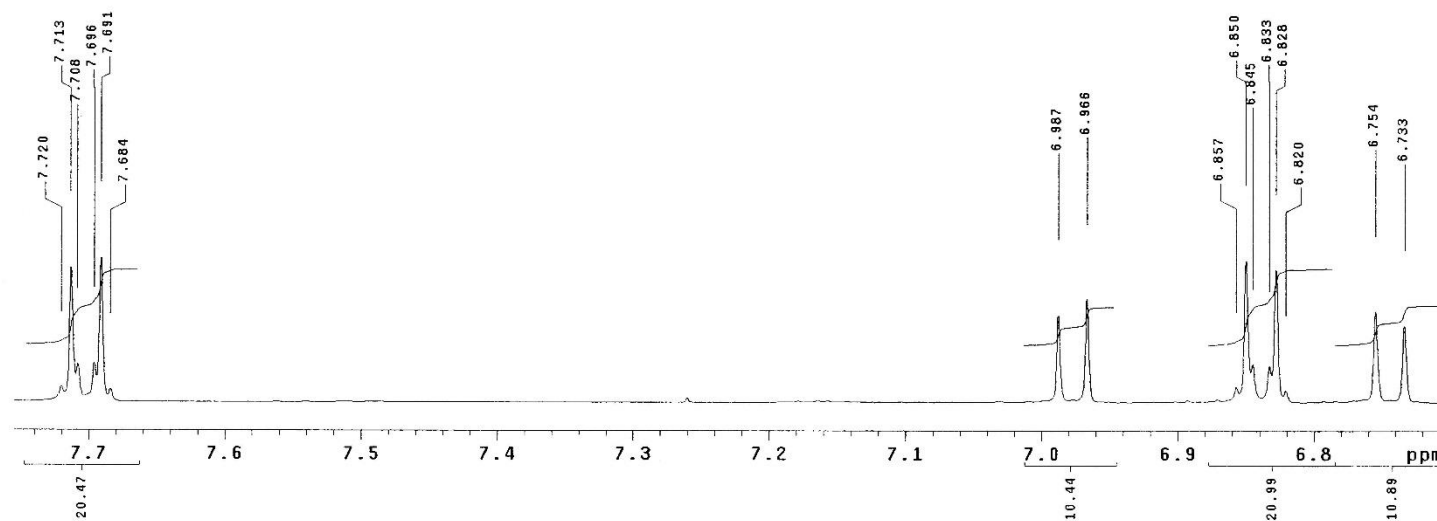
## Compound 6a

YLenon2a

Pulse Sequence: s2pu1  
UNITYplus-400 "unity400"  
Date: Nov 2 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 32 repetitions



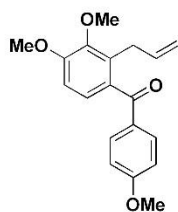
Compound 6a  
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



## Compound 6a

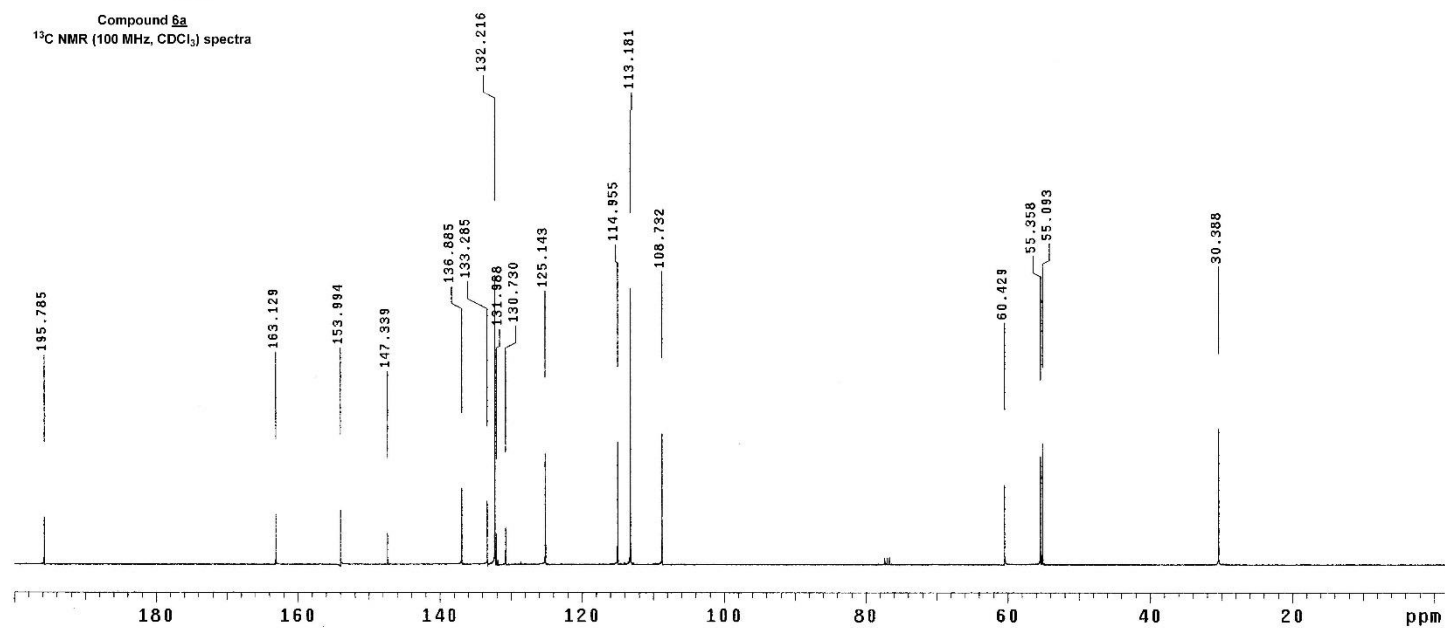
YLenon2a

Pulse Sequence: s2pul  
UNITYplus-400 "unity400"  
Date: Nov 2 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 704 repetitions



Compound 6a

<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra



## Compound 6b

YLenon2b

Pulse Sequence: s2pu1

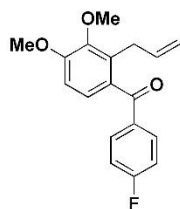
UNITYplus-400 "unity400"

Date: Nov 20 2015

Solvent: CDCl<sub>3</sub>

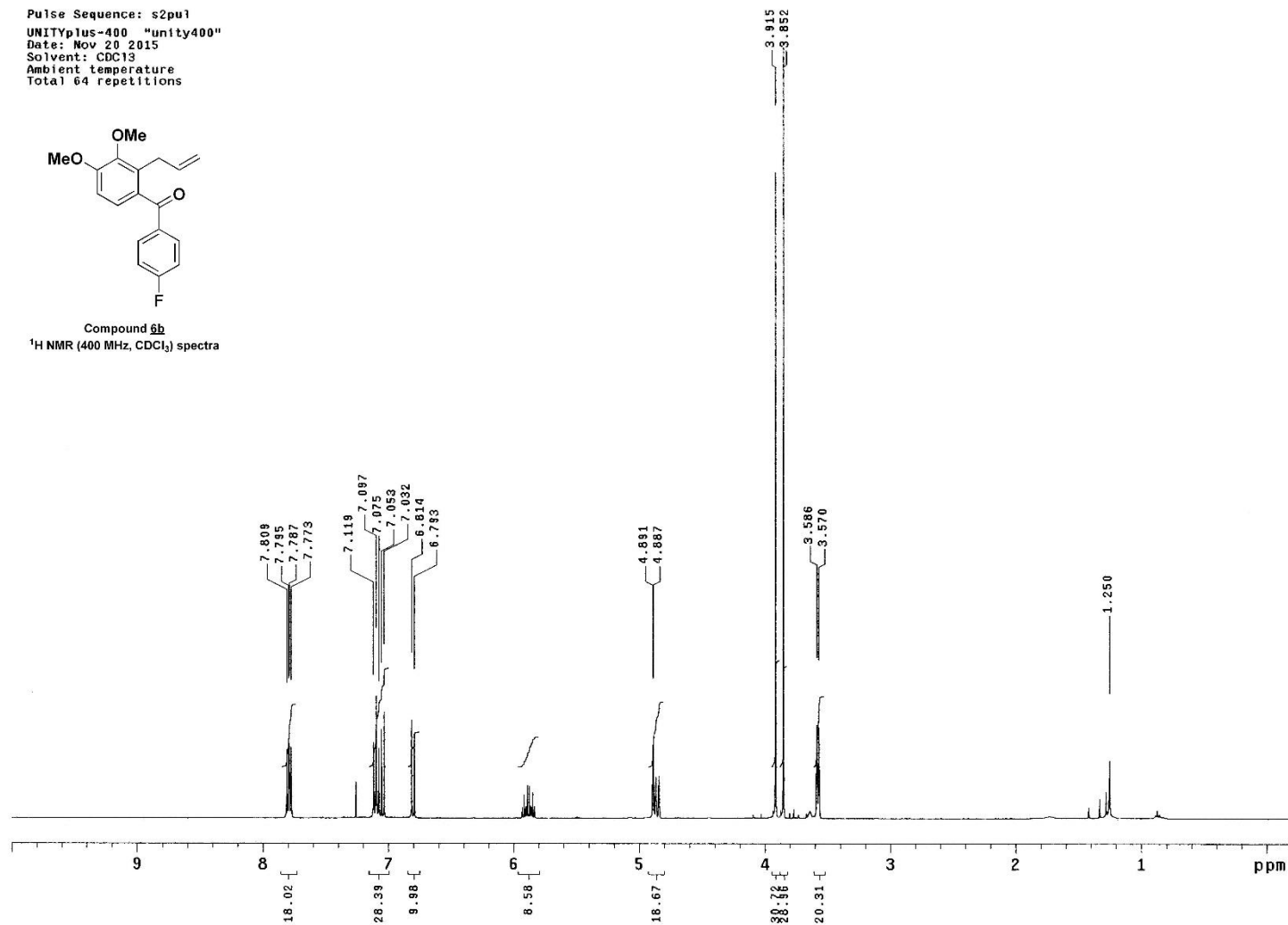
Ambient temperature

Total 64 repetitions



Compound 6b

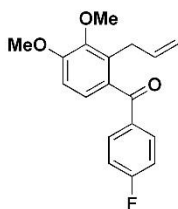
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



# Compound 6b

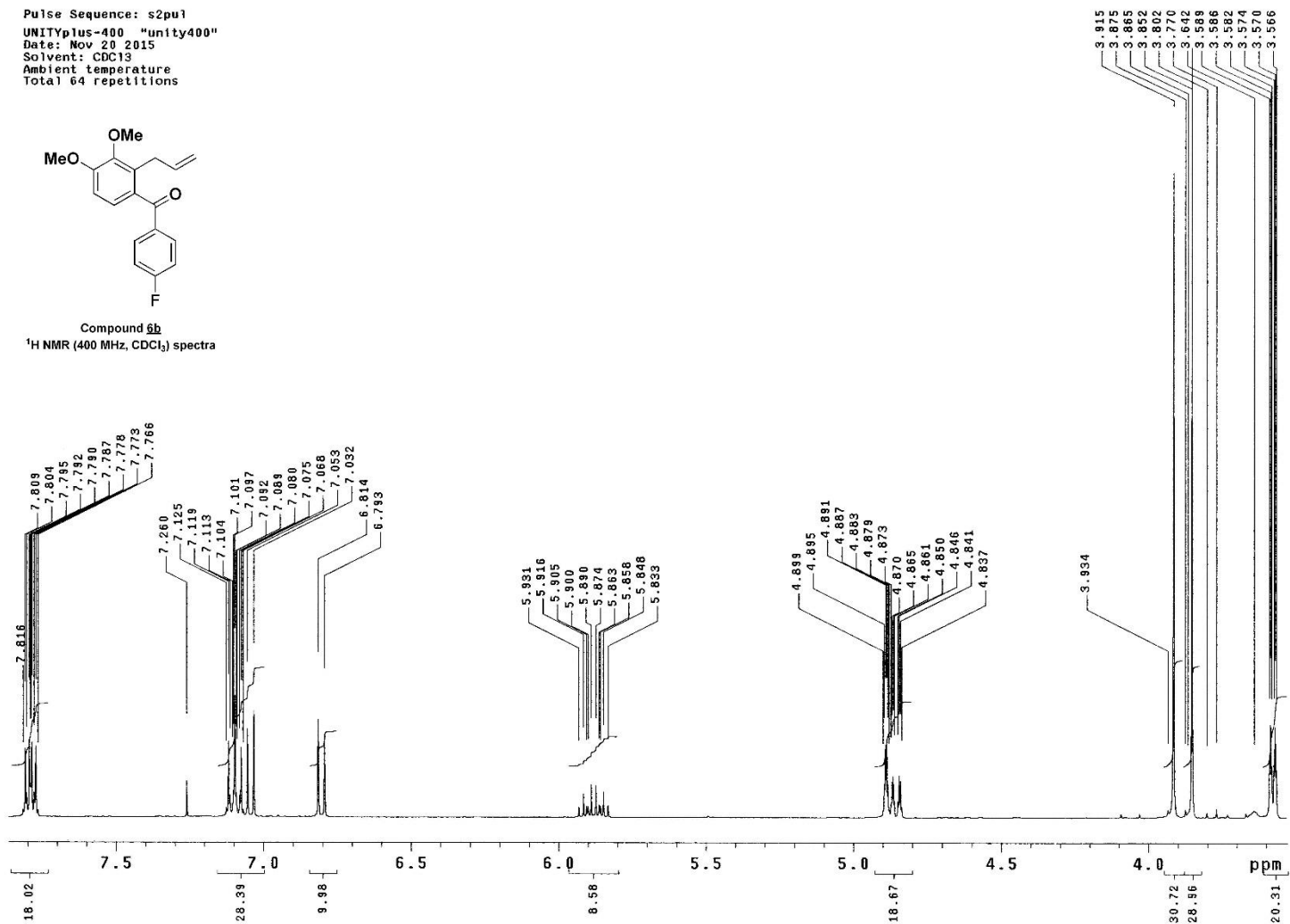
YLenon2b

Pulse Sequence: s2pu1  
 UNITYplus-400 "unity400"  
 Date: Nov 20 2015  
 Solvent: CDCl<sub>3</sub>  
 Ambient temperature  
 Total 64 repetitions



Compound **6b**

<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



## Compound 6b

YLenon2b

Pulse Sequence: s2pu1

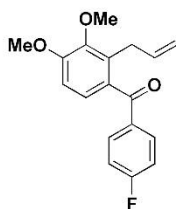
UNITYplus-400 "unity400"

Date: Nov 20 2015

Solvent: CDCl<sub>3</sub>

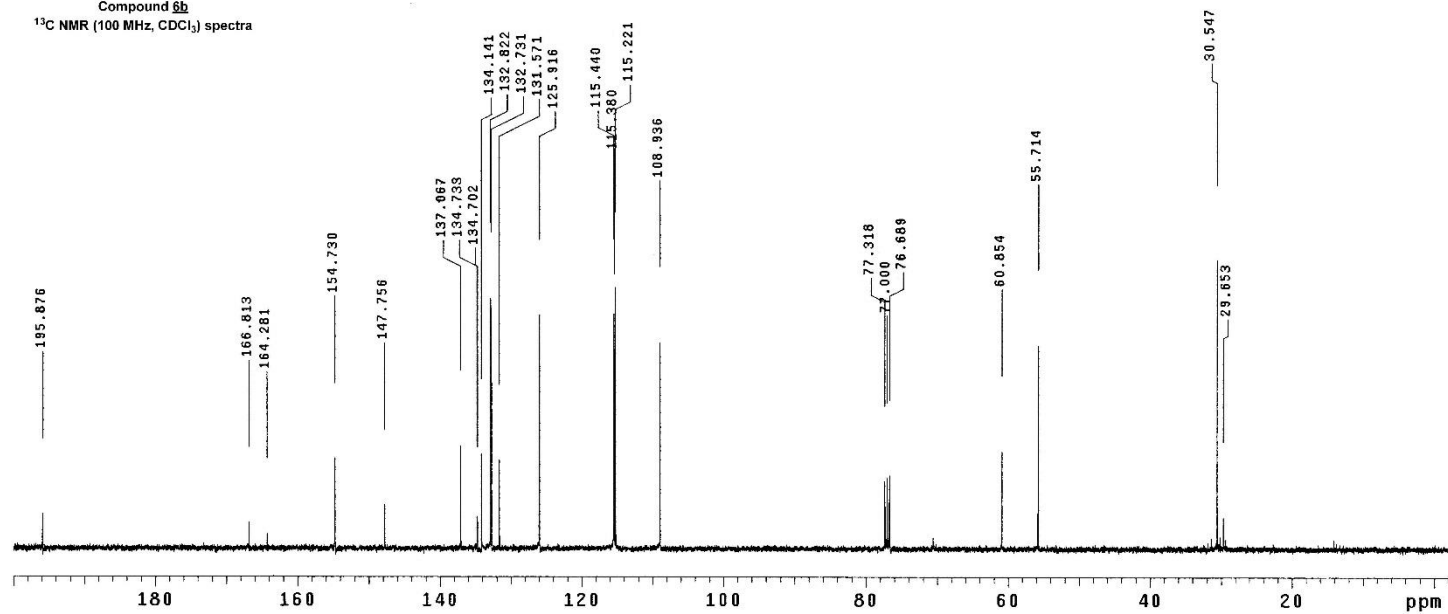
Ambient temperature

Total 1360 repetitions



Compound 6b

<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra





## Compound 6c

YLenon2c

Pulse Sequence: s2pul

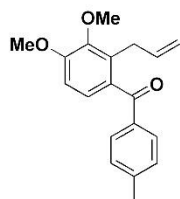
UNITYplus-400 "unity400"

Date: Nov 20 2015

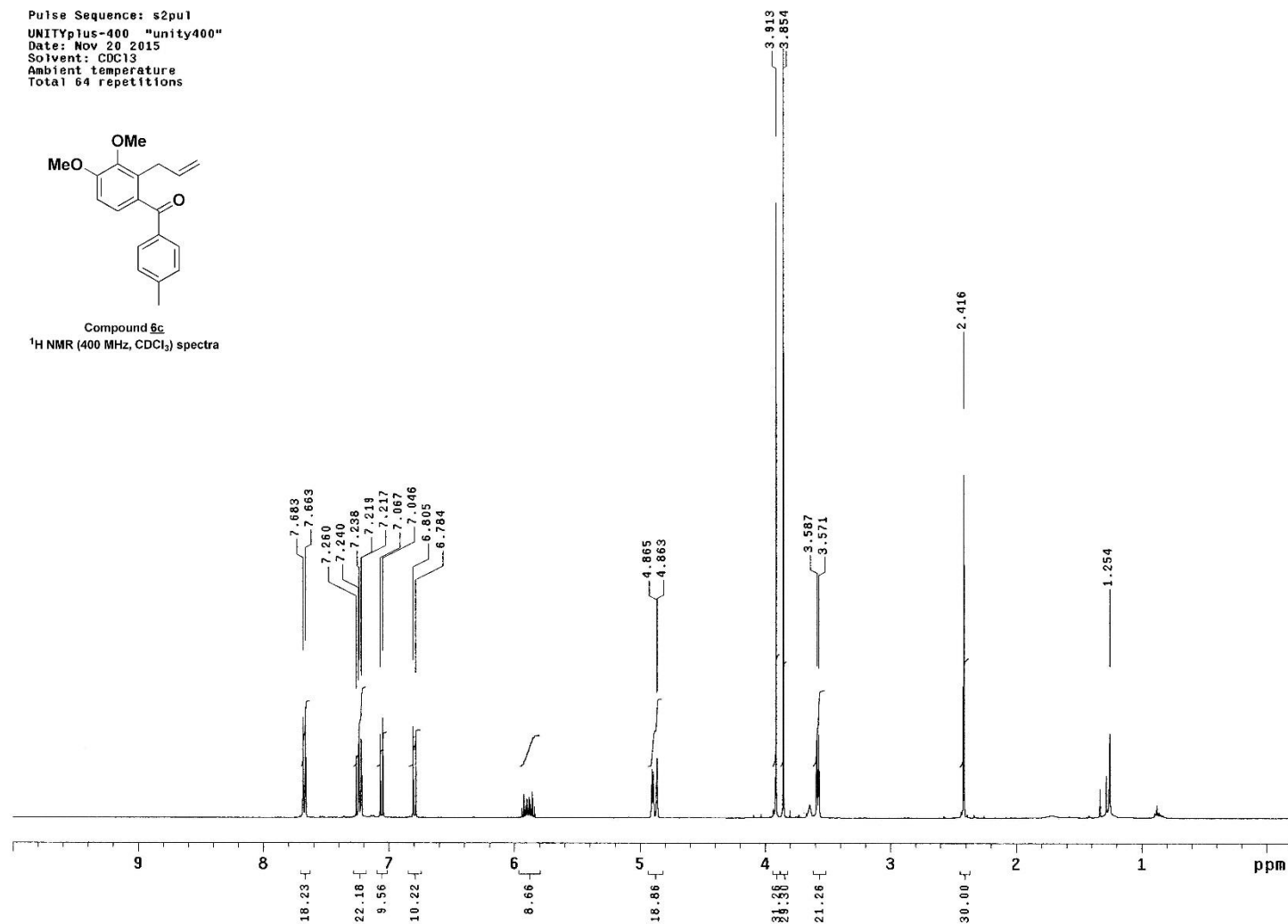
Solvent: CDCl<sub>3</sub>

Ambient temperature

Total 64 repetitions

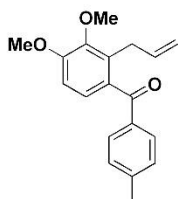


Compound **6c**  
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra

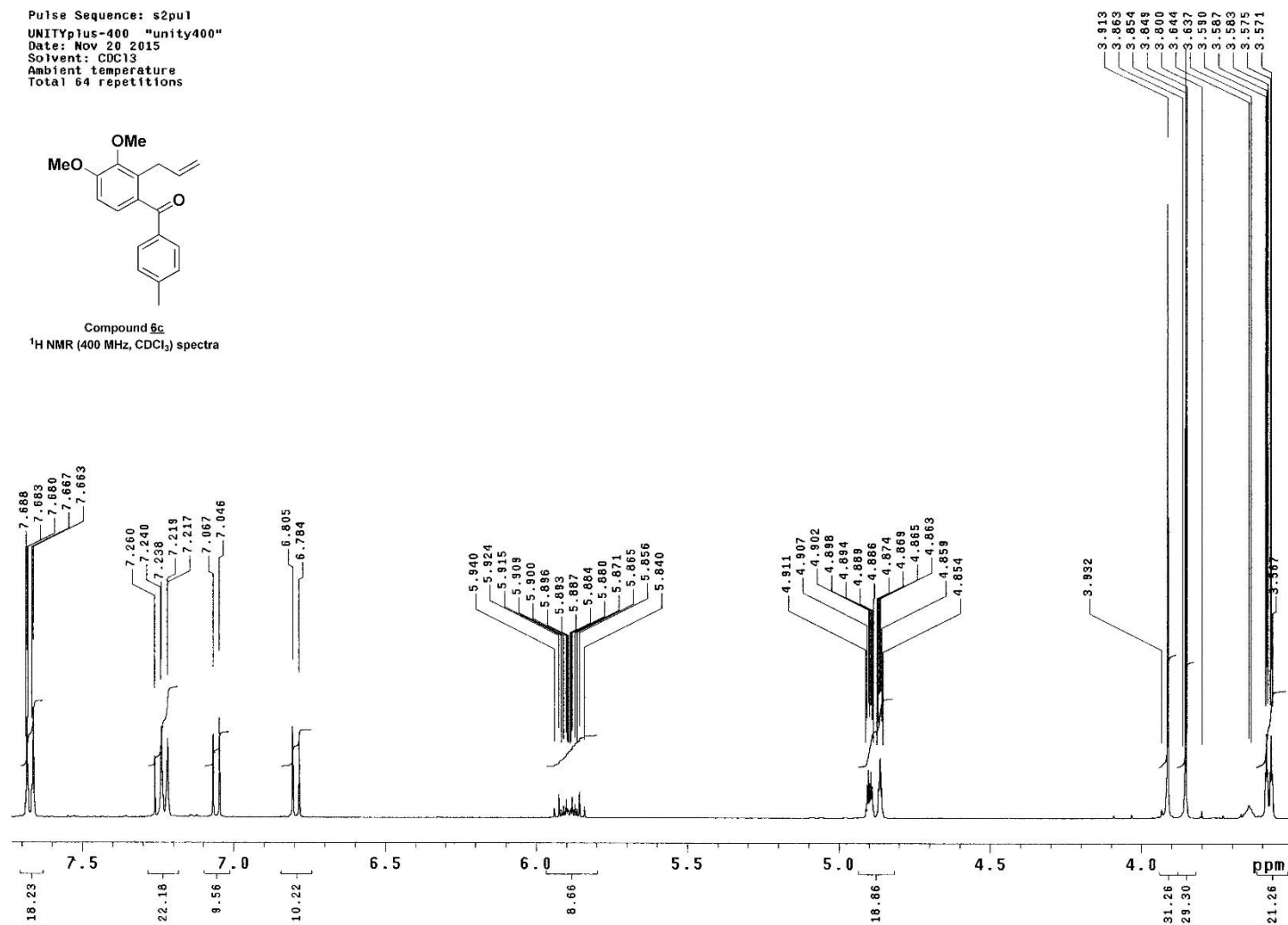


# Compound 6c

YLenon2c  
Pulse Sequence: s2pul  
UNITYplus-400 "unity400"  
Date: Nov 20 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 64 repetitions



Compound 6c  
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



## Compound 6c

YLenon2c

Pulse Sequence: s2pu1

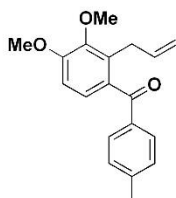
UNITYplus-400 "unity400"

Date: Nov 20 2015

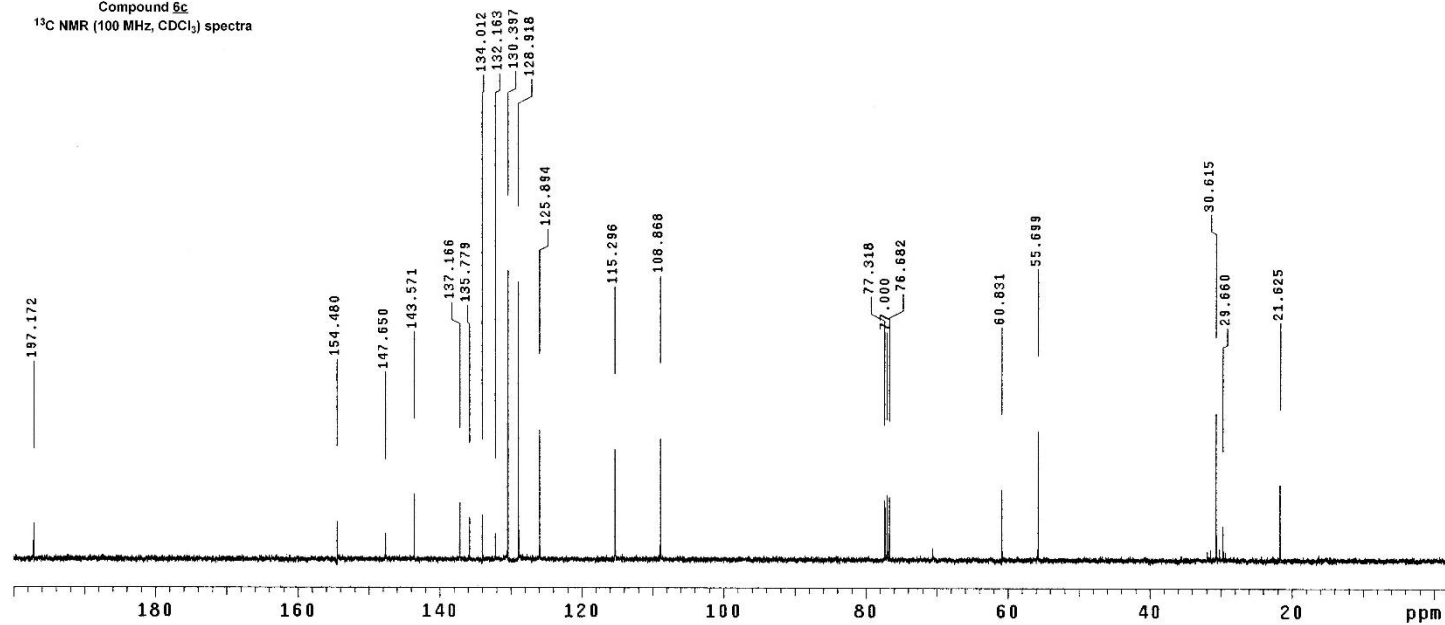
Solvent: CDCl<sub>3</sub>

Ambient temperature

Total 1040 repetitions



Compound 6c  
<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra



## Compound 6d

YLenon2d

Pulse Sequence: s2pu1

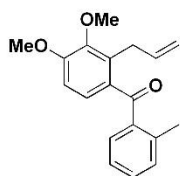
UNITYplus-400 "unity400"

Date: Nov 23 2015

Solvent: CDCl<sub>3</sub>

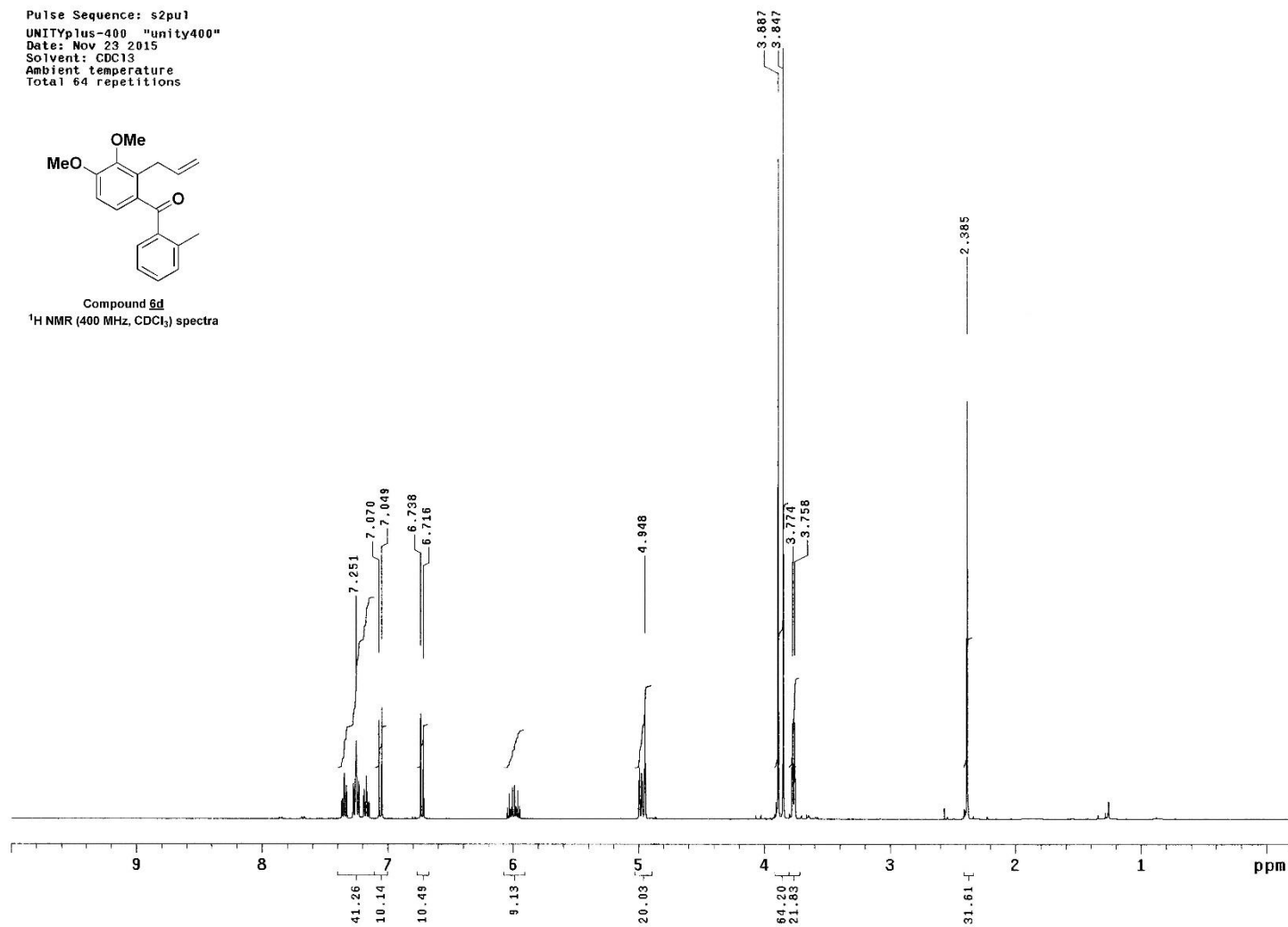
Ambient temperature

Total 64 repetitions



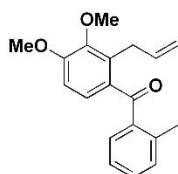
Compound 6d

<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra

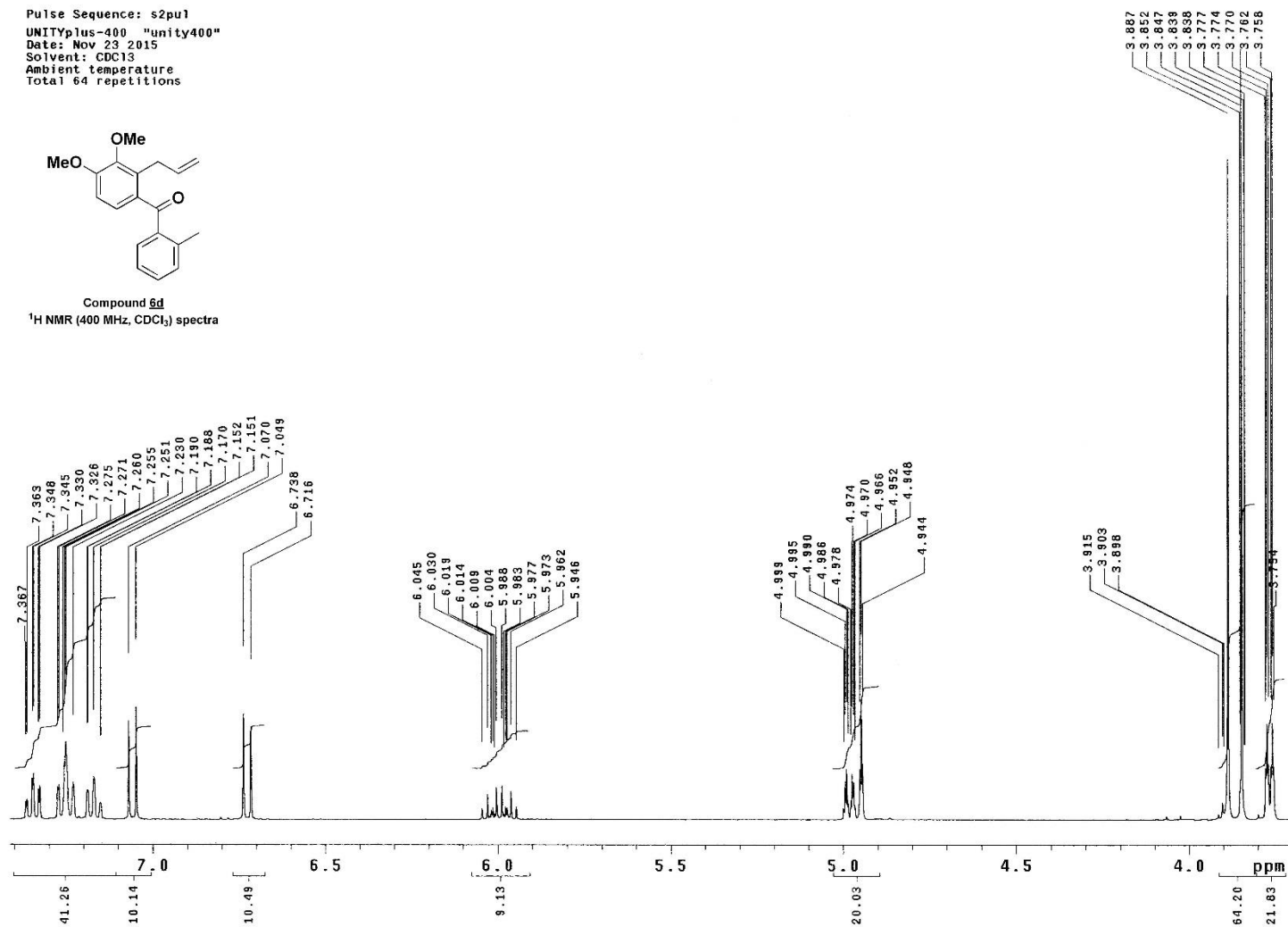


# Compound 6d

YLenon2d  
Pulse Sequence: s2pu1  
UNITYplus-400 "unity400"  
Date: Nov 23 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 64 repetitions



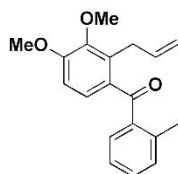
Compound **6d**  
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



## Compound 6d

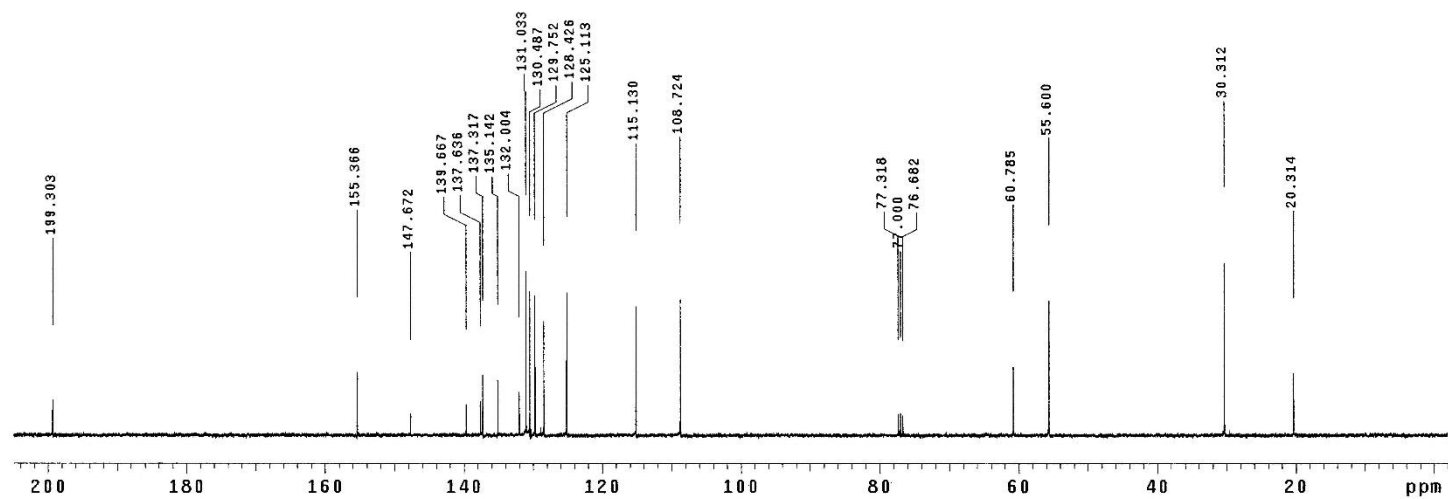
YLenon2d

Pulse Sequence: s2pul  
UNITYplus-400 "unity400"  
Date: Nov 23 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 224 repetitions



Compound 6d

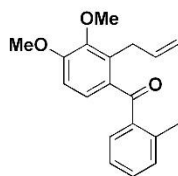
<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra



## Compound 6d

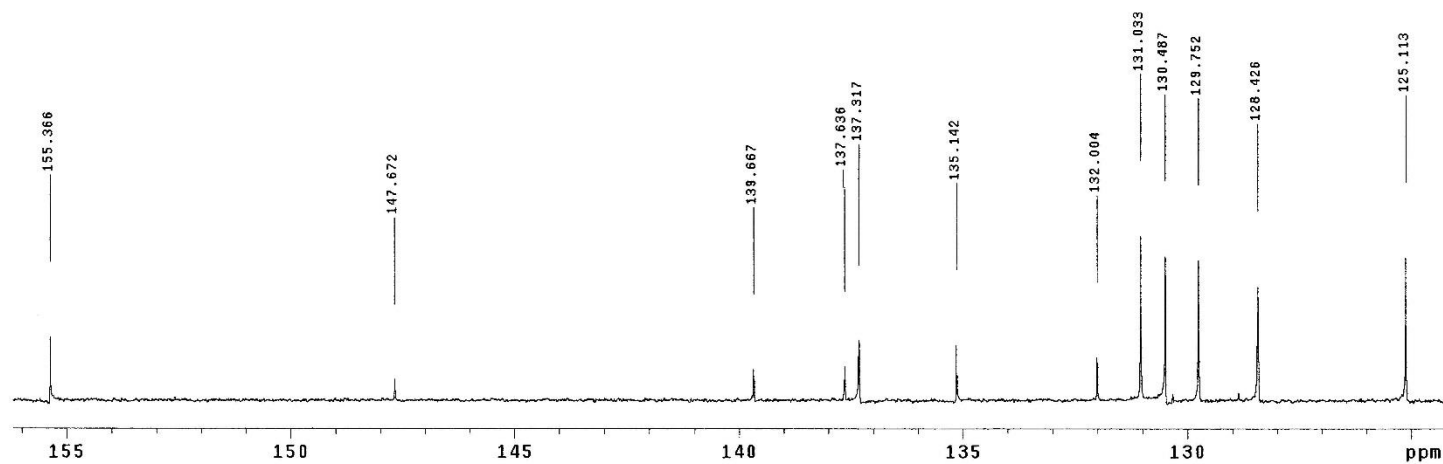
YLenon2d

Pulse Sequence: s2pu1  
UNITYplus-400 "unity400"  
Date: Nov 23 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 224 repetitions



Compound 6d

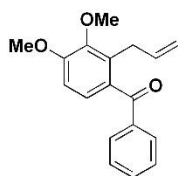
<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra



## Compound 6e

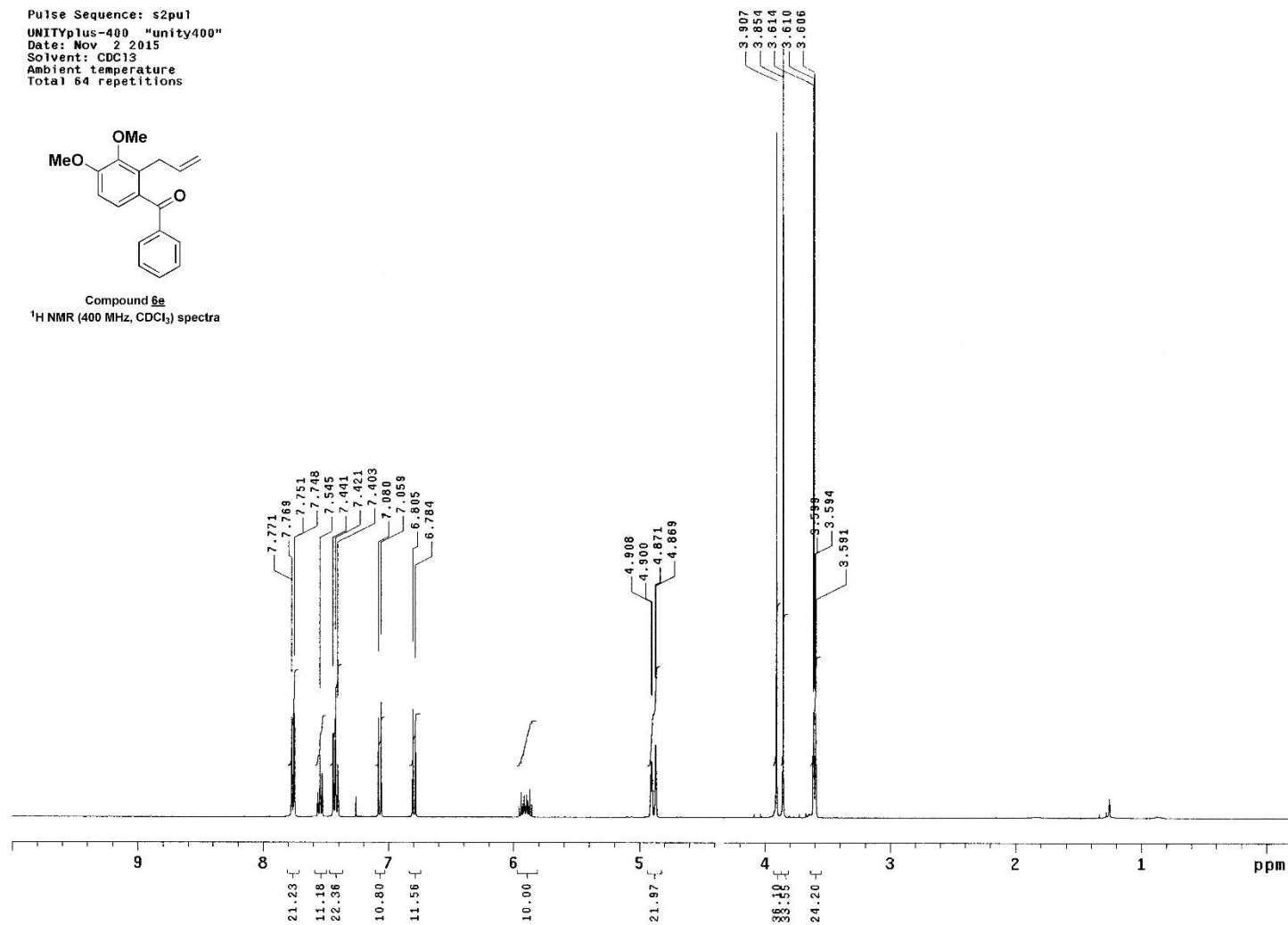
YLenon2e

Pulse Sequence: s2pul  
UNITYplus-400 "unity400"  
Date: Nov 2 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 64 repetitions



Compound 6e

<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra

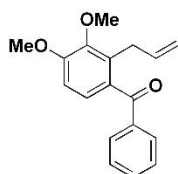




## Compound 6e

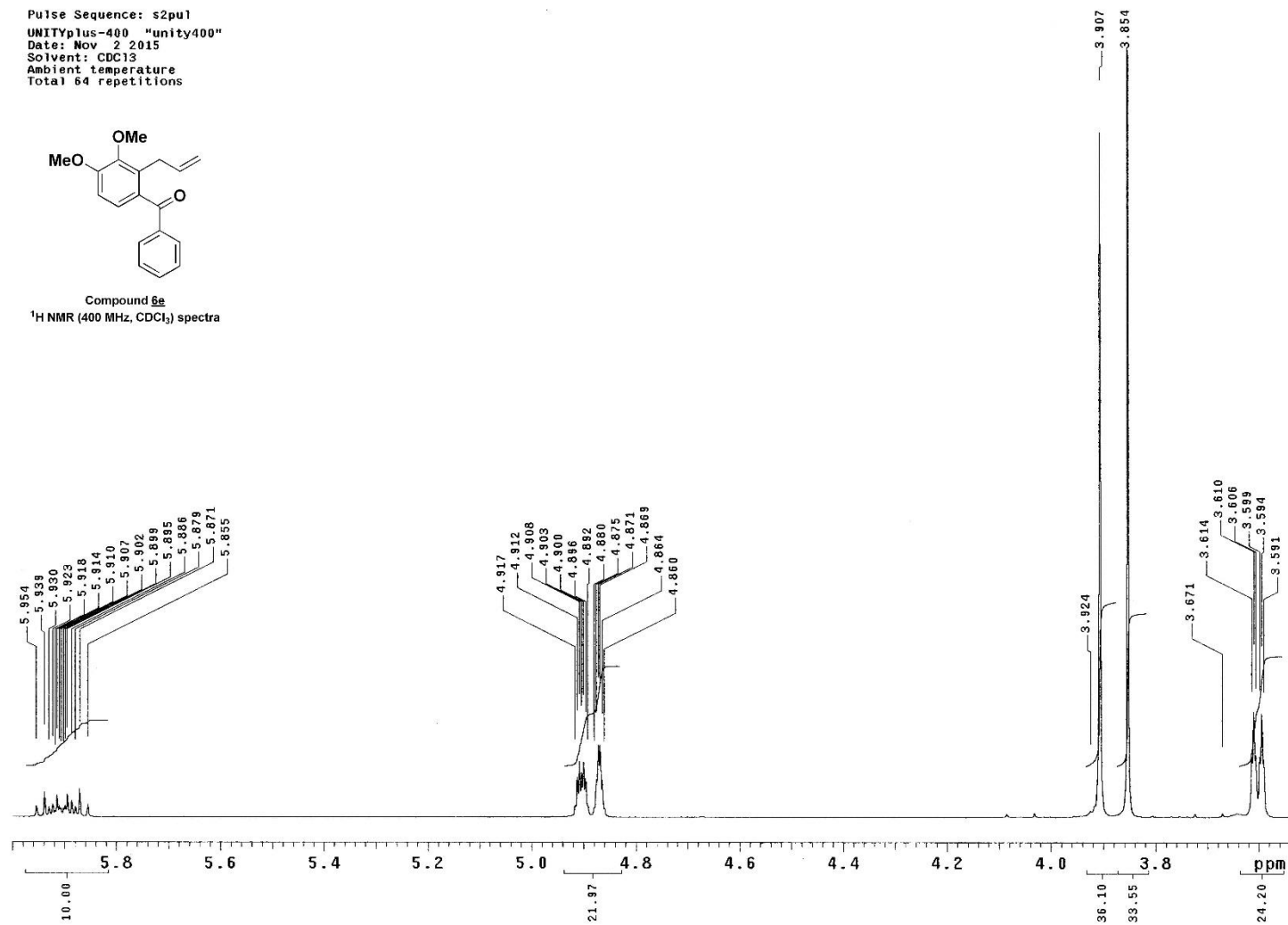
YLenon2e

Pulse Sequence: s2pul  
UNITYplus-400 "unity400"  
Date: Nov 2 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 64 repetitions



Compound 6e

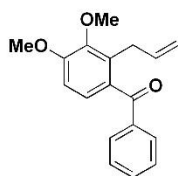
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



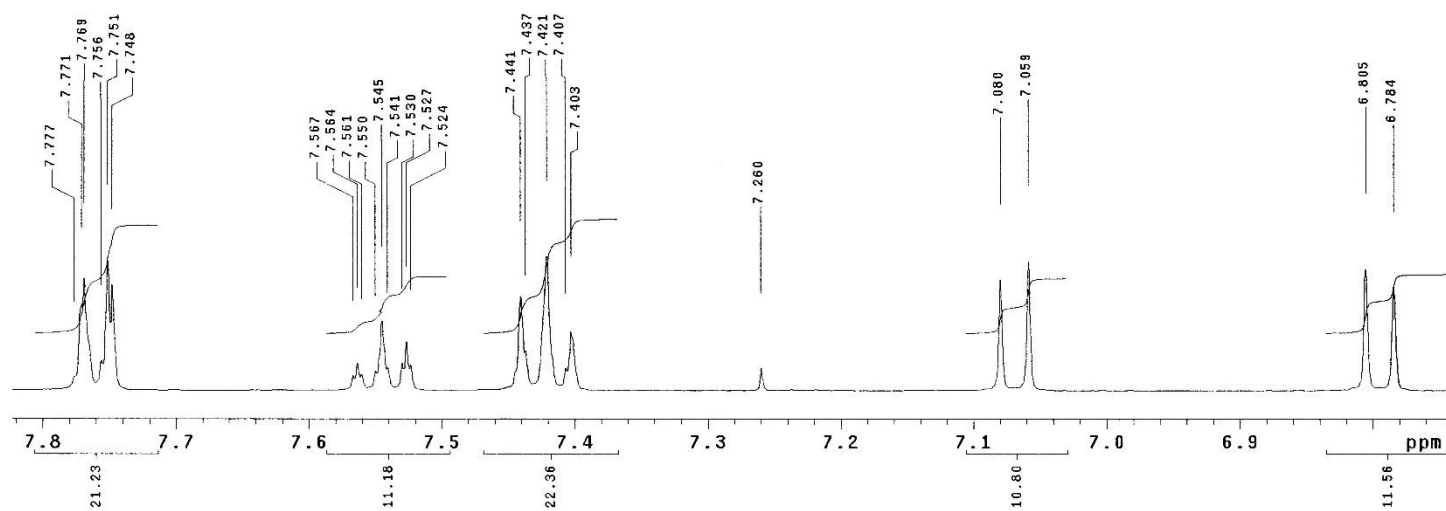
## Compound 6e

YLenon2e

Pulse Sequence: s2pul  
UNITYplus-400 "unity400"  
Date: Nov 2 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 64 repetitions



Compound 6e  
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



## Compound 6e

YLenon2e

Pulse Sequence: s2pu1

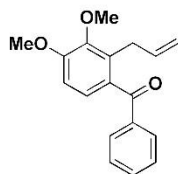
UNITYplus-400 "unity400"

Date: Nov 2 2015

Solvent: CDCl<sub>3</sub>

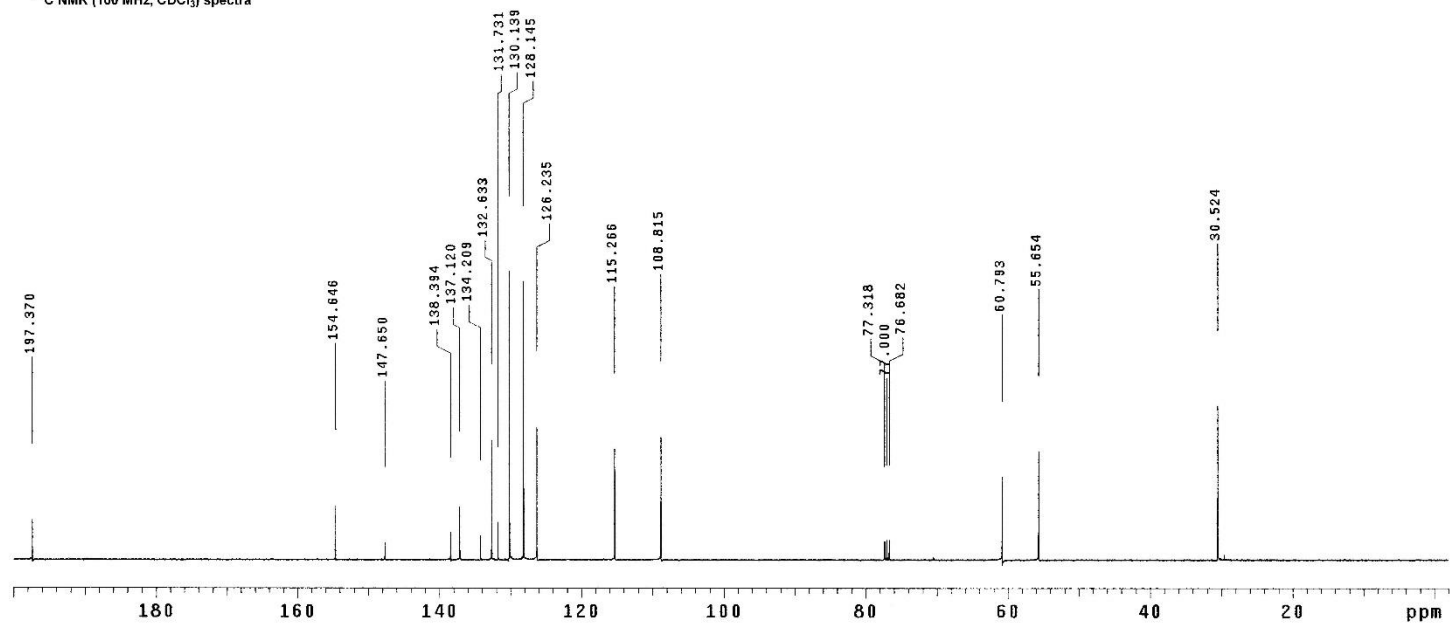
Ambient temperature

Total 2208 repetitions



Compound 6e

<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra



## Compound 6f

YLenon2f

Pulse Sequence: s2pu1

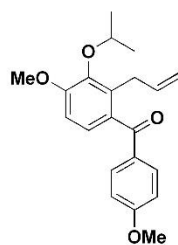
UNITYplus-400 "unity400"

Date: Oct 26 2015

Solvent: CDCl<sub>3</sub>

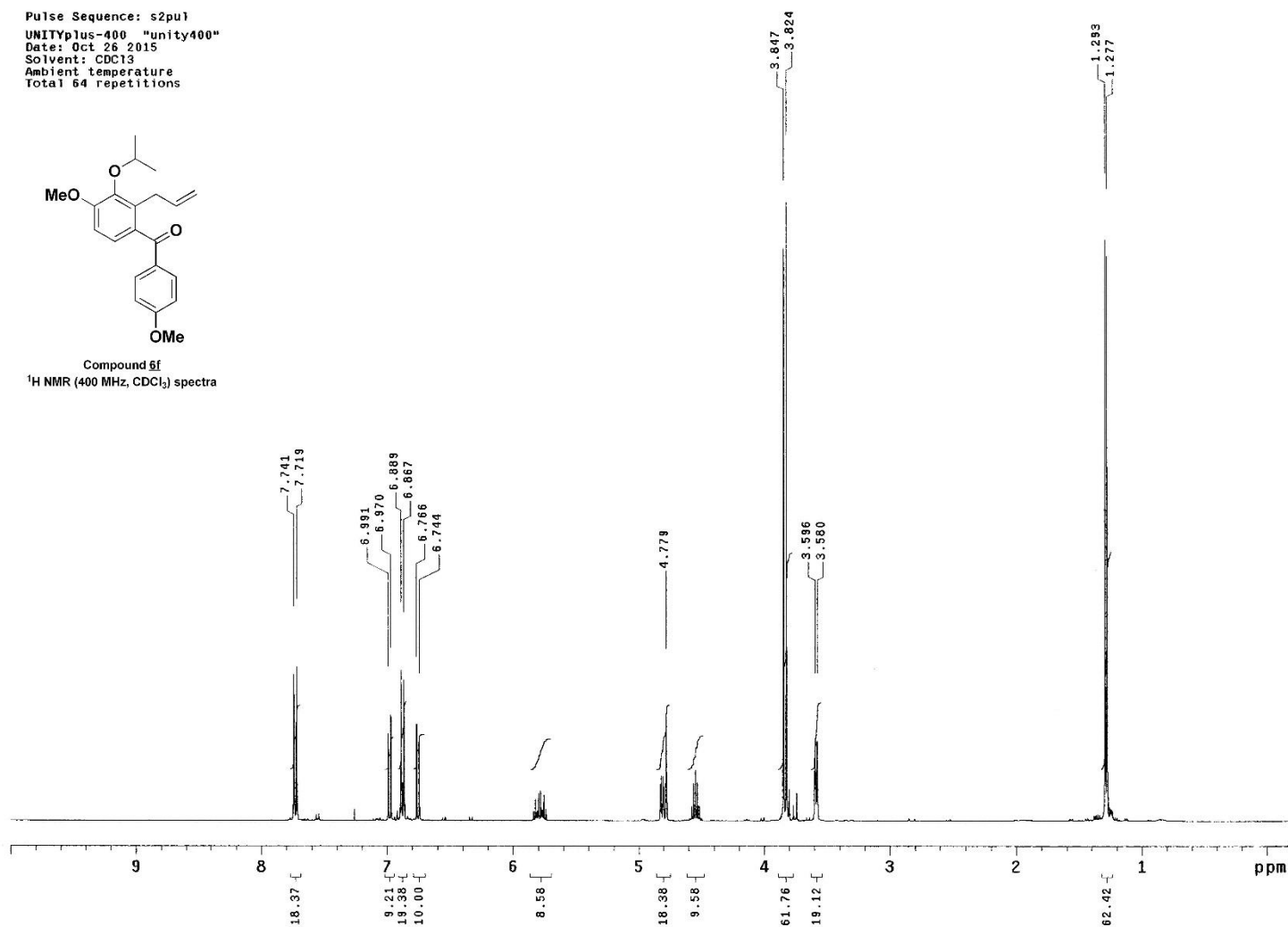
Ambient temperature

Total 64 repetitions



Compound 6f

<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



# Compound 6f

YLenon2f

Pulse Sequence: s2pu1

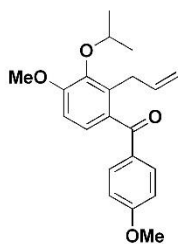
UNITYplus-400 "unity400"

Date: Oct 26 2015

Solvent: CDCl<sub>3</sub>

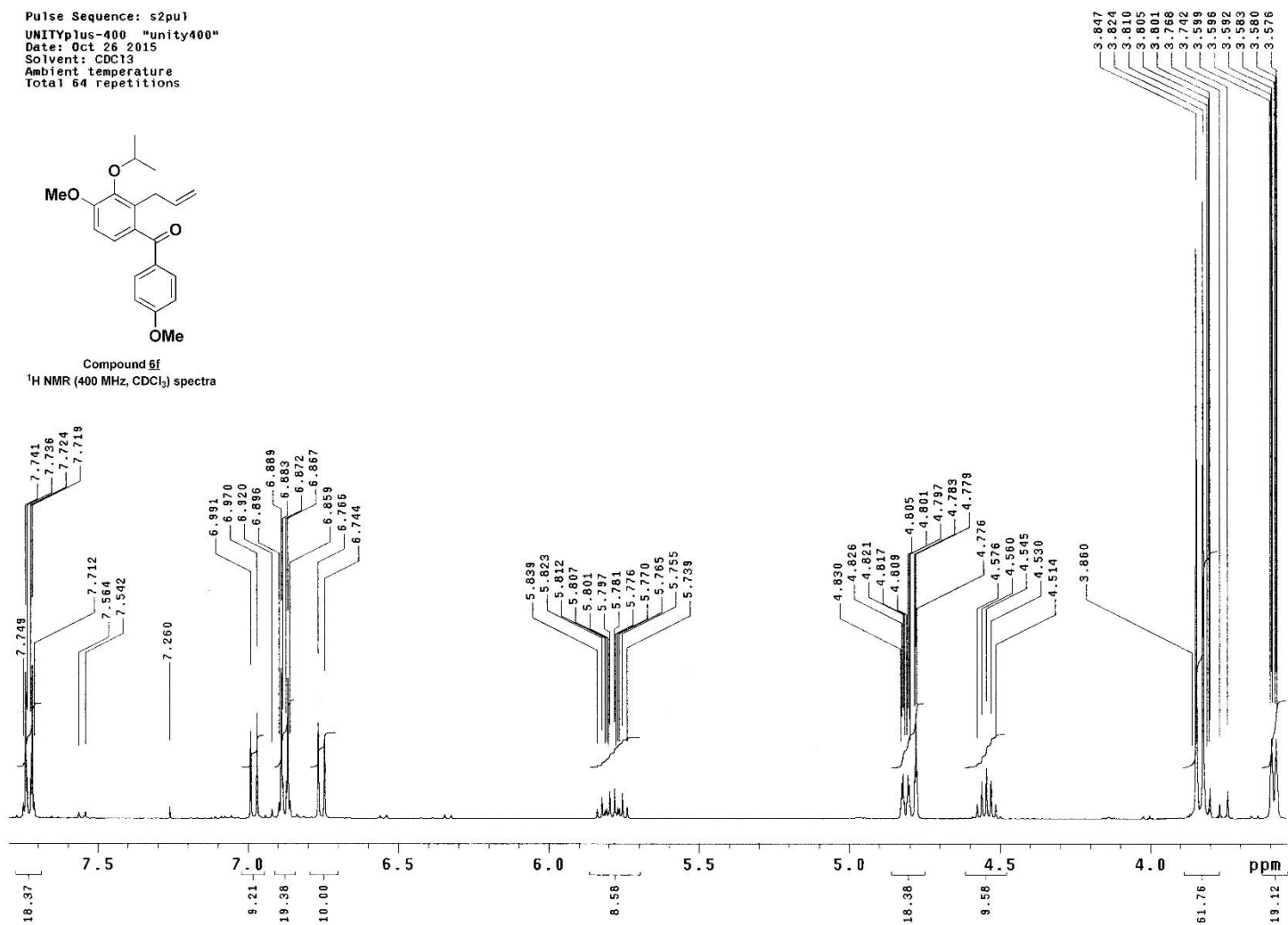
Ambient temperature

Total 64 repetitions



Compound 6f

<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



## Compound 6f

YLenon2f

Pulse Sequence: s2pu1

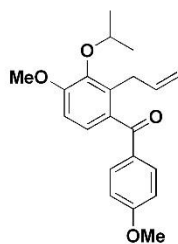
UNITYplus-400 "unity400"

Date: Oct 26 2015

Solvent: CDCl<sub>3</sub>

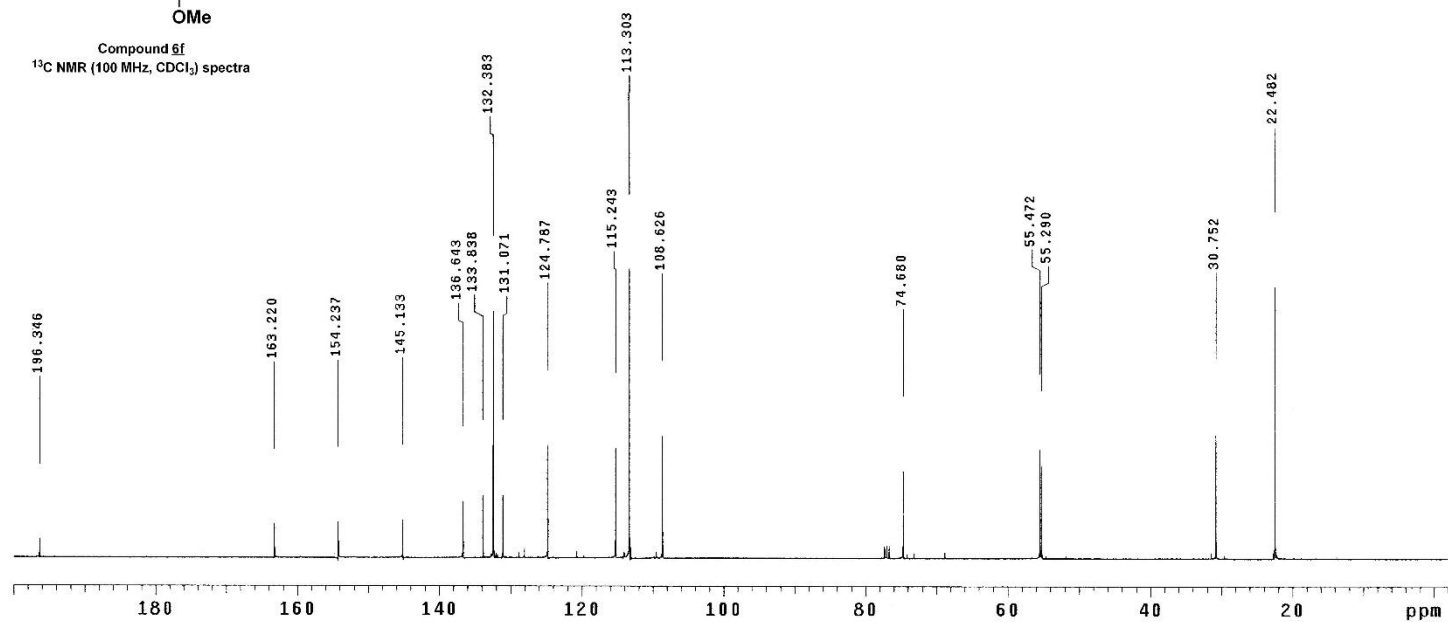
Ambient temperature

Total 3568 repetitions



Compound 6f

<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra



## Compound 6g

YLenon2g

Pulse Sequence: s2pu1

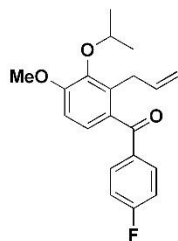
UNITYplus-400 "unity400"

Date: Nov 2 2015

Solvent: CDCl<sub>3</sub>

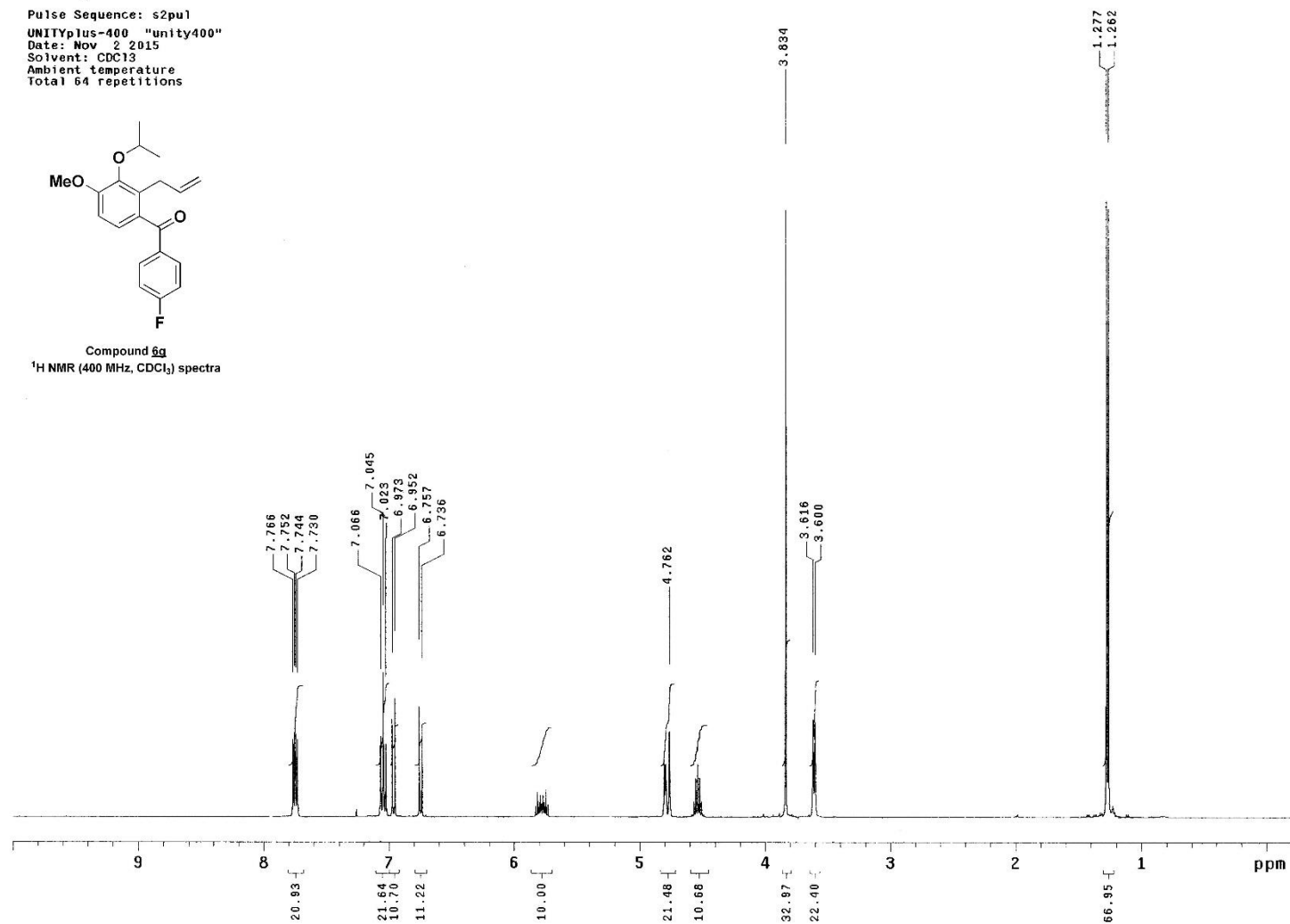
Ambient temperature

Total 64 repetitions



Compound **6g**

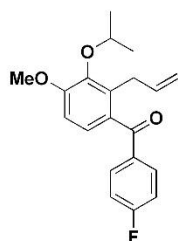
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



# Compound 6g

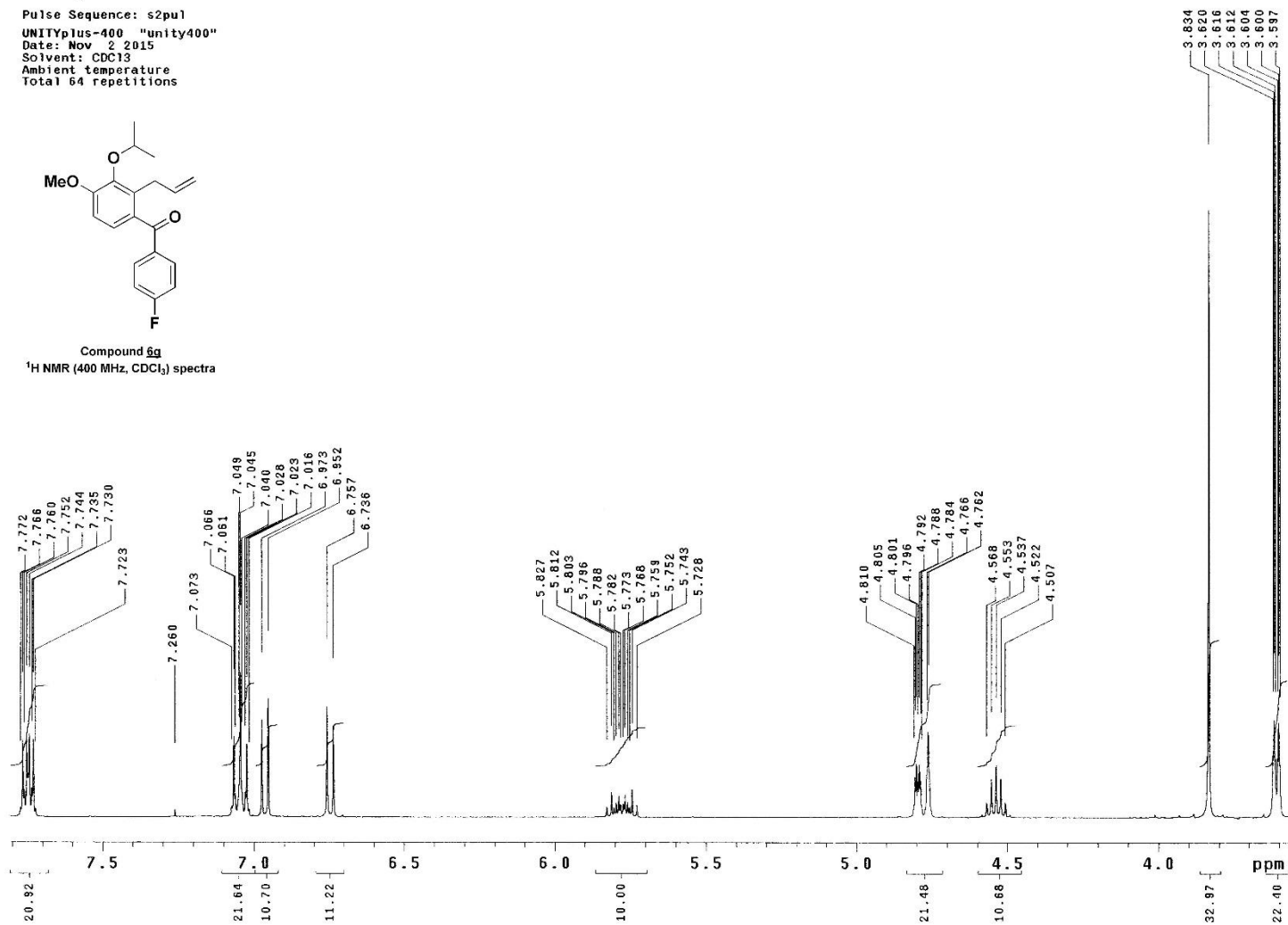
YLenon2g

Pulse Sequence: s2pu1  
 UNITYplus-400 "unity400"  
 Date: Nov 2 2015  
 Solvent: CDCl3  
 Ambient temperature  
 Total 64 repetitions



Compound 6g

<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra





## Compound 6g

YLenon2g

Pulse Sequence: s2pu1

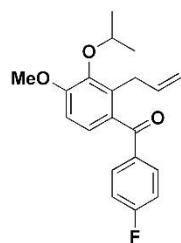
UNITYplus-400 "unity400"

Date: Nov 2 2015

Solvent: CDCl<sub>3</sub>

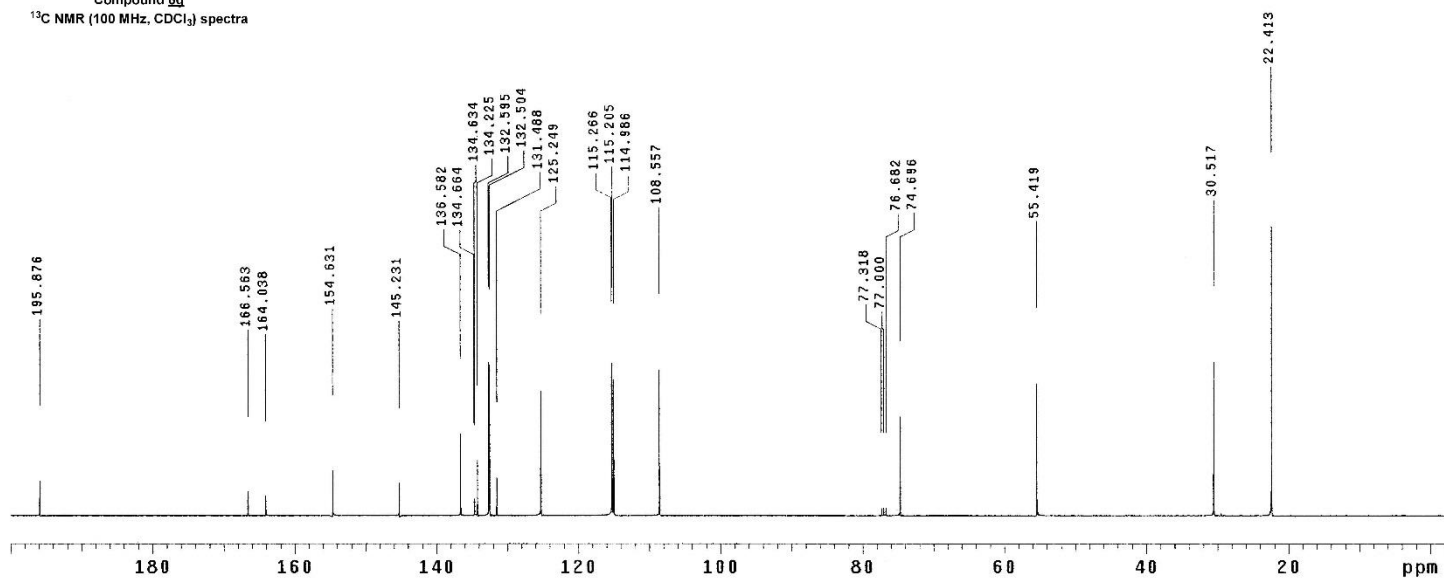
Ambient temperature

Total 1008 repetitions



Compound 6g

<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra



## Compound 6g

YLenon2g

Pulse Sequence: s2pu1

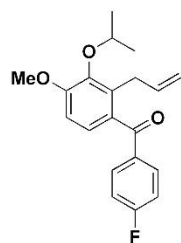
UNITYplus-400 "unity400"

Date: Nov 2 2015

Solvent: CDCl<sub>3</sub>

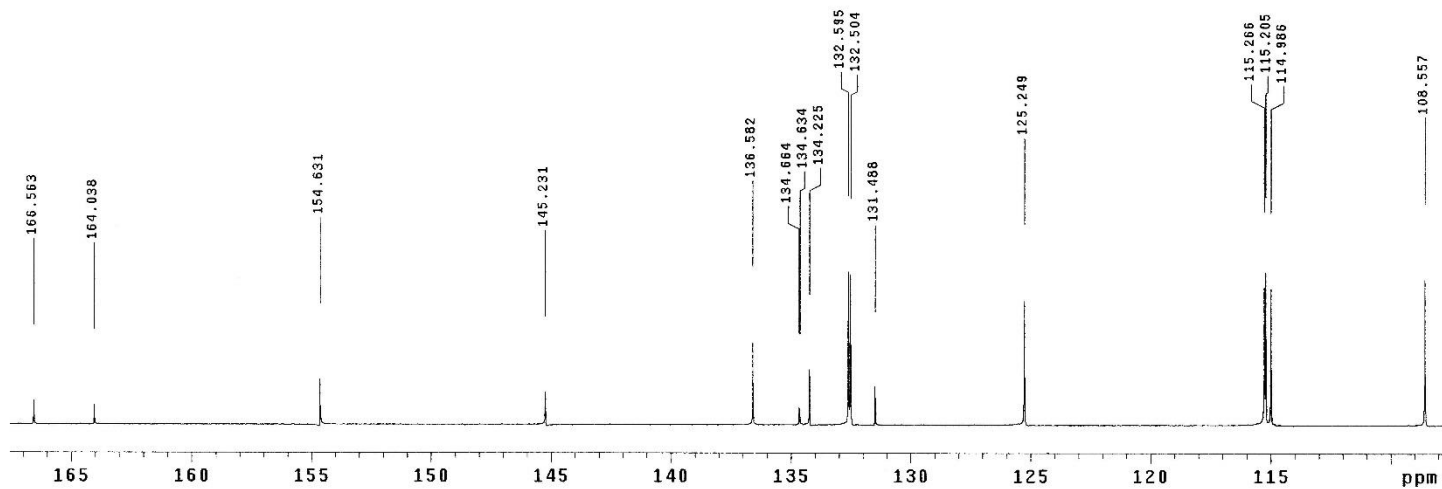
Ambient temperature

Total 1008 repetitions



Compound 6g

<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra



## Compound 6h

YL1041223

Pulse Sequence: s2pu1

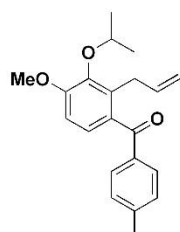
UNITYplus-400 "unity400"

Date: Dec 25 2015

Solvent: CDCl<sub>3</sub>

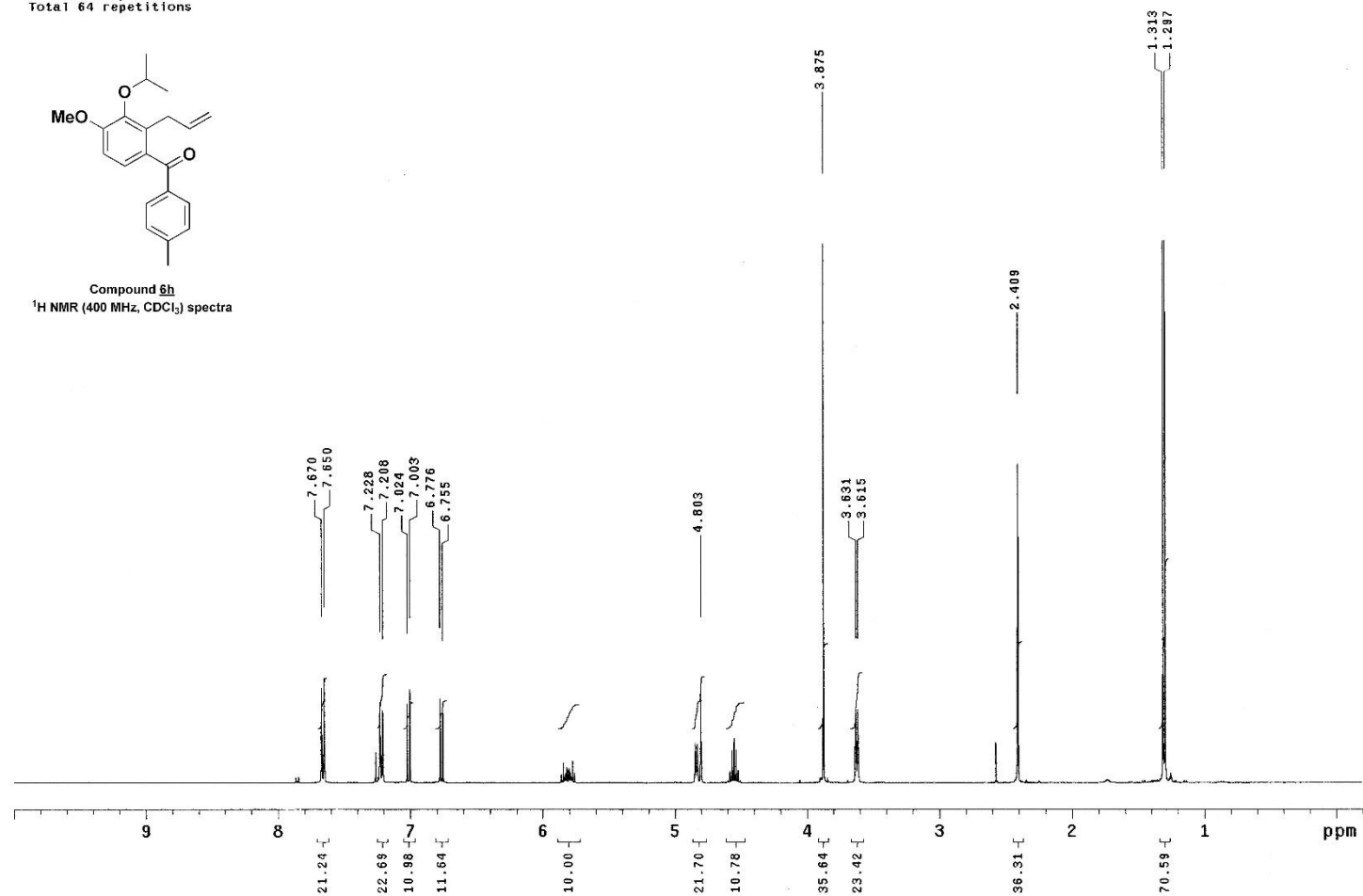
Ambient temperature

Total 64 repetitions



Compound 6h

<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



# Compound 6h

YL1041223

Pulse Sequence: s2pu1

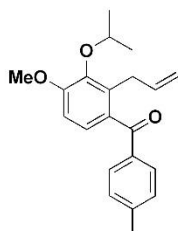
UNITYplus-400 "unity400"

Date: Dec 25 2015

Solvent: CDCl<sub>3</sub>

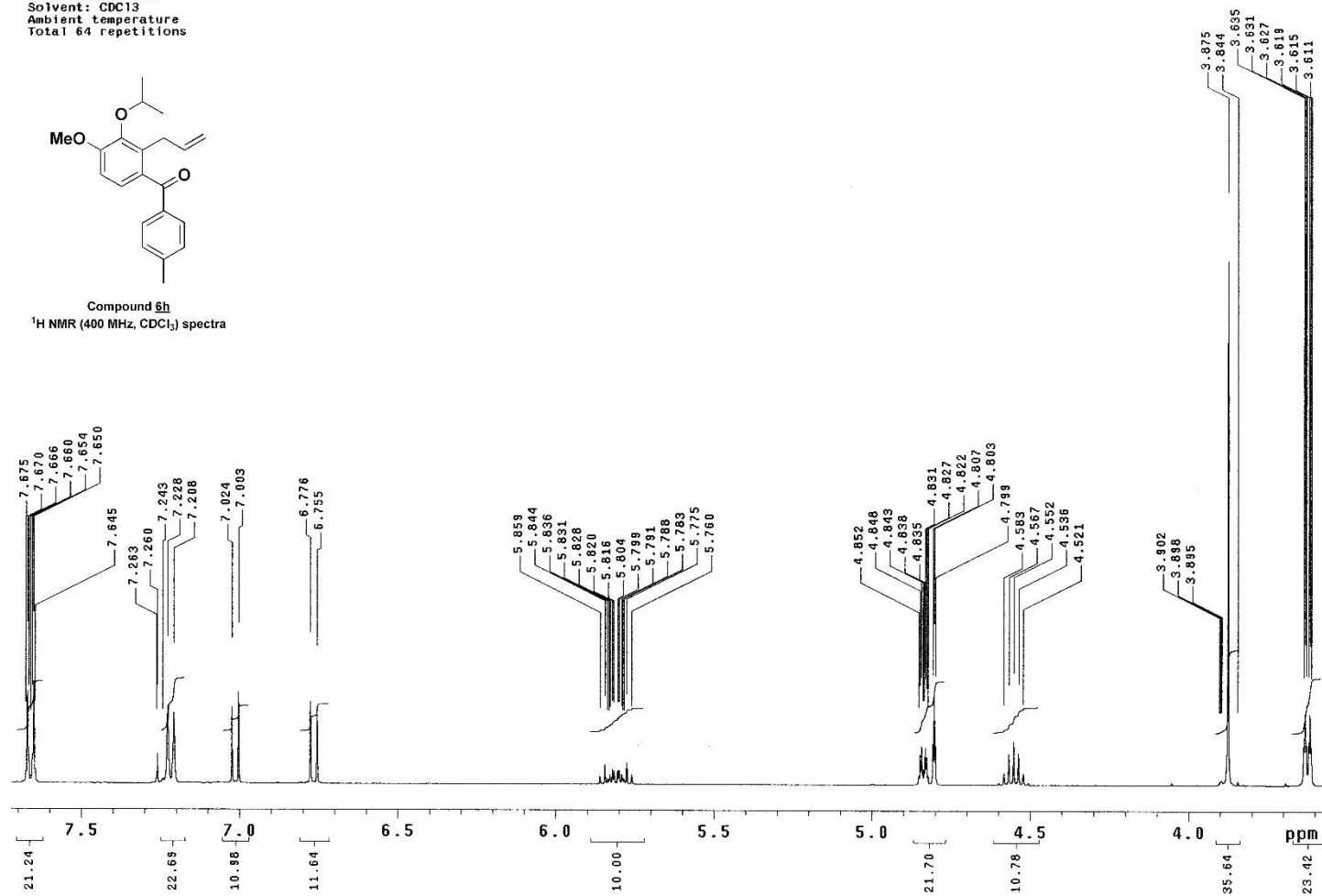
Ambient temperature

Total 64 repetitions



Compound 6h

<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



## Compound 6h

YL1041223

Pulse Sequence: s2pu1

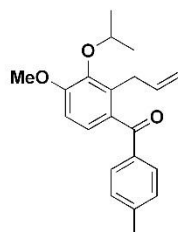
UNITYplus-400 "unity400"

Date: Dec 25 2015

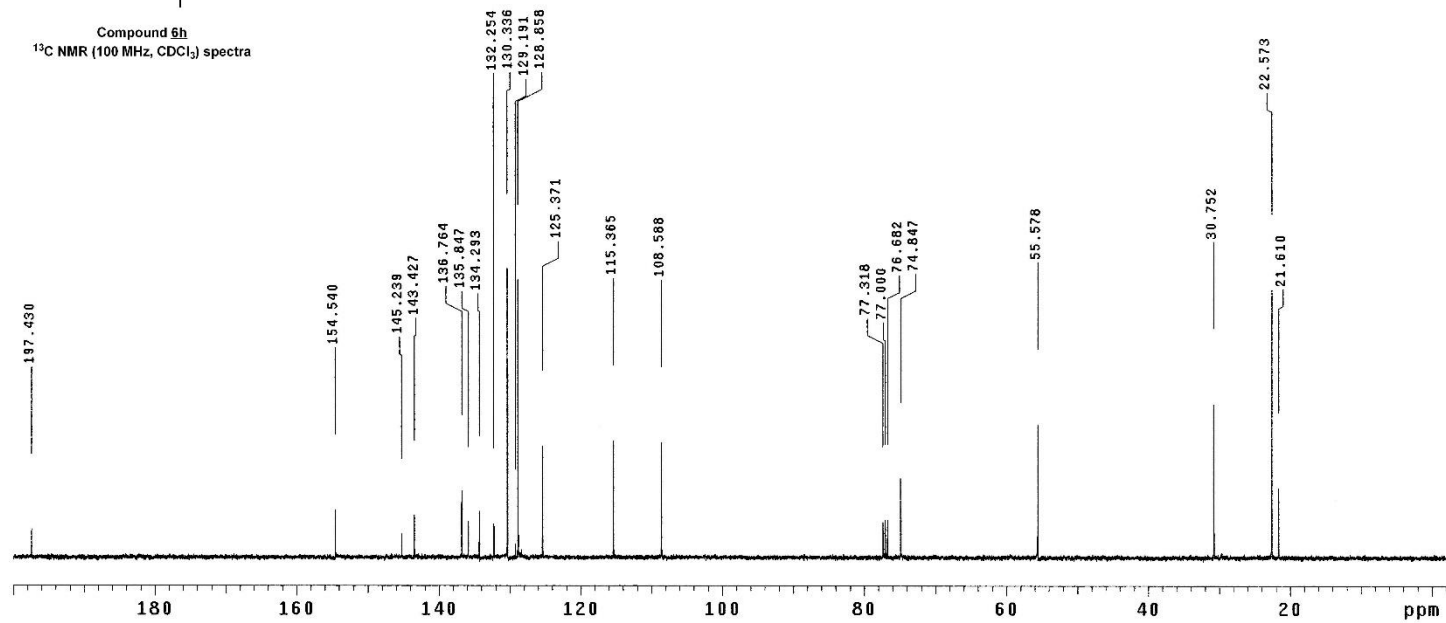
Solvent: CDCl<sub>3</sub>

Ambient Temperature

Total 448 repetitions



Compound 6h  
<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra



## Compound 6h

YL1041223

Pulse Sequence: s2pu1

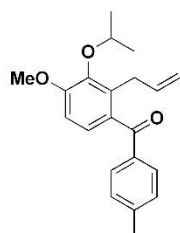
UNITYplus-400 "unity400"

Date: Dec 25 2015

Solvent: CDCl<sub>3</sub>

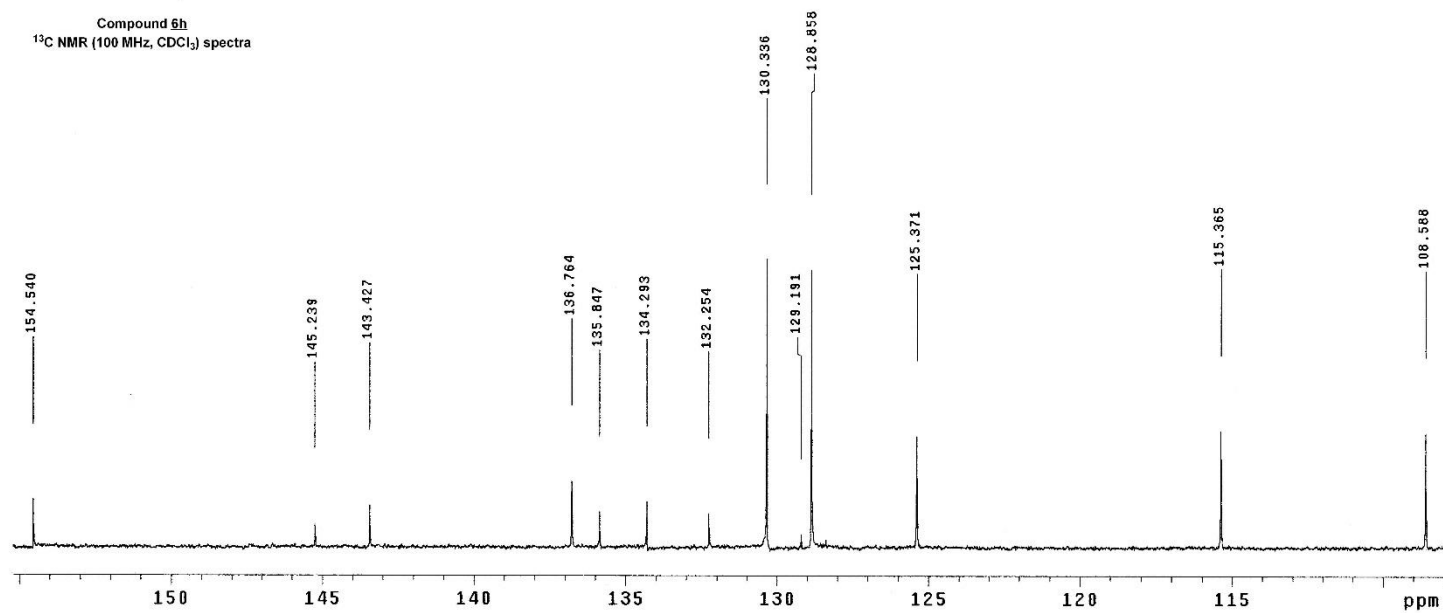
Ambient Temperature

Total 448 repetitions



Compound 6h

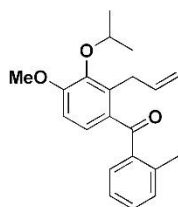
<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra



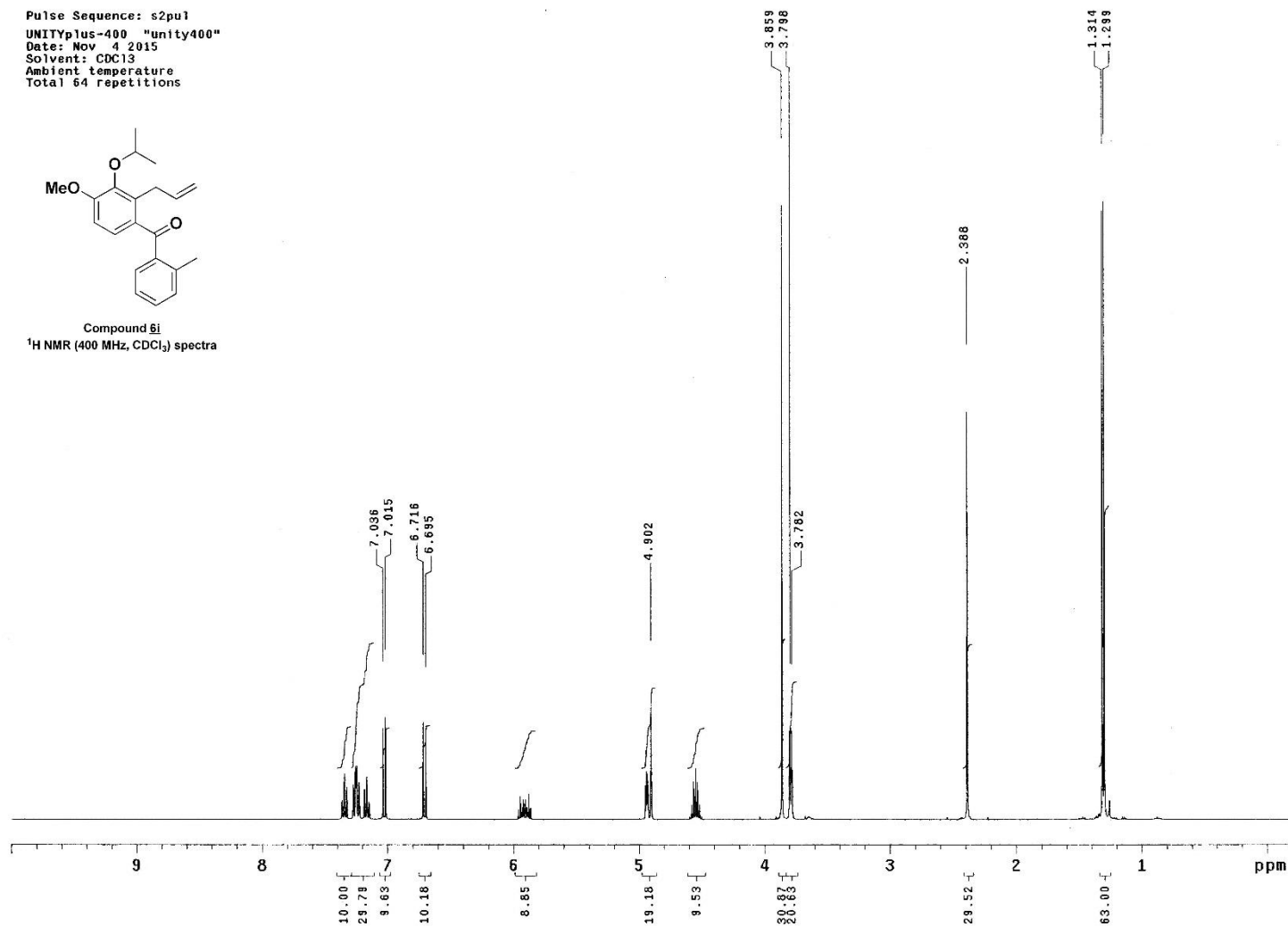
## Compound 6i

YLenon21

Pulse Sequence: s2pu1  
UNITYplus-400 "unity400"  
Date: Nov 4 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 64 repetitions



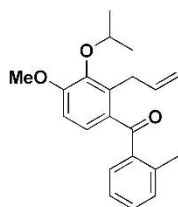
Compound 6i  
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



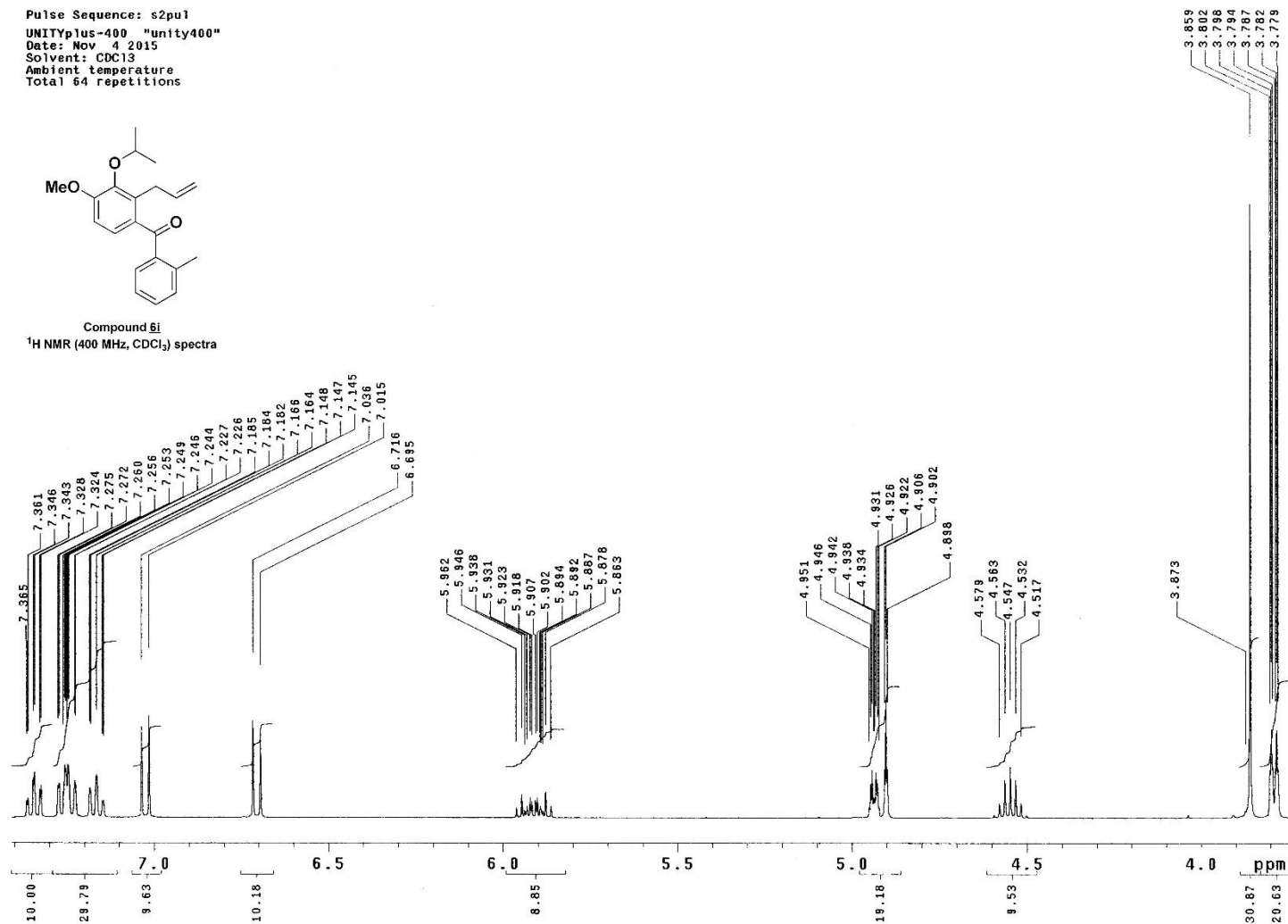
# Compound 6i

YLenon21

Pulse Sequence: s2pu1  
 UNITYplus-400 "unity400"  
 Date: Nov 4 2015  
 Solvent: CDCl3  
 Ambient temperature  
 Total 64 repetitions



Compound 6i  
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra

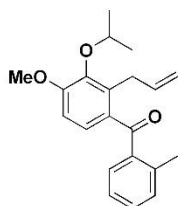




## Compound 6i

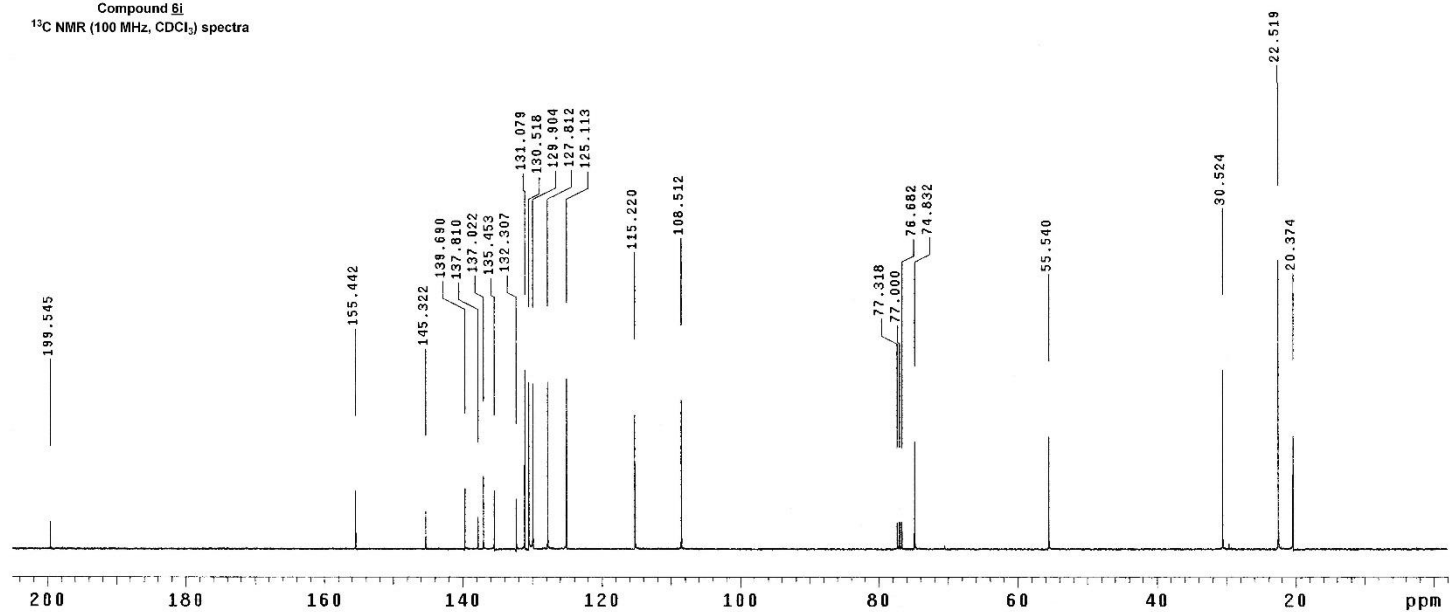
YLenon21

Pulse Sequence: s2pul  
UNITYplus-400 "unity400"  
Date: Nov 4 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 1696 repetitions



Compound 6i

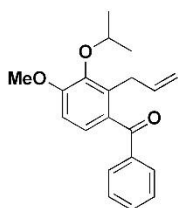
<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra



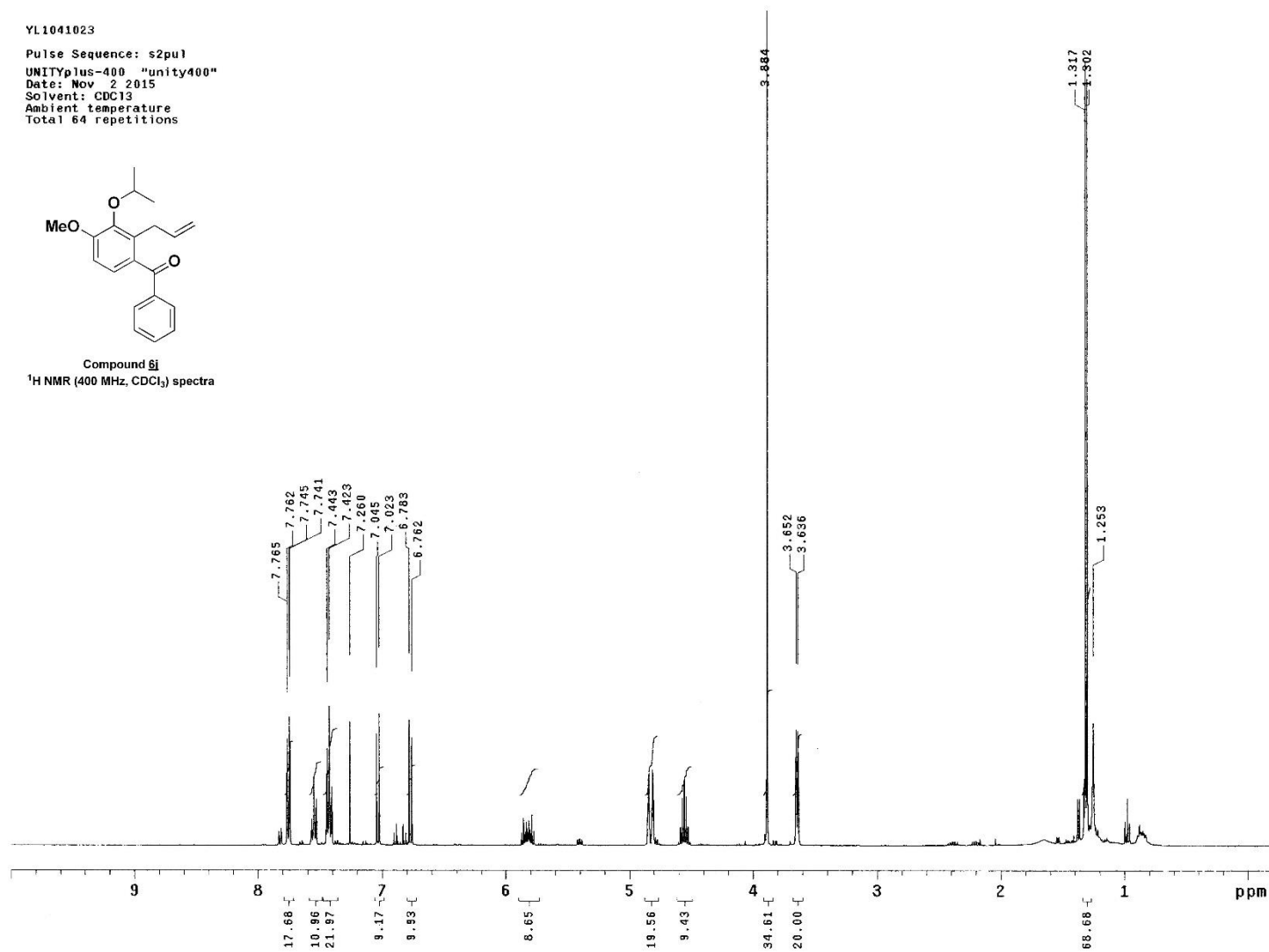
## Compound 6j

YL1041023

Pulse Sequence: s2pul  
UNITYplus-400 "unity400"  
Date: Nov 2 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 64 repetitions



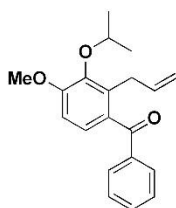
Compound 6j  
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



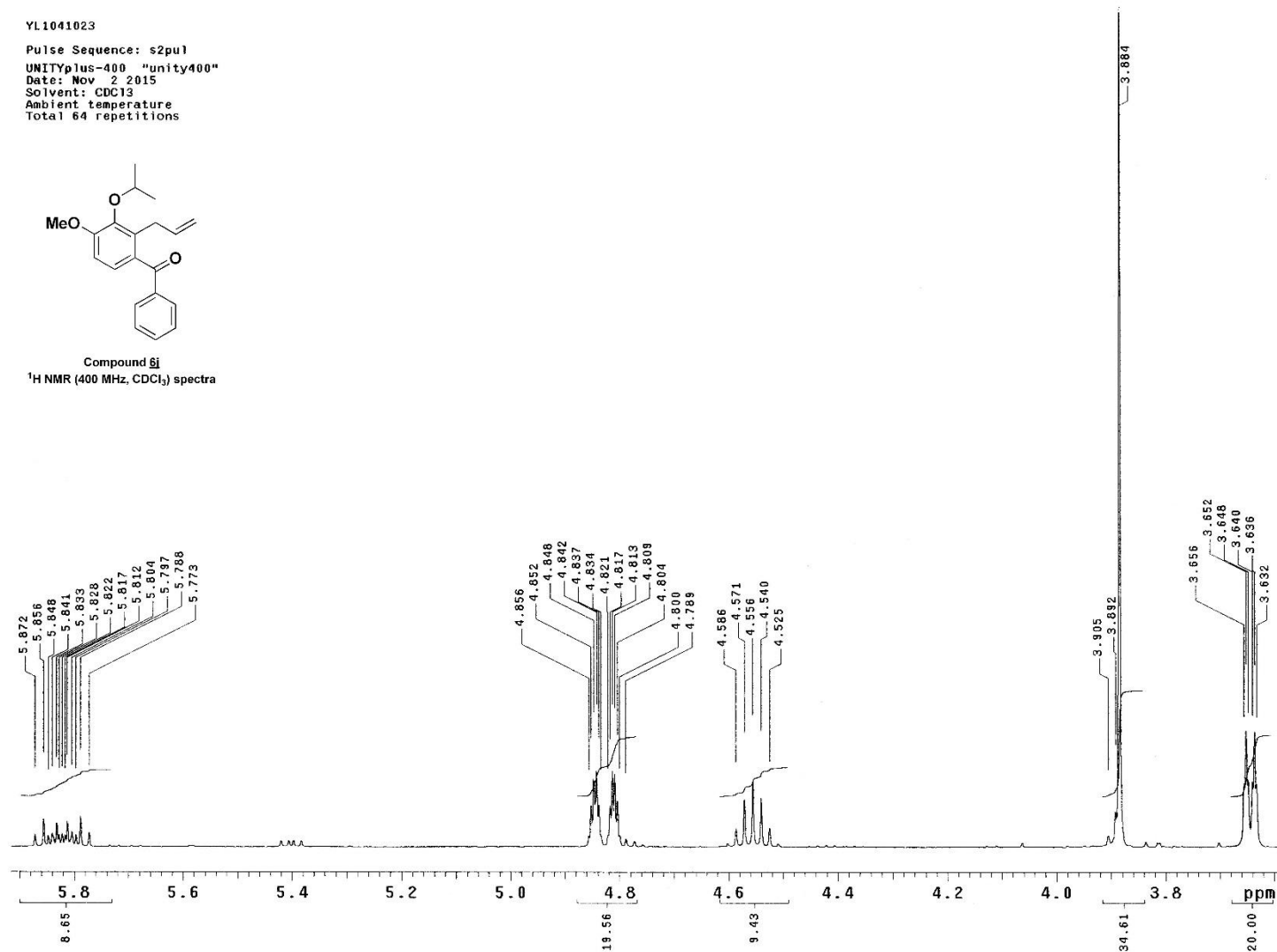
## Compound 6j

YL1041023

Pulse Sequence: s2pul  
UNITYplus-400 "unity400"  
Date: Nov 2 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 64 repetitions



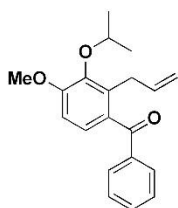
Compound **6j**  
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



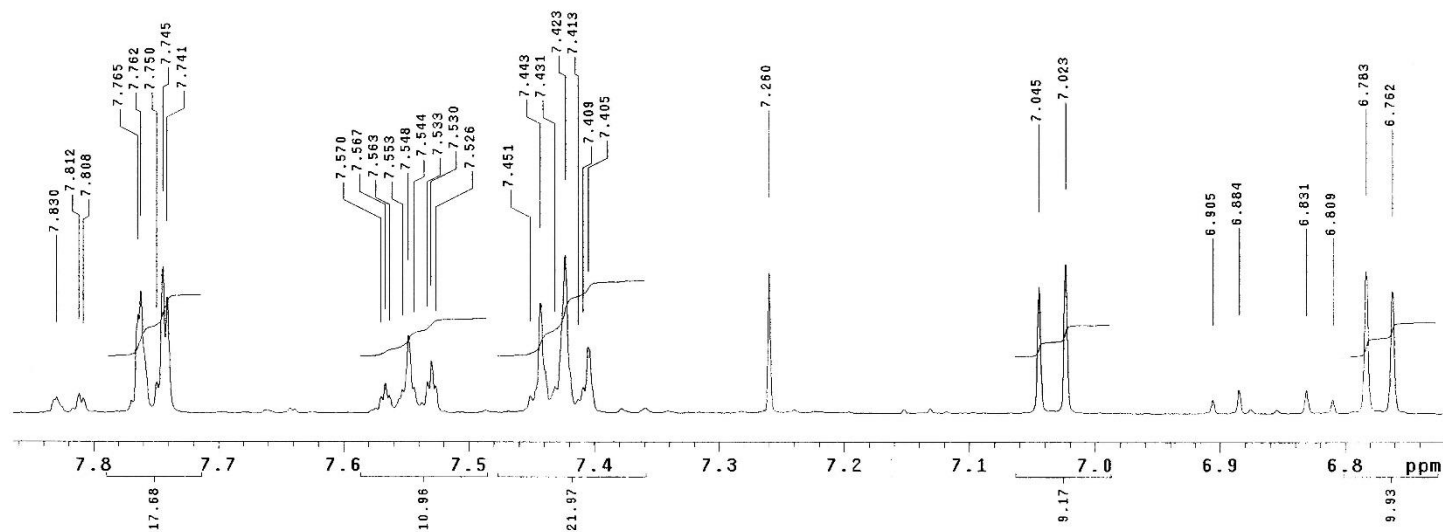
## Compound 6j

YL1041023

Pulse Sequence: s2pul  
UNITYplus-400 "unity400"  
Date: Nov 2 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 64 repetitions



Compound 6j  
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



## Compound 6j

YL1041023

Pulse Sequence: s2pu1

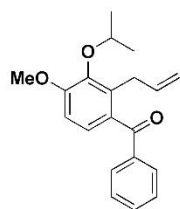
UNITYplus-400 "unity400"

Date: Nov 2 2015

Solvent: CDCl<sub>3</sub>

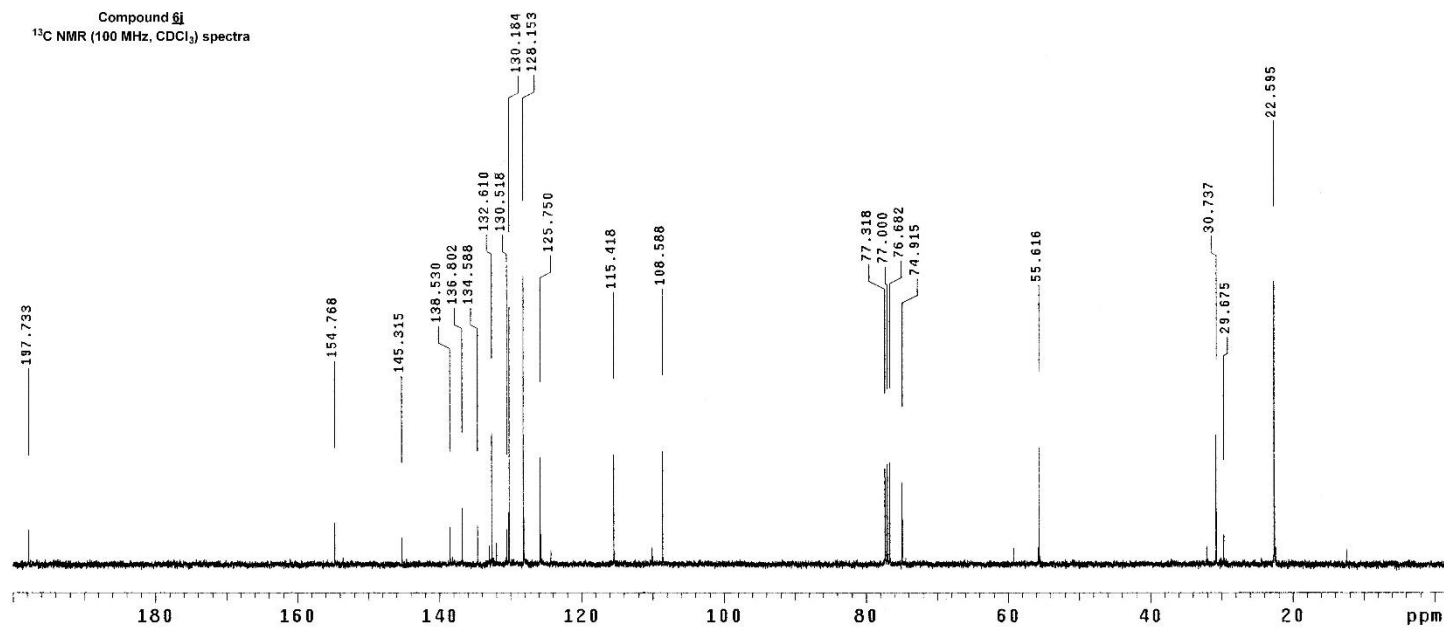
Ambient temperature

Total 1312 repetitions



Compound 6j

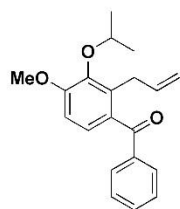
<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra



## Compound 6j

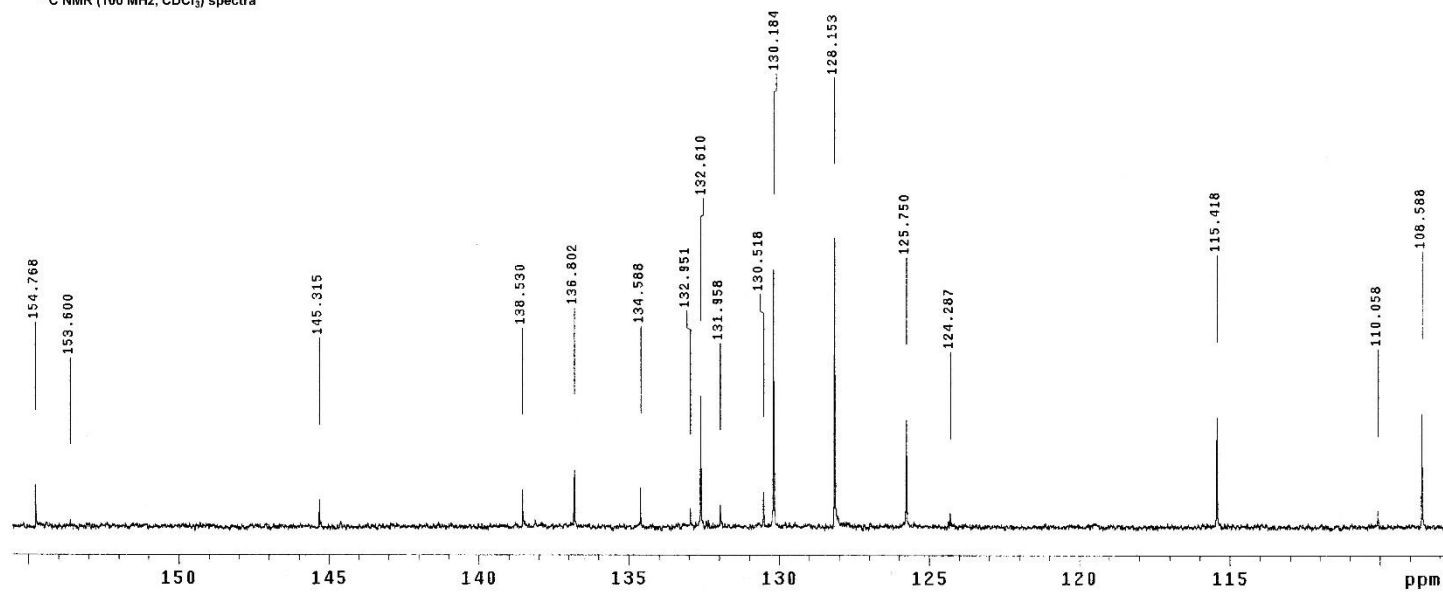
YL1041023

Pulse Sequence: s2pu1  
UNITYplus-400 "unity400"  
Date: Nov 2 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 1312 repetitions



Compound 6j

<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra



## Compound 6k

YLenon2K

Pulse Sequence: s2pu1

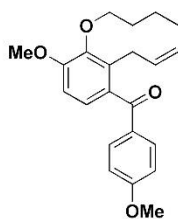
UNITYplus-400 "unity400"

Date: Oct 26 2015

Solvent: CDCl<sub>3</sub>

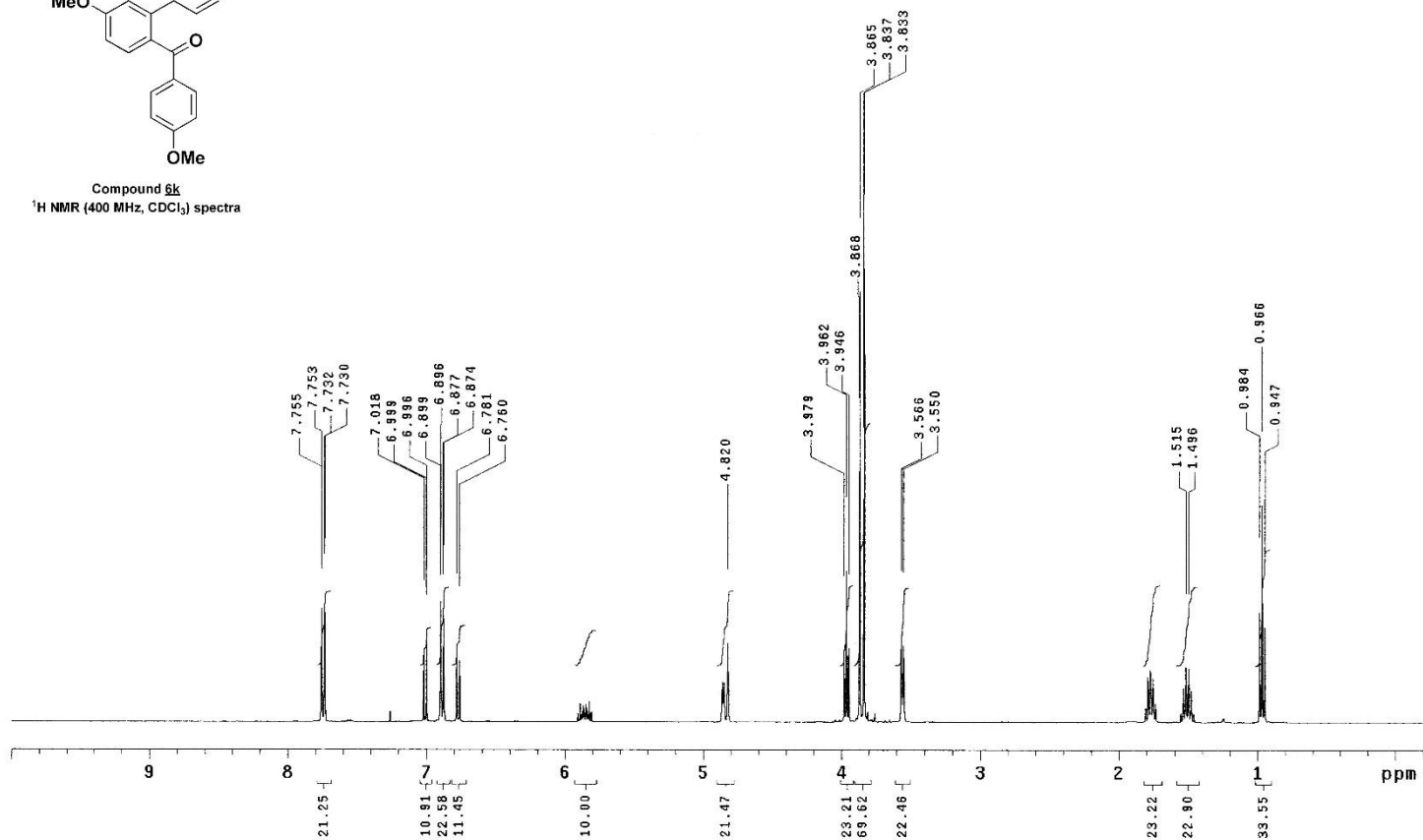
Ambient temperature

Total 64 repetitions



Compound 6k

<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



## Compound 6k

YLenon2K

Pulse Sequence: s2pu1

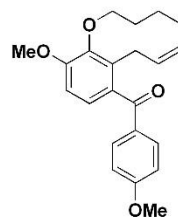
UNITYplus-400 "unity400"

Date: Oct 26 2015

Solvent: CDCl<sub>3</sub>

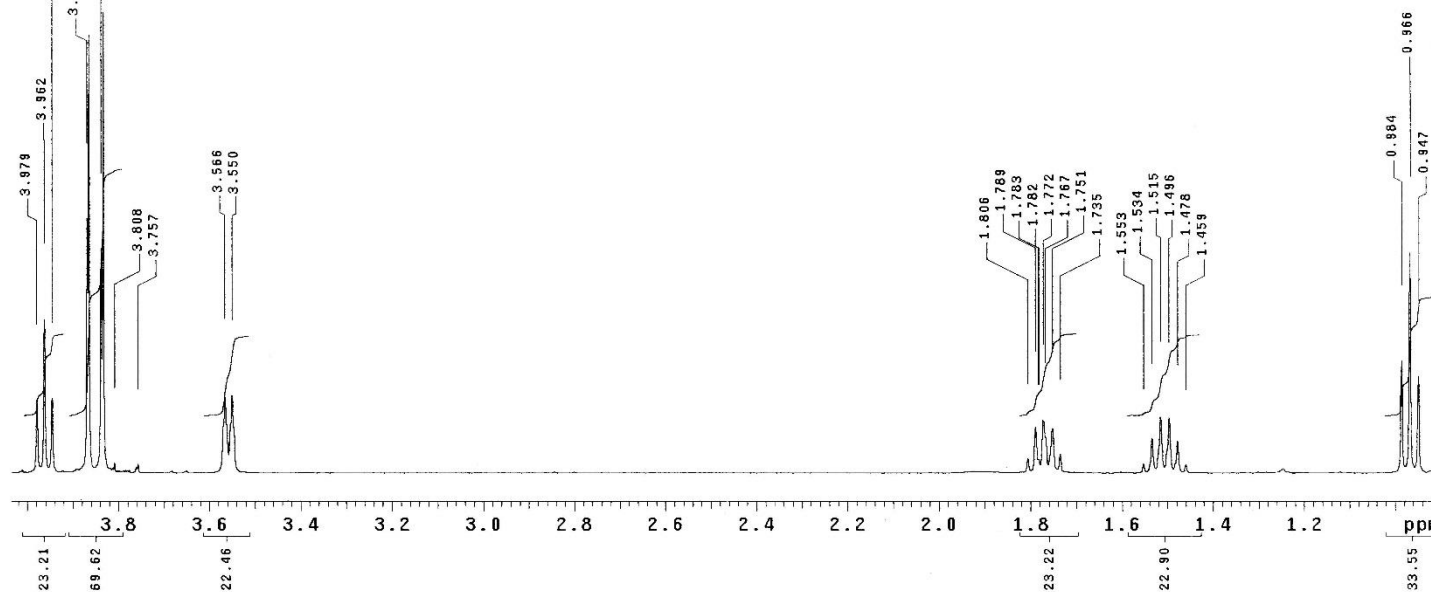
Ambient temperature

Total 64 repetitions



Compound 6k

<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra





## Compound 6k

YLenon2K

Pulse Sequence: s2pu1

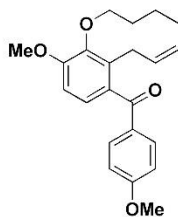
UNITYplus-400 "unity400"

Date: Oct 26 2015

Solvent: CDCl<sub>3</sub>

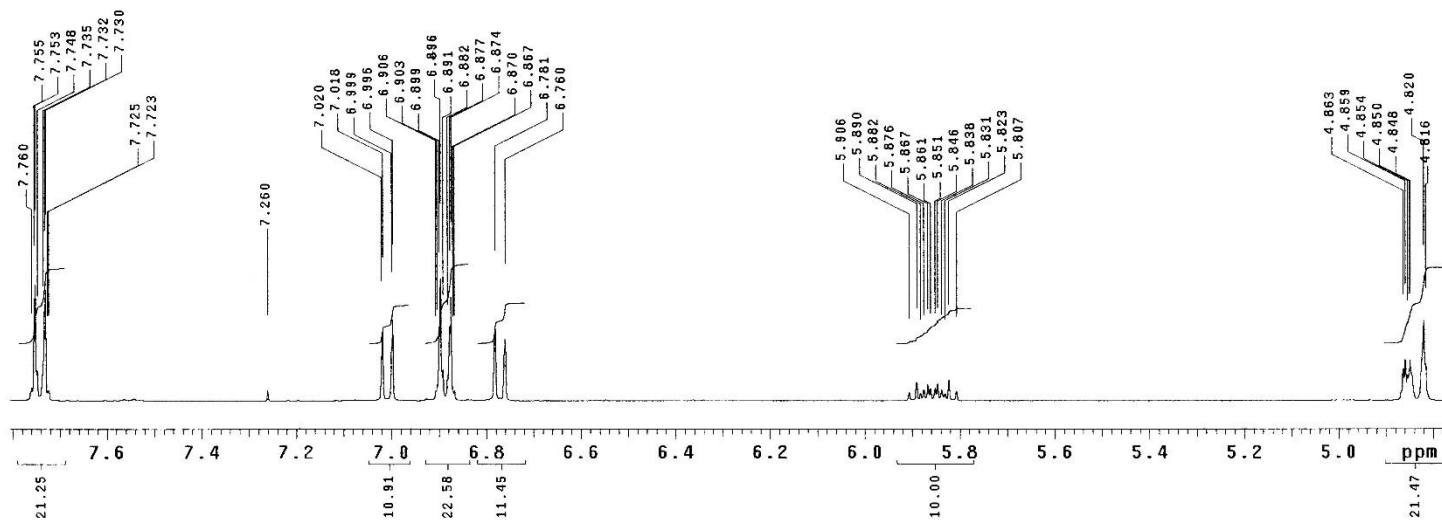
Ambient temperature

Total 64 repetitions



Compound 6k

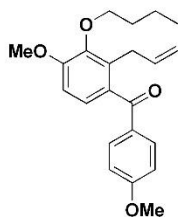
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



## Compound 6k

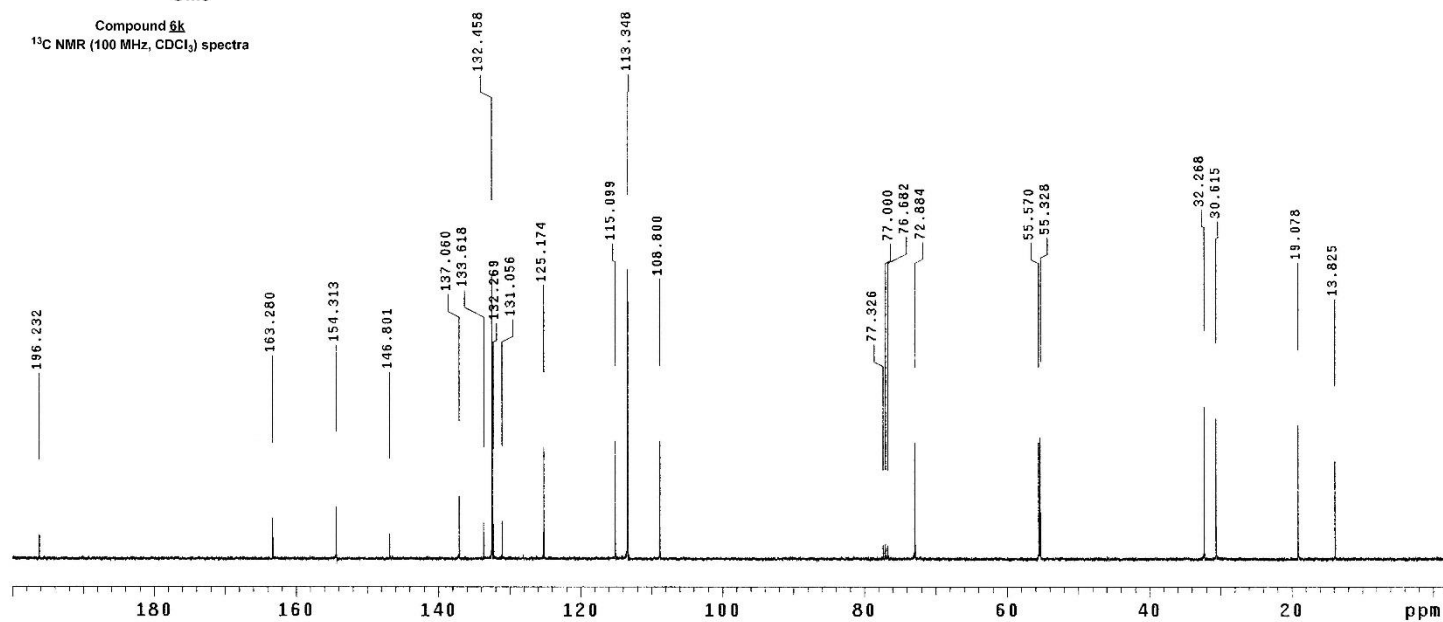
YLenon2K

Pulse Sequence: s2pul  
UNITYplus-400 "unity400"  
Date: Oct 26 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 208 repetitions



Compound 6k

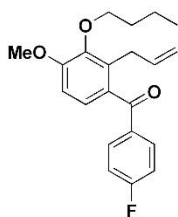
<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra



## Compound 6l

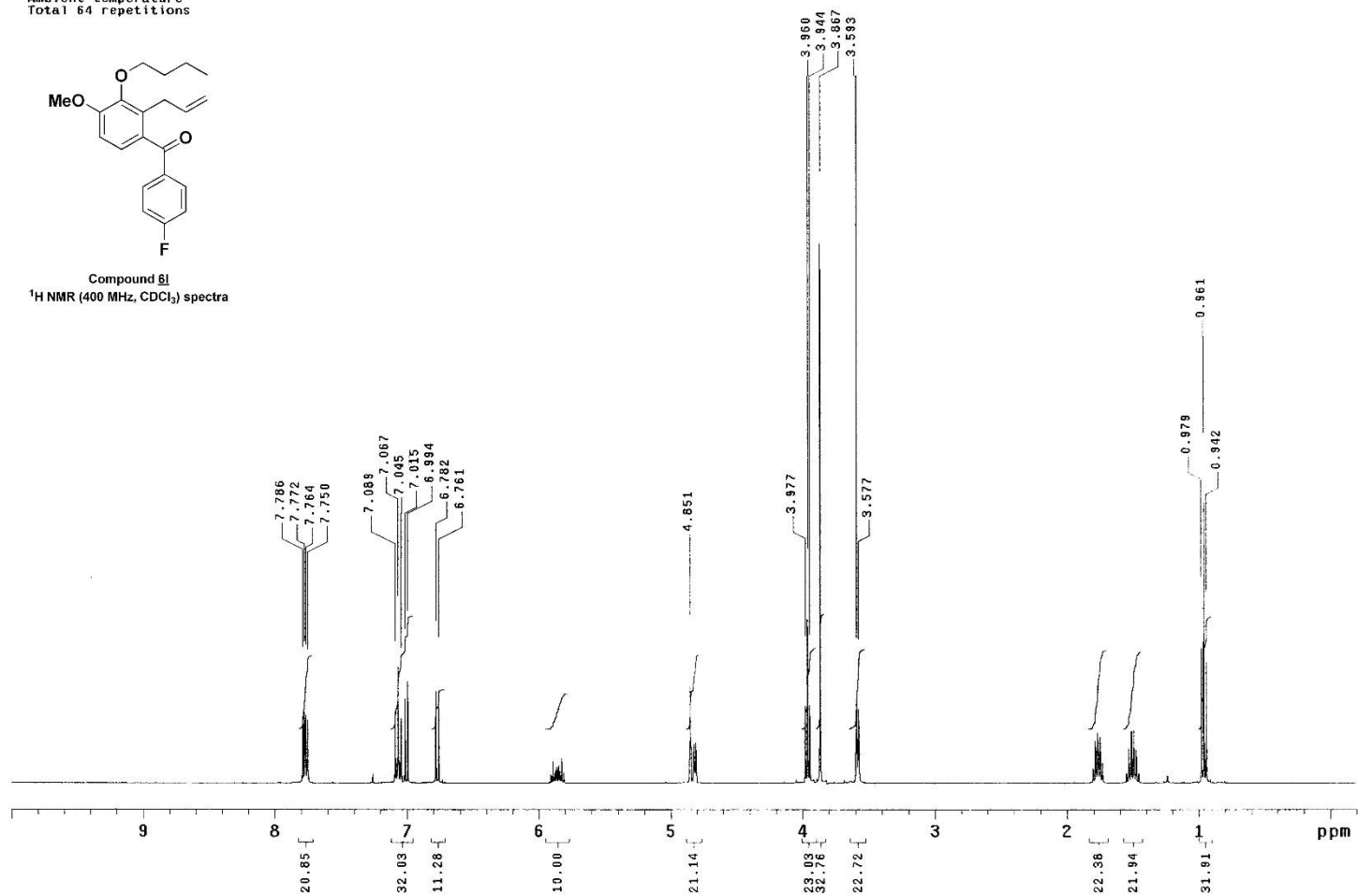
YLenon21

Pulse Sequence: s2pul  
UNITYplus-400 "unity400"  
Date: Nov 2 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 64 repetitions



Compound 6l

<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



## Compound 6l

YLenon21

Pulse Sequence: s2pul

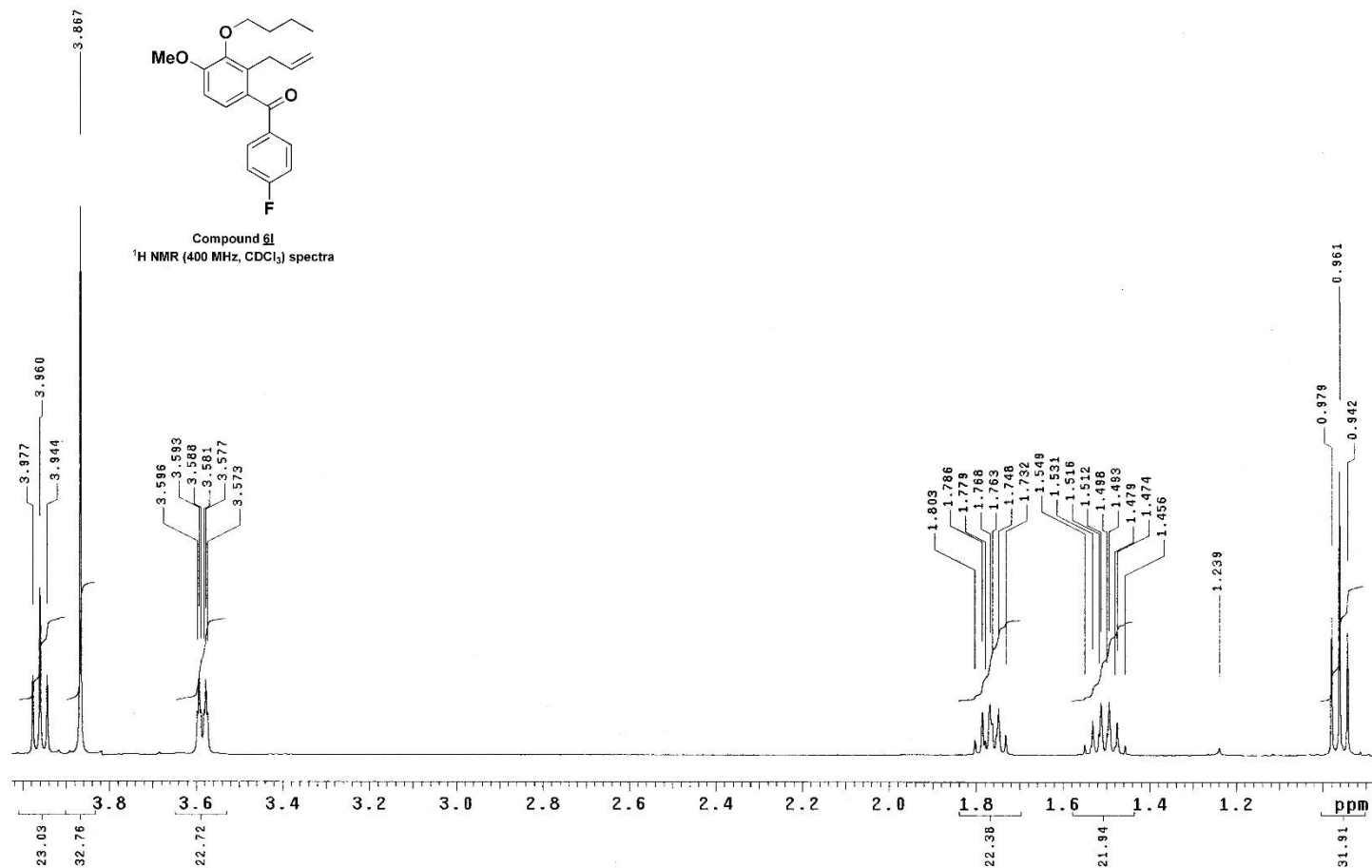
UNITYplus-400 "unity400"

Date: Nov 2 2015

Solvent: CDCl<sub>3</sub>

Ambient temperature

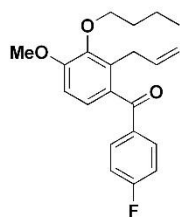
Total 64 repetitions



# Compound 6l

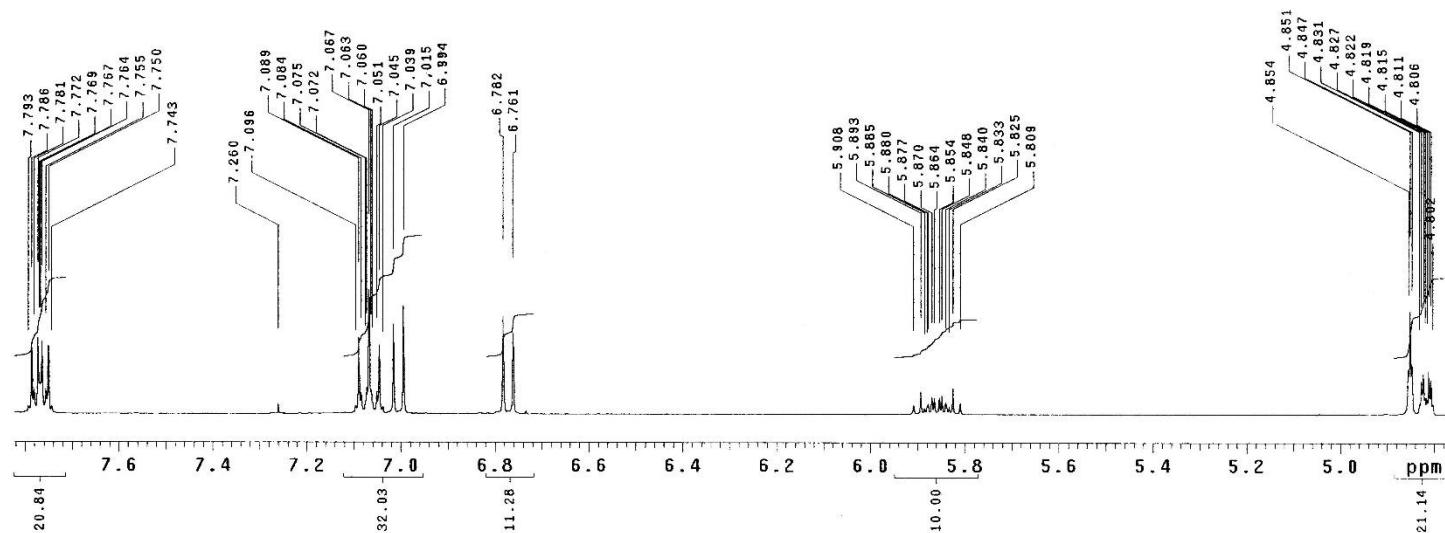
YLenon21

Pulse Sequence: s2pul  
 UNITYplus-400 "unity400"  
 Date: Nov 2 2015  
 Solvent: CDCl<sub>3</sub>  
 Ambient temperature  
 Total 64 repetitions



Compound 6l

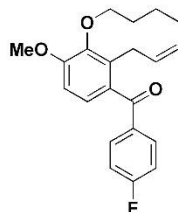
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



## Compound 6l

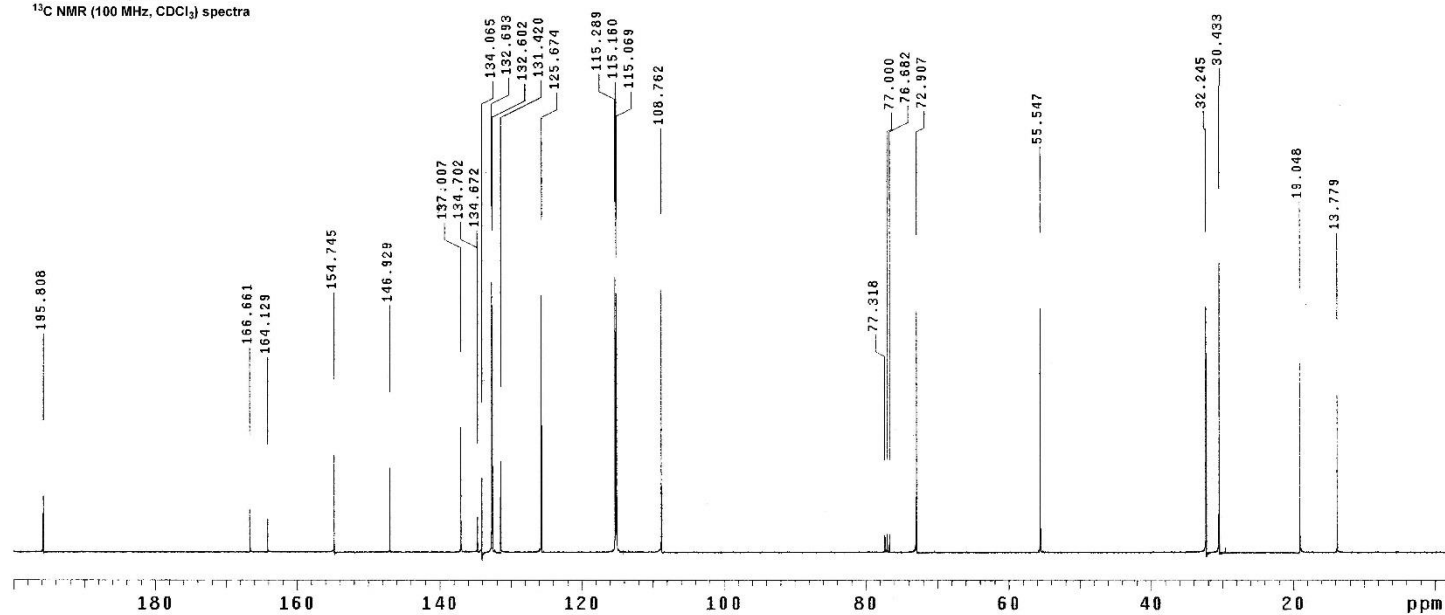
YLenon21

Pulse Sequence: s2pul  
UNITYplus-400 "unity400"  
Date: Nov 2 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 2464 repetitions



Compound 6l

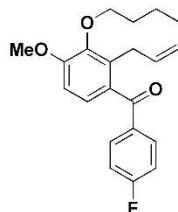
<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra



## Compound 6l

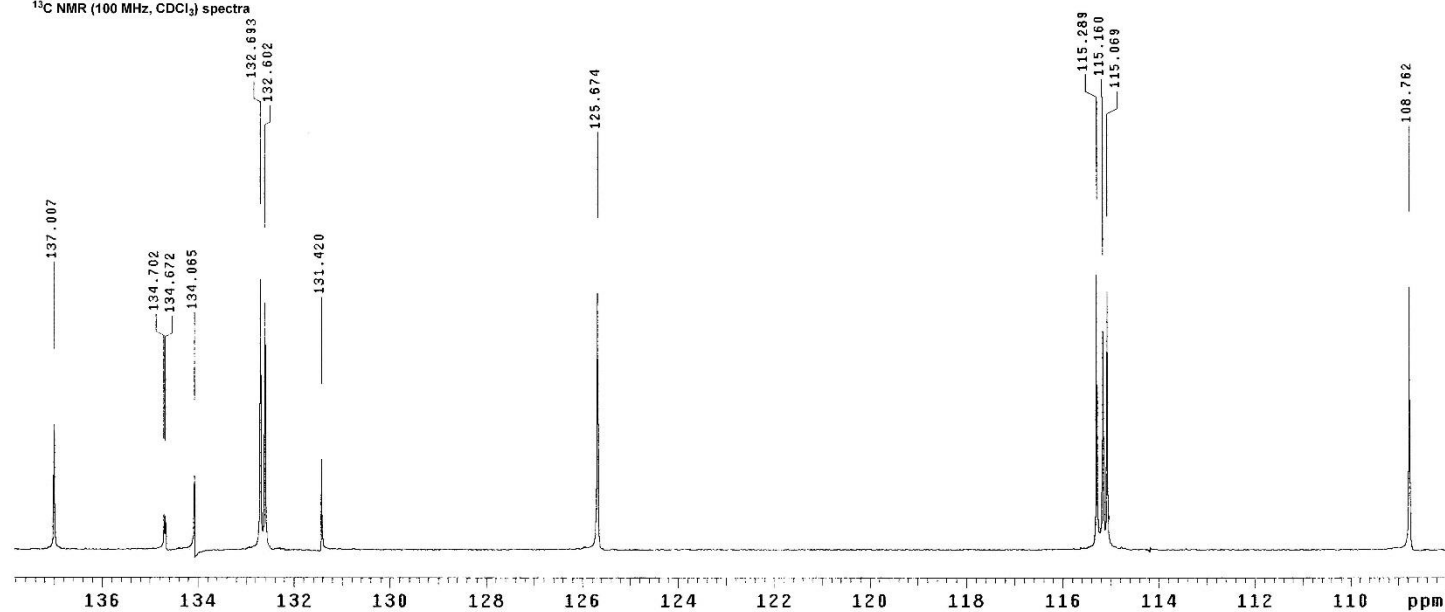
YLenon21

Pulse Sequence: s2pul  
UNITYplus-400 "unity400"  
Date: Nov 2 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 2464 repetitions



Compound 6l

<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra



## Compound 6m

YL1041224

Pulse Sequence: s2pu1

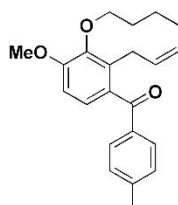
UNITYplus-400 "unity400"

Date: Dec 25 2015

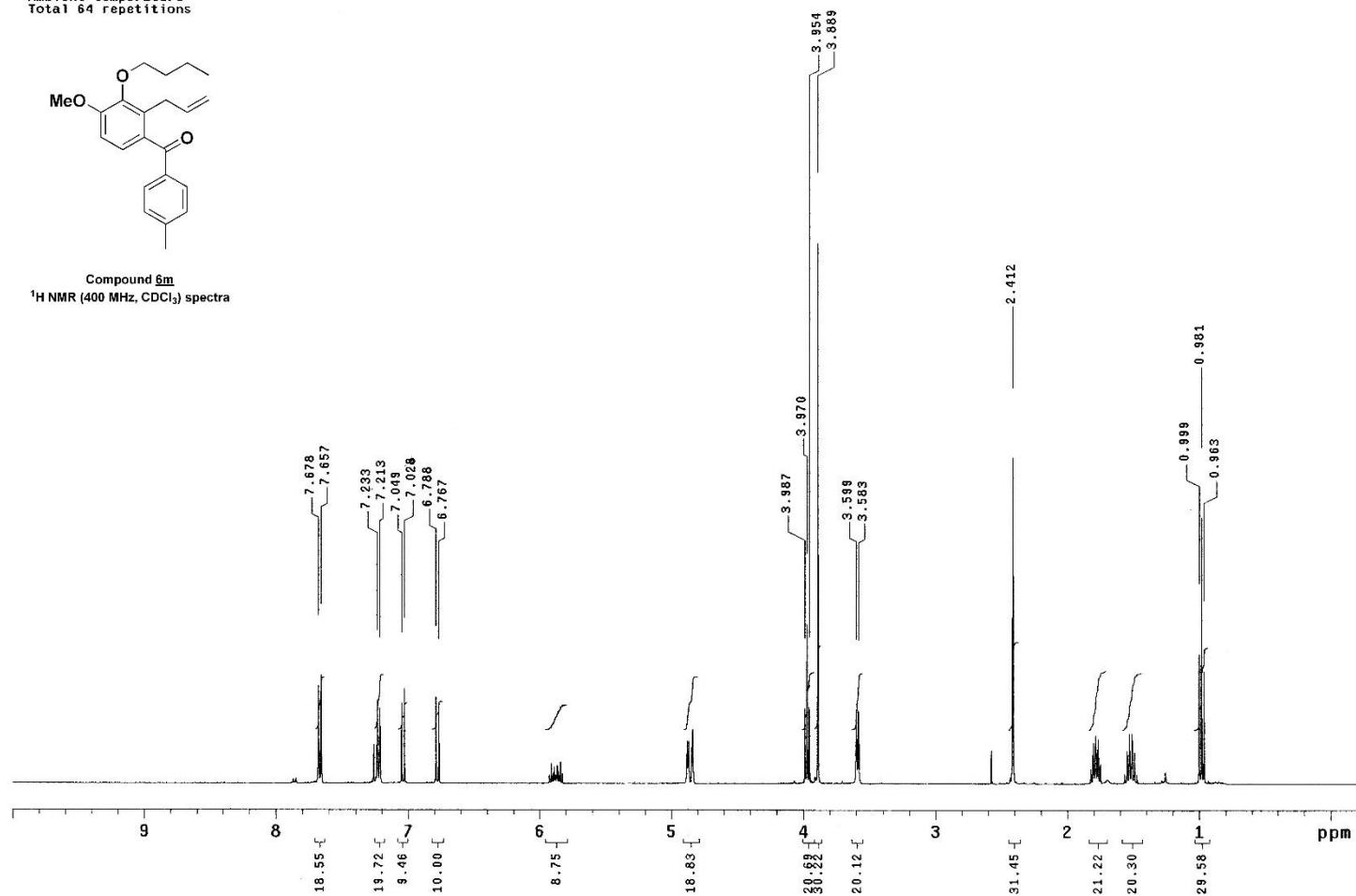
Solvent: CDCl<sub>3</sub>

Ambient temperature

Total 64 repetitions



Compound 6m  
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra





## Compound 6m

YL1041224

Pulse Sequence: s2pu1

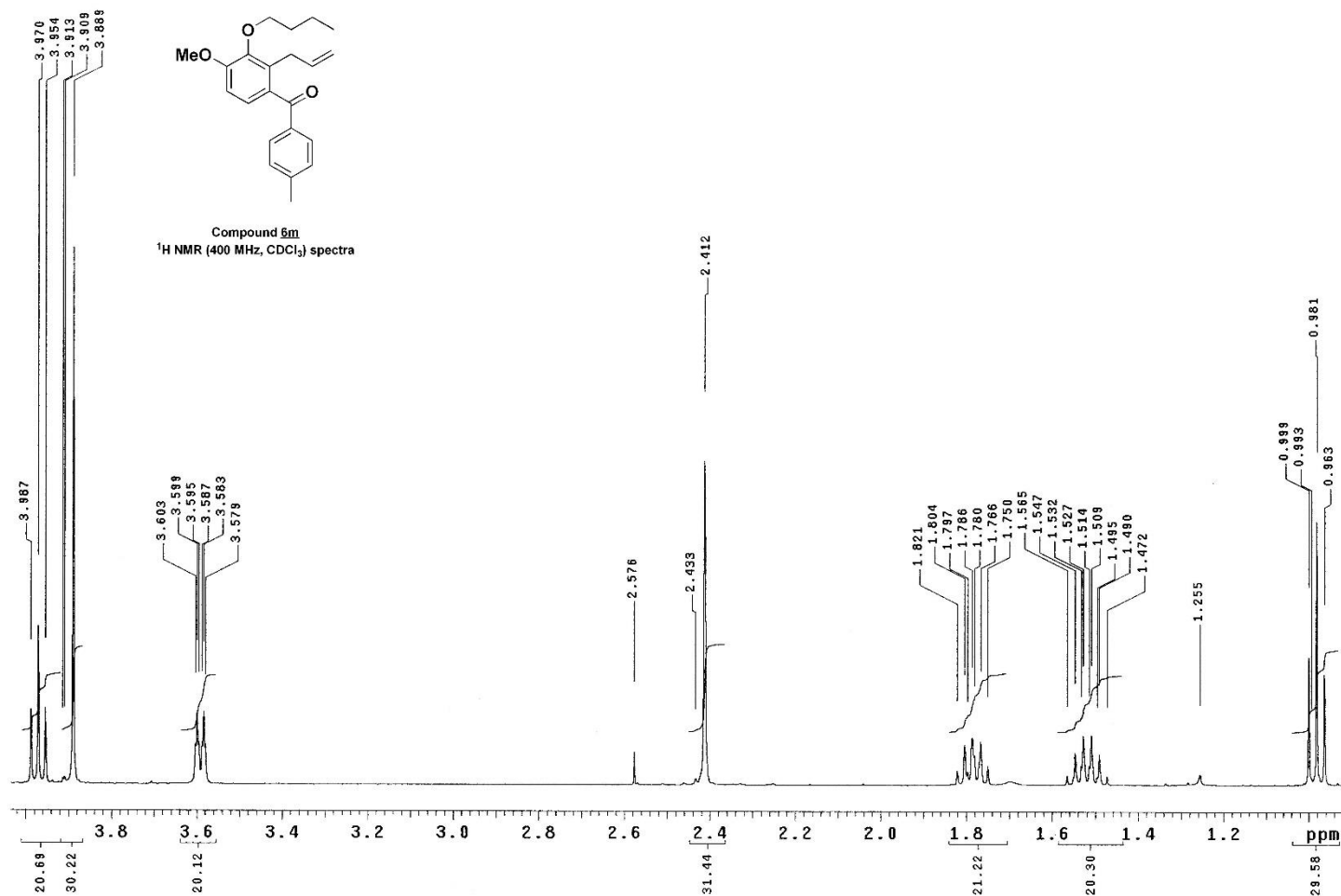
UNITYplus-400 "unity400"

Date: Dec 25 2015

Solvent: CDCl<sub>3</sub>

Ambient temperature

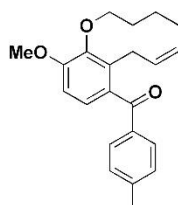
Total 64 repetitions



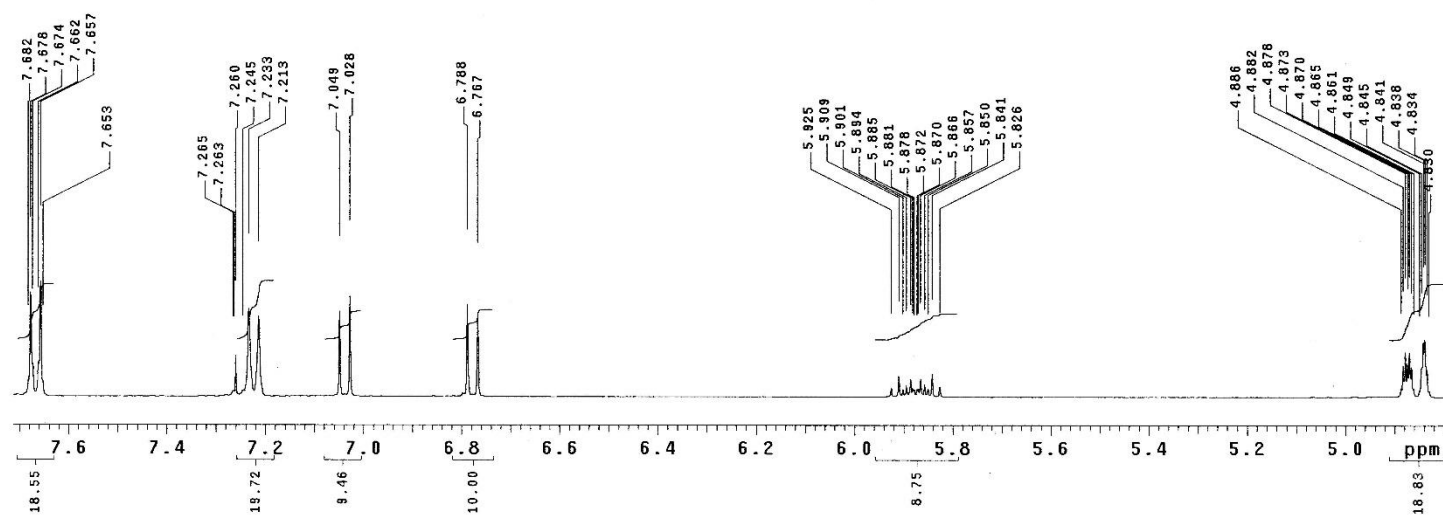
## Compound 6m

YL1041224

Pulse Sequence: s2pu1  
UNITYplus-400 "unity400"  
Date: Dec 25 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 64 repetitions



Compound 6m  
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



## Compound 6m

YL1041224

Pulse Sequence: s2pu1

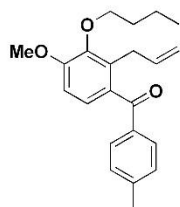
UNITYplus-400 "unity400"

Date: Dec 25 2015

Solvent: CDCl<sub>3</sub>

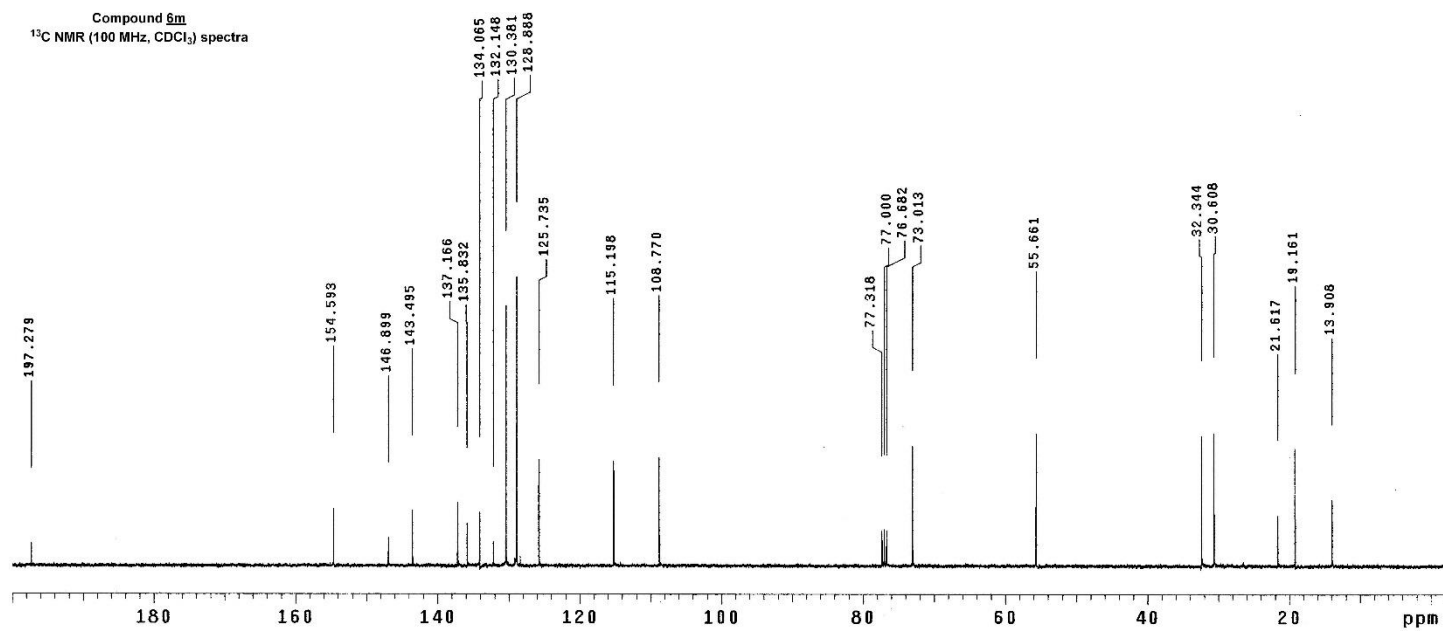
Ambient Temperature

Total 1024 repetitions



Compound 6m

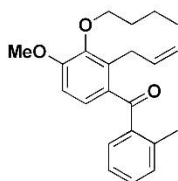
<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra



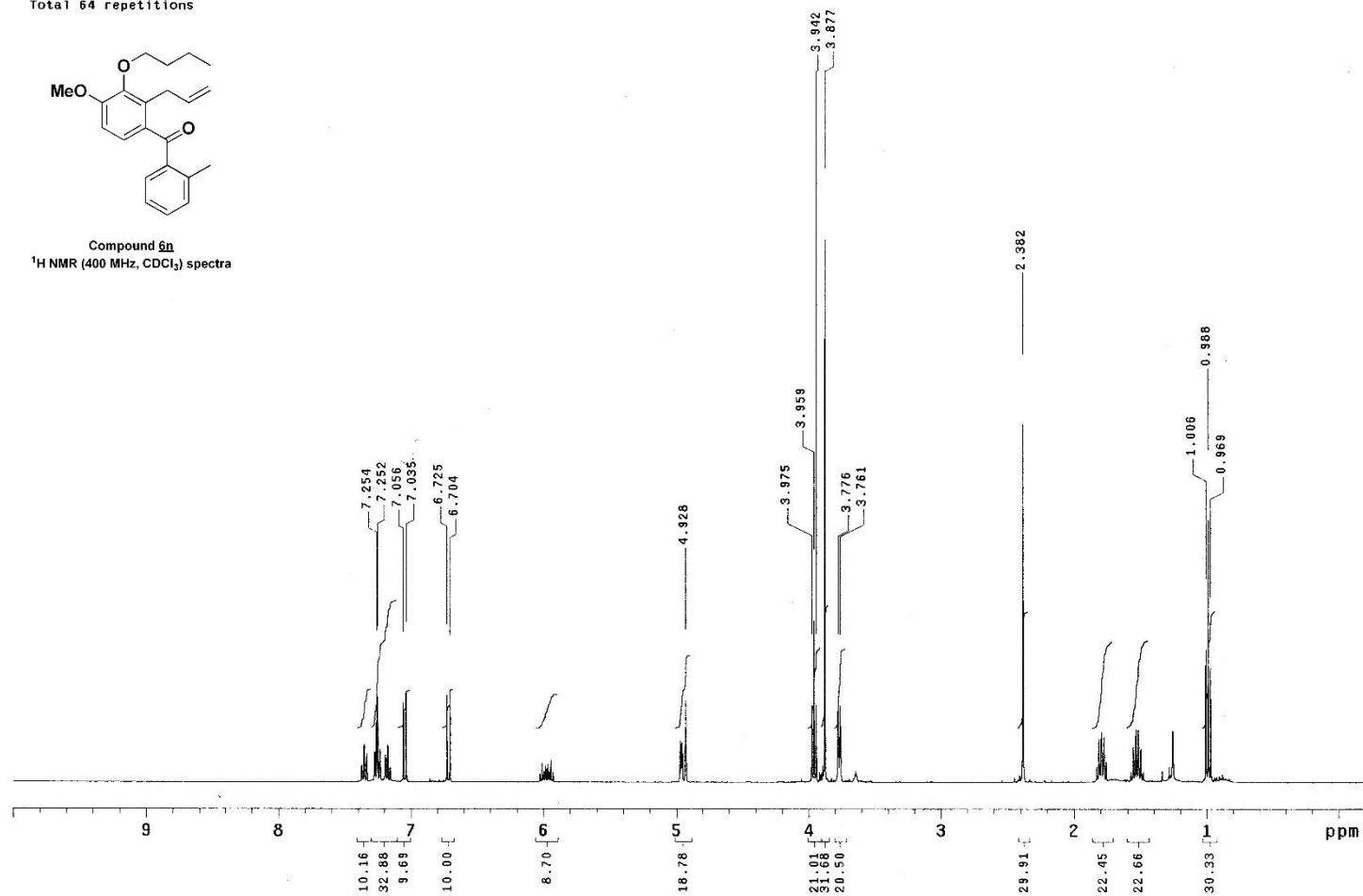
## Compound 6n

YLenon2n

Pulse Sequence: s2pul  
UNITYplus-400 "unity400"  
Date: Nov 4 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 64 repetitions



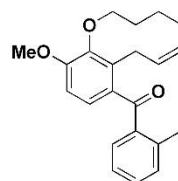
Compound 6n  
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



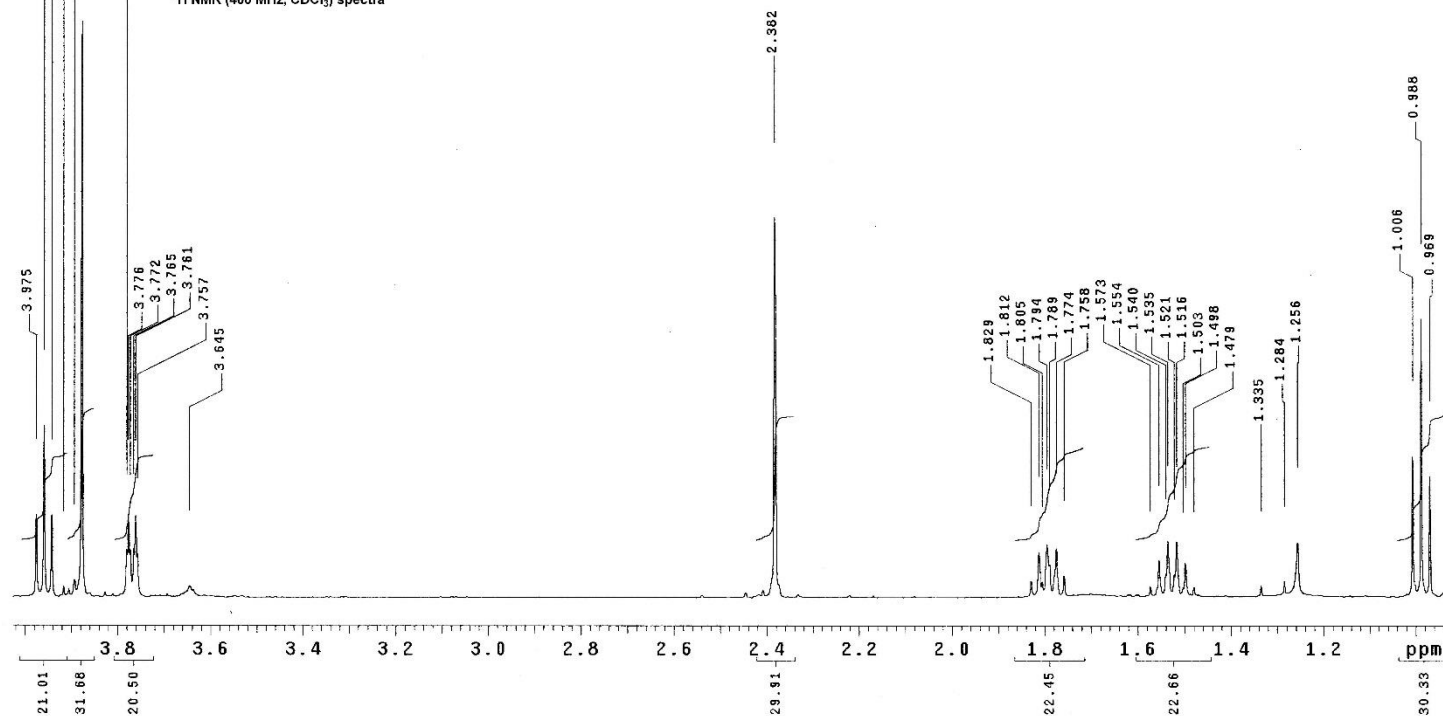
# Compound 6n

YLenon2n

Pulse Sequence: s2pu1  
 UNITYplus-400 "unity400"  
 Date: Nov 4 2015  
 Solvent: CDCl3  
 Ambient temperature  
 Total 64 repetitions



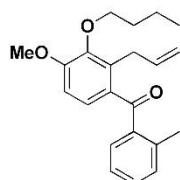
Compound 6n  
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



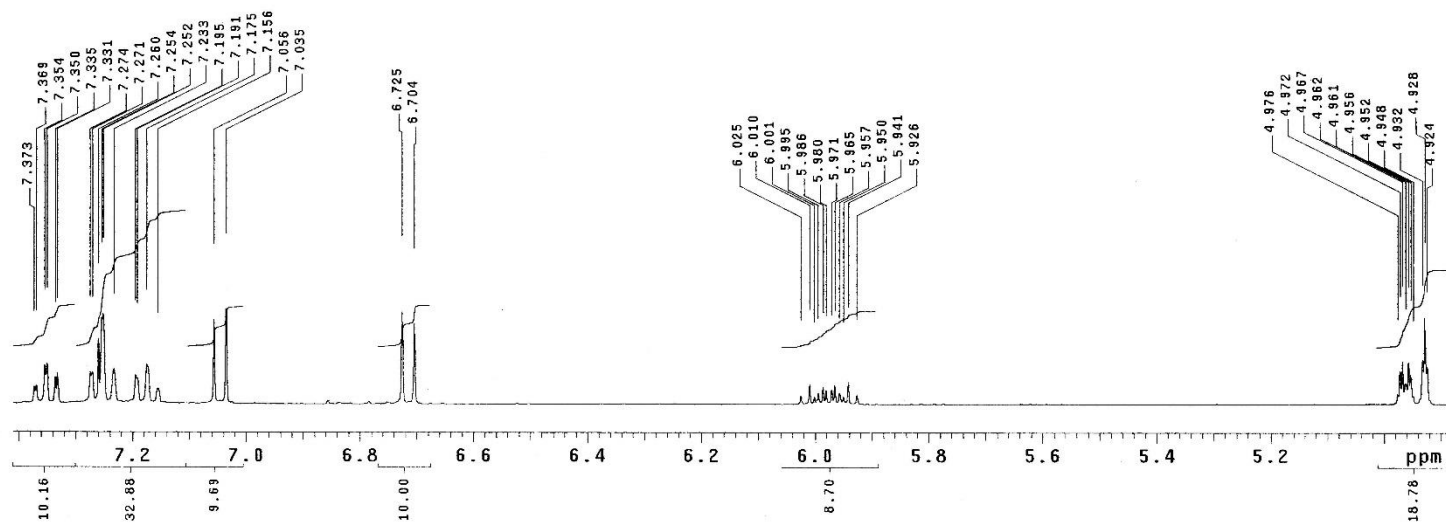
## Compound 6n

YLenon2n

Pulse Sequence: s2pul  
UNITYplus-400 "unity400"  
Date: Nov 4 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 64 repetitions



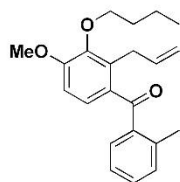
Compound **6n**  
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



## Compound 6n

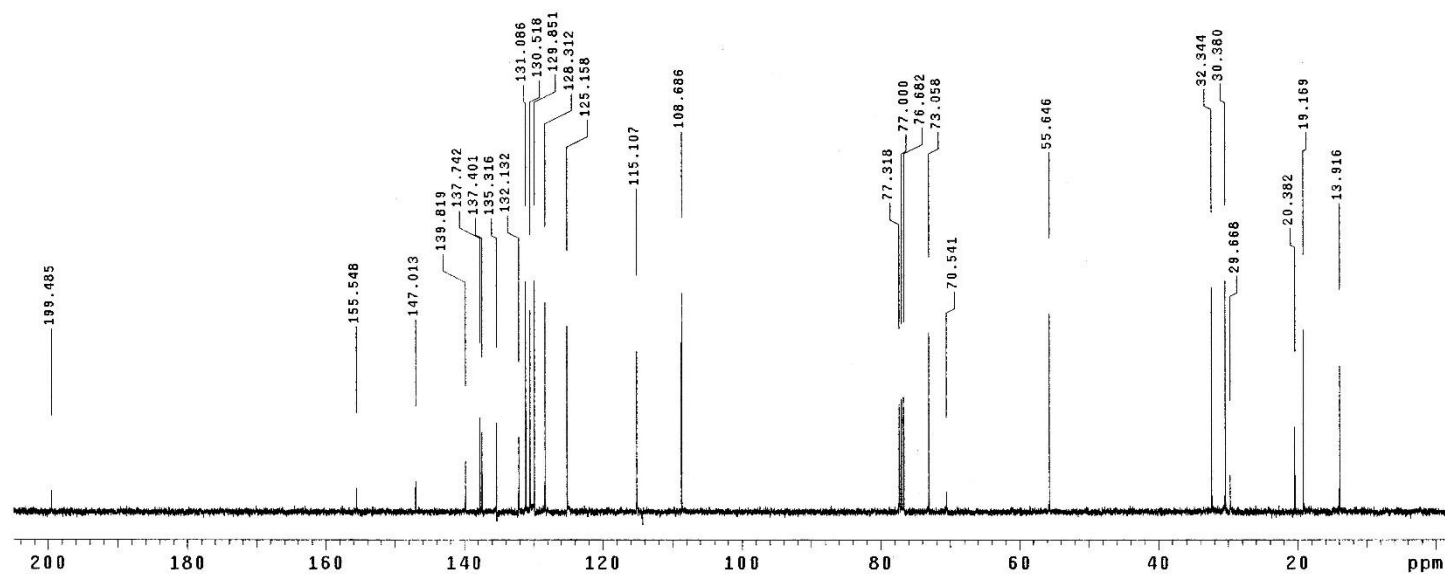
YLenon2n

Pulse Sequence: s2pul  
UNITYplus-400 "unity400"  
Date: Nov 4 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 2144 repetitions



Compound 6n

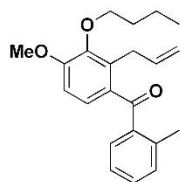
<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra



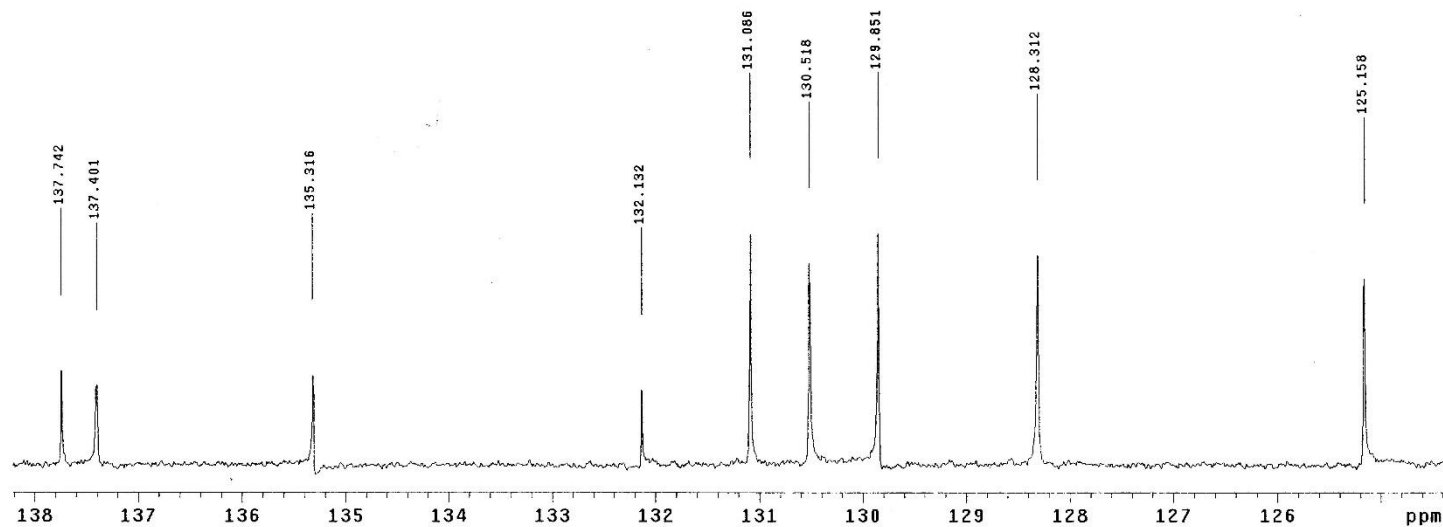
## Compound 6n

YLenon2n

Pulse Sequence: s2pul  
UNITYplus-400 "unity400"  
Date: Nov 4 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 2144 repetitions



Compound 6n  
<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra

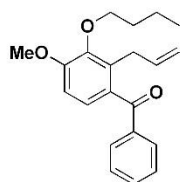




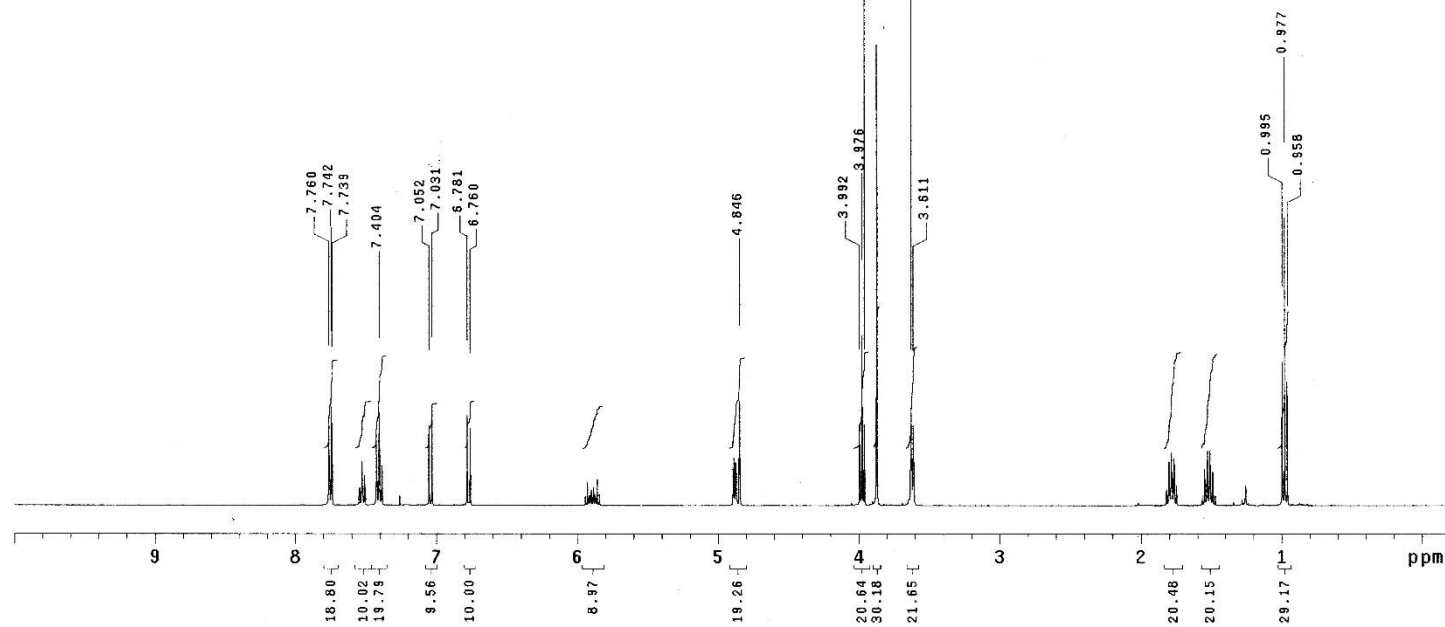
## Compound 6o

YLenon2o

Pulse Sequence: s2pu1  
UNITYplus-400 "unity400"  
Date: Nov 9 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 64 repetitions



Compound 6o  
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



# Compound 6o

YLenon2o

Pulse Sequence: s2pu1

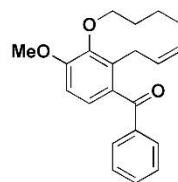
UNITYplus-400 "unity400"

Date: Nov 9 2015

Solvent: CDCl<sub>3</sub>

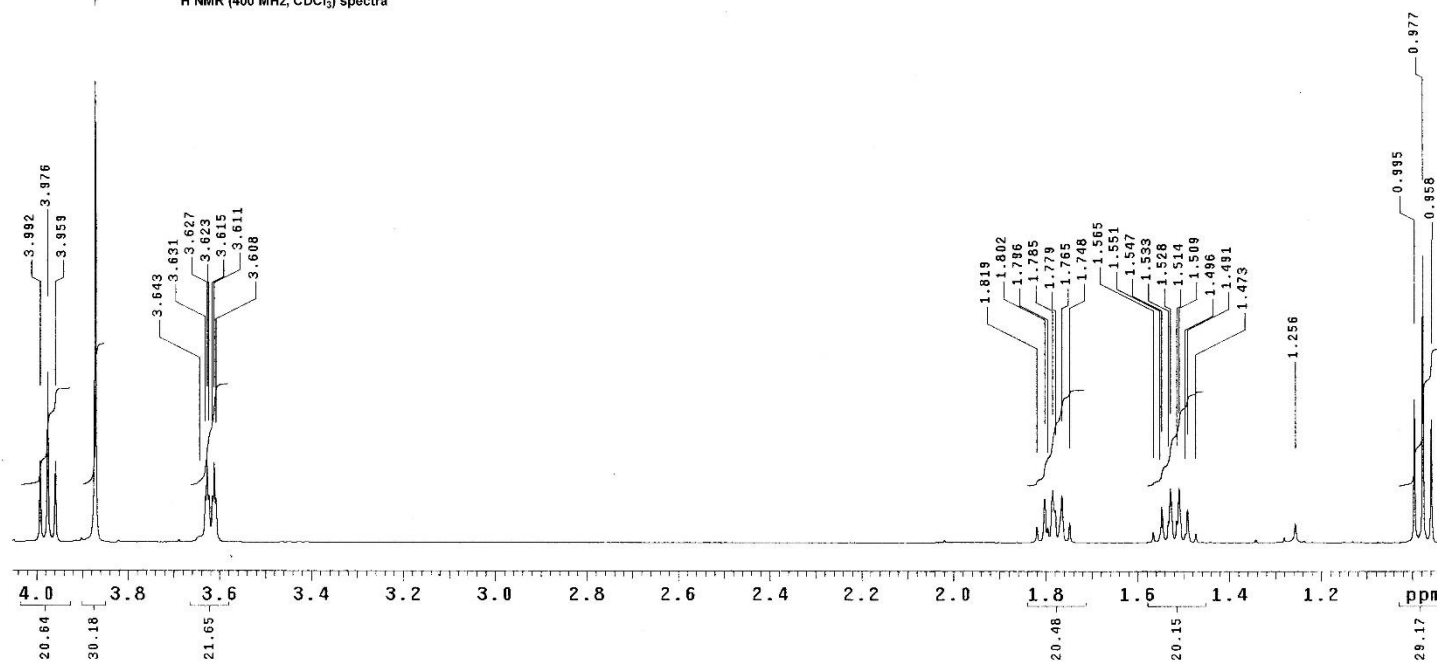
Ambient temperature

Total 64 repetitions



Compound 6o

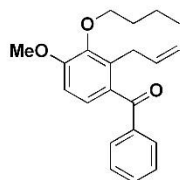
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



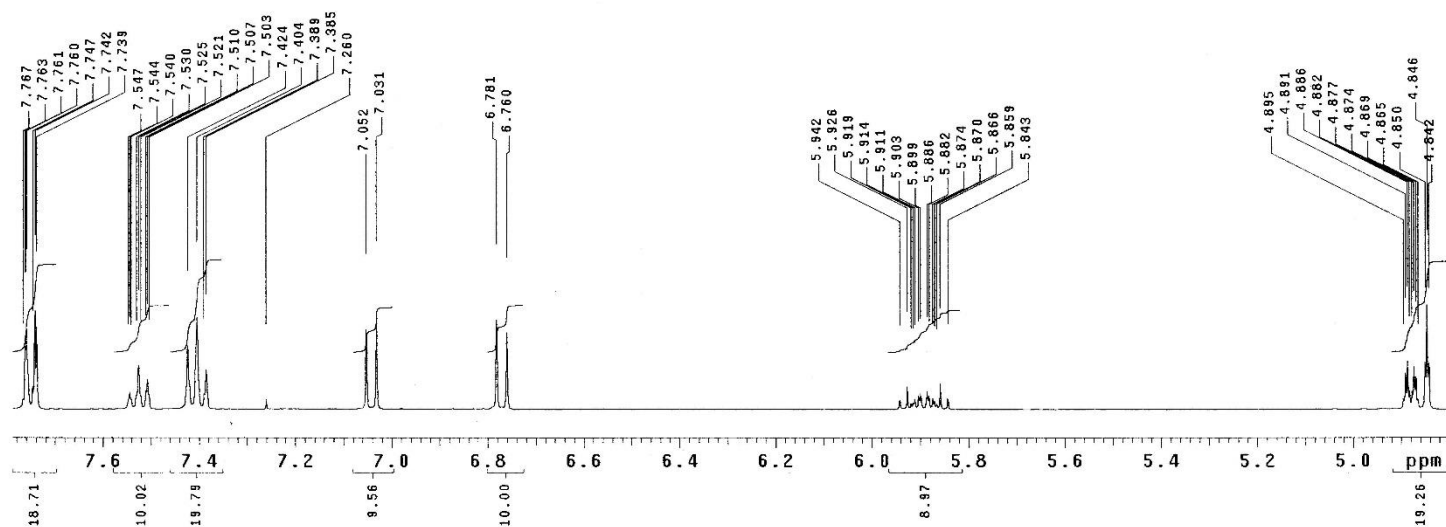
## Compound 6o

YLenon2o

Pulse Sequence: s2pu1  
UNITYplus-400 "unity400"  
Date: Nov 9 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 64 repetitions



Compound 6o  
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



## Compound 6o

YLenon2o

Pulse Sequence: s2pu1

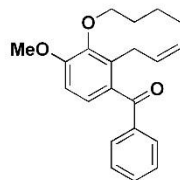
UNITYplus-400 "unity400"

Date: Nov 9 2015

Solvent: CDCl<sub>3</sub>

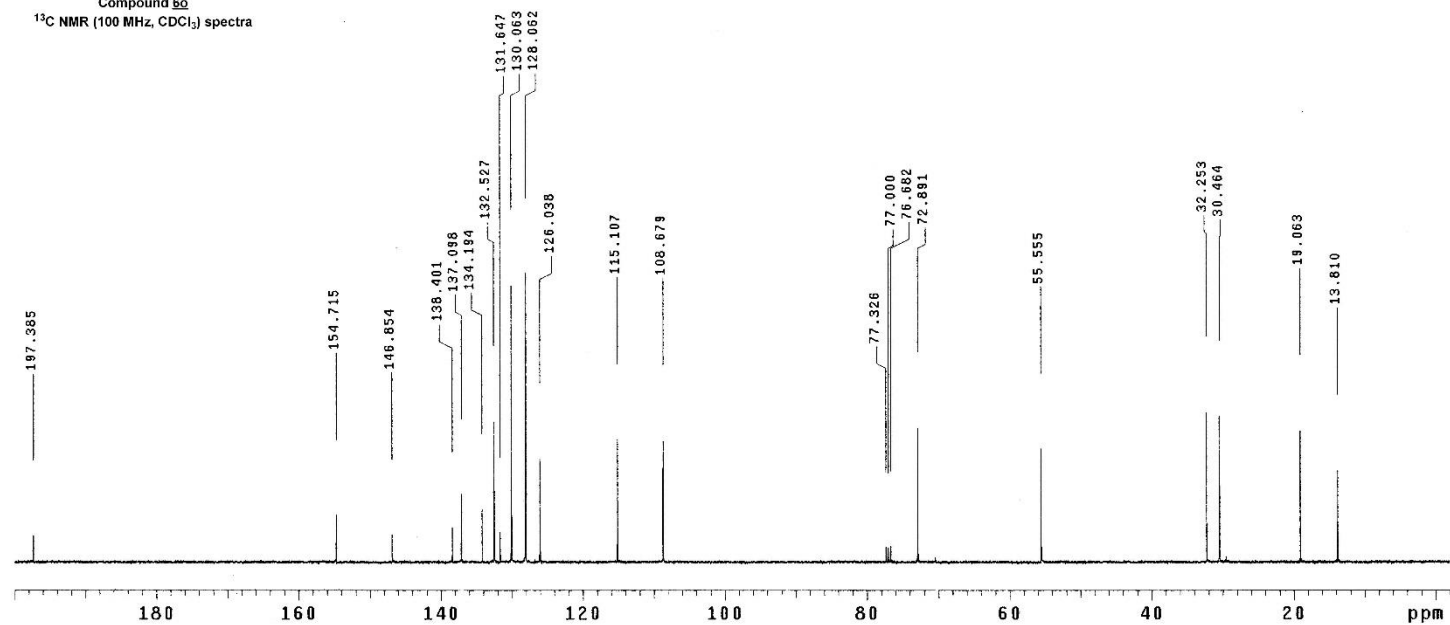
Ambient Temperature

Total 128 repetitions



Compound 6o

<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra



## Compound 6p

YLenon2P

Pulse Sequence: s2pu1

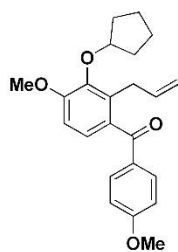
UNITYplus-400 "unity400"

Date: Oct 26 2015

Solvent: CDCl<sub>3</sub>

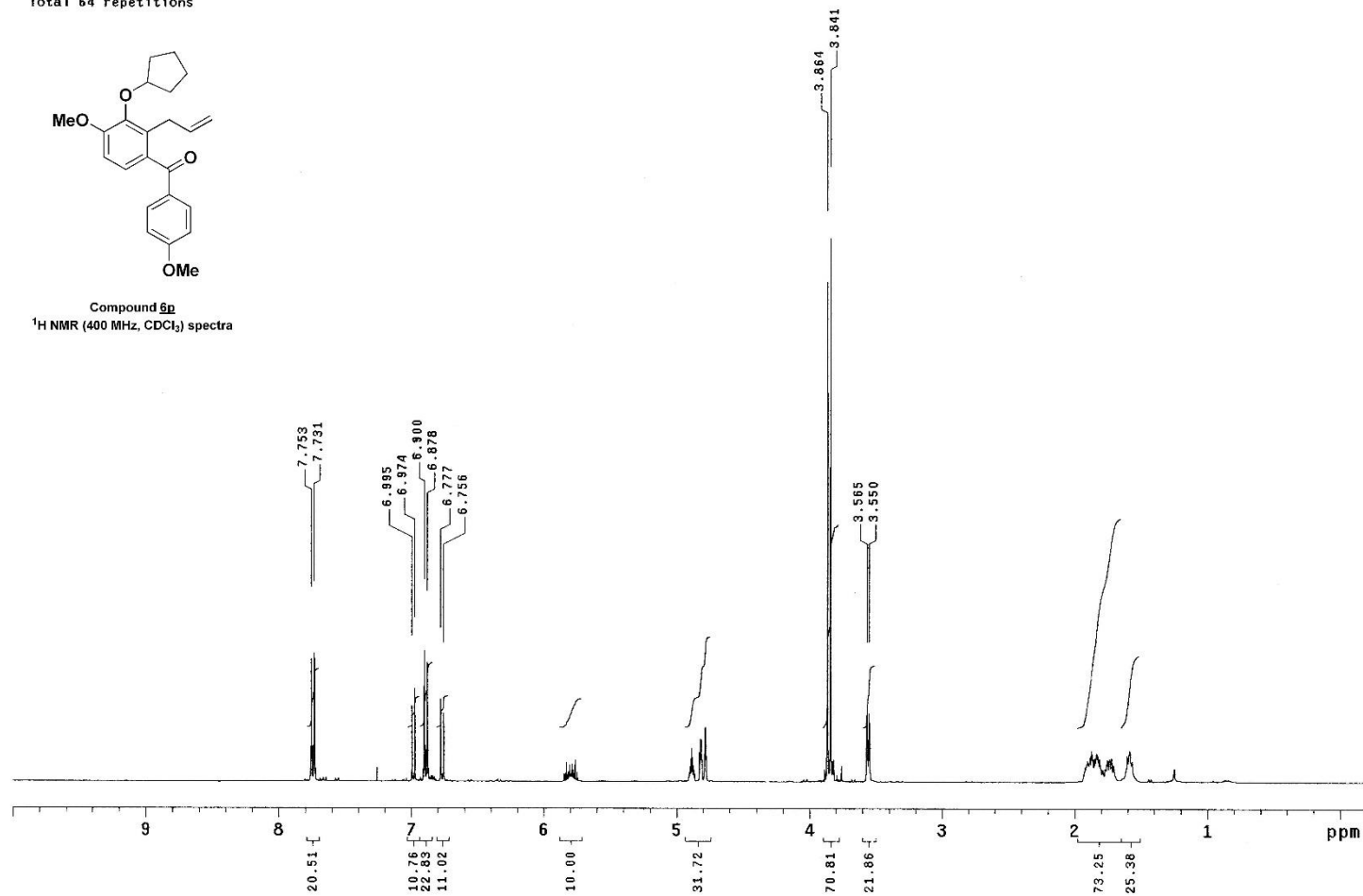
Ambient temperature

Total 64 repetitions



Compound 6p

<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



# Compound 6p

YLenon2P

Pulse Sequence: s2pu1

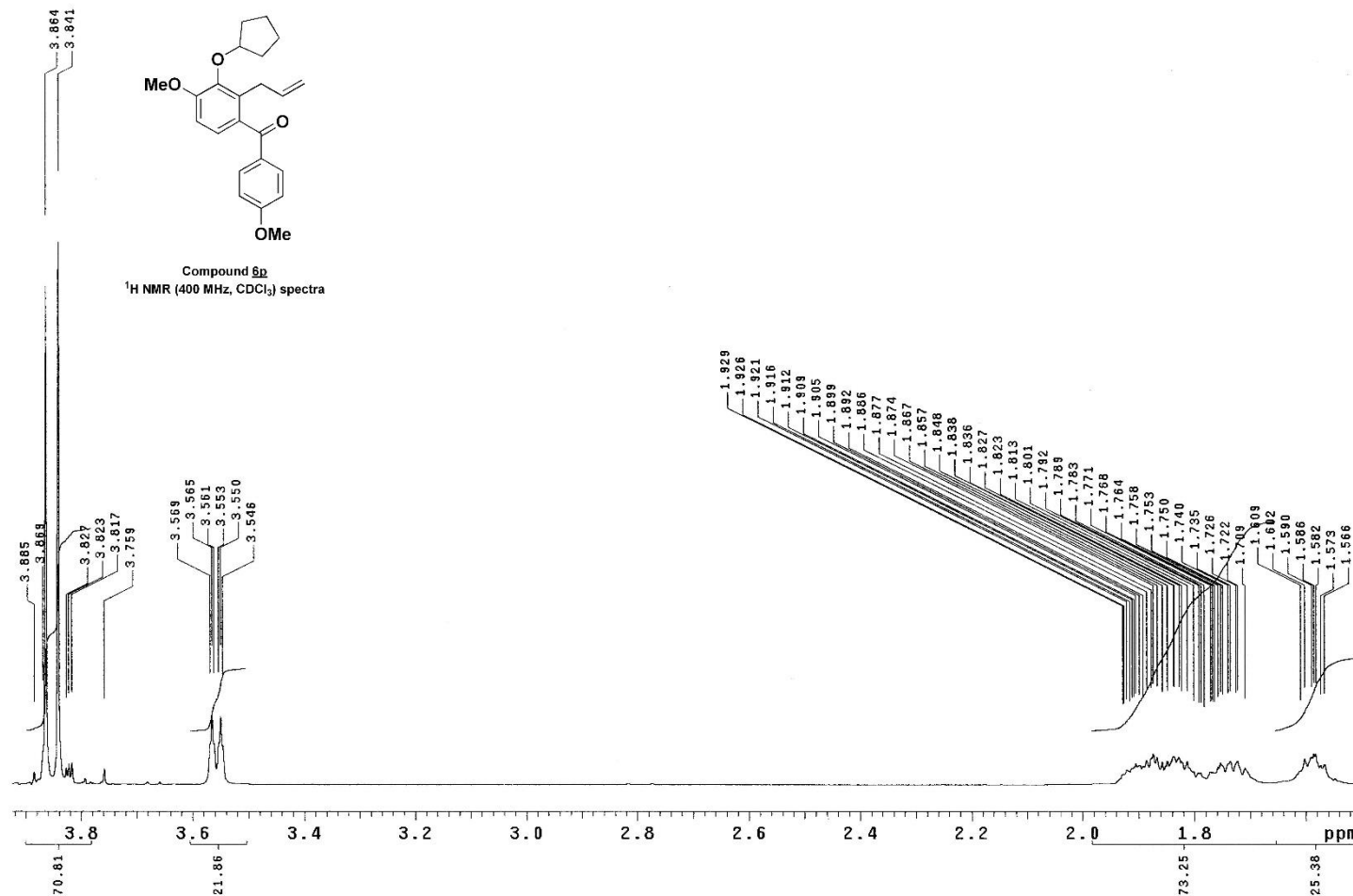
UNITYplus-400 "unity400"

Date: Oct 26 2015

Solvent: CDCl<sub>3</sub>

Ambient temperature

Total 64 repetitions



## Compound 6p

YLenon2P

Pulse Sequence: s2pu1

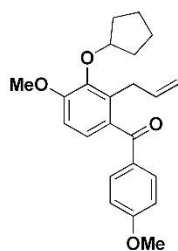
UNITYplus-400 "unity400"

Date: Oct 25 2015

Solvent: CDCl<sub>3</sub>

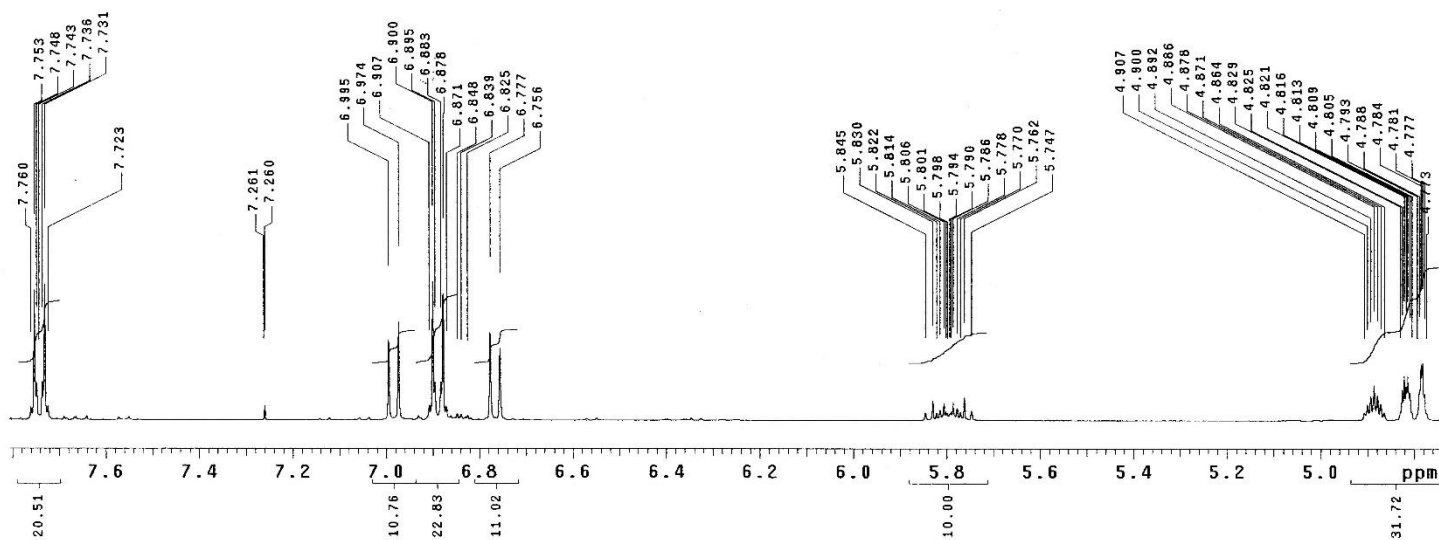
Ambient temperature

Total 64 repetitions



Compound 6p

<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



## Compound 6p

YLenon2P

Pulse Sequence: s2pul

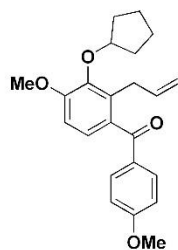
UNITYplus-400 "unity400"

Date: Oct 26 2015

Solvent: CDCl<sub>3</sub>

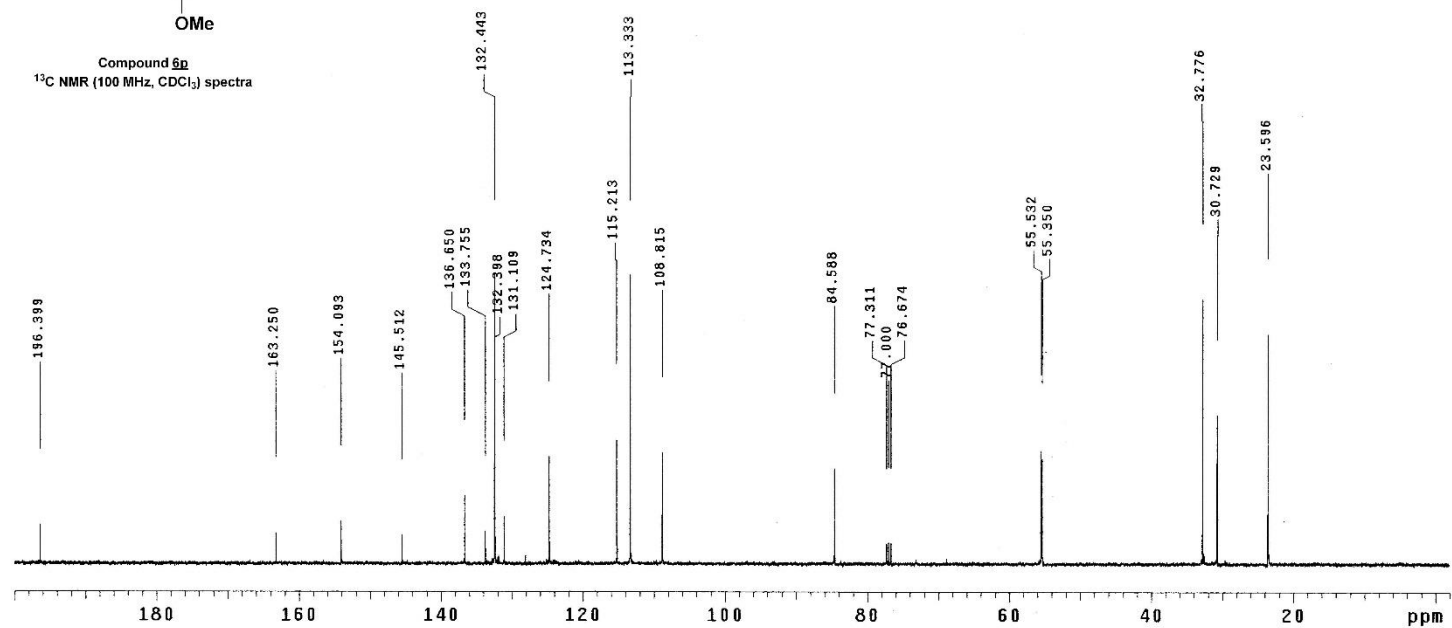
Ambient temperature

Total 256 repetitions



Compound 6p

<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra

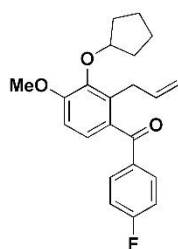




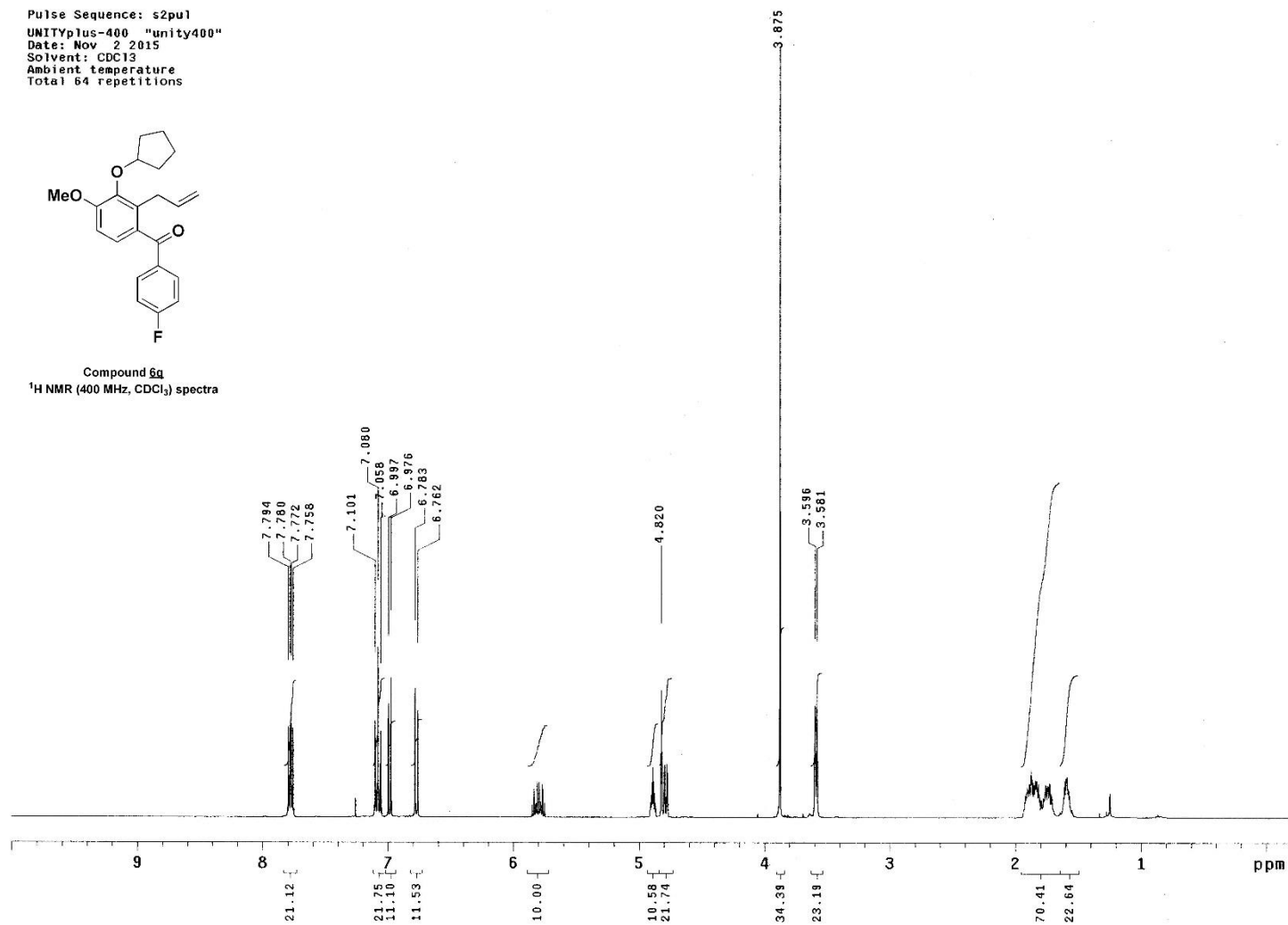
## Compound 6q

YLenon20

Pulse Sequence: s2pul  
UNITYplus-400 "unity400"  
Date: Nov 2 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 64 repetitions



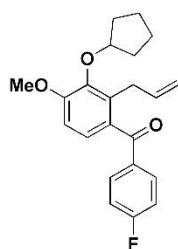
Compound 6q  
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



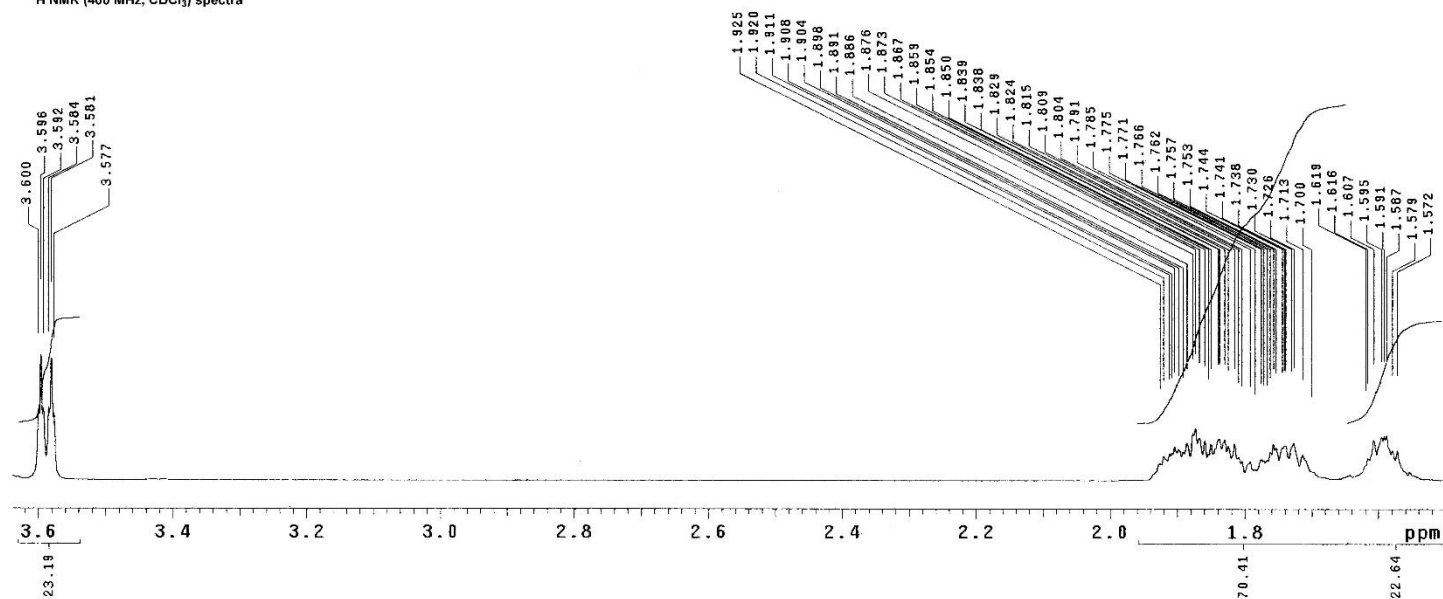
## Compound 6q

YLenon20

Pulse Sequence: s2pul  
UNITYplus-400 "unity400"  
Date: Nov 2 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 64 repetitions

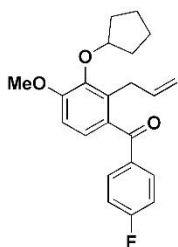


Compound 6q  
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra

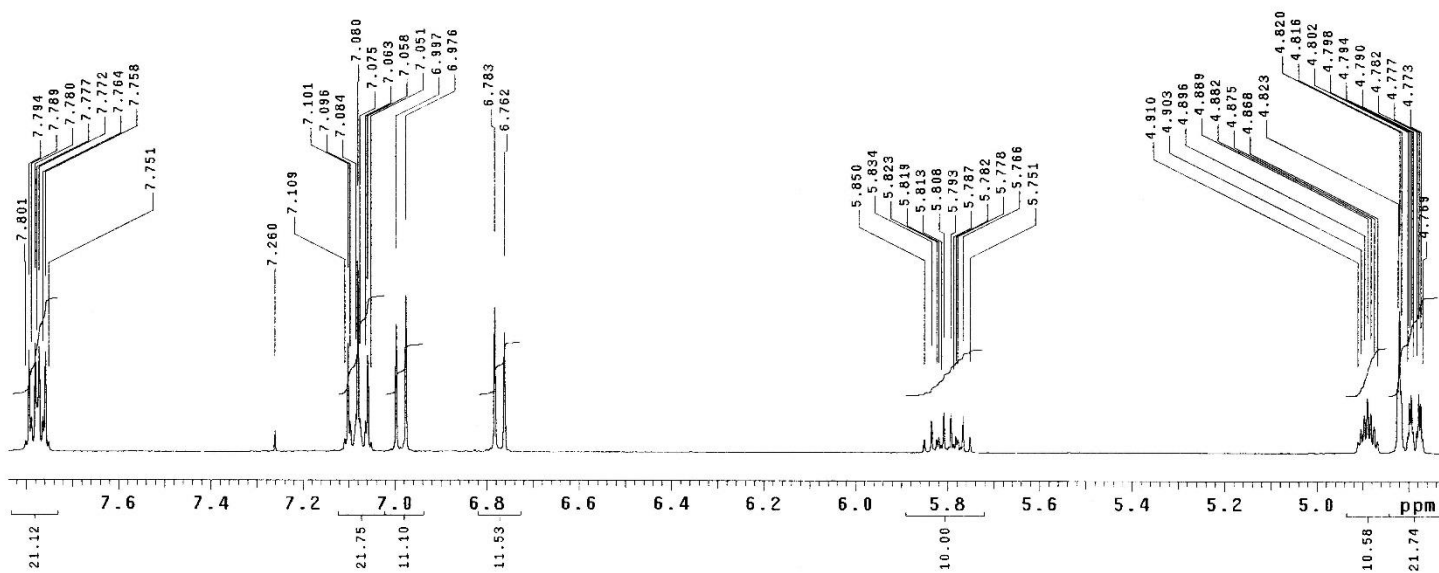


# Compound 6q

YLenon20  
Pulse Sequence: s2pul  
UNITYplus-400 "unity400"  
Date: Nov 2 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 64 repetitions



Compound 6q  
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



## Compound 6q

YLenon20

Pulse Sequence: s2pul

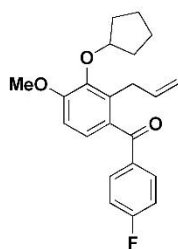
UNITYplus-400 "unity400"

Date: Nov 2 2015

Solvent: CDCl<sub>3</sub>

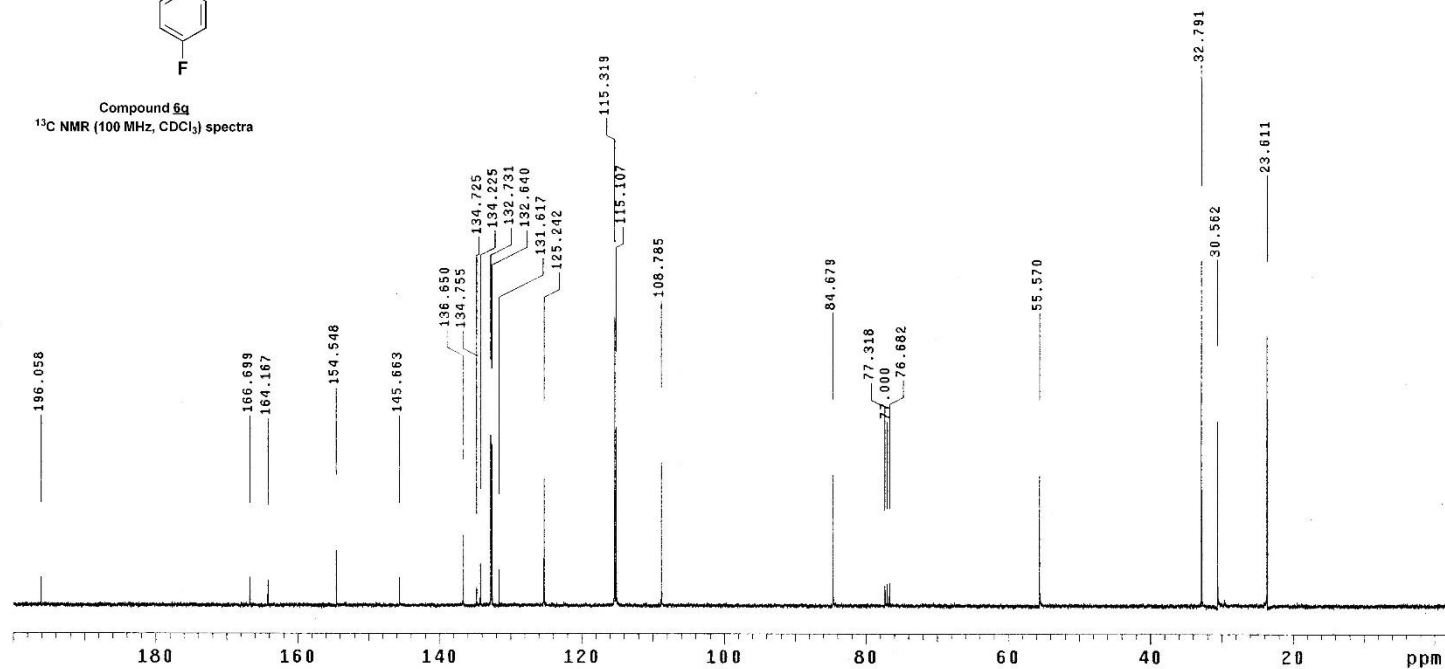
Ambient temperature

Total 160 repetitions



Compound 6q

<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra



## Compound 6r

YL1041225

Pulse Sequence: s2pu1

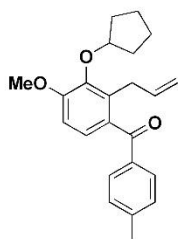
UNITYplus-400 "unity400"

Date: Dec 25 2015

Solvent: CDCl<sub>3</sub>

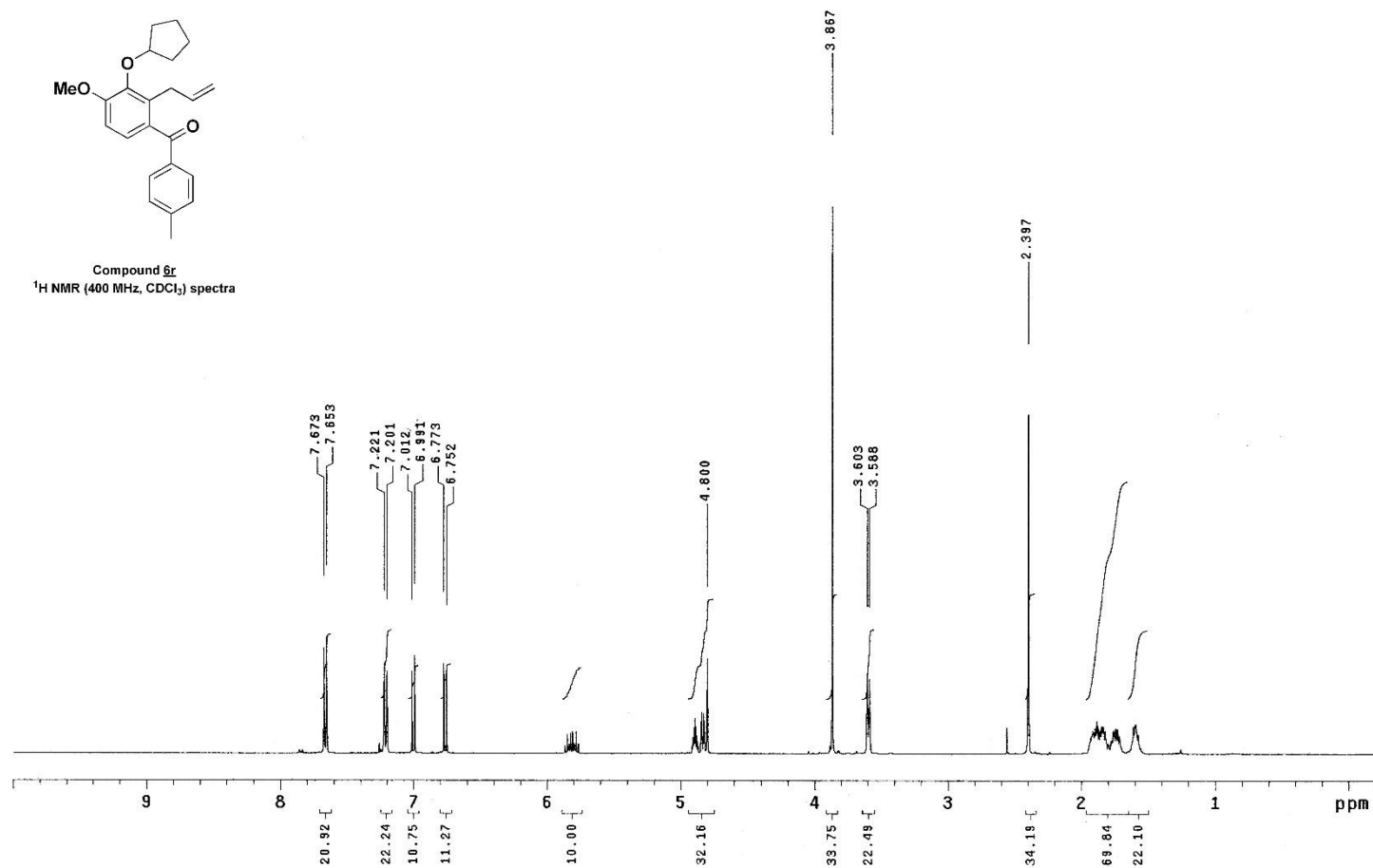
Ambient temperature

Total 64 repetitions



Compound 6r

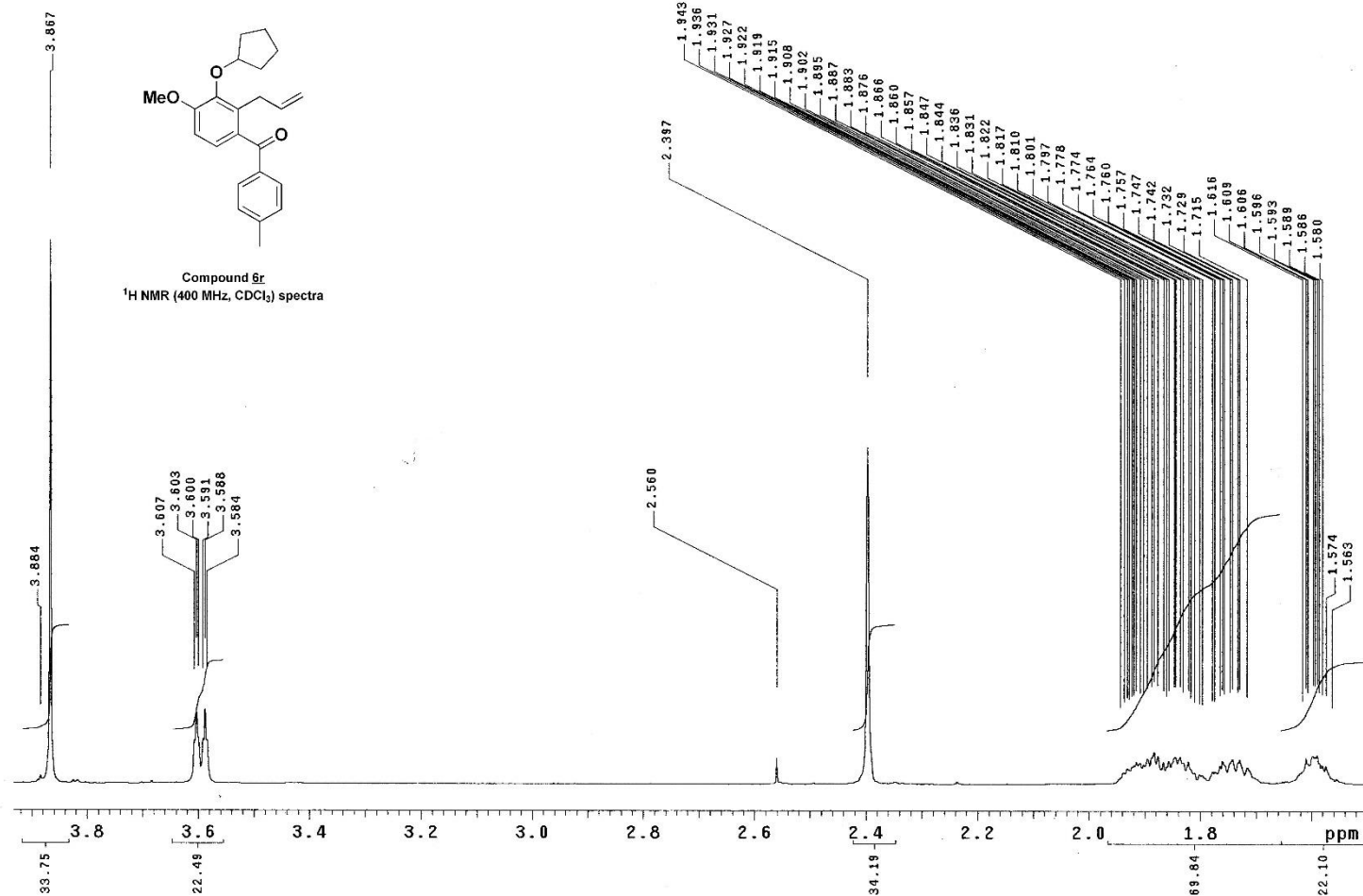
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



# Compound 6r

YL1041225

Pulse Sequence: s2pu1  
 UNITYplus-400 "unity400"  
 Date: Dec 25 2015  
 Solvent: CDCl<sub>3</sub>  
 Ambient temperature  
 Total 64 repetitions



## Compound 6r

YL1041225

Pulse Sequence: s2pu1

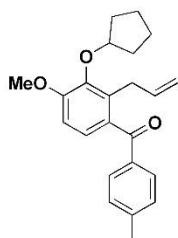
UNITYplus-400 "unity400"

Date: Dec 25 2015

Solvent: CDCl<sub>3</sub>

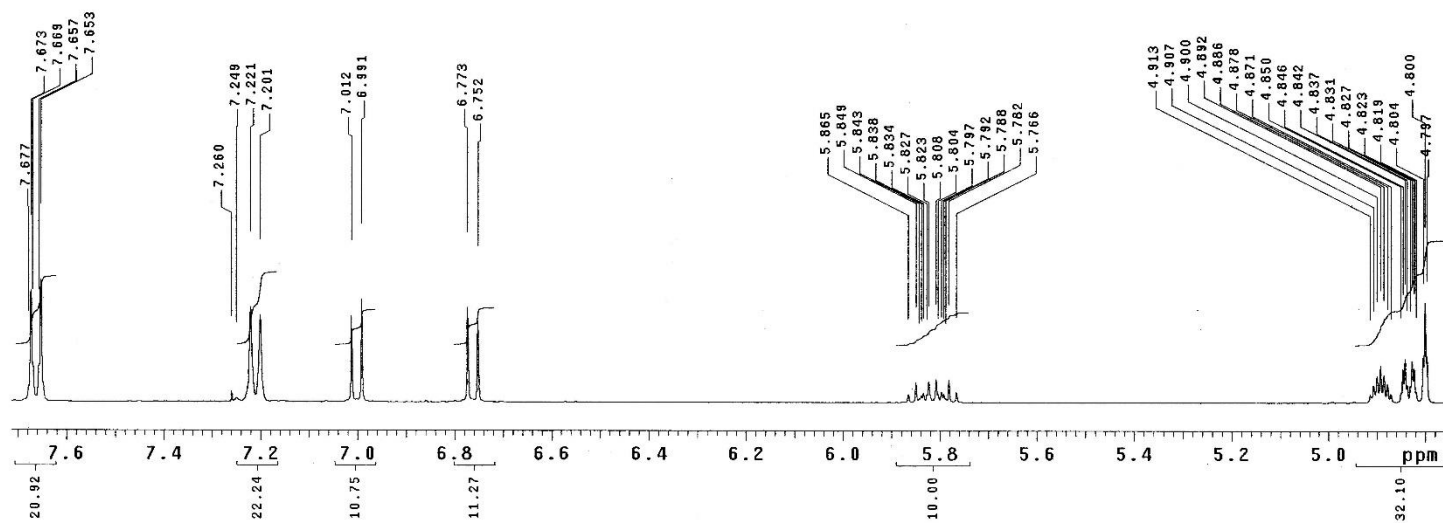
Ambient temperature

Total 64 repetitions



Compound 6r

<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



## Compound 6r

YL1041225

Pulse Sequence: s2pu1

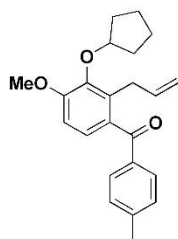
UNITYplus-400 "unity400"

Date: Dec 25 2015

Solvent: CDCl<sub>3</sub>

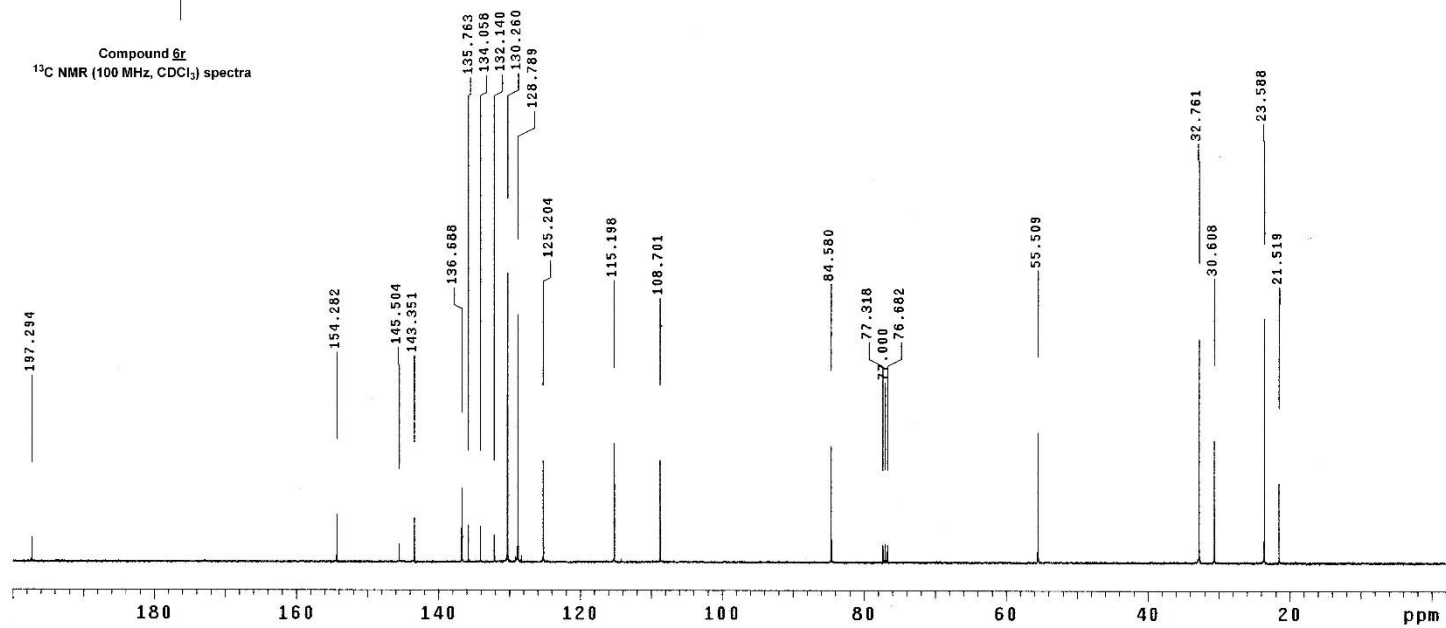
Ambient temperature

Total 336 repetitions



Compound 6r

<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra

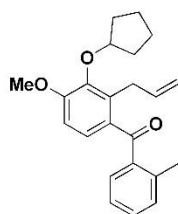




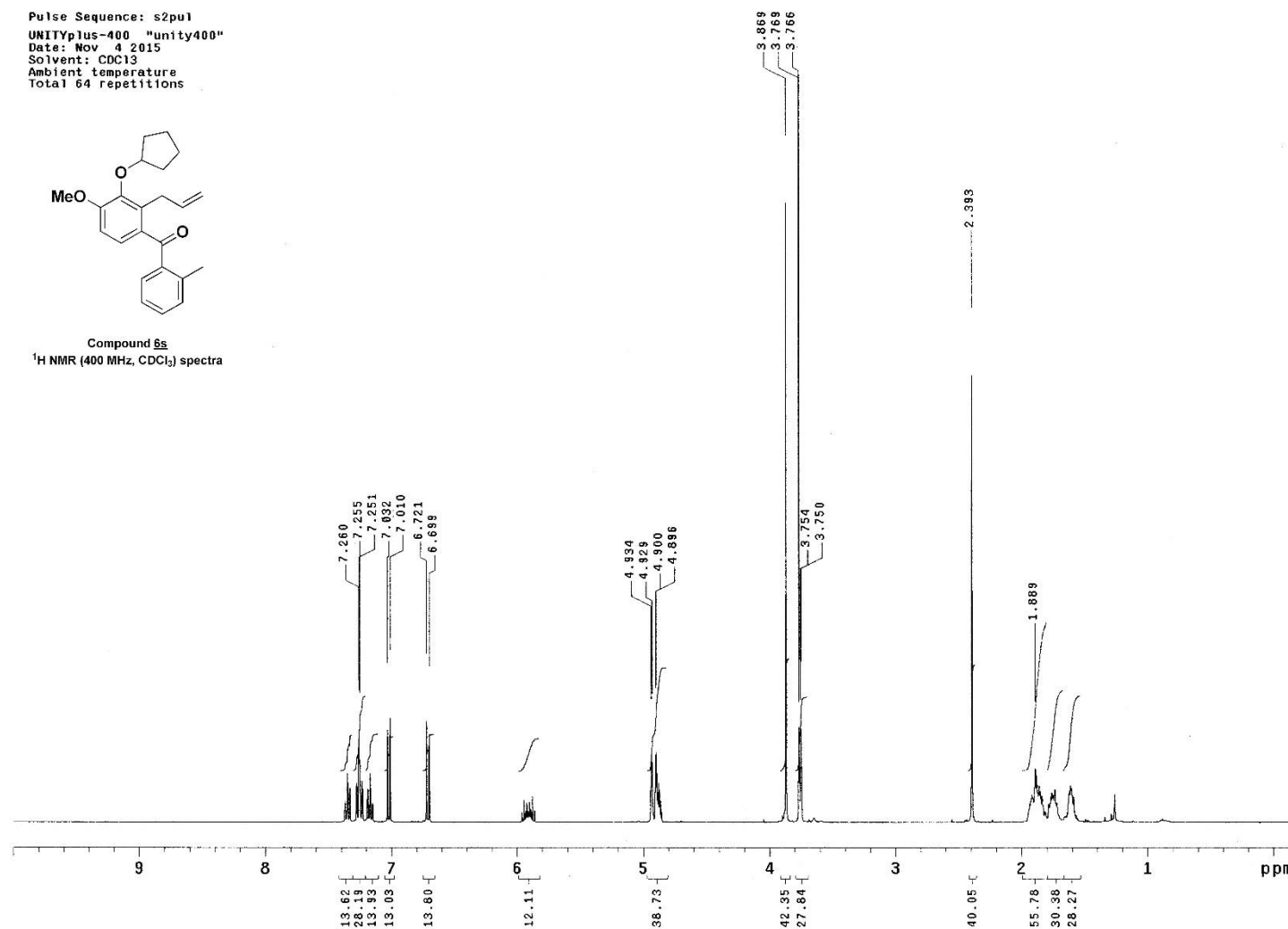
# Compound 6s

YLenon2s

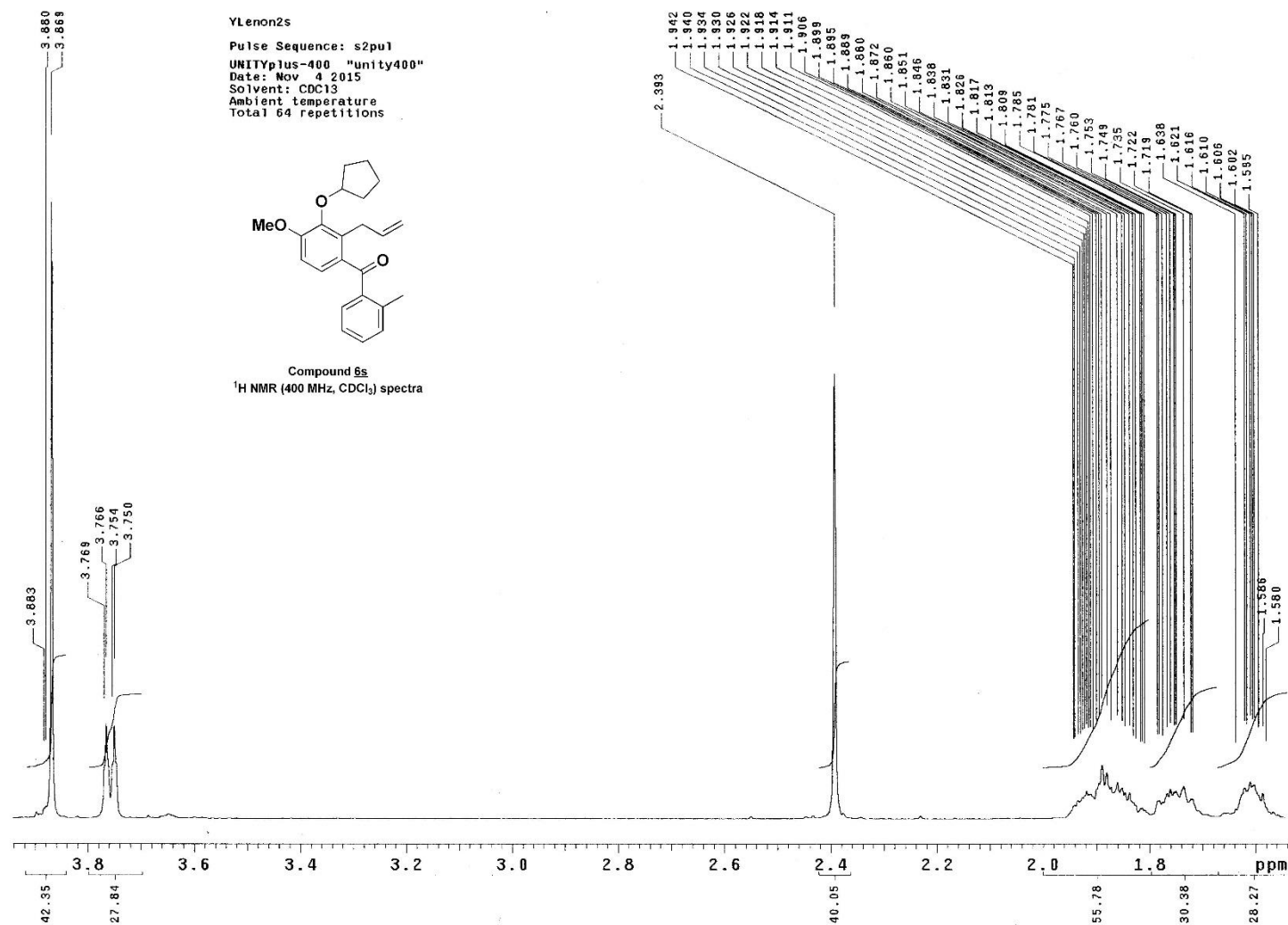
Pulse Sequence: s2pul  
 UNITYplus-400 "unity400"  
 Date: Nov 4 2015  
 Solvent: CDCl<sub>3</sub>  
 Ambient temperature  
 Total 64 repetitions



Compound 6s  
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



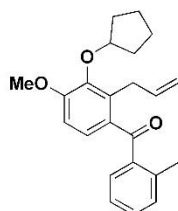
# Compound 6s



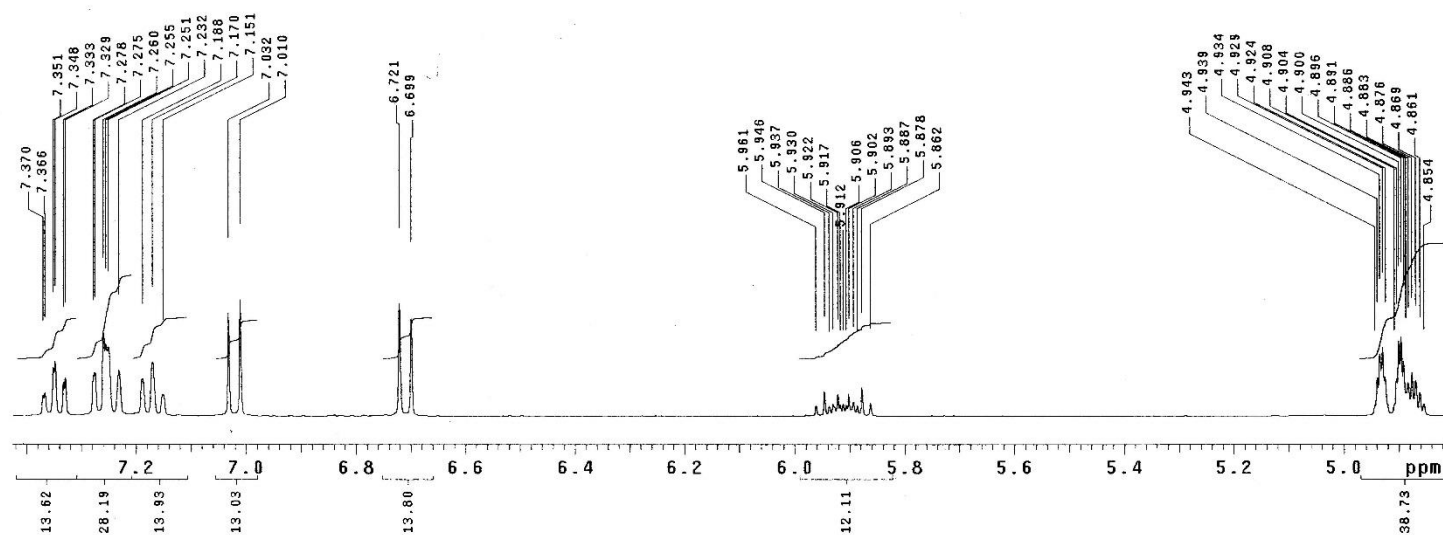
## Compound 6s

YLenon2s

Pulse Sequence: s2pul  
UNITYplus-400 "unity400"  
Date: Nov 4 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 64 repetitions

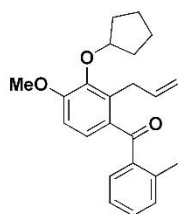


Compound 6s  
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



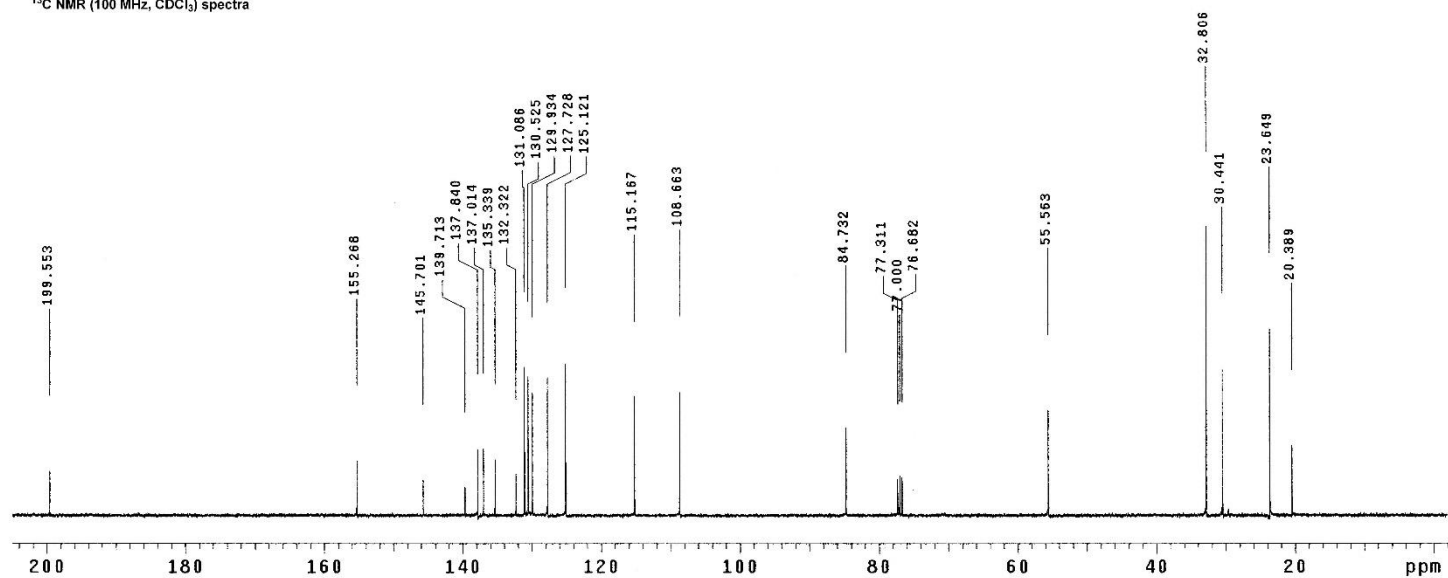
## Compound 6s

YLenon2s  
Pulse Sequence: s2pu1  
UNITYplus-400 "unity400"  
Date: Nov 4 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 928 repetitions



Compound 6s

<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra



## Compound 6t

YLenon2t

Pulse Sequence: s2pu1

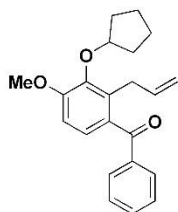
UNITYplus-400 "unity400"

Date: Nov 9 2015

Solvent: CDCl<sub>3</sub>

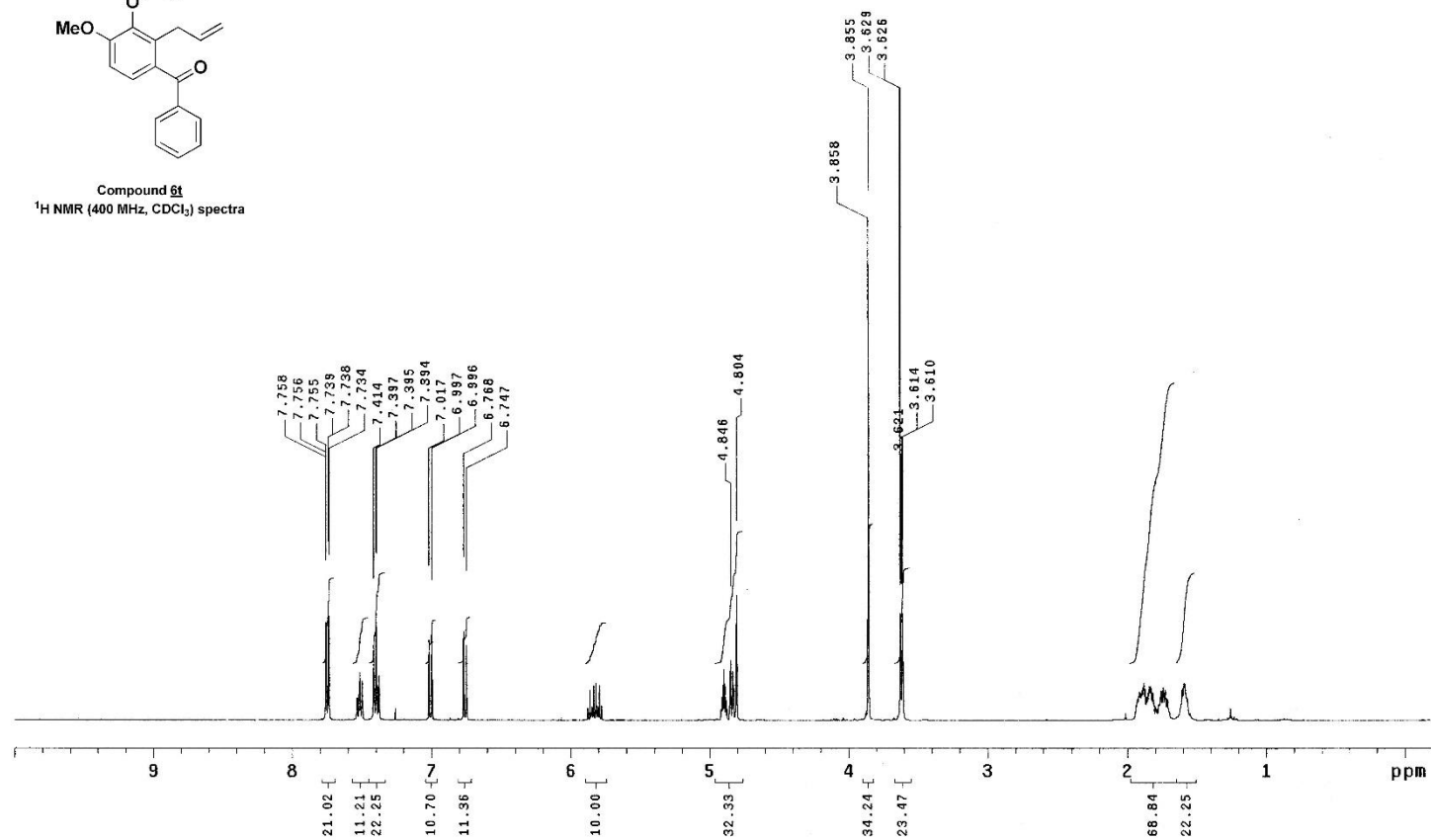
Ambient temperature

Total 64 repetitions



Compound 6t

<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



# Compound 6t

YLenon2t

Pulse Sequence: s2pu1

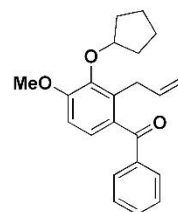
UNITYplus-400 "unity400"

Date: Nov 9 2015

Solvent: CDCl<sub>3</sub>

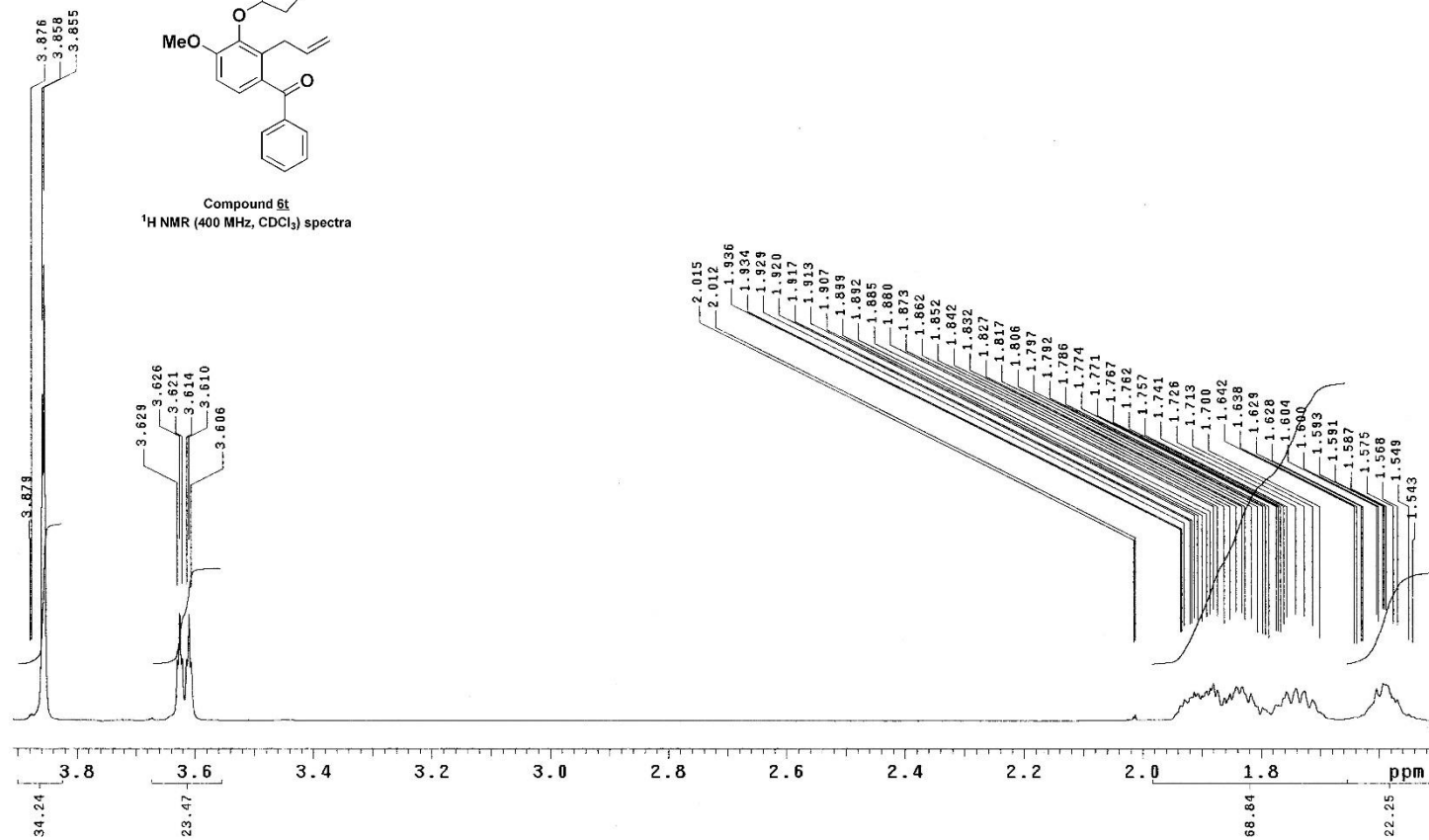
Ambient temperature

Total 64 repetitions



Compound 6t

<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



## Compound 6t

YLenon2t

Pulse Sequence: s2pu1

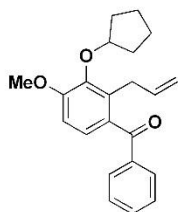
UNITYplus-400 "unity400"

Date: Nov 9 2015

Solvent: CDCl<sub>3</sub>

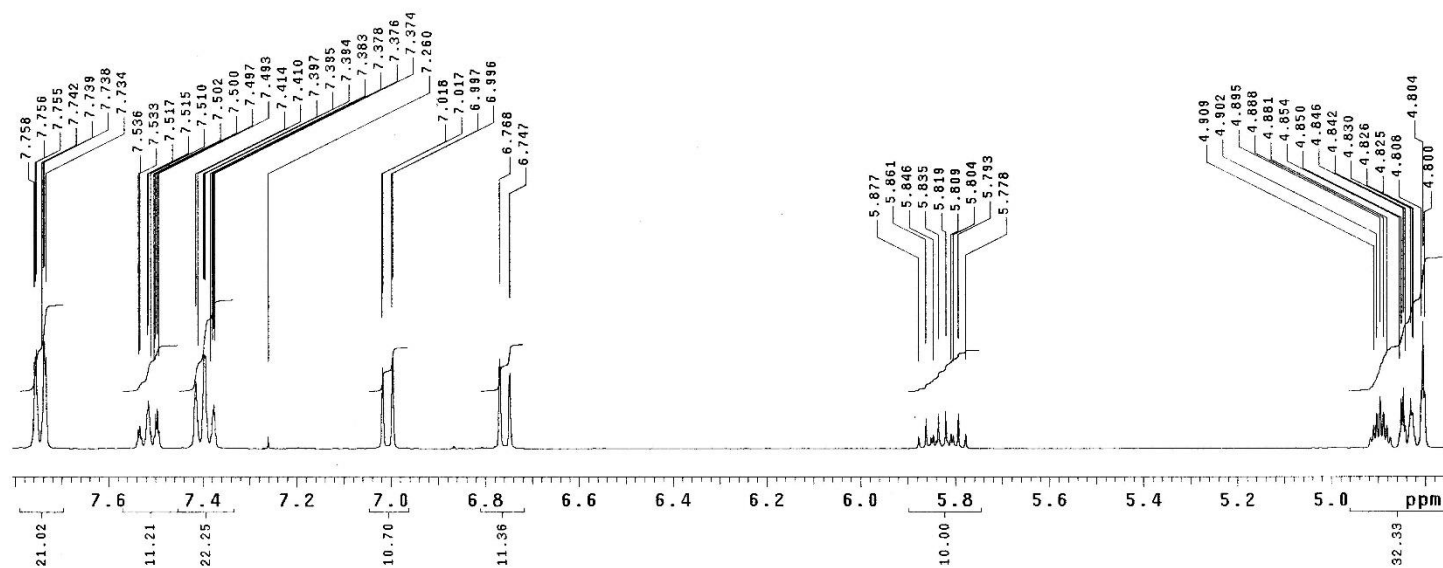
Ambient temperature

Total 64 repetitions



Compound 6t

<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



## Compound 6t

YLenon2t

Pulse Sequence: s2pu1

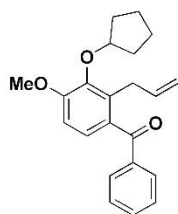
UNITYplus-400 "unity400"

Date: Nov 9 2015

Solvent: CDCl<sub>3</sub>

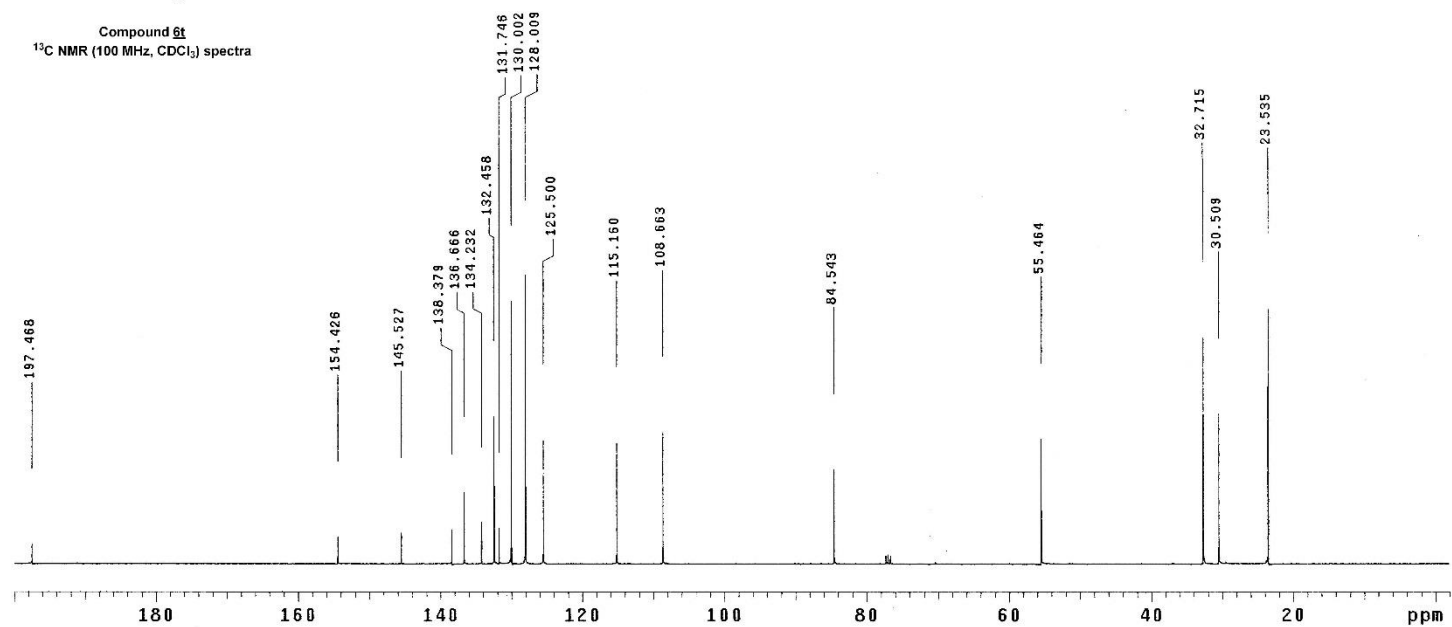
Ambient temperature

Total 1632 repetitions



Compound 6t

<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra





## Compound 6u

YLenon2u

Pulse Sequence: s2pu1

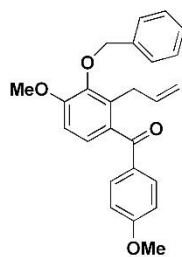
UNITYplus-400 "unity400"

Date: Nov 2 2015

Solvent: CDCl<sub>3</sub>

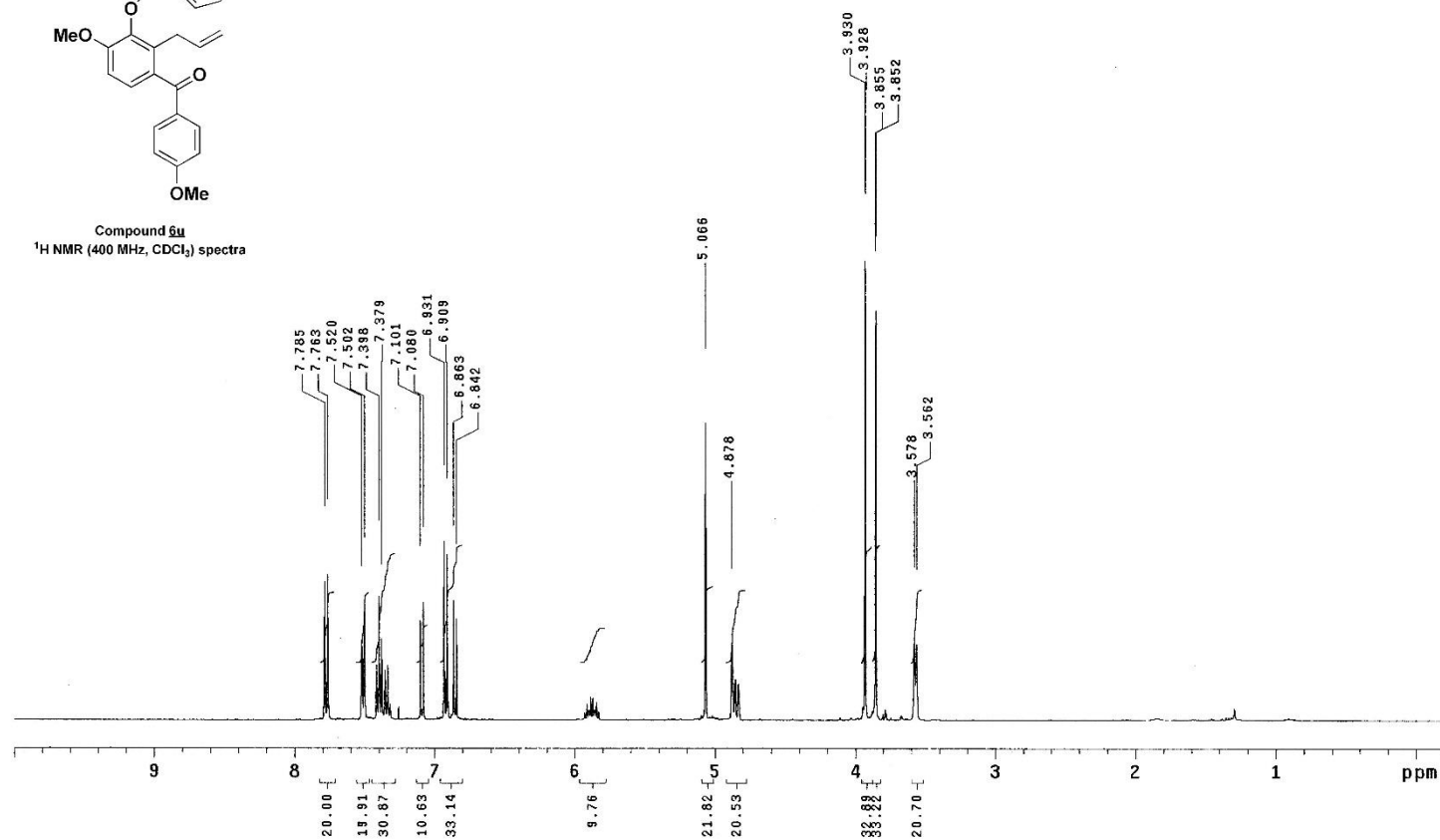
Ambient temperature

Total 64 repetitions



Compound 6u

<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



## Compound 6u

YLenon2u

Pulse Sequence: s2pul

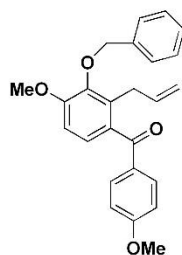
UNITYplus-400 "unity400"

Date: Nov 2 2015

Solvent: CDCl<sub>3</sub>

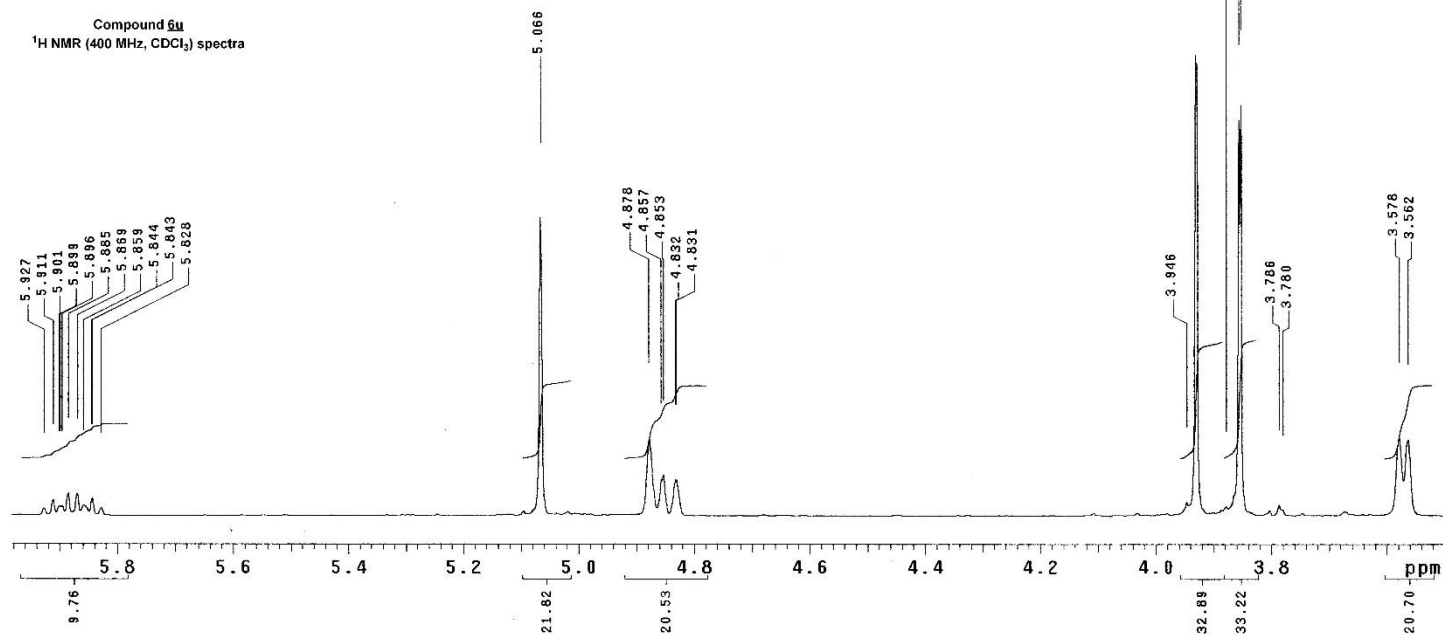
Ambient temperature

Total 64 repetitions



Compound 6u

<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



## Compound 6u

YLenon2u

Pulse Sequence: s2pu1

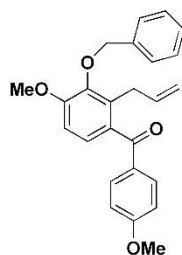
UNITYplus-400 "unity400"

Date: Nov 2 2015

Solvent: CDCl<sub>3</sub>

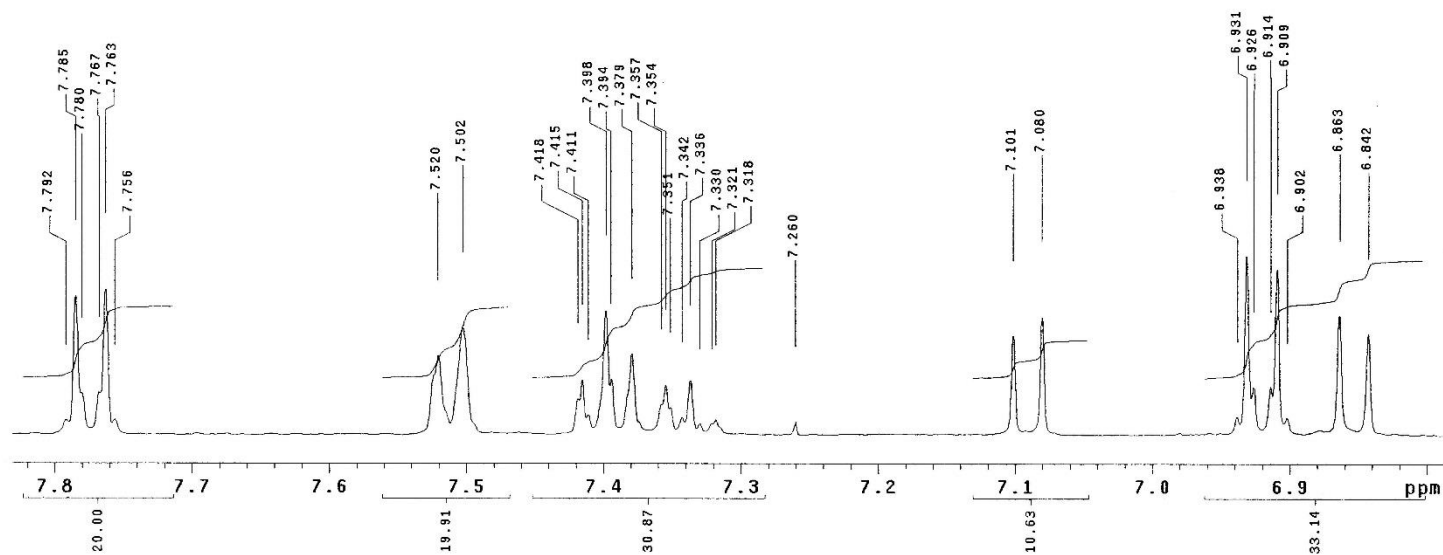
Ambient temperature

Total 64 repetitions



Compound 6u

<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



## Compound 6u

YLenon2u

Pulse Sequence: s2pu1

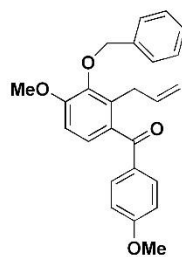
UNITYplus-400 "unity400"

Date: Nov 2 2015

Solvent: CDCl<sub>3</sub>

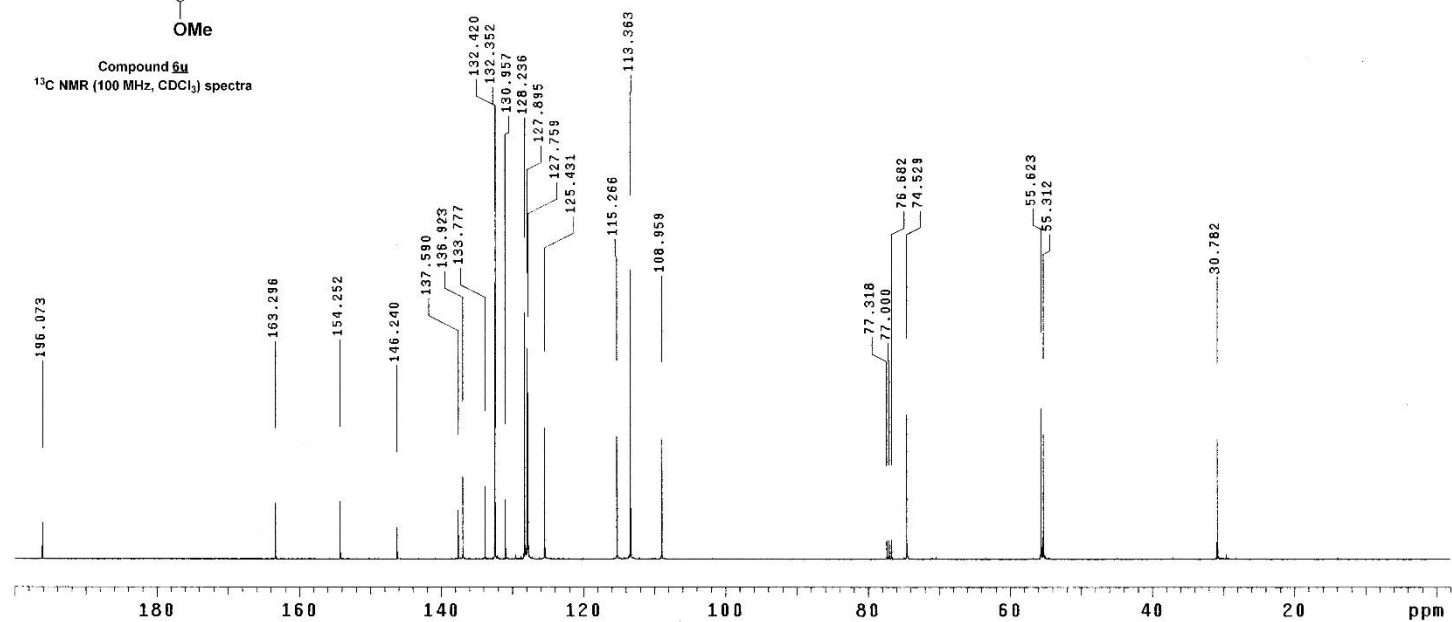
Ambient temperature

Total 3200 repetitions



Compound 6u

<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra



## Compound 6v

YLenon2v

Pulse Sequence: s2pu1

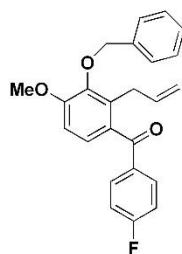
UNITYplus-400 "unity400"

Date: Nov 13 2015

Solvent: CDCl<sub>3</sub>

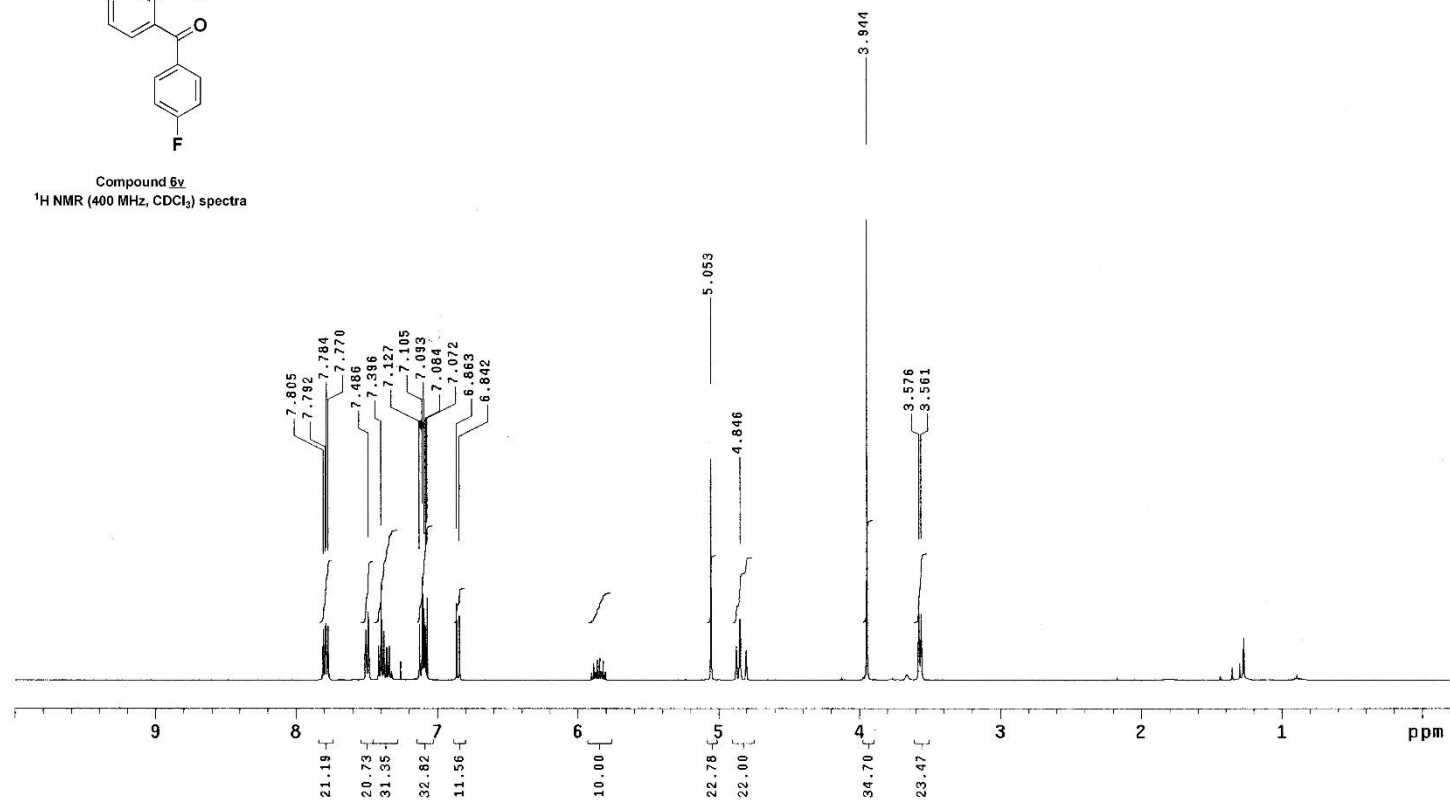
Ambient temperature

Total 64 repetitions



Compound 6v

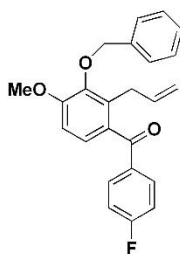
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



# Compound 6v

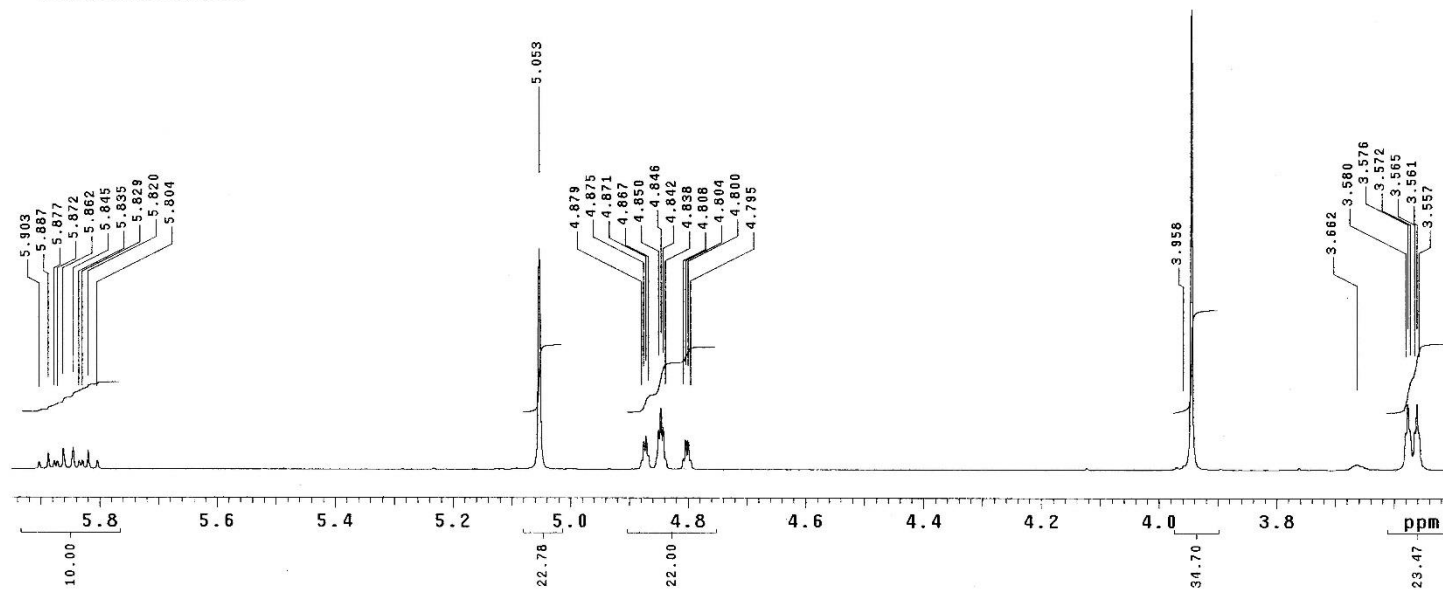
YLenon2v

Pulse Sequence: s2pu1  
 UNITYplus-400 "unity400"  
 Date: Nov 13 2015  
 Solvent: CDCl3  
 Ambient temperature  
 Total 64 repetitions



Compound 6v

<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



## Compound 6v

YLenon2v

Pulse Sequence: s2pu1

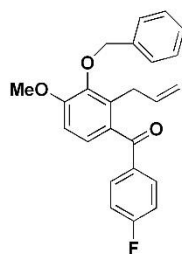
UNITYplus-400 "unity400"

Date: Nov 13 2015

Solvent: CDCl<sub>3</sub>

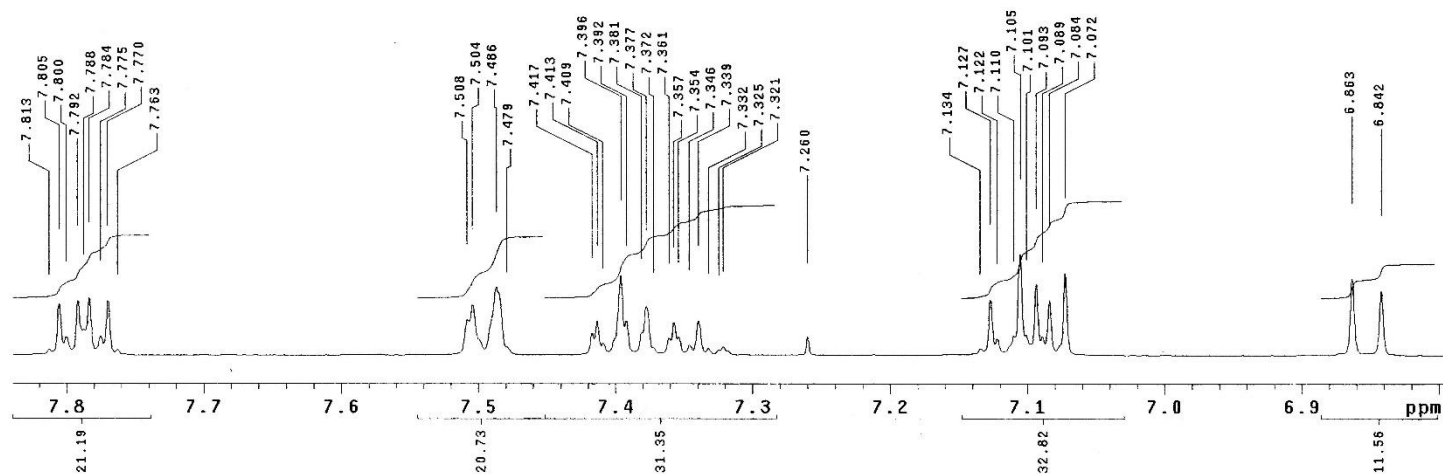
Ambient temperature

Total 64 repetitions



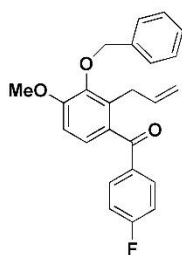
Compound 6v

<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra

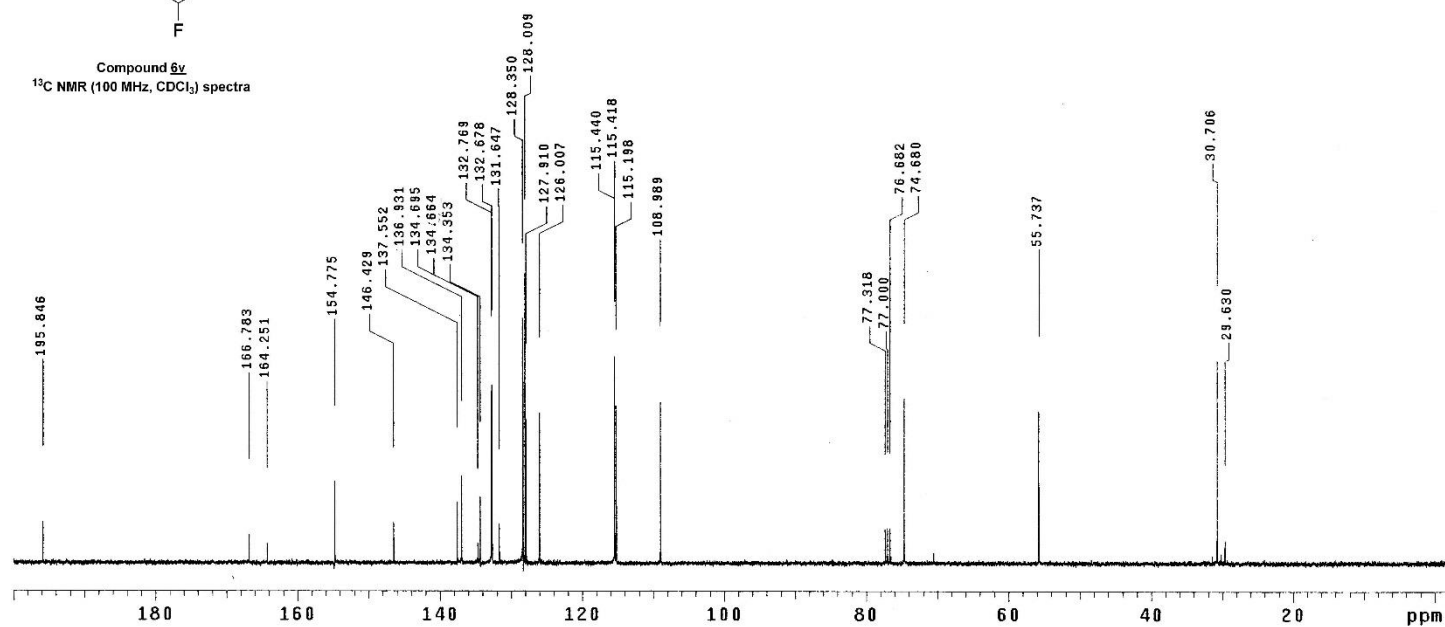


## Compound 6v

YLenon2v  
Pulse Sequence: s2pul  
UNITYplus-400 "unity400"  
Date: Nov 13 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 512 repetitions



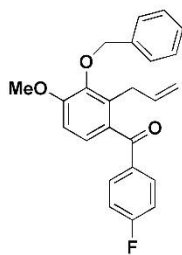
Compound 6v  
<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra



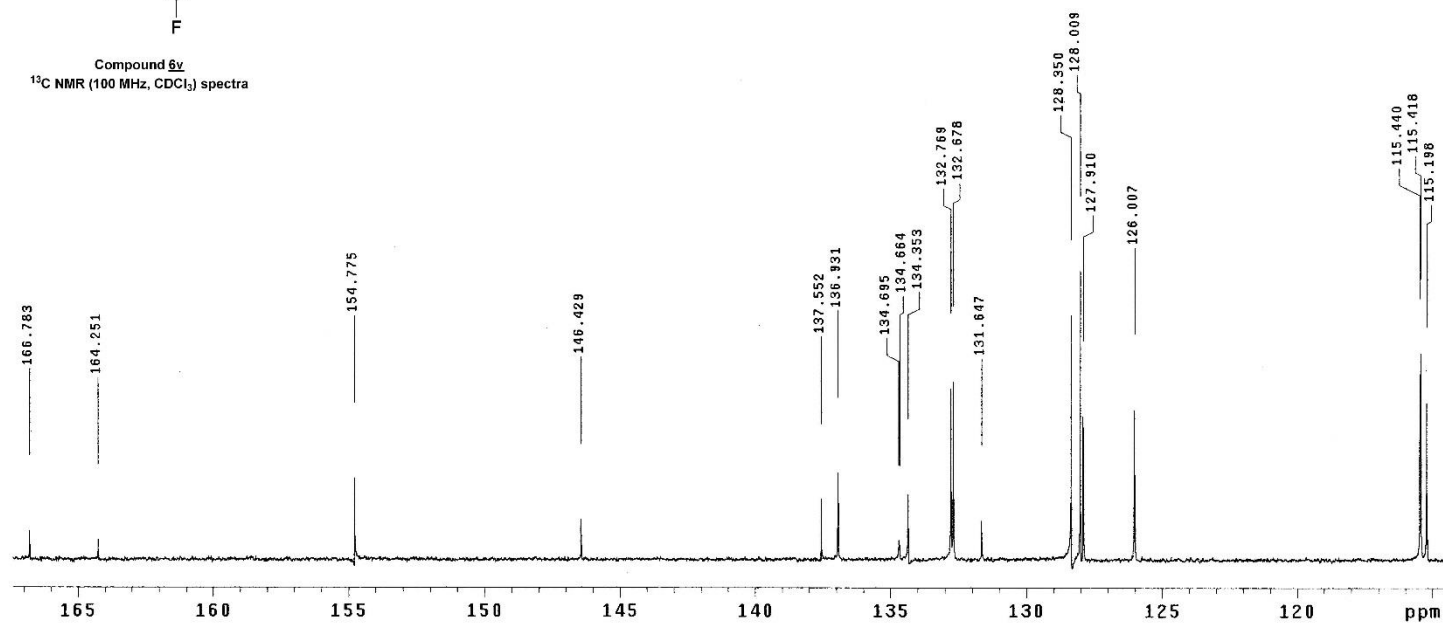


## Compound 6v

YLenon2v  
Pulse Sequence: s2pul  
UNITYplus-400 "unity400"  
Date: Nov 13 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 512 repetitions



Compound 6v  
<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra



## Compound 6w

YLenon2w

Pulse Sequence: s2pu1

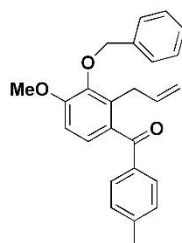
UNITYplus-400 "unity400"

Date: Nov 10 2015

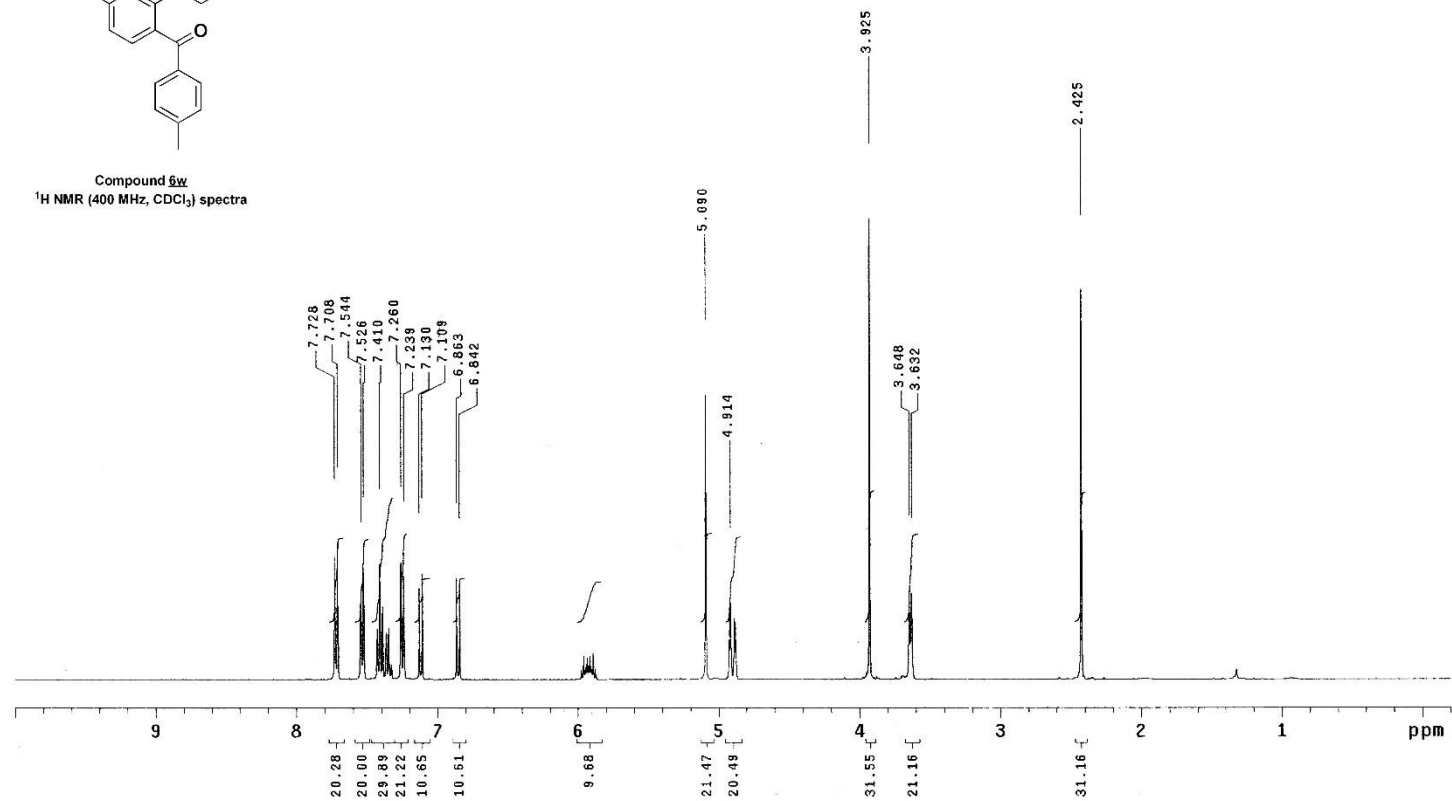
Solvent: CDCl<sub>3</sub>

Ambient temperature

Total 64 repetitions



Compound 6w  
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



## Compound 6w

YLenon2w

Pulse Sequence: s2pu1

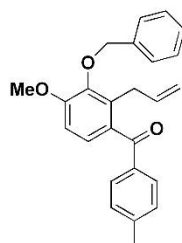
UNITYplus-400 "unity400"

Date: Nov 10 2015

Solvent: CDCl<sub>3</sub>

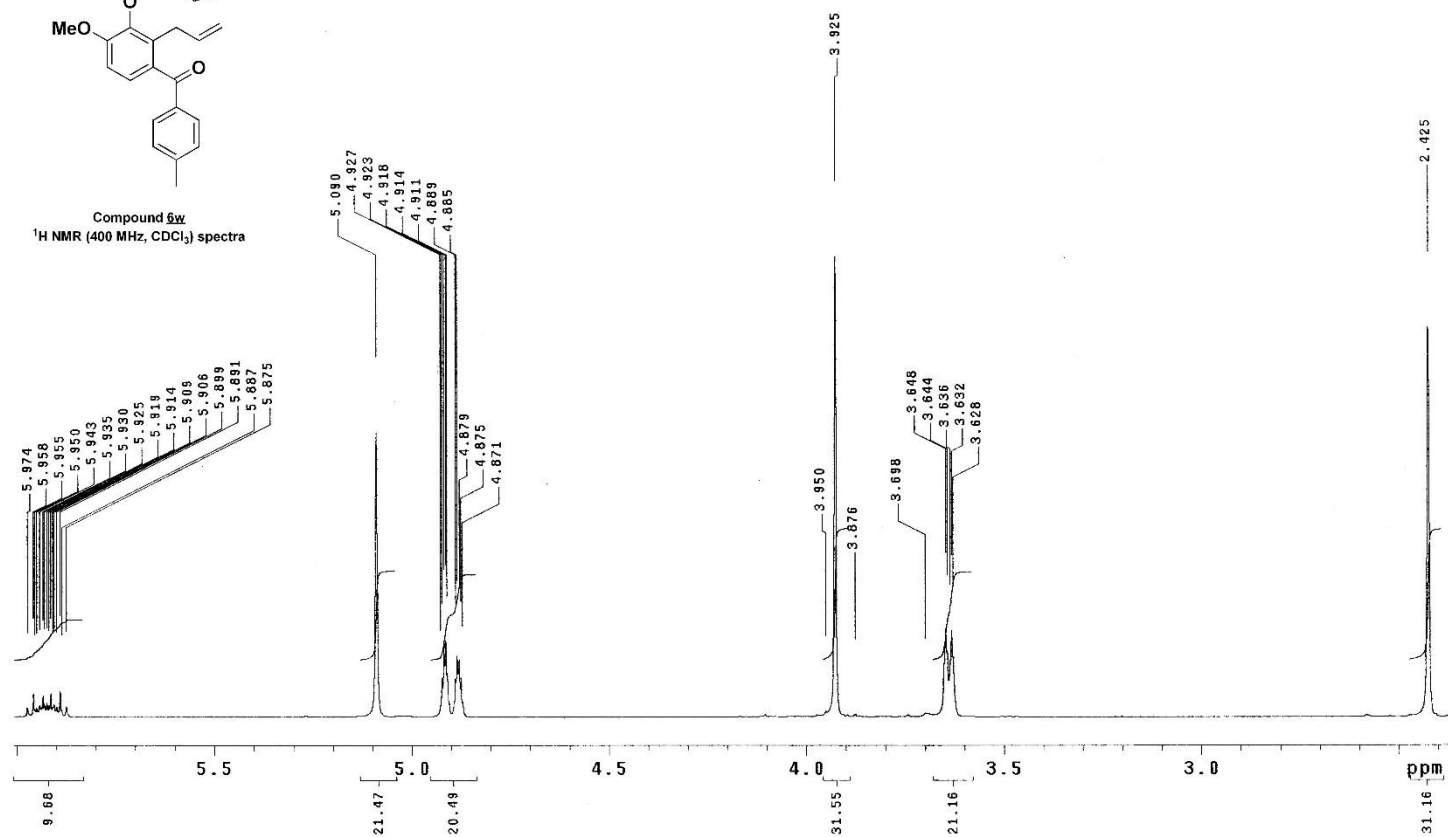
Ambient temperature

Total 64 repetitions



Compound 6w

<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



## Compound 6w

YLenon2w

Pulse Sequence: s2pu1

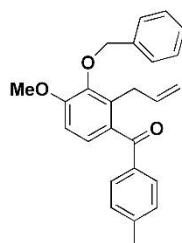
UNITYplus-400 "unity400"

Date: Nov 10 2015

Solvent: CDCl<sub>3</sub>

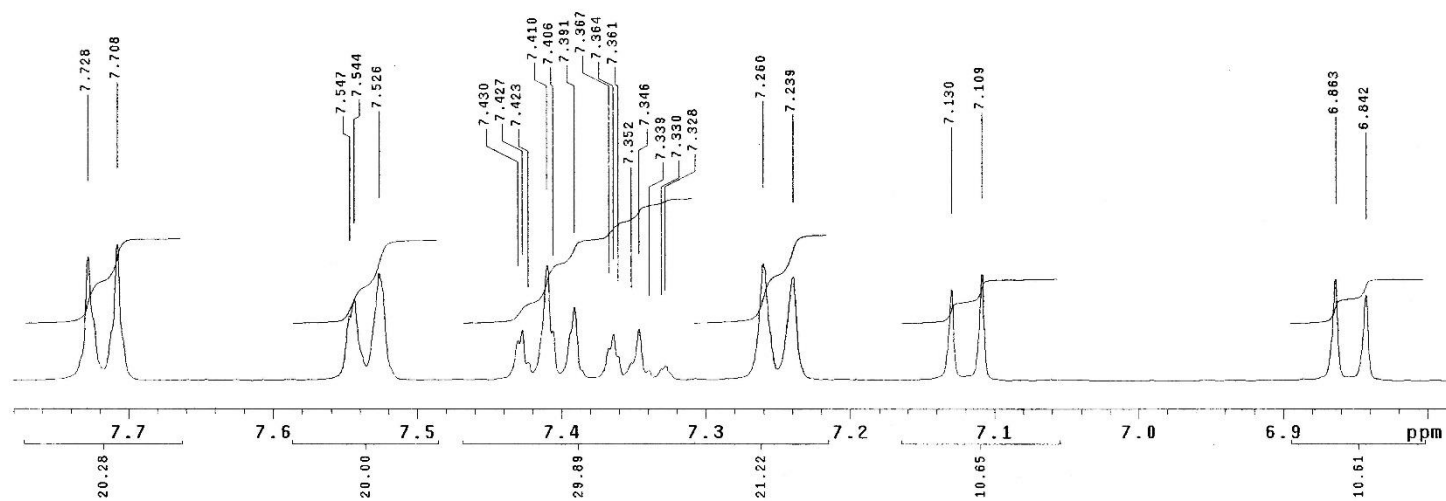
Ambient temperature

Total 64 repetitions



Compound 6w

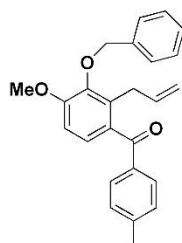
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



## Compound 6w

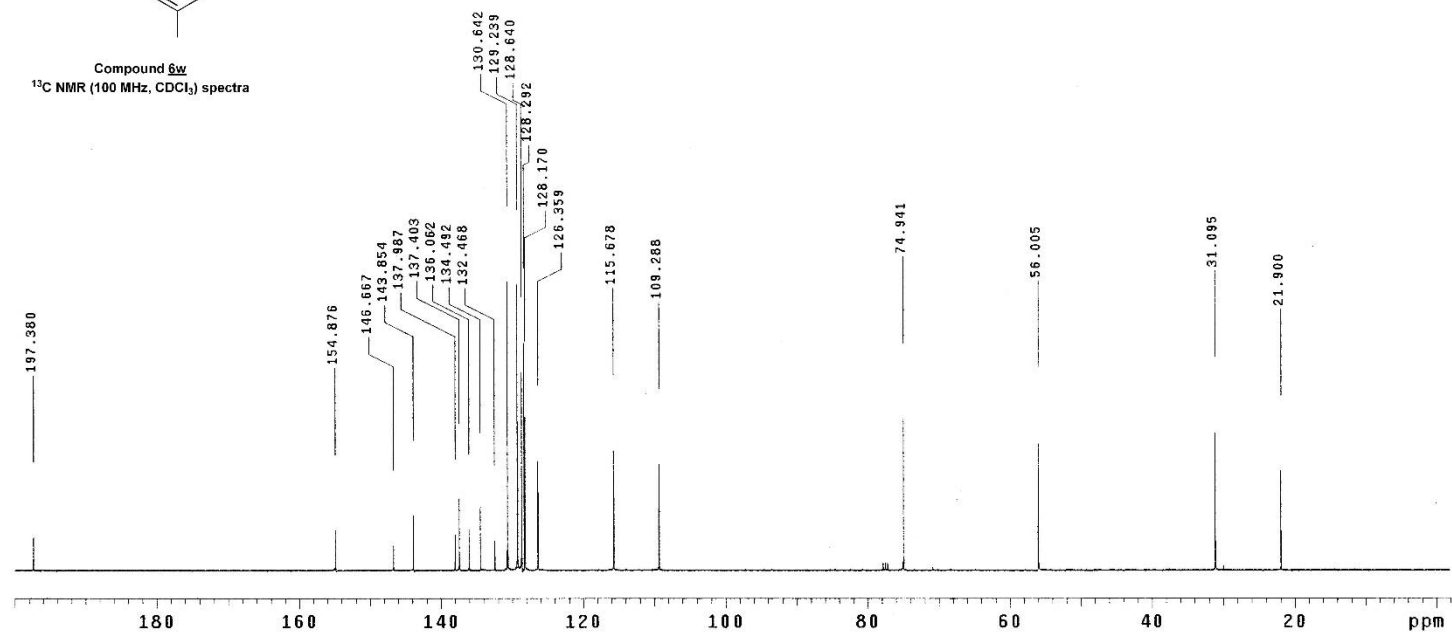
YLenon2w

Pulse Sequence: s2pu1  
UNITYplus-400 "unity400"  
Date: Nov 10 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 320 repetitions



Compound **6w**

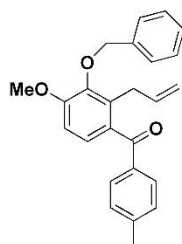
<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra



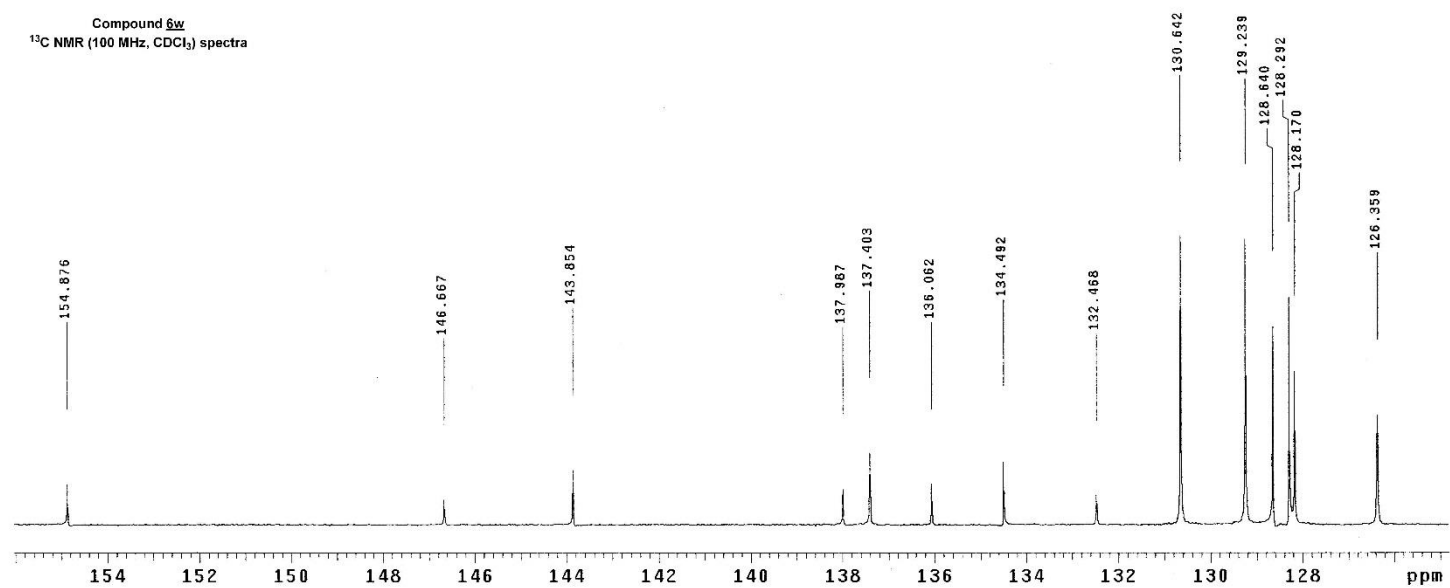
## Compound 6w

YLenon2w

Pulse Sequence: s2pu1  
UNITYplus-400 "unity400"  
Date: Nov 10 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 320 repetitions



Compound 6w  
<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra



## Compound 6x

YLenon2x

Pulse Sequence: s2pul

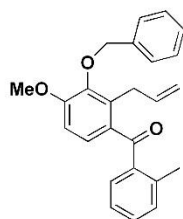
UNITYplus-400 "unity400"

Date: Nov 4 2015

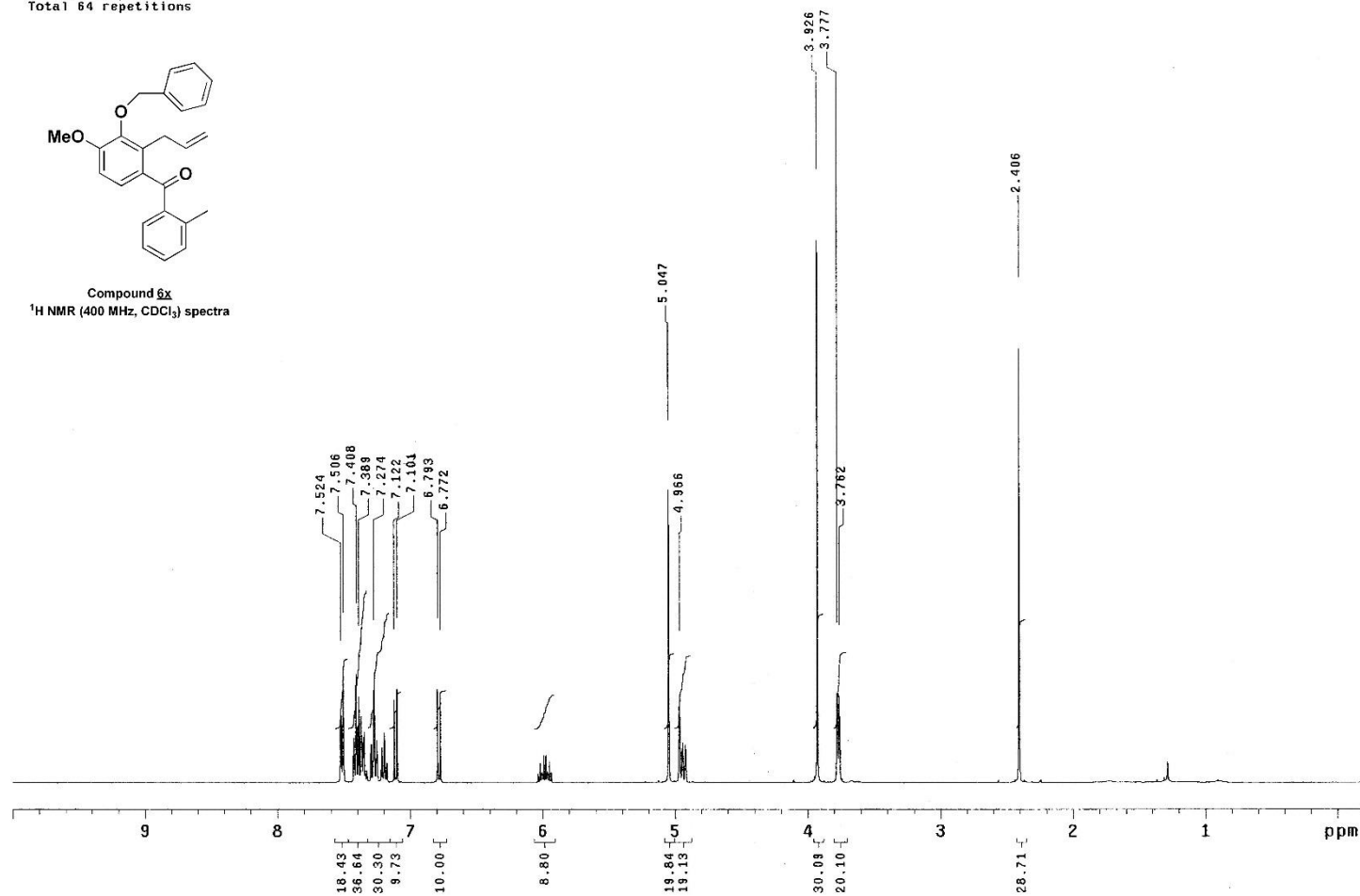
Solvent: CDCl<sub>3</sub>

Ambient temperature

Total 64 repetitions



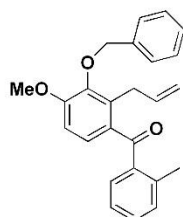
Compound 6x  
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



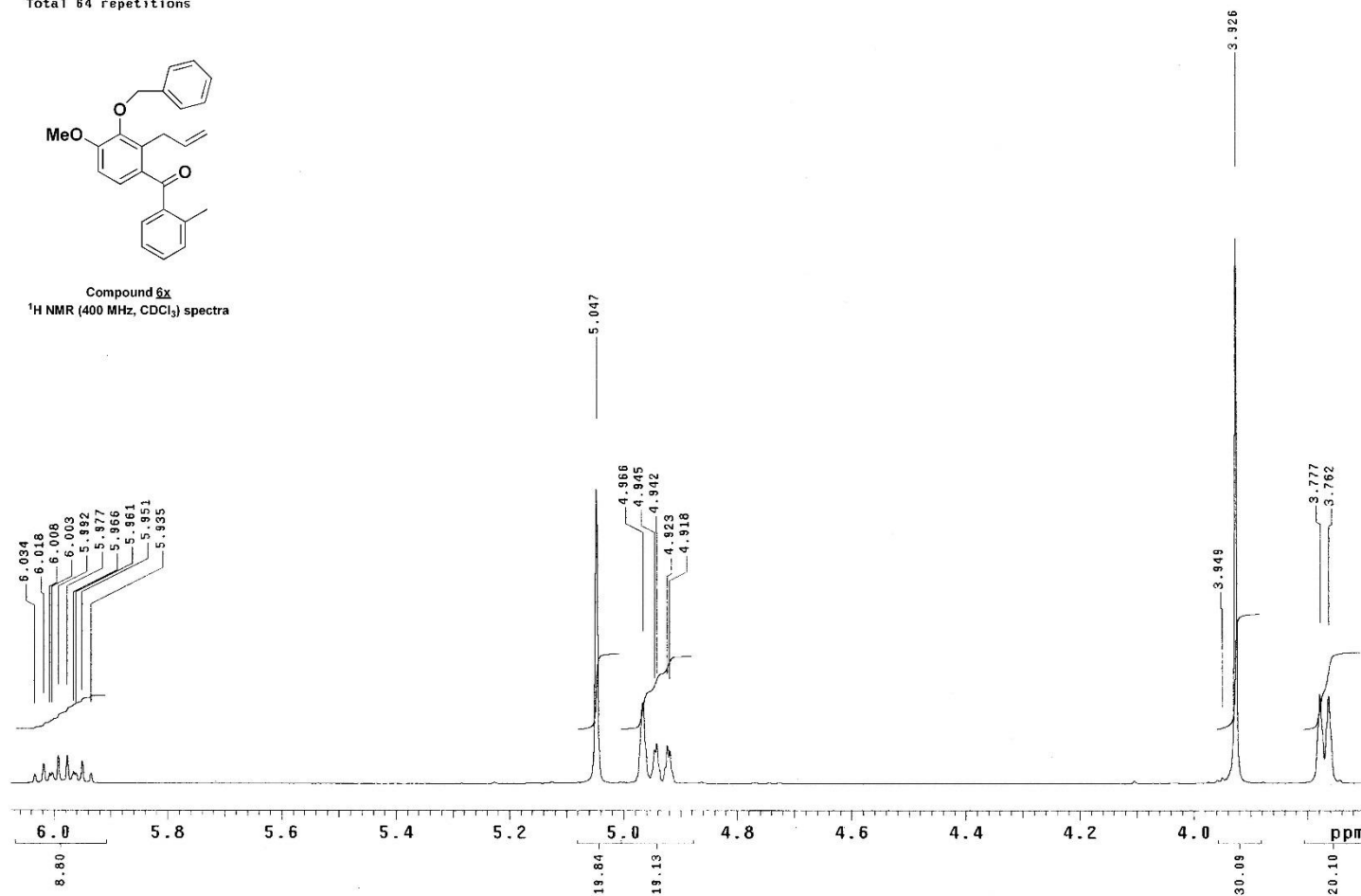
## Compound 6x

YLenon2x

Pulse Sequence: s2pul  
UNITYplus-400 "unity400"  
Date: Nov 4 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 64 repetitions



Compound 6x  
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra

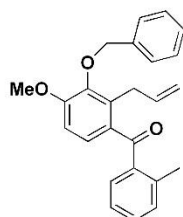




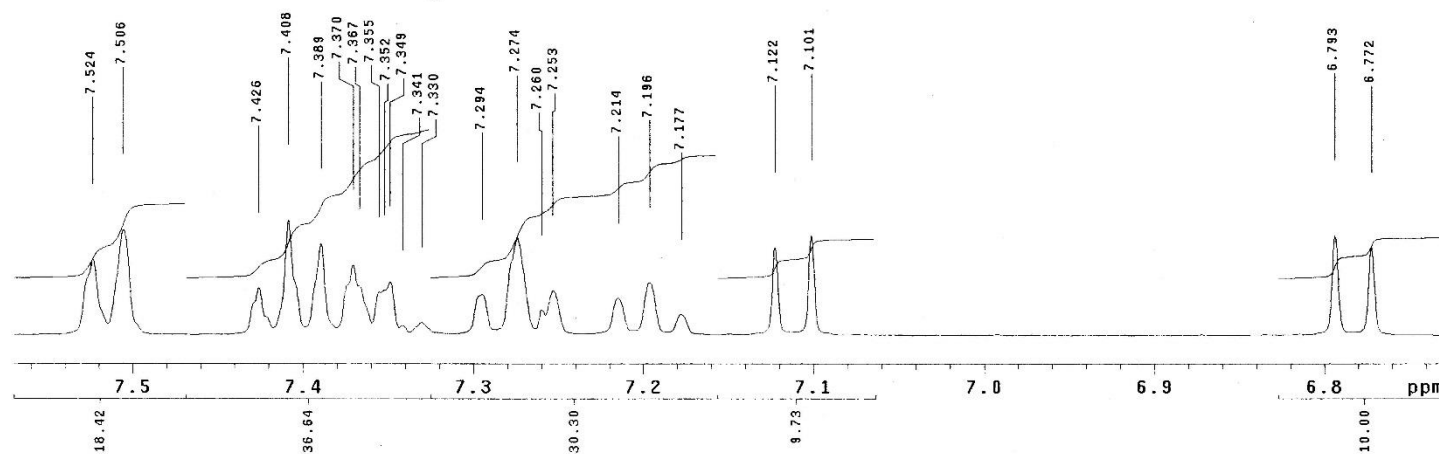
## Compound 6x

YLenon2x

Pulse Sequence: s2pul  
UNITYplus-400 "unity400"  
Date: Nov 4 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 64 repetitions



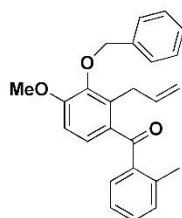
Compound 6x  
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



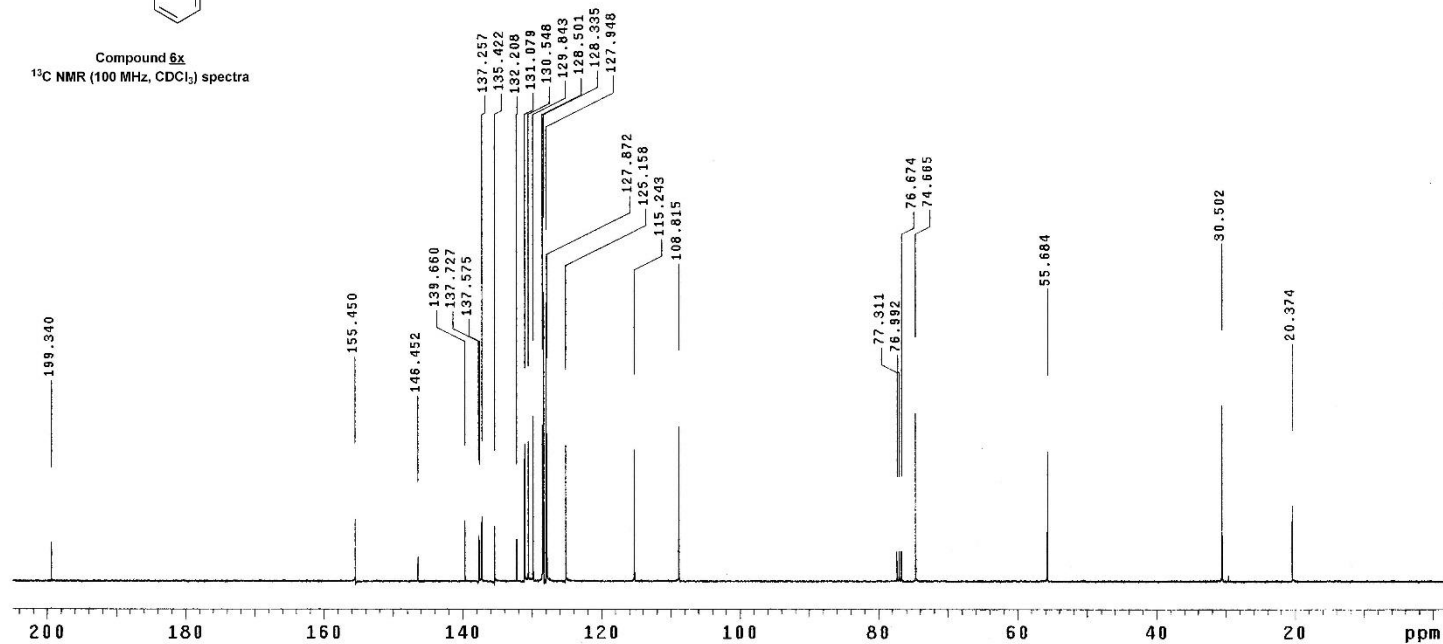
## Compound 6x

YLenon2x

Pulse Sequence: s2pul  
UNITYplus-400 "unity400"  
Date: Nov 4 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 1728 repetitions



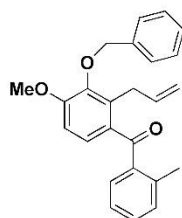
Compound 6x  
<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra



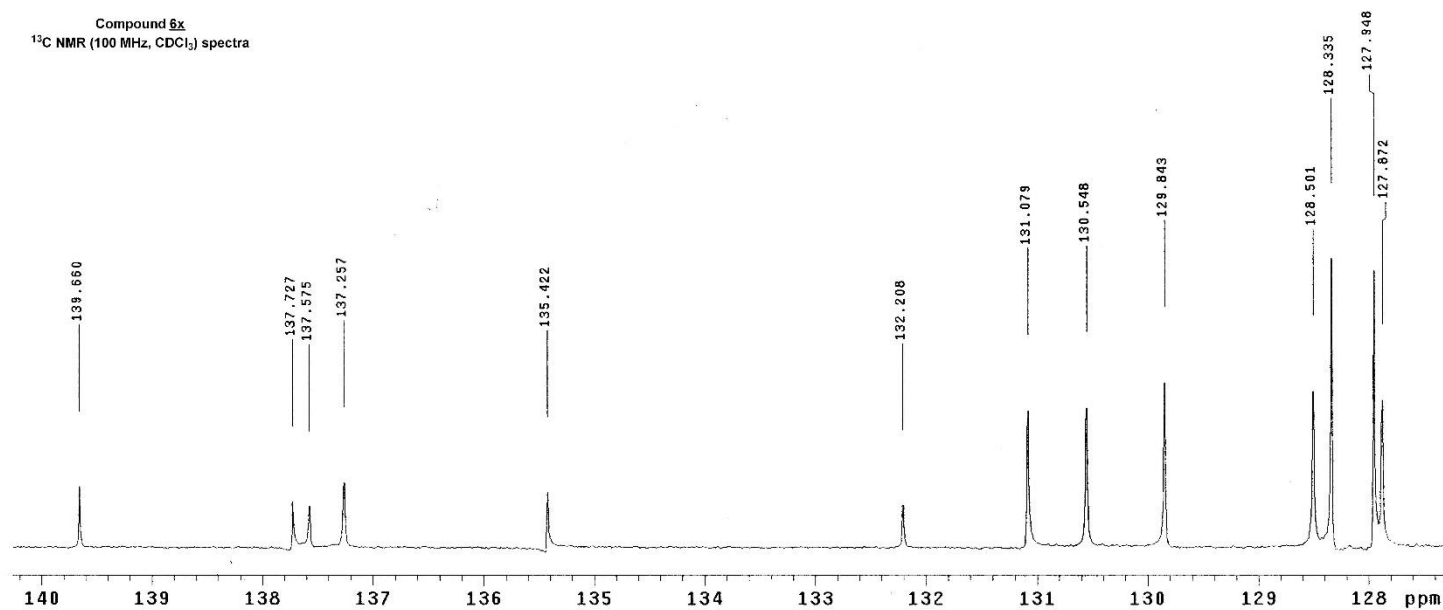
## Compound 6x

YLenon2x

Pulse Sequence: s2pu1  
UNITYplus-400 "unity400"  
Date: Nov 4 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 1728 repetitions



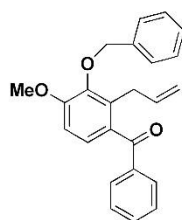
Compound 6x  
<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra



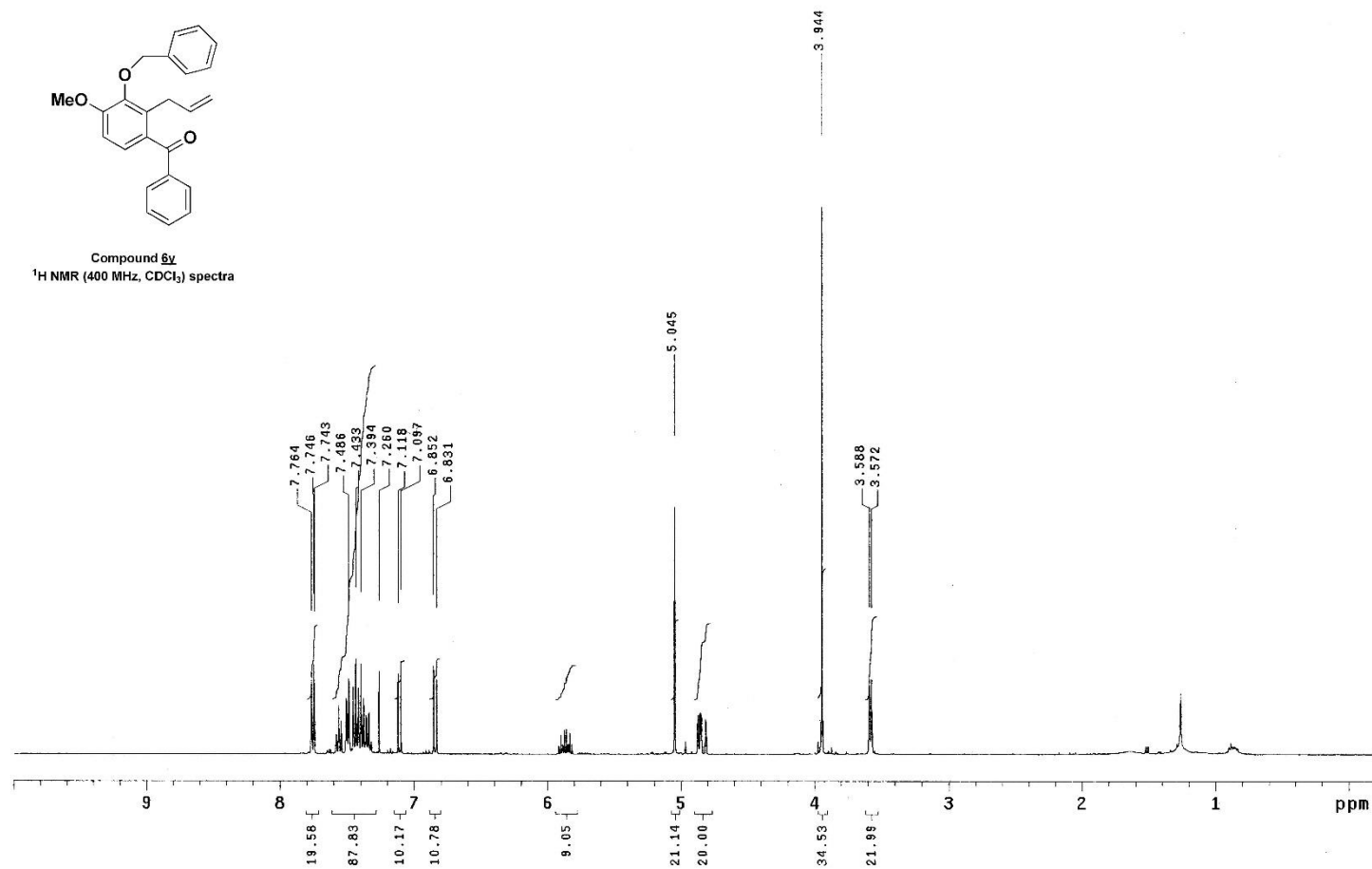
## Compound 6y

YL1041024

Pulse Sequence: s2pul  
UNITYplus-400 "unity400"  
Date: Nov 2 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 64 repetitions



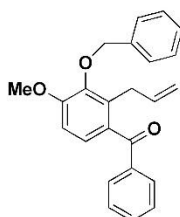
Compound 6y  
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



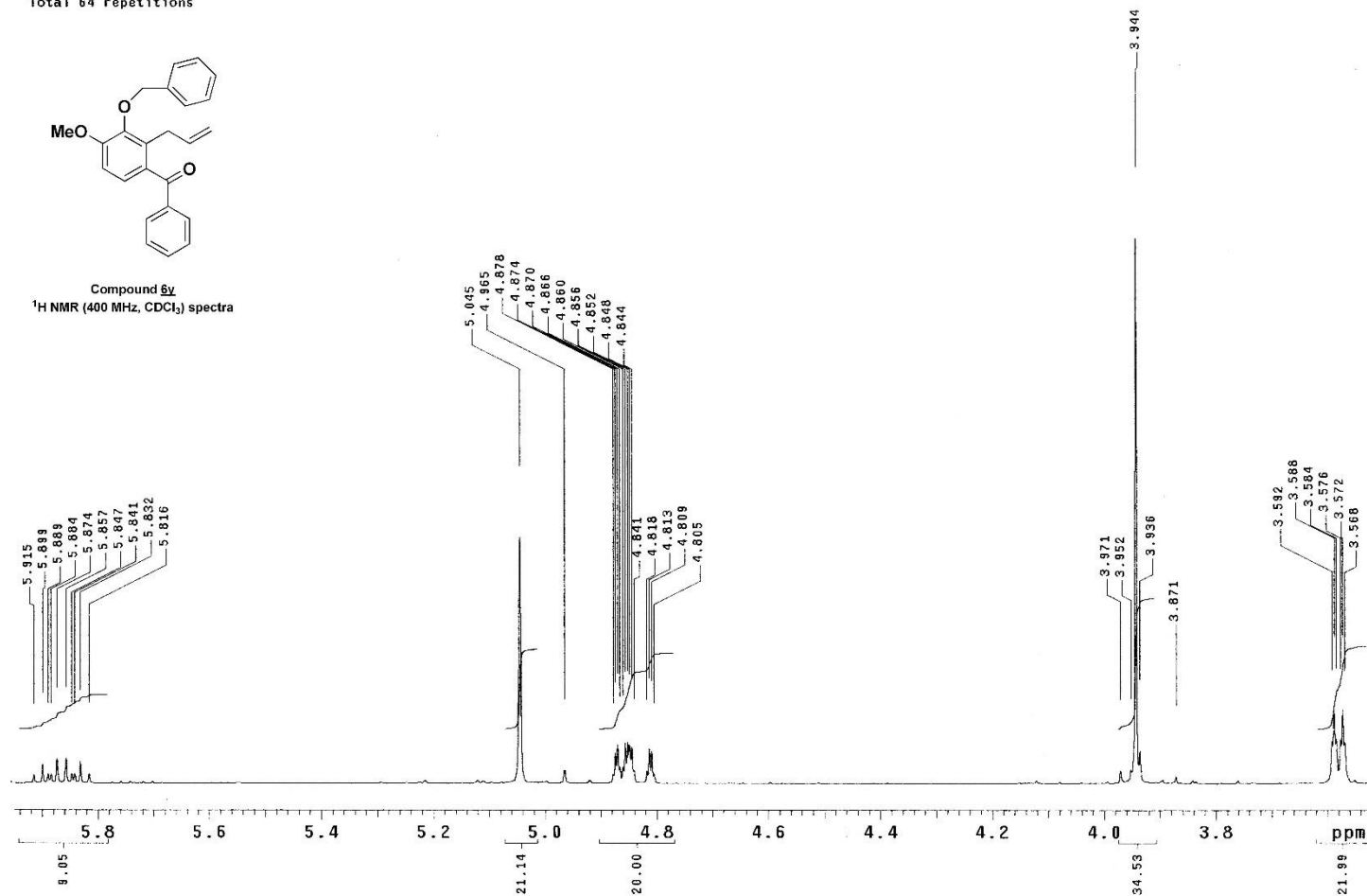
## Compound 6y

YL1041024

Pulse Sequence: s2pul  
UNITYplus-400 "unity400"  
Date: Nov 2 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 64 repetitions



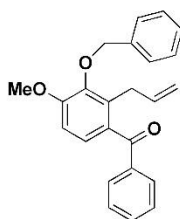
Compound 6y  
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



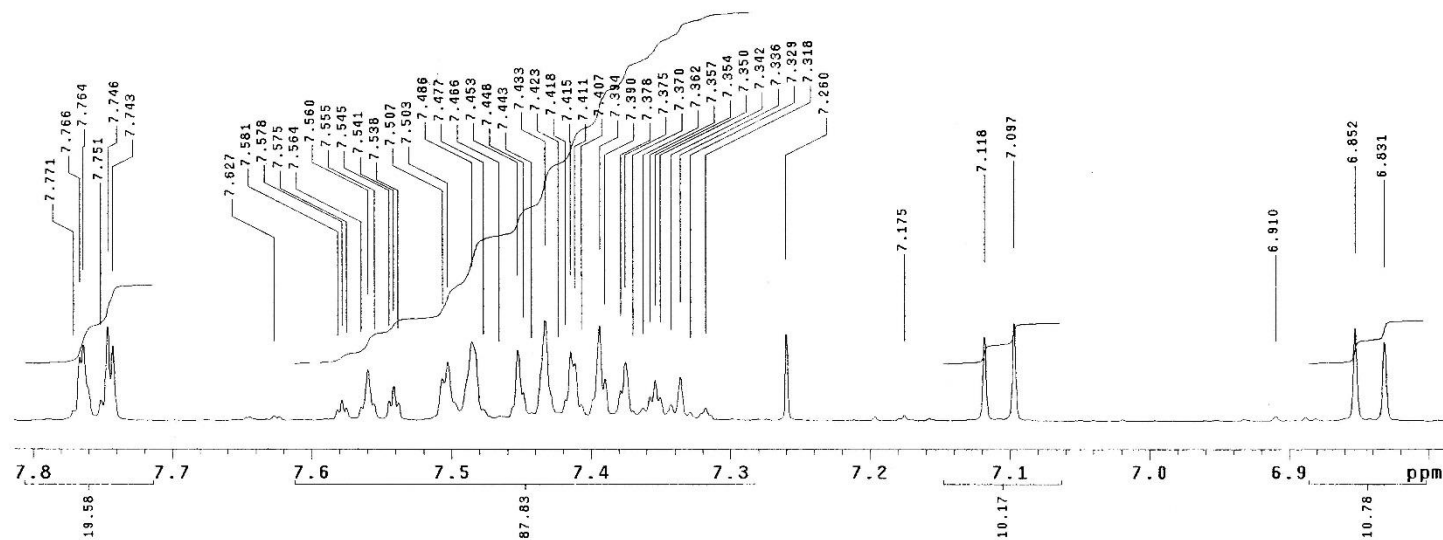
## Compound 6y

YL1041024

Pulse Sequence: s2pul  
UNITYplus-400 "unity400"  
Date: Nov 2 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 64 repetitions



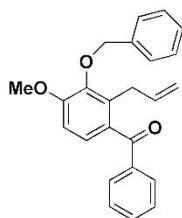
Compound **6y**  
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



## Compound 6y

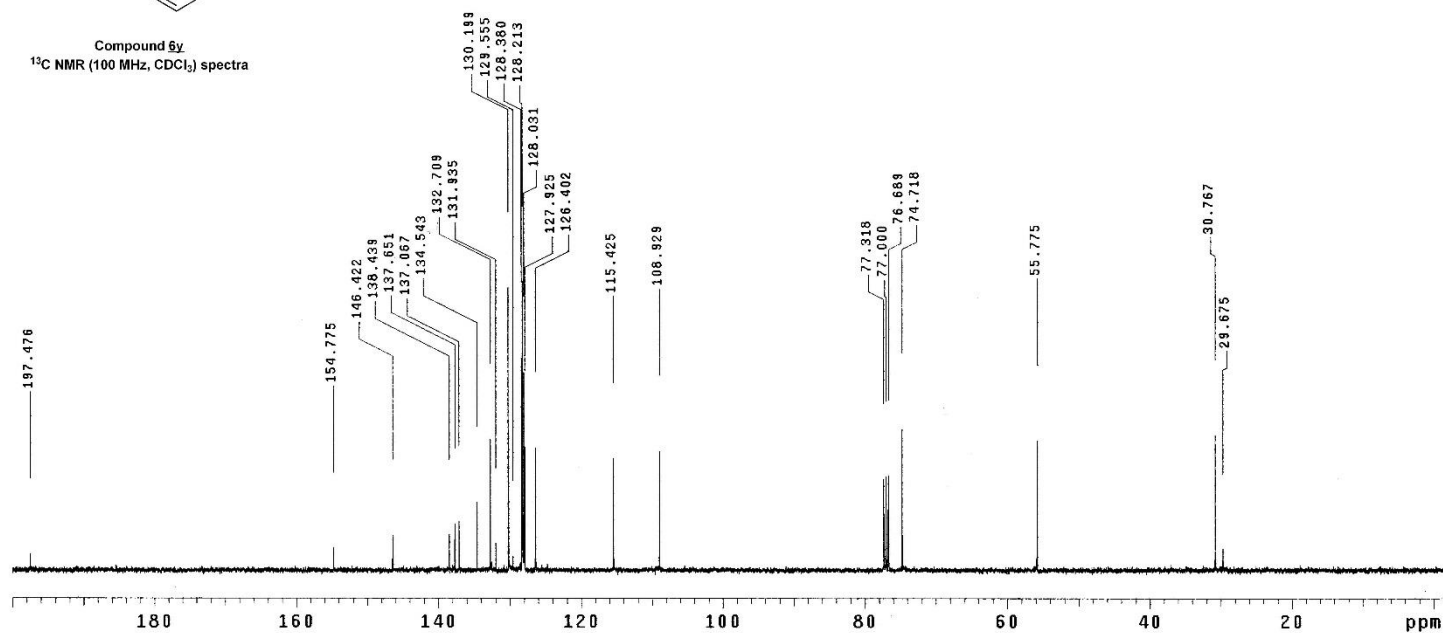
YL1041024

Pulse Sequence: s2pul  
UNITYplus-400 "unity400"  
Date: Nov 2 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 2176 repetitions



Compound 6y

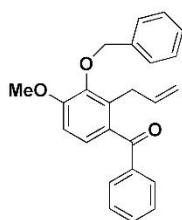
<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra



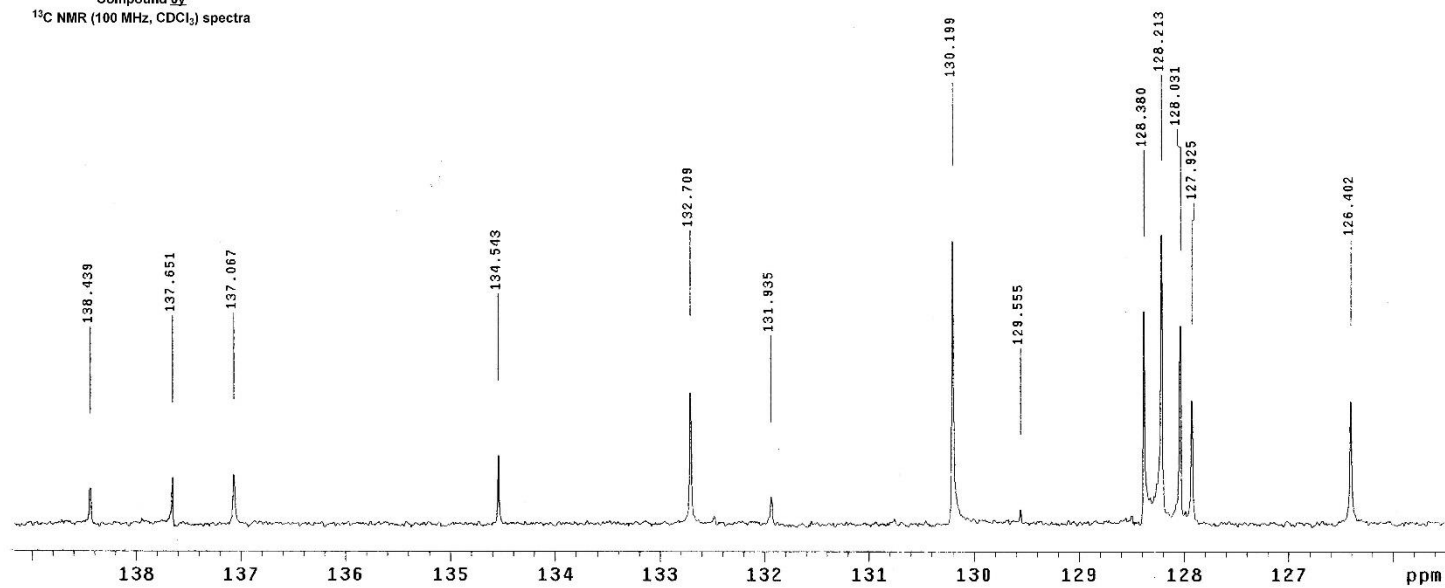
## Compound 6y

YL1041024

Pulse Sequence: s2pul  
UNITYplus-400 "unity400"  
Date: Nov 2 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 2176 repetitions



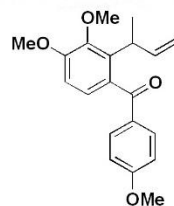
Compound 6y  
<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra





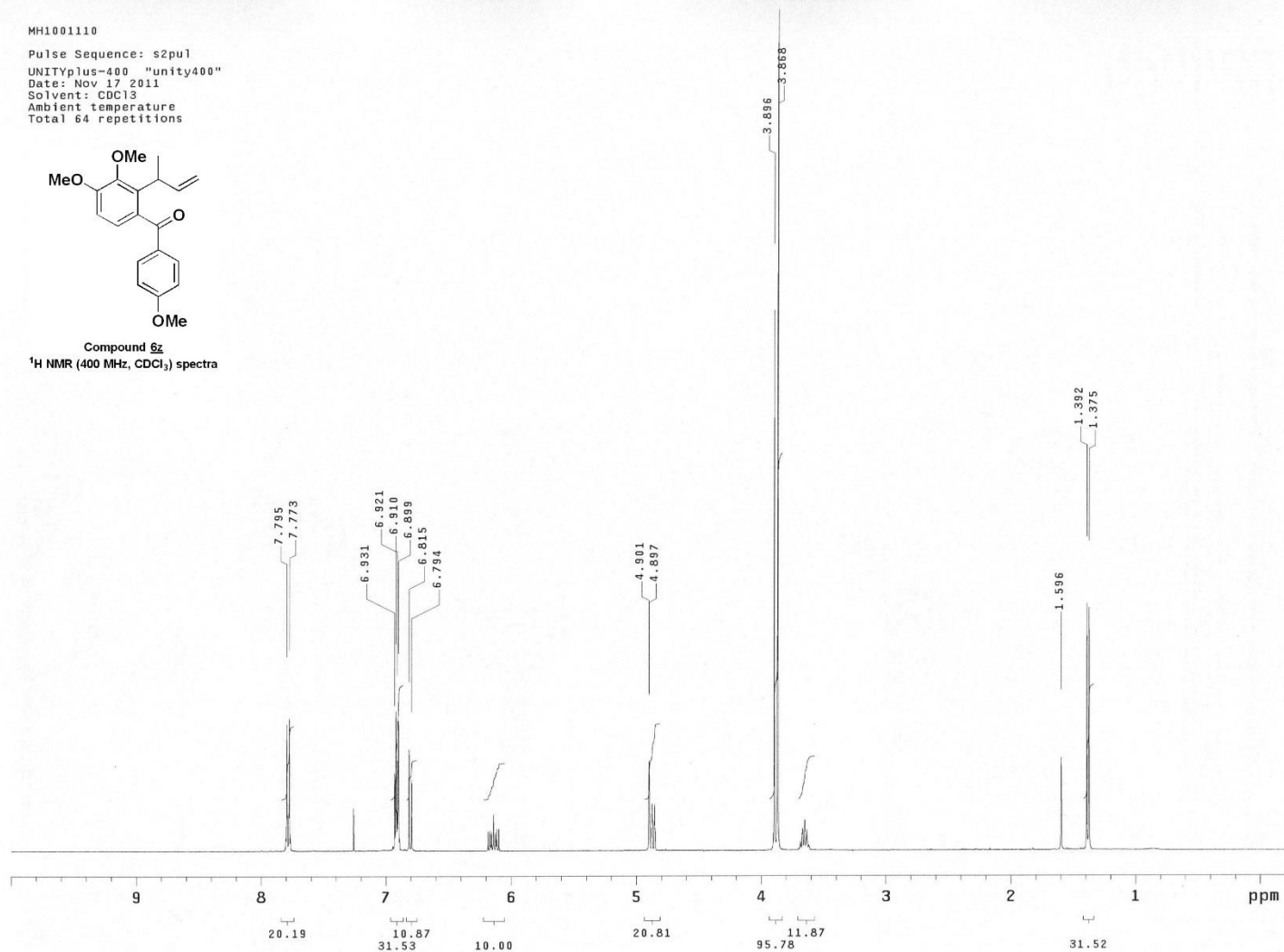
## Compound 6z

MH1001110  
Pulse Sequence: s2pu1  
UNITYplus-400 "unity400"  
Date: Nov 17 2011  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 64 repetitions



Compound 6z

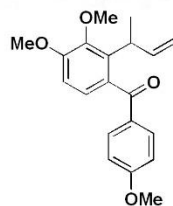
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



## Compound 6z

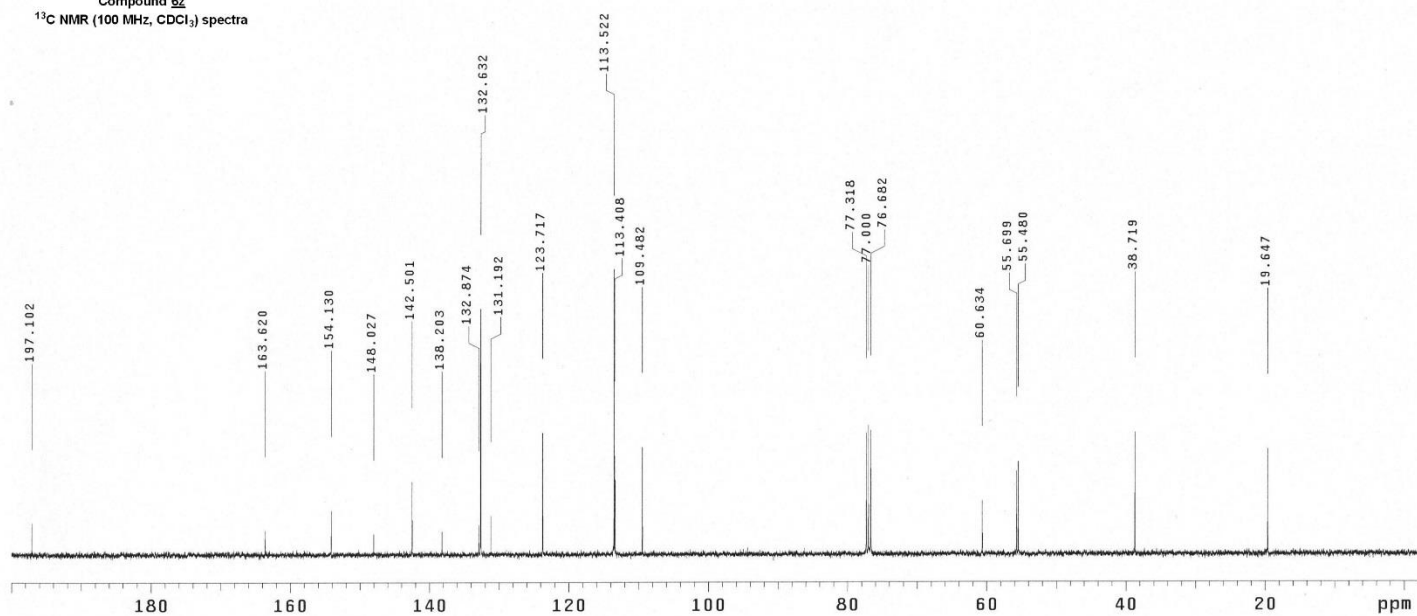
MH1001110

Pulse Sequence: s2pu1  
UNITYplus-400 "unity400"  
Date: Nov 17 2011  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 2320 repetitions



Compound 6z

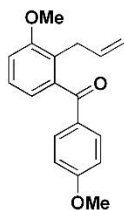
<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra



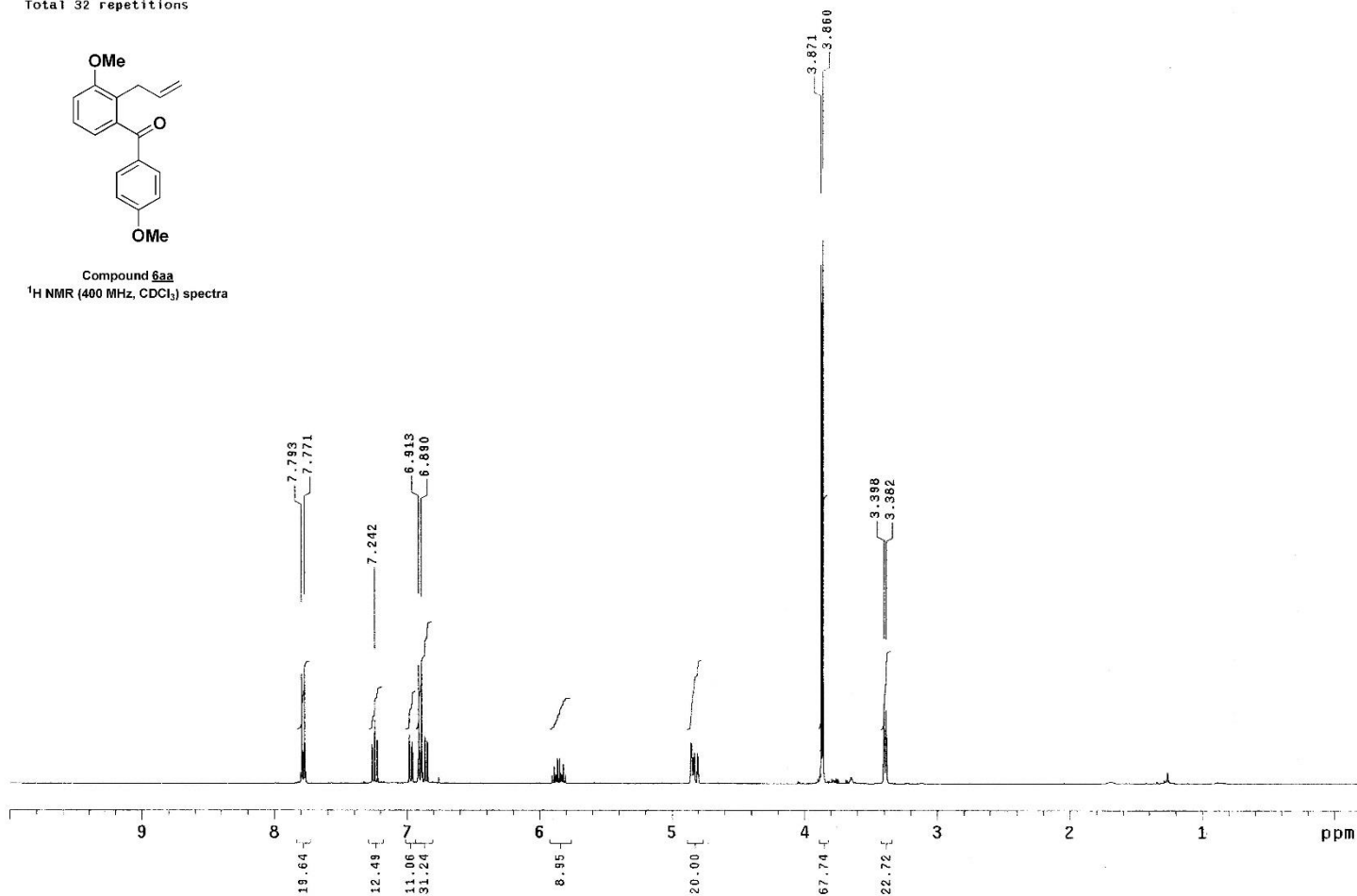
## Compound 6aa

YL1050423

Pulse Sequence: s2pu1  
UNITYplus-400 "unity400"  
Date: Apr 27 2016  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 32 repetitions



Compound 6aa  
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



## Compound 6aa

YL1050423

Pulse Sequence: s2pu1

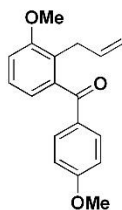
UNITYplus-400 "unity400"

Date: Apr 27 2016

Solvent: CDCl<sub>3</sub>

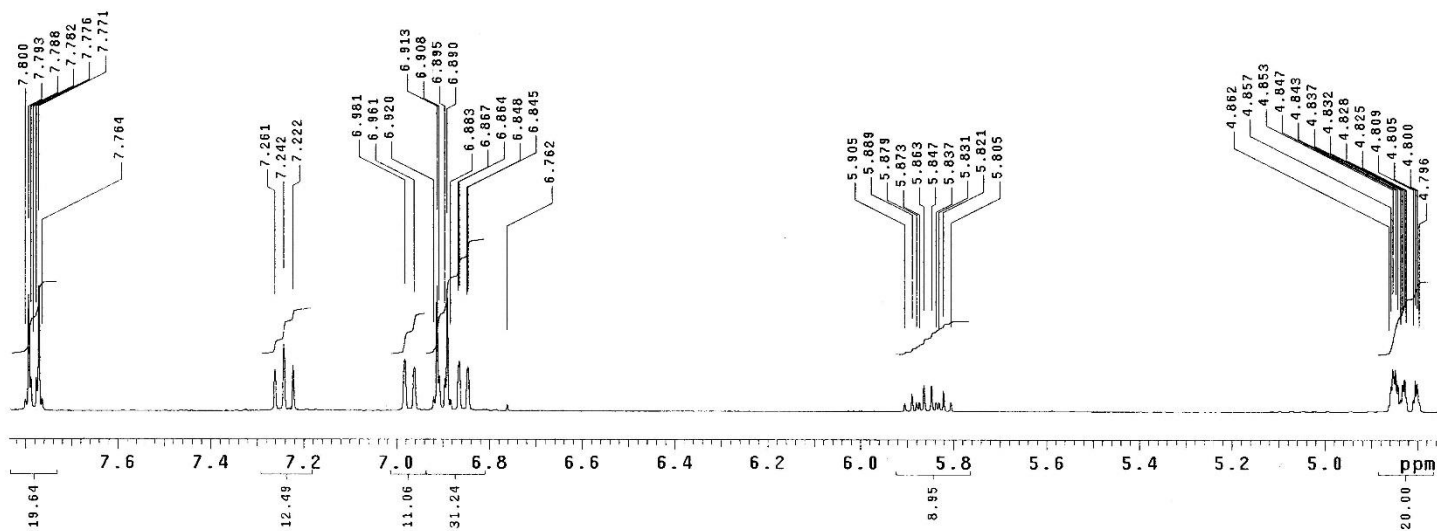
Ambient temperature

Total 32 repetitions



Compound 6aa

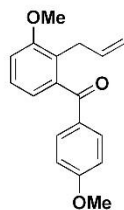
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



## Compound 6aa

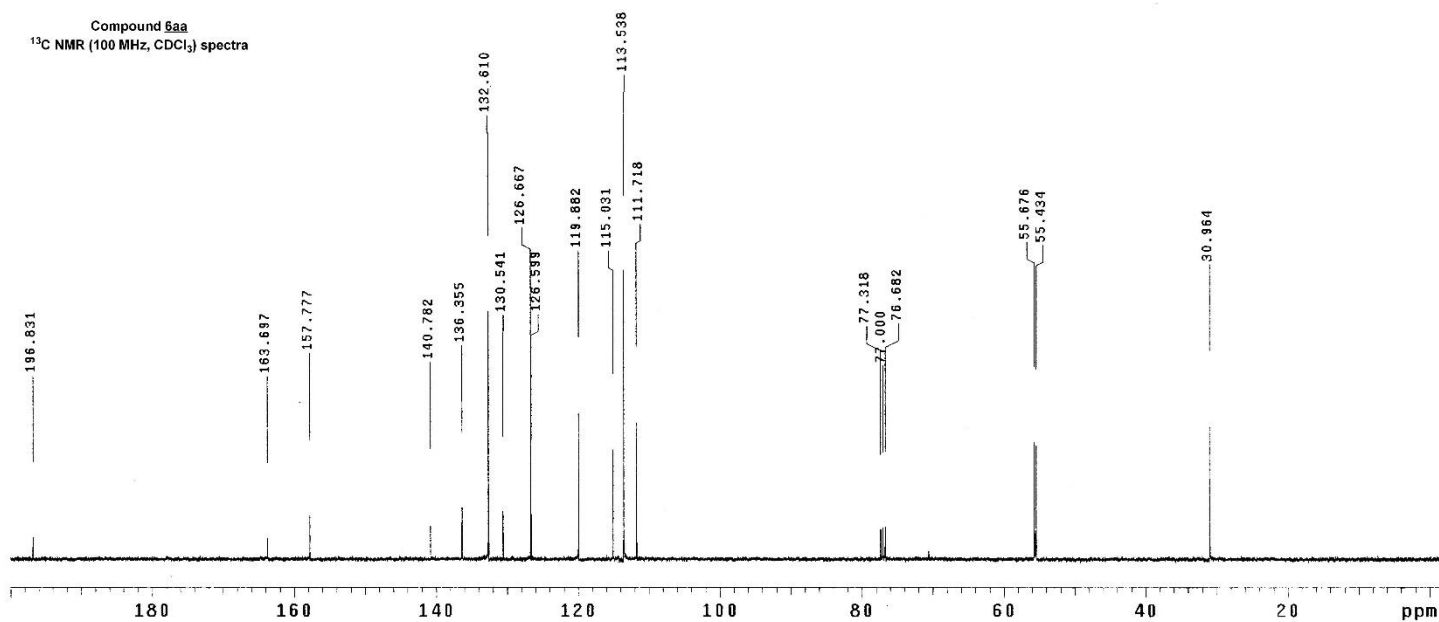
YL1050423

Pulse Sequence: s2pul  
UNITYplus-400 "unity400"  
Date: Apr 27 2016  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 544 repetitions



Compound 6aa

<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra



## Compound 8a

SK1010808-2

Pulse Sequence: s2pu1

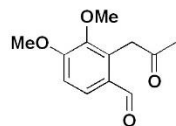
UNITYplus-400 "unity400"

Date: Sep 12 2012

Solvent: CDCl<sub>3</sub>

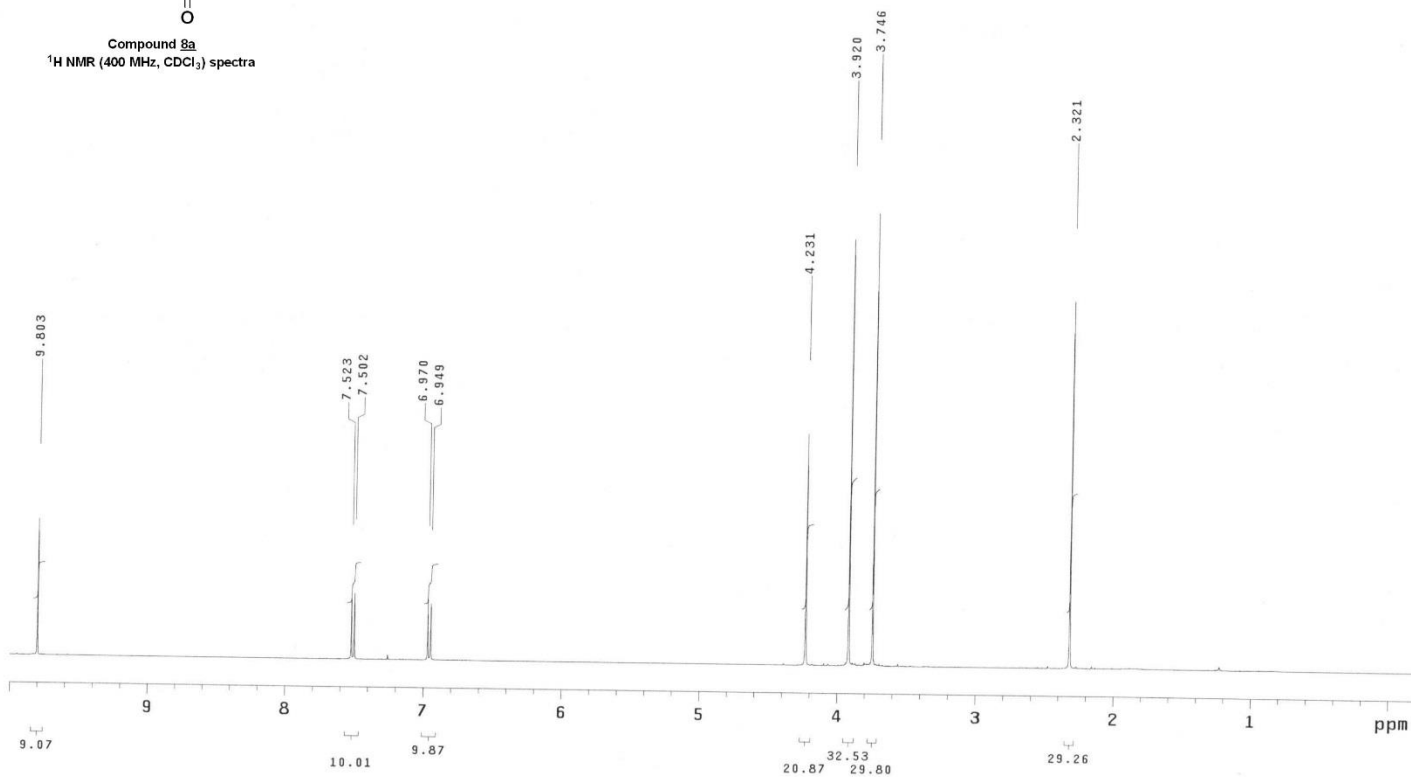
Ambient temperature

Total 36 repetitions



Compound 8a

<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



## Compound 8a

SK1010808-2

Pulse Sequence: s2pu1

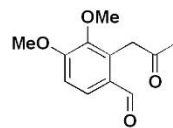
UNITYplus-400 "unity400"

Date: Sep 12 2012

Solvent: CDCl<sub>3</sub>

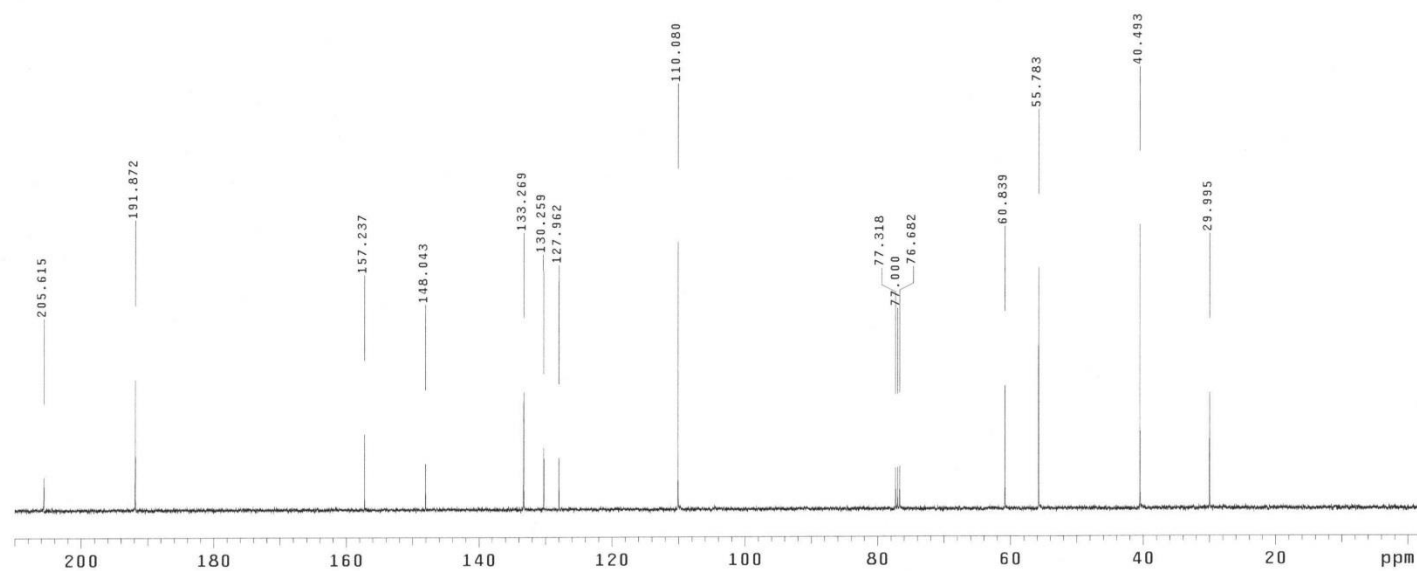
Ambient temperature

Total 304 repetitions



Compound 8a

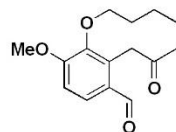
<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra



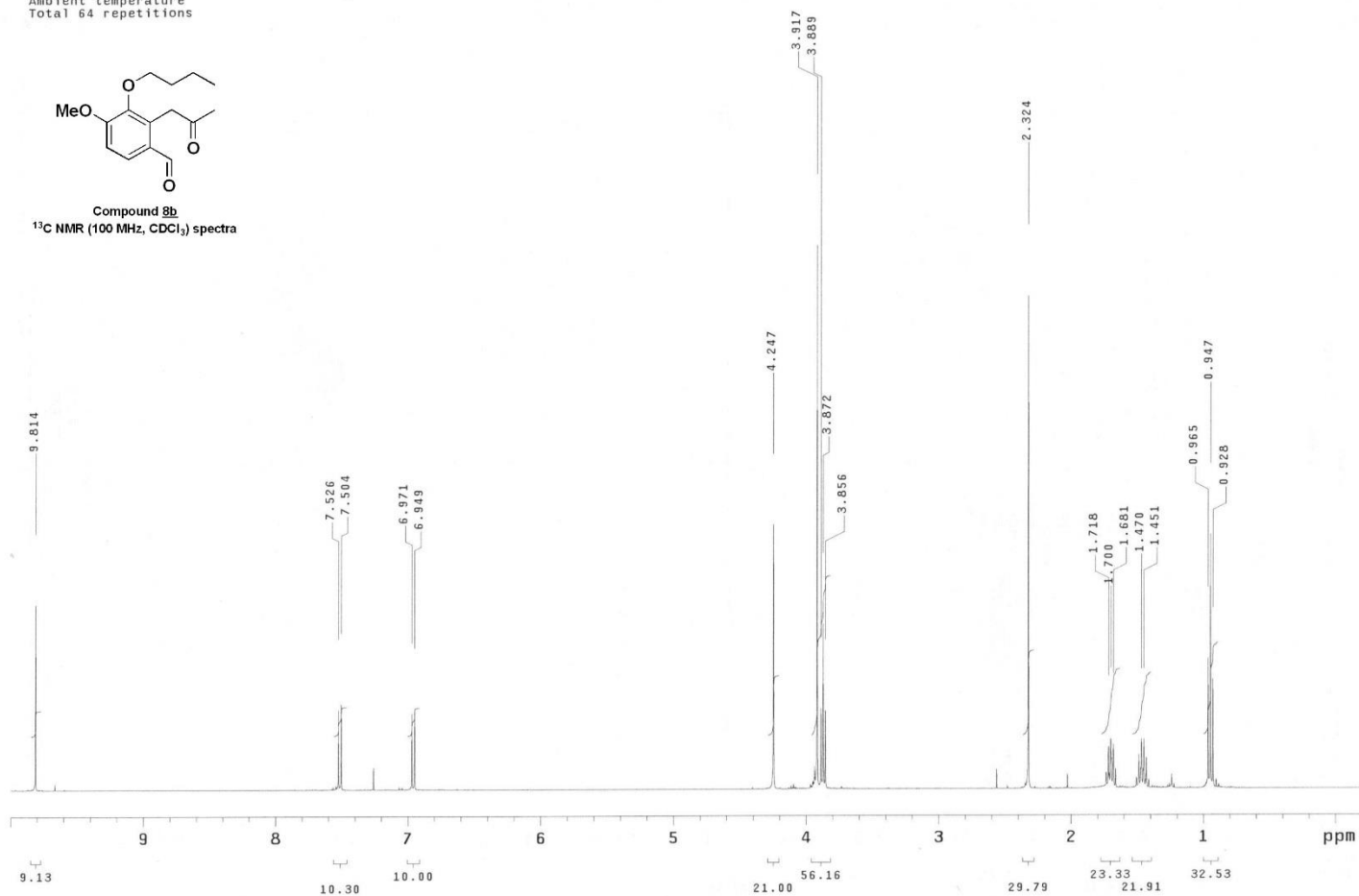
## Compound 8b

SKEWK

Pulse Sequence: s2pu1  
UNITYplus-400 "unity400"  
Date: Sep 17 2012  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 64 repetitions



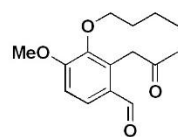
Compound 8b  
<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra



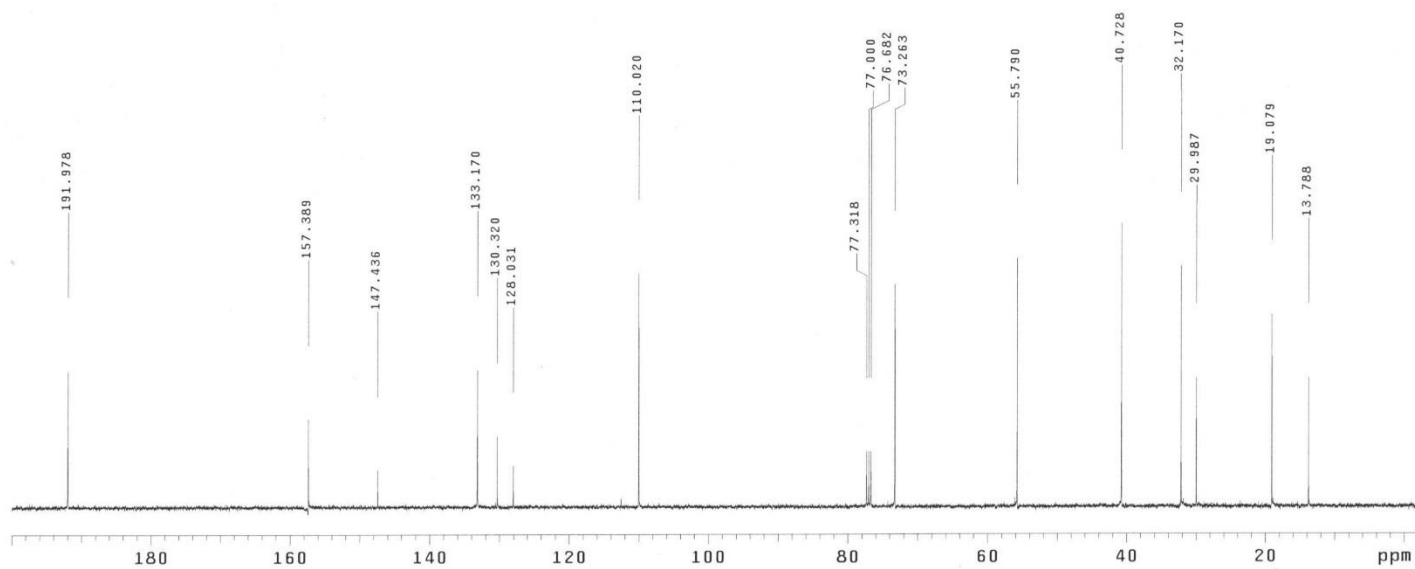


## Compound 8b

SKWVK  
Pulse Sequence: s2pul  
UNITYplus-400 "unity400"  
Date: Sep 17 2012  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 1072 repetitions



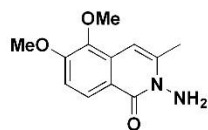
Compound 8b  
<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra



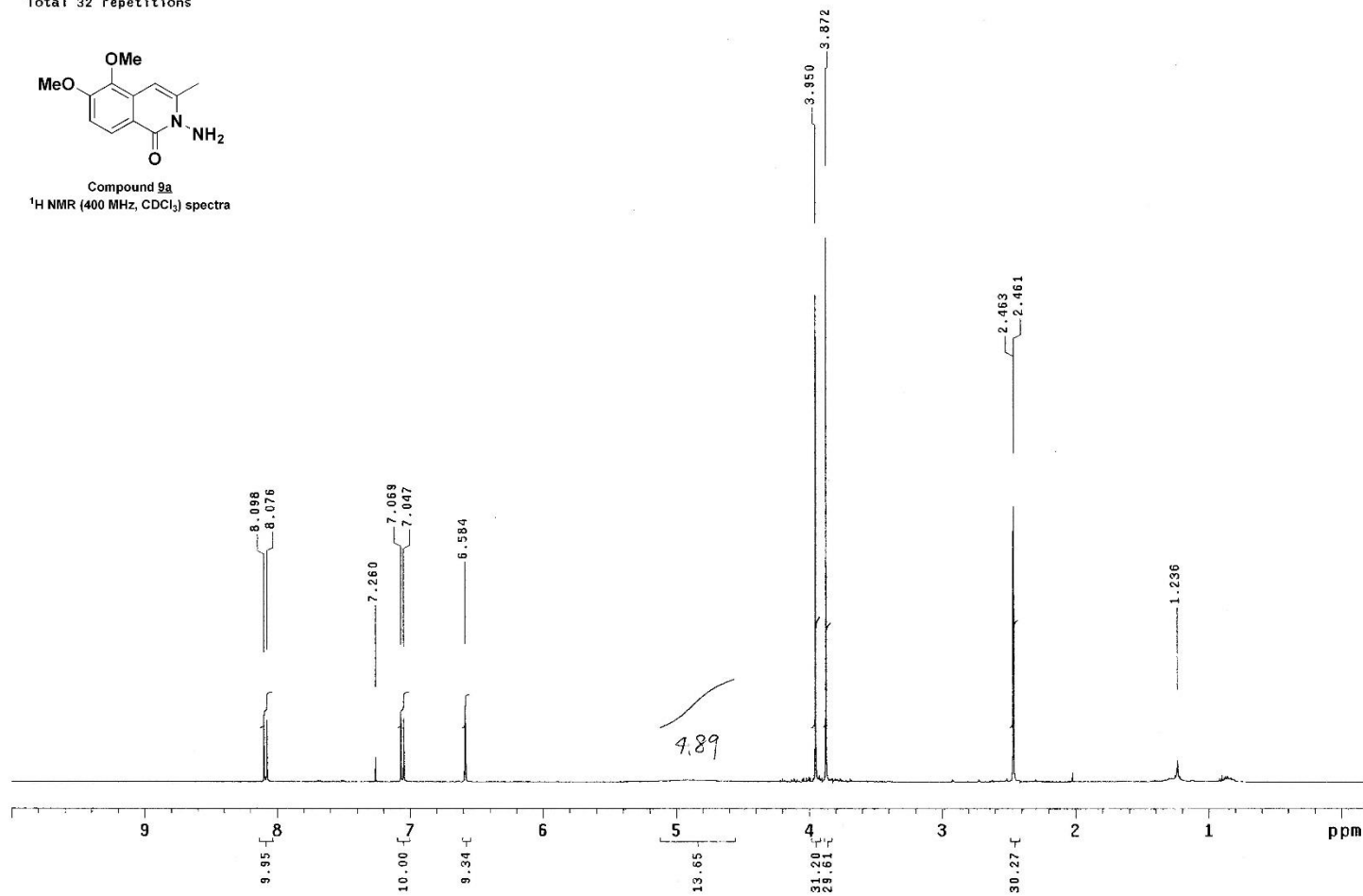
## Compound 9a

YR1040623

Pulse Sequence: s2pu1  
UNITYplus-400 "unity400"  
Date: Jun 25 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 32 repetitions



Compound 9a  
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



## Compound 9a

YR1040623

Pulse Sequence: s2pu1

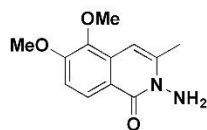
UNITYplus-400 "unity400"

Date: Jun 25 2015

Solvent: CDCl<sub>3</sub>

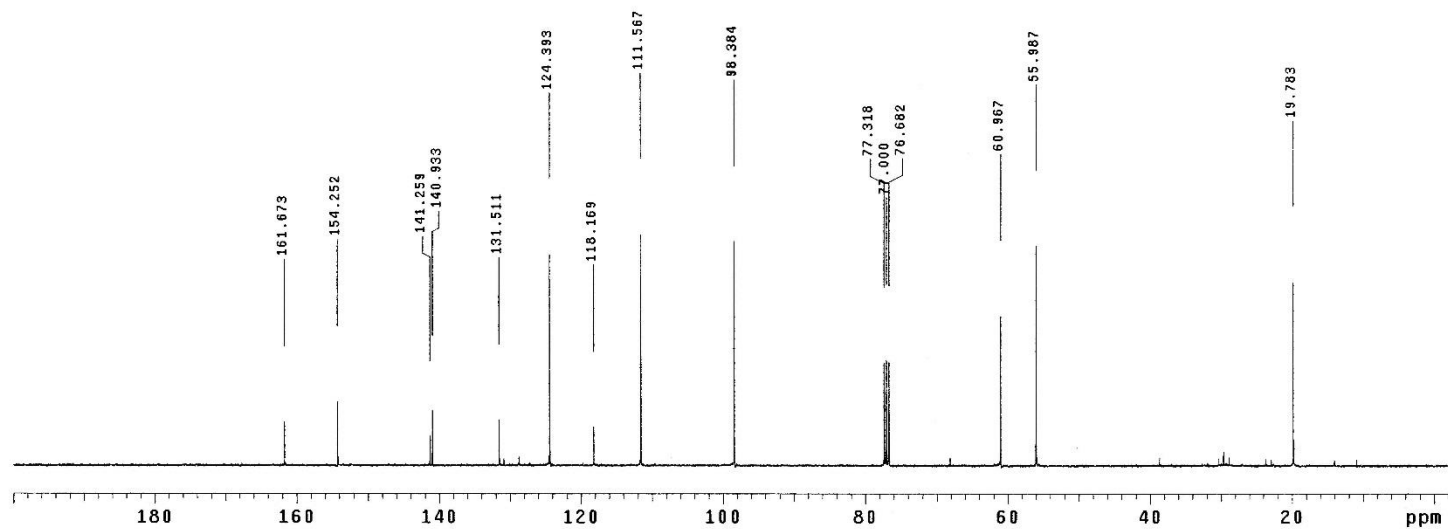
Ambient temperature

Total 6400 repetitions



Compound 9a

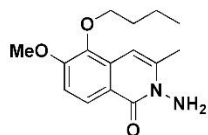
<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra



## Compound 9b

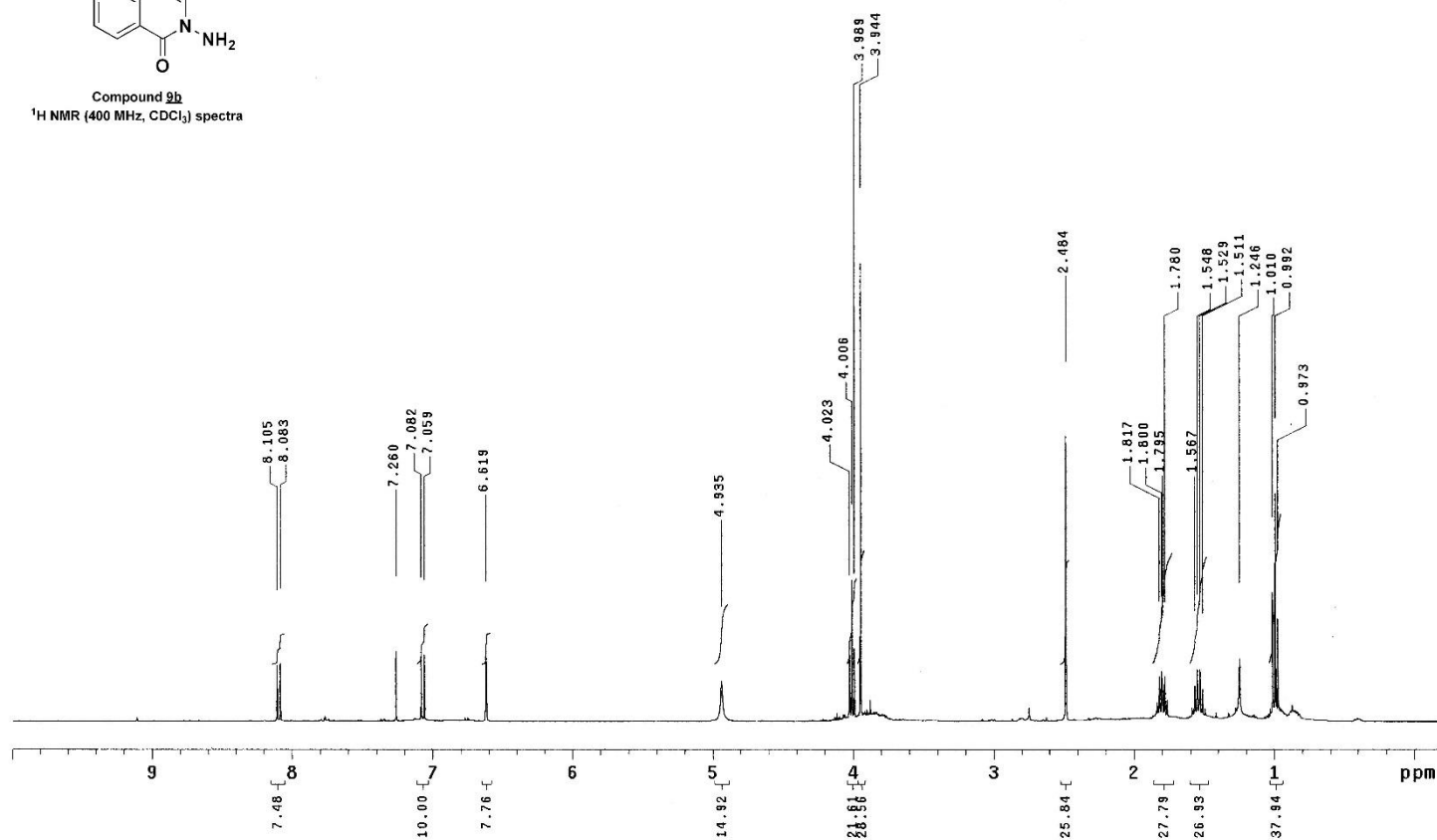
YL1040907

Pulse Sequence: s2pul  
UNITYplus-400 "unity400"  
Date: Sep 8 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 64 repetitions



Compound 9b

<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



## Compound 9b

YL1040907

Pulse Sequence: s2pul

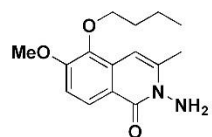
UNITYplus-400 "unity400"

Date: Sep 8 2015

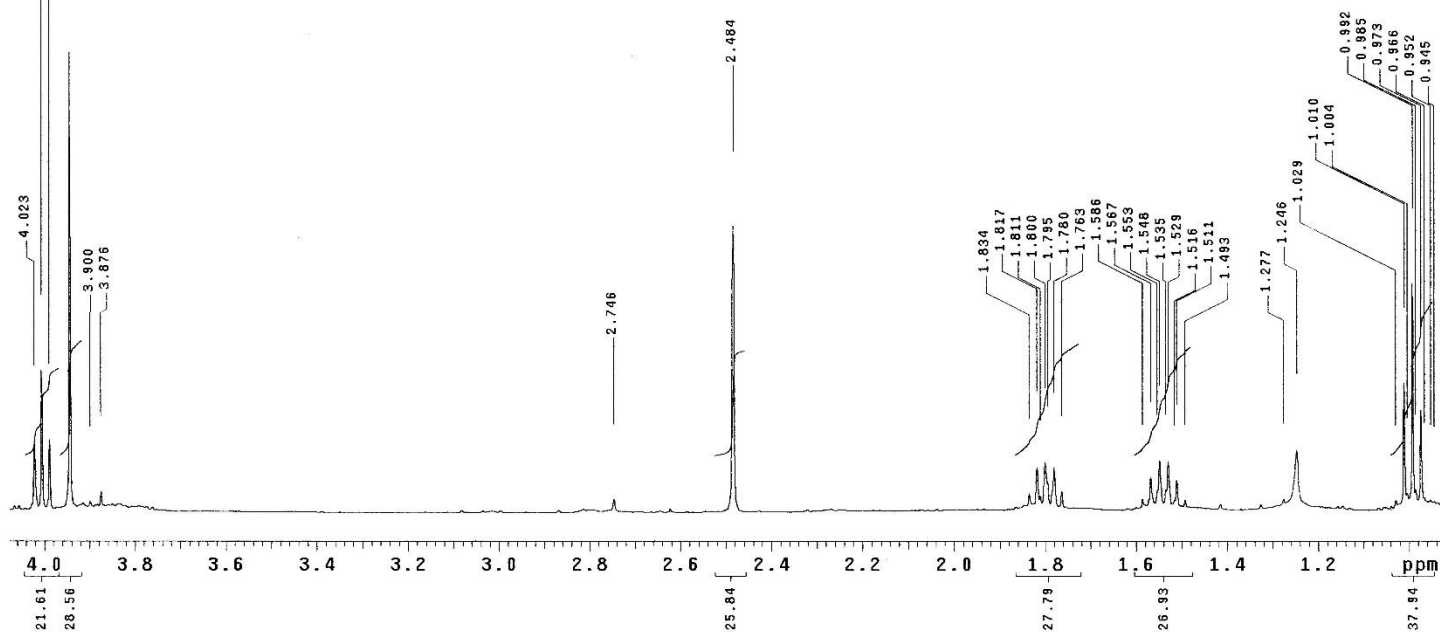
Solvent: CDCl<sub>3</sub>

Ambient temperature

Total 64 repetitions



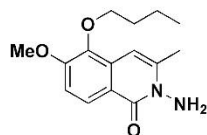
Compound **9b**  
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



## Compound 9b

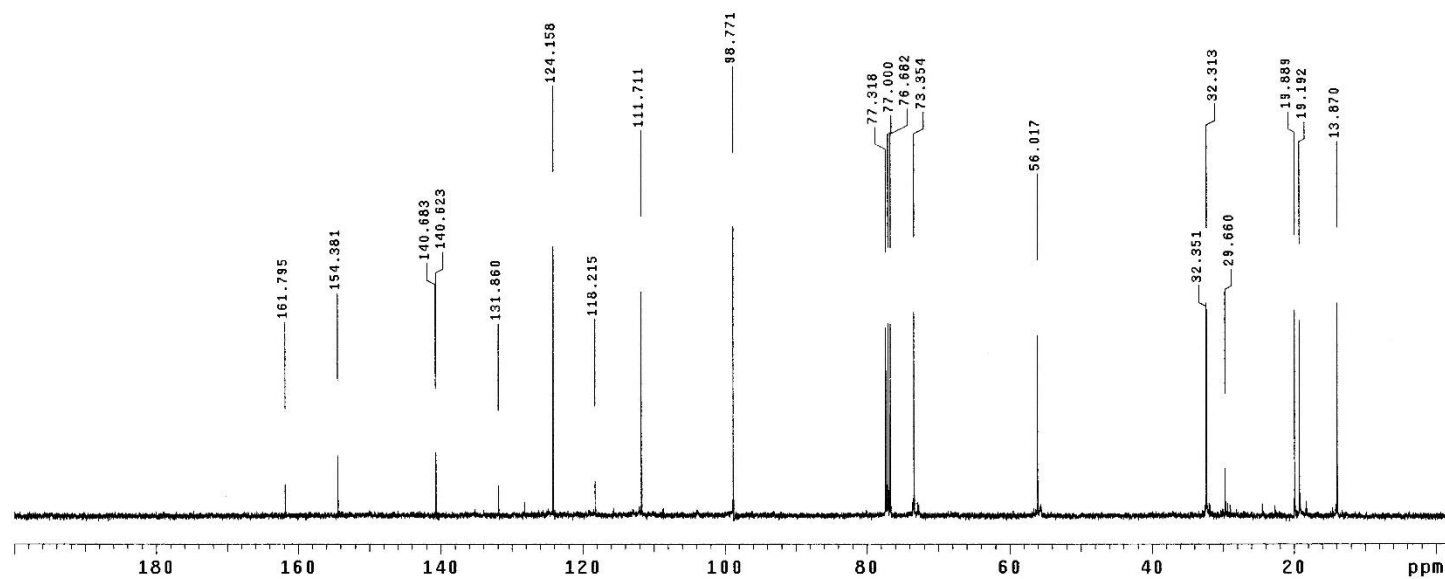
YL1040907

Pulse Sequence: s2pu1  
UNITYplus-400 "unity400"  
Date: Sep 8 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 11728 repetitions



Compound 9b

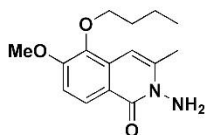
<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra



## Compound 9b

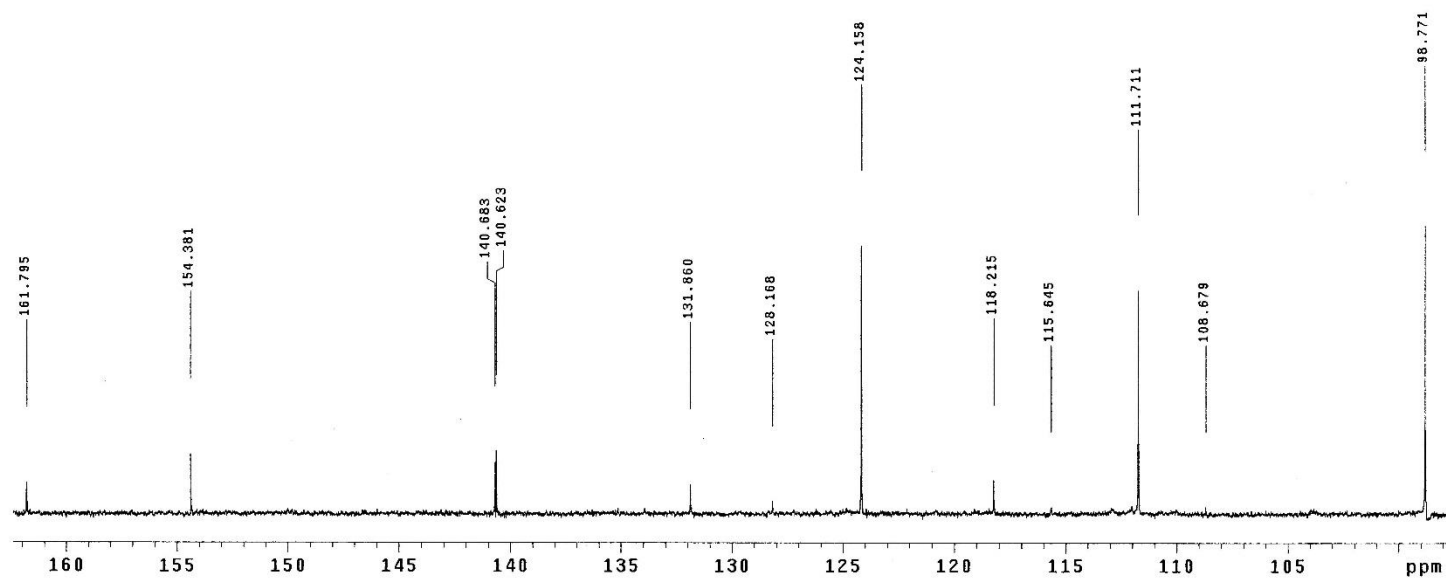
YL1040907

Pulse Sequence: s2pu1  
UNITYplus-400 "unity400"  
Date: Sep 8 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 11728 repetitions



Compound 9b

<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra



## Compound 9c

YL1040912

Pulse Sequence: s2pu1

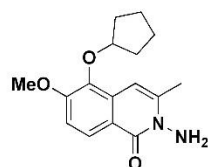
UNITYplus-400 "unity400"

Date: Sep 14 2015

Solvent: CDCl<sub>3</sub>

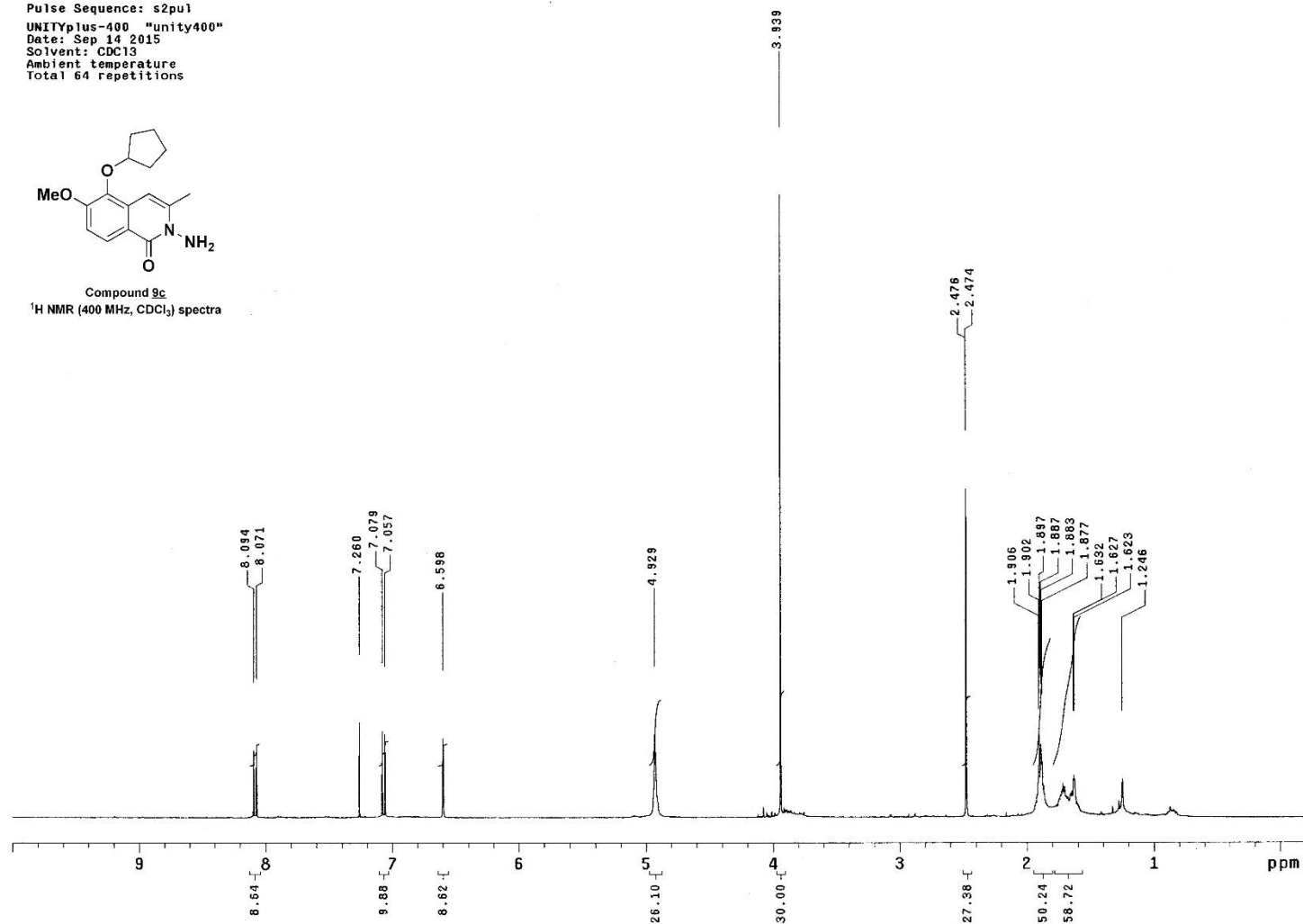
Ambient temperature

Total 64 repetitions



Compound 9c

<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra





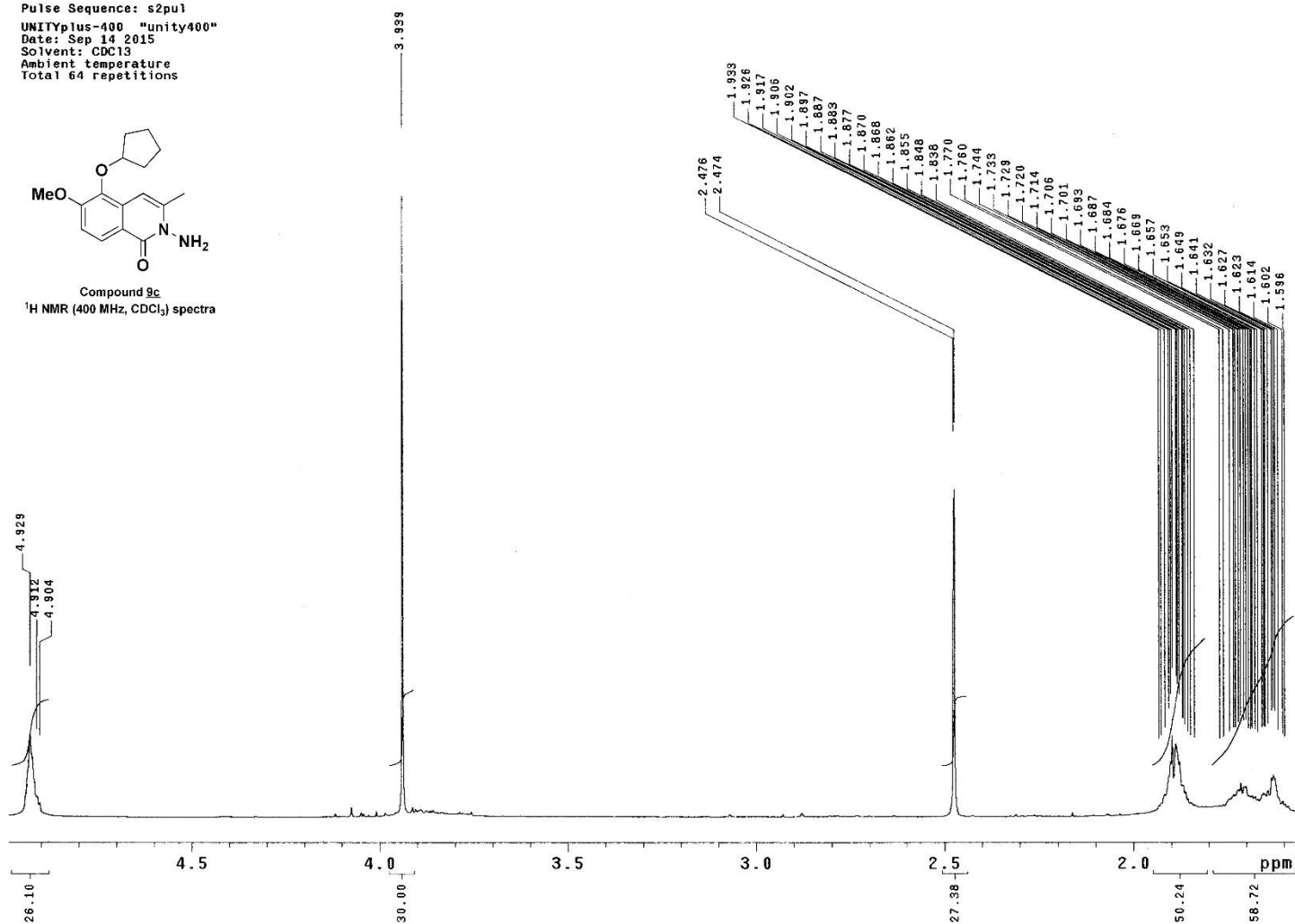
## Compound 9c

YL1040912

Pulse Sequence: s2pu1  
UNITYplus-400 "unity400"  
Date: Sep 14 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 64 repetitions



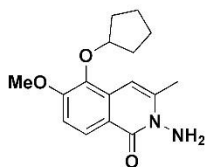
Compound 9c  
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



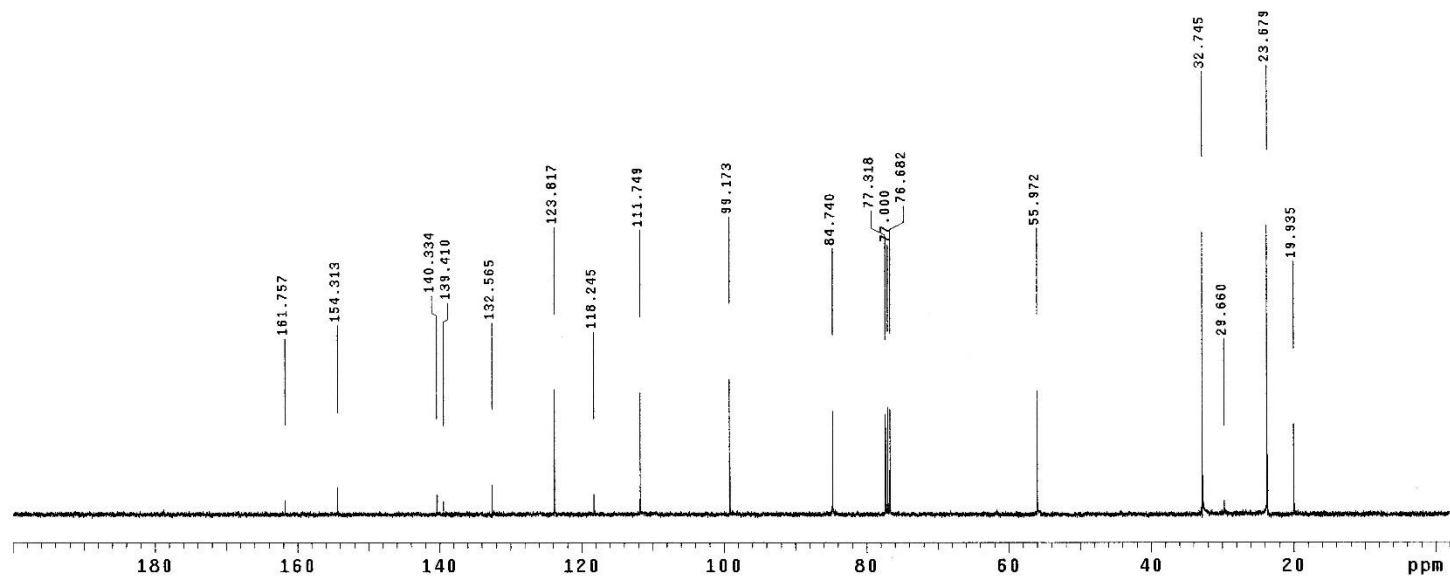
## Compound 9c

YL1040912

Pulse Sequence: s2pu1  
UNITYplus-400 "unity400"  
Date: Sep 14 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 4448 repetitions



Compound 9c  
<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra



## Compound 9d

YL1040931

Pulse Sequence: s2pul

UNITYplus-400 "unity400"

Date: Oct 6 2015

Solvent: CDCl<sub>3</sub>

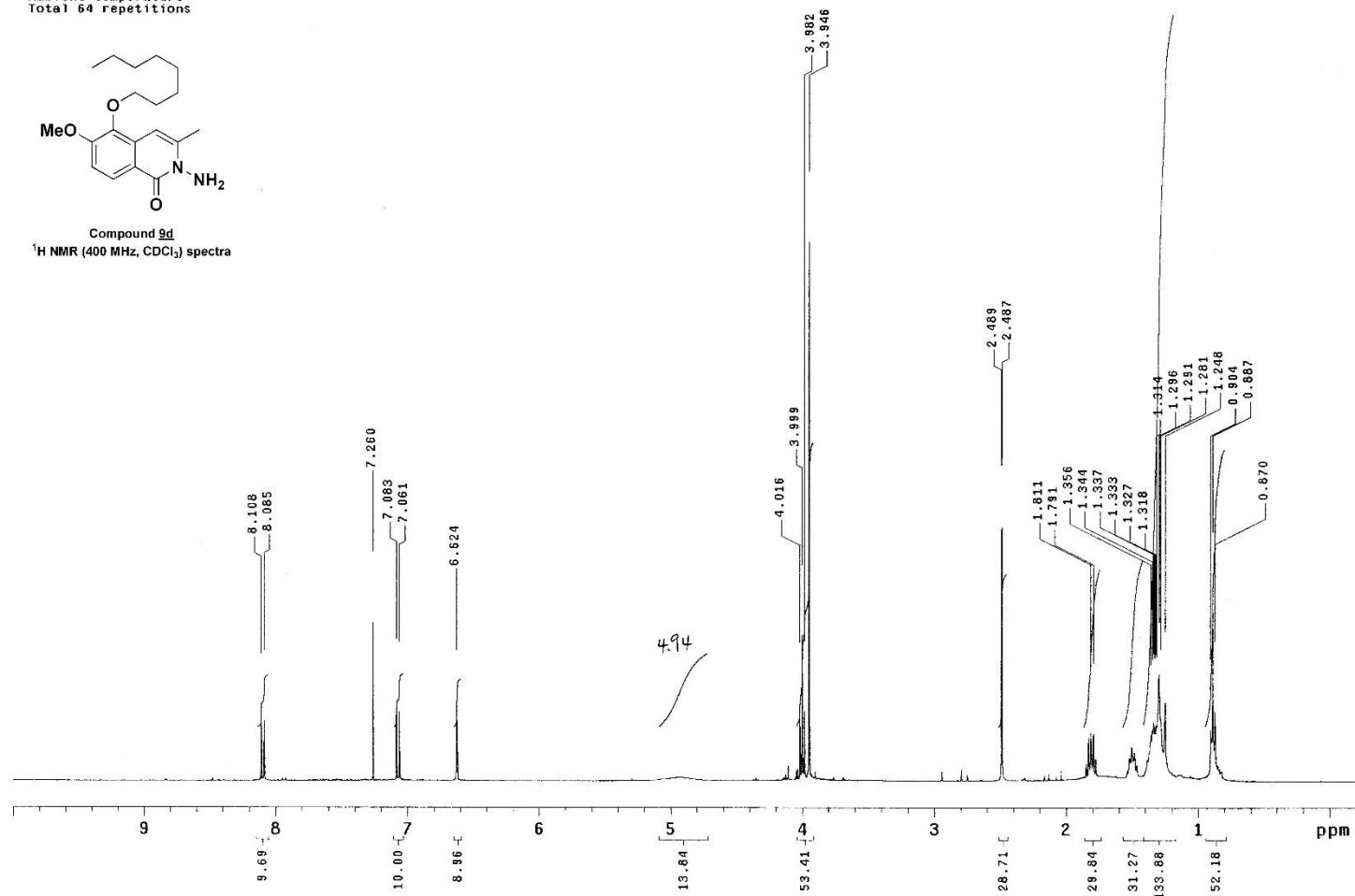
Ambient temperature

Total 64 repetitions



Compound 9d

<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



## Compound 9d

YL1040931

Pulse Sequence: s2pul

UNITYplus-400 "unity400"

Date: Oct 6 2015

Solvent: CDCl<sub>3</sub>

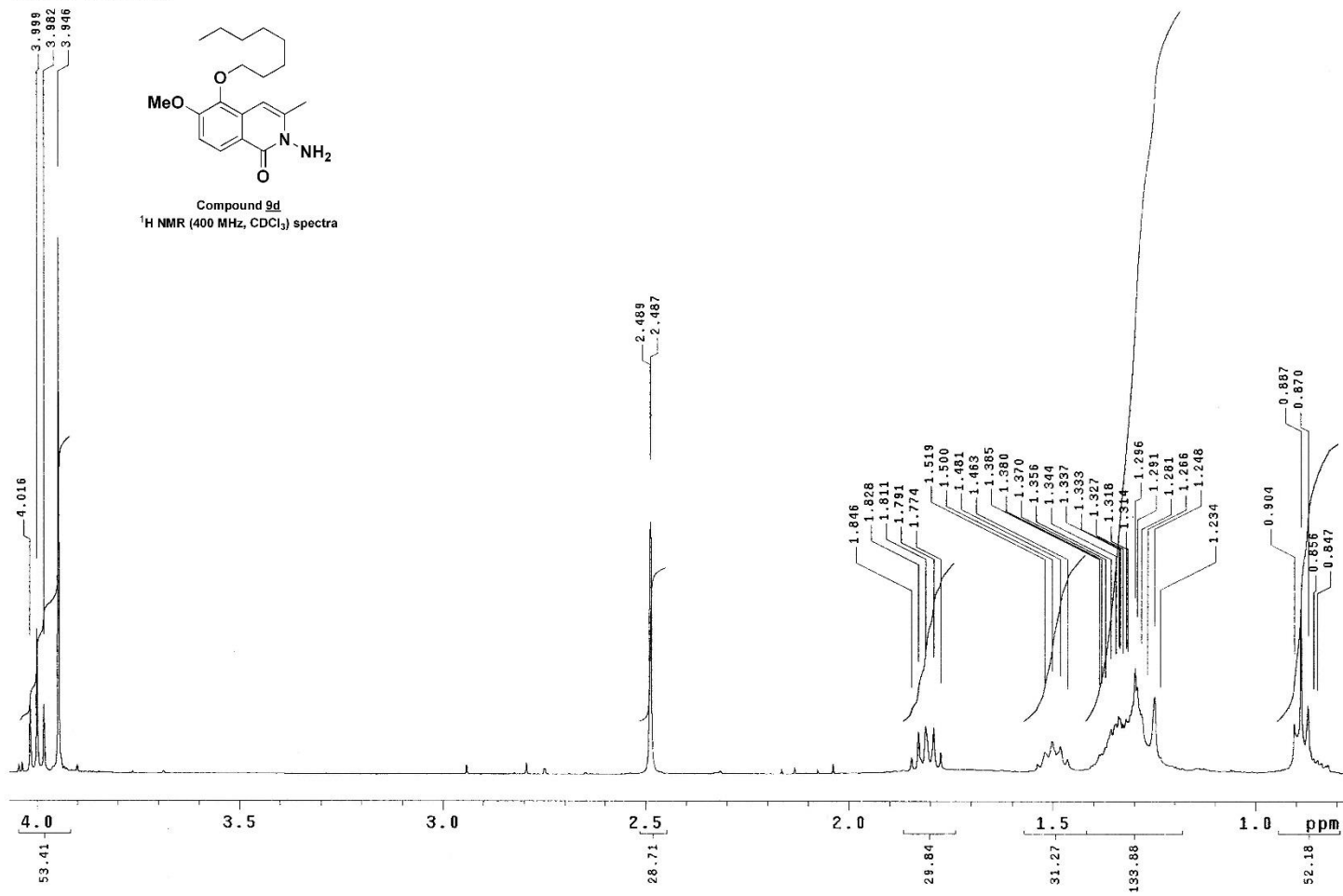
Ambient temperature

Total 64 repetitions



Compound 9d

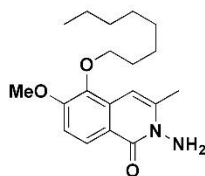
<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



## Compound 9d

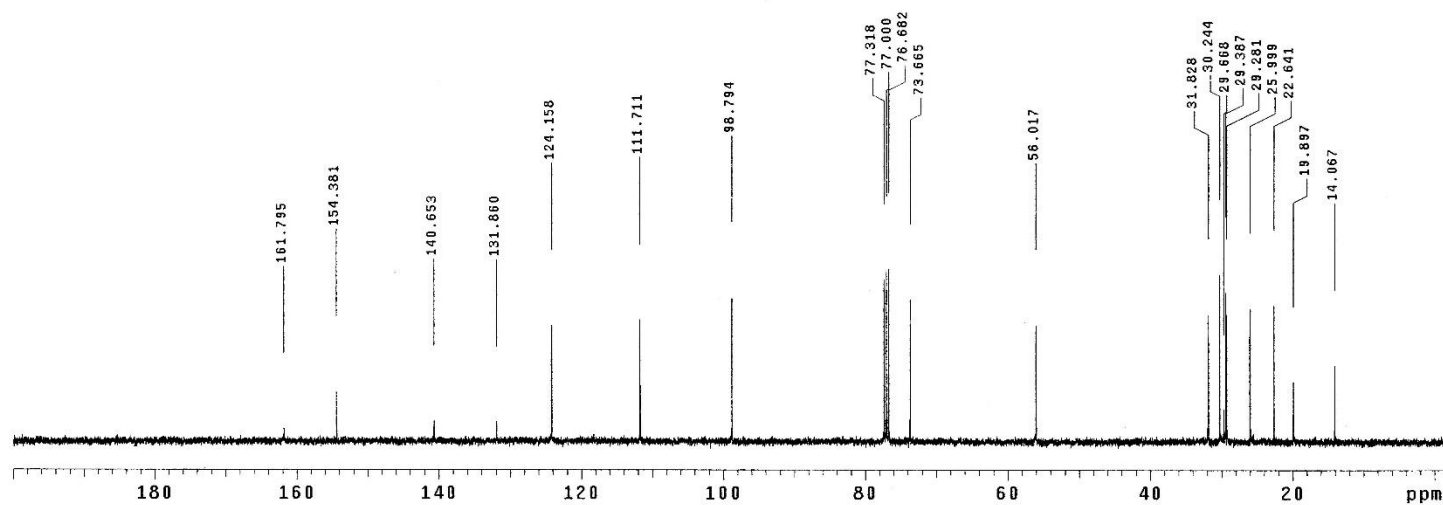
YL1040931

Pulse Sequence: s2pul  
UNITYplus-400 "unity400"  
Date: Oct 6 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 4272 repetitions



Compound 9d

<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra



## Compound 9d

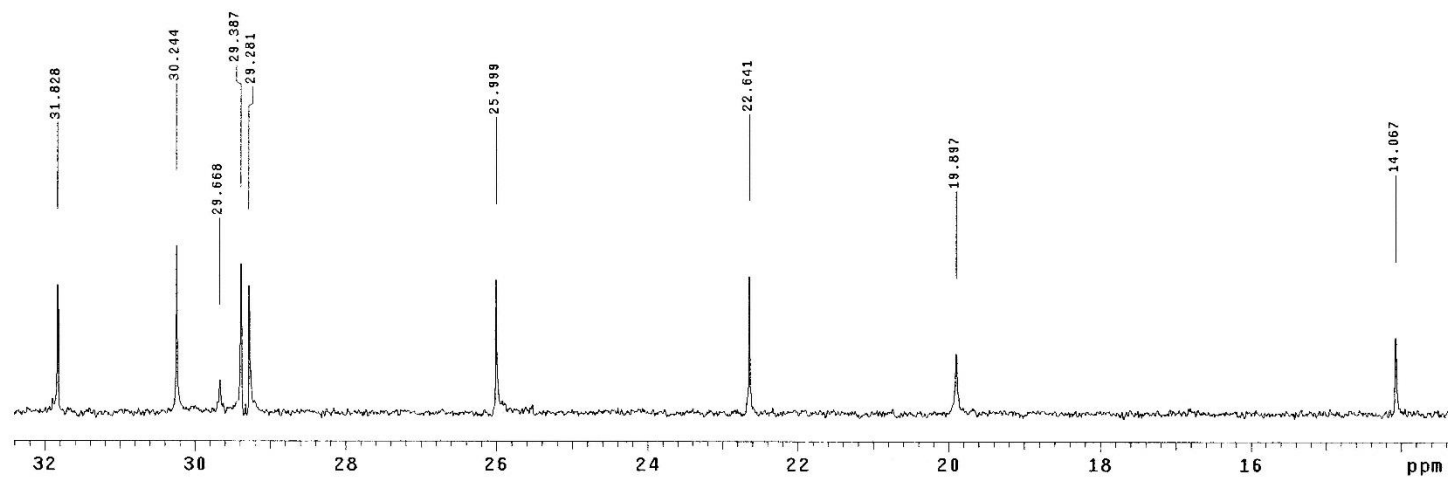
YL1040931

Pulse Sequence: s2pul  
UNITYplus-400 "unity400"  
Date: Oct 6 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 4272 repetitions



Compound 9d

<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra



## Compound 10

YL1041021

Pulse Sequence: s2pul

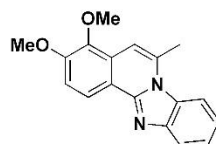
UNITYplus-400 "unity400"

Date: Oct 22 2015

Solvent: CDCl<sub>3</sub>

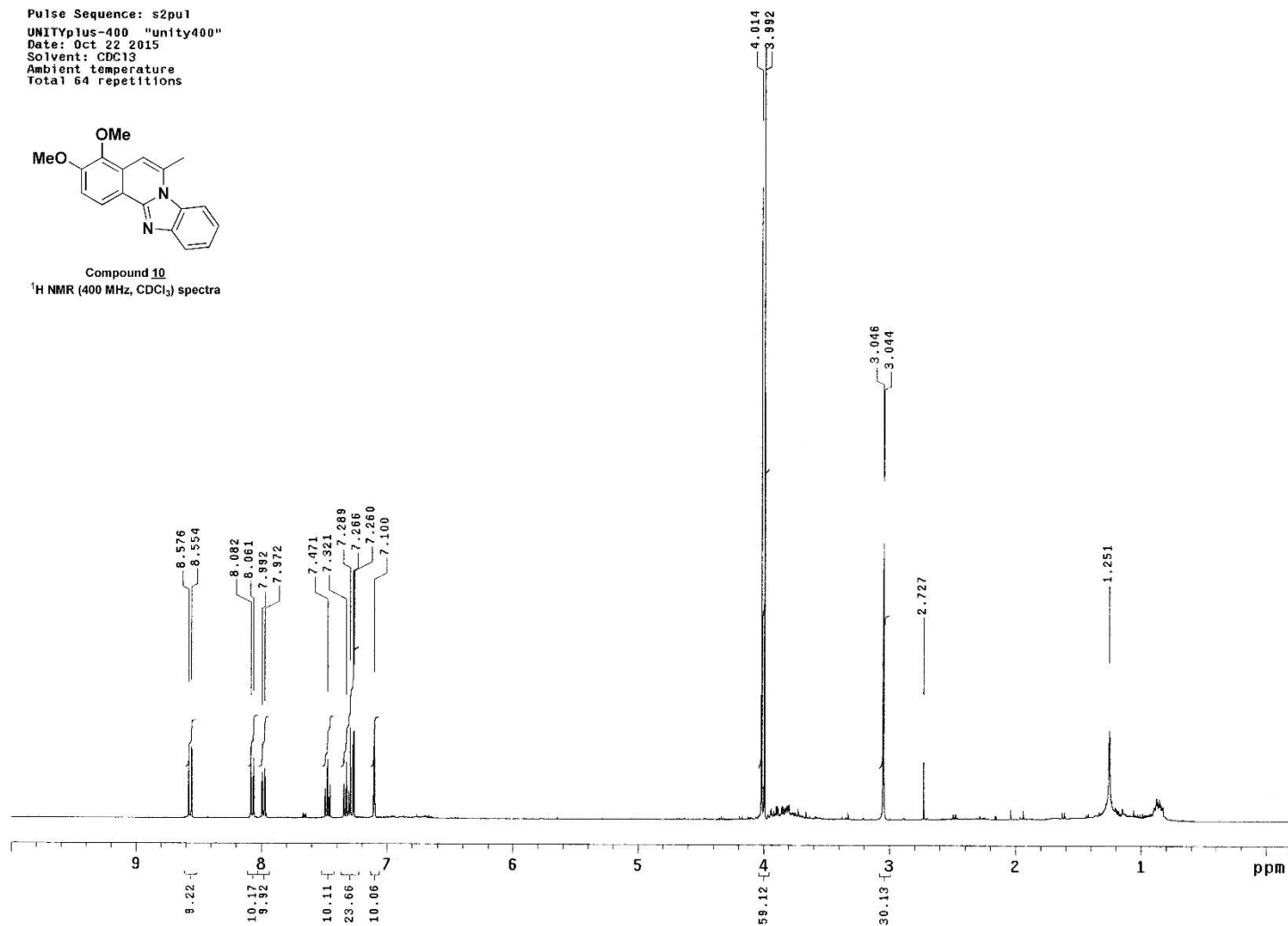
Ambient temperature

Total 64 repetitions



Compound 10

<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra



## Compound 10

YL1041021

Pulse Sequence: s2pul

UNITYplus-400 "unity400"

Date: Oct 22 2015

Solvent: CDCl<sub>3</sub>

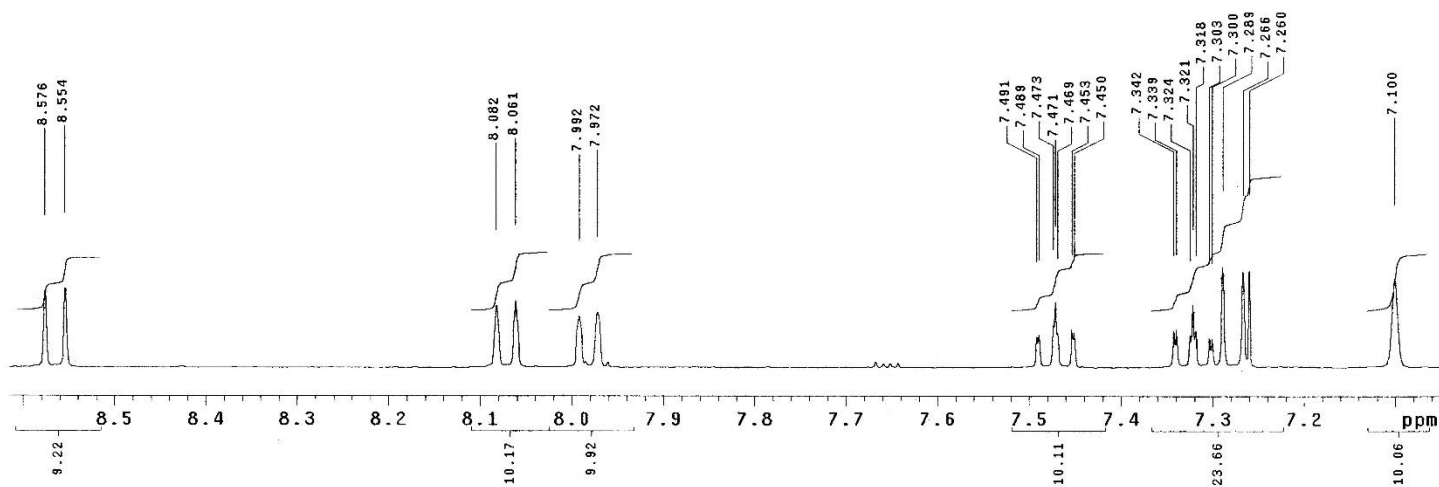
Ambient temperature

Total 64 repetitions



Compound 10

<sup>1</sup>H NMR (400 MHz, CDCl<sub>3</sub>) spectra

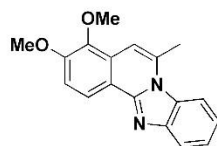




## Compound 10

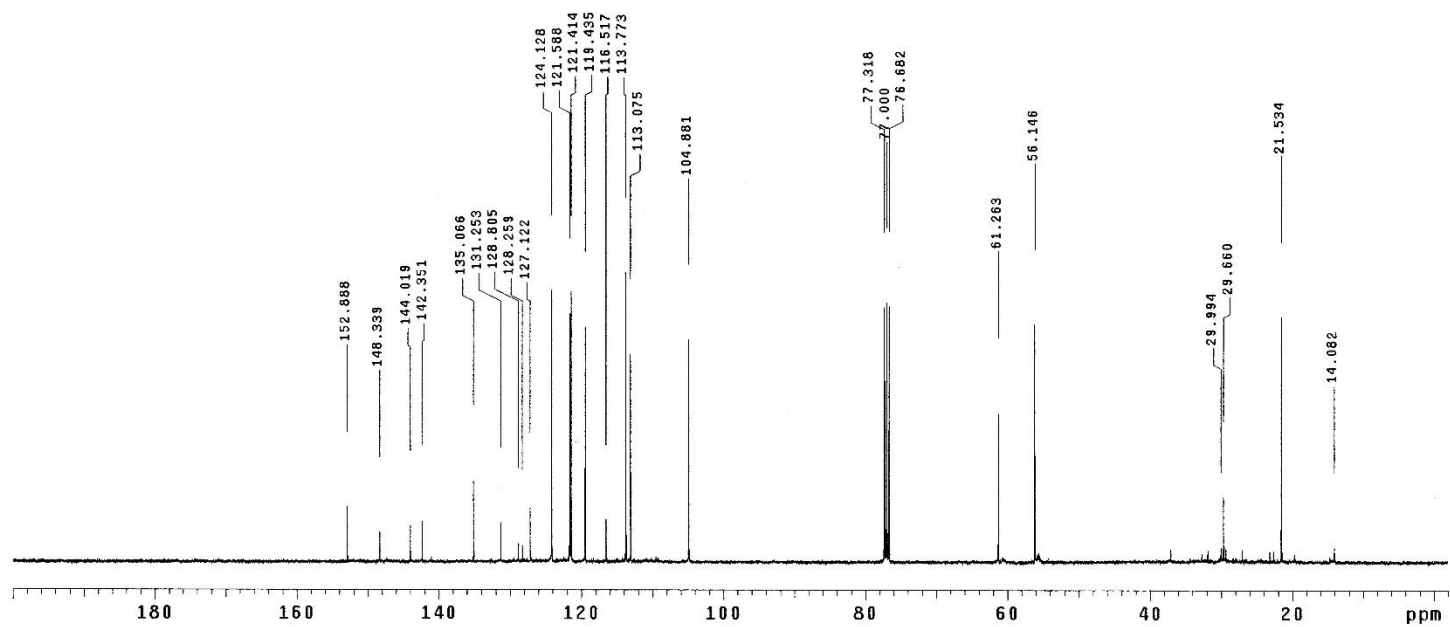
YL1041021

Pulse Sequence: s2pul  
UNITYplus-400 "unity400"  
Date: Oct 22 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 12800 repetitions



Compound 10

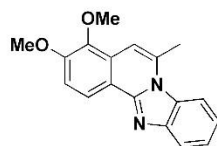
<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra



## Compound 10

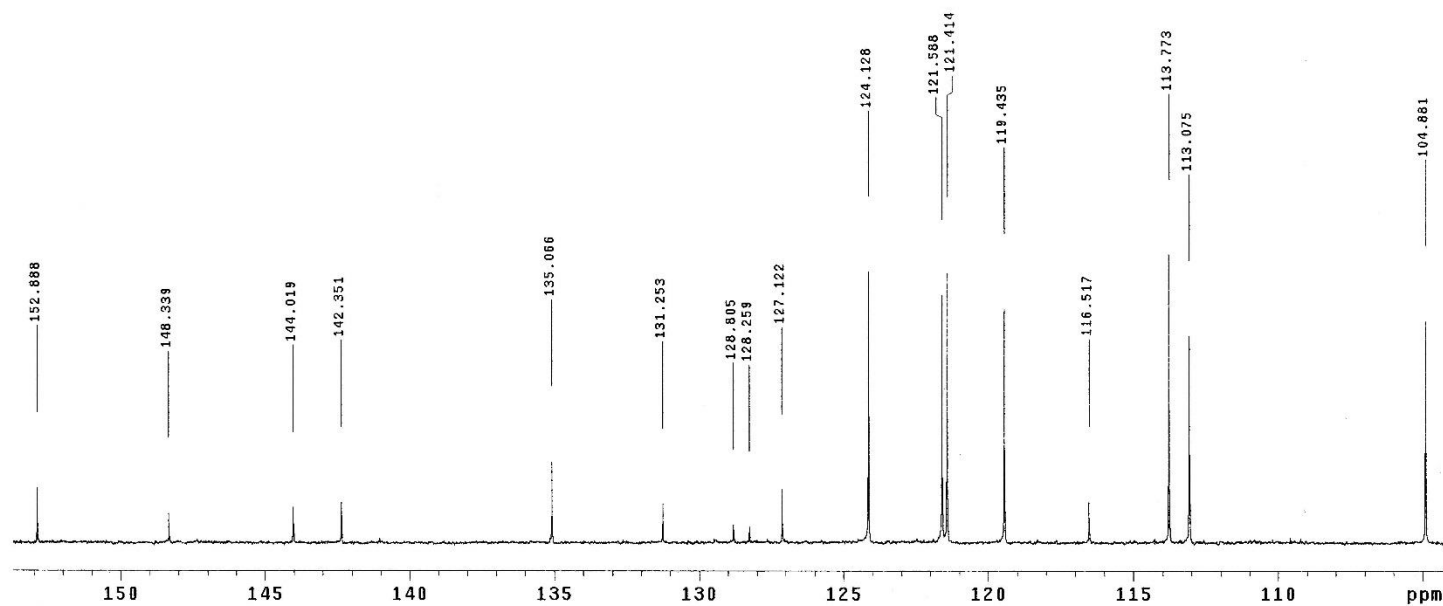
YL1041021

Pulse Sequence: s2pul  
UNITYplus-400 "unity400"  
Date: Oct 22 2015  
Solvent: CDCl<sub>3</sub>  
Ambient temperature  
Total 12800 repetitions

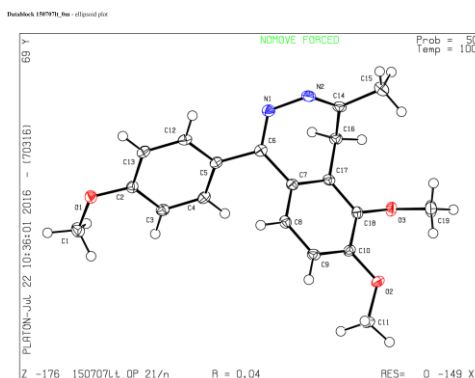


Compound 10

<sup>13</sup>C NMR (100 MHz, CDCl<sub>3</sub>) spectra

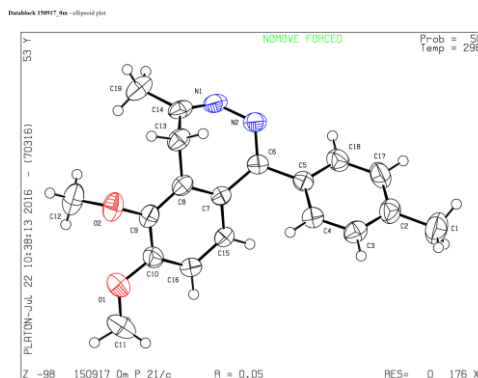


Crystal data and structure refinement for **1a** (the thermal ellipsoid was drawn at the 50% probability level)



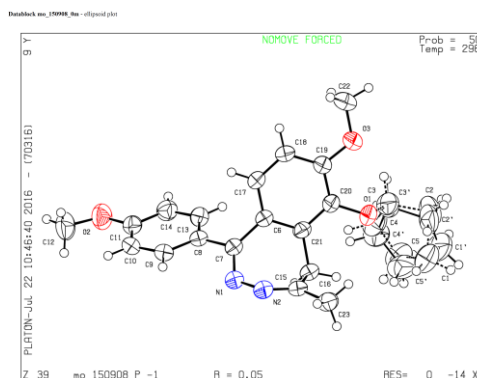
Identification code	150707lt_0m
Empirical formula	C <sub>19</sub> H <sub>20</sub> N <sub>2</sub> O <sub>3</sub>
Formula weight	324.37
Temperature	100(2) K
Wavelength	0.71073 Å
Crystal system, Space group	Monoclinic, P 2 <sub>1</sub> /n
Unit cell dimensions	a = 8.1616(6) Å      α = 90°. b = 8.6757(7) Å      β = 90.485(3)°. c = 22.6247(19) Å      γ = 90°.
Volume	1601.9(2) Å <sup>3</sup>
Z, Density (calculated)	4, 1.345 Mg/m <sup>3</sup>
Absorption coefficient	0.092 mm <sup>-1</sup>
F(000)	688
Crystal size	0.12 x 0.10 x 0.10 mm <sup>3</sup>
Theta range for data collection	1.800 to 26.469°.
Index ranges	-7 ≤ h ≤ 10, -10 ≤ k ≤ 10, -28 ≤ l ≤ 26
Reflections collected	13106
Independent reflections	3282 [R(int) = 0.0289]
Completeness to theta = 25.242°	99.8 %
Absorption correction	Semi-empirical from equivalents
Max. and min. transmission	0.9485 and 0.8810
Refinement method	Full-matrix least-squares on F <sup>2</sup>
Data / restraints / parameters	3282 / 0 / 221
Goodness-of-fit on F <sup>2</sup>	1.129
Final R indices [I > 2σ(I)]	R <sub>1</sub> = 0.0356, wR <sub>2</sub> = 0.0970
R indices (all data)	R <sub>1</sub> = 0.0418, wR <sub>2</sub> = 0.1152
Extinction coefficient	n/a
Largest diff. peak and hole	0.338 and -0.245 e.Å <sup>-3</sup>

Crystal data and structure refinement for **1c** (the thermal ellipsoid was drawn at the 50% probability level)



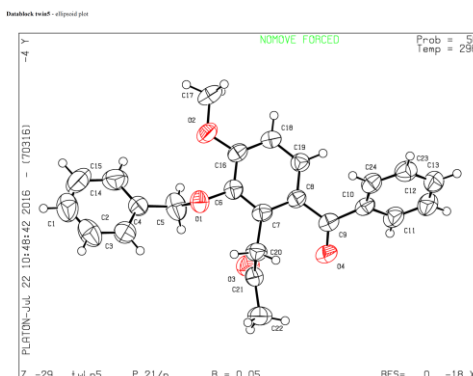
Identification code	150917_0m	
Empirical formula	C <sub>19</sub> H <sub>20</sub> N <sub>2</sub> O <sub>2</sub>	
Formula weight	308.37	
Temperature	296(2) K	
Wavelength	0.71073 Å	
Crystal system, Space group	Monoclinic, P 2 <sub>1</sub> /c	
Unit cell dimensions	a = 7.1877(5) Å	α = 90°.
	b = 25.1688(16) Å	β = 110.284(4)°.
	c = 9.8090(6) Å	γ = 90°.
Volume	1664.46(19) Å <sup>3</sup>	
Z, Density (calculated)	4, 1.231 Mg/m <sup>3</sup>	
Absorption coefficient	0.081 mm <sup>-1</sup>	
F(000)	656	
Crystal size	0.20 x 0.15 x 0.15 mm <sup>3</sup>	
Theta range for data collection	1.618 to 26.408°.	
Index ranges	-8 ≤ h ≤ 6, -31 ≤ k ≤ 30, -12 ≤ l ≤ 12	
Reflections collected	13538	
Independent reflections	3399 [R(int) = 0.0362]	
Completeness to theta = 25.242°	99.9 %	
Absorption correction	Semi-empirical from equivalents	
Max. and min. transmission	0.9485 and 0.8499	
Refinement method	Full-matrix least-squares on F <sup>2</sup>	
Data / restraints / parameters	3399 / 0 / 212	
Goodness-of-fit on F <sup>2</sup>	1.030	
Final R indices [I > 2σ(I)]	R <sub>1</sub> = 0.0481, wR <sub>2</sub> = 0.1186	
R indices (all data)	R <sub>1</sub> = 0.0649, wR <sub>2</sub> = 0.1299	
Extinction coefficient	n/a	
Largest diff. peak and hole	0.166 and -0.167 e.Å <sup>-3</sup>	

Crystal data and structure refinement for **1p** (the thermal ellipsoid was drawn at the 50% probability level)



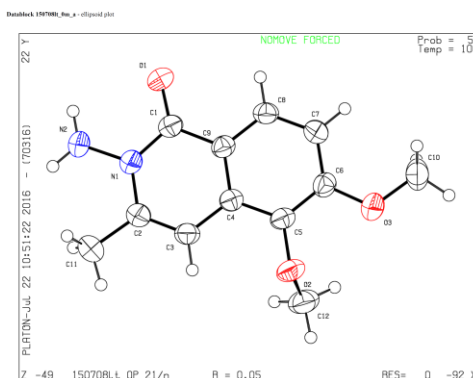
Identification code	mo_150908_0m
Empirical formula	C <sub>23</sub> H <sub>26</sub> N <sub>2</sub> O <sub>3</sub>
Formula weight	378.46
Temperature	296(2) K
Wavelength	0.71073 Å
Crystal system, Space group	Triclinic, P -1
Unit cell dimensions	a = 8.4384(6) Å      α = 70.841(2)° b = 11.0458(8) Å      β = 77.317(2)° c = 12.1243(8) Å      γ = 86.918(2)°
Volume	1041.25(13) Å <sup>3</sup>
Z, Density (calculated)	2, 1.207 Mg/m <sup>3</sup>
Absorption coefficient	0.080 mm <sup>-1</sup>
F(000)	404
Crystal size	0.25 x 0.20 x 0.20 mm <sup>3</sup>
Theta range for data collection	1.820 to 26.514°.
Index ranges	-10 ≤ h ≤ 10, -13 ≤ k ≤ 13, -11 ≤ l ≤ 15
Reflections collected	17072
Independent reflections	4298 [R(int) = 0.0330]
Completeness to theta = 25.242°	99.8 %
Absorption correction	Semi-empirical from equivalents
Max. and min. transmission	0.9485 and 0.8948
Refinement method	Full-matrix least-squares on F <sup>2</sup>
Data / restraints / parameters	4298 / 180 / 302
Goodness-of-fit on F <sup>2</sup>	1.040
Final R indices [I > 2σ(I)]	R1 = 0.0473, wR2 = 0.1277
R indices (all data)	R1 = 0.0710, wR2 = 0.1461
Extinction coefficient	n/a
Largest diff. peak and hole	0.253 and -0.175 e.Å <sup>-3</sup>

Crystal data and structure refinement for **7y** (the thermal ellipsoid was drawn at the 50% probability level)



Identification code	twin5
Empirical formula	C <sub>24</sub> H <sub>22</sub> O <sub>4</sub>
Formula weight	374.41
Temperature	296(2) K
Wavelength	0.71073 Å
Crystal system, Space group	Monoclinic, P 2 <sub>1</sub> /n
Unit cell dimensions	a = 11.5472(5) Å      α = 90°. b = 9.5808(3) Å      β = 95.831(2)°. c = 17.8875(7) Å      γ = 90°.
Volume	1968.68(13) Å <sup>3</sup>
Z, Density (calculated)	4, 1.263 Mg/m <sup>3</sup>
Absorption coefficient	0.085 mm <sup>-1</sup>
F(000)	792
Crystal size	0.20 x 0.15 x 0.12 mm <sup>3</sup>
Theta range for data collection	2.010 to 26.422°.
Index ranges	-14 ≤ h ≤ 14, 0 ≤ k ≤ 11, 0 ≤ l ≤ 22
Reflections collected	4099
Independent reflections	4099 [R(int) = 0.0387]
Completeness to theta = 25.242°	99.9 %
Absorption correction	Semi-empirical from equivalents
Max. and min. transmission	0.9485 and 0.7768
Refinement method	Full-matrix least-squares on F <sup>2</sup>
Data / restraints / parameters	4099 / 0 / 256
Goodness-of-fit on F <sup>2</sup>	1.082
Final R indices [I > 2σ(I)]	R1 = 0.0547, wR2 = 0.1499
R indices (all data)	R1 = 0.0882, wR2 = 0.1806
Extinction coefficient	n/a
Largest diff. peak and hole	0.247 and -0.242 e.Å <sup>-3</sup>

Crystal data and structure refinement for **9a** (the thermal ellipsoid was drawn at the 50% probability level)



Identification code	150708lt_0m_a
Empirical formula	C <sub>12</sub> H <sub>14</sub> N <sub>2</sub> O <sub>3</sub>
Formula weight	234.25
Temperature	100(2) K
Wavelength	0.71073 Å
Crystal system, Space group	Monoclinic, P 2 <sub>1</sub> /n
Unit cell dimensions	a = 15.2093(9) Å      α = 90°. b = 4.0297(2) Å      β = 90.067(3)°. c = 18.2902(11) Å      γ = 90°.
Volume	1120.99(11) Å <sup>3</sup>
Z, Density (calculated)	4, 1.388 Mg/m <sup>3</sup>
Absorption coefficient	0.101 mm <sup>-1</sup>
F(000)	496
Crystal size	0.20 x 0.08 x 0.08 mm <sup>3</sup>
Theta range for data collection	1.740 to 26.321°.
Index ranges	-18 ≤ h ≤ 18, -4 ≤ k ≤ 5, -22 ≤ l ≤ 22
Reflections collected	9387
Independent reflections	2258 [R(int) = 0.0243]
Completeness to theta = 25.242°	99.9 %
Absorption correction	Semi-empirical from equivalents
Max. and min. transmission	0.9485 and 0.8866
Refinement method	Full-matrix least-squares on F <sup>2</sup>
Data / restraints / parameters	2258 / 0 / 157
Goodness-of-fit on F <sup>2</sup>	1.098
Final R indices [I > 2σ(I)]	R <sub>1</sub> = 0.0491, wR <sub>2</sub> = 0.1559
R indices (all data)	R <sub>1</sub> = 0.0662, wR <sub>2</sub> = 0.1878
Extinction coefficient	n/a
Largest diff. peak and hole	0.378 and -0.465 e.Å <sup>-3</sup>